Appendix C

Mobility Study

Mobility Report

Midway-Pacific Highway and Old Town Communities

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Prepared for:
City of San Diego

Prepared by:

CHEN RYAN
3900 Fifth Avenue, Suite 210
San Diego, CA 92103

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1.0 Introduction

1.1 Study Background and Purpose

This Mobility Report summarizes the physical and operational conditions of the Midway-Pacific Highway and Old Town communities' mobility systems as part of the City of San Diego's community plan update process. The evaluation culminates with an analysis of all travel modes under the horizon year 2035 Preferred Plan conditions. The report also describes key terms and methodologies utilized for conducting the analyses presented.

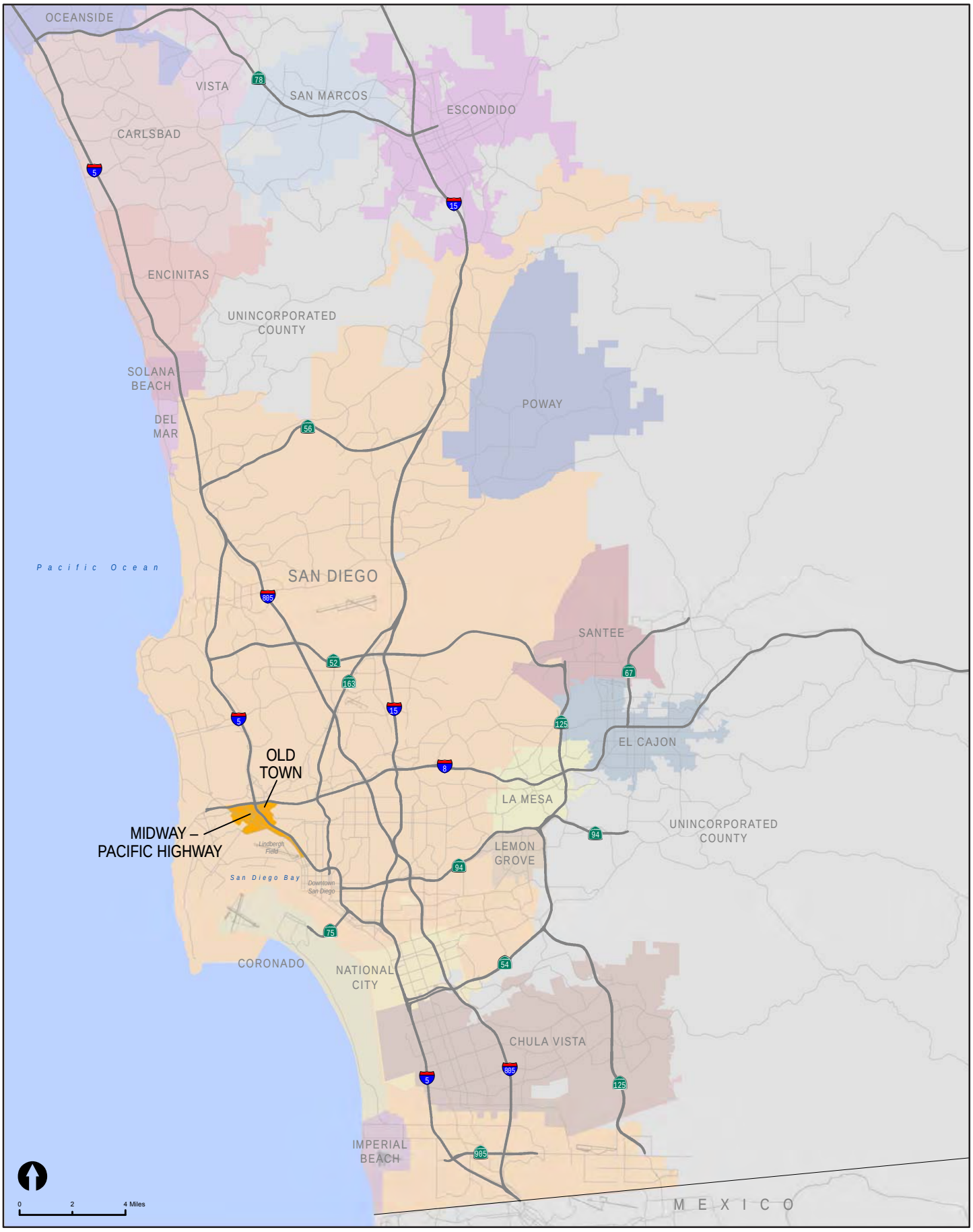
This Mobility Report is an update to the Midway-Pacific Highway Corridor Community Plan and Local Coastal Program Land Use Plan which was adopted by City Council in 1991, and the Old Town San Diego Community Plan, adopted in 1987.

The Preferred Plan is a strategy to address existing and forecast deficiencies related to mobility systems within the Midway-Pacific Highway and Old Town communities. The mobility networks are comprised of roadway and freeway systems, pedestrian and bicycle infrastructure, and public transit. Each of these transportation modes is discussed in the following chapters.

1.2 Study Location

The Midway-Pacific Highway and Old Town communities are located north of Downtown San Diego. The communities are both bound by Interstate 8 along the northern edge. Interstate 5 divides the communities, forming a north-south running boundary for each community. The Midway-Pacific Highway Community is bound by the Peninsula community and Barnett Avenue to west; and the Marine Corps Recruit Depot San Diego, the San Diego International Airport, and Laurel Street to the south. The Old Town Community is bound by Uptown and Mission Hills to the south and east.

Figure 1-1 displays the Midway-Pacific Highway and Old Town communities within the region.



Midway-Pacific Highway and Old Town Community Plan Update

CHEN RYAN

Figure 1-1
Midway-Pacific Highway and Old Town within the Region

Midway-Pacific Highway Community

The Midway-Pacific Highway community is situated north of Downtown San Diego and between the Old Town and Peninsula communities. The community encompasses approximately 800 acres of mostly flatland and is comprised of two basic elements: the central Midway area and the narrow, linear-shaped Pacific Highway Corridor.

Central Midway has an urbanized commercial core containing numerous shopping centers and institutional facilities which cater to the commercial needs of nearby residential and visitor populations. The area is characterized by wide streets, flat topography, and a varied mixture of flat-roofed large and small commercial buildings. The Pacific Highway Corridor, between Interstate 5 and Lindbergh Field, contains some of the City's oldest industrial areas. The corridor is defined by large scale buildings and unscreened commercial parking lots in the southern portion, and a group of smaller scale, low lying industrial buildings located between Witherby Street and Washington Street in the northern portion.

There are a few multifamily residential complexes located in the western portion of the community, adjacent to the Point Loma area. The planning area is generally characterized by a variety of commercial retail activities, and wide, multi-directional traffic intersections.

Since the 1960s, the Midway area has experienced an irregular development pattern, resulting in a lack of clear visual form both in terms of orientation and community legibility. The resulting diversity in development patterns, architectural styles, setbacks, and other development criteria has contributed to a disjointed and sporadic community image, where few buildings have compatibility or any functional relationship to each other and the surrounding neighborhood. Due to the area's low land valuations, high traffic utilization and inadequate zoning and development regulation, many auto-oriented commercial uses have located throughout the industrially zoned portions of the community. Much of the commercial development, including retail oriented auto sales and services, adult entertainment, and drive-thru restaurants, now exhibit a general lack of adequate parking, landscaping, and other commercial development amenities.

Old Town

The Old Town community covers 230 acres and is bound on the north by Interstate 8 and Mission Valley, on the west by Interstate 5 and Midway, and on the south and east by the Uptown/ Mission Hills hillsides.

Old Town San Diego, considered the "birthplace" of California, is the site of the first permanent Spanish Mission and settlement in California. The first Spanish Mission and Presidio were built on a hillside overlooking what is currently known as Old Town San Diego. At the base of the hill in the 1820's, a small Mexican community of adobe buildings was formed and by 1835 had attained the status of El Pueblo de San Diego.

In 1968, the State of California Department of Parks and Recreation established Old Town State Historic Park to preserve the rich heritage that characterized San Diego during the 1821 to 1872 period. The park includes a main plaza, exhibits, museums and living history demonstrations. Due to the historical nature and attractions within the community, Old Town San Diego is currently one of the region's largest tourist attractions. Within the community's central core (San Diego Avenue & Congress Street, between Twiggs Street and Ampudia Street) there are currently more than 150 shops, several restaurants, 17 museums, and historical sites.

There is a small number of residential neighborhoods located along the eastern, western and southern boundaries of the community.

1.3 Organization of the Report

The remainder of this Mobility Report is organized into the following chapters:

- *Chapter 2* describes the methodologies used to determine the study area and assess the pedestrian, transit, bicycle and vehicular systems.
- *Chapter 3* presents the Preferred Plan for the Midway-Pacific Highway community, including the development process, identification of existing community needs, and recommended improvements.
- *Chapter 4* presents the Preferred Plan for the Old Town community, including the development process, identification of existing community needs, and recommended improvements.
- *Chapter 5* provides an overview of the Transportation Demand Model Forecasting process utilized to project future travel patters under implementation of the Preferred Plan.
- *Chapter 6* concludes this document with the Preferred Plan analysis results for each mode. Additionally, Intelligent Transportation Systems (ITS), Transportation Demand Management (TDM) Systems, and Parking Management are described in this chapter.

2.0 Analysis Methodology

This chapter describes the methodologies used to determine the study area and assess the pedestrian, transit, bicycle and vehicular systems within the Midway-Pacific Highway and Old Town communities.

2.1 Selection of the Study Area

This section describes the process used to identify roadway segments and intersections for analysis.

2.1.1 Roadway Segments

Roadway segments were evaluated if one or more of the following circumstances applied:

- The roadway segment is an existing or planned circulation element roadway as identified in the Midway-Pacific Highway Corridor Community Plan and Local Coastal Program Land Use Plan (1991), or the Old Town San Diego Community Plan (1987).
- The roadway segment provides freeway access to/from the Midway-Pacific Highway or Old Town communities.
- The roadway segment is located outside of either study community, however, it may influence or impact the flow of transportation within either of the communities.

Based on the criteria listed above, Table 2.1 displays the roadway segments selected for analysis.

Table 2.1 Study Area Roadway Segments

ID	Roadway	From	To
North-South			
Midway Pacific Highway			
1	Lytton Street / Barnett Ave	Rosecrans St	Midway Dr
2	Midway Dr	W. Point Loma Blvd/Sports Arena Blvd	Kemper St
3		Kemper St	East Dr
4		East Dr	Rosecrans St
5		Rosecrans St	Barnett Ave
6	Sports Arena Blvd	I-8 WB Ramps	I-8 EB Ramps
7		I-8 EB Ramps	W. Point Loma Blvd
8		W. Point Loma Blvd/Midway Dr	Kemper St
9		Kemper St	East Dr
10		East Dr	Rosecrans St
11		Rosecrans St	Pacific Hwy
12	Kurtz St	Hancock St	Rosecrans St

Table 2.1 Study Area Roadway Segments

ID	Roadway	From	To
13	Kurtz St	Rosecrans St	Pacific Hwy
14	Hancock St	Sports Arena Blvd	Kurtz St
15		Kurtz St	Camino Del Rio West
16		Camino Del Rio West	Rosecrans St
17		Old Town Ave	Witherby St
18		Witherby St	Washington St
19	Kettner Blvd	Washington St	Vine St
20		Vine St	Sassafras St
21		Sassafras St	Laurel St
22	Pacific Hwy	Interstate-8	Taylor St
23		Taylor St	Kurtz St
24		Kurtz St	Sports Arena Blvd
25		Sports Arena Blvd	Barnett Ave
26		Barnett Ave	Washington St
27		Washington St	Sassafras St
28		Sassafras St	Laurel St
Old Town			
29	Congress St	Taylor St	Twiggs St
30		Twiggs St	Harney St
31		Harney St	San Diego Ave/ Ampudia St
32	San Diego Ave	Twiggs St	Conde St
33		Conde St	Ampudia St
34		Ampudia St	Old Town Ave
35		Old Town Ave	Hortensia St
36	Juan St	Taylor St	Twiggs St
37		Twiggs St	Harney St
38		Harney St	San Juan Rd
East-West			
Midway Pacific Highway			
39	Channel Wy	W. Mission Bay Dr	Hancock St
40	Kemper St	Kenyon St	Midway Dr
41		Midway Dr	Sports Arena Blvd
42		Sports Arena Blvd	Hancock St
43	Frontier Dr	Sports Arena Blvd	Kurtz St
44	Greenwood St	Sports Arena Blvd	Kurtz St
45	Camino Del Rio West	Rosecrans St	I-5/I-8 Ramps
46	Rosecrans St	Lytton St	Midway Dr
47		Midway Dr	Sports Arena Blvd
48	Rosecrans St	Sports Arena Blvd	Pacific Hwy/Taylor St

Table 2.1 Study Area Roadway Segments

ID	Roadway	From	To
49	Charles Lindbergh Pkwy	Midway Dr	Sports Arena Blvd
50		Sports Arena Blvd	Kurtz Street
51	Dutch Flats Pkwy	Barnett Avenue	Midway Dr
52		Midway Dr	Sports Arena Blvd
53	Barnett Ave	Midway Dr	Pacific Hwy
54	Washington St	Frontage Rd	Pacific St
55		Pacific St	Hancock St
56	Vine St	California St	Kettner Blvd
57	Sassafras St	Pacific Hwy	Kettner Blvd
58	Laurel St	Pacific Hwy	Kettner Blvd
Old Town			
59	Taylor St	Pacific Hwy/ Rosecrans St	Congress St
60		Congress St	Juan St
61		Juan St	Morena Blvd
62		Morena Blvd	I-8 EB Ramps
63	Twiggs St	Congress St	San Diego Ave
64		San Diego Ave	Juan St
65	Harney St	Congress St	San Diego Ave
66		San Diego Ave	Juan St
67	Old Town Ave	Hancock St	Moore St
68		Moore St	San Diego Ave

Source: Chen Ryan Associates (2016)

2.1.2 Intersections

Intersections were evaluated if one or more of the following circumstances applied:

- The intersection is comprised of a circulation element roadway intersecting with another circulation element roadway. This includes existing and future/planned circulation element roadways as identified in the Midway-Pacific Highway Corridor Community Plan and Local Coastal Program Land Use Plan (1991), or the Old Town San Diego Community Plan (1987).
- The intersection is at a freeway ramp interchange located within the Midway-Pacific Highway or Old Town communities or is a major gateway to either community.
- The intersection is a major intersection located outside of either community, however, it may influence or impact the flow of transportation within the communities.
- The intersection meets criteria used in previous studies, whereby both streets meet one of the following:
    - 4 lanes or greater

- 3 lanes and carries over 15,000 ADT
- 2 lanes and carries over 10,000 ADT

- Intersections at freeway access ramps.
- Significant intersections where travel time analysis is performed.

A total of 59 intersections were identified based on the criteria listed above, which include 11 intersections located outside the study communities. These intersections were added to the study area because of their proximity to the communities, and the likelihood that changes within the communities could directly affect traffic in/out of the communities. The 59 intersections include the following:

Midway-Pacific Highway

1. Lytton Street and Rosecrans Street
2. W. Mission Bay Drive and I-8 WB Off-Ramp
3. Sports Arena Boulevard and Channel Way
4. Midway Drive and Sports Arena/W. Point Loma Boulevard
5. Midway Drive and Kemper Street
6. Midway Drive and East Drive
7. Midway Drive and Rosecrans Street
8. Midway Drive and Charles Lindbergh Parkway
9. Midway Drive and Enterprise Street
10. Midway Drive and Barnett Avenue
11. Sports Arena Boulevard and Hancock Street
12. Sports Arena Boulevard and Kemper Street
13. Sports Arena Boulevard and Sports Arena Driveway
14. Sports Arena Boulevard and East Drive
15. Sports Arena Boulevard and Rosecrans Street
16. Sports Arena Boulevard and Charles Lindbergh Parkway
17. Sports Arena Boulevard and Pacific Highway
18. Kurtz Street and Hancock Street
19. Kurtz Street and Camino Del Rio West
20. Kurtz Street and Rosecrans Street
21. Kurtz Street and Pacific Highway
22. Hancock Street and Channel Way
23. Hancock Street and Camino Del Rio West
24. Hancock Street and Rosecrans Street
25. Hancock Street and Old Town Avenue
26. Hancock Street and Witherby Street
27. Hancock Street and Washington Street
28. Kettner Boulevard and Vine Street
29. Kettner Boulevard and Sassafras Street

30. Kettner Boulevard and West Laurel Street
31. Pacific Highway and Barnett Avenue
32. Pacific Highway and Washington Street @ Frontage Road
33. Pacific Highway and Washington Street
34. Pacific Highway and Sassafras Street
35. Pacific Highway and West Laurel Street

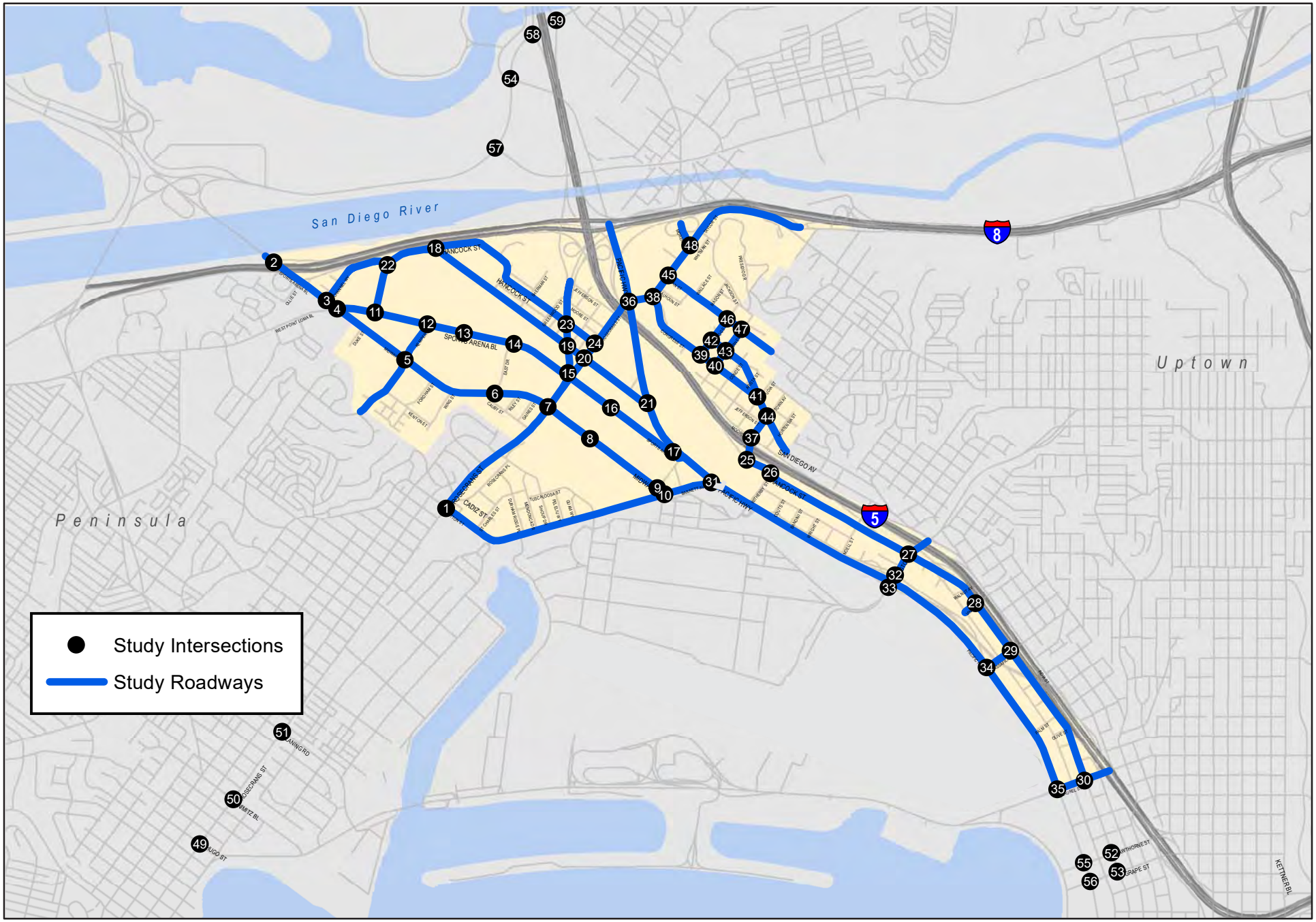
Old Town

36. Pacific Highway and Taylor Street
37. Moore Street and Old Town Avenue
38. Congress Street and Taylor Street
39. Congress Street and Twiggs Street
40. Congress Street and Harney Street
41. Congress Street and San Diego Avenue/Ampudia Street
42. San Diego Avenue and Twiggs Street
43. San Diego Avenue and Harney Street
44. San Diego Avenue and Old Town Avenue
45. Juan Street and Taylor Street
46. Juan Street and Twiggs Street
47. Juan Street and Harney Street
48. Morena Boulevard and Taylor Street

Intersections Outside of Study Communities

49. Hugo Street/N Harbor Drive and Rosecrans Street
50. Lowell Street/Nimitz Boulevard and Rosecrans Street
51. Kettner Boulevard and W Hawthorn Street
52. Kettner Boulevard and W Grape Street
53. Laning Road and Rosecrans Street
54. Pacific Highway and Sea World Drive
55. Pacific Highway and W Hawthorn Street
56. Pacific Highway and W Grape Street
57. Friars Road and Sea World Drive
58. I-5 SB Ramps and Sea World Drive
59. I-5 NB Ramps and Sea World Drive

Figure 2-1 displays the location of the 59 study intersections. As shown, this includes the 11 intersections located outside of the study communities.



Midway-Pacific Highway and
Old Town Community Plan Update

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Figure 2-1
Project Study Area

2.2 Vehicular Analysis

Analysis of the vehicular systems – roadways, intersections, and freeways – were prepared for this report in accordance with the City of San Diego and SANTEC/ITE Guidelines. Vehicular level of service (LOS) is a quantitative measure that represents the quality of service – or how well a transportation facility operates – as experienced by vehicular drivers. These conditions are generally described in terms of factors such as speed, travel time, freedom to maneuver, comfort, convenience, and safety. LOS A represents the best operating conditions from a driver's perspective, while LOS F represents the worst. Table 2.2 describes generalized definitions of vehicular LOS A through F as identified by the Highway Capacity Manual (2000).

Table 2.2 Vehicular Level of Service Definitions

LOS	Definition
A	Primarily free-flow operation. Vehicles are completely unimpeded in their ability to maneuver within the traffic stream. Controlled delay at the boundary intersections is minimal. The travel speed exceeds 85% of the base free-flow speed.
B	Reasonably unimpeded operation. The ability to maneuver within the traffic stream is only slightly restricted and control delay at the boundary intersections is not significant. The travel speed is between 67% and 85% of the base free-flow speed.
C	Stable operation. The ability to maneuver and change lanes at mid-segment locations may be more restricted than at LOS B. Longer queues at the boundary intersections may contribute to lower travel speeds. The travel speed is between 50% and 67% of the base free-flow speed.
D	Less stable condition in which small increases in flow may cause substantial increases in delay and decreases in travel speed. This operation may be due to adverse signal progression, high volume, or inappropriate signal timing at the boundary intersections. The travel speed is between 40% and 50% of the base free-flow speed.
E	Unstable operation and significant delay. Such operations may be due to some combination of adverse signal progression, high volume, and inappropriate signal timing at the boundary intersections. The travel speed is between 30% and 40% of the base free-flow speed.
F	Flow at extremely low speed. Congestion is likely occurring at the boundary intersections, as indicated by high delay and extensive queuing. The travel speed is 30% or less of the base free-flow speed. Also, LOS F is assigned to the subject direction of travel if the through movement at one or more boundary intersections have a volume-to-capacity ratio greater than 1.0.

Source: Highway Capacity Manual (2000)

2.2.1 Roadway Segment

Roadway segment level of service standards and thresholds provided the basis for analysis of arterial roadway segment performance. The analysis of roadway segment level of service is based on the functional classification of the roadway, the maximum capacity, roadway geometrics, and existing or forecast Average Daily Traffic (ADT) volumes.

Table 2.3 presents the roadway segment capacity and LOS standards utilized to analyze roadways evaluated in this report. These standards are generally used as long-range planning guidelines to determine the functional classification of roadways. The actual capacity of a roadway varies according to its physical and operational attributes. LOS D is considered acceptable for Mobility Element roadway segments in the City of San Diego. Often, a roadway segment operating at LOS

E or F based on theoretical capacity is found to operate acceptably in practice. In such cases, HCM arterial analysis may be conducted and utilized (or intersection analysis, if arterial analysis is not applicable) to provide a more accurate indication of LOS.

Table 2.3 City of San Diego Roadway Segment Daily Capacity and Level of Service Standards

Roadway Functional Classification	Level of Service				
	A	B	C	D	E
Expressway (6-lane)	< 30,000	< 42,000	< 60,000	< 70,000	< 80,000
Prime Arterial (6-lane)	< 25,000	< 35,000	< 50,000	< 55,000	< 60,000
Major Arterial (6-lane, divided)	< 20,000	< 28,000	< 40,000	< 45,000	< 50,000
Major Arterial (4-lane, divided)	< 15,000	< 21,000	< 30,000	< 35,000	< 40,000
Collector (4-lane w/ center left-turn lane)	< 10,000	< 14,000	< 20,000	< 25,000	< 30,000
Collector (3-lane w/ center left-turn lane)	< 7,500	< 10,500	< 15,000	< 19,000	< 22,500
Collector (4-lane w/o center lane)	< 5,000	< 7,000	< 10,000	< 13,000	< 15,000
Collector (2-lane w/ center left-turn lane)					
Collector (2-lane no fronting property)	< 4,000	< 5,500	< 7,500	< 9,000	< 10,000
Collector (2-lane w/ commercial fronting)	< 2,500	< 3,500	< 5,000	< 6,500	< 8,000
Collector (2-lane multi-family fronting)					
Sub-Collector (2-lane single-family)	-	-	< 2,200	-	-

Source: City of San Diego Traffic Impact Study Manual (1998)

Note: Bold numbers indicate the ADT thresholds for acceptable LOS.

2.2.2 Peak Hour Intersection

This section presents the methodologies used to perform peak hour intersection capacity analysis, for both signalized and unsignalized intersections. The following assumptions were utilized in conducting all intersection level of service analyses:

- Pedestrian Calls per Hour: Based on existing pedestrian counts.
- Heavy Vehicle Factor: A 2% heavy vehicle factor was assumed for all intersections within the study area.
- Peak Hour Factor: Based on existing peak hour counts.
- Signal Timing: Based on existing signal timing plans (as of November 2012).

Signalized Intersection Analysis

The signalized intersection analysis utilized in this study conforms to the operational analysis methodology outlined in 2000 Highway Capacity Manual (HCM), Transportation Research Board Special Report 209. This method defines LOS in terms of delay, or more specifically, average control delay per vehicle (sec/veh). The 2000 HCM methodology sets 1,900 passenger-cars per hour per lane (pcphpl) as the ideal saturation flow rate at signalized intersections based upon the minimum headway that can be sustained between departing vehicles at a signalized intersection. The service saturation flow rate, which reflects the saturation flow rate specific to the study facility, is determined by adjusting the ideal saturation flow rate for lane width, on-street parking, bus stops, pedestrian volume, traffic composition (or percentage of heavy vehicles), and shared

lane movements (e.g. through and right-turn movements sharing the same lane). The level of service criteria used for this technique are described in Table 2.4. The computerized analysis of intersection operations was performed utilizing the Synchro 8.0 (2000 HCM methodology) traffic analysis software (by Trafficware, 2011).

Table 2.4 Signalized intersection LOS – HCM Operational Analysis Method

Average Control Delay Per Vehicle (seconds)	Level of Service (LOS) Characteristics
≤10.0	*LOS A* occurs when the volume-to-capacity ratio is low and either progression is exceptionally favorable or the cycle length is very short. If it is due to favorable progression, most vehicles arrive during the green indication and travel through the intersection without stopping.
10.1 – 20.0	*LOS B* occurs when the volume-to-capacity ratio is low and either progression is highly favorable or the cycle length is short. More vehicles stop than with LOS A.
20.1 – 35.0	*LOS C* occurs when progression is favorable or the cycle length is moderate. The number of vehicles stopping is significant, although many vehicles still pass through the intersection without stopping.
35.1 – 55.0	*LOS D* occurs when the volume-to-capacity ratio is high and either progression is ineffective or the cycle length is long. Many vehicles stop and individual cycle failures are noticeable.
55.1 – 80.0	*LOS E* occurs when the volume-to-capacity ratio is high, progression is unfavorable, and the cycle length is long. Individual cycle failures are frequent.
>80.0	*LOS F* occurs when the volume-to-capacity ratio is very high, progression is very poor, and the cycle length is long. Most cycles fail to clear the queue.

Source: Highway Capacity Manual, Transportation Research Board Special Report 209 (2000)

Unsignalized Intersection Analysis

Unsignalized intersections, including two-way and all-way stop controlled intersections were analyzed using the *2000 HCM* unsignalized intersection analysis methodology. The Synchro 8.0 software supports this methodology and was utilized to produce LOS results. The LOS for a two-way stop controlled (TWSC) intersection is determined by the computed or measured control delay and is defined for each minor movement. The LOS for an all-way stop controlled (AWSC) intersection is determined by the computed or measured average control delay of all movements. Table 2.5 summarizes the level of service criteria for unsignalized intersections.

Table 2.5 Level of Service Criteria for Stop Controlled Unsignalized Intersections

Average Control Delay (sec/veh)	Level of Service
≤10.0	A
10.1 – 15.0	B
15.1 – 25.0	C
25.1 – 35.0	D
35.1 – 50.0	E
>50.0	F

Source: Highway Capacity Manual (2000)

The City of San Diego considers LOS D or better during the AM and PM peak hours to be an acceptable intersection level of service.

2.2.3 Freeway

The freeway level of service analysis followed procedures developed by Caltrans District 11. The procedure involves estimating a peak hour volume to capacity ratio (V/C). Peak hour volumes are estimated from the application of design hour ("K"), directional ("D"), and truck ("T") factors to average daily traffic (ADT) volumes). The base capacities were assumed to be 2,350 passenger-cars per hour per main lane (pc/h/ln) and 1,410 pc/h/ln for auxiliary lane. A 0.95 peak hour factor (PHF) was utilized for this analysis. The resulting V/C ratio was then compared to acceptable ranges of V/C values corresponding to the various levels of service for each facility classification, as shown in Table 2.6. The corresponding level of service represents an approximation of anticipated future freeway operating conditions in the peak direction of travel during the peak hour. LOS D or better was used in this study as the threshold for acceptable freeway operations based upon Caltrans and the SANDAG Regional Growth Management Strategy (RGMS) requirements.

Table 2.6 Caltrans District 11 Freeway Segment Level of Service Definitions

LOS	V/C	Congestion/Delay	Traffic Description
Used for freeways, expressways and conventional highways			
"A"	<0.41	None	Free flow.
"B"	0.42-0.62	None	Free to stable flow, light to moderate volumes.
"C"	0.63-0.79	None to minimal	Stable flow, moderate volumes, freedom to maneuver noticeably restricted.
"D"	0.80-0.92	Minimal to substantial	Approaches unstable flow, heavy volumes, very limited freedom to maneuver.
"E"	0.93-1.00	Significant	Extremely unstable flow, maneuverability and psychological comfort extremely poor.
Used for conventional highways			
"F"	>1.00	Considerable	Forced or breakdown flow. Delay measured in average travel speed (MPH). Signalized segments experience delays >60.0 seconds/vehicle.
Used for freeways and expressways			
"F0"	1.01–1.25	Considerable (0-1 hour delay)	Forced flow, heavy congestion, long queues form behind breakdown points, stop and go.
"F1"	1.26-1.35	Severe (1-2 hour delay)	Very heavy congestion, very long queues.
"F2"	1.36-1.45	Very severe (2-3 hour delay)	Extremely heavy congestion, longer queues, more numerous breakdown points, longer stop periods.
"F3"	>1.46	Extremely severe (3+ hours of delay)	Gridlock.

Source: SANTEC/ITE Guidelines for TIS in the San Diego Region

2.2.4 Ramp Metering Analysis

Ramp metering is a means of controlling the volume of traffic entering the freeway with the goal of improving freeway main lane traffic operations and flow. Freeway ramp meter analyses estimate peak hour queues and delays at freeway ramps by comparing existing volumes to the meter rate at the given location.

Meter rates, which represent the amount of vehicles permitted through the signal, onto the ramp and freeway, were obtained from Caltrans for use in the analysis. Ramp metering analyses to calculate delays at study area freeway ramps were conducted following the procedures outlined in the *City of San Diego Traffic Impact Study Manual (1998)*.

2.3 Multimodal Analysis

Recent planning efforts and legislative actions have redefined the way community transportation planning is carried out. An important unifying theme is to achieve a more balanced, multimodal transportation system that allows people of varying physical and economic conditions to accomplish daily activities without making a single-occupant vehicle trip. A balanced system will address many complex transportation issues such as traffic congestion, greenhouse gas emissions, community health, and economic vitality of a community.

Multimodal analyses are gaining attention among local and regional jurisdictions as one method of supporting progress toward these issues. This section describes the pedestrian, bicycle, and transit analysis methodologies used in this report.

2.3.1 Pedestrian Assessment

Three analyses were utilized to assess overall pedestrian mobility: 1) network connectivity; 2) facility quality; and 3) combined network connectivity and quality.

Pedestrian Connectivity Ratio

A pedestrian travelshed analysis was used to assess the level of connectivity provided from each Traffic Analysis Zone (TAZ) with pedestrian friendly land uses (residential, commercial, office or recreational). A 0.5 mile pedestrian network buffer was drawn around each TAZ within the community containing pedestrian friendly land uses. That area was then compared to the area of a 0.5 mile as-the-crow-flies buffer (502.7 acres) to develop a Pedestrian Connectivity Ratio for the intersection. The higher the Pedestrian Connectivity Ratio, the better the overall walking connectivity from the TAZ.

Pedestrian Environment Quality Evaluation (PEQE)

The quality of all roadway segments, intersections, and mid-block crossings within the Midway-Pacific Highway and Old Town communities were evaluated under Preferred Plan conditions using the Pedestrian Environmental Quality Evaluation (PEQE) tool. Table 2.7 outlines the evaluation system used to develop the PEQE scoring metric.

Table 2.7 Pedestrian Environment Quality Ranking System

Facility Type	Measure	Description/Feature	Scoring
Segment *(between two intersections)*	Horizontal Buffer	Between the edge of auto travel way and the edge of clear pedestrian zone	0 point: < 6 feet 1 point: 6 – 14 feet 2 points: > 14 feet
	Lighting	--	0 point: below standard/requirement 1 point: meet standard/requirement 2 points: exceed standard/requirement
	Clear Pedestrian Zone	5' minimum	0 point: has obstructions 2 points: no obstructions
	Posted Speed Limit	--	0 point: > 40 mph 1 point: 30 – 40 mph 2 points: < 30 mph
		Maximum Points	8 points
Intersection	Physical Feature	• Enhanced/High Visibility Crosswalk • Raised Crosswalk/Speed Table • Advanced Stop Bar • Bulb out/Curb Extension	0 point: < 1 feature per ped crossing 1 point: 1 – 2 features per ped crossing 2 points: > 2 features per ped crossing
	Operational Feature	• Pedestrian Countdown Signal • Pedestrian Lead Interval • No-Turn On Red Sign/Signal • Additional Pedestrian Signage	0 point: < 1 feature per ped crossing 1 point: 1 – 2 features per ped crossing 2 points: > 2 features per ped crossing
Intersection (Continued)	ADA Curb Ramp	--	0 point: below standard/requirement 2 points: meet standard/requirement
	Traffic Control	--	0 point: No control 1 point: Stop sign controlled 2 points: Signal/Roundabout/Traffic Circle
		Maximum Points	8 points
Mid-block Crossing	Visibility	--	0 point: w/o high visibility crosswalk 2 points: with high visibility crosswalk
	Crossing Distance	--	0 point: no treatment 2 points: with bulb out or pedestrian refuge
	ADA Curb Ramp	--	0 point: below standard/requirement 2 points: meet standard/requirement
	Traffic Control	--	0 point: No control 1 point: Flashing Beacon 2 points: Signal/Pedestrian Hybrid Beacon
		Maximum Points	8 points
Final PEQE Scoring:			
Low: < 4 points Medium: 4-6 points High: > 7 points			

Combined Pedestrian Network Connectivity and Quality Assessment

This evaluation involves assessing the connectivity and quality of the walking environment within each community. Pedestrian network connectivity and quality is assessed using a combination of the pedestrian travelshed and quality assessment previously described. The following steps outline the evaluation process used:

a. *Total Walking Distance* – a 0.5 mile pedestrian network buffer is drawn around each study intersection, regardless of PEQE score.

b. *Quality Walking Distance* – a 0.5 mile pedestrian network buffer is drawn around each study intersection, using only pedestrian facilities with a PEQE ranking of Medium or High (including roadway links and intersections, and not including mid-block crossings). PEQE scores on each side of the roadway segment are added together and assigned a quality rating using the following scale (Low: 0-7, Medium: 8-12, High: 13+), to get a single quality measure for the roadway segment. Segments with a "High" rating are considered quality segments.

c. *Quality Walk Ratio* – The ratio of high quality connectivity to overall connectivity along all pedestrian facilities is determined using the following equation:

$$\text{Quality Walk Ratio} = \frac{\textit{Quality Walking Distance}}{\textit{Total Walking Distance (Existing Conditions)}}$$

2.3.2 Bicycle Assessment

Three analyses were utilized to assess overall bicycle mobility: 1) network connectivity; 2) facility quality; and 3) combined network connectivity and quality.

Bicycle Connectivity Ratio – Travelshed Analysis

A bicycle travelshed analysis was used to assess the level of connectivity provided from each study intersection. A 1.0 mile bicycle network buffer (using all bikeable roadways plus multi-use paths) is drawn around each intersection. That area is then compared to the area of a 1.0 mile as-the-crow-flies buffer (2,010.6 acres) to develop a Bicycle Connectivity Ratio for the intersection. The higher the Connectivity Ratio, the better the overall connectivity from the intersection.

Bicycle Facility Quality

The bicycle environment is assessed using the Bicycle Level of Traffic Stress (LTS) methodology, as developed by Mekuria, et al. (2012) of the Mineta Transportation Institute and reported in *Low-Stress Bicycle and Network Connectivity*. LTS classifies the street network into categories according to the level of stress it causes cyclists, taking into consideration a cyclist's physical separation from vehicular traffic, vehicular traffic speeds along the roadway segment, number of travel lanes, and factors related to intersection approaches with right-turn lanes and unsignalized crossings. LTS scores range from 1 (lowest stress) to 4 (highest stress).

Table 2.8 displays the four LTS categories with descriptions of traffic stress experienced by the cyclist and the cycling conditions associated with each category.

Combined Bicycle Network Connectivity and Quality Assessment

This assessment quantifies the connectivity of low stress bicycle facilities (LTS score 1 or 2) between TAZs within the study communities. This measure results in each TAZ being assigned a percentage reflecting the number of total TAZ reachable via low stress bicycle facilities within the study area.

Table 2.8 Level of Traffic Stress Classifications and Descriptions

LTS Category	LTS Description	Cycling Conditions Fitting LTS Category
LTS 1	Presenting little traffic stress and demanding little attention from cyclists; suitable for almost all cyclists, including children trained to safely cross intersections	• Facility that is physically separated from traffic or an exclusive cycling zone next to a slow traffic stream with no more than one lane per direction • A shared roadway where cyclists only interact with the occasional motor vehicle with a low speed differential • Ample space for cyclist when alongside a parking lane • Intersections are easy to approach and cross
LTS 2	Presenting little traffic stress but demanding more attention than might be expected from children	• Facility that is physically separated from traffic or an exclusive cycling zone next to a well-connected traffic stream with adequate clearance from parking lanes • A shared roadway where cyclists only interact with the occasional motor vehicle (as opposed to a stream of traffic) with a low speed differential • Unambiguous priority to the cyclist where cars must cross bike lanes (e.g. at dedicated right-turn lanes); design speed for right-turn lanes comparable to bicycling speeds • Crossings not difficult for most adults
LTS 3	Presenting enough traffic stress to deter riders not comfortable with sharing the roadway with traffic	• An exclusive cycling zone (lane) next to moderate-speed vehicular traffic • A shared roadway that is not multilane and has moderately low automobile travel speeds • Crossings may be longer or across higher-speed roadways than allowed by LTS 2, but area still considered acceptably safe to most adult pedestrians
LTS 4	Presenting enough traffic stress to deter all but the Strong & Fearless cycling demographic (estimated at <1% of the population)	• An exclusive cycling zone (lane) next to high-speed and multi-lane vehicular traffic • A shared roadway with multiple lanes per direction with high traffic speeds • Cyclist must maneuver through dedicated right-turn lanes containing no dedicated bicycling space and designed for turning speeds faster than bicycling speeds

Source: Mekuria, et al. (2012)

2.3.3 Transit Assessment

Two performance measures were used to analyze transit conditions, including station quality and arterial speed.

Station Quality – Presence of Amenities

Each transit station/stop was reviewed for the presence of the following amenities:

- Shelters
- Benches
- Trash Receptacles
- Station Signs
- Maps/Wayfinding
- Lighting
- ADA Compliancy

Table 2.9 displays the standard amenities that should be provided at transit stops/stations based on daily passenger boardings (across all routes).

Table 2.9 Transit Amenity Standards by Ridership Levels

Amenity	Daily Passenger Boardings by Stop/Station				
	< 50	50 – 100	101 – 200	201 – 500	> 500
Sign and Pole	X	X	X	X	
Built-in Sign					X
Expanded Sidewalk			X	X	X
Bench		X	X	X	X
Shelter			X	X	X
Route Designations	X	X	X	X	X
Time Table				X	X
Route Map			X	X	X
System Map					X
Trash Receptacle				X	X
Lighting			X	X	X
ADA Compliant	X	X	X	X	X

Source: MTS Design for Transit (1993)

Arterial Speed

On-time bus performance can be directly impacted by vehicular traffic congestion along roadways servicing bus routes. An HCM roadway arterial speed analysis was used to identify locations in which on-time performance is currently or may be impacted under future conditions by vehicular traffic congestion.

Arterial Level of Service (LOS) is based on the average peak hour travel speeds along a roadway segment. The average travel speed is computed from the running time on the arterial segment(s) and the intersection approach delay. Average speed is strongly influenced by the number of signals per mile and the average intersection delay. On a given facility, factors such as

inappropriate signal timing, poor progression, and increasing traffic flow can substantially degrade the arterial LOS.

Table 2.10 displays the LOS thresholds used for the arterial analysis. Arterial speed analyses should be performed utilizing the methodologies in the version of the Highway Capacity Manual (HCM) that is currently accepted by the City of San Diego

Table 2.10 Arterial Analysis Level of Service Thresholds

Arterial Class	I	II	III
Range of Free Flow Speed (mph)	45 to 35	35 to 30	30 to 25
Typical Free Flow Speed (mph)	40 mph	33 mph	27 mph
Level of Service Analysis	**Average Travel Speed**		
A	35	30	25
B	28	24	19
C	22	18	13
D	17	14	9
E	13	10	7
F	< 13	< 10	< 7

Source: Highway Capacity Manual (TRB 1997)

3.0 Midway-Pacific Highway Preferred Plan

This section documents the mobility related issues and needs of the Midway-Pacific Highway community and the process used to identify those issues. This section also outlines the mobility improvements recommended under buildout of Preferred Plan conditions and the process used to develop these improvements.

3.1 Development of the Preferred Plan

3.1.1 Identification of Issues and Needs

Existing mobility related issues and needs within the Midway-Pacific Highway community were identified in the *Community of Midway/Pacific Highway Corridor and Old Town Mobility Existing Conditions Report; September 2012 (Existing Conditions Report)*. The issues and needs identified in the Existing Conditions Report were used, in conjunction with the other planning efforts and the overall community vision, to develop the recommended mobility improvements incorporated into the Preferred Plan.

3.1.2 Development of Preferred Plan Improvements

Preferred Plan improvements were developed by first cross checking the mobility issues and needs, identified in the Existing Conditions Report, against the mobility issues and needs identified in several other on-going or recent planning efforts, including:

- Midway/Pacific Highway Urban Greening Plan (December 2016)
- I-8 Corridor Study (August 2016)
- San Diego Forward, The Regional Plan (October 2015)
- City of San Diego Bicycle Master Plan (December 2013)
- City of San Diego Pedestrian Master Plan – Phase 4 (December 2013)
- Rosecrans Corridor Mobility Study (February 2010)
- Destination Lindbergh Technical Report: San Diego International Airport (November 2008)
- San Diego International Airport Master Plan (November 2008)

Where possible, the Preferred Plan carried forward or maintained the relevant improvements from on-going or previous planning efforts which have been adopted or vetted by the community. New improvement strategies were then developed for the issues and needs, identified in the Existing Conditions Report, which were not addressed in other planning efforts. Additional mobility improvements were also developed to accommodate the anticipated future growth within the community. The following sections outline the mobility issues and needs identified in the Existing Conditions Report and the associated improvements recommended under the Preferred Plan to alleviate them.

3.2 Street and Freeway System

3.2.1 Identified Street and Freeway Needs

There is constrained regional access to/from the Midway-Pacific Highway Community and to adjacent communities. A significant amount of regional traffic traverses the local roadway system within the community since there are limited regional access points, missing freeway-to-freeway connectors between I-8 and I-5, as well as major employment centers and trip generators within and adjacent to the community. Figure 3-1 displays regional access issues in the Midway-Pacific Highway community.

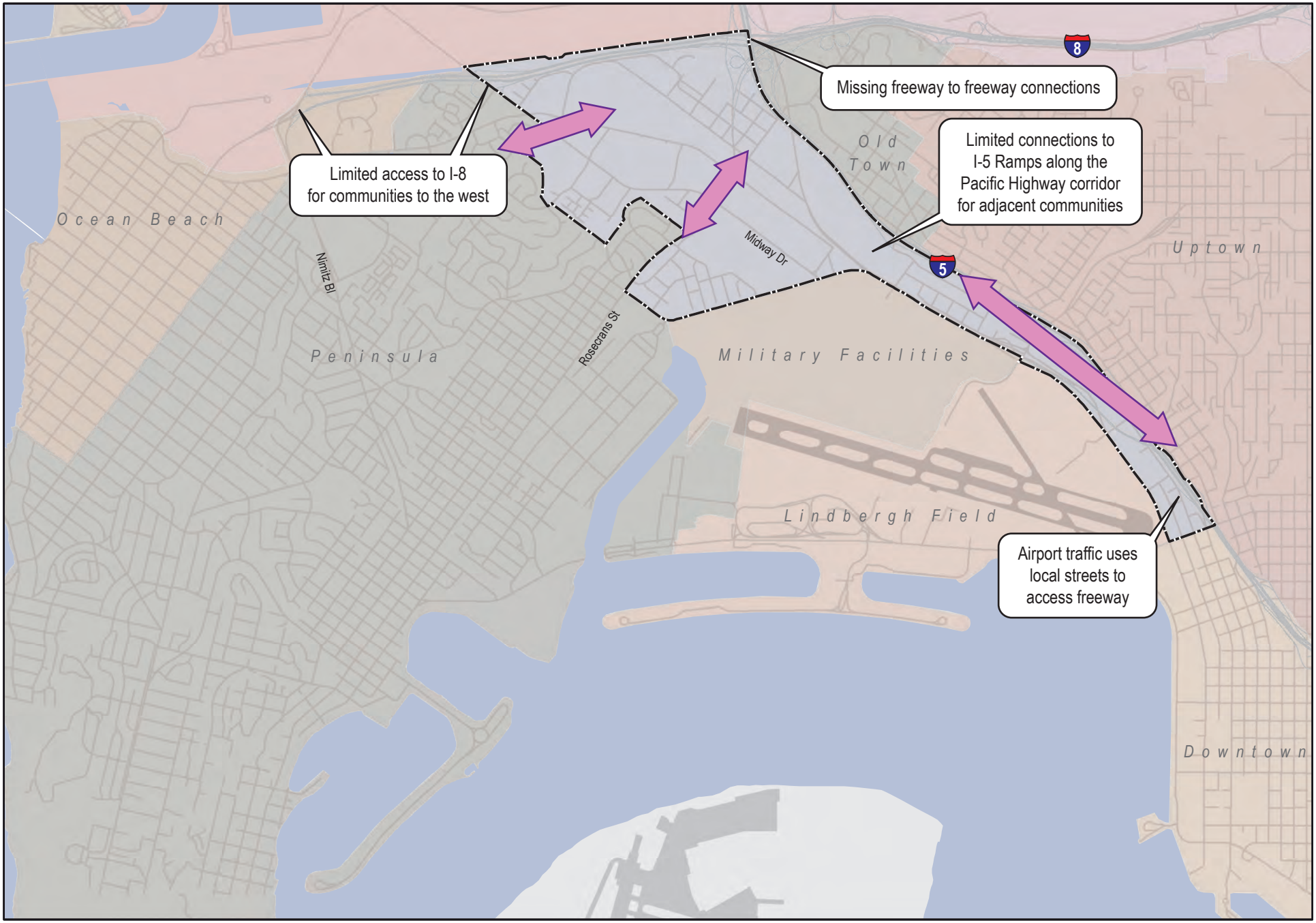
Constrained regional access, large trip generators, and limited circulation created by large blocks within and adjacent to the community, result in highly concentrated traffic volumes along study roadways providing freeway access. This concentration of traffic volumes creates congestion, low traffic speeds and delays on both the Rosecrans Street and Camino Del Rio West. Figure 3-2 displays the location of identified issues/needs within the Midway-Pacific Highway community.

3.2.2 Street and Freeway Improvements

A list of Preferred Plan proposed roadway improvements, new roadways, intersection improvements, new intersections, and freeway improvements are presented throughout this section. These improvements are predominantly based on the future year traffic volumes that are projected under buildout of the Preferred Plan, as displayed in Figure 5-1. Full analysis of all Preferred Plan roadways is provided in Chapter 6.

Roadways

- *Lytton Street/Barnett Avenue, between Rosecrans Street and Midway Drive* – Construct a raised median along these portions of Lytton Street / Barnett Avenue. This will improve Lytton Street to a four-lane major configuration.
- *Sports Arena Boulevard, between Interstate 8 and Rosecrans Street* – Improve this section of Sports Arena Boulevard to a six-lane major arterial. *(Note: Conceptual drawings of the improvements along Sports Arena Boulevard are provided in Figures 3-8 and 3-10).*
- *Sports Arena Boulevard, between Rosecrans Street and Pacific Highway* – Improve this section of Sports Arena Boulevard from a sub-collector to a two-lane collector with a continuous left-turn lane.
- *Kurtz Street, between Rosecrans Street and Pacific Highway* – Restripe this section of Kurtz Street from a two-lane collector to a two-lane collector with center left turn lane.
- *Rosecrans Street, between Lytton Street and Sports Arena Boulevard* – Improve this section of Rosecrans Street from a six-lane major to a six-lane prime arterial, which would require limiting driveway access. *(Note: A conceptual drawing of the improvements along Rosecrans Street are provided as Figure 3-6).*



Midway-Pacific Highway and
Old Town Community Plan Update

CHEN RYAN

Figure 3-1
Regional Access -
Midway-Pacific Highway Community

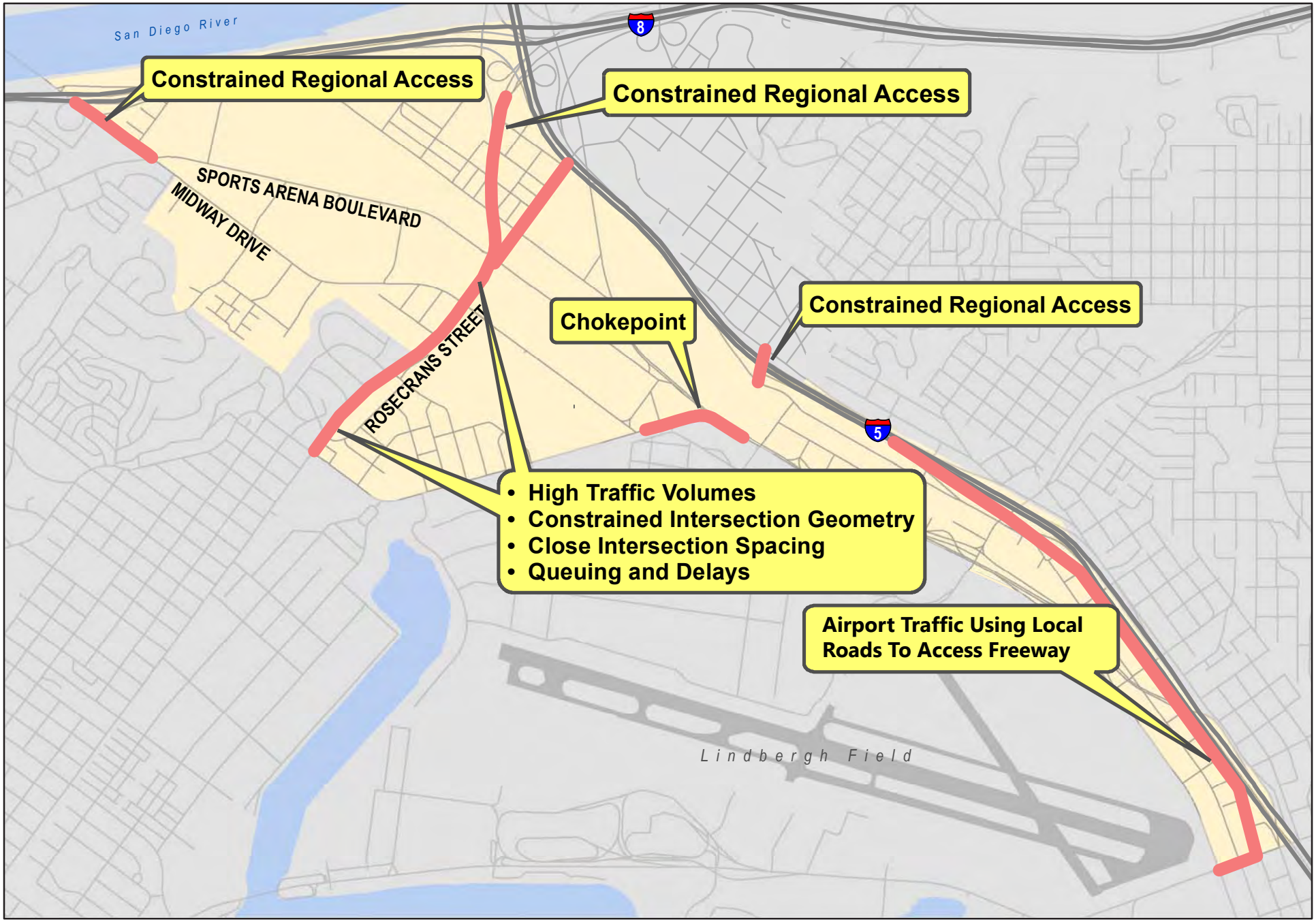


Figure 3-2
Identified Vehicular Issues and Needs -
Midway-Pacific Highway Community

Roadways (continued)

- *Rosecrans Street, between Sports Arena Boulevard and Taylor Street* – Construct a landscaped median along this section of Rosecrans Street. This will improve this section of Rosecrans Street to a four-lane major configuration. *(Note: A conceptual drawing of the improvements along this segment of Rosecrans Street is provided as Figure 3-7)*.
- *Hancock Street, between Kurtz Street and Rosecrans Street* – Widen this section of Hancock Street from a two-lane collector (one-way) to a three-lane major (one-way).
- *Hancock Street, between Old Town Avenue and Witherby Street* – Widen this section of Hancock Street from a two-lane collector to a four-lane collector.
- *Barnett Avenue, between Midway Drive and Pacific Highway* – Widen this section of Barnett Avenue from a four-lane major to a six-lane prime arterial.
- *W. Mission Bay Drive, between I-8 WB Ramps and I-8 EB Ramps* – Widen this section of W. Mission Bay Drive from a five-lane prime arterial to a six-lane prime arterial.
- *Camino Del Rio, Moore Street/Greenwood Street* – Extend the existing median to close the southbound left turn pocket along Camino Del Rio W at the intersection of Moore Street / Greenwood Street to reduce vehicular conflicts.

New Roadways

To provide better east/west connectivity throughout the Midway-Pacific Highway community and provide additional access to potential new developments within the existing "super blocks," the Preferred Plan proposes the following new roadways segments:

1. *Kemper Street Extension* – Kemper Street will be extended between Sports Arena Boulevard and Kurtz Street, connecting as the southwest leg of the Kurtz Street / Hancock Street intersection. The Kemper Street extension will be constructed as a two-lane collector with a continuous left-turn lane.
2. *Frontier Drive* – Frontier Drive will be a new roadway connecting between Sports Arena Boulevard and Kurtz Street. Frontier Drive will be located between the new Kemper Street extension and the Greenwood Street extension. Frontier Drive will be constructed as a two-lane collector with a continuous left-turn lane.
3. *Greenwood Street Extension* – Greenwood Street will be extended between Kurtz Street and Sports Arena Boulevard. Greenwood Street between Sports Arena Boulevard and Midway Drive will follow the alignment of the existing East Drive private street. Greenwood Street will be constructed as a two-lane collector.
4. *Charles Lindbergh Parkway* – Charles Lindbergh Parkway will be a new street connecting between Kurtz Street and Midway Drive. Charles Lindbergh Parkway will be located halfway between Rosecrans Street and the new Dutch Flats Parkway. Charles Lindbergh Parkway will be constructed as a two-lane collector with a continuous left-turn lane.
5. *Dutch Flats Parkway* – Dutch Flats Parkway will be a new roadway connecting between Sports Arena Boulevard and Barnett Avenue. Dutch Flats Parkway will be located between

the new Charles Lindbergh Parkway and Enterprise Street. Dutch Flats Parkway will be constructed as a two-lane collector with a continuous left-turn lane.

It should be noted that implementation of these new roadway segments would necessitate additional right-of-way and most likely require the redevelopment of adjacent properties. All roadways will be designed in accordance with the *City of San Diego Street Design Manual* and their corresponding classification. A summary of the roadway improvements in the Midway-Pacific Highway community is presented in Table 3.1.

Table 3.1 Summary of Roadway Improvements

Roadway	Segment	Existing Configuration	Recommended Classification
Segment Modifications			
Lytton St / Barnett Ave	Rosecrans St and Midway Dr	4-Lane Collector W/ CLTL	4-Lane Major
Sports Arena Blvd	Interstate 8 and Rosecrans St	5-Lane Major	6-Lane Major
Sports Arena Blvd	Rosecrans St and Pacific Hwy	Sub-Collector	2-Lane Collector W/ CLTL
Kurtz St	Rosecrans St and Pacific Hwy	2-Lane Collector	2-Lane Collector W/ CLTL
Rosecrans St	Lytton St and Sports Arena Blvd	6-Lane Major	6-Lane Prime
Rosecrans St	Sports Arena Blvd and Taylor St	4-Lane Collector W/ CLTL	4-Lane Major
Hancock St	Kurtz St and Rosecrans St	2-Lane Collector (One-Way)	3-Lane Major (One-Way)
Hancock St	Old Town Ave and Witherby St	2-Lane Collector	4-Lane Collector
Barnett Ave	Midway Dr and Pacific Hwy	4-Lane Major	6-Lane Prime
W. Mission Bay Dr	I-8 WB Ramps and I-8 EB Ramps	5-Lane Prime	6-Lane Prime
New Roadways			
Kemper St	Sports Arena Blvd and Kurtz St	Does Not Exist	2-Lane Collector W/CLTL
Frontier Dr	Sports Arena Blvd and Kurtz St	Does Not Exist	2-Lane Collector W/ CLTL
Greenwood St	Kurtz St and Sports Arena Blvd	Does Not Exist	2-Lane Collector
Charles Lindbergh Pkwy	Kurtz St and Midway Dr	Does Not Exist	2-Lane Collector W/ CLTL
Dutch Flats Pkwy	Sports Arena Blvd and Barnett Ave	Does Not Exist	2-Lane Collector W/ CLTL

Source: Chen Ryan Associates (June 2016)

Intersections

Rosecrans Street / Sports Arena Boulevard / Camino Del Rio West:

- Remove the southbound free right-turn movement from Camino Del Rio West onto Sports Arena Boulevard and replace it with an exclusive right-turn lane.
- Allow southbound movements to continue on Sports Arena Boulevard through the intersection. It should be noted that vehicles would still not be able to access the southern leg of Sports Arena Boulevard from westbound Rosecrans Street or southwest bound Camino del Rio West.

Additional improvement concepts were also considered for the Rosecrans Street / Sports Arena Boulevard / Camino Del Rio West intersection, but ultimately not selected. These alternative concepts include the following:

Alternative 1: This alternative would allow full access to the southern leg of Sports Area Boulevard from all approaches of the intersection and remove the eastbound (Rosecrans Street) to northbound (Sports Arena Boulevard) left-turn movements. The eastbound left-turn movement was removed to limit the number of signal phases at the intersection and provide for more efficient signal timing patterns. The removal of the eastbound left-turn movement is consistent with the recommendations provided in the *Rosecrans Corridor Mobility Study (February 2010).*

With the implementation of this concept the Rosecrans Street / Sports Arena Boulevard / Camino Del Rio West intersection was projected to perform at acceptable levels (AM: LOS C / PM: LOS D) with minor queuing impacts. However, the community does not support the removal of the eastbound left-turn movement and therefore this alterative was removed.

Alternative 2: This alternative would allow full access to the southern leg of Sports Area Boulevard from all approaches, and keep the eastbound left-turn movement intact. Due to the additional intersection phases and cycle length required to allow full access to the southern leg of Sports Arena Boulevard, the intersection performed poorly under this alternative (AM: LOS D / PM: LOS E) with excessive queuing issues on both Rosecrans Street and Camino del Rio West. Due to the poor intersection performance and queuing issues this alternative was not selected.

Alternative 3: This alternative would remove traffic from the westbound approach of Rosecrans Street and reroute the traffic up Kurtz Street and then to Camino del Rio West. To accommodate this improvement Kurtz Street would be reconfigured from a one-way southbound roadway to a one-way northbound roadway, between Hancock Street and Rosecrans Street. Conversely, Hancock Street would need to be reconfigured as a one-way southbound roadway along the same section to complete the couplet. While this configuration does allow the Rosecrans Street / Sports Arena Boulevard / Camino Del Rio West intersection to operate at acceptable levels (AM: LOS C / PM: LOS D), it is projected to result in substantial queuing issues along the short segment of Kurtz Street between Camino del Rio West and Rosecrans Street (260 feet). This excessive queuing is projected to negatively impact the operations at the Kurtz Street / Camino del Rio West intersection as well as the Kurtz Street / Rosecrans Street intersection and cause significant congestion at these intersections. Due to these queuing issues this alterative was not selected.

Sports Arena Boulevard / Pacific Highway:

- Move intersection approximately 500 feet to the north.
- Re-align Sports Arena Boulevard to create a right-angle with Pacific Highway.
- Signalize the intersection.

- Provide an exclusive eastbound left-turn lane from Sports Arena Boulevard onto Pacific Highway.
- Provide an exclusive northbound left-turn lane from Pacific Highway onto Sports Arena Boulevard.

The proposed relocation of the Sports Arena Boulevard / Pacific Highway intersection meets the 500 feet minimum spacing requirements for intersections. An additional focus during the design phase needs to ensure the curved radii resulting from the intersection realignment will adhere to design standards.

Sports Arena Boulevard / West Point Loma Boulevard / Midway Drive

- Square up and control the westbound free right-turn movement from Sports Arena Boulevard onto Sports Arena Boulevard with the intersection.
- Remove the northbound free right-turn movement from Midway Drive onto Sports Arena Boulevard. The right-of-way will be used to extend the curb and create a curb bulb-out to reduce the pedestrian crossing distance. Right-turn movements will be permitted from the outside through lane.

Camino Del Rio and Moore Street / Greenwood Street

- Extend the existing median to close the southbound left turn pocket along Camino Del Rio W at the intersection of Moore Street / Greenwood Street to reduce vehicular conflicts. (This improvement is also noted in the "Roadway" subheading above.)

<u>Pacific Highway Corridor – Barnett Avenue /Witherby Street / Washington Street</u>

As part of this mobility study, downgrading the section between Barnett Avenue and Washington Street of Pacific Highway from an expressway to a 6-lane major arterial was discussed. The purpose of this downgrade would be to improve safety for vehicles, pedestrians, and cyclists, create a community gateway along Pacific Highway, and enhance the multimodal connections between the community and Downtown San Diego. Ultimately, the recommendation for the Preferred Plan is to carry forward the expressway classification between Barnett Avenue and Washington Street, and the other sections of Pacific Highway in this community, to remain or be developed as a 5-lane or 6-lane major arterial roadway.

One of the main challenges associated with downgrading the expressway is bringing the Barnett Avenue and Witherby Street intersections to grade in order to meet the standards of a 6-lane major arterial roadway. The at-grade approach was not considered as part of the Mobility Study analysis; however, to fully understand the feasibility of these improvements, from both an engineering and constructability standpoint, an Engineering Feasibility Study is recommended. The Engineering Feasibility Study should analyze and address the following:

- The feasibility of bringing both interchanges to grade

- Multi-modal facility alternatives that do not require at-grade intersections (pedestrian and bicycle bridges, alternative multi-use urban path alignments, etc.)
- Addressing the existing flooding issues at both interchanges

Since it is unknown at this time if these improvements are feasible, they were not included in the technical analysis of the Preferred Plan. It is recommended that the feasibility of these improvements be further assessed and incorporated into a future plan. The Preferred Plan identifies Witherby Street as a 2-lane collector with continuous left-turn lane, however, the additional feasibility analysis may determine a need to widen Witherby Street to a 4-lane collector. A potential concept of what these improvements could look like is displayed in Figure 3-3. Additionally, the feasibility analysis may determine a need for additional improvements at Pacific Highway at West Washington Street that are not identified in this mobility study.

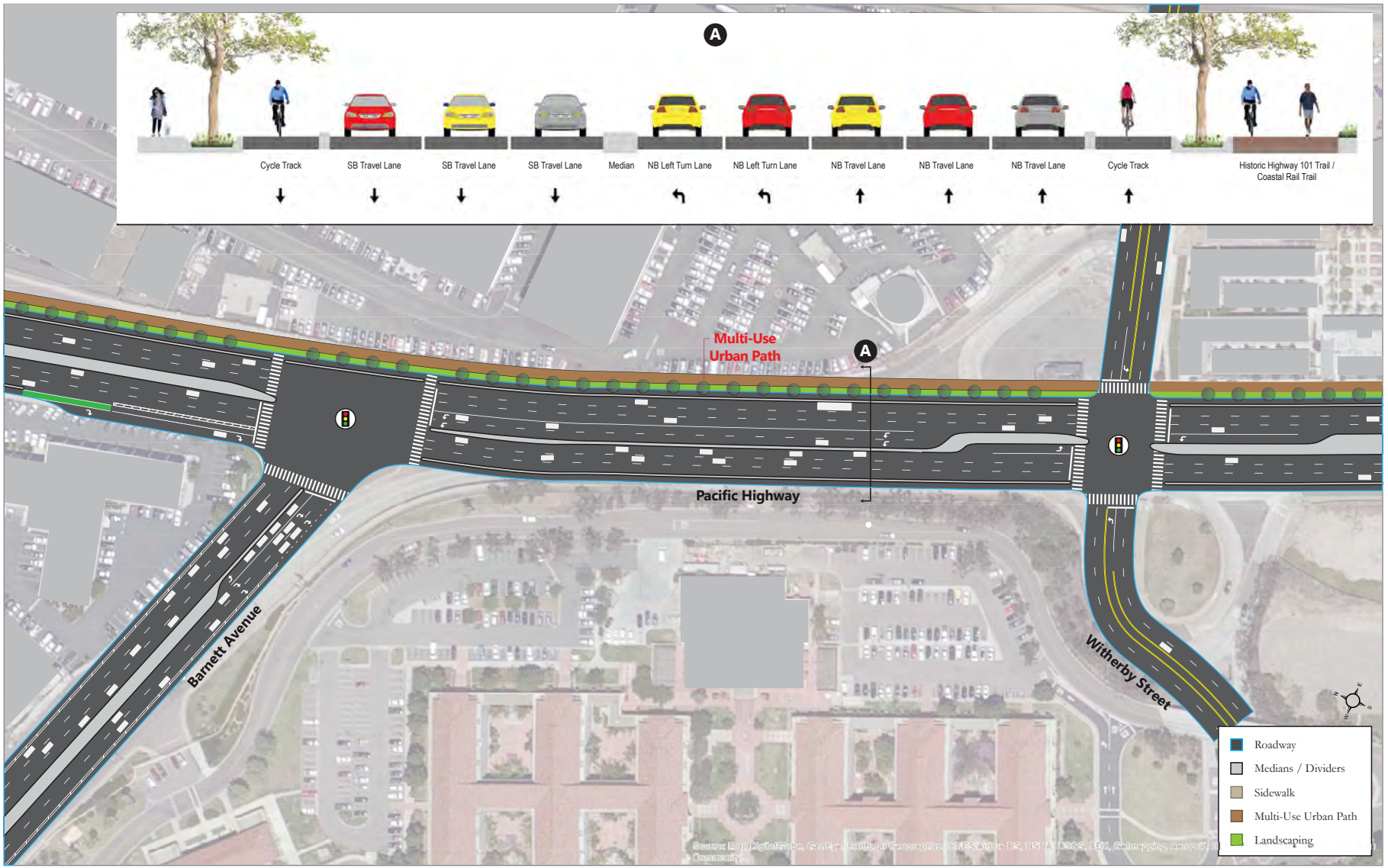
Based on the assumptions displayed in the Figure 3-3, the at-grade intersections would be anticipated to operate as follows:

- Barnett Avenue / Pacific Highway – AM: Delay 35.3 seconds, LOS D | PM: Delay 53.2 seconds, LOS D
- Witherby Street / Pacific Highway – AM: Delay 36.7 seconds, LOS D | PM: Delay 52.0 seconds, LOS D

Intersection Operations

Seven new intersections are recommended for the Midway-Pacific Highway community. Additionally, the roadway network was evaluated to identify intersection locations, both existing and new intersections, that would benefit from the implementation of a roundabout or signalization. A summary of recommended intersection improvements is displayed in Table 3.2. It is not known at this time if the implementation of a roundabout will be feasible at any or all intersections. A roundabout feasibility analysis will need to be performed once the new intersections and roadways are designed. Therefore, to be conservative, the analysis assumed that all new intersections would be signalized, unless otherwise noted. However, it is recommended that a roundabout be implemented in lieu of a signal at all new intersections, where feasible.

Traffic signal warrants were conducted at the intersections where signalization is recommended. Figure 4C-103 (CA) of the California Manual on Uniform Traffic Control Devices (MUTCD) 2012 Edition was utilized and all intersections would meet the warrants. Signal warrants worksheets are included in Appendix C.



This graphic is for conceptual purposes only. Further engineering study would be required at the project level prior to implementation.

Figure 3-3
Barnett Avenue and Witherby Street / Pacific Highway at-Grade Intersection Concepts

Table 3.2 Summary of Intersection Improvements

No.	Intersection	Improvement	Preferred Plan Control
8	Midway Drive / Charles Lindbergh Parkway	New intersection	Roundabout/Signalized
12	Kemper Street / Sports Arena Boulevard	Add north leg	Signalized
13	Sports Arena Boulevard / Frontier Drive	Add north leg	Signalized
14	Sports Arena Boulevard / Greenwood Street	Add north leg	Signalized
16	Sports Arena Boulevard / Charles Lindbergh Parkway	New intersection	Roundabout/Signalized
17	Sports Arena Boulevard / Pacific Highway	Relocate intersection and signalize	Signalized
18	Kurtz Street / Hancock Street / Kemper Street	Add south leg and signalize	Signalized
21	Kurtz Street / Pacific Highway	Signalize	Signalized
61	Kurtz Street / Frontier Drive	New intersection	Roundabout/SSSC
62	Kurtz Street / Greenwood Street	Add south leg and signalize	Signalized
63	Kurtz Street / Charles Lindbergh Parkway	New intersection	Roundabout/Signalized
64	Barnett Avenue / Dutch Flats Parkway	New intersection	Roundabout/Signalized
65	Midway Drive / Dutch Flats Parkway	New intersection	Roundabout/Signalized
66	Sports Arena Boulevard / Dutch Flats Parkway	New intersection	Roundabout/Signalized
N/A	Hancock Street / Greenwood Street	Signalize	Signalized

Source: Chen Ryan Associates (June 2016)

Freeway Improvements

There are no freeway improvements included in the Revenue Constrained alternative of *SANDAG's San Diego Forward, The Regional Plan (Adopted October 2015)* within the vicinity of the Midway-Pacific Highway community to be completed before this plan's horizon year (Year 2035).

I-8 / I-5 Ramp Connection – It should be noted that the missing I-8 East to I-5 North, and I-5 South to I-8 West ramps are included in the Unconstrained Revenue scenario of the Regional Transportation Plan (RTP); therefore, there is currently no funding mechanism for these ramps and they are not included in the Preferred Plan assessment. However, these ramps are needed to enhance the regional access for the community. A policy statement should be included in the Mobility Element recommending that the City of San Diego work with SANDAG and Caltrans to implement these ramps.

I-5 to Pacific Highway Ramps – Ramps connecting Interstate 5 to Pacific Highway are included in the RTP; however, since there is currently no funding mechanism for these ramps they are not included in the Preferred Plan assessment. These ramps are needed to enhance the regional access for the community. A policy should be included in the Mobility Element recommending that the City of San Diego work with SANDAG and Caltrans to implement these ramps.

3.3 Pedestrian Environment

3.3.1 Identified Pedestrian Needs

The Existing Conditions Report identified the following pedestrian issues/needs in the Midway-Pacific Highway community, as displayed in Figure 3-4:

Midway Drive / Sports Arena Boulevard / West Point Loma Boulevard Intersection – This is a major vehicular junction point within the community in which two major roadways (Sports Arena Boulevard and Midway Drive) intersect with two major regional access points (West Point Loma Boulevard connecting to both the Peninsula and Ocean Beach communities to the west, and West Mission Bay Drive and I-8 ramps). To accommodate the high intersecting traffic volumes there is currently a yield control northbound right-turn movement, a stop controlled southbound right-turn movement and a free westbound right-turn movement. The high traffic volumes and uncontrolled right-turn movements create an intimidating environment for pedestrians to cross.

East/West Connectivity – Due to the large block sizes within the community, there are currently few pedestrian corridors directly connecting the east and west sides of the community. Rosecrans Street is the only east/west corridor that currently spans the entire community from east to west.

Walkability Issues along Rosecrans Street and Camino Del Rio West – As mentioned above, Rosecrans Street is the only east/west pedestrian corridor that spans the entire length of the community and is the only corridor that connects to the Old Town Transit Center, located to the east. The retail and institutional uses along both Rosecrans Street and Camino Del Rio West are also major pedestrian attractions within the corridors. Currently both corridors have 5 - 7 foot sidewalks with no parkways or on-street parking to buffer pedestrians from vehicular traffic. The narrow sidewalks with a lack of buffer create an unfriendly pedestrian environment.

Rosecrans Street / I-5 Underpass – This is the only connection point for pedestrians between the Old Town Transit Center and the Midway-Pacific Highway community. The 200-foot wide underpass is poorly lit and has narrow sidewalks, with no parkways or on-street parking to buffer pedestrians from vehicular traffic, creating an unfriendly pedestrian environment.

Missing Sidewalk Facilities – There are currently no sidewalks provided along Sports Arena Boulevard from Rosecrans Street to Pacific Highway, with the exception of a small portion on its south side near the intersection of Rosecrans Street. This area currently predominantly serves industrial uses and attracts little pedestrian traffic; however, it is one of the few major north/south corridors that span the entire community.

Figure 3-4
Identified Pedestrian Issues and Needs -
Midway-Pacific Highway Community

Barnett Avenue / Pacific Highway – There is currently no pedestrian access to Pacific Highway from Barnett Avenue for pedestrians on the north side of Barnett Avenue. Pedestrians on the north side of the roadway heading east on Barnett Avenue hit a dead end and are forced to head north along Pacific Highway.

At-Grade Rail Crossings – Pedestrians accessing both the Washington Street and Middletown Trolley stations from Pacific Highway currently have to cross the rail right-of-way to access both stations. During gate down times, pedestrians may be delayed from accessing the station by on- coming trolleys or trains.

3.3.2 Pedestrian Improvements

Multi-Use Urban Paths

The Preferred Plan includes the implementation of several multi-use urban paths along key roadways, cumulatively creating an Urban Path system throughout the Midway-Pacific Highway community, which is consistent with recommendations in the Midway/Pacific Highway Urban Greening Plan. The individual multi-use urban paths are described below:

La Playa Trail – The La Playa Trail multi-use urban path will run along the south side of Rosecrans Street between Lytton Street and Pacific Highway. The path will be approximately 12 feet wide and replace the sidewalks on the southern side of the roadway. The ultimate right-of-way required along Rosecrans Street to implement this facility would be as follows:

- 127 feet between Lytton Street and Midway Drive.
- 116 feet between Midway Drive and Sports Arena Boulevard.
- 100 feet between Sports Arena Boulevard and Taylor Street.

It is recommended that pedestrian scale lighting be installed along the entire length of the path. The implementation of these improvements may necessitate acquiring additional right-of-way along the corridor.

Bay-to-Bay – The Bay-to-Bay multi-use urban path will be constructed along Sports Arena Boulevard, Lytton Street / Barnett Avenue, Kemper Street, and a connecting segment along the proposed Dutch Flats Parkway to mimic the previous Community Plan's Bay-to-Bay proposed canal alignment. The path will run along the southeast side of the Kemper Street extension between Kurtz Street and Sports Arena Boulevard, along the northeast side of Sports Arena Boulevard between Midway Drive and Dutch Flats Parkway, on the southern side of Dutch Flats Parkway between Barnett Avenue and Sports Arena Boulevard, and on the south side of Lytton Street / Barnett Avenue between Rosecrans Street and Pacific Highway. The segment of path on Sports Arena Boulevard between West Point Loma Boulevard and the I-8 should be further evaluated regarding its placement, whether on the southwest, or northeast side of the roadway. The path will be 12 feet wide and replace the sidewalks on the appropriate side of the roadway in each segment, as described.

The ultimate right-of-way required along each roadway segment to implement this facility is as follows:

- Kemper Street, between Kurtz Street and Sports Arena Boulevard: 90 feet
- Sports Arena Boulevard, between I-8 and Rosecrans Street: 117 feet
- Sports Arena Boulevard, between Rosecrans Street and Dutch Flats Parkway: 78 feet
- Lytton Street / Barnett Avenue, between Rosecrans Street and Pacific Highway: 90 feet
- Dutch Flats Parkway, between Barnett Avenue and Sports Arena Boulevard: 78 feet. An additional 30' of right-of-way will be required to provide for a linear park adjacent to Dutch Flats Parkway. This 30' may need to be obtained as public right-of-way or as an easement on privately held land.

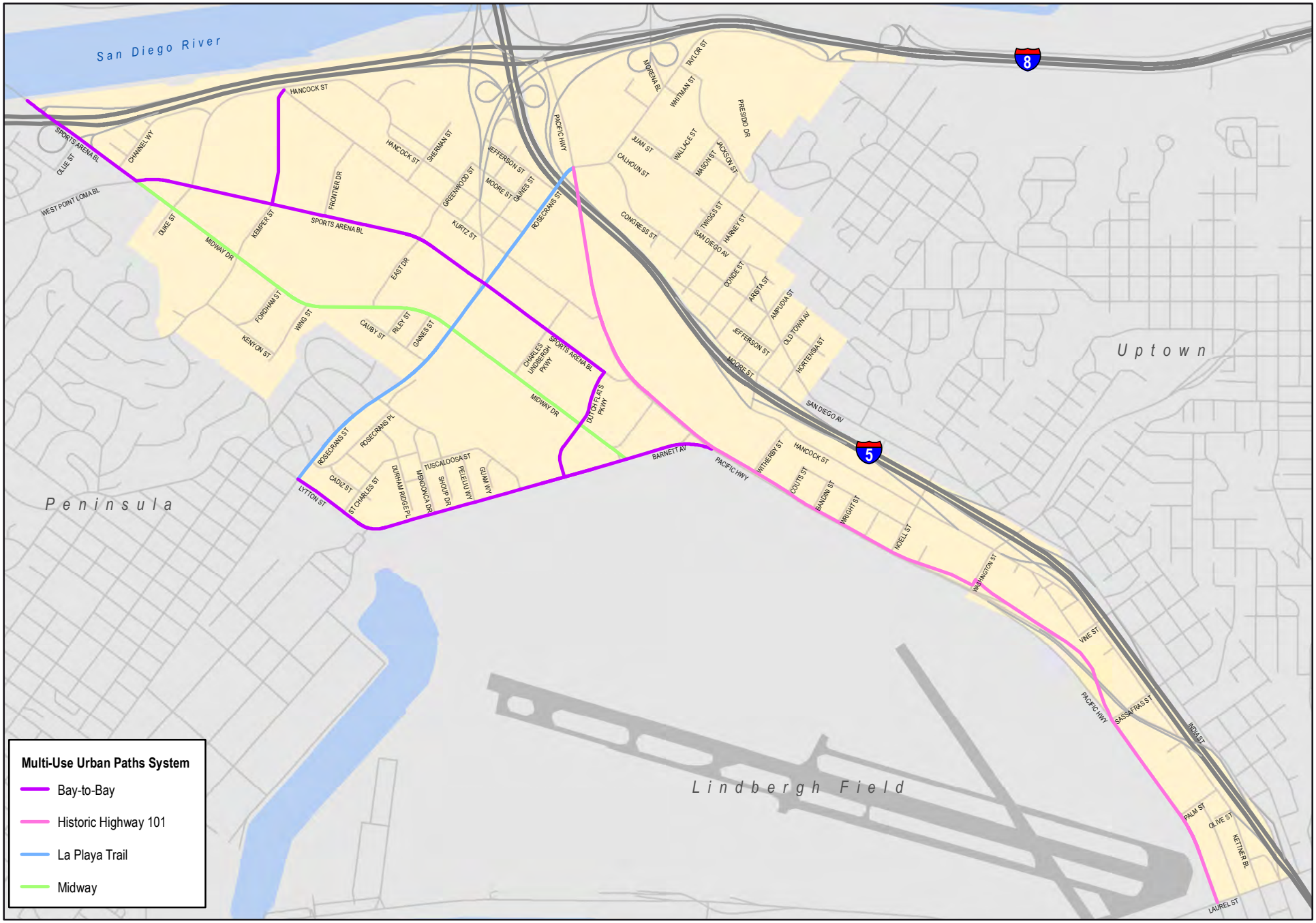
It is recommended that pedestrian scale lighting be installed along the entire length of the path. The implementation of these improvements may necessitate acquiring additional right-of-way along the corridor. *(Note: Figure 3-8 and Figure 3-10 provide conceptual drawings of the proposed Bay-to-Bay Path configuration along Sports Arena Boulevard)*.

Midway – The Midway multi-use urban path will run along the southwest side of Midway Drive between Sports Arena Boulevard and Barnett Avenue. The path will be approximately 12 feet and will replace the existing southwest sidewalk. The ultimate right-of-way required along Midway Drive to implement this facility would be 81 feet. It is recommended that pedestrian scale lighting be installed along the entire length of the path. The implementation of these improvements may necessitate acquiring additional right-of-way along the corridor.

Historic Highway 101 – The Historic Highway 101 multi-use urban path will run along the east side of Pacific Highway between Taylor Street and Laurel Street. The multi-use urban path will be 12 feet wide and will replace the existing sidewalk on the east side of the roadway. The ultimate right-of-way required along Pacific Highway to implement this facility would be 131 feet. It is recommended that pedestrian scale lighting be installed along the entire length of the path. The implementation of these improvements may necessitate acquiring additional right-of-way along the corridor.

Hancock Street Extension – Hancock Street will be extended between Midway Drive and Sports Arena Boulevard as a pedestrian and bicycle connection. This segment will not be open to vehicular traffic. *(Note: This pedestrian and bicycle connection, which is located just southeast of the W. Point Loma Boulevard / Sports Arena Boulevard / Midway Drive intersection, is illustrated in Figure 3-8 and Figure 3-10).*

The complete Multi-Use Urban Path system is displayed in Figure 3-5. Figure 3-6 and 3-7 provide concept drawings of the proposed La Playa Trail configuration along Rosecrans Street. Figure 3-8 displays a concept drawing of the Bay-to-Bay Path along Sports Arena Boulevard, north of Rosecrans Street. Figure 3-9 provides a concept drawing of the proposed Midway Path configuration along Midway Drive.



Midway-Pacific Highway and
Old Town Community Plan Update

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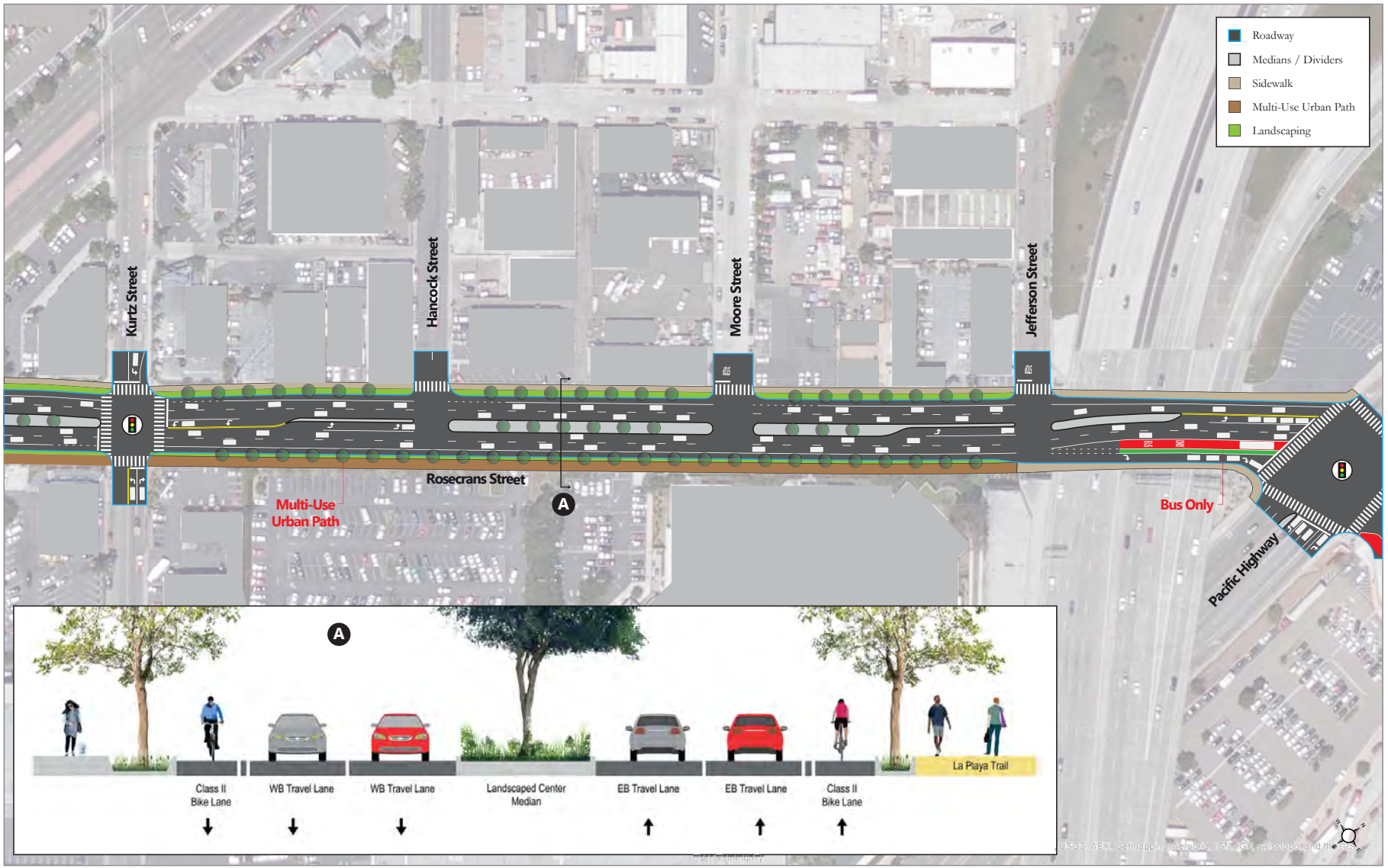
Figure 3-5
Multi-Use Urban Paths System

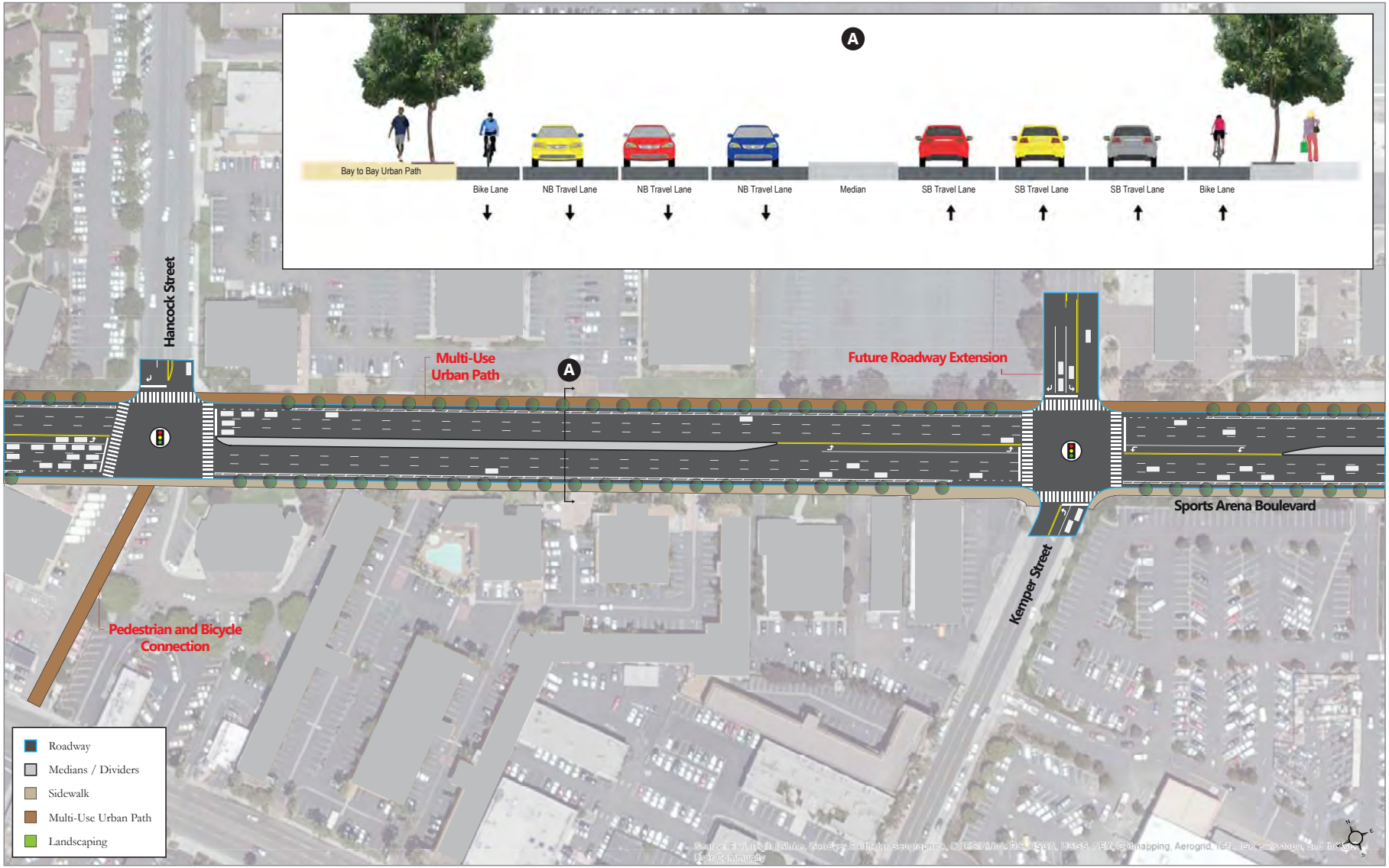
This graphic is for conceptual purposes only. Further engineering study would be required at the project level prior to implementation.

Figure 3-6
Rosecrans Street with La Playa Trail - West of Midway Drive



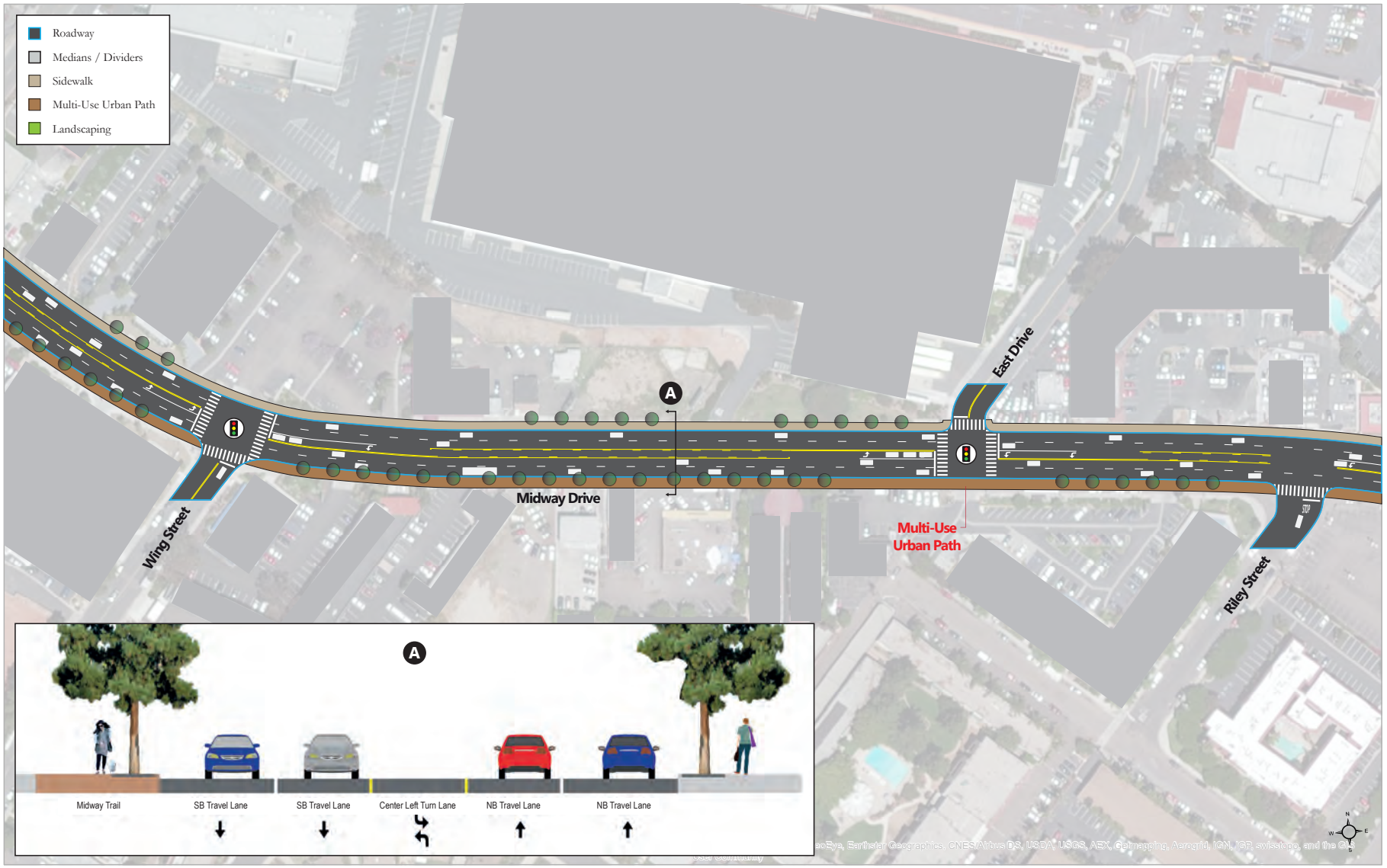
This graphic is for conceptual purposes only. Further engineering study would be required at the project level prior to implementation.

Figure 3-7
Rosecrans Street with La Playa Trail - East of Sports Arena Boulevard



This graphic is for conceptual purposes only. Further engineering study would be required at the project level prior to implementation.

Figure 3-8
Sports Arena Boulevard with Bay to Bay Trail - North of Rosecrans Street



This graphic is for conceptual purposes only. Further engineering study would be required at the project level prior to implementation.

Figure 3-9
Midway Drive with Midway Trail -
North of Rosecrans Street

Street Trees

The Preferred Plan includes the implementation of street trees along the following roadway corridors, which is consistent with the Midway/Pacific Highway Urban Greening Plan:

- Barnett Avenue, between Rosecrans Street and Pacific Highway
- Midway Drive, between Sports Arena Boulevard and Barnett Avenue
- Sports Arena Boulevard, between West Mission Bay Drive and Rosecrans Street
- Pacific Highway, between Taylor Street and Laurel Street
- Rosecrans Street, between Midway Drive and Taylor Street

Intersections

All crossing points at intersections should be upgraded to include the following:

- ADA compliant pedestrian ramps
- High visibility continental cross-walks
- Advanced stop bar placement
- Pedestrian count down signals

New Sidewalks

Sidewalk facilities will be implemented along the following roadways:

- Midway Drive, between Bogley Drive and Barnett Avenue
- Jessop Lane, between Enterprise Street and Barnett Avenue
- St. Charles Street, between Lytton Street and Cadiz Street
- Kemper Street, Kenyon Street to Midway Drive (south side)
- Sports Arena Boulevard, between Rosecrans Street and Pacific Highway (southwest side)
- Kurtz Street, between Rosecrans Street and Pacific Highway
- Pacific Highway, between Couts Street and Washington Street (southwest side)
- Witherby Street, between Hancock Street and Pacific Highway
- Hancock Street, between Witherby Street to 465 ft south of Witherby Street (south side)

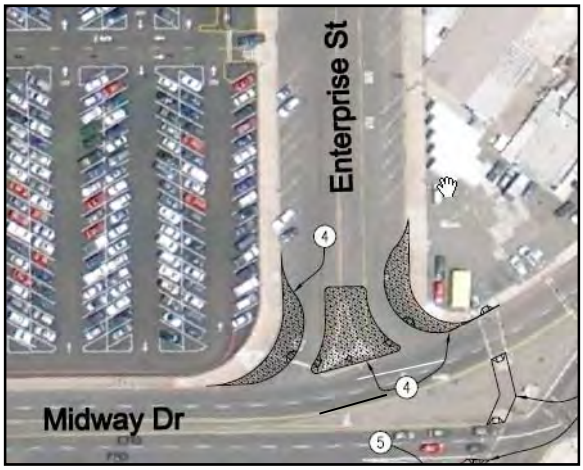
Specific Pedestrian-Related Intersection Improvements:

Midway Drive / Enterprise Street (Shown to the Right):

- Install bulb-outs and a pedestrian refuge island on the northeast leg of the intersection.

West Palm Street / Kettner Boulevard (intersection adjacent to the I-5 pedestrian bridge)

- Install bulb-outs on north leg of the intersection.
- Install continental cross-walk on the north leg of the intersection.
- Install a Pedestrian Hybrid Beacon on the north leg of the intersection (if warrants are met).



Conceptual Drawing from Phase IV of the City of San Diego Pedestrian Master Plan

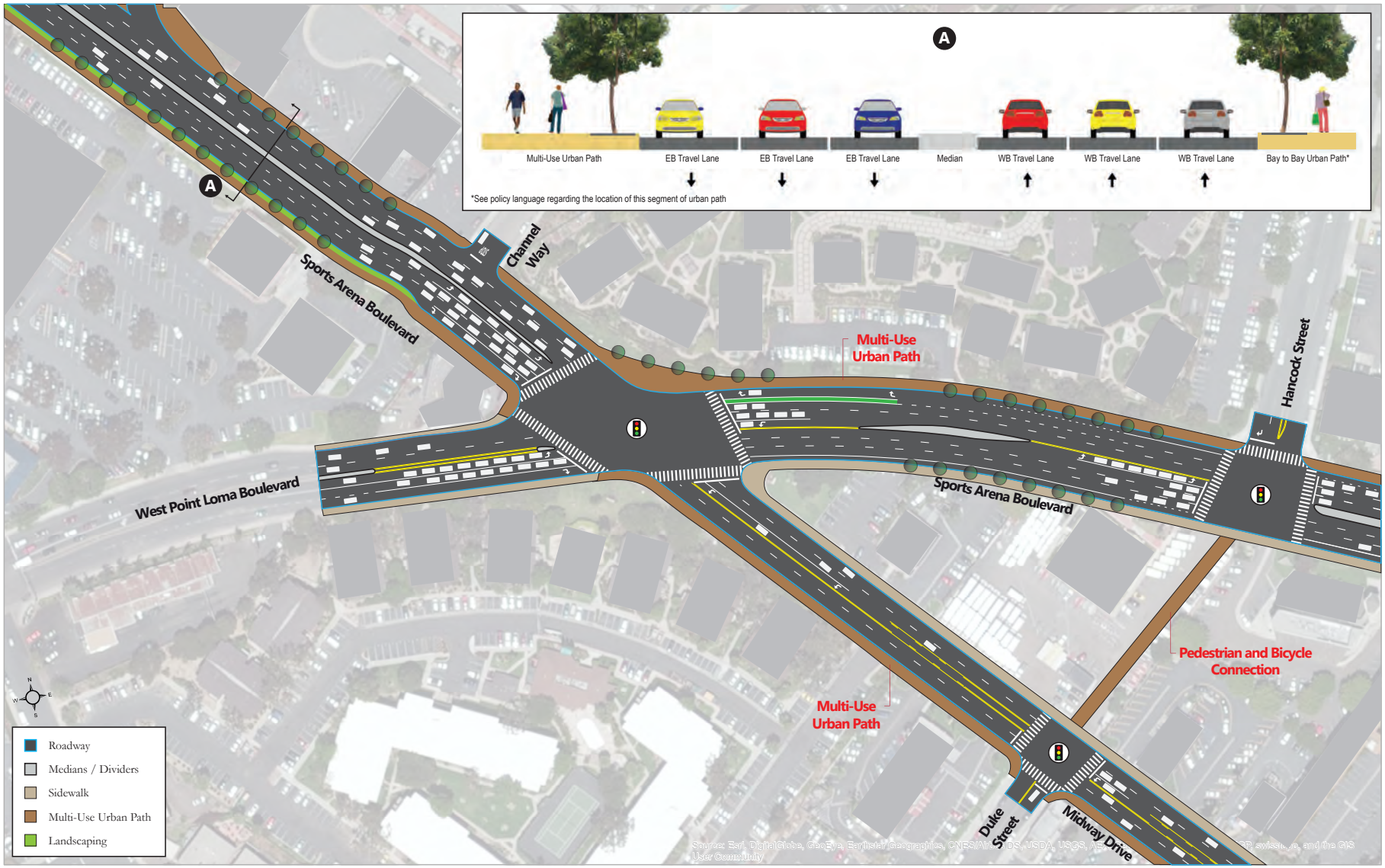
Sports Area Boulevard / West Point Loma Drive / Midway Drive

- Remove all free-right turn movements, which will decrease pedestrian crossing-distances.
- Improve the right-of-way with landscaping to improve the pedestrian environment.

Figure 3-10 displays a concept drawing of the proposed intersection improvements.

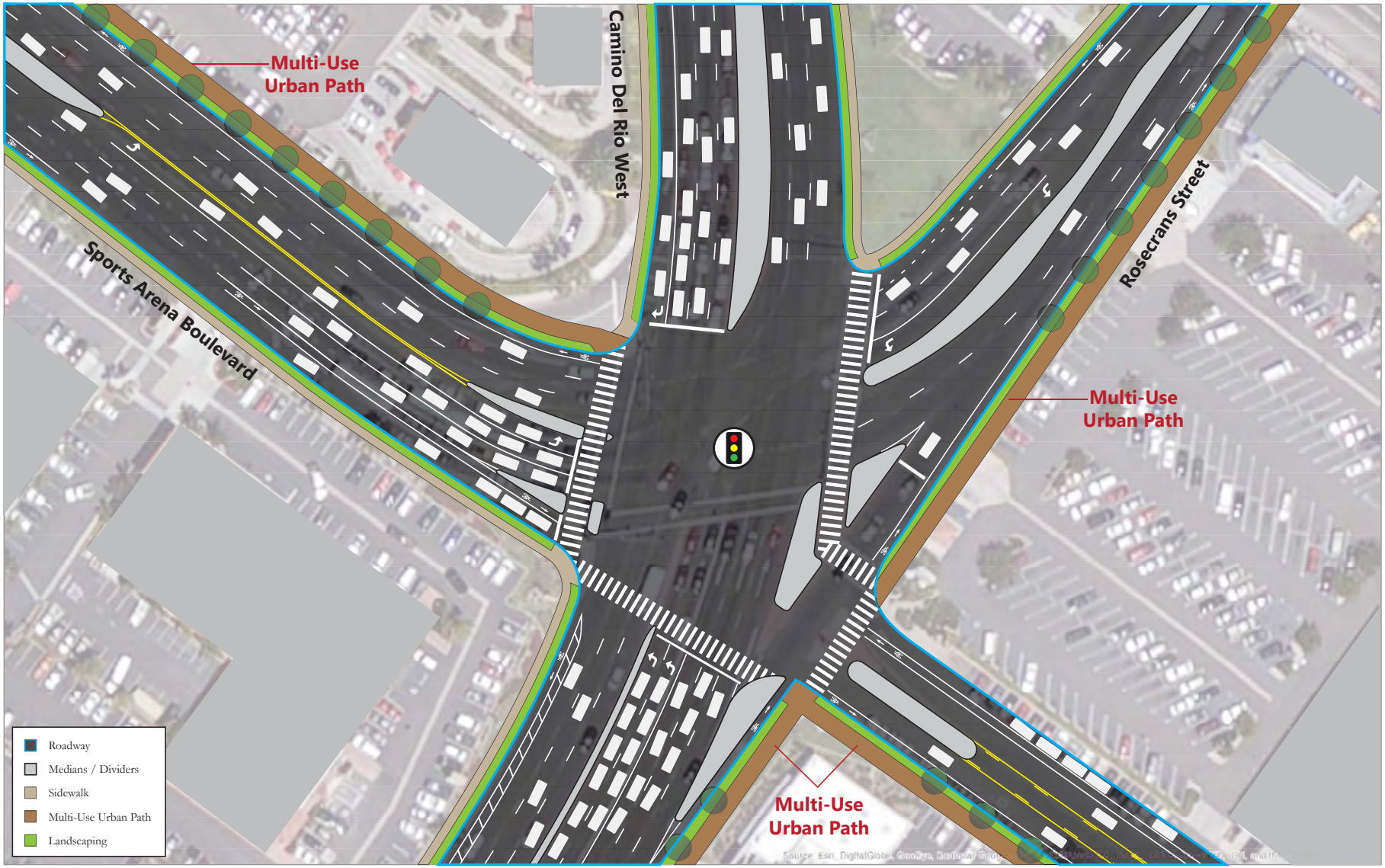
Sports Arena Boulevard / Rosecrans Street / Camino Del Rio West

- Remove the southbound free right-turn movement from Camino Del Rio West onto Sports Arena Boulevard and replace it with an exclusive right-turn lane, which will improve pedestrian safety while crossing the intersection. Figure 3-11 displays a concept drawing of the proposed intersection improvements.



This graphic is for conceptual purposes only. Further engineering study would be required at the project level prior to implementation.

Figure 3-10
Sports Arena Boulevard / West Point Loma Boulevard / Midway Drive - Proposed Pedestrian Improvements



This graphic is for conceptual purposes only. Further engineering study would be required at the project level prior to implementation.

Figure 3-11
Sports Arena Boulevard / Rosecrans Street / Camino Del Rio West - Proposed Pedestrian Improvements

3.4 Cycling Environment

3.4.1 Identified Bicycle Needs

The Midway-Pacific Highway Community is located at a junction point for several regional bicycle facilities including both the Coastal Rail Trail (along Pacific Highway) and the Ocean Beach Bike Path (along the San Diego River). Local bicycle connections to the surrounding neighborhoods are also provided, such as Class II Bike Lanes between Midway-Pacific Highway and the Peninsula communities along Rosecrans Street. A Class III Bike Route is provided along West Mission Bay Drive and terminates at its intersection with W. Point Loma Boulevard / Sports Arena Boulevard. These regional and local connections, along with strong transit service and high intensity commercial and institutional land uses, create high cycling demands within this community.

However, as shown in Figure 3-12 there are currently no bicycle facilities along the major corridors traversing the Midway-Pacific Highway Community (Midway Drive, Sports Arena Boulevard and Rosecrans Street) to accommodate the high bicycle demand. These corridors also have high vehicular traffic volumes and speeds as well as numerous conflict points (intersections, driveways, and alleyways) between motorists and cyclists, creating an uncomfortable environment for cyclists. Figure 3-5 displays the locations of issues/need, mainly defined as high cycling demand corridors that lack bicycle facilities and have high vehicular traffic volumes and speed.

3.4.2 Bicycle Improvements

The Bicycle Network under the Preferred Plan Conditions is shown in Figure 6-10 in this report. The recommended bicycle facilities proposed in this plan are consistent with and improve upon the recommendations outlined in The City of San Diego Bicycle Master Plan. The Preferred Plan proposes to implement the following bicycle facilities within the Midway-Pacific Highway Community:

<u>In Road Facilities</u>

- Class II Buffered Bike Lanes in both directions along Lytton Street / Barnett Avenue between Rosecrans Street and Pacific Highway.
- Class IV One-Way Cycle Tracks in both directions along Pacific Highway between Taylor Street and Laurel Street. This cycle track continues through the Old Town community, north to Sea World Drive.
- Class II Buffered Bike Lanes in both directions along Rosecrans Street between Lytton Street and Pacific Highway.
- Class II Buffered Bike Lanes in both directions along Sports Arena Boulevard between W. Point Loma Boulevard and Pacific Highway.
- Class II Bike Lanes in both directions along Hancock Street between Old Town Avenue and Noell Street.
- Class II Bike Lanes along the south side of Hancock Street/Kettner Boulevard between Noell Street and Laurel Street.

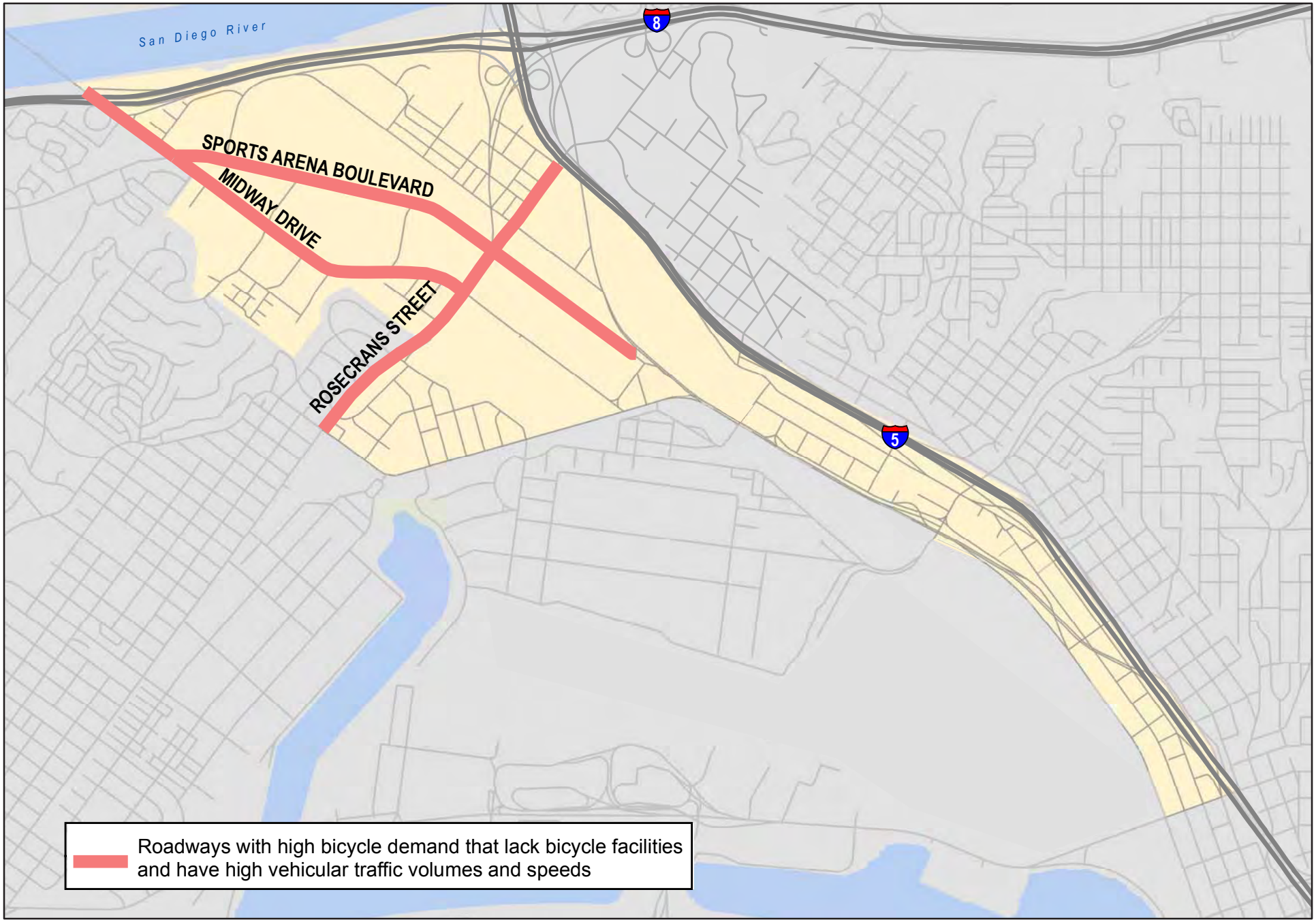


Figure 3-12
Bicycle Network Issues and Needs -
Midway-Pacific Highway Community

In Road Facilities (continued)

- Class II Buffered Bike Lanes in both directions along Kemper Street between Kenyon Street and Kurtz Street.
- Class IV Cycle Track on the north side of Washington Street between Pacific Highway and Interstate 5.
- Class II Bike Lanes in both directions along Old Town Avenue between Hancock Street and San Diego Avenue.
- Class II Buffered Bike lanes in both directions along Frontier Drive between Sports Arena Boulevard and Kurtz Street.
- Class II Buffered Bike lanes in both directions along Charles Lindbergh Parkway between Midway Drive and Kurtz Street.
- Class III Bicycle Route on Kurtz Street between Hancock Street and Rosecrans Street.
- Class III Bicycle Route on Noell Street between Pacific Highway and Hancock Street.
- Class III Bicycle Route on Hancock Street between Sports Arena Boulevard and Rosecrans Street.
- Class II Bike Lanes in both directions along Witherby Street between Pacific Highway and Hancock Street (The inclusion of bike lanes along this street would be determined by the available road width for these facilities; see section 3.2.2 for a discussion of a feasibility analysis to determine a need to widen Witherby Street)
- Class II Bike Lanes in both directions along Sassafras Street between Pacific Highway and Interstate 5.

Multi-Use Urban Paths

- Class I Multi-Use Urban Path connection, as an extension of Hancock Street between Sports Arena Boulevard and Midway Drive.
- Class I Multi-Use Urban Path along the south side of Rosecrans Street between Lytton Street and Pacific Highway.
- Class I Multi-Use Urban Path along the south side of Lytton Street / Barnett Avenue between Rosecrans Street and Pacific Highway.
- Class I Multi-Use Urban Path along the west side of Midway Drive between Sports Area Boulevard and Barnett Avenue.
- Class I Multi-Use Urban Path along the southwest or northeast side of Sports Arena Boulevard between I-8 and Midway Drive (to be determined by further study upon implementation), and on the northeast side of Sports Arena Boulevard between Midway Drive and Dutch Flats Parkway.
- Class I Multi-Use Urban Path along the south side of Dutch Flats Parkway between Barnett Avenue and Sports Arena Boulevard.
- Class I Multi-Use Urban Path along the east side of Pacific Highway between Taylor Street and Laurel Street.
- Class I Multi-Use Urban Path along the southeast side of Kemper Street between Sports Arena Boulevard and Kurtz Street.

3.5 Public Transit Service and Facilities

3.5.1 Identified Transit Needs

Underserved Areas – As shown in Figure 3-13, the following areas within the Midway-Pacific Highway Community are located beyond a quarter mile of a bus stop or transit station, indicating potentially poor levels of transit access:

- Barnett Avenue, between Truxtun Road and Midway Drive
- The northeast portion of the community (east of Kurtz Street and north of Sherman Street)
- Pacific Highway, between Wright Street and Noell Street
- Pacific Highway, between Vine Street and Sassafras Street

3.5.2 Transit Improvements

SANDAG's San Diego Forward, The Regional Plan (Adopted October 2015) indicates that a number of transit improvements are planned for the Midway-Pacific Highway Community, prior to this plan's Year 2035 horizon year, including:

Local Bus Service – Increase local bus service in key corridors to 10 minute headways programmed and scheduled for Year 2035.

Rapid Bus Route 28 – By the Year 2035, a new rapid bus route will be implemented providing service between Point Loma and Kearny Mesa via the Old Town Transit Center.

San Diego International Airport Intermodal Transit Center (ITC) – The ITC will act as an important hub connecting all modes of transportation accessing and departing from Lindbergh Field. The ITC is planned to be located on the north end of the airport, just south of Interstate 5 between Washington Street and Sassafras Street. The ITC is being planned as a major transit hub connecting all three existing trolley lines (Blue, Green and Orange), the COASTER, Amtrak, new MTS Express Bus routes directly serving the airport, several local MTS bus routes and the planned California High Speed Rail system. In addition to the transit connections, the ITC is planned to provide the following:

- 360 new parking spaces
- 126,000 SF of new retail uses
- Direct access to I-5 / via the Pacific Highway on/off-ramps
- Grade separation of the Washington Street and Sassafras at-grade rail crossings
- New grade separated crossing at Vine Street
- Raised bicycle lanes and cycle tracks on the street surrounding the ITC
- Wider sidewalks around both the ITC and new retail uses
- Curb extensions and planting/parking strips as well as provide new opportunities to employ green street strategies on impacted/new roadways.

The ITC is anticipated to be constructed and operational by the Year 2035.

Midway-Pacific Highway and
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Figure 3-13
Transit Coverage -
Midway-Pacific Highway Community

Transit Priority Improvements

Pacific Highway - Pacific Highway serves several express bus routes that link multiple communities. It is recommended that, as Pacific Highway is redeveloped, transit priority measures such as queue jumper lanes and transit priority signals be implemented at all signalized intersections along Pacific Highway between Taylor Street and Laurel Street.

Rosecrans Street – Rosecrans Street east of Camino Del Rio West currently serves four MTS bus Routes (8, 9, 28 and 35). A queue jumper lane and transit signal have already been implemented on the eastbound approach at the Taylor Street / Rosecrans Street and Pacific Highway intersection. Similar transit priority improvements should also be examined for feasibility at the Rosecrans Street / Camino Del Rio West / Sports Arena Boulevard intersection to allow westbound buses (Routes 8, 9 and 35) to turn right onto Sports Arena Boulevard and avoid congestion.

New Roadway Connections – The proposed new roadway connections can serve as alternative east/west routes for busses traveling through the community. Rerouting to these new facilities, if possible, may help avoid the congestion on Rosecrans Street. It is recommended that after the construction of any of the new roadways, the City of San Diego coordinate with MTS to examine opportunities for bus rerouting.

3.6 Currently Planned Improvements

The following section outlines the mobility improvements that are currently planned within the Midway-Pacific Highway community. Some improvements were too minor to incorporate at the community plan level, while others are mitigation measures from projects within the area and are not the responsibility of the community plan. Additionally, the pending improvements contained within the existing community Public Facilities Financing Plan are outlined and identified whether they are consistent with the Preferred Plan.

3.6.1 Auto

West Mission Bay Drive Bridge over San Diego River, CIP Project S00871 – the proposed City project will replace the existing bridge with a 6-lane bridge having a northbound and southbound Class I bicycle facility and pedestrian sidewalks. The project is in the final design phase and construction is estimated to start in July 2017. Improvements from this project were analyzed and its design was considered to develop recommendations in this study.

Midway/Pacific Highway Corridor Public Facilities Financing Plan, 2004 – this document contains several roadway improvements that have not yet been completed. It should be noted that all of these improvements are unfunded and currently not scheduled for implementation.

Signal Modifications:

- Barnett Avenue / Midway Drive (Project T7) – *Improvement has been completed and is consistent with the Preferred Plan.*

- Pacific Highway / West Washington Street (Project T29) – *Improvement is consistent the Preferred Plan.*

Extensions/New Streets:

- Extension of Barnett Avenue from Pacific Highway to Old Town Avenue (Project T8) – *Improvement is no longer recommended under the Preferred Plan.*
- Extension of Kemper Street as a four-lane collector from Sports Arena Boulevard to Hancock Street (Project T14) – *Improvement changed under the Preferred Plan.*
- New four-lane collector street connecting Sports Arena Boulevard and Midway Drive (Project T13) – *Improvement changed under the Preferred Plan.*

Street Widening:

- Improve Kurtz Street to a four-lane major between Rosecrans Street and Pacific Highway (Project T15) – *Improvement changed under the Preferred Plan.*
- Improve Sports Arena Boulevard to a four-lane collector between Rosecrans Street and Pacific Highway (Project T16) – *Improvement changed under the Preferred Plan.*
- *Add Project T23 and state whether improvement has changed under the Preferred Plan (we did not assumed it has in our cost estimating).*

Intersection Improvements

- Midway Drive / Sports Arena Boulevard (Project T17) – *Improvement changed under the Preferred Plan.*

Several roadway facility projects have been identified by the City of San Diego and are included on their Unfunded Transportation Needs List (8/5/2014). A list of the roadway related improvements located in the Midway-Pacific Highway Community is included in Appendix B. It should be noted that this list is updated on a regular basis and Appendix B only reflects a snapshot of the needs and planned improvements throughout the community at the time when this report was prepared.

3.6.2 Pedestrian

Public Facilities Financing Plans

The adopted Public Facilities Financing Plan for the Midway-Pacific Highway community currently contains planned pedestrian improvements that have not yet been completed, as follows:

- Install / upgrade 169 curb ramps to meet ADA standards (T25) – These improvements are currently not scheduled or funded. *Improvement is consistent with the Preferred Plan.*

Several pedestrian facility projects have been identified by the City of San Diego and are included on their Unfunded Transportation Needs List (8/5/2014). A list of the pedestrian improvements located in the Midway-Pacific Highway Community is included in Appendix B. It should be noted that this list is updated on a regular basis and Appendix B only reflects a snapshot of the needs and planned improvements throughout the community at the time when this report was prepared.

3.6.3 Bicycle

The City of San Diego's Transportation and Stormwater Department is currently resurfacing Barnett Avenue between Midway Drive and Pacific Coast Highway. The resurfaced pavement will include striping for a new Class II bicycle lane along the north side of Barnett Avenue between Pacific Highway and Midway Drive and green paint in areas of potential conflict zones between vehicular and bicycle traffic. The resurfacing project maintains the existing Class II bicycle facilities in this area on both sides of Barnett Avenue and enhances each facility with a 2' buffer on both sides of the roadway.

3.6.4 Transit

As noted in section 3.5.2 the Preferred Plan in consistent with *SANDAG's San Diego Forward, The Regional Plan* (Adopted October 2015).

4.0 Old Town Community Preferred Plan

4.1 Development of the Preferred Plan

4.1.1 Identification of Issues and Needs

Existing mobility related issues and needs within the Old Town Community were identified in the *Community of Midway/Pacific Highway Corridor and Old Town Mobility Existing Conditions Report; September 2012 (Existing Conditions Report)*. The issues and needs identified in the Existing Conditions Report were used, in conjunction with the other planning efforts and the overall community vision, to develop the recommended mobility improvements presented in the Preferred Plan.

4.1.2 Development of Preferred Plan Improvements

Preferred Plan improvements were developed by first cross checking the mobility issues and needs identified in the Existing Conditions Report against the mobility issues and needs identified in several other on-going or recent planning efforts, including:

- I-8 Corridor Study (August 2016)
- San Diego Forward, The Regional Plan (October 2015)
- Riding to 2050, The San Diego Regional Bike Plan (2010)
- City of San Diego Bicycle Master Plan (December 2013)
- Phase II Visitor Oriented Parking Facilities Study of the Old Town Community (May 2002)
- City of San Diego Pedestrian Master Plan - Phase 4 (Dec 2013)
- Mid-Coast Corridor Transit Project, Transportation Impacts and Mitigation Report (Sept 2014)

Where possible, the Preferred Plan carried forward or maintained the relevant improvements from on-going or previous planning efforts which have been adopted or vetted by the community. New improvement strategies were then developed to address the existing issues and needs, as identified in the Existing Conditions Report, which have not been addressed in other planning efforts. Additional mobility improvements were also developed to accommodate the anticipated future growth within the community. The following sections outline the mobility issues and needs identified in the Existing Conditions Report and the associated improvements recommended under the Preferred Plan to alleviate them.

4.2 Street and Freeway System

4.2.1 Identified Street and Freeway Issues and Needs

Taylor Street – Taylor Street provides connections to three major regional roadway facilities. To the east, Taylor Street provides a connection to I-8 and the regional freeway system. To the west, Taylor Street connects with both Rosecrans Street (which connects to communities to the west), and to Pacific Highway (which connects to communities to the north and the south). Taylor Street

accommodates a high volume of both regional and local traffic. There are currently two identified roadway related issues along Taylor Street, as described below:

At-Grade Rail Crossing – Currently the BNSF and MTS trolley right-of-way crosses Taylor Street at-grade between Pacific Highway and Congress Street. Gate down times at this crossing typically last between 30 seconds to 3 minutes, depending on the number of vehicles and train cars. During these gate down times, all other modes of transportation must stop, causing impacts to traffic operations at the adjacent intersections. Train crossings at this location typically cause additional intersection delay, queuing and congestion.

Taylor Street between Presidio Drive and I-8 Ramps – Taylor Street east of Presidio Drive reduces from four-lanes to two, with narrow lane widths (10 feet). Traffic volumes along this segment are high (13,140 ADT) since it leads to an I-8 interchange, and far exceeds the roadway LOS D maximum capacity of 9,000 ADT. The narrow lane widths and high traffic volumes result in congestion along this segment in the eastbound direction accessing the freeway ramps during the PM peak hour.

San Diego Avenue between Ampudia Street and Old Town Avenue – This segment of San Diego Avenue connects the commercial uses along both Congress Street and San Diego Avenue to the I-5 interchange located at Old Town Avenue. This segment of San Diego Avenue is currently a two-lane roadway with an average daily traffic volume of 10,160, which far exceeds the roadway LOS D maximum capacity of 6,500 ADT. This results in reduced speeds and congestion in the northbound direction during both the AM and PM peak hours.

*Old Town Avenue between Moore Street and San Diego Aven*ue – Old Town Avenue provides a regional connection point between the community and I-5. This segment of Old Town Avenue is currently two-lanes with an ADT of 11,750, which far exceeds the roadway LOS D maximum capacity of 6,500 ADT. This results in reduced speeds and congestion in the northbound direction during the PM peak hour.

The identified roadway issues and needs within the Old Town Community are displayed in Figure 4-1.

4.2.2 Street and Freeway Improvements

Due to the historic nature of the community, the Preferred Plan does not propose any roadway widenings or significant roadway capacity improvements.

Intersections

Congress Street / San Diego Avenue / Ampudia Street:

- Convert intersection to all-way stop control
- Implement bulb-outs on all legs of the intersection
- Widen the sidewalks along the north side of San Diego Avenue

Figure 4-2 displays a concept drawing of the proposed intersection improvements.

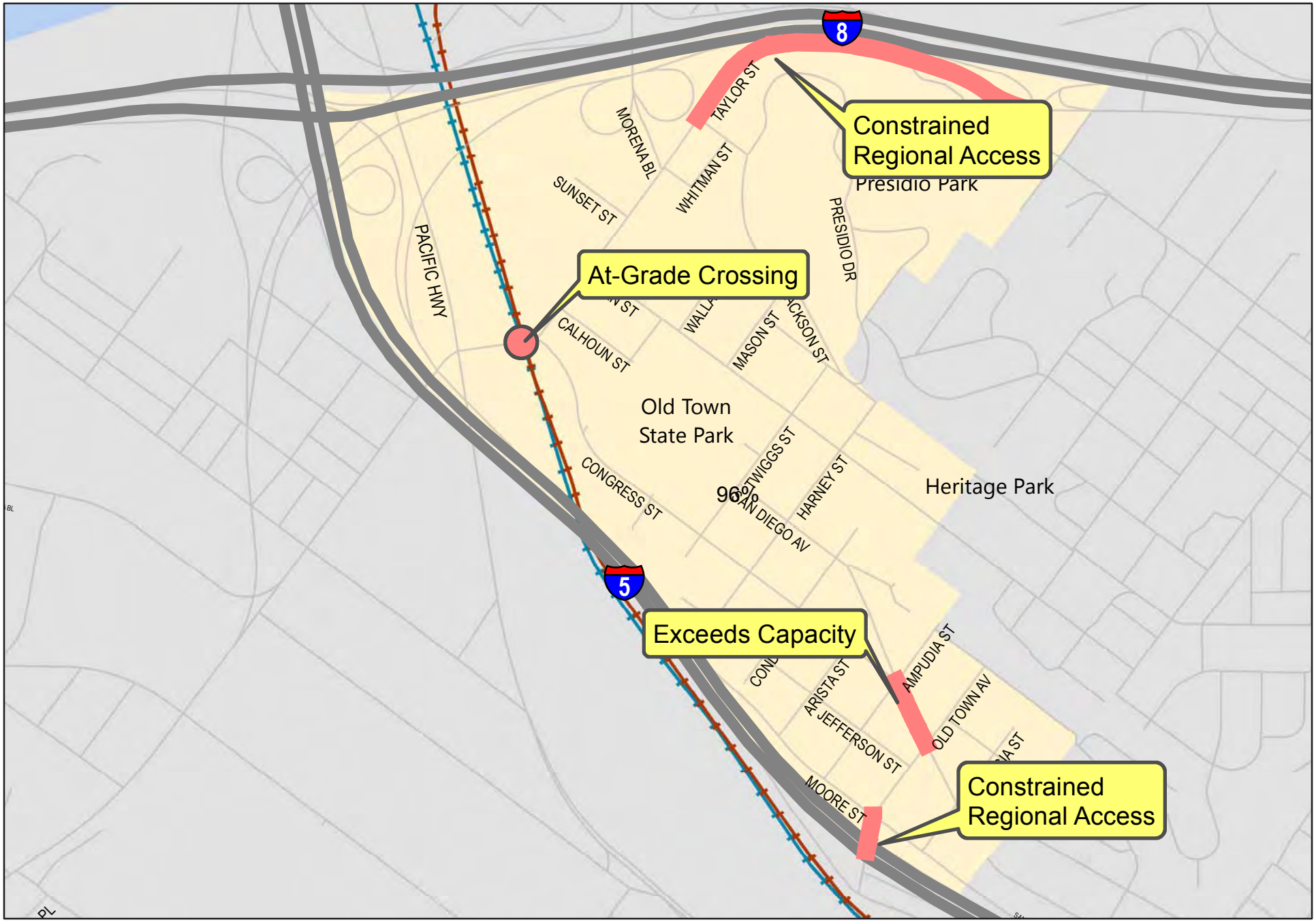


Figure 4-1
Identified Street and Freeway Related Issues and Needs - Old Town Community

This graphic is for conceptual purposes only. Further engineering study would be required at the project level prior to implementation.

Figure 4-2
Proposed Improvements - Congress Street / San Diego Avenue / Ampudia Street

Note: Converting the intersection control to a roundabout is also an option for this intersection. However, due to the tight spacing of the adjacent buildings there may not be enough right-of-way to accommodate a roundabout. Additional engineering study should be conducted to see if a roundabout is feasible at this intersection. If it is determined that a roundabout is feasible then it would become the preferred improvement.

Parking

San Diego Avenue between Twiggs Street and Conde Street has a large curb-to-curb width (50 feet) for a standard two-lane collector roadway (typically 40 feet wide). Therefore, in order to better utilize the curb-to-curb right-of-way, it is recommended that the parallel parking on the east side of the roadway be converted to angled parking, as shown in the figure below. The recommended improvement will not affect the capacity of the roadway and will increase the already constrained parking capacity within the Old Town community. Figure 4-3 displays a concept drawing of this improvement.

Freeway

There are no freeway improvements included in the Revenue Constrained alternative of *SANDAG's San Diego Forward, The Regional Plan (Adopted October 2015)* to be completed before this plan's Horizon Year (Year 2035). SANDAG prepared the Draft I-8 Corridor Study as a high level planning resource for potential improvements between Ocean Beach and Mission Valley. One of the identified improvements calls for the removal of all free movements from I-8 onto Morena Boulevard and "squaring up" each intersection. Since the plan has not yet been adopted and the improvements are not anticipated to be implemented until Year 2050, no improvements were assumed under Preferred Plan conditions.

This graphic is for conceptual purposes only. Further engineering study would be required at the project level prior to implementation.

Figure 4-3
Proposed San Diego Avenue Improvements between Twiggs Street and Conde Street

4.3 Pedestrian Environment

4.3.1 Identified Pedestrian Issues and Needs

The following pedestrian related issues and needs were identified in the Existing Conditions Report:

Taylor Street At-Grade Rail Crossing – Pedestrians accessing the Old Town Community or the Old Town Transit Center from Pacific Highway or Rosecrans Street currently have to cross the shared BNSF and MTS Trolley rail right-of-way. The Taylor Street at-grade rail crossing is over 100 feet wide, gate to gate, and pedestrians have to cross over four sets of rail tracks. During peak hours there are approximately 13 train crossing events lasting between 30 seconds and 3 minutes. During these times pedestrians are forced to wait until the train clears the crossing, causing excessive delays.

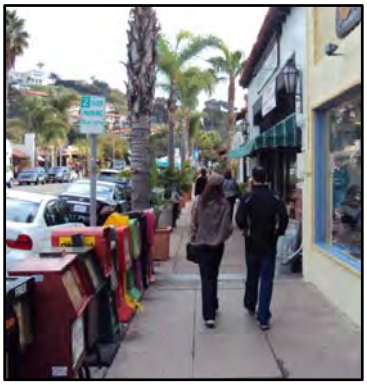
Old Town Transit Center Wayfinding – There is currently limited signage at the Old Town Transit Center directing pedestrians who are unfamiliar with the area, such as tourists, to the many restaurant, shops, historical monuments and structures, and parks in the community. Currently there is only a single map (identical to the map depicted in the picture below, which is located on San Diego Avenue) directing patrons to these various community features.

The Old Town San Diego Chamber of Commerce is implementing a wayfinding signage program that will install various signage types throughout the community to better inform patrons about how to access the various community features and help brand the community as a whole.

Missing Sidewalks – There are currently no sidewalks on Taylor Street, east of Presidio Drive and on the east side of San Diego Avenue, just north of Ampudia Street.

Connectivity between Community Features and Parks – There is currently no direct, convenient or identifiable path connecting the Old Town Transit Center, Old Town State Park and Presidio Park. Both parks are major community features attracting tourists and out of town guests who may not be familiar with the community or its amenities. The development of a clear, concise and well signed path connecting these three community assets would significantly improve pedestrian circulation within the community.

Sidewalk Capacity Issues – The retail and restaurant establishments along San Diego Avenue attract significant pedestrian traffic particularly during evenings and weekends. The sidewalks along San Diego Avenue are currently 7 to 8 feet wide with a limited parkway featuring street trees and planters. Retail shops and other merchants also take up part of the sidewalk with displays, racks and other attractions, as displayed in the photos to the right. During peak times, typical weekend evenings, pedestrian traffic along San Diego Avenue exceeds sidewalk capacity creating a congested pedestrian environment.



San Diego Avenue / Congress Street / Ampudia Street Intersection – This is currently a five legged intersection in which three of the approaches are stop-controlled (SB San Diego Avenue and EB & WB Ampudia Street) and the other two (NB San Diego Avenue and SB Congress Street) are free movements. There are also high vehicular traffic volumes crossing through the intersection along San Diego Avenue and Congress Street, which have no crosswalk facilities. This intersection is confusing and intimidating for pedestrians to cross due to the lack of traffic controls, high traffic volumes and missing crosswalk facilities.

The pedestrian related issues/needs within the Old Town Community, identified above, are displayed in Figure 4-4.

4.3.2 Pedestrian Improvements

Sidewalks

- Complete the sidewalks on the east side of San Diego Avenue, north of Ampudia Street.
- Complete sidewalks on Taylor Street, east of Presidio Drive.
- Implement sidewalks on the north side of Whitman Street.
- Complete sidewalks on Twiggs Street west of Congress Street.
- Implement sidewalks on Sunset Street between Juan Street and Mason Street.
- Implement a sidewalk on the west side of Mason Street between Juan Street and Jackson Street.
- Implement a sidewalk on the west side of Jackson Street between Presidio Drive and Mason Street

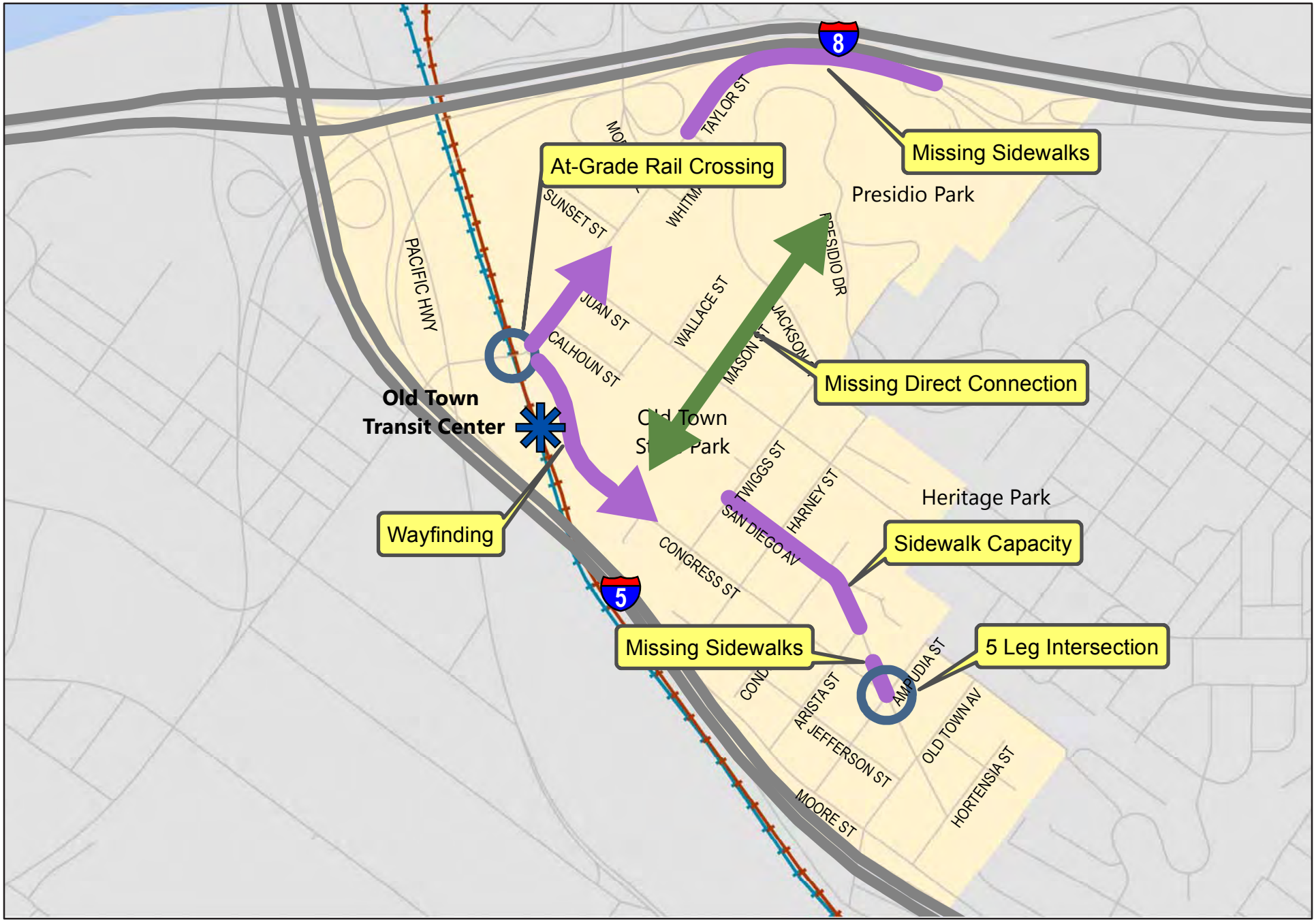
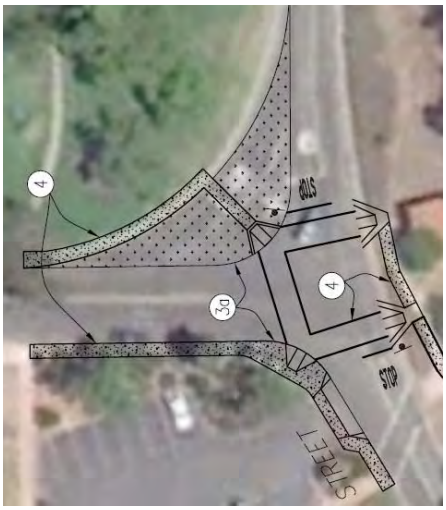


Figure 4-4
Identified Pedestrian Issues and Needs -
Old Town Community

Intersections

All crossing points at intersections should be upgraded to include the following:

- ADA compliant pedestrian ramps
- High visibility continental crosswalks
- Advanced stop bar placement
- Pedestrian count down signals



Proposed Improvements to Presidio Drive / Jackson Street intersection

Specific Intersection Improvements:

Presidio Drive / Jackson Street (Shown to the right):

- Implement bulb-outs on the west leg of the intersection
- Complete sidewalks on all sides of the intersection
- Square up intersection and remove southbound yielded right-turn movements
- Provide cross-walks across all legs of the intersection

Congress Street / Twiggs Street:

- Implement bulb-outs across all legs of the intersection

San Diego Avenue / Twiggs Street:

- Implement pavers or other high visible material in the center of the intersection to slow down and alert drivers to the heavy pedestrian presence, see example to the right.

Example of using bricks/pavers to create a highly visible intersection

Linwood Street / San Diego Avenue:

- Implement Pedestrian refuge island on the southern (Linwood Street) leg of the intersection.

Congress Street / San Diego Avenue / Ampudia Street (See figure 4-2):

- Convert intersection to all-way stop control
- Implement bulb-outs on all legs of the intersection
- Widen the sidewalks along the north side of San Diego Avenue

Note: As stated above, converting the intersection control to a roundabout is also an option for this intersection. However, due to the tight spacing of the adjacent buildings there may not be enough right-of-way to accommodate a roundabout. Additional engineering study should be conducted to see if a roundabout is feasible at this intersection. If it is determined that a roundabout is feasible then it would become the preferred improvement.

4.4 Cycling Environment

4.4.1 Identified Bicycle Issues and Needs

The following cycling related issues and needs were identified in the Existing Conditions Report:

Taylor Street – As mentioned previously, the Taylor Street corridor provides a significant regional east/west connection for vehicles as well as for cyclists. Taylor Street is currently classified as a Class III Bike Route within the Old Town Community; however, east of Presidio Drive, Taylor Street narrows to a two-lane roadway with narrow lane widths (10 feet) and no shoulders. Taylor Street is also a regional vehicular access point for the Old Town Community connecting the I-8 / Taylor Street interchange and Pacific Highway. The narrow lane widths, high vehicular traffic volumes and speeds along Taylor Street, east of Presidio Drive, create an uncomfortable environment for cyclists.

Congress Street / San Diego Avenue – Congress Street and San Diego Avenue (south of Ampudia Street) provide one of the few north/south connections for cyclists within the Old Town Community. Congress Street and San Diego Avenue (south of Ampudia Street) is currently classified as a Class III Bike Route designated by sharrow markings. Congress Street's proximity to the Old Town Transit Center and retail and restaurant uses make it a highly attractive route for cyclists. Both corridors currently have high traffic volumes, and on-street parking on both sides of the roadway which create an uncomfortable environment for cyclists.

The bicycle related issues/needs within the Old Town Community, identified above, are displayed in Figure 4-5.

4.4.2 Bicycle Improvements

The Preferred Plan proposes implementing the following bicycle facilities within the Old Town Community:

- Complete the Class II Bike Lanes in both directions along Taylor Street between Pacific Highway and the community boundary and bicycle boxes at appropriate intersections, as identified in the I-8 Corridor Study.
- Class III Bike Route in both directions along Juan Street between Taylor Street and community boundary.
- Class II Bike Lanes in both directions along Old Town Avenue between Hancock Street and San Diego Avenue.
- Class II Bike Lanes in both directions along Morena Boulevard between Taylor Street and the community boundary.

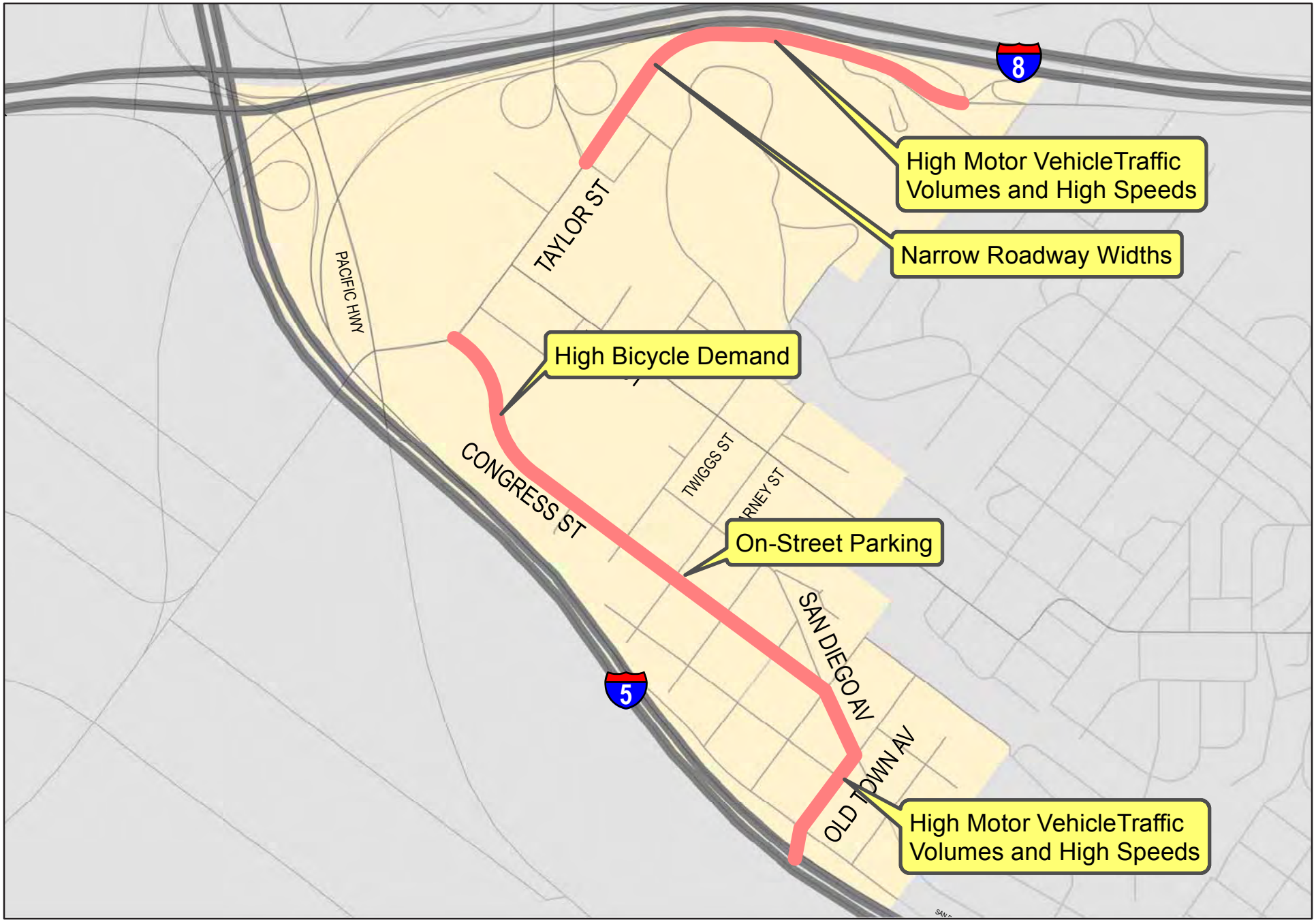


Figure 4-5
Bicycle Network Issues and Needs -
Old Town Community

A bicycle connection is currently lacking along Morena Boulevard between Taylor Street and Linda Vista Road. This is a critical connection that would link the Old Town and Linda Vista communities, as well as provide a connection to the Ocean Beach Bike Path. Unfortunately, the bridge along this segment of the roadway has a constrained right-of-way, and the current configuration of the I-8 Morena Boulevard ramps position four high-speed free-right turn movements on/off the bridge.

Due to these constraints there is not feasible bicycle facility that can be implemented along this segment without both widening the bridge and reconfiguring the I-8 / Morena Boulevard Ramps. However, it is recommended that the City work with both Caltrans and SANDAG to look for opportunities to implement bicycle facilities and better pedestrian facilities along this segment should any improvements be done to this segment. The I-8 Corridor Study identifies Class II bike lanes along Morena Boulevard, between W. Morena Boulevard and Taylor Street, as a high priority project. As described in section 4.2.2, the Corridor Study also proposes removing all free movements from I-8 onto Morena Boulevard and "squaring up" each intersection. Since the plan has not yet been adopted and the improvements are not anticipated to be implemented until Year 2050, no improvements were assumed under Preferred Plan conditions.

4.5 Public Transit Service and Facilities

4.5.1 Identified Transit Issues and Needs

The Old Town Community is served by 10 bus routes, a trolley line, a commuter rail service (The COASTER) and a regional rail line (Amtrak Surfliner), which all serve the Old Town Transit Center. Figure 4-6 displays the community's streets served by bus routes as well as the existing Trolley Lines.

This figure also shows the area within ½ mile of the Old Town Transit Center, which is considered a reasonable walking distance to a major transit center (as compared to a ¼ mile for bus stops). As depicted in this figure, nearly all of the commercial and recreational uses are within ½ mile of transit service.

Figure 4-6
Transit Coverage -
Old Town Community

4.5.2 Transit Improvements

SANDAG's *San Diego Forward, The Regional Plan* (Adopted October 2015), indicates that a number of transit improvements are planned for the Old Town Community, prior to this plan's Year 2035 Horizon Year, as described below.

COASTER – By the Year 2020, the frequency of the COASTER will be increased to every 20 minutes during peak periods and every 120 minutes during off-peak periods. The COASTER provides a commuter rail connection between the Old Town Transit Center and North County communities including Solana Beach, Encinitas and Oceanside.

COASTER – by the Year 2020, the COASTER line will be extended to the south and include stations at both Petco Park and the Convention Center.

Mid-Coast Trolley Line – The Mid-Coast Trolley will extend service from Santa Fe Depot in Downtown San Diego to the University City community, serving major activity centers such as Old Town, the University of California, San Diego (UCSD), and Westfield UTC. Construction of the Mid-Coast Trolley line is anticipated to be completed by the Year 2021.

Local Bus Service – Increase local bus service in key corridors to 10 minute headways programmed and scheduled for Year 2035.

Rapid Bus Route 28 – By the Year 2035, a new rapid bus route will be implemented providing service between Point Loma and Kearny Mesa via the Old Town Transit Center.

Rapid Bus Route 30 – By the Year 2035, a new rapid bus route will be implemented providing service between the Old Town Transit Center and Sorrento Mesa via Pacific Beach, La Jolla and UTC.

Rapid Bus Routes 640A – By the Year 2035, a new rapid bus route will be implemented providing service along I-5 between San Ysidro and the Old Town Transit Center, via City College downtown.

Transit Priority Treatments

Taylor Street serves several regional bus routes connecting multiple communities. Therefore, it is recommended that transit priority treatments be implemented along Taylor Street to help increase transit performance. It is recommended to implement queue jumper lanes and transit priority signals in either direction at both the Taylor Street / Juan Street and Taylor Street / Morena Boulevard intersections.

4.6 Currently Planned Improvements

The following section outlines the mobility improvements that are currently planned within the Old Town community. Some improvements were too minor to incorporate at the community plan level, while others are mitigation measures from projects within the area and are not the responsibility of the community plan. Additionally, the pending improvements contained within

the existing community Public Facilities Financing Plan are also outlined and identified if they are consistent with the Preferred Plan.

4.6.1 Auto

Mid-Coast Corridor Transit Project – The Mid-Coast Corridor and Transit Project Transportation Impacts and Mitigation Report; September 2014, identifies the following project related improvements at the Taylor Street / Rosecrans Street and Pacific Highway intersection:

- Provide second northbound right-turn lane
- Provide third eastbound through lane
- Provide second southbound left-turn lane

These improvements are designed to handle excess queuing at the intersection during gate down times. These improvements do not conflict with any improvements recommended by the Preferred Plan and have been incorporated into the future year analysis. However, since these improvements are mitigation measures for the Mid-Coast Corridor Transit Project they are not considered to be part of the Preferred Plan and should not be included in the IFS.

Old Town Public Facilities Financing Plan, 2004 – This plan identifies the widening of Presidio Drive to allow for a right-turn lane on Taylor Street (Project T10). This improvement is unfunded and is not currently scheduled for implementation. – *The Preferred Plan does not include this improvement as a recommendation.*

4.6.2 Pedestrian

Old Town Public Facilities Financing Plan, 2004 – Contains the following planned pedestrian improvements that have not yet been completed.

- Install / upgrade 20 curb ramps to meet ADA standards (Project T12) – These improvements are currently not scheduled or funded. – *Improvement is consistent with the Preferred Plan.*

Several pedestrian facility projects have been identified by the City of San Diego and are included on their Unfunded Transportation Needs List (8/5/2014). A list of the pedestrian improvements located in the Old Town Community are included in Appendix B. It should be noted that this list is updated on a regular basis and Appendix B only reflects a snapshot of the needs and planned improvements throughout the community at the time when this report was prepared.

SANDAG Uptown Bikeways Project – Phase 4 of the Uptown Bikeways project will include treatments to improve pedestrian safety (e.g., high visibility crosswalks, dual pedestrian ramps, bulb-outs). The project is located along Congress Street (from Taylor Street to San Diego Avenue) and San Diego Avenue (from Congress Street to south of Hortensia Avenue). The project is entering final design and is funded through construction. Since these improvements are funded through the Uptown Bikeways project, they should not be included in the IFS. *– Improvements are consistent with the Preferred Plan.*

Wayfinding Signage Program

The Old Town Chamber of Commerce is currently developing a wayfinding signage program in the Old Town Community. The wayfinding signage program will standardize and brand the various wayfinding signs currently within the community and highlight paths and links for pedestrians to access the various parks and attractions within the community.

4.6.3 Bicycle

SANDAG Uptown Bikeways Project – Phase 4 of the Uptown Bikeways project will include a mix of buffered bike lanes and shared lane markings along Congress Street (from Taylor Street to Mason Street) and shared lane markings, where not already marked (from Mason Street to San Diego Avenue). The project is currently in the design phase with specifications still being determined, therefore, it was not included as a recommendation in the Preferred Plan. Congress Street is currently designated as a Class III bicycle route, identifiable by vertical signage and shared lane markings. The Preferred Plan does not propose any modifications to the existing bicycle facility, nor does it include any recommendations that would prevent the Uptown Bikeways project from being implemented.

4.6.4 Transit

As noted in section 4.5.2 the Preferred Plan in consistent with *SANDAG's San Diego Forward, The Regional Plan (Adopted October 2015).*

5.0 Modeling and Forecasting

This chapter summarizes the future year travel demand model forecasting process utilized to project the future travel patterns within the Midway-Pacific Highway and Old Town communities, under buildout conditions. Future year traffic volumes were derived from a SANDAG Series 12 Transportation Forecast model run, which was verified per the City of San Diego's Small Study Area Traffic Modeling Process (April 2012) and calibrated for the Midway-Pacific Highway and Old Town communities.

5.1 Base Year (2012) Model Calibration

The base year model calibration process included verification and validation of base year model inputs (land uses and roadway network), as well as additional adjustments to the base year model (roadway speeds, centroid loadings, etc.) to calibrate the model to better represent existing travel patterns within the Midway-Pacific Highway and Old Town communities. Detailed descriptions of each validation step are provided in the following sections.

5.1.1 Base Year Land Use Verification/Validation

Existing land use data, as listed below, was collected for the Midway-Pacific Highway and Old Town communities and verified/adjusted in the Base Year model to correctly match actual conditions:

- Descriptions (land use type and code)
- Proper measurement unit types (square feet, units, acres)
- Quantity
- Vehicular trip generation rates

Land use types, descriptions and quantities were crosschecked with ground conditions using Google Earth imagery, as well as field verification, as necessary. Trip generation rates for individual land uses were coded based on the driveway rates provided in the *City of San Diego Land Development Code – Trip Generation Manual* (May 2003). Base year land use inputs for the project study area are provided in Appendix D.

5.1.2 Base Year Roadway Network Verification/Validation

The SANDAG Series 12 Base Year roadway network was compared to actual conditions to ensure an accurate model network. The following variables were compared and adjusted to match actual conditions:

- TAZ loading points
- Number of lanes for roadways
- Traffic controls
- Signalized intersection geometrics
- Street classification
- Roadway speed limits

5.1.3 Base Year Ground Count Validation & Adjustment

Historical ADT volumes over the past 11 years were compiled from the City of San Diego's Traffic Count Database and other recent studies for major roadway segments throughout the Midway-Pacific Highway and Old Town communities. The most recent historic counts along with counts from the past five (5) years were selected to establish a Base Year ground count database. This database included multiple counts from the same location on numerous segments, as well as the counts already included in the model. The final count was selected based upon nearby trip generators and traffic patterns along each roadway segment. Abnormally high or low traffic volumes were assumed to be outliers, and thus were not selected as model inputs.

5.1.4 Model Sensitivity Adjustment

Model calibration was performed by running a Base Year model estimate and comparing the results to the selected ground counts discussed above. Roadway segments that did not meet the model calibration targets established by the City of San Diego were identified for additional adjustments. These adjustments included the relocation of TAZ connectors and centroids, TAZ splitting, adjustments of roadway speed (to represent congestion), and in rare cases, ground count adjustments using historic counts older than three years.

5.2 Future Year Traffic Forecast Volume

The Future Year model was developed by inputting the future year land uses and roadway network into the calibrated Base Year model, described in the previous sections, with the following adjustments/assumptions:

- Implementation of the Preferred Plan land uses within the project study area (land use assumptions are provided in Appendix D).
- Existing roadway network within the study area with the following improvement projects:
    - Extension of Kemper Street between Sports Arena Boulevard and Kurtz Street
    - Implementation of Frontier Drive between Sports Arena Boulevard and Kurtz Street
    - Extension of Greenwood Street between Kurtz Street and Sports Arena Boulevard
    - Implementation of Charles Lindbergh Parkway between Sports Arena Boulevard and Midway Drive
    - Implementation of Dutch Flats Parkway between Sports Arena Boulevard and Barnett Avenue
- Year 2035 land uses outside of the study area
- Year 2035 roadway/transit network outside of the study area
- Year 2035 transit network both inside and outside of the study area

The model inputs described above were reviewed and approved by City staff prior to running the model forecasts.

Final SANDAG Series 12 Future Year Forecast Model results are provided in Appendix D. Figure 5-1 shows the final projected average daily traffic volumes that were used to develop and analyze the Preferred Plan mobility network, as described in the next chapter.

5.2.1 Vehicle Miles Traveled

The vehicle miles traveled (VMT) generated within the community was estimated using the SANDAG Series 12 Preferred Plan Future Year 2035 and Base Year models. VMT is the total number of miles driven by all vehicle trips within the Midway-Pacific Highway and Old Town communities, including trips to, from, and within the community. Table 5.1A and 5.1B display the total VMT generated within each community and the average trip length under both the Preferred Plan and Base Year conditions. VMT calculations are provided in Appendix D.

Table 5.1A Vehicle Miles Traveled (VMT) Comparison – Midway-Pacific Highway Community

Measure	Community Planning Area				San Diego Region			
	Base Year	Preferred Plan	Δ in Value	Δ in %	Base Year	Year 2035	Δ in Value	Δ in %
Total VMT (miles)	730,121	835,997	105,876	14.5%	85,331,631	108,992,533	23,660,902	27.7%
Total # of Auto Trips	294,796	313,558	18,762	6.4%	16,458,692	20,183,171	3,724,479	22.6%
Average Trip Length[1] (miles)	2.5	2.7	0.2	7.6%	5.2	5.4	0.2	3.7%
Population	4,672	27,070	22,398	479.4%	3,130,717	4,035,834	905,117	28.9%
Daily VMT by Population (miles)	156	31	-125	-80.2%	27	27	0	-1.5%

Source: Chen Ryan Associates (March 2017)

Note:
1. Average trip length is estimated by dividing the total VMT by the total # of auto trips.

As shown, under implementation of the Preferred Plan the number of new auto trips and total VMT generated within the Midway-Pacific Highway community is only anticipated to experience minimal growth (based on the regional averages). With the implementation of the Preferred Plan infrastructure and land uses, the average vehicular trip length is anticipated to increase by 7.6%. However, with the significant population increase anticipated within the community, the daily VMT by population is anticipated to drop dramatically (-80.2%).

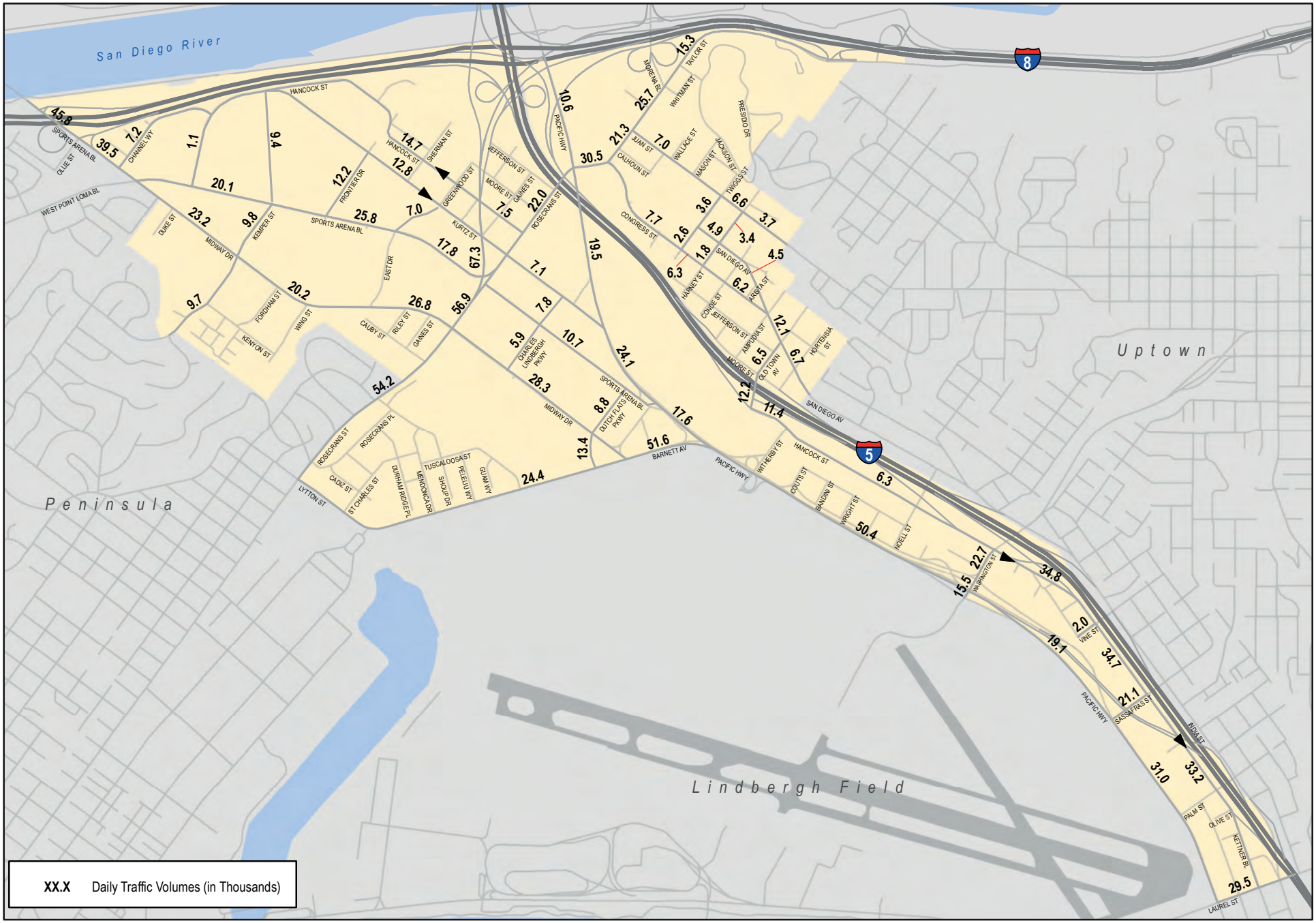


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Figure 5-1
Daily Roadway Segment Traffic Volumes - Preferred Plan Conditions

Table 5.1B Vehicle Miles Traveled (VMT) Comparison – Old Town Community

Measure	Community Planning Area				San Diego Region			
	Base Year	Preferred Plan	Δ in Value	Δ in %	Base Year	Year 2035	Δ in Value	Δ in %
Total VMT (miles)	151,300	175,097	23,797	15.7%	85,331,631	108,992,533	23,660,902	27.7%
Total # of Auto Trips	57,989	61,622	3,633	6.3%	16,458,692	20,183,171	3,724,479	22.6%
Average Trip Length[1] (miles)	2.6	2.8	0.2	8.9%	5.2	5.4	0.2	3.7%
Population	834	2,430	1,596	191.4%	3,130,717	4,035,834	905,117	28.9%
Daily VMT by Population (miles)	181	72	-109	-60.3%	27	27	0	-1.5%

Source: Chen Ryan Associates (March 2017)

Note:
1. Average trip length is estimated by dividing the total VMT by the total # of auto trips.

As shown, under implementation of the Preferred Plan the number of new auto trips and total VMT generated within the Old Town community is only anticipated to experience average growth (based on the region. With the implementation of the Preferred Plan infrastructure and land uses the average vehicular trip length is anticipated to increase by 8.9%. However, the anticipated population increase within the community results in an overall decrease in the daily VMT by population (-60.3%).

5.2.2 Community Mode Choice

The Mode Choice Model used in the SANDAG Series 12 Transportation Forecast is not sensitive to changes in bicycle and pedestrian facilities. In other words, the model does not accurately adjust travel behaviors in response to implementation of multimodal facilities, such as bicycle lanes or separated multi-use paths, or reflect land use changes that create more mixed use environments. Due to these constraints, the SANDAG Series 12 Model was not utilized to project the demands of future year non-motorized travel.

SANDAG is currently in the process of developing Series 13, an Activity Based Model (ABM) which will more accurately account for shifts in transportation modes based on the implementation of pedestrian and bicycle facilities. However, SANDAG modeling staff has indicated that this model is currently under development and will not be ready for public release until later in 2016.

Since the ABM model is not ready for use at this time, a subsequent mode choice analysis will be prepared by the City as a separate document. The mode choice analysis will use the methods outlined in both the California Air Pollution Control Officers Association (CAPCOA) Quantifying Green House Gas Measures manual, as well as the Urban Land Institute's (ULI) Growing Cooler to post process the Series 12 model results and develop a more accurate mode split for each community.

6.0 Preferred Plan Analysis

6.1 Street and Freeway System Assessment and Results

The following section provides a summary of vehicular analysis results along key study roadways, including the projected daily roadway LOS, and the peak hour intersection LOS analysis under implementation of the Preferred Plan.

6.1.1 Roadway Segment Analysis

This analysis assumes implementation of the roadway segment-related improvements outlined in Sections 3.2.2 and 4.2.2 under the Preferred Plan. The associated roadway classifications under implementation of the Preferred Plan, within both communities, is displayed in Figure 6-1.

Table 6.1 and Figure 6-2 display the projected ADT volume and associated roadway LOS under implementation of the Preferred Plan. Section 5.2 describes the process used to develop projected ADT volume estimations.

As shown, all Mobility Element roadways are projected to operate at LOS D or better under Preferred Plan conditions, with the exception of the following:

Midway-Pacific Highway Community

- Midway Drive, between East Drive and Rosecrans Street (LOS E)
- Midway Drive, between Rosecrans Street and Barnett Avenue (LOS E)
- Kurtz Street, between Hancock Street and Rosecrans Street (LOS E)
- Kettner Boulevard, between Washington Street and Vine Street (LOS F)
- Kettner Boulevard, between Vine Street and Sassafras Street (LOS F)
- Kettner Boulevard, between Sassafras Street and Laurel Street (LOS F)
- Greenwood Street, between Sports Arena Boulevard and Kurtz Street (LOS E)
- Camino Del Rio West, between Rosecrans Street and the I-5/I-8 Ramps (LOS F)
- Rosecrans Street, between Midway Drive and Sports Arena Boulevard (LOS E)
- Dutch Flats Parkway, between Barnett Avenue and Midway Drive (LOS E)
- Sassafras Street, between Pacific Highway and Kettner Boulevard (LOS F)

Old Town Community

- Congress Street between Taylor Street and Twiggs Street (LOS E)
- San Diego Avenue, between Ampudia St and Old Town Avenue (LOS F)
- San Diego Avenue, between Old Town Avenue and Hortensia Street (LOS E)
- Juan Street, between Taylor Street and Twiggs Street (LOS E)
- Juan Street, between Twiggs Street and Harney Street (LOS E)
- Taylor Street, between Morena Boulevard and I-8 Ramps (LOS F)
- Old Town Avenue, between Hancock Street and Moore Street (LOS F)
- Old Town Avenue, between Moore Street and San Diego Avenue (LOS E)

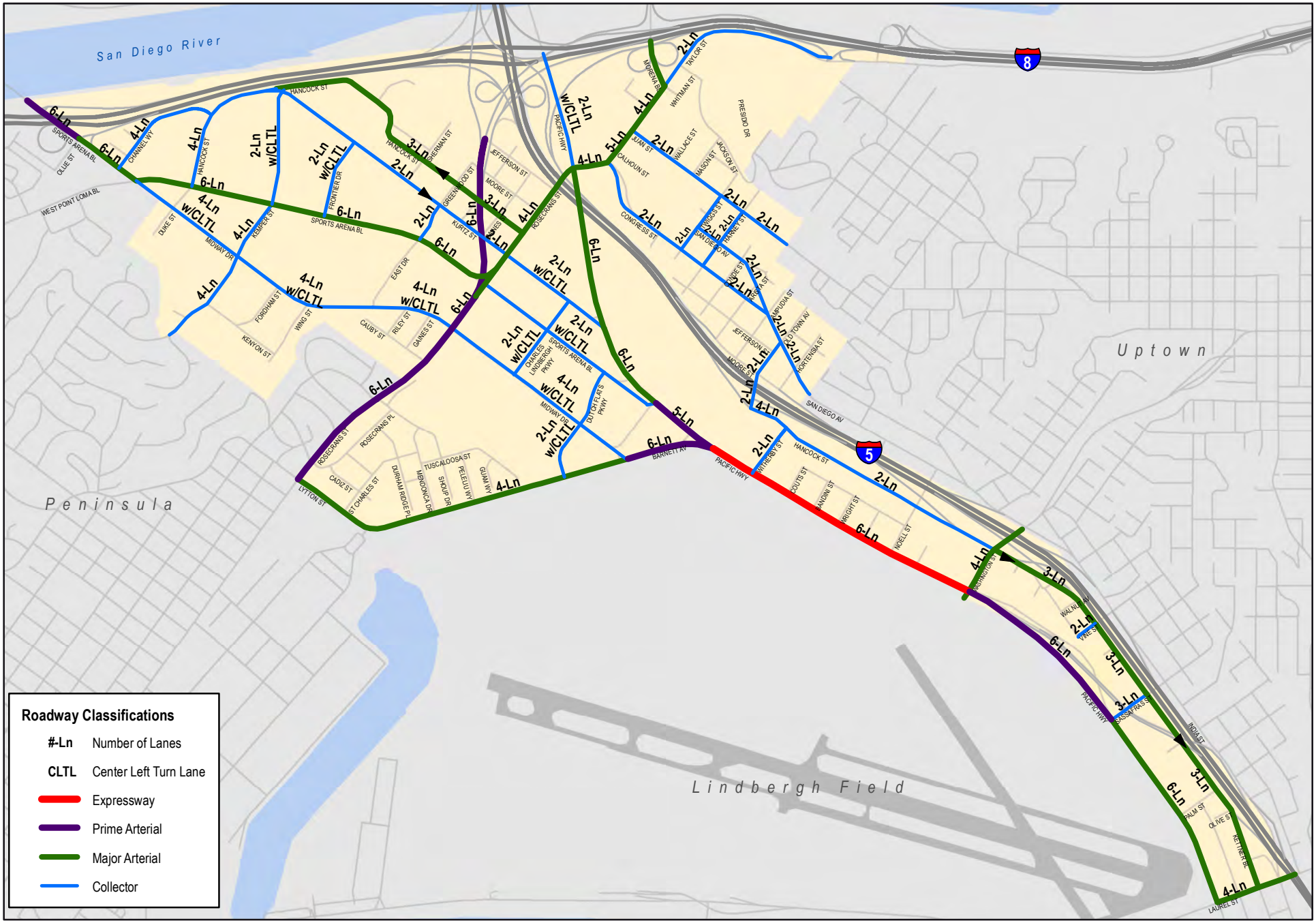

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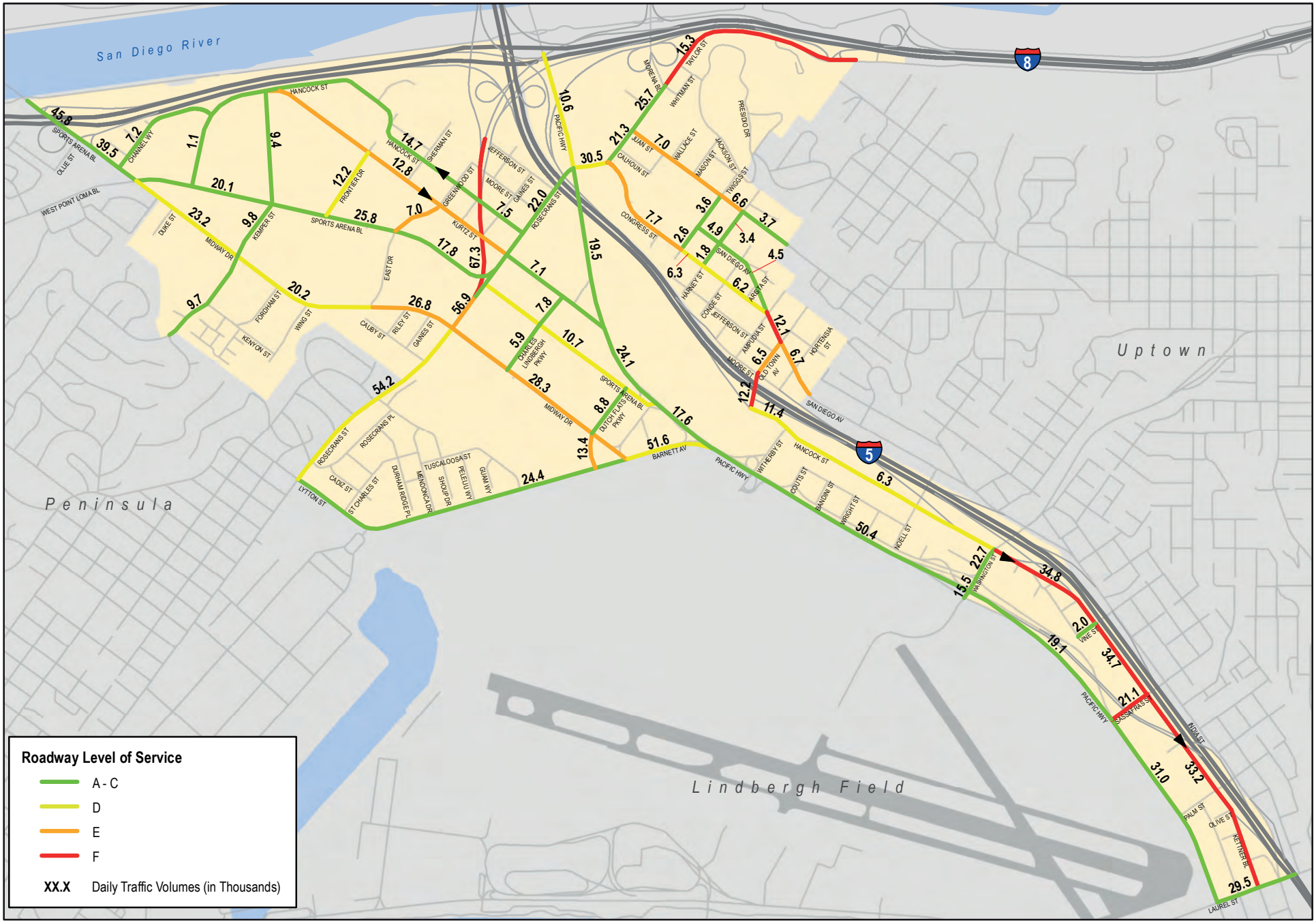
Figure 6-1
Roadway Classifications -
Preferred Plan Conditions



Midway-Pacific Highway and
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Figure 6-2
Daily Roadway Segment Traffic Volumes and LOS - Preferred Plan Conditions

Table 6.1 Daily Roadway Segment Analysis - Preferred Plan Conditions

Roadway	From	To	Classification	Maximum Capacity at LOS E	ADT	V/C	LOS
North-South							
Midway Pacific Highway							
Lytton Street/ Barnett Ave	Rosecrans St	Midway Dr	4-Lane Major Arterial	40,000	24,400	0.61	C
Midway Dr	W. Point Loma Blvd/ Sports Arena Blvd	Kemper St	4-Lane Collector (CLTL)	30,000	23,200	0.77	D
	Kemper St	East Dr	4-Lane Collector (CLTL)	30,000	20,200	0.67	D
	East Dr	Rosecrans St	4-Lane Collector (CLTL)	30,000	26,800	0.89	E
	Rosecrans St	Barnett Ave	4-Lane Collector (CLTL)	30,000	28,300	0.94	E
Sports Arena Blvd	I-8 WB Ramps	I-8 EB Ramps	6-Lane Prime Arterial	60,000	45,800	0.76	C
	I-8 EB Ramps	W. Point Loma Blvd	6-Lane Major Arterial	50,000	39,500	0.79	C
	W. Point Loma Blvd/Midway Dr	Kemper St	6-Lane Major Arterial	50,000	20,100	0.4	B
	Kemper St	East Dr	6-Lane Major Arterial	50,000	25,800	0.52	B
	East Dr	Rosecrans St	6-Lane Major Arterial	50,000	17,800	0.36	A
	Rosecrans St	Pacific Hwy	2-Lane Collector (CLTL)	15,000	10,700	0.71	D
Kurtz St	Hancock St	Rosecrans St	2-Lane Collector (One-Way)	15,000	12,800	0.85	E
	Rosecrans St	Pacific Hwy	2-Lane Collector (CLTL)	15,000	7,100	0.47	C
Hancock St	Sports Arena Blvd	Kurtz St	4-Lane Collector	15,000	1,100	0.07	A
	Kurtz St	Camino Del Rio West	3-Lane Major (One-Way)	30,000	14,700	0.49	B
	Camino Del Rio West	Rosecrans St	3-Lane Major (One-Way)	30,000	7,500	0.25	A
	Old Town Ave	Witherby St	4-Lane Collector	15,000	11,400	0.76	D
	Witherby St	Washington St	2-Lane Collector	8,000	6,300	0.79	D
Kettner Blvd	Washington St	Vine St	3-Lane Major (One-Way)	30,000	34,800	1.16	F
	Vine St	Sassafras St	3-Lane Major (One-Way)	30,000	34,700	1.16	F
	Sassafras St	Laurel St	3-Lane Major (One-Way)	30,000	33,200	1.11	F
Pacific Hwy	Sea World Dr	Taylor St	2-Lane Collector (CLTL)	15,000	10,600	0.71	D

Table 6.1 Daily Roadway Segment Analysis - Preferred Plan Conditions

Roadway	From	To	Classification	Maximum Capacity at LOS E	ADT	V/C	LOS
Pacific Hwy	Taylor St	Kurtz St	6-Lane Major Arterial	50,000	19,500	0.39	A
	Kurtz St	Sports Arena Blvd	6-Lane Major Arterial	50,000	24,100	0.48	B
	Sports Arena Blvd	Barnett Ave	5-Lane Major Arterial	50,000	17,600	0.35	A
	Barnett Ave	Washington St	Expressway	80,000	50,400	0.63	C
	Washington St	Sassafras St	6-Lane Prime Arterial	60,000	19,100	0.38	A
	Sassafras St	Laurel St	6-Lane Major Arterial	50,000	31,000	0.62	C
Old Town							
Congress St[1]	Taylor St	Twiggs St	2-Lane Collector	8,000	7,700	0.96	E
	Twiggs St	Harney St	2-Lane Collector	8,000	6,300	0.79	D
	Harney St	San Diego Ave/ Ampudia St	2-Lane Collector	8,000	6,200	0.78	D
San Diego Ave[1]	Twiggs St	Harney St	2-Lane Collector	8,000	4,900	0.61	C
	Conde St	Arista Ave	2-Lane Collector	8,000	4,500	0.56	C
	Ampudia St	Old Town Ave	2-Lane Collector	8,000	12,100	1.51	F
	Old Town Ave	Hortensia St	2-Lane Collector	8,000	6,700	0.84	E
Juan St[1]	Taylor St	Twiggs St	2-Lane Collector	8,000	7,000	0.88	E
	Twiggs St	Harney St	2-Lane Collector	8,000	6,600	0.83	E
	Harney St	San Juan Rd	2-Lane Collector	8,000	3,700	0.46	C
East-West							
Midway Pacific Highway							
Channel Wy	W. Mission Bay Dr	Hancock St	4-Lane Collector	15,000	7,200	0.48	C
Kemper St	Kenyon St	Midway Dr	4-Lane Collector	15,000	9,700	0.65	C
	Midway Dr	Sports Arena Blvd	4-Lane Collector	15,000	9,800	0.65	C
	Sports Arena Blvd	Hancock St	2-Lane Collector (CLTL)	15,000	9,400	0.63	C
Frontier St	Sports Arena Blvd	Kurtz St	2-Lane Collector (CLTL)	15,000	12,200	0.81	D

Table 6.1 Daily Roadway Segment Analysis - Preferred Plan Conditions

Roadway	From	To	Classification	Maximum Capacity at LOS E	ADT	V/C	LOS
Greenwood St	Sports Arena Blvd	Kurtz St	2-Lane Collector	8,000	7,000	0.88	E
Camino Del Rio West	Rosecrans St	I-5/I-8 Ramps	6-Lane Prime Arterial	60,000	67,300	1.12	F
Rosecrans St	Lytton St	Midway Dr	6-Lane Prime Arterial	60,000	54,200	0.9	D
	Midway Dr	Sports Arena Blvd	6-Lane Prime Arterial	60,000	56,900	0.95	E
	Sports Arena Blvd	Pacific Hwy/Taylor St	4- Lane Major Arterial	40,000	22,000	0.55	C
Charles Lindbergh Pkwy	Midway Dr	Sports Arena Blvd	2-Lane Collector (CLTL)	15,000	5,900	0.39	B
	Sports Arena Blvd	Kurtz Street	2-Lane Collector (CLTL)	15,000	7,800	0.52	C
Dutch Flats Pkwy	Barnett Avenue	Midway Dr	2-Lane Collector (CLTL)	15,000	13,400	0.89	E
	Midway Dr	Sports Arena Blvd	2-Lane Collector (CLTL)	15,000	8,800	0.59	C
Barnett Ave	Midway Dr	Pacific Hwy	6-Lane Prime Arterial	60,000	51,600	0.86	D
Washington St	Frontage Rd	Pacific St	4- Lane Major Arterial	40,000	15,500	0.39	B
	Pacific St	Hancock St	4- Lane Major Arterial	40,000	22,700	0.57	C
Vine St	California St	Kettner Blvd	2-Lane Collector	8,000	2,000	0.25	A
Sassafras St	Pacific Hwy	Kettner Blvd	3-Lane Collector	11,500	21,100	1.83	F
Laurel St	Pacific Hwy	Kettner Blvd	4- Lane Major Arterial	40,000	29,500	0.74	C
Old Town							
Taylor St[1]	Pacific Hwy/ Rosecrans St	Congress St	4- Lane Major Arterial	40,000	30,500	0.76	D
	Congress St	Juan St	5-Lane Major Arterial	45,000	21,300	0.47	B
	Juan St	Morena Blvd	4- Lane Major Arterial	40,000	25,700	0.64	C
	Morena Blvd	I-8 EB Ramps	2-Lane Collector	8,000	15,300	1.91	F
Twiggs St[1]	Congress St	San Diego Ave	2-Lane Collector	8,000	2,600	0.33	B
	San Diego Ave	Juan St	2-Lane Collector	8,000	3,600	0.45	C
Harney St[1]	Congress St	San Diego Ave	2-Lane Collector	8,000	1,800	0.23	A
	San Diego Ave	Juan St	2-Lane Collector	8,000	3,400	0.43	B

Table 6.1 Daily Roadway Segment Analysis - Preferred Plan Conditions

Roadway	From	To	Classification	Maximum Capacity at LOS E	ADT	V/C	LOS
Old Town Ave[1]	Hancock St	Moore St	2-Lane Collector	8,000	12,200	1.53	**F**
	Moore St	San Diego Ave	2-Lane Collector	8,000	6,500	0.81	**E**

Source: Chen Ryan Associates (May 2017)

Note: **Bold** letter indicates LOS E or F

The following mitigation measures were identified for the two communities:

Midway-Pacific Highway Community

Midway Drive, between Rosecrans Street and Barnett Avenue (LOS E) – Improving the roadway way from a 4-Lane Collector with Center Left-Turn Lane to a 4-Lane Major Arterial would improve the operations to LOS C. The identified significant traffic related impact to this roadway segment would be fully mitigated with the implementation of this mitigation measure.

Kurtz Street, between Hancock Street and Rosecrans Street (LOS E) – Widening the roadway from a 2-Lane Collector (One-Way) Arterial to a 3-Lane - Lane Major (One-Way) Arterial would improve the operations to LOS B. The identified significant traffic related impact to this roadway segment would be fully mitigated with the implementation of this improvement.

Kettner Boulevard, between Washington Street and Vine Street (LOS F) – Widening the roadway from a 3-Lane Major (One-Way) Arterial to a 4-Lane - Lane Major (One-Way) Arterial would improve the operations to LOS D. The identified significant traffic related impact to this roadway segment would be fully mitigated with the implementation of this mitigation measure.

Kettner Boulevard, between Vine Street and Sassafras Street (LOS F) – Widening the roadway from a 3-Lane Major (One-Way) Arterial to a 4-Lane - Lane Major (One-Way) Arterial would improve the operations to LOS D. The identified significant traffic related impact to this roadway segment would be fully mitigated with the implementation of this mitigation measure.

Kettner Boulevard, between Sassafras Street and Laurel Street (LOS F) – Widening the roadway from a 3-Lane Major (One-Way) Arterial to a 4-Lane - Lane Major (One-Way) Arterial would improve the operations to LOS D. The identified significant traffic related impact to this roadway segment would be fully mitigated with the implementation of this mitigation measure.

Greenwood Street, between Sports Arena Boulevard and Kurtz Street (LOS E) – Improving from a 2-Lane Collector to a 2-Lane Collector with a Center Left Turn-Lane would improve the operations to LOS C. The identified significant traffic related impact to this roadway segment would be fully mitigated with the implementation of this mitigation measure. However, due to the neighborhood character and potential impacts to both bicycle and pedestrian travel, it is recommended that Greenwood Street be built as a 2-Lane Collector.

Camino Del Rio West, between Rosecrans Street and the I-5/I-8 Ramps (LOS F) – Improving this roadway from a 6-Lane Prime Arterial to a 6-Lane Expressway would improve the operations to LOS D. The identified significant traffic related impact to this roadway segment would be fully mitigated with the implementation of this improvement.

Dutch Flats Parkway, between Barnett Avenue and Midway Drive (LOS E) – Improving from a 2-Lane Collector with a Center Left Turn-Lane to a 4-Lane Collector with a Center Left Turn-Lane would improve the operations to LOS B. The identified significant traffic related impact to this roadway segment would be fully mitigated with the implementation of this improvement. However, due to the neighborhood character and potential impacts to both bicycle and pedestrian travel, it is recommended that Dutch Flats Parkway be built as a 2-Lane Collector with a Center Left Turn-Lane.

Sassafras Street, between Pacific Highway and Kettner Boulevard (LOS F) - Widening the roadway from a 3-Lane Collector to a 4-Lane Collector with Center Left-Turn Lane would improve the operations to LOS D. The identified significant traffic related impact to this roadway segment would be fully mitigated with the implementation of this improvement.

Old Town Community

Congress Street between Taylor Street and Twiggs Street (LOS E) - Widening the roadway from a 2-Lane Collector to a 2-Lane Collector with Center Left-Turn Lane would improve the operations to LOS C. The identified significant traffic related impact to this roadway segment would be fully mitigated with the implementation of this improvement.

San Diego Avenue, between Ampudia St and Old Town Avenue (LOS F) - Widening the roadway from a 2-Lane Collector to a 2-Lane Collector with Center Left-Turn Lane would improve the operations to LOS D. The identified significant traffic related impact to this roadway segment would be fully mitigated with the implementation of this improvement.

San Diego Avenue, between Old Town Avenue and Hortensia Street (LOS E) - Widening the roadway from a 2-Lane Collector to a 2-Lane Collector with Center Left-Turn Lane would improve the operations to LOS B. The identified significant traffic related impact to this roadway segment would be fully mitigated with the implementation of this improvement.

Juan Street, between Taylor Street and Twiggs Street (LOS E) - Widening the roadway from a 2-Lane Collector to a 2-Lane Collector with Center Left-Turn Lane would improve the operations to LOS B. The identified significant traffic related impact to this roadway segment would be fully mitigated with the implementation of this mitigation measure.

Juan Street, between Twiggs Street and Harney Street (LOS E) - Widening the roadway from a 2-Lane Collector to a 2-Lane Collector with Center Left-Turn Lane would improve the operations to LOS B. The identified significant traffic related impact to this roadway segment would be fully mitigated with the implementation of this improvement.

Taylor Street, between Morena Boulevard and I-8 Ramps (LOS F) - Widening the roadway from a 2-Lane Collector to a 4-Lane Collector with Center Left-Turn Lane would improve the operations to LOS C. The identified significant traffic related impact to this roadway segment would be fully mitigated with the implementation of this improvement.

Old Town Avenue, between Hancock Street and Moore Street (LOS F) - Widening the roadway from a 2-Lane Collector to a 2-Lane Collector with Center Left-Turn Lane would improve the operations to LOS D. The identified significant traffic related impact to this roadway segment would be fully mitigated with the implementation of this mitigation measure.

Old Town Avenue, between Moore Street and San Diego Avenue (LOS E) - Widening the roadway from a 2-Lane Collector to a 2-Lane Collector with Center Left-Turn Lane would improve the operations to LOS B. The identified significant traffic related impact to this roadway segment would be fully mitigated with the implementation of this mitigation measure.

6.1.2 Intersection Geometry and LOS Analysis

AM and PM peak hour intersection LOS analyses were conducted for Preferred Plan conditions. It was assumed under implementation of the Preferred Plan that the proposed intersection improvements outlined in Sections 3.2.2 and 4.2.2 would be in place. Figure 6-3 and Figure 6-4 display the proposed intersection geometrics and forecast AM and PM peak hour turning movements under implementation of the Preferred Plan, respectively.

Table 6.2 and Figure 6-5 display the LOS results for the key study intersections located within both communities under Preferred Plan conditions. LOS analyses were conducted using the methodologies described in Chapter 2.0. Intersection LOS calculation worksheets are provided in Appendix E. Signal timing were assumed to be optimized under implementation of Preferred Plan conditions, therefore some signal operations may be projected to operate better than under existing conditions.

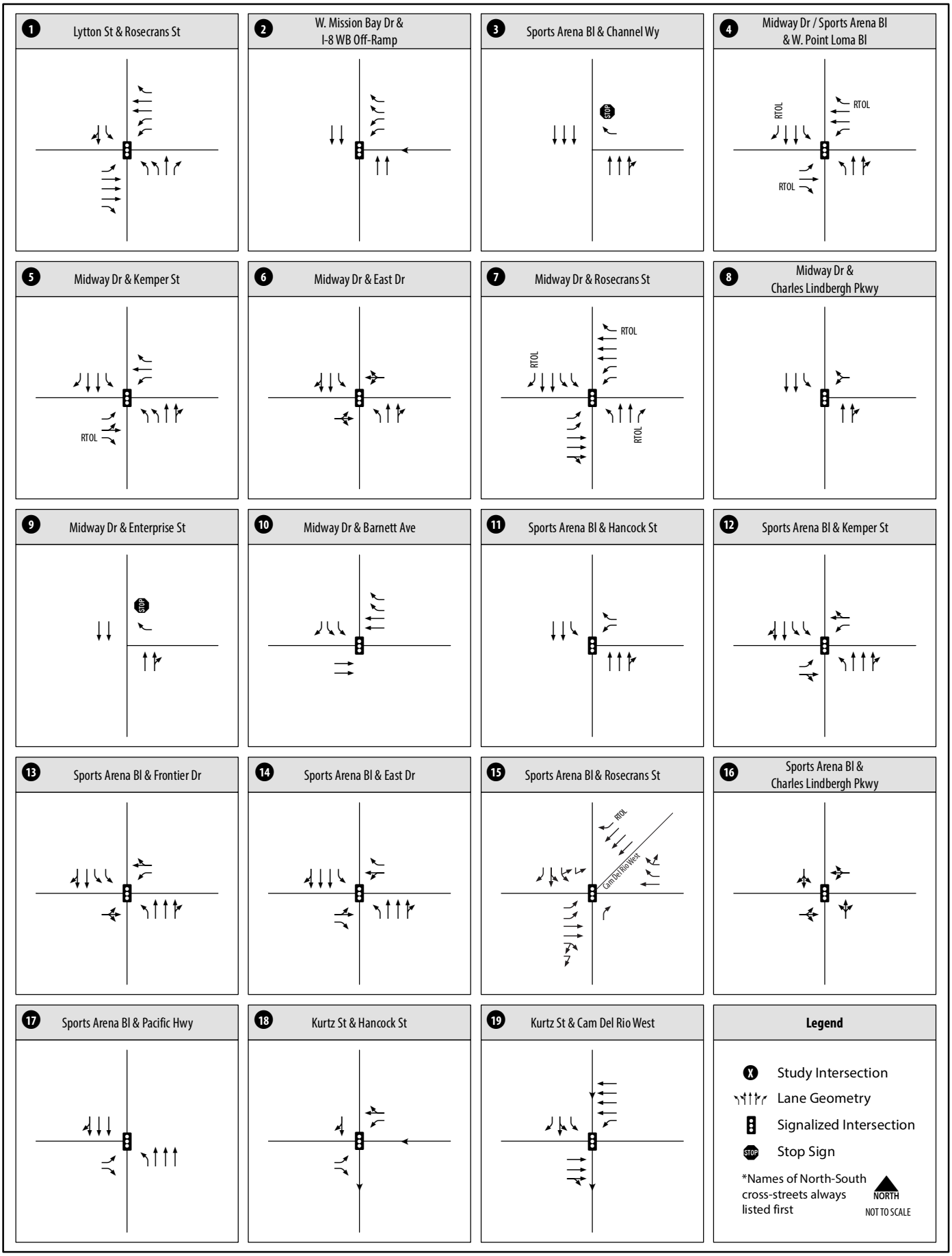

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Figure 6-3
Intersection Geometrics - Preferred Plan (Intersections 1-19)

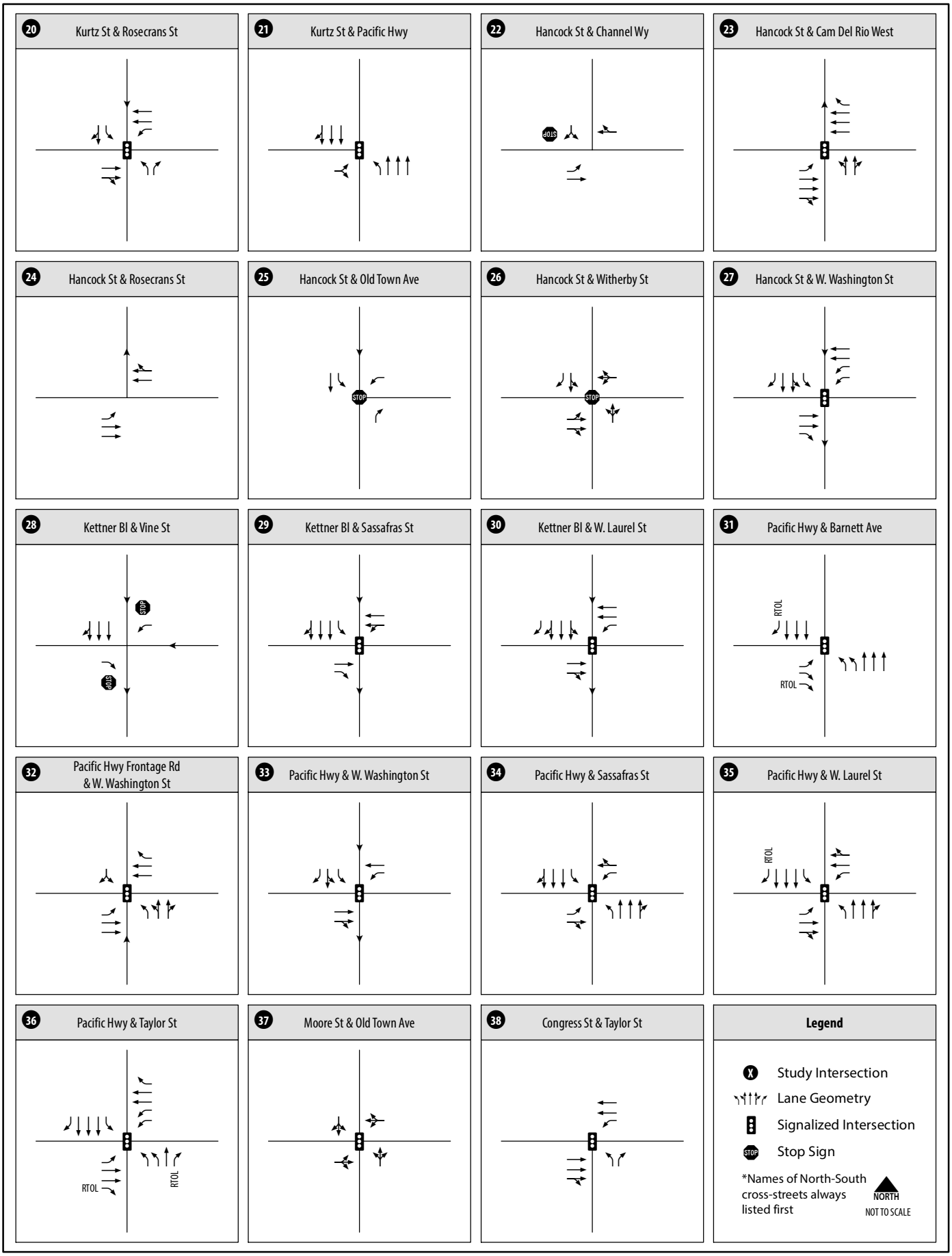

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Figure 6-3
Intersection Geometrics - Preferred Plan (Intersections 20-38)

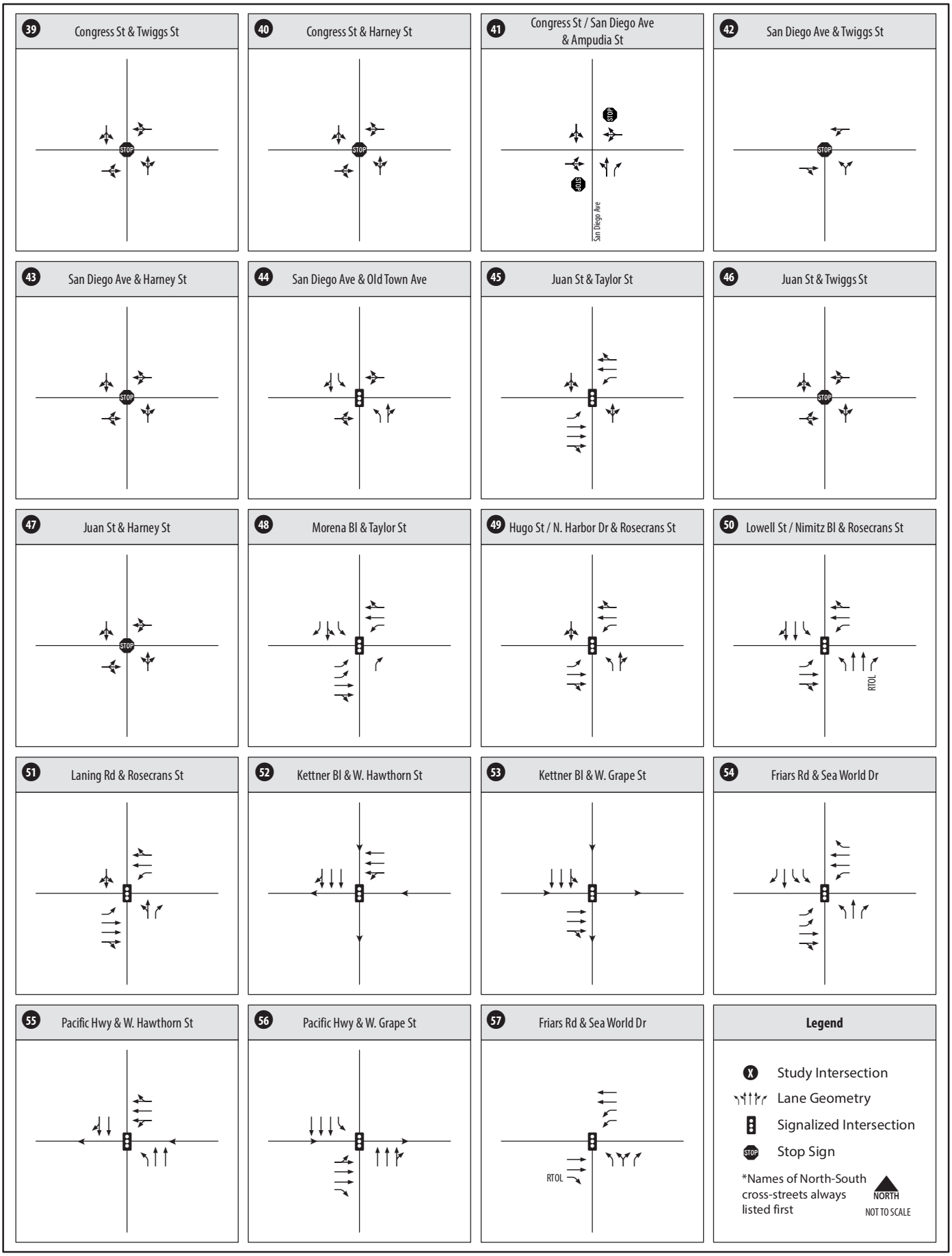

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Figure 6-3
Intersection Geometrics - Preferred Plan (Intersections 39-57)

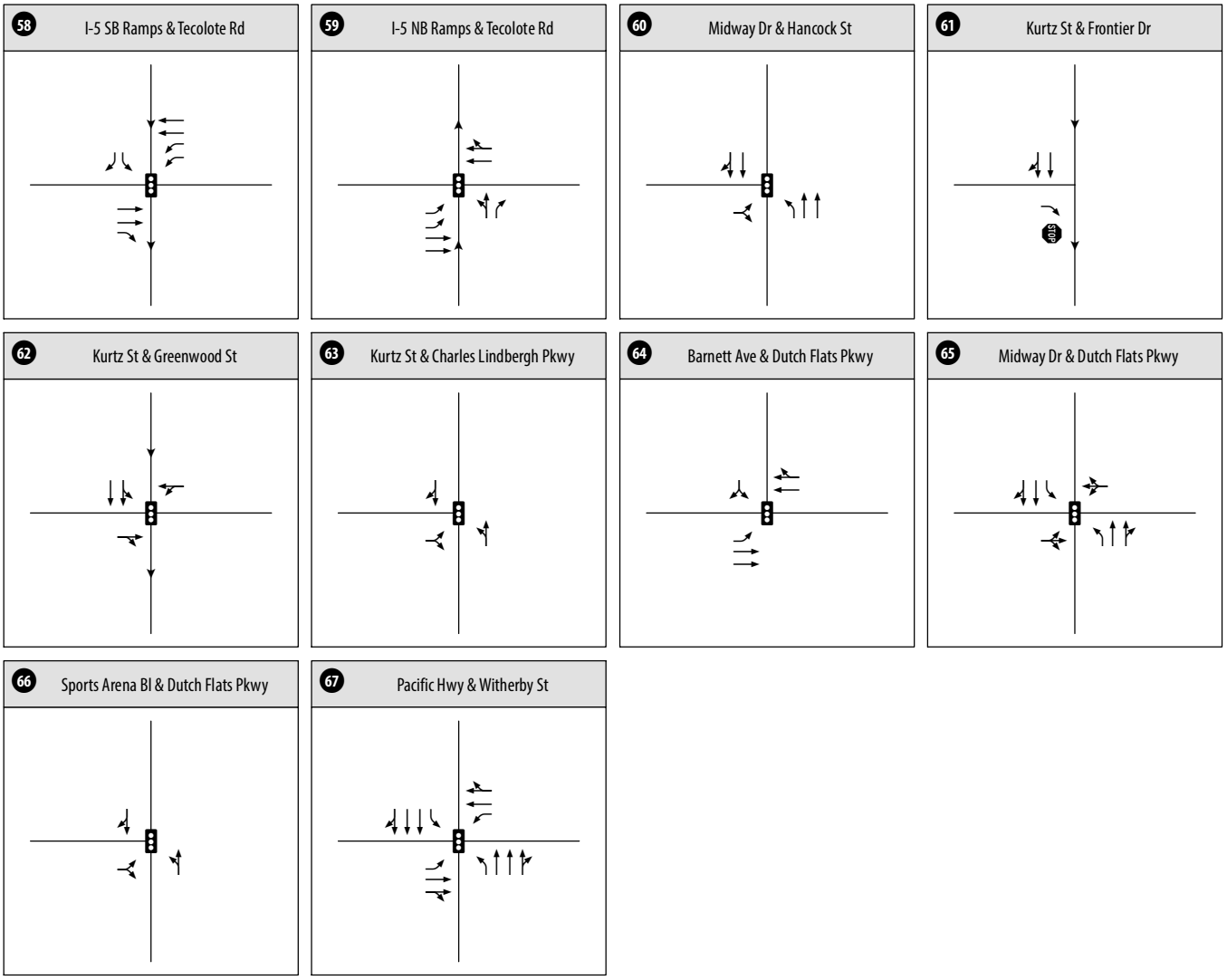

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Figure 6-3
Intersection Geometrics - Preferred Plan (Intersections 58-67)

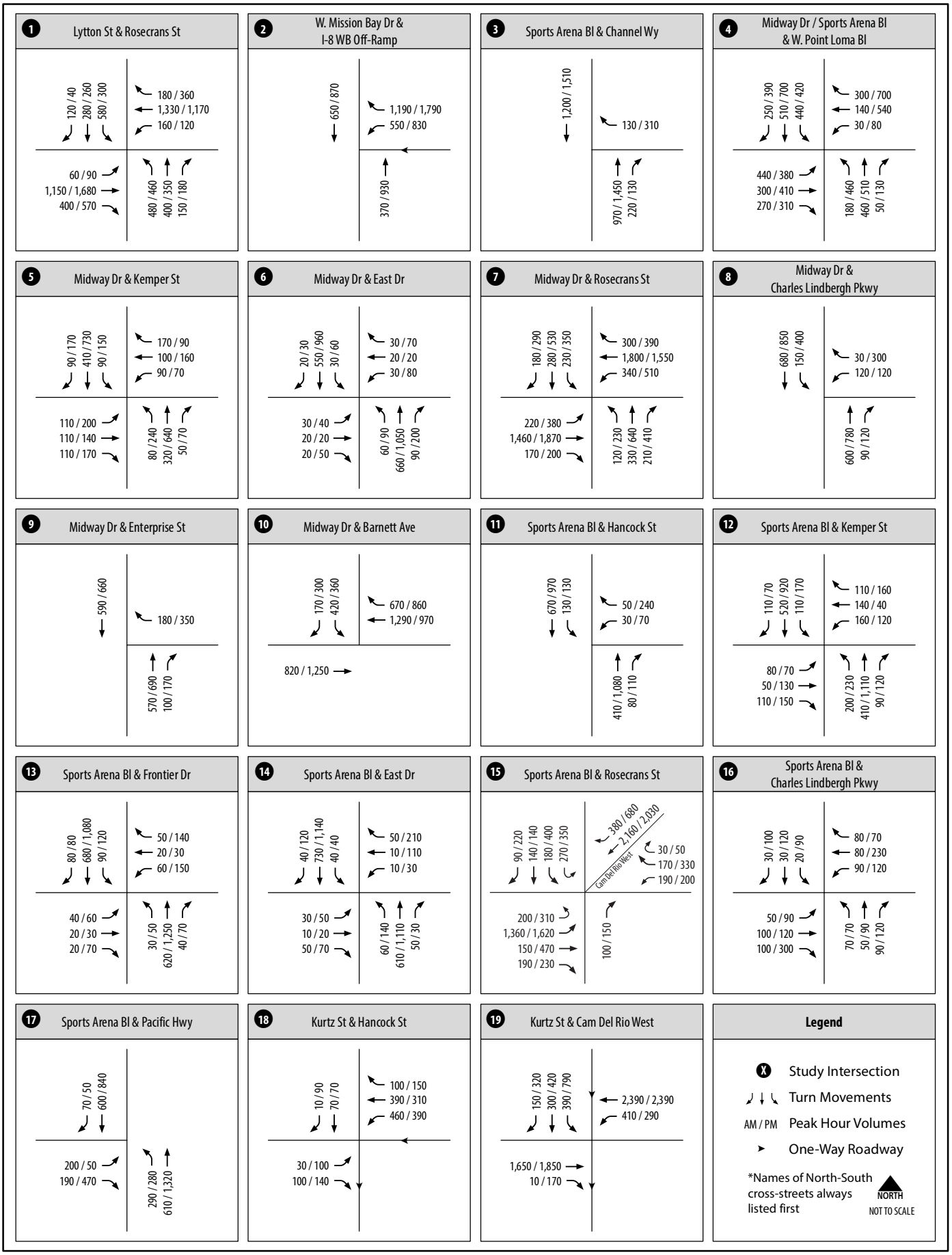

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Figure 6-4

Peak Hour Turning Movement Volumes - Preferred Plan Conditions (Intersections 1-19)

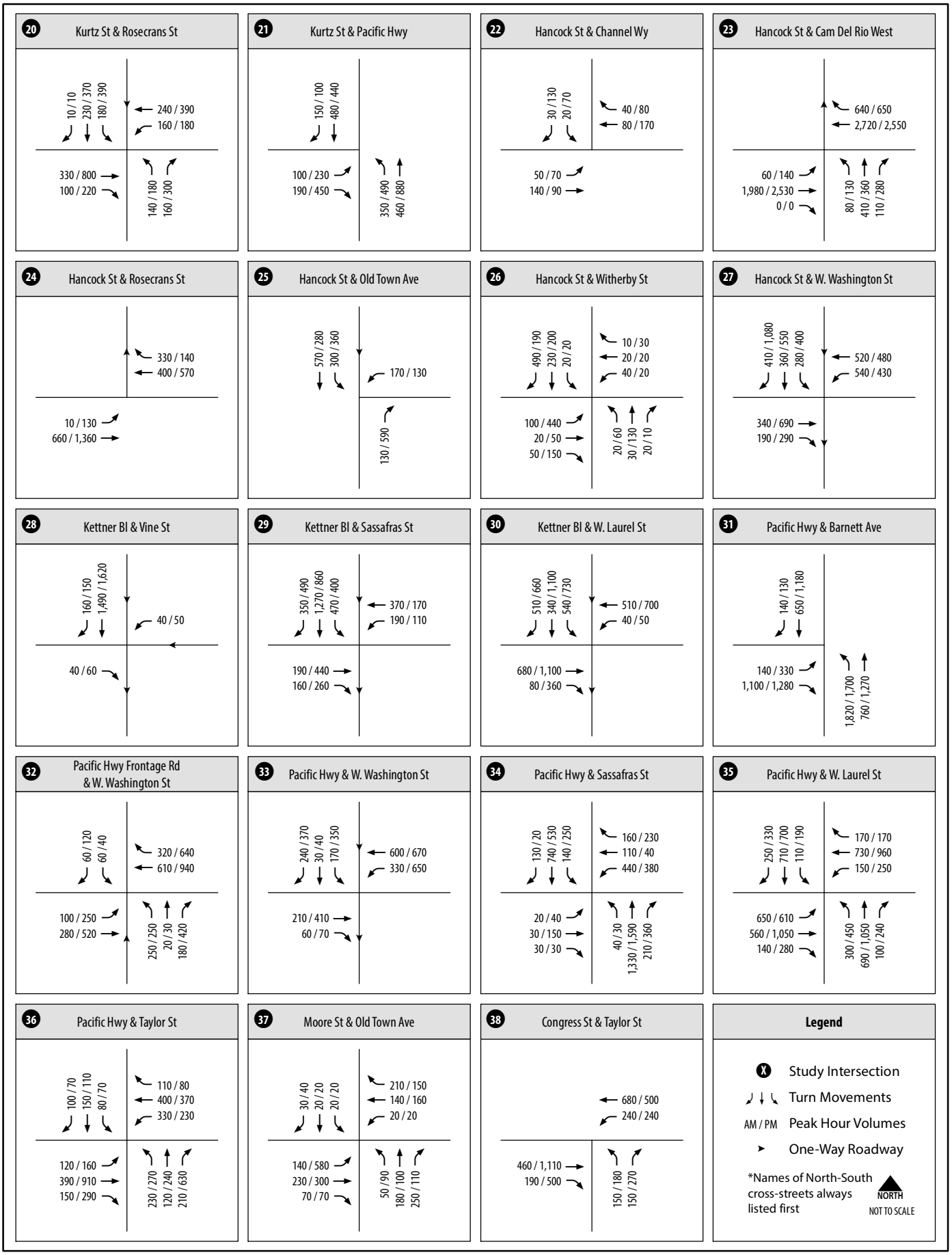

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Figure 6-4
Peak Hour Turning Movement Volumes - Preferred Plan Conditions (Intersections 20-38)

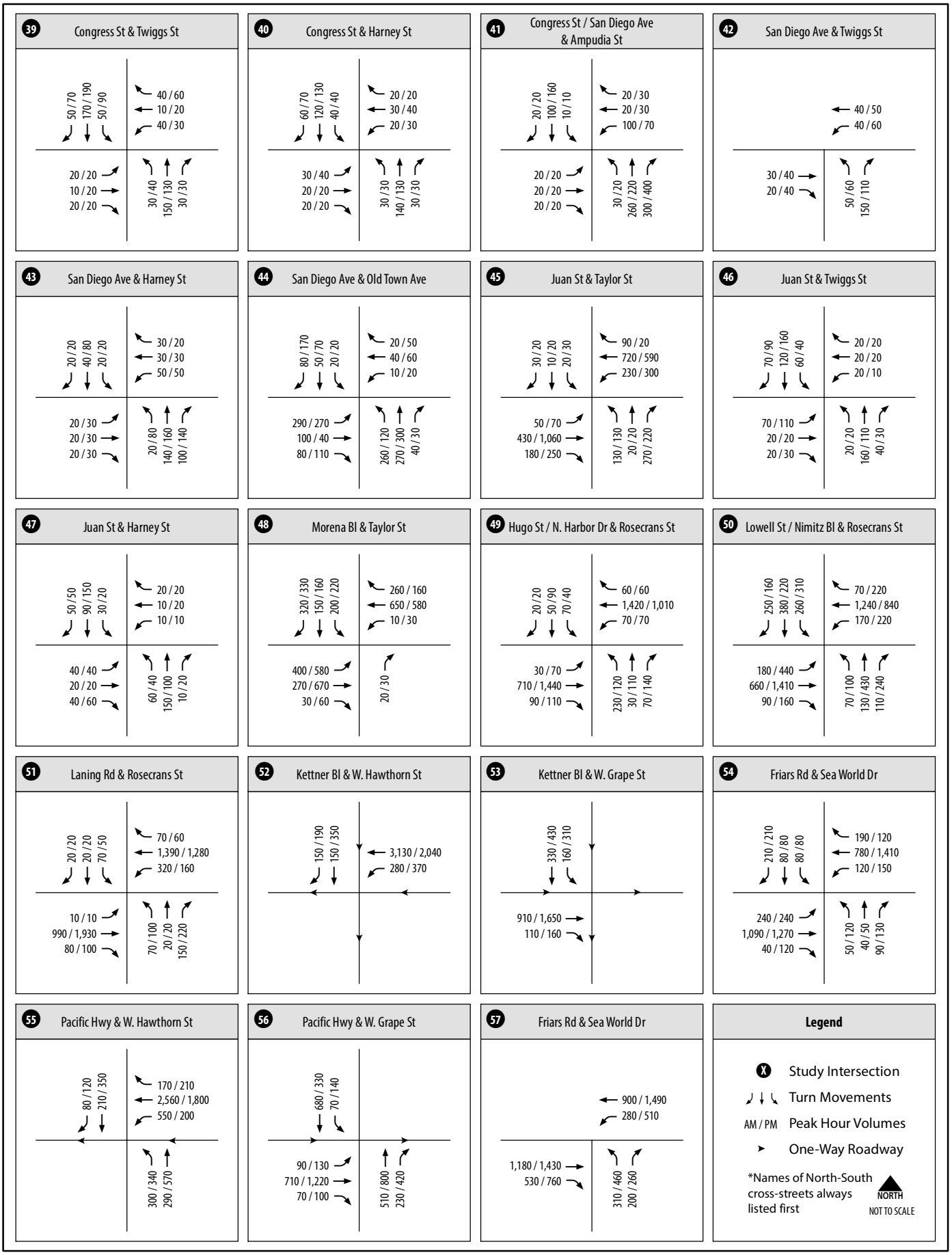

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Figure 6-4
Peak Hour Turning Movement Volumes - Preferred Plan Conditions (Intersections 39-57)

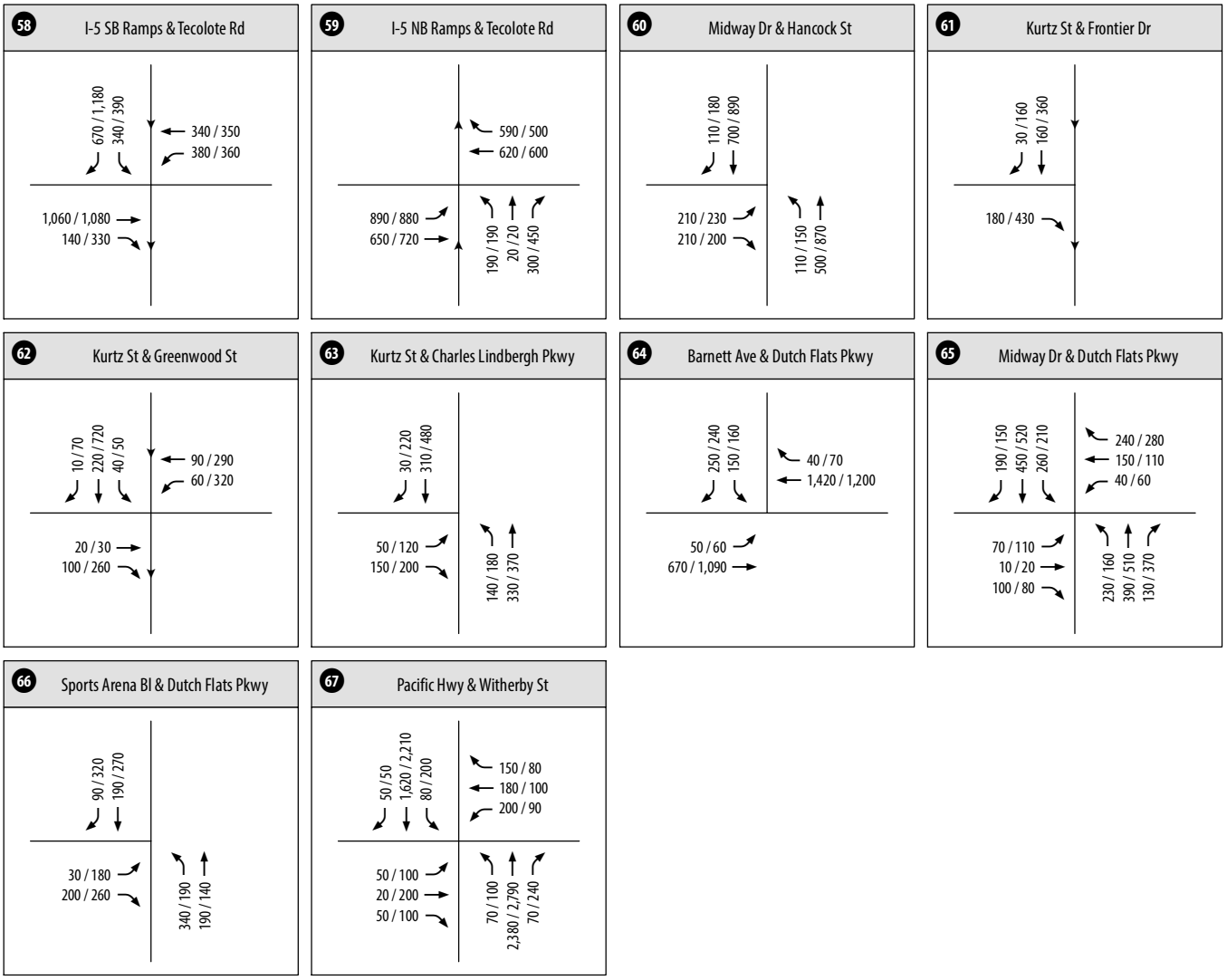

Figure 6-4
Peak Hour Turning Movement Volumes - Preferred Plan Conditions (Intersections 58-67)

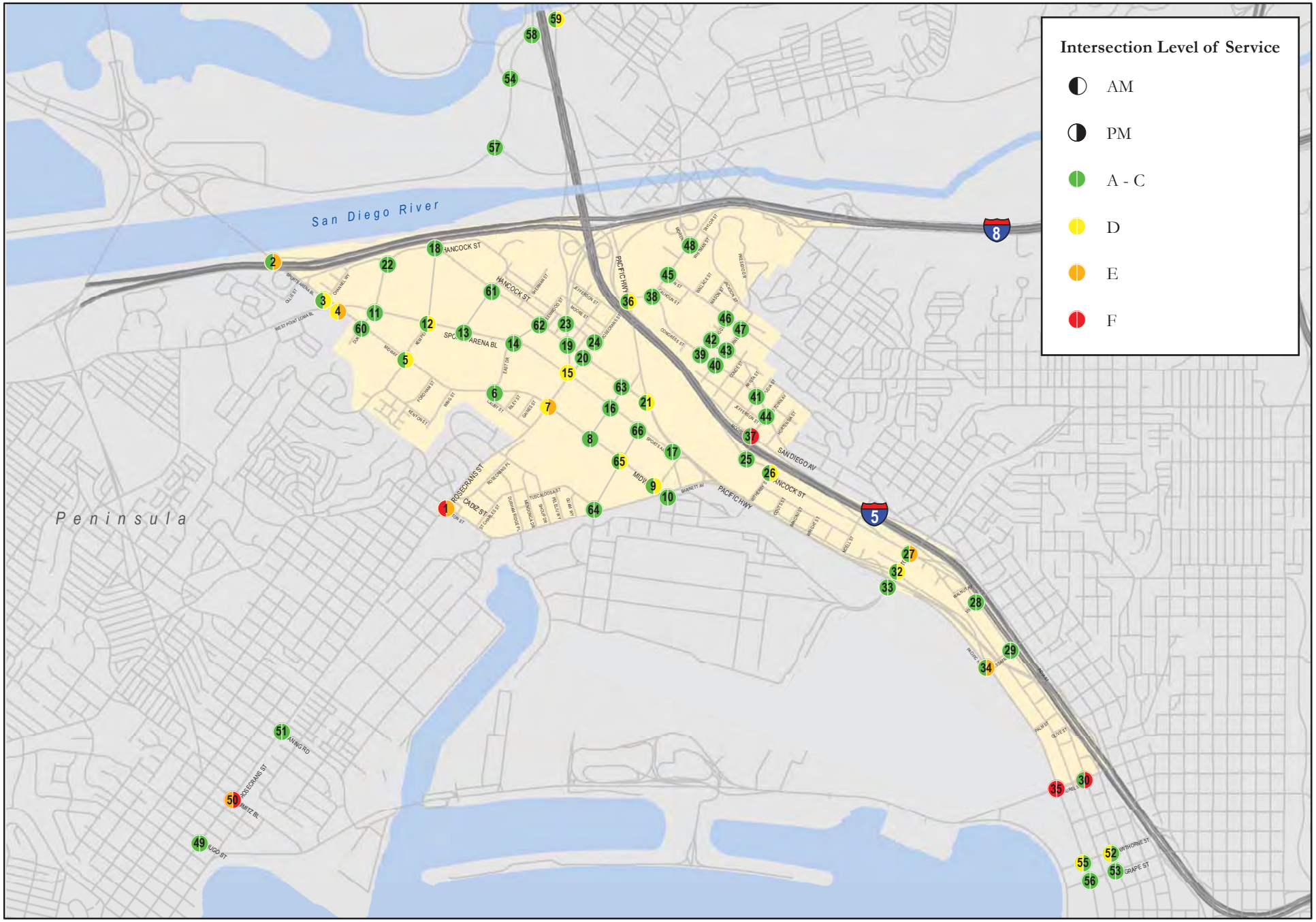

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Figure 6-5
Peak Hour Intersection LOS
Preferred Plan Conditions

Table 6.2 Peak Hour Intersection LOS and Delay Results – Preferred Plan Conditions

No.	Intersection	Control	AM			PM		
			Delay (Sec)	LOS	Existing LOS	Delay (Sec)	LOS	Existing LOS
Midway-Pacific Highway								
1	Lytton St and Rosecrans St	Signal	96.9	F	E	55.2	E	D
2	W Mission Bay Dr and I-8 WB Off-Ramp	Signal	15.4	B	B	70.2	E	E
3	Sports Arena Blvd and Channel Way	SSSC	12.3	B	B	30.6	D	B
4	Midway Dr and Sports Arena/W Point Loma Blvd	Signal	52.2	D	D	75.8	E	D
5	Midway Dr and Kemper St	Signal	31.6	C	C	39.1	D	D
6	Midway Dr and East Dr	Signal	7.0	A	A	17.8	B	B
7	Midway Dr and Rosecrans St	Signal	40.5	D	C	76.0	E	D
8	Midway Dr and Charles Lindbergh Pkwy	Signal	11.2	B	(1)	28.7	C	(1)
9	Midway Dr and Enterprise St	SSSC	13.4	B	B	26.5	D	C
10	Midway Dr and Barnett Ave	Signal	13.7	B	B	12.3	B	B
11	Sports Arena Blvd and Hancock St	Signal	14.4	B	A	17.4	B	B
12	Sports Arena Blvd and Kemper St	Signal	37.6	D	B	43.9	D	B
13	Sports Arena Blvd and Sports Arena Driveway	Signal	18.4	B	B	27.0	C	C
14	Sports Arena Blvd and East Dr	Signal	7.8	A	C	25.6	C	B
15	Sports Arena Blvd and Rosecrans St	Signal	37.6	D	D	53.5	D	D
16	Sports Arena Blvd and Charles Lindbergh Pkwy	Signal	13.9	B	(1)	17.8	B	(1)
17	Sports Arena Blvd and Pacific Hwy	Signal	25.8	C	B	17.9	B	B
18	Kurtz St and Hancock St	Signal	12.3	B	(2)	12.0	B	(2)
19	Kurtz St and Camino Del Rio West	Signal	26.6	C	A	43.5	D	C
20	Kurtz St and Rosecrans St	Signal	29.8	C	B	37.0	D	C
21	Kurtz St and Pacific Hwy	Signal	31.0	C	B	48.3	D	B
22	Hancock St and Channel Wy	SSSC	10.0	B	A	12.9	B	B
23	Hancock St and Camino Del Rio West	Signal	35.3	D	C	39.5	D	C
24	Hancock St and Rosecrans St	*No Conflicting Movements*						
25	Hancock St and Old Town Ave	AWSC	24.8	C	C	20.9	C	B
26	Hancock St and Witherby St	AWSC	13.9	B	C	34.9	D	C
27	Hancock St and Washington St	Signal	23.1	C	C	77.8	E	C
28	Kettner Blvd and Vine St	SSSC	16.5	C	B	19.9	C	C
29	Kettner Blvd and Sassafras St	Signal	15.0	B	B	15.3	B	B
30	Kettner Blvd and West Laurel St	Signal	19.3	B	B	96.5	F	C
31	Pacific Hwy and Barnett Ave	*No Conflicting Movements*						
32	Pacific Hwy and Washington St @ Frontage Rd	Signal	20.4	C	B	47.5	D	D
33	Pacific Hwy and Washington St	Signal	20.5	C	B	27.7	C	C

Table 6.2 Peak Hour Intersection LOS and Delay Results – Preferred Plan Conditions

No.	Intersection	Control	AM			PM		
			Delay (Sec)	LOS	Existing LOS	Delay (Sec)	LOS	Existing LOS
34	Pacific Hwy and Sassafras St	Signal	32.9	C	B	75.9	E	C
35	Pacific Hwy and West Laurel St	Signal	91.3	F	D	141.3	F	D
Old Town								
36	Pacific Hwy and Taylor St	Signal	31.1	C	E	51.2	D	C
37	Moore St and Old Town Ave	Signal	23.2	C	B	96.5	F	B
38	Congress St and Taylor St	Signal	13.8	B	B	19.2	B	C
39	Congress St and Twiggs St	AWSC	9.7	A	A	10.8	B	A
40	Congress St and Harney St	AWSC	9.1	A	A	9.4	A	A
41	Congress St and San Diego Ave/Ampudia St	SSSC	16.7	C	B	15.8	C	B
42	San Diego Ave and Twiggs St	AWSC	8.0	A	A	8.1	A	A
43	San Diego Ave and Harney St	AWSC	9.0	A	A	10.8	B	A
44	San Diego Ave and Old Town Ave	Signal	17.4	B	B	13.7	B	B
45	Juan St and Taylor St	Signal	14.6	B	B	18.6	B	B
46	Juan St and Twiggs St	AWSC	9.7	A	A	10.1	B	A
47	Juan St and Harney St	AWSC	9.0	A	A	8.9	A	A
48	Morena Blvd and Taylor St	Signal	21.9	C	C	24.8	C	B
Intersections Outside of Study Communities								
49	Hugo St/N. Harbor Dr and Rosecrans St	Signal	29.0	C	B	31.6	C	C
50	Lowell St/Nimitz Blvd and Rosecrans St	Signal	60.4	E	D	111.6	F	E
51	Laning Rd and Rosecrans St	Signal	25.5	C	B	23.2	C	B
52	Kettner Blvd and West Hawthorn St	Signal	34.7	C	B	13.3	B	B
53	Kettner Blvd and West Grape St	Signal	10.1	B	A	9.4	A	A
54	Pacific Hwy and Sea World Dr	Signal	24.0	C	B	34.1	C	C
55	Pacific Hwy and West Hawthorn St	Signal	34.4	C	D	31.7	C	C
56	Pacific Hwy and West Grape St	Signal	17.9	B	B	31.4	C	C
57	Friars Rd and Sea World Dr	Signal	15.4	B	B	26.0	C	B
58	I-5 SB Ramps and Sea World Dr	Signal	17.8	B	B	20.0	C	E
59	I-5 NB Ramps and Sea World Dr	Signal	29.3	C	C	43.3	D	C
New Intersections (Midway-Pacific Highway Community)								
60	Midway Dr & Duke Street / Hancock St	Signal	27.0	C	(1)	32.1	C	(1)
61	Kurtz St & Frontier Dr	SSSC	9.9	A	(1)	19.0	C	(1)
62	Kurtz St & Greenwood St	Signal	11.9	B	(1)	16.9	B	(1)
63	Kurtz St & Charles Lindbergh Pkwy	Signal	8.3	A	(1)	22.1	C	(1)
64	Barnett Ave & Dutch Flats Pkwy	Signal	24.6	C	(1)	14.5	B	(1)

Table 6.2 Peak Hour Intersection LOS and Delay Results – Preferred Plan Conditions

No.	Intersection	Control	AM Delay (Sec)	AM LOS	AM Existing LOS	PM Delay (Sec)	PM LOS	PM Existing LOS
65	Midway Dr & Dutch Flats Pkwy	Signal	48.5	D	(1)	53.7	D	(1)
66	Dutch Flats Pkwy & Sports Arena Bl	Signal	10.9	B	(1)	21.5	C	(1)

Source: Chen Ryan Associates (May 2017)

Notes:
Bold letter indicates LOS E or F.
[1] Significant Impact
[2] Single Side Stop Controlled
[3] All Way Stop Controlled

The following mitigation measures were identified for the two communities:

Midway-Pacific Highway Community

1. *Lytton Street and Rosecrans Street (LOS F: AM Peak Hour and LOS E PM Peak Hour)* – The westbound through movement, as well as the southbound left-turn and through movements are projected to be over capacity, under implementation of the Preferred Plan. Implementing the following improvements would allow the intersection to operate at LOS D or better during both peak hours.

    - Add a second southbound left-turn lane
    - Add an additional westbound through movement lane on Rosecrans Street (three total)
    - Implement right-turn overlap (RTOL) phases at all legs of the intersection

    The identified significant traffic related impact to this intersection would be fully mitigated with the implementation of this improvement.

    Partial Mitigation: If the second southbound left-turn and RTOL phase are implemented (feasible improvements) the overall intersection delay would be reduced to the following:

    AM: LOS E
    PM: LOS D

    Implementation of this improvement will partially mitigate the traffic related impact at the intersection.

2. *Sports Arena Boulevard / West Mission Bay and I-8 WB Off-Ramp (LOS E: PM Peak Hour)* – The westbound right-turn movement at this intersection is projected to be over capacity during the PM peak hour, under the implementation of the Preferred Plan. Providing a third exclusive westbound right-turn lane or converting the movement to free-right-turn movement would improve the intersection operations to LOS D. The identified significant traffic related impact to this intersection would be fully mitigated with the implementation of this improvement.

Partial Mitigation: None recommended.

4. *Midway Drive / West Point Loma Drive and Sports Arena Boulevard (LOS E: PM Peak Hour)* – All four left-turn movements at this intersection are projected to be over capacity during the PM Peak Hour. Providing dual-left turn lanes in the northbound, southbound and eastbound directions would improve intersection operations to LOS D during the PM peak hour. The identified significant traffic related impact to this intersection would be fully mitigated with the implementation of this improvement.

   Partial Mitigation: None recommended.

7. *Midway Drive and Rosecrans Street* (LOS E: PM Peak Hour) – Rosecrans Street is projected to operate at LOS E during the PM peak hours, under implementation of the Preferred Plan. Widening the eastbound and westbound approaches of the intersection to include a fourth through lane would improve the intersection operations to LOS D. The identified significant traffic related impact to this intersection would be fully mitigated with the implementation of this improvement.

   Partial Mitigation: None recommended, limited to no right-of-way is anticipated to be available with proposed Multi-Use Urban Path improvements.

27. *Hancock Street and Washington Street (LOS E: PM Peak Hour)* – The southbound right-turn movement of the intersection is projected to be over capacity during the PM peak hour, under the implementation of the Preferred Plan. Restriping the southbound approach to include a second southbound right-turn lane would allow the intersection to operate at LOS C during the PM Peak Hour. This improvement is feasible but may require additional engineering study. The identified significant traffic related impact to this intersection would be fully mitigated with the implementation of this improvement.

    Partial Mitigation: None recommended.

30. *Kettner Boulevard and Laurel Street (LOS F: PM Peak Hour)* – The eastbound through movement at the intersection is projected to be over capacity during the PM peak hour, under implementation of the Preferred Plan. Widening the eastbound approach of the intersection to include a third through lane would improve the intersection operations to LOS D. The identified significant traffic related impact to this intersection would be fully mitigated with the implementation of this improvement.

    Partial Mitigation: None recommended.

34. *Pacific Highway and Sassafras Street (LOS E: PM Peak Hour)* – The southbound left-turn movement of the intersection is projected to be over capacity during the PM peak hour, under the implementation of the Preferred Plan. Adding a second southbound left-turn lane would allow the intersection to operate at LOS D during the PM peak hour. The

identified significant traffic related impact to this intersection would be fully mitigated with the implementation of this improvement.

Partial Mitigation: None recommended.

35. *Pacific Highway and Laurel Street (LOS F: AM and PM Peak Hours)* – Laurel Street is projected to be over capacity during both peak hours, under implementation of the Preferred Plan. Widening the eastbound, westbound and northbound approaches of the intersection to include a third through lane and a second eastbound left-turn lane, as well as a second northbound left-turn lane and exclusive right-turn lane would improve the intersection operations to LOS D. The identified significant traffic related impact to this intersection would be fully mitigated with the implementation of this improvement.

    Partial Mitigation: None recommended.

Old Town Community

37. *Moore Street and Old Town Street (LOS F: PM Peak Hour)* – The eastbound and westbound movements of the intersection are projected to be over capacity during the PM peak hour, under implementation of the Preferred Plan. Implementation of the following improvements would allow the intersection to operate at LOS D during the PM peak hour.

    - Implement exclusive eastbound and westbound left-turn lanes.
    - Convert the eastbound/westbound signal phasing from permitted to protected phasing.

    The identified significant traffic related impact to this intersection would be fully mitigated with the implementation of this improvement.

    Partial Mitigation: None recommended.

Outside of the Community

50. *Nimitz Boulevard / Lowell Street and Rosecrans Street (LOS E: AM Peak Hour and LOS F: PM Peak Hour*) – Both the southbound through movement and eastbound left-turn movement are anticipated to be over capacity during both peak hours, under implementation of Preferred Plan. Widening the northbound and southbound approaches of the intersection to include a third through lane and a second southbound left-turn lane would improve the intersection operations to LOS D or better during both the AM and PM peak hours. Implementation of the following improvements would allow the intersection to operate at LOS D or better during both the AM and PM peak hours.

    The identified significant traffic related impact to this intersection would be fully mitigated with the implementation of this improvement.

    Partial Mitigation: None recommended.

6.1.3 Intersection Queuing Analysis

A queuing analysis was conducted under Preferred Plan conditions, at each of the study intersections to assess potential overflowing issues at exclusive turn-lanes and closely spaced intersections. Closely spaced intersections include all ramp intersections and intersections within close proximity (less than 500 feet) to one another. The limitations in turn-lane storage capacity could result in turning vehicles overflow into adjacent lanes, while excessive queuing (queue length exceeds distance to upstream intersection) at closely spaced intersection could negatively affect the operations of the upstream intersection. When either situation occurs, traffic operations could deteriorate, resulting in additional levels of congestion.

Table 6.3 displays the average (50th percentile) and maximum (95th percentile) queue lengths at closely spaced intersections (500 feet apart), for relevant movements. Synchro intersection queuing reports are provided in Appendix E following the intersection LOS worksheets.

Table 6.3 Queue Lengths at Closely Spaced Intersections – Preferred Plan Conditions

#	Impacted Intersection	Peak Hour	Upstream Intersection	Spacing (Feet)	Turning Movement	95th% Queue Length (Feet)	50th% Queue Length (Feet)
7	Midway Dr and Rosecrans St	AM	15. Sports Arena Blvd and Rosecrans St	665	EBT	315	268
		PM				798	719
15	Sports Arena Blvd and Rosecrans St	AM	19. Kurtz St and Camino Del Rio West	380	EBT	594	526
		PM				910	823
19	Kurtz St and Camino Del Rio West	AM	23. Hancock St and Camino Del Rio West	315	NET	308	245
		PM				491	405
20	Kurtz St and Rosecrans St	AM	15. Sports Arena Blvd and Rosecrans St	310	WBT	700	565
		PM				912	815
N/A	I-5 SB Off-Ramp and Camino Del Rio West	AM	23. Hancock St and Camino Del Rio West	490	WBT	1,246	1,166
		PM				1,218	1,141

Source: Chen Ryan Associates (May 2017)

Midway-Pacific Highway Community

As shown, the maximum (95th percentile) and average (50th percentile) queue lengths at all closely spaced intersections are anticipated to exceed the spacing between intersections under implementation of Preferred Plan conditions. Queuing spillovers could degrade traffic operations at the upstream intersections.

Old Town

There are no signalized intersections within 500 feet of each other within the Old Town Community.

Table 6.4 displays the average (50th percentile) and maximum (95th percentile) queue lengths for intersection movements where the maximum peak hour queue length is projected to exceed the current storage length under Preferred Plan conditions. Synchro intersection queuing reports are provided in Appendix E following the intersection LOS worksheets.

Table 6.4 Queue Lengths at Closely Spaced Intersections – Preferred Plan Conditions

No.	Intersection	Movement	Peak	95th % Queue Length (Feet)	50th % Queue Length (Feet)	Pocket Length (Feet)	Excess 95th % Queue (Feet)	Excess 50th % Queue (feet)
Midway-Pacific Highway								
1	Lytton St and Rosecrans St	EBL	AM	166	66	105	61	0
			PM	223	98	105	118	0
		NBL	AM	309	215	230	79	0
			PM	384	267	230	154	37
		SBL	AM	976	741	185	791	556
			PM	551	350	185	366	165
4	Midway Dr and Sports Arena/W Point Loma Blvd	EBL	AM	781	381	380	401	1
			PM	694	479	380	314	99
		NBL	AM	259	140	230	29	0
			PM	823	595	230	593	365
5	Midway Dr and Kemper St	EBL	AM	127	93	100	27	0
			PM	196	146	100	96	46
7	Midway Dr and Rosecrans St	WBL	AM	241	146	340	0	0
			PM	436	317	340	96	0
		SBL	AM	164	87	90	74	0
			PM	299	189	90	209	99
		NBL	AM	198	88	190	8	0
			PM	472	291	190	282	101
		NBR	AM	93	42	190	0	0
			PM	405	278	190	215	88
12	Sports Arena Blvd and Kemper Street	EBL	AM	88	59	50	38	9
			PM	108	63	50	58	13
		NBL	AM	269	146	160	109	0
			PM	359	253	160	199	93
14	Sports Arena Blvd and East Drive	NBL	AM	47	26	130	0	0
			PM	165	132	130	35	2
15	Sports Arena Blvd and Rosecrans St	EBL	AM	131	78	220	0	0
			PM	248	169	220	28	0
		NBL	AM	298	148	130	168	18
			PM	385	215	130	255	85

Table 6.4 Queue Lengths at Closely Spaced Intersections – Preferred Plan Conditions

No.	Intersection	Movement	Peak	95th % Queue Length (Feet)	50th % Queue Length (Feet)	Pocket Length (Feet)	Excess 95th % Queue (Feet)	Excess 50th % Queue (feet)
19	Kurtz St and Camino Del Rio West	SBL	AM	397	300	210	187	90
			PM	1054	798	210	844	588
		WBL	AM	473	429	110	363	319
			PM	321	364	110	211	254
20	Kurtz St and Rosecrans St	NBL	AM	189	124	60	129	64
			PM	220	109	60	160	49
		WBL	AM	130	64	85	45	0
			PM	193	62	85	108	0
23	Hancock St and Camino Del Rio West	WBR	AM	518	334	140	378	194
			PM	678	463	140	538	323
		EBL	AM	57	44	110	0	0
			PM	124	132	110	14	22
27	Hancock St and Washington St	WBL	AM	229	140	140	89	0
			PM	312	205	140	172	65
		SBR	AM	146	58	270	0	0
			PM	1329	1065	270	1059	795
29	Kettner Blvd and Sassafras Street	SBL	AM	214	130	80	134	50
			PM	199	120	80	119	40
34	Pacific Highway and Sassafras Street	WBL	AM	453	256	100	353	156
			PM	570	372	100	470	272
		SBL	AM	184	85	250	0	0
			PM	411	239	250	161	0
35	Pacific Hwy and West Laurel St	EBL	AM	987	749	375	612	374
			PM	1124	878	375	749	503
		WBL	AM	209	134	70	139	64
			PM	470	281	70	400	211
		NBL	AM	533	344	90	443	254
			PM	870	645	90	780	555
		SBL	AM	225	102	250	0	0
			PM	483	312	250	233	62
Old Town								
36	Pacific Hwy and Taylor St	EBL	AM	172	64	150	22	0
			PM	245	95	150	95	0
		WBL	AM	221	93	160	61	0
			PM	140	69	160	0	0

Table 6.4 Queue Lengths at Closely Spaced Intersections – Preferred Plan Conditions

No.	Intersection	Movement	Peak	95th % Queue Length (Feet)	50th % Queue Length (Feet)	Pocket Length (Feet)	Excess 95th % Queue (Feet)	Excess 50th % Queue (feet)
36	Pacific Hwy and Taylor St	NBL	AM	168	65	100	68	0
			PM	201	85	100	101	0
		NBR	AM	43	0	200	0	0
			PM	578	357	200	378	157
38	Congress St and Taylor St	WBL	AM	246	81	100	146	0
			PM	254	101	100	154	1
44	San Diego Avenue and Old Town Street	NBL	AM	166	66	75	91	0
			PM	81	23	75	6	0
45	Juan Street and Taylor Street	WBL	AM	105	42	95	10	0
			PM	203	66	95	108	0
48	Morena Blvd and Taylor St	EBL	AM	186	86	180	6	0
			PM	282	130	180	102	0
Intersections Outside of Study Communities								
49	Hugo St and Rosecrans St	NBL	AM	294	183	115	179	68
			PM	188	119	115	73	4
50	Nimitz Blvd and Rosecrans St	EBL	AM	345	173	300	45	0
			PM	787	547	300	487	247
		WBL	AM	194	118	300	0	0
			PM	466	277	300	166	0
		NBL	AM	110	57	75	35	0
			PM	168	101	75	93	26
		SBL	AM	421	246	285	136	0
			PM	583	385	285	298	100
54	Pacific Highway and Seaworld Drive	WBL	AM	185	58	170	15	0
			PM	241	87	170	71	0
		NBL	AM	81	24	150	0	0
			PM	210	70	150	60	0
56	Pacific Highway and Grape St	SBL	AM	75	34	130	0	0
			PM	139	79	130	9	0
57	Friars Road and Seaworld Dr	EBR	AM	101	62	180	0	0
			PM	340	216	180	160	36
		WBL	AM	151	61	205	0	0
			PM	301	167	205	96	0
		NBL	AM	101	66	150	0	0
			PM	185	135	150	35	0

Table 6.4 Queue Lengths at Closely Spaced Intersections – Preferred Plan Conditions

No.	Intersection	Movement	Peak	95th % Queue Length (Feet)	50th % Queue Length (Feet)	Pocket Length (Feet)	Excess 95th % Queue (Feet)	Excess 50th % Queue (feet)
58	I-5 SB Ramps and Tecolote Road	WBL	AM	144	82	120	24	0
			PM	132	89	120	12	0
59	I-5 NB Ramps and Tecolote Road	EBL	AM	350	236	170	180	66
			PM	308	221	170	138	51

Source: Chen Ryan Associates (May 2017)

Midway-Pacific Highway Community

As shown, under implementation of the Preferred Plan, 29 different movements within the Midway-Pacific Highway Community are projected to have queue lengths exceeding their storage capacity at the most congested point of the peak hour (95th Percentile). The spillovers could degrade traffic operations within the intersection or adjacent closely spaced, upstream intersections for approximately one to two cycles during the peak hour. However, only 25 movements are anticipated to have queues that exceed their storage capacity on an average during either peak hour (50th Percentile).

Old Town

As shown, under implementation of the Preferred Plan, 8 different movements within the Old Town Community are projected to have queue lengths exceeding their storage capacity at the most congested point of the peak hour (95th Percentile). The spillovers could degrade traffic operations within the intersection or adjacent closely spaced, upstream intersections for approximately one to two cycles during the peak hour. However, only 2 movements are anticipated to have queues that exceed their storage capacity on an average during either peak hour (50th Percentile).

Other Communities

As shown, under implementation of the Preferred Plan, 13 different movements within other communities are projected to have queue lengths that exceed their storage capacity at the most congested point of the peak hour (95th Percentile). The spillovers could degrade traffic operations within the intersection or adjacent closely spaced, upstream intersections for approximately one to two cycles during the peak hour. However, only 6 movements are anticipated to have queues that exceed their storage capacity on an average during either peak hour (50th Percentile).

6.1.4 Freeway Segments and LOS Analysis

Neither the Revenue Constrained Alternative of SANDAG's *San Diego Forward Plan* (October 2015) nor the Preferred Plan include freeway improvements, as noted in Sections 3.2.2 and 4.2.2. Table 6.5 displays the freeway segment LOS in the vicinity of the Midway-Pacific Highway and Old Town communities. Forecast freeway volumes were obtained from the modeling process described in Section 5.0.

Table 6.5 Freeway Segment LOS Results – Preferred Plan Conditions

								AM					PM				
Freeway	To	From	Dir	Daily Volume	HVF	Lanes	Aux	K	D	Peak Volume	V/C	LOS	K	D	Peak Volume	V/C	LOS
I-8	Beginning of Freeway	Sports Arena Boulevard	EB	61,200	1.2%	2	0	6.3%	61%	2,600	0.55	B	8.6%	71%	3,100	0.66	C
			WB			2	0		39%	1,700	0.36	A		29%	2,800	0.60	B
	Sports Arena Boulevard	I-5	EB	122,400	2.8%	3	1	6.4%	61%	5,400	0.64	C	7.8%	62%	5,500	0.65	C
			WB			3	1		39%	3,500	0.41	B		38%	5,400	0.64	C
	I-5	Morena Boulevard	EB	183,300	2.8%	4	1	6.4%	42%	5,500	0.51	B	7.2%	50%	6,600	0.61	B
			WB			5	0		58%	7,700	0.66	C		50%	8,300	0.71	C
	Morena Boulevard	Hotel Circle	EB	217,200	2.8%	4	1	6.5%	47%	7,600	0.70	C	8.2%	55%	11,000	1.02	F
			WB			5	0		53%	8,400	0.71	C		45%	9,000	0.77	C
I-5	Clairemont Drive	Sea World Drive	NB	241,500	4.5%	5	0	6.4%	61%	11,000	0.94	E	8.3%	51%	11,700	1.00	E
			SB			5	0		39%	6,900	0.59	B		49%	11,300	0.96	E
	Sea World Drive	I-8	NB	231,800	4.5%	4	1	6.4%	62%	10,500	0.97	E	8.4%	52%	11,600	1.07	F
			SB			4	2		38%	6,400	0.52	B		48%	10,700	0.88	D
	I-8	Old Town Avenue	NB	243,000	4.1%	4	1	6.9%	49%	9,400	0.87	D	8.2%	39%	8,900	0.82	D
			SB			5	0		51%	9,700	0.83	D		61%	13,900	1.18	F
	Old Town Avenue	Washington Avenue	NB	227,800	4.1%	4	0	6.9%	49%	8,800	0.94	E	8.0%	51%	10,700	1.14	F
			SB			5	0		51%	9,300	0.79	D		49%	10,200	0.87	D
	Washington Avenue	Pacific Highway	NB	171,500	4.1%	4	0	6.9%	53%	7,100	0.76	C	8.1%	36%	5,700	0.61	B
			SB			4	0		47%	6,400	0.68	C		64%	10,200	1.09	F
	Pacific Highway	Laurel Street	NB	216,500	4.1%	4	1	6.8%	57%	9,600	0.89	D	7.1%	50%	8,400	0.78	C
			SB			4	1		43%	7,200	0.67	C		50%	9,300	0.86	D
	Laurel Street	Hawthorne Avenue	NB	222,200	4.1%	4	1	6.9%	57%	9,900	0.92	D	7.3%	47%	8,300	0.77	C
			SB			4	1		43%	7,600	0.70	C		53%	10,400	0.96	E

Source: Chen Ryan Associates (May 2017)

Note:
Bold letter indicates LOS E or F

As shown, all mainline freeway segments are projected to operate at LOS D or better under Preferred Plan conditions, with the exception of the following:

- I-8 EB, between Morena Boulevard and Hotel Circle Drive (LOS F: PM Peak Hour)
- I-5 NB, between Clairemont Drive and Sea World Drive (LOS E: AM & PM Peak Hours)
- I-5 SB, between Clairemont Drive and Sea World Drive (LOS E: PM Peak Hour)
- I-5 NB, between Sea World Drive and I-8 (LOS E: AM Peak Hour, LOS F PM Peak Hour)
- I-5 SB, between I-8 and Old Town Avenue (LOS F: PM Peak Hour)
- I-5 NB, between Old Town Avenue and Washington Avenue (LOS E: AM Peak Hour and LOS F: PM Peak Hour)
- I-5 SB, between Washington Avenue and Pacific Highway (LOS F: PM Peak Hour)
- I-5 SB, between Laurel Street and Hawthorne Avenue (LOS E: PM Peak Hour)

6.1.5 Meter Analysis

Table 6.6 summarizes the freeway ramp metering analysis results under implementation of the Preferred Plan for all ramp meter locations within both study communities. The volumes were derived using the outputs for the modeling described in Section 5.0. Existing ramp meter flow rates were assumed under Preferred Plan conditions.

Table 6.6 Freeway Ramp Metering Analysis – Preferred Plan Conditions

Ramp	Peak	Lanes		Flow Rate	Volume	Excess Demand	Delay (Minutes)	Queue (Feet)
		SOV	HOV					
I-8 EB / Sports Arena Boulevard	PM	2	1	641	920	279	26.1	8,091
I-5 SB / Sea World Drive	AM	1	1	444	530	86	11.6	2,494
	PM	1	1	444	670	226	30.5	6,554
I-5 NB / Sea World Drive	AM	2	0	1,555	1,530	0	0.0	0
	PM	2	0	1,656	1,250	0	0.0	0
I-5 SB / Old Town Avenue	PM	1	0	461	410	0	0.0	0
I-5 NB / Old Town Avenue	AM	2	0	905	370	0	0.0	0
	PM	2	0	888	690	0	0.0	0

Source: Chen Ryan Associates (May 2017)

Notes:
SOV = Single Occupancy Vehicle; HOV = High Occupancy Vehicle.
[1] Demand is the peak hour demand expected to use the on-ramp.
[2] Meter Rate is the peak hour capacity expected to be processed through the ramp meter. This value was obtained from Caltrans.
[3] Excess Demand = (Demand) – (Meter Rate) or zero, whichever is greater.
[4] Delay = (Excess Demand / Meter Rate) X 60 min/hr.
[5] Queue = (Excess Demand) X 29 ft/veh.

As shown in the table, the anticipated peak hour demand is not anticipated to exceed the anticipated meter rate at any of the study ramp meter locations creating a delay of 15 minutes[1], with the exception of the following:

- I-8 EB / Sports Arena Boulevard during the PM peak hour (26.1 minutes)
- I-5 SB / Sea World Drive during the PM peak hour (30.5 minutes)

6.2 Intelligent Transportation Systems (ITS)

The implementation of Intelligent Transportation Systems (ITS) can provide many benefits to the local roadway network, including improving roadway traffic operations, improving transit operations, relaying valuable traffic-related information and providing guidance to drivers (e.g. locations of available parking, traffic congestion points, and the location of accidents). Coordinated traffic signals and transit signal priority treatments are examples of ITS programs that can help improve both transit and roadway operations.

The City of San Diego should investigate the feasibility of the following ITS improvements within the Midway-Pacific Highway and Old Town communities:

- Expand signal coordination along major roadway corridors including Rosecrans Street, Taylor Street, Midway Drive, Sports Arena Boulevard, Pacific Highway, Kettner Street and San Diego Avenue.
- Regularly update the timing of traffic signals to reflect shifting travel patterns
- Use traffic responsive or adaptive traffic control in areas with variable traffic patterns
- Implement transit signal priority treatments at signalized intersections serving rapid bus routes
- Use variable message signs to direct motorists to available parking and to alert them of street closures.

The recommendations identified above are consistent with the goals of the future traffic signal communications network elements identified in the City of San Diego *Traffic Signal Communication Master Plan* (2014).

6.3 Transportation Demand Management (TDM) Strategies

The goal of the City's Transportation Demand Management (TDM) program is to improve mobility, reduce congestion and air pollution, and provide options for employees and residents to commute to/ from work. Typical TDM strategies include promoting the following:

- Teleworking
- Alternative Work Schedules
- Transit
- Mixed-Use Development

[1] The City of San Diego Traffic Impact Study Manual (July 1998) defines ramp meters with more than 15 minutes of delay as having a significant impact.

- Walking
- Bicycling
- Carpooling
- Vanpooling
- Shared Mobility Services (e.g., bikeshare, carshare, and on-demand ridesharing services)
- Other Transportation Options

TDM measures improve the efficiency of the transportation system by helping to reduce vehicle trips during peak periods of demand. The San Diego Association of Governments (SANDAG) has an established program (iCommute) that serves as the administrator for TDM programs throughout the region. iCommute provides the following services:

Ridematching Services – the iCommute TripPlanner tool allows users to compare multiple transportation choices in addition to finding vanpool and carpool matches.

Subsidized Vanpool Program – Through the SANDAG vanpool program, each qualified vanpool receives a $400 monthly subsidy when leased through SANDAG preferred vendors, Enterprise Rideshare and vRide. Vanpools range from 7 to 15 passenger vehicles where commuters share the ride to work and split the cost thereby saving money, wear and tear on their personal vehicles, as well as reducing Greenhouse Gas emissions.

Employer Services - The SANDAG iCommute program provides assistance and tools to help local San Diego organizations design and implement customized commuter programs that assist and support employees commute using alternative modes of transportation. The iCommute Diamond Awards recognizes employers with exemplary commute programs and mode-share.

Walk, Ride, and Roll to School – Part of the Safe Routes to School program, this service supports active transportation to and from K-12 schools including biking, walking, skating, skateboarding, or riding a scooter to help promote physical activity and healthier lifestyles for students.

Telework - Teleworking is a convenient solution that enables employees to work from home or a remote location one or more days per week. Telework has proven benefits to employees and employers such as reducing commute costs, lowering parking demand, and helping the environment.

Transit Information – Provides information about San Diego regional transit agencies in addition to Compass Card information.

Bike Parking Program– Provides secure bike parking spaces at more than sixty transit stops and some Park & Ride lots throughout San Diego County in addition to a Regional Bike Map, which has been updated to show bike paths, lanes and routes.

Guaranteed Ride Home – A free service that allows registered iCommute users getting to work by alternative modes to receive free emergency rides home in the cases of illness or unscheduled overtime. Commuters can use the service up to three times per year.

In addition to the iCommute program, Caltrans owns and/or maintains several Park & Ride lots throughout the region that are used to promote carpool and vanpool activity.

The City of San Diego's Land Development Code (LDC) requires new development to provide sufficient bicycle parking stalls, carpool parking, and motorcycle facilities to encourage the use of alternative modes of transportation. The City is early in the process of developing recommendations to amend the LDC requirements for pedestrian, bicycle, carpool, and commuter information facilities. The City's municipal code now allows for on-street carshare operations. Pricing strategies are also used to reduce demand on the transportation system.

6.4 Pedestrian Assessment and Results

This section presents an assessment of the pedestrian network under implementation of the Preferred Plan, which assumes the implementation of the pedestrian related improvements outlined in Sections 3.3.2 and 4.3.2. The City of San Diego Pedestrian Master Plan Phase I identifies the following six Pedestrian Route Typologies and the purpose they serve:

District Sidewalks – Sidewalks along roads that support heavy pedestrian levels in mixed-use concentrated urban areas.

Corridor Sidewalks – Sidewalks along roads that support moderate density business and shopping districts with moderate pedestrian level.

Connector Sidewalks – Sidewalks along roads that support institutional, industrial or business complexes with limited lateral access and low pedestrian levels.

Neighborhood Sidewalks – Sidewalks along roads that support low to moderate density housing with low to moderate pedestrian levels.

Ancillary pedestrian facilities – Facilities away or crossing over streets such as plazas, paseos, promenades, courtyards or pedestrian bridges and stairways.

Path – Walkways and paved paths that are not adjacent to roads that support recreational and transportation purposes.

The assumed Pedestrian Route Typologies within both communities is displayed in Figure 6-6.

The proposed pedestrian network under Preferred Plan conditions was assessed using the methodologies described in Section 2.3.1. The pedestrian network connectivity, quality and overall adequacy (combining both quality and connectivity) are discussed below.

6.4.1 Pedestrian Network Connectivity

Figure 6-7 displays the pedestrian network connectivity to/from pedestrian attracting land uses (residential, commercial, office and recreational uses) throughout both communities. This analysis calculates the percent of area accessible to pedestrians within a half mile walking distance from the respective land uses (connectivity ratio). A connectivity ratio of 50% or better is considered to be ideal.

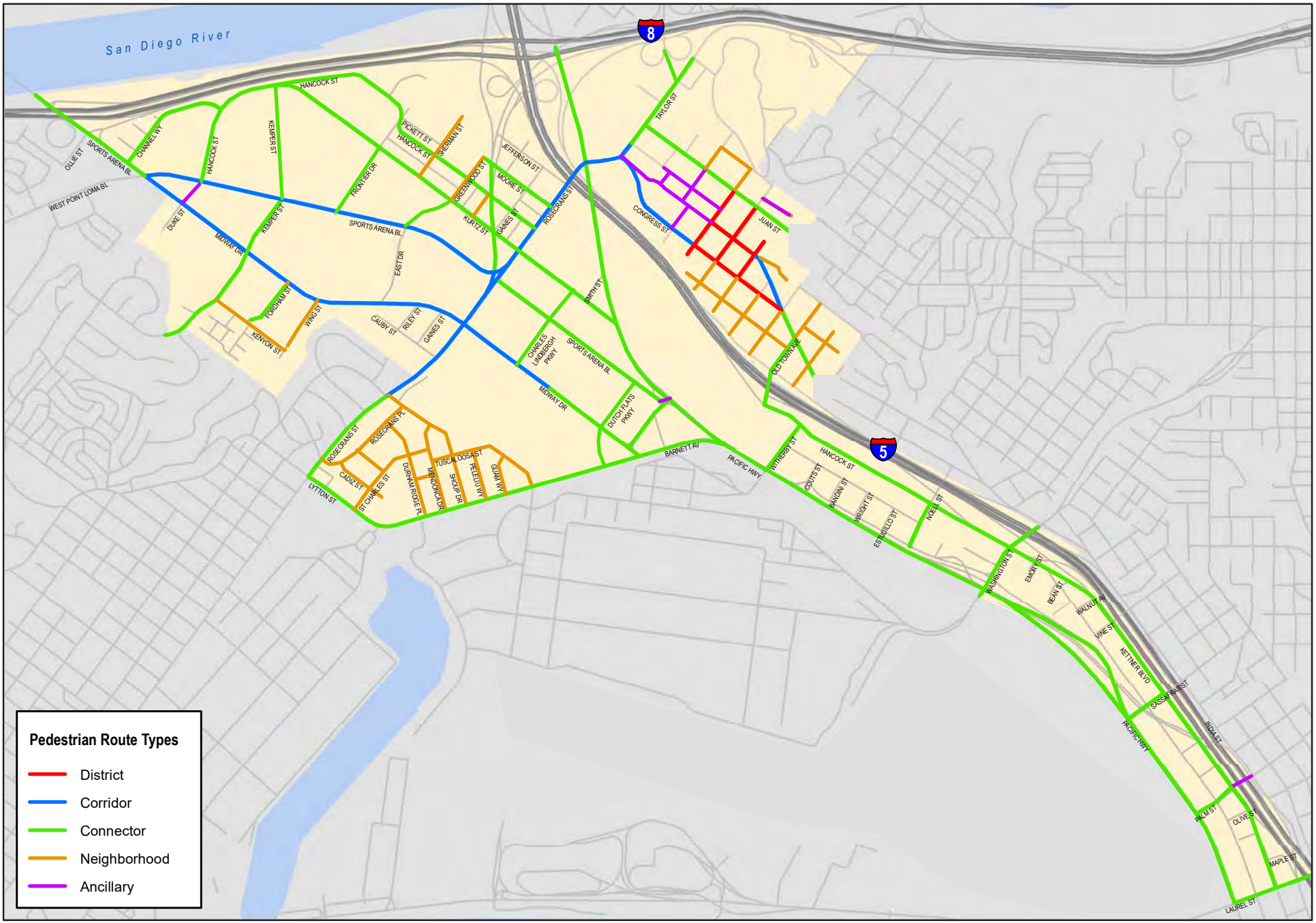


Figure 6-6
Pedestrian Route Typologies -
Preferred Plan Conditions

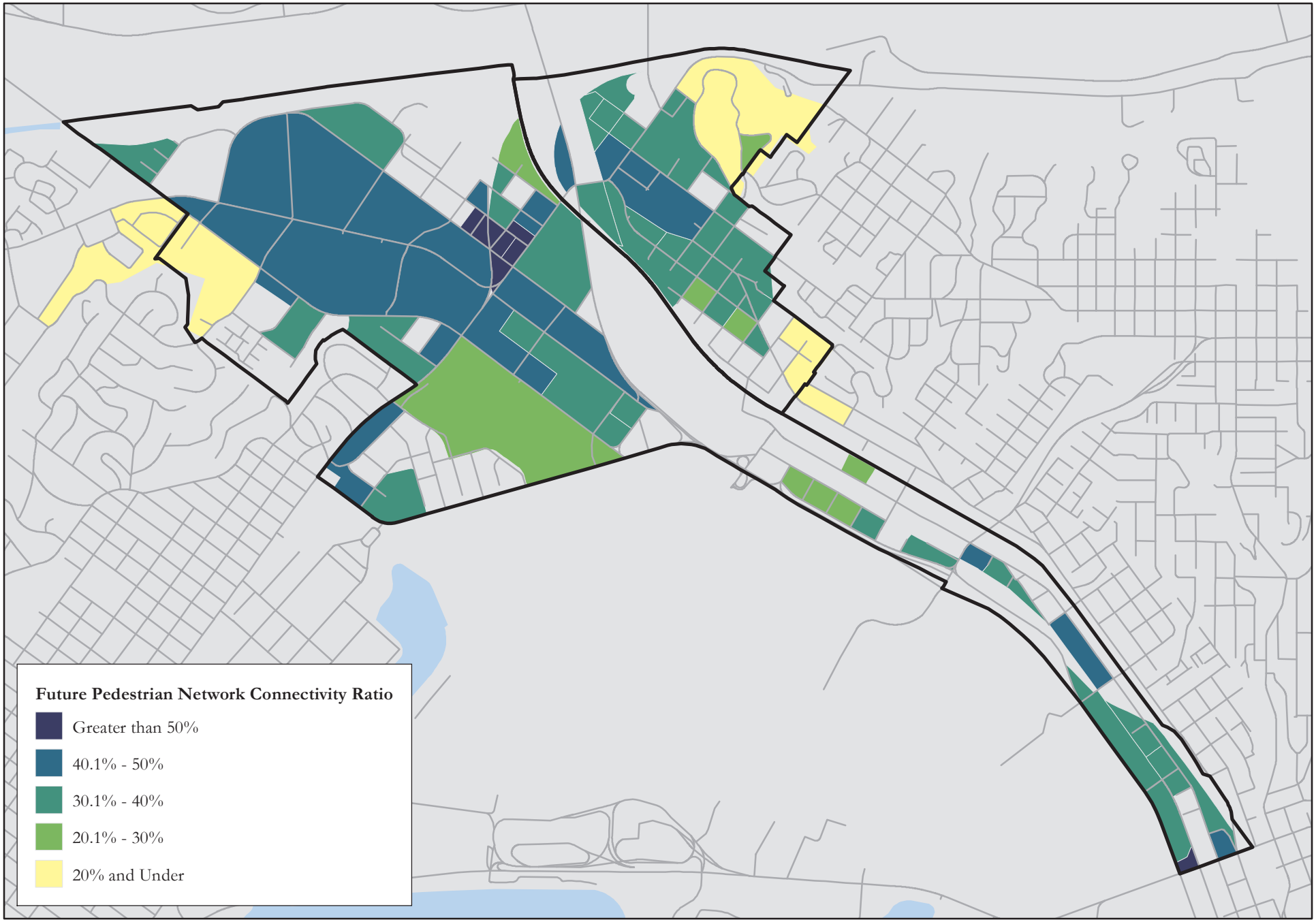


Figure 6-7
Pedestrian Network Connectivity -
Preferred Plan Conditions

Midway-Pacific Highway Community

As shown in the figure, pedestrian connectivity is at ideal levels (50%+ connectivity ratio) within the center of the community (in the area to the northeast of the intersection of Kurtz Street and Rosecrans Street, on either side of Camino Del Rio West. This is primarily due to the dense grid network present in this area. The lower connectivity ratio areas include the northwest area of the community west of Midway Drive and in the area west of Midway Drive and south of Rosecrans Street. The lower ratio is due to large, disconnected parking lots, superblocks, and private property with primary access points along Midway Drive.

Old Town Community

As shown in the figure, the Old Town Community generally has a good connectivity ratio between 40-50%, which is highest in the tourist areas around the Historic State Park and Transit Center Area, and gets lower toward the outskirts of the community. The lower connectivity ratio on the outskirts of the community is primarily due to the barriers created by the I-5 and I-8 freeways where pedestrian crossings are constrained.

6.4.2 Pedestrian Network Quality

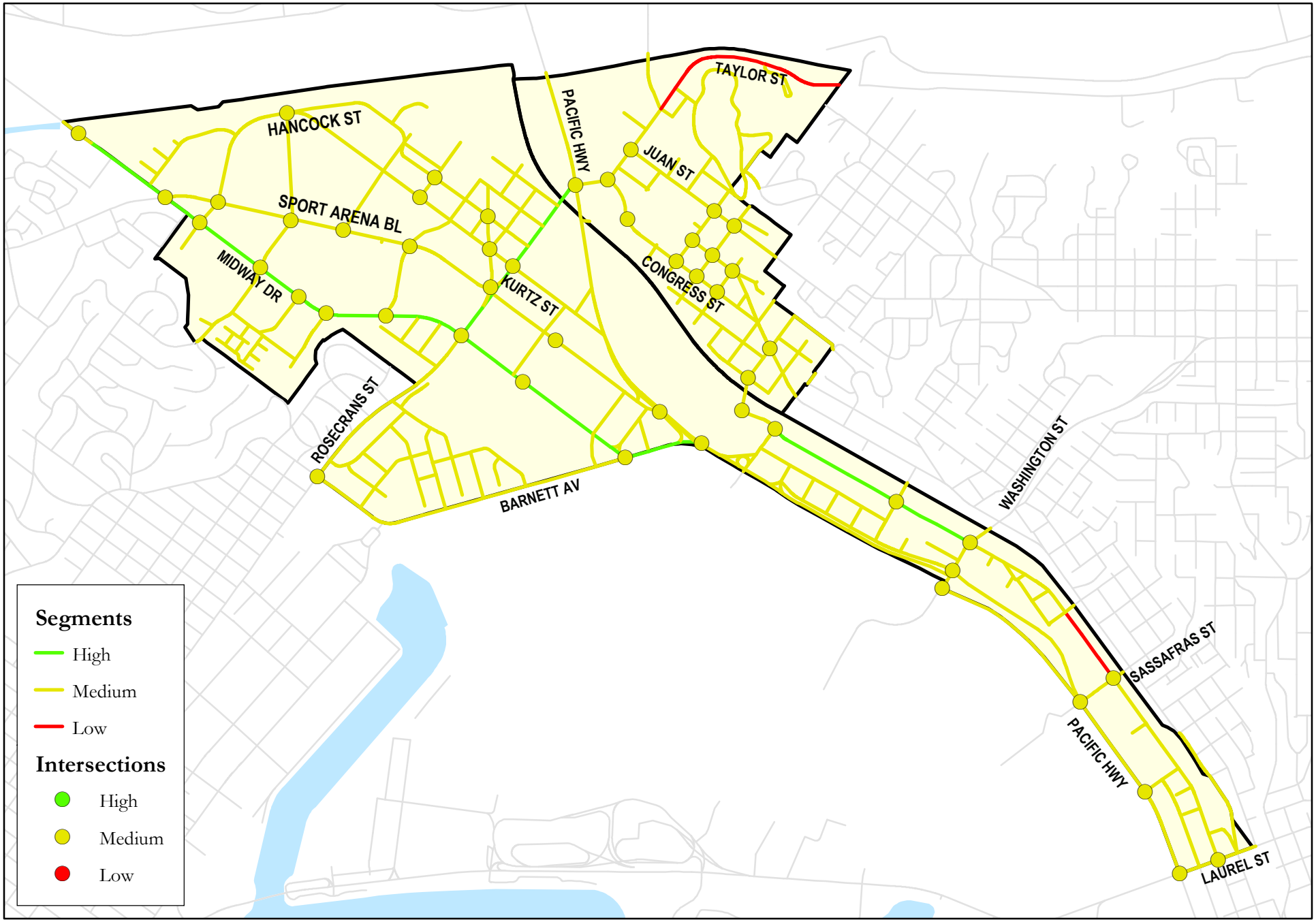
Figure 6-8 and Tables 6.7A and 6.7B display the PEQE analysis results for roadways segments and intersections, along the major pedestrian corridors within the community. PEQE calculation worksheets are provided in Appendix F. As shown in the table, with the implementation of the proposed improvements, the pedestrian facilities along all major roadways within both communities have a Medium or High grade under implementation of the Preferred Plan with the exception of the following:

Midway-Pacific Highway Community

Kettner Boulevard between Vine Street and Sassafras Street – This segment has a score of Low due to the lack of pedestrian facilities on the west side of the roadway (where there are no fronting land uses) and high posted speed limit (40 mph). It should be noted that the east side of the roadway, where the fronting land uses are located, has a grade of Medium. Based on the results of the PEQE analysis, the pedestrian improvements proposed under the Preferred Plan would significantly improve the walkability and safety within Midway-Pacific Highway community from their current conditions.

Old Town Community

Taylor Street between Morena Boulevard and I-8 Ramps – This segment has a grade of Low due to the lack of pedestrian facilities. However, it should be noted that there are no fronting land uses on either side of this segment, nor does this segment connect to any activity centers to the east of the community. While the Old Town community is very walkable today, the improvements proposed under the Preferred Plan provide both access and safety upgrades throughout the community. Improvements such as ADA ramps, continental cross-walks and bulb outs (at key intersections) upgrade many of the intersections within the community from Low to Medium conditions.



Midway-Pacific Highway and
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Figure 6-8
PEQE Scoring
Preferred Plan Conditions

Table 6.7A PEQE Results: Roadway Segments – Preferred Plan Conditions

Roadway	To	From	Northside/ Eastside		Southside/ Westside		Total	
			Score	Grade	Score	Grade	Score	Grade
North-South								
Midway/Pacific Highway Corridor								
Lytton Street/ Barnett Avenue	Rosecrans St	Midway Dr	4	Medium	4	Medium	8	Medium
	Midway Dr	Pacific Hwy	7	High	7	High	14	High
W. Mission Bay Dr	I-8 WB Ramps	I-8 EB Ramps	4	Medium	4	Medium	8	Medium
Midway Dr	W. Point Loma Blvd/Sports Arena Blvd	Kemper St	7	High	7	High	14	High
	Kemper St	East Dr	7	High	7	High	14	High
	East Dr	Rosecrans St	7	High	7	High	14	High
	Rosecrans St	Barnett Ave	7	High	7	High	14	High
Sports Arena Blvd	I-8 EB Ramps	W. Point Loma Blvd/Sports Arena Blvd	6	Medium	7	High	13	High
	W. Point Loma Blvd/Midway Dr	Kemper St	5	Medium	5	Medium	10	Medium
	Kemper St	East Dr	5	Medium	5	Medium	10	Medium
	East Dr	Rosecrans St	5	Medium	5	Medium	10	Medium
	Rosecrans St	Pacific Hwy	6	Medium	5	Medium	11	Medium
Kurtz St	Hancock St	Rosecrans St	6	Medium	6	Medium	12	Medium
	Rosecrans St	Pacific Hwy	4	Medium	4	Medium	8	Medium
Hancock St	Sports Arena Blvd	Kurtz St	3	Low	6	Medium	9	Medium
	Kurtz St	Camino Del Rio West	4	Medium	6	Medium	10	Medium
	Camino Del Rio West	Rosecrans St	5	Medium	5	Medium	10	Medium
	Old Town Ave	Witherby St	4	Medium	4	Medium	8	Medium
	Witherby St	Washington St	6	Medium	7	High	13	High
Kettner Blvd	Washington St	Vine St	3	Low	5	Medium	8	Medium
	Vine St	Sassafras St	4	Medium	2	Low	6	Medium
	Sassafras St	Laurel St	5	Medium	5	Medium	10	Medium
Pacific Hwy	Sea World Dr	Taylor St	5	Medium	5	Medium	10	Medium
	Taylor St	Kurtz St	6	Medium	6	Medium	12	Medium
	Kurtz St	Sports Arena Blvd	6	Medium	6	Medium	12	Medium
	Sports Arena Blvd	Barnett Ave	6	Medium	6	Medium	12	Medium
	Barnett Ave	Harney Washington St	6	Medium	6	Medium	12	Medium
	Washington St	Sassafras St	6	Medium	6	Medium	12	Medium
	Sassafras St	Laurel St	6	Medium	6	Medium	12	Medium
Old Town								
Congress St	Taylor St	Twiggs St	6	Medium	6	Medium	12	Medium
	Twiggs St	Harney St	6	Medium	6	Medium	12	Medium
	Harney St	San Diego Ave/Ampudia St	6	Medium	6	Medium	12	Medium
San Diego Ave	Twiggs St	Harney St	6	Medium	6	Medium	12	Medium
	Harney St	Ampudia St	6	Medium	6	Medium	12	Medium

Table 6.7A PEQE Results: Roadway Segments – Preferred Plan Conditions

Roadway	To	From	Northside/ Eastside		Southside/ Westside		Total	
			Score	Grade	Score	Grade	Score	Grade
San Diego Ave	Ampudia St	Old Town Ave	6	Medium	6	Medium	12	Medium
	Old Town Ave	Hortensia St	6	Medium	6	Medium	12	Medium
Juan St	Taylor St	Twiggs St	6	Medium	6	Medium	12	Medium
	Twiggs St	Harney St	6	Medium	6	Medium	12	Medium
	Harney St	San Juan Rd	6	Medium	6	Medium	12	Medium
East-West								
Midway/Pacific Highway Corridor								
Channel Wy	W. Mission Bay Dr	Hancock St	6	Medium	6	Medium	12	Medium
Kemper St	Kenyon St	Midway Dr	6	Medium	5	Medium	11	Medium
	Midway Dr	Sports Arena Blvd	6	Medium	6	Medium	12	Medium
Camino Del Rio West	Rosecrans St	I-5/I-8 Ramps	4	Medium	4	Medium	8	Medium
Rosecrans St	Lytton St	Midway Dr	6	Medium	6	Medium	12	Medium
	Midway Dr	Sports Arena Blvd	7	High	7	High	14	High
	Sports Arena Blvd	Pacific Hwy/Taylor St	7	High	7	High	14	High
Washington St	Frontage Rd	Pacific St	5	Medium	5	Medium	10	Medium
	Pacific St	Hancock St	6	Medium	5	Medium	11	Medium
Vine St	California St	Kettner Blvd	7	High	5	Medium	12	Medium
Sassafras St	Pacific Hwy	Kettner Blvd	5	Medium	5	Medium	10	Medium
Laurel St	Pacific Hwy	Kettner Blvd	5	Medium	5	Medium	10	Medium
Old Town								
Taylor St	Pacific Hwy/ Rosecrans St	Congress St	4	Medium	4	Medium	8	Medium
	Congress St	Juan St	4	Medium	4	Medium	8	Medium
	Juan St	Morena Blvd	4	Medium	4	Medium	8	Medium
	Morena Blvd	I-8 EB Ramps	1	Low	1	Low	2	Low
Twiggs St	Congress St	San Diego Ave	5	Medium	5	Medium	10	Medium
	San Diego Ave	Juan St	6	Medium	6	Medium	12	Medium
Harney St	Congress St	San Diego Ave	6	Medium	6	Medium	12	Medium
	San Diego Ave	Juan St	6	Medium	5	Medium	11	Medium
Old Town Ave	Hancock St	Moore St	5	Medium	5	Medium	10	Medium
	Moore St	San Diego Ave	5	Medium	5	Medium	10	Medium

Source: Chen Ryan Associates (June 2016)

Table 6.7B PEQE Results: Intersections – Preferred Plan Conditions

#	Intersection	Score	Grade
Midway-Pacific Highway			
1	Lytton St and Rosecrans St	6	Medium
2	W Mission Bay Dr and I-8 WB Off-Ramp	6	Medium
3	W Mission Bay Dr and Channel Way	5	Medium
4	Midway Dr and Sports Arena/W Point Loma Blvd	6	Medium
5	Midway Dr and Kemper St	6	Medium
6	Midway Dr and East Dr	6	Medium
7	Midway Dr and Rosecrans St	6	Medium
8	Midway Dr and Charles Lindbergh Pkwy	6	Medium
9	Midway Dr and Enterprise St	5	Medium
10	Midway Dr and Barnett Ave	6	Medium
11	Sports Arena Blvd and Hancock St	6	Medium
12	Sports Arena Blvd and Kemper St	6	Medium
13	Sports Arena Blvd and Sports Arena Driveway	6	Medium
14	Sports Arena Blvd and East Dr	6	Medium
15	Sports Arena Blvd and Rosecrans St	6	Medium
16	Sports Arena Blvd and Charles Lindbergh Pkwy	6	Medium
17	Sports Arena Blvd and Pacific Hwy	6	Medium
18	Kurtz St and Hancock St	5	Medium
19	Kurtz St and Camino Del Rio West	6	Medium
20	Kurtz St and Rosecrans St	6	Medium
21	Kurtz St and Pacific Hwy	6	Medium
22	Hancock St and Channel Wy	5	Medium
23	Hancock St and Camino Del Rio West	6	Medium
24	Hancock St and Rosecrans St	5	Medium
25	Hancock St and Old Town Ave	5	Medium
26	Hancock St and Witherby St	5	Medium
27	Hancock St and Washington St	6	Medium
28	Kettner Blvd and Vine St	5	Medium
29	Kettner Blvd and Sassafras St	6	Medium
30	Kettner Blvd and West Laurel St	6	Medium
31	Pacific Hwy and Barnett Ave	6	Medium
32	Pacific Hwy and Washington St @ Frontage Rd	6	Medium
33	Pacific Hwy and Washington St @ Pacific St	6	Medium
34	Pacific Hwy and Sassafras St	6	Medium
35	Pacific Hwy and West Laurel St	6	Medium
Old Town			
36	Pacific Hwy and Taylor St	6	Medium
37	Moore St and Old Town Ave	6	Medium
38	Congress St and Taylor St	6	Medium

Table 6.7B PEQE Results: Intersections – Preferred Plan Conditions

#	Intersection	Score	Grade
39	Congress St and Twiggs St	5	Medium
40	Congress St and Harney St	5	Medium
41	Congress St and San Diego Ave/Ampudia St	5	Medium
42	San Diego Ave and Twiggs St	5	Medium
43	San Diego Ave and Harney St	5	Medium
44	San Diego Ave and Old Town Ave	6	Medium
45	Juan St and Taylor St	6	Medium
46	Juan St and Twiggs St	5	Medium
47	Juan St and Harney St	5	Medium
48	Morena Blvd and Taylor St	6	Medium
New Intersections			
61	Kurtz St & Frontier Dr	5	Medium
63	Kurtz St & Charles Lindbergh Pkwy	6	Medium
64	Barnett Ave & Dutch Flats Pkwy	6	Medium
65	Midway Dr & Dutch Flats Pkwy	6	Medium
66	Dutch Flats Pkwy & Sports Arena Bl	6	Medium

Source: Chen Ryan Associates (June 2016)

As shown, all study intersections within both communities are projected to have a Medium grade under implementation of the Preferred Plan.

6.4.3 Pedestrian Quality Network Coverage

Figure 6-9 displays the Pedestrian Quality Network Coverage at all study intersections across both communities. This analysis calculates the ratio of the length of quality pedestrian network facilities (PEQE score Medium or High) within a half-mile walk from an intersection, compared to the total network available (based on existing conditions).

Midway-Pacific Highway Community

As shown in the figure, under implementation of the Preferred Plan, the Pedestrian Quality Network Coverage increases to over 75% at all study intersections within the community. The significant increase in coverage is primarily due to the new roadway links proposed under Preferred Plan conditions, including multi-use urban path improvements.

Old Town Community

As shown in the figure, under implementation of the Preferred Plan, the Pedestrian Quality Network Coverage increases to over 75% at all study intersections within the community. The significant increase in coverage is primarily due to the overall improvement to the intersections within the community by implementing minor improvements such as ADA ramps and Continental Crosswalks.

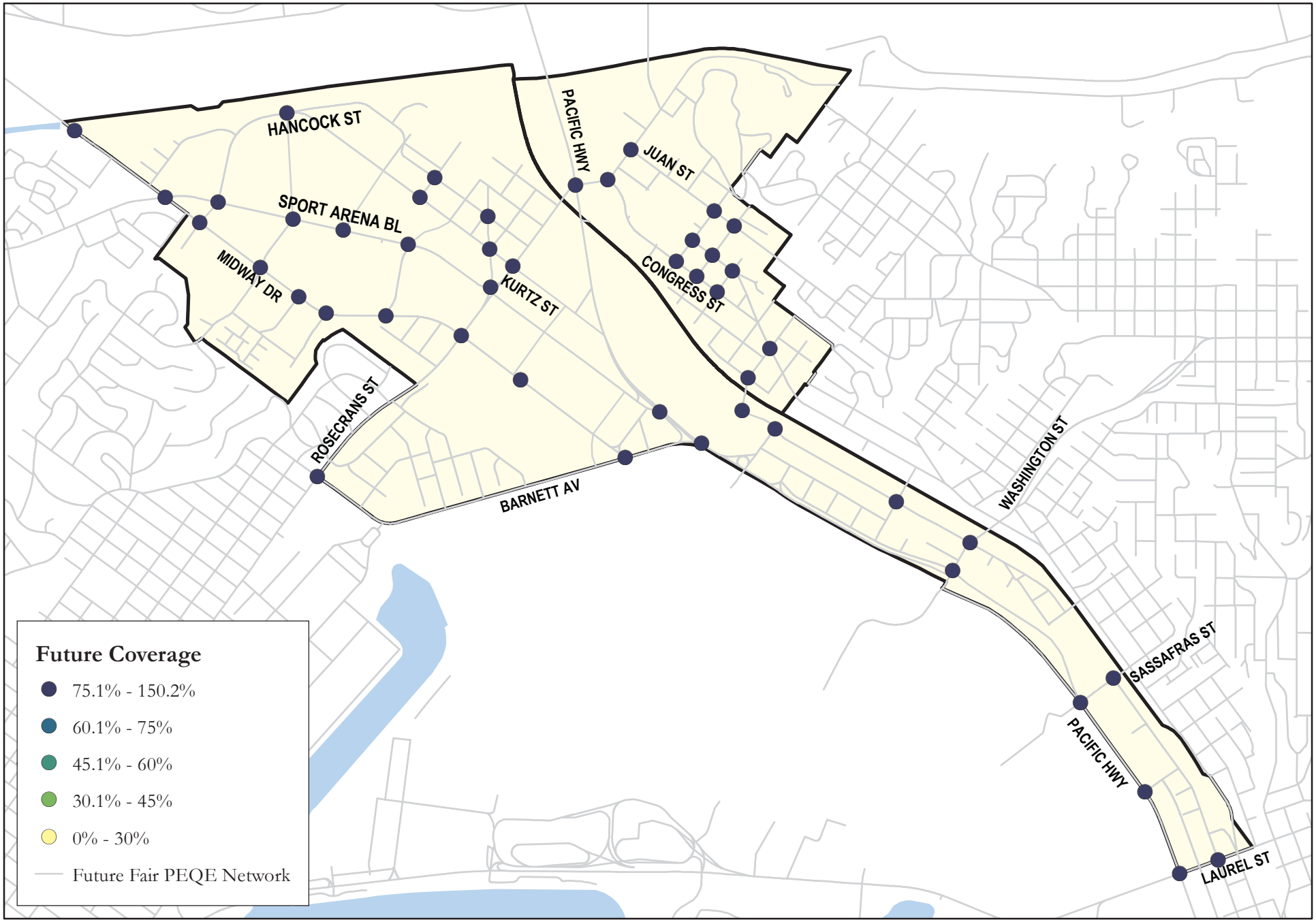

Figure 6-9
Pedestrian Quality Network Coverage -
Preferred Plan Conditions

6.5 Cycling Environment Assessment and Results

This section presents an assessment of the cycling environment under implementation of the Preferred Plan conditions, which assumes implementation of the cycling-related improvements outlined in Sections 3.4.2 and 4.4.2. Figure 6-10 displays the proposed bicycle network in both communities under implementation of the Preferred Plan.

The cycling environment under Preferred Plan conditions was assessed using the methodologies presented in Section 2.3.2. Cycling network connectivity, quality and overall adequacy (combining both quality and connectivity) are assessed below.

6.5.1 Bicycle Network Connectivity

Figure 6-11 displays bicycle network connectivity to/from the study area intersections across both communities. This analysis calculates the percent of area that a cyclist can access within a one mile ride from the respective intersection (connectivity ratio). A connectivity ratio of 50% or better is considered to be ideal.

Midway-Pacific Highway Community

As shown in the figure, the bicycle connectivity is at good levels (40%+ connectivity ratio) in the center of the community around the block bound by Rosecrans Street, Midway Drive, Sports Arena Boulevard and East Drive. This improvement in connectivity is predominantly due to the new roadway connections between Midway and Sports Arena Boulevard.

Old Town Community

As shown in the figure, the Old Town community generally has a good connectivity ratio of 35+%, with the highest connectivity along Taylor Street, where regional connections are available from Taylor Street (Coastal Rail Trail and Ocean Beach Bike Path).

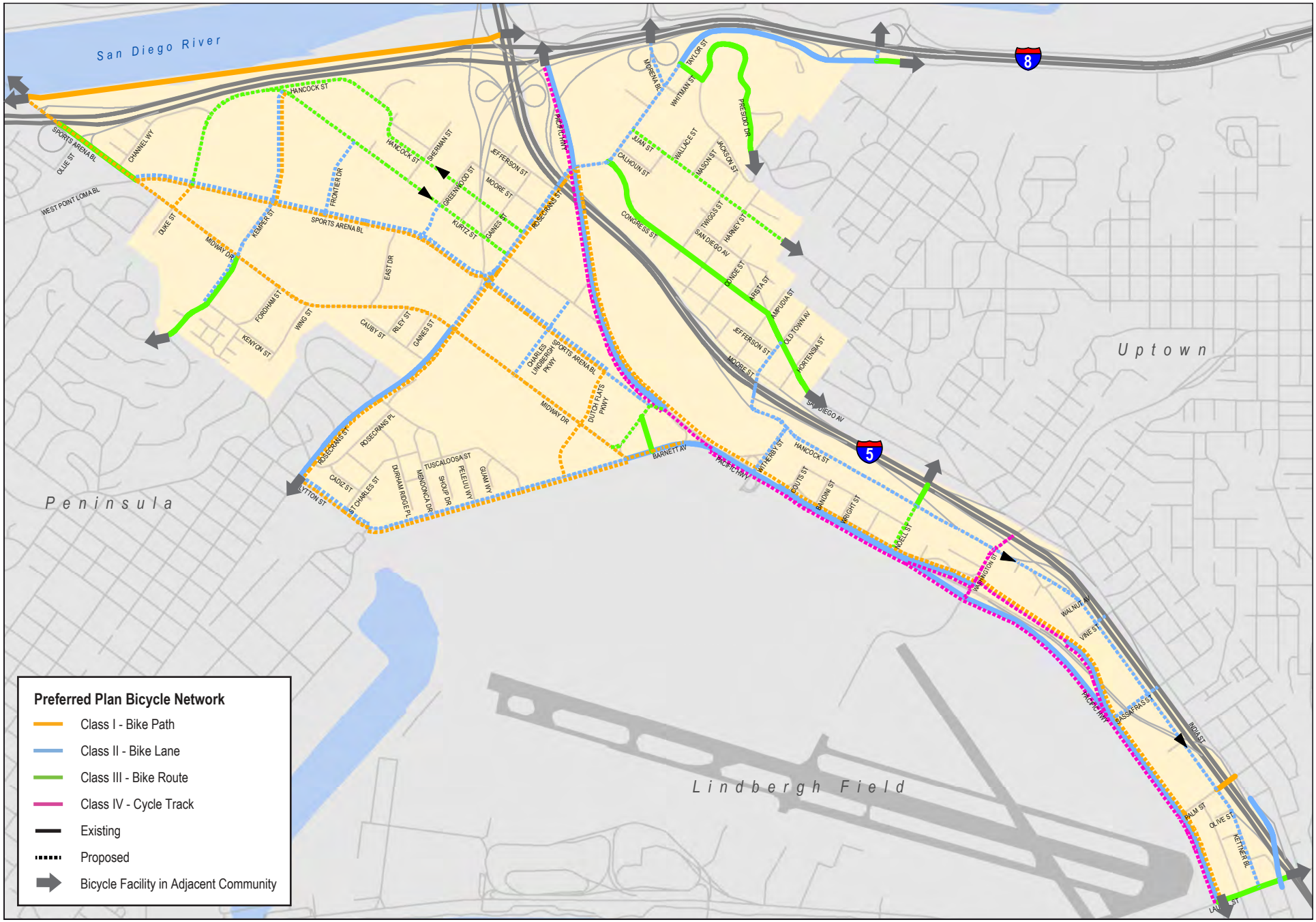

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Figure 6-10
Bicycle Network -
Preferred Plan Conditions

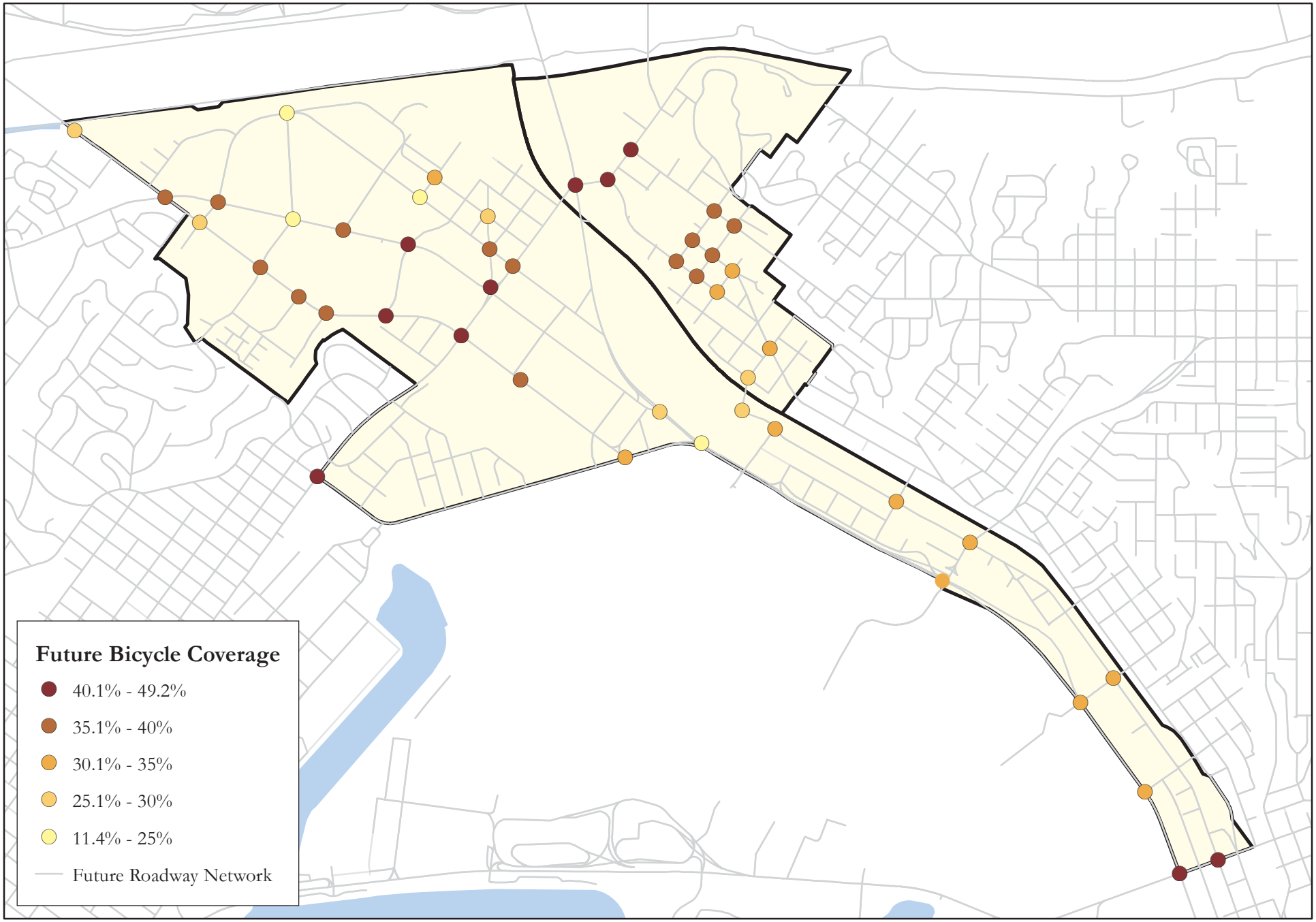


Figure 6-11
Bicycle Network Connectivity
Preferred Plan Conditions

6.5.2 Bicycle Network Quality

Figure 6-12 display the LTS analysis results for roadways segments and intersections along all Mobility Element roadways within the community.

Midway-Pacific Highway Community

As shown in the figure, the new multi-use urban paths proposed as part of the Midway/Pacific Highway Urban Greening Plan (La Playa Trail, Bay-to-Bay Path, the Historic Highway 101 Path, and the Midway Path), and the Preferred Plan, provide a slower low stress environment for cyclists (all paths have a score of LTS 1). Additionally, the proposed Class IV One-Way Cycle Tracks proposed along Pacific Highway provide a safe cycling environment for higher speed cyclists entering the community from either the north or south. These facilities have an LTS 1 score. Finally, the Enhanced Class II Buffered Bikes Lanes proposed along Sport Area Boulevard and Rosecrans Street provide more confident and higher speed cyclists a safe in-road alternative along these routes. Both facilities have a score of LTS 1.

Hancock Street between Kurtz Street and Rosecrans Street, and Hancock Street/Kettner Boulevard between Noel Street and Laurel Street were identified as providing LTS 4 environments under Preferred Plan conditions. The LTS 4 designation is largely due to the one-way directional travel. When calculating LTS scores for one-way streets the number of vehicular travel lanes is doubled, and the street is treated as though it has a median. This results in Hancock Street and Hancock Street/Kettner Boulevard as providing conditions equivalent to a 6-lane roadway, from the cyclist's perception. Hancock Street, between Kurtz Street and Rosecrans Street, does not have a bicycle facility, resulting in the LTS 4 score. Hancock Street/Kettner Boulevard, between Noel Street and Laurel Street, does have a Class II bike lane under Preferred Plan conditions, however, the posted speed limit of 40 MPH results in the LTS 4 score.

Based on the results of the LTS analysis, the bicycle facilities proposed under the Preferred Plan would significantly improve the connectivity and safety for cyclists within Midway-Pacific Highway community from their current conditions.

Old Town Community

As shown in the figure all roadways, with the exception of Taylor Street and Morena Boulevard, are projected to be low stress cycling environments (LTS 1 or 2). This is due to the low speed nature of the roadways within the Old Town Community. However, even with Class II Bike Lanes proposed along Taylor Street, the roadway is still projected to have an LTS score of 3. This is due to the high vehicular travel speed along Taylor Street and lack of a horizontal or vertical buffer between cyclists and motorists.

As noted in section 4.4.2, the connection along Morena Boulevard between Taylor Street and Linda Vista Road is critical. A connection here would link the Old Town and Linda Vista communities, as well as provide a connection to the Ocean Beach Bike Path.

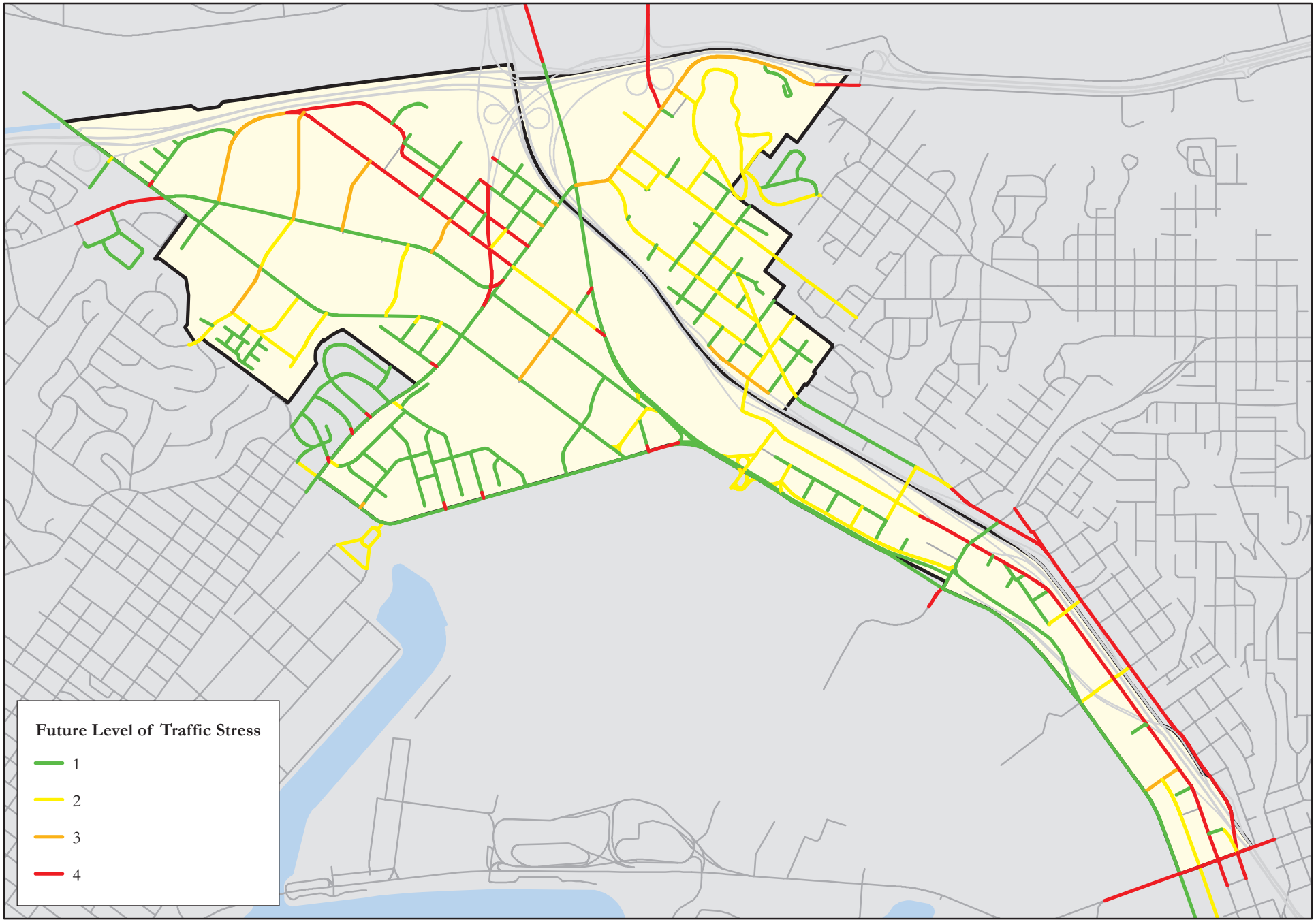


Figure 6-12
Bicycle LTS Score - Preferred Plan Conditions

Unfortunately, the bridge along this segment of the roadway has a constrained right-of-way, and the current configuration of the I-8 Morena Boulevard ramps position four high-speed free-right turn movements on/off the bridge. Due to these constraints there is not feasible bicycle facility that can be implemented along this segment without both widening the bridge and reconfiguring the I-8 / Morena Boulevard Ramps. However, it is recommended that the City work with both Caltrans and SANDAG to look for opportunities to implement bicycle facilities and better pedestrian facilities along this segment should any improvements be done to this segment.

6.5.3 Combined Bicycle Network Connectivity and Quality Assessment

Figure 6-13 displays the combined Bicycle Network Connectivity and Quality Assessment for all bicycle accessible land uses (residential, commercial, office, recreational and instructional land uses) throughout both communities. This analysis calculates the percent of TAZs with bicycle accessible land uses that a cyclist can reach using only LTS 1 and 2 facilities.

Midway-Pacific Highway Community

As shown in the figure, the proposed bicycle improvements enhance the level of connectivity to/from the residential land uses located on the western side of the community. In this area, cyclists can connect to 40+% of the bicycle accessible land uses within the community using only LTS 1 or 2 facilities. The proposed commercial areas within the community (north of Rosecrans Street) can typically connect to 30-40% of the bicycle accessible land uses within the community using only LTS 1 or 2 facilities. The only areas that have low connectivity (0-10%) are the more industrial areas located in the north and northeast portions of the community. However, these areas have very few bicycle accessible land uses.

Old Town Community

As shown in the figure, the community as a whole has generally moderate connectivity levels between 20% and 40%. The main barrier limiting the overall quality connectivity within the community is Taylor Street, which has an LTS score of 3. If the LTS score along Taylor Street can be improved to an LTS 1 or 2, the overall quality connectivity within the Old Town Community will increase significantly. However, based on the roadway's current configuration, enhanced bicycle facilities such as Buffered Class II Bike Lanes or a Class IV Cycle Track is not currently feasible along Taylor Street. Therefore, a policy should be included in the Mobility Element that if Taylor Street is ever widened beyond its current right-of-way, enhanced bicycle facilities such as Class II Buffered Bike Lanes or a Class IV Cycle Track should be implemented as well.

6.6 Public Transit Services and Facilities Assessment and Results

This section assesses the proposed transit network under implementation of the Preferred Plan conditions, which assumes implementation of the transit-related improvements outlined in Sections 3.5.2 and 4.5.2. The proposed Transit network under Preferred Plan conditions was assessed using the methodologies contained in Section 2.3.3. Transit stop/station ridership and amenities are assessed below as well as the roadway arterial speed along roadways continuing transit routes.

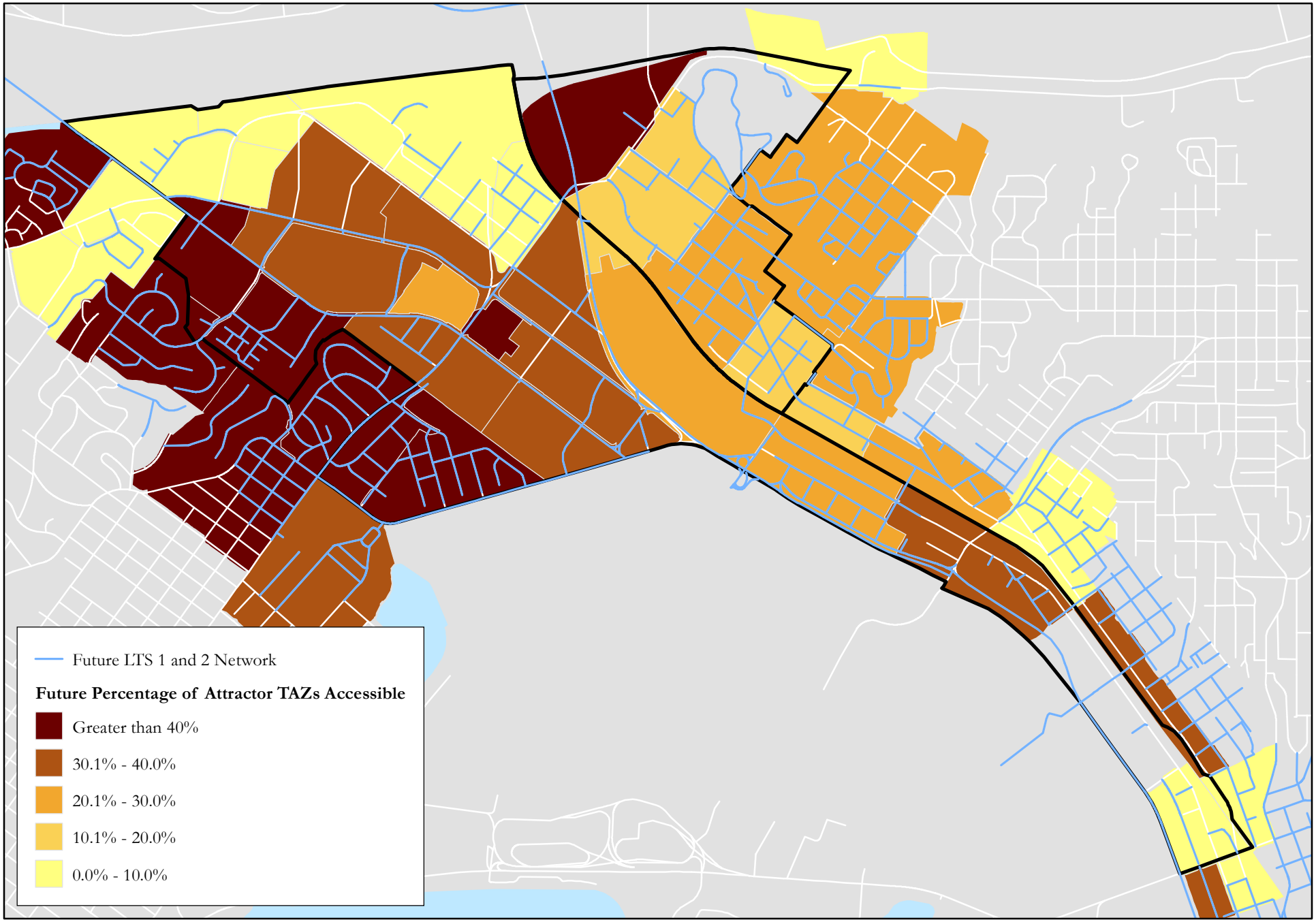


Figure 6-13
Combined Bicycle Network Connectivity and Quality Assessment
Preferred Plan Conditions

6.6.1 Transit Stop/Station Amenities and Average Daily Boardings and Alightings

While projecting increases in multimodal trips requires some level of judgment and is dependent on numerous factors, quantitative methods are available to assist in this process. A community-wide transit ridership growth factor was derived based on future growth estimates in SANDAG Series 12 Transportation Forecast Model, as documented in Section 5.0. Based on the SANDAG model results, a 1.75 growth factor was applied to existing transit ridership volumes, which is consistent with the projection of regional growth. Due to the methodology, projected ridership is only presented for existing locations and does not include the future Blue Line extension.

Table 6.8 displays the projected transit boarding and alightings by route and by stop within both communities under Preferred Plan conditions.

Table 6.8 Average Daily Transit Boardings and Alightings by Route and Station – Preferred Plan Conditions

Route # and Location	Boardings	Alightings	Total Trips
Bus Route 8 Clockwise			
Sports Arena Blvd and Midway Dr	30	30	60
Sports Arena Blvd and Midway Dr	150	50	200
Sports Arena Blvd Between Hancock and Kemper	60	20	70
Sports Arena Blvd Between Kemper and Sports Arena Driveway	70	50	160
Sports Arena Blvd and East Dr	120	50	170
Rosecrans St and Pacific Highway	40	40	70
Old Town Transit Center	20	1,090	1,110
Bus Route 9 Counter Clockwise			
Old Town Transit Center	1,110	20	1,120
Rosecrans St and Moore St	30	20	40
Rosecrans St and Kurtz St	20	40	50
Sports Arena Blvd and Camino Del Rio West	20	60	70
Sports Arena Blvd and East Dr	20	90	110
Sports Arena Blvd and Sports Arena Driveway	50	130	170
Sports Arena Blvd and Hancock St	60	180	230
Bus Route 10 East			
Old Town Transit Center	1,770	30	1,790
Pacific Highway and Sports Arena Blvd	50	30	70
Pacific Highway and Witherby St	100	170	260
Washington St and Pacific Highway	90	70	160
Washington St and Hancock St	40	10	50
Washington St and India St	90	30	120
Bus Route 10 West			
Washington St and India St	20	90	100

Table 6.8 Average Daily Transit Boardings and Alightings by Route and Station – Preferred Plan Conditions

Route # and Location	Boardings	Alightings	Total Trips
Washington St and Hancock St	10	20	30
Washington St and The Trolley Tracks	30	150	170
Pacific Highway and Washington St	30	30	60
Pacific Highway and Witherby St	90	110	200
Pacific Highway and Enterprise St	20	60	80
Pacific Highway and Kurtz St	10	10	10
Old Town Transit Center	30	1,450	1,470
Bus Route 28 East			
Rosecrans St and Lytton St	30	20	40
Rosecrans St and North Evergreen St	30	30	60
Rosecrans St and Loma Square	80	60	140
Rosecrans St and Sports Arena Blvd	60	60	110
Rosecrans St and Pacific Highway	30	10	30
Old Town Transit Center	N/A	1,090	1,090
Bus Route 28 West			
Old Town Transit Center	930	N/A	930
Rosecrans St and Moore St	20	N/A	20
Rosecrans St and Kurtz St	20	20	30
Rosecrans St and Midway Drive	50	50	90
Rosecrans St and Midway Drive	80	90	160
Rosecrans St and North Evergreen St	30	40	60
Rosecrans St and Lytton St	10	20	30
Bus Route 30 North			
Pacific Highway and Witherby St	90	80	170
Pacific Highway and Enterprise St	20	40	50
Pacific Highway and Kurtz St	10	10	10
Old Town Transit Center	1,110	610	1,710
Bus Route 30 South			
Old Town Transit Center	590	1,090	1,680
Pacific Highway and Sports Arena Blvd	20	590	60
Bus Route 35 East			
Midway Drive and Duke St	100	60	160
Midway Drive and Kemper St	70	40	110
Midway Drive and Fordham St	110	40	140
Midway Drive and East Drive	70	70	140
Rosecrans St and Sports Arena Blvd	100	30	130
Rosecrans St and Pacific Highway	20	20	30

Table 6.8 Average Daily Transit Boardings and Alightings by Route and Station – Preferred Plan Conditions

Route # and Location	Boardings	Alightings	Total Trips
Old Town Transit Center	N/A	990	990
Bus Route 35 West			
Old Town Transit Center	1,010	N/A	1,010
Rosecrans St and Moore St	40	10	50
Rosecrans St and Kurtz St	20	30	40
Rosecrans St and Midway Drive	50	70	110
Midway Drive and East Drive	80	60	140
Midway Drive and Fordham St	40	110	140
Midway Drive and Kemper St	50	110	150
Midway Drive and Duke St	40	130	160
Bus Route 44 North			
Old Town Transit Center	1,820	10	1,830
Taylor St and Juan St	20	10	20
Bus Route 44 South			
Taylor St and Sunset St	10	10	20
Old Town Transit Center	50	1,570	1,610
Bus Route 88 East			
Old Town Transit Center	240	20	250
Taylor St and Juan St	10	10	10
Taylor St and Presidio Drive	10	10	10
Taylor St and I-8 East	10	10	10
Bus Route 88 West			
Taylor St and I-8 East	10	10	10
Taylor St and Presidio Drive	10	10	10
Taylor St and Sunset St	10	10	10
Old Town Transit Center	10	140	150
Bus Route 105 North			
Old Town Transit Center	770	10	780
Taylor St and Juan St	10	10	10
Bus Route 105 South			
Taylor St and Juan St	10	10	10
Old Town Transit Center	10	570	570
Bus Route 150 North			
Pacific Highway and Witherby St	50	20	70
Pacific Highway and Enterprise St	10	20	20
Pacific Highway and Kurtz St	10	10	10
Old Town Transit Center	470	140	610

Table 6.8 Average Daily Transit Boardings and Alightings by Route and Station – Preferred Plan Conditions

Route # and Location	Boardings	Alightings	Total Trips
Bus Route 150 South			
Old Town Transit Center	120	660	80
Pacific Highway and Sports Arena Blvd	20	10	20
Green Line Trolley East			
Old Town Transit Center	8,280	390	8,670
Washington Street Station	280	660	930
Middletown Station	10	11,110	11,110
Green Line Trolley West			
Old Town Transit Center	10,600	7,680	18,270
Washington Street Station	690	220	910
Middletown Station	330	190	510

Source: Chen Ryan Associates (March 2017)

Table 6.9 displays the projected transit boardings and alightings at each transit stop/station within both communities under implementation of the Preferred Plan. The table also shows the required stop/station amenities, as shown in Table 2.2, based on the future ridership projects.

Table 6.9 Transit Station/Stop Locations, Amenities and Average Daily Boardings and Alightings – Preferred Plan Conditions

				Amenities at the Stops			
Station	Boardings	Alightings	Total	Signs	Shelter	Bench	Trash Can
Sports Arena Blvd and Midway Dr (Clockwise)	180	80	260	✓	✓	✓	✓
Sports Arena Blvd Between Hancock and Kemper (Clockwise)	60	20	70	✓	□	○	□
Sports Arena Blvd Between Kemper and Sports Arena Driveway (Clockwise)	70	50	160	✓	□	✓	□
Sports Arena Blvd and East Dr (Clockwise)	120	50	170	✓	○	✓	□
Rosecrans St and Pacific Highway (Clockwise)	40	40	70	✓	✓	✓	✓
Old Town Transit Center (Clockwise)	20	1,090	1,110	✓	✓	✓	✓
Old Town Transit Center (Counter Clockwise)	1,110	20	1,120	✓	✓	✓	✓
Rosecrans St and Moore St (Counter Clockwise)	30	20	40	✓	□	✓	✓
Rosecrans St and Kurtz St (Counter Clockwise)	20	40	50	✓	□	✓	□
Sports Arena Blvd and Camino Del Rio West (Counter Clockwise)	20	60	70	✓	□	✓	□
Sports Arena Blvd and East Dr (Counter Clockwise)	20	90	110	✓	□	✓	✓

Table 6.9 Transit Station/Stop Locations, Amenities and Average Daily Boardings and Alightings – Preferred Plan Conditions

Station	Boardings	Alightings	Total	Amenities at the Stops			
				Signs	Shelter	Bench	Trash Can
Sports Arena Blvd and Sports Arena Driveway (Counter Clockwise)	50	130	170	✓		✓	
Sports Arena Blvd and Hancock St (Counter Clockwise)	60	180	230	✓		✓	
Old Town Transit Center (Eastbound)	2,010	2,130	4,120	✓	✓	✓	✓
Pacific Highway and Sports Arena Blvd (Eastbound)	50	30	70	✓			
Pacific Highway and Witherby St (Eastbound)	100	170	260	✓		✓	✓
Washington St and Pacific Highway (Eastbound)	90	70	160	✓		✓	
Washington St and Hancock St (Eastbound)	40	10	50	✓		✓	✓
Washington St and India St (Eastbound)	90	30	120	✓		✓	✓
Washington St and India St (Westbound)	20	90	100	✓			✓
Washington St and Hancock St (Westbound)	10	20	30	✓		✓	✓
Washington St and The Trolley Tracks (Westbound)	30	150	170	✓			
Pacific Highway and Washington St (Westbound)	30	30	60	✓		✓	
Pacific Highway and Witherby St (Westbound)	90	110	200	✓	✓	✓	✓
Pacific Highway and Enterprise St (Westbound)	20	60	80	✓			
Pacific Highway and Kurtz St (Westbound)	10	10	10	✓			
Old Town Transit Center (Westbound)	1,980	1,590	3,560	✓	✓	✓	✓
Rosecrans St and Lytton St (Eastbound)	30	20	40	✓	✓	✓	✓
Rosecrans St and North Evergreen St (Eastbound)	30	30	60	✓		✓	✓
Rosecrans St and Loma Square (Eastbound)	80	60	140	✓	✓	✓	✓
Rosecrans St and Sports Arena Blvd (Eastbound)	160	90	240	✓	✓	✓	✓
Rosecrans St and Pacific Highway (Eastbound)	50	30	60	✓	✓	✓	✓
Rosecrans St and Moore St (Westbound)	60	10	70	✓		✓	✓
Rosecrans St and Kurtz St (Westbound)	40	50	70	✓		✓	
Rosecrans St and Midway Drive (Westbound)	180	210	360	✓	○	✓	✓
Rosecrans St and North Evergreen St (Westbound)	30	40	60	✓			
Rosecrans St and Lytton St (Westbound)	10	20	30	✓			

Table 6.9 Transit Station/Stop Locations, Amenities and Average Daily Boardings and Alightings – Preferred Plan Conditions

Station	Boardings	Alightings	Total	Amenities at the Stops			
				Signs	Shelter	Bench	Trash Can
Pacific Highway and Witherby St (Northbound)	140	100	240	✓	✓	✓	✓
Pacific Highway and Enterprise St (Northbound)	30	60	70	✓			
Pacific Highway and Kurtz St (Northbound)	20	20	20	✓			
Old Town Transit Center (Northbound)	4,170	770	4,930	✓	✓	✓	✓
Old Town Transit Center (Southbound)	770	3,890	3,940	✓	✓	✓	✓
Pacific Highway and Sports Arena Blvd (Southbound)	40	600	80	✓			
Midway Drive and Duke St (Eastbound)	100	60	160	✓	✓	✓	✓
Midway Drive and Fordham St (Eastbound)	110	40	140	✓	✓	✓	✓
Midway Drive and East Drive (Eastbound)	70	70	140	✓	✓	✓	✓
Midway Drive and East Drive (Westbound)	80	60	140	✓		✓	
Midway Drive and Fordham St (Westbound)	40	110	140	✓		✓	
Midway Drive and Kemper St (Westbound)	50	110	150	✓		✓	
Midway Drive and Duke St (Westbound)	40	130	160	✓		✓	
Taylor St and Juan St (Northbound)	30	20	30	✓		✓	
Taylor St and Sunset St (Southbound)	10	10	20	✓		✓	
Taylor St and Juan St (Eastbound)	10	10	10	✓		✓	
Taylor St and Presidio Drive (Eastbound)	10	10	10	✓		✓	
Taylor St and I-8 East (Eastbound)	10	10	10	✓			
Taylor St and I-8 East (Westbound)	10	10	10	✓		✓	
Taylor St and Presidio Drive (Westbound)	10	10	10	✓		✓	
Taylor St and Sunset St (Westbound)	10	10	10	✓		✓	
Taylor St and Juan St (Southbound)	10	10	10	✓		✓	
Old Town Transit Center	8,280	390	8,670	✓	✓	✓	✓
Washington Street Station	280	660	930	✓	✓	✓	✓
Middletown Station	10	11,110	11,110	✓	✓	✓	✓

Source: Chen Ryan Associates (March 2017)

Notes:
✓: Existing Amenity
O: Needed Amenity

As shown, the majority of the existing stops/stations already provide adequate amenities to accommodate the projected future ridership. However, additional amenities will be needed at the following stations as ridership increased:

Midway-Pacific Highway Community

- Sports Arena Boulevard, between Hancock Street and Kemper Street (Clockwise) – Bench
- Sports Arena Boulevard and East Drive (Clockwise) – Shelter
- Rosecrans Street and Midway Drive (Westbound) – Shelter

Old Town

- None

6.6.2 Arterial Speed Analysis Along Roadways Serving Transit Routes

An HCM peak hour arterial speed analysis was conducted along all roadway corridors where transit routes are projected to operate in order to identify future roadway congestion that could potentially impact transit route travel times and on-time performance. Transit priority measures such as queue jumper lanes and transit priority signal timing should be implemented in locations where future roadway congestion is anticipated.

Table 6.10 displays peak hour arterial speed analyses for all roadway facilities where a transit route operates under implementation of the Preferred Plan. Peak hour arterial analysis worksheets are provided in Appendix G.

Table 6.10 Arterial Speed Analysis Along Transit Corridors – Preferred Plan Conditions

Roadway	Segment	Posted Speed (MPH)	AM				PM			
			EB/NB		WB/SB		EB/NB		WB/SB	
			Speed	LOS	Speed	LOS	Speed	LOS	Speed	LOS
Midway-Pacific Highway Community										
Camino Del Rio West	Sports Arena Blvd to Kurtz Street	35	5.7	F	6.8	F	4.7	F	5.1	F
	Kurtz Street to Hancock Street	35	10.8	D	24.2	B	10.9	D	23.1	C
Rosecrans Street	Barnett Avenue to Midway Drive	35	22.2	C	9.5	F	12.9	F	19.1	D
	Midway Drive to Sports Arena Blvd	35	31.2	B	9.3	F	31.2	B	8.3	F
	Sports Arena Blvd to Kurtz Street	35	9.8	F	2.9	F	7.2	F	2.7	F
	Kurtz Street to Pacific Highway	35	16.9	E	20.5	D	14.5	E	20.4	D
Midway Drive	Sports Arena Blvd to Duke Street/Hancock Street	35	6	F	10.4	E	5.1	F	9.2	F
	Duke Street/Hancock Street to Kemper Street	35	20.5	C	17.7	D	16.1	D	13.4	E
	Kemper Street to East Drive	35	19.1	C	24.9	B	15.6	D	23.7	C
	East Drive to Rosecrans Street	35	23	C	12.3	E	20	C	8.4	F
Sports Arena Boulevard	I-8 WB Off-Ramp to W Point Loma Blvd	35	21	C	8.1	F	8.8	F	7.5	F
	W Point Loma Blvd to Hancock Street	35	11.7	E	21.1	C	4.8	F	23.1	C
	Hancock Street to Kemper Street	35	15.1	D	13.7	E	18.2	C	9.5	F
	Kemper Street to Frontier Drive	35	10.9	E	14.3	D	14.4	D	17.7	D
	Frontier Drive to Greenwood Street	35	12	E	20.6	C	12.3	E	11.7	E
	Greenwood Street to Rosecrans Street	35	26.2	B	6.4	F	23.7	C	6.1	F
Pacific Highway	Taylor Street to Kurtz Street	45	24.9	C	21.9	D	22.7	C	15.5	E
	Kurtz Street to Sports Arena Blvd	45	23	C	16.5	E	13.2	E	23	C

Table 6.10 Arterial Speed Analysis Along Transit Corridors – Preferred Plan Conditions

Roadway	Segment	Posted Speed (MPH)	AM				PM			
			EB/NB		WB/SB		EB/NB		WB/SB	
			Speed	LOS	Speed	LOS	Speed	LOS	Speed	LOS
Pacific Highway	Sports Arena Blvd to Barnett Avenue	45	11.7	F	11.7	F	9.4	F	4.8	F
	Washington Street to Sassafras Street	45	9.5	F	28	B	5.4	F	28.1	B
	Sassafras Street to W Laurel Street	45	31.6	B	15.3	E	27.9	C	13.2	E
Old Town Community										
Taylor Street	Pacific Highway to Congress Street	35	12.5	D	9	E	9.1	D	8.6	E
	Congress Street to Juan Street	35	9.7	D	12.9	D	6.7	F	13.8	C
	Juan Street to Whitman Street	35	17.5	C	14.3	C	15.4	C	15.3	C

Source: Chen Ryan Associates (March 2017)

Note:
Bold letter indicates LOS E or F

As shown, several segments within both communities are projected to operate at LOS E or F during both the AM and PM Peak hours:

<u>Midway-Pacific Highway</u>

- Camino del Rio West, between Sports Arena Boulevard and Kurtz Street
  - LOS F: AM & PM peak hours, westbound & eastbound directions
- Rosecrans Street, between Barnett Avenue and Midway Drive
  - LOS F: AM peak hour, westbound direction
  - LOS F: PM peak hour, eastbound direction
- Rosecrans Street, between Midway Drive and Sports Arena Boulevard
  - LOS F: AM & PM peak hours, westbound direction
- Rosecrans Street, between Sports Arena Boulevard and Kurtz Street
  - LOS F: AM & PM peak hours, westbound & eastbound directions
- Rosecrans Street, between Kurtz Street and Pacific Highway
  - LOS E: AM & PM peak hours, eastbound direction
- Midway Drive, between Sports Arena Boulevard and Hancock Street
  - LOS F: AM & PM peak hours, northbound direction
  - LOS E: AM peak hour, southbound direction
  - LOS F: PM peak hour, southbound direction
- Midway Driveway, between Hancock Street and Kemper Street
  - LOS E: PM peak hour, southbound direction
- Midway Drive, between East Drive and Rosecrans Street
  - LOS E: AM peak hour southbound direction
  - LOS F: PM peak hour southbound direction
- Sports Arena Boulevard, between I-8 Westbound Ramps and West Point Loma Boulevard
  - LOS F: AM peak hour, southbound direction
  - LOS F: PM peak hour, northbound & southbound directions
- Sports Arena Boulevard, between West Point Loma Boulevard and Hancock Street
  - LOS E: AM peak hour, northbound direction

    - LOS F: PM peak hour, northbound direction
- Sports Arena Boulevard, between Hancock Street and Kemper Street
    - LOS E: AM peak hour, southbound direction
    - LOS F: PM peak hour, southbound direction
- Sports Arena Boulevard, between Kemper Street and Frontier Drive
    - LOS E: AM peak hour, northbound direction
- Sports Arena Boulevard, between Frontier Drive and Greenwood Street
    - LOS E: AM peak hour, northbound direction
    - LOS E: PM peak hour, northbound & southbound directions
- Sports Arena Boulevard, between Greenwood Street and Rosecrans Street
    - LOS F: AM & PM peak hours, southbound direction
- Pacific Highway, between Taylor Street to Kurtz Street
    - LOS E: PM peak hour, southbound direction
- Pacific Highway, between Kurtz Street and Sports Arena Boulevard
    - LOS E: AM peak hour, southbound direction
    - LOS E: PM peak hour, northbound direction
- Pacific Highway, between Sports Arena Boulevard and Barnett Avenue
    - LOS F: AM & PM peak hours, northbound & southbound directions
- Pacific Highway, between Washington Avenue and Sassafras Street
    - LOS F: AM & PM peak hours, northbound direction
- Pacific Highway, between Sassafras Street and Laurel Street
    - LOS E: AM & PM peak hours, southbound direction

As noted in Section 3.5.2, the following transit priority treatments are recommended to help on-time performance for bus routes within the Midway-Pacific Highway community:

Pacific Highway - Pacific Highway serves several regional bus routes that connect multiple communities. The projected low travel speeds along several segments of Pacific Highway could impact the efficiency and on-time performance of these regional routes. Therefore, it is recommended that, transit priority measures such as queue jumper lanes and transit priority signals are implemented at all signalized intersections along Pacific Highway between Taylor Street and Laurel Street.

Rosecrans Street – Rosecrans Street east of Camino Del Rio West currently serves four MTS bus Routes (8, 9, 28 and 35). A queue jumper lane and transit signal have already been implemented on the eastbound approach at the Taylor Street / Rosecrans Street and Pacific Highway intersection. Similar transit priority improvements should also be looked at the Rosecrans Street Camino Del Rio West and Sports Arena Boulevard intersection to allow westbound buses (Routes 8, 9 and 35) to turn right onto Sports Arena Boulevard and avoid congestion.

New Roadway Connections – The proposed new roadway connections can serve as alternative east/west routes for busses traveling through the community. Rerouting to these new facilities, if possible, may help avoid the congestion on Rosecrans Street. It is recommended that after

the construction of any of the new roadways, the City of San Diego coordinate with MTS to look at bus rerouting opportunities.

Old Town

- Taylor Street, between Pacific Highway and Congress Street
  - LOS E: AM & PM peak hours, southbound direction
- Taylor Street, between Congress Street and Juan Street
  - LOS F: PM peak hour, northbound direction

Taylor Street serves several regional bus routes connecting multiple communities. Therefore, it is recommended that transit priority treatments be implemented along Taylor Street to help increase transit performance. It is recommended to implement queue jumper lanes and transit priority signals in either direction at both the Taylor Street / Juan Street and Taylor Street / Morena Boulevard intersections.

6.7 Parking Management

It is anticipated that any additional parking demand associated with future developments will be accommodated on-site. It is assumed that all on-street public parking spaces will be maintained under Preferred Plan implementation, with the exception of the following:

Midway-Pacific Highway

Rosecrans Street, between Sports Arena Boulevard / Camino Del Rio West and Pacific Highway – To implement the multi-use urban path improvements proposed as part of the Preferred Plan, parking along both sides of Rosecrans Street will need to be removed. Approximately 65 on-street parking spaces will be removed along this segment. Since there is abundant off-street parking within the community and these spaces are not heavily utilized, the removal of these spaces should not negatively impact the community.

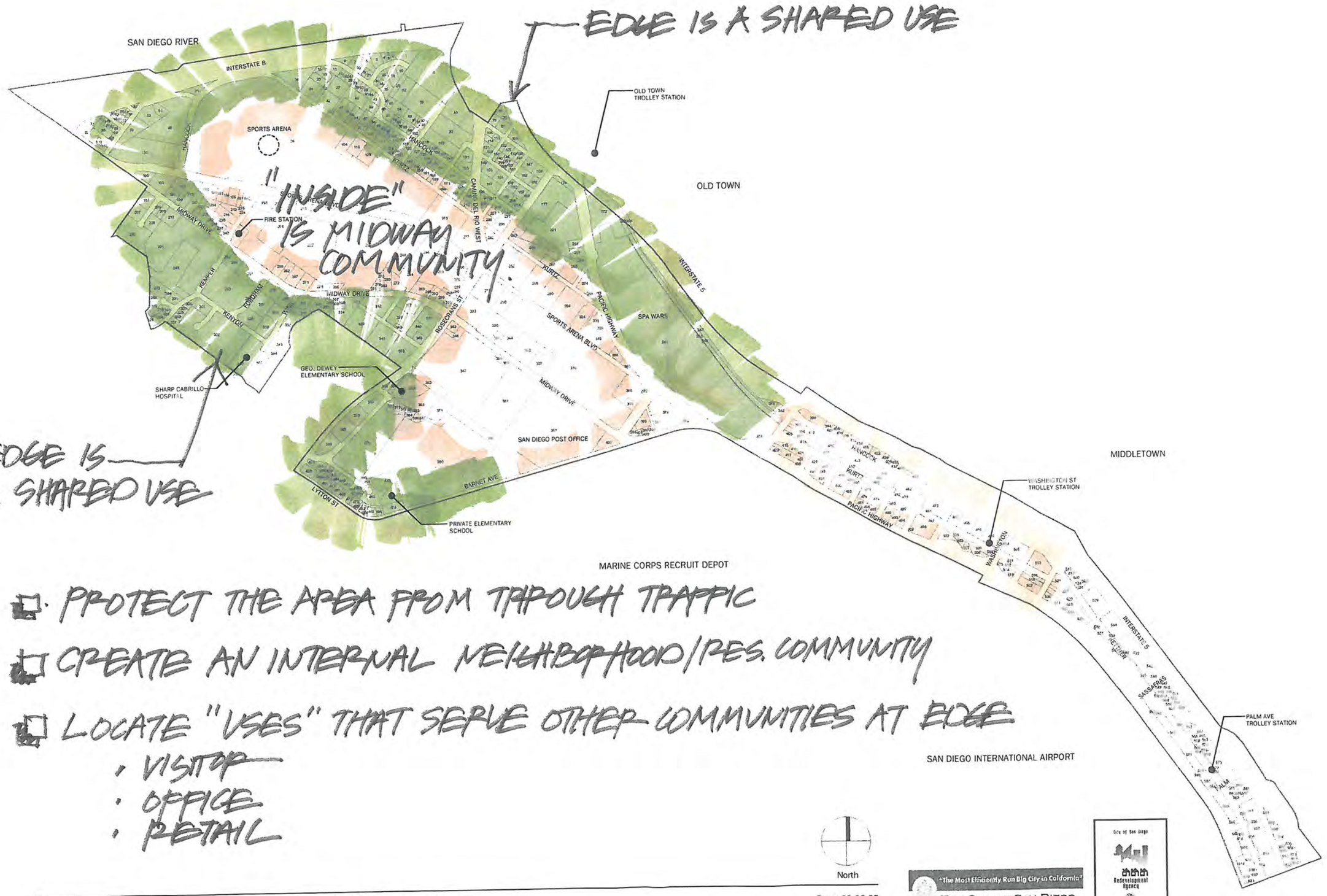
Sports Arena Boulevard, between West Point Loma Boulevard and Rosecrans Street – To implement the multi-use urban path improvements proposed as part of the Preferred Plan, parking along the southwest side of Sports Arena Boulevard will need to be removed. Approximately 24 on-street parking spaces will be removed along this segment. Since there is abundant off-street parking within the community and these spaces are not heavily utilized, removal of these spaces should not negatively impact the community.

Old Town

There is not anticipated to be any loss of on-street parking within the Old Town Community. However, as noted in Section 4.2.2 it is proposed that the parking along the east side of San Diego Avenue, between Twiggs Street and Conde Street, be converted from parallel to diagonal parking. This improvement could potentially result in up to 20 additional on-street parking spaces along San Diego Avenue.

The community is not currently in favor of metering parking within Old Town as a means to create parking turnover, therefore, use of the existing parking supply should be maximized to help meet parking demands. The Caltrans parking lot, located north of the Congress Street and Taylor Street intersection, provides approximately 800 parking spaces that are open to the public on nights and weekends and is frequently under capacity. Increased utilization of these spaces may help alleviate some of the parking demand experienced throughout the Old Town community. Additional wayfinding signage may be beneficial to help direct community visitors and employees to the lot.

Appendix A
Midway/Pacific Highway Urban Greening Plan
Cross-Sections and Concept Plans



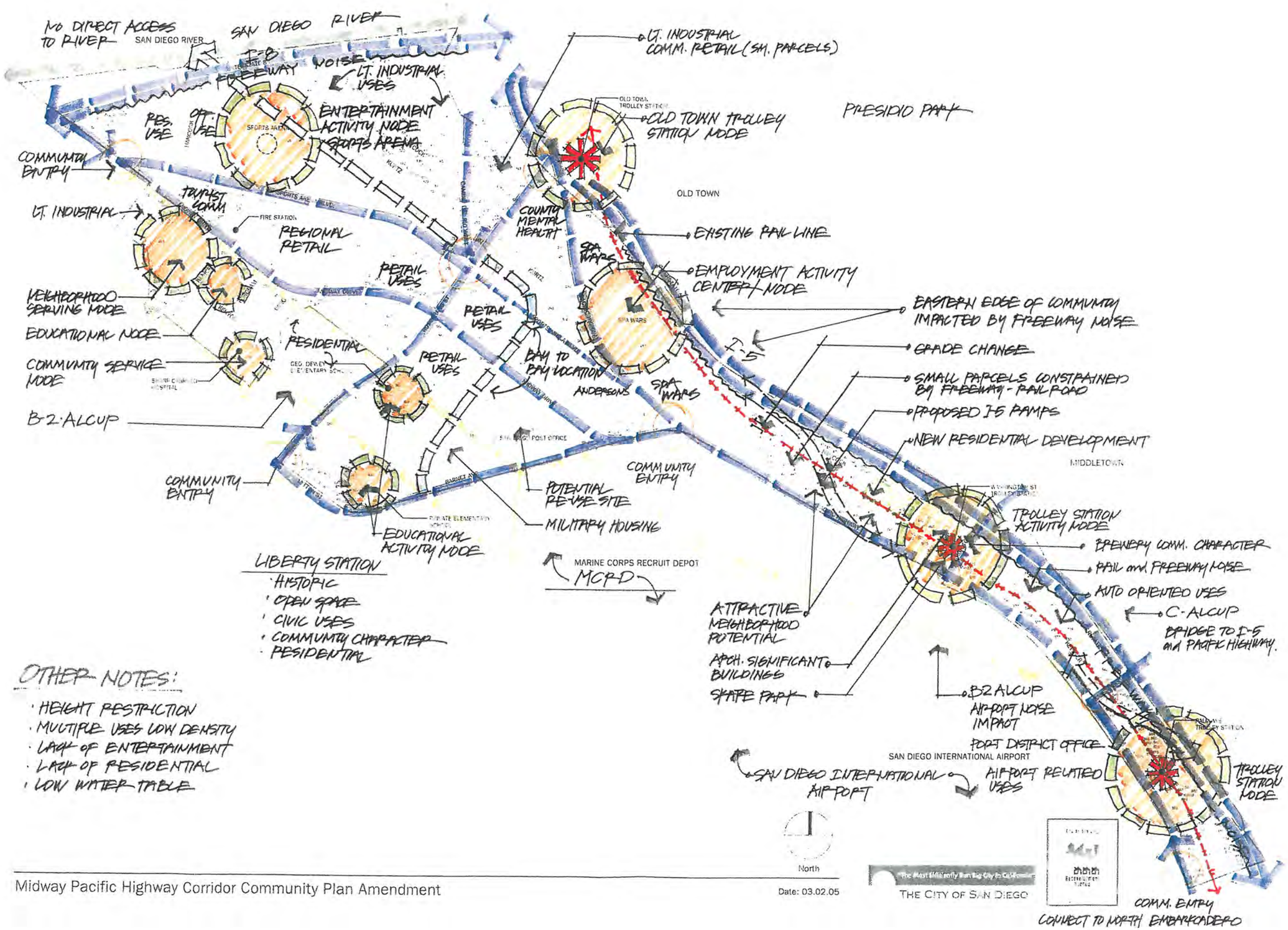
- PROTECT THE AREA FROM THROUGH TRAFFIC
- CREATE AN INTERNAL NEIGHBORHOOD/RES. COMMUNITY
- LOCATE "USES" THAT SERVE OTHER COMMUNITIES AT EDGE
  - VISITOR
  - OFFICE
  - RETAIL

North

"The Most Efficiently Run Big City in California"

THE CITY OF SAN DIEGO

City of San Diego Redevelopment Agency


NO DIRECT ACCESS TO RIVER
SAN DIEGO RIVER
SAN DIEGO RIVER
I-8 FREEWAY
NOISE
LT. INDUSTRIAL USES
RES. USE
OFF. USE
ENTERTAINMENT ACTIVITY NODE
SPORTS ARENA
COMMUNITY ENTRY
LT. INDUSTRIAL
TOURIST COMM.
FIRE STATION
REGIONAL RETAIL
NEIGHBORHOOD SERVING NODE
EDUCATIONAL NODE
COMMUNITY SERVICE NODE
B-2-ALCUP
RESIDENTIAL
RETAIL USES
RETAIL USES
RETAIL USES
BAY TO BAY CONNECTION
ANDERSONS
SPA WARS
LT. INDUSTRIAL COMM. RETAIL (SM. PARCELS)
OLD TOWN TROLLEY STATION
OLD TOWN TROLLEY STATION NODE
PRESIDIO PARK
OLD TOWN
COUNTY MENTAL HEALTH
SPA WARS
EXISTING RAIL LINE
EMPLOYMENT ACTIVITY CENTER/NODE
EASTERN EDGE OF COMMUNITY IMPACTED BY FREEWAY NOISE
I-5
GRADE CHANGE
SMALL PARCELS CONSTRAINED BY FREEWAY - RAILROAD
PROPOSED I-5 RAMPS
NEW RESIDENTIAL DEVELOPMENT
MIDDLETOWN
SAN DIEGO POST OFFICE
COMMUNITY ENTRY
POTENTIAL RE-USE SITE
MILITARY HOUSING
EDUCATIONAL ACTIVITY NODE
COMMUNITY ENTRY
LIBERTY STATION
· HISTORIC
· OPEN SPACE
· CIVIC USES
· COMMUNITY CHARACTER
· RESIDENTIAL
MARINE CORPS RECRUIT DEPOT
MCRD
ATTRACTIVE NEIGHBORHOOD POTENTIAL
ARCH. SIGNIFICANT BUILDINGS
SKATE PARK
B2 ALCUP
AIRPORT NOISE IMPACT
PORT DISTRICT OFFICE
SAN DIEGO INTERNATIONAL AIRPORT
SAN DIEGO INTERNATIONAL AIRPORT
AIRPORT RELATED USES
TROLLEY STATION NODE
TROLLEY STATION ACTIVITY NODE
BREWERY COMM. CHARACTER
RAIL and FREEWAY NOISE
AUTO ORIENTED USES
C-ALCUP
BRIDGE TO I-5 and PACIFIC HIGHWAY.
COMM. ENTRY
CONNECT TO NORTH EMBARCADERO
OTHER NOTES:
· HEIGHT RESTRICTION
· MULTIPLE USES LOW DENSITY
· LACK OF ENTERTAINMENT
· LACK OF RESIDENTIAL
· LOW WATER TABLE
North
THE CITY OF SAN DIEGO

Appendix B
City of San Diego Unfunded Transportation Needs List (8/5/14)

ID	Title	Prioritization_Score	Description	Status	Community	CD	CIP_NO	PFFP_NO	Estimate	Funding_Identified_in_Financing_Plan	Grant_Funding_Source	Comments	High_Accident	TR_Number	Mapped_By	Item Type	Path
2491	Market St @ Pitta St	0	Re-evaluated in August 2012 and no longer meets warrants.	No longer meets warrants	Encanto Neighborhoods, Southeastern	4							0	320405		Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
2503	Cardiff St @ San Vicente St	0	Re-evaluated March 2012 and no longer meets warrants.	No longer meets warrants	Encanto Neighborhoods, Southeastern	4							0	320397		Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
2767	58th St @ Skyline Dr/Trinidad Wy	0	Re-evaluated in Oct. 2012 and no longer meets warrants.	No longer meets warrants	Encanto Neighborhoods, Southeastern	4							0	326167		Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
3517	Sampson Street southwest of 28th Street 156', northwest side Street Light	0		No longer meets warrants	Southeastern San Diego, Southeastern	8			2000				0	329954	Hughes, Duncan	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
827	30th Street & Market Street Traffic Signal Upgrade	0	Install left-turn phasing for EB/WB traffic on Market Street	No longer meets warrants	Southeastern San Diego, Southeastern	8			13785			LT phasing installed by Streets Div. on 5/15/12.	0	305875	Pornan, Donald	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
751	Southcrest Redevelopment Project Area Street Lights	1	This project will install up to 73 street lights in the Southcrest Redevelopment Area.	PITS	Southeastern San Diego, Southeastern	4;#8	52-293.0		655600	Redevelopment			Yes		Pornan, Donald	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
530	60th St. from Upland St. to Weaver St.-Install New Guardrail	17	This project will install 1,230' of guardrail.	TEO Funded	Encanto Neighborhoods,	4			78000				No		Nascimento, Claudio	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
531	60th St. from Broadway to Radio Dr.-Install New Guardrail	20	This project will install 272' of guardrail along the west side of 60th St within the specified limits.	TEO Funded	Encanto Neighborhoods, Southeastern	4						In Design, estimate to be provided by consultant.	No	283409	Nascimento, Claudio	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
4109	Medio St and Pocatello St - Install New Guardrail	21	This project will install approximately 375' of new guardrail along the west side of Pocatello St and Medio St between Eleanor Dr and Bishop St.	TEO Unfunded	Southeastern San Diego, Southeastern	4			45000			Cost Estimate Complete.	No		Alo, Leo	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
491	Wunderlin Ave from 63rd Street to 900' east(North Side) - Install New Sidewalk	25	This project will provide PCC sidewalk on the north side of Wunderlin Avenue.	TEO Unfunded	Encanto Neighborhoods, Southeastern	4			115000	Other	CDBG;#Safe Route to School	Conflicts: Landscaping, Utility Poles, Trees	Yes	318208	Pornan, Donald	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
814	19th Street & Market Street Traffic Signal Upgrade	25	Install pedestrian heads for all crossings	TEO Unfunded	Southeastern San Diego, Southeastern	8			12500				0		Pornan, Donald	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
934	25th Street & Imperial Avenue Traffic Signal Upgrade	25	Install PPB (2010).	TEO Unfunded	Southeastern San Diego, Southeastern	8			6000				0		Pornan, Donald	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
935	25th Street & Market Street Traffic Signal Upgrade	25	Change out left turn signal; head from PV to regular signal heads with arrows .	TEO Unfunded	Southeastern San Diego, Southeastern	8			16100				0		Pornan, Donald	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
938	30th Street (S) & Ocean View Boulevard Traffic Signal Upgrade	25	Install pedestrian indications on the NWC and NEC	TEO Unfunded	Southeastern San Diego, Southeastern	8			9500				0		Pornan, Donald	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
449	Pocatello St from Eleanor Dr to Medio St, Medio St from Pocatello St to Bishop Dr, Bishop Dr from Medio St to Eleanor Dr - Improve to residential local street	27	This project will provide for a low volume, residential local street along Pocatello, Medio and Bishop per Street Design Manual Standards. It will require excavation, new AC street section,curb, gutter and sidewalk, street lights, retaining walls, and encroachment removal.	TEO Unfunded	Southeastern San Diego, Southeastern	4				Other			0		Pornan, Donald	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
498	Skyline Dr. at Woodman St.-Install New Guardrail	28	This project will install approximately 80' of guardrail at the southeast corner of this intersection.	TEO Unfunded	Encanto Neighborhoods, Southeastern;#Skyli	4			30000				No	308921	Nascimento, Claudio	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
551	Imperial Ave from I-5 to 32nd St - Widen to 4-lane major	28	This project provides for the widening of Imperial Avenue to a four-lane major street.	TEO Unfunded	Southeastern San Diego, Southeastern	4;#8		SESD-T9	2800000				0		Pornan, Donald	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
947	32nd St & Market St Traffic Signal Upgrade	28	Add pedestrian signal heads and push buttons	TEO Unfunded	Southeastern San Diego, Southeastern	8			14600				0		Pornan, Donald	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
984	Euclid Av & Logan Av/Olvera Av Traffic Signal Upgrade	28	Relocate PPB 180 degrees at NWC of Logan and Euclid (south leg of Logan, PPB on median); relocate PPB 180 degrees at SEC of Olvera & Euclid (2002)	TEO Unfunded	Encanto Neighborhoods, Southeastern	4			600				0		Pornan, Donald	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
1077	32nd St & Imperial Ave Traffic Signal Upgrade	28	Install new limit line loops to improve bicycle detection for all approaches (Mod. Type E)	TEO Unfunded	Southeastern San Diego, Southeastern	4			20000				0	314,613	Pornan, Donald	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
251	60th St from Imperial to Federal - Widen to 2-lane collector	29	This project provides for the widening of 60th Street to a two-lane collector.	TEO Unfunded	Southeastern San Diego, Southeastern	4;#8		SESD-17	7000000	Other			0		Pornan, Donald	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
267	Guymon St from 1000' w/o Euclid Ave to 1400' w/o Euclid Ave - Widen road	29	Widen road to standard 40' c/c	TEO Unfunded	Southeastern San Diego, Southeastern	8				Other		Conflicts: Environmental, No C&G, Drainage	0	313469	Pornan, Donald	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
3481	36th St & National Av APS Traffic Signal Upgrade	29	Install Polara push buttons Upgrade curb ramps Install ped countdown timers	TEO Unfunded	Southeastern San Diego, Southeastern	9			30000				0	329545		Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
3791	25th St & J St Traffic Signal Upgrade	29	Install ped countdown timers (8) Upgrade ped push buttons (7)	TEO Unfunded	Southeastern San Diego, Southeastern	8			2600				0	331,264		Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
474	35th St from Durant St to Webster Ave(West Side)-Install New Sidewalk	30	This project will provide approximately 100 linear feet of new PCC sidewalk on the west side of 35th Street. It will require excavation.	TEO Unfunded	Southeastern San Diego, Southeastern	9			27000	Other	CDBG	Conflicts: None Observed IMCAT Conflicts as of	0	308882	Nascimento, Claudio	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
4115	Merlin Drive north of Brooklyn Avenue 395', west side	30		TEO Unfunded	Encanto Neighborhoods,	4			2000		Smart Growth;#CDBG			TR334870	Semaan, Jerry	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
4116	Merlin Drive north of Brooklyn Avenue 575', west side	30		TEO Unfunded	Encanto Neighborhoods,	4			2000		Smart Growth;#CDBG			TR334870	Semaan, Jerry	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
4117	Merlin Drive north of Brooklyn Avenue 915', west side	30		TEO Unfunded	Encanto Neighborhoods,	4			2000		Smart Growth;#CDBG			TR334870		Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
3014	Skyline Dr & Sychar Rd Traffic Signal Upgrade	30	Upgrade curb ramps Install ped countdown timers	TEO Unfunded	Encanto Neighborhoods,	4			40000				0	328,180	Morabe, Lindsay	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
3015	Meadowbrook Dr & Skyline Dr Traffic Signal Upgrade	30	Upgrade curb ramps Install ped countdown timers	TEO Unfunded	Encanto Neighborhoods,	4			40000				0	328,179	Morabe, Lindsay	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List

3017	Skyline Dr & Woodman St Traffic Signal Upgrade	30	Install new loops for phases 2 & 5 Upgrade curb ramps Upgrade ped push buttons Install ped countdown timers	TEO Unfunded	Encanto Neighborhoods, Southeastern	4			55000				0	328,183	Morabe, Lindsay	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
116	Bancroft St from Island Ave to J St(West Side)- Install New Sidewalk	31	This project will provide approximately 291 linear feet of sidewalk, relocate three (3) street lights, 18 linear feet of driveway, and add five (5) pedestrian ramps.	TEO Unfunded	Southeastern San Diego, Southeastern	8			192000	Other	CDBG;#Safe Route to School	Conflicts: Utility Poles, Utility Boxes, Landscaping	0	308866	Tawfiq, Kharman	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
323	Geneva Ave from Winston Dr to Beverly St(South Side)- Install New Sidewalk	31	This project will install PCC sidewalk on the South Side of Geneva Ave.	TEO Unfunded	Encanto Neighborhoods, Southeastern	4				Other		Conflicts: Slope, Utility Poles, Mailboxes, Landscaping IMCAT Conflicts as of	0	309002	Pornan, Donald	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
353	58th St from South of Atla Vista Ave to End of 58th St(West Side)- Install New Sidewalk	31	This project will install PCC sidewalk on the west side of 58th Street.	TEO Unfunded	Encanto Neighborhoods, Southeastern	4				Other	CDBG	Conflicts: Drainage, Possible ROW Encroachment	0	318210	Pornan, Donald	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
493	Santa Isabel Dr from Bonita Dr to Olvera Ave(West Side)- Install New Sidewalk	31	This project will install PCC sidewalk on the west side of Santa Isabel Drive.	TEO Unfunded	Encanto Neighborhoods, Southeastern	4				Other	CDBG	Conflicts: Utility Poles, Landscaping, Driveway Clearance, Trees, Slop	Yes	309079	Pornan, Donald	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
3018	Skyline Dr & Valencia Traffic Signal Upgrade	31	Upgrade ped push buttons Install ped countdown timers	TEO Unfunded	Encanto Neighborhoods,	4			8000				0	328,186	Morabe, Lindsay	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
352	54th St from Imperial Ave to Santa Margarita St(East Side)- Install New Sidewalk	32	This project will install PCC sidewalk on the East Side of 54th Street.	TEO Unfunded	Encanto Neighborhoods, Southeastern	4					CDBG	Conflicts: No C&G, Drainage Concerns, Utility Poles IMCAT Conflicts as of	0	303500	Pornan, Donald	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
370	53rd St from Santa Margarita St to Imperial Ave(East Side)- Install New Sidewalk	32	This project will install PCC sidewalk on the east side of 53rd Street.	TEO Unfunded	Encanto Neighborhoods, Southeastern	4				Other	CDBG	Conflicts: None Oserved	0	306252	Pornan, Donald	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
1263	Roswell St from Swaner St to Old Memory Lane (North Side) -Install New Sidewalk	32	This project will install a missing sidewalk segment on the North Side of Roswell St.	TEO Unfunded	Encanto Neighborhoods, Southeastern	4						Conflicts: No C&G, Drainage Concerns	0		Pornan, Donald	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
1242	Citywide Streetlights FY 2011	32	Installation of street lights at various locations: Enterprise Street at Jessop Lane, north side Pershing Avenue at Upas Street, southeast corner Bancroft Street at Greely Avenue, southeast corner Houston Street at Kurtz Street, southwest corner Central Avenue at Dwight Street, northeast corner 62nd Street at Akins Avenue, southeast corner 31st Street at Juniper Street, northeast corner 32nd Street at Juniper Street, northeast corner 33rd Street at Juniper Street, northeast corner Bancroft Street at Juniper Street, northeast corner Dale Street at Juniper Street, northeast corner	TEO Funded	Encanto Neighborhoods, Southeastern;#Greater North Park;#Mid-City:City Heights;#Midway-Pacific Highway;#Southeastern San Diego, Southeastern	2;#3;#4;#8	B1114 7		96000				Yes		Pornan, Donald	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
3016	O'Meara St & Skyline Dr Traffic Signal Upgrade	32	Install ped countdown timers	TEO Unfunded	Encanto	4			2000				0	328,184	Morabe,	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
298	Brooklyn Ave from Merlin St to 63rd St(North Side)- Install New Sidewalk	33	This project will provide approximately 377 linear feet of sidewalk, six driveways, and two pedestrian ramps.	TEO Unfunded	Encanto Neighborhoods, Southeastern	4			116000	Other	CDBG;#Safe Route to School	Conflicts: Utility Box, Utility Poles, Decorative Pavement IMCAT Conflicts as of	0	309098A	Pornan, Donald	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
328	54th St from Imperial Ave to Naranja St(East Side)- Install New Sidewalk	33	This project will install PCC sidewalk on the East Side of 54th Street.	TEO Unfunded	Encanto Neighborhoods, Southeastern	4					CDBG	Conflicts: No C&G, Drainage Concerns	0	303499	Pornan, Donald	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
332	G St from 22nd St to 24th St(North Side)- Install New Sidewalk	33	This project will provide approximately 410 Linear feet of new PCC sidewalk and curb ramps on the north side of G Street. It will require clearing and grubbing, sign relocation, fence relocation, and Caltrans Encroachment Permit.	TEO Unfunded	Southeastern San Diego, Southeastern	8			148000	Other	CDBG;#Safe Route to School	Conflicts: Guardrail, Fence, ROW space, Utility Boxes IMCAT Conflicts as of 1/3/13: Overlay FY14	0	308999	Nascimento, Claudio	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
381	Groveland Dr from Euclid Ave to 53rd St(North Side)- Install New Sidewalk	33	This project will provide approximately 407 linear feet of sidewalk, 84 linear feet of driveway, 491 linear feet of curb and gutter, two pedestrian ramps, and relocate one fire hydrant.	TEO Unfunded	Encanto Neighborhoods, Southeastern	4			261000		CDBG	Conflicts: Utility Poles, Utility Boxes IMCAT Conflicts as of 12/28/12: None	0	309225	Pornan, Donald	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
463	Leghorn Ave from 66th St to Varney Dr(West Side)- Install New Sidewalk	33	This project will provide approximately 921 linear feet of guardrail, five driveways, 295 feet of curb, gutter, 141 linear feet of retaining wall, and 141 feet of guardrail.	TEO Unfunded	Encanto Neighborhoods, Southeastern	4			321000	Other		Conflicts: Mailboxes, Street Light, Utility Boxes, Guardrail, Storm Drain, Substandard Segment needs widening	0	309025	Nascimento, Claudio	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
470	Santa Margarita St from San Jacinto Dr to 55th St(South Side)- Install New Sidewalk	33	This project will install PCC sidewalk on the south side of Santa Margarita Street.	TEO Unfunded	Encanto Neighborhoods, Southeastern	4				Other	CDBG;#Safe Route to School	Conflicts: Utility Poles, Slopes, Landscaping, Trees, Draina IMCAT Conflicts as of	0	309080	Pornan, Donald	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List

665	Brooklyn Ave from 63rd St to Otay St(South Side)- Install New Sidewalk	33	This project will provide approximately 702 linear feet of sidewalk, 85 linear feet of driveway, three pedestrian ramps, and relocate two fire hydrants.	TEO Unfunded	Encanto Neighborhoods, Southeastern	4			201000		CDBG;#Safe Route to School	Conflicts: Utility Poles, Fire Hydrant, Fence IMCAT Conflicts as of	0	309097B	Pornan, Donald	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
666	Brooklyn Ave from Merlin St to 63rd St(South Side)- Install New Sidewalk	33	This project will install PCC sidewalk on the South Side of Brooklyn Avenue.	TEO Unfunded	Encanto Neighborhoods, Southeastern	4					CDBG;#Safe Route to School	Conflicts: Utility Box, Utility Poles, Decorative Pavement IMCAT Conflicts as of	0	309098B	Pornan, Donald	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
693	Benson Ave from Roth Ct to Jojo Ct (South Side) - Install New Sidewalk	33	This project will install PCC sidewalk on the south side of Benson Ave.	TEO Unfunded	Encanto Neighborhoods, Southeastern	4					CDBG;#Safe Route to School	Conflicts: Widening needed, Slope IMCAT Conflicts as of	0	309085	Pornan, Donald	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
785	29th St from Imperial Ave to Commercial St (East Side)- Install New Sidewalk	33	This project will provide approx. 330 LF of sidewalk, trees w/ grates, AC pavement, curb ramps, driveway apron, Type B inlet, and traffic striping. It will require sidewalk removal, pavement removal, inlet removal, sign relocation, meter box adjustment, and fire hydrant relocation.	TEO Unfunded	Southeastern San Diego, Southeastern	8			486000		CDBG	Conflicts: No Curb & Gutter, Drainage IMCAT Conflicts as of 1/3/13: Overlay FY15 (Start Cnst: 11/14 End Cnst: 7/15)	0	311510	Pornan, Donald	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
555	Akins Ave from 62nd St to 65th St Channel Improvements	33	This project provides for approximately 1400 feet of six foot high vinyl coated chain link fence with one gate. Remove existing fence.	PITS	Southeastern San Diego, Southeastern	4	527780		75000	Other			0			Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
813	19th Street & Imperial Avenue Traffic Signal Upgrade	33	Install signal poles and mast arms; upgrade to 12" signal heads; install detection; replace controller	TEO Unfunded	Southeastern San Diego, Southeastern	8			96000				0		Pornan, Donald	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
250	47th St from Market St to Imperial Ave - Widen to 4-lane major	34	This project provides for the widening of 47th Street to a four-lane Major.	TEO Unfunded	Southeastern San Diego, Southeastern	8		SESD-T18	5100000	Other			0		Pornan, Donald	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
263	Imperial Ave from I-15 to 40th St - Widen to 4-lane collector	34	This project provides for the widening of Imperial Avenue to a four-lane collector. Cost includes property acquisition and demolition of businesses and homes on southside.	TEO Unfunded	Southeastern San Diego, Southeastern	4;#8		SESD-T10		Other			0	315962	Pornan, Donald	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
266	Woodman St from Imperial Ave to Skyline Dr - Widen to 2-lane collector	34	This project provided for the improvement of Woodman Street to a two-lane collector.	PITS	Southeastern San Diego, Southeastern	4;#8		SESD-T14	1300000	Other			0		Pornan, Donald	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
283	33rd St from Imperial Ave to 75' N/O Imperial Ave(West Side)- Install New Sidewalk	34	This project will install PCC sidewalk on the west side of 33rd Street.	TEO Unfunded	Southeastern San Diego, Southeastern	8				Other	CDBG	Conflicts: Utility Boxes IMCAT Conflicts as of	0	318209	Pornan, Donald	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
334	Mallard St from Federal Blvd to 69th St (South Side)- Install New Sidewalk	34	This project will install PCC sidewak on the South Side of Mallard Street.	TEO Unfunded	Encanto Neighborhoods, Southeastern	4				Other		Conflicts: Utility POles, Mailboxes, Landscaping, Slopes, Fire Hydrant, Trees, Shrubs, Vegetation, Guardrail	0	309030	Pornan, Donald	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
469	Castana St from Euclid Ave to San Jacinto Dr(South Side) Install New Sidewalk	34	Install a sidewalk along the south side of Castana Street.	TEO Unfunded	Encanto Neighborhoods, Southeastern	4				Other	CDBG	Conflicts: Fire Hydrant, Utility Box, Utility Pole	0	309100	Pornan, Donald	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
1222	S 45th St from T Street to Logan Ave (East Side)- Install New Sidewalk	34	This project will install PCC sidewalk on the East Side of S 45th Street.	TEO Unfunded	Southeastern San Diego, Southeastern	4					CDBG	Conflicts: No C&G, Tree, Drainage, Business Access IMCAT Conflicts as of	0		Pornan, Donald	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
1234	Manzanares Wy from Euclid Ave to San Jacinto (South Side)- Install New Sidewalk	34	This project will install PCC sidewalk on the South Side of Manzanares Wy.	TEO Unfunded	Encanto Neighborhoods, Southeastern	4					CDBG	Conflicts: Utility Poles, Trees, Landscaping, Fire Hydrants, Fences	0		Pornan, Donald	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
441	Woodman St from Imperial Ave to Skyline Dr(West Side) - Install New Sidewalk	35	This project will install PCC sidewalk on the west side of Woodman Street.	TEO Unfunded	Encanto Neighborhoods, Southeastern	4			600000		CDBG	Water Group Job (Pipe Rehab) started 2/12 and Underground Utilities improvements will	No	317233, 325410, 333706	Pornan, Donald	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
3988	Radio Drive east of Paradise Street 850', south side street light	35		TEO Unfunded	Encanto Neighborhoods,	4			2000		CDBG		0	TR332999	Avila-Zepeda , Felipe R	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
264	Market St from Euclid Ave to 32nd St - Widen to 4-lane major	36	This project provides for the widening of Market Street to a four-lane major street with Class II bicycle lanes. The cost for property acquisition and building demolition are included in this estimate.	TEO Unfunded	Southeastern San Diego, Southeastern	4;#8		SESD-T11	6000000	Other			0		Pornan, Donald	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
363	Bluebird St from Mallard St to Mulberry St(West Side)- Install New Sidewalk	36	This project will install PCC sidewalk on the west side of Bluebird St.	TEO Unfunded	Encanto Neighborhoods, Southeastern	4				Other		Conflicts: Landscaping, No C&G, Mailboxes, Vegetation, Drainage, Utility Poles	0	309096B	Pornan, Donald	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
664	Bluebird St from Mallard St to Mulberry St(East Side)- Install New Sidewalk	36	This project will install PCC sidewalk on the East Side of Bluebird Street.	TEO Unfunded	Encanto Neighborhoods, Southeastern	4						Conflicts: Landscaping, No C&G, Mailboxes, Vegetation, Drainage, Utility Poles	0	309096A, 308872	Pornan, Donald	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
783	45th St from Benfield Ct to Imperial Ave (East Side)- Install New Sidewalk	36	This project will install PCC sidewalk on the east side of 45th Street.	TEO Unfunded	Southeastern San Diego, Southeastern	4			185000		CDBG	Conflicts: Needs Widening, Drainage, AC Curb, Utility Poles, Drain Inlet, Mailboxes, Outility Boxes	0	313467	Pornan, Donald	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List

112	Bittern St from Klauber Ave to Madera St(West Side)- Install New Sidewalk	37	This project will provide approximately 675 Linear Feet of sidewalk on the west side of Bittern Street. It will require excavation, sign relocation, mailbox relocation, meter box adjustment, and fire hydrant relocation. It will include new PCC sidewalk, curb ramps, and driveway aprons. .	TEO Unfunded	Encanto Neighborhoods, Southeastern	4			150000	Other		Conflicts: Landscaping, Mailboxes, Slope, Retaining Wall Fire Hydrants, Utility Poles IMCAT Conflicts as of	0	309095B	Nascimento, Claudio	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
262	Holly Dr from Willie James Jones Ave to Euclid Ave - Widen for CG&S	37	1000' widen road and CG&S & Drainage	PITS	Southeastern San Diego, Southeastern	4			1400000	Other			0		Pornan, Donald	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
270	Benson St from 61st St to Jenna St (South Side) - Install New Sidewalk	37	Widen, CG&S, Pvmt, Fill	TEO Unfunded	Southeastern San Diego, Southeastern	8			396000	Other		Conflicts: Needs Widening, Drainage, Utility Poles, Utility Boxes	0		Pornan, Donald	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
280	Beta St from 43rd St to End (North Side)- Install New Sidewalk	37	This project will provide approximately 601 linear feet of sidewalk. It will include curb and gutter, 13 driveways, and pavement.	TEO Unfunded	Southeastern San Diego, Southeastern	9			417000	Other	CDBG	Conflicts: Substandard Street, No C&G, Drainage, Trees, ROW Aquistion/Encroachm	0	309094B	Pornan, Donald	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
318	Coban St from Bonita Dr to Reynolds St(North Side)- Install New Sidewalk	37	This project will provide approximately 505 linear feet of sidewalk, five driveways, two pedestrian ramps, and 209 linear feet of curb and gutter.	TEO Unfunded	Encanto Neighborhoods, Southeastern	4			200000	Other	CDBG	Conflicts: Fire Hydrant, Utility Pole, No C&G, Wall, Tree, Landscaping	0	309103A	Pornan, Donald	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
466	Swan St from Springfield St to Tooley (West Side)- Install New Sidewalk	37	This project will install PCC sidewalk on the west side of Swan Street.	TEO Unfunded	Encanto Neighborhoods, Southeastern	4				Other		Conflicts: No C&G, Substandard Street Potentially, Landscaping,	0	309130	Pornan, Donald	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
662	Beta St from 43rd St to End (South Side)- Install New Sidewalk	37	This project will provide approximately 383 linear feet of sidewalk. It will include curb, gutter, 9 driveways, and pavement.	TEO Unfunded	Southeastern San Diego, Southeastern	9			310000		CDBG	Conflicts: Substandard Street, No C&G, Drainage, Trees, ROW Aquistion/Encroachm	0	309094A	Pornan, Donald	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
663	Bittern St from Klauber Ave to Madera St(East Side)- Install New Sidewalk	37	This project will provide approximately 1190 Linear Feet of sidewalk on the east side of ittern Street. It will require excavation, sign relocation, and mailbox relocation. It will include new PCC sidewalk, curb ramps, driveway aprons and a 130 LF 3" high retaining wall.	TEO Unfunded	Encanto Neighborhoods, Southeastern	4			243000			Conflicts: Landscaping, Mailboxes, Slope IMCAT Conflicts as of 12/28/12: None	0	309095A	Pornan, Donald	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
671	Coban St from Bonita Dr to Reynolds St(South Side)- Install New Sidewalk	37	This project will provide approximately 565 linear feet of sidewalk, 120 linear feet of curb and gutter, one driveway, and for pedestrian ramps.	TEO Unfunded	Encanto Neighborhoods, Southeastern	4			155000		CDBG	Conflicts: Fire Hydrant, Utility Pole, No C&G, Wall, Tree, Landscaping	0	309103B	Pornan, Donald	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
688	Swan St from Springfield St to Tooley (East Side)- Install New Sidewalk	37	This project will install PCC sidewalk on the East Side of Swan Street.	TEO Unfunded	Encanto Neighborhoods, Southeastern	4						Conflicts: No C&G, Substandard Street Potentially, Landscaping,	0	309130B	Pornan, Donald	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
265	Oceanview Blvd from 40th St to 32nd St - Widen to 4-lane major	38	This project provides for the widening of Oceanview Boulevard to a modified four-lane major street. No additional right of way is anticipated.	TEO Unfunded	Southeastern San Diego, Southeastern	4;#8		SESD-T12	96000000	Other			0		Pornan, Donald	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
394	Webster Avenue from 36th St to Western End of Webster (Both Sides) - Install New Sidewalk	38	This project will install PCC sidewalk on both side of Webster Avenue.	TEO Unfunded	Southeastern San Diego, Southeastern	9				Other	CDBG	Conflicts: Utility Poles, Drainage, Trees, Utility Boxes IMCAT Conflicts as of	0	309033	Pornan, Donald	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
533	Logan Ave from S47th St to 100' East (North Side)- Install New Sidewalk	38	This project will provide approximately 71 LF of sidewalk, and 71 feet of curb and gutter.	PITS	Encanto Neighborhoods,	4			41000		CDBG;#Safe Route to School	Funded by Brock Jones of Disability	0	308153	Pornan, Donald	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
3676	Nogal Street - 75' East of 47th Street (north side) - Install Driveway	38	Install missing (removed by previous owner) driveway	TEO Unfunded	Encanto Neighborhoods, Southeastern	4						Conflict Check: Undergrounding Utilities (start con:	0	330569	Turner, Scott	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
115	Cervantes Ave from Euclid Ave to Bonita Dr(North Side)- Install New Sidewalk	39	This project will provide approximately 2070 LF of CG&S, curb ramps, and driveway aprons. It will require AC curb removal, sign relocation, fence relocation, excavation, clearing and grubbing, and ROW acquisition.	TEO Unfunded	Encanto Neighborhoods, Southeastern	4			414000	Other	CDBG	Conflicts: Fire Hydrants, Fences, Landscaping, Utility Poles, Slope, Utility Boxes, Mailboxes	0	308880	Nascimento, Claudio	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
119	Alta Vista Ave from Cervantes Ave to 58th St(South Side)- Install New Sidewalk	39	This project will provide approximately install 1259 linear feet of sidewalk, 243 linear feet of driveway, with respective curb and gutter, four pedestrian ramps, 273 linear feet of retaining wall, relocate 12 mail boxes, and three signs on the south side of Alta Vista Avenue.	TEO Unfunded	Encanto Neighborhoods, Southeastern	4			492000	Other	CDBG	Conflicts: No C&G, Drainage, Mailboxes, Landscaping, Slope, Trees, Walls, Fences IMCAT Conflicts as of 12/28/12: None	0	306235	Tawfiq, Kharman	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
252	61st St from Akins St to Brooklyn St(East Side)- Install New Sidewalk	39	This project will provide approximately 701 linear feet of sidewalk, 432 linear feet of driveway, 1146 linear feet of curb and gutter, one pedestrian ramp, replace 3 fire hydrants, and replace one street sign.	TEO Unfunded	Encanto Neighborhoods, Southeastern	4			442000		CDBG	Conflicts: Utility Pole, Fire Hydrant, Trees IMCAT Conflicts as of 12/28/12: Overlay	0	306237	Tawfiq, Kharman	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
390	Radio Dr from 60th St to Springfield Dr(North Side)- Sidewalk Improvement	39	This project will install PCC sidewalk on the north side of Radio Drive.	TEO Unfunded	Encanto Neighborhoods, Southeastern	4			24150000	Other		Conflicts: Substandard Roadways- needs many improvements IMCAT Conflicts as of	0	284464	Nascimento, Claudio	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
465	Castana St from San Jacinto Dr to Groveland Dr(North Side)- Install New Sidewalk	39	This project will provide approximately 470 linear feet of sidewalk, and 31 feet of driveway.	TEO Unfunded	Encanto Neighborhoods, Southeastern	4			57000	Other	CDBG	Conflicts: None observed	0	309100A, 306233	Nascimento, Claudio	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List

518	Radio Dr from 60th St to Springfield Dr(South Side)- Sidewalk Improvement	39	This project will install PCC sidewalk on the South Side of Radio Drive.	TEO Unfunded	Encanto Neighborhoods, Southeastern	4			24150000			Conflicts: Substandard Roadways- needs many improvements IMCAT Conflicts as of	0	284464	Pornan, Donald	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
668	Castana St from San Jacinto Dr to Groveland Dr(South Side)- Install New Sidewalk	39	This project will provide approximately 377 linear feet of sidewalk, and 104 linear feet of driveway. It will be neccessary to relocate one fire hydrant and one traffic sign.	TEO Unfunded	Encanto Neighborhoods, Southeastern	4			84000		CDBG	Conflicts: None observed IMCAT Conflicts as of	0	309100B	Pornan, Donald	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
670	Cervantes Ave from Euclid Ave to Bonita Dr(South Side)- Install New Sidewalk	39	This project will provide approximately 2070 LF of sidewalk on the south side of Cervantes Avenue. It will require AC curb removal, sign relocation, fence relocation, excavation, clearing and grubbing, and ROW acquisition. It will include new CG&S, curb ramps, and driveway aprons.	TEO Unfunded	Encanto Neighborhoods, Southeastern	4			414000		CDBG	Conflicts: Fire Hydrants, Fences, Landscaping, Utility Poles, Slope, Utility Boxes, Mailboxes IMCAT Conflicts as of	0	308880	Pornan, Donald	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
701	Cervantes Ave from Bonita Dr to Alta Vista Ave(North Side)- Install New Sidewalk	39	This project will provide approximately 541 linear feet of sidewalk, six driveways, and six pedestrian ramps.	TEO Unfunded	Encanto Neighborhoods, Southeastern	4			240000		CDBG	Conflicts: ROW Encroachments, Fences, Landscaping, Utility Poles, Slope,	0	309229	Pornan, Donald	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
702	Cervantes Ave from Bonita Dr to Alta Vista Ave(South Side)- Install New Sidewalk	39	This project will provide approximatley 1032 linear feet of sidewalk, two driveways, nine pedesrtian ramps, and 132 linear feet of retaining wall.	TEO Unfunded	Encanto Neighborhoods, Southeastern	4			375000		CDBG	Conflicts: ROW Encroachments, Fences, Landscaping, Utility Poles, Slope,	0	309228	Pornan, Donald	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
703	Coban St from Euclid Ave to Reynolds St(North Side)- Install New Sidewalk	39	This project will install PCC sidewalk on the North Side of Coban Street.	TEO Unfunded	Encanto Neighborhoods, Southeastern	4					CDBG	Conflicts: Fire Hydrant, Utility Pole, Decorative Pavement, Trees, Landscaping	0	309227	Pornan, Donald	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
704	Coban St from Euclid Ave to Reynolds St(South Side)- Install New Sidewalk	39	This project will provide approximately 913 linear feet of sidewalk, 17 driveways, and two pedestrian ramps.	TEO Unfunded	Encanto Neighborhoods, Southeastern	4			276000		CDBG	Conflicts: Fire Hydrant, Utility Pole, Decorative Pavement, Trees, Landscaping	0	309226	Pornan, Donald	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
705	Groveland Dr from 53rd St to 54th St(North Side)- Install New Sidewalk	39	This project will provide approximately 407 linear feet of sidewalk, 84 linear feet of driveway, 491 linear feet of curb and gutter, two pedestrian ramps, and relocate one fire hydrant.	TEO Unfunded	Encanto Neighborhoods, Southeastern	4			261000		CDBG	Conflicts: Substandard Street, Drainage, No C&G, Utility Poles IMCAT Conflicts as of	0	309225	Pornan, Donald	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
706	Groveland Dr from 53rd St to 54th St(South Side)- Install New Sidewalk	39	This project will install PCC sidewalk on the South Side of Groveland Drive.	TEO Unfunded	Encanto Neighborhoods, Southeastern	4					CDBG	Conflicts: Substandard Street, Drainage, No C&G, Utility Poles	0	309224	Pornan, Donald	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
1154	Iona Dr from Kenwood St to Brooklyn Ave (Both Sides)- Install New Sidewalk	39	This location is missing sidewalk on both sides of Iona Drive.	TEO Unfunded	Encanto Neighborhoods, Southeastern	4					CDBG	Conflicts: Fire Hydrants, Landscaping	0	317012	Pornan, Donald	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
2776	47th St from Logan Ave to Division St (West Side)- Install New Sidewalk	39	This project will install PCC sidewalk on the west side of 47th St within the specified limits.	TEO Unfunded	Encanto Neighborhoods, Southeastern	4					CDBG		0			Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
308	60th St from Old Memory Lane to Broadway St - Widen to 2-lane collector	40	Widen to 2-lane collector (both sides)	TEO Unfunded	Encanto Neighborhoods, Southeastern	4		SESD-T17			Other	Road Widening PFFP SESD-T17 Project originally for east side only - estimated as $700,000 on 2/5/09. West side improvements added per CPC request. Cost estimate needs updating to include west side. Conflicts:ROW encroachment, Utility	No	306249	Tawfiq, Kharman	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
253	Akins Ave from Iona Dr to 69th St - Widen to install CG&S	40	3,120 linear feet of CG&S	No longer meets warrants	Southeastern San Diego, Southeastern	8					Other		***This location has sidewalk***	0	313015	Pornan, Donald	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
315	Fergus St from Brooklyn St to Akins St(East Side)- Install New Sidewalk	40	This project will provide approximately 611 linear feet of sidewalk, 242 linear feet of driveway, two pedestrian ramps, relocate one fire hydrant and one traffic sign.	TEO Unfunded	Encanto Neighborhoods, Southeastern	4			203000	Other	CDBG	Conflicts: ROW encroachment, Utility Poles	0	306243	Tawfiq, Kharman	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
333	West Street from south of Imerial Ave to End of West St (East Side) - Install New Sidewalk	40	This project will provide approximately 513 linear feet of sidewalk, 141 linear feet of driveways, 36 linear feet of curb and gutter, replace one street sign, and six mail boxes.	TEO Unfunded	Southeastern San Diego, Southeastern	4			104000	Other	CDBG	Conflicts: ROW encroachment, utility poles IMCAT conflicts as of 10/8/12: Sewer &	0	306240	Tawfiq, Kharman	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
694	Benson Ave from Pagel Pl to Aviation Dr (South Side) - Install New Sidewalk	40	This project will install new PCC sidewalk on the south side of Benson Ave.	TEO Unfunded	Encanto Neighborhoods, Southeastern	4			400000		CDBG	Conflicts: Trees, Utility Poles, Drainage, No C&G, Possible Property Aquisition Required, Mailboxes,	0	309084	Pornan, Donald	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
1223	Broadway from Scimitar Dr to 65th St (North Side)- Install New Sidewalk	40	This project will install CG&S on the North Side of Broadway from approx. 40' West of Scimitar Dr to 65th St.	TEO Unfunded	Encanto Neighborhoods, Southeastern	4					CDBG;#Safe Route to School	Conflicts: Utility Pole, Tree, Mailbox, Landscaping, Slope IMCAT Conflicts as of 12/28/12: Overlay	0	320593	Pornan, Donald	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List

1239	Euclid Frontage Rd from Trinidad Way to Manzaranres Way (East Side)- Install New Sidewalk	40	This project will install PCC sidewalk on the East side of S Euclid Frontage Road.	TEO Unfunded	Encanto Neighborhoods, Southeastern	4					CDBG;#Safe Route to School	Conflicts: Landscaping, Utility Boxes, Fire Hydrant, Walls	0	321112	Pornan, Donald	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
3382	69th Street north of Wunderlin Avenue 120', west side, streetlight	40		TEO Unfunded	Encanto Neighborhoods,	4			15000				0	TR327235		Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
3383	69th Street north of Brooklyn Avenue 265', est side, streetlight	40		TEO Unfunded	Encanto Neighborhoods,	4			2000				0	TR327235		Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
3384	69th Street north of Brooklyn Avenue 105', west side, streetlight	40		TEO Unfunded	Encanto Neighborhoods,	4							Yes	TR327235		Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
3727	Central Avenue south of Monroe Avenue 175', east side-streetlight	40	Priority 3a	TEO Unfunded	Encanto Neighborhoods,	9			8000		CDBG		0	TR316281	Semaan, Jerry	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
3808	Julian Avenue east of Dewey Street 295', north side streetlight	40		TEO Unfunded	Southeastern San Diego, Southeastern	8			15000				0	TR 331,383	Hughes, Duncan	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
3809	Julian Avenue east of Dewey Street 160', south side streetlight	40		TEO Unfunded	Southeastern San Diego, Southeastern	8			15000				0	TR 331.383	Hughes, Duncan	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
3810	Julian Avenue west of Evans Steet (S) 155', south side streetlight	40		TEO Unfunded	Southeastern San Diego, Southeastern	8			15000				0	TR 331,383	Hughes, Duncan	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
3927	Boston Avenue east of S 43th Street 170', north side street light	40		TEO Funded	Southeastern San Diego, Southeastern	9			8000		CDBG	B-14107	Yes	TR332941	Avila-Zepeda , Felipe R	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
3928	Boston Avenue east of S 44th Street 90', south side street light	40		TEO Funded	Southeastern San Diego, Southeastern	9			2000		CDBG	B-14107	Yes	TR332938	Avila-Zepeda , Felipe R	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
4020	S Evans Street south of Julian Avenue 180', west side, at alley	40		TEO Unfunded	Southeastern San Diego, Southeastern	8			2000		CDBG		0	TR333309	Semaan, Jerry	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
4031	60th Street north of Kenwood Street 110', west side	40		TEO Unfunded	Encanto Neighborhoods,	4			2000		CDBG		0	TR333433	Semaan, Jerry	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
4110	Merlin Drive south of Market Street 130', east side	40		TEO Unfunded	Encanto Neighborhoods,	4			2000		Smart Growth;#CDBG			TR334870	Semaan, Jerry	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
4111	Merlin Drive north of Market Street 110', west side	40		TEO Unfunded	Encanto Neighborhoods,	4			2000		Smart Growth;#CDBG			TR334870		Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
4112	Merlin Drive north of Market Street 260', west side	40		TEO Unfunded	Encanto Neighborhoods,	4			2000		Smart Growth;#CDBG			TR334870	Semaan, Jerry	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
4113	Merlin Drive south of Brooklyn Avenue 565', west side	40		TEO Unfunded	Encanto Neighborhoods,	4			2000		Smart Growth;#CDBG			TR334870	Semaan, Jerry	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
4114	Merlin Drive south of Brooklyn Avenue 240', west side	40		TEO Unfunded	Encanto Neighborhoods,	4			2000		Smart Growth;#CDBG			TR334870	Semaan, Jerry	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
2452	40th St and Alpha St Pop-Outs	40	This project will provide approximately 3886 square feet of pop out, 324 feet of curb and gutter, 192 linear feet of RCP for storm drain, three clean outs, four storm drain inlets, and eight pedestrian ramps.	PITS	Southeastern San Diego, Southeastern	8			430000				0		Pornan, Donald	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
248	43rd St from Imperial Ave to Logan Ave - Widen to 4-lane collector	41	This project provides for the construction of 43rd Street to a four-lane collector. This project is recommended for deletion. See comments.	TEO Unfunded	Southeastern San Diego, Southeastern	4;#8		SESD-T16	7400000	Other			No		Pornan, Donald	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
552	Valencia Pkwy from Imperial Ave to Market St - Widen to 4-lane major	41	This project provides for the extension of Valencia Parkway as a four-lane major street.	TEO Unfunded	Southeastern San Diego, Southeastern	4;#8		SESD-T13	5500000				No		Pornan, Donald	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
1235	San Alberto Wy from Santa Rosalia to Trinidad Wy (Both Sides)- Install New Sidewalk	41	This project will provide approximately 2015 LF of sidewalk within the project limits. It will require clearing and grubbing, inlet removal, sign relocation, tree removal, fence relocation, meter box adjustments, and fire hydrant relocations. It will include new CG&S, AC pavement, driveway aprons, curb ramps, and Type B inlets with 18" storm pipe.	TEO Unfunded	Encanto Neighborhoods, Southeastern	4			285000		CDBG	Conflicts: Drain Inlet on Corner, ROW encroachment (Trees, Landscaping, fences, bushes, walls), Utility Poles, Driveways IMCAT conflicts as of 10/8/12: FY10 Overlay Group 3 Start:	0	320991	Pornan, Donald	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
1236	Agua Vista Wy from Trinidad Wy to Northern Terminus (Both Sides)- Install New Sidewalk	41	This project will provide approximately 1700 LF of Sidewalk within the project limits. It will require excavation, clearing & grubbing, sign relocation, meter box adjustments, and fire hyrant relocation. It will include new PCC sidewalk, driveway aprons, and curb ramps.	TEO Unfunded	Encanto Neighborhoods, Southeastern	4			192000		CDBG	Conflicts: Utility Poles, ROW encroachment (Landscaping, Bushes, Fences), IMCAT conflicts as of 10/8/12: FY10 Overlay	0	321052	Pornan, Donald	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
1237	Santa Rosalia Dr from Manzanares Wy to Southern Terminus (Both Sides)- Install New Sidewalk	41	This project will install PCC sidewalk on both side of Santa Rosalia Dr.	TEO Unfunded	Encanto Neighborhoods, Southeastern	4					CDBG	Conflicts: ROW encroachment (Landscaping, Walls, Bushes), Utility Poles, Drainage Inlet	0	320992	Pornan, Donald	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
1238	Trinidad Wy from Santa Maria Terr to Euclid Ave (Both Sides)- Install New Sidewalk	41	This project will install PCC sidewalk on both side of Trinidad Way.	TEO Unfunded	Encanto Neighborhoods, Southeastern	4					CDBG;#Safe Route to School	Conflicts: Drainage, Utility Boxes/Poles, ROW encroachment (Landscaping, Trees, Walls, Bushes, Fences),	0	321051	Pornan, Donald	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
2524	S. Boundary St from Ocean View Bl to T St (Both Sides) - Install New Sidewalk	41	This project will install PCC sidewalk on both sides of South Boundary St	TEO Unfunded	Southeastern San Diego, Southeastern	9			55000			Conflicts: Phone, Cox, SDGE, Water, Large Trees, Shrubs IMCAT Conflicts as of 11/21/12: Water	0	326984		Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List

4108	56th Street from Glen Road (south) to northern cul-de-sac end - Install new sidewalk (west side)	41	This project installs new sidewalk, curb and gutter along west side of 56th Street. The project has several meter boxes, clean-outs and existing vaults that will need to be adjusted to grade. Many conflicts with transformer boxes, trees, tree roots, stairs, decorative paving, masonary blocks, and signs also exist. Will require minor earthwork.	TEO Unfunded	Encanto Neighborhoods, Southeastern	4								333726	Turner, Scott	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
254	Klauber Ave from Bittern St to 69th St - Widen to 2-lane collector	42	4000' Widen CG&S, Rwall, Drainage Major Road Proj	TEO Unfunded	Southeastern San Diego, Southeastern	8				Other		Conflicts: Substandard Road, Slopes, ROW Encroachments/Aquisition, Utility Poles, Mailboxes, Drainage, No C&G, Landscaping,	No	313021	Pornan, Donald	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
110	53rd St from Imperial Ave to Groveland St(Both Sides)- Install New Sidewalk	42	This project will provide approximately 400 linear feet of sidewalk, one pedestrian ramp, relocate three signs and two fire hydrants.	TEO Unfunded	Encanto Neighborhoods, Southeastern	4			72000	Other	CDBG	Conflicts: Utility Poles/Boxes IMCAT conflicts as of	0	323284	Tawfiq, Kharman	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
383	La Paz Dr from Euclid Ave to San Bernardo(North Side)- Install New Sidewalk	42	This project will provide approximately 1445 linear feet of sidewalk, 339 linear feet of driveways, four pedestrian ramps, and relocate six signs on the north side of the street.	TEO Funded	Encanto Neighborhoods, Southeastern	4	B-13085		228000	Other	CDBG		0	323283	Nascimento, Claudio	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
483	Solola Ave from Euclid Ave to Palin St(Both Sides)- Install New Sidewalk	42	This project will provide approximately 460 linear feet of sidewalk, 108 linear feet of driveway, seven pedestrian ramps, and 11 linear feet of retaining wall. It will include sidewalk and median modification at existing bus stop to comply with ADA standards.	TEO Unfunded	Encanto Neighborhoods, Southeastern	4			163000	Other	CDBG	Poles/Boxes IMCAT conflicts as of 10/8/12: None observed	0	323294	Nascimento, Claudio	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
268	Madera St from 66th St to 69th St - Widen for CG&S	43	CG&S 3200'	TEO Unfunded	Encanto Neighborhoods, Southeastern	4				Other		Conflicts: SLopes, Landscaping Utility Poles, Mailboxes, Drainage, Missing	0	313022	Pornan, Donald	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
2782	56th St from North of Roswell St to South of Roswell St (west Side)- Install New Sidewalk	43	This project will install PCC sidewalk on the west side of 56th Street within the limits.	TEO Unfunded	Encanto Neighborhoods,	4							0			Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
3596	Cielo Drive - Woodman St to 65th St - Install new sidewalk	43	Install new sidewalk, curb and gutter - south side of Cielo Dr from Woodman St to 61st St; north side of Cielo Dr from Woodman St to Pagel Pl. 7 curb ramps, driveway replacement and retaining wall	TEO Unfunded	Encanto Neighborhoods, Southeastern	4			525000			ADA project OS-13-02-0015	0	TR328222		Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
3854	51st Street from Hilltop Ave to approx. 340 ft. north (west side) - Install new sidewalk	43	This project will construct approx. 340 LF of sidewalk, a curb return and two ped ramps. Earthwork and a retaining wall are required. Also, removal of several cactus, bushes and a tree is necessary. Curb and gutter are in.	TEO Unfunded	Encanto Neighborhoods, Southeastern	4							No	333667	Turner, Scott	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
3909	Mariposa Street (Both sides) and Mariposa Place from Mariposa St to Shell Ave (North Side) - Install New Sidewalk	43	Mariposa St: Install curb, gutter, sidewalk and driveway entrances (both sides). Mariposa Place: Install curb, gutter, sidewalk and driveway entrances (north side only), may require power pole, blowoff/AV&AR, and fire hydrant relocation.	TEO Unfunded	Encanto Neighborhoods, Southeastern	4							0	331976	Turner, Scott	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
4072	Ocean View Blvd from Willie James Jones W to Willie James Jones E - Widening	43	This project will widen Ocean View Blvd from Willie James Jones W Ave to Willie James Jones E Ave and provide 265' of curb, gutter, and sidewalk.	TEO Unfunded	Encanto Neighborhoods, Southeastern	4						IMCAT Conflicts (4/7/2014): Water Main Replacement DESIGN: (9/6/2013 - 1/23/2014) CONST: (8/21/2014 - 7/21/2015)		334044		Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
794	Kelton Rd at Kelton Pl Electronic Speed Sign	43	This project will one Electronic V-Calm sign on Kelton Rd by Kelton Pl facing southbound traffic	TEO Funded	Encanto Neighborhoods, Southeastern	4			8000		TransNet	Funded by "Old Transnet" funding	Yes		Pornan, Donald	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
255	Cesar Chavez Pkwy from Commercial St to I-5 - Widen to 4-lane collector	44	This project will provide for the widening of Cesar Chavez Pkwy to a four-lane Collector.	TEO Unfunded	Southeastern San Diego, Southeastern	8		SESD-T20	1900000	Other			No		Pornan, Donald	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
261	Division St from Lorenz Ave to 61st St - Widen to 4-lane collector	44	This project will provide for the widening of Division Street to a modified four lane Collector.	TEO Unfunded	Southeastern San Diego, Southeastern	8		SESD-T19	1300000	Other			No		Pornan, Donald	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
269	Brooklyn Ave from 65th St to 66th St - Improve road	44	Fully improve to 40' c/c, Rwalls, Grade adjustment	TEO Unfunded	Southeastern San Diego, Southeastern	8				Other		TR request submitted	No	311608	Pornan, Donald	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
2777	63rd St from Broadway to Imperial Ave (Both Sides)- Install New Sidewalk	44	This project will provide approximately 2320 LF of sidewalk within the project limits. It will require clearing and grubbing, sign relocation, meter box adjustment, and fire hydrant relocation. It will new PCC sidewalk. driveway aprons, curb ramps, and 125 LF of 3' retaining walls.	TEO Funded	Encanto Neighborhoods, Southeastern	4	B1403 9		307000			Project was sent to Street Division for review for construction.	0			Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
4032	26th St & Market St New Traffic Signal	45	Install new traffic signal	PITS	Southeastern San Diego, Southeastern	8			275000		TransNet	Design to be provided by Fehr & Peers.	0			Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
271	69th St from Madera St to Mallard St - Widen for CG&S	45	CG&S, Pavement, Drainage, Road widening	TEO Unfunded	Encanto Neighborhoods, Southeastern	4				Other		CONFLICTS: Utility poles, Trees, bushes, fence	0	313016	Pornan, Donald	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List

2762	Madrone Ave from 63rd St to Shaules Ave (Both Sides)- Install New Sidewalk	45	This project will install sidewalk on both sides of Madrone Ave.	TEO Unfunded	Encanto Neighborhoods, Southeastern	4						Conflicts: Slopes both sides, nonstandard width roadway, guardrails, utility poles, water valves, drainage issues, no c&g, fire hydrants, ROW encroachments:	0			Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
2811	Olvera Ave from Gwen St to Santa Isabel Dr (South Side) Install New Sidewalk	45	This project will install PCC sidewalk on the south sides of Olver Ave within the specified limits. Conflicts include fire hydrants and a small masonary wall. Will also require relocation of an existing driveway entrance at curb return. Some adjustments to grade for existing meter boxes. Some earthwork also needed. Curb and gutter in.	TEO Unfunded	Encanto Neighborhoods, Southeastern	4						IMCAT Conflicts as of 2/20/14: Street segment SS-020537, Project ID FY10-S3 Slurry moratorium Start 3/6/2012 End 3/6/2015	No		Turner, Scott	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
2812	Olvera Ave from San Onofre Ter. to Las Flores (South Side)- Install New Sidewalk	45	This project will install PCC sidewalk on the south side of Olvera Ave within the specified limits. Conflicts include fire hydrants, masonary walls, decorative rock, utility poles, vegitation and shrubs. Some adjustments to grade to clean outs and meter boxes will be needed. Curb is in, but in deteriorated condition and may need repair/replacement.	TEO Unfunded	Encanto Neighborhoods, Southeastern	4						IMCAT Conflicts as of 2/20/14: Street segment SS-020533, project ID FY10-S3 Slurry Overlay Moratorium start 3/6/2012 end 3/6/2015	No	333730	Turner, Scott	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
3956	Pitta St from Market St to Kenwood St (Both Sides) - Install New Sidewalk	45	This project will provide curb/gutter and sidewalk on both sides of Pitta Street north of Market Street.	TEO Unfunded	Encanto Neighborhoods, Southeastern	4						ROW width of street is 40 feet with curb to curb of 25 feet. IMCAT Conflicts: Pipeline Rehabilitation Design: 1/2014 to 4/2014 Construction: 8/2014	0	332534		Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
2823	Egret Street north of Weaver Street 300', east side streetlight	45	Priority 2b	TEO Funded	Encanto Neighborhoods,	4			2000				Yes	TR246076		Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
3001	31st St @ Imperial Ave New Traffic Signal	46	Install a new traffic signal	PITS	Southeastern San	8			275000				0	306689	Hughes,	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
2779	Scimitar Dr from Broadway to Kluaber Ave (Both Sides)- Install New Sidewalk	46	This project will install PCC sidewalk on both sides of Scimitar Dr, also to include road widening.	TEO Unfunded	Encanto Neighborhoods, Southeastern	4							0			Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
2453	40th St at National Ave	46		PITS	Southeastern San	4			502000				0		Pornan,	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
1230	41st St @ National Ave New Traffic Signal	47	Install a new traffic signal	PITS	Southeastern San	4;#8			275000				0	318737	Pornan,	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
2809	Eider St from Scimitar Dr to Klauber Ave (Both Sides)- Install New Sidewalk	47	This project will install sidewalk,curb and gutter on both sides of Eider St within the specified limits. Drainage will become an issue. Extensive earthwork, shoring and retaining walls necessary for project. Right of Way acquisition may be necessary due to limited street widths and room for sidewalk. Numerous conflicts with trees, slopes, utilities, poles, walls. Street also in poor condition and needs overlay.	TEO Unfunded	Encanto Neighborhoods, Southeastern	4						IMCAT conflicts as of 6/3/14: No conflicts	No			Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
2810	Wren St from Scimitar Dr to Klauber Ave (Both Sides)- Install New Sidewalk	48	This project will install PCC sidewalk and curb returns on Wren St within the specified limits. Will require earthwork and retaining walls. Conflicts include several utility poles, mail boxes, several medium to tall trees, shrubs, and ground vegitation. Curb and gutter are mostly in.	TEO Unfunded	Encanto Neighborhoods, Southeastern	4						IMCAT conflicts as of 6/3/14: None	No	333986	Turner, Scott	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
3853	Elwood Ave from Lenox Dr to Geneva Ave (West Side) - Install new sidewalk	48	This project will provide sidewalk and install/upgrade curb return ped ramps. Will require utility pole relocation, meter box adjustment to grade and minor vegitation removal. One masonary wall conflicts w/ proposed 4' wide path of travel.	TEO Unfunded	Encanto Neighborhoods, Southeastern	4							No	333668	Turner, Scott	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
770	31st St @ National Ave New Traffic Signal	49	Install a new traffic signal	TEO Unfunded	Southeastern San Diego, Southeastern	8			275000				0	308,848	Nascimento, Claudio	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
1316	31st St @ Ocean View Bl New Traffic Signal	49	Install a new traffic signal.	PITS	Southeastern San	4			275000				0	321035	Pornan,	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
543	S 38th St at Alpha St- Pop-Outs(4)	49	This project will provide approximately 2980 square feet of pop out, 249 feet of curb and gutter, four pedestrian ramps, relocate one fire hydrant, one manhole, and two storm drain inlets. Assume: grades flat, subsurface drainage proposed.	TEO Unfunded	Southeastern San Diego, Southeastern	8			294000		CDBG;#Safe Route to School	FY 14: $75,000 Prelim Fy 15: $100,000 Design FY 16: $119,000 Construction	0	308053	Nascimento, Claudio	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
440	Market St from Euclid Ave to 54th St. - Widening	50	This project provides for the widening of Market St to a four lane major street.	TEO Unfunded	Encanto Neighborhoods,	4			1300000	Other			No		Pornan, Donald	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
468	Creston Dr from Selma Pl to Roswell St(Both Sides)- Install New Sidewalk	50	This project will provide approximately 544 linear feet of PCC sidewalk, 156 linear feet of driveway, one pedestrian ramp, and relocate two signs.	TEO Unfunded	Encanto Neighborhoods, Southeastern	4			114000			Conflicts: Fire Hydrant, Landscaping, Utility Pole, Trees IMCAT Conflicts as of 12/28/12: Pipeline	Yes	306231, 333725	Nascimento, Claudio	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
2778	65th St from Imperial Ave to Madrone (Both Sides)- Install New Sidewalk	50	This project will install PCC sidewalk on 65th St within the specified limits. It will also include road widening.	TEO Unfunded	Encanto Neighborhoods, Southeastern	4					CDBG		0			Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List

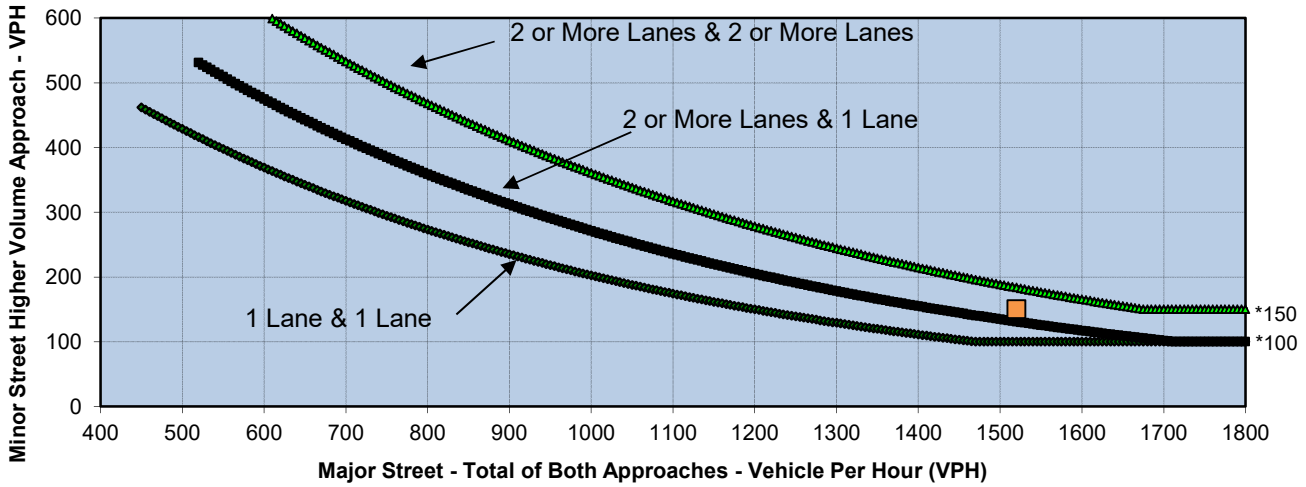
3851	Lenox Drive from Winston Dr to Beverly St (Both Sides) - Install new sidewalk	50	This project will install sidewalk and ped ramps, earthwork and retaining walls required. Conflicts include utility poles, mail boxes, masonary walls, fire hydrants, a large tree stump, shrubs and ground vegitation, and decorative paving/rocks. Several meter boxes require adjustment to grade. Curb and gutter are in.	TEO Unfunded	Encanto Neighborhoods, Southeastern	4						IMCAT conflits as of 6/3/14: Pipeline Rehab - Phase G-2 (laterals) start 1/22/2015 end 8/24/2016	No	333727	Turner, Scott	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
3852	Winston Drive from Lenox Dr to Hilltop Dr (Both Sides) - Install new sidewalk	50	This project will provide sidewalk on both the east and west side of Winston Drive. Will require earthwork and retaining walls. Conflicts include large palm trees, smaller trees, shrubs and ground vegitation. Will require adjustment to grade of meter boxes. Curb and gutter are in, but are deteriorated and damaged. May require replacement/repair.	TEO Unfunded	Encanto Neighborhoods, Southeastern	4						IMCAT conflicts as of 2/21/14: Street segment SS-029003, project ID FY10-O2 Asphalt overlay moratorium Stert 9/20/2011 end 9/20/2016	No	333723	Turner, Scott	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
3073	Raven Street south of Hilltop Drive 137', east side streetlight	50		TEO Unfunded	Southeastern San Diego, Southeastern	9			8000				Yes	TR256791		Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
3078	Southlook Avenue south of Gilmore Street 165', west side streetlight	50		TEO Unfunded	Southeastern San Diego, Southeastern	9			8000				Yes	TR258639A		Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
3079	Southlook Avenue south of Imperial Avenue 110', west side streetlight	50		TEO Unfunded	Southeastern San Diego, Southeastern	9			8000				Yes	TR258639A		Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
3081	Ada Street north of Franklin Avenue 155', west side streetlight	50		TEO Unfunded	Southeastern San Diego, Southeastern	9			8000				Yes	TR258944		Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
3082	Ada Street south of Imperial Avenue 150', west side streetlight	50		TEO Unfunded	Southeastern San Diego, Southeastern	9			8000				Yes	TR258944		Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
3083	Ada Street south of Imperial Avenue 346', west side streetlight	50		TEO Unfunded	Southeastern San Diego, Southeastern	9			8000				Yes	TR258944		Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
3087	Bancroft Street south of Greely Avenue 100', west side streetlight	50		TEO Unfunded	Southeastern San Diego, Southeastern	8			8000				Yes	TR260576		Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
3089	Solola Avenue west of Palin Street 132', south side streetlight	50		TEO Unfunded	Encanto Neighborhoods,	4			2000				Yes	TR261798A		Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
3097	K Street east of 26th Street 312', south side streetlight	50		TEO Unfunded	Southeastern San Diego, Southeastern	8			8000				Yes	TR264211		Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
3177	39TH (S) Street north of Superior Street at alley 120', west side streetlight	50		TEO Unfunded	Southeastern San Diego, Southeastern	9			2000				Yes	TR314106		Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
3178	39TH (S) Street south of Imperial Avenue at alley 120', west side streetlight	50		TEO Unfunded	Southeastern San Diego, Southeastern	9			2000				Yes	TR314106		Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
3209	Acacia Street west of South 35th Street 140', north side streetlight	50		TEO Unfunded	Southeastern San Diego, Southeastern	9			8000				Yes	TR320603		Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
3210	Boston Avenue east of South 35th Street 175', north side streetlight	50		TEO Unfunded	Southeastern San Diego, Southeastern	9			8000				Yes	TR320603		Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
3220	35th Street (South) south of Martin Avenue 275', west side streetlight	50		TEO Unfunded	Southeastern San Diego, Southeastern	9			2000				Yes	TR322078		Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
3228	33rd Street north of Imperial Avenue 130', west side at alley streetlight	50	Priority 2a	TEO Funded	Southeastern San Diego, Southeastern	8			2000				Yes	TR324036		Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
3259	Bonita Drive north of Cervantes Avenue 180', west side streetlight	50		TEO Unfunded	Encanto Neighborhoods,	4			8000				Yes	TR326417		Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
3269	42nd Street south of Broadway 145' at alley, southwest corner streetlight	50		TEO Unfunded	Southeastern San Diego, Southeastern	9			2000				Yes	TR326746		Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
3274	Superba Street east of 38th Street 160', south side streetlight	50		TEO Unfunded	Southeastern San Diego, Southeastern	9			8000				Yes	TR219413		Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
3278	Valle Avenue west of South 35th Street 220', north side streetlight	50		TEO Unfunded	Southeastern San Diego, Southeastern	9			8000				Yes	TR228103		Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
3284	Ada Street south of Imperial Avenue 630', west side streetlight	50		TEO Unfunded	Southeastern San Diego, Southeastern	9			8000				Yes	TR229556		Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
3287	Jewell Drive south of T Street 164', east side streetlight	50		TEO Unfunded	Southeastern San Diego, Southeastern	9			8000				Yes	TR231558		Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
3377	Franklin Avenue east of 40th Street 145', south side at alley streetlight	50		TEO Unfunded	Southeastern San Diego, Southeastern	9			5000				Yes	TR244871		Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
3688	Alta Vista Avenue east of Paradise Road 590', north side street lights	50		TEO Unfunded	Encanto Neighborhoods,	4			2000		CDBG		0	TR329548	Avila-Zepeda , Felipe R	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
3691	NWC of S 47th Street and Franklin Avenue street lights	50		TEO Unfunded	Encanto Neighborhoods,	4			15000		CDBG		0	TR330817	Avila-Zepeda , Felipe R	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
3692	NEC of S 47th Street and Franklin Avenue street lights	50		TEO Unfunded	Encanto Neighborhoods,	4			15000		CDBG		0	TR330817	Avila-Zepeda , Felipe R	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
3693	S 47th Street north of T street 175', east side street lights	50		TEO Unfunded	Encanto Neighborhoods,	4			15000		CDBG		0	TR330817	Avila-Zepeda , Felipe R	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
3694	S 47th Street south of T street 190', east side street lights	50		TEO Unfunded	Encanto Neighborhoods,	4			15000		CDBG		0	TR330817	Avila-Zepeda , Felipe R	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
3817	Dodson Street south of Market Street 135', west side streetlight	50	Priority 2a	TEO Funded	Southeastern San Diego, Southeastern	8			2000		Smart Growth	Smart Growth Area SD SE-3	Yes	TR 331,935	Hughes, Duncan	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
3874	Franklin Avenue west of S 30th Street 175', north side street light	50		TEO Unfunded	Southeastern San Diego, Southeastern	8			15000		CDBG		0	TR332395	Avila-Zepeda , Felipe R	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
3926	Boston Avenue east of S 38th Street 130', north side street light	50		TEO Unfunded	Southeastern San Diego, Southeastern	9			8000		CDBG		0	TR332926	Avila-Zepeda , Felipe R	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
3929	Boston Avenue west of S 38th Street 260', north side street light	50		TEO Funded	Southeastern San Diego, Southeastern	9			8000		CDBG	B-14107	Yes	TR332936	Avila-Zepeda , Felipe R	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
3930	Boston Avenue west of S 36th Street 106', north side street light	50		TEO Unfunded	Southeastern San Diego, Southeastern	9			15000		CDBG		0	TR332937	Avila-Zepeda , Felipe R	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
3931	Boston Avenue west of S 40th Street 165', north side street light	50		TEO Unfunded	Southeastern San Diego, Southeastern	9			15000		CDBG		0	TR332935	Avila-Zepeda , Felipe R	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
3954	Boston Avenue east of S 39th Street 150', north side street light	50		TEO Unfunded	Southeastern San Diego, Southeastern	9			15000		CDBG		0	TR332925	Avila-Zepeda , Felipe R	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
3957	33rd Street north of Imperial Avenue 135', west side, at alley	50	Priority 2a	TEO Funded	Southeastern San Diego, Southeastern	8			2000		CDBG	DUPLICATE - SEE GIS_ID 3228	Yes	TR332756	Semaan, Jerry	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List

3958	33rd Street north of L Street 150', west side, at alley	50	Priority 2a	TEO Funded	Southeastern San Diego, Southeastern	8			2000		CDBG		Yes	TR332756	Semaan, Jerry	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
4064	San Jacinto Dr south of Groveland Dr 182', west side	50		TEO Unfunded	Southeastern San Diego, Southeastern	4			2000			Install pole attachment between 264 & 274 San Jacinto				Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
4089	S 28th Street south of Imperial Avenue 160' at alley, west side	50	Priority 2a	TEO Funded	Southeastern San Diego, Southeastern	8			2000		Smart Growth;#CDBG	Duplicate: See TUNL ID 3020		TR334489	Semaan, Jerry	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
4090	S 29th Street south of Imperial Avenue 175' at alley, southwest corner	50	Priority 2a	TEO Funded	Southeastern San Diego, Southeastern	8			2000		Smart Growth;#CDBG			TR334489		Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
4124	S 33rd Street north of Webster Avenue 85, west side	50		TEO Unfunded	Southeastern San Diego, Southeastern	8			2000		CDBG			TR335463B	Semaan, Jerry	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
1179	SR-94 / Euclid Ave Interchange	51	Provides a PRS for improvements to the interchange.	TEO Unfunded	Encanto Neighborhoods,	4	S-11046		1000000		TransNet		No		Pornan, Donald	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
2780	Market St from Euclid Ave to Pita St (Both Sides)- Install New Sidewalk	51	This project will install PCC sidewalk on both sides of Maket St witin the limits, also to include road widening.	TEO Unfunded	Encanto Neighborhoods, Southeastern	4						IMCAT: FY-15 Object ID#7717 Strt: 11/15/2014 End:	0			Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
1216	Division St @ Valencia Pkwy New Traffic Signal	52	Install a new traffic signal	TEO Unfunded	Encanto	4			275000				0	315440	Pornan,	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
3850	Beverly St from Roswell St to Lenox Dr (Both Sides) - Install new sidewalk	52	This project will provide 3 curb returns, 16 driveways and sidewalk along both sides of Beverly. Many utility boxes need adjustment to grade. Curb and gutter are in.	TEO Unfunded	Encanto Neighborhoods, Southeastern	4			287000				No	333649	Turner, Scott	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
2841	Egret Street north of Weaver Street 800', north side at cul de sac streetlight	62	Priority 1e	TEO Funded	Encanto Neighborhoods,	4			8000			DUPLICATE LOCATION	Yes	TR246076		Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
3680	Radio Drive north of Market Street 170', west side street lights	62		TEO Unfunded	Encanto Neighborhoods,	4			2000		Smart Growth		0	TR330816	Avila-Zepeda , Felipe R	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
2824	Egret Street north of Weaver Street 300', east side streetlight	64		No longer meets warrants	Encanto Neighborhoods, Southeastern	4			2000			DUPLICATE: REFER TO GIS_ID 2823	Yes	TR246076		Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
2828	Kelton Road north of Kelton Place 250', west side streetlight	64	Priority 1d	TEO Funded	Encanto Neighborhoods,	4			15000		TransNet		Yes	TR239339		Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
2829	Kelton Road north of Kelton Place 500', west side streetlight	64	Priority 1d	TEO Funded	Encanto Neighborhoods,	4			15000		TransNet		Yes	TR239339		Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
2891	Market Street east of 45th Street 170', north side	66	FY15 budget $1.4M	TEO Funded	Encanto	4			15000			Priority 1c	Yes	TR258616		Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
2910	National Avenue east of S 32nd Street 155', south side streetlight	66	Priority 1c	TEO Funded	Southeastern San Diego, Southeastern	8			2000				Yes	TR322359		Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
2988	Market Street east of 45th Street 450', north side streetlight	66	FY15 budget $1.4M	TEO Funded	Encanto Neighborhoods,	4			15000			Priority 1c	Yes	TR258616		Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
2876	6308 63rd Street at Shaules Avenue, northeast corner streetlight	70	Priority 1a	TEO Funded	Encanto Neighborhoods,	4			2000		TransNet	B-14106 FY 2014	Yes	TR312615		Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
2885	Ginna Place at Logan Avenue, southeast corner streetlight	70	Priority 1a	TEO Funded	Encanto Neighborhoods,	4			2000		TransNet	Duplicate: See TUNL ID 3961	Yes	TR304278		Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
2941	Brooklyn Ave & Madera St streetlight	70	Priority 1a	TEO Funded	Encanto Neighborhoods,	4			2000		TransNet	B-14106 FY 2013	Yes	TR310491		Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
3682	Sicard Street southwest of S 28th Street 185', west side street light	70	Priority 2a	TEO Funded	Southeastern San Diego, Southeastern	8			2000			FY 2014	Yes	330,687	Hughes, Duncan	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
3925	S 44th Street and Boston Avenue southwest street light	70		TEO Funded	Southeastern San Diego, Southeastern	9			2000		CDBG	B-14107	Yes		Avila-Zepeda , Felipe R	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
3961	Ginna Place at Logan Avenue, south side street light	70	Priority 1a	TEO Funded	Encanto Neighborhoods,	4			2000		CDBG	B-14106 FY 2014	Yes	TR333000	Avila-Zepeda , Felipe R	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
3987	37th Street (S) and Logan Avenue, northeast corner	70	FY15 budget $1.4M	TEO Funded	Southeastern San Diego, Southeastern	9			8000		CDBG	Priority 1a	Yes	TR332842	Avila-Zepeda , Felipe R	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
3997	Clay Avenue at Sampson Street, at alley, northwest corner street ;ight	70	Priority 1a	TEO Funded	Southeastern San Diego, Southeastern	8			2000		CDBG;#TransNet		Yes	TR275743	Avila-Zepeda , Felipe R	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
3856	Hilltop Drive from Winston Dr to Roswell St (Both Sides) - Install new sidewalk		This project will provide sidewalk on both sides of Hilltop Drive. Project requires earthwork and retaining walls. Conflict includes very large, medium and small palm trees (will probably require removal) and utility poles. Several metar boxes will need to be adjusted to grade. Curb and gutter are in.	TEO Unfunded	Encanto Neighborhoods, Southeastern	4						IMCAT conflicts as of 2/21/14: PROJECT ID B11074 Sewer pipeline rehabilitation start6/11/2012 end 5/8/2014 Street segment SS-	No		Turner, Scott	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
3858	Pitta St from Market St to end of street [south] (both sides) - Install new sidewalk			TEO Unfunded	Encanto Neighborhoods,	4							0		Turner, Scott	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
3859	Castana Street from 47th St to Escuela St (both sides) - Install new sidewalk			TEO Unfunded	Encanto Neighborhoods,	4							0		Turner, Scott	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
4085	San Jacinto from Groveland to Imperial (west side) - Sidewalk		This project will install approximately 640 LF of sidewalk within the project limits.	TEO Unfunded	Encanto Neighborhoods,	4			95000					335596		Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
3624	61st Street at Flipper Flashing Beacon		Installation of a flashing beacon at the school crosswalk	TEO Unfunded	Encanto Neighborhoods,	4					TransNet		0			Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
3720	Market Street Electronic Speed Signs		Installation of two electronic speed signs on Market Street near 26th street	TEO Funded	Southeastern San Diego, Southeastern	8			16000		TransNet	Funded with "Old Transnet" funding	0			Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List

Appendix C
Signal Warrant Worksheets

Sheet No 1 of 2

Figure 4C-3
Warrant 3, Peak Hour



* Note: 150 VPH APPLIES AS THE LOWER THRESHOLD VOLUME FOR A MINOR STREET APPROACH WITH TWO OR MORE LANES AND 100 VPH APPLIES AS THE LOWER THRESHOLD VOLUME FOR A MINOR STREET APPROACHING WITH ONE LANE.

Source: *California Manual on Uniform Traffic Control Devices*, Caltrans, 2006

#8

Major Street	Midway Drive
Minor Street	Charles Lindbergh Parkway

Project	Midway & Old Town CPU
Scenario	3B
Peak Hour	AM

Turn Movement Volumes

	NB	SB	EB	WB
Left		150		30
Through	600	680		
Right	90			120
Total	690	830	0	150

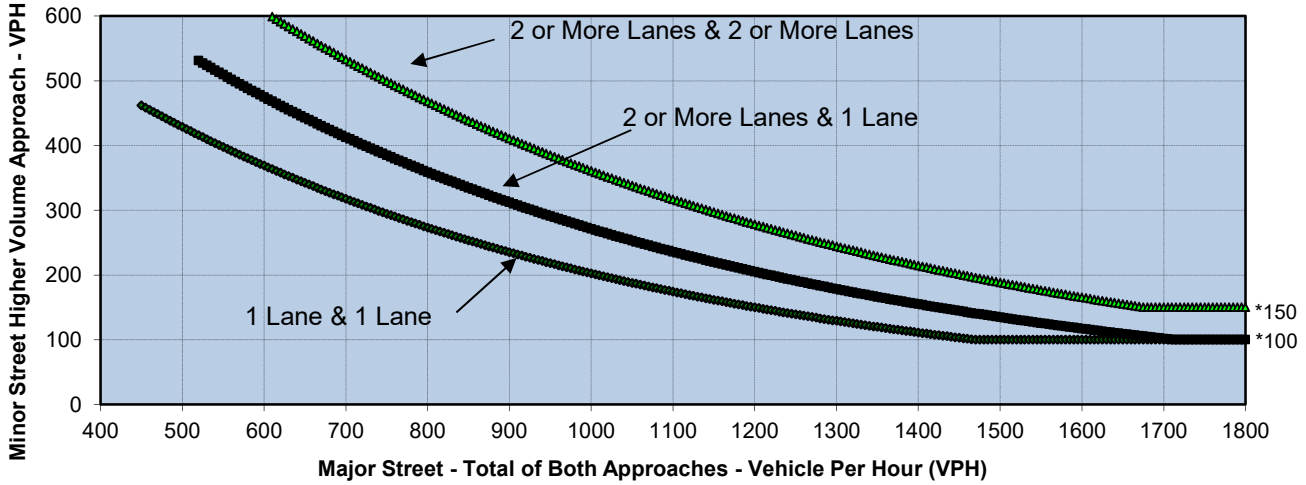
Major Street Direction

X	North/South
	East/West

	Major Street	Minor Street	Warrant Met
	Midway Drive	Charles Lindbergh Parkway	
Number of Approach Lanes	**2**	**1**	**YES**
Traffic Volume (VPH) *	**1,520**	**150**	

Sheet No 2 of 2

Figure 4C-3
Warrant 3, Peak Hour



* Note: 150 VPH APPLIES AS THE LOWER THRESHOLD VOLUME FOR A MINOR STREET APPROACH WITH TWO OR MORE LANES AND 100 VPH APPLIES AS THE LOWER THRESHOLD VOLUME FOR A MINOR STREET APPROACHING WITH ONE LANE.

Source: *California Manual on Uniform Traffic Control Devices*, Caltrans, 2006

#8

Major Street	Midway Drive
Minor Street	Charles Lindbergh Parkway

Project	Midway & Old Town CPU
Scenario	3B
Peak Hour	PM

Turn Movement Volumes

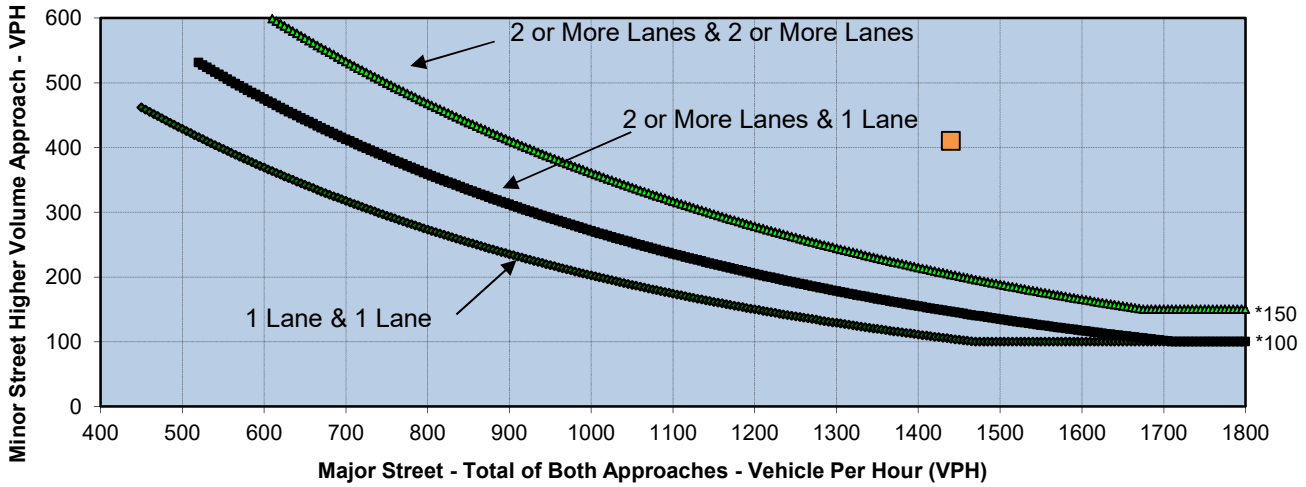
	NB	SB	EB	WB
Left		400		300
Through	780	850		
Right	120			120
Total	900	1,250	0	420

Major Street Direction

X	North/South
	East/West

	Major Street	Minor Street	Warrant Met
	Midway Drive	Charles Lindbergh Parkway	
Number of Approach Lanes	2	1	YES
Traffic Volume (VPH) *	2,150	420	

Figure 4C-3
Warrant 3, Peak Hour



* Note: 150 VPH APPLIES AS THE LOWER THRESHOLD VOLUME FOR A MINOR STREET APPROACH WITH TWO OR MORE LANES AND 100 VPH APPLIES AS THE LOWER THRESHOLD VOLUME FOR A MINOR STREET APPROACHING WITH ONE LANE.

Source: *California Manual on Uniform Traffic Control Devices*, Caltrans, 2006

#12

Major Street	Sports Arean Boulevard
Minor Street	Kemper Street

Project	Midway & Old Town CPU
Scenario	3B
Peak Hour	AM

Turn Movement Volumes

	NB	SB	EB	WB
Left	200	110	80	110
Through	410	520	50	140
Right	90	110	110	160
Total	700	740	240	410

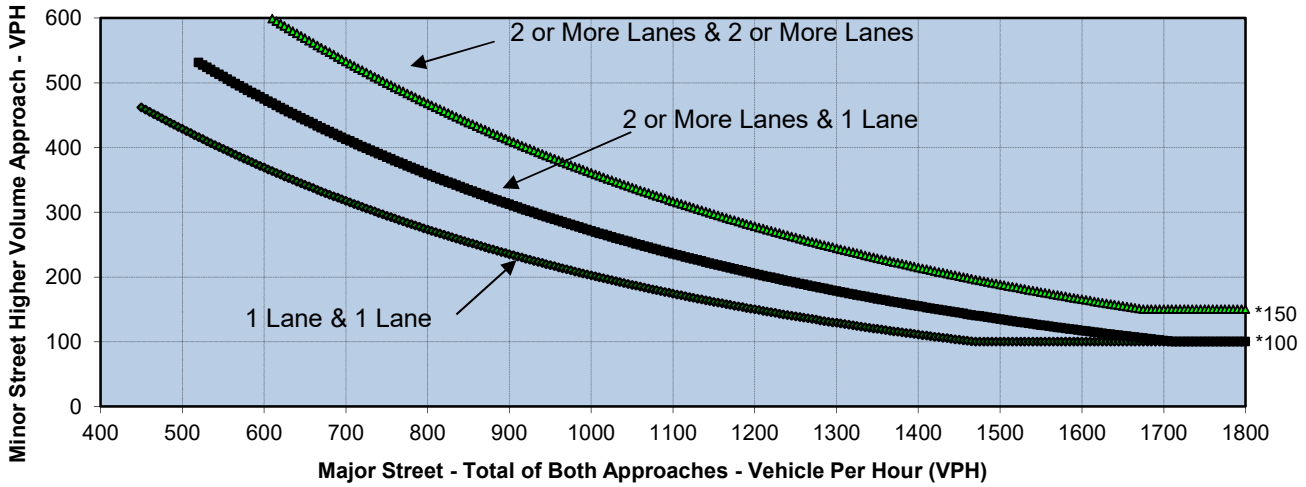
Major Street Direction

X	North/South
	East/West

	Major Street	Minor Street	Warrant Met
	Sports Arean Boulevard	Kemper Street	
Number of Approach Lanes	**3**	**1**	**YES**
Traffic Volume (VPH) *	**1,440**	**410**	

Sheet No 2 of 2

Figure 4C-3
Warrant 3, Peak Hour



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Source: *California Manual on Uniform Traffic Control Devices*, Caltrans, 2006

#12

Major Street	Sports Arean Boulevard
Minor Street	Kemper Street

Project	Midway & Old Town CPU
Scenario	3B
Peak Hour	PM

Turn Movement Volumes

	NB	SB	EB	WB
Left	230	170	70	160
Through	1,110	920	130	40
Right	120	70	150	120
Total	1,460	1,160	350	320

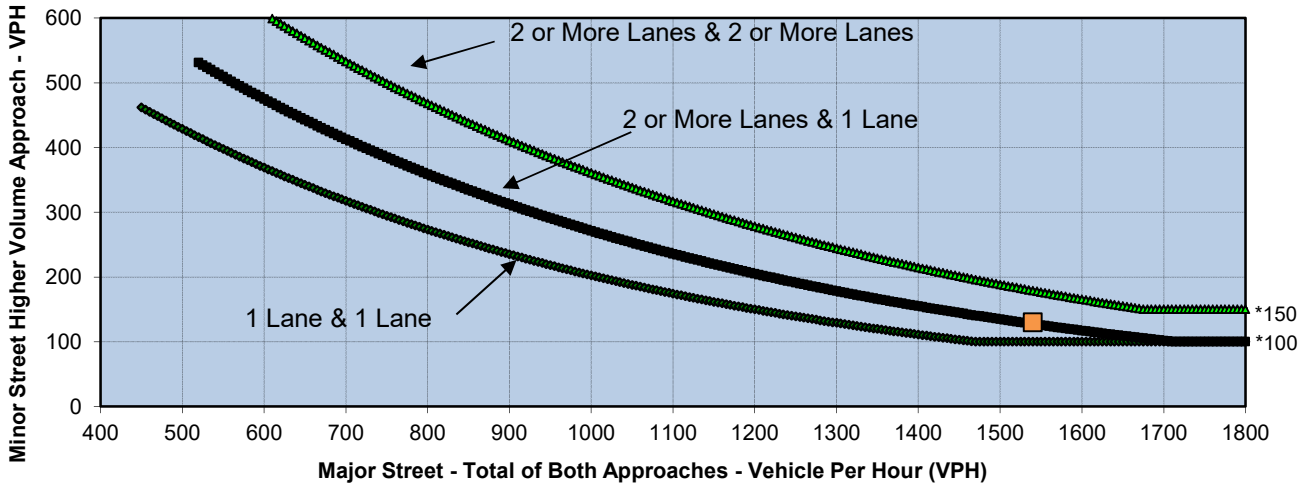
Major Street Direction

X	North/South
	East/West

	Major Street	Minor Street	Warrant Met
	Sports Arean Boulevard	Kemper Street	
Number of Approach Lanes	3	1	YES
Traffic Volume (VPH) *	2,620	350	

Sheet No 1 of 2

Figure 4C-3
Warrant 3, Peak Hour



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Source: *California Manual on Uniform Traffic Control Devices*, Caltrans, 2006

#13

Major Street	Sports Arean Boulevard
Minor Street	Frontier Street

Project	Midway & Old Town CPU
Scenario	3B
Peak Hour	AM

Turn Movement Volumes

	NB	SB	EB	WB
Left	30	90	40	50
Through	620	680	20	20
Right	40	80	20	60
Total	690	850	80	130

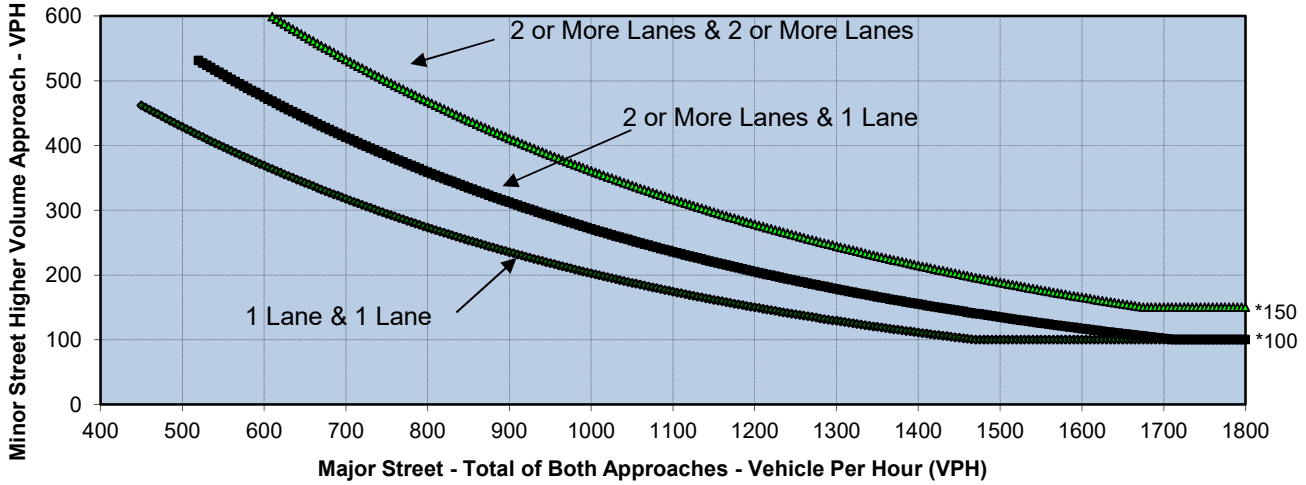
Major Street Direction

X	North/South
	East/West

	Major Street	Minor Street	Warrant Met
	Sports Arean Boulevard	Frontier Street	
Number of Approach Lanes	**3**	**1**	**YES**
Traffic Volume (VPH) *	**1,540**	**130**	

Sheet No 2 of 2

Figure 4C-3
Warrant 3, Peak Hour



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Source: *California Manual on Uniform Traffic Control Devices*, Caltrans, 2006

#13

Major Street	Sports Arean Boulevard
Minor Street	Frontier Street

Project	Midway & Old Town CPU
Scenario	3B
Peak Hour	PM

Turn Movement Volumes

	NB	SB	EB	WB
Left	50	120	60	120
Through	1,250	1,080	30	30
Right	70	80	70	150
Total	1,370	1,280	160	300

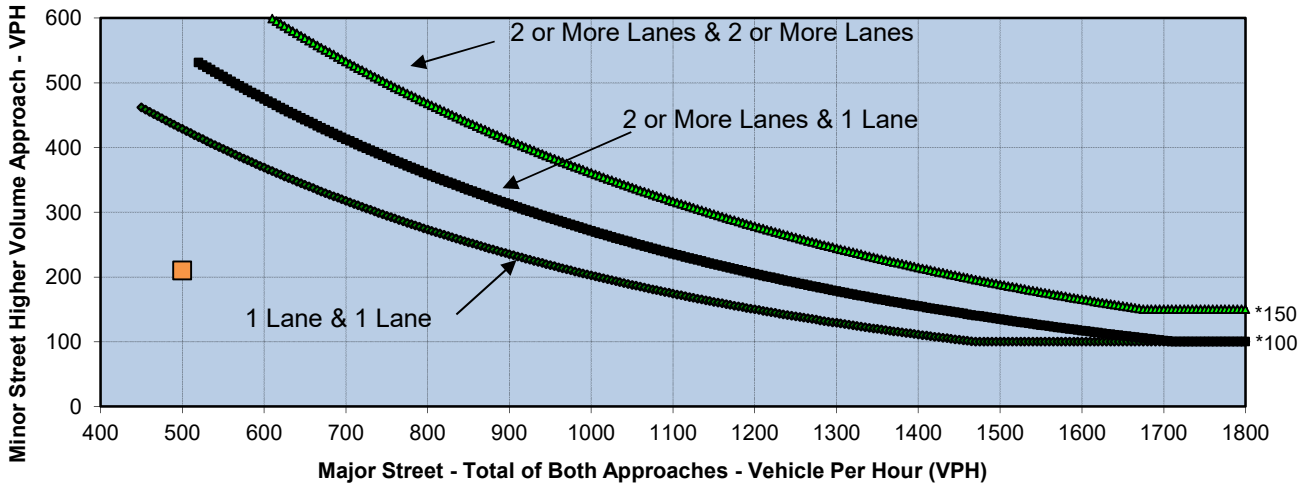
Major Street Direction

X	North/South
	East/West

	Major Street	Minor Street	Warrant Met
	Sports Arean Boulevard	Frontier Street	
Number of Approach Lanes	3	1	YES
Traffic Volume (VPH) *	2,650	300	

Sheet No 1 of 2

Figure 4C-3
Warrant 3, Peak Hour



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Source: *California Manual on Uniform Traffic Control Devices*, Caltrans, 2006

#16

Major Street	Sports Arean Boulevard
Minor Street	Charles Lindbergh Parkway

Project	Midway & Old Town CPU
Scenario	3B
Peak Hour	AM

Turn Movement Volumes

	NB	SB	EB	WB
Left	70	20	50	80
Through	50	30	100	80
Right	90	30	100	90
Total	210	80	250	250

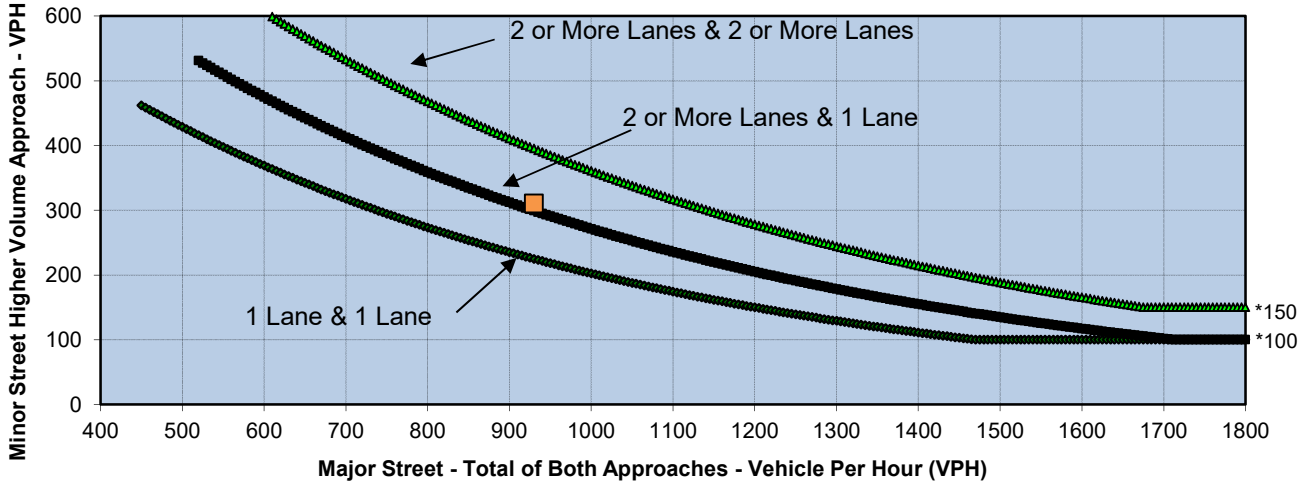
Major Street Direction

	North/South
X	East/West

	Major Street	Minor Street	Warrant Met
	Sports Arean Boulevard	Charles Lindbergh Parkway	
Number of Approach Lanes	**1**	**1**	**NO**
Traffic Volume (VPH) *	**500**	**210**	

Sheet No 2 of 2

Figure 4C-3
Warrant 3, Peak Hour



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Source: *California Manual on Uniform Traffic Control Devices*, Caltrans, 2006

#16		Project	Midway & Old Town CPU
Major Street	Sports Arean Boulevard	Scenario	3B
Minor Street	Charles Lindbergh Parkway	Peak Hour	PM

Turn Movement Volumes

	NB	SB	EB	WB
Left	70	90	90	70
Through	90	120	120	230
Right	120	100	300	120
Total	280	310	510	420

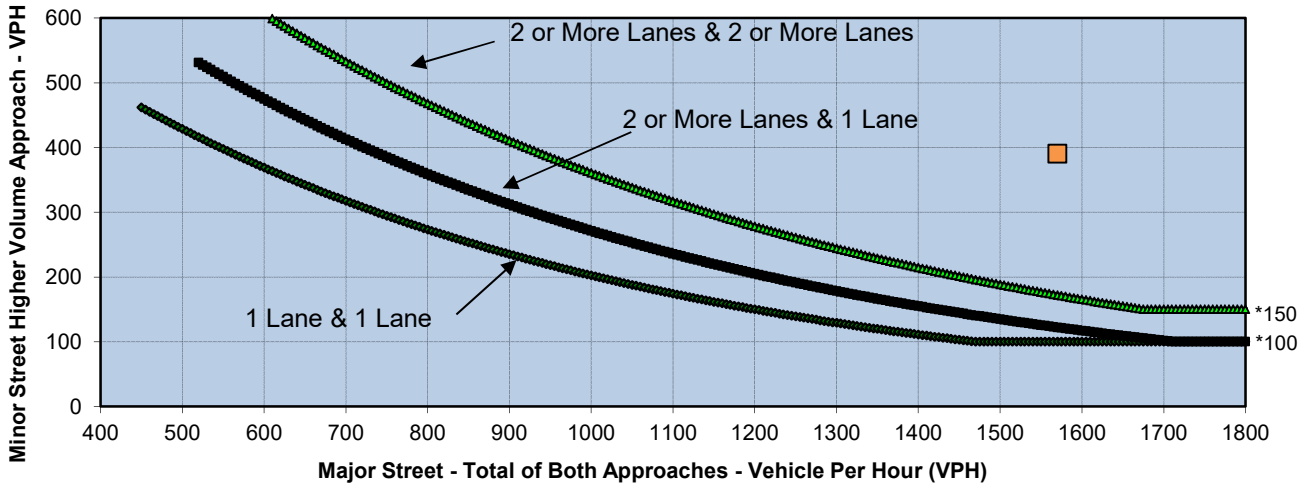
Major Street Direction

	North/South
X	East/West

	Major Street	Minor Street	Warrant Met
	Sports Arean Boulevard	Charles Lindbergh Parkway	
Number of Approach Lanes	1	1	YES
Traffic Volume (VPH) *	930	310	

Sheet No 1 of 2

Figure 4C-3
Warrant 3, Peak Hour



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Source: *California Manual on Uniform Traffic Control Devices*, Caltrans, 2006

#17

Major Street	Pacific Highway
Minor Street	Sports Arena Blvd

Project	Midway & Old Town CPU
Scenario	3B
Peak Hour	AM

Turn Movement Volumes

	NB	SB	EB	WB
Left	290	0	200	0
Through	610	600	0	0
Right	0	70	190	0
Total	900	670	390	0

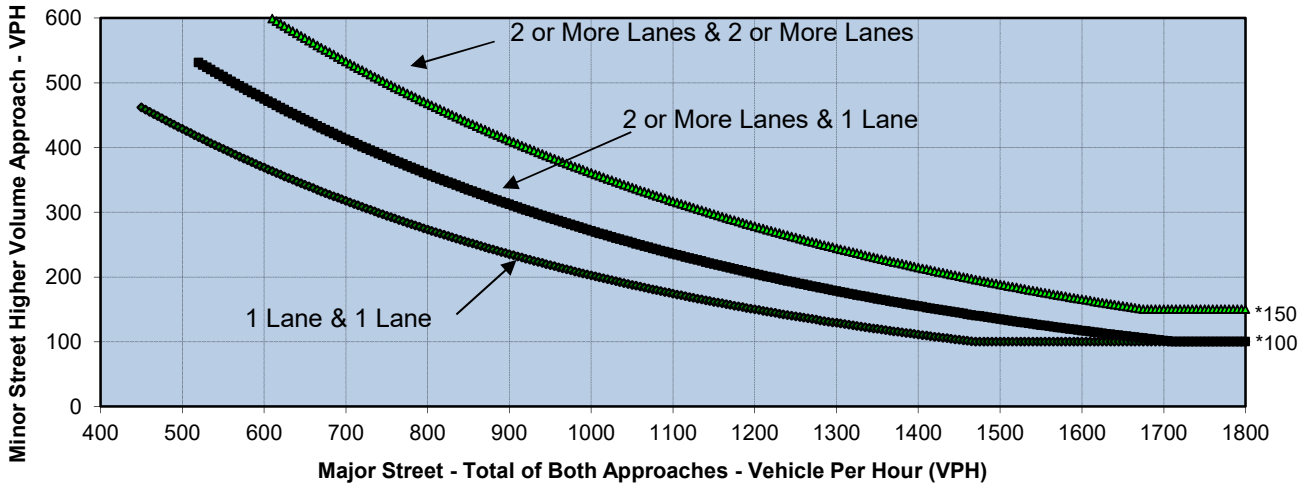
Major Street Direction

X	North/South
	East/West

	Major Street	Minor Street	Warrant Met
	Pacific Highway	Sports Arena Blvd	
Number of Approach Lanes	**3**	**1**	**YES**
Traffic Volume (VPH) *	**1,570**	**390**	

Sheet No 2 of 2

Figure 4C-3
Warrant 3, Peak Hour



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Source: *California Manual on Uniform Traffic Control Devices*, Caltrans, 2006

#17

Major Street	Pacific Highway
Minor Street	Sports Arena Blvd

Project	Midway & Old Town CPU
Scenario	3B
Peak Hour	PM

Turn Movement Volumes

	NB	SB	EB	WB
Left	280	0	50	0
Through	1,320	840	0	0
Right	0	50	470	0
Total	1,600	890	520	0

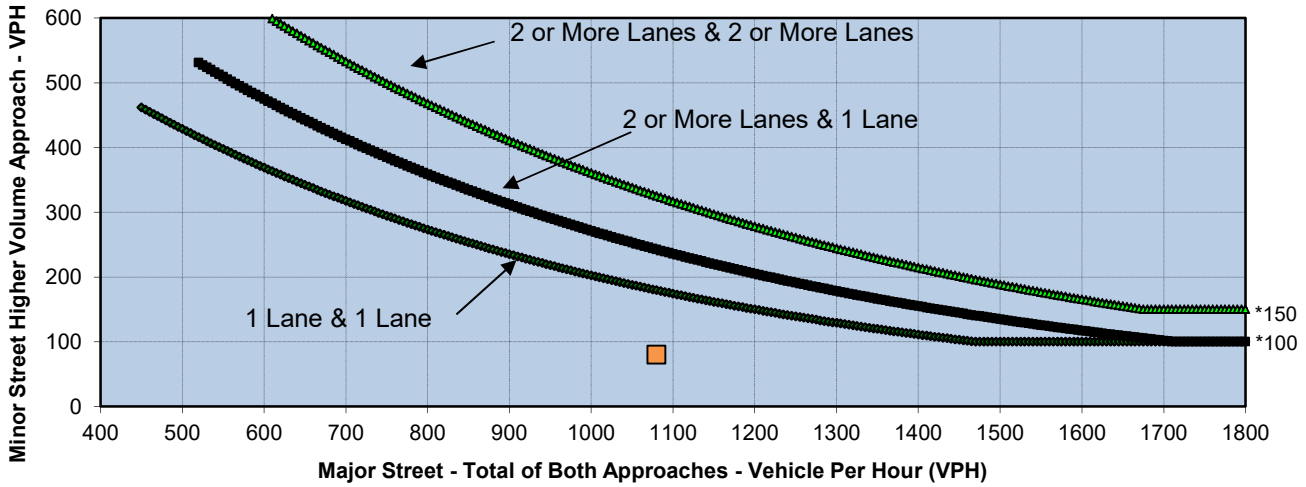
Major Street Direction

X	North/South
	East/West

	Major Street	Minor Street	Warrant Met
	Pacific Highway	Sports Arena Blvd	
Number of Approach Lanes	3	1	YES
Traffic Volume (VPH) *	2,490	520	

Sheet No 1 of 2

Figure 4C-3
Warrant 3, Peak Hour



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Source: *California Manual on Uniform Traffic Control Devices*, Caltrans, 2006

#18		Project	Midway & Old Town CPU
Major Street	Kurtz Street	Scenario	3B
Minor Street	Hancock Street	Peak Hour	AM

Turn Movement Volumes

	NB	SB	EB	WB
Left			30	100
Through		70		390
Right		10	100	460
Total	0	80	130	950

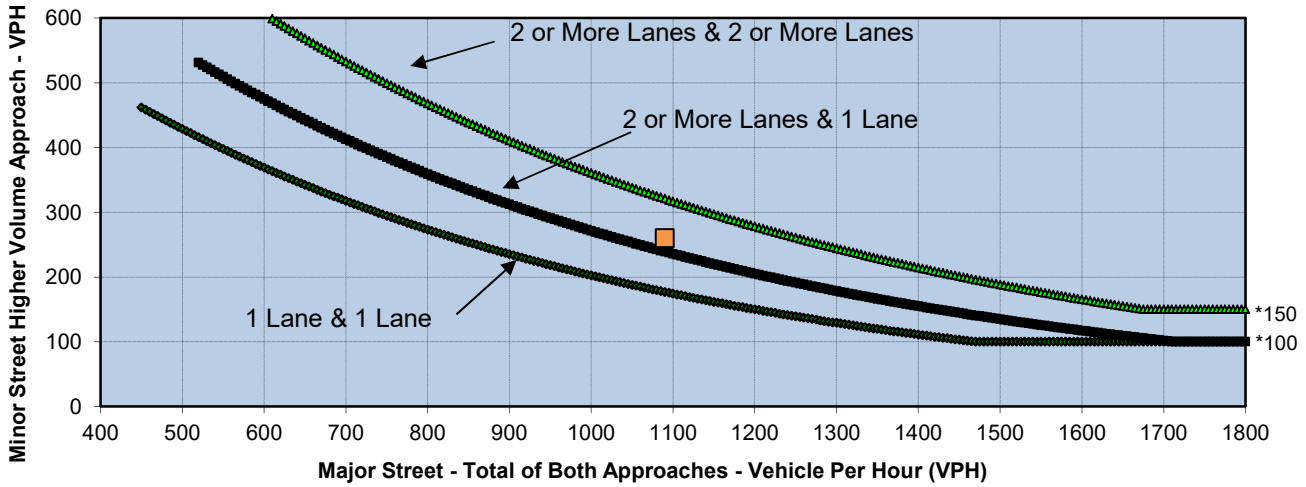
Major Street Direction

	North/South
X	East/West

	Major Street	Minor Street	Warrant Met
	Kurtz Street	Hancock Street	
Number of Approach Lanes	**1**	**1**	**NO**
Traffic Volume (VPH) *	**1,080**	**80**	

Sheet No 2 of 2

Figure 4C-3
Warrant 3, Peak Hour



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Source: *California Manual on Uniform Traffic Control Devices*, Caltrans, 2006

#18		Project	Midway & Old Town CPU
Major Street	Kurtz Street	Scenario	3B
Minor Street	Hancock Street	Peak Hour	PM

Turn Movement Volumes

	NB	SB	EB	WB
Left			100	150
Through		170		310
Right		90	140	390
Total	0	260	240	850

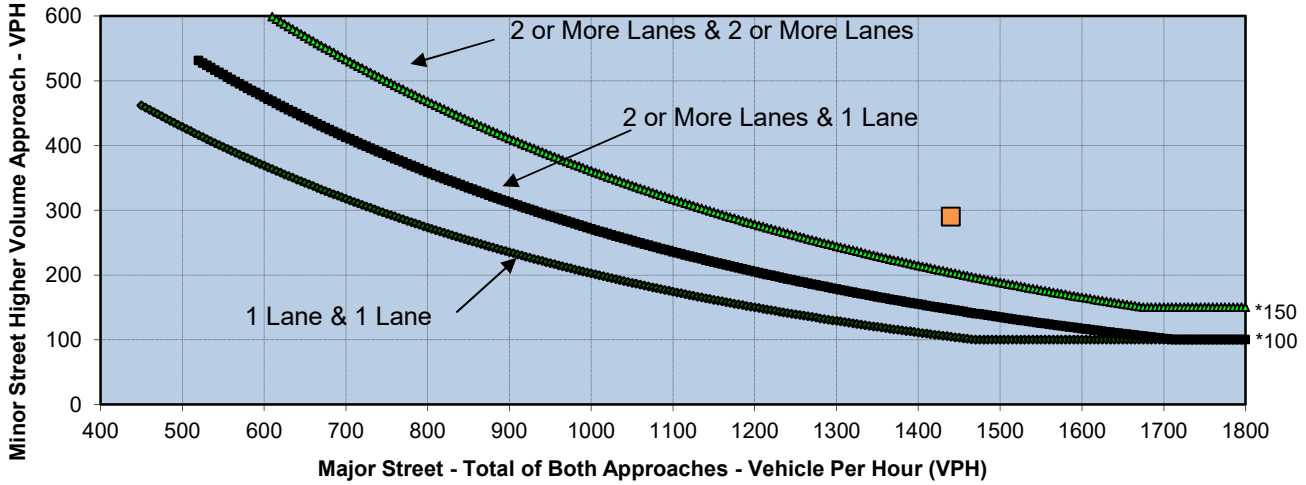
Major Street Direction

	North/South
X	East/West

	Major Street	Minor Street	Warrant Met
	Kurtz Street	Hancock Street	
Number of Approach Lanes	1	1	YES
Traffic Volume (VPH) *	1,090	260	

Sheet No 1 of 2

Figure 4C-3
Warrant 3, Peak Hour



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Source: *California Manual on Uniform Traffic Control Devices*, Caltrans, 2006

#21

Major Street	Pacific Highway
Minor Street	Kurtz Street

Project	Midway & Old Town CPU
Scenario	3B
Peak Hour	AM

Turn Movement Volumes

	NB	SB	EB	WB
Left	350		100	
Through	460	480		
Right		150	190	
Total	810	630	290	0

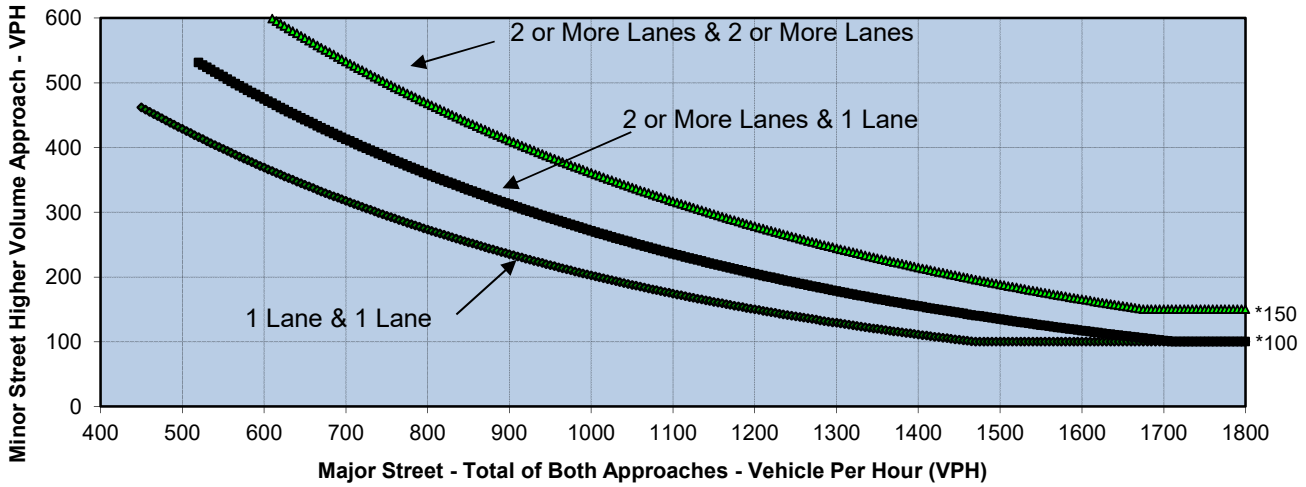
Major Street Direction

X	North/South
	East/West

	Major Street	Minor Street	Warrant Met
	Pacific Highway	Kurtz Street	
Number of Approach Lanes	**3**	**1**	**YES**
Traffic Volume (VPH) *	**1,440**	**290**	

Sheet No 2 of 2

Figure 4C-3
Warrant 3, Peak Hour



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Source: *California Manual on Uniform Traffic Control Devices*, Caltrans, 2006

#21		Project	Midway & Old Town CPU
Major Street	Pacific Highway	Scenario	3B
Minor Street	Kurtz Street	Peak Hour	PM

Turn Movement Volumes

	NB	SB	EB	WB
Left	490		230	
Through	880	440		
Right		100	450	
Total	1,370	540	680	0

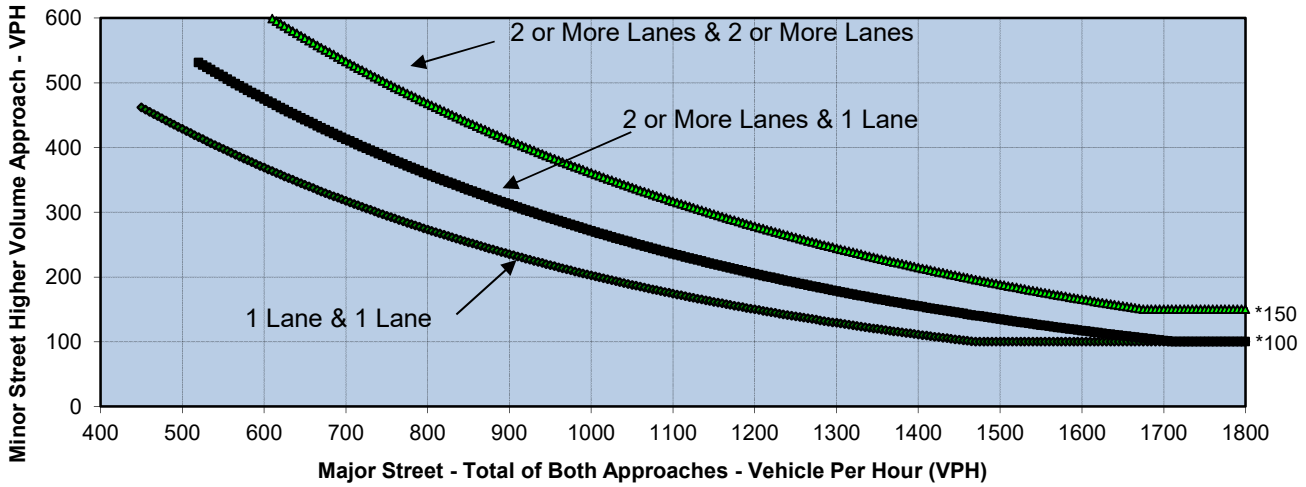
Major Street Direction

X	North/South
	East/West

	Major Street	Minor Street	Warrant Met
	Pacific Highway	Kurtz Street	
Number of Approach Lanes	3	1	YES
Traffic Volume (VPH) *	1,910	680	

Sheet No 1 of 2

Figure 4C-3
Warrant 3, Peak Hour



* Note: 150 VPH APPLIES AS THE LOWER THRESHOLD VOLUME FOR A MINOR STREET APPROACH WITH TWO OR MORE LANES AND 100 VPH APPLIES AS THE LOWER THRESHOLD VOLUME FOR A MINOR STREET APPROACHING WITH ONE LANE.

Source: *California Manual on Uniform Traffic Control Devices*, Caltrans, 2006

#62

Major Street	Kurtz Street
Minor Street	Greenwood Street

Project	Midway & Old Town CPU
Scenario	3B
Peak Hour	AM

Turn Movement Volumes

	NB	SB	EB	WB
Left		10		60
Through		220	20	90
Right		40	100	
Total	0	270	120	150

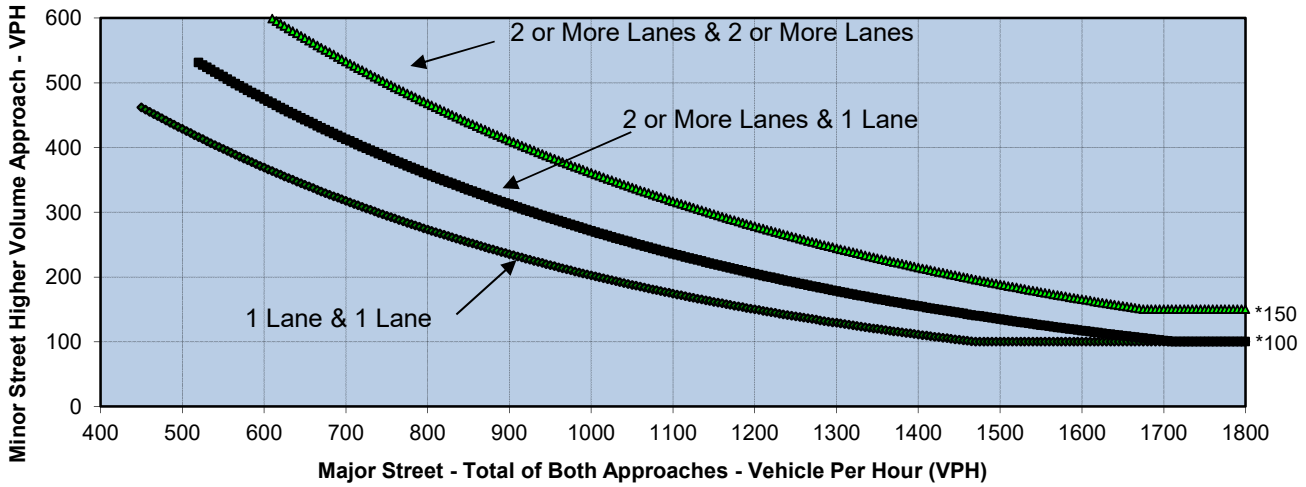
Major Street Direction

X	North/South
	East/West

	Major Street	Minor Street	Warrant Met
	Kurtz Street	Greenwood Street	
Number of Approach Lanes	**2**	**1**	**NO**
Traffic Volume (VPH) *	**270**	**150**	

Sheet No 2 of 2

Figure 4C-3
Warrant 3, Peak Hour



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Source: *California Manual on Uniform Traffic Control Devices*, Caltrans, 2006

#62		Project	Midway & Old Town CPU
Major Street	Kurtz Street	Scenario	3B
Minor Street	Greenwood Street	Peak Hour	PM

Turn Movement Volumes

	NB	SB	EB	WB
Left		70		320
Through		720	30	290
Right		50	260	
Total	0	840	290	610

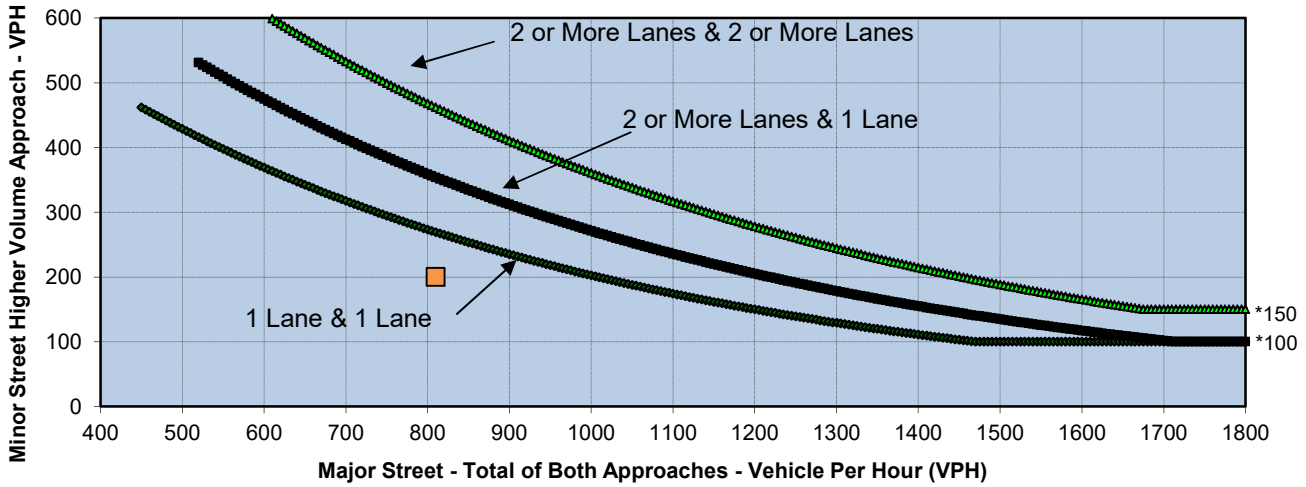
Major Street Direction

X	North/South
	East/West

	Major Street	Minor Street	Warrant Met
	Kurtz Street	Greenwood Street	
Number of Approach Lanes	2	1	YES
Traffic Volume (VPH) *	840	610	

Sheet No 1 of 2

Figure 4C-3
Warrant 3, Peak Hour



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Source: *California Manual on Uniform Traffic Control Devices*, Caltrans, 2006

#63		Project	Midway & Old Town CPU
Major Street	Kurtz Street	Scenario	3B
Minor Street	Charles Lindbergh Parkway	Peak Hour	AM

Turn Movement Volumes

	NB	SB	EB	WB
Left	140		50	
Through	330	310		
Right		30	150	
Total	470	340	200	0

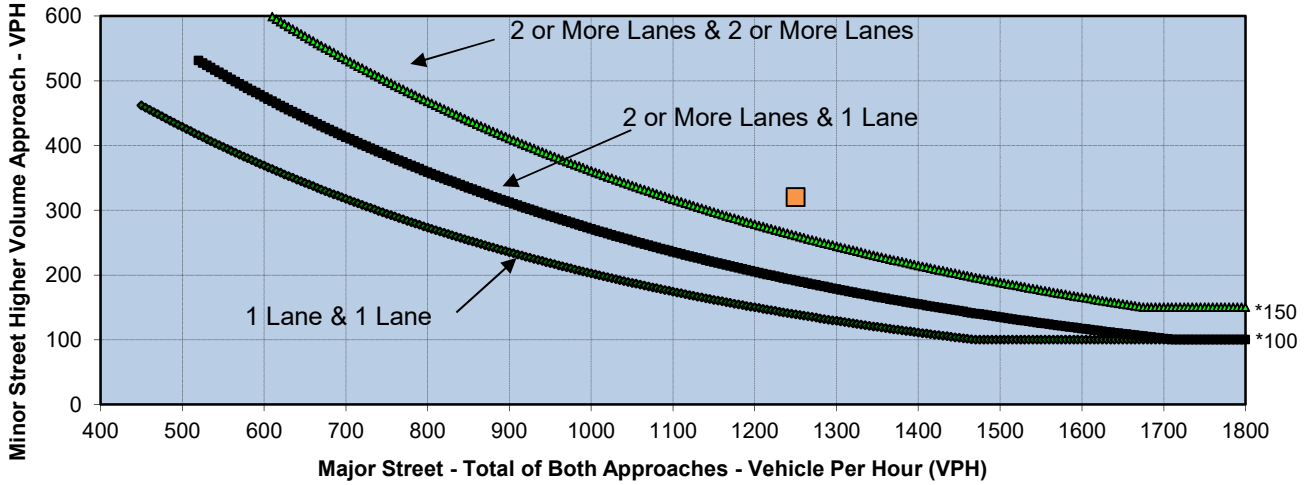
Major Street Direction

X	North/South
	East/West

	Major Street	Minor Street	Warrant Met
	Kurtz Street	Charles Lindbergh Parkway	
Number of Approach Lanes	**2**	**1**	**NO**
Traffic Volume (VPH) *	**810**	**200**	

Sheet No 2 of 2

Figure 4C-3
Warrant 3, Peak Hour



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Source: *California Manual on Uniform Traffic Control Devices*, Caltrans, 2006

#63		Project	Midway & Old Town CPU
Major Street	Kurtz Street	Scenario	3B
Minor Street	Charles Lindbergh Parkway	Peak Hour	PM

Turn Movement Volumes

	NB	SB	EB	WB
Left	180		120	
Through	370	480		
Right		220	200	
Total	550	700	320	0

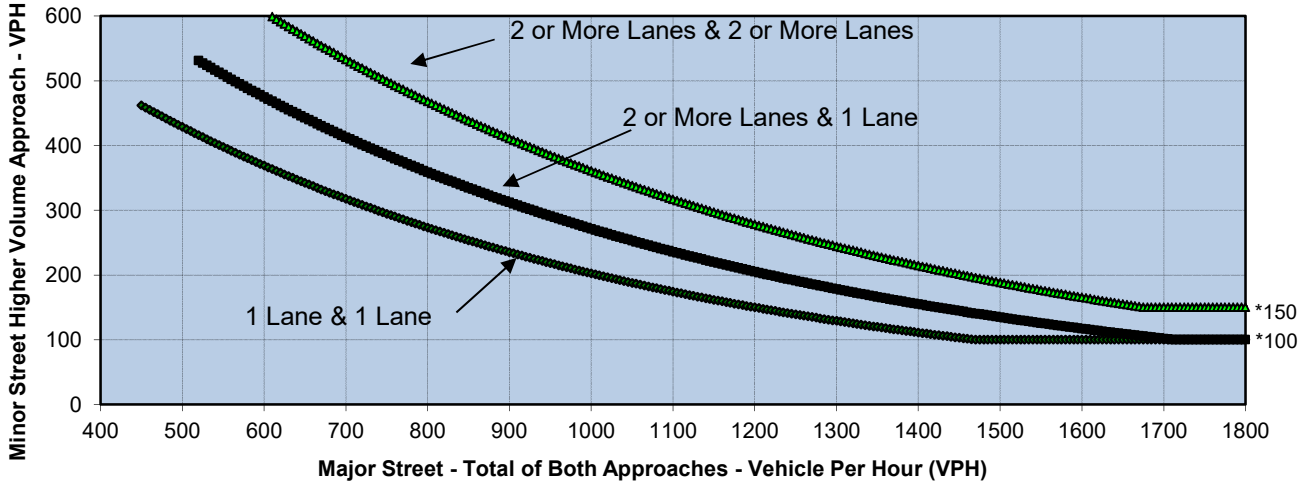
Major Street Direction

X	North/South
	East/West

	Major Street	Minor Street	Warrant Met
	Kurtz Street	Charles Lindbergh Parkway	
Number of Approach Lanes	2	1	YES
Traffic Volume (VPH) *	1,250	320	

Sheet No 1 of 2

Figure 4C-3
Warrant 3, Peak Hour



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Source: *California Manual on Uniform Traffic Control Devices*, Caltrans, 2006

#64		Project	Midway & Old Town CPU
Major Street	Barnett Avenue	Scenario	3B
Minor Street	Dutch Flats Parkway	Peak Hour	AM

Turn Movement Volumes

	NB	SB	EB	WB
Left		150	50	
Through			670	10
Right		250		1,420
Total	0	400	720	1,430

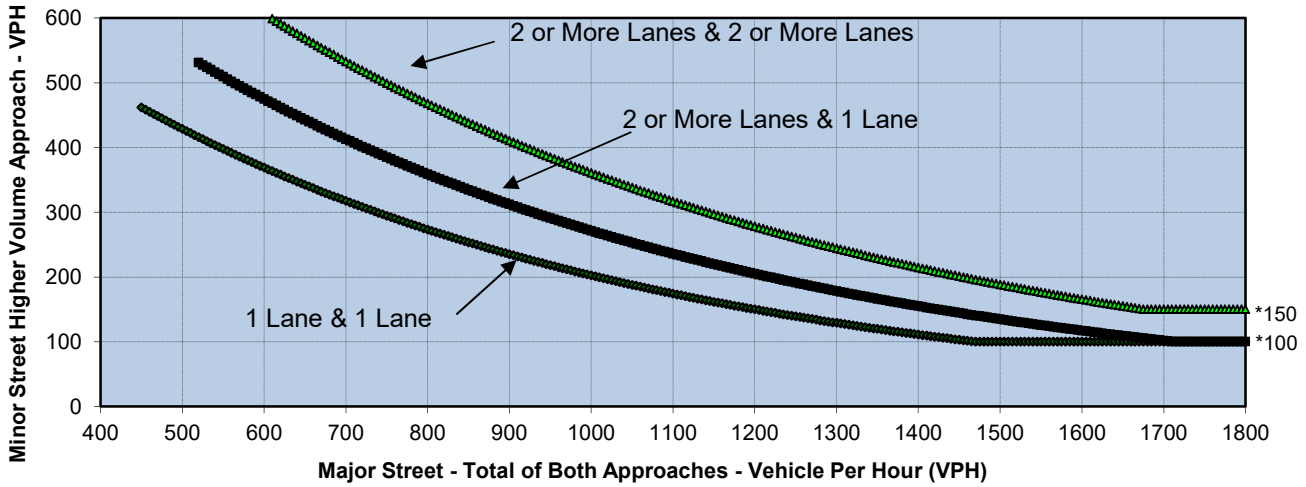
Major Street Direction

	North/South
X	East/West

	Major Street	Minor Street	Warrant Met
	Barnett Avenue	Dutch Flats Parkway	
Number of Approach Lanes	**2**	**1**	**YES**
Traffic Volume (VPH) *	**2,150**	**400**	

Sheet No 2 of 2

Figure 4C-3
Warrant 3, Peak Hour



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Source: *California Manual on Uniform Traffic Control Devices*, Caltrans, 2006

#64		Project	Midway & Old Town CPU
Major Street	Barnett Avenue	Scenario	3B
Minor Street	Dutch Flats Parkway	Peak Hour	PM

Turn Movement Volumes

	NB	SB	EB	WB
Left		160	60	
Through			1,090	1,200
Right		240		70
Total	0	400	1,150	1,270

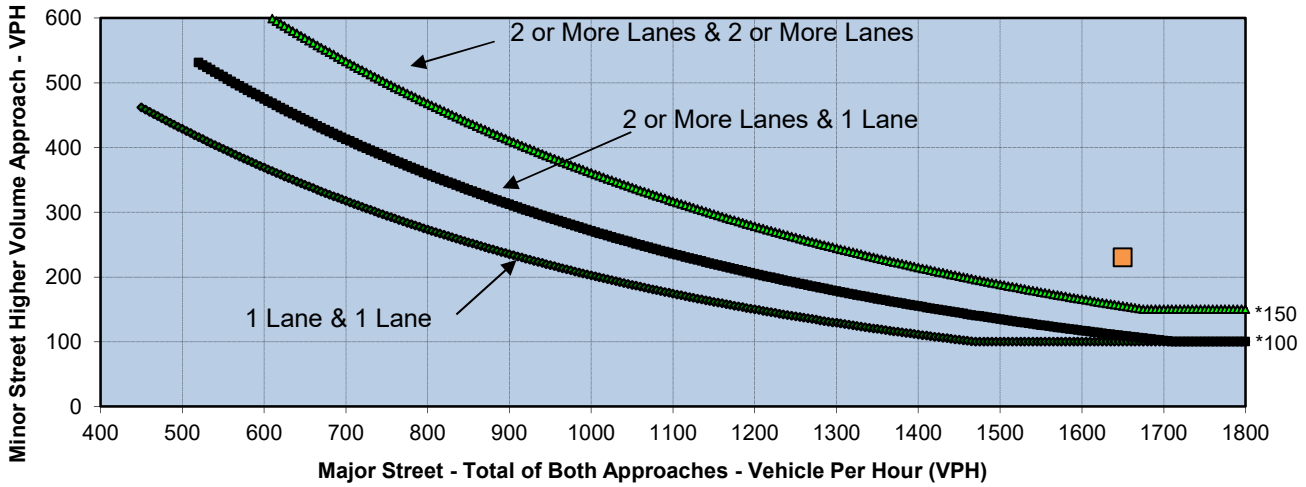
Major Street Direction

	North/South
X	East/West

	Major Street	Minor Street	Warrant Met
	Barnett Avenue	Dutch Flats Parkway	
Number of Approach Lanes	2	1	YES
Traffic Volume (VPH) *	2,420	400	

Sheet No 1 of 2

Figure 4C-3
Warrant 3, Peak Hour



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Source: *California Manual on Uniform Traffic Control Devices*, Caltrans, 2006

#65		Project	Midway & Old Town CPU
Major Street	Midway Drive	Scenario	3B
Minor Street	Dutch Flats Parkway	Peak Hour	AM

Turn Movement Volumes

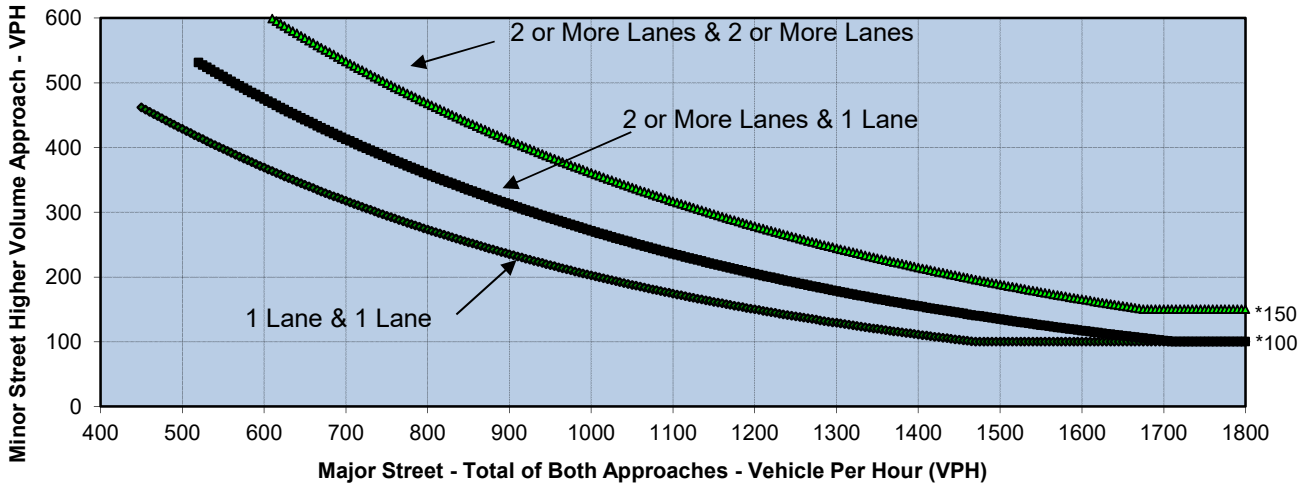
	NB	SB	EB	WB
Left	230	260	70	40
Through	390	450	10	150
Right	130	190	100	40
Total	750	900	180	230

Major Street Direction

X	North/South
	East/West

	Major Street	Minor Street	Warrant Met
	Midway Drive	Dutch Flats Parkway	
Number of Approach Lanes	**2**	**1**	**YES**
Traffic Volume (VPH) *	**1,650**	**230**	

Figure 4C-3
Warrant 3, Peak Hour



* Note: 150 VPH APPLIES AS THE LOWER THRESHOLD VOLUME FOR A MINOR STREET APPROACH WITH TWO OR MORE LANES AND 100 VPH APPLIES AS THE LOWER THRESHOLD VOLUME FOR A MINOR STREET APPROACHING WITH ONE LANE.

Source: *California Manual on Uniform Traffic Control Devices*, Caltrans, 2006

#65

Major Street	Midway Drive
Minor Street	Dutch Flats Parkway

Project	Midway & Old Town CPU
Scenario	3B
Peak Hour	PM

Turn Movement Volumes

	NB	SB	EB	WB
Left	160	210	110	60
Through	510	520	20	110
Right	370	150	80	280
Total	1,040	880	210	450

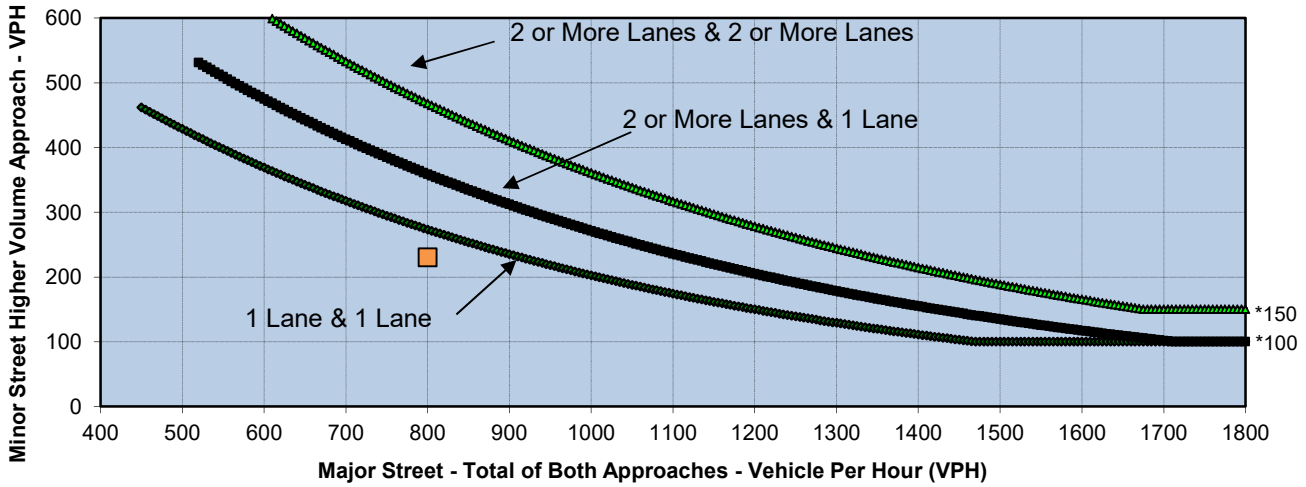
Major Street Direction

X	North/South
	East/West

	Major Street	Minor Street	Warrant Met
	Midway Drive	Dutch Flats Parkway	
Number of Approach Lanes	**2**	**1**	**YES**
Traffic Volume (VPH) *	**1,920**	**450**	

Sheet No 1 of 2

Figure 4C-3
Warrant 3, Peak Hour



* Note: 150 VPH APPLIES AS THE LOWER THRESHOLD VOLUME FOR A MINOR STREET APPROACH WITH TWO OR MORE LANES AND 100 VPH APPLIES AS THE LOWER THRESHOLD VOLUME FOR A MINOR STREET APPROACHING WITH ONE LANE.

Source: *California Manual on Uniform Traffic Control Devices*, Caltrans, 2006

#66

Major Street	Sports Arena Boulevard
Minor Street	Dutch Flats Parkway

Project	Midway & Old Town CPU
Scenario	3B
Peak Hour	AM

Turn Movement Volumes

	NB	SB	EB	WB
Left	340		30	
Through	180	190		
Right		90	200	
Total	520	280	230	0

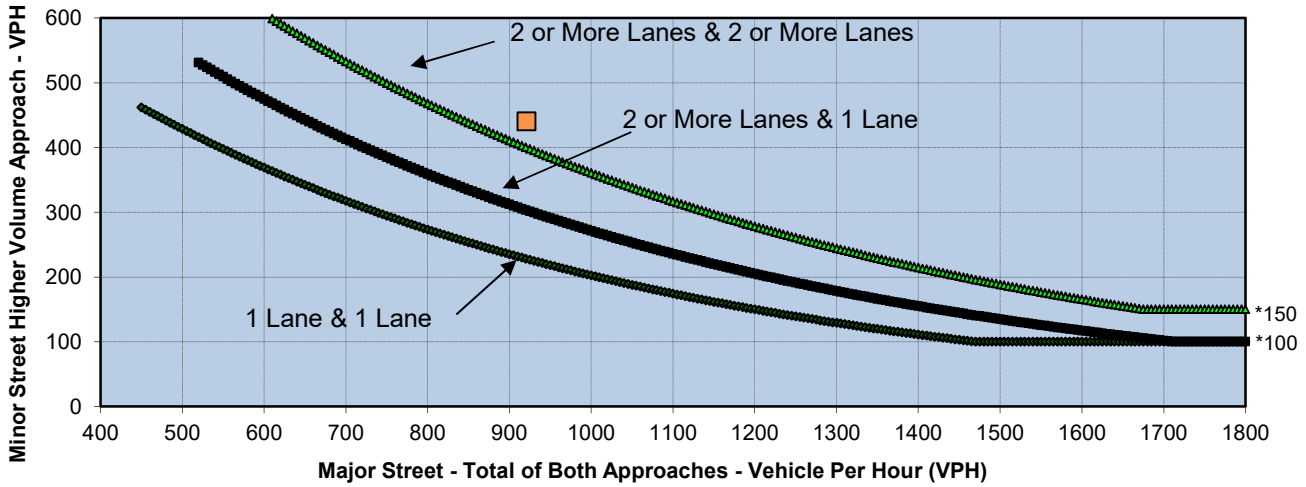
Major Street Direction

X	North/South
	East/West

	Major Street	Minor Street	Warrant Met
	Sports Arena Boulevard	Dutch Flats Parkway	
Number of Approach Lanes	**1**	**1**	**NO**
Traffic Volume (VPH) *	**800**	**230**	

Sheet No 2 of 2

Figure 4C-3
Warrant 3, Peak Hour



* Note: 150 VPH APPLIES AS THE LOWER THRESHOLD VOLUME FOR A MINOR STREET APPROACH WITH TWO OR MORE LANES AND 100 VPH APPLIES AS THE LOWER THRESHOLD VOLUME FOR A MINOR STREET APPROACHING WITH ONE LANE.

Source: *California Manual on Uniform Traffic Control Devices*, Caltrans, 2006

#66

Major Street	Sports Arena Boulevard
Minor Street	Dutch Flats Parkway

Project	Midway & Old Town CPU
Scenario	3B
Peak Hour	PM

Turn Movement Volumes

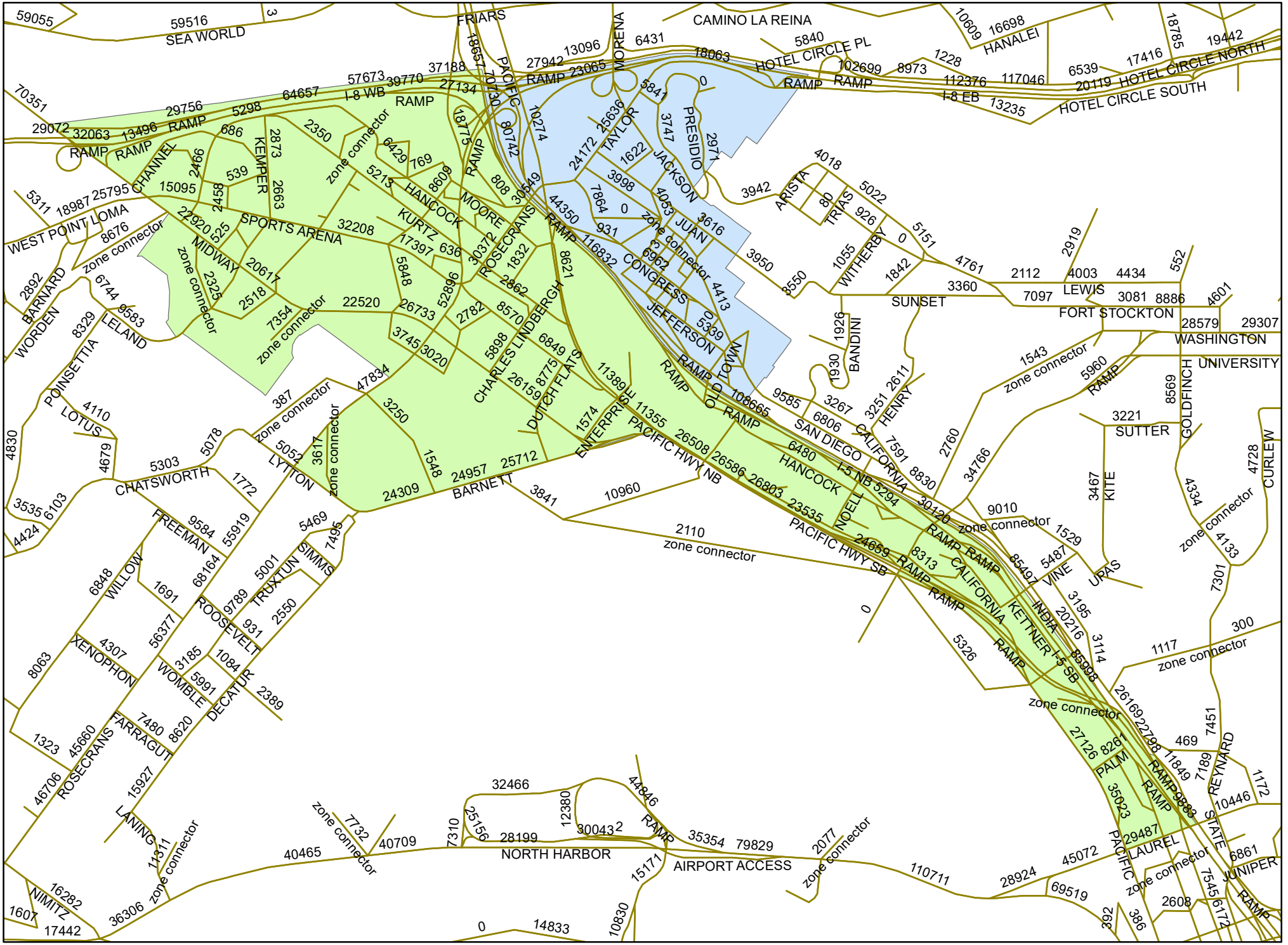
	NB	SB	EB	WB
Left	190		180	
Through	141	270		
Right		320	260	
Total	331	590	440	0

Major Street Direction

X	North/South
	East/West

	Major Street	Minor Street	Warrant Met
	Sports Arena Boulevard	Dutch Flats Parkway	
Number of Approach Lanes	1	1	YES
Traffic Volume (VPH) *	921	440	

Appendix D
SANDAG Series 12 Model Outputs, Documentation and VMT Analysis



Midway-Pacific Highway and Old Town Community Plan

Scenario 3B

VMT Analysis

	Base Year 2008										
	SF (1)			MF			Mobile Homes				Estimated
	VR(2)	PPH(3)	SFDU	VR(2)	PPH(3)	MFDU	VR(2)	PPH(3)	MHDU	TOTAL DU	Populatio
Midway	2.00%	1.78	1,274	3.10%	1.78	484	0.00%	1.78		1,758	3,057
Old Town	6.90%	1.62	229	7.10%	1.62	25	0.00%	1.62	-	254	383

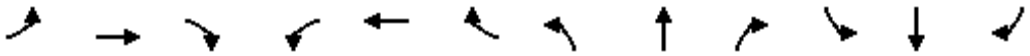
	Preferred CPU - Buildout for Communities, Year 2035 for Region										
	SF (1)			MF			Mobile Homes				Estimated
	VR(4)	PPH(5)	SFDU	VR(4)	PPH(5)	MFDU	VR(4)	PPH(5)	MHDU	TOTAL DU	Populatio
Midway	1.70%	1.82	-	2.40%	1.82	11,415	0.00%	1.82		11,415	20,277
Old Town	0.00%	1.66	79	5.10%	1.66	1,253	0.00%	1.66	-	1,332	2,105

	Delta (CPU Buildout for SESD & Encanto, Year 2035 for Region) - Base Year (2008)						
	DELTAS				Percent increase	Estimated Population Increase	Percent Increase
	SFDU	MFDU	MHDU	Total DU			
Midway	-1274	10931	0	9657	5.493174	17219.5143	5.632486
Old Town	-150	1228	0	1078	4.244094	1722.03414	4.496092

(1) Single family includes detached single family and multi-unit single family
(2) Vacancy Rate data for 2010 per SANDAG Community Profiles
(3) Persons Per Household data for 2010 per SANDAG Community Profiles
(4) Vacancy Rate data for 2050 per SANDAG Community Profiles
(5) Persons Per Household data for 2050 per SANDAG Community Profiles

Appendix E
Peak Hour Intersection Calculation Worksheets and Queuing Reports

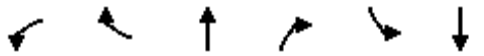
Peak Hour Intersection Calculation Worksheets



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	60	1150	400	160	1330	180	480	400	150	580	280	120
Future Volume (vph)	60	1150	400	160	1330	180	480	400	150	580	280	120
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	
Lane Util. Factor	1.00	0.91	1.00	0.97	0.95	1.00	0.97	1.00	1.00	1.00	1.00	
Frpb, ped/bikes	1.00	1.00	0.99	1.00	1.00	0.95	1.00	1.00	0.98	1.00	1.00	
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.96	
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)	1770	5085	1563	3433	3539	1497	3433	1863	1559	1770	1771	
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (perm)	1770	5085	1563	3433	3539	1497	3433	1863	1559	1770	1771	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	65	1250	435	174	1446	196	522	435	163	630	304	130
RTOR Reduction (vph)	0	0	293	0	0	93	0	0	100	0	13	0
Lane Group Flow (vph)	65	1250	142	174	1446	103	522	435	63	630	421	0
Confl. Peds. (#/hr)	8					8			3	3		
Confl. Bikes (#/hr)			1			5						3
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases			2			6			8			
Actuated Green, G (s)	4.0	39.9	39.9	8.6	44.4	44.4	30.5	33.2	33.2	35.8	36.7	
Effective Green, g (s)	4.4	41.2	41.2	9.0	45.8	45.8	30.9	34.0	34.0	34.8	37.9	
Actuated g/C Ratio	0.03	0.31	0.31	0.07	0.34	0.34	0.23	0.25	0.25	0.26	0.28	
Clearance Time (s)	4.4	5.3	5.3	4.4	5.4	5.4	4.4	4.8	4.8	3.0	5.2	
Vehicle Extension (s)	2.0	4.4	4.4	2.0	4.4	4.4	2.0	3.8	3.8	2.0	2.0	
Lane Grp Cap (vph)	57	1551	477	228	1200	507	785	469	392	456	497	
v/s Ratio Prot	0.04	0.25		c0.05	c0.41		0.15	c0.23		c0.36	0.24	
v/s Ratio Perm			0.09			0.07			0.04			
v/c Ratio	1.14	0.81	0.30	0.76	1.21	0.20	0.66	0.93	0.16	1.38	0.85	
Uniform Delay, d1	65.3	43.2	35.8	62.0	44.6	31.7	47.3	49.3	39.4	50.1	45.8	
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	162.7	4.6	1.6	12.7	100.4	0.9	1.7	24.8	0.3	185.0	12.1	
Delay (s)	228.0	47.8	37.4	74.7	145.0	32.6	49.0	74.1	39.6	235.1	58.0	
Level of Service	F	D	D	E	F	C	D	E	D	F	E	
Approach Delay (s)		51.9			126.1			57.4			162.8	
Approach LOS		D			F			E			F	

Intersection Summary			
HCM 2000 Control Delay	96.9	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.18		
Actuated Cycle Length (s)	135.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	107.3%	ICU Level of Service	G
Analysis Period (min)	15		

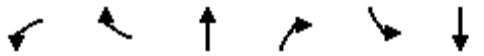
c Critical Lane Group



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	550	1190	370	0	0	650
Future Volume (vph)	550	1190	370	0	0	650
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	7.0	7.0	7.0			7.0
Lane Util. Factor	0.97	0.88	0.95			0.95
Frt	1.00	0.85	1.00			1.00
Flt Protected	0.95	1.00	1.00			1.00
Satd. Flow (prot)	3433	2787	3539			3539
Flt Permitted	0.95	1.00	1.00			1.00
Satd. Flow (perm)	3433	2787	3539			3539
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	598	1293	402	0	0	707
RTOR Reduction (vph)	0	301	0	0	0	0
Lane Group Flow (vph)	598	992	402	0	0	707
Turn Type	Prot	Perm	NA			NA
Protected Phases	4		2			6
Permitted Phases		4				
Actuated Green, G (s)	19.7	19.7	13.0			13.0
Effective Green, g (s)	19.7	19.7	13.0			13.0
Actuated g/C Ratio	0.42	0.42	0.28			0.28
Clearance Time (s)	7.0	7.0	7.0			7.0
Vehicle Extension (s)	0.2	0.2	0.2			0.2
Lane Grp Cap (vph)	1448	1175	985			985
v/s Ratio Prot	0.17		0.11			c0.20
v/s Ratio Perm		c0.36				
v/c Ratio	0.41	0.84	0.41			0.72
Uniform Delay, d1	9.5	12.1	13.7			15.2
Progression Factor	1.00	1.00	1.00			1.00
Incremental Delay, d2	0.1	5.5	0.1			2.1
Delay (s)	9.5	17.6	13.8			17.3
Level of Service	A	B	B			B
Approach Delay (s)	15.1		13.8			17.3
Approach LOS	B		B			B

Intersection Summary			
HCM 2000 Control Delay	15.4	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.79		
Actuated Cycle Length (s)	46.7	Sum of lost time (s)	14.0
Intersection Capacity Utilization	63.5%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group



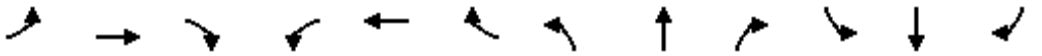
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	0	130	970	220	0	1200
Future Volume (Veh/h)	0	130	970	220	0	1200
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	141	1054	239	0	1304
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type			None			None
Median storage veh)						
Upstream signal (ft)			810			780
pX, platoon unblocked	0.97	0.97			0.97	
vC, conflicting volume	1608	471			1293	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1510	349			1196	
tC, single (s)	6.8	6.9			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	100	78			100	
cM capacity (veh/h)	110	634			562	

Direction, Lane #	WB 1	NB 1	NB 2	NB 3	SB 1	SB 2	SB 3
Volume Total	141	422	422	450	435	435	435
Volume Left	0	0	0	0	0	0	0
Volume Right	141	0	0	239	0	0	0
cSH	634	1700	1700	1700	1700	1700	1700
Volume to Capacity	0.22	0.25	0.25	0.26	0.26	0.26	0.26
Queue Length 95th (ft)	21	0	0	0	0	0	0
Control Delay (s)	12.3	0.0	0.0	0.0	0.0	0.0	0.0
Lane LOS	B						
Approach Delay (s)	12.3	0.0			0.0		
Approach LOS	B						

Intersection Summary			
Average Delay	0.6		
Intersection Capacity Utilization	38.4%	ICU Level of Service	A
Analysis Period (min)	15		

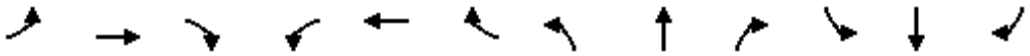
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	440	300	270	30	140	300	180	460	50	440	510	250
Future Volume (vph)	440	300	270	30	140	300	180	460	50	440	510	250
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.1	4.0	3.1	3.0	4.0	4.0	3.1	4.0		3.1	4.0	4.0
Lane Util. Factor	1.00	1.00	1.00	1.00	0.95	1.00	1.00	0.95		1.00	0.95	1.00
Frpb, ped/bikes	1.00	1.00	0.99	1.00	1.00	0.99	1.00	1.00		1.00	1.00	0.99
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.99		1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1770	1863	1564	1770	3539	1574	1770	3482		1770	3539	1565
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)	1770	1863	1564	1770	3539	1574	1770	3482		1770	3539	1565
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	478	326	293	33	152	326	196	500	54	478	554	272
RTOR Reduction (vph)	0	0	76	0	0	44	0	6	0	0	0	117
Lane Group Flow (vph)	478	326	217	33	152	282	196	548	0	478	554	155
Confl. Peds. (#/hr)			4			3			5			8
Turn Type	Prot	NA	pm+ov	Prot	NA	pm+ov	Prot	NA		Prot	NA	pm+ov
Protected Phases	5	2	3	1	6	7	3	8		7	4	5
Permitted Phases			2			6						4
Actuated Green, G (s)	31.3	47.0	63.6	3.4	19.0	50.3	16.6	24.6		31.3	39.3	70.6
Effective Green, g (s)	32.2	47.9	65.4	4.4	20.0	50.3	17.5	25.5		32.2	40.2	70.6
Actuated g/C Ratio	0.26	0.39	0.53	0.04	0.16	0.41	0.14	0.21		0.26	0.32	0.57
Clearance Time (s)	4.0	4.9	4.0	4.0	5.0	4.0	4.0	4.9		4.0	4.9	4.0
Vehicle Extension (s)	3.0	0.2	3.0	3.0	8.0	3.0	3.0	3.1		3.0	5.5	3.0
Lane Grp Cap (vph)	459	719	824	62	570	637	249	715		459	1146	890
v/s Ratio Prot	c0.27	c0.18	0.04	0.02	0.04	0.11	0.11	c0.16		c0.27	0.16	0.04
v/s Ratio Perm			0.10			0.07						0.06
v/c Ratio	1.04	0.45	0.26	0.53	0.27	0.44	0.79	0.77		1.04	0.48	0.17
Uniform Delay, d1	45.9	28.4	16.1	58.8	45.6	26.7	51.5	46.5		45.9	33.6	12.8
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	53.2	0.2	0.2	8.5	1.1	0.5	15.1	5.0		53.2	0.8	0.1
Delay (s)	99.1	28.5	16.3	67.3	46.7	27.2	66.6	51.5		99.1	34.4	12.9
Level of Service	F	C	B	E	D	C	E	D		F	C	B
Approach Delay (s)		56.0			35.6			55.4			53.6	
Approach LOS		E			D			E			D	

Intersection Summary			
HCM 2000 Control Delay	52.2	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.90		
Actuated Cycle Length (s)	124.1	Sum of lost time (s)	16.0
Intersection Capacity Utilization	85.6%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	110	110	110	90	100	170	80	320	50	90	410	90
Future Volume (vph)	110	110	110	90	100	170	80	320	50	90	410	90
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0
Lane Util. Factor	0.95	0.95	1.00	1.00	1.00	1.00	0.97	0.95		1.00	0.95	1.00
Frpb, ped/bikes	1.00	1.00	0.98	1.00	1.00	0.98	1.00	1.00		1.00	1.00	1.00
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.98		1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1681	1770	1556	1770	1863	1551	3433	3459		1770	3539	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)	1681	1770	1556	1770	1863	1551	3433	3459		1770	3539	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	120	120	120	98	109	185	87	348	54	98	446	98
RTOR Reduction (vph)	0	0	96	0	0	159	0	7	0	0	0	47
Lane Group Flow (vph)	120	120	24	98	109	26	87	395	0	98	446	51
Confl. Peds. (#/hr)			12			8			5			
Turn Type	Split	NA	pm+ov	Split	NA	Perm	Prot	NA		Prot	NA	Perm
Protected Phases	8	8	1	7	7		1	6		5	2	
Permitted Phases			8			7						2
Actuated Green, G (s)	17.0	17.0	23.6	16.0	16.0	16.0	6.6	56.8		11.1	61.3	61.3
Effective Green, g (s)	17.9	17.9	24.4	16.9	16.9	16.9	7.0	57.7		11.5	62.2	62.2
Actuated g/C Ratio	0.15	0.15	0.20	0.14	0.14	0.14	0.06	0.48		0.10	0.52	0.52
Clearance Time (s)	4.9	4.9	4.4	4.9	4.9	4.9	4.4	4.9		4.4	4.9	4.9
Vehicle Extension (s)	3.0	3.0	2.0	3.0	3.0	3.0	2.0	4.5		2.0	4.6	4.6
Lane Grp Cap (vph)	250	264	316	249	262	218	200	1663		169	1834	820
v/s Ratio Prot	c0.07	0.07	0.00	0.06	c0.06		0.03	0.11		c0.06	c0.13	
v/s Ratio Perm			0.01			0.02						0.03
v/c Ratio	0.48	0.45	0.08	0.39	0.42	0.12	0.43	0.24		0.58	0.24	0.06
Uniform Delay, d1	46.8	46.6	38.7	46.9	47.0	45.0	54.6	18.3		51.9	15.9	14.4
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.25	0.71	0.71
Incremental Delay, d2	1.5	1.2	0.0	1.0	1.1	0.2	0.6	0.3		2.5	0.3	0.1
Delay (s)	48.2	47.8	38.7	47.9	48.1	45.3	55.1	18.6		67.7	11.5	10.4
Level of Service	D	D	D	D	D	D	E	B		E	B	B
Approach Delay (s)		44.9			46.7			25.1			19.9	
Approach LOS		D			D			C			B	

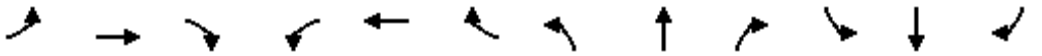
Intersection Summary			
HCM 2000 Control Delay	31.6	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.35		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	58.9%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	30	20	20	30	20	30	60	660	90	30	550	20
Future Volume (vph)	30	20	20	30	20	30	60	660	90	30	550	20
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0			4.0		4.0	4.0		4.0	4.0	
Lane Util. Factor		1.00			1.00		1.00	0.95		1.00	0.95	
Frpb, ped/bikes		1.00			0.99		1.00	1.00		1.00	1.00	
Flpb, ped/bikes		1.00			1.00		1.00	1.00		1.00	1.00	
Frt		0.96			0.95		1.00	0.98		1.00	0.99	
Flt Protected		0.98			0.98		0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1746			1724		1770	3460		1770	3515	
Flt Permitted		0.83			0.84		0.39	1.00		0.32	1.00	
Satd. Flow (perm)		1489			1482		724	3460		603	3515	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	33	22	22	33	22	33	65	717	98	33	598	22
RTOR Reduction (vph)	0	19	0	0	28	0	0	13	0	0	4	0
Lane Group Flow (vph)	0	58	0	0	60	0	65	802	0	33	616	0
Confl. Peds. (#/hr)			1			10			10			10
Confl. Bikes (#/hr)									5			5
Turn Type	Perm	NA		Perm	NA		pm+pt	NA		pm+pt	NA	
Protected Phases		8			4		1	6		5	2	
Permitted Phases	8			4			6			2		
Actuated Green, G (s)		5.3			5.3		21.8	20.1		20.0	19.2	
Effective Green, g (s)		6.2			6.2		22.6	21.0		20.8	20.1	
Actuated g/C Ratio		0.15			0.15		0.56	0.52		0.51	0.50	
Clearance Time (s)		4.9			4.9		4.4	4.9		4.4	4.9	
Vehicle Extension (s)		2.0			2.0		2.0	2.9		2.0	2.9	
Lane Grp Cap (vph)		228			227		459	1798		345	1748	
v/s Ratio Prot							c0.01	c0.23		0.00	0.18	
v/s Ratio Perm		0.04			c0.04		0.07			0.05		
v/c Ratio		0.26			0.26		0.14	0.45		0.10	0.35	
Uniform Delay, d1		15.1			15.1		4.1	6.1		4.9	6.2	
Progression Factor		1.00			1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2		0.2			0.2		0.1	0.2		0.0	0.1	
Delay (s)		15.3			15.3		4.1	6.2		4.9	6.3	
Level of Service		B			B		A	A		A	A	
Approach Delay (s)		15.3			15.3			6.1			6.2	
Approach LOS		B			B			A			A	

Intersection Summary			
HCM 2000 Control Delay	7.0	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.40		
Actuated Cycle Length (s)	40.4	Sum of lost time (s)	12.0
Intersection Capacity Utilization	43.6%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	220	1460	170	340	1800	300	120	330	210	230	280	180
Future Volume (vph)	220	1460	170	340	1800	300	120	330	210	230	280	180
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0	4.4	4.0	4.0	3.5	4.0	4.0	3.5
Lane Util. Factor	0.97	0.91		0.97	0.91	1.00	1.00	0.95	1.00	0.97	0.95	1.00
Frpb, ped/bikes	1.00	1.00		1.00	1.00	0.98	1.00	1.00	0.97	1.00	1.00	0.98
Flpb, ped/bikes	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.98		1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	4984		3433	5085	1544	1770	3539	1542	3433	3539	1555
Flt Permitted	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	4984		3433	5085	1544	1770	3539	1542	3433	3539	1555
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	239	1587	185	370	1957	326	130	359	228	250	304	196
RTOR Reduction (vph)	0	13	0	0	0	79	0	0	77	0	0	77
Lane Group Flow (vph)	239	1759	0	370	1957	247	130	359	151	250	304	119
Confl. Peds. (#/hr)	14		25	25		14	18		27	27		14
Turn Type	Prot	NA		Prot	NA	pm+ov	Prot	NA	pm+ov	Prot	NA	pm+ov
Protected Phases	5	2		1	6	7	3	8	1	7	4	5
Permitted Phases						6			8			4
Actuated Green, G (s)	10.6	42.7		10.3	42.5	51.7	8.5	24.0	34.3	9.2	24.7	35.3
Effective Green, g (s)	11.0	43.8		10.7	43.5	51.7	8.9	24.9	36.1	9.6	25.6	37.1
Actuated g/C Ratio	0.10	0.42		0.10	0.41	0.49	0.08	0.24	0.34	0.09	0.24	0.35
Clearance Time (s)	4.4	5.1		4.4	5.0	4.4	4.4	4.9	4.4	4.4	4.9	4.4
Vehicle Extension (s)	2.0	3.5		2.0	3.7	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lane Grp Cap (vph)	359	2079		349	2106	760	150	839	581	313	862	549
v/s Ratio Prot	0.07	c0.35		0.11	c0.38	0.03	c0.07	c0.10	0.03	c0.07	0.09	0.02
v/s Ratio Perm						0.13			0.07			0.05
v/c Ratio	0.67	0.85		1.06	0.93	0.33	0.87	0.43	0.26	0.80	0.35	0.22
Uniform Delay, d1	45.2	27.6		47.1	29.3	16.1	47.5	34.0	24.8	46.8	32.8	23.8
Progression Factor	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	3.6	4.5		65.0	8.8	0.1	36.3	0.1	0.1	12.4	0.1	0.1
Delay (s)	48.8	32.0		112.1	38.1	16.2	83.8	34.1	24.9	59.2	32.9	23.8
Level of Service	D	C		F	D	B	F	C	C	E	C	C
Approach Delay (s)		34.0			45.7			40.2			39.3	
Approach LOS		C			D			D			D	

Intersection Summary			
HCM 2000 Control Delay	40.5	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.82		
Actuated Cycle Length (s)	105.0	Sum of lost time (s)	16.4
Intersection Capacity Utilization	81.4%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	120	30	600	90	150	680
Future Volume (vph)	120	30	600	90	150	680
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.5		4.5		4.5	4.5
Lane Util. Factor	1.00		0.95		1.00	0.95
Frt	0.97		0.98		1.00	1.00
Flt Protected	0.96		1.00		0.95	1.00
Satd. Flow (prot)	1742		3470		1770	3539
Flt Permitted	0.96		1.00		0.95	1.00
Satd. Flow (perm)	1742		3470		1770	3539
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	130	33	652	98	163	739
RTOR Reduction (vph)	16	0	14	0	0	0
Lane Group Flow (vph)	147	0	736	0	163	739
Turn Type	Prot		NA		Prot	NA
Protected Phases	8		2		1	6
Permitted Phases						
Actuated Green, G (s)	8.9		30.2		8.8	43.5
Effective Green, g (s)	8.9		30.2		8.8	43.5
Actuated g/C Ratio	0.14		0.49		0.14	0.71
Clearance Time (s)	4.5		4.5		4.5	4.5
Vehicle Extension (s)	3.0		3.0		3.0	3.0
Lane Grp Cap (vph)	252		1706		253	2507
v/s Ratio Prot	c0.08		c0.21		c0.09	0.21
v/s Ratio Perm						
v/c Ratio	0.58		0.43		0.64	0.29
Uniform Delay, d1	24.5		10.1		24.8	3.3
Progression Factor	1.00		1.00		1.00	1.00
Incremental Delay, d2	3.4		0.8		5.5	0.3
Delay (s)	27.9		10.9		30.4	3.6
Level of Service	C		B		C	A
Approach Delay (s)	27.9		10.9			8.4
Approach LOS	C		B			A

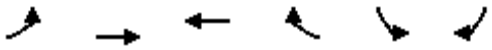
Intersection Summary			
HCM 2000 Control Delay	11.2	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.50		
Actuated Cycle Length (s)	61.4	Sum of lost time (s)	13.5
Intersection Capacity Utilization	47.5%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	0	180	570	100	0	590
Future Volume (Veh/h)	0	180	570	100	0	590
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	196	620	109	0	641
Pedestrians	2					3
Lane Width (ft)	12.0					12.0
Walking Speed (ft/s)	4.0					4.0
Percent Blockage	0					0
Right turn flare (veh)						
Median type			None			None
Median storage veh)						
Upstream signal (ft)			215			491
pX, platoon unblocked	0.86					
vC, conflicting volume	997	370			731	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	671	370			731	
tC, single (s)	6.8	6.9			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	100	69			100	
cM capacity (veh/h)	335	625			868	

Direction, Lane #	WB 1	NB 1	NB 2	SB 1	SB 2
Volume Total	196	413	316	320	320
Volume Left	0	0	0	0	0
Volume Right	196	0	109	0	0
cSH	625	1700	1700	1700	1700
Volume to Capacity	0.31	0.24	0.19	0.19	0.19
Queue Length 95th (ft)	33	0	0	0	0
Control Delay (s)	13.4	0.0	0.0	0.0	0.0
Lane LOS	B				
Approach Delay (s)	13.4	0.0		0.0	
Approach LOS	B				

Intersection Summary			
Average Delay	1.7		
Intersection Capacity Utilization	37.3%	ICU Level of Service	A
Analysis Period (min)	15		

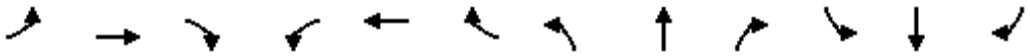


Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	0	820	1290	670	420	170
Future Volume (vph)	0	820	1290	670	420	170
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.4	5.4	5.9	5.2	5.2
Lane Util. Factor		0.95	0.95	0.88	0.97	1.00
Frpb, ped/bikes		1.00	1.00	1.00	1.00	1.00
Flpb, ped/bikes		1.00	1.00	1.00	1.00	1.00
Frt		1.00	1.00	0.85	1.00	0.85
Flt Protected		1.00	1.00	1.00	0.95	1.00
Satd. Flow (prot)		3539	3539	2787	3433	1583
Flt Permitted		1.00	1.00	1.00	0.95	1.00
Satd. Flow (perm)		3539	3539	2787	3433	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	891	1402	728	457	185
RTOR Reduction (vph)	0	0	0	293	0	148
Lane Group Flow (vph)	0	891	1402	435	457	37
Confl. Peds. (#/hr)				8	8	
Turn Type		NA	NA	custom	Prot	Perm
Protected Phases		2	2	8	1	
Permitted Phases						1
Actuated Green, G (s)		31.9	31.9	27.3	12.1	12.1
Effective Green, g (s)		31.9	31.9	26.8	12.1	12.1
Actuated g/C Ratio		0.52	0.52	0.44	0.20	0.20
Clearance Time (s)		5.4	5.4	5.4	5.2	5.2
Vehicle Extension (s)		2.9	2.9	3.0	2.5	2.5
Lane Grp Cap (vph)		1856	1856	1228	683	315
v/s Ratio Prot		0.25	c0.40	0.16	c0.13	
v/s Ratio Perm						0.02
v/c Ratio		0.48	0.76	0.35	0.67	0.12
Uniform Delay, d1		9.2	11.4	11.3	22.5	20.0
Progression Factor		1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2		0.2	1.8	0.2	2.2	0.1
Delay (s)		9.4	13.2	11.4	24.7	20.1
Level of Service		A	B	B	C	C
Approach Delay (s)		9.4	12.6		23.4	
Approach LOS		A	B		C	

Intersection Summary			
HCM 2000 Control Delay	13.7	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.74		
Actuated Cycle Length (s)	60.8	Sum of lost time (s)	17.1
Intersection Capacity Utilization	56.5%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

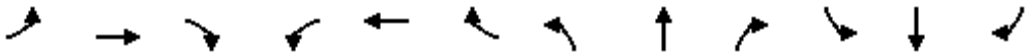
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	30	50	410	80	130	670
Future Volume (vph)	30	50	410	80	130	670
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.9	4.9	5.6		4.4	4.9
Lane Util. Factor	1.00	1.00	0.91		1.00	0.91
Frpb, ped/bikes	1.00	0.98	1.00		1.00	1.00
Flpb, ped/bikes	1.00	1.00	1.00		1.00	1.00
Frt	1.00	0.85	0.98		1.00	1.00
Flt Protected	0.95	1.00	1.00		0.95	1.00
Satd. Flow (prot)	1770	1550	4943		1770	5085
Flt Permitted	0.95	1.00	1.00		0.95	1.00
Satd. Flow (perm)	1770	1550	4943		1770	5085
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	33	54	446	87	141	728
RTOR Reduction (vph)	0	48	14	0	0	0
Lane Group Flow (vph)	33	6	519	0	141	728
Confl. Peds. (#/hr)	4	11		9	9	
Turn Type	Prot	Perm	NA		Prot	NA
Protected Phases	4		6		5	2
Permitted Phases		4				
Actuated Green, G (s)	11.9	11.9	70.8		13.1	88.3
Effective Green, g (s)	11.9	11.9	70.1		13.1	88.3
Actuated g/C Ratio	0.11	0.11	0.64		0.12	0.80
Clearance Time (s)	4.9	4.9	4.9		4.4	4.9
Vehicle Extension (s)	2.0	2.0	5.0		2.0	3.2
Lane Grp Cap (vph)	191	167	3150		210	4081
v/s Ratio Prot	c0.02		0.11		c0.08	c0.14
v/s Ratio Perm		0.00				
v/c Ratio	0.17	0.03	0.16		0.67	0.18
Uniform Delay, d1	44.6	43.9	8.1		46.4	2.5
Progression Factor	1.00	1.00	1.89		1.00	1.00
Incremental Delay, d2	0.2	0.0	0.1		6.5	0.1
Delay (s)	44.7	43.9	15.4		52.9	2.6
Level of Service	D	D	B		D	A
Approach Delay (s)	44.2		15.4			10.8
Approach LOS	D		B			B

Intersection Summary			
HCM 2000 Control Delay	14.4	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.25		
Actuated Cycle Length (s)	110.0	Sum of lost time (s)	14.9
Intersection Capacity Utilization	57.2%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			



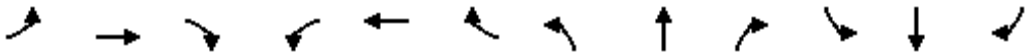
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	80	50	110	160	140	110	200	410	90	110	520	110
Future Volume (vph)	80	50	110	160	140	110	200	410	90	110	520	110
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.5	4.0	
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	0.91		0.97	0.95	
Frpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	0.97		1.00	1.00	
Flpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Frt	1.00	0.90		1.00	0.93		1.00	0.97		1.00	0.97	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1770	1670		1770	1739		1770	4787		3433	3446	
Flt Permitted	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (perm)	1770	1670		1770	1739		1770	4787		3433	3446	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	87	54	120	174	152	120	217	446	98	120	565	120
RTOR Reduction (vph)	0	87	0	0	26	0	0	31	0	0	13	0
Lane Group Flow (vph)	87	87	0	174	246	0	217	513	0	120	672	0
Confl. Peds. (#/hr)									120			
Turn Type	Split	NA		Split	NA		Prot	NA		Prot	NA	
Protected Phases	7	7		8	8		1	6		5	2	
Permitted Phases												
Actuated Green, G (s)	14.0	14.0		17.1	17.1		16.8	36.0		23.3	43.0	
Effective Green, g (s)	14.9	14.9		18.0	18.0		17.2	36.9		23.7	43.9	
Actuated g/C Ratio	0.14	0.14		0.16	0.16		0.16	0.34		0.22	0.40	
Clearance Time (s)	4.9	4.9		4.9	4.9		4.4	4.9		4.9	4.9	
Vehicle Extension (s)	3.0	3.0		2.0	2.0		2.0	3.9		3.9	3.9	
Lane Grp Cap (vph)	239	226		289	284		276	1605		739	1375	
v/s Ratio Prot	0.05	c0.05		0.10	c0.14		c0.12	0.11		0.03	c0.20	
v/s Ratio Perm												
v/c Ratio	0.36	0.38		0.60	0.87		0.79	0.32		0.16	0.49	
Uniform Delay, d1	43.2	43.4		42.7	44.8		44.6	27.2		35.1	24.7	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		0.92	0.92	
Incremental Delay, d2	0.9	1.1		2.4	22.4		12.7	0.5		0.1	1.2	
Delay (s)	44.2	44.4		45.1	67.2		57.3	27.7		32.4	23.9	
Level of Service	D	D		D	E		E	C		C	C	
Approach Delay (s)		44.4			58.6			36.2			25.1	
Approach LOS		D			E			D			C	

Intersection Summary			
HCM 2000 Control Delay	37.6	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.60		
Actuated Cycle Length (s)	110.0	Sum of lost time (s)	16.5
Intersection Capacity Utilization	62.2%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	40	20	20	60	20	50	30	620	40	90	680	80
Future Volume (vph)	40	20	20	60	20	50	30	620	40	90	680	80
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.9		4.9	4.9		4.4	4.9		4.9	4.9	
Lane Util. Factor		1.00		1.00	1.00		1.00	0.91		0.97	0.95	
Frpb, ped/bikes		1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Flpb, ped/bikes		1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Frt		0.97		1.00	0.89		1.00	0.99		1.00	0.98	
Flt Protected		0.98		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1749		1770	1664		1770	5032		3433	3471	
Flt Permitted		0.98		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (perm)		1749		1770	1664		1770	5032		3433	3471	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	43	22	22	65	22	54	33	674	43	98	739	87
RTOR Reduction (vph)	0	10	0	0	49	0	0	4	0	0	5	0
Lane Group Flow (vph)	0	77	0	65	27	0	33	713	0	98	821	0
Confl. Peds. (#/hr)			7	7			9		4	4		9
Turn Type	Split	NA		Split	NA		Prot	NA		Prot	NA	
Protected Phases	8	8		7	7		1	6		5	2	
Permitted Phases												
Actuated Green, G (s)		9.0		6.1	6.1		2.1	20.2		13.5	32.1	
Effective Green, g (s)		9.0		6.1	6.1		2.1	20.2		13.5	32.1	
Actuated g/C Ratio		0.13		0.09	0.09		0.03	0.30		0.20	0.47	
Clearance Time (s)		4.9		4.9	4.9		4.4	4.9		4.9	4.9	
Vehicle Extension (s)		2.0		2.0	2.0		2.0	2.0		2.0	2.0	
Lane Grp Cap (vph)		230		157	148		54	1486		677	1628	
v/s Ratio Prot		c0.04		c0.04	0.02		c0.02	0.14		0.03	c0.24	
v/s Ratio Perm												
v/c Ratio		0.33		0.41	0.18		0.61	0.48		0.14	0.50	
Uniform Delay, d1		27.0		29.5	28.8		32.7	19.8		22.7	12.6	
Progression Factor		1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2		0.3		0.6	0.2		13.5	0.1		0.0	0.1	
Delay (s)		27.3		30.1	29.1		46.3	19.9		22.7	12.7	
Level of Service		C		C	C		D	B		C	B	
Approach Delay (s)		27.3			29.5			21.0			13.8	
Approach LOS		C			C			C			B	

Intersection Summary			
HCM 2000 Control Delay	18.4	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.47		
Actuated Cycle Length (s)	68.4	Sum of lost time (s)	19.6
Intersection Capacity Utilization	51.8%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	30	10	50	10	10	50	60	610	50	40	730	40
Future Volume (vph)	30	10	50	10	10	50	60	610	50	40	730	40
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0	4.0		4.9	4.0	4.0	4.0		4.0	4.0	
Lane Util. Factor		1.00	1.00		1.00	1.00	1.00	0.91		1.00	0.91	
Frt		1.00	0.85		1.00	0.85	1.00	0.99		1.00	0.99	
Flt Protected		0.96	1.00		0.98	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1795	1583		1817	1583	1770	5028		1770	5046	
Flt Permitted		0.77	1.00		0.84	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (perm)		1440	1583		1562	1583	1770	5028		1770	5046	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	33	11	54	11	11	54	65	663	54	43	793	43
RTOR Reduction (vph)	0	0	47	0	0	47	0	11	0	0	7	0
Lane Group Flow (vph)	0	44	7	0	22	7	65	706	0	43	829	0
Turn Type	Perm	NA	Perm	Perm	NA	Perm	Prot	NA		Prot	NA	
Protected Phases		8			8		1	6		5	2	
Permitted Phases	8		8	8		8						
Actuated Green, G (s)		7.4	7.4		7.4	7.4	4.4	33.1		2.5	31.2	
Effective Green, g (s)		7.4	7.4		6.5	7.4	4.4	33.1		2.5	31.2	
Actuated g/C Ratio		0.13	0.13		0.12	0.13	0.08	0.60		0.05	0.57	
Clearance Time (s)		4.0	4.0		4.0	4.0	4.0	4.0		4.0	4.0	
Vehicle Extension (s)		3.0	3.0		3.0	3.0	3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)		193	212		184	212	141	3025		80	2862	
v/s Ratio Prot							c0.04	0.14		c0.02	c0.16	
v/s Ratio Perm		c0.03	0.00		0.01	0.00						
v/c Ratio		0.23	0.03		0.12	0.03	0.46	0.23		0.54	0.29	
Uniform Delay, d1		21.2	20.7		21.7	20.7	24.2	5.1		25.7	6.2	
Progression Factor		1.00	1.00		1.00	1.00	0.81	0.64		1.00	1.00	
Incremental Delay, d2		0.6	0.1		0.3	0.1	2.0	0.2		6.8	0.3	
Delay (s)		21.9	20.8		22.0	20.8	21.7	3.4		32.5	6.4	
Level of Service		C	C		C	C	C	A		C	A	
Approach Delay (s)		21.3			21.1			4.9			7.7	
Approach LOS		C			C			A			A	

Intersection Summary			
HCM 2000 Control Delay	7.8	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.31		
Actuated Cycle Length (s)	55.0	Sum of lost time (s)	12.9
Intersection Capacity Utilization	37.2%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

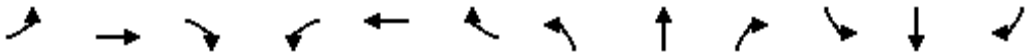
Movement	EBL	EBT	EBR	EBR2	WBT	WBR	NBR2	SBL2	SBL	SBT	SBR	NWL
Lane Configurations												
Traffic Volume (vph)	200	1360	150	190	2160	380	100	270	180	140	90	190
Future Volume (vph)	200	1360	150	190	2160	380	100	270	180	140	90	190
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	2.6	4.0		6.1	4.0	7.8	5.9	5.9	5.9	5.9	5.9	5.9
Lane Util. Factor	0.97	0.86		0.86	0.91	1.00	1.00	0.95	0.91	0.91	1.00	1.00
Frpb, ped/bikes	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.88	1.00
Flpb, ped/bikes	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.98		0.85	1.00	0.85	0.86	1.00	1.00	1.00	0.85	1.00
Flt Protected	0.95	1.00		1.00	1.00	1.00	1.00	0.95	0.95	0.98	1.00	0.95
Satd. Flow (prot)	3433	4726		1362	5085	1583	1611	1681	1610	1666	1401	1770
Flt Permitted	0.95	1.00		1.00	1.00	1.00	1.00	0.95	0.95	0.98	1.00	0.95
Satd. Flow (perm)	3433	4726		1362	5085	1583	1611	1681	1610	1666	1401	1770
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	217	1478	163	207	2348	413	109	293	196	152	98	207
RTOR Reduction (vph)	0	1	0	80	0	36	74	0	0	0	84	0
Lane Group Flow (vph)	217	1661	0	106	2348	377	35	179	228	234	14	207
Confl. Peds. (#/hr)								9			45	18
Confl. Bikes (#/hr)											10	
Turn Type	Prot	NA		Perm	NA	pm+ov	Perm	Split	Split	NA	Perm	Prot
Protected Phases	5	2			6	4		4	4	4		3
Permitted Phases				2		6	8				4	
Actuated Green, G (s)	8.0	62.9		62.9	51.1	67.2	35.1	16.1	16.1	16.1	16.1	13.1
Effective Green, g (s)	9.4	65.0		62.9	53.0	63.4	35.1	16.1	16.1	16.1	16.1	13.1
Actuated g/C Ratio	0.09	0.59		0.57	0.48	0.58	0.32	0.15	0.15	0.15	0.15	0.12
Clearance Time (s)	4.0	6.1		6.1	5.9	5.9	5.9	5.9	5.9	5.9	5.9	5.9
Vehicle Extension (s)	3.0	2.8		2.8	3.2	2.9	4.1	2.9	2.9	2.9	2.9	2.9
Lane Grp Cap (vph)	293	2792		778	2450	912	514	246	235	243	205	210
v/s Ratio Prot	c0.06	0.35			c0.46	0.05		0.11	c0.14	0.14		c0.12
v/s Ratio Perm				0.08		0.18	0.02				0.01	
v/c Ratio	0.74	0.59		0.14	0.96	0.41	0.07	0.73	0.97	0.96	0.07	0.99
Uniform Delay, d1	49.1	14.2		10.9	27.4	13.0	26.1	44.9	46.7	46.7	40.5	48.4
Progression Factor	1.00	1.00		1.00	1.00	1.00	1.00	0.85	0.87	0.87	2.50	1.00
Incremental Delay, d2	9.7	0.9		0.4	10.7	0.3	0.1	10.0	49.6	46.6	0.1	57.5
Delay (s)	58.8	15.1		11.3	38.2	13.3	26.1	48.3	90.2	87.1	101.2	105.9
Level of Service	E	B		B	D	B	C	D	F	F	F	F
Approach Delay (s)		19.4			34.5					80.5		74.6
Approach LOS		B			C					F		E

Intersection Summary			
HCM 2000 Control Delay	37.6	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.96		
Actuated Cycle Length (s)	110.0	Sum of lost time (s)	20.3
Intersection Capacity Utilization	85.2%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group

Movement	NWR	NWR2
Lane Configurations		
Traffic Volume (vph)	170	30
Future Volume (vph)	170	30
Ideal Flow (vphpl)	1900	1900
Total Lost time (s)	5.9	
Lane Util. Factor	0.88	
Frpb, ped/bikes	1.00	
Flpb, ped/bikes	1.00	
Frt	0.85	
Flt Protected	1.00	
Satd. Flow (prot)	2787	
Flt Permitted	1.00	
Satd. Flow (perm)	2787	
Peak-hour factor, PHF	0.92	0.92
Adj. Flow (vph)	185	33
RTOR Reduction (vph)	114	0
Lane Group Flow (vph)	104	0
Confl. Peds. (#/hr)		9
Confl. Bikes (#/hr)		1
Turn Type	Prot	
Protected Phases	3	
Permitted Phases		
Actuated Green, G (s)	13.1	
Effective Green, g (s)	13.1	
Actuated g/C Ratio	0.12	
Clearance Time (s)	5.9	
Vehicle Extension (s)	2.9	
Lane Grp Cap (vph)	331	
v/s Ratio Prot	0.04	
v/s Ratio Perm		
v/c Ratio	0.32	
Uniform Delay, d1	44.3	
Progression Factor	1.00	
Incremental Delay, d2	0.5	
Delay (s)	44.9	
Level of Service	D	
Approach Delay (s)		
Approach LOS		

Intersection Summary



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	50	100	100	90	80	80	70	50	90	20	30	30
Future Volume (vph)	50	100	100	90	80	80	70	50	90	20	30	30
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.5			4.5			4.5			4.0	
Lane Util. Factor		1.00			1.00			1.00			1.00	
Frt		0.95			0.96			0.94			0.95	
Flt Protected		0.99			0.98			0.98			0.99	
Satd. Flow (prot)		1745			1751			1726			1747	
Flt Permitted		0.90			0.75			0.89			0.92	
Satd. Flow (perm)		1577			1335			1563			1635	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	54	109	109	98	87	87	76	54	98	22	33	33
RTOR Reduction (vph)	0	50	0	0	35	0	0	32	0	0	15	0
Lane Group Flow (vph)	0	222	0	0	237	0	0	196	0	0	73	0
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)		12.9			12.9			26.7			27.2	
Effective Green, g (s)		12.9			12.9			26.7			27.2	
Actuated g/C Ratio		0.27			0.27			0.55			0.56	
Clearance Time (s)		4.5			4.5			4.5			4.0	
Vehicle Extension (s)		3.0			3.0			3.0			3.0	
Lane Grp Cap (vph)		418			354			858			915	
v/s Ratio Prot												
v/s Ratio Perm		0.14			c0.18			c0.13			0.04	
v/c Ratio		0.53			0.67			0.23			0.08	
Uniform Delay, d1		15.3			15.9			5.6			4.9	
Progression Factor		1.00			1.00			1.00			1.00	
Incremental Delay, d2		1.3			4.7			0.6			0.0	
Delay (s)		16.6			20.7			6.3			5.0	
Level of Service		B			C			A			A	
Approach Delay (s)		16.6			20.7			6.3			5.0	
Approach LOS		B			C			A			A	

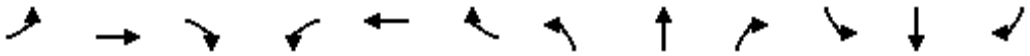
Intersection Summary			
HCM 2000 Control Delay	13.9	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.37		
Actuated Cycle Length (s)	48.6	Sum of lost time (s)	9.0
Intersection Capacity Utilization	50.0%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Movement	NBL	NBT	SBT	SBR	SEL	SER
Lane Configurations						
Traffic Volume (vph)	290	610	600	70	200	190
Future Volume (vph)	290	610	600	70	200	190
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.3	4.0	4.0		4.0	4.0
Lane Util. Factor	1.00	0.91	0.91		1.00	1.00
Frt	1.00	1.00	0.98		1.00	0.85
Flt Protected	0.95	1.00	1.00		0.95	1.00
Satd. Flow (prot)	1770	5085	5006		1770	1583
Flt Permitted	0.95	1.00	1.00		0.95	1.00
Satd. Flow (perm)	1770	5085	5006		1770	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	315	663	652	76	217	207
RTOR Reduction (vph)	0	0	8	0	0	172
Lane Group Flow (vph)	315	663	720	0	217	35
Turn Type	Prot	NA	NA		Prot	Perm
Protected Phases	7	4	8		5	
Permitted Phases						5
Actuated Green, G (s)	26.7	91.8	61.1		20.2	20.2
Effective Green, g (s)	26.4	91.8	61.1		20.2	20.2
Actuated g/C Ratio	0.22	0.76	0.51		0.17	0.17
Clearance Time (s)	4.0	4.0	4.0		4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0		3.0	3.0
Lane Grp Cap (vph)	389	3890	2548		297	266
v/s Ratio Prot	c0.18	0.13	c0.14		c0.12	
v/s Ratio Perm						0.02
v/c Ratio	0.81	0.17	0.28		0.73	0.13
Uniform Delay, d1	44.4	3.8	16.9		47.3	42.4
Progression Factor	1.01	0.15	1.25		1.00	1.00
Incremental Delay, d2	11.6	0.1	0.3		8.9	0.2
Delay (s)	56.5	0.7	21.4		56.2	42.7
Level of Service	E	A	C		E	D
Approach Delay (s)		18.7	21.4		49.6	
Approach LOS		B	C		D	

Intersection Summary			
HCM 2000 Control Delay	25.8	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.50		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	12.3
Intersection Capacity Utilization	50.3%	ICU Level of Service	A
Analysis Period (min)	15		

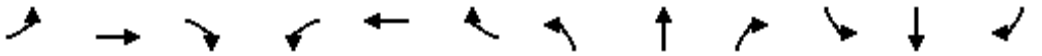
c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	30	0	100	460	390	100	0	0	0	0	70	10
Future Volume (vph)	30	0	100	460	390	100	0	0	0	0	70	10
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0		4.0	4.0	4.0						4.0	
Lane Util. Factor	1.00		1.00	1.00	1.00						1.00	
Frt	1.00		0.85	1.00	0.97						0.98	
Flt Protected	0.95		1.00	0.95	1.00						1.00	
Satd. Flow (prot)	1770		1583	1770	1806						1831	
Flt Permitted	0.53		1.00	0.95	1.00						1.00	
Satd. Flow (perm)	980		1583	1770	1806						1831	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	33	0	109	500	424	109	0	0	0	0	76	11
RTOR Reduction (vph)	0	0	92	284	11	0	0	0	0	0	9	0
Lane Group Flow (vph)	33	0	17	216	522	0	0	0	0	0	78	0
Turn Type	Perm		Perm	Split	NA						NA	
Protected Phases				8	8						6	
Permitted Phases	4		4									
Actuated Green, G (s)	7.6		7.6	20.7	20.7						7.6	
Effective Green, g (s)	7.6		7.6	20.7	20.7						7.6	
Actuated g/C Ratio	0.16		0.16	0.43	0.43						0.16	
Clearance Time (s)	4.0		4.0	4.0	4.0						4.0	
Vehicle Extension (s)	3.0		3.0	3.0	3.0						3.0	
Lane Grp Cap (vph)	155		251	764	780						290	
v/s Ratio Prot				0.12	c0.29						c0.04	
v/s Ratio Perm	c0.03		0.01									
v/c Ratio	0.21		0.07	0.28	0.67						0.27	
Uniform Delay, d1	17.5		17.1	8.8	10.9						17.7	
Progression Factor	1.00		1.00	1.00	1.00						1.00	
Incremental Delay, d2	0.7		0.1	0.2	2.2						0.5	
Delay (s)	18.2		17.3	9.0	13.1						18.2	
Level of Service	B		B	A	B						B	
Approach Delay (s)		17.5			11.1			0.0			18.2	
Approach LOS		B			B			A			B	

Intersection Summary			
HCM 2000 Control Delay	12.3	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.49		
Actuated Cycle Length (s)	47.9	Sum of lost time (s)	12.0
Intersection Capacity Utilization	46.0%	ICU Level of Service	A
Analysis Period (min)	15		

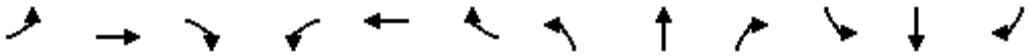
c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	1650	10	410	2390	0	0	0	0	390	300	150
Future Volume (vph)	0	1650	10	410	2390	0	0	0	0	390	300	150
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		3.2		2.4	3.9					3.4	3.4	3.9
Lane Util. Factor		0.91		1.00	0.86					0.95	0.95	1.00
Frt		1.00		1.00	1.00					1.00	1.00	0.85
Flt Protected		1.00		0.95	1.00					0.95	0.99	1.00
Satd. Flow (prot)		5081		1770	6408					1681	1754	1583
Flt Permitted		1.00		0.95	1.00					0.95	0.99	1.00
Satd. Flow (perm)		5081		1770	6408					1681	1754	1583
Peak-hour factor, PHF	0.93	0.93	0.93	0.93	0.93	0.93	0.92	0.92	0.92	0.93	0.93	0.93
Adj. Flow (vph)	0	1774	11	441	2570	0	0	0	0	419	323	161
RTOR Reduction (vph)	0	1	0	0	0	0	0	0	0	0	0	42
Lane Group Flow (vph)	0	1784	0	441	2570	0	0	0	0	348	394	119
Turn Type		NA		Prot	NA					Split	NA	Perm
Protected Phases		2		1	6					4	4	
Permitted Phases												4
Actuated Green, G (s)		55.0		30.8	90.5					34.7	34.7	34.7
Effective Green, g (s)		57.0		32.8	91.5					36.2	36.2	35.7
Actuated g/C Ratio		0.42		0.24	0.68					0.27	0.27	0.26
Clearance Time (s)		5.2		4.4	4.9					4.9	4.9	4.9
Vehicle Extension (s)		3.8		2.0	4.6					2.0	2.0	2.0
Lane Grp Cap (vph)		2145		430	4343					450	470	418
v/s Ratio Prot		c0.35		c0.25	0.40					0.21	c0.22	
v/s Ratio Perm												0.08
v/c Ratio		0.83		1.03	0.59					0.77	0.84	0.28
Uniform Delay, d1		34.7		51.1	11.7					45.6	46.6	39.5
Progression Factor		1.00		0.90	0.18					1.00	1.00	1.00
Incremental Delay, d2		3.9		20.1	0.1					7.4	11.8	0.1
Delay (s)		38.7		66.1	2.2					53.0	58.5	39.6
Level of Service		D		E	A					D	E	D
Approach Delay (s)		38.7			11.5			0.0			53.0	
Approach LOS		D			B			A			D	

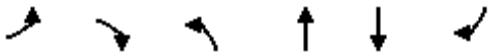
Intersection Summary			
HCM 2000 Control Delay	26.6	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.88		
Actuated Cycle Length (s)	135.0	Sum of lost time (s)	9.0
Intersection Capacity Utilization	83.5%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group



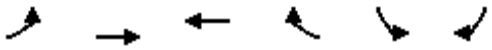
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	330	100	160	240	0	140	0	160	180	230	10
Future Volume (vph)	0	330	100	160	240	0	140	0	160	180	230	10
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.5		4.0	4.0		4.0		3.5	4.0	4.0	
Lane Util. Factor		0.95		1.00	0.95		1.00		1.00	1.00	1.00	
Frpb, ped/bikes		0.98		1.00	1.00		1.00		0.98	1.00	1.00	
Flpb, ped/bikes		1.00		0.99	1.00		1.00		1.00	1.00	1.00	
Frt		0.97		1.00	1.00		1.00		0.85	1.00	0.99	
Flt Protected		1.00		0.95	1.00		0.95		1.00	0.95	1.00	
Satd. Flow (prot)		3331		1750	3539		1770		1557	1770	1850	
Flt Permitted		1.00		0.40	1.00		0.95		1.00	0.95	1.00	
Satd. Flow (perm)		3331		740	3539		1770		1557	1770	1850	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	359	109	174	261	0	152	0	174	196	250	11
RTOR Reduction (vph)	0	17	0	0	0	0	0	0	70	0	2	0
Lane Group Flow (vph)	0	451	0	174	261	0	152	0	104	196	259	0
Confl. Peds. (#/hr)			21	21		47	2		4			2
Turn Type		NA		pm+pt	NA		Prot		custom	Split	NA	
Protected Phases		2		1	6		3		3	4	4	
Permitted Phases				6					2			
Actuated Green, G (s)		56.6		71.7	71.7		16.0		72.6	23.1	23.1	
Effective Green, g (s)		57.0		72.1	72.6		16.4		74.4	24.0	24.0	
Actuated g/C Ratio		0.46		0.58	0.58		0.13		0.60	0.19	0.19	
Clearance Time (s)		4.9		4.4	4.9		4.4		4.4	4.9	4.9	
Vehicle Extension (s)		6.7		2.0	6.7		3.0		3.0	3.0	3.0	
Lane Grp Cap (vph)		1518		516	2055		232		926	339	355	
v/s Ratio Prot		0.14		c0.03	0.07		c0.09		0.02	0.11	c0.14	
v/s Ratio Perm				c0.16					0.05			
v/c Ratio		0.30		0.34	0.13		0.66		0.11	0.58	0.73	
Uniform Delay, d1		21.4		13.0	11.9		51.6		11.0	45.9	47.5	
Progression Factor		1.00		1.00	1.00		1.00		1.00	1.00	1.00	
Incremental Delay, d2		0.5		0.1	0.1		6.5		0.1	2.4	7.5	
Delay (s)		21.9		13.1	12.0		58.1		11.0	48.3	55.0	
Level of Service		C		B	B		E		B	D	D	
Approach Delay (s)		21.9			12.4			33.0			52.1	
Approach LOS		C			B			C			D	

Intersection Summary			
HCM 2000 Control Delay	29.8	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.48		
Actuated Cycle Length (s)	125.0	Sum of lost time (s)	16.5
Intersection Capacity Utilization	56.2%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	100	190	350	460	480	150
Future Volume (vph)	100	190	350	460	480	150
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0		4.4	4.0	4.9	
Lane Util. Factor	1.00		1.00	0.91	0.91	
Frpb, ped/bikes	0.99		1.00	1.00	1.00	
Flpb, ped/bikes	1.00		1.00	1.00	1.00	
Frt	0.91		1.00	1.00	0.96	
Flt Protected	0.98		0.95	1.00	1.00	
Satd. Flow (prot)	1651		1770	5085	4904	
Flt Permitted	0.98		0.95	1.00	1.00	
Satd. Flow (perm)	1651		1770	5085	4904	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	109	207	380	500	522	163
RTOR Reduction (vph)	57	0	0	0	35	0
Lane Group Flow (vph)	259	0	380	500	650	0
Confl. Peds. (#/hr)		2				
Turn Type	Prot		Prot	NA	NA	
Protected Phases	2		3	8	4	
Permitted Phases						
Actuated Green, G (s)	29.0		32.6	83.0	46.4	
Effective Green, g (s)	29.0		32.2	83.0	45.5	
Actuated g/C Ratio	0.24		0.27	0.69	0.38	
Clearance Time (s)	4.0		4.0	4.0	4.0	
Vehicle Extension (s)	3.0		3.0	3.0	3.0	
Lane Grp Cap (vph)	398		474	3517	1859	
v/s Ratio Prot	c0.16		c0.21	0.10	c0.13	
v/s Ratio Perm						
v/c Ratio	0.65		0.80	0.14	0.35	
Uniform Delay, d1	40.9		40.9	6.3	26.7	
Progression Factor	1.00		1.03	1.42	1.00	
Incremental Delay, d2	8.0		9.3	0.1	0.5	
Delay (s)	49.0		51.6	9.1	27.2	
Level of Service	D		D	A	C	
Approach Delay (s)	49.0			27.4	27.2	
Approach LOS	D			C	C	

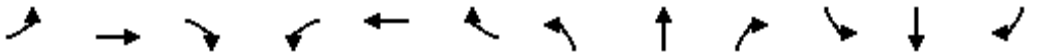
Intersection Summary			
HCM 2000 Control Delay	31.0	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.57		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	13.3
Intersection Capacity Utilization	60.1%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	50	140	80	40	20	30
Future Volume (Veh/h)	50	140	80	40	20	30
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	54	152	87	43	22	33
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type		None	None			
Median storage veh)						
Upstream signal (ft)		1157	644			
pX, platoon unblocked						
vC, conflicting volume	130				368	108
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	130				368	108
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	96				96	97
cM capacity (veh/h)	1455				608	945

Direction, Lane #	EB 1	EB 2	WB 1	SB 1
Volume Total	54	152	130	55
Volume Left	54	0	0	22
Volume Right	0	0	43	33
cSH	1455	1700	1700	774
Volume to Capacity	0.04	0.09	0.08	0.07
Queue Length 95th (ft)	3	0	0	6
Control Delay (s)	7.6	0.0	0.0	10.0
Lane LOS	A			B
Approach Delay (s)	2.0		0.0	10.0
Approach LOS				B

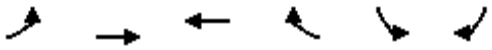
Intersection Summary			
Average Delay	2.5		
Intersection Capacity Utilization	19.4%	ICU Level of Service	A
Analysis Period (min)	15		



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	60	1980	0	0	2720	640	80	410	110	0	0	0
Future Volume (vph)	60	1980	0	0	2720	640	80	410	110	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.9			4.0	4.9		4.0				
Lane Util. Factor	1.00	0.91			0.91	1.00		0.95				
Frt	1.00	1.00			1.00	0.85		0.97				
Flt Protected	0.95	1.00			1.00	1.00		0.99				
Satd. Flow (prot)	1770	5085			5085	1583		3419				
Flt Permitted	0.95	1.00			1.00	1.00		0.99				
Satd. Flow (perm)	1770	5085			5085	1583		3419				
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	65	2152	0	0	2957	696	87	446	120	0	0	0
RTOR Reduction (vph)	0	0	0	0	0	108	0	6	0	0	0	0
Lane Group Flow (vph)	65	2152	0	0	2957	588	0	647	0	0	0	0
Turn Type	Prot	NA			NA	Perm	Split	NA				
Protected Phases	5	2			6		4	4				
Permitted Phases						6						
Actuated Green, G (s)	9.6	88.4			74.4	74.4		36.8				
Effective Green, g (s)	10.0	88.4			75.3	74.4		37.7				
Actuated g/C Ratio	0.07	0.65			0.56	0.55		0.28				
Clearance Time (s)	4.4	4.9			4.9	4.9		4.9				
Vehicle Extension (s)	2.0	3.8			4.6	4.6		2.0				
Lane Grp Cap (vph)	131	3329			2836	872		954				
v/s Ratio Prot	0.04	c0.42			c0.58			c0.19				
v/s Ratio Perm						0.37						
v/c Ratio	0.50	0.65			1.04	0.67		0.68				
Uniform Delay, d1	60.1	13.9			29.9	21.7		43.3				
Progression Factor	0.69	0.14			1.00	1.00		1.00				
Incremental Delay, d2	0.6	0.6			29.3	4.2		1.5				
Delay (s)	42.2	2.5			59.2	25.8		44.8				
Level of Service	D	A			E	C		D				
Approach Delay (s)		3.6			52.8			44.8			0.0	
Approach LOS		A			D			D			A	

Intersection Summary			
HCM 2000 Control Delay	35.3	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.91		
Actuated Cycle Length (s)	135.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	83.5%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	10	660	400	330	0	0
Future Volume (Veh/h)	10	660	400	330	0	0
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	11	717	435	359	0	0
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type		None	None			
Median storage veh)						
Upstream signal (ft)		480	811			
pX, platoon unblocked	0.93				0.96	0.93
vC, conflicting volume	794				995	397
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	637				647	212
tC, single (s)	4.1				6.8	6.9
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	99				100	100
cM capacity (veh/h)	880				384	741

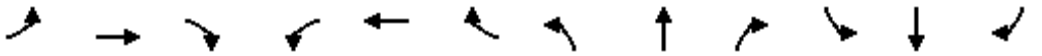
Direction, Lane #	EB 1	EB 2	EB 3	WB 1	WB 2
Volume Total	11	358	358	290	504
Volume Left	11	0	0	0	0
Volume Right	0	0	0	0	359
cSH	880	1700	1700	1700	1700
Volume to Capacity	0.01	0.21	0.21	0.17	0.30
Queue Length 95th (ft)	1	0	0	0	0
Control Delay (s)	9.1	0.0	0.0	0.0	0.0
Lane LOS	A				
Approach Delay (s)	0.1			0.0	
Approach LOS					

Intersection Summary			
Average Delay	0.1		
Intersection Capacity Utilization	25.0%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Sign Control	Stop		Stop			Stop
Traffic Volume (vph)	170	0	0	130	300	570
Future Volume (vph)	170	0	0	130	300	570
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	185	0	0	141	326	620

Direction, Lane #	WB 1	NB 1	SB 1	SB 2
Volume Total (vph)	185	141	326	620
Volume Left (vph)	185	0	326	0
Volume Right (vph)	0	141	0	0
Hadj (s)	0.23	-0.57	0.53	0.03
Departure Headway (s)	6.2	5.0	5.8	5.3
Degree Utilization, x	0.32	0.19	0.53	0.91
Capacity (veh/h)	567	702	611	675
Control Delay (s)	12.0	9.1	13.8	38.0
Approach Delay (s)	12.0	9.1	29.7	
Approach LOS	B	A	D	

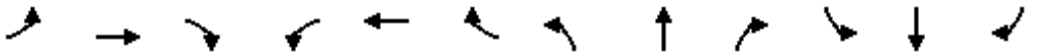
Intersection Summary			
Delay	24.8		
Level of Service	C		
Intersection Capacity Utilization	46.5%	ICU Level of Service	A
Analysis Period (min)	15		



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Traffic Volume (vph)	100	20	50	40	20	10	20	30	20	20	230	490
Future Volume (vph)	100	20	50	40	20	10	20	30	20	20	230	490
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	109	22	54	43	22	11	22	33	22	22	250	533

Direction, Lane #	EB 1	EB 2	WB 1	NB 1	SB 1	SB 2
Volume Total (vph)	120	65	76	77	272	533
Volume Left (vph)	109	0	43	22	22	0
Volume Right (vph)	0	54	11	22	0	533
Hadj (s)	0.49	-0.55	0.06	-0.08	0.07	-0.67
Departure Headway (s)	7.1	6.1	6.7	6.1	5.5	4.8
Degree Utilization, x	0.24	0.11	0.14	0.13	0.42	0.71
Capacity (veh/h)	473	547	493	553	632	729
Control Delay (s)	11.1	8.6	10.9	10.1	11.3	17.5
Approach Delay (s)	10.2		10.9	10.1	15.4	
Approach LOS	B		B	B	C	

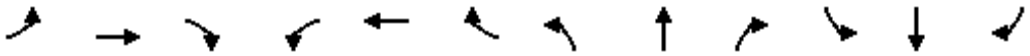
Intersection Summary				
Delay	13.9			
Level of Service	B			
Intersection Capacity Utilization	48.1%	ICU Level of Service	A	
Analysis Period (min)	15			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	340	190	540	520	0	0	0	0	280	360	410
Future Volume (vph)	0	340	190	540	520	0	0	0	0	280	360	410
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.9	4.0	4.0	4.0					4.0	4.0	4.0
Lane Util. Factor		0.95	1.00	0.97	0.95					0.91	0.91	1.00
Frt		1.00	0.85	1.00	1.00					1.00	1.00	0.85
Flt Protected		1.00	1.00	0.95	1.00					0.95	0.99	1.00
Satd. Flow (prot)		3539	1583	3433	3539					1610	3358	1583
Flt Permitted		1.00	1.00	0.95	1.00					0.95	0.99	1.00
Satd. Flow (perm)		3539	1583	3433	3539					1610	3358	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	370	207	587	565	0	0	0	0	304	391	446
RTOR Reduction (vph)	0	0	99	0	0	0	0	0	0	0	0	220
Lane Group Flow (vph)	0	370	108	587	565	0	0	0	0	213	482	226
Turn Type		NA	Perm	Prot	NA					Perm	NA	Perm
Protected Phases		2		1	6						4	
Permitted Phases			2							4		4
Actuated Green, G (s)		30.1	30.1	16.0	50.5					19.7	19.7	19.7
Effective Green, g (s)		30.1	31.0	16.4	51.4					20.6	20.6	20.6
Actuated g/C Ratio		0.38	0.39	0.20	0.64					0.26	0.26	0.26
Clearance Time (s)		4.9	4.9	4.4	4.9					4.9	4.9	4.9
Vehicle Extension (s)		3.8	3.8	2.0	4.2					2.0	2.0	2.0
Lane Grp Cap (vph)		1331	613	703	2273					414	864	407
v/s Ratio Prot		c0.10		c0.17	0.16							
v/s Ratio Perm			0.07							0.13	0.14	0.14
v/c Ratio		0.28	0.18	0.83	0.25					0.51	0.56	0.56
Uniform Delay, d1		17.4	16.1	30.5	6.1					25.4	25.8	25.7
Progression Factor		1.00	1.00	1.00	1.00					1.00	1.00	1.00
Incremental Delay, d2		0.5	0.6	8.1	0.3					0.5	0.4	0.9
Delay (s)		17.9	16.7	38.6	6.3					25.9	26.2	26.7
Level of Service		B	B	D	A					C	C	C
Approach Delay (s)		17.5			22.8			0.0			26.3	
Approach LOS		B			C			A			C	

Intersection Summary			
HCM 2000 Control Delay	23.1	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.50		
Actuated Cycle Length (s)	80.0	Sum of lost time (s)	12.9
Intersection Capacity Utilization	49.2%	ICU Level of Service	A
Analysis Period (min)	15		

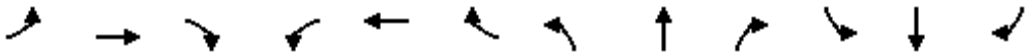
c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	0	40	40	0	0	0	0	0	0	1490	160
Future Volume (Veh/h)	0	0	40	40	0	0	0	0	0	0	1490	160
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	0	43	43	0	0	0	0	0	0	1620	174
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)								1066				
pX, platoon unblocked												
vC, conflicting volume	1707	1707	627	583	1794	0	1794			0		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	1707	1707	627	583	1794	0	1794			0		
tC, single (s)	7.5	6.5	6.9	7.5	6.5	6.9	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	100	100	90	88	100	100	100			100		
cM capacity (veh/h)	59	90	426	356	80	1084	341			1622		

Direction, Lane #	EB 1	WB 1	SB 1	SB 2	SB 3
Volume Total	43	43	648	648	498
Volume Left	0	43	0	0	0
Volume Right	43	0	0	0	174
cSH	426	356	1700	1700	1700
Volume to Capacity	0.10	0.12	0.38	0.38	0.29
Queue Length 95th (ft)	8	10	0	0	0
Control Delay (s)	14.4	16.5	0.0	0.0	0.0
Lane LOS	B	C			
Approach Delay (s)	14.4	16.5	0.0		
Approach LOS	B	C			

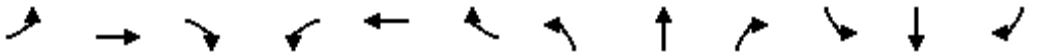
Intersection Summary				
Average Delay	0.7			
Intersection Capacity Utilization	50.9%	ICU Level of Service	A	
Analysis Period (min)	15			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	190	160	190	370	0	0	0	0	470	1270	350
Future Volume (vph)	0	190	160	190	370	0	0	0	0	470	1270	350
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0	6.7		4.0					4.0	4.0	
Lane Util. Factor		1.00	1.00		0.95					1.00	0.91	
Frt		1.00	0.85		1.00					1.00	0.97	
Flt Protected		1.00	1.00		0.98					0.95	1.00	
Satd. Flow (prot)		1863	1583		3480					1770	4921	
Flt Permitted		1.00	1.00		0.76					0.95	1.00	
Satd. Flow (perm)		1863	1583		2673					1770	4921	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	207	174	207	402	0	0	0	0	511	1380	380
RTOR Reduction (vph)	0	0	37	0	0	0	0	0	0	0	76	0
Lane Group Flow (vph)	0	207	137	0	609	0	0	0	0	511	1684	0
Turn Type		NA	Perm	Perm	NA					Perm	NA	
Protected Phases		4			8						6	
Permitted Phases			4	8						6		
Actuated Green, G (s)		21.3	21.3		21.3					30.7	30.7	
Effective Green, g (s)		24.0	21.3		24.0					33.0	33.0	
Actuated g/C Ratio		0.37	0.33		0.37					0.51	0.51	
Clearance Time (s)		6.7	6.7		6.7					6.3	6.3	
Vehicle Extension (s)		2.0	2.0		2.5					4.6	4.6	
Lane Grp Cap (vph)		687	518		986					898	2498	
v/s Ratio Prot		0.11									c0.34	
v/s Ratio Perm			0.09		c0.23					0.29		
v/c Ratio		0.30	0.26		0.62					0.57	0.67	
Uniform Delay, d1		14.5	16.1		16.8					11.1	12.0	
Progression Factor		1.00	1.00		1.00					1.00	1.00	
Incremental Delay, d2		1.1	1.2		2.9					2.6	1.5	
Delay (s)		15.7	17.3		19.7					13.7	13.4	
Level of Service		B	B		B					B	B	
Approach Delay (s)		16.4			19.7			0.0			13.5	
Approach LOS		B			B			A			B	

Intersection Summary			
HCM 2000 Control Delay	15.0	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.65		
Actuated Cycle Length (s)	65.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	70.3%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

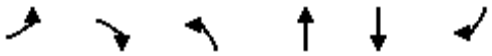


Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	680	80	40	510	0	0	0	0	540	340	510
Future Volume (vph)	0	680	80	40	510	0	0	0	0	540	340	510
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		6.7		4.0	6.7						6.3	4.0
Lane Util. Factor		0.95		1.00	0.95						0.86	0.86
Frt		0.98		1.00	1.00						1.00	0.85
Flt Protected		1.00		0.95	1.00						0.97	1.00
Satd. Flow (prot)		3483		1770	3539						4663	1362
Flt Permitted		1.00		0.95	1.00						0.97	1.00
Satd. Flow (perm)		3483		1770	3539						4663	1362
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	739	87	43	554	0	0	0	0	587	370	554
RTOR Reduction (vph)	0	14	0	0	0	0	0	0	0	0	0	119
Lane Group Flow (vph)	0	812	0	43	554	0	0	0	0	0	957	435
Turn Type		NA		Prot	NA					Perm	NA	Perm
Protected Phases		2		1	6						4	
Permitted Phases										4		4
Actuated Green, G (s)		22.4		2.8	27.9						25.1	25.1
Effective Green, g (s)		20.6		3.2	27.8						24.2	26.5
Actuated g/C Ratio		0.32		0.05	0.43						0.37	0.41
Clearance Time (s)		4.9		4.4	6.6						5.4	5.4
Vehicle Extension (s)		1.0		2.0	1.0						1.0	1.0
Lane Grp Cap (vph)		1103		87	1513						1736	555
v/s Ratio Prot		c0.23		0.02	c0.16							
v/s Ratio Perm											0.21	c0.32
v/c Ratio		0.74		0.49	0.37						0.94dl	0.78
Uniform Delay, d1		19.8		30.1	12.6						16.1	16.8
Progression Factor		1.00		1.34	0.84						1.00	1.00
Incremental Delay, d2		4.4		1.5	0.6						0.2	6.6
Delay (s)		24.2		41.7	11.2						16.3	23.4
Level of Service		C		D	B						B	C
Approach Delay (s)		24.2			13.4			0.0			18.9	
Approach LOS		C			B			A			B	

Intersection Summary			
HCM 2000 Control Delay	19.3	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.78		
Actuated Cycle Length (s)	65.0	Sum of lost time (s)	17.0
Intersection Capacity Utilization	79.8%	ICU Level of Service	D
Analysis Period (min)	15		

dl Defacto Left Lane. Recode with 1 though lane as a left lane.

c Critical Lane Group



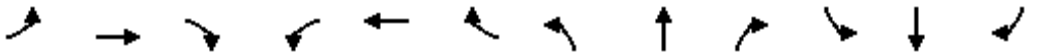
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	140	1100	1820	760	650	140
Future Volume (vph)	140	1100	1820	760	650	140
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	0.88	0.97	0.91	0.91	1.00
Frpb, ped/bikes	1.00	0.99	1.00	1.00	1.00	1.00
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected	0.95	1.00	0.95	1.00	1.00	1.00
Satd. Flow (prot)	1770	2764	3433	5085	5085	1583
Flt Permitted	0.95	1.00	0.95	1.00	1.00	1.00
Satd. Flow (perm)	1770	2764	3433	5085	5085	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	152	1196	1978	826	707	152
RTOR Reduction (vph)	0	19	0	0	0	1
Lane Group Flow (vph)	152	1177	1978	826	707	151
Confl. Peds. (#/hr)	129	61	34			
Turn Type	Prot	pm+ov	Prot	NA	NA	pm+ov
Protected Phases	5	7	7	4	8	5
Permitted Phases		5				8
Actuated Green, G (s)	15.6	76.0	60.4	96.4	32.0	47.6
Effective Green, g (s)	15.6	76.0	60.4	96.4	32.0	47.6
Actuated g/C Ratio	0.13	0.63	0.50	0.80	0.27	0.40
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	230	1842	1727	4084	1356	680
v/s Ratio Prot	0.09	c0.32	c0.58	0.16	c0.14	0.03
v/s Ratio Perm		0.10				0.07
v/c Ratio	0.66	0.64	1.15	0.20	0.52	0.22
Uniform Delay, d1	49.7	13.5	29.8	2.8	37.5	23.9
Progression Factor	1.00	1.00	0.43	0.64	0.70	0.80
Incremental Delay, d2	6.9	0.7	68.3	0.0	1.4	0.2
Delay (s)	56.6	14.3	81.1	1.8	27.6	19.3
Level of Service	E	B	F	A	C	B
Approach Delay (s)	19.1			57.7	26.1	
Approach LOS	B			E	C	

Intersection Summary			
HCM 2000 Control Delay	41.9	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.90		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	82.2%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	SEL	SET	SER	NWL	NWT	NWR
Lane Configurations												
Traffic Volume (vph)	100	280	0	0	610	320	60	0	60	250	20	180
Future Volume (vph)	100	280	0	0	610	320	60	0	60	250	20	180
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0			4.0	4.0		4.0		3.6	4.0	4.0
Lane Util. Factor	1.00	0.95			0.95	1.00		1.00		0.95	0.95	1.00
Frt	1.00	1.00			1.00	0.85		0.93		1.00	1.00	0.85
Flt Protected	0.95	1.00			1.00	1.00		0.98		0.95	0.96	1.00
Satd. Flow (prot)	1770	3539			3539	1583		1695		1681	1697	1583
Flt Permitted	0.95	1.00			1.00	1.00		0.76		0.50	0.54	1.00
Satd. Flow (perm)	1770	3539			3539	1583		1326		890	962	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	109	304	0	0	663	348	65	0	65	272	22	196
RTOR Reduction (vph)	0	0	0	0	0	228	0	119	0	0	0	152
Lane Group Flow (vph)	109	304	0	0	663	120	0	11	0	147	147	44
Turn Type	Prot	NA			NA	Perm	Perm	NA		Perm	NA	Perm
Protected Phases	5	2			6			8			7	
Permitted Phases						6	8			7		7
Actuated Green, G (s)	6.1	32.2			22.1	22.1		5.5		14.4	14.4	14.4
Effective Green, g (s)	6.1	32.2			22.1	22.1		5.5		14.8	14.4	14.4
Actuated g/C Ratio	0.10	0.50			0.34	0.34		0.09		0.23	0.22	0.22
Clearance Time (s)	4.0	4.0			4.0	4.0		4.0		4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0			3.0	3.0		3.0		3.0	3.0	3.0
Lane Grp Cap (vph)	168	1777			1220	545		113		205	216	355
v/s Ratio Prot	c0.06	0.09			c0.19							
v/s Ratio Perm						0.08		c0.01		c0.17	0.15	0.03
v/c Ratio	0.65	0.17			0.54	0.22		0.10		0.72	0.68	0.12
Uniform Delay, d1	28.0	8.7			16.9	14.9		27.0		22.7	22.7	19.8
Progression Factor	1.00	1.00			1.00	1.00		1.00		1.00	1.00	1.00
Incremental Delay, d2	8.3	0.2			1.7	0.9		0.4		11.3	8.5	0.2
Delay (s)	36.3	8.9			18.7	15.8		27.4		34.0	31.3	20.0
Level of Service	D	A			B	B		C		C	C	B
Approach Delay (s)		16.1			17.7			27.4			27.6	
Approach LOS		B			B			C			C	

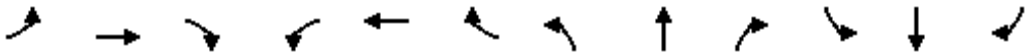
Intersection Summary			
HCM 2000 Control Delay	20.4	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.56		
Actuated Cycle Length (s)	64.1	Sum of lost time (s)	16.0
Intersection Capacity Utilization	46.1%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	210	60	330	600	0	0	0	0	170	30	240
Future Volume (vph)	0	210	60	330	600	0	0	0	0	170	30	240
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0		5.7	5.7					1.8	1.8	1.8
Lane Util. Factor		0.95		1.00	1.00					0.95	0.95	1.00
Frpb, ped/bikes		1.00		1.00	1.00					1.00	1.00	1.00
Flpb, ped/bikes		1.00		1.00	1.00					1.00	1.00	1.00
Frt		0.97		1.00	1.00					1.00	1.00	0.85
Flt Protected		1.00		0.95	1.00					0.95	0.97	1.00
Satd. Flow (prot)		3408		1763	1863					1681	1708	1583
Flt Permitted		1.00		0.57	1.00					0.95	0.97	1.00
Satd. Flow (perm)		3408		1063	1863					1681	1708	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	228	65	359	652	0	0	0	0	185	33	261
RTOR Reduction (vph)	0	34	0	0	0	0	0	0	0	0	0	80
Lane Group Flow (vph)	0	259	0	359	652	0	0	0	0	100	118	181
Confl. Peds. (#/hr)	5		5	5		10						
Turn Type		NA		Perm	NA					Perm	NA	custom
Protected Phases		7			8						6	7
Permitted Phases				8						6		6
Actuated Green, G (s)		11.1		25.7	25.7					10.0	10.0	21.1
Effective Green, g (s)		11.1		26.2	26.2					12.2	12.2	25.5
Actuated g/C Ratio		0.18		0.43	0.43					0.20	0.20	0.42
Clearance Time (s)		4.0		6.2	6.2					4.0	4.0	4.0
Vehicle Extension (s)		3.0		2.0	2.0					3.0	3.0	3.0
Lane Grp Cap (vph)		620		456	800					336	341	708
v/s Ratio Prot		c0.08			c0.35							0.06
v/s Ratio Perm				0.34						0.06	0.07	0.06
v/c Ratio		0.42		0.79	0.81					0.30	0.35	0.26
Uniform Delay, d1		22.1		15.0	15.3					20.8	21.0	11.6
Progression Factor		1.00		1.00	1.00					1.00	1.00	1.00
Incremental Delay, d2		0.5		8.1	6.1					0.5	0.6	0.2
Delay (s)		22.6		23.1	21.4					21.3	21.6	11.8
Level of Service		C		C	C					C	C	B
Approach Delay (s)		22.6			22.0			0.0			16.2	
Approach LOS		C			C			A			B	

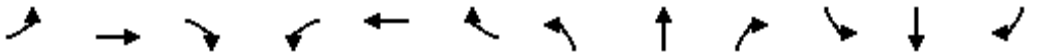
Intersection Summary			
HCM 2000 Control Delay	20.5	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.61		
Actuated Cycle Length (s)	61.0	Sum of lost time (s)	11.5
Intersection Capacity Utilization	54.5%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	20	30	30	440	110	160	40	1330	210	140	740	130
Future Volume (vph)	20	30	30	440	110	160	40	1330	210	140	740	130
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.3	4.3		4.0	4.0		4.0	4.0	
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	0.91		1.00	0.91	
Frpb, ped/bikes	1.00	0.99		1.00	1.00		1.00	1.00		1.00	1.00	
Flpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Frt	1.00	0.93		1.00	0.91		1.00	0.98		1.00	0.98	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1770	1710		1764	1697		1770	4981		1770	4955	
Flt Permitted	0.45	1.00		0.71	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (perm)	834	1710		1326	1697		1770	4981		1770	4955	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	22	33	33	478	120	174	43	1446	228	152	804	141
RTOR Reduction (vph)	0	21	0	0	59	0	0	23	0	0	23	0
Lane Group Flow (vph)	22	45	0	478	235	0	43	1651	0	152	922	0
Confl. Peds. (#/hr)			4	4			1					1
Turn Type	Perm	NA		Perm	NA		Prot	NA		Prot	NA	
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4			8								
Actuated Green, G (s)	32.0	32.0		31.3	31.3		4.7	35.2		10.1	40.4	
Effective Green, g (s)	32.0	32.0		31.7	31.7		4.7	36.6		10.6	42.5	
Actuated g/C Ratio	0.35	0.35		0.35	0.35		0.05	0.40		0.12	0.47	
Clearance Time (s)	4.0	4.0		4.7	4.7		4.0	5.4		4.5	6.1	
Vehicle Extension (s)	2.0	2.0		3.0	3.0		2.0	4.8		3.0	3.7	
Lane Grp Cap (vph)	292	600		460	589		91	1998		205	2309	
v/s Ratio Prot		0.03			0.14		0.02	c0.33		c0.09	0.19	
v/s Ratio Perm	0.03			c0.36								
v/c Ratio	0.08	0.07		1.04	0.40		0.47	0.83		0.74	0.40	
Uniform Delay, d1	19.7	19.7		29.8	22.5		42.0	24.5		39.0	16.0	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	0.0	0.0		52.5	0.4		1.4	4.1		13.5	0.5	
Delay (s)	19.8	19.7		82.2	23.0		43.5	28.5		52.4	16.5	
Level of Service	B	B		F	C		D	C		D	B	
Approach Delay (s)		19.8			59.7			28.9			21.5	
Approach LOS		B			E			C			C	

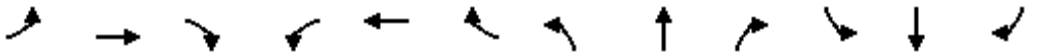
Intersection Summary			
HCM 2000 Control Delay	32.9	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.90		
Actuated Cycle Length (s)	91.2	Sum of lost time (s)	12.3
Intersection Capacity Utilization	79.4%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	650	560	140	150	730	170	300	690	100	110	710	250
Future Volume (vph)	650	560	140	150	730	170	300	690	100	110	710	250
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	4.0
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00	0.91		1.00	0.91	1.00
Frpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	0.99
Flpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	1.00
Frt	1.00	0.97		1.00	0.97		1.00	0.98		1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1770	3433		1770	3428		1770	4980		1770	5085	1571
Flt Permitted	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)	1770	3433		1770	3428		1770	4980		1770	5085	1571
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	707	609	152	163	793	185	326	750	109	120	772	272
RTOR Reduction (vph)	0	16	0	0	16	0	0	15	0	0	0	51
Lane Group Flow (vph)	707	745	0	163	962	0	326	844	0	120	772	221
Confl. Peds. (#/hr)	4					4	5		1	1		5
Turn Type	Prot	NA		Prot	NA		Prot	NA		Prot	NA	pm+ov
Protected Phases	7	4		3	8		5	2		1	6	7
Permitted Phases												6
Actuated Green, G (s)	40.6	56.1		16.1	31.0		18.6	29.7		9.2	20.2	60.8
Effective Green, g (s)	41.0	57.3		16.5	32.8		19.0	30.6		9.6	21.2	61.6
Actuated g/C Ratio	0.32	0.44		0.13	0.25		0.15	0.24		0.07	0.16	0.47
Clearance Time (s)	4.4	5.2		4.4	5.8		4.4	4.9		4.4	5.0	4.4
Vehicle Extension (s)	2.0	3.9		2.0	2.7		2.0	3.3		2.0	4.1	2.0
Lane Grp Cap (vph)	558	1513		224	864		258	1172		130	829	744
v/s Ratio Prot	c0.40	0.22		0.09	c0.28		c0.18	0.17		0.07	c0.15	0.09
v/s Ratio Perm												0.05
v/c Ratio	1.27	0.49		0.73	1.11		1.26	0.72		0.92	0.93	0.30
Uniform Delay, d1	44.5	26.0		54.6	48.6		55.5	45.8		59.8	53.7	20.9
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	133.9	0.3		9.6	66.8		145.8	3.8		55.0	18.4	0.1
Delay (s)	178.4	26.3		64.1	115.4		201.3	49.6		114.8	72.1	21.0
Level of Service	F	C		E	F		F	D		F	E	C
Approach Delay (s)		99.6			108.1			91.3			64.6	
Approach LOS		F			F			F			E	

Intersection Summary			
HCM 2000 Control Delay	91.3	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.16		
Actuated Cycle Length (s)	130.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	106.7%	ICU Level of Service	G
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	120	390	150	330	400	110	230	120	210	80	150	100
Future Volume (vph)	120	390	150	330	400	110	230	120	210	80	150	100
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	5.5	5.5	4.0	5.4	5.4
Lane Util. Factor	1.00	0.95	0.88	0.97	0.95	1.00	0.97	1.00	1.00	1.00	0.91	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1770	3539	2787	3433	3539	1583	3433	1863	1583	1770	5085	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1770	3539	2787	3433	3539	1583	3433	1863	1583	1770	5085	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	130	424	163	359	435	120	250	130	228	87	163	109
RTOR Reduction (vph)	0	0	89	0	0	74	0	0	143	0	0	85
Lane Group Flow (vph)	130	424	74	359	435	46	250	130	85	87	163	24
Turn Type	Prot	NA	pm+ov	Prot	NA	Perm	Prot	NA	pm+ov	Prot	NA	Perm
Protected Phases	5	2	3	1	6		3	8	1	7	4	
Permitted Phases			2			6			8			4
Actuated Green, G (s)	9.6	32.8	40.4	10.9	34.1	34.1	7.6	21.4	32.3	6.7	20.5	20.5
Effective Green, g (s)	10.0	33.7	41.2	11.3	35.0	35.0	8.0	20.8	30.1	7.1	20.0	20.0
Actuated g/C Ratio	0.11	0.37	0.46	0.12	0.39	0.39	0.09	0.23	0.33	0.08	0.22	0.22
Clearance Time (s)	4.4	4.9	4.4	4.4	4.9	4.9	4.4	4.9	4.4	4.4	4.9	4.9
Vehicle Extension (s)	2.0	2.1	2.0	2.0	2.3	2.3	2.0	4.5	2.0	2.0	4.5	4.5
Lane Grp Cap (vph)	195	1319	1270	429	1370	612	303	428	527	139	1125	350
v/s Ratio Prot	0.07	0.12	0.01	c0.10	c0.12		c0.07	c0.07	0.02	0.05	0.03	
v/s Ratio Perm			0.02			0.03			0.04			0.02
v/c Ratio	0.67	0.32	0.06	0.84	0.32	0.08	0.83	0.30	0.16	0.63	0.14	0.07
Uniform Delay, d1	38.6	20.2	13.8	38.6	19.4	17.5	40.5	28.8	21.3	40.4	28.3	27.8
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	6.5	0.6	0.0	12.7	0.6	0.2	15.8	0.7	0.1	6.2	0.1	0.1
Delay (s)	45.1	20.8	13.8	51.4	20.0	17.7	56.3	29.5	21.3	46.5	28.4	28.0
Level of Service	D	C	B	D	B	B	E	C	C	D	C	C
Approach Delay (s)		23.6			32.0			37.4			32.7	
Approach LOS		C			C			D			C	

Intersection Summary			
HCM 2000 Control Delay	31.1	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.47		
Actuated Cycle Length (s)	90.4	Sum of lost time (s)	19.0
Intersection Capacity Utilization	47.1%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

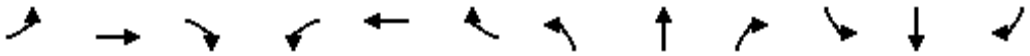
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	140	230	70	20	140	210	50	180	250	20	20	30
Future Volume (vph)	140	230	70	20	140	210	50	180	250	20	20	30
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0			4.0			4.0			4.0	
Lane Util. Factor		1.00			1.00			1.00			1.00	
Frpb, ped/bikes		1.00			1.00			0.98			1.00	
Flpb, ped/bikes		1.00			1.00			1.00			1.00	
Frt		0.98			0.92			0.93			0.94	
Flt Protected		0.98			1.00			0.99			0.99	
Satd. Flow (prot)		1787			1715			1691			1728	
Flt Permitted		0.78			0.97			0.96			0.80	
Satd. Flow (perm)		1410			1664			1634			1398	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	152	250	76	22	152	228	54	196	272	22	22	33
RTOR Reduction (vph)	0	10	0	0	40	0	0	57	0	0	23	0
Lane Group Flow (vph)	0	468	0	0	362	0	0	465	0	0	54	0
Confl. Peds. (#/hr)			3	3					8	8		
Turn Type	pm+pt	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases	5	2			6			8			4	
Permitted Phases	2			6			8			4		
Actuated Green, G (s)		39.1			39.1			20.3			20.3	
Effective Green, g (s)		40.0			40.0			21.2			21.2	
Actuated g/C Ratio		0.58			0.58			0.31			0.31	
Clearance Time (s)		4.9			4.9			4.9			4.9	
Vehicle Extension (s)		2.0			2.0			2.0			2.0	
Lane Grp Cap (vph)		815			961			500			428	
v/s Ratio Prot												
v/s Ratio Perm		c0.33			0.22			c0.28			0.04	
v/c Ratio		0.57			0.38			0.93			0.13	
Uniform Delay, d1		9.2			7.9			23.3			17.3	
Progression Factor		1.00			1.00			1.00			1.00	
Incremental Delay, d2		0.6			1.1			23.8			0.0	
Delay (s)		9.8			9.0			47.1			17.4	
Level of Service		A			A			D			B	
Approach Delay (s)		9.8			9.0			47.1			17.4	
Approach LOS		A			A			D			B	

Intersection Summary			
HCM 2000 Control Delay	23.2	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.75		
Actuated Cycle Length (s)	69.2	Sum of lost time (s)	12.0
Intersection Capacity Utilization	85.8%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	460	190	240	680	150	150
Future Volume (vph)	460	190	240	680	150	150
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0		4.0	4.9	4.0	4.0
Lane Util. Factor	0.91		1.00	0.95	1.00	1.00
Frpb, ped/bikes	0.99		1.00	1.00	1.00	1.00
Flpb, ped/bikes	1.00		1.00	1.00	1.00	1.00
Frt	0.96		1.00	1.00	1.00	0.85
Flt Protected	1.00		0.95	1.00	0.95	1.00
Satd. Flow (prot)	4819		1770	3539	1770	1583
Flt Permitted	1.00		0.95	1.00	0.95	1.00
Satd. Flow (perm)	4819		1770	3539	1770	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	500	207	261	739	163	163
RTOR Reduction (vph)	89	0	0	0	0	125
Lane Group Flow (vph)	618	0	261	739	163	38
Confl. Peds. (#/hr)		7	7		30	15
Turn Type	NA		Prot	NA	Prot	Prot
Protected Phases	2		1	6	8	8
Permitted Phases						
Actuated Green, G (s)	22.8		12.3	39.5	13.6	13.6
Effective Green, g (s)	24.7		12.7	39.5	14.5	14.5
Actuated g/C Ratio	0.39		0.20	0.63	0.23	0.23
Clearance Time (s)	4.9		4.4	4.9	4.9	4.9
Vehicle Extension (s)	2.9		2.0	2.0	2.0	2.0
Lane Grp Cap (vph)	1892		357	2222	408	364
v/s Ratio Prot	0.13		c0.15	c0.21	c0.09	0.02
v/s Ratio Perm						
v/c Ratio	0.33		0.73	0.33	0.40	0.10
Uniform Delay, d1	13.3		23.5	5.5	20.5	19.1
Progression Factor	1.00		1.00	1.00	1.00	1.00
Incremental Delay, d2	0.5		6.5	0.0	0.2	0.0
Delay (s)	13.8		30.0	5.5	20.7	19.1
Level of Service	B		C	A	C	B
Approach Delay (s)	13.8			11.9	19.9	
Approach LOS	B			B	B	

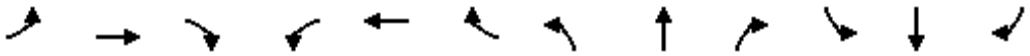
Intersection Summary			
HCM 2000 Control Delay	13.8	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.45		
Actuated Cycle Length (s)	62.9	Sum of lost time (s)	11.0
Intersection Capacity Utilization	49.1%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Traffic Volume (vph)	20	10	20	40	10	40	30	150	30	50	170	50
Future Volume (vph)	20	10	20	40	10	40	30	150	30	50	170	50
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	22	11	22	43	11	43	33	163	33	54	185	54

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total (vph)	55	97	229	293
Volume Left (vph)	22	43	33	54
Volume Right (vph)	22	43	33	54
Hadj (s)	-0.13	-0.14	-0.02	-0.04
Departure Headway (s)	5.1	5.1	4.6	4.5
Degree Utilization, x	0.08	0.14	0.29	0.37
Capacity (veh/h)	619	637	744	760
Control Delay (s)	8.6	8.8	9.5	10.2
Approach Delay (s)	8.6	8.8	9.5	10.2
Approach LOS	A	A	A	B

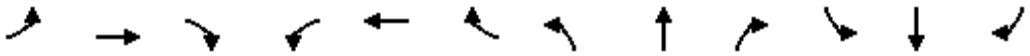
Intersection Summary				
Delay	9.7			
Level of Service	A			
Intersection Capacity Utilization	36.5%	ICU Level of Service	A	
Analysis Period (min)	15			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Traffic Volume (vph)	30	20	20	20	30	20	30	140	30	40	120	60
Future Volume (vph)	30	20	20	20	30	20	30	140	30	40	120	60
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	33	22	22	22	33	22	33	152	33	43	130	65

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total (vph)	77	77	218	238
Volume Left (vph)	33	22	33	43
Volume Right (vph)	22	22	33	65
Hadj (s)	-0.05	-0.08	-0.03	-0.09
Departure Headway (s)	5.0	5.0	4.5	4.5
Degree Utilization, x	0.11	0.11	0.28	0.30
Capacity (veh/h)	646	649	757	768
Control Delay (s)	8.6	8.6	9.3	9.3
Approach Delay (s)	8.6	8.6	9.3	9.3
Approach LOS	A	A	A	A

Intersection Summary				
Delay	9.1			
Level of Service	A			
Intersection Capacity Utilization	31.3%	ICU Level of Service	A	
Analysis Period (min)	15			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Traffic Volume (vph)	20	20	20	85	20	20	30	260	300	10	100	20
Future Volume (vph)	20	20	20	85	20	20	30	260	300	10	100	20
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	22	22	22	92	22	22	33	283	326	11	109	22

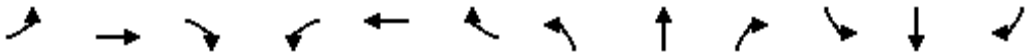
Direction, Lane #	EB 1	WB 1	NB 1	NB 2	SB 1
Volume Total (vph)	66	136	316	326	142
Volume Left (vph)	22	92	33	0	11
Volume Right (vph)	22	22	0	326	22
Hadj (s)	-0.10	0.07	0.09	-0.67	-0.04
Departure Headway (s)	5.7	5.7	5.3	4.6	5.2
Degree Utilization, x	0.10	0.22	0.47	0.41	0.21
Capacity (veh/h)	568	579	659	764	649
Control Delay (s)	9.3	10.2	17.8	9.6	9.6
Approach Delay (s)	9.3	10.2	17.9		9.6
Approach LOS	A	B	B		A

Intersection Summary				
Delay	16.7			
Level of Service	B			
Intersection Capacity Utilization	51.9%	ICU Level of Service	A	
Analysis Period (min)	15			

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Sign Control	Stop			Stop	Stop	
Traffic Volume (vph)	30	20	40	40	50	150
Future Volume (vph)	30	20	40	40	50	150
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	33	22	43	43	54	163

Direction, Lane #	EB 1	WB 1	NB 1
Volume Total (vph)	55	86	217
Volume Left (vph)	0	43	54
Volume Right (vph)	22	0	163
Hadj (s)	-0.21	0.13	-0.37
Departure Headway (s)	4.2	4.5	3.9
Degree Utilization, x	0.06	0.11	0.23
Capacity (veh/h)	800	744	900
Control Delay (s)	7.5	8.1	8.0
Approach Delay (s)	7.5	8.1	8.0
Approach LOS	A	A	A

Intersection Summary			
Delay	8.0		
Level of Service	A		
Intersection Capacity Utilization	36.0%	ICU Level of Service	A
Analysis Period (min)	15		



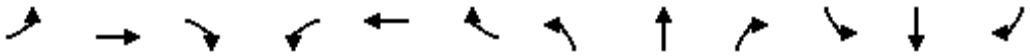
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Traffic Volume (vph)	20	20	20	50	30	30	20	140	100	20	40	20
Future Volume (vph)	20	20	20	50	30	30	20	140	100	20	40	20
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	22	22	22	54	33	33	22	152	109	22	43	22

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total (vph)	66	120	283	87
Volume Left (vph)	22	54	22	22
Volume Right (vph)	22	33	109	22
Hadj (s)	-0.10	-0.04	-0.18	-0.07
Departure Headway (s)	4.8	4.8	4.3	4.6
Degree Utilization, x	0.09	0.16	0.34	0.11
Capacity (veh/h)	679	691	806	728
Control Delay (s)	8.3	8.7	9.5	8.2
Approach Delay (s)	8.3	8.7	9.5	8.2
Approach LOS	A	A	A	A

Intersection Summary				
Delay	9.0			
Level of Service	A			
Intersection Capacity Utilization	38.2%	ICU Level of Service	A	
Analysis Period (min)	15			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	290	100	80	10	40	20	260	270	40	20	50	80
Future Volume (vph)	290	100	80	10	40	20	260	270	40	20	50	80
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		3.9			4.0		4.0	4.0		4.0	4.0	
Lane Util. Factor		1.00			1.00		1.00	1.00		1.00	1.00	
Frpb, ped/bikes		1.00			1.00		1.00	1.00		1.00	0.98	
Flpb, ped/bikes		1.00			1.00		1.00	1.00		1.00	1.00	
Frt		0.98			0.96		1.00	0.98		1.00	0.91	
Flt Protected		0.97			0.99		0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1761			1769		1763	1821		1764	1663	
Flt Permitted		0.77			0.93		0.67	1.00		0.49	1.00	
Satd. Flow (perm)		1394			1662		1238	1821		902	1663	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	315	109	87	11	43	22	283	293	43	22	54	87
RTOR Reduction (vph)	0	13	0	0	13	0	0	7	0	0	49	0
Lane Group Flow (vph)	0	498	0	0	63	0	283	329	0	22	92	0
Confl. Peds. (#/hr)	5					5	3		4	4		4
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		8			4			2			6	
Permitted Phases	8			4			2			6		
Actuated Green, G (s)		23.3			23.3		24.4	24.4		24.4	24.4	
Effective Green, g (s)		23.4			23.3		24.4	24.4		24.4	24.4	
Actuated g/C Ratio		0.42			0.42		0.44	0.44		0.44	0.44	
Clearance Time (s)		4.0			4.0		4.0	4.0		4.0	4.0	
Vehicle Extension (s)		2.0			2.0		4.4	4.4		2.1	2.1	
Lane Grp Cap (vph)		585			695		542	797		395	728	
v/s Ratio Prot								0.18			0.06	
v/s Ratio Perm		c0.36			0.04		c0.23			0.02		
v/c Ratio		0.85			0.09		0.52	0.41		0.06	0.13	
Uniform Delay, d1		14.6			9.8		11.4	10.7		9.0	9.3	
Progression Factor		1.00			1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2		11.0			0.0		3.6	1.6		0.3	0.4	
Delay (s)		25.6			9.8		15.0	12.3		9.3	9.7	
Level of Service		C			A		B	B		A	A	
Approach Delay (s)		25.6			9.8			13.5			9.6	
Approach LOS		C			A			B			A	

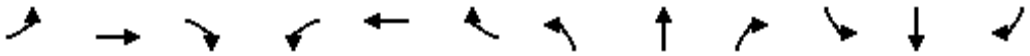
Intersection Summary			
HCM 2000 Control Delay	17.4	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.68		
Actuated Cycle Length (s)	55.7	Sum of lost time (s)	8.0
Intersection Capacity Utilization	73.1%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	50	430	180	230	720	90	130	20	270	20	10	30
Future Volume (vph)	50	430	180	230	720	90	130	20	270	20	10	30
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	3.0		4.0	2.9			3.9			4.0	
Lane Util. Factor	1.00	0.91		1.00	0.95			1.00			1.00	
Frpb, ped/bikes	1.00	1.00		1.00	1.00			0.99			1.00	
Flpb, ped/bikes	1.00	1.00		1.00	1.00			1.00			1.00	
Frt	1.00	0.96		1.00	0.98			0.91			0.93	
Flt Protected	0.95	1.00		0.95	1.00			0.98			0.98	
Satd. Flow (prot)	1769	4860		1770	3472			1653			1706	
Flt Permitted	0.30	1.00		0.25	1.00			0.87			0.85	
Satd. Flow (perm)	568	4860		470	3472			1466			1471	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	54	467	196	250	783	98	141	22	293	22	11	33
RTOR Reduction (vph)	0	103	0	0	13	0	0	103	0	0	23	0
Lane Group Flow (vph)	54	560	0	250	868	0	0	353	0	0	43	0
Confl. Peds. (#/hr)	2					2			13	13		
Turn Type	pm+pt	NA		pm+pt	NA		Perm	NA		Perm	NA	
Protected Phases	5	2		1	6			8			4	
Permitted Phases	2			6			8			4		
Actuated Green, G (s)	17.2	15.1		28.6	22.1			16.4			16.4	
Effective Green, g (s)	18.0	17.1		29.0	24.1			17.4			17.3	
Actuated g/C Ratio	0.33	0.31		0.53	0.44			0.32			0.32	
Clearance Time (s)	4.4	5.0		4.4	4.9			4.9			4.9	
Vehicle Extension (s)	2.0	3.3		2.0	3.3			2.0			2.0	
Lane Grp Cap (vph)	241	1516		471	1526			465			464	
v/s Ratio Prot	0.01	0.12		c0.09	c0.25							
v/s Ratio Perm	0.06			0.19				c0.24			0.03	
v/c Ratio	0.22	0.37		0.53	0.57			0.76			0.09	
Uniform Delay, d1	12.8	14.7		7.7	11.5			16.8			13.2	
Progression Factor	1.00	1.00		1.00	1.00			1.00			1.00	
Incremental Delay, d2	0.2	0.2		0.6	0.5			6.2			0.0	
Delay (s)	12.9	14.8		8.3	12.0			23.0			13.3	
Level of Service	B	B		A	B			C			B	
Approach Delay (s)		14.7			11.2			23.0			13.3	
Approach LOS		B			B			C			B	

Intersection Summary			
HCM 2000 Control Delay	14.6	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.68		
Actuated Cycle Length (s)	54.8	Sum of lost time (s)	11.0
Intersection Capacity Utilization	68.5%	ICU Level of Service	C
Analysis Period (min)	15		

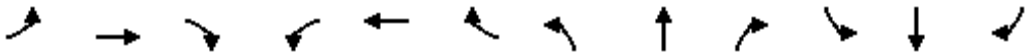
c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Traffic Volume (vph)	70	20	20	20	20	20	20	160	40	60	120	70
Future Volume (vph)	70	20	20	20	20	20	20	160	40	60	120	70
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	76	22	22	22	22	22	22	174	43	65	130	76

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total (vph)	120	66	239	271
Volume Left (vph)	76	22	22	65
Volume Right (vph)	22	22	43	76
Hadj (s)	0.05	-0.10	-0.06	-0.09
Departure Headway (s)	5.3	5.2	4.7	4.6
Degree Utilization, x	0.18	0.10	0.31	0.35
Capacity (veh/h)	618	611	732	741
Control Delay (s)	9.4	8.7	9.8	10.1
Approach Delay (s)	9.4	8.7	9.8	10.1
Approach LOS	A	A	A	B

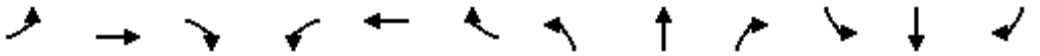
Intersection Summary			
Delay	9.7		
Level of Service	A		
Intersection Capacity Utilization	45.8%	ICU Level of Service	A
Analysis Period (min)	15		



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Traffic Volume (vph)	40	20	40	10	10	20	60	150	10	30	90	50
Future Volume (vph)	40	20	40	10	10	20	60	150	10	30	90	50
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	43	22	43	11	11	22	65	163	11	33	98	54

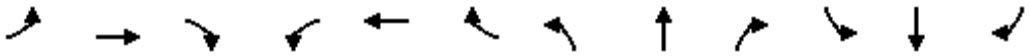
Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total (vph)	108	44	239	185
Volume Left (vph)	43	11	65	33
Volume Right (vph)	43	22	11	54
Hadj (s)	-0.13	-0.22	0.06	-0.11
Departure Headway (s)	4.8	4.8	4.6	4.5
Degree Utilization, x	0.14	0.06	0.30	0.23
Capacity (veh/h)	680	667	759	766
Control Delay (s)	8.6	8.1	9.5	8.8
Approach Delay (s)	8.6	8.1	9.5	8.8
Approach LOS	A	A	A	A

Intersection Summary				
Delay	9.0			
Level of Service	A			
Intersection Capacity Utilization	35.2%	ICU Level of Service	A	
Analysis Period (min)	15			



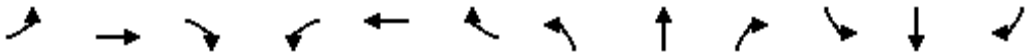
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	400	270	30	10	650	260	0	0	20	200	150	320
Future Volume (vph)	400	270	30	10	650	260	0	0	20	200	150	320
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0				4.0	4.0	4.0	4.0
Lane Util. Factor	0.97	0.95		1.00	0.95				1.00	0.95	0.95	1.00
Frpb, ped/bikes	1.00	1.00		1.00	1.00				0.99	1.00	1.00	1.00
Flpb, ped/bikes	1.00	1.00		1.00	1.00				1.00	1.00	1.00	1.00
Frt	1.00	0.98		1.00	0.96				0.86	1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00				1.00	0.95	0.98	1.00
Satd. Flow (prot)	3433	3478		1770	3387				1590	1681	1736	1583
Flt Permitted	0.95	1.00		0.95	1.00				1.00	0.95	0.98	1.00
Satd. Flow (perm)	3433	3478		1770	3387				1590	1681	1736	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	435	293	33	11	707	283	0	0	22	217	163	348
RTOR Reduction (vph)	0	8	0	0	46	0	0	0	0	0	0	214
Lane Group Flow (vph)	435	318	0	11	944	0	0	0	22	113	267	134
Confl. Peds. (#/hr)			1	1					4	4		
Turn Type	Prot	NA		Prot	NA				Free	Split	NA	Perm
Protected Phases	5	2		1	6					4	4	
Permitted Phases									Free			4
Actuated Green, G (s)	11.2	38.3		0.7	27.8				71.2	17.6	17.6	17.6
Effective Green, g (s)	11.6	39.2		1.1	28.7				71.2	18.9	18.9	18.9
Actuated g/C Ratio	0.16	0.55		0.02	0.40				1.00	0.27	0.27	0.27
Clearance Time (s)	4.4	4.9		4.4	4.9					5.3	5.3	5.3
Vehicle Extension (s)	2.0	3.3		2.0	3.8					4.4	4.4	4.4
Lane Grp Cap (vph)	559	1914		27	1365				1590	446	460	420
v/s Ratio Prot	c0.13	0.09		0.01	c0.28					0.07	c0.15	
v/s Ratio Perm									0.01			0.08
v/c Ratio	0.78	0.17		0.41	0.69				0.01	0.25	0.58	0.32
Uniform Delay, d1	28.6	7.9		34.7	17.6				0.0	20.6	22.7	21.0
Progression Factor	1.00	1.00		1.00	1.00				1.00	1.00	1.00	1.00
Incremental Delay, d2	6.2	0.2		3.6	2.9				0.0	0.5	2.5	0.7
Delay (s)	34.7	8.1		38.3	20.5				0.0	21.1	25.2	21.7
Level of Service	C	A		D	C				A	C	C	C
Approach Delay (s)		23.3			20.7			0.0			22.9	
Approach LOS		C			C			A			C	

Intersection Summary			
HCM 2000 Control Delay	21.9	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.67		
Actuated Cycle Length (s)	71.2	Sum of lost time (s)	12.0
Intersection Capacity Utilization	63.8%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	30	710	90	70	1420	60	230	30	70	70	50	20
Future Volume (vph)	30	710	90	70	1420	60	230	30	70	70	50	20
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.5	4.0		4.0	4.0		3.6	4.0			4.0	
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00	1.00			1.00	
Frpb, ped/bikes	1.00	0.99		1.00	1.00		1.00	0.98			1.00	
Flpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00			1.00	
Frt	1.00	0.98		1.00	0.99		1.00	0.90			0.98	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00			0.98	
Satd. Flow (prot)	1678	3364		1671	3411		1656	1527			1682	
Flt Permitted	0.95	1.00		0.95	1.00		0.63	1.00			0.80	
Satd. Flow (perm)	1678	3364		1671	3411		1091	1527			1384	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	33	772	98	76	1543	65	250	33	76	76	54	22
RTOR Reduction (vph)	0	8	0	0	2	0	0	56	0	0	5	0
Lane Group Flow (vph)	33	862	0	76	1606	0	250	53	0	0	147	0
Confl. Peds. (#/hr)	14		16	16		14			13			13
Confl. Bikes (#/hr)			3			3			1			
Bus Blockages (#/hr)	13	13	13	14	14	14	16	16	16	13	13	13
Turn Type	Prot	NA		Prot	NA		Perm	NA		Perm	NA	
Protected Phases	5	2		1	6			4			4	
Permitted Phases							4			4		
Actuated Green, G (s)	3.2	67.5		8.0	72.3		30.3	30.3			30.3	
Effective Green, g (s)	4.1	68.4		8.4	73.2		31.6	31.2			31.2	
Actuated g/C Ratio	0.03	0.57		0.07	0.61		0.26	0.26			0.26	
Clearance Time (s)	4.4	4.9		4.4	4.9		4.9	4.9			4.9	
Vehicle Extension (s)	2.0	2.1		2.0	2.1		2.0	2.0			2.0	
Lane Grp Cap (vph)	57	1917		116	2080		287	397			359	
v/s Ratio Prot	0.02	0.26		c0.05	c0.47			0.03				
v/s Ratio Perm							c0.23				0.11	
v/c Ratio	0.58	0.45		0.66	0.77		0.87	0.13			0.41	
Uniform Delay, d1	57.1	14.9		54.4	17.2		42.3	34.0			36.8	
Progression Factor	1.00	1.00		0.84	1.57		1.00	1.00			1.00	
Incremental Delay, d2	8.6	0.8		2.8	0.8		23.2	0.1			0.3	
Delay (s)	65.7	15.7		48.5	27.8		65.4	34.1			37.0	
Level of Service	E	B		D	C		E	C			D	
Approach Delay (s)		17.5			28.7			55.9			37.0	
Approach LOS		B			C			E			D	

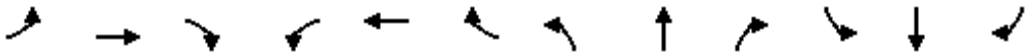
Intersection Summary			
HCM 2000 Control Delay	29.0	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.81		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	74.5%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	180	660	90	170	1240	70	70	130	110	260	380	250
Future Volume (vph)	180	660	90	170	1240	70	70	130	110	260	380	250
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0		4.0	4.0	4.0	4.0	4.0	
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00	0.95	1.00	1.00	0.95	
Frpb, ped/bikes	1.00	0.99		1.00	1.00		1.00	1.00	0.98	1.00	0.98	
Flpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	
Frt	1.00	0.98		1.00	0.99		1.00	1.00	0.85	1.00	0.94	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)	1770	3454		1770	3501		1770	3539	1550	1770	3267	
Flt Permitted	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (perm)	1770	3454		1770	3501		1770	3539	1550	1770	3267	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	196	717	98	185	1348	76	76	141	120	283	413	272
RTOR Reduction (vph)	0	8	0	0	3	0	0	0	45	0	92	0
Lane Group Flow (vph)	196	807	0	185	1421	0	76	141	75	283	593	0
Confl. Peds. (#/hr)	23		24	24		23	19		14	14		19
Confl. Bikes (#/hr)			9			5			12			6
Turn Type	Prot	NA		Prot	NA		Prot	NA	pm+ov	Prot	NA	
Protected Phases	5	2		1	6		3	8	1	7	4	
Permitted Phases									8			
Actuated Green, G (s)	13.9	40.9		16.3	42.8		7.3	21.4	37.7	22.7	36.9	
Effective Green, g (s)	14.3	41.8		16.7	44.2		7.7	22.4	38.5	23.1	37.8	
Actuated g/C Ratio	0.12	0.35		0.14	0.37		0.06	0.19	0.32	0.19	0.31	
Clearance Time (s)	4.4	4.9		4.4	5.4		4.4	5.0	4.4	4.4	4.9	
Vehicle Extension (s)	2.0	4.2		2.0	3.0		2.0	4.0	2.0	2.0	2.6	
Lane Grp Cap (vph)	210	1203		246	1289		113	660	497	340	1029	
v/s Ratio Prot	c0.11	0.23		0.10	c0.41		c0.04	0.04	0.02	c0.16	c0.18	
v/s Ratio Perm									0.03			
v/c Ratio	0.93	0.67		0.75	1.10		0.67	0.21	0.15	0.83	0.58	
Uniform Delay, d1	52.4	33.2		49.7	37.9		54.9	41.3	29.1	46.6	34.4	
Progression Factor	1.19	0.83		1.06	0.84		1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	41.4	2.8		9.0	56.1		11.7	0.2	0.1	15.2	0.7	
Delay (s)	103.7	30.3		61.9	87.8		66.6	41.6	29.1	61.8	35.1	
Level of Service	F	C		E	F		E	D	C	E	D	
Approach Delay (s)		44.5			84.8			42.8			42.9	
Approach LOS		D			F			D			D	

Intersection Summary			
HCM 2000 Control Delay	60.4	HCM 2000 Level of Service	E
HCM 2000 Volume to Capacity ratio	0.90		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	88.6%	ICU Level of Service	E
Analysis Period (min)	15		

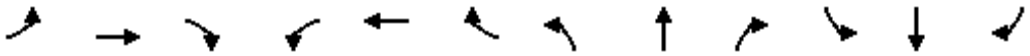
c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	10	990	80	320	1390	70	70	20	150	70	20	20
Future Volume (vph)	10	990	80	320	1390	70	70	20	150	70	20	20
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0			4.0	4.0		4.0	
Lane Util. Factor	1.00	0.91		1.00	0.95			1.00	1.00		1.00	
Frpb, ped/bikes	1.00	1.00		1.00	1.00			1.00	0.98		0.99	
Flpb, ped/bikes	1.00	1.00		1.00	1.00			1.00	1.00		1.00	
Frt	1.00	0.99		1.00	0.99			1.00	0.85		0.98	
Flt Protected	0.95	1.00		0.95	1.00			0.96	1.00		0.97	
Satd. Flow (prot)	1770	5015		1770	3510			1792	1552		1750	
Flt Permitted	0.95	1.00		0.95	1.00			0.70	1.00		0.70	
Satd. Flow (perm)	1770	5015		1770	3510			1309	1552		1265	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	11	1076	87	348	1511	76	76	22	163	76	22	22
RTOR Reduction (vph)	0	6	0	0	2	0	0	0	135	0	7	0
Lane Group Flow (vph)	11	1157	0	348	1585	0	0	98	28	0	113	0
Confl. Peds. (#/hr)	1		1	1		1	1		1	1		1
Confl. Bikes (#/hr)			17			4			5			12
Turn Type	Prot	NA		Prot	NA		Perm	NA	Perm	Perm	NA	
Protected Phases	5	2		1	6			8			4	
Permitted Phases							8		8	4		
Actuated Green, G (s)	1.3	57.2		28.3	84.2			19.9	19.9		19.9	
Effective Green, g (s)	1.7	58.5		28.7	85.5			20.8	20.8		20.8	
Actuated g/C Ratio	0.01	0.49		0.24	0.71			0.17	0.17		0.17	
Clearance Time (s)	4.4	5.3		4.4	5.3			4.9	4.9		4.9	
Vehicle Extension (s)	2.0	4.4		2.0	4.4			2.0	2.0		2.0	
Lane Grp Cap (vph)	25	2444		423	2500			226	269		219	
v/s Ratio Prot	0.01	0.23		c0.20	c0.45							
v/s Ratio Perm								0.07	0.02		c0.09	
v/c Ratio	0.44	0.47		0.82	0.63			0.43	0.11		0.51	
Uniform Delay, d1	58.7	20.5		43.2	9.0			44.3	41.8		45.0	
Progression Factor	0.80	1.50		1.00	1.00			1.00	1.00		1.00	
Incremental Delay, d2	3.5	0.5		11.6	1.2			0.5	0.1		0.8	
Delay (s)	50.4	31.2		54.9	10.3			44.8	41.8		45.9	
Level of Service	D	C		D	B			D	D		D	
Approach Delay (s)		31.3			18.3			43.0			45.9	
Approach LOS		C			B			D			D	

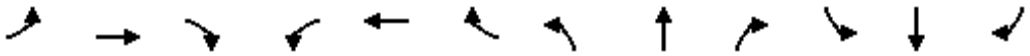
Intersection Summary			
HCM 2000 Control Delay	25.5	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.68		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	67.1%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	0	0	280	3130	0	0	0	0	0	150	150
Future Volume (vph)	0	0	0	280	3130	0	0	0	0	0	150	150
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)					4.2						4.0	
Lane Util. Factor					0.91						0.91	
Frpb, ped/bikes					1.00						0.99	
Flpb, ped/bikes					1.00						1.00	
Frt					1.00						0.93	
Flt Protected					1.00						1.00	
Satd. Flow (prot)					5061						4651	
Flt Permitted					1.00						1.00	
Satd. Flow (perm)					5061						4651	
Peak-hour factor, PHF	0.92	0.92	0.92	0.94	0.94	0.94	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	298	3330	0	0	0	0	0	163	163
RTOR Reduction (vph)	0	0	0	0	7	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	0	0	0	3621	0	0	0	0	0	326	0
Confl. Peds. (#/hr)				6								7
Turn Type				Perm	NA						NA	
Protected Phases					6						4	
Permitted Phases				6								
Actuated Green, G (s)					61.8						18.0	
Effective Green, g (s)					62.9						18.9	
Actuated g/C Ratio					0.70						0.21	
Clearance Time (s)					5.3						4.9	
Vehicle Extension (s)					0.2						0.2	
Lane Grp Cap (vph)					3537						976	
v/s Ratio Prot											c0.07	
v/s Ratio Perm					0.72							
v/c Ratio					1.02						0.33	
Uniform Delay, d1					13.6						30.2	
Progression Factor					1.00						1.00	
Incremental Delay, d2					21.6						0.1	
Delay (s)					35.1						30.3	
Level of Service					D						C	
Approach Delay (s)		0.0			35.1			0.0			30.3	
Approach LOS		A			D			A			C	

Intersection Summary			
HCM 2000 Control Delay	34.7	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.86		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	8.2
Intersection Capacity Utilization	88.0%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			

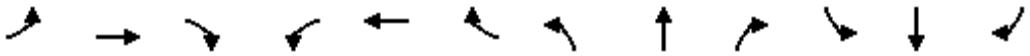


Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	910	110	0	0	0	0	0	0	160	330	0
Future Volume (vph)	0	910	110	0	0	0	0	0	0	160	330	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0									4.0	
Lane Util. Factor		0.91									0.91	
Frpb, ped/bikes		1.00									1.00	
Flpb, ped/bikes		1.00									0.99	
Frt		0.98									1.00	
Flt Protected		1.00									0.98	
Satd. Flow (prot)		4990									4977	
Flt Permitted		1.00									0.98	
Satd. Flow (perm)		4990									4977	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	989	120	0	0	0	0	0	0	174	359	0
RTOR Reduction (vph)	0	16	0	0	0	0	0	0	0	0	68	0
Lane Group Flow (vph)	0	1093	0	0	0	0	0	0	0	0	465	0
Confl. Peds. (#/hr)			9							14		
Turn Type		NA								Perm	NA	
Protected Phases		2									4	
Permitted Phases										4		
Actuated Green, G (s)		47.0									19.0	
Effective Green, g (s)		47.0									20.0	
Actuated g/C Ratio		0.63									0.27	
Clearance Time (s)		4.0									5.0	
Vehicle Extension (s)		3.0									3.0	
Lane Grp Cap (vph)		3127									1327	
v/s Ratio Prot		c0.22										
v/s Ratio Perm											0.09	
v/c Ratio		0.35									0.35	
Uniform Delay, d1		6.7									22.2	
Progression Factor		0.58									1.00	
Incremental Delay, d2		0.3									0.2	
Delay (s)		4.1									22.4	
Level of Service		A									C	
Approach Delay (s)		4.1			0.0			0.0			22.4	
Approach LOS		A			A			A			C	

Intersection Summary			
HCM 2000 Control Delay	10.1	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.35		
Actuated Cycle Length (s)	75.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	43.3%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	240	1090	40	120	780	190	50	40	90	80	80	210
Future Volume (vph)	240	1090	40	120	780	190	50	40	90	80	80	210
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.97	0.95		1.00	0.95	1.00	1.00	1.00	1.00	0.97	1.00	1.00
Frpb, ped/bikes	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.99
Flpb, ped/bikes	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.99		1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	3521		1770	3539	1583	1770	1863	1583	3433	1863	1562
Flt Permitted	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	3521		1770	3539	1583	1770	1863	1583	3433	1863	1562
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	261	1185	43	130	848	207	54	43	98	87	87	228
RTOR Reduction (vph)	0	3	0	0	0	190	0	0	84	0	0	187
Lane Group Flow (vph)	261	1225	0	130	848	17	54	43	14	87	87	41
Confl. Peds. (#/hr)	2											2
Turn Type	Prot	NA		Prot	NA	custom	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases						7			8			4
Actuated Green, G (s)	8.6	33.1		7.1	31.7	6.3	3.5	9.0	9.0	6.3	12.7	12.7
Effective Green, g (s)	8.6	34.6		7.1	33.1	6.3	3.5	10.8	10.8	6.3	13.6	13.6
Actuated g/C Ratio	0.11	0.46		0.09	0.44	0.08	0.05	0.14	0.14	0.08	0.18	0.18
Clearance Time (s)	4.0	5.5		4.0	5.4	4.0	4.0	5.8	5.8	4.0	4.9	4.9
Vehicle Extension (s)	2.0	3.7		2.0	4.0	2.0	2.0	2.0	2.0	2.0	3.0	3.0
Lane Grp Cap (vph)	394	1628		168	1566	133	82	268	228	289	338	284
v/s Ratio Prot	c0.08	c0.35		0.07	0.24		c0.03	0.02		0.03	c0.05	
v/s Ratio Perm						0.01			0.01			0.03
v/c Ratio	0.66	0.75		0.77	0.54	0.13	0.66	0.16	0.06	0.30	0.26	0.15
Uniform Delay, d1	31.7	16.6		33.1	15.3	31.7	35.1	28.0	27.6	32.2	26.3	25.7
Progression Factor	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	3.2	3.3		18.1	1.3	0.2	13.6	0.1	0.0	0.2	0.4	0.2
Delay (s)	34.9	19.8		51.1	16.6	31.9	48.7	28.1	27.7	32.4	26.7	26.0
Level of Service	C	B		D	B	C	D	C	C	C	C	C
Approach Delay (s)		22.5			23.1			33.6			27.5	
Approach LOS		C			C			C			C	

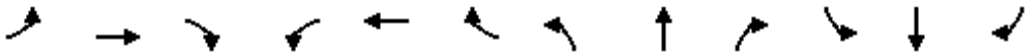
Intersection Summary			
HCM 2000 Control Delay	24.0	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.64		
Actuated Cycle Length (s)	74.8	Sum of lost time (s)	16.0
Intersection Capacity Utilization	57.8%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	0	0	550	2560	170	300	290	0	0	210	80
Future Volume (vph)	0	0	0	550	2560	170	300	290	0	0	210	80
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)					3.5		4.4	4.9			5.4	
Lane Util. Factor					0.86		1.00	0.95			0.95	
Frpb, ped/bikes					1.00		1.00	1.00			1.00	
Flpb, ped/bikes					1.00		1.00	1.00			1.00	
Frt					0.99		1.00	1.00			0.96	
Flt Protected					0.99		0.95	1.00			1.00	
Satd. Flow (prot)					6272		1770	3539			3376	
Flt Permitted					0.99		0.95	1.00			1.00	
Satd. Flow (perm)					6272		1770	3539			3376	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	0	0	0	579	2695	179	316	305	0	0	221	84
RTOR Reduction (vph)	0	0	0	0	7	0	0	0	0	0	13	0
Lane Group Flow (vph)	0	0	0	0	3446	0	316	305	0	0	292	0
Confl. Peds. (#/hr)	4		13	13		4	2		2	2		2
Confl. Bikes (#/hr)												1
Turn Type				Perm	NA		Prot	NA			NA	
Protected Phases					6		3	8			4	
Permitted Phases				6								
Actuated Green, G (s)					66.6		16.6	33.6			12.1	
Effective Green, g (s)					68.0		16.6	33.6			12.1	
Actuated g/C Ratio					0.62		0.15	0.31			0.11	
Clearance Time (s)					4.9		4.4	4.9			5.4	
Vehicle Extension (s)					2.4		3.0	3.3			2.4	
Lane Grp Cap (vph)					3877		267	1081			371	
v/s Ratio Prot							c0.18	0.09			c0.09	
v/s Ratio Perm					0.55							
v/c Ratio					0.89		1.18	0.28			0.79	
Uniform Delay, d1					17.8		46.7	29.0			47.7	
Progression Factor					1.00		1.00	1.00			1.00	
Incremental Delay, d2					3.5		114.1	0.2			10.0	
Delay (s)					21.3		160.8	29.2			57.7	
Level of Service					C		F	C			E	
Approach Delay (s)		0.0			21.3			96.1			57.7	
Approach LOS		A			C			F			E	

Intersection Summary			
HCM 2000 Control Delay	34.4	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.93		
Actuated Cycle Length (s)	110.0	Sum of lost time (s)	13.3
Intersection Capacity Utilization	85.2%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group

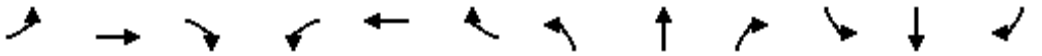


Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	90	710	70	0	0	0	0	510	230	70	680	0
Future Volume (vph)	90	710	70	0	0	0	0	510	230	70	680	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0	4.0					4.9		4.0	4.9	
Lane Util. Factor		0.91	1.00					0.91		1.00	0.91	
Frpb, ped/bikes		1.00	0.98					0.99		1.00	1.00	
Flpb, ped/bikes		1.00	1.00					1.00		1.00	1.00	
Frt		1.00	0.85					0.95		1.00	1.00	
Flt Protected		0.99	1.00					1.00		0.95	1.00	
Satd. Flow (prot)		5055	1551					4809		1770	5085	
Flt Permitted		0.99	1.00					1.00		0.95	1.00	
Satd. Flow (perm)		5055	1551					4809		1770	5085	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	98	772	76	0	0	0	0	554	250	76	739	0
RTOR Reduction (vph)	0	0	42	0	0	0	0	104	0	0	0	0
Lane Group Flow (vph)	0	870	34	0	0	0	0	700	0	76	739	0
Confl. Peds. (#/hr)	4		12				6		12	12		6
Turn Type	Perm	NA	Perm					NA		Prot	NA	
Protected Phases		2						8		7	4	
Permitted Phases	2		2									
Actuated Green, G (s)		32.2	32.2					22.0		6.6	33.0	
Effective Green, g (s)		33.1	33.1					22.0		7.0	33.0	
Actuated g/C Ratio		0.44	0.44					0.29		0.09	0.44	
Clearance Time (s)		4.9	4.9					4.9		4.4	4.9	
Vehicle Extension (s)		4.4	4.4					3.3		2.0	3.3	
Lane Grp Cap (vph)		2230	684					1410		165	2237	
v/s Ratio Prot								c0.15		c0.04	0.15	
v/s Ratio Perm		0.17	0.02									
v/c Ratio		0.39	0.05					0.50		0.46	0.33	
Uniform Delay, d1		14.1	12.0					21.9		32.2	13.8	
Progression Factor		1.00	1.00					1.00		1.00	1.00	
Incremental Delay, d2		0.5	0.1					1.3		9.0	0.4	
Delay (s)		14.7	12.1					23.2		41.2	14.2	
Level of Service		B	B					C		D	B	
Approach Delay (s)		14.4			0.0			23.2			16.7	
Approach LOS		B			A			C			B	

Intersection Summary			
HCM 2000 Control Delay	17.9	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.44		
Actuated Cycle Length (s)	75.0	Sum of lost time (s)	12.9
Intersection Capacity Utilization	85.2%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			

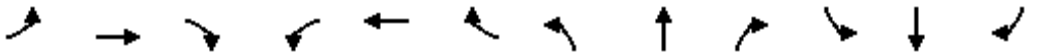
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	1180	530	280	900	310	200
Future Volume (vph)	1180	530	280	900	310	200
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.5	4.0	4.0	4.0
Lane Util. Factor	0.95	1.00	0.97	0.95	0.97	0.91
Frpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	0.99
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.85	1.00	1.00	0.98	0.85
Flt Protected	1.00	1.00	0.95	1.00	0.96	1.00
Satd. Flow (prot)	3539	1583	3433	3539	3377	1421
Flt Permitted	1.00	1.00	0.95	1.00	0.96	1.00
Satd. Flow (perm)	3539	1583	3433	3539	3377	1421
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	1283	576	304	978	337	217
RTOR Reduction (vph)	0	5	0	0	24	116
Lane Group Flow (vph)	1283	571	304	978	378	36
Confl. Peds. (#/hr)						2
Turn Type	NA	pm+ov	Prot	NA	Prot	Perm
Protected Phases	2	8	1	6	8	
Permitted Phases		2				8
Actuated Green, G (s)	28.6	42.3	8.0	41.8	13.7	13.7
Effective Green, g (s)	30.8	46.7	7.9	43.2	15.9	15.9
Actuated g/C Ratio	0.46	0.70	0.12	0.64	0.24	0.24
Clearance Time (s)	6.2	6.2	4.4	5.4	6.2	6.2
Vehicle Extension (s)	4.0	2.0	2.0	5.2	2.0	2.0
Lane Grp Cap (vph)	1624	1196	404	2278	800	336
v/s Ratio Prot	c0.36	c0.11	c0.09	0.28	0.11	
v/s Ratio Perm		0.25				0.03
v/c Ratio	0.79	0.48	0.75	0.43	0.47	0.11
Uniform Delay, d1	15.4	4.6	28.7	5.9	22.0	20.0
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	4.0	0.1	6.9	0.6	0.2	0.1
Delay (s)	19.4	4.8	35.5	6.5	22.2	20.1
Level of Service	B	A	D	A	C	C
Approach Delay (s)	14.9			13.4	21.6	
Approach LOS	B			B	C	

Intersection Summary			
HCM 2000 Control Delay	15.4	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.72		
Actuated Cycle Length (s)	67.1	Sum of lost time (s)	12.5
Intersection Capacity Utilization	62.7%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	1060	140	380	340	0	0	0	0	340	0	670
Future Volume (vph)	0	1060	140	380	340	0	0	0	0	340	0	670
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0	4.0	4.0	4.0					4.0		3.4
Lane Util. Factor		0.95	1.00	0.97	0.95					1.00		1.00
Frpb, ped/bikes		1.00	0.99	1.00	1.00					1.00		1.00
Flpb, ped/bikes		1.00	1.00	1.00	1.00					1.00		1.00
Frt		1.00	0.85	1.00	1.00					1.00		0.85
Flt Protected		1.00	1.00	0.95	1.00					0.95		1.00
Satd. Flow (prot)		3539	1561	3433	3539					1770		1583
Flt Permitted		1.00	1.00	0.95	1.00					0.95		1.00
Satd. Flow (perm)		3539	1561	3433	3539					1770		1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	1152	152	413	370	0	0	0	0	370	0	728
RTOR Reduction (vph)	0	0	88	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	1152	64	413	370	0	0	0	0	370	0	728
Confl. Peds. (#/hr)			2	2								
Turn Type		NA	Perm	Prot	NA					Prot		Free
Protected Phases		2		1	6					4		
Permitted Phases			2									Free
Actuated Green, G (s)		27.5	27.5	10.4	42.1					15.7		67.4
Effective Green, g (s)		28.5	28.5	10.6	43.1					16.3		67.4
Actuated g/C Ratio		0.42	0.42	0.16	0.64					0.24		1.00
Clearance Time (s)		5.0	5.0	4.2	5.0					4.6		
Vehicle Extension (s)		0.2	0.2	0.2	0.2					0.2		
Lane Grp Cap (vph)		1496	660	539	2263					428		1583
v/s Ratio Prot		c0.33		c0.12	0.10					c0.21		
v/s Ratio Perm			0.04									0.46
v/c Ratio		0.77	0.10	0.77	0.16					0.86		0.46
Uniform Delay, d1		16.6	11.7	27.2	4.9					24.5		0.0
Progression Factor		1.00	1.00	1.00	1.00					1.00		1.00
Incremental Delay, d2		3.9	0.3	5.8	0.2					15.9		1.0
Delay (s)		20.5	12.0	33.0	5.0					40.4		1.0
Level of Service		C	B	C	A					D		A
Approach Delay (s)		19.5			19.8			0.0			14.3	
Approach LOS		B			B			A			B	

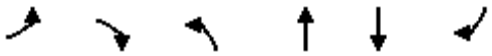
Intersection Summary			
HCM 2000 Control Delay	17.8	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.80		
Actuated Cycle Length (s)	67.4	Sum of lost time (s)	12.0
Intersection Capacity Utilization	82.8%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	890	650	0	0	620	590	190	0	300	0	0	0
Future Volume (vph)	890	650	0	0	620	590	190	0	300	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	5.0			5.0			4.0	4.0			
Lane Util. Factor	0.97	0.95			0.95			1.00	1.00			
Frt	1.00	1.00			0.93			1.00	0.85			
Flt Protected	0.95	1.00			1.00			0.95	1.00			
Satd. Flow (prot)	3433	3539			3280			1770	1583			
Flt Permitted	0.95	1.00			1.00			0.95	1.00			
Satd. Flow (perm)	3433	3539			3280			1770	1583			
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	967	707	0	0	674	641	207	0	326	0	0	0
RTOR Reduction (vph)	0	0	0	0	202	0	0	0	277	0	0	0
Lane Group Flow (vph)	967	707	0	0	1113	0	0	207	49	0	0	0
Turn Type	Prot	NA			NA		Split	NA	Perm			
Protected Phases	5	2			6		4	4				
Permitted Phases									4			
Actuated Green, G (s)	23.6	59.3			31.5			10.0	10.0			
Effective Green, g (s)	23.8	59.8			32.0			10.6	10.6			
Actuated g/C Ratio	0.30	0.75			0.40			0.13	0.13			
Clearance Time (s)	4.2	5.5			5.5			4.6	4.6			
Vehicle Extension (s)	0.2	0.2			0.2			0.2	0.2			
Lane Grp Cap (vph)	1029	2665			1321			236	211			
v/s Ratio Prot	c0.28	0.20			c0.34			c0.12				
v/s Ratio Perm									0.03			
v/c Ratio	0.94	0.27			0.84			0.88	0.23			
Uniform Delay, d1	27.1	3.0			21.4			33.8	30.8			
Progression Factor	1.00	1.00			1.00			1.00	1.00			
Incremental Delay, d2	15.3	0.2			6.7			27.8	0.2			
Delay (s)	42.4	3.3			28.1			61.5	31.0			
Level of Service	D	A			C			E	C			
Approach Delay (s)		25.8			28.1			42.8			0.0	
Approach LOS		C			C			D			A	

Intersection Summary			
HCM 2000 Control Delay	29.3	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.88		
Actuated Cycle Length (s)	79.4	Sum of lost time (s)	13.0
Intersection Capacity Utilization	82.8%	ICU Level of Service	E
Analysis Period (min)	15		

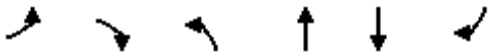
c Critical Lane Group



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	210	210	110	500	700	110
Future Volume (vph)	210	210	110	500	700	110
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0		4.0	4.0	4.0	
Lane Util. Factor	1.00		1.00	0.95	0.95	
Frt	0.93		1.00	1.00	0.98	
Flt Protected	0.98		0.95	1.00	1.00	
Satd. Flow (prot)	1695		1770	3539	3467	
Flt Permitted	0.98		0.95	1.00	1.00	
Satd. Flow (perm)	1695		1770	3539	3467	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	228	228	120	543	761	120
RTOR Reduction (vph)	35	0	0	0	9	0
Lane Group Flow (vph)	421	0	120	543	872	0
Turn Type	Prot		Prot	NA	NA	
Protected Phases	7		1	6	2	
Permitted Phases						
Actuated Green, G (s)	35.5		13.1	76.5	59.4	
Effective Green, g (s)	35.5		13.1	76.5	59.4	
Actuated g/C Ratio	0.30		0.11	0.64	0.49	
Clearance Time (s)	4.0		4.0	4.0	4.0	
Vehicle Extension (s)	3.0		3.0	3.0	3.0	
Lane Grp Cap (vph)	501		193	2256	1716	
v/s Ratio Prot	c0.25		c0.07	0.15	c0.25	
v/s Ratio Perm						
v/c Ratio	0.84		0.62	0.24	0.51	
Uniform Delay, d1	39.6		51.1	9.3	20.4	
Progression Factor	1.00		1.00	0.90	1.00	
Incremental Delay, d2	11.8		6.0	0.2	1.1	
Delay (s)	51.4		56.9	8.7	21.5	
Level of Service	D		E	A	C	
Approach Delay (s)	51.4			17.4	21.5	
Approach LOS	D			B	C	

Intersection Summary			
HCM 2000 Control Delay	27.0	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.63		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	63.5%	ICU Level of Service	B
Analysis Period (min)	15		

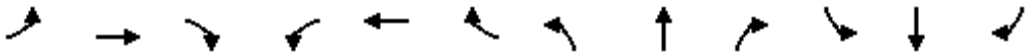
c Critical Lane Group



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	0	180	0	0	160	30
Future Volume (Veh/h)	0	180	0	0	160	30
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	196	0	0	174	33
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage veh)						
Upstream signal (ft)				973	1298	
pX, platoon unblocked						
vC, conflicting volume	190	104	207			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	190	104	207			
tC, single (s)	6.8	6.9	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	100	79	100			
cM capacity (veh/h)	781	931	1361			

Direction, Lane #	EB 1	SB 1	SB 2
Volume Total	196	116	91
Volume Left	0	0	0
Volume Right	196	0	33
cSH	931	1700	1700
Volume to Capacity	0.21	0.07	0.05
Queue Length 95th (ft)	20	0	0
Control Delay (s)	9.9	0.0	0.0
Lane LOS	A		
Approach Delay (s)	9.9	0.0	
Approach LOS	A		

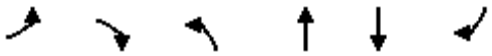
Intersection Summary			
Average Delay	4.8		
Intersection Capacity Utilization	23.2%	ICU Level of Service	A
Analysis Period (min)	15		



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	20	100	60	90	0	0	0	0	40	220	10
Future Volume (vph)	0	20	100	60	90	0	0	0	0	40	220	10
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.5			4.5						4.5	
Lane Util. Factor		1.00			1.00						0.95	
Frt		0.89			1.00						0.99	
Flt Protected		1.00			0.98						0.99	
Satd. Flow (prot)		1654			1826						3494	
Flt Permitted		1.00			0.86						0.99	
Satd. Flow (perm)		1654			1598						3494	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	22	109	65	98	0	0	0	0	43	239	11
RTOR Reduction (vph)	0	56	0	0	0	0	0	0	0	0	4	0
Lane Group Flow (vph)	0	75	0	0	163	0	0	0	0	0	289	0
Turn Type		NA		Perm	NA					Perm	NA	
Protected Phases		2			6						4	
Permitted Phases				6						4		
Actuated Green, G (s)		31.5			31.5						24.5	
Effective Green, g (s)		31.5			31.5						24.5	
Actuated g/C Ratio		0.48			0.48						0.38	
Clearance Time (s)		4.5			4.5						4.5	
Vehicle Extension (s)		3.0			3.0						3.0	
Lane Grp Cap (vph)		801			774						1316	
v/s Ratio Prot		0.05										
v/s Ratio Perm					c0.10						0.08	
v/c Ratio		0.09			0.21						0.22	
Uniform Delay, d1		9.0			9.6						13.8	
Progression Factor		1.00			1.00						1.00	
Incremental Delay, d2		0.1			0.6						0.4	
Delay (s)		9.1			10.2						14.1	
Level of Service		A			B						B	
Approach Delay (s)		9.1			10.2			0.0			14.1	
Approach LOS		A			B			A			B	

Intersection Summary			
HCM 2000 Control Delay	11.9	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.21		
Actuated Cycle Length (s)	65.0	Sum of lost time (s)	9.0
Intersection Capacity Utilization	29.8%	ICU Level of Service	A
Analysis Period (min)	15		

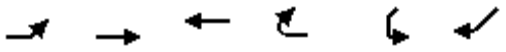
c Critical Lane Group



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	50	150	140	330	310	30
Future Volume (vph)	50	150	140	330	310	30
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0			4.0	4.0	
Lane Util. Factor	1.00			1.00	1.00	
Frt	0.90			1.00	0.99	
Flt Protected	0.99			0.99	1.00	
Satd. Flow (prot)	1653			1835	1840	
Flt Permitted	0.99			0.80	1.00	
Satd. Flow (perm)	1653			1481	1840	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	54	163	152	359	337	33
RTOR Reduction (vph)	141	0	0	0	4	0
Lane Group Flow (vph)	76	0	0	511	366	0
Turn Type	Prot		Perm	NA	NA	
Protected Phases	4			2	6	
Permitted Phases			2			
Actuated Green, G (s)	8.3			45.5	45.5	
Effective Green, g (s)	8.3			45.5	45.5	
Actuated g/C Ratio	0.13			0.74	0.74	
Clearance Time (s)	4.0			4.0	4.0	
Vehicle Extension (s)	3.0			3.0	3.0	
Lane Grp Cap (vph)	222			1090	1354	
v/s Ratio Prot	c0.05				0.20	
v/s Ratio Perm				c0.35		
v/c Ratio	0.34			0.47	0.27	
Uniform Delay, d1	24.3			3.3	2.7	
Progression Factor	1.00			1.00	1.00	
Incremental Delay, d2	0.9			1.4	0.5	
Delay (s)	25.2			4.7	3.2	
Level of Service	C			A	A	
Approach Delay (s)	25.2			4.7	3.2	
Approach LOS	C			A	A	

Intersection Summary			
HCM 2000 Control Delay	8.3	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.45		
Actuated Cycle Length (s)	61.8	Sum of lost time (s)	8.0
Intersection Capacity Utilization	65.3%	ICU Level of Service	C
Analysis Period (min)	15		

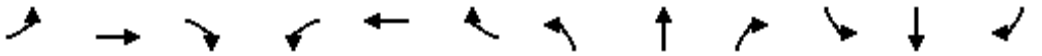
c Critical Lane Group



Movement	EBL	EBT	WBT	WBR	SWL	SWR
Lane Configurations						
Traffic Volume (vph)	50	670	1420	40	150	250
Future Volume (vph)	50	670	1420	40	150	250
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.5	4.5	4.5		4.5	
Lane Util. Factor	1.00	0.95	0.95		1.00	
Frt	1.00	1.00	1.00		0.92	
Flt Protected	0.95	1.00	1.00		0.98	
Satd. Flow (prot)	1770	3539	3525		1674	
Flt Permitted	0.95	1.00	1.00		0.98	
Satd. Flow (perm)	1770	3539	3525		1674	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	54	728	1543	43	163	272
RTOR Reduction (vph)	0	0	3	0	74	0
Lane Group Flow (vph)	54	728	1583	0	361	0
Turn Type	Prot	NA	NA		Prot	
Protected Phases	7	4	8		6	
Permitted Phases						
Actuated Green, G (s)	3.5	46.0	38.0		23.6	
Effective Green, g (s)	3.5	46.0	38.0		23.6	
Actuated g/C Ratio	0.04	0.59	0.48		0.30	
Clearance Time (s)	4.5	4.5	4.5		4.5	
Vehicle Extension (s)	3.0	3.0	3.0		3.0	
Lane Grp Cap (vph)	78	2071	1704		502	
v/s Ratio Prot	c0.03	0.21	c0.45		c0.22	
v/s Ratio Perm						
v/c Ratio	0.69	0.35	0.93		0.72	
Uniform Delay, d1	37.0	8.5	19.0		24.5	
Progression Factor	1.00	1.00	1.00		1.00	
Incremental Delay, d2	23.3	0.1	9.4		8.6	
Delay (s)	60.3	8.6	28.4		33.1	
Level of Service	E	A	C		C	
Approach Delay (s)		12.2	28.4		33.1	
Approach LOS		B	C		C	

Intersection Summary			
HCM 2000 Control Delay	24.6	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.84		
Actuated Cycle Length (s)	78.6	Sum of lost time (s)	13.5
Intersection Capacity Utilization	72.7%	ICU Level of Service	C
Analysis Period (min)	15		

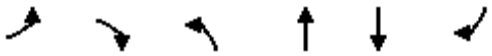
c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	70	10	100	40	150	240	230	390	130	260	450	190
Future Volume (vph)	70	10	100	40	150	240	230	390	130	260	450	190
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.5			4.5		4.5	4.5		4.5	4.5	
Lane Util. Factor		1.00			1.00		1.00	0.95		1.00	0.95	
Frt		0.92			0.92		1.00	0.96		1.00	0.96	
Flt Protected		0.98			1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1690			1714		1770	3407		1770	3381	
Flt Permitted		0.98			1.00		0.95	1.00		0.95	1.00	
Satd. Flow (perm)		1690			1714		1770	3407		1770	3381	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	76	11	109	43	163	261	250	424	141	283	489	207
RTOR Reduction (vph)	0	54	0	0	50	0	0	36	0	0	51	0
Lane Group Flow (vph)	0	142	0	0	417	0	250	529	0	283	645	0
Turn Type	Split	NA		Split	NA		Prot	NA		Prot	NA	
Protected Phases	2	2		6	6		3	8		7	4	
Permitted Phases												
Actuated Green, G (s)		12.0			21.6		11.7	15.8		15.4	19.5	
Effective Green, g (s)		12.0			21.6		11.7	15.8		15.4	19.5	
Actuated g/C Ratio		0.14			0.26		0.14	0.19		0.19	0.24	
Clearance Time (s)		4.5			4.5		4.5	4.5		4.5	4.5	
Vehicle Extension (s)		3.0			3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)		244			447		250	650		329	796	
v/s Ratio Prot		c0.08			c0.24		0.14	0.16		c0.16	c0.19	
v/s Ratio Perm												
v/c Ratio		0.58			0.93		1.00	0.81		0.86	0.81	
Uniform Delay, d1		33.1			29.9		35.5	32.1		32.7	29.9	
Progression Factor		1.00			1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2		3.5			26.7		56.9	7.7		19.9	6.3	
Delay (s)		36.6			56.6		92.5	39.8		52.5	36.2	
Level of Service		D			E		F	D		D	D	
Approach Delay (s)		36.6			56.6			56.0			40.9	
Approach LOS		D			E			E			D	

Intersection Summary			
HCM 2000 Control Delay	48.5	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.84		
Actuated Cycle Length (s)	82.8	Sum of lost time (s)	18.0
Intersection Capacity Utilization	71.5%	ICU Level of Service	C
Analysis Period (min)	15		

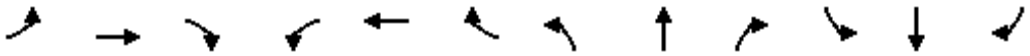
c Critical Lane Group



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	30	200	340	190	190	90
Future Volume (vph)	30	200	340	190	190	90
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.5			4.5	4.5	
Lane Util. Factor	1.00			1.00	1.00	
Frt	0.88			1.00	0.96	
Flt Protected	0.99			0.97	1.00	
Satd. Flow (prot)	1634			1805	1782	
Flt Permitted	0.99			0.64	1.00	
Satd. Flow (perm)	1634			1185	1782	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	33	217	370	207	207	98
RTOR Reduction (vph)	188	0	0	0	19	0
Lane Group Flow (vph)	62	0	0	577	286	0
Turn Type	Prot		Perm	NA	NA	
Protected Phases	4			2	6	
Permitted Phases			2			
Actuated Green, G (s)	8.1			43.5	43.5	
Effective Green, g (s)	8.1			43.5	43.5	
Actuated g/C Ratio	0.13			0.72	0.72	
Clearance Time (s)	4.5			4.5	4.5	
Vehicle Extension (s)	3.0			3.0	3.0	
Lane Grp Cap (vph)	218			850	1279	
v/s Ratio Prot	c0.04				0.16	
v/s Ratio Perm				c0.49		
v/c Ratio	0.28			0.68	0.22	
Uniform Delay, d1	23.6			4.7	2.9	
Progression Factor	1.00			1.00	1.00	
Incremental Delay, d2	0.7			4.3	0.4	
Delay (s)	24.4			9.1	3.3	
Level of Service	C			A	A	
Approach Delay (s)	24.4			9.1	3.3	
Approach LOS	C			A	A	

Intersection Summary			
HCM 2000 Control Delay	10.9	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.62		
Actuated Cycle Length (s)	60.6	Sum of lost time (s)	9.0
Intersection Capacity Utilization	69.6%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	90	1680	570	120	1170	360	460	350	180	300	260	40
Future Volume (vph)	90	1680	570	120	1170	360	460	350	180	300	260	40
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	
Lane Util. Factor	1.00	0.91	1.00	0.97	0.95	1.00	0.97	1.00	1.00	1.00	1.00	
Frpb, ped/bikes	1.00	1.00	0.99	1.00	1.00	0.95	1.00	1.00	0.98	1.00	1.00	
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.98	
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)	1770	5085	1561	3433	3539	1506	3433	1863	1552	1770	1822	
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (perm)	1770	5085	1561	3433	3539	1506	3433	1863	1552	1770	1822	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	98	1826	620	130	1272	391	500	380	196	326	283	43
RTOR Reduction (vph)	0	0	242	0	0	158	0	0	95	0	4	0
Lane Group Flow (vph)	98	1826	378	130	1272	233	500	380	101	326	322	0
Confl. Peds. (#/hr)	6		1	1		6			6	6		
Confl. Bikes (#/hr)			1			5						3
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases			2			6			8			
Actuated Green, G (s)	8.5	59.8	59.8	10.0	61.2	61.2	23.4	32.9	32.9	29.8	37.5	
Effective Green, g (s)	8.9	61.1	61.1	10.4	62.6	62.6	23.8	33.7	33.7	28.8	38.7	
Actuated g/C Ratio	0.06	0.41	0.41	0.07	0.42	0.42	0.16	0.22	0.22	0.19	0.26	
Clearance Time (s)	4.4	5.3	5.3	4.4	5.4	5.4	4.4	4.8	4.8	3.0	5.2	
Vehicle Extension (s)	2.0	4.4	4.4	2.0	4.4	4.4	2.0	3.8	3.8	2.0	2.0	
Lane Grp Cap (vph)	105	2071	635	238	1476	628	544	418	348	339	470	
v/s Ratio Prot	c0.06	0.36		0.04	c0.36		0.15	c0.20		c0.18	0.18	
v/s Ratio Perm			0.24			0.15			0.06			
v/c Ratio	0.93	0.88	0.59	0.55	0.86	0.37	0.92	0.91	0.29	0.96	0.69	
Uniform Delay, d1	70.3	41.1	34.8	67.5	39.8	30.1	62.2	56.7	48.2	60.1	50.2	
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	65.7	5.8	4.1	1.4	6.8	1.7	20.2	23.5	0.6	38.3	3.3	
Delay (s)	136.0	46.9	38.8	68.9	46.6	31.8	82.4	80.2	48.8	98.4	53.5	
Level of Service	F	D	D	E	D	C	F	F	D	F	D	
Approach Delay (s)		48.4			45.0			75.5			75.9	
Approach LOS		D			D			E			E	

Intersection Summary			
HCM 2000 Control Delay	55.2	HCM 2000 Level of Service	E
HCM 2000 Volume to Capacity ratio	0.90		
Actuated Cycle Length (s)	150.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	87.5%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	830	1790	930	0	0	870
Future Volume (vph)	830	1790	930	0	0	870
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	7.0	7.0	7.0			7.0
Lane Util. Factor	0.97	0.88	0.95			0.95
Frt	1.00	0.85	1.00			1.00
Flt Protected	0.95	1.00	1.00			1.00
Satd. Flow (prot)	3433	2787	3539			3539
Flt Permitted	0.95	1.00	1.00			1.00
Satd. Flow (perm)	3433	2787	3539			3539
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	902	1946	1011	0	0	946
RTOR Reduction (vph)	0	6	0	0	0	0
Lane Group Flow (vph)	902	1940	1011	0	0	946
Turn Type	Prot	Perm	NA			NA
Protected Phases	4		2			6
Permitted Phases		4				
Actuated Green, G (s)	92.7	92.7	43.3			43.3
Effective Green, g (s)	92.7	92.7	43.3			43.3
Actuated g/C Ratio	0.62	0.62	0.29			0.29
Clearance Time (s)	7.0	7.0	7.0			7.0
Vehicle Extension (s)	0.2	0.2	0.2			0.2
Lane Grp Cap (vph)	2121	1722	1021			1021
v/s Ratio Prot	0.26		c0.29			0.27
v/s Ratio Perm		c0.70				
v/c Ratio	0.43	1.13	0.99			0.93
Uniform Delay, d1	14.8	28.6	53.1			51.8
Progression Factor	1.00	1.00	1.00			1.00
Incremental Delay, d2	0.1	65.2	25.7			13.5
Delay (s)	14.9	93.8	78.8			65.3
Level of Service	B	F	E			E
Approach Delay (s)	68.8		78.8			65.3
Approach LOS	E		E			E

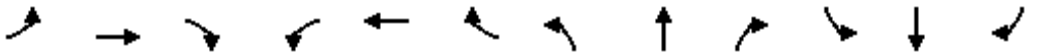
Intersection Summary			
HCM 2000 Control Delay	70.2	HCM 2000 Level of Service	E
HCM 2000 Volume to Capacity ratio	1.08		
Actuated Cycle Length (s)	150.0	Sum of lost time (s)	14.0
Intersection Capacity Utilization	100.0%	ICU Level of Service	F
Analysis Period (min)	15		

c Critical Lane Group

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	0	290	1450	130	0	1510
Future Volume (Veh/h)	0	290	1450	130	0	1510
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	315	1576	141	0	1641
Pedestrians						3
Lane Width (ft)						12.0
Walking Speed (ft/s)						4.0
Percent Blockage						0
Right turn flare (veh)						
Median type			None			None
Median storage veh)						
Upstream signal (ft)			810			779
pX, platoon unblocked	0.83					
vC, conflicting volume	2194	599			1717	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1720	599			1717	
tC, single (s)	6.8	6.9			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	100	29			100	
cM capacity (veh/h)	67	444			365	

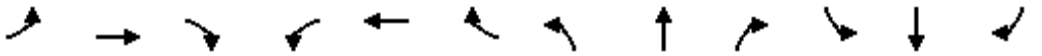
Direction, Lane #	WB 1	NB 1	NB 2	NB 3	SB 1	SB 2	SB 3
Volume Total	315	630	630	456	547	547	547
Volume Left	0	0	0	0	0	0	0
Volume Right	315	0	0	141	0	0	0
cSH	444	1700	1700	1700	1700	1700	1700
Volume to Capacity	0.71	0.37	0.37	0.27	0.32	0.32	0.32
Queue Length 95th (ft)	137	0	0	0	0	0	0
Control Delay (s)	30.6	0.0	0.0	0.0	0.0	0.0	0.0
Lane LOS	D						
Approach Delay (s)	30.6	0.0			0.0		
Approach LOS	D						

Intersection Summary			
Average Delay	2.6		
Intersection Capacity Utilization	55.9%	ICU Level of Service	B
Analysis Period (min)	15		



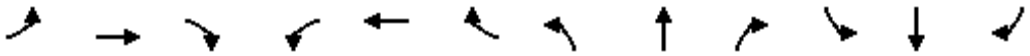
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	380	410	310	80	540	700	460	510	130	420	700	390
Future Volume (vph)	380	410	310	80	540	700	460	510	130	420	700	390
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.3	4.0	4.0	5.0	5.0	4.9	4.0	4.0		4.0	4.0	4.9
Lane Util. Factor	1.00	1.00	1.00	1.00	0.95	1.00	1.00	0.95		1.00	0.95	1.00
Frpb, ped/bikes	1.00	1.00	0.99	1.00	1.00	0.99	1.00	1.00		1.00	1.00	0.99
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.97		1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1770	1863	1568	1770	3539	1568	1770	3432		1770	3539	1566
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)	1770	1863	1568	1770	3539	1568	1770	3432		1770	3539	1566
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	413	446	337	87	587	761	500	554	141	457	761	424
RTOR Reduction (vph)	0	0	21	0	0	30	0	15	0	0	0	50
Lane Group Flow (vph)	413	446	316	87	587	731	500	680	0	457	761	374
Confl. Peds. (#/hr)	6		3	3		6	6					6
Turn Type	Prot	NA	pm+ov	Prot	NA	pm+ov	Prot	NA		Prot	NA	pm+ov
Protected Phases	5	2	3	1	6	7	3	8		7	4	5
Permitted Phases			2			6						4
Actuated Green, G (s)	28.1	50.6	86.3	9.0	31.5	69.0	35.7	33.2		37.5	35.0	63.1
Effective Green, g (s)	28.7	51.5	88.1	9.0	31.5	69.0	36.6	34.1		38.4	35.9	63.1
Actuated g/C Ratio	0.19	0.34	0.59	0.06	0.21	0.46	0.24	0.23		0.26	0.24	0.42
Clearance Time (s)	4.9	4.9	4.9	5.0	5.0	4.9	4.9	4.9		4.9	4.9	4.9
Vehicle Extension (s)	0.2	0.2	3.1	8.0	8.0	5.5	3.1	3.1		5.5	5.5	0.2
Lane Grp Cap (vph)	338	639	962	106	743	772	431	780		453	847	658
v/s Ratio Prot	c0.23	0.24	0.08	0.05	0.17	c0.24	c0.28	0.20		c0.26	0.22	0.11
v/s Ratio Perm			0.12			0.23						0.13
v/c Ratio	1.22	0.70	0.33	0.82	0.79	0.95	1.16	0.87		1.01	0.90	0.57
Uniform Delay, d1	60.6	42.5	15.8	69.7	56.1	38.7	56.7	55.8		55.8	55.3	33.1
Progression Factor	1.00	1.00	1.00	0.99	0.60	0.93	1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	123.6	6.2	0.2	43.9	7.9	20.2	95.0	10.5		44.5	13.2	0.7
Delay (s)	184.2	48.8	16.0	112.9	41.8	56.0	151.7	66.4		100.3	68.5	33.7
Level of Service	F	D	B	F	D	E	F	E		F	E	C
Approach Delay (s)		86.3			53.7			102.1			68.4	
Approach LOS		F			D			F			E	

Intersection Summary			
HCM 2000 Control Delay	75.8	HCM 2000 Level of Service	E
HCM 2000 Volume to Capacity ratio	1.12		
Actuated Cycle Length (s)	150.0	Sum of lost time (s)	18.8
Intersection Capacity Utilization	107.9%	ICU Level of Service	G
Analysis Period (min)	15		
c Critical Lane Group			



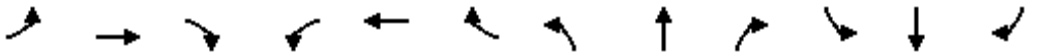
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	200	140	170	70	160	90	240	640	70	150	730	170
Future Volume (vph)	200	140	170	70	160	90	240	640	70	150	730	170
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.9	4.9	4.4	4.9	4.9	4.9	4.4	4.9		4.4	4.9	4.0
Lane Util. Factor	0.95	0.95	1.00	1.00	1.00	1.00	0.97	0.95		1.00	0.95	1.00
Frpb, ped/bikes	1.00	1.00	0.98	1.00	1.00	0.98	1.00	1.00		1.00	1.00	0.97
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.99		1.00	1.00	0.85
Flt Protected	0.95	0.99	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1681	1750	1557	1770	1863	1547	3433	3476		1770	3539	1531
Flt Permitted	0.95	0.99	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)	1681	1750	1557	1770	1863	1547	3433	3476		1770	3539	1531
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	217	152	185	76	174	98	261	696	76	163	793	185
RTOR Reduction (vph)	0	0	133	0	0	81	0	5	0	0	0	104
Lane Group Flow (vph)	174	195	52	76	174	17	261	767	0	163	793	81
Confl. Peds. (#/hr)	10		12	12		10	15		12	12		15
Turn Type	Split	NA	pm+ov	Split	NA	Perm	Prot	NA		Prot	NA	Perm
Protected Phases	8	8	1	7	7		1	6		5	2	
Permitted Phases			8			7						2
Actuated Green, G (s)	23.9	23.9	36.5	22.4	22.4	22.4	12.6	50.0		14.6	52.0	52.0
Effective Green, g (s)	23.9	23.9	36.5	22.4	22.4	22.4	12.6	50.0		14.6	52.0	52.9
Actuated g/C Ratio	0.18	0.18	0.28	0.17	0.17	0.17	0.10	0.38		0.11	0.40	0.41
Clearance Time (s)	4.9	4.9	4.4	4.9	4.9	4.9	4.4	4.9		4.4	4.9	4.9
Vehicle Extension (s)	3.0	3.0	2.0	3.0	3.0	3.0	2.0	4.5		2.0	4.6	4.6
Lane Grp Cap (vph)	309	321	437	304	321	266	332	1336		198	1415	622
v/s Ratio Prot	0.10	c0.11	0.01	0.04	c0.09		0.08	0.22		c0.09	c0.22	
v/s Ratio Perm			0.02			0.01						0.05
v/c Ratio	0.56	0.61	0.12	0.25	0.54	0.06	0.79	0.57		0.82	0.56	0.13
Uniform Delay, d1	48.3	48.7	34.8	46.5	49.1	45.0	57.4	31.6		56.4	30.2	24.1
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.41	0.67	0.41
Incremental Delay, d2	2.3	3.2	0.0	0.4	1.9	0.1	10.8	1.8		16.3	1.1	0.3
Delay (s)	50.6	52.0	34.8	47.0	51.0	45.1	68.1	33.4		95.8	21.4	10.1
Level of Service	D	D	C	D	D	D	E	C		F	C	B
Approach Delay (s)		45.8			48.5			42.2			30.2	
Approach LOS		D			D			D			C	

Intersection Summary			
HCM 2000 Control Delay	39.1	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.61		
Actuated Cycle Length (s)	130.0	Sum of lost time (s)	19.1
Intersection Capacity Utilization	75.1%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			



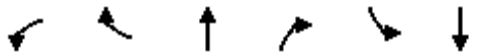
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	40	20	50	80	20	70	90	1050	200	60	960	30
Future Volume (vph)	40	20	50	80	20	70	90	1050	200	60	960	30
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0			4.0		4.0	4.5		4.0	4.0	
Lane Util. Factor		1.00			1.00		1.00	0.95		1.00	0.95	
Frpb, ped/bikes		1.00			0.97		1.00	0.99		1.00	1.00	
Flpb, ped/bikes		0.99			1.00		1.00	1.00		1.00	1.00	
Frt		0.94			0.94		1.00	0.98		1.00	1.00	
Flt Protected		0.98			0.98		0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1696			1659		1770	3435		1770	3523	
Flt Permitted		0.78			0.71		0.22	1.00		0.16	1.00	
Satd. Flow (perm)		1348			1205		415	3435		297	3523	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	43	22	54	87	22	76	98	1141	217	65	1043	33
RTOR Reduction (vph)	0	21	0	0	18	0	0	8	0	0	1	0
Lane Group Flow (vph)	0	98	0	0	167	0	98	1350	0	65	1075	0
Confl. Peds. (#/hr)	33					33			3	3		
Turn Type	Perm	NA		Perm	NA		pm+pt	NA		pm+pt	NA	
Protected Phases		8			4		1	6		5	2	
Permitted Phases	8			4			6			2		
Actuated Green, G (s)		23.3			23.3		114.1	107.6		110.9	106.0	
Effective Green, g (s)		24.2			24.2		114.9	108.0		111.7	106.9	
Actuated g/C Ratio		0.16			0.16		0.77	0.72		0.74	0.71	
Clearance Time (s)		4.9			4.9		4.4	4.9		4.4	4.9	
Vehicle Extension (s)		2.0			2.0		2.0	2.9		2.0	2.9	
Lane Grp Cap (vph)		217			194		380	2473		273	2510	
v/s Ratio Prot							c0.01	c0.39		0.01	0.31	
v/s Ratio Perm		0.07			c0.14		0.19			0.17		
v/c Ratio		0.45			0.86		0.26	0.55		0.24	0.43	
Uniform Delay, d1		56.9			61.3		5.6	9.7		7.0	8.9	
Progression Factor		1.00			1.26		1.00	1.00		1.00	1.00	
Incremental Delay, d2		0.5			27.8		0.1	0.9		0.2	0.5	
Delay (s)		57.4			104.9		5.7	10.6		7.1	9.4	
Level of Service		E			F		A	B		A	A	
Approach Delay (s)		57.4			104.9			10.2			9.3	
Approach LOS		E			F			B			A	

Intersection Summary			
HCM 2000 Control Delay	17.8	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.59		
Actuated Cycle Length (s)	150.0	Sum of lost time (s)	12.5
Intersection Capacity Utilization	65.4%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	380	1870	200	510	1550	390	230	640	410	350	530	290
Future Volume (vph)	380	1870	200	510	1550	390	230	640	410	350	530	290
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0	4.4	4.0	4.0	3.5	4.0	4.0	3.5
Lane Util. Factor	0.97	0.91		0.97	0.91	1.00	1.00	0.95	1.00	0.97	0.95	1.00
Frpb, ped/bikes	1.00	0.99		1.00	1.00	0.92	1.00	1.00	0.96	1.00	1.00	0.96
Flpb, ped/bikes	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.99		1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	4954		3433	5085	1464	1770	3539	1522	3433	3539	1516
Flt Permitted	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	4954		3433	5085	1464	1770	3539	1522	3433	3539	1516
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	413	2033	217	554	1685	424	250	696	446	380	576	315
RTOR Reduction (vph)	0	9	0	0	0	39	0	0	54	0	0	55
Lane Group Flow (vph)	413	2241	0	554	1685	385	250	696	392	380	576	260
Confl. Peds. (#/hr)	48		65	65		48	42		40	40		42
Turn Type	Prot	NA		Prot	NA	pm+ov	Prot	NA	pm+ov	Prot	NA	pm+ov
Protected Phases	5	2		1	6	7	3	8	1	7	4	5
Permitted Phases						6			8			4
Actuated Green, G (s)	19.7	57.7		20.9	59.0	75.9	16.2	30.7	51.6	16.9	31.4	51.1
Effective Green, g (s)	20.1	58.8		21.3	60.0	75.9	16.6	31.6	53.4	17.3	32.3	52.9
Actuated g/C Ratio	0.14	0.41		0.15	0.41	0.52	0.11	0.22	0.37	0.12	0.22	0.36
Clearance Time (s)	4.4	5.1		4.4	5.0	4.4	4.4	4.9	4.4	4.4	4.9	4.4
Vehicle Extension (s)	2.0	3.5		2.0	3.7	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lane Grp Cap (vph)	475	2008		504	2104	766	202	771	597	409	788	553
v/s Ratio Prot	0.12	c0.45		c0.16	0.33	0.06	c0.14	c0.20	0.10	c0.11	0.16	0.07
v/s Ratio Perm						0.20			0.16			0.10
v/c Ratio	0.87	1.12		1.10	0.80	0.50	1.24	0.90	0.66	0.93	0.73	0.47
Uniform Delay, d1	61.2	43.1		61.9	37.3	22.4	64.2	55.2	38.2	63.2	52.3	35.3
Progression Factor	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	15.0	59.8		69.9	2.4	0.2	141.9	13.6	2.0	26.8	3.0	0.2
Delay (s)	76.2	102.9		131.8	39.6	22.5	206.1	68.8	40.1	90.1	55.3	35.5
Level of Service	E	F		F	D	C	F	E	D	F	E	D
Approach Delay (s)		98.7			56.1			84.3			60.8	
Approach LOS		F			E			F			E	

Intersection Summary			
HCM 2000 Control Delay	76.0	HCM 2000 Level of Service	E
HCM 2000 Volume to Capacity ratio	1.07		
Actuated Cycle Length (s)	145.0	Sum of lost time (s)	16.4
Intersection Capacity Utilization	104.7%	ICU Level of Service	G
Analysis Period (min)	15		
c Critical Lane Group			



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	120	300	780	120	400	850
Future Volume (vph)	120	300	780	120	400	850
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.5		4.5		4.5	4.5
Lane Util. Factor	1.00		0.95		1.00	0.95
Frt	0.90		0.98		1.00	1.00
Flt Protected	0.99		1.00		0.95	1.00
Satd. Flow (prot)	1659		3469		1770	3539
Flt Permitted	0.99		1.00		0.95	1.00
Satd. Flow (perm)	1659		3469		1770	3539
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	130	326	848	130	435	924
RTOR Reduction (vph)	130	0	17	0	0	0
Lane Group Flow (vph)	326	0	961	0	435	924
Turn Type	Prot		NA		Prot	NA
Protected Phases	8		2		1	6
Permitted Phases						
Actuated Green, G (s)	15.2		21.7		18.8	45.0
Effective Green, g (s)	15.2		21.7		18.8	45.0
Actuated g/C Ratio	0.22		0.31		0.27	0.65
Clearance Time (s)	4.5		4.5		4.5	4.5
Vehicle Extension (s)	3.0		3.0		3.0	3.0
Lane Grp Cap (vph)	364		1087		480	2301
v/s Ratio Prot	c0.20		c0.28		c0.25	0.26
v/s Ratio Perm						
v/c Ratio	0.89		0.88		0.91	0.40
Uniform Delay, d1	26.2		22.6		24.3	5.7
Progression Factor	1.00		1.00		1.00	1.00
Incremental Delay, d2	23.2		10.5		20.5	0.5
Delay (s)	49.5		33.1		44.8	6.3
Level of Service	D		C		D	A
Approach Delay (s)	49.5		33.1			18.6
Approach LOS	D		C			B

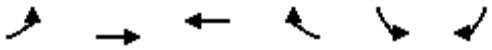
Intersection Summary			
HCM 2000 Control Delay	28.7	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.89		
Actuated Cycle Length (s)	69.2	Sum of lost time (s)	13.5
Intersection Capacity Utilization	83.9%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	0	350	690	170	0	660
Future Volume (Veh/h)	0	350	690	170	0	660
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	380	750	185	0	717
Pedestrians	2					3
Lane Width (ft)	12.0					12.0
Walking Speed (ft/s)	4.0					4.0
Percent Blockage	0					0
Right turn flare (veh)						
Median type			None			None
Median storage veh)						
Upstream signal (ft)			215			407
pX, platoon unblocked	0.83					
vC, conflicting volume	1203	472			937	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	838	472			937	
tC, single (s)	6.8	6.9			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	100	29			100	
cM capacity (veh/h)	253	536			726	

Direction, Lane #	WB 1	NB 1	NB 2	SB 1	SB 2
Volume Total	380	500	435	358	358
Volume Left	0	0	0	0	0
Volume Right	380	0	185	0	0
cSH	536	1700	1700	1700	1700
Volume to Capacity	0.71	0.29	0.26	0.21	0.21
Queue Length 95th (ft)	142	0	0	0	0
Control Delay (s)	26.5	0.0	0.0	0.0	0.0
Lane LOS	D				
Approach Delay (s)	26.5	0.0		0.0	
Approach LOS	D				

Intersection Summary				
Average Delay	4.9			
Intersection Capacity Utilization	53.2%	ICU Level of Service		A
Analysis Period (min)	15			

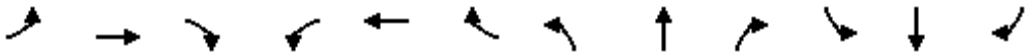


Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	0	1250	970	860	360	300
Future Volume (vph)	0	1250	970	860	360	300
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.4	5.4	5.9	5.2	5.2
Lane Util. Factor		0.95	0.95	0.88	0.97	1.00
Frpb, ped/bikes		1.00	1.00	1.00	1.00	1.00
Flpb, ped/bikes		1.00	1.00	1.00	1.00	1.00
Frt		1.00	1.00	0.85	1.00	0.85
Flt Protected		1.00	1.00	1.00	0.95	1.00
Satd. Flow (prot)		3539	3539	2787	3433	1583
Flt Permitted		1.00	1.00	1.00	0.95	1.00
Satd. Flow (perm)		3539	3539	2787	3433	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	1359	1054	935	391	326
RTOR Reduction (vph)	0	0	0	429	0	267
Lane Group Flow (vph)	0	1359	1054	506	391	59
Confl. Peds. (#/hr)				6	3	
Turn Type		NA	NA	custom	Prot	Perm
Protected Phases		2	2	2	1	
Permitted Phases				8		1
Actuated Green, G (s)		34.2	34.2	34.2	11.2	11.2
Effective Green, g (s)		34.2	34.2	33.7	11.2	11.2
Actuated g/C Ratio		0.55	0.55	0.54	0.18	0.18
Clearance Time (s)		5.4	5.4	5.4	5.2	5.2
Vehicle Extension (s)		2.9	2.9	2.9	2.5	2.5
Lane Grp Cap (vph)		1942	1942	1507	617	284
v/s Ratio Prot		c0.38	0.30	0.18	c0.11	
v/s Ratio Perm						0.04
v/c Ratio		0.70	0.54	0.34	0.63	0.21
Uniform Delay, d1		10.3	9.0	8.0	23.7	21.8
Progression Factor		1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2		1.1	0.3	0.1	1.9	0.3
Delay (s)		11.4	9.3	8.1	25.5	22.0
Level of Service		B	A	A	C	C
Approach Delay (s)		11.4	8.8		23.9	
Approach LOS		B	A		C	

Intersection Summary			
HCM 2000 Control Delay	12.3	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.68		
Actuated Cycle Length (s)	62.3	Sum of lost time (s)	16.6
Intersection Capacity Utilization	54.2%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

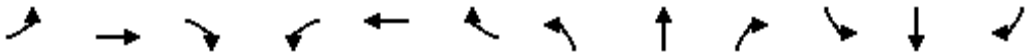
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	70	240	1080	110	130	970
Future Volume (vph)	70	240	1080	110	130	970
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	3.1	4.9		4.4	4.9
Lane Util. Factor	1.00	1.00	0.91		1.00	0.91
Frpb, ped/bikes	1.00	0.94	1.00		1.00	1.00
Flpb, ped/bikes	1.00	1.00	1.00		1.00	1.00
Frt	1.00	0.85	0.99		1.00	1.00
Flt Protected	0.95	1.00	1.00		0.95	1.00
Satd. Flow (prot)	1770	1495	4997		1770	5085
Flt Permitted	0.95	1.00	1.00		0.95	1.00
Satd. Flow (perm)	1770	1495	4997		1770	5085
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	76	261	1174	120	141	1054
RTOR Reduction (vph)	0	230	5	0	0	0
Lane Group Flow (vph)	76	31	1289	0	141	1054
Confl. Peds. (#/hr)	11	16		18	18	
Turn Type	Prot	Perm	NA		Prot	NA
Protected Phases	4		6		5	2
Permitted Phases		4				
Actuated Green, G (s)	12.3	12.3	108.1		16.3	128.8
Effective Green, g (s)	12.3	13.2	108.1		16.3	128.8
Actuated g/C Ratio	0.08	0.09	0.72		0.11	0.86
Clearance Time (s)	4.0	4.0	4.9		4.4	4.9
Vehicle Extension (s)	3.0	3.0	5.0		2.0	3.2
Lane Grp Cap (vph)	145	131	3601		192	4366
v/s Ratio Prot	c0.04		c0.26		c0.08	0.21
v/s Ratio Perm		0.02				
v/c Ratio	0.52	0.24	0.36		0.73	0.24
Uniform Delay, d1	66.0	63.7	7.9		64.8	1.9
Progression Factor	1.00	1.00	1.32		1.11	0.97
Incremental Delay, d2	3.4	0.9	0.2		7.9	0.1
Delay (s)	69.4	64.7	10.7		79.9	1.9
Level of Service	E	E	B		E	A
Approach Delay (s)	65.7		10.7			11.1
Approach LOS	E		B			B

Intersection Summary			
HCM 2000 Control Delay	17.4	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.42		
Actuated Cycle Length (s)	150.0	Sum of lost time (s)	13.3
Intersection Capacity Utilization	51.1%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



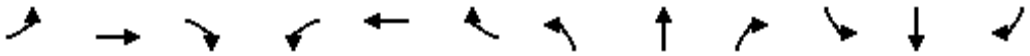
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	70	130	150	120	40	160	230	1110	120	170	920	70
Future Volume (vph)	70	130	150	120	40	160	230	1110	120	170	920	70
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.4		4.0	4.0		4.0	4.0		4.0	4.9	
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	0.91		0.97	0.95	
Frpb, ped/bikes	1.00	0.99		1.00	0.98		1.00	1.00		1.00	1.00	
Flpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Frt	1.00	0.92		1.00	0.88		1.00	0.99		1.00	0.99	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1770	1690		1770	1612		1770	4992		3433	3492	
Flt Permitted	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (perm)	1770	1690		1770	1612		1770	4992		3433	3492	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	76	141	163	130	43	174	250	1207	130	185	1000	76
RTOR Reduction (vph)	0	28	0	0	99	0	0	9	0	0	3	0
Lane Group Flow (vph)	76	276	0	130	118	0	250	1328	0	185	1073	0
Confl. Peds. (#/hr)	3		9	9		3	14		14	14		14
Turn Type	Split	NA		Split	NA		Prot	NA		Prot	NA	
Protected Phases	7	7		8	8		1	6		5	2	
Permitted Phases												
Actuated Green, G (s)	28.0	28.0		14.7	14.7		23.5	67.2		21.0	64.7	
Effective Green, g (s)	28.9	28.5		15.6	15.6		23.9	68.1		21.4	64.7	
Actuated g/C Ratio	0.19	0.19		0.10	0.10		0.16	0.45		0.14	0.43	
Clearance Time (s)	4.9	4.9		4.9	4.9		4.4	4.9		4.4	4.9	
Vehicle Extension (s)	3.0	3.0		2.0	2.0		2.0	3.9		2.0	3.9	
Lane Grp Cap (vph)	341	321		184	167		282	2266		489	1506	
v/s Ratio Prot	0.04	c0.16		c0.07	0.07		c0.14	0.27		0.05	c0.31	
v/s Ratio Perm												
v/c Ratio	0.22	0.86		0.71	0.70		0.89	0.59		0.38	0.71	
Uniform Delay, d1	51.1	58.8		65.0	65.0		61.7	30.5		58.3	35.0	
Progression Factor	1.00	1.00		1.00	1.00		1.05	0.53		0.88	1.21	
Incremental Delay, d2	0.3	19.8		9.7	10.5		23.3	1.0		0.2	2.9	
Delay (s)	51.4	78.6		74.6	75.4		88.2	17.1		51.4	45.3	
Level of Service	D	E		E	E		F	B		D	D	
Approach Delay (s)		73.1			75.1			28.3			46.2	
Approach LOS		E			E			C			D	

Intersection Summary			
HCM 2000 Control Delay	43.9	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.77		
Actuated Cycle Length (s)	150.0	Sum of lost time (s)	17.3
Intersection Capacity Utilization	80.3%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	60	30	70	150	30	140	50	1250	70	120	1080	80
Future Volume (vph)	60	30	70	150	30	140	50	1250	70	120	1080	80
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.9		4.0	4.9		4.4	4.2		4.4	4.0	
Lane Util. Factor		1.00		1.00	1.00		1.00	0.91		0.97	0.95	
Frpb, ped/bikes		0.99		1.00	1.00		1.00	1.00		1.00	1.00	
Flpb, ped/bikes		1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Frt		0.94		1.00	0.88		1.00	0.99		1.00	0.99	
Flt Protected		0.98		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1706		1770	1633		1770	5024		3433	3492	
Flt Permitted		0.98		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (perm)		1706		1770	1633		1770	5024		3433	3492	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	65	33	76	163	33	152	54	1359	76	130	1174	87
RTOR Reduction (vph)	0	22	0	0	114	0	0	3	0	0	3	0
Lane Group Flow (vph)	0	152	0	163	71	0	54	1432	0	130	1258	0
Confl. Peds. (#/hr)			6	6			7		18	18		7
Turn Type	Split	NA		Split	NA		Prot	NA		Prot	NA	
Protected Phases	8	8		7	7		1	6		5	2	
Permitted Phases												
Actuated Green, G (s)		19.9		17.5	17.5		8.4	79.8		13.7	85.1	
Effective Green, g (s)		19.9		18.4	17.5		8.4	80.5		13.7	86.0	
Actuated g/C Ratio		0.13		0.12	0.12		0.06	0.54		0.09	0.57	
Clearance Time (s)		4.9		4.9	4.9		4.4	4.9		4.4	4.9	
Vehicle Extension (s)		2.0		2.0	2.0		2.0	2.0		2.0	2.0	
Lane Grp Cap (vph)		226		217	190		99	2696		313	2002	
v/s Ratio Prot		c0.09		c0.09	0.04		0.03	c0.28		0.04	c0.36	
v/s Ratio Perm												
v/c Ratio		0.67		0.75	0.37		0.55	0.53		0.42	0.63	
Uniform Delay, d1		62.0		63.6	61.2		68.9	22.5		64.4	21.3	
Progression Factor		1.00		1.00	1.00		1.11	0.96		0.70	0.47	
Incremental Delay, d2		6.1		12.2	0.5		3.2	0.7		0.2	1.1	
Delay (s)		68.1		75.8	61.6		80.0	22.3		45.5	11.1	
Level of Service		E		E	E		E	C		D	B	
Approach Delay (s)		68.1			68.3			24.4			14.3	
Approach LOS		E			E			C			B	

Intersection Summary			
HCM 2000 Control Delay	27.0	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.66		
Actuated Cycle Length (s)	150.0	Sum of lost time (s)	18.4
Intersection Capacity Utilization	74.3%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	50	20	70	30	110	210	140	1110	30	40	1140	120
Future Volume (vph)	50	20	70	30	110	210	140	1110	30	40	1140	120
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.9	4.9		4.9	4.0	4.4	4.0		4.4	4.5	
Lane Util. Factor		1.00	1.00		1.00	1.00	1.00	0.91		1.00	0.91	
Frpb, ped/bikes		1.00	0.99		1.00	1.00	1.00	1.00		1.00	0.99	
Flpb, ped/bikes		1.00	1.00		1.00	1.00	1.00	1.00		1.00	1.00	
Frt		1.00	0.85		1.00	0.85	1.00	1.00		1.00	0.99	
Flt Protected		0.97	1.00		0.99	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1799	1562		1842	1583	1770	5055		1770	4966	
Flt Permitted		0.42	1.00		0.91	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (perm)		783	1562		1699	1583	1770	5055		1770	4966	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	54	22	76	33	120	228	152	1207	33	43	1239	130
RTOR Reduction (vph)	0	0	67	0	0	0	0	1	0	0	6	0
Lane Group Flow (vph)	0	76	9	0	153	228	152	1239	0	43	1363	0
Confl. Peds. (#/hr)			1	1			19		19	19		19
Turn Type	Perm	NA	Perm	Perm	NA	Free	Prot	NA		Prot	NA	
Protected Phases		8			8		1	6		5	2	
Permitted Phases	8		8	8		Free						
Actuated Green, G (s)		18.5	18.5		18.5	150.0	32.5	110.2		7.1	84.8	
Effective Green, g (s)		18.5	18.5		18.5	150.0	32.5	111.1		7.1	85.2	
Actuated g/C Ratio		0.12	0.12		0.12	1.00	0.22	0.74		0.05	0.57	
Clearance Time (s)		4.9	4.9		4.9		4.4	4.9		4.4	4.9	
Vehicle Extension (s)		2.0	2.0		2.0		2.0	2.9		2.0	3.9	
Lane Grp Cap (vph)		96	192		209	1583	383	3744		83	2820	
v/s Ratio Prot							c0.09	0.25		0.02	c0.27	
v/s Ratio Perm		c0.10	0.01		0.09	0.14						
v/c Ratio		0.79	0.05		0.73	0.14	0.40	0.33		0.52	0.48	
Uniform Delay, d1		63.9	58.0		63.4	0.0	50.4	6.7		69.8	19.3	
Progression Factor		1.27	2.69		1.00	1.00	0.86	0.74		0.91	1.42	
Incremental Delay, d2		30.2	0.0		10.8	0.2	0.1	0.1		1.8	0.5	
Delay (s)		111.0	156.2		74.2	0.2	43.4	5.1		65.2	27.9	
Level of Service		F	F		E	A	D	A		E	C	
Approach Delay (s)		133.6			29.9			9.3			29.0	
Approach LOS		F			C			A			C	

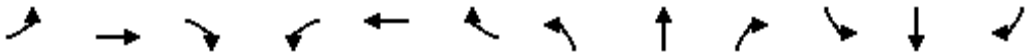
Intersection Summary			
HCM 2000 Control Delay	25.6	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.50		
Actuated Cycle Length (s)	150.0	Sum of lost time (s)	13.8
Intersection Capacity Utilization	58.2%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	EBR2	WBT	WBR	NBR2	SBL2	SBL	SBT	SBR	NWL
Lane Configurations												
Traffic Volume (vph)	310	1620	470	230	2030	680	150	350	400	140	220	200
Future Volume (vph)	310	1620	470	230	2030	680	150	350	400	140	220	200
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	2.6	4.0		6.1	4.0	5.9	5.9	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.97	0.86		0.86	0.91	1.00	1.00	0.95	0.91	0.91	1.00	1.00
Frpb, ped/bikes	1.00	0.99		1.00	1.00	0.94	1.00	1.00	1.00	1.00	0.81	1.00
Flpb, ped/bikes	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.96		0.85	1.00	0.85	0.86	1.00	1.00	1.00	0.85	1.00
Flt Protected	0.95	1.00		1.00	1.00	1.00	1.00	0.95	0.95	0.97	1.00	0.95
Satd. Flow (prot)	3433	4577		1362	5085	1484	1611	1681	1610	1647	1289	1770
Flt Permitted	0.95	1.00		1.00	1.00	1.00	1.00	0.95	0.95	0.97	1.00	0.95
Satd. Flow (perm)	3433	4577		1362	5085	1484	1611	1681	1610	1647	1289	1770
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	337	1761	511	250	2207	739	163	380	435	152	239	217
RTOR Reduction (vph)	0	1	0	69	0	14	104	0	0	0	152	0
Lane Group Flow (vph)	337	2296	0	156	2207	725	59	243	359	365	87	217
Confl. Peds. (#/hr)	29		31			29		10			63	63
Turn Type	Prot	NA		Perm	NA	pm+ov	Perm	Split	Split	NA	Perm	Prot
Protected Phases	5	2			6	4		4	4	4		3
Permitted Phases				2		6	8				4	
Actuated Green, G (s)	15.0	83.9		83.9	65.1	96.7	54.1	31.6	31.6	31.6	31.6	20.4
Effective Green, g (s)	16.4	86.0		83.9	67.0	92.9	54.1	31.6	31.6	31.6	31.6	20.4
Actuated g/C Ratio	0.11	0.57		0.56	0.45	0.62	0.36	0.21	0.21	0.21	0.21	0.14
Clearance Time (s)	4.0	6.1		6.1	5.9	4.0	5.9	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	2.8		2.8	3.2	3.0	4.1	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	375	2624		761	2271	919	581	354	339	346	271	240
v/s Ratio Prot	c0.10	0.50			c0.43	0.16		0.14	c0.22	0.22		c0.12
v/s Ratio Perm				0.11		0.33	0.04				0.07	
v/c Ratio	0.90	0.88		0.21	0.97	0.79	0.10	0.69	1.06	1.05	0.32	0.90
Uniform Delay, d1	66.0	27.4		16.5	40.6	21.3	31.8	54.6	59.2	59.2	50.1	63.8
Progression Factor	1.00	1.00		1.00	1.06	1.25	1.00	0.88	0.89	0.89	1.00	1.00
Incremental Delay, d2	23.2	4.5		0.6	11.3	3.6	0.1	4.9	62.9	61.2	0.6	33.5
Delay (s)	89.2	31.9		17.1	54.3	30.1	31.9	53.0	115.4	113.6	50.7	97.3
Level of Service	F	C		B	D	C	C	D	F	F	D	F
Approach Delay (s)		37.4			48.2					89.5		87.8
Approach LOS		D			D					F		F

Intersection Summary			
HCM 2000 Control Delay	53.5	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.99		
Actuated Cycle Length (s)	150.0	Sum of lost time (s)	16.5
Intersection Capacity Utilization	91.0%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			

Movement	NWR	NWR2
Lane Configurations		
Traffic Volume (vph)	330	50
Future Volume (vph)	330	50
Ideal Flow (vphpl)	1900	1900
Total Lost time (s)	4.0	
Lane Util. Factor	0.88	
Frpb, ped/bikes	1.00	
Flpb, ped/bikes	1.00	
Frt	0.85	
Flt Protected	1.00	
Satd. Flow (prot)	2787	
Flt Permitted	1.00	
Satd. Flow (perm)	2787	
Peak-hour factor, PHF	0.92	0.92
Adj. Flow (vph)	359	54
RTOR Reduction (vph)	82	0
Lane Group Flow (vph)	331	0
Confl. Peds. (#/hr)		31
Turn Type	Prot	
Protected Phases	3	
Permitted Phases		
Actuated Green, G (s)	20.4	
Effective Green, g (s)	20.4	
Actuated g/C Ratio	0.14	
Clearance Time (s)	4.0	
Vehicle Extension (s)	3.0	
Lane Grp Cap (vph)	379	
v/s Ratio Prot	0.12	
v/s Ratio Perm		
v/c Ratio	0.87	
Uniform Delay, d1	63.5	
Progression Factor	1.00	
Incremental Delay, d2	19.3	
Delay (s)	82.9	
Level of Service	F	
Approach Delay (s)		
Approach LOS		

Intersection Summary



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	90	120	300	120	230	70	70	90	120	90	120	100
Future Volume (vph)	90	120	300	120	230	70	70	90	120	90	120	100
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.5			4.5			4.5			4.0	
Lane Util. Factor		1.00			1.00			1.00			1.00	
Frt		0.92			0.98			0.94			0.96	
Flt Protected		0.99			0.99			0.99			0.99	
Satd. Flow (prot)		1700			1795			1734			1756	
Flt Permitted		0.86			0.70			0.86			0.84	
Satd. Flow (perm)		1469			1280			1508			1495	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	98	130	326	130	250	76	76	98	130	98	130	109
RTOR Reduction (vph)	0	99	0	0	14	0	0	36	0	0	23	0
Lane Group Flow (vph)	0	455	0	0	442	0	0	268	0	0	314	0
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)		21.8			21.8			22.0			22.5	
Effective Green, g (s)		21.8			21.8			22.0			22.5	
Actuated g/C Ratio		0.41			0.41			0.42			0.43	
Clearance Time (s)		4.5			4.5			4.5			4.0	
Vehicle Extension (s)		3.0			3.0			3.0			3.0	
Lane Grp Cap (vph)		606			528			628			637	
v/s Ratio Prot												
v/s Ratio Perm		0.31			c0.35			0.18			c0.21	
v/c Ratio		0.75			0.84			0.43			0.49	
Uniform Delay, d1		13.2			13.9			10.9			11.0	
Progression Factor		1.00			1.00			1.00			1.00	
Incremental Delay, d2		5.2			11.1			2.1			0.6	
Delay (s)		18.4			25.0			13.0			11.6	
Level of Service		B			C			B			B	
Approach Delay (s)		18.4			25.0			13.0			11.6	
Approach LOS		B			C			B			B	

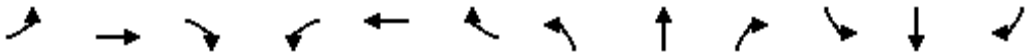
Intersection Summary			
HCM 2000 Control Delay	17.8	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.67		
Actuated Cycle Length (s)	52.8	Sum of lost time (s)	9.0
Intersection Capacity Utilization	69.1%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Movement	NBL	NBT	SBT	SBR	SEL	SER
Lane Configurations						
Traffic Volume (vph)	280	1320	840	50	50	470
Future Volume (vph)	280	1320	840	50	50	470
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.5	4.5	4.5		4.5	4.5
Lane Util. Factor	1.00	0.91	0.91		1.00	1.00
Frt	1.00	1.00	0.99		1.00	0.85
Flt Protected	0.95	1.00	1.00		0.95	1.00
Satd. Flow (prot)	1770	5085	5043		1770	1583
Flt Permitted	0.95	1.00	1.00		0.95	1.00
Satd. Flow (perm)	1770	5085	5043		1770	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	304	1435	913	54	54	511
RTOR Reduction (vph)	0	0	3	0	0	420
Lane Group Flow (vph)	304	1435	964	0	54	91
Turn Type	Prot	NA	NA		Prot	Perm
Protected Phases	7	4	8		5	
Permitted Phases						5
Actuated Green, G (s)	26.3	97.1	66.3		13.9	13.9
Effective Green, g (s)	26.3	97.1	66.3		13.9	13.9
Actuated g/C Ratio	0.22	0.81	0.55		0.12	0.12
Clearance Time (s)	4.5	4.5	4.5		4.5	4.5
Vehicle Extension (s)	3.0	3.0	3.0		3.0	3.0
Lane Grp Cap (vph)	387	4114	2786		205	183
v/s Ratio Prot	c0.17	c0.28	0.19		0.03	
v/s Ratio Perm						c0.06
v/c Ratio	0.79	0.35	0.35		0.26	0.50
Uniform Delay, d1	44.2	3.0	14.9		48.4	49.8
Progression Factor	1.00	1.00	0.56		1.00	1.00
Incremental Delay, d2	10.1	0.2	0.2		0.7	2.1
Delay (s)	54.2	3.3	8.4		49.1	51.9
Level of Service	D	A	A		D	D
Approach Delay (s)		12.2	8.4		51.6	
Approach LOS		B	A		D	

Intersection Summary			
HCM 2000 Control Delay	17.9	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.48		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	13.5
Intersection Capacity Utilization	53.9%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

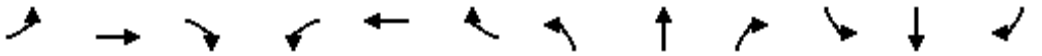


Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	100	0	140	390	310	150	0	0	0	0	70	90
Future Volume (vph)	100	0	140	390	310	150	0	0	0	0	70	90
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0		4.0	4.0	3.3						4.0	
Lane Util. Factor	1.00		1.00	1.00	1.00						1.00	
Frt	1.00		0.85	1.00	0.95						0.92	
Flt Protected	0.95		1.00	0.95	1.00						1.00	
Satd. Flow (prot)	1770		1583	1770	1772						1721	
Flt Permitted	0.95		1.00	0.95	1.00						1.00	
Satd. Flow (perm)	1770		1583	1770	1772						1721	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	109	0	152	424	337	163	0	0	0	0	76	98
RTOR Reduction (vph)	0	0	135	249	23	0	0	0	0	0	76	0
Lane Group Flow (vph)	109	0	17	175	477	0	0	0	0	0	98	0
Turn Type	Prot		Perm	Split	NA						NA	
Protected Phases	2!			8	8						6!	
Permitted Phases			4									
Actuated Green, G (s)	8.6		4.9	18.0	18.0						8.6	
Effective Green, g (s)	8.6		4.9	18.0	18.7						8.6	
Actuated g/C Ratio	0.20		0.11	0.41	0.43						0.20	
Clearance Time (s)	4.0		4.0	4.0	4.0						4.0	
Vehicle Extension (s)	3.0		3.0	3.0	3.0						3.0	
Lane Grp Cap (vph)	349		178	732	761						340	
v/s Ratio Prot	c0.06			0.10	c0.27						0.06	
v/s Ratio Perm			c0.01									
v/c Ratio	0.31		0.10	0.24	0.63						0.29	
Uniform Delay, d1	14.9		17.3	8.3	9.7						14.8	
Progression Factor	1.00		1.00	1.00	1.00						1.00	
Incremental Delay, d2	0.5		0.2	0.2	1.6						0.5	
Delay (s)	15.4		17.6	8.5	11.3						15.3	
Level of Service	B		B	A	B						B	
Approach Delay (s)		16.7			10.0			0.0			15.3	
Approach LOS		B			B			A			B	

Intersection Summary			
HCM 2000 Control Delay	12.0	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.47		
Actuated Cycle Length (s)	43.5	Sum of lost time (s)	12.0
Intersection Capacity Utilization	50.2%	ICU Level of Service	A
Analysis Period (min)	15		

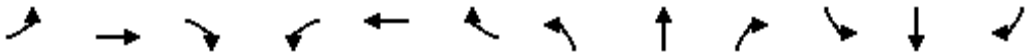
! Phase conflict between lane groups.

c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	1850	170	290	2390	0	0	0	0	790	420	320
Future Volume (vph)	0	1850	170	290	2390	0	0	0	0	790	420	320
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		3.1		2.4	2.9					2.9	2.9	2.9
Lane Util. Factor		0.91		1.00	0.86					0.95	0.95	1.00
Frpb, ped/bikes		1.00		1.00	1.00					1.00	1.00	0.98
Flpb, ped/bikes		1.00		1.00	1.00					0.98	1.00	1.00
Frt		0.99		1.00	1.00					1.00	1.00	0.85
Flt Protected		1.00		0.95	1.00					0.95	0.99	1.00
Satd. Flow (prot)		5021		1770	6408					1656	1735	1559
Flt Permitted		1.00		0.95	1.00					0.95	0.99	1.00
Satd. Flow (perm)		5021		1770	6408					1656	1735	1559
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	0	1947	179	305	2516	0	0	0	0	832	442	337
RTOR Reduction (vph)	0	7	0	0	0	0	0	0	0	0	0	31
Lane Group Flow (vph)	0	2119	0	305	2516	0	0	0	0	641	633	306
Confl. Peds. (#/hr)				13						14		3
Turn Type		NA		Prot	NA					Perm	NA	Perm
Protected Phases		2		1	6						4	
Permitted Phases										4		4
Actuated Green, G (s)		61.8		22.0	88.5					51.7	51.7	51.7
Effective Green, g (s)		63.9		24.0	90.5					53.7	53.7	53.7
Actuated g/C Ratio		0.43		0.16	0.60					0.36	0.36	0.36
Clearance Time (s)		5.2		4.4	4.9					4.9	4.9	4.9
Vehicle Extension (s)		3.8		2.0	4.6					2.0	2.0	2.0
Lane Grp Cap (vph)		2138		283	3866					592	621	558
v/s Ratio Prot		c0.42		c0.17	0.39							
v/s Ratio Perm										c0.39	0.36	0.20
v/c Ratio		0.99		1.08	0.65					1.08	1.02	0.55
Uniform Delay, d1		42.8		63.0	19.4					48.1	48.1	38.5
Progression Factor		0.88		1.16	0.12					1.00	1.00	1.00
Incremental Delay, d2		11.5		41.6	0.1					61.4	41.1	0.6
Delay (s)		49.0		114.6	2.4					109.5	89.2	39.1
Level of Service		D		F	A					F	F	D
Approach Delay (s)		49.0			14.5			0.0			86.8	
Approach LOS		D			B			A			F	

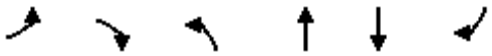
Intersection Summary			
HCM 2000 Control Delay	43.5	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	1.04		
Actuated Cycle Length (s)	150.0	Sum of lost time (s)	8.4
Intersection Capacity Utilization	98.7%	ICU Level of Service	F
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	800	220	180	390	0	180	0	300	390	370	10
Future Volume (vph)	0	800	220	180	390	0	180	0	300	390	370	10
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		3.4		4.0	3.4		3.4		4.0	2.9	2.9	
Lane Util. Factor		0.95		1.00	0.95		1.00		1.00	1.00	1.00	
Frpb, ped/bikes		0.97		1.00	1.00		1.00		0.98	1.00	1.00	
Flpb, ped/bikes		1.00		1.00	1.00		1.00		1.00	1.00	1.00	
Frt		0.97		1.00	1.00		1.00		0.85	1.00	1.00	
Flt Protected		1.00		0.95	1.00		0.95		1.00	0.95	1.00	
Satd. Flow (prot)		3317		1770	3539		1770		1556	1770	1854	
Flt Permitted		1.00		0.11	1.00		0.95		1.00	0.95	1.00	
Satd. Flow (perm)		3317		210	3539		1770		1556	1770	1854	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	870	239	196	424	0	196	0	326	424	402	11
RTOR Reduction (vph)	0	27	0	0	0	0	0	0	210	0	1	0
Lane Group Flow (vph)	0	1082	0	196	424	0	196	0	116	424	412	0
Confl. Peds. (#/hr)			43	43		51	17		3	3		17
Turn Type		NA		pm+pt	NA		Prot		Perm	Split	NA	
Protected Phases		2		1	6		3			4	4	
Permitted Phases				6					2			
Actuated Green, G (s)		31.1		43.2	43.2		10.8		31.1	21.8	21.8	
Effective Green, g (s)		32.6		43.6	44.7		11.8		32.0	23.8	23.8	
Actuated g/C Ratio		0.36		0.48	0.50		0.13		0.36	0.26	0.26	
Clearance Time (s)		4.9		4.4	4.9		4.4		4.9	4.9	4.9	
Vehicle Extension (s)		6.7		2.0	6.7		3.0		6.7	3.0	3.0	
Lane Grp Cap (vph)		1201		242	1757		232		553	468	490	
v/s Ratio Prot		c0.33		c0.07	0.12		c0.11			c0.24	0.22	
v/s Ratio Perm				0.32					0.07			
v/c Ratio		0.90		0.81	0.24		0.84		0.21	0.91	0.84	
Uniform Delay, d1		27.2		18.9	13.0		38.2		20.2	32.0	31.3	
Progression Factor		1.00		1.00	1.00		1.00		1.00	1.00	1.00	
Incremental Delay, d2		10.9		16.9	0.3		23.5		0.9	20.9	12.4	
Delay (s)		38.1		35.8	13.3		61.7		21.1	52.9	43.7	
Level of Service		D		D	B		E		C	D	D	
Approach Delay (s)		38.1			20.4			36.3			48.3	
Approach LOS		D			C			D			D	

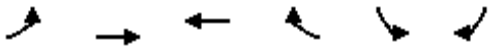
Intersection Summary			
HCM 2000 Control Delay	37.0	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.89		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	13.7
Intersection Capacity Utilization	83.3%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	230	450	490	880	440	100
Future Volume (vph)	230	450	490	880	440	100
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0		4.3	4.0	4.9	
Lane Util. Factor	1.00		1.00	0.91	0.91	
Frpb, ped/bikes	1.00		1.00	1.00	0.99	
Flpb, ped/bikes	1.00		1.00	1.00	1.00	
Frt	0.91		1.00	1.00	0.97	
Flt Protected	0.98		0.95	1.00	1.00	
Satd. Flow (prot)	1668		1770	5085	4919	
Flt Permitted	0.98		0.95	1.00	1.00	
Satd. Flow (perm)	1668		1770	5085	4919	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	250	489	533	957	478	109
RTOR Reduction (vph)	59	0	0	0	30	0
Lane Group Flow (vph)	680	0	533	957	557	0
Confl. Peds. (#/hr)			2			2
Turn Type	Prot		Prot	NA	NA	
Protected Phases	2		3	8	4	
Permitted Phases						
Actuated Green, G (s)	50.1		38.1	61.9	19.8	
Effective Green, g (s)	50.1		37.8	61.9	18.9	
Actuated g/C Ratio	0.42		0.31	0.52	0.16	
Clearance Time (s)	4.0		4.0	4.0	4.0	
Vehicle Extension (s)	3.0		3.0	3.0	3.0	
Lane Grp Cap (vph)	696		557	2623	774	
v/s Ratio Prot	c0.41		c0.30	0.19	c0.11	
v/s Ratio Perm						
v/c Ratio	0.98		0.96	0.36	0.72	
Uniform Delay, d1	34.4		40.3	17.3	48.0	
Progression Factor	1.00		1.05	1.29	1.00	
Incremental Delay, d2	28.0		26.6	0.4	5.7	
Delay (s)	62.4		69.1	22.7	53.7	
Level of Service	E		E	C	D	
Approach Delay (s)	62.4			39.3	53.7	
Approach LOS	E			D	D	

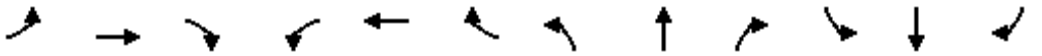
Intersection Summary			
HCM 2000 Control Delay	48.3	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.92		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	13.2
Intersection Capacity Utilization	91.6%	ICU Level of Service	F
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	70	90	170	80	70	130
Future Volume (Veh/h)	70	90	170	80	70	130
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	76	98	185	87	76	141
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type		None	None			
Median storage veh)						
Upstream signal (ft)		1226	738			
pX, platoon unblocked						
vC, conflicting volume	272				478	228
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	272				478	228
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	94				85	83
cM capacity (veh/h)	1291				514	811

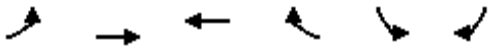
Direction, Lane #	EB 1	EB 2	WB 1	SB 1
Volume Total	76	98	272	217
Volume Left	76	0	0	76
Volume Right	0	0	87	141
cSH	1291	1700	1700	674
Volume to Capacity	0.06	0.06	0.16	0.32
Queue Length 95th (ft)	5	0	0	35
Control Delay (s)	8.0	0.0	0.0	12.9
Lane LOS	A			B
Approach Delay (s)	3.5		0.0	12.9
Approach LOS				B

Intersection Summary			
Average Delay	5.1		
Intersection Capacity Utilization	39.6%	ICU Level of Service	A
Analysis Period (min)	15		



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	140	2530	0	0	2550	650	130	360	280	0	0	0
Future Volume (vph)	140	2530	0	0	2550	650	130	360	280	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0			4.0	4.0		4.0				
Lane Util. Factor	1.00	0.91			0.91	1.00		0.95				
Frpb, ped/bikes	1.00	1.00			1.00	0.96		0.99				
Flpb, ped/bikes	1.00	1.00			1.00	1.00		1.00				
Frt	1.00	1.00			1.00	0.85		0.95				
Flt Protected	0.95	1.00			1.00	1.00		0.99				
Satd. Flow (prot)	1770	5085			5085	1519		3279				
Flt Permitted	0.95	1.00			1.00	1.00		0.99				
Satd. Flow (perm)	1770	5085			5085	1519		3279				
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	147	2663	0	0	2684	684	137	379	295	0	0	0
RTOR Reduction (vph)	0	0	0	0	0	91	0	2	0	0	0	0
Lane Group Flow (vph)	147	2663	0	0	2684	593	0	809	0	0	0	0
Confl. Peds. (#/hr)	15		2			15	1		20			
Turn Type	Prot	NA			NA	Perm	Split	NA				
Protected Phases	5	2			6		4	4				
Permitted Phases						6						
Actuated Green, G (s)	18.0	99.1			76.7	76.7		41.1				
Effective Green, g (s)	18.4	100.0			77.6	77.6		42.0				
Actuated g/C Ratio	0.12	0.67			0.52	0.52		0.28				
Clearance Time (s)	4.4	4.9			4.9	4.9		4.9				
Vehicle Extension (s)	2.0	3.8			4.6	4.6		2.0				
Lane Grp Cap (vph)	217	3390			2630	785		918				
v/s Ratio Prot	0.08	c0.52			c0.53			c0.25				
v/s Ratio Perm						0.39						
v/c Ratio	0.68	0.79			1.02	0.76		0.88				
Uniform Delay, d1	63.0	17.5			36.2	28.7		51.6				
Progression Factor	0.83	0.76			1.00	1.00		1.00				
Incremental Delay, d2	0.6	0.2			22.9	6.7		9.7				
Delay (s)	52.9	13.5			59.1	35.3		61.3				
Level of Service	D	B			E	D		E				
Approach Delay (s)		15.6			54.3			61.3			0.0	
Approach LOS		B			D			E			A	

Intersection Summary			
HCM 2000 Control Delay	39.5	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.96		
Actuated Cycle Length (s)	150.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	98.7%	ICU Level of Service	F
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	130	1360	570	140	0	0
Future Volume (Veh/h)	130	1360	570	140	0	0
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	141	1478	620	152	0	0
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type		None	None			
Median storage veh)						
Upstream signal (ft)		345	945			
pX, platoon unblocked	0.94				0.75	0.94
vC, conflicting volume	772				1717	386
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	642				947	233
tC, single (s)	4.1				6.8	6.9
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	84				100	100
cM capacity (veh/h)	887				163	726

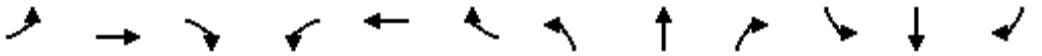
Direction, Lane #	EB 1	EB 2	EB 3	WB 1	WB 2
Volume Total	141	739	739	413	359
Volume Left	141	0	0	0	0
Volume Right	0	0	0	0	152
cSH	887	1700	1700	1700	1700
Volume to Capacity	0.16	0.43	0.43	0.24	0.21
Queue Length 95th (ft)	14	0	0	0	0
Control Delay (s)	9.8	0.0	0.0	0.0	0.0
Lane LOS	A				
Approach Delay (s)	0.9			0.0	
Approach LOS					

Intersection Summary			
Average Delay	0.6		
Intersection Capacity Utilization	40.9%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Sign Control	Stop		Stop			Stop
Traffic Volume (vph)	130	0	0	590	360	280
Future Volume (vph)	130	0	0	590	360	280
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	141	0	0	641	391	304

Direction, Lane #	WB 1	NB 1	SB 1	SB 2
Volume Total (vph)	141	641	391	304
Volume Left (vph)	141	0	391	0
Volume Right (vph)	0	641	0	0
Hadj (s)	0.23	-0.57	0.53	0.03
Departure Headway (s)	6.9	4.7	6.2	5.7
Degree Utilization, x	0.27	0.84	0.67	0.48
Capacity (veh/h)	499	751	565	624
Control Delay (s)	12.4	27.4	19.7	12.6
Approach Delay (s)	12.4	27.4	16.6	
Approach LOS	B	D	C	

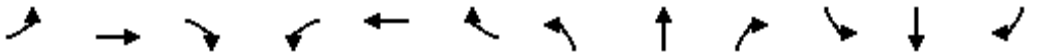
Intersection Summary			
Delay	20.9		
Level of Service	C		
Intersection Capacity Utilization	63.1%	ICU Level of Service	B
Analysis Period (min)	15		



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Traffic Volume (vph)	440	50	150	20	20	30	60	130	10	20	200	190
Future Volume (vph)	440	50	150	20	20	30	60	130	10	20	200	190
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	478	54	163	22	22	33	65	141	11	22	217	207

Direction, Lane #	EB 1	EB 2	WB 1	NB 1	SB 1	SB 2
Volume Total (vph)	505	190	77	217	239	207
Volume Left (vph)	478	0	22	65	22	0
Volume Right (vph)	0	163	33	11	0	207
Hadj (s)	0.51	-0.57	-0.17	0.06	0.08	-0.67
Departure Headway (s)	7.3	6.2	7.8	7.5	7.4	6.6
Degree Utilization, x	1.03	0.33	0.17	0.45	0.49	0.38
Capacity (veh/h)	485	567	432	457	478	531
Control Delay (s)	73.1	11.0	12.3	16.7	16.1	12.5
Approach Delay (s)	56.2		12.3	16.7	14.4	
Approach LOS	F		B	C	B	

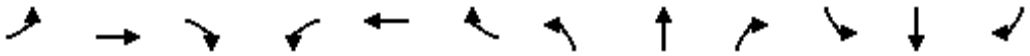
Intersection Summary				
Delay	34.9			
Level of Service	D			
Intersection Capacity Utilization	63.8%	ICU Level of Service	B	
Analysis Period (min)	15			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	690	290	430	480	0	0	0	0	400	550	1080
Future Volume (vph)	0	690	290	430	480	0	0	0	0	400	550	1080
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0	4.0	4.3	4.0					4.0	4.0	4.0
Lane Util. Factor		0.95	1.00	0.97	0.95					0.91	0.91	1.00
Frt		1.00	0.85	1.00	1.00					1.00	1.00	0.85
Flt Protected		1.00	1.00	0.95	1.00					0.95	1.00	1.00
Satd. Flow (prot)		3539	1583	3433	3539					1610	3390	1583
Flt Permitted		1.00	1.00	0.95	1.00					0.95	1.00	1.00
Satd. Flow (perm)		3539	1583	3433	3539					1610	3390	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	750	315	467	522	0	0	0	0	435	598	1174
RTOR Reduction (vph)	0	0	163	0	0	0	0	0	0	0	0	87
Lane Group Flow (vph)	0	750	152	467	522	0	0	0	0	435	598	1087
Turn Type		NA	Perm	Prot	NA					Perm	NA	Perm
Protected Phases		2		1	6						4	
Permitted Phases			2							4		4
Actuated Green, G (s)		26.6	26.6	15.1	46.1					64.1	64.1	64.1
Effective Green, g (s)		27.5	27.5	15.2	47.0					65.0	65.0	65.0
Actuated g/C Ratio		0.23	0.23	0.13	0.39					0.54	0.54	0.54
Clearance Time (s)		4.9	4.9	4.4	4.9					4.9	4.9	4.9
Vehicle Extension (s)		3.8	3.8	2.0	4.2					2.0	2.0	2.0
Lane Grp Cap (vph)		811	362	434	1386					872	1836	857
v/s Ratio Prot		c0.21		c0.14	0.15							
v/s Ratio Perm			0.10							0.27	0.18	c0.69
v/c Ratio		0.92	0.42	1.08	0.38					0.50	0.33	1.27
Uniform Delay, d1		45.2	39.4	52.4	26.0					17.3	15.3	27.5
Progression Factor		1.00	1.00	1.00	1.00					1.00	1.00	1.00
Incremental Delay, d2		17.9	3.5	65.1	0.8					0.2	0.0	130.0
Delay (s)		63.1	43.0	117.5	26.8					17.4	15.3	157.5
Level of Service		E	D	F	C					B	B	F
Approach Delay (s)		57.1			69.6			0.0			91.3	
Approach LOS		E			E			A			F	

Intersection Summary			
HCM 2000 Control Delay	77.8	HCM 2000 Level of Service	E
HCM 2000 Volume to Capacity ratio	1.15		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	12.3
Intersection Capacity Utilization	86.8%	ICU Level of Service	E
Analysis Period (min)	15		

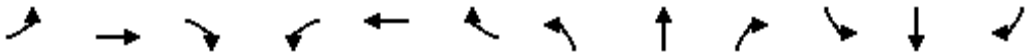
c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	0	60	50	0	0	0	0	0	0	1620	150
Future Volume (Veh/h)	0	0	60	50	0	0	0	0	0	0	1620	150
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	0	65	54	0	0	0	0	0	0	1761	163
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)								1066				
pX, platoon unblocked												
vC, conflicting volume	1842	1842	668	652	1924	0	1924			0		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	1842	1842	668	652	1924	0	1924			0		
tC, single (s)	7.5	6.5	6.9	7.5	6.5	6.9	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	100	100	84	82	100	100	100			100		
cM capacity (veh/h)	47	74	400	296	66	1084	303			1622		

Direction, Lane #	EB 1	WB 1	SB 1	SB 2	SB 3
Volume Total	65	54	704	704	515
Volume Left	0	54	0	0	0
Volume Right	65	0	0	0	163
cSH	400	296	1700	1700	1700
Volume to Capacity	0.16	0.18	0.41	0.41	0.30
Queue Length 95th (ft)	14	16	0	0	0
Control Delay (s)	15.7	19.9	0.0	0.0	0.0
Lane LOS	C	C			
Approach Delay (s)	15.7	19.9	0.0		
Approach LOS	C	C			

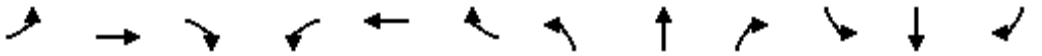
Intersection Summary				
Average Delay	1.0			
Intersection Capacity Utilization	53.5%	ICU Level of Service		A
Analysis Period (min)	15			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	440	260	110	170	0	0	0	0	400	860	490
Future Volume (vph)	0	440	260	110	170	0	0	0	0	400	860	490
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0	4.0		4.0					4.0	4.0	
Lane Util. Factor		1.00	1.00		0.95					1.00	0.91	
Frt		1.00	0.85		1.00					1.00	0.95	
Flt Protected		1.00	1.00		0.98					0.95	1.00	
Satd. Flow (prot)		1863	1583		3471					1770	4808	
Flt Permitted		1.00	1.00		0.62					0.95	1.00	
Satd. Flow (perm)		1863	1583		2177					1770	4808	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	478	283	120	185	0	0	0	0	435	935	533
RTOR Reduction (vph)	0	0	38	0	0	0	0	0	0	0	158	0
Lane Group Flow (vph)	0	478	245	0	305	0	0	0	0	435	1310	0
Turn Type		NA	Perm	Perm	NA					Perm	NA	
Protected Phases		4			8						6	
Permitted Phases			4	8						6		
Actuated Green, G (s)		25.3	25.3		25.3					26.7	26.7	
Effective Green, g (s)		28.0	28.0		28.0					29.0	29.0	
Actuated g/C Ratio		0.43	0.43		0.43					0.45	0.45	
Clearance Time (s)		6.7	6.7		6.7					6.3	6.3	
Vehicle Extension (s)		2.0	2.0		2.5					4.6	4.6	
Lane Grp Cap (vph)		802	681		937					789	2145	
v/s Ratio Prot		c0.26									c0.27	
v/s Ratio Perm			0.16		0.14					0.25		
v/c Ratio		0.60	0.36		0.33					0.55	0.61	
Uniform Delay, d1		14.2	12.5		12.2					13.2	13.7	
Progression Factor		1.00	1.00		1.00					1.00	1.00	
Incremental Delay, d2		3.3	1.5		0.9					2.8	1.3	
Delay (s)		17.4	13.9		13.2					16.0	15.0	
Level of Service		B	B		B					B	B	
Approach Delay (s)		16.1			13.2			0.0			15.2	
Approach LOS		B			B			A			B	

Intersection Summary			
HCM 2000 Control Delay	15.3	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.60		
Actuated Cycle Length (s)	65.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	68.6%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

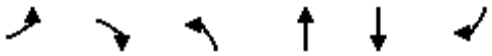


Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	1100	360	50	700	0	0	0	0	730	1100	660
Future Volume (vph)	0	1100	360	50	700	0	0	0	0	730	1100	660
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		6.7		4.4	6.7						6.3	6.3
Lane Util. Factor		0.95		1.00	0.95						0.86	0.86
Frt		0.96		1.00	1.00						1.00	0.85
Flt Protected		1.00		0.95	1.00						0.98	1.00
Satd. Flow (prot)		3408		1770	3539						4712	1362
Flt Permitted		1.00		0.95	1.00						0.98	1.00
Satd. Flow (perm)		3408		1770	3539						4712	1362
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	1196	391	54	761	0	0	0	0	793	1196	717
RTOR Reduction (vph)	0	31	0	0	0	0	0	0	0	0	0	54
Lane Group Flow (vph)	0	1556	0	54	761	0	0	0	0	0	1989	663
Turn Type		NA		Prot	NA					Perm	NA	Perm
Protected Phases		2		1	6						4	
Permitted Phases										4		4
Actuated Green, G (s)		31.5		3.4	37.6						40.4	40.4
Effective Green, g (s)		29.7		3.4	37.5						39.5	39.5
Actuated g/C Ratio		0.33		0.04	0.42						0.44	0.44
Clearance Time (s)		4.9		4.4	6.6						5.4	5.4
Vehicle Extension (s)		1.0		2.0	1.0						1.0	1.0
Lane Grp Cap (vph)		1124		66	1474						2068	597
v/s Ratio Prot		c0.46		c0.03	0.22							
v/s Ratio Perm											0.42	c0.49
v/c Ratio		1.38		0.82	0.52						1.08dl	1.11
Uniform Delay, d1		30.1		43.0	19.5						24.5	25.2
Progression Factor		1.00		1.00	1.00						1.00	1.00
Incremental Delay, d2		178.3		50.1	1.3						12.0	70.7
Delay (s)		208.5		93.1	20.8						36.5	96.0
Level of Service		F		F	C						D	F
Approach Delay (s)		208.5			25.6			0.0			52.3	
Approach LOS		F			C			A			D	

Intersection Summary			
HCM 2000 Control Delay	96.5	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.21		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	17.4
Intersection Capacity Utilization	93.7%	ICU Level of Service	F
Analysis Period (min)	15		

dl Defacto Left Lane. Recode with 1 though lane as a left lane.

c Critical Lane Group



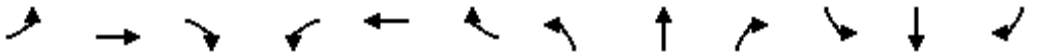
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	330	1280	1700	1270	1180	130
Future Volume (vph)	330	1280	1700	1270	1180	130
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	0.88	0.97	0.91	0.91	1.00
Frpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	0.99
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected	0.95	1.00	0.95	1.00	1.00	1.00
Satd. Flow (prot)	1770	2787	3433	5085	5085	1566
Flt Permitted	0.95	1.00	0.95	1.00	1.00	1.00
Satd. Flow (perm)	1770	2787	3433	5085	5085	1566
Peak-hour factor, PHF	0.92	0.95	0.95	0.95	0.92	0.92
Adj. Flow (vph)	359	1347	1789	1337	1283	141
RTOR Reduction (vph)	0	0	0	0	0	5
Lane Group Flow (vph)	359	1347	1789	1337	1283	136
Confl. Peds. (#/hr)			3			3
Turn Type	Prot	pm+ov	Prot	NA	NA	pm+ov
Protected Phases	5	7	7	4	8	5
Permitted Phases		5				8
Actuated Green, G (s)	23.0	88.0	65.0	99.0	30.0	53.0
Effective Green, g (s)	23.0	88.0	65.0	99.0	30.0	53.0
Actuated g/C Ratio	0.18	0.68	0.50	0.76	0.23	0.41
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	313	1972	1716	3872	1173	686
v/s Ratio Prot	c0.20	0.34	c0.52	0.26	c0.25	0.04
v/s Ratio Perm		0.14				0.05
v/c Ratio	1.15	0.68	1.04	0.35	1.09	0.20
Uniform Delay, d1	53.5	12.6	32.5	5.0	50.0	24.8
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	96.8	1.0	33.7	0.2	55.7	0.1
Delay (s)	150.3	13.6	66.2	5.3	105.7	25.0
Level of Service	F	B	E	A	F	C
Approach Delay (s)	42.4			40.2	97.7	
Approach LOS	D			D	F	

Intersection Summary			
HCM 2000 Control Delay	53.9	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	1.08		
Actuated Cycle Length (s)	130.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	99.6%	ICU Level of Service	F
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	SEL	SET	SER	NWL	NWT	NWR
Lane Configurations												
Traffic Volume (vph)	250	520	0	0	940	640	40	0	120	250	30	420
Future Volume (vph)	250	520	0	0	940	640	40	0	120	250	30	420
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.5	4.0			4.4	4.4		6.4		4.0	4.0	
Lane Util. Factor	1.00	0.95			0.95	1.00		1.00		0.91	0.91	
Frt	1.00	1.00			1.00	0.85		0.90		1.00	0.87	
Flt Protected	0.95	1.00			1.00	1.00		0.99		0.95	1.00	
Satd. Flow (prot)	1770	3539			3539	1583		1653		1610	2933	
Flt Permitted	0.95	1.00			1.00	1.00		0.99		0.95	1.00	
Satd. Flow (perm)	1770	3539			3539	1583		1653		1610	2933	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	272	565	0	0	1022	696	43	0	130	272	33	457
RTOR Reduction (vph)	0	0	0	0	0	427	0	111	0	0	399	0
Lane Group Flow (vph)	272	565	0	0	1022	269	0	62	0	245	118	0
Turn Type	Prot	NA			NA	Perm	Split	NA		Split	NA	
Protected Phases	5	2			6		8	8		7	7	
Permitted Phases						6						
Actuated Green, G (s)	10.6	49.2			33.7	33.7		12.6		11.1	11.1	
Effective Green, g (s)	10.6	49.2			33.7	33.7		12.6		11.1	11.1	
Actuated g/C Ratio	0.12	0.56			0.39	0.39		0.14		0.13	0.13	
Clearance Time (s)	4.5	4.0			4.4	4.4		6.4		4.0	4.0	
Vehicle Extension (s)	3.5	2.0			3.5	3.5		2.0		2.0	2.0	
Lane Grp Cap (vph)	214	1994			1366	611		238		204	372	
v/s Ratio Prot	c0.15	0.16			c0.29			c0.04		c0.15	0.04	
v/s Ratio Perm						0.17						
v/c Ratio	1.27	0.28			0.75	0.44		0.26		1.20	0.32	
Uniform Delay, d1	38.4	9.9			23.1	19.8		33.2		38.1	34.7	
Progression Factor	1.00	1.00			1.00	1.00		1.00		1.00	1.00	
Incremental Delay, d2	153.3	0.4			3.8	2.3		0.2		127.8	0.2	
Delay (s)	191.7	10.3			26.9	22.1		33.4		165.9	34.8	
Level of Service	F	B			C	C		C		F	C	
Approach Delay (s)		69.2			25.0			33.4			77.0	
Approach LOS		E			C			C			E	

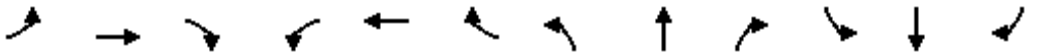
Intersection Summary			
HCM 2000 Control Delay	47.5	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.81		
Actuated Cycle Length (s)	87.3	Sum of lost time (s)	19.3
Intersection Capacity Utilization	80.0%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group



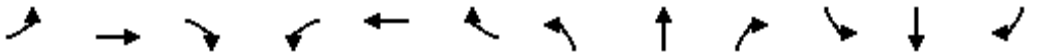
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	410	70	650	670	0	0	0	0	350	40	370
Future Volume (vph)	0	410	70	650	670	0	0	0	0	350	40	370
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0		5.9	5.5					1.8	1.8	1.8
Lane Util. Factor		0.95		1.00	1.00					0.95	0.95	1.00
Frpb, ped/bikes		1.00		1.00	1.00					1.00	1.00	1.00
Flpb, ped/bikes		1.00		1.00	1.00					1.00	1.00	1.00
Frt		0.98		1.00	1.00					1.00	1.00	0.85
Flt Protected		1.00		0.95	1.00					0.95	0.96	1.00
Satd. Flow (prot)		3453		1770	1863					1681	1701	1583
Flt Permitted		1.00		0.95	1.00					0.95	0.96	1.00
Satd. Flow (perm)		3453		1770	1863					1681	1701	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	446	76	707	728	0	0	0	0	380	43	402
RTOR Reduction (vph)	0	18	0	0	0	0	0	0	0	0	0	73
Lane Group Flow (vph)	0	504	0	707	728	0	0	0	0	201	222	329
Confl. Peds. (#/hr)	5		5	5		10						
Turn Type		NA		Split	NA					Split	NA	custom
Protected Phases		7		8	8					6	6	6
Permitted Phases												7
Actuated Green, G (s)		14.3		30.3	30.3					10.6	10.6	24.9
Effective Green, g (s)		14.3		30.6	31.0					12.8	12.8	29.3
Actuated g/C Ratio		0.21		0.44	0.45					0.18	0.18	0.42
Clearance Time (s)		4.0		6.2	6.2					4.0	4.0	4.0
Vehicle Extension (s)		3.0		2.0	2.0					3.0	3.0	3.0
Lane Grp Cap (vph)		711		780	832					310	313	709
v/s Ratio Prot		c0.15		c0.40	0.39					0.12	c0.13	0.09
v/s Ratio Perm												0.12
v/c Ratio		0.71		0.91	0.88					0.65	0.71	0.46
Uniform Delay, d1		25.6		18.1	17.4					26.2	26.6	14.4
Progression Factor		1.00		1.00	1.00					1.00	1.00	1.00
Incremental Delay, d2		3.2		13.8	9.9					4.6	7.2	0.5
Delay (s)		28.9		31.9	27.3					30.8	33.7	14.9
Level of Service		C		C	C					C	C	B
Approach Delay (s)		28.9			29.6			0.0			23.8	
Approach LOS		C			C			A			C	

Intersection Summary			
HCM 2000 Control Delay	27.7	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.80		
Actuated Cycle Length (s)	69.4	Sum of lost time (s)	11.7
Intersection Capacity Utilization	71.6%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			



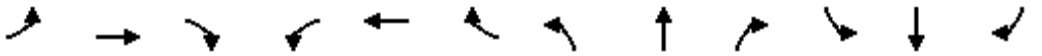
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	40	150	30	380	40	230	30	1590	360	250	530	20
Future Volume (vph)	40	150	30	380	40	230	30	1590	360	250	530	20
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.4	5.6		4.0	4.0		6.2	7.0	
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	0.91		1.00	0.91	
Frpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Flpb, ped/bikes	1.00	1.00		0.99	1.00		1.00	1.00		1.00	1.00	
Frt	1.00	0.97		1.00	0.87		1.00	0.97		1.00	0.99	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1770	1809		1757	1624		1770	4945		1770	5052	
Flt Permitted	0.45	1.00		0.55	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (perm)	831	1809		1020	1624		1770	4945		1770	5052	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	43	163	33	413	43	250	33	1728	391	272	576	22
RTOR Reduction (vph)	0	6	0	0	165	0	0	30	0	0	3	0
Lane Group Flow (vph)	43	190	0	413	128	0	33	2089	0	272	595	0
Confl. Peds. (#/hr)			9	9			2					2
Turn Type	Perm	NA		Perm	NA		Prot	NA		Prot	NA	
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4			8								
Actuated Green, G (s)	43.1	43.1		42.4	42.4		3.6	46.1		19.0	60.8	
Effective Green, g (s)	43.1	43.1		42.7	41.5		3.6	47.5		16.8	59.9	
Actuated g/C Ratio	0.35	0.35		0.35	0.34		0.03	0.39		0.14	0.49	
Clearance Time (s)	4.0	4.0		4.7	4.7		4.0	5.4		4.0	6.1	
Vehicle Extension (s)	2.0	2.0		3.0	3.0		2.0	4.8		2.0	3.7	
Lane Grp Cap (vph)	294	641		358	554		52	1931		244	2488	
v/s Ratio Prot		0.11			0.08		0.02	c0.42		c0.15	0.12	
v/s Ratio Perm	0.05			c0.41								
v/c Ratio	0.15	0.30		1.15	0.23		0.63	1.08		1.11	0.24	
Uniform Delay, d1	26.7	28.3		39.4	28.6		58.3	37.0		52.4	17.7	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	0.1	0.1		96.3	0.2		17.1	46.6		91.9	0.2	
Delay (s)	26.8	28.4		135.7	28.9		75.4	83.6		144.3	18.0	
Level of Service	C	C		F	C		E	F		F	B	
Approach Delay (s)		28.1			91.4			83.5			57.5	
Approach LOS		C			F			F			E	

Intersection Summary			
HCM 2000 Control Delay	75.9	HCM 2000 Level of Service	E
HCM 2000 Volume to Capacity ratio	1.14		
Actuated Cycle Length (s)	121.6	Sum of lost time (s)	16.6
Intersection Capacity Utilization	103.2%	ICU Level of Service	G
Analysis Period (min)	15		
c Critical Lane Group			



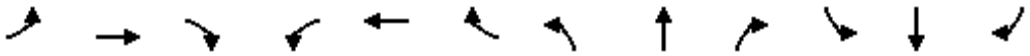
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	610	1050	280	250	960	170	450	1050	240	190	700	330
Future Volume (vph)	610	1050	280	250	960	170	450	1050	240	190	700	330
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.2		4.0	4.1		4.0	3.9		4.0	4.0	4.0
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00	0.91		1.00	0.91	1.00
Frpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	0.99
Flpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	1.00
Frt	1.00	0.97		1.00	0.98		1.00	0.97		1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1770	3428		1770	3450		1770	4930		1770	5085	1569
Flt Permitted	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)	1770	3428		1770	3450		1770	4930		1770	5085	1569
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	663	1141	304	272	1043	185	489	1141	261	207	761	359
RTOR Reduction (vph)	0	16	0	0	9	0	0	25	0	0	0	50
Lane Group Flow (vph)	663	1429	0	272	1219	0	489	1377	0	207	761	309
Confl. Peds. (#/hr)	4					4	5		1	1		5
Turn Type	Prot	NA		Prot	NA		Prot	NA		Prot	NA	pm+ov
Protected Phases	7	4		3	8		5	2		1	6	7
Permitted Phases												6
Actuated Green, G (s)	38.6	58.2		22.2	41.2		28.6	42.1		8.6	22.0	60.6
Effective Green, g (s)	39.0	59.2		22.6	42.9		29.0	43.1		9.0	23.0	61.4
Actuated g/C Ratio	0.26	0.39		0.15	0.29		0.19	0.29		0.06	0.15	0.41
Clearance Time (s)	4.4	5.2		4.4	5.8		4.4	4.9		4.4	5.0	4.4
Vehicle Extension (s)	2.0	3.9		2.0	2.7		2.0	3.3		2.0	4.1	2.0
Lane Grp Cap (vph)	460	1352		266	986		342	1416		106	779	642
v/s Ratio Prot	c0.37	0.42		0.15	c0.35		c0.28	c0.28		c0.12	0.15	0.13
v/s Ratio Perm												0.07
v/c Ratio	1.44	1.06		1.02	1.24		1.43	0.97		1.95	0.98	0.48
Uniform Delay, d1	55.5	45.4		63.7	53.5		60.5	52.9		70.5	63.2	32.6
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	210.6	41.1		61.1	115.0		209.6	18.2		461.1	27.1	0.2
Delay (s)	266.1	86.5		124.8	168.6		270.1	71.1		531.6	90.3	32.8
Level of Service	F	F		F	F		F	E		F	F	C
Approach Delay (s)		143.0			160.6			122.5			143.6	
Approach LOS		F			F			F			F	

Intersection Summary			
HCM 2000 Control Delay	141.3	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.33		
Actuated Cycle Length (s)	150.0	Sum of lost time (s)	16.2
Intersection Capacity Utilization	119.2%	ICU Level of Service	H
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	160	910	290	230	370	80	270	240	630	70	110	70
Future Volume (vph)	160	910	290	230	370	80	270	240	630	70	110	70
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.5	4.0	4.0	4.0	4.0	4.0	4.0	5.5	5.5	4.0	5.4	5.4
Lane Util. Factor	1.00	0.95	0.88	0.97	0.95	1.00	0.97	1.00	1.00	1.00	0.91	1.00
Frpb, ped/bikes	1.00	1.00	0.97	1.00	1.00	0.71	1.00	1.00	0.98	1.00	1.00	0.97
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1770	3539	2709	3433	3539	1131	3433	1863	1555	1770	5085	1537
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1770	3539	2709	3433	3539	1131	3433	1863	1555	1770	5085	1537
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	174	989	315	250	402	87	293	261	685	76	120	76
RTOR Reduction (vph)	0	0	172	0	0	56	0	0	58	0	0	58
Lane Group Flow (vph)	174	989	143	250	402	31	293	261	627	76	120	18
Confl. Peds. (#/hr)			27	27		170	23		15	15		23
Turn Type	Prot	NA	pm+ov	Prot	NA	Perm	Prot	NA	pm+ov	Prot	NA	Perm
Protected Phases	5	2	3	1	6		3	8	1	7	4	
Permitted Phases			2			6			8			4
Actuated Green, G (s)	10.8	33.2	41.1	10.1	32.5	32.5	7.9	24.0	34.1	6.6	22.7	22.7
Effective Green, g (s)	11.7	34.1	41.9	10.5	33.4	33.4	8.3	23.4	31.9	7.0	22.2	22.2
Actuated g/C Ratio	0.13	0.37	0.45	0.11	0.36	0.36	0.09	0.25	0.34	0.08	0.24	0.24
Clearance Time (s)	4.4	4.9	4.4	4.4	4.9	4.9	4.4	4.9	4.4	4.4	4.9	4.9
Vehicle Extension (s)	2.0	2.1	2.0	2.0	2.3	2.3	2.0	4.5	2.0	2.0	4.5	4.5
Lane Grp Cap (vph)	223	1304	1227	389	1277	408	308	471	536	133	1220	368
v/s Ratio Prot	0.10	c0.28	0.01	0.07	0.11		c0.09	0.14	c0.11	0.04	0.02	
v/s Ratio Perm			0.04			0.03			0.29			0.01
v/c Ratio	0.78	0.76	0.12	0.64	0.31	0.08	0.95	0.55	1.17	0.57	0.10	0.05
Uniform Delay, d1	39.2	25.6	14.6	39.2	21.3	19.4	41.9	30.0	30.3	41.3	27.4	27.0
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	14.9	4.2	0.0	2.7	0.6	0.4	38.0	2.1	95.3	3.6	0.1	0.1
Delay (s)	54.1	29.8	14.6	41.9	21.9	19.8	79.9	32.1	125.6	44.9	27.4	27.1
Level of Service	D	C	B	D	C	B	E	C	F	D	C	C
Approach Delay (s)		29.4			28.5			95.1			32.2	
Approach LOS		C			C			F			C	

Intersection Summary			
HCM 2000 Control Delay	51.2	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.97		
Actuated Cycle Length (s)	92.5	Sum of lost time (s)	19.0
Intersection Capacity Utilization	82.3%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			



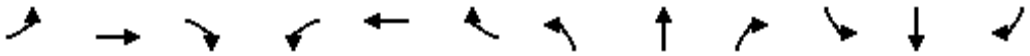
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	580	300	70	20	160	150	90	100	110	20	20	40
Future Volume (vph)	580	300	70	20	160	150	90	100	110	20	20	40
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0			4.0			4.0			4.0	
Lane Util. Factor		1.00			1.00			1.00			1.00	
Frpb, ped/bikes		1.00			0.99			0.99			0.99	
Flpb, ped/bikes		1.00			1.00			1.00			1.00	
Frt		0.99			0.94			0.95			0.93	
Flt Protected		0.97			1.00			0.99			0.99	
Satd. Flow (prot)		1784			1727			1722			1698	
Flt Permitted		0.62			0.92			0.86			0.79	
Satd. Flow (perm)		1147			1592			1495			1365	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	630	326	76	22	174	163	98	109	120	22	22	43
RTOR Reduction (vph)	0	3	0	0	17	0	0	19	0	0	32	0
Lane Group Flow (vph)	0	1029	0	0	342	0	0	308	0	0	55	0
Confl. Peds. (#/hr)	1		3	3		1	1		4	4		1
Turn Type	pm+pt	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases	5	2			6			8			4	
Permitted Phases	2			6			8			4		
Actuated Green, G (s)		79.2			79.2			21.0			21.0	
Effective Green, g (s)		80.1			80.1			21.9			21.9	
Actuated g/C Ratio		0.73			0.73			0.20			0.20	
Clearance Time (s)		4.9			4.9			4.9			4.9	
Vehicle Extension (s)		2.0			2.0			2.0			2.0	
Lane Grp Cap (vph)		835			1159			297			271	
v/s Ratio Prot												
v/s Ratio Perm		c0.90			0.22			c0.21			0.04	
v/c Ratio		1.23			0.30			1.04			0.20	
Uniform Delay, d1		15.0			5.2			44.0			36.8	
Progression Factor		1.00			1.00			1.00			1.00	
Incremental Delay, d2		115.1			0.6			62.0			0.1	
Delay (s)		130.0			5.8			106.0			36.9	
Level of Service		F			A			F			D	
Approach Delay (s)		130.0			5.8			106.0			36.9	
Approach LOS		F			A			F			D	

Intersection Summary			
HCM 2000 Control Delay	96.5	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.24		
Actuated Cycle Length (s)	110.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	104.7%	ICU Level of Service	G
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	1110	500	240	500	180	270
Future Volume (vph)	1110	500	240	500	180	270
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	2.7		3.1	4.0	4.0	4.0
Lane Util. Factor	0.91		1.00	0.95	1.00	1.00
Frpb, ped/bikes	0.97		1.00	1.00	1.00	1.00
Flpb, ped/bikes	1.00		1.00	1.00	1.00	1.00
Frt	0.95		1.00	1.00	1.00	0.85
Flt Protected	1.00		0.95	1.00	0.95	1.00
Satd. Flow (prot)	4686		1770	3539	1770	1583
Flt Permitted	1.00		0.95	1.00	0.95	1.00
Satd. Flow (perm)	4686		1770	3539	1770	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	1207	543	261	543	196	293
RTOR Reduction (vph)	90	0	0	0	0	228
Lane Group Flow (vph)	1660	0	261	543	196	65
Confl. Peds. (#/hr)		53	53		46	81
Turn Type	NA		Prot	NA	Prot	Prot
Protected Phases	2		1	6	8	8
Permitted Phases						
Actuated Green, G (s)	29.6		12.6	46.6	14.8	14.8
Effective Green, g (s)	31.8		13.9	47.5	15.7	15.7
Actuated g/C Ratio	0.45		0.20	0.67	0.22	0.22
Clearance Time (s)	4.9		4.4	4.9	4.9	4.9
Vehicle Extension (s)	2.9		2.0	2.0	2.0	2.0
Lane Grp Cap (vph)	2092		345	2360	390	349
v/s Ratio Prot	c0.35		c0.15	0.15	c0.11	0.04
v/s Ratio Perm						
v/c Ratio	0.79		0.76	0.23	0.50	0.19
Uniform Delay, d1	16.9		27.1	4.7	24.3	22.6
Progression Factor	1.00		1.00	1.00	1.00	1.00
Incremental Delay, d2	3.2		8.1	0.2	0.4	0.1
Delay (s)	20.1		35.2	4.9	24.7	22.6
Level of Service	C		D	A	C	C
Approach Delay (s)	20.1			14.7	23.5	
Approach LOS	C			B	C	

Intersection Summary			
HCM 2000 Control Delay	19.2	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.71		
Actuated Cycle Length (s)	71.2	Sum of lost time (s)	9.8
Intersection Capacity Utilization	67.2%	ICU Level of Service	C
Analysis Period (min)	15		

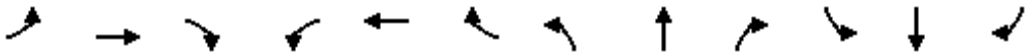
c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Traffic Volume (vph)	20	20	20	30	20	60	40	130	30	90	190	70
Future Volume (vph)	20	20	20	30	20	60	40	130	30	90	190	70
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	22	22	22	33	22	65	43	141	33	98	207	76

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total (vph)	66	120	217	381
Volume Left (vph)	22	33	43	98
Volume Right (vph)	22	65	33	76
Hadj (s)	-0.10	-0.24	-0.02	-0.03
Departure Headway (s)	5.4	5.2	4.9	4.7
Degree Utilization, x	0.10	0.17	0.29	0.49
Capacity (veh/h)	576	614	701	743
Control Delay (s)	9.0	9.3	9.9	12.1
Approach Delay (s)	9.0	9.3	9.9	12.1
Approach LOS	A	A	A	B

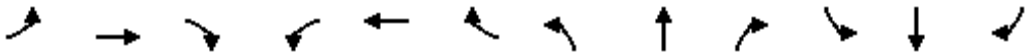
Intersection Summary			
Delay	10.8		
Level of Service	B		
Intersection Capacity Utilization	48.4%	ICU Level of Service	A
Analysis Period (min)	15		



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Traffic Volume (vph)	40	20	20	30	40	20	30	130	30	40	130	70
Future Volume (vph)	40	20	20	30	40	20	30	130	30	40	130	70
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	43	22	22	33	43	22	33	141	33	43	141	76

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total (vph)	87	98	207	260
Volume Left (vph)	43	33	33	43
Volume Right (vph)	22	22	33	76
Hadj (s)	-0.02	-0.03	-0.03	-0.11
Departure Headway (s)	5.1	5.1	4.7	4.5
Degree Utilization, x	0.12	0.14	0.27	0.33
Capacity (veh/h)	630	635	732	753
Control Delay (s)	8.9	8.9	9.4	9.7
Approach Delay (s)	8.9	8.9	9.4	9.7
Approach LOS	A	A	A	A

Intersection Summary				
Delay	9.4			
Level of Service	A			
Intersection Capacity Utilization	34.8%	ICU Level of Service	A	
Analysis Period (min)	15			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Traffic Volume (vph)	20	20	20	85	20	20	30	260	300	10	100	20
Future Volume (vph)	20	20	20	85	20	20	30	260	300	10	100	20
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	22	22	22	92	22	22	33	283	326	11	109	22

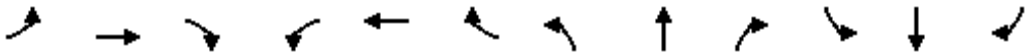
Direction, Lane #	EB 1	WB 1	NB 1	NB 2	SB 1
Volume Total (vph)	66	136	316	326	142
Volume Left (vph)	22	92	33	0	11
Volume Right (vph)	22	22	0	326	22
Hadj (s)	-0.10	0.07	0.09	-0.67	-0.04
Departure Headway (s)	5.7	5.7	5.3	4.6	5.2
Degree Utilization, x	0.10	0.22	0.47	0.41	0.21
Capacity (veh/h)	568	579	659	764	649
Control Delay (s)	9.3	10.2	19.8	9.6	9.6
Approach Delay (s)	9.3	10.2	20.7		9.6
Approach LOS	A	B	C		A

Intersection Summary				
Delay	15.8			
Level of Service	C			
Intersection Capacity Utilization	51.9%	ICU Level of Service	A	
Analysis Period (min)	15			

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Sign Control	Stop			Stop	Stop	
Traffic Volume (vph)	40	40	60	50	60	110
Future Volume (vph)	40	40	60	50	60	110
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	43	43	65	54	65	120

Direction, Lane #	EB 1	WB 1	NB 1
Volume Total (vph)	86	119	185
Volume Left (vph)	0	65	65
Volume Right (vph)	43	0	120
Hadj (s)	-0.27	0.14	-0.28
Departure Headway (s)	4.2	4.5	4.1
Degree Utilization, x	0.10	0.15	0.21
Capacity (veh/h)	818	751	840
Control Delay (s)	7.6	8.3	8.2
Approach Delay (s)	7.6	8.3	8.2
Approach LOS	A	A	A

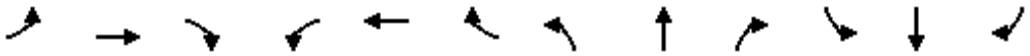
Intersection Summary			
Delay	8.1		
Level of Service	A		
Intersection Capacity Utilization	34.3%	ICU Level of Service	A
Analysis Period (min)	15		



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Traffic Volume (vph)	30	30	30	50	30	20	80	160	140	20	80	20
Future Volume (vph)	30	30	30	50	30	20	80	160	140	20	80	20
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	33	33	33	54	33	22	87	174	152	22	87	22

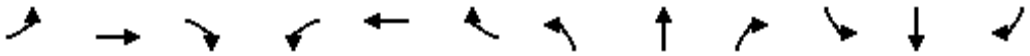
Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total (vph)	99	109	413	131
Volume Left (vph)	33	54	87	22
Volume Right (vph)	33	22	152	22
Hadj (s)	-0.10	0.01	-0.14	-0.03
Departure Headway (s)	5.3	5.4	4.5	4.9
Degree Utilization, x	0.14	0.16	0.52	0.18
Capacity (veh/h)	607	600	773	676
Control Delay (s)	9.2	9.4	12.2	9.0
Approach Delay (s)	9.2	9.4	12.2	9.0
Approach LOS	A	A	B	A

Intersection Summary				
Delay	10.8			
Level of Service	B			
Intersection Capacity Utilization	50.7%	ICU Level of Service	A	
Analysis Period (min)	15			



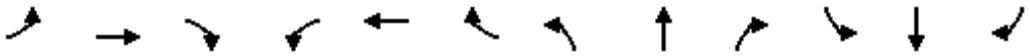
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	270	40	110	20	60	50	120	300	30	20	70	170
Future Volume (vph)	270	40	110	20	60	50	120	300	30	20	70	170
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0			4.0		4.0	4.0		4.0	4.0	
Lane Util. Factor		1.00			1.00		1.00	1.00		1.00	1.00	
Frpb, ped/bikes		1.00			0.99		1.00	1.00		1.00	0.98	
Flpb, ped/bikes		1.00			1.00		1.00	1.00		1.00	1.00	
Frt		0.96			0.95		1.00	0.99		1.00	0.89	
Flt Protected		0.97			0.99		0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1737			1742		1765	1833		1764	1637	
Flt Permitted		0.76			0.92		0.57	1.00		0.47	1.00	
Satd. Flow (perm)		1357			1608		1068	1833		873	1637	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	293	43	120	22	65	54	130	326	33	22	76	185
RTOR Reduction (vph)	0	26	0	0	32	0	0	4	0	0	104	0
Lane Group Flow (vph)	0	430	0	0	109	0	130	355	0	22	157	0
Confl. Peds. (#/hr)	5					5	3		4	4		3
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		8			4			6			2	
Permitted Phases	8			4			6			2		
Actuated Green, G (s)		20.7			20.7		22.5	22.5		22.5	22.5	
Effective Green, g (s)		20.7			20.7		22.5	22.5		22.5	22.5	
Actuated g/C Ratio		0.40			0.40		0.44	0.44		0.44	0.44	
Clearance Time (s)		4.0			4.0		4.0	4.0		4.0	4.0	
Vehicle Extension (s)		2.0			2.0		2.1	2.1		2.1	2.1	
Lane Grp Cap (vph)		548			650		469	805		383	719	
v/s Ratio Prot								c0.19			0.10	
v/s Ratio Perm		c0.32			0.07		0.12			0.03		
v/c Ratio		0.79			0.17		0.28	0.44		0.06	0.22	
Uniform Delay, d1		13.3			9.7		9.2	10.0		8.3	8.9	
Progression Factor		1.00			1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2		6.7			0.0		1.5	1.7		0.3	0.7	
Delay (s)		20.1			9.8		10.6	11.7		8.5	9.6	
Level of Service		C			A		B	B		A	A	
Approach Delay (s)		20.1			9.8			11.4			9.5	
Approach LOS		C			A			B			A	

Intersection Summary			
HCM 2000 Control Delay	13.7	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.61		
Actuated Cycle Length (s)	51.2	Sum of lost time (s)	8.0
Intersection Capacity Utilization	64.6%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	70	1060	250	300	590	20	130	20	220	30	20	20
Future Volume (vph)	70	1060	250	300	590	20	130	20	220	30	20	20
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.5	4.1		2.7	4.0			4.0			4.0	
Lane Util. Factor	1.00	0.91		1.00	0.95			1.00			1.00	
Frpb, ped/bikes	1.00	0.99		1.00	1.00			0.99			1.00	
Flpb, ped/bikes	1.00	1.00		1.00	1.00			1.00			1.00	
Frt	1.00	0.97		1.00	1.00			0.92			0.96	
Flt Protected	0.95	1.00		0.95	1.00			0.98			0.98	
Satd. Flow (prot)	1765	4898		1769	3517			1668			1745	
Flt Permitted	0.40	1.00		0.15	1.00			0.86			0.77	
Satd. Flow (perm)	743	4898		279	3517			1464			1374	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	76	1152	272	326	641	22	141	22	239	33	22	22
RTOR Reduction (vph)	0	50	0	0	3	0	0	89	0	0	16	0
Lane Group Flow (vph)	76	1374	0	326	660	0	0	313	0	0	61	0
Confl. Peds. (#/hr)	13		12	12		13	6		2	2		6
Turn Type	pm+pt	NA		pm+pt	NA		Perm	NA		Perm	NA	
Protected Phases	5	2		1	6			8			4	
Permitted Phases	2			6			8			4		
Actuated Green, G (s)	25.3	22.2		35.9	28.4			16.4			16.4	
Effective Green, g (s)	27.1	23.1		37.6	29.3			17.3			17.3	
Actuated g/C Ratio	0.44	0.37		0.61	0.47			0.28			0.28	
Clearance Time (s)	4.4	5.0		4.4	4.9			4.9			4.9	
Vehicle Extension (s)	2.0	3.3		2.0	3.3			2.0			2.0	
Lane Grp Cap (vph)	390	1821		430	1659			407			382	
v/s Ratio Prot	0.01	0.28		c0.13	0.19							
v/s Ratio Perm	0.07			c0.33				c0.21			0.04	
v/c Ratio	0.19	0.75		0.76	0.40			0.77			0.16	
Uniform Delay, d1	10.3	17.0		11.3	10.7			20.6			16.9	
Progression Factor	1.00	1.00		1.00	1.00			1.00			1.00	
Incremental Delay, d2	0.1	3.0		6.7	0.7			7.7			0.1	
Delay (s)	10.4	20.0		18.0	11.4			28.3			17.0	
Level of Service	B	B		B	B			C			B	
Approach Delay (s)		19.5			13.6			28.3			17.0	
Approach LOS		B			B			C			B	

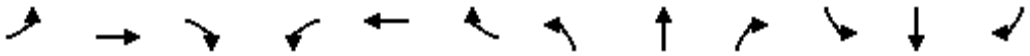
Intersection Summary			
HCM 2000 Control Delay	18.6	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.82		
Actuated Cycle Length (s)	62.1	Sum of lost time (s)	11.5
Intersection Capacity Utilization	79.3%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Traffic Volume (vph)	110	20	30	10	20	20	20	110	30	40	160	90
Future Volume (vph)	110	20	30	10	20	20	20	110	30	40	160	90
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	120	22	33	11	22	22	22	120	33	43	174	98

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total (vph)	175	55	175	315
Volume Left (vph)	120	11	22	43
Volume Right (vph)	33	22	33	98
Hadj (s)	0.06	-0.17	-0.05	-0.13
Departure Headway (s)	5.2	5.2	4.9	4.6
Degree Utilization, x	0.25	0.08	0.24	0.40
Capacity (veh/h)	631	608	692	739
Control Delay (s)	10.0	8.6	9.4	10.7
Approach Delay (s)	10.0	8.6	9.4	10.7
Approach LOS	A	A	A	B

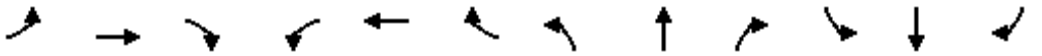
Intersection Summary			
Delay	10.1		
Level of Service	B		
Intersection Capacity Utilization	45.4%	ICU Level of Service	A
Analysis Period (min)	15		



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Traffic Volume (vph)	40	20	60	10	20	20	40	100	20	20	140	50
Future Volume (vph)	40	20	60	10	20	20	40	100	20	20	140	50
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	43	22	65	11	22	22	43	109	22	22	152	54

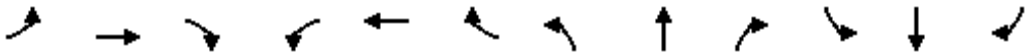
Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total (vph)	130	55	174	228
Volume Left (vph)	43	11	43	22
Volume Right (vph)	65	22	22	54
Hadj (s)	-0.20	-0.17	0.01	-0.09
Departure Headway (s)	4.7	4.9	4.6	4.5
Degree Utilization, x	0.17	0.07	0.22	0.28
Capacity (veh/h)	699	665	737	762
Control Delay (s)	8.7	8.2	9.0	9.2
Approach Delay (s)	8.7	8.2	9.0	9.2
Approach LOS	A	A	A	A

Intersection Summary				
Delay	8.9			
Level of Service	A			
Intersection Capacity Utilization	36.6%	ICU Level of Service	A	
Analysis Period (min)	15			



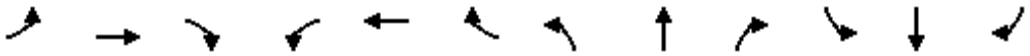
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	580	670	60	30	580	160	0	0	30	220	160	330
Future Volume (vph)	580	670	60	30	580	160	0	0	30	220	160	330
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0				4.0	4.0	4.0	4.0
Lane Util. Factor	0.97	0.95		1.00	0.95				1.00	0.95	0.95	1.00
Frpb, ped/bikes	1.00	1.00		1.00	1.00				1.00	1.00	1.00	0.99
Flpb, ped/bikes	1.00	1.00		1.00	1.00				1.00	1.00	1.00	1.00
Frt	1.00	0.99		1.00	0.97				0.86	1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00				1.00	0.95	0.98	1.00
Satd. Flow (prot)	3433	3487		1770	3412				1611	1681	1736	1561
Flt Permitted	0.95	1.00		0.95	1.00				1.00	0.95	0.98	1.00
Satd. Flow (perm)	3433	3487		1770	3412				1611	1681	1736	1561
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	630	728	65	33	630	174	0	0	33	239	174	359
RTOR Reduction (vph)	0	7	0	0	28	0	0	0	0	0	0	258
Lane Group Flow (vph)	630	786	0	33	776	0	0	0	33	127	286	101
Confl. Peds. (#/hr)	5		4	4		5						3
Turn Type	Prot	NA		Prot	NA				Free	Split	NA	Perm
Protected Phases	5	2		1	6					4	4	
Permitted Phases									Free			4
Actuated Green, G (s)	13.5	36.5		2.0	25.0				71.4	18.3	18.3	18.3
Effective Green, g (s)	13.9	37.4		2.4	25.9				71.4	19.6	19.6	19.6
Actuated g/C Ratio	0.19	0.52		0.03	0.36				1.00	0.27	0.27	0.27
Clearance Time (s)	4.4	4.9		4.4	4.9					5.3	5.3	5.3
Vehicle Extension (s)	2.0	3.3		2.0	3.8					4.4	4.4	4.4
Lane Grp Cap (vph)	668	1826		59	1237				1611	461	476	428
v/s Ratio Prot	c0.18	0.23		0.02	c0.23					0.08	c0.16	
v/s Ratio Perm									0.02			0.06
v/c Ratio	0.94	0.43		0.56	0.63				0.02	0.28	0.60	0.24
Uniform Delay, d1	28.4	10.5		34.0	18.8				0.0	20.3	22.5	20.1
Progression Factor	1.00	1.00		1.00	1.00				1.00	1.00	1.00	1.00
Incremental Delay, d2	21.6	0.7		6.4	2.4				0.0	0.5	2.7	0.5
Delay (s)	50.0	11.2		40.4	21.2				0.0	20.9	25.2	20.6
Level of Service	D	B		D	C				A	C	C	C
Approach Delay (s)		28.4			21.9			0.0			22.3	
Approach LOS		C			C			A			C	

Intersection Summary			
HCM 2000 Control Delay	24.8	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.69		
Actuated Cycle Length (s)	71.4	Sum of lost time (s)	12.0
Intersection Capacity Utilization	59.5%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	70	1440	110	70	1010	60	120	110	140	40	90	20
Future Volume (vph)	70	1440	110	70	1010	60	120	110	140	40	90	20
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0		4.0	4.0			3.9	
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00	1.00			1.00	
Frpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	0.99			1.00	
Flpb, ped/bikes	1.00	1.00		1.00	1.00		0.99	1.00			1.00	
Frt	1.00	0.99		1.00	0.99		1.00	0.92			0.98	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00			0.99	
Satd. Flow (prot)	1678	3403		1671	3405		1646	1575			1704	
Flt Permitted	0.95	1.00		0.95	1.00		0.49	1.00			0.45	
Satd. Flow (perm)	1678	3403		1671	3405		849	1575			773	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	76	1565	120	76	1098	65	130	120	152	43	98	22
RTOR Reduction (vph)	0	3	0	0	3	0	0	34	0	0	4	0
Lane Group Flow (vph)	76	1682	0	76	1160	0	130	238	0	0	159	0
Confl. Peds. (#/hr)	4		3	3		4	6		5	5		6
Confl. Bikes (#/hr)			3			2			4			
Bus Blockages (#/hr)	13	13	13	14	14	14	16	16	16	13	13	13
Turn Type	Prot	NA		Prot	NA		Perm	NA		Perm	NA	
Protected Phases	5	2		1	6			4			4	
Permitted Phases							4			4		
Actuated Green, G (s)	10.9	94.7		10.0	93.8		26.1	26.1			26.1	
Effective Green, g (s)	11.3	95.6		10.4	94.7		27.0	27.0			27.1	
Actuated g/C Ratio	0.08	0.66		0.07	0.65		0.19	0.19			0.19	
Clearance Time (s)	4.4	4.9		4.4	4.9		4.9	4.9			4.9	
Vehicle Extension (s)	2.0	2.1		2.0	2.1		2.0	2.0			2.0	
Lane Grp Cap (vph)	130	2243		119	2223		158	293			144	
v/s Ratio Prot	0.05	c0.49		c0.05	0.34			0.15				
v/s Ratio Perm							0.15				c0.21	
v/c Ratio	0.58	0.75		0.64	0.52		0.82	0.81			1.10	
Uniform Delay, d1	64.6	16.6		65.5	13.2		56.7	56.6			58.9	
Progression Factor	1.00	1.00		1.00	0.82		1.00	1.00			1.00	
Incremental Delay, d2	4.3	2.4		3.0	0.3		26.8	14.8			105.5	
Delay (s)	68.9	19.0		68.7	11.2		83.5	71.4			164.5	
Level of Service	E	B		E	B		F	E			F	
Approach Delay (s)		21.1			14.7			75.3			164.5	
Approach LOS		C			B			E			F	

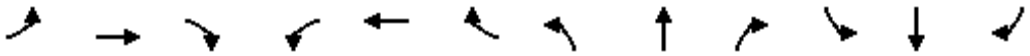
Intersection Summary			
HCM 2000 Control Delay	31.6	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.81		
Actuated Cycle Length (s)	145.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	86.7%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	440	1410	160	220	840	220	100	430	240	310	220	160
Future Volume (vph)	440	1410	160	220	840	220	100	430	240	310	220	160
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.5	3.4		4.0	4.0		4.0	4.0	4.0	4.0	4.0	
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00	0.95	1.00	1.00	0.95	
Frpb, ped/bikes	1.00	0.99		1.00	0.99		1.00	1.00	0.96	1.00	0.96	
Flpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	
Frt	1.00	0.98		1.00	0.97		1.00	1.00	0.85	1.00	0.94	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)	1770	3464		1770	3380		1770	3539	1526	1770	3180	
Flt Permitted	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (perm)	1770	3464		1770	3380		1770	3539	1526	1770	3180	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	478	1533	174	239	913	239	109	467	261	337	239	174
RTOR Reduction (vph)	0	6	0	0	16	0	0	0	62	0	90	0
Lane Group Flow (vph)	478	1701	0	239	1136	0	109	467	199	337	323	0
Confl. Peds. (#/hr)	26		26	26		26	41		25	25		41
Confl. Bikes (#/hr)			8			2			13			8
Turn Type	Prot	NA		Prot	NA		Prot	NA	pm+ov	Prot	NA	
Protected Phases	5	2		1	6		3	8	1	7	4	
Permitted Phases									8			
Actuated Green, G (s)	31.6	59.1		15.6	42.6		12.5	25.9	41.5	25.7	39.2	
Effective Green, g (s)	32.5	60.6		16.0	44.0		12.9	26.9	42.3	26.1	40.1	
Actuated g/C Ratio	0.22	0.42		0.11	0.30		0.09	0.19	0.29	0.18	0.28	
Clearance Time (s)	4.4	4.9		4.4	5.4		4.4	5.0	4.4	4.4	4.9	
Vehicle Extension (s)	2.0	4.2		2.0	3.0		2.0	4.0	2.0	2.0	2.6	
Lane Grp Cap (vph)	396	1447		195	1025		157	656	445	318	879	
v/s Ratio Prot	c0.27	c0.49		0.14	0.34		0.06	c0.13	0.05	c0.19	0.10	
v/s Ratio Perm									0.08			
v/c Ratio	1.21	1.18		1.23	1.11		0.69	0.71	0.45	1.06	0.37	
Uniform Delay, d1	56.2	42.2		64.5	50.5		64.1	55.4	41.8	59.5	42.2	
Progression Factor	1.07	0.95		1.10	0.93		1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	111.0	85.2		133.9	61.0		10.2	3.9	0.3	67.1	0.2	
Delay (s)	171.4	125.4		204.6	107.7		74.4	59.3	42.1	126.6	42.4	
Level of Service	F	F		F	F		E	E	D	F	D	
Approach Delay (s)		135.5			124.4			55.9			80.2	
Approach LOS		F			F			E			F	

Intersection Summary			
HCM 2000 Control Delay	111.6	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.09		
Actuated Cycle Length (s)	145.0	Sum of lost time (s)	15.5
Intersection Capacity Utilization	105.8%	ICU Level of Service	G
Analysis Period (min)	15		

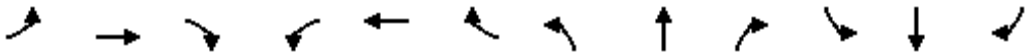
c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	10	1930	100	160	1280	60	100	20	220	50	20	20
Future Volume (vph)	10	1930	100	160	1280	60	100	20	220	50	20	20
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0			4.0	4.0		4.0	
Lane Util. Factor	1.00	0.91		1.00	0.95			1.00	1.00		1.00	
Frpb, ped/bikes	1.00	1.00		1.00	1.00			1.00	0.98		0.99	
Flpb, ped/bikes	1.00	1.00		1.00	1.00			1.00	1.00		1.00	
Frt	1.00	0.99		1.00	0.99			1.00	0.85		0.97	
Flt Protected	0.95	1.00		0.95	1.00			0.96	1.00		0.97	
Satd. Flow (prot)	1770	5039		1770	3512			1788	1553		1742	
Flt Permitted	0.95	1.00		0.95	1.00			0.67	1.00		0.63	
Satd. Flow (perm)	1770	5039		1770	3512			1248	1553		1126	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	11	2098	109	174	1391	65	109	22	239	54	22	22
RTOR Reduction (vph)	0	3	0	0	2	0	0	0	202	0	8	0
Lane Group Flow (vph)	11	2204	0	174	1454	0	0	131	37	0	90	0
Confl. Peds. (#/hr)			3	3								
Confl. Bikes (#/hr)			11			1			5			20
Turn Type	Prot	NA		Prot	NA		Perm	NA	Perm	Perm	NA	
Protected Phases	5	2		1	6			8			4	
Permitted Phases							8		8	4		
Actuated Green, G (s)	2.0	90.1		18.6	106.7			21.7	21.7		21.7	
Effective Green, g (s)	2.4	91.4		19.0	108.0			22.6	22.6		22.6	
Actuated g/C Ratio	0.02	0.63		0.13	0.74			0.16	0.16		0.16	
Clearance Time (s)	4.4	5.3		4.4	5.3			4.9	4.9		4.9	
Vehicle Extension (s)	2.0	4.4		2.0	4.4			2.0	2.0		2.0	
Lane Grp Cap (vph)	29	3176		231	2615			194	242		175	
v/s Ratio Prot	0.01	c0.44		c0.10	0.41							
v/s Ratio Perm								c0.10	0.02		0.08	
v/c Ratio	0.38	0.69		0.75	0.56			0.68	0.15		0.52	
Uniform Delay, d1	70.6	17.6		60.7	8.1			57.7	52.9		56.2	
Progression Factor	0.86	1.21		1.00	1.00			1.00	1.00		1.00	
Incremental Delay, d2	0.3	0.1		11.6	0.9			7.1	0.1		1.1	
Delay (s)	61.0	21.4		72.4	8.9			64.8	53.0		57.3	
Level of Service	E	C		E	A			E	D		E	
Approach Delay (s)		21.6			15.7			57.2			57.3	
Approach LOS		C			B			E			E	

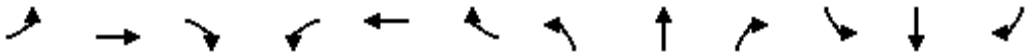
Intersection Summary			
HCM 2000 Control Delay	23.2	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.70		
Actuated Cycle Length (s)	145.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	70.1%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	0	0	370	2040	0	0	0	0	0	350	190
Future Volume (vph)	0	0	0	370	2040	0	0	0	0	0	350	190
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)					3.8						3.8	
Lane Util. Factor					0.91						0.91	
Frpb, ped/bikes					1.00						0.99	
Flpb, ped/bikes					1.00						1.00	
Frt					1.00						0.95	
Flt Protected					0.99						1.00	
Satd. Flow (prot)					5039						4778	
Flt Permitted					0.99						1.00	
Satd. Flow (perm)					5039						4778	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	402	2217	0	0	0	0	0	380	207
RTOR Reduction (vph)	0	0	0	0	12	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	0	0	0	2607	0	0	0	0	0	587	0
Confl. Peds. (#/hr)				6								7
Turn Type				Perm	NA						NA	
Protected Phases					6						4	
Permitted Phases				6								
Actuated Green, G (s)					61.8						18.0	
Effective Green, g (s)					63.3						19.1	
Actuated g/C Ratio					0.70						0.21	
Clearance Time (s)					5.3						4.9	
Vehicle Extension (s)					0.2						0.2	
Lane Grp Cap (vph)					3544						1013	
v/s Ratio Prot											c0.12	
v/s Ratio Perm					0.52							
v/c Ratio					0.74						0.58	
Uniform Delay, d1					8.2						31.8	
Progression Factor					1.00						0.93	
Incremental Delay, d2					1.4						0.0	
Delay (s)					9.6						29.7	
Level of Service					A						C	
Approach Delay (s)		0.0			9.6			0.0			29.7	
Approach LOS		A			A			A			C	

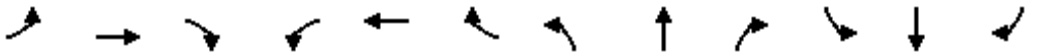
Intersection Summary			
HCM 2000 Control Delay	13.3	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.70		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	7.6
Intersection Capacity Utilization	68.6%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	1650	160	0	0	0	0	0	0	310	430	0
Future Volume (vph)	0	1650	160	0	0	0	0	0	0	310	430	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0									3.0	
Lane Util. Factor		0.91									0.91	
Frpb, ped/bikes		1.00									1.00	
Flpb, ped/bikes		1.00									0.99	
Frt		0.99									1.00	
Flt Protected		1.00									0.98	
Satd. Flow (prot)		5007									4939	
Flt Permitted		1.00									0.98	
Satd. Flow (perm)		5007									4939	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	1793	174	0	0	0	0	0	0	337	467	0
RTOR Reduction (vph)	0	11	0	0	0	0	0	0	0	0	15	0
Lane Group Flow (vph)	0	1956	0	0	0	0	0	0	0	0	789	0
Confl. Peds. (#/hr)			9							14		
Turn Type		NA								Perm	NA	
Protected Phases		2									4	
Permitted Phases										4		
Actuated Green, G (s)		58.8									22.2	
Effective Green, g (s)		58.8									24.2	
Actuated g/C Ratio		0.65									0.27	
Clearance Time (s)		4.0									5.0	
Vehicle Extension (s)		3.0									3.0	
Lane Grp Cap (vph)		3271									1328	
v/s Ratio Prot		c0.39										
v/s Ratio Perm											0.16	
v/c Ratio		0.60									0.59	
Uniform Delay, d1		8.9									28.6	
Progression Factor		0.39									0.77	
Incremental Delay, d2		0.5									0.6	
Delay (s)		4.0									22.8	
Level of Service		A									C	
Approach Delay (s)		4.0			0.0			0.0			22.8	
Approach LOS		A			A			A			C	

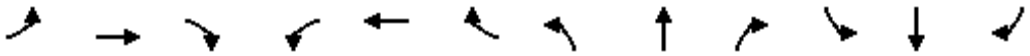
Intersection Summary			
HCM 2000 Control Delay	9.4	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.60		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	7.0
Intersection Capacity Utilization	59.4%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	240	1270	120	150	1410	120	120	50	130	80	80	210
Future Volume (vph)	240	1270	120	150	1410	120	120	50	130	80	80	210
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.97	0.95		1.00	0.95	1.00	1.00	1.00	1.00	0.97	1.00	1.00
Frpb, ped/bikes	1.00	1.00		1.00	1.00	0.98	1.00	1.00	1.00	1.00	1.00	0.99
Flpb, ped/bikes	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.99		1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	3494		1770	3539	1557	1770	1863	1583	3433	1863	1563
Flt Permitted	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	3494		1770	3539	1557	1770	1863	1583	3433	1863	1563
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	261	1380	130	163	1533	130	130	54	141	87	87	228
RTOR Reduction (vph)	0	6	0	0	0	121	0	0	118	0	0	136
Lane Group Flow (vph)	261	1504	0	163	1533	9	130	54	23	87	87	92
Confl. Peds. (#/hr)	1					1	1					1
Turn Type	Prot	NA		Prot	NA	custom	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases						7			8			4
Actuated Green, G (s)	7.0	40.8		9.0	42.9	5.7	7.0	12.2	12.2	5.7	11.8	11.8
Effective Green, g (s)	7.0	42.3		9.0	44.3	5.7	7.0	14.0	14.0	5.7	12.7	12.7
Actuated g/C Ratio	0.08	0.49		0.10	0.51	0.07	0.08	0.16	0.16	0.07	0.15	0.15
Clearance Time (s)	4.0	5.5		4.0	5.4	4.0	4.0	5.8	5.8	4.0	4.9	4.9
Vehicle Extension (s)	2.0	3.7		2.0	4.0	2.0	2.0	2.0	2.0	2.0	3.0	3.0
Lane Grp Cap (vph)	276	1698		183	1802	102	142	299	254	224	271	228
v/s Ratio Prot	0.08	0.43		c0.09	c0.43		c0.07	0.03		0.03	0.05	
v/s Ratio Perm						0.01			0.01			c0.06
v/c Ratio	0.95	0.89		0.89	0.85	0.08	0.92	0.18	0.09	0.39	0.32	0.40
Uniform Delay, d1	39.8	20.2		38.5	18.5	38.2	39.7	31.5	31.1	39.0	33.3	33.7
Progression Factor	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	39.0	7.2		36.8	5.3	0.1	49.8	0.1	0.1	0.4	0.7	1.2
Delay (s)	78.8	27.4		75.3	23.8	38.3	89.5	31.6	31.1	39.4	34.0	34.9
Level of Service	E	C		E	C	D	F	C	C	D	C	C
Approach Delay (s)		35.0			29.4			54.6			35.7	
Approach LOS		C			C			D			D	

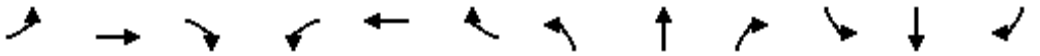
Intersection Summary			
HCM 2000 Control Delay	34.1	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.80		
Actuated Cycle Length (s)	87.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	70.6%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	0	0	200	1800	210	340	570	0	0	350	120
Future Volume (vph)	0	0	0	200	1800	210	340	570	0	0	350	120
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)					4.9		2.9	4.9			5.4	
Lane Util. Factor					0.86		1.00	0.95			0.95	
Frpb, ped/bikes					1.00		1.00	1.00			1.00	
Flpb, ped/bikes					1.00		1.00	1.00			1.00	
Frt					0.99		1.00	1.00			0.96	
Flt Protected					1.00		0.95	1.00			1.00	
Satd. Flow (prot)					6262		1770	3539			3389	
Flt Permitted					1.00		0.95	1.00			1.00	
Satd. Flow (perm)					6262		1770	3539			3389	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	0	0	0	211	1895	221	358	600	0	0	368	126
RTOR Reduction (vph)	0	0	0	0	15	0	0	0	0	0	31	0
Lane Group Flow (vph)	0	0	0	0	2312	0	358	600	0	0	463	0
Confl. Peds. (#/hr)	4		13	13		4	2		2	2		2
Confl. Bikes (#/hr)												1
Turn Type				Perm	NA		Prot	NA			NA	
Protected Phases					6		3	8			4	
Permitted Phases				6								
Actuated Green, G (s)					51.5		25.6	48.7			18.2	
Effective Green, g (s)					51.5		27.1	48.7			18.2	
Actuated g/C Ratio					0.47		0.25	0.44			0.17	
Clearance Time (s)					4.9		4.4	4.9			5.4	
Vehicle Extension (s)					2.4		3.0	3.3			2.4	
Lane Grp Cap (vph)					2931		436	1566			560	
v/s Ratio Prot							c0.20	0.17			c0.14	
v/s Ratio Perm					0.37							
v/c Ratio					0.79		0.82	0.38			0.83	
Uniform Delay, d1					24.7		39.2	20.6			44.4	
Progression Factor					1.00		1.00	1.00			1.00	
Incremental Delay, d2					2.2		11.8	0.2			9.5	
Delay (s)					26.9		50.9	20.7			53.9	
Level of Service					C		D	C			D	
Approach Delay (s)		0.0			26.9			32.0			53.9	
Approach LOS		A			C			C			D	

Intersection Summary			
HCM 2000 Control Delay	31.7	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.80		
Actuated Cycle Length (s)	110.0	Sum of lost time (s)	13.2
Intersection Capacity Utilization	77.0%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group



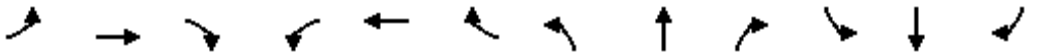
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	130	1220	100	0	0	0	0	800	420	140	330	0
Future Volume (vph)	130	1220	100	0	0	0	0	800	420	140	330	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0	4.0					4.7		4.2	4.9	
Lane Util. Factor		0.91	1.00					0.91		1.00	0.91	
Frpb, ped/bikes		1.00	0.97					0.99		1.00	1.00	
Flpb, ped/bikes		1.00	1.00					1.00		1.00	1.00	
Frt		1.00	0.85					0.95		1.00	1.00	
Flt Protected		1.00	1.00					1.00		0.95	1.00	
Satd. Flow (prot)		5059	1532					4775		1770	5085	
Flt Permitted		1.00	1.00					1.00		0.95	1.00	
Satd. Flow (perm)		5059	1532					4775		1770	5085	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	141	1326	109	0	0	0	0	870	457	152	359	0
RTOR Reduction (vph)	0	0	65	0	0	0	0	83	0	0	0	0
Lane Group Flow (vph)	0	1467	44	0	0	0	0	1244	0	152	359	0
Confl. Peds. (#/hr)	5		25				6		12	12		6
Turn Type	Perm	NA	Perm					NA		Prot	NA	
Protected Phases		2						8		7	4	
Permitted Phases	2		2									
Actuated Green, G (s)		35.1	35.1					25.1		15.6	45.1	
Effective Green, g (s)		36.0	36.0					25.3		15.8	45.1	
Actuated g/C Ratio		0.40	0.40					0.28		0.18	0.50	
Clearance Time (s)		4.9	4.9					4.9		4.4	4.9	
Vehicle Extension (s)		4.4	4.4					3.3		2.0	3.3	
Lane Grp Cap (vph)		2023	612					1342		310	2548	
v/s Ratio Prot								c0.26		c0.09	0.07	
v/s Ratio Perm		0.29	0.03									
v/c Ratio		0.73	0.07					0.93		0.49	0.14	
Uniform Delay, d1		22.8	16.7					31.4		33.5	12.1	
Progression Factor		1.00	1.00					1.00		1.00	1.00	
Incremental Delay, d2		2.3	0.2					12.3		5.5	0.1	
Delay (s)		25.1	16.9					43.8		38.9	12.2	
Level of Service		C	B					D		D	B	
Approach Delay (s)		24.6			0.0			43.8			20.1	
Approach LOS		C			A			D			C	

Intersection Summary			
HCM 2000 Control Delay	31.4	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.74		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	12.9
Intersection Capacity Utilization	77.0%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	1430	760	510	1490	460	260
Future Volume (vph)	1430	760	510	1490	460	260
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	3.9	4.0	4.0	4.0
Lane Util. Factor	0.95	1.00	0.97	0.95	0.97	0.91
Frpb, ped/bikes	1.00	0.99	1.00	1.00	1.00	0.98
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected	1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (prot)	3539	1569	3433	3539	3433	1418
Flt Permitted	1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (perm)	3539	1569	3433	3539	3433	1418
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	1554	826	554	1620	500	283
RTOR Reduction (vph)	0	3	0	0	0	217
Lane Group Flow (vph)	1554	823	554	1620	500	66
Confl. Peds. (#/hr)						1
Confl. Bikes (#/hr)		6				3
Turn Type	NA	pm+ov	Prot	NA	Prot	Perm
Protected Phases	2	8	1	6	8	
Permitted Phases		2				8
Actuated Green, G (s)	40.6	60.1	15.8	61.6	19.5	19.5
Effective Green, g (s)	42.8	64.5	16.3	63.0	21.7	21.7
Actuated g/C Ratio	0.46	0.70	0.18	0.68	0.23	0.23
Clearance Time (s)	6.2	6.2	4.4	5.4	6.2	6.2
Vehicle Extension (s)	4.0	2.0	2.0	5.2	2.0	2.0
Lane Grp Cap (vph)	1633	1159	603	2405	803	331
v/s Ratio Prot	c0.44	c0.17	c0.16	0.46	0.15	
v/s Ratio Perm		0.36				0.05
v/c Ratio	0.95	0.71	0.92	0.67	0.62	0.20
Uniform Delay, d1	24.0	8.5	37.5	8.8	31.8	28.5
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	13.4	1.7	18.7	1.5	1.1	0.1
Delay (s)	37.4	10.2	56.3	10.3	32.9	28.6
Level of Service	D	B	E	B	C	C
Approach Delay (s)	27.9			22.0	31.4	
Approach LOS	C			C	C	

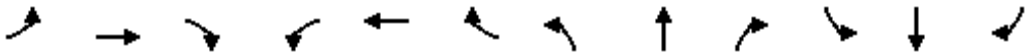
Intersection Summary			
HCM 2000 Control Delay	26.0	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.90		
Actuated Cycle Length (s)	92.7	Sum of lost time (s)	11.9
Intersection Capacity Utilization	80.2%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group



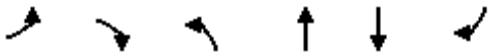
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	1080	330	360	350	0	0	0	0	390	0	1180
Future Volume (vph)	0	1080	330	360	350	0	0	0	0	390	0	1180
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0	4.0	4.0	4.0					4.0		3.4
Lane Util. Factor		0.95	1.00	0.97	0.95					1.00		1.00
Frpb, ped/bikes		1.00	0.99	1.00	1.00					1.00		1.00
Flpb, ped/bikes		1.00	1.00	1.00	1.00					1.00		1.00
Frt		1.00	0.85	1.00	1.00					1.00		0.85
Flt Protected		1.00	1.00	0.95	1.00					0.95		1.00
Satd. Flow (prot)		3539	1560	3433	3539					1770		1583
Flt Permitted		1.00	1.00	0.95	1.00					0.95		1.00
Satd. Flow (perm)		3539	1560	3433	3539					1770		1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	1174	359	391	380	0	0	0	0	424	0	1283
RTOR Reduction (vph)	0	0	229	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	1174	130	391	380	0	0	0	0	424	0	1283
Confl. Peds. (#/hr)			2	2								
Turn Type		NA	Perm	Prot	NA					Prot		Free
Protected Phases		2		1	6					4		
Permitted Phases			2									Free
Actuated Green, G (s)		26.2	26.2	13.6	44.0					21.4		75.0
Effective Green, g (s)		27.2	27.2	13.8	45.0					22.0		75.0
Actuated g/C Ratio		0.36	0.36	0.18	0.60					0.29		1.00
Clearance Time (s)		5.0	5.0	4.2	5.0					4.6		
Vehicle Extension (s)		0.2	0.2	0.2	0.2					0.2		
Lane Grp Cap (vph)		1283	565	631	2123					519		1583
v/s Ratio Prot		0.33		0.11	0.11					0.24		
v/s Ratio Perm			0.08									c0.81
v/c Ratio		0.92	0.23	0.62	0.18					0.82		0.81
Uniform Delay, d1		22.8	16.6	28.2	6.7					24.6		0.0
Progression Factor		1.00	1.00	0.86	1.39					1.00		1.00
Incremental Delay, d2		11.6	1.0	0.7	0.1					9.2		4.6
Delay (s)		34.4	17.6	25.1	9.4					33.8		4.6
Level of Service		C	B	C	A					C		A
Approach Delay (s)		30.5			17.4			0.0			11.9	
Approach LOS		C			B			A			B	

Intersection Summary			
HCM 2000 Control Delay	20.0	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.96		
Actuated Cycle Length (s)	75.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	80.3%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	880	720	0	0	600	500	190	20	450	0	0	0
Future Volume (vph)	880	720	0	0	600	500	190	20	450	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	5.0			5.0			3.6	3.9			
Lane Util. Factor	0.97	0.95			0.95			1.00	1.00			
Frpb, ped/bikes	1.00	1.00			0.99			1.00	1.00			
Flpb, ped/bikes	1.00	1.00			1.00			1.00	1.00			
Frt	1.00	1.00			0.93			1.00	0.85			
Flt Protected	0.95	1.00			1.00			0.96	1.00			
Satd. Flow (prot)	3433	3539			3274			1782	1583			
Flt Permitted	0.95	1.00			1.00			0.96	1.00			
Satd. Flow (perm)	3433	3539			3274			1782	1583			
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	957	783	0	0	652	543	207	22	489	0	0	0
RTOR Reduction (vph)	0	0	0	0	185	0	0	0	231	0	0	0
Lane Group Flow (vph)	957	783	0	0	1010	0	0	229	258	0	0	0
Confl. Peds. (#/hr)	3		1	1		3						
Turn Type	Prot	NA			NA		Split	NA	Perm			
Protected Phases	5	2			6		4	4				
Permitted Phases									4			
Actuated Green, G (s)	20.8	54.5			29.5			10.4	10.4			
Effective Green, g (s)	21.0	55.0			30.0			11.4	11.1			
Actuated g/C Ratio	0.28	0.73			0.40			0.15	0.15			
Clearance Time (s)	4.2	5.5			5.5			4.6	4.6			
Vehicle Extension (s)	0.2	0.2			0.2			0.2	0.2			
Lane Grp Cap (vph)	961	2595			1309			270	234			
v/s Ratio Prot	c0.28	0.22			c0.31			0.13				
v/s Ratio Perm									c0.16			
v/c Ratio	1.00	0.30			0.77			0.85	1.10			
Uniform Delay, d1	27.0	3.4			19.5			31.0	31.9			
Progression Factor	1.38	0.64			1.00			1.00	1.00			
Incremental Delay, d2	21.9	0.2			4.4			20.4	89.2			
Delay (s)	59.2	2.4			24.0			51.4	121.1			
Level of Service	E	A			C			D	F			
Approach Delay (s)		33.7			24.0			98.9			0.0	
Approach LOS		C			C			F			A	

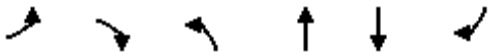
Intersection Summary			
HCM 2000 Control Delay	43.3	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.91		
Actuated Cycle Length (s)	75.0	Sum of lost time (s)	13.0
Intersection Capacity Utilization	80.3%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	230	200	150	870	890	180
Future Volume (vph)	230	200	150	870	890	180
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.5		4.5	4.5	4.5	
Lane Util. Factor	1.00		1.00	0.95	0.95	
Frt	0.94		1.00	1.00	0.97	
Flt Protected	0.97		0.95	1.00	1.00	
Satd. Flow (prot)	1700		1770	3539	3450	
Flt Permitted	0.97		0.95	1.00	1.00	
Satd. Flow (perm)	1700		1770	3539	3450	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	250	217	163	946	967	196
RTOR Reduction (vph)	26	0	0	0	11	0
Lane Group Flow (vph)	441	0	163	946	1152	0
Turn Type	Prot		Prot	NA	NA	
Protected Phases	7		1	6	2	
Permitted Phases						
Actuated Green, G (s)	37.9		16.0	83.1	62.6	
Effective Green, g (s)	37.9		16.0	83.1	62.6	
Actuated g/C Ratio	0.29		0.12	0.64	0.48	
Clearance Time (s)	4.5		4.5	4.5	4.5	
Vehicle Extension (s)	3.0		3.0	3.0	3.0	
Lane Grp Cap (vph)	495		217	2262	1661	
v/s Ratio Prot	c0.26		c0.09	0.27	c0.33	
v/s Ratio Perm						
v/c Ratio	0.89		0.75	0.42	0.69	
Uniform Delay, d1	44.1		55.1	11.5	26.2	
Progression Factor	1.00		1.04	1.25	1.00	
Incremental Delay, d2	18.0		12.4	0.5	2.4	
Delay (s)	62.1		69.8	14.9	28.6	
Level of Service	E		E	B	C	
Approach Delay (s)	62.1			23.0	28.6	
Approach LOS	E			C	C	

Intersection Summary			
HCM 2000 Control Delay	32.1	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.77		
Actuated Cycle Length (s)	130.0	Sum of lost time (s)	13.5
Intersection Capacity Utilization	74.9%	ICU Level of Service	D
Analysis Period (min)	15		

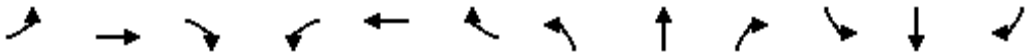
c Critical Lane Group



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	0	430	0	0	360	160
Future Volume (Veh/h)	0	430	0	0	360	160
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	467	0	0	391	174
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage veh)						
Upstream signal (ft)				897	1285	
pX, platoon unblocked						
vC, conflicting volume	478	282	565			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	478	282	565			
tC, single (s)	6.8	6.9	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	100	35	100			
cM capacity (veh/h)	516	714	1003			

Direction, Lane #	EB 1	SB 1	SB 2
Volume Total	467	261	304
Volume Left	0	0	0
Volume Right	467	0	174
cSH	714	1700	1700
Volume to Capacity	0.65	0.15	0.18
Queue Length 95th (ft)	122	0	0
Control Delay (s)	19.0	0.0	0.0
Lane LOS	C		
Approach Delay (s)	19.0	0.0	
Approach LOS	C		

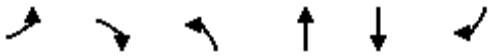
Intersection Summary			
Average Delay	8.6		
Intersection Capacity Utilization	48.4%	ICU Level of Service	A
Analysis Period (min)	15		



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	30	260	320	290	0	0	0	0	50	720	70
Future Volume (vph)	0	30	260	320	290	0	0	0	0	50	720	70
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0		4.0	4.0						4.0	
Lane Util. Factor		1.00		1.00	1.00						0.95	
Frt		0.88		1.00	1.00						0.99	
Flt Protected		1.00		0.95	1.00						1.00	
Satd. Flow (prot)		1638		1770	1863						3485	
Flt Permitted		1.00		0.50	1.00						1.00	
Satd. Flow (perm)		1638		931	1863						3485	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	33	283	348	315	0	0	0	0	54	783	76
RTOR Reduction (vph)	0	33	0	0	0	0	0	0	0	0	9	0
Lane Group Flow (vph)	0	283	0	348	315	0	0	0	0	0	904	0
Turn Type		NA		Perm	NA					Perm	NA	
Protected Phases		4			8						6	
Permitted Phases				8						6		
Actuated Green, G (s)		26.1		26.1	26.1						25.6	
Effective Green, g (s)		26.1		26.1	26.1						25.6	
Actuated g/C Ratio		0.44		0.44	0.44						0.43	
Clearance Time (s)		4.0		4.0	4.0						4.0	
Vehicle Extension (s)		3.0		3.0	3.0						3.0	
Lane Grp Cap (vph)		716		407	814						1494	
v/s Ratio Prot		0.17			0.17							
v/s Ratio Perm				c0.37							0.26	
v/c Ratio		0.40		0.86	0.39						0.61	
Uniform Delay, d1		11.4		15.1	11.4						13.2	
Progression Factor		1.00		1.00	1.00						1.00	
Incremental Delay, d2		0.4		15.9	0.3						1.8	
Delay (s)		11.8		31.0	11.7						15.0	
Level of Service		B		C	B						B	
Approach Delay (s)		11.8			21.8			0.0			15.0	
Approach LOS		B			C			A			B	

Intersection Summary			
HCM 2000 Control Delay	16.9	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.73		
Actuated Cycle Length (s)	59.7	Sum of lost time (s)	8.0
Intersection Capacity Utilization	57.2%	ICU Level of Service	B
Analysis Period (min)	15		

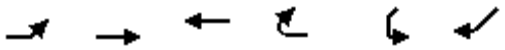
c Critical Lane Group



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	120	200	180	370	480	220
Future Volume (vph)	120	200	180	370	480	220
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0			4.0	4.0	
Lane Util. Factor	1.00			1.00	1.00	
Frt	0.92			1.00	0.96	
Flt Protected	0.98			0.98	1.00	
Satd. Flow (prot)	1674			1833	1784	
Flt Permitted	0.98			0.51	1.00	
Satd. Flow (perm)	1674			942	1784	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	130	217	196	402	522	239
RTOR Reduction (vph)	89	0	0	0	22	0
Lane Group Flow (vph)	258	0	0	598	739	0
Turn Type	Prot		Perm	NA	NA	
Protected Phases	4			2	6	
Permitted Phases			2			
Actuated Green, G (s)	13.9			47.0	47.0	
Effective Green, g (s)	13.9			47.0	47.0	
Actuated g/C Ratio	0.20			0.68	0.68	
Clearance Time (s)	4.0			4.0	4.0	
Vehicle Extension (s)	3.0			3.0	3.0	
Lane Grp Cap (vph)	337			642	1216	
v/s Ratio Prot	c0.15				0.41	
v/s Ratio Perm				c0.63		
v/c Ratio	0.77			0.93	0.61	
Uniform Delay, d1	26.0			9.5	5.9	
Progression Factor	1.00			1.00	1.00	
Incremental Delay, d2	10.0			22.2	2.3	
Delay (s)	36.0			31.7	8.2	
Level of Service	D			C	A	
Approach Delay (s)	36.0			31.7	8.2	
Approach LOS	D			C	A	

Intersection Summary			
HCM 2000 Control Delay	22.1	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.89		
Actuated Cycle Length (s)	68.9	Sum of lost time (s)	8.0
Intersection Capacity Utilization	97.0%	ICU Level of Service	F
Analysis Period (min)	15		

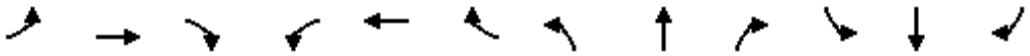
c Critical Lane Group



Movement	EBL	EBT	WBT	WBR	SWL	SWR
Lane Configurations						
Traffic Volume (vph)	60	1090	1200	70	160	240
Future Volume (vph)	60	1090	1200	70	160	240
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0		4.0	
Lane Util. Factor	1.00	0.95	0.95		1.00	
Frt	1.00	1.00	0.99		0.92	
Flt Protected	0.95	1.00	1.00		0.98	
Satd. Flow (prot)	1770	3539	3510		1678	
Flt Permitted	0.13	1.00	1.00		0.98	
Satd. Flow (perm)	237	3539	3510		1678	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	65	1185	1304	76	174	261
RTOR Reduction (vph)	0	0	7	0	27	0
Lane Group Flow (vph)	65	1185	1373	0	408	0
Turn Type	Perm	NA	NA		Prot	
Protected Phases		4	8		6	
Permitted Phases	4					
Actuated Green, G (s)	31.5	31.5	31.5		22.1	
Effective Green, g (s)	31.5	31.5	31.5		22.1	
Actuated g/C Ratio	0.51	0.51	0.51		0.36	
Clearance Time (s)	4.0	4.0	4.0		4.0	
Vehicle Extension (s)	3.0	3.0	3.0		3.0	
Lane Grp Cap (vph)	121	1809	1794		602	
v/s Ratio Prot		0.33	c0.39		c0.24	
v/s Ratio Perm	0.27					
v/c Ratio	0.54	0.66	0.77		0.68	
Uniform Delay, d1	10.1	11.1	12.1		16.7	
Progression Factor	1.00	1.00	1.00		1.00	
Incremental Delay, d2	4.5	0.9	2.0		6.0	
Delay (s)	14.7	11.9	14.1		22.8	
Level of Service	B	B	B		C	
Approach Delay (s)		12.1	14.1		22.8	
Approach LOS		B	B		C	

Intersection Summary			
HCM 2000 Control Delay	14.5	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.73		
Actuated Cycle Length (s)	61.6	Sum of lost time (s)	8.0
Intersection Capacity Utilization	72.3%	ICU Level of Service	C
Analysis Period (min)	15		

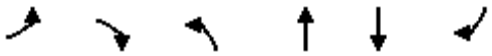
c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	110	20	80	60	110	280	160	510	370	210	520	150
Future Volume (vph)	110	20	80	60	110	280	160	510	370	210	520	150
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.5			4.5		4.5	4.5		4.5	4.5	
Lane Util. Factor		1.00			1.00		1.00	0.95		1.00	0.95	
Frt		0.95			0.92		1.00	0.94		1.00	0.97	
Flt Protected		0.97			0.99		0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1722			1695		1770	3316		1770	3420	
Flt Permitted		0.97			0.99		0.95	1.00		0.95	1.00	
Satd. Flow (perm)		1722			1695		1770	3316		1770	3420	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	120	22	87	65	120	304	174	554	402	228	565	163
RTOR Reduction (vph)	0	22	0	0	59	0	0	131	0	0	26	0
Lane Group Flow (vph)	0	207	0	0	430	0	174	825	0	228	702	0
Turn Type	Split	NA		Split	NA		Prot	NA		Prot	NA	
Protected Phases	8	8		4	4		5	2		1	6	
Permitted Phases												
Actuated Green, G (s)		14.7			25.5		12.8	26.4		13.9	27.5	
Effective Green, g (s)		14.7			25.5		12.8	26.4		13.9	27.5	
Actuated g/C Ratio		0.15			0.26		0.13	0.27		0.14	0.28	
Clearance Time (s)		4.5			4.5		4.5	4.5		4.5	4.5	
Vehicle Extension (s)		3.0			3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)		256			438		230	888		249	954	
v/s Ratio Prot		c0.12			c0.25		0.10	c0.25		c0.13	0.21	
v/s Ratio Perm												
v/c Ratio		0.81			0.98		0.76	0.93		0.92	0.74	
Uniform Delay, d1		40.5			36.3		41.3	35.1		41.7	32.2	
Progression Factor		1.00			1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2		16.8			38.2		13.2	15.6		35.0	3.0	
Delay (s)		57.4			74.5		54.6	50.7		76.7	35.2	
Level of Service		E			E		D	D		E	D	
Approach Delay (s)		57.4			74.5			51.3			45.1	
Approach LOS		E			E			D			D	

Intersection Summary			
HCM 2000 Control Delay	53.7	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.92		
Actuated Cycle Length (s)	98.5	Sum of lost time (s)	18.0
Intersection Capacity Utilization	83.2%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group

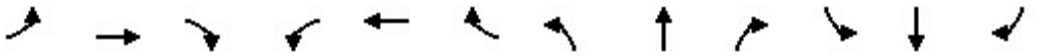


Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	180	260	190	140	270	320
Future Volume (vph)	180	260	190	140	270	320
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0			4.0	4.0	
Lane Util. Factor	1.00			1.00	1.00	
Frt	0.92			1.00	0.93	
Flt Protected	0.98			0.97	1.00	
Satd. Flow (prot)	1680			1811	1726	
Flt Permitted	0.98			0.42	1.00	
Satd. Flow (perm)	1680			776	1726	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	196	283	207	152	293	348
RTOR Reduction (vph)	82	0	0	0	63	0
Lane Group Flow (vph)	397	0	0	359	578	0
Turn Type	Prot		Perm	NA	NA	
Protected Phases	4			2	6	
Permitted Phases			2			
Actuated Green, G (s)	17.4			38.1	38.1	
Effective Green, g (s)	17.4			38.1	38.1	
Actuated g/C Ratio	0.27			0.60	0.60	
Clearance Time (s)	4.0			4.0	4.0	
Vehicle Extension (s)	3.0			3.0	3.0	
Lane Grp Cap (vph)	460			465	1035	
v/s Ratio Prot	c0.24				0.33	
v/s Ratio Perm				c0.46		
v/c Ratio	0.86			0.77	0.56	
Uniform Delay, d1	21.9			9.5	7.6	
Progression Factor	1.00			1.00	1.00	
Incremental Delay, d2	15.3			11.8	2.2	
Delay (s)	37.2			21.2	9.8	
Level of Service	D			C	A	
Approach Delay (s)	37.2			21.2	9.8	
Approach LOS	D			C	A	

Intersection Summary			
HCM 2000 Control Delay	21.5	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.80		
Actuated Cycle Length (s)	63.5	Sum of lost time (s)	8.0
Intersection Capacity Utilization	87.6%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group

Peak Hour Intersection Calculation Worksheets - Mitigation



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	60	1150	400	160	1330	180	480	400	150	580	280	120
Future Volume (vph)	60	1150	400	160	1330	180	480	400	150	580	280	120
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	3.1	4.0	4.0	1.6	4.0	4.0	3.6	4.0	4.0	
Lane Util. Factor	1.00	0.91	1.00	0.97	0.91	1.00	0.97	1.00	1.00	0.97	1.00	
Frpb, ped/bikes	1.00	1.00	0.99	1.00	1.00	0.97	1.00	1.00	0.99	1.00	1.00	
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.96	
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)	1770	5085	1571	3433	5085	1531	3433	1863	1565	3433	1771	
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (perm)	1770	5085	1571	3433	5085	1531	3433	1863	1565	3433	1771	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	65	1250	435	174	1446	196	522	435	163	630	304	130
RTOR Reduction (vph)	0	0	123	0	0	65	0	0	35	0	12	0
Lane Group Flow (vph)	65	1250	312	174	1446	131	522	435	128	630	422	0
Confl. Peds. (#/hr)	8					8			3	3		
Confl. Bikes (#/hr)			1			5						3
Turn Type	Prot	NA	pm+ov	Prot	NA	pm+ov	Prot	NA	pm+ov	Prot	NA	
Protected Phases	5	2	3	1	6	7	3	8	1	7	4	
Permitted Phases			2			6			8			
Actuated Green, G (s)	6.2	43.7	69.2	11.1	48.5	76.4	25.5	34.8	45.9	27.9	35.4	
Effective Green, g (s)	6.6	45.0	71.8	11.5	49.9	79.2	25.9	35.6	47.5	26.9	36.6	
Actuated g/C Ratio	0.05	0.33	0.53	0.09	0.37	0.59	0.19	0.26	0.35	0.20	0.27	
Clearance Time (s)	4.4	5.3	4.4	4.4	5.4	3.0	4.4	4.8	4.4	3.0	5.2	
Vehicle Extension (s)	2.0	4.4	2.0	2.0	4.4	2.0	2.0	3.8	2.0	2.0	2.0	
Lane Grp Cap (vph)	86	1695	871	292	1879	916	658	491	592	684	480	
v/s Ratio Prot	0.04	0.25	0.07	c0.05	c0.28	0.03	0.15	0.23	0.02	c0.18	c0.24	
v/s Ratio Perm			0.13			0.05			0.06			
v/c Ratio	0.76	0.74	0.36	0.60	0.77	0.14	0.79	0.89	0.22	0.92	0.88	
Uniform Delay, d1	63.4	39.8	18.3	59.5	37.5	12.6	52.0	47.7	30.7	53.0	47.1	
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	27.9	2.9	0.1	2.2	3.1	0.0	6.1	17.6	0.1	17.6	16.0	
Delay (s)	91.3	42.7	18.4	61.7	40.6	12.6	58.1	65.4	30.8	70.6	63.1	
Level of Service	F	D	B	E	D	B	E	E	C	E	E	
Approach Delay (s)		38.4			39.6			56.9			67.5	
Approach LOS		D			D			E			E	

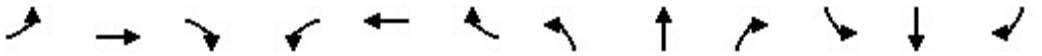
Intersection Summary			
HCM 2000 Control Delay	47.8	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.85		
Actuated Cycle Length (s)	135.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	80.7%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	550	1190	370	0	0	650
Future Volume (vph)	550	1190	370	0	0	650
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	7.0	7.0	7.0			7.0
Lane Util. Factor	0.97	0.76	0.95			0.95
Frt	1.00	0.85	1.00			1.00
Flt Protected	0.95	1.00	1.00			1.00
Satd. Flow (prot)	3433	3610	3539			3539
Flt Permitted	0.95	1.00	1.00			1.00
Satd. Flow (perm)	3433	3610	3539			3539
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	598	1293	402	0	0	707
RTOR Reduction (vph)	0	475	0	0	0	0
Lane Group Flow (vph)	598	818	402	0	0	707
Turn Type	Prot	Perm	NA			NA
Protected Phases	4		2			6
Permitted Phases		4				
Actuated Green, G (s)	11.0	11.0	12.2			12.2
Effective Green, g (s)	11.0	11.0	12.2			12.2
Actuated g/C Ratio	0.30	0.30	0.33			0.33
Clearance Time (s)	7.0	7.0	7.0			7.0
Vehicle Extension (s)	0.2	0.2	0.2			0.2
Lane Grp Cap (vph)	1015	1067	1160			1160
v/s Ratio Prot	0.17		0.11			c0.20
v/s Ratio Perm		c0.23				
v/c Ratio	0.59	0.77	0.35			0.61
Uniform Delay, d1	11.2	11.9	9.5			10.5
Progression Factor	1.00	1.00	1.00			1.00
Incremental Delay, d2	0.6	3.0	0.1			0.6
Delay (s)	11.7	15.0	9.5			11.1
Level of Service	B	B	A			B
Approach Delay (s)	13.9		9.5			11.1
Approach LOS	B		A			B

Intersection Summary			
HCM 2000 Control Delay	12.7	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.68		
Actuated Cycle Length (s)	37.2	Sum of lost time (s)	14.0
Intersection Capacity Utilization	49.6%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

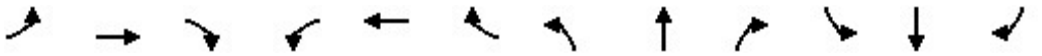


Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	440	300	270	30	140	300	180	460	50	440	510	250
Future Volume (vph)	440	300	270	30	140	300	180	460	50	440	510	250
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.1	4.0	3.1	3.0	4.0	4.0	3.1	4.0		3.1	4.0	4.0
Lane Util. Factor	0.97	1.00	1.00	1.00	0.95	1.00	0.97	0.95		0.97	0.95	1.00
Frpb, ped/bikes	1.00	1.00	0.99	1.00	1.00	0.99	1.00	1.00		1.00	1.00	0.99
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.99		1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	3433	1863	1565	1770	3539	1572	3433	3482		3433	3539	1565
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)	3433	1863	1565	1770	3539	1572	3433	3482		3433	3539	1565
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	478	326	293	33	152	326	196	500	54	478	554	272
RTOR Reduction (vph)	0	0	66	0	0	45	0	6	0	0	0	131
Lane Group Flow (vph)	478	326	227	33	152	281	196	548	0	478	554	141
Confl. Peds. (#/hr)			4			3			5			8
Turn Type	Prot	NA	pm+ov	Prot	NA	pm+ov	Prot	NA		Prot	NA	pm+ov
Protected Phases	5	2	3	1	6	7	3	8		7	4	5
Permitted Phases			2			6						4
Actuated Green, G (s)	20.8	36.9	48.8	3.2	19.2	40.0	11.9	22.7		20.8	31.6	52.4
Effective Green, g (s)	21.7	37.8	50.6	4.2	20.2	40.0	12.8	23.6		21.7	32.5	52.4
Actuated g/C Ratio	0.21	0.37	0.50	0.04	0.20	0.39	0.13	0.23		0.21	0.32	0.52
Clearance Time (s)	4.0	4.9	4.0	4.0	5.0	4.0	4.0	4.9		4.0	4.9	4.0
Vehicle Extension (s)	3.0	0.2	3.0	3.0	8.0	3.0	3.0	3.1		3.0	5.5	3.0
Lane Grp Cap (vph)	734	694	780	73	705	620	433	810		734	1134	808
v/s Ratio Prot	c0.14	c0.18	0.04	0.02	0.04	0.09	0.06	c0.16		c0.14	0.16	0.04
v/s Ratio Perm			0.11			0.09						0.05
v/c Ratio	0.65	0.47	0.29	0.45	0.22	0.45	0.45	0.68		0.65	0.49	0.17
Uniform Delay, d1	36.4	24.2	14.9	47.5	34.0	22.6	41.1	35.4		36.4	27.8	13.0
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	2.1	0.2	0.2	4.4	0.7	0.5	0.8	2.3		2.1	0.8	0.1
Delay (s)	38.5	24.4	15.1	51.9	34.6	23.2	41.8	37.7		38.5	28.6	13.1
Level of Service	D	C	B	D	C	C	D	D		D	C	B
Approach Delay (s)		28.0			28.4			38.8			29.0	
Approach LOS		C			C			D			C	

Intersection Summary			
HCM 2000 Control Delay	30.6	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.64		
Actuated Cycle Length (s)	101.4	Sum of lost time (s)	16.0
Intersection Capacity Utilization	62.9%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	220	1460	170	340	1800	300	120	330	210	230	280	180
Future Volume (vph)	220	1460	170	340	1800	300	120	330	210	230	280	180
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0	4.4	4.0	4.0	3.5	4.0	4.0	3.5
Lane Util. Factor	0.97	0.86		0.97	0.86	1.00	1.00	0.95	1.00	0.97	0.95	1.00
Frpb, ped/bikes	1.00	1.00		1.00	1.00	0.98	1.00	1.00	0.98	1.00	1.00	0.98
Flpb, ped/bikes	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.98		1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	6280		3433	6408	1544	1770	3539	1545	3433	3539	1554
Flt Permitted	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	6280		3433	6408	1544	1770	3539	1545	3433	3539	1554
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	239	1587	185	370	1957	326	130	359	228	250	304	196
RTOR Reduction (vph)	0	17	0	0	0	77	0	0	74	0	0	80
Lane Group Flow (vph)	239	1755	0	370	1957	249	130	359	154	250	304	116
Confl. Peds. (#/hr)	14		25	25		14	18		27	27		14
Turn Type	Prot	NA		Prot	NA	pm+ov	Prot	NA	pm+ov	Prot	NA	pm+ov
Protected Phases	5	2		1	6	7	3	8	1	7	4	5
Permitted Phases						6			8			4
Actuated Green, G (s)	8.8	39.3		13.4	44.0	53.5	9.5	24.0	37.4	9.5	24.0	32.8
Effective Green, g (s)	9.2	40.4		13.8	45.0	53.5	9.9	24.9	39.2	9.9	24.9	34.6
Actuated g/C Ratio	0.09	0.38		0.13	0.43	0.51	0.09	0.24	0.37	0.09	0.24	0.33
Clearance Time (s)	4.4	5.1		4.4	5.0	4.4	4.4	4.9	4.4	4.4	4.9	4.4
Vehicle Extension (s)	2.0	3.5		2.0	3.7	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lane Grp Cap (vph)	300	2416		451	2746	786	166	839	628	323	839	512
v/s Ratio Prot	0.07	c0.28		0.11	c0.31	0.03	c0.07	c0.10	0.03	c0.07	0.09	0.02
v/s Ratio Perm						0.13			0.07			0.05
v/c Ratio	0.80	0.73		0.82	0.71	0.32	0.78	0.43	0.25	0.77	0.36	0.23
Uniform Delay, d1	47.0	27.6		44.4	24.7	15.1	46.5	34.0	22.7	46.5	33.4	25.5
Progression Factor	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	12.8	1.9		10.9	1.6	0.1	19.6	0.1	0.1	10.1	0.1	0.1
Delay (s)	59.8	29.5		55.3	26.3	15.2	66.1	34.1	22.8	56.5	33.5	25.6
Level of Service	E	C		E	C	B	E	C	C	E	C	C
Approach Delay (s)		33.1			29.0			36.3			39.1	
Approach LOS		C			C			D			D	

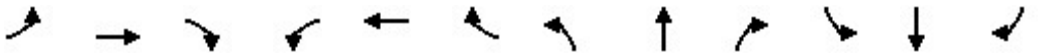
Intersection Summary			
HCM 2000 Control Delay	32.4	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.70		
Actuated Cycle Length (s)	105.0	Sum of lost time (s)	16.4
Intersection Capacity Utilization	73.4%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	340	190	540	520	0	0	0	0	280	360	410
Future Volume (vph)	0	340	190	540	520	0	0	0	0	280	360	410
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0	4.0	4.0	4.0					4.0	4.0	4.0
Lane Util. Factor		0.95	1.00	0.97	0.95					0.91	0.91	0.88
Frt		1.00	0.85	1.00	1.00					1.00	1.00	0.85
Flt Protected		1.00	1.00	0.95	1.00					0.95	0.99	1.00
Satd. Flow (prot)		3539	1583	3433	3539					1610	3358	2787
Flt Permitted		1.00	1.00	0.95	1.00					0.95	0.99	1.00
Satd. Flow (perm)		3539	1583	3433	3539					1610	3358	2787
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	370	207	587	565	0	0	0	0	304	391	446
RTOR Reduction (vph)	0	0	90	0	0	0	0	0	0	0	0	332
Lane Group Flow (vph)	0	370	117	587	565	0	0	0	0	213	482	114
Turn Type		NA	Perm	Prot	NA					Perm	NA	Perm
Protected Phases		2		1	6						4	
Permitted Phases			2							4		4
Actuated Green, G (s)		30.2	30.2	16.1	50.7					19.5	19.5	19.5
Effective Green, g (s)		31.1	31.1	16.5	51.6					20.4	20.4	20.4
Actuated g/C Ratio		0.39	0.39	0.21	0.65					0.25	0.25	0.25
Clearance Time (s)		4.9	4.9	4.4	4.9					4.9	4.9	4.9
Vehicle Extension (s)		3.8	3.8	2.0	4.2					2.0	2.0	2.0
Lane Grp Cap (vph)		1375	615	708	2282					410	856	710
v/s Ratio Prot		c0.10		c0.17	0.16							
v/s Ratio Perm			0.07							0.13	0.14	0.04
v/c Ratio		0.27	0.19	0.83	0.25					0.52	0.56	0.16
Uniform Delay, d1		16.7	16.1	30.4	6.0					25.6	25.9	23.1
Progression Factor		1.00	1.00	1.00	1.00					1.00	1.00	1.00
Incremental Delay, d2		0.5	0.7	7.6	0.3					0.5	0.5	0.0
Delay (s)		17.2	16.8	38.0	6.3					26.1	26.4	23.2
Level of Service		B	B	D	A					C	C	C
Approach Delay (s)		17.0			22.4			0.0			25.1	
Approach LOS		B			C			A			C	

Intersection Summary			
HCM 2000 Control Delay	22.4	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.49		
Actuated Cycle Length (s)	80.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	49.2%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

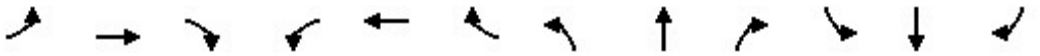


Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	680	80	40	510	0	0	0	0	540	340	510
Future Volume (vph)	0	680	80	40	510	0	0	0	0	540	340	510
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		6.7		4.0	6.7						6.3	4.0
Lane Util. Factor		0.91		1.00	0.95						0.86	0.86
Frt		0.98		1.00	1.00						1.00	0.85
Flt Protected		1.00		0.95	1.00						0.97	1.00
Satd. Flow (prot)		5005		1770	3539						4663	1362
Flt Permitted		1.00		0.95	1.00						0.97	1.00
Satd. Flow (perm)		5005		1770	3539						4663	1362
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	739	87	43	554	0	0	0	0	587	370	554
RTOR Reduction (vph)	0	21	0	0	0	0	0	0	0	0	0	118
Lane Group Flow (vph)	0	805	0	43	554	0	0	0	0	0	957	436
Turn Type		NA		Prot	NA					Perm	NA	Perm
Protected Phases		2		1	6						4	
Permitted Phases										4		4
Actuated Green, G (s)		22.1		2.8	27.6						25.4	25.4
Effective Green, g (s)		20.3		3.2	27.5						24.5	26.8
Actuated g/C Ratio		0.31		0.05	0.42						0.38	0.41
Clearance Time (s)		4.9		4.4	6.6						5.4	5.4
Vehicle Extension (s)		1.0		2.0	1.0						1.0	1.0
Lane Grp Cap (vph)		1563		87	1497						1757	561
v/s Ratio Prot		c0.16		0.02	c0.16							
v/s Ratio Perm											0.21	c0.32
v/c Ratio		0.51		0.49	0.37						0.93dl	0.78
Uniform Delay, d1		18.3		30.1	12.8						15.9	16.5
Progression Factor		1.00		1.34	0.83						1.00	1.00
Incremental Delay, d2		1.2		1.5	0.6						0.2	6.1
Delay (s)		19.5		41.7	11.3						16.1	22.6
Level of Service		B		D	B						B	C
Approach Delay (s)		19.5			13.5			0.0			18.5	
Approach LOS		B			B			A			B	

Intersection Summary			
HCM 2000 Control Delay	17.8	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.69		
Actuated Cycle Length (s)	65.0	Sum of lost time (s)	17.0
Intersection Capacity Utilization	75.1%	ICU Level of Service	D
Analysis Period (min)	15		

dl Defacto Left Lane. Recode with 1 though lane as a left lane.

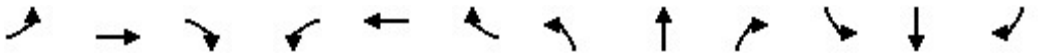
c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	20	30	30	440	110	160	40	1330	210	140	740	130
Future Volume (vph)	20	30	30	440	110	160	40	1330	210	140	740	130
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.3	4.3		4.0	4.0		4.0	4.0	
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	0.91		0.97	0.91	
Frpb, ped/bikes	1.00	0.99		1.00	1.00		1.00	1.00		1.00	1.00	
Flpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Frt	1.00	0.93		1.00	0.91		1.00	0.98		1.00	0.98	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1770	1710		1764	1697		1770	4981		3433	4955	
Flt Permitted	0.47	1.00		0.71	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (perm)	868	1710		1326	1697		1770	4981		3433	4955	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	22	33	33	478	120	174	43	1446	228	152	804	141
RTOR Reduction (vph)	0	21	0	0	59	0	0	23	0	0	26	0
Lane Group Flow (vph)	22	45	0	478	235	0	43	1651	0	152	919	0
Confl. Peds. (#/hr)			4	4			1					1
Turn Type	Perm	NA		Perm	NA		Prot	NA		Prot	NA	
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4			8								
Actuated Green, G (s)	33.8	33.8		33.1	33.1		3.5	33.3		8.6	38.2	
Effective Green, g (s)	33.8	33.8		33.5	33.5		3.5	34.7		9.1	40.3	
Actuated g/C Ratio	0.38	0.38		0.37	0.37		0.04	0.39		0.10	0.45	
Clearance Time (s)	4.0	4.0		4.7	4.7		4.0	5.4		4.5	6.1	
Vehicle Extension (s)	2.0	2.0		3.0	3.0		2.0	4.8		3.0	3.7	
Lane Grp Cap (vph)	327	645		495	634		69	1929		348	2228	
v/s Ratio Prot		0.03			0.14		0.02	c0.33		c0.04	0.19	
v/s Ratio Perm	0.03			c0.36								
v/c Ratio	0.07	0.07		0.97	0.37		0.62	0.86		0.44	0.41	
Uniform Delay, d1	17.8	17.8		27.5	20.4		42.4	25.2		37.8	16.7	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	0.0	0.0		31.5	0.4		11.9	5.1		0.9	0.6	
Delay (s)	17.9	17.9		59.0	20.8		54.3	30.3		38.7	17.2	
Level of Service	B	B		E	C		D	C		D	B	
Approach Delay (s)		17.9			44.4			30.9			20.2	
Approach LOS		B			D			C			C	

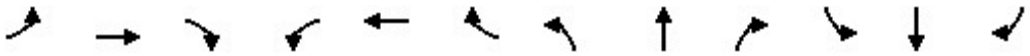
Intersection Summary			
HCM 2000 Control Delay	30.2	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.85		
Actuated Cycle Length (s)	89.6	Sum of lost time (s)	12.3
Intersection Capacity Utilization	75.7%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group



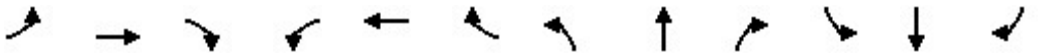
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	650	560	140	150	730	170	300	690	100	110	710	250
Future Volume (vph)	650	560	140	150	730	170	300	690	100	110	710	250
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0		4.0	4.0	4.9	4.0	4.0	4.0
Lane Util. Factor	0.97	0.91		1.00	0.91		0.97	0.91	1.00	1.00	0.91	1.00
Frpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00	0.99	1.00	1.00	0.99
Flpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.97		1.00	0.97		1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	4933		1770	4926		3433	5085	1562	1770	5085	1568
Flt Permitted	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	4933		1770	4926		3433	5085	1562	1770	5085	1568
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	707	609	152	163	793	185	326	750	109	120	772	272
RTOR Reduction (vph)	0	42	0	0	41	0	0	0	84	0	0	45
Lane Group Flow (vph)	707	719	0	163	937	0	326	750	25	120	772	227
Confl. Peds. (#/hr)	4					4	5		1	1		5
Turn Type	Prot	NA		Prot	NA		Prot	NA	Perm	Prot	NA	pm+ov
Protected Phases	7	4		3	8		5	2		1	6	7
Permitted Phases									2			6
Actuated Green, G (s)	20.3	33.3		12.6	25.0		9.6	22.0	22.0	7.4	19.7	40.0
Effective Green, g (s)	20.7	34.5		13.0	26.8		10.0	22.9	22.0	7.8	20.7	40.8
Actuated g/C Ratio	0.22	0.37		0.14	0.28		0.11	0.24	0.23	0.08	0.22	0.43
Clearance Time (s)	4.4	5.2		4.4	5.8		4.4	4.9	4.9	4.4	5.0	4.4
Vehicle Extension (s)	2.0	3.9		2.0	2.7		2.0	3.3	3.3	2.0	4.1	2.0
Lane Grp Cap (vph)	754	1806		244	1401		364	1236	364	146	1117	679
v/s Ratio Prot	c0.21	0.15		0.09	c0.19		c0.09	0.15		0.07	c0.15	0.07
v/s Ratio Perm									0.02			0.07
v/c Ratio	0.94	0.40		0.67	0.67		0.90	0.61	0.07	0.82	0.69	0.33
Uniform Delay, d1	36.1	22.1		38.6	29.8		41.6	31.7	28.1	42.5	33.8	17.7
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	18.8	0.2		5.3	1.2		22.9	2.2	0.4	28.4	3.5	0.1
Delay (s)	54.9	22.3		43.8	30.9		64.5	33.9	28.5	70.9	37.3	17.8
Level of Service	D	C		D	C		E	C	C	E	D	B
Approach Delay (s)		38.0			32.8			41.8			36.2	
Approach LOS		D			C			D			D	

Intersection Summary			
HCM 2000 Control Delay	37.3	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.77		
Actuated Cycle Length (s)	94.2	Sum of lost time (s)	16.0
Intersection Capacity Utilization	74.4%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	140	230	70	20	140	210	50	180	250	20	20	30
Future Volume (vph)	140	230	70	20	140	210	50	180	250	20	20	30
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		3.1	4.0			4.0			4.0	
Lane Util. Factor	1.00	1.00		1.00	1.00			1.00			1.00	
Frpb, ped/bikes	1.00	0.99		1.00	1.00			0.98			1.00	
Flpb, ped/bikes	1.00	1.00		1.00	1.00			1.00			1.00	
Frt	1.00	0.97		1.00	0.91			0.93			0.94	
Flt Protected	0.95	1.00		0.95	1.00			0.99			0.99	
Satd. Flow (prot)	1770	1787		1770	1695			1690			1728	
Flt Permitted	0.95	1.00		0.95	1.00			0.96			0.81	
Satd. Flow (perm)	1770	1787		1770	1695			1633			1412	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	152	250	76	22	152	228	54	196	272	22	22	33
RTOR Reduction (vph)	0	13	0	0	66	0	0	53	0	0	23	0
Lane Group Flow (vph)	152	313	0	22	314	0	0	469	0	0	54	0
Confl. Peds. (#/hr)			3	3					8	8		
Turn Type	Prot	NA		Prot	NA		Perm	NA		Perm	NA	
Protected Phases	5	2		1	6			8			4	
Permitted Phases							8			4		
Actuated Green, G (s)	11.5	36.4		1.5	26.0			22.4			22.4	
Effective Green, g (s)	11.9	37.3		2.4	26.9			23.3			23.3	
Actuated g/C Ratio	0.16	0.50		0.03	0.36			0.31			0.31	
Clearance Time (s)	4.4	4.9		4.0	4.9			4.9			4.9	
Vehicle Extension (s)	1.0	2.0		3.0	2.0			2.0			2.0	
Lane Grp Cap (vph)	284	899		57	615			513			443	
v/s Ratio Prot	c0.09	0.17		0.01	c0.19							
v/s Ratio Perm								c0.29			0.04	
v/c Ratio	0.54	0.35		0.39	0.51			0.91			0.12	
Uniform Delay, d1	28.6	11.1		35.1	18.5			24.4			18.1	
Progression Factor	1.00	1.00		1.00	1.00			1.00			1.00	
Incremental Delay, d2	1.0	1.1		4.3	3.0			20.4			0.0	
Delay (s)	29.5	12.1		39.4	21.5			44.8			18.2	
Level of Service	C	B		D	C			D			B	
Approach Delay (s)		17.7			22.5			44.8			18.2	
Approach LOS		B			C			D			B	

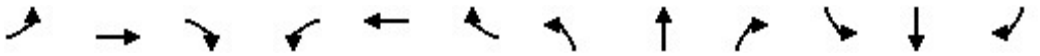
Intersection Summary			
HCM 2000 Control Delay	28.6	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.67		
Actuated Cycle Length (s)	74.1	Sum of lost time (s)	12.0
Intersection Capacity Utilization	73.0%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	180	660	90	170	1240	70	70	130	110	260	380	250
Future Volume (vph)	180	660	90	170	1240	70	70	130	110	260	380	250
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0		4.0	4.0	4.0	4.0	4.0	
Lane Util. Factor	0.97	0.91		1.00	0.91		1.00	0.95	1.00	1.00	0.95	
Frpb, ped/bikes	1.00	0.99		1.00	1.00		1.00	1.00	0.98	1.00	0.98	
Flpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	
Frt	1.00	0.98		1.00	0.99		1.00	1.00	0.85	1.00	0.94	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)	3433	4963		1770	5030		1770	3539	1550	1770	3267	
Flt Permitted	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (perm)	3433	4963		1770	5030		1770	3539	1550	1770	3267	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	196	717	98	185	1348	76	76	141	120	283	413	272
RTOR Reduction (vph)	0	14	0	0	5	0	0	0	45	0	91	0
Lane Group Flow (vph)	196	801	0	185	1419	0	76	141	75	283	594	0
Confl. Peds. (#/hr)	23		24	24		23	19		14	14		19
Confl. Bikes (#/hr)			9			5			12			6
Turn Type	Prot	NA		Prot	NA		Prot	NA	pm+ov	Prot	NA	
Protected Phases	5	2		1	6		3	8	1	7	4	
Permitted Phases									8			
Actuated Green, G (s)	10.0	39.6		16.3	45.4		7.6	21.4	37.7	24.0	37.9	
Effective Green, g (s)	10.4	40.5		16.7	46.8		8.0	22.4	38.5	24.4	38.8	
Actuated g/C Ratio	0.09	0.34		0.14	0.39		0.07	0.19	0.32	0.20	0.32	
Clearance Time (s)	4.4	4.9		4.4	5.4		4.4	5.0	4.4	4.4	4.9	
Vehicle Extension (s)	2.0	4.2		2.0	3.0		2.0	4.0	2.0	2.0	2.6	
Lane Grp Cap (vph)	297	1675		246	1961		118	660	497	359	1056	
v/s Ratio Prot	0.06	0.16		c0.10	c0.28		c0.04	0.04	0.02	c0.16	c0.18	
v/s Ratio Perm									0.03			
v/c Ratio	0.66	0.48		0.75	0.72		0.64	0.21	0.15	0.79	0.56	
Uniform Delay, d1	53.1	31.4		49.7	31.1		54.6	41.3	29.1	45.3	33.6	
Progression Factor	1.28	0.72		1.05	0.78		1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	3.8	0.9		9.0	1.9		8.7	0.2	0.1	10.1	0.6	
Delay (s)	71.6	23.5		61.2	26.2		63.3	41.6	29.1	55.5	34.2	
Level of Service	E	C		E	C		E	D	C	E	C	
Approach Delay (s)		32.8			30.2			42.0			40.4	
Approach LOS		C			C			D			D	

Intersection Summary			
HCM 2000 Control Delay	34.4	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.72		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	72.7%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	90	1680	570	120	1170	360	460	350	180	300	260	40
Future Volume (vph)	90	1680	570	120	1170	360	460	350	180	300	260	40
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	3.1	4.0	4.0	1.6	4.0	4.0	3.6	4.0	4.0	
Lane Util. Factor	1.00	0.91	1.00	0.97	0.91	1.00	0.97	1.00	1.00	0.97	1.00	
Frpb, ped/bikes	1.00	1.00	0.99	1.00	1.00	0.96	1.00	1.00	0.98	1.00	1.00	
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.98	
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)	1770	5085	1567	3433	5085	1528	3433	1863	1558	3433	1822	
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (perm)	1770	5085	1567	3433	5085	1528	3433	1863	1558	3433	1822	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	98	1826	620	130	1272	391	500	380	196	326	283	43
RTOR Reduction (vph)	0	0	69	0	0	90	0	0	60	0	4	0
Lane Group Flow (vph)	98	1826	551	130	1272	301	500	380	136	326	322	0
Confl. Peds. (#/hr)	6		1	1		6			6	6		
Confl. Bikes (#/hr)			1			5						3
Turn Type	Prot	NA	pm+ov	Prot	NA	pm+ov	Prot	NA	pm+ov	Prot	NA	
Protected Phases	5	2	3	1	6	7	3	8	1	7	4	
Permitted Phases			2			6			8			
Actuated Green, G (s)	12.2	66.9	92.0	8.5	63.1	84.5	25.1	35.7	44.2	21.4	30.2	
Effective Green, g (s)	12.6	68.2	94.6	8.9	64.5	87.3	25.5	36.5	45.8	20.4	31.4	
Actuated g/C Ratio	0.08	0.45	0.63	0.06	0.43	0.58	0.17	0.24	0.31	0.14	0.21	
Clearance Time (s)	4.4	5.3	4.4	4.4	5.4	3.0	4.4	4.8	4.4	3.0	5.2	
Vehicle Extension (s)	2.0	4.4	2.0	2.0	4.4	2.0	2.0	3.8	2.0	2.0	2.0	
Lane Grp Cap (vph)	148	2311	988	203	2186	889	583	453	475	466	381	
v/s Ratio Prot	c0.06	c0.36	0.10	0.04	0.25	0.05	0.15	c0.20	0.02	0.09	c0.18	
v/s Ratio Perm			0.25			0.15			0.07			
v/c Ratio	0.66	0.79	0.56	0.64	0.58	0.34	0.86	0.84	0.29	0.70	0.85	
Uniform Delay, d1	66.6	34.8	15.8	69.0	32.5	16.3	60.5	54.0	39.6	61.9	57.0	
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	8.3	2.8	0.4	5.1	1.1	0.1	11.5	13.2	0.1	3.7	15.1	
Delay (s)	75.0	37.7	16.2	74.1	33.6	16.4	72.0	67.2	39.8	65.6	72.1	
Level of Service	E	D	B	E	C	B	E	E	D	E	E	
Approach Delay (s)		33.9			32.8			64.4			68.8	
Approach LOS		C			C			E			E	

Intersection Summary			
HCM 2000 Control Delay	42.7	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.83		
Actuated Cycle Length (s)	150.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	78.5%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

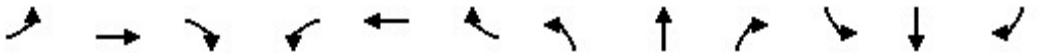
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	830	1790	930	0	0	870
Future Volume (vph)	830	1790	930	0	0	870
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	7.0	7.0	7.0			7.0
Lane Util. Factor	0.97	0.76	0.95			0.95
Frt	1.00	0.85	1.00			1.00
Flt Protected	0.95	1.00	1.00			1.00
Satd. Flow (prot)	3433	3610	3539			3539
Flt Permitted	0.95	1.00	1.00			1.00
Satd. Flow (perm)	3433	3610	3539			3539
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	902	1946	1011	0	0	946
RTOR Reduction (vph)	0	7	0	0	0	0
Lane Group Flow (vph)	902	1939	1011	0	0	946
Turn Type	Prot	Perm	NA			NA
Protected Phases	4		2			6
Permitted Phases		4				
Actuated Green, G (s)	71.1	71.1	41.5			41.5
Effective Green, g (s)	71.1	71.1	41.5			41.5
Actuated g/C Ratio	0.56	0.56	0.33			0.33
Clearance Time (s)	7.0	7.0	7.0			7.0
Vehicle Extension (s)	0.2	0.2	0.2			0.2
Lane Grp Cap (vph)	1928	2027	1160			1160
v/s Ratio Prot	0.26		c0.29			0.27
v/s Ratio Perm		c0.54				
v/c Ratio	0.47	0.96	0.87			0.82
Uniform Delay, d1	16.5	26.3	40.0			39.0
Progression Factor	1.00	1.00	1.00			1.00
Incremental Delay, d2	0.1	11.3	7.2			4.3
Delay (s)	16.6	37.5	47.2			43.3
Level of Service	B	D	D			D
Approach Delay (s)	30.9		47.2			43.3
Approach LOS	C		D			D

Intersection Summary			
HCM 2000 Control Delay	36.8	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.92		
Actuated Cycle Length (s)	126.6	Sum of lost time (s)	14.0
Intersection Capacity Utilization	79.1%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

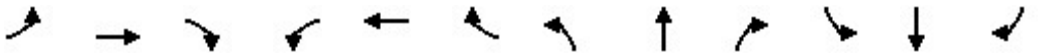
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	380	410	310	80	540	700	460	510	130	420	700	390
Future Volume (vph)	380	410	310	80	540	700	460	510	130	420	700	390
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.9	4.0	4.0		4.0	4.0	4.9
Lane Util. Factor	0.97	1.00	1.00	1.00	0.95	1.00	0.97	0.95		0.97	0.95	1.00
Frpb, ped/bikes	1.00	1.00	0.99	1.00	1.00	0.99	1.00	1.00		1.00	1.00	0.99
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.97		1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	3433	1863	1568	1770	3539	1569	3433	3432		3433	3539	1562
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)	3433	1863	1568	1770	3539	1569	3433	3432		3433	3539	1562
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	413	446	337	87	587	761	500	554	141	457	761	424
RTOR Reduction (vph)	0	0	47	0	0	45	0	17	0	0	0	51
Lane Group Flow (vph)	413	446	290	87	587	716	500	678	0	457	761	373
Confl. Peds. (#/hr)	6		3	3		6	6					6
Turn Type	Prot	NA	pm+ov	Prot	NA	pm+ov	Prot	NA		Prot	NA	pm+ov
Protected Phases	5	2	3	1	6	7	3	8		7	4	5
Permitted Phases			2			6						4
Actuated Green, G (s)	18.1	42.2	67.1	8.0	32.1	70.5	24.9	31.7		38.4	45.2	63.3
Effective Green, g (s)	19.0	43.1	68.9	9.0	33.1	70.5	25.8	32.6		39.3	46.1	63.3
Actuated g/C Ratio	0.14	0.31	0.49	0.06	0.24	0.50	0.18	0.23		0.28	0.33	0.45
Clearance Time (s)	4.9	4.9	4.9	5.0	5.0	4.9	4.9	4.9		4.9	4.9	4.9
Vehicle Extension (s)	0.2	0.2	3.1	8.0	8.0	5.5	3.1	3.1		5.5	5.5	0.2
Lane Grp Cap (vph)	465	573	816	113	836	845	632	799		963	1165	706
v/s Ratio Prot	c0.12	0.24	0.07	0.05	0.17	c0.23	0.15	c0.20		0.13	0.22	0.07
v/s Ratio Perm			0.12			0.22						0.17
v/c Ratio	0.89	0.78	0.36	0.77	0.70	0.85	0.79	0.85		0.47	0.65	0.53
Uniform Delay, d1	59.5	44.1	21.9	64.5	48.9	30.1	54.5	51.3		41.8	40.1	27.6
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	17.8	10.0	0.3	37.4	4.9	8.9	6.7	8.4		0.9	2.0	0.3
Delay (s)	77.3	54.1	22.2	101.9	53.8	39.0	61.3	59.8		42.7	42.1	27.9
Level of Service	E	D	C	F	D	D	E	E		D	D	C
Approach Delay (s)		53.1			48.9			60.4			38.6	
Approach LOS		D			D			E			D	

Intersection Summary			
HCM 2000 Control Delay	49.2	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.89		
Actuated Cycle Length (s)	140.0	Sum of lost time (s)	17.8
Intersection Capacity Utilization	84.3%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	380	1870	200	510	1550	390	230	640	410	350	530	290
Future Volume (vph)	380	1870	200	510	1550	390	230	640	410	350	530	290
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0	4.4	4.0	4.0	3.5	4.0	4.0	3.5
Lane Util. Factor	0.97	0.86		0.97	0.86	1.00	1.00	0.95	1.00	0.97	0.95	1.00
Frpb, ped/bikes	1.00	0.99		1.00	1.00	0.93	1.00	1.00	0.96	1.00	1.00	0.96
Flpb, ped/bikes	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.99		1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	6238		3433	6408	1468	1770	3539	1526	3433	3539	1520
Flt Permitted	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	6238		3433	6408	1468	1770	3539	1526	3433	3539	1520
Peak-hour factor, PHF	0.92	0.95	0.92	0.92	0.95	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	413	1968	217	554	1632	424	250	696	446	380	576	315
RTOR Reduction (vph)	0	13	0	0	0	39	0	0	52	0	0	56
Lane Group Flow (vph)	413	2172	0	554	1632	385	250	696	394	380	576	259
Confl. Peds. (#/hr)	48		65	65		48	42		40	40		42
Turn Type	Prot	NA		Prot	NA	pm+ov	Prot	NA	pm+ov	Prot	NA	pm+ov
Protected Phases	5	2		1	6	7	3	8	1	7	4	5
Permitted Phases						6			8			4
Actuated Green, G (s)	21.2	52.6		24.0	55.5	74.4	20.9	30.7	54.7	18.9	28.7	49.9
Effective Green, g (s)	21.6	53.7		24.4	56.5	74.4	21.3	31.6	56.5	19.3	29.6	51.7
Actuated g/C Ratio	0.15	0.37		0.17	0.39	0.51	0.15	0.22	0.39	0.13	0.20	0.36
Clearance Time (s)	4.4	5.1		4.4	5.0	4.4	4.4	4.9	4.4	4.4	4.9	4.4
Vehicle Extension (s)	2.0	3.5		2.0	3.7	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lane Grp Cap (vph)	511	2310		577	2496	753	260	771	631	456	722	541
v/s Ratio Prot	0.12	c0.35		c0.16	0.25	0.07	0.14	c0.20	0.11	0.11	c0.16	0.07
v/s Ratio Perm						0.20			0.15			0.10
v/c Ratio	0.81	0.94		0.96	0.65	0.51	0.96	0.90	0.62	0.83	0.80	0.48
Uniform Delay, d1	59.7	44.1		59.8	36.2	23.3	61.4	55.2	35.7	61.3	54.9	36.2
Progression Factor	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	8.6	9.2		27.5	0.7	0.2	44.8	13.6	1.4	11.8	5.7	0.2
Delay (s)	68.3	53.3		87.3	36.9	23.5	106.2	68.8	37.1	73.1	60.6	36.4
Level of Service	E	D		F	D	C	F	E	D	E	E	D
Approach Delay (s)		55.7			45.4			65.3			58.3	
Approach LOS		E			D			E			E	

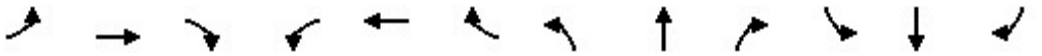
Intersection Summary			
HCM 2000 Control Delay	54.4	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.93		
Actuated Cycle Length (s)	145.0	Sum of lost time (s)	16.4
Intersection Capacity Utilization	94.6%	ICU Level of Service	F
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	690	290	430	480	0	0	0	0	400	550	1080
Future Volume (vph)	0	690	290	430	480	0	0	0	0	400	550	1080
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0	4.0	4.0	4.0					4.0	4.0	4.0
Lane Util. Factor		0.95	1.00	0.97	0.95					0.91	0.91	0.88
Frt		1.00	0.85	1.00	1.00					1.00	1.00	0.85
Flt Protected		1.00	1.00	0.95	1.00					0.95	1.00	1.00
Satd. Flow (prot)		3539	1583	3433	3539					1610	3390	2787
Flt Permitted		1.00	1.00	0.95	1.00					0.95	1.00	1.00
Satd. Flow (perm)		3539	1583	3433	3539					1610	3390	2787
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	750	315	467	522	0	0	0	0	435	598	1174
RTOR Reduction (vph)	0	0	153	0	0	0	0	0	0	0	0	175
Lane Group Flow (vph)	0	750	162	467	522	0	0	0	0	435	598	999
Turn Type		NA	Perm	Prot	NA					Perm	NA	Perm
Protected Phases		2		1	6						4	
Permitted Phases			2							4		4
Actuated Green, G (s)		32.9	32.9	16.4	53.7					56.5	56.5	56.5
Effective Green, g (s)		33.8	33.8	16.8	54.6					57.4	57.4	57.4
Actuated g/C Ratio		0.28	0.28	0.14	0.46					0.48	0.48	0.48
Clearance Time (s)		4.9	4.9	4.4	4.9					4.9	4.9	4.9
Vehicle Extension (s)		3.8	3.8	2.0	4.2					2.0	2.0	2.0
Lane Grp Cap (vph)		996	445	480	1610					770	1621	1333
v/s Ratio Prot		c0.21		c0.14	0.15							
v/s Ratio Perm			0.10							0.27	0.18	c0.36
v/c Ratio		0.75	0.36	0.97	0.32					0.56	0.37	0.75
Uniform Delay, d1		39.3	34.5	51.4	20.9					22.4	19.8	25.5
Progression Factor		1.00	1.00	1.00	1.00					1.00	1.00	1.00
Incremental Delay, d2		5.3	2.3	33.8	0.5					0.6	0.1	2.1
Delay (s)		44.6	36.8	85.2	21.4					22.9	19.9	27.5
Level of Service		D	D	F	C					C	B	C
Approach Delay (s)		42.3			51.5			0.0			24.5	
Approach LOS		D			D			A			C	

Intersection Summary			
HCM 2000 Control Delay	35.2	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.78		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	59.2%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

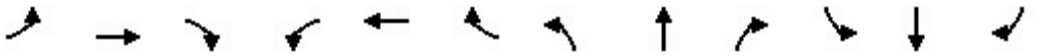


Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	1100	360	50	700	0	0	0	0	730	1100	660
Future Volume (vph)	0	1100	360	50	700	0	0	0	0	730	1100	660
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		6.7		4.0	6.7						6.3	4.0
Lane Util. Factor		0.91		1.00	0.95						0.86	0.86
Frt		0.96		1.00	1.00						1.00	0.85
Flt Protected		1.00		0.95	1.00						0.98	1.00
Satd. Flow (prot)		4897		1770	3539						4712	1362
Flt Permitted		1.00		0.95	1.00						0.98	1.00
Satd. Flow (perm)		4897		1770	3539						4712	1362
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	1196	391	54	761	0	0	0	0	793	1196	717
RTOR Reduction (vph)	0	34	0	0	0	0	0	0	0	0	0	52
Lane Group Flow (vph)	0	1553	0	54	761	0	0	0	0	0	1989	665
Turn Type		NA		Prot	NA					Perm	NA	Perm
Protected Phases		2		1	6						4	
Permitted Phases										4		4
Actuated Green, G (s)		31.2		3.4	37.3						40.7	40.7
Effective Green, g (s)		29.4		3.8	37.2						39.8	42.1
Actuated g/C Ratio		0.33		0.04	0.41						0.44	0.47
Clearance Time (s)		4.9		4.4	6.6						5.4	5.4
Vehicle Extension (s)		1.0		2.0	1.0						1.0	1.0
Lane Grp Cap (vph)		1599		74	1462						2083	637
v/s Ratio Prot		c0.32		0.03	c0.22							
v/s Ratio Perm											0.42	c0.49
v/c Ratio		0.97		0.73	0.52						1.07dl	1.04
Uniform Delay, d1		29.9		42.6	19.7						24.2	23.9
Progression Factor		1.00		1.00	1.00						1.00	1.00
Incremental Delay, d2		16.7		26.0	1.3						10.8	47.8
Delay (s)		46.6		68.6	21.1						35.1	71.8
Level of Service		D		E	C						D	E
Approach Delay (s)		46.6			24.2			0.0			44.8	
Approach LOS		D			C			A			D	

Intersection Summary			
HCM 2000 Control Delay	42.1	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	1.03		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	17.0
Intersection Capacity Utilization	87.8%	ICU Level of Service	E
Analysis Period (min)	15		

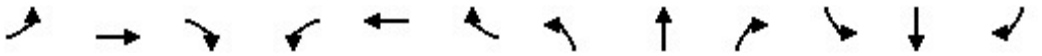
dl Defacto Left Lane. Recode with 1 though lane as a left lane.

c Critical Lane Group



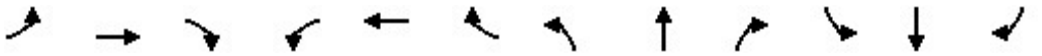
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	40	150	30	380	40	230	30	1590	360	250	530	20
Future Volume (vph)	40	150	30	380	40	230	30	1590	360	250	530	20
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.3	4.3		4.0	4.0		6.2	4.0	
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	0.91		0.97	0.91	
Frpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Flpb, ped/bikes	1.00	1.00		0.99	1.00		1.00	1.00		1.00	1.00	
Frt	1.00	0.97		1.00	0.87		1.00	0.97		1.00	0.99	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1770	1809		1757	1624		1770	4945		3433	5052	
Flt Permitted	0.45	1.00		0.56	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (perm)	842	1809		1042	1624		1770	4945		3433	5052	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	43	163	33	413	43	250	33	1728	391	272	576	22
RTOR Reduction (vph)	0	6	0	0	99	0	0	30	0	0	3	0
Lane Group Flow (vph)	43	190	0	413	194	0	33	2089	0	272	595	0
Confl. Peds. (#/hr)			9	9			2					2
Turn Type	Perm	NA		Perm	NA		Prot	NA		Prot	NA	
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4			8								
Actuated Green, G (s)	46.6	46.6		45.9	45.9		3.6	49.6		12.0	57.3	
Effective Green, g (s)	46.6	46.6		46.3	46.3		3.6	51.0		9.8	59.4	
Actuated g/C Ratio	0.38	0.38		0.38	0.38		0.03	0.42		0.08	0.49	
Clearance Time (s)	4.0	4.0		4.7	4.7		4.0	5.4		4.0	6.1	
Vehicle Extension (s)	2.0	2.0		3.0	3.0		2.0	4.8		2.0	3.7	
Lane Grp Cap (vph)	322	693		396	618		52	2073		276	2467	
v/s Ratio Prot		0.10			0.12		0.02	c0.42		c0.08	0.12	
v/s Ratio Perm	0.05			c0.40								
v/c Ratio	0.13	0.27		1.04	0.31		0.63	1.01		0.99	0.24	
Uniform Delay, d1	24.4	25.8		37.6	26.5		58.3	35.3		55.8	18.0	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	0.1	0.1		56.8	0.3		17.1	21.6		49.6	0.2	
Delay (s)	24.4	25.9		94.5	26.8		75.4	56.9		105.5	18.3	
Level of Service	C	C		F	C		E	E		F	B	
Approach Delay (s)		25.7			66.4			57.2			45.5	
Approach LOS		C			E			E			D	

Intersection Summary			
HCM 2000 Control Delay	54.4	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	1.02		
Actuated Cycle Length (s)	121.6	Sum of lost time (s)	14.5
Intersection Capacity Utilization	96.4%	ICU Level of Service	F
Analysis Period (min)	15		
c Critical Lane Group			



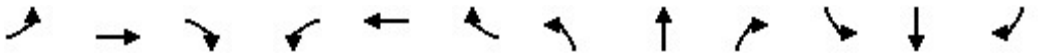
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	610	1050	280	250	960	170	450	1050	240	190	700	330
Future Volume (vph)	610	1050	280	250	960	170	450	1050	240	190	700	330
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0		4.0	4.0	4.9	4.0	4.0	4.0
Lane Util. Factor	0.97	0.91		1.00	0.91		0.97	0.91	1.00	1.00	0.91	1.00
Frpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00	0.99	1.00	1.00	0.99
Flpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.97		1.00	0.98		1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	4925		1770	4958		3433	5085	1562	1770	5085	1567
Flt Permitted	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	4925		1770	4958		3433	5085	1562	1770	5085	1567
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	663	1141	304	272	1043	185	489	1141	261	207	761	359
RTOR Reduction (vph)	0	44	0	0	23	0	0	0	201	0	0	42
Lane Group Flow (vph)	663	1401	0	272	1205	0	489	1141	60	207	761	317
Confl. Peds. (#/hr)	4					4	5		1	1		5
Turn Type	Prot	NA		Prot	NA		Prot	NA	Perm	Prot	NA	pm+ov
Protected Phases	7	4		3	8		5	2		1	6	7
Permitted Phases									2			6
Actuated Green, G (s)	21.6	34.9		17.6	30.3		16.3	25.1	25.1	12.8	21.5	43.1
Effective Green, g (s)	22.0	36.1		18.0	32.1		16.7	26.0	25.1	13.2	22.5	43.9
Actuated g/C Ratio	0.20	0.33		0.16	0.29		0.15	0.24	0.23	0.12	0.21	0.40
Clearance Time (s)	4.4	5.2		4.4	5.8		4.4	4.9	4.9	4.4	5.0	4.4
Vehicle Extension (s)	2.0	3.9		2.0	2.7		2.0	3.3	3.3	2.0	4.1	2.0
Lane Grp Cap (vph)	690	1626		291	1456		524	1209	358	213	1046	629
v/s Ratio Prot	c0.19	c0.28		0.15	0.24		c0.14	c0.22		0.12	0.15	0.10
v/s Ratio Perm									0.04			0.10
v/c Ratio	0.96	0.86		0.93	0.83		0.93	0.94	0.17	0.97	0.73	0.50
Uniform Delay, d1	43.2	34.3		45.1	36.0		45.7	40.9	33.7	47.9	40.5	24.5
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	24.7	5.1		35.2	4.0		23.5	15.5	1.0	53.1	4.4	0.2
Delay (s)	67.9	39.4		80.3	40.0		69.3	56.4	34.7	101.0	45.0	24.8
Level of Service	E	D		F	D		E	E	C	F	D	C
Approach Delay (s)		48.4			47.3			56.8			48.2	
Approach LOS		D			D			E			D	

Intersection Summary			
HCM 2000 Control Delay	50.4	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.94		
Actuated Cycle Length (s)	109.3	Sum of lost time (s)	16.0
Intersection Capacity Utilization	84.5%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	580	300	70	20	160	150	90	100	110	20	20	40
Future Volume (vph)	580	300	70	20	160	150	90	100	110	20	20	40
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		3.1	4.0			4.0			4.0	
Lane Util. Factor	1.00	1.00		1.00	1.00			1.00			1.00	
Frpb, ped/bikes	1.00	0.99		1.00	0.99			0.99			0.99	
Flpb, ped/bikes	1.00	1.00		1.00	1.00			1.00			1.00	
Frt	1.00	0.97		1.00	0.93			0.95			0.93	
Flt Protected	0.95	1.00		0.95	1.00			0.99			0.99	
Satd. Flow (prot)	1770	1800		1770	1709			1724			1696	
Flt Permitted	0.95	1.00		0.95	1.00			0.88			0.84	
Satd. Flow (perm)	1770	1800		1770	1709			1538			1437	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	630	326	76	22	174	163	98	109	120	22	22	43
RTOR Reduction (vph)	0	8	0	0	35	0	0	24	0	0	33	0
Lane Group Flow (vph)	630	394	0	22	302	0	0	303	0	0	54	0
Confl. Peds. (#/hr)	1		3	3		1	1		4	4		1
Turn Type	Prot	NA		Prot	NA		Perm	NA		Perm	NA	
Protected Phases	5	2		1	6			8			4	
Permitted Phases							8			4		
Actuated Green, G (s)	32.0	53.8		1.5	22.9			18.7			18.7	
Effective Green, g (s)	32.4	54.7		2.4	23.8			19.6			19.6	
Actuated g/C Ratio	0.37	0.62		0.03	0.27			0.22			0.22	
Clearance Time (s)	4.4	4.9		4.0	4.9			4.9			4.9	
Vehicle Extension (s)	1.0	2.0		3.0	2.0			2.0			2.0	
Lane Grp Cap (vph)	653	1121		48	463			343			320	
v/s Ratio Prot	c0.36	0.22		0.01	c0.18							
v/s Ratio Perm								c0.20			0.04	
v/c Ratio	0.96	0.35		0.46	0.65			0.88			0.17	
Uniform Delay, d1	27.1	8.0		42.1	28.3			33.0			27.5	
Progression Factor	1.00	1.00		1.00	1.00			1.00			1.00	
Incremental Delay, d2	26.3	0.9		6.8	7.0			21.9			0.1	
Delay (s)	53.5	8.9		48.9	35.3			54.9			27.6	
Level of Service	D	A		D	D			D			C	
Approach Delay (s)		36.1			36.1			54.9			27.6	
Approach LOS		D			D			D			C	

Intersection Summary			
HCM 2000 Control Delay	39.1	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.85		
Actuated Cycle Length (s)	87.8	Sum of lost time (s)	12.0
Intersection Capacity Utilization	83.6%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			

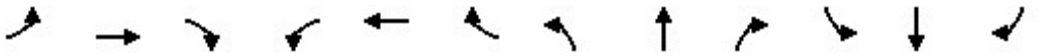


Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	440	1410	160	220	840	220	100	430	240	310	220	160
Future Volume (vph)	440	1410	160	220	840	220	100	430	240	310	220	160
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0		4.0	4.0	4.0	4.0	4.0	
Lane Util. Factor	0.97	0.91		1.00	0.91		1.00	0.95	1.00	1.00	0.95	
Frpb, ped/bikes	1.00	0.99		1.00	0.99		1.00	1.00	0.97	1.00	0.96	
Flpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	
Frt	1.00	0.98		1.00	0.97		1.00	1.00	0.85	1.00	0.94	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)	3433	4976		1770	4857		1770	3539	1533	1770	3180	
Flt Permitted	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (perm)	3433	4976		1770	4857		1770	3539	1533	1770	3180	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	478	1533	174	239	913	239	109	467	261	337	239	174
RTOR Reduction (vph)	0	10	0	0	31	0	0	0	38	0	89	0
Lane Group Flow (vph)	478	1697	0	239	1121	0	109	467	223	337	324	0
Confl. Peds. (#/hr)	26		26	26		26	41		25	25		41
Confl. Bikes (#/hr)			8			2			13			8
Turn Type	Prot	NA		Prot	NA		Prot	NA	pm+ov	Prot	NA	
Protected Phases	5	2		1	6		3	8	1	7	4	
Permitted Phases									8			
Actuated Green, G (s)	22.6	51.9		20.2	49.0		13.0	25.1	45.3	29.1	41.3	
Effective Green, g (s)	23.0	52.8		20.6	50.4		13.4	26.1	46.1	29.5	42.2	
Actuated g/C Ratio	0.16	0.36		0.14	0.35		0.09	0.18	0.32	0.20	0.29	
Clearance Time (s)	4.4	4.9		4.4	5.4		4.4	5.0	4.4	4.4	4.9	
Vehicle Extension (s)	2.0	4.2		2.0	3.0		2.0	4.0	2.0	2.0	2.6	
Lane Grp Cap (vph)	544	1811		251	1688		163	637	487	360	925	
v/s Ratio Prot	0.14	c0.34		c0.14	0.23		0.06	c0.13	0.07	c0.19	0.10	
v/s Ratio Perm									0.08			
v/c Ratio	0.88	0.94		0.95	0.66		0.67	0.73	0.46	0.94	0.35	
Uniform Delay, d1	59.6	44.5		61.7	40.1		63.7	56.2	39.5	56.8	40.6	
Progression Factor	1.02	0.90		0.91	1.01		1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	12.1	9.0		39.2	1.8		7.8	4.6	0.3	30.9	0.2	
Delay (s)	73.0	49.3		95.3	42.1		71.4	60.8	39.7	87.7	40.8	
Level of Service	E	D		F	D		E	E	D	F	D	
Approach Delay (s)		54.5			51.2			55.6			61.8	
Approach LOS		D			D			E			E	

Intersection Summary			
HCM 2000 Control Delay	54.9	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.90		
Actuated Cycle Length (s)	145.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	92.6%	ICU Level of Service	F
Analysis Period (min)	15		

c Critical Lane Group

Peak Hour Intersection Calculation Worksheets - Mitigation



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	60	1150	400	160	1330	180	480	400	150	580	280	120
Future Volume (vph)	60	1150	400	160	1330	180	480	400	150	580	280	120
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	3.1	4.0	4.0	1.6	4.0	4.0	3.6	4.0	4.0	
Lane Util. Factor	1.00	0.91	1.00	0.97	0.91	1.00	0.97	1.00	1.00	0.97	1.00	
Frpb, ped/bikes	1.00	1.00	0.99	1.00	1.00	0.97	1.00	1.00	0.99	1.00	1.00	
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.96	
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)	1770	5085	1571	3433	5085	1531	3433	1863	1565	3433	1771	
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (perm)	1770	5085	1571	3433	5085	1531	3433	1863	1565	3433	1771	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	65	1250	435	174	1446	196	522	435	163	630	304	130
RTOR Reduction (vph)	0	0	123	0	0	65	0	0	35	0	12	0
Lane Group Flow (vph)	65	1250	312	174	1446	131	522	435	128	630	422	0
Confl. Peds. (#/hr)	8					8			3	3		
Confl. Bikes (#/hr)			1			5						3
Turn Type	Prot	NA	pm+ov	Prot	NA	pm+ov	Prot	NA	pm+ov	Prot	NA	
Protected Phases	5	2	3	1	6	7	3	8	1	7	4	
Permitted Phases			2			6			8			
Actuated Green, G (s)	6.2	43.7	69.2	11.1	48.5	76.4	25.5	34.8	45.9	27.9	35.4	
Effective Green, g (s)	6.6	45.0	71.8	11.5	49.9	79.2	25.9	35.6	47.5	26.9	36.6	
Actuated g/C Ratio	0.05	0.33	0.53	0.09	0.37	0.59	0.19	0.26	0.35	0.20	0.27	
Clearance Time (s)	4.4	5.3	4.4	4.4	5.4	3.0	4.4	4.8	4.4	3.0	5.2	
Vehicle Extension (s)	2.0	4.4	2.0	2.0	4.4	2.0	2.0	3.8	2.0	2.0	2.0	
Lane Grp Cap (vph)	86	1695	871	292	1879	916	658	491	592	684	480	
v/s Ratio Prot	0.04	0.25	0.07	c0.05	c0.28	0.03	0.15	0.23	0.02	c0.18	c0.24	
v/s Ratio Perm			0.13			0.05			0.06			
v/c Ratio	0.76	0.74	0.36	0.60	0.77	0.14	0.79	0.89	0.22	0.92	0.88	
Uniform Delay, d1	63.4	39.8	18.3	59.5	37.5	12.6	52.0	47.7	30.7	53.0	47.1	
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	27.9	2.9	0.1	2.2	3.1	0.0	6.1	17.6	0.1	17.6	16.0	
Delay (s)	91.3	42.7	18.4	61.7	40.6	12.6	58.1	65.4	30.8	70.6	63.1	
Level of Service	F	D	B	E	D	B	E	E	C	E	E	
Approach Delay (s)		38.4			39.6			56.9			67.5	
Approach LOS		D			D			E			E	

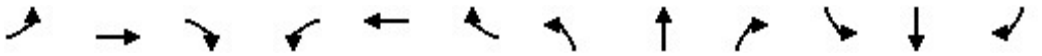
Intersection Summary			
HCM 2000 Control Delay	47.8	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.85		
Actuated Cycle Length (s)	135.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	80.7%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	550	1190	370	0	0	650
Future Volume (vph)	550	1190	370	0	0	650
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	7.0	7.0	7.0			7.0
Lane Util. Factor	0.97	0.76	0.95			0.95
Frt	1.00	0.85	1.00			1.00
Flt Protected	0.95	1.00	1.00			1.00
Satd. Flow (prot)	3433	3610	3539			3539
Flt Permitted	0.95	1.00	1.00			1.00
Satd. Flow (perm)	3433	3610	3539			3539
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	598	1293	402	0	0	707
RTOR Reduction (vph)	0	475	0	0	0	0
Lane Group Flow (vph)	598	818	402	0	0	707
Turn Type	Prot	Perm	NA			NA
Protected Phases	4		2			6
Permitted Phases		4				
Actuated Green, G (s)	11.0	11.0	12.2			12.2
Effective Green, g (s)	11.0	11.0	12.2			12.2
Actuated g/C Ratio	0.30	0.30	0.33			0.33
Clearance Time (s)	7.0	7.0	7.0			7.0
Vehicle Extension (s)	0.2	0.2	0.2			0.2
Lane Grp Cap (vph)	1015	1067	1160			1160
v/s Ratio Prot	0.17		0.11			c0.20
v/s Ratio Perm		c0.23				
v/c Ratio	0.59	0.77	0.35			0.61
Uniform Delay, d1	11.2	11.9	9.5			10.5
Progression Factor	1.00	1.00	1.00			1.00
Incremental Delay, d2	0.6	3.0	0.1			0.6
Delay (s)	11.7	15.0	9.5			11.1
Level of Service	B	B	A			B
Approach Delay (s)	13.9		9.5			11.1
Approach LOS	B		A			B

Intersection Summary			
HCM 2000 Control Delay	12.7	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.68		
Actuated Cycle Length (s)	37.2	Sum of lost time (s)	14.0
Intersection Capacity Utilization	49.6%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

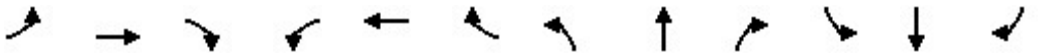


Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	440	300	270	30	140	300	180	460	50	440	510	250
Future Volume (vph)	440	300	270	30	140	300	180	460	50	440	510	250
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.1	4.0	3.1	3.0	4.0	4.0	3.1	4.0		3.1	4.0	4.0
Lane Util. Factor	0.97	1.00	1.00	1.00	0.95	1.00	0.97	0.95		0.97	0.95	1.00
Frpb, ped/bikes	1.00	1.00	0.99	1.00	1.00	0.99	1.00	1.00		1.00	1.00	0.99
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.99		1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	3433	1863	1565	1770	3539	1572	3433	3482		3433	3539	1565
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)	3433	1863	1565	1770	3539	1572	3433	3482		3433	3539	1565
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	478	326	293	33	152	326	196	500	54	478	554	272
RTOR Reduction (vph)	0	0	66	0	0	45	0	6	0	0	0	131
Lane Group Flow (vph)	478	326	227	33	152	281	196	548	0	478	554	141
Confl. Peds. (#/hr)			4			3			5			8
Turn Type	Prot	NA	pm+ov	Prot	NA	pm+ov	Prot	NA		Prot	NA	pm+ov
Protected Phases	5	2	3	1	6	7	3	8		7	4	5
Permitted Phases			2			6						4
Actuated Green, G (s)	20.8	36.9	48.8	3.2	19.2	40.0	11.9	22.7		20.8	31.6	52.4
Effective Green, g (s)	21.7	37.8	50.6	4.2	20.2	40.0	12.8	23.6		21.7	32.5	52.4
Actuated g/C Ratio	0.21	0.37	0.50	0.04	0.20	0.39	0.13	0.23		0.21	0.32	0.52
Clearance Time (s)	4.0	4.9	4.0	4.0	5.0	4.0	4.0	4.9		4.0	4.9	4.0
Vehicle Extension (s)	3.0	0.2	3.0	3.0	8.0	3.0	3.0	3.1		3.0	5.5	3.0
Lane Grp Cap (vph)	734	694	780	73	705	620	433	810		734	1134	808
v/s Ratio Prot	c0.14	c0.18	0.04	0.02	0.04	0.09	0.06	c0.16		c0.14	0.16	0.04
v/s Ratio Perm			0.11			0.09						0.05
v/c Ratio	0.65	0.47	0.29	0.45	0.22	0.45	0.45	0.68		0.65	0.49	0.17
Uniform Delay, d1	36.4	24.2	14.9	47.5	34.0	22.6	41.1	35.4		36.4	27.8	13.0
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	2.1	0.2	0.2	4.4	0.7	0.5	0.8	2.3		2.1	0.8	0.1
Delay (s)	38.5	24.4	15.1	51.9	34.6	23.2	41.8	37.7		38.5	28.6	13.1
Level of Service	D	C	B	D	C	C	D	D		D	C	B
Approach Delay (s)		28.0			28.4			38.8			29.0	
Approach LOS		C			C			D			C	

Intersection Summary			
HCM 2000 Control Delay	30.6	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.64		
Actuated Cycle Length (s)	101.4	Sum of lost time (s)	16.0
Intersection Capacity Utilization	62.9%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	220	1460	170	340	1800	300	120	330	210	230	280	180
Future Volume (vph)	220	1460	170	340	1800	300	120	330	210	230	280	180
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0	4.4	4.0	4.0	3.5	4.0	4.0	3.5
Lane Util. Factor	0.97	0.86		0.97	0.86	1.00	1.00	0.95	1.00	0.97	0.95	1.00
Frpb, ped/bikes	1.00	1.00		1.00	1.00	0.98	1.00	1.00	0.98	1.00	1.00	0.98
Flpb, ped/bikes	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.98		1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	6280		3433	6408	1544	1770	3539	1545	3433	3539	1554
Flt Permitted	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	6280		3433	6408	1544	1770	3539	1545	3433	3539	1554
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	239	1587	185	370	1957	326	130	359	228	250	304	196
RTOR Reduction (vph)	0	17	0	0	0	77	0	0	74	0	0	80
Lane Group Flow (vph)	239	1755	0	370	1957	249	130	359	154	250	304	116
Confl. Peds. (#/hr)	14		25	25		14	18		27	27		14
Turn Type	Prot	NA		Prot	NA	pm+ov	Prot	NA	pm+ov	Prot	NA	pm+ov
Protected Phases	5	2		1	6	7	3	8	1	7	4	5
Permitted Phases						6			8			4
Actuated Green, G (s)	8.8	39.3		13.4	44.0	53.5	9.5	24.0	37.4	9.5	24.0	32.8
Effective Green, g (s)	9.2	40.4		13.8	45.0	53.5	9.9	24.9	39.2	9.9	24.9	34.6
Actuated g/C Ratio	0.09	0.38		0.13	0.43	0.51	0.09	0.24	0.37	0.09	0.24	0.33
Clearance Time (s)	4.4	5.1		4.4	5.0	4.4	4.4	4.9	4.4	4.4	4.9	4.4
Vehicle Extension (s)	2.0	3.5		2.0	3.7	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lane Grp Cap (vph)	300	2416		451	2746	786	166	839	628	323	839	512
v/s Ratio Prot	0.07	c0.28		0.11	c0.31	0.03	c0.07	c0.10	0.03	c0.07	0.09	0.02
v/s Ratio Perm						0.13			0.07			0.05
v/c Ratio	0.80	0.73		0.82	0.71	0.32	0.78	0.43	0.25	0.77	0.36	0.23
Uniform Delay, d1	47.0	27.6		44.4	24.7	15.1	46.5	34.0	22.7	46.5	33.4	25.5
Progression Factor	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	12.8	1.9		10.9	1.6	0.1	19.6	0.1	0.1	10.1	0.1	0.1
Delay (s)	59.8	29.5		55.3	26.3	15.2	66.1	34.1	22.8	56.5	33.5	25.6
Level of Service	E	C		E	C	B	E	C	C	E	C	C
Approach Delay (s)		33.1			29.0			36.3			39.1	
Approach LOS		C			C			D			D	

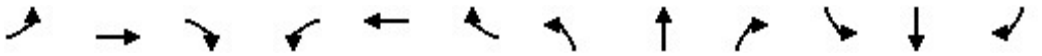
Intersection Summary			
HCM 2000 Control Delay	32.4	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.70		
Actuated Cycle Length (s)	105.0	Sum of lost time (s)	16.4
Intersection Capacity Utilization	73.4%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	340	190	540	520	0	0	0	0	280	360	410
Future Volume (vph)	0	340	190	540	520	0	0	0	0	280	360	410
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0	4.0	4.0	4.0					4.0	4.0	4.0
Lane Util. Factor		0.95	1.00	0.97	0.95					0.91	0.91	0.88
Frt		1.00	0.85	1.00	1.00					1.00	1.00	0.85
Flt Protected		1.00	1.00	0.95	1.00					0.95	0.99	1.00
Satd. Flow (prot)		3539	1583	3433	3539					1610	3358	2787
Flt Permitted		1.00	1.00	0.95	1.00					0.95	0.99	1.00
Satd. Flow (perm)		3539	1583	3433	3539					1610	3358	2787
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	370	207	587	565	0	0	0	0	304	391	446
RTOR Reduction (vph)	0	0	90	0	0	0	0	0	0	0	0	332
Lane Group Flow (vph)	0	370	117	587	565	0	0	0	0	213	482	114
Turn Type		NA	Perm	Prot	NA					Perm	NA	Perm
Protected Phases		2		1	6						4	
Permitted Phases			2							4		4
Actuated Green, G (s)		30.2	30.2	16.1	50.7					19.5	19.5	19.5
Effective Green, g (s)		31.1	31.1	16.5	51.6					20.4	20.4	20.4
Actuated g/C Ratio		0.39	0.39	0.21	0.65					0.25	0.25	0.25
Clearance Time (s)		4.9	4.9	4.4	4.9					4.9	4.9	4.9
Vehicle Extension (s)		3.8	3.8	2.0	4.2					2.0	2.0	2.0
Lane Grp Cap (vph)		1375	615	708	2282					410	856	710
v/s Ratio Prot		c0.10		c0.17	0.16							
v/s Ratio Perm			0.07							0.13	0.14	0.04
v/c Ratio		0.27	0.19	0.83	0.25					0.52	0.56	0.16
Uniform Delay, d1		16.7	16.1	30.4	6.0					25.6	25.9	23.1
Progression Factor		1.00	1.00	1.00	1.00					1.00	1.00	1.00
Incremental Delay, d2		0.5	0.7	7.6	0.3					0.5	0.5	0.0
Delay (s)		17.2	16.8	38.0	6.3					26.1	26.4	23.2
Level of Service		B	B	D	A					C	C	C
Approach Delay (s)		17.0			22.4			0.0			25.1	
Approach LOS		B			C			A			C	

Intersection Summary			
HCM 2000 Control Delay	22.4	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.49		
Actuated Cycle Length (s)	80.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	49.2%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

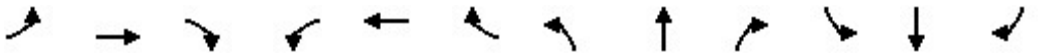


Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	680	80	40	510	0	0	0	0	540	340	510
Future Volume (vph)	0	680	80	40	510	0	0	0	0	540	340	510
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		6.7		4.0	6.7						6.3	4.0
Lane Util. Factor		0.91		1.00	0.95						0.86	0.86
Frt		0.98		1.00	1.00						1.00	0.85
Flt Protected		1.00		0.95	1.00						0.97	1.00
Satd. Flow (prot)		5005		1770	3539						4663	1362
Flt Permitted		1.00		0.95	1.00						0.97	1.00
Satd. Flow (perm)		5005		1770	3539						4663	1362
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	739	87	43	554	0	0	0	0	587	370	554
RTOR Reduction (vph)	0	21	0	0	0	0	0	0	0	0	0	118
Lane Group Flow (vph)	0	805	0	43	554	0	0	0	0	0	957	436
Turn Type		NA		Prot	NA					Perm	NA	Perm
Protected Phases		2		1	6						4	
Permitted Phases										4		4
Actuated Green, G (s)		22.1		2.8	27.6						25.4	25.4
Effective Green, g (s)		20.3		3.2	27.5						24.5	26.8
Actuated g/C Ratio		0.31		0.05	0.42						0.38	0.41
Clearance Time (s)		4.9		4.4	6.6						5.4	5.4
Vehicle Extension (s)		1.0		2.0	1.0						1.0	1.0
Lane Grp Cap (vph)		1563		87	1497						1757	561
v/s Ratio Prot		c0.16		0.02	c0.16							
v/s Ratio Perm											0.21	c0.32
v/c Ratio		0.51		0.49	0.37						0.93dl	0.78
Uniform Delay, d1		18.3		30.1	12.8						15.9	16.5
Progression Factor		1.00		1.34	0.83						1.00	1.00
Incremental Delay, d2		1.2		1.5	0.6						0.2	6.1
Delay (s)		19.5		41.7	11.3						16.1	22.6
Level of Service		B		D	B						B	C
Approach Delay (s)		19.5			13.5			0.0			18.5	
Approach LOS		B			B			A			B	

Intersection Summary			
HCM 2000 Control Delay	17.8	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.69		
Actuated Cycle Length (s)	65.0	Sum of lost time (s)	17.0
Intersection Capacity Utilization	75.1%	ICU Level of Service	D
Analysis Period (min)	15		

dl Defacto Left Lane. Recode with 1 though lane as a left lane.

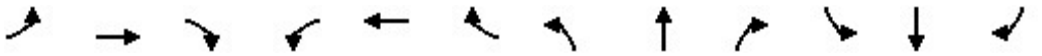
c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	20	30	30	440	110	160	40	1330	210	140	740	130
Future Volume (vph)	20	30	30	440	110	160	40	1330	210	140	740	130
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.3	4.3		4.0	4.0		4.0	4.0	
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	0.91		0.97	0.91	
Frpb, ped/bikes	1.00	0.99		1.00	1.00		1.00	1.00		1.00	1.00	
Flpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Frt	1.00	0.93		1.00	0.91		1.00	0.98		1.00	0.98	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1770	1710		1764	1697		1770	4981		3433	4955	
Flt Permitted	0.47	1.00		0.71	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (perm)	868	1710		1326	1697		1770	4981		3433	4955	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	22	33	33	478	120	174	43	1446	228	152	804	141
RTOR Reduction (vph)	0	21	0	0	59	0	0	23	0	0	26	0
Lane Group Flow (vph)	22	45	0	478	235	0	43	1651	0	152	919	0
Confl. Peds. (#/hr)			4	4			1					1
Turn Type	Perm	NA		Perm	NA		Prot	NA		Prot	NA	
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4			8								
Actuated Green, G (s)	33.8	33.8		33.1	33.1		3.5	33.3		8.6	38.2	
Effective Green, g (s)	33.8	33.8		33.5	33.5		3.5	34.7		9.1	40.3	
Actuated g/C Ratio	0.38	0.38		0.37	0.37		0.04	0.39		0.10	0.45	
Clearance Time (s)	4.0	4.0		4.7	4.7		4.0	5.4		4.5	6.1	
Vehicle Extension (s)	2.0	2.0		3.0	3.0		2.0	4.8		3.0	3.7	
Lane Grp Cap (vph)	327	645		495	634		69	1929		348	2228	
v/s Ratio Prot		0.03			0.14		0.02	c0.33		c0.04	0.19	
v/s Ratio Perm	0.03			c0.36								
v/c Ratio	0.07	0.07		0.97	0.37		0.62	0.86		0.44	0.41	
Uniform Delay, d1	17.8	17.8		27.5	20.4		42.4	25.2		37.8	16.7	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	0.0	0.0		31.5	0.4		11.9	5.1		0.9	0.6	
Delay (s)	17.9	17.9		59.0	20.8		54.3	30.3		38.7	17.2	
Level of Service	B	B		E	C		D	C		D	B	
Approach Delay (s)		17.9			44.4			30.9			20.2	
Approach LOS		B			D			C			C	

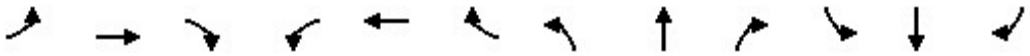
Intersection Summary			
HCM 2000 Control Delay	30.2	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.85		
Actuated Cycle Length (s)	89.6	Sum of lost time (s)	12.3
Intersection Capacity Utilization	75.7%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group



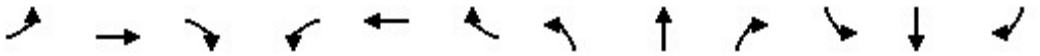
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	650	560	140	150	730	170	300	690	100	110	710	250
Future Volume (vph)	650	560	140	150	730	170	300	690	100	110	710	250
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0		4.0	4.0	4.9	4.0	4.0	4.0
Lane Util. Factor	0.97	0.91		1.00	0.91		0.97	0.91	1.00	1.00	0.91	1.00
Frpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00	0.99	1.00	1.00	0.99
Flpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.97		1.00	0.97		1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	4933		1770	4926		3433	5085	1562	1770	5085	1568
Flt Permitted	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	4933		1770	4926		3433	5085	1562	1770	5085	1568
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	707	609	152	163	793	185	326	750	109	120	772	272
RTOR Reduction (vph)	0	42	0	0	41	0	0	0	84	0	0	45
Lane Group Flow (vph)	707	719	0	163	937	0	326	750	25	120	772	227
Confl. Peds. (#/hr)	4					4	5		1	1		5
Turn Type	Prot	NA		Prot	NA		Prot	NA	Perm	Prot	NA	pm+ov
Protected Phases	7	4		3	8		5	2		1	6	7
Permitted Phases									2			6
Actuated Green, G (s)	20.3	33.3		12.6	25.0		9.6	22.0	22.0	7.4	19.7	40.0
Effective Green, g (s)	20.7	34.5		13.0	26.8		10.0	22.9	22.0	7.8	20.7	40.8
Actuated g/C Ratio	0.22	0.37		0.14	0.28		0.11	0.24	0.23	0.08	0.22	0.43
Clearance Time (s)	4.4	5.2		4.4	5.8		4.4	4.9	4.9	4.4	5.0	4.4
Vehicle Extension (s)	2.0	3.9		2.0	2.7		2.0	3.3	3.3	2.0	4.1	2.0
Lane Grp Cap (vph)	754	1806		244	1401		364	1236	364	146	1117	679
v/s Ratio Prot	c0.21	0.15		0.09	c0.19		c0.09	0.15		0.07	c0.15	0.07
v/s Ratio Perm									0.02			0.07
v/c Ratio	0.94	0.40		0.67	0.67		0.90	0.61	0.07	0.82	0.69	0.33
Uniform Delay, d1	36.1	22.1		38.6	29.8		41.6	31.7	28.1	42.5	33.8	17.7
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	18.8	0.2		5.3	1.2		22.9	2.2	0.4	28.4	3.5	0.1
Delay (s)	54.9	22.3		43.8	30.9		64.5	33.9	28.5	70.9	37.3	17.8
Level of Service	D	C		D	C		E	C	C	E	D	B
Approach Delay (s)		38.0			32.8			41.8			36.2	
Approach LOS		D			C			D			D	

Intersection Summary			
HCM 2000 Control Delay	37.3	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.77		
Actuated Cycle Length (s)	94.2	Sum of lost time (s)	16.0
Intersection Capacity Utilization	74.4%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	140	230	70	20	140	210	50	180	250	20	20	30
Future Volume (vph)	140	230	70	20	140	210	50	180	250	20	20	30
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		3.1	4.0			4.0			4.0	
Lane Util. Factor	1.00	1.00		1.00	1.00			1.00			1.00	
Frpb, ped/bikes	1.00	0.99		1.00	1.00			0.98			1.00	
Flpb, ped/bikes	1.00	1.00		1.00	1.00			1.00			1.00	
Frt	1.00	0.97		1.00	0.91			0.93			0.94	
Flt Protected	0.95	1.00		0.95	1.00			0.99			0.99	
Satd. Flow (prot)	1770	1787		1770	1695			1690			1728	
Flt Permitted	0.95	1.00		0.95	1.00			0.96			0.81	
Satd. Flow (perm)	1770	1787		1770	1695			1633			1412	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	152	250	76	22	152	228	54	196	272	22	22	33
RTOR Reduction (vph)	0	13	0	0	66	0	0	53	0	0	23	0
Lane Group Flow (vph)	152	313	0	22	314	0	0	469	0	0	54	0
Confl. Peds. (#/hr)			3	3					8	8		
Turn Type	Prot	NA		Prot	NA		Perm	NA		Perm	NA	
Protected Phases	5	2		1	6			8			4	
Permitted Phases							8			4		
Actuated Green, G (s)	11.5	36.4		1.5	26.0			22.4			22.4	
Effective Green, g (s)	11.9	37.3		2.4	26.9			23.3			23.3	
Actuated g/C Ratio	0.16	0.50		0.03	0.36			0.31			0.31	
Clearance Time (s)	4.4	4.9		4.0	4.9			4.9			4.9	
Vehicle Extension (s)	1.0	2.0		3.0	2.0			2.0			2.0	
Lane Grp Cap (vph)	284	899		57	615			513			443	
v/s Ratio Prot	c0.09	0.17		0.01	c0.19							
v/s Ratio Perm								c0.29			0.04	
v/c Ratio	0.54	0.35		0.39	0.51			0.91			0.12	
Uniform Delay, d1	28.6	11.1		35.1	18.5			24.4			18.1	
Progression Factor	1.00	1.00		1.00	1.00			1.00			1.00	
Incremental Delay, d2	1.0	1.1		4.3	3.0			20.4			0.0	
Delay (s)	29.5	12.1		39.4	21.5			44.8			18.2	
Level of Service	C	B		D	C			D			B	
Approach Delay (s)		17.7			22.5			44.8			18.2	
Approach LOS		B			C			D			B	

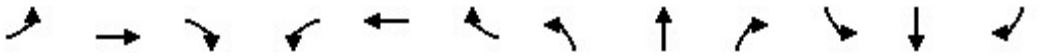
Intersection Summary			
HCM 2000 Control Delay	28.6	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.67		
Actuated Cycle Length (s)	74.1	Sum of lost time (s)	12.0
Intersection Capacity Utilization	73.0%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	180	660	90	170	1240	70	70	130	110	260	380	250
Future Volume (vph)	180	660	90	170	1240	70	70	130	110	260	380	250
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0		4.0	4.0	4.0	4.0	4.0	
Lane Util. Factor	0.97	0.91		1.00	0.91		1.00	0.95	1.00	1.00	0.95	
Frpb, ped/bikes	1.00	0.99		1.00	1.00		1.00	1.00	0.98	1.00	0.98	
Flpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	
Frt	1.00	0.98		1.00	0.99		1.00	1.00	0.85	1.00	0.94	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)	3433	4963		1770	5030		1770	3539	1550	1770	3267	
Flt Permitted	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (perm)	3433	4963		1770	5030		1770	3539	1550	1770	3267	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	196	717	98	185	1348	76	76	141	120	283	413	272
RTOR Reduction (vph)	0	14	0	0	5	0	0	0	45	0	91	0
Lane Group Flow (vph)	196	801	0	185	1419	0	76	141	75	283	594	0
Confl. Peds. (#/hr)	23		24	24		23	19		14	14		19
Confl. Bikes (#/hr)			9			5			12			6
Turn Type	Prot	NA		Prot	NA		Prot	NA	pm+ov	Prot	NA	
Protected Phases	5	2		1	6		3	8	1	7	4	
Permitted Phases									8			
Actuated Green, G (s)	10.0	39.6		16.3	45.4		7.6	21.4	37.7	24.0	37.9	
Effective Green, g (s)	10.4	40.5		16.7	46.8		8.0	22.4	38.5	24.4	38.8	
Actuated g/C Ratio	0.09	0.34		0.14	0.39		0.07	0.19	0.32	0.20	0.32	
Clearance Time (s)	4.4	4.9		4.4	5.4		4.4	5.0	4.4	4.4	4.9	
Vehicle Extension (s)	2.0	4.2		2.0	3.0		2.0	4.0	2.0	2.0	2.6	
Lane Grp Cap (vph)	297	1675		246	1961		118	660	497	359	1056	
v/s Ratio Prot	0.06	0.16		c0.10	c0.28		c0.04	0.04	0.02	c0.16	c0.18	
v/s Ratio Perm									0.03			
v/c Ratio	0.66	0.48		0.75	0.72		0.64	0.21	0.15	0.79	0.56	
Uniform Delay, d1	53.1	31.4		49.7	31.1		54.6	41.3	29.1	45.3	33.6	
Progression Factor	1.28	0.72		1.05	0.78		1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	3.8	0.9		9.0	1.9		8.7	0.2	0.1	10.1	0.6	
Delay (s)	71.6	23.5		61.2	26.2		63.3	41.6	29.1	55.5	34.2	
Level of Service	E	C		E	C		E	D	C	E	C	
Approach Delay (s)		32.8			30.2			42.0			40.4	
Approach LOS		C			C			D			D	

Intersection Summary			
HCM 2000 Control Delay	34.4	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.72		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	72.7%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	90	1680	570	120	1170	360	460	350	180	300	260	40
Future Volume (vph)	90	1680	570	120	1170	360	460	350	180	300	260	40
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	3.1	4.0	4.0	1.6	4.0	4.0	3.6	4.0	4.0	
Lane Util. Factor	1.00	0.91	1.00	0.97	0.91	1.00	0.97	1.00	1.00	0.97	1.00	
Frpb, ped/bikes	1.00	1.00	0.99	1.00	1.00	0.96	1.00	1.00	0.98	1.00	1.00	
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.98	
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)	1770	5085	1567	3433	5085	1528	3433	1863	1558	3433	1822	
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (perm)	1770	5085	1567	3433	5085	1528	3433	1863	1558	3433	1822	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	98	1826	620	130	1272	391	500	380	196	326	283	43
RTOR Reduction (vph)	0	0	69	0	0	90	0	0	60	0	4	0
Lane Group Flow (vph)	98	1826	551	130	1272	301	500	380	136	326	322	0
Confl. Peds. (#/hr)	6		1	1		6			6	6		
Confl. Bikes (#/hr)			1			5						3
Turn Type	Prot	NA	pm+ov	Prot	NA	pm+ov	Prot	NA	pm+ov	Prot	NA	
Protected Phases	5	2	3	1	6	7	3	8	1	7	4	
Permitted Phases			2			6			8			
Actuated Green, G (s)	12.2	66.9	92.0	8.5	63.1	84.5	25.1	35.7	44.2	21.4	30.2	
Effective Green, g (s)	12.6	68.2	94.6	8.9	64.5	87.3	25.5	36.5	45.8	20.4	31.4	
Actuated g/C Ratio	0.08	0.45	0.63	0.06	0.43	0.58	0.17	0.24	0.31	0.14	0.21	
Clearance Time (s)	4.4	5.3	4.4	4.4	5.4	3.0	4.4	4.8	4.4	3.0	5.2	
Vehicle Extension (s)	2.0	4.4	2.0	2.0	4.4	2.0	2.0	3.8	2.0	2.0	2.0	
Lane Grp Cap (vph)	148	2311	988	203	2186	889	583	453	475	466	381	
v/s Ratio Prot	c0.06	c0.36	0.10	0.04	0.25	0.05	0.15	c0.20	0.02	0.09	c0.18	
v/s Ratio Perm			0.25			0.15			0.07			
v/c Ratio	0.66	0.79	0.56	0.64	0.58	0.34	0.86	0.84	0.29	0.70	0.85	
Uniform Delay, d1	66.6	34.8	15.8	69.0	32.5	16.3	60.5	54.0	39.6	61.9	57.0	
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	8.3	2.8	0.4	5.1	1.1	0.1	11.5	13.2	0.1	3.7	15.1	
Delay (s)	75.0	37.7	16.2	74.1	33.6	16.4	72.0	67.2	39.8	65.6	72.1	
Level of Service	E	D	B	E	C	B	E	E	D	E	E	
Approach Delay (s)		33.9			32.8			64.4			68.8	
Approach LOS		C			C			E			E	

Intersection Summary			
HCM 2000 Control Delay	42.7	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.83		
Actuated Cycle Length (s)	150.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	78.5%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

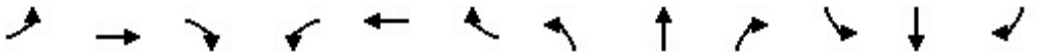
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	830	1790	930	0	0	870
Future Volume (vph)	830	1790	930	0	0	870
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	7.0	7.0	7.0			7.0
Lane Util. Factor	0.97	0.76	0.95			0.95
Frt	1.00	0.85	1.00			1.00
Flt Protected	0.95	1.00	1.00			1.00
Satd. Flow (prot)	3433	3610	3539			3539
Flt Permitted	0.95	1.00	1.00			1.00
Satd. Flow (perm)	3433	3610	3539			3539
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	902	1946	1011	0	0	946
RTOR Reduction (vph)	0	7	0	0	0	0
Lane Group Flow (vph)	902	1939	1011	0	0	946
Turn Type	Prot	Perm	NA			NA
Protected Phases	4		2			6
Permitted Phases		4				
Actuated Green, G (s)	71.1	71.1	41.5			41.5
Effective Green, g (s)	71.1	71.1	41.5			41.5
Actuated g/C Ratio	0.56	0.56	0.33			0.33
Clearance Time (s)	7.0	7.0	7.0			7.0
Vehicle Extension (s)	0.2	0.2	0.2			0.2
Lane Grp Cap (vph)	1928	2027	1160			1160
v/s Ratio Prot	0.26		c0.29			0.27
v/s Ratio Perm		c0.54				
v/c Ratio	0.47	0.96	0.87			0.82
Uniform Delay, d1	16.5	26.3	40.0			39.0
Progression Factor	1.00	1.00	1.00			1.00
Incremental Delay, d2	0.1	11.3	7.2			4.3
Delay (s)	16.6	37.5	47.2			43.3
Level of Service	B	D	D			D
Approach Delay (s)	30.9		47.2			43.3
Approach LOS	C		D			D

Intersection Summary			
HCM 2000 Control Delay	36.8	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.92		
Actuated Cycle Length (s)	126.6	Sum of lost time (s)	14.0
Intersection Capacity Utilization	79.1%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

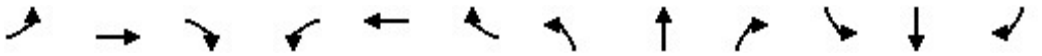
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	380	410	310	80	540	700	460	510	130	420	700	390
Future Volume (vph)	380	410	310	80	540	700	460	510	130	420	700	390
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.9	4.0	4.0		4.0	4.0	4.9
Lane Util. Factor	0.97	1.00	1.00	1.00	0.95	1.00	0.97	0.95		0.97	0.95	1.00
Frpb, ped/bikes	1.00	1.00	0.99	1.00	1.00	0.99	1.00	1.00		1.00	1.00	0.99
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.97		1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	3433	1863	1568	1770	3539	1569	3433	3432		3433	3539	1562
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)	3433	1863	1568	1770	3539	1569	3433	3432		3433	3539	1562
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	413	446	337	87	587	761	500	554	141	457	761	424
RTOR Reduction (vph)	0	0	47	0	0	45	0	17	0	0	0	51
Lane Group Flow (vph)	413	446	290	87	587	716	500	678	0	457	761	373
Confl. Peds. (#/hr)	6		3	3		6	6					6
Turn Type	Prot	NA	pm+ov	Prot	NA	pm+ov	Prot	NA		Prot	NA	pm+ov
Protected Phases	5	2	3	1	6	7	3	8		7	4	5
Permitted Phases			2			6						4
Actuated Green, G (s)	18.1	42.2	67.1	8.0	32.1	70.5	24.9	31.7		38.4	45.2	63.3
Effective Green, g (s)	19.0	43.1	68.9	9.0	33.1	70.5	25.8	32.6		39.3	46.1	63.3
Actuated g/C Ratio	0.14	0.31	0.49	0.06	0.24	0.50	0.18	0.23		0.28	0.33	0.45
Clearance Time (s)	4.9	4.9	4.9	5.0	5.0	4.9	4.9	4.9		4.9	4.9	4.9
Vehicle Extension (s)	0.2	0.2	3.1	8.0	8.0	5.5	3.1	3.1		5.5	5.5	0.2
Lane Grp Cap (vph)	465	573	816	113	836	845	632	799		963	1165	706
v/s Ratio Prot	c0.12	0.24	0.07	0.05	0.17	c0.23	0.15	c0.20		0.13	0.22	0.07
v/s Ratio Perm			0.12			0.22						0.17
v/c Ratio	0.89	0.78	0.36	0.77	0.70	0.85	0.79	0.85		0.47	0.65	0.53
Uniform Delay, d1	59.5	44.1	21.9	64.5	48.9	30.1	54.5	51.3		41.8	40.1	27.6
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	17.8	10.0	0.3	37.4	4.9	8.9	6.7	8.4		0.9	2.0	0.3
Delay (s)	77.3	54.1	22.2	101.9	53.8	39.0	61.3	59.8		42.7	42.1	27.9
Level of Service	E	D	C	F	D	D	E	E		D	D	C
Approach Delay (s)		53.1			48.9			60.4			38.6	
Approach LOS		D			D			E			D	

Intersection Summary			
HCM 2000 Control Delay	49.2	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.89		
Actuated Cycle Length (s)	140.0	Sum of lost time (s)	17.8
Intersection Capacity Utilization	84.3%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	380	1870	200	510	1550	390	230	640	410	350	530	290
Future Volume (vph)	380	1870	200	510	1550	390	230	640	410	350	530	290
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0	4.4	4.0	4.0	3.5	4.0	4.0	3.5
Lane Util. Factor	0.97	0.86		0.97	0.86	1.00	1.00	0.95	1.00	0.97	0.95	1.00
Frpb, ped/bikes	1.00	0.99		1.00	1.00	0.93	1.00	1.00	0.96	1.00	1.00	0.96
Flpb, ped/bikes	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.99		1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	6238		3433	6408	1468	1770	3539	1526	3433	3539	1520
Flt Permitted	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	6238		3433	6408	1468	1770	3539	1526	3433	3539	1520
Peak-hour factor, PHF	0.92	0.95	0.92	0.92	0.95	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	413	1968	217	554	1632	424	250	696	446	380	576	315
RTOR Reduction (vph)	0	13	0	0	0	39	0	0	52	0	0	56
Lane Group Flow (vph)	413	2172	0	554	1632	385	250	696	394	380	576	259
Confl. Peds. (#/hr)	48		65	65		48	42		40	40		42
Turn Type	Prot	NA		Prot	NA	pm+ov	Prot	NA	pm+ov	Prot	NA	pm+ov
Protected Phases	5	2		1	6	7	3	8	1	7	4	5
Permitted Phases						6			8			4
Actuated Green, G (s)	21.2	52.6		24.0	55.5	74.4	20.9	30.7	54.7	18.9	28.7	49.9
Effective Green, g (s)	21.6	53.7		24.4	56.5	74.4	21.3	31.6	56.5	19.3	29.6	51.7
Actuated g/C Ratio	0.15	0.37		0.17	0.39	0.51	0.15	0.22	0.39	0.13	0.20	0.36
Clearance Time (s)	4.4	5.1		4.4	5.0	4.4	4.4	4.9	4.4	4.4	4.9	4.4
Vehicle Extension (s)	2.0	3.5		2.0	3.7	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lane Grp Cap (vph)	511	2310		577	2496	753	260	771	631	456	722	541
v/s Ratio Prot	0.12	c0.35		c0.16	0.25	0.07	0.14	c0.20	0.11	0.11	c0.16	0.07
v/s Ratio Perm						0.20			0.15			0.10
v/c Ratio	0.81	0.94		0.96	0.65	0.51	0.96	0.90	0.62	0.83	0.80	0.48
Uniform Delay, d1	59.7	44.1		59.8	36.2	23.3	61.4	55.2	35.7	61.3	54.9	36.2
Progression Factor	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	8.6	9.2		27.5	0.7	0.2	44.8	13.6	1.4	11.8	5.7	0.2
Delay (s)	68.3	53.3		87.3	36.9	23.5	106.2	68.8	37.1	73.1	60.6	36.4
Level of Service	E	D		F	D	C	F	E	D	E	E	D
Approach Delay (s)		55.7			45.4			65.3			58.3	
Approach LOS		E			D			E			E	

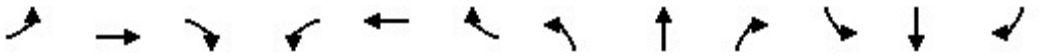
Intersection Summary			
HCM 2000 Control Delay	54.4	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.93		
Actuated Cycle Length (s)	145.0	Sum of lost time (s)	16.4
Intersection Capacity Utilization	94.6%	ICU Level of Service	F
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	690	290	430	480	0	0	0	0	400	550	1080
Future Volume (vph)	0	690	290	430	480	0	0	0	0	400	550	1080
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0	4.0	4.0	4.0					4.0	4.0	4.0
Lane Util. Factor		0.95	1.00	0.97	0.95					0.91	0.91	0.88
Frt		1.00	0.85	1.00	1.00					1.00	1.00	0.85
Flt Protected		1.00	1.00	0.95	1.00					0.95	1.00	1.00
Satd. Flow (prot)		3539	1583	3433	3539					1610	3390	2787
Flt Permitted		1.00	1.00	0.95	1.00					0.95	1.00	1.00
Satd. Flow (perm)		3539	1583	3433	3539					1610	3390	2787
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	750	315	467	522	0	0	0	0	435	598	1174
RTOR Reduction (vph)	0	0	153	0	0	0	0	0	0	0	0	175
Lane Group Flow (vph)	0	750	162	467	522	0	0	0	0	435	598	999
Turn Type		NA	Perm	Prot	NA					Perm	NA	Perm
Protected Phases		2		1	6						4	
Permitted Phases			2							4		4
Actuated Green, G (s)		32.9	32.9	16.4	53.7					56.5	56.5	56.5
Effective Green, g (s)		33.8	33.8	16.8	54.6					57.4	57.4	57.4
Actuated g/C Ratio		0.28	0.28	0.14	0.46					0.48	0.48	0.48
Clearance Time (s)		4.9	4.9	4.4	4.9					4.9	4.9	4.9
Vehicle Extension (s)		3.8	3.8	2.0	4.2					2.0	2.0	2.0
Lane Grp Cap (vph)		996	445	480	1610					770	1621	1333
v/s Ratio Prot		c0.21		c0.14	0.15							
v/s Ratio Perm			0.10							0.27	0.18	c0.36
v/c Ratio		0.75	0.36	0.97	0.32					0.56	0.37	0.75
Uniform Delay, d1		39.3	34.5	51.4	20.9					22.4	19.8	25.5
Progression Factor		1.00	1.00	1.00	1.00					1.00	1.00	1.00
Incremental Delay, d2		5.3	2.3	33.8	0.5					0.6	0.1	2.1
Delay (s)		44.6	36.8	85.2	21.4					22.9	19.9	27.5
Level of Service		D	D	F	C					C	B	C
Approach Delay (s)		42.3			51.5			0.0			24.5	
Approach LOS		D			D			A			C	

Intersection Summary			
HCM 2000 Control Delay	35.2	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.78		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	59.2%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

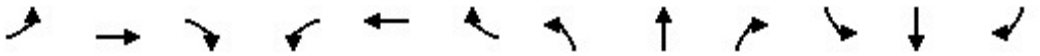


Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	1100	360	50	700	0	0	0	0	730	1100	660
Future Volume (vph)	0	1100	360	50	700	0	0	0	0	730	1100	660
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		6.7		4.0	6.7						6.3	4.0
Lane Util. Factor		0.91		1.00	0.95						0.86	0.86
Frt		0.96		1.00	1.00						1.00	0.85
Flt Protected		1.00		0.95	1.00						0.98	1.00
Satd. Flow (prot)		4897		1770	3539						4712	1362
Flt Permitted		1.00		0.95	1.00						0.98	1.00
Satd. Flow (perm)		4897		1770	3539						4712	1362
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	1196	391	54	761	0	0	0	0	793	1196	717
RTOR Reduction (vph)	0	34	0	0	0	0	0	0	0	0	0	52
Lane Group Flow (vph)	0	1553	0	54	761	0	0	0	0	0	1989	665
Turn Type		NA		Prot	NA					Perm	NA	Perm
Protected Phases		2		1	6						4	
Permitted Phases										4		4
Actuated Green, G (s)		31.2		3.4	37.3						40.7	40.7
Effective Green, g (s)		29.4		3.8	37.2						39.8	42.1
Actuated g/C Ratio		0.33		0.04	0.41						0.44	0.47
Clearance Time (s)		4.9		4.4	6.6						5.4	5.4
Vehicle Extension (s)		1.0		2.0	1.0						1.0	1.0
Lane Grp Cap (vph)		1599		74	1462						2083	637
v/s Ratio Prot		c0.32		0.03	c0.22							
v/s Ratio Perm											0.42	c0.49
v/c Ratio		0.97		0.73	0.52						1.07dl	1.04
Uniform Delay, d1		29.9		42.6	19.7						24.2	23.9
Progression Factor		1.00		1.00	1.00						1.00	1.00
Incremental Delay, d2		16.7		26.0	1.3						10.8	47.8
Delay (s)		46.6		68.6	21.1						35.1	71.8
Level of Service		D		E	C						D	E
Approach Delay (s)		46.6			24.2			0.0			44.8	
Approach LOS		D			C			A			D	

Intersection Summary			
HCM 2000 Control Delay	42.1	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	1.03		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	17.0
Intersection Capacity Utilization	87.8%	ICU Level of Service	E
Analysis Period (min)	15		

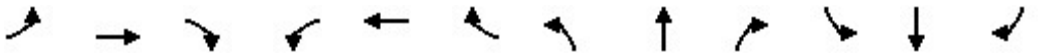
dl Defacto Left Lane. Recode with 1 though lane as a left lane.

c Critical Lane Group



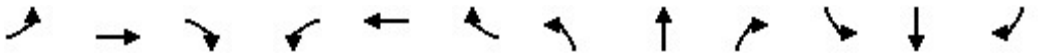
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	40	150	30	380	40	230	30	1590	360	250	530	20
Future Volume (vph)	40	150	30	380	40	230	30	1590	360	250	530	20
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.3	4.3		4.0	4.0		6.2	4.0	
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	0.91		0.97	0.91	
Frpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Flpb, ped/bikes	1.00	1.00		0.99	1.00		1.00	1.00		1.00	1.00	
Frt	1.00	0.97		1.00	0.87		1.00	0.97		1.00	0.99	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1770	1809		1757	1624		1770	4945		3433	5052	
Flt Permitted	0.45	1.00		0.56	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (perm)	842	1809		1042	1624		1770	4945		3433	5052	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	43	163	33	413	43	250	33	1728	391	272	576	22
RTOR Reduction (vph)	0	6	0	0	99	0	0	30	0	0	3	0
Lane Group Flow (vph)	43	190	0	413	194	0	33	2089	0	272	595	0
Confl. Peds. (#/hr)			9	9			2					2
Turn Type	Perm	NA		Perm	NA		Prot	NA		Prot	NA	
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4			8								
Actuated Green, G (s)	46.6	46.6		45.9	45.9		3.6	49.6		12.0	57.3	
Effective Green, g (s)	46.6	46.6		46.3	46.3		3.6	51.0		9.8	59.4	
Actuated g/C Ratio	0.38	0.38		0.38	0.38		0.03	0.42		0.08	0.49	
Clearance Time (s)	4.0	4.0		4.7	4.7		4.0	5.4		4.0	6.1	
Vehicle Extension (s)	2.0	2.0		3.0	3.0		2.0	4.8		2.0	3.7	
Lane Grp Cap (vph)	322	693		396	618		52	2073		276	2467	
v/s Ratio Prot		0.10			0.12		0.02	c0.42		c0.08	0.12	
v/s Ratio Perm	0.05			c0.40								
v/c Ratio	0.13	0.27		1.04	0.31		0.63	1.01		0.99	0.24	
Uniform Delay, d1	24.4	25.8		37.6	26.5		58.3	35.3		55.8	18.0	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	0.1	0.1		56.8	0.3		17.1	21.6		49.6	0.2	
Delay (s)	24.4	25.9		94.5	26.8		75.4	56.9		105.5	18.3	
Level of Service	C	C		F	C		E	E		F	B	
Approach Delay (s)		25.7			66.4			57.2			45.5	
Approach LOS		C			E			E			D	

Intersection Summary			
HCM 2000 Control Delay	54.4	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	1.02		
Actuated Cycle Length (s)	121.6	Sum of lost time (s)	14.5
Intersection Capacity Utilization	96.4%	ICU Level of Service	F
Analysis Period (min)	15		
c Critical Lane Group			



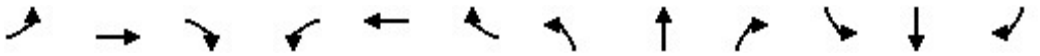
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	610	1050	280	250	960	170	450	1050	240	190	700	330
Future Volume (vph)	610	1050	280	250	960	170	450	1050	240	190	700	330
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0		4.0	4.0	4.9	4.0	4.0	4.0
Lane Util. Factor	0.97	0.91		1.00	0.91		0.97	0.91	1.00	1.00	0.91	1.00
Frpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00	0.99	1.00	1.00	0.99
Flpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.97		1.00	0.98		1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	4925		1770	4958		3433	5085	1562	1770	5085	1567
Flt Permitted	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	4925		1770	4958		3433	5085	1562	1770	5085	1567
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	663	1141	304	272	1043	185	489	1141	261	207	761	359
RTOR Reduction (vph)	0	44	0	0	23	0	0	0	201	0	0	42
Lane Group Flow (vph)	663	1401	0	272	1205	0	489	1141	60	207	761	317
Confl. Peds. (#/hr)	4					4	5		1	1		5
Turn Type	Prot	NA		Prot	NA		Prot	NA	Perm	Prot	NA	pm+ov
Protected Phases	7	4		3	8		5	2		1	6	7
Permitted Phases									2			6
Actuated Green, G (s)	21.6	34.9		17.6	30.3		16.3	25.1	25.1	12.8	21.5	43.1
Effective Green, g (s)	22.0	36.1		18.0	32.1		16.7	26.0	25.1	13.2	22.5	43.9
Actuated g/C Ratio	0.20	0.33		0.16	0.29		0.15	0.24	0.23	0.12	0.21	0.40
Clearance Time (s)	4.4	5.2		4.4	5.8		4.4	4.9	4.9	4.4	5.0	4.4
Vehicle Extension (s)	2.0	3.9		2.0	2.7		2.0	3.3	3.3	2.0	4.1	2.0
Lane Grp Cap (vph)	690	1626		291	1456		524	1209	358	213	1046	629
v/s Ratio Prot	c0.19	c0.28		0.15	0.24		c0.14	c0.22		0.12	0.15	0.10
v/s Ratio Perm									0.04			0.10
v/c Ratio	0.96	0.86		0.93	0.83		0.93	0.94	0.17	0.97	0.73	0.50
Uniform Delay, d1	43.2	34.3		45.1	36.0		45.7	40.9	33.7	47.9	40.5	24.5
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	24.7	5.1		35.2	4.0		23.5	15.5	1.0	53.1	4.4	0.2
Delay (s)	67.9	39.4		80.3	40.0		69.3	56.4	34.7	101.0	45.0	24.8
Level of Service	E	D		F	D		E	E	C	F	D	C
Approach Delay (s)		48.4			47.3			56.8			48.2	
Approach LOS		D			D			E			D	

Intersection Summary			
HCM 2000 Control Delay	50.4	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.94		
Actuated Cycle Length (s)	109.3	Sum of lost time (s)	16.0
Intersection Capacity Utilization	84.5%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	580	300	70	20	160	150	90	100	110	20	20	40
Future Volume (vph)	580	300	70	20	160	150	90	100	110	20	20	40
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		3.1	4.0			4.0			4.0	
Lane Util. Factor	1.00	1.00		1.00	1.00			1.00			1.00	
Frpb, ped/bikes	1.00	0.99		1.00	0.99			0.99			0.99	
Flpb, ped/bikes	1.00	1.00		1.00	1.00			1.00			1.00	
Frt	1.00	0.97		1.00	0.93			0.95			0.93	
Flt Protected	0.95	1.00		0.95	1.00			0.99			0.99	
Satd. Flow (prot)	1770	1800		1770	1709			1724			1696	
Flt Permitted	0.95	1.00		0.95	1.00			0.88			0.84	
Satd. Flow (perm)	1770	1800		1770	1709			1538			1437	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	630	326	76	22	174	163	98	109	120	22	22	43
RTOR Reduction (vph)	0	8	0	0	35	0	0	24	0	0	33	0
Lane Group Flow (vph)	630	394	0	22	302	0	0	303	0	0	54	0
Confl. Peds. (#/hr)	1		3	3		1	1		4	4		1
Turn Type	Prot	NA		Prot	NA		Perm	NA		Perm	NA	
Protected Phases	5	2		1	6			8			4	
Permitted Phases							8			4		
Actuated Green, G (s)	32.0	53.8		1.5	22.9			18.7			18.7	
Effective Green, g (s)	32.4	54.7		2.4	23.8			19.6			19.6	
Actuated g/C Ratio	0.37	0.62		0.03	0.27			0.22			0.22	
Clearance Time (s)	4.4	4.9		4.0	4.9			4.9			4.9	
Vehicle Extension (s)	1.0	2.0		3.0	2.0			2.0			2.0	
Lane Grp Cap (vph)	653	1121		48	463			343			320	
v/s Ratio Prot	c0.36	0.22		0.01	c0.18							
v/s Ratio Perm								c0.20			0.04	
v/c Ratio	0.96	0.35		0.46	0.65			0.88			0.17	
Uniform Delay, d1	27.1	8.0		42.1	28.3			33.0			27.5	
Progression Factor	1.00	1.00		1.00	1.00			1.00			1.00	
Incremental Delay, d2	26.3	0.9		6.8	7.0			21.9			0.1	
Delay (s)	53.5	8.9		48.9	35.3			54.9			27.6	
Level of Service	D	A		D	D			D			C	
Approach Delay (s)		36.1			36.1			54.9			27.6	
Approach LOS		D			D			D			C	

Intersection Summary			
HCM 2000 Control Delay	39.1	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.85		
Actuated Cycle Length (s)	87.8	Sum of lost time (s)	12.0
Intersection Capacity Utilization	83.6%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	440	1410	160	220	840	220	100	430	240	310	220	160
Future Volume (vph)	440	1410	160	220	840	220	100	430	240	310	220	160
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0		4.0	4.0	4.0	4.0	4.0	
Lane Util. Factor	0.97	0.91		1.00	0.91		1.00	0.95	1.00	1.00	0.95	
Frpb, ped/bikes	1.00	0.99		1.00	0.99		1.00	1.00	0.97	1.00	0.96	
Flpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	
Frt	1.00	0.98		1.00	0.97		1.00	1.00	0.85	1.00	0.94	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)	3433	4976		1770	4857		1770	3539	1533	1770	3180	
Flt Permitted	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (perm)	3433	4976		1770	4857		1770	3539	1533	1770	3180	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	478	1533	174	239	913	239	109	467	261	337	239	174
RTOR Reduction (vph)	0	10	0	0	31	0	0	0	38	0	89	0
Lane Group Flow (vph)	478	1697	0	239	1121	0	109	467	223	337	324	0
Confl. Peds. (#/hr)	26		26	26		26	41		25	25		41
Confl. Bikes (#/hr)			8			2			13			8
Turn Type	Prot	NA		Prot	NA		Prot	NA	pm+ov	Prot	NA	
Protected Phases	5	2		1	6		3	8	1	7	4	
Permitted Phases									8			
Actuated Green, G (s)	22.6	51.9		20.2	49.0		13.0	25.1	45.3	29.1	41.3	
Effective Green, g (s)	23.0	52.8		20.6	50.4		13.4	26.1	46.1	29.5	42.2	
Actuated g/C Ratio	0.16	0.36		0.14	0.35		0.09	0.18	0.32	0.20	0.29	
Clearance Time (s)	4.4	4.9		4.4	5.4		4.4	5.0	4.4	4.4	4.9	
Vehicle Extension (s)	2.0	4.2		2.0	3.0		2.0	4.0	2.0	2.0	2.6	
Lane Grp Cap (vph)	544	1811		251	1688		163	637	487	360	925	
v/s Ratio Prot	0.14	c0.34		c0.14	0.23		0.06	c0.13	0.07	c0.19	0.10	
v/s Ratio Perm									0.08			
v/c Ratio	0.88	0.94		0.95	0.66		0.67	0.73	0.46	0.94	0.35	
Uniform Delay, d1	59.6	44.5		61.7	40.1		63.7	56.2	39.5	56.8	40.6	
Progression Factor	1.02	0.90		0.91	1.01		1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	12.1	9.0		39.2	1.8		7.8	4.6	0.3	30.9	0.2	
Delay (s)	73.0	49.3		95.3	42.1		71.4	60.8	39.7	87.7	40.8	
Level of Service	E	D		F	D		E	E	D	F	D	
Approach Delay (s)		54.5			51.2			55.6			61.8	
Approach LOS		D			D			E			E	

Intersection Summary			
HCM 2000 Control Delay	54.9	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.90		
Actuated Cycle Length (s)	145.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	92.6%	ICU Level of Service	F
Analysis Period (min)	15		

c Critical Lane Group

Queuing Reports

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	65	1250	435	174	1446	196	522	435	163	630	434
v/c Ratio	1.14	0.85	0.59	0.63	1.21	0.33	0.65	0.93	0.33	1.38	0.87
Control Delay	218.4	51.2	8.6	71.1	139.5	13.5	52.1	76.4	12.2	223.4	63.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	218.4	51.2	8.6	71.1	139.5	13.5	52.1	76.4	12.2	223.4	63.0
Queue Length 50th (ft)	~66	372	23	78	~810	41	215	371	21	~741	349
Queue Length 95th (ft)	#166	432	118	#127	#950	105	#309	#566	80	#976	455
Internal Link Dist (ft)		2325			484			648			1369
Turn Bay Length (ft)											
Base Capacity (vph)	57	1533	749	278	1200	592	808	480	499	456	589
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	1.14	0.82	0.58	0.63	1.21	0.33	0.65	0.91	0.33	1.38	0.74

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Lane Group	WBL	WBR	NBT	SBT
Lane Group Flow (vph)	598	1293	402	707
v/c Ratio	0.42	0.88	0.41	0.72
Control Delay	11.0	17.0	15.5	20.3
Queue Delay	0.0	0.0	0.0	0.0
Total Delay	11.0	17.0	15.5	20.3
Queue Length 50th (ft)	52	92	50	96
Queue Length 95th (ft)	106	#290	79	143
Internal Link Dist (ft)	810		406	1779
Turn Bay Length (ft)				
Base Capacity (vph)	1634	1598	1837	1837
Starvation Cap Reductn	0	0	0	0
Spillback Cap Reductn	0	0	0	0
Storage Cap Reductn	0	0	0	0
Reduced v/c Ratio	0.37	0.81	0.22	0.38

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT	SBR
Lane Group Flow (vph)	478	326	293	33	152	326	196	554	478	554	272
v/c Ratio	1.04	0.45	0.32	0.32	0.28	0.48	0.71	0.75	1.04	0.50	0.27
Control Delay	97.7	31.2	8.1	67.6	46.7	21.1	63.3	51.4	97.7	37.2	2.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	97.7	31.2	8.1	67.6	46.7	21.1	63.3	51.4	97.7	37.2	2.5
Queue Length 50th (ft)	~381	193	59	24	54	129	140	204	~381	178	0
Queue Length 95th (ft)	#781	316	117	68	94	238	259	307	#781	294	44
Internal Link Dist (ft)		611			563			507		730	
Turn Bay Length (ft)											
Base Capacity (vph)	458	875	1013	103	949	680	384	1085	458	1246	999
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	1.04	0.37	0.29	0.32	0.16	0.48	0.51	0.51	1.04	0.44	0.27

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT	SBR
Lane Group Flow (vph)	120	120	120	98	109	185	87	402	98	446	98
v/c Ratio	0.48	0.45	0.29	0.40	0.42	0.49	0.43	0.25	0.52	0.24	0.11
Control Delay	50.8	49.7	6.7	48.9	49.4	9.9	61.5	22.6	73.0	14.7	4.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	50.8	49.7	6.7	48.9	49.4	9.9	61.5	22.6	73.0	14.7	4.3
Queue Length 50th (ft)	93	93	0	73	81	0	34	83	81	38	0
Queue Length 95th (ft)	127	126	39	102	112	54	#63	193	m#178	231	m72
Internal Link Dist (ft)		644			610			685		849	
Turn Bay Length (ft)											
Base Capacity (vph)	502	529	419	514	541	582	201	1640	187	1837	870
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.24	0.23	0.29	0.19	0.20	0.32	0.43	0.25	0.52	0.24	0.11

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.

Lane Group	EBT	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	77	88	65	815	33	620
v/c Ratio	0.20	0.21	0.10	0.34	0.06	0.28
Control Delay	11.1	10.2	5.4	6.9	5.5	8.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	11.1	10.2	5.4	6.9	5.5	8.1
Queue Length 50th (ft)	6	6	4	33	2	24
Queue Length 95th (ft)	40	42	26	171	16	127
Internal Link Dist (ft)	218	191		927		475
Turn Bay Length (ft)						
Base Capacity (vph)	1017	1004	638	2807	559	2821
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.08	0.09	0.10	0.29	0.06	0.22

Intersection Summary

Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	239	1772	370	1957	326	130	359	228	250	304	196
v/c Ratio	0.79	0.85	1.05	0.89	0.38	0.87	0.43	0.37	0.80	0.35	0.32
Control Delay	67.5	33.8	108.6	35.5	7.1	93.7	34.2	11.0	67.5	32.7	9.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	67.5	33.8	108.6	35.5	7.1	93.7	34.2	11.0	67.5	32.7	9.7
Queue Length 50th (ft)	83	423	~146	~488	47	88	96	42	87	81	31
Queue Length 95th (ft)	#157	#541	#241	#605	93	#198	136	93	#164	117	77
Internal Link Dist (ft)		286		607			736			927	
Turn Bay Length (ft)											
Base Capacity (vph)	301	2087	352	2193	869	150	1108	616	312	1085	607
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.79	0.85	1.05	0.89	0.38	0.87	0.32	0.37	0.80	0.28	0.32

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Lane Group	WBL	NBT	SBL	SBT
Lane Group Flow (vph)	163	750	163	739
v/c Ratio	0.52	0.41	0.54	0.29
Control Delay	25.5	13.1	29.5	4.4
Queue Delay	0.0	0.0	0.0	0.0
Total Delay	25.5	13.1	29.5	4.4
Queue Length 50th (ft)	46	94	53	44
Queue Length 95th (ft)	95	168	107	86
Internal Link Dist (ft)	266	258		736
Turn Bay Length (ft)				
Base Capacity (vph)	497	1821	374	2581
Starvation Cap Reductn	0	0	0	0
Spillback Cap Reductn	0	0	0	0
Storage Cap Reductn	0	0	0	0
Reduced v/c Ratio	0.33	0.41	0.44	0.29

Intersection Summary

Lane Group	EBT	WBT	WBR	SBL	SBR
Lane Group Flow (vph)	891	1402	728	457	185
v/c Ratio	0.48	0.76	0.45	0.62	0.38
Control Delay	11.1	16.1	5.5	28.6	7.9
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	11.1	16.1	5.5	28.6	7.9
Queue Length 50th (ft)	70	136	14	62	0
Queue Length 95th (ft)	247	#517	115	#224	57
Internal Link Dist (ft)	776	812		135	
Turn Bay Length (ft)					
Base Capacity (vph)	2402	2402	1603	738	485
Starvation Cap Reductn	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.37	0.58	0.45	0.62	0.38

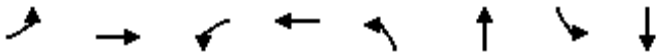
Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Lane Group	WBL	WBR	NBT	SBL	SBT
Lane Group Flow (vph)	33	54	533	141	728
v/c Ratio	0.16	0.23	0.16	0.67	0.17
Control Delay	39.8	10.5	22.3	61.3	4.4
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	39.8	10.5	22.3	61.3	4.4
Queue Length 50th (ft)	23	0	82	97	22
Queue Length 95th (ft)	36	26	m160	156	119
Internal Link Dist (ft)	700		918		563
Turn Bay Length (ft)					
Base Capacity (vph)	645	611	3242	331	4173
Starvation Cap Reductn	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.05	0.09	0.16	0.43	0.17

Intersection Summary

m Volume for 95th percentile queue is metered by upstream signal.



Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	87	174	174	272	217	544	120	685
v/c Ratio	0.36	0.56	0.55	0.81	0.79	0.35	0.16	0.51
Control Delay	44.8	24.6	49.8	58.7	64.9	28.5	33.4	26.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	44.8	24.6	49.8	58.7	64.9	28.5	33.4	26.9
Queue Length 50th (ft)	59	49	112	164	146	97	34	175
Queue Length 95th (ft)	88	96	#217	#355	#269	152	68	318
Internal Link Dist (ft)		610		1546		668		918
Turn Bay Length (ft)								
Base Capacity (vph)	497	542	318	337	294	1541	757	1334
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.18	0.32	0.55	0.81	0.74	0.35	0.16	0.51

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Lane Group	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	87	65	76	33	717	98	826
v/c Ratio	0.28	0.27	0.28	0.18	0.56	0.14	0.45
Control Delay	25.3	36.9	19.2	39.7	26.2	28.3	17.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	25.3	36.9	19.2	39.7	26.2	28.3	17.6
Queue Length 50th (ft)	24	21	7	11	80	14	91
Queue Length 95th (ft)	80	91	61	57	224	55	337
Internal Link Dist (ft)	465		807		727		668
Turn Bay Length (ft)							
Base Capacity (vph)	1113	931	900	229	2687	1806	2788
Starvation Cap Reductn	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.08	0.07	0.08	0.14	0.27	0.05	0.30

Intersection Summary

Lane Group	EBT	EBR	WBT	WBR	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	44	54	22	54	65	717	43	836
v/c Ratio	0.20	0.14	0.10	0.14	0.34	0.21	0.22	0.26
Control Delay	20.5	0.7	19.3	0.7	23.1	3.6	25.4	7.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	20.5	0.7	19.3	0.7	23.1	3.6	25.4	7.2
Queue Length 50th (ft)	13	0	7	0	26	10	13	46
Queue Length 95th (ft)	30	0	19	0	m47	50	38	98
Internal Link Dist (ft)	286		160			994		727
Turn Bay Length (ft)								
Base Capacity (vph)	418	587	428	587	193	3405	196	3238
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.11	0.09	0.05	0.09	0.34	0.21	0.22	0.26

Intersection Summary

m Volume for 95th percentile queue is metered by upstream signal.

Lane Group	EBL	EBT	EBR2	WBT	WBR	NBR2	SBL2	SBL	SBT	SBR	NWL	NWR
Lane Group Flow (vph)	217	1662	186	2348	413	109	179	228	234	98	207	218
v/c Ratio	0.74	0.60	0.22	0.96	0.44	0.11	0.73	0.97	0.96	0.31	0.99	0.49
Control Delay	65.1	15.3	2.2	38.7	6.8	0.2	56.3	93.5	90.8	11.0	107.5	23.0
Queue Delay	0.0	0.0	0.0	43.6	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	65.1	15.3	2.2	82.3	7.0	0.2	56.3	93.5	90.8	11.0	107.5	23.0
Queue Length 50th (ft)	78	268	0	565	60	0	128	178	182	0	148	32
Queue Length 95th (ft)	#131	315	34	#700	96	0	#236	#351	#353	43	#298	74
Internal Link Dist (ft)		607		437					994		422	
Turn Bay Length (ft)												
Base Capacity (vph)	293	2792	858	2450	947	1036	246	235	243	315	210	445
Starvation Cap Reductn	0	0	0	402	107	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.74	0.60	0.22	1.15	0.49	0.11	0.73	0.97	0.96	0.31	0.99	0.49

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Lane Group	EBT	WBT	NBT	SBT
Lane Group Flow (vph)	272	272	228	88
v/c Ratio	0.58	0.70	0.26	0.09
Control Delay	16.5	23.2	5.9	4.9
Queue Delay	0.0	0.0	0.0	0.0
Total Delay	16.5	23.2	5.9	4.9
Queue Length 50th (ft)	48	55	19	6
Queue Length 95th (ft)	103	118	63	27
Internal Link Dist (ft)	271	339	940	771
Turn Bay Length (ft)				
Base Capacity (vph)	989	834	889	928
Starvation Cap Reductn	0	0	0	0
Spillback Cap Reductn	0	0	0	0
Storage Cap Reductn	0	0	0	0
Reduced v/c Ratio	0.28	0.33	0.26	0.09

Intersection Summary

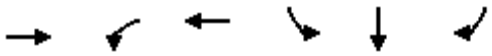
Lane Group	NBL	NBT	SBT	SEL	SER
Lane Group Flow (vph)	315	663	728	217	207
v/c Ratio	0.80	0.17	0.29	0.73	0.47
Control Delay	65.5	0.8	20.6	60.7	8.9
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	65.5	0.8	20.6	60.7	8.9
Queue Length 50th (ft)	222	6	146	161	0
Queue Length 95th (ft)	221	9	205	229	61
Internal Link Dist (ft)		764	913	479	
Turn Bay Length (ft)					
Base Capacity (vph)	575	3886	2549	545	631
Starvation Cap Reductn	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.55	0.17	0.29	0.40	0.33

Intersection Summary

Lane Group	EBL	EBR	WBL	WBT	SBT
Lane Group Flow (vph)	33	109	500	533	87
v/c Ratio	0.17	0.27	0.48	0.69	0.28
Control Delay	18.3	6.2	3.5	20.3	19.6
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	18.3	6.2	3.5	20.3	19.6
Queue Length 50th (ft)	8	0	0	110	19
Queue Length 95th (ft)	27	30	54	#327	55
Internal Link Dist (ft)				363	564
Turn Bay Length (ft)					
Base Capacity (vph)	355	643	1046	789	753
Starvation Cap Reductn	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.09	0.17	0.48	0.68	0.12

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.



Lane Group	EBT	WBL	WBT	SBL	SBT	SBR
Lane Group Flow (vph)	1804	446	2598	352	398	163
v/c Ratio	0.90	1.02	0.60	0.78	0.85	0.35
Control Delay	45.3	70.5	1.1	57.7	63.1	27.2
Queue Delay	46.7	19.4	1.8	0.3	0.5	0.0
Total Delay	92.0	90.0	2.9	58.1	63.6	27.2
Queue Length 50th (ft)	526	~429	18	300	346	76
Queue Length 95th (ft)	594	m#473	m18	397	451	132
Internal Link Dist (ft)	437		346		833	
Turn Bay Length (ft)						
Base Capacity (vph)	2070	439	4309	535	558	540
Starvation Cap Reductn	445	24	1477	0	0	0
Spillback Cap Reductn	0	0	0	21	22	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	1.11	1.07	0.92	0.68	0.74	0.30

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

Lane Group	EBT	WBL	WBT	NBL	NBR	SBL	SBT
Lane Group Flow (vph)	468	174	261	152	174	196	261
v/c Ratio	0.30	0.33	0.13	0.66	0.21	0.58	0.74
Control Delay	23.0	16.2	13.8	67.3	4.8	54.1	61.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.2
Total Delay	23.0	16.2	13.8	67.3	4.8	54.1	61.6
Queue Length 50th (ft)	114	64	48	124	0	153	209
Queue Length 95th (ft)	204	130	90	189	52	215	282
Internal Link Dist (ft)	422		400				360
Turn Bay Length (ft)							
Base Capacity (vph)	1583	594	2080	364	821	447	469
Starvation Cap Reductn	0	0	0	0	0	0	21
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.30	0.29	0.13	0.42	0.21	0.44	0.58

Intersection Summary

Lane Group	EBL	NBL	NBT	SBT
Lane Group Flow (vph)	316	380	500	685
v/c Ratio	0.82	0.81	0.13	0.32
Control Delay	51.5	53.8	7.3	23.6
Queue Delay	0.0	0.0	0.0	0.0
Total Delay	51.5	53.8	7.3	23.6
Queue Length 50th (ft)	180	292	50	115
Queue Length 95th (ft)	262	395	86	190
Internal Link Dist (ft)	648		913	1745
Turn Bay Length (ft)				
Base Capacity (vph)	511	775	3759	2142
Starvation Cap Reductn	0	0	0	0
Spillback Cap Reductn	0	0	0	0
Storage Cap Reductn	0	0	0	0
Reduced v/c Ratio	0.62	0.49	0.13	0.32

Intersection Summary

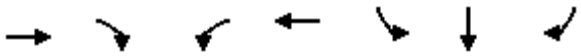
Lane Group	EBL	EBT	WBT	WBR	NBT
Lane Group Flow (vph)	65	2152	2957	696	653
v/c Ratio	0.40	0.64	1.05	0.70	0.68
Control Delay	49.9	13.6	62.1	20.2	45.8
Queue Delay	0.0	0.5	19.2	0.0	0.2
Total Delay	49.9	14.1	81.3	20.2	46.0
Queue Length 50th (ft)	44	260	~1166	334	245
Queue Length 95th (ft)	m57	342	#1246	518	308
Internal Link Dist (ft)		346	988		517
Turn Bay Length (ft)					
Base Capacity (vph)	183	3363	2821	992	1141
Starvation Cap Reductn	0	663	0	0	0
Spillback Cap Reductn	0	0	118	0	75
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.36	0.80	1.09	0.70	0.61

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

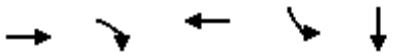
m Volume for 95th percentile queue is metered by upstream signal.



Lane Group	EBT	EBR	WBL	WBT	SBL	SBT	SBR
Lane Group Flow (vph)	370	207	587	565	213	482	446
v/c Ratio	0.27	0.29	0.83	0.25	0.52	0.56	0.71
Control Delay	18.7	7.9	42.4	7.1	29.3	27.8	14.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	18.7	7.9	42.4	7.1	29.3	27.8	14.7
Queue Length 50th (ft)	67	19	140	54	101	115	58
Queue Length 95th (ft)	108	69	#229	96	156	148	146
Internal Link Dist (ft)	269			774		2836	
Turn Bay Length (ft)							
Base Capacity (vph)	1381	708	722	2284	521	1087	718
Starvation Cap Reductn	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.27	0.29	0.81	0.25	0.41	0.44	0.62

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.



Lane Group	EBT	EBR	WBT	SBL	SBT
Lane Group Flow (vph)	207	174	609	511	1760
v/c Ratio	0.30	0.28	0.62	0.57	0.68
Control Delay	16.1	11.3	20.1	14.2	12.6
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	16.1	11.3	20.1	14.2	12.6
Queue Length 50th (ft)	57	31	101	130	161
Queue Length 95th (ft)	103	72	151	214	210
Internal Link Dist (ft)	458		806		986
Turn Bay Length (ft)					
Base Capacity (vph)	687	619	986	898	2575
Starvation Cap Reductn	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.30	0.28	0.62	0.57	0.68

Intersection Summary

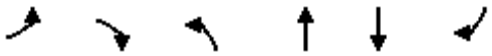
Lane Group	EBT	WBL	WBT	SBT	SBR
Lane Group Flow (vph)	826	43	554	957	554
v/c Ratio	0.68	0.31	0.37	0.94dl	0.82
Control Delay	22.9	44.0	11.4	17.6	23.4
Queue Delay	0.0	0.0	0.2	0.5	0.0
Total Delay	22.9	44.0	11.6	18.1	23.4
Queue Length 50th (ft)	156	19	56	110	137
Queue Length 95th (ft)	#241	m43	72	152	#355
Internal Link Dist (ft)	458		157	1023	
Turn Bay Length (ft)					
Base Capacity (vph)	1218	139	1519	1738	675
Starvation Cap Reductn	0	0	354	0	0
Spillback Cap Reductn	1	0	0	370	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.68	0.31	0.48	0.70	0.82

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

dl Defacto Left Lane. Recode with 1 though lane as a left lane.



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Group Flow (vph)	152	1196	1978	826	707	152
v/c Ratio	0.66	0.68	1.14	0.20	0.52	0.22
Control Delay	63.1	14.9	84.9	2.0	31.8	21.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	63.1	14.9	84.9	2.0	31.8	21.2
Queue Length 50th (ft)	114	267	~940	32	201	107
Queue Length 95th (ft)	176	338	m#1080	m63	245	155
Internal Link Dist (ft)	812			696	764	
Turn Bay Length (ft)						
Base Capacity (vph)	354	1769	1728	4086	1356	792
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.43	0.68	1.14	0.20	0.52	0.19

Intersection Summary

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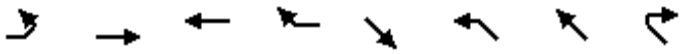
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

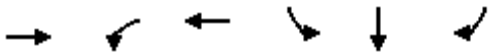
m Volume for 95th percentile queue is metered by upstream signal.



Lane Group	EBL	EBT	WBT	WBR	SET	NWL	NWT	NWR
Lane Group Flow (vph)	109	304	663	348	130	147	147	196
v/c Ratio	0.59	0.18	0.55	0.45	0.47	0.70	0.64	0.37
Control Delay	42.5	10.9	21.0	4.9	10.9	40.9	35.6	5.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	42.5	10.9	21.0	4.9	10.9	40.9	35.6	5.9
Queue Length 50th (ft)	38	33	111	0	0	48	47	0
Queue Length 95th (ft)	#110	63	#181	57	37	#136	#128	43
Internal Link Dist (ft)		323	269		463		382	
Turn Bay Length (ft)								
Base Capacity (vph)	186	1685	1214	771	472	250	270	585
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.59	0.18	0.55	0.45	0.28	0.59	0.54	0.34

Intersection Summary

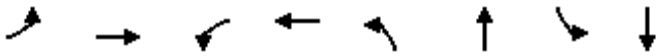
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.



Lane Group	EBT	WBL	WBT	SBL	SBT	SBR
Lane Group Flow (vph)	293	359	652	100	118	261
v/c Ratio	0.45	0.80	0.83	0.30	0.35	0.33
Control Delay	23.5	32.6	27.6	26.9	27.6	7.5
Queue Delay	0.0	0.0	0.4	0.0	0.0	0.0
Total Delay	23.5	32.6	28.0	26.9	27.6	7.5
Queue Length 50th (ft)	45	110	204	34	42	28
Queue Length 95th (ft)	92	#294	#456	87	100	79
Internal Link Dist (ft)	435		323		512	
Turn Bay Length (ft)						
Base Capacity (vph)	960	618	1084	522	530	918
Starvation Cap Reductn	0	0	107	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.31	0.58	0.67	0.19	0.22	0.28

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.



Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	22	66	478	294	43	1674	152	945
v/c Ratio	0.07	0.10	0.95	0.42	0.39	0.89	0.78	0.41
Control Delay	18.1	10.8	58.8	15.5	50.7	33.4	66.1	16.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	18.1	10.8	58.8	15.5	50.7	33.4	66.1	16.7
Queue Length 50th (ft)	8	12	256	78	24	319	85	131
Queue Length 95th (ft)	24	37	#453	146	57	#401	#184	168
Internal Link Dist (ft)		526		458		1888		582
Turn Bay Length (ft)								
Base Capacity (vph)	341	694	518	721	120	1876	199	2311
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.06	0.10	0.92	0.41	0.36	0.89	0.76	0.41

Intersection Summary

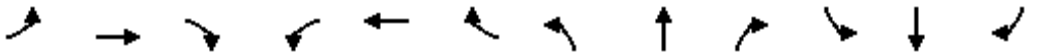
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT	SBR
Lane Group Flow (vph)	707	761	163	978	326	859	120	772	272
v/c Ratio	1.27	0.49	0.75	1.11	1.26	0.72	0.92	0.93	0.34
Control Delay	171.6	26.4	76.0	109.4	190.4	48.9	120.1	72.1	13.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	171.6	26.4	76.0	109.4	190.4	48.9	120.1	72.1	13.0
Queue Length 50th (ft)	~749	228	134	~489	~344	241	102	238	80
Queue Length 95th (ft)	#987	298	209	#625	#533	291	#225	#319	141
Internal Link Dist (ft)		403		458		623		529	
Turn Bay Length (ft)									
Base Capacity (vph)	558	1544	262	880	258	1186	130	829	802
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	1.27	0.49	0.62	1.11	1.26	0.72	0.92	0.93	0.34

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

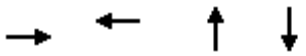
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	130	424	163	359	435	120	250	130	228	87	163	109
v/c Ratio	0.66	0.32	0.11	0.83	0.31	0.17	0.81	0.31	0.30	0.50	0.15	0.26
Control Delay	57.9	22.9	3.2	58.2	22.5	5.7	64.0	31.4	3.5	51.0	27.2	6.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	57.9	22.9	3.2	58.2	22.5	5.7	64.0	31.4	3.5	51.0	27.2	6.3
Queue Length 50th (ft)	64	76	0	93	78	0	65	63	0	43	27	0
Queue Length 95th (ft)	#172	160	21	#221	164	40	#168	114	43	106	43	36
Internal Link Dist (ft)		731			423			1745			245	
Turn Bay Length (ft)									100			
Base Capacity (vph)	223	1330	1504	432	1382	691	308	669	764	235	2050	704
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.58	0.32	0.11	0.83	0.31	0.17	0.81	0.19	0.30	0.37	0.08	0.15

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.



Lane Group	EBT	WBT	NBT	SBT
Lane Group Flow (vph)	478	402	522	77
v/c Ratio	0.58	0.40	0.94	0.17
Control Delay	12.5	7.5	47.2	12.5
Queue Delay	0.0	0.0	0.0	0.0
Total Delay	12.5	7.5	47.2	12.5
Queue Length 50th (ft)	114	63	184	13
Queue Length 95th (ft)	199	116	#369	42
Internal Link Dist (ft)	342	520	255	125
Turn Bay Length (ft)				
Base Capacity (vph)	825	1001	575	467
Starvation Cap Reductn	0	0	0	0
Spillback Cap Reductn	0	0	0	0
Storage Cap Reductn	0	0	0	0
Reduced v/c Ratio	0.58	0.40	0.91	0.16

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Lane Group	EBT	WBL	WBT	NBL	NBR
Lane Group Flow (vph)	707	261	739	163	163
v/c Ratio	0.36	0.79	0.34	0.39	0.33
Control Delay	11.8	47.0	7.8	20.7	5.0
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	11.8	47.0	7.8	20.7	5.0
Queue Length 50th (ft)	41	81	45	49	0
Queue Length 95th (ft)	94	#246	133	91	35
Internal Link Dist (ft)	423		279	871	
Turn Bay Length (ft)					
Base Capacity (vph)	1973	329	2163	749	764
Starvation Cap Reductn	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.36	0.79	0.34	0.22	0.21

Intersection Summary

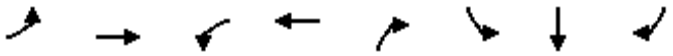
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Lane Group	EBT	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	511	76	283	336	22	141
v/c Ratio	0.86	0.11	0.52	0.42	0.06	0.18
Control Delay	29.3	7.1	18.4	14.4	12.9	6.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	29.3	7.1	18.4	14.4	12.9	6.7
Queue Length 50th (ft)	138	10	66	70	4	10
Queue Length 95th (ft)	251	28	166	164	19	46
Internal Link Dist (ft)	520	293		203		240
Turn Bay Length (ft)						
Base Capacity (vph)	846	1008	541	804	393	776
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.60	0.08	0.52	0.42	0.06	0.18

Intersection Summary

Lane Group	EBL	EBT	WBL	WBT	NBT	SBT
Lane Group Flow (vph)	54	663	250	881	456	66
v/c Ratio	0.17	0.40	0.51	0.53	0.82	0.14
Control Delay	10.4	14.3	12.5	14.8	24.9	9.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	10.4	14.3	12.5	14.8	24.9	9.2
Queue Length 50th (ft)	8	50	42	123	101	8
Queue Length 95th (ft)	29	101	105	223	203	31
Internal Link Dist (ft)		279		609	1265	205
Turn Bay Length (ft)						
Base Capacity (vph)	327	1672	562	1652	796	726
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.17	0.40	0.44	0.53	0.57	0.09

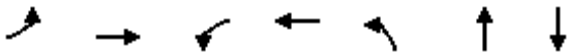
Intersection Summary



Lane Group	EBL	EBT	WBL	WBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	435	326	11	990	22	113	267	348
v/c Ratio	0.74	0.16	0.09	0.76	0.01	0.24	0.55	0.53
Control Delay	37.0	8.5	35.0	23.7	0.0	19.5	24.9	7.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	37.0	8.5	35.0	23.7	0.0	19.5	24.9	7.4
Queue Length 50th (ft)	86	24	4	166	0	37	98	17
Queue Length 95th (ft)	#186	80	21	#349	0	73	163	72
Internal Link Dist (ft)		609		486			881	
Turn Bay Length (ft)								
Base Capacity (vph)	615	2023	118	1298	1590	786	812	896
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.71	0.16	0.09	0.76	0.01	0.14	0.33	0.39

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.



Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBT
Lane Group Flow (vph)	33	870	76	1608	250	109	152
v/c Ratio	0.43	0.46	0.66	0.76	0.88	0.24	0.41
Control Delay	73.2	16.7	55.4	29.1	71.7	12.6	36.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	73.2	16.7	55.4	29.1	71.7	12.6	36.8
Queue Length 50th (ft)	25	211	61	516	183	19	91
Queue Length 95th (ft)	#72	268	m66	m368	#294	61	147
Internal Link Dist (ft)		624		906		244	377
Turn Bay Length (ft)							
Base Capacity (vph)	77	1912	116	2122	341	535	439
Starvation Cap Reductn	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.43	0.46	0.66	0.76	0.73	0.20	0.35

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

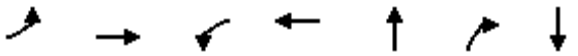
m Volume for 95th percentile queue is metered by upstream signal.

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	196	815	185	1424	76	141	120	283	685
v/c Ratio	0.93	0.66	0.75	1.08	0.58	0.21	0.22	0.87	0.61
Control Delay	105.5	29.0	67.4	78.8	71.3	39.9	6.9	74.3	30.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	105.5	29.0	67.4	78.8	71.3	39.9	6.9	74.3	30.6
Queue Length 50th (ft)	~173	295	118	~650	57	45	16	~246	190
Queue Length 95th (ft)	#345	387	194	#773	110	73	37	#421	255
Internal Link Dist (ft)		906		1436		1074			606
Turn Bay Length (ft)									
Base Capacity (vph)	211	1236	314	1318	146	884	608	327	1156
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.93	0.66	0.59	1.08	0.52	0.16	0.20	0.87	0.59

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

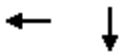
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.



Lane Group	EBL	EBT	WBL	WBT	NBT	NBR	SBT
Lane Group Flow (vph)	11	1163	348	1587	98	163	120
v/c Ratio	0.14	0.48	0.82	0.61	0.43	0.40	0.53
Control Delay	48.1	35.2	58.9	10.1	47.8	8.8	48.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	48.1	35.2	58.9	10.1	47.8	8.8	48.0
Queue Length 50th (ft)	9	278	257	314	63	0	73
Queue Length 95th (ft)	m16	329	335	487	115	55	133
Internal Link Dist (ft)		1436		2539	649		441
Turn Bay Length (ft)							
Base Capacity (vph)	77	2447	604	2618	305	487	302
Starvation Cap Reductn	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.14	0.48	0.58	0.61	0.32	0.33	0.40

Intersection Summary

m Volume for 95th percentile queue is metered by upstream signal.



Lane Group	WBT	SBT
Lane Group Flow (vph)	3706	326
v/c Ratio	1.04	0.33
Control Delay	42.5	31.3
Queue Delay	0.0	0.0
Total Delay	42.5	31.3
Queue Length 50th (ft)	~843	58
Queue Length 95th (ft)	#932	84
Internal Link Dist (ft)	692	1330
Turn Bay Length (ft)		
Base Capacity (vph)	3557	1364
Starvation Cap Reductn	0	0
Spillback Cap Reductn	0	0
Storage Cap Reductn	0	0
Reduced v/c Ratio	1.04	0.24

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Lane Group	EBT	SBT
Lane Group Flow (vph)	1109	533
v/c Ratio	0.35	0.38
Control Delay	4.0	19.3
Queue Delay	0.0	0.0
Total Delay	4.0	19.3
Queue Length 50th (ft)	43	60
Queue Length 95th (ft)	51	89
Internal Link Dist (ft)	496	288
Turn Bay Length (ft)		
Base Capacity (vph)	3143	1851
Starvation Cap Reductn	0	0
Spillback Cap Reductn	0	0
Storage Cap Reductn	0	0
Reduced v/c Ratio	0.35	0.29

Intersection Summary

Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	261	1228	130	848	207	54	43	98	87	87	228
v/c Ratio	0.65	0.72	0.76	0.52	0.67	0.45	0.15	0.28	0.34	0.26	0.48
Control Delay	41.5	20.1	65.0	17.3	18.4	49.6	27.1	4.8	39.8	28.0	7.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	41.5	20.1	65.0	17.3	18.4	49.6	27.1	4.8	39.8	28.0	7.6
Queue Length 50th (ft)	58	216	58	136	0	24	17	0	19	36	0
Queue Length 95th (ft)	#131	#467	#185	272	#93	#81	42	22	49	72	51
Internal Link Dist (ft)		445		606			613			390	
Turn Bay Length (ft)											
Base Capacity (vph)	426	1713	171	1644	309	122	688	665	255	688	720
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.61	0.72	0.76	0.52	0.67	0.44	0.06	0.15	0.34	0.13	0.32

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Lane Group	WBT	NBL	NBT	SBT
Lane Group Flow (vph)	3453	316	305	305
v/c Ratio	0.96	0.95	0.25	0.77
Control Delay	31.7	84.4	26.7	56.8
Queue Delay	43.5	1.6	0.0	0.0
Total Delay	75.2	86.0	26.7	56.8
Queue Length 50th (ft)	646	223	80	100
Queue Length 95th (ft)	#744	#397	115	#156
Internal Link Dist (ft)	485		269	645
Turn Bay Length (ft)				
Base Capacity (vph)	3582	331	1225	413
Starvation Cap Reductn	449	3	0	0
Spillback Cap Reductn	0	0	0	0
Storage Cap Reductn	0	0	0	0
Reduced v/c Ratio	1.10	0.96	0.25	0.74

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

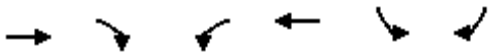
Lane Group	EBT	EBR	NBT	SBL	SBT
Lane Group Flow (vph)	870	76	804	76	739
v/c Ratio	0.39	0.10	0.53	0.46	0.33
Control Delay	14.8	2.7	19.4	41.9	14.3
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	14.8	2.7	19.4	41.9	14.3
Queue Length 50th (ft)	96	0	91	34	79
Queue Length 95th (ft)	126	17	128	75	106
Internal Link Dist (ft)	183		353		269
Turn Bay Length (ft)					
Base Capacity (vph)	2230	735	1513	165	2237
Starvation Cap Reductn	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.39	0.10	0.53	0.46	0.33

Intersection Summary

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Group Flow (vph)	1283	576	304	978	402	152
v/c Ratio	0.79	0.48	0.76	0.43	0.49	0.34
Control Delay	21.9	4.5	44.5	7.7	21.7	5.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	21.9	4.5	44.5	7.7	21.7	5.8
Queue Length 50th (ft)	212	62	61	82	66	0
Queue Length 95th (ft)	#464	101	#151	204	101	39
Internal Link Dist (ft)	216			273	735	
Turn Bay Length (ft)						
Base Capacity (vph)	1620	1496	401	2274	1498	708
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.79	0.39	0.76	0.43	0.27	0.21

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.



Lane Group	EBT	EBR	WBL	WBT	SBL	SBR
Lane Group Flow (vph)	1152	152	413	370	370	728
v/c Ratio	0.77	0.20	0.83	0.16	0.88	0.46
Control Delay	20.7	3.4	42.1	5.3	46.7	1.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	20.7	3.4	42.1	5.3	46.7	1.0
Queue Length 50th (ft)	206	0	82	28	136	0
Queue Length 95th (ft)	283	30	#144	44	#266	0
Internal Link Dist (ft)	139			450		
Turn Bay Length (ft)						
Base Capacity (vph)	1504	750	544	2244	476	1583
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.77	0.20	0.76	0.16	0.78	0.46

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

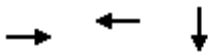
Lane Group	EBL	EBT	WBT	NBT	NBR
Lane Group Flow (vph)	967	707	1315	207	326
v/c Ratio	0.94	0.27	0.86	0.88	0.67
Control Delay	44.8	3.4	23.9	70.1	11.9
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	44.8	3.4	23.9	70.1	11.9
Queue Length 50th (ft)	236	45	245	102	3
Queue Length 95th (ft)	#350	62	#390	#217	76
Internal Link Dist (ft)		450	517	531	
Turn Bay Length (ft)					
Base Capacity (vph)	1080	2665	1523	249	497
Starvation Cap Reductn	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.90	0.27	0.86	0.83	0.66

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Lane Group	EBL	NBL	NBT	SBT
Lane Group Flow (vph)	456	120	543	881
v/c Ratio	0.85	0.62	0.24	0.51
Control Delay	49.9	64.6	9.8	23.5
Queue Delay	0.0	0.0	0.0	0.0
Total Delay	49.9	64.6	9.8	23.5
Queue Length 50th (ft)	299	97	70	233
Queue Length 95th (ft)	382	151	211	364
Internal Link Dist (ft)	72		849	507
Turn Bay Length (ft)				
Base Capacity (vph)	707	229	2255	1723
Starvation Cap Reductn	0	0	0	0
Spillback Cap Reductn	0	0	0	0
Storage Cap Reductn	0	0	0	0
Reduced v/c Ratio	0.64	0.52	0.24	0.51

Intersection Summary

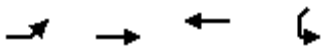


Lane Group	EBT	WBT	SBT
Lane Group Flow (vph)	131	163	293
v/c Ratio	0.15	0.21	0.22
Control Delay	3.5	10.5	14.0
Queue Delay	0.0	0.0	0.0
Total Delay	3.5	10.5	14.0
Queue Length 50th (ft)	4	35	39
Queue Length 95th (ft)	28	67	64
Internal Link Dist (ft)	272	260	893
Turn Bay Length (ft)			
Base Capacity (vph)	857	774	1320
Starvation Cap Reductn	0	0	0
Spillback Cap Reductn	0	0	0
Storage Cap Reductn	0	0	0
Reduced v/c Ratio	0.15	0.21	0.22

Intersection Summary

Lane Group	EBL	NBT	SBT
Lane Group Flow (vph)	217	511	370
v/c Ratio	0.60	0.47	0.27
Control Delay	14.5	5.7	3.7
Queue Delay	0.0	0.0	0.0
Total Delay	14.5	5.7	3.7
Queue Length 50th (ft)	17	52	29
Queue Length 95th (ft)	67	146	80
Internal Link Dist (ft)	339	648	504
Turn Bay Length (ft)			
Base Capacity (vph)	550	1089	1356
Starvation Cap Reductn	0	0	0
Spillback Cap Reductn	0	0	0
Storage Cap Reductn	0	0	0
Reduced v/c Ratio	0.39	0.47	0.27

Intersection Summary



Lane Group	EBL	EBT	WBT	SWL
Lane Group Flow (vph)	54	728	1586	435
v/c Ratio	0.52	0.36	0.92	0.75
Control Delay	56.7	9.1	29.2	28.4
Queue Delay	0.0	0.0	0.0	0.0
Total Delay	56.7	9.1	29.2	28.4
Queue Length 50th (ft)	27	88	372	150
Queue Length 95th (ft)	#76	121	#542	#292
Internal Link Dist (ft)		1988	776	623
Turn Bay Length (ft)				
Base Capacity (vph)	103	2175	1759	583
Starvation Cap Reductn	0	0	0	0
Spillback Cap Reductn	0	0	0	0
Storage Cap Reductn	0	0	0	0
Reduced v/c Ratio	0.52	0.33	0.90	0.75

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Lane Group	EBT	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	196	467	250	565	283	696
v/c Ratio	0.66	0.94	1.01	0.82	0.86	0.82
Control Delay	33.4	57.0	98.5	41.9	60.5	37.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	33.4	57.0	98.5	41.9	60.5	37.0
Queue Length 50th (ft)	66	210	~136	137	145	163
Queue Length 95th (ft)	133	#442	#309	#241	#310	#275
Internal Link Dist (ft)	623	665		411		690
Turn Bay Length (ft)						
Base Capacity (vph)	427	496	248	716	332	886
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.46	0.94	1.01	0.79	0.85	0.79

Intersection Summary

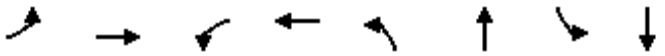
~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Lane Group	EBL	NBT	SBT
Lane Group Flow (vph)	250	577	305
v/c Ratio	0.62	0.68	0.23
Control Delay	12.5	11.4	3.2
Queue Delay	0.0	0.0	0.0
Total Delay	12.5	11.4	3.2
Queue Length 50th (ft)	10	76	19
Queue Length 95th (ft)	63	#295	59
Internal Link Dist (ft)	665	479	940
Turn Bay Length (ft)			
Base Capacity (vph)	592	850	1299
Starvation Cap Reductn	0	0	0
Spillback Cap Reductn	0	0	0
Storage Cap Reductn	0	0	0
Reduced v/c Ratio	0.42	0.68	0.23

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.



Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	54	76	217	359	76	2663	87	1815
v/c Ratio	0.46	0.16	0.98	0.45	0.54	0.97	0.74	0.66
Control Delay	66.1	19.1	108.8	26.1	67.2	38.0	74.6	20.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	66.1	19.1	108.8	26.1	67.2	38.0	74.6	20.1
Queue Length 50th (ft)	41	7	170	73	57	698	65	382
Queue Length 95th (ft)	84	31	#329	123	109	#851	m#123	417
Internal Link Dist (ft)		306		551		569		696
Turn Bay Length (ft)								
Base Capacity (vph)	132	468	221	806	162	2749	118	2768
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.41	0.16	0.98	0.45	0.47	0.97	0.74	0.66

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

Lane Group	EBL	NBL	NBT
Lane Group Flow (vph)	120	217	761
v/c Ratio	0.17	0.31	0.54
Control Delay	8.6	9.7	10.9
Queue Delay	0.0	0.0	0.0
Total Delay	8.6	9.7	10.9
Queue Length 50th (ft)	16	31	63
Queue Length 95th (ft)	38	65	101
Internal Link Dist (ft)	260		609
Turn Bay Length (ft)			
Base Capacity (vph)	708	708	1415
Starvation Cap Reductn	0	0	0
Spillback Cap Reductn	0	0	0
Storage Cap Reductn	0	0	0
Reduced v/c Ratio	0.17	0.31	0.54

Intersection Summary

Lane Group	EBL	EBT	WBT	NBT	NBR
Lane Group Flow (vph)	446	859	641	380	22
v/c Ratio	0.59	0.69	0.47	0.61	0.06
Control Delay	25.2	11.8	13.4	28.5	0.3
Queue Delay	0.0	29.5	0.0	0.0	0.0
Total Delay	25.2	41.3	13.4	28.5	0.3
Queue Length 50th (ft)	94	195	73	74	0
Queue Length 95th (ft)	142	319	126	104	0
Internal Link Dist (ft)		157	779	808	
Turn Bay Length (ft)					
Base Capacity (vph)	761	1247	1369	1119	583
Starvation Cap Reductn	0	425	0	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.59	1.05	0.47	0.34	0.04

Intersection Summary

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	98	1826	620	130	1272	391	500	380	196	326	326
v/c Ratio	0.94	0.88	0.71	0.55	0.86	0.50	0.94	0.91	0.44	0.96	0.68
Control Delay	141.5	47.2	16.5	76.1	46.7	11.1	88.1	82.6	21.9	98.9	57.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	141.5	47.2	16.5	76.1	46.7	11.1	88.1	82.6	21.9	98.9	57.2
Queue Length 50th (ft)	98	589	170	64	575	74	~267	362	58	~350	284
Queue Length 95th (ft)	#223	675	333	99	674	167	#384	#541	137	#551	398
Internal Link Dist (ft)		2325			484			648			1369
Turn Bay Length (ft)											
Base Capacity (vph)	104	2073	878	297	1526	803	533	432	454	340	482
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.94	0.88	0.71	0.44	0.83	0.49	0.94	0.88	0.43	0.96	0.68

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Lane Group	WBL	WBR	NBT	SBT
Lane Group Flow (vph)	902	1946	1011	946
v/c Ratio	0.42	1.11	1.02	0.96
Control Delay	14.9	86.7	86.5	72.5
Queue Delay	0.0	0.0	0.0	0.0
Total Delay	14.9	86.7	86.5	72.5
Queue Length 50th (ft)	219	~1233	~550	481
Queue Length 95th (ft)	263	#1380	#687	#618
Internal Link Dist (ft)	810		699	1779
Turn Bay Length (ft)				
Base Capacity (vph)	2151	1751	990	990
Starvation Cap Reductn	0	0	0	0
Spillback Cap Reductn	0	0	0	0
Storage Cap Reductn	0	0	0	0
Reduced v/c Ratio	0.42	1.11	1.02	0.96

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT	SBR
Lane Group Flow (vph)	413	446	337	87	587	761	500	695	457	761	424
v/c Ratio	1.17	0.70	0.36	0.62	0.75	1.02	1.21	0.88	1.05	0.90	0.59
Control Delay	152.4	50.0	12.8	96.6	43.2	76.4	163.0	67.6	109.3	69.6	16.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	152.4	50.0	12.8	96.6	43.2	76.4	163.0	67.6	109.3	69.6	16.5
Queue Length 50th (ft)	~479	378	121	65	152	~672	~595	334	~507	383	116
Queue Length 95th (ft)	#694	509	183	#156	259	#1018	#823	412	#729	#492	171
Internal Link Dist (ft)		614			571			545		730	
Turn Bay Length (ft)											
Base Capacity (vph)	354	634	931	141	780	745	413	836	436	847	719
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	1.17	0.70	0.36	0.62	0.75	1.02	1.21	0.83	1.05	0.90	0.59

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT	SBR
Lane Group Flow (vph)	174	195	185	76	174	98	261	772	163	793	185
v/c Ratio	0.54	0.58	0.32	0.24	0.52	0.27	0.78	0.56	0.81	0.55	0.25
Control Delay	52.0	53.4	5.0	44.3	52.1	8.8	73.6	36.7	98.7	23.9	3.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	52.0	53.4	5.0	44.3	52.1	8.8	73.6	36.7	98.7	23.9	3.1
Queue Length 50th (ft)	146	166	0	58	141	0	109	239	147	86	0
Queue Length 95th (ft)	196	218	47	91	186	44	#189	#489	m#219	#447	m30
Internal Link Dist (ft)		644			610			685		811	
Turn Bay Length (ft)											
Base Capacity (vph)	464	483	581	475	500	487	336	1370	211	1448	732
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.38	0.40	0.32	0.16	0.35	0.20	0.78	0.56	0.77	0.55	0.25

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.

Lane Group	EBT	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	119	185	98	1358	65	1076
v/c Ratio	0.49	0.86	0.26	0.54	0.23	0.43
Control Delay	49.5	97.4	6.3	11.4	6.7	10.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	49.5	97.4	6.3	11.4	6.7	10.6
Queue Length 50th (ft)	83	147	19	294	12	210
Queue Length 95th (ft)	140	180	44	453	32	328
Internal Link Dist (ft)	218	191		926		474
Turn Bay Length (ft)						
Base Capacity (vph)	344	306	413	2503	349	2501
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.35	0.60	0.24	0.54	0.19	0.43

Intersection Summary

Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	413	2250	554	1685	424	250	696	446	380	576	315
v/c Ratio	0.87	1.10	1.15	0.80	0.52	1.24	0.90	0.73	0.93	0.73	0.51
Control Delay	79.9	91.6	144.3	41.1	12.3	192.8	71.2	37.8	92.1	58.6	26.6
Queue Delay	0.0	0.0	0.0	0.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	79.9	91.6	144.3	42.0	12.3	192.8	71.2	37.8	92.1	58.6	26.6
Queue Length 50th (ft)	198	~878	~317	513	111	~291	335	278	~189	267	156
Queue Length 95th (ft)	#276	#968	#436	576	163	#472	#431	405	#299	337	245
Internal Link Dist (ft)		286		607			727			926	
Turn Bay Length (ft)											
Base Capacity (vph)	497	2052	480	2104	810	202	805	608	410	790	622
Starvation Cap Reductn	0	0	0	183	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.83	1.10	1.15	0.88	0.52	1.24	0.86	0.73	0.93	0.73	0.51

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Lane Group	WBL	NBT	SBL	SBT
Lane Group Flow (vph)	456	978	435	924
v/c Ratio	0.92	0.89	0.90	0.40
Control Delay	44.1	34.6	49.8	6.5
Queue Delay	0.0	0.0	0.0	0.0
Total Delay	44.1	34.6	49.8	6.5
Queue Length 50th (ft)	123	207	178	86
Queue Length 95th (ft)	#292	#327	#336	119
Internal Link Dist (ft)	633	267		727
Turn Bay Length (ft)				
Base Capacity (vph)	512	1103	499	2301
Starvation Cap Reductn	0	0	0	0
Spillback Cap Reductn	0	0	0	0
Storage Cap Reductn	0	0	0	0
Reduced v/c Ratio	0.89	0.89	0.87	0.40

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Lane Group	EBT	WBT	WBR	SBL	SBR
Lane Group Flow (vph)	1359	1054	935	391	326
v/c Ratio	0.70	0.54	0.48	0.59	0.57
Control Delay	14.1	11.3	1.9	29.6	8.7
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	14.1	11.3	1.9	29.6	8.7
Queue Length 50th (ft)	124	84	0	58	0
Queue Length 95th (ft)	#484	304	36	#188	76
Internal Link Dist (ft)	621	812		135	
Turn Bay Length (ft)					
Base Capacity (vph)	2372	2372	2159	679	574
Starvation Cap Reductn	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.57	0.44	0.43	0.58	0.57

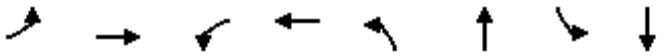
Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Lane Group	WBL	WBR	NBT	SBL	SBT
Lane Group Flow (vph)	76	261	1294	141	1054
v/c Ratio	0.54	0.71	0.36	0.73	0.24
Control Delay	79.1	18.0	14.7	87.9	2.6
Queue Delay	0.0	0.1	0.0	0.0	0.0
Total Delay	79.1	18.1	14.7	87.9	2.6
Queue Length 50th (ft)	73	0	421	139	27
Queue Length 95th (ft)	124	90	465	m167	m162
Internal Link Dist (ft)	835		918		571
Turn Bay Length (ft)					
Base Capacity (vph)	448	581	3612	325	4374
Starvation Cap Reductn	0	0	0	0	0
Spillback Cap Reductn	0	31	246	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.17	0.47	0.38	0.43	0.24

Intersection Summary

m Volume for 95th percentile queue is metered by upstream signal.



Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	76	304	130	217	250	1337	185	1076
v/c Ratio	0.22	0.85	0.72	0.83	0.86	0.58	0.39	0.71
Control Delay	51.0	72.8	87.2	56.6	88.5	17.4	55.5	48.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	51.0	72.8	87.2	56.6	88.5	17.4	55.5	48.9
Queue Length 50th (ft)	63	256	124	104	253	422	82	420
Queue Length 95th (ft)	108	364	197	#217	#359	63	119	620
Internal Link Dist (ft)		610		1517		668		918
Turn Bay Length (ft)								
Base Capacity (vph)	401	411	212	290	330	2447	472	1517
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	16
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.19	0.74	0.61	0.75	0.76	0.55	0.39	0.72

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Lane Group	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	174	163	185	54	1435	130	1261
v/c Ratio	0.70	0.79	0.60	0.56	0.53	0.43	0.62
Control Delay	66.7	89.3	28.3	96.0	25.2	44.6	10.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.1
Total Delay	66.7	89.3	28.3	96.0	25.2	44.6	10.8
Queue Length 50th (ft)	144	157	50	55	250	58	187
Queue Length 95th (ft)	199	234	131	#95	468	m82	338
Internal Link Dist (ft)	465		811		724		668
Turn Bay Length (ft)							
Base Capacity (vph)	429	260	351	107	2734	318	2032
Starvation Cap Reductn	0	0	0	0	0	0	98
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.41	0.63	0.53	0.50	0.52	0.41	0.65

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.

Lane Group	EBT	EBR	WBT	WBR	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	76	76	153	228	152	1240	43	1369
v/c Ratio	0.74	0.29	0.78	0.14	0.42	0.33	0.45	0.48
Control Delay	111.7	26.8	89.5	0.2	48.4	6.5	76.5	27.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	111.7	26.8	89.5	0.2	48.4	6.5	76.5	27.2
Queue Length 50th (ft)	75	12	149	0	132	97	41	298
Queue Length 95th (ft)	127	63	214	0	m165	m219	m72	459
Internal Link Dist (ft)	286		160			995		724
Turn Bay Length (ft)								
Base Capacity (vph)	202	437	391	1583	361	3743	160	2878
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.38	0.17	0.39	0.14	0.42	0.33	0.27	0.48

Intersection Summary

m Volume for 95th percentile queue is metered by upstream signal.

Lane Group	EBL	EBT	EBR2	WBT	WBR	NBR2	SBL2	SBL	SBT	SBR	NWL	NWR
Lane Group Flow (vph)	337	2297	225	2207	739	163	243	359	365	239	217	413
v/c Ratio	0.85	0.88	0.27	0.99	0.77	0.20	0.66	1.01	1.01	0.55	0.97	0.95
Control Delay	84.9	32.3	6.1	56.0	18.9	0.6	52.4	97.0	95.1	14.5	116.6	81.5
Queue Delay	0.0	23.3	0.0	41.1	4.8	0.0	39.8	33.9	0.0	0.0	0.0	3.3
Total Delay	84.9	55.6	6.1	97.1	23.7	0.6	92.3	130.9	95.1	14.5	116.6	84.8
Queue Length 50th (ft)	169	719	34	815	461	0	171	~417	~420	28	215	181
Queue Length 95th (ft)	#248	798	87	#912	537	0	212	#609	#610	101	#385	#298
Internal Link Dist (ft)		607		437					995		195	
Turn Bay Length (ft)												
Base Capacity (vph)	398	2625	830	2240	956	800	369	354	362	438	224	435
Starvation Cap Reductn	0	426	0	719	155	0	0	0	0	0	0	0
Spillback Cap Reductn	0	396	0	0	0	0	135	129	0	0	0	9
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.85	1.04	0.27	1.45	0.92	0.20	1.04	1.60	1.01	0.55	0.97	0.97

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Lane Group	EBT	WBT	NBT	SBT
Lane Group Flow (vph)	554	456	304	337
v/c Ratio	0.79	0.84	0.46	0.51
Control Delay	17.5	27.9	13.8	15.6
Queue Delay	0.0	0.0	0.0	0.0
Total Delay	17.5	27.9	13.8	15.6
Queue Length 50th (ft)	94	113	49	61
Queue Length 95th (ft)	193	211	148	179
Internal Link Dist (ft)	633	311	949	790
Turn Bay Length (ft)				
Base Capacity (vph)	1034	858	660	656
Starvation Cap Reductn	0	2	0	0
Spillback Cap Reductn	0	0	0	0
Storage Cap Reductn	0	0	0	0
Reduced v/c Ratio	0.54	0.53	0.46	0.51

Intersection Summary

Lane Group	NBL	NBT	SBT	SEL	SER
Lane Group Flow (vph)	304	1435	967	54	511
v/c Ratio	0.80	0.34	0.33	0.30	0.82
Control Delay	59.5	3.2	9.0	50.9	15.8
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	59.5	3.2	9.0	50.9	15.8
Queue Length 50th (ft)	224	61	143	40	0
Queue Length 95th (ft)	302	160	m224	71	103
Internal Link Dist (ft)		763	913	452	
Turn Bay Length (ft)					
Base Capacity (vph)	531	4222	2934	575	859
Starvation Cap Reductn	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.57	0.34	0.33	0.09	0.59

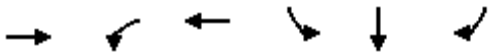
Intersection Summary

m Volume for 95th percentile queue is metered by upstream signal.

Lane Group	EBL	EBR	WBL	WBT	SBT
Lane Group Flow (vph)	109	152	424	500	174
v/c Ratio	0.31	0.40	0.43	0.65	0.42
Control Delay	19.7	8.0	3.1	16.1	12.4
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	19.7	8.0	3.1	16.1	12.4
Queue Length 50th (ft)	25	0	0	85	18
Queue Length 95th (ft)	64	39	45	#253	63
Internal Link Dist (ft)				439	658
Turn Bay Length (ft)					
Base Capacity (vph)	751	724	1096	904	787
Starvation Cap Reductn	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.15	0.21	0.39	0.55	0.22

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.



Lane Group	EBT	WBL	WBT	SBL	SBT	SBR
Lane Group Flow (vph)	2196	315	2598	661	655	348
v/c Ratio	1.03	1.19	0.68	1.15	1.09	0.61
Control Delay	59.5	152.5	1.7	130.5	109.0	40.0
Queue Delay	28.8	0.0	32.8	0.9	4.8	0.1
Total Delay	88.3	152.5	34.6	131.4	113.8	40.1
Queue Length 50th (ft)	~823	~364	37	~798	~756	244
Queue Length 95th (ft)	m#910	m#321	m33	#1054	#1012	356
Internal Link Dist (ft)	437		346		820	
Turn Bay Length (ft)						
Base Capacity (vph)	2134	264	3844	574	601	571
Starvation Cap Reductn	269	0	1181	0	0	0
Spillback Cap Reductn	1	0	1408	61	64	9
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	1.18	1.19	1.07	1.29	1.22	0.62

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

Lane Group	EBT	WBL	WBT	NBL	NBR	SBL	SBT
Lane Group Flow (vph)	1109	196	424	196	326	424	413
v/c Ratio	0.89	0.91	0.25	0.82	0.42	0.99	0.92
Control Delay	36.1	61.5	14.0	64.5	4.2	76.0	60.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	36.1	61.5	14.0	64.5	4.2	76.0	60.6
Queue Length 50th (ft)	296	62	71	109	0	240	229
Queue Length 95th (ft)	#423	#193	101	#220	53	#429	#404
Internal Link Dist (ft)	152		265				360
Turn Bay Length (ft)							
Base Capacity (vph)	1248	216	1723	247	778	430	451
Starvation Cap Reductn	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.89	0.91	0.25	0.79	0.42	0.99	0.92

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Lane Group	EBL	NBL	NBT	SBT
Lane Group Flow (vph)	739	533	957	587
v/c Ratio	1.00	0.99	0.36	0.66
Control Delay	64.5	79.0	20.6	47.0
Queue Delay	0.0	0.0	0.0	0.0
Total Delay	64.5	79.0	20.6	47.0
Queue Length 50th (ft)	512	424	146	146
Queue Length 95th (ft)	#787	#654	276	190
Internal Link Dist (ft)	585		913	1745
Turn Bay Length (ft)				
Base Capacity (vph)	739	539	2669	895
Starvation Cap Reductn	0	0	0	0
Spillback Cap Reductn	0	0	0	0
Storage Cap Reductn	0	0	0	0
Reduced v/c Ratio	1.00	0.99	0.36	0.66

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

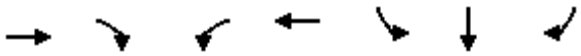
Lane Group	EBL	EBT	WBT	WBR	NBT
Lane Group Flow (vph)	152	2750	2772	707	836
v/c Ratio	0.64	0.82	1.09	0.82	0.90
Control Delay	51.0	13.3	81.9	32.8	64.7
Queue Delay	0.0	15.7	0.0	0.0	0.0
Total Delay	51.0	29.0	81.9	32.8	64.7
Queue Length 50th (ft)	132	391	~1141	463	405
Queue Length 95th (ft)	m124	m370	#1218	678	491
Internal Link Dist (ft)		346	988		236
Turn Bay Length (ft)					
Base Capacity (vph)	238	3373	2553	857	983
Starvation Cap Reductn	0	687	0	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.64	1.02	1.09	0.82	0.85

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

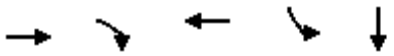


Lane Group	EBT	EBR	WBL	WBT	SBL	SBT	SBR
Lane Group Flow (vph)	750	315	467	522	435	598	1174
v/c Ratio	0.93	0.60	1.05	0.38	0.50	0.33	1.24
Control Delay	63.6	18.7	108.0	27.0	19.8	15.9	142.3
Queue Delay	14.5	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	78.1	18.7	108.0	27.0	19.8	15.9	142.3
Queue Length 50th (ft)	300	65	~205	150	223	135	~1065
Queue Length 95th (ft)	#415	165	#312	196	321	175	#1329
Internal Link Dist (ft)	321			774		2836	
Turn Bay Length (ft)							
Base Capacity (vph)	813	528	443	1386	872	1836	944
Starvation Cap Reductn	72	2	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	1.01	0.60	1.05	0.38	0.50	0.33	1.24

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.



Lane Group	EBT	EBR	WBT	SBL	SBT
Lane Group Flow (vph)	478	283	305	435	1468
v/c Ratio	0.60	0.39	0.33	0.55	0.64
Control Delay	18.0	11.5	13.5	16.5	12.5
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	18.0	11.5	13.5	16.5	12.5
Queue Length 50th (ft)	139	54	40	120	123
Queue Length 95th (ft)	226	108	67	199	167
Internal Link Dist (ft)	451		806		986
Turn Bay Length (ft)					
Base Capacity (vph)	802	719	937	789	2304
Starvation Cap Reductn	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.60	0.39	0.33	0.55	0.64

Intersection Summary

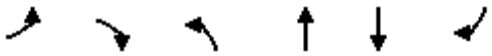
Lane Group	EBT	WBL	WBT	SBT	SBR
Lane Group Flow (vph)	1587	54	761	1989	717
v/c Ratio	1.33	0.60	0.52	1.08dl	1.05
Control Delay	182.3	69.9	21.1	38.1	70.6
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	182.3	69.9	21.1	38.1	70.6
Queue Length 50th (ft)	~638	31	164	413	~483
Queue Length 95th (ft)	#776	#86	218	#544	#738
Internal Link Dist (ft)	458		38	1023	
Turn Bay Length (ft)					
Base Capacity (vph)	1192	90	1474	2067	684
Starvation Cap Reductn	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	1.33	0.60	0.52	0.96	1.05

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

dl Defacto Left Lane. Recode with 1 though lane as a left lane.



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Group Flow (vph)	359	1347	1789	1337	1283	141
v/c Ratio	1.15	0.68	1.04	0.35	1.09	0.22
Control Delay	144.1	13.0	66.0	5.3	102.2	22.4
Queue Delay	0.0	0.0	23.4	0.0	0.0	0.0
Total Delay	144.1	13.0	89.4	5.3	102.2	22.4
Queue Length 50th (ft)	~354	329	~839	115	~446	68
Queue Length 95th (ft)	#550	409	#976	134	#543	114
Internal Link Dist (ft)	812			667	763	
Turn Bay Length (ft)						
Base Capacity (vph)	313	1972	1716	3872	1173	643
Starvation Cap Reductn	0	0	125	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	1.15	0.68	1.12	0.35	1.09	0.22

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

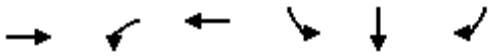
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Lane Group	EBL	EBT	WBT	WBR	SET	NWL	NWT
Lane Group Flow (vph)	272	565	1022	696	173	245	517
v/c Ratio	1.27	0.28	0.75	0.67	0.50	1.20	0.67
Control Delay	187.5	12.0	29.5	5.8	14.8	163.1	11.5
Queue Delay	0.0	0.5	3.8	0.3	0.0	0.0	0.0
Total Delay	187.5	12.5	33.3	6.1	14.8	163.1	11.5
Queue Length 50th (ft)	~167	64	217	0	21	~158	14
Queue Length 95th (ft)	#399	150	#432	88	74	#396	72
Internal Link Dist (ft)		269	321		401		767
Turn Bay Length (ft)							
Base Capacity (vph)	214	1990	1359	1036	588	205	772
Starvation Cap Reductn	0	958	249	57	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	1.27	0.55	0.92	0.71	0.29	1.20	0.67

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

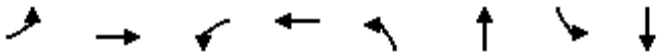
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.



Lane Group	EBT	WBL	WBT	SBL	SBT	SBR
Lane Group Flow (vph)	522	707	728	201	222	402
v/c Ratio	0.72	0.91	0.89	0.65	0.71	0.52
Control Delay	31.7	36.6	33.4	39.6	42.8	12.7
Queue Delay	0.0	18.7	19.4	0.0	0.0	0.0
Total Delay	31.7	55.3	52.9	39.6	42.8	12.7
Queue Length 50th (ft)	113	286	290	92	104	86
Queue Length 95th (ft)	165	#500	#502	#186	#211	164
Internal Link Dist (ft)	435		269		2903	
Turn Bay Length (ft)						
Base Capacity (vph)	823	880	927	323	327	777
Starvation Cap Reductn	0	180	208	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.63	1.01	1.01	0.62	0.68	0.52

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.



Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	43	196	413	293	33	2119	272	598
v/c Ratio	0.15	0.30	1.13	0.40	0.40	1.10	1.10	0.23
Control Delay	27.9	27.8	125.5	7.1	69.8	89.8	134.8	16.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	27.9	27.8	125.5	7.1	69.8	89.8	134.8	16.1
Queue Length 50th (ft)	22	103	~372	22	25	~676	~239	93
Queue Length 95th (ft)	51	164	#570	86	60	#773	#411	119
Internal Link Dist (ft)		480		451		1866		540
Turn Bay Length (ft)								
Base Capacity (vph)	289	655	364	740	88	1920	247	2650
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.15	0.30	1.13	0.40	0.38	1.10	1.10	0.23

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

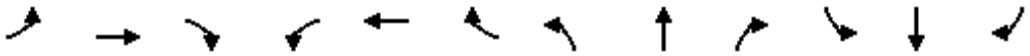
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT	SBR
Lane Group Flow (vph)	663	1445	272	1228	489	1402	207	761	359
v/c Ratio	1.44	1.05	1.02	1.23	1.43	0.97	1.95	0.98	0.52
Control Delay	250.1	82.3	122.2	156.5	251.8	69.8	494.6	89.7	25.7
Queue Delay	0.0	0.0	0.0	0.4	0.0	0.0	0.0	0.0	0.0
Total Delay	250.1	82.3	122.2	156.9	251.8	69.8	494.6	89.7	25.7
Queue Length 50th (ft)	~878	~802	~281	~775	~645	490	~312	275	188
Queue Length 95th (ft)	#1124	#944	#470	#917	#870	#597	#483	#367	284
Internal Link Dist (ft)		403		458		623		529	
Turn Bay Length (ft)									
Base Capacity (vph)	460	1372	266	998	342	1438	106	779	697
Starvation Cap Reductn	0	0	0	77	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	1.44	1.05	1.02	1.33	1.43	0.97	1.95	0.98	0.52

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

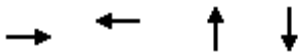


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	174	989	315	250	402	87	293	261	685	76	120	76
v/c Ratio	0.79	0.75	0.22	0.64	0.31	0.19	0.94	0.55	1.13	0.48	0.10	0.17
Control Delay	68.3	31.7	2.5	49.5	24.1	4.1	82.8	34.5	103.5	53.4	26.0	2.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	68.3	31.7	2.5	49.5	24.1	4.1	82.8	34.5	103.5	53.4	26.0	2.8
Queue Length 50th (ft)	95	243	0	69	82	0	85	135	~357	41	19	0
Queue Length 95th (ft)	#245	#441	26	#140	153	23	#201	214	#578	97	34	15
Internal Link Dist (ft)		865			423			1745			245	
Turn Bay Length (ft)									100			
Base Capacity (vph)	223	1317	1420	391	1282	460	311	691	604	198	1999	669
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.78	0.75	0.22	0.64	0.31	0.19	0.94	0.38	1.13	0.38	0.06	0.11

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.



Lane Group	EBT	WBT	NBT	SBT
Lane Group Flow (vph)	1032	359	327	87
v/c Ratio	1.23	0.31	1.03	0.29
Control Delay	134.1	5.0	100.8	24.5
Queue Delay	0.0	0.0	0.0	0.0
Total Delay	134.1	5.0	100.8	24.5
Queue Length 50th (ft)	~906	61	~234	28
Queue Length 95th (ft)	#1160	97	#414	74
Internal Link Dist (ft)	342	520	255	125
Turn Bay Length (ft)				
Base Capacity (vph)	837	1175	316	303
Starvation Cap Reductn	0	0	0	0
Spillback Cap Reductn	0	0	0	0
Storage Cap Reductn	0	0	0	0
Reduced v/c Ratio	1.23	0.31	1.03	0.29

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Lane Group	EBT	WBL	WBT	NBL	NBR
Lane Group Flow (vph)	1750	261	543	196	293
v/c Ratio	0.82	0.79	0.23	0.50	0.51
Control Delay	22.0	48.6	6.5	28.2	6.2
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	22.0	48.6	6.5	28.2	6.2
Queue Length 50th (ft)	200	101	36	75	0
Queue Length 95th (ft)	#393	#254	92	131	53
Internal Link Dist (ft)	423		279	871	
Turn Bay Length (ft)					
Base Capacity (vph)	2132	351	2313	627	750
Starvation Cap Reductn	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.82	0.74	0.23	0.31	0.39

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

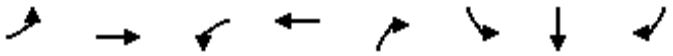
Lane Group	EBT	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	456	141	130	359	22	261
v/c Ratio	0.80	0.21	0.28	0.45	0.06	0.32
Control Delay	22.8	6.5	14.7	14.7	13.0	5.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	22.8	6.5	14.7	14.7	13.0	5.9
Queue Length 50th (ft)	101	15	23	66	3	12
Queue Length 95th (ft)	187	39	81	190	20	68
Internal Link Dist (ft)	520	293		203		240
Turn Bay Length (ft)						
Base Capacity (vph)	963	1142	466	805	381	819
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.47	0.12	0.28	0.45	0.06	0.32

Intersection Summary

Lane Group	EBL	EBT	WBL	WBT	NBT	SBT
Lane Group Flow (vph)	76	1424	326	663	402	77
v/c Ratio	0.19	0.84	0.77	0.38	0.80	0.19
Control Delay	9.4	25.8	25.9	12.7	26.8	13.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	9.4	25.8	25.9	12.7	26.8	13.4
Queue Length 50th (ft)	11	173	66	88	100	16
Queue Length 95th (ft)	33	#313	#203	152	196	43
Internal Link Dist (ft)		279		609	1265	205
Turn Bay Length (ft)						
Base Capacity (vph)	408	1703	487	1746	679	584
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.19	0.84	0.67	0.38	0.59	0.13

Intersection Summary

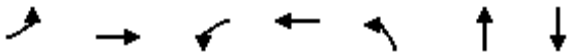
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.



Lane Group	EBL	EBT	WBL	WBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	630	793	33	804	33	127	286	359
v/c Ratio	0.91	0.42	0.23	0.68	0.02	0.27	0.58	0.51
Control Delay	47.7	12.3	36.4	23.4	0.0	19.7	25.5	5.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	47.7	12.3	36.4	23.4	0.0	19.7	25.5	5.1
Queue Length 50th (ft)	130	75	13	138	0	43	107	1
Queue Length 95th (ft)	#282	214	43	253	0	82	176	51
Internal Link Dist (ft)		609		486			881	
Turn Bay Length (ft)								
Base Capacity (vph)	695	1909	148	1176	1611	772	797	909
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.91	0.42	0.22	0.68	0.02	0.16	0.36	0.39

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.



Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBT
Lane Group Flow (vph)	76	1685	76	1163	130	272	163
v/c Ratio	0.58	0.75	0.63	0.52	0.82	0.83	1.12
Control Delay	81.3	20.9	74.4	11.9	91.7	68.1	160.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	81.3	20.9	74.4	11.9	91.7	68.1	160.1
Queue Length 50th (ft)	70	543	75	175	119	214	~172
Queue Length 95th (ft)	#179	743	m87	m75	188	300	#280
Internal Link Dist (ft)		624		906		244	377
Turn Bay Length (ft)							
Base Capacity (vph)	130	2245	129	2242	211	422	193
Starvation Cap Reductn	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.58	0.75	0.59	0.52	0.62	0.64	0.84

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

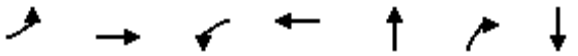
Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	478	1707	239	1152	109	467	261	337	413
v/c Ratio	1.23	1.19	1.23	1.11	0.69	0.71	0.51	1.06	0.43
Control Delay	167.8	126.3	189.3	102.6	86.2	61.5	18.8	122.4	31.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	167.8	126.3	189.3	102.6	86.2	61.5	18.8	122.4	31.5
Queue Length 50th (ft)	~547	~1020	~277	~646	101	214	85	~385	117
Queue Length 95th (ft)	m#787	#1147	#466	#617	168	276	143	#583	173
Internal Link Dist (ft)		906		1436		1074			606
Turn Bay Length (ft)									
Base Capacity (vph)	390	1439	195	1041	189	732	513	318	969
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	1.23	1.19	1.23	1.11	0.58	0.64	0.51	1.06	0.43

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.



Lane Group	EBL	EBT	WBL	WBT	NBT	NBR	SBT
Lane Group Flow (vph)	11	2207	174	1456	131	239	98
v/c Ratio	0.17	0.69	0.75	0.54	0.68	0.54	0.54
Control Delay	59.0	23.8	79.9	9.2	73.6	10.5	60.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	59.0	23.8	79.9	9.2	73.6	10.5	60.3
Queue Length 50th (ft)	10	522	161	270	113	0	75
Queue Length 95th (ft)	m11	m328	233	412	186	75	136
Internal Link Dist (ft)		1436		2539	649		441
Turn Bay Length (ft)							
Base Capacity (vph)	64	3178	339	2686	244	496	228
Starvation Cap Reductn	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.17	0.69	0.51	0.54	0.54	0.48	0.43

Intersection Summary

m Volume for 95th percentile queue is metered by upstream signal.

Lane Group	WBT	SBT
Lane Group Flow (vph)	2619	587
v/c Ratio	0.74	0.59
Control Delay	9.8	30.1
Queue Delay	0.0	0.0
Total Delay	9.8	30.1
Queue Length 50th (ft)	284	129
Queue Length 95th (ft)	338	m126
Internal Link Dist (ft)	692	1330
Turn Bay Length (ft)		
Base Capacity (vph)	3544	2888
Starvation Cap Reductn	0	0
Spillback Cap Reductn	0	0
Storage Cap Reductn	0	0
Reduced v/c Ratio	0.74	0.20

Intersection Summary

m Volume for 95th percentile queue is metered by upstream signal.

Lane Group	EBT	SBT
Lane Group Flow (vph)	1967	804
v/c Ratio	0.60	0.63
Control Delay	4.1	23.9
Queue Delay	0.1	0.0
Total Delay	4.2	23.9
Queue Length 50th (ft)	80	91
Queue Length 95th (ft)	m114	114
Internal Link Dist (ft)	496	288
Turn Bay Length (ft)		
Base Capacity (vph)	3285	1495
Starvation Cap Reductn	223	0
Spillback Cap Reductn	0	0
Storage Cap Reductn	0	0
Reduced v/c Ratio	0.64	0.54

Intersection Summary

m Volume for 95th percentile queue is metered by upstream signal.

Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	261	1510	163	1533	130	130	54	141	87	87	228
v/c Ratio	0.94	0.89	0.89	0.85	0.57	0.92	0.18	0.38	0.39	0.32	0.63
Control Delay	84.2	29.3	84.7	25.8	18.3	99.4	32.0	8.5	46.0	35.5	19.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	84.2	29.3	84.7	25.8	18.3	99.4	32.0	8.5	46.0	35.5	19.5
Queue Length 50th (ft)	72	351	87	340	0	70	26	0	23	43	34
Queue Length 95th (ft)	#177	#678	#241	#664	55	#210	57	45	53	83	101
Internal Link Dist (ft)		445		509			613			390	
Turn Bay Length (ft)											
Base Capacity (vph)	277	1701	183	1799	232	142	577	588	237	556	578
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.94	0.89	0.89	0.85	0.56	0.92	0.09	0.24	0.37	0.16	0.39

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Lane Group	WBT	NBL	NBT	SBT
Lane Group Flow (vph)	2327	358	600	494
v/c Ratio	0.79	0.86	0.38	0.84
Control Delay	27.9	61.3	20.7	54.2
Queue Delay	0.2	17.6	1.2	0.0
Total Delay	28.1	78.9	21.9	54.2
Queue Length 50th (ft)	413	238	136	163
Queue Length 95th (ft)	473	#371	176	225
Internal Link Dist (ft)	485		269	645
Turn Bay Length (ft)				
Base Capacity (vph)	2937	460	1708	635
Starvation Cap Reductn	137	95	844	0
Spillback Cap Reductn	0	0	0	0
Storage Cap Reductn	0	0	0	0
Reduced v/c Ratio	0.83	0.98	0.69	0.78

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Lane Group	EBT	EBR	NBT	SBL	SBT
Lane Group Flow (vph)	1467	109	1327	152	359
v/c Ratio	0.73	0.16	0.94	0.48	0.14
Control Delay	25.4	4.3	42.7	39.2	12.2
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	25.4	4.3	42.7	39.2	12.2
Queue Length 50th (ft)	252	0	248	79	38
Queue Length 95th (ft)	306	31	#343	139	54
Internal Link Dist (ft)	183		353		269
Turn Bay Length (ft)					
Base Capacity (vph)	2023	678	1415	314	2548
Starvation Cap Reductn	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.73	0.16	0.94	0.48	0.14

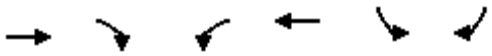
Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Group Flow (vph)	1554	826	554	1620	500	283
v/c Ratio	0.95	0.76	0.95	0.67	0.62	0.52
Control Delay	39.4	12.2	67.1	11.4	35.2	7.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	39.4	12.2	67.1	11.4	35.2	7.1
Queue Length 50th (ft)	443	216	167	257	135	0
Queue Length 95th (ft)	#698	340	#301	424	185	65
Internal Link Dist (ft)	216			273	735	
Turn Bay Length (ft)						
Base Capacity (vph)	1630	1221	582	2403	1084	641
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.95	0.68	0.95	0.67	0.46	0.44

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.



Lane Group	EBT	EBR	WBL	WBT	SBL	SBR
Lane Group Flow (vph)	1174	359	391	380	424	1283
v/c Ratio	0.92	0.45	0.62	0.18	0.82	0.81
Control Delay	37.5	4.5	29.8	11.1	37.0	4.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	37.5	4.5	29.8	11.1	37.0	4.8
Queue Length 50th (ft)	272	0	89	61	181	0
Queue Length 95th (ft)	#437	55	m#132	m87	243	0
Internal Link Dist (ft)	222			450		
Turn Bay Length (ft)						
Base Capacity (vph)	1280	793	632	2121	755	1583
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.92	0.45	0.62	0.18	0.56	0.81

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.

Lane Group	EBL	EBT	WBT	NBT	NBR
Lane Group Flow (vph)	957	783	1195	229	489
v/c Ratio	1.00	0.30	0.80	0.88	1.06
Control Delay	60.4	2.4	19.4	65.8	74.7
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	60.4	2.4	19.4	65.8	74.7
Queue Length 50th (ft)	221	32	188	106	~134
Queue Length 95th (ft)	m#308	m42	272	#227	#315
Internal Link Dist (ft)		450	517	531	
Turn Bay Length (ft)					
Base Capacity (vph)	961	2595	1494	261	463
Starvation Cap Reductn	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	1.00	0.30	0.80	0.88	1.06

Intersection Summary

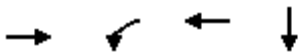
~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

Lane Group	EBL	NBL	NBT	SBT
Lane Group Flow (vph)	467	163	946	1163
v/c Ratio	0.90	0.75	0.42	0.70
Control Delay	60.9	76.2	16.1	30.1
Queue Delay	0.0	0.0	0.0	0.9
Total Delay	60.9	76.2	16.1	31.0
Queue Length 50th (ft)	347	119	90	402
Queue Length 95th (ft)	471	206	317	528
Internal Link Dist (ft)	112		811	545
Turn Bay Length (ft)				
Base Capacity (vph)	592	251	2261	1672
Starvation Cap Reductn	0	0	0	245
Spillback Cap Reductn	0	0	0	0
Storage Cap Reductn	0	0	0	0
Reduced v/c Ratio	0.79	0.65	0.42	0.81

Intersection Summary



Lane Group	EBT	WBL	WBT	SBT
Lane Group Flow (vph)	316	348	315	913
v/c Ratio	0.42	0.86	0.39	0.61
Control Delay	10.4	36.2	12.1	17.2
Queue Delay	0.0	0.0	0.0	0.0
Total Delay	10.4	36.2	12.1	17.2
Queue Length 50th (ft)	57	104	71	130
Queue Length 95th (ft)	106	#243	119	238
Internal Link Dist (ft)	276		303	817
Turn Bay Length (ft)				
Base Capacity (vph)	1057	589	1179	1499
Starvation Cap Reductn	0	0	0	0
Spillback Cap Reductn	0	0	0	0
Storage Cap Reductn	0	0	0	0
Reduced v/c Ratio	0.30	0.59	0.27	0.61

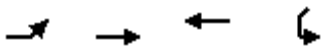
Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Lane Group	EBL	NBT	SBT
Lane Group Flow (vph)	347	598	761
v/c Ratio	0.82	0.93	0.61
Control Delay	34.2	36.3	8.5
Queue Delay	0.0	0.0	0.0
Total Delay	34.2	36.3	8.5
Queue Length 50th (ft)	93	205	146
Queue Length 95th (ft)	#212	#447	245
Internal Link Dist (ft)	311	585	567
Turn Bay Length (ft)			
Base Capacity (vph)	474	643	1239
Starvation Cap Reductn	0	0	0
Spillback Cap Reductn	0	0	0
Storage Cap Reductn	0	0	0
Reduced v/c Ratio	0.73	0.93	0.61

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.



Lane Group	EBL	EBT	WBT	SWL
Lane Group Flow (vph)	65	1185	1380	435
v/c Ratio	0.54	0.66	0.77	0.69
Control Delay	30.5	13.0	15.2	23.6
Queue Delay	0.0	0.0	0.0	0.0
Total Delay	30.5	13.0	15.2	23.6
Queue Length 50th (ft)	15	156	197	134
Queue Length 95th (ft)	#71	214	271	#262
Internal Link Dist (ft)		2143	621	511
Turn Bay Length (ft)				
Base Capacity (vph)	135	2018	2008	628
Starvation Cap Reductn	0	0	0	0
Spillback Cap Reductn	0	0	0	0
Storage Cap Reductn	0	0	0	0
Reduced v/c Ratio	0.48	0.59	0.69	0.69

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Lane Group	EBT	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	229	489	174	956	228	728
v/c Ratio	0.82	0.98	0.76	0.94	0.91	0.74
Control Delay	59.8	69.0	63.1	46.5	82.1	36.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	59.8	69.0	63.1	46.5	82.1	36.7
Queue Length 50th (ft)	126	270	108	263	146	215
Queue Length 95th (ft)	#241	#484	#203	#394	#288	285
Internal Link Dist (ft)	511	686		327		774
Turn Bay Length (ft)						
Base Capacity (vph)	301	497	248	1026	250	979
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.76	0.98	0.70	0.93	0.91	0.74

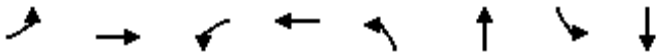
Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Lane Group	EBL	NBT	SBT
Lane Group Flow (vph)	479	359	641
v/c Ratio	0.88	0.77	0.58
Control Delay	37.2	24.9	8.6
Queue Delay	0.0	0.0	0.0
Total Delay	37.2	24.9	8.6
Queue Length 50th (ft)	136	97	102
Queue Length 95th (ft)	#295	#259	189
Internal Link Dist (ft)	686	452	949
Turn Bay Length (ft)			
Base Capacity (vph)	582	465	1098
Starvation Cap Reductn	0	0	0
Spillback Cap Reductn	0	0	0
Storage Cap Reductn	0	0	0
Reduced v/c Ratio	0.82	0.77	0.58

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.



Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	109	326	98	196	109	3294	217	2456
v/c Ratio	1.03	0.82	0.92	0.46	0.73	1.03	1.32	0.75
Control Delay	161.5	72.9	137.2	38.3	93.0	52.7	227.9	20.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.8
Total Delay	161.5	72.9	137.2	38.3	93.0	52.7	227.9	23.5
Queue Length 50th (ft)	~113	144	97	52	105	~1261	~273	592
Queue Length 95th (ft)	#245	#218	#217	95	#185	#1327	#445	649
Internal Link Dist (ft)		253		576		2903		667
Turn Bay Length (ft)								
Base Capacity (vph)	106	399	106	429	165	3188	165	3255
Starvation Cap Reductn	0	0	0	0	0	0	0	662
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	1.03	0.82	0.92	0.46	0.66	1.03	1.32	0.95

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Lane Group	EBL	NBL	NBT
Lane Group Flow (vph)	109	402	533
v/c Ratio	0.15	0.57	0.38
Control Delay	8.4	13.2	9.5
Queue Delay	0.0	0.0	0.0
Total Delay	8.4	13.2	9.5
Queue Length 50th (ft)	15	65	41
Queue Length 95th (ft)	36	127	68
Internal Link Dist (ft)	303		541
Turn Bay Length (ft)			
Base Capacity (vph)	708	708	1415
Starvation Cap Reductn	0	0	0
Spillback Cap Reductn	0	0	0
Storage Cap Reductn	0	0	0
Reduced v/c Ratio	0.15	0.57	0.38

Intersection Summary

Appendix F
PEQE Calculation Worksheets

Roadway	To	From	Horizontal Buffer North/East	Lighting	Clear Zone	Posted Speed Limit	Score		Horizontal Buffer	Lighting	Clear Zone South/West	Posted Speed Limit	Score		Horizontal Buffer	Lighting	Clear Zone	Posted Speed Limit	Horizontal Buffer	Lighting	Clear Zone	Posted Speed Limit
Midway/Pacific Highway Corridor																						
Lytton Street/ Barnett Avenue	Rosecrans St	Midway Dr	0	Standard	No Obstructions	40	4	Fair	0	Standard	No Obstructions	40	4	Fair	0	1	2	1	0	1	2	1
	Midway Dr	Pacific Hwy	15	Exceed Standard	No Obstructions	40	7	Good	15	Exceed Standard	No Obstructions	40	7	Good	2	2	2	1	2	2	2	1
W. Mission Bay Dr	I-8 WB Ramps	I-8 EB Ramps	0	Standard	No Obstructions	35	4	Fair	0	Standard	No Obstructions	35	4	Fair	0	1	2	1	0	1	2	1
Midway Dr	W. Point Loma Blvd/Sports Arena Blvd	Kemper St	15	Exceed Standard	No Obstructions	35	7	Good	15	Exceed Standard	No Obstructions	35	7	Good	2	2	2	1	2	2	2	1
	Kemper St	East Dr	15	Exceed Standard	No Obstructions	35	7	Good	15	Exceed Standard	No Obstructions	35	7	Good	2	2	2	1	2	2	2	1
	East Dr	Rosecrans St	15	Exceed Standard	No Obstructions	35	7	Good	15	Exceed Standard	No Obstructions	35	7	Good	2	2	2	1	2	2	2	1
	Rosecrans St	Barnett Ave	15	Exceed Standard	No Obstructions	35	7	Good	15	Exceed Standard	No Obstructions	35	7	Good	2	2	2	1	2	2	2	1
Sports Arena Blvd	I-8 EB Ramps	W. Point Loma Blvd/Sports Arena Blvd	15	Standard	No Obstructions	35	6	Fair	15	Exceed Standard	No Obstructions	35	7	Good	2	1	2	1	2	2	2	1
	W. Point Loma Blvd/Midway	Kemper St	8	Standard	No Obstructions	35	5	Fair	8	Standard	No Obstructions	35	5	Fair	1	1	2	1	1	1	2	1
	Kemper St	East Dr	7	Standard	No Obstructions	35	5	Fair	7	Standard	No Obstructions	35	5	Fair	1	1	2	1	1	1	2	1
	East Dr	Rosecrans St	7	Standard	No Obstructions	35	5	Fair	7	Standard	No Obstructions	35	5	Fair	1	1	2	1	1	1	2	1
	Rosecrans St	Pacific Hwy	13	Exceed Standard	No Obstructions	35	6	Fair	13	Standard	No Obstructions	35	5	Fair	1	2	2	1	1	1	2	1
Kurtz St	Hancock St	Rosecrans St	8	Standard	No Obstructions	30	6	Fair	8	Standard	No Obstructions	30	6	Fair	1	1	2	2	1	1	2	2
	Rosecrans St	Pacific Hwy	0	Standard	No Obstructions	30	4	Fair	0	Standard	No Obstructions	30	4	Fair	0	0	2	2	0	0	2	2
Hancock St	Sports Arena Blvd	Kurtz St	0	Standard	Obstructed	30	3	Poor	8	Standard	No Obstructions	30	6	Fair	0	1	0	2	1	1	2	2
	Kurtz St	Camino Del Rio West	8	Standard	Obstructed	30	4	Fair	8	Standard	No Obstructions	30	6	Fair	1	1	0	2	1	1	2	2
	Camino Del Rio West	Rosecrans St	0	Standard	No Obstructions	30	5	Fair	0	Standard	No Obstructions	30	5	Fair	0	1	2	2	0	1	2	2
	Old Town Ave	Witherby St	0	Standard	Obstructed	30	2	Poor	0	Standard	Obstructed	30	2	Poor	0	0	0	2	0	0	0	2
	Witherby St	Washington St	8	Standard	No Obstructions	30	6	Fair	16	Standard	No Obstructions	30	7	Good	1	1	2	2	2	1	2	2
Kettner Blvd	Washington St	Vine St	0	Exceed Standard	Obstructed	40	3	Poor	0	Exceed Standard	No Obstructions	40	5	Fair	0	2	0	1	0	2	2	1
	Vine St	Sassafras St	0	Standard	Obstructed	40	1	Poor	8	Standard	No Obstructions	40	5	Fair	0	0	0	1	1	1	2	1
	Sassafras St	Laurel St	8	Standard	No Obstructions	40	5	Fair	8	Standard	No Obstructions	40	5	Fair	1	1	2	1	1	1	2	1
Pacific Hwy	Sea World Dr	Taylor St	17	Standard	No Obstructions	45	5	Fair	17	Standard	No Obstructions	45	5	Fair	2	1	2	0	2	1	2	0
	Taylor St	Kurtz St	17	Exceed Standard	No Obstructions	45	6	Standard	17	Exceed Standard	No Obstructions	45	6	Fair	2	2	2	0	2	2	2	0
	Kurtz St	Sports Arena Blvd	17	Exceed Standard	No Obstructions	45	6	Standard	17	Exceed Standard	No Obstructions	45	6	Fair	2	2	2	0	2	2	2	0
	Sports Arena Blvd	Barnett Ave	17	Exceed Standard	No Obstructions	45	6	Standard	17	Exceed Standard	No Obstructions	45	6	Fair	2	2	2	0	2	2	2	0
	Barnett Ave	Harney Washington St	17	Exceed Standard	No Obstructions	55	6	Standard	17	Exceed Standard	No Obstructions	55	6	Fair	2	2	2	0	2	2	2	0
	Washington St	Sassafras St	17	Exceed Standard	No Obstructions	45	6	Standard	17	Exceed Standard	No Obstructions	45	6	Fair	2	2	2	0	2	2	2	0
	Sassafras St	Laurel St	17	Exceed Standard	No Obstructions	45	6	Standard	17	Exceed Standard	No Obstructions	45	6	Fair	2	2	2	0	2	2	2	0
Old Town								Poor						Poor								
Congress St	Taylor St	Twiggs St	8	Standard	No Obstructions	25	6	Fair	8	Standard	No Obstructions	25	6	Fair	1	1	2	2	1	1	2	2
	Twiggs St	Harney St	8	Standard	No Obstructions	25	6	Fair	8	Standard	No Obstructions	25	6	Fair	1	1	2	2	1	1	2	2
	Harney St	San Diego Ave/ Ampudia St	8	Standard	No Obstructions	25	6	Fair	8	Standard	No Obstructions	25	6	Fair	1	1	2	2	1	1	2	2
San Diego Ave	Twiggs St	Harney St	8	Standard	No Obstructions	25	6	Fair	8	Standard	No Obstructions	25	6	Fair	1	1	2	2	1	1	2	2
	Harney St	Ampudia St	8	Standard	No Obstructions	25	6	Fair	8	Standard	No Obstructions	25	6	Fair	1	1	2	2	1	1	2	2
	Ampudia St	Old Town Ave	8	Standard	No Obstructions	25	6	Fair	8	Standard	No Obstructions	25	6	Fair	1	1	2	2	1	1	2	2
	Old Town Ave	Hortensia St	13	Standard	No Obstructions	25	6	Fair	13	Standard	No Obstructions	25	6	Fair	1	1	2	2	1	1	2	2
Juan St	Taylor St	Twiggs St	8	Standard	No Obstructions	30	6	Fair	8	Standard	No Obstructions	30	6	Fair	1	1	2	2	1	1	2	2
	Twiggs St	Harney St	8	Standard	No Obstructions	30	6	Fair	8	Standard	No Obstructions	30	6	Fair	1	1	2	2	1	1	2	2
	Harney St	San Juan Rd	8	Standard	No Obstructions	30	6	Fair	8	Standard	No Obstructions	30	6	Fair	1	1	2	2	1	1	2	2
East-West								Poor						Poor								
Midway/Pacific Highway Corridor								Poor						Poor								
Channel Wy	W. Mission Bay Dr	Hancock St	8	Standard	No Obstructions	25	6	Fair	8	Standard	No Obstructions	25	6	Fair	1	1	2	2	1	1	2	2
Kemper St	Kenyon St	Midway Dr	8	Below Standard	No Obstructions	25	5	Fair	0	Standard	No Obstructions	25	5	Fair	1	0	2	2	0	1	2	2
	Midway Dr	Sports Arena Blvd	8	Standard	No Obstructions	25	6	Fair	8	Standard	No Obstructions	25	6	Fair	1	1	2	2	1	1	2	2
Camino Del Rio West	Rosecrans St	I-5/I-8 Ramps	0	Standard	No Obstructions	35	4	Fair	0	Standard	No Obstructions	35	4	Fair	0	1	2	1	0	1	2	1
Rosecrans St	Lytton St	Midway Dr	9	Exceed Standard	No Obstructions	35	6	Fair	10	Exceed Standard	No Obstructions	35	6	Fair	1	2	2	1	1	2	2	1
	Midway Dr	Sports Arena Blvd	15	Exceed Standard	No Obstructions	35	7	Good	15	Exceed Standard	No Obstructions	35	7	Good	2	2	2	1	2	2	2	1
	Sports Arena Blvd	Pacific Hwy/Taylor St	15	Exceed Standard	No Obstructions	35	7	Good	15	Exceed Standard	No Obstructions	35	7	Good	2	2	2	1	2	2	2	1
Washington St	Frontage Rd	Pacific St	0	Standard	No Obstructions	25	5	Fair	0	Standard	No Obstructions	25	5	Fair	0	1	2	2	0	1	2	2
	Pacific St	Hancock St	8	Standard	No Obstructions	25	6	Fair	0	Standard	No Obstructions	25	5	Fair	1	1	2	2	0	1	2	2
Vine St	California St	Kettner Blvd	16	Standard	No Obstructions	25	7	Good	0	Standard	No Obstructions	25	5	Fair	2	1	2	2	0	1	2	2
Sassafras St	Pacific Hwy	Kettner Blvd	0	Standard	No Obstructions	25	5	Fair	0	Standard	No Obstructions	25	5	Fair	0	1	2	2	0	1	2	2
Laurel St	Pacific Hwy	Kettner Blvd	0	Standard	No Obstructions	25	5	Fair	0	Standard	No Obstructions	25	5	Fair	0	1	2	2	0	1	2	2
Old Town								Poor						Poor								
Taylor St	Pacific Hwy/ Rosecrans St	Congress St	0	Standard	No Obstructions	35	4	Fair	0	Standard	No Obstructions	35	4	Fair	0	1	2	1	0	1	2	1
	Congress St	Juan St	0	Standard	No Obstructions	35	4	Fair	0	Standard	No Obstructions	35	4	Fair	0	1	2	1	0	1	2	1
	Juan St	Morena Blvd	0	Standard	No Obstructions	35	4	Fair	0	Standard	No Obstructions	35	4	Fair	0	1	2	1	0	1	2	1
	Morena Blvd	I-8 EB Ramps	0	Below Standard	Obstructed	35	1	Poor	0	Below Standard	Obstructed	35	1	Poor	0	0	0	1	0	0	0	1
Twiggs St	Congress St	San Diego Ave	0	Standard	No Obstructions	25	5	Fair	0	Standard	No Obstructions	25	5	Fair	0	1	2	2	0	1	2	2
	San Diego Ave	Juan St	8	Standard	No Obstructions	25	6	Fair	8	Standard	No Obstructions	25	6	Fair	1	1	2	2	1	1	2	2
Harney St	Congress St	San Diego Ave	8	Standard	No Obstructions	25	6	Fair	8	Standard	No Obstructions	25	6	Fair	1	1	2	2	1	1	2	2
	San Diego Ave	Juan St	8	Standard	No Obstructions	25	6	Fair	0	Standard	No Obstructions	25	5	Fair	1	1	2	2	0	1	2	2
Old Town Ave	Hancock St	Moore St	0	Standard	No Obstructions	25	5	Fair	0	Standard	No Obstructions	25	5	Fair	0	1	2	2	0	1	2	2
	Moore St	San Diego Ave	0	Standard	No Obstructions	25	5	Fair	0	Standard	No Obstructions	25	5	Fair	0	1	2	2	0	1	2	2

Features 3.1 7.1
Grade 3.1 6.1

Intersection

	Intersection	Control	Physical	Ops	ADA	Legs	Score	Grade	Control	Physical	Ops	ADA	Control	Physical	Ops	ADA	Legs	Score	Grade	Control	Physical	Ops	ADA
1	1: Barnett Ave/Lytton St & Rosecrans St.	Signal	0	0	No	4	2	Poor	2	0	0	0	Signal	8		Yes	4	6	Fair	2	2	0	2
2	2: Midway Dr/W Mission Bay Dr & I-8 WB Off Ramp	Signal	0	0	Yes	3	4	Fair	2	0	0	2	Signal	6		Yes	3	6	Fair	2	2	0	2
3	3: W Mission Bay Dr & Channel Way	SSSC	0	0	No	3	1	Poor	1	0	0	0	SSSC	6		Yes	3	5	Fair	1	2	0	2
4	4: Midway Dr/W Mission Bay Dr & Sports Arena	Signal	0	0	No	4	2	Poor	2	0	0	0	Signal	8		Yes	4	6	Fair	2	2	0	2
	Midway Dr & Duke Street	Signal	0	0	No	3	2	Poor	2	0	0	0	Signal	6		Yes	3	6	Fair	2	2	0	2
5	5: Midway Dr & Kemper St/Kemper Street	Signal	3	0	No	4	2	Poor	2	0	0	0	Signal	8		Yes	4	6	Fair	2	2	0	2
	Midway Dr & Fodam Street	Signal	0	0	No	4	2	Poor	2	0	0	0	Signal	8		Yes	4	6	Fair	2	2	0	2
	Midway Dr & Wing Street	Signal	0	0	No	3	2	Poor	2	0	0	0	Signal	6		Yes	3	6	Fair	2	2	0	2
6	6: Midway Dr & East Drive	Signal	0	0	No	3	2	Poor	2	0	0	0	Signal	6		Yes	3	6	Fair	2	2	0	2
	Midway Drive & Riely Street	SSSC	0	0	No	3	1	Poor	1	0	0	0	SSSC	6		Yes	3	5	Fair	1	2	0	2
	Midway Drive & Gaines Street	SSSC	0	0	No	3	1	Poor	1	0	0	0	SSSC	6		Yes	3	5	Fair	1	2	0	2
7	7: Midway Dr & Rosecrans St.	Signal	0	0	No	4	2	Poor	2	0	0	0	Signal	8		Yes	4	6	Fair	2	2	0	2
8	8: Midway Dr & Charles Lindbergh Parkway	Signal	N/A				4	Fair	2	2	0	0	Signal	8		Yes	4	6	Fair	2	2	0	2
9	9: Midway Dr & Enterprise St	SSSC	0	0	No	3	1	Poor	1	0	0	0	SSSC	8		Yes	3	5	Fair	1	2	0	2
10	10: Barnett Ave & Midway Dr	Signal	3	0	No	3	3	Poor	2	1	0	0	Signal	8		Yes	3	6	Fair	2	2	0	2
11	11: Sports Arena & Hancock Street	Signal	2	0	Yes	3	4	Fair	2	0	0	2	Signal	8		Yes	3	6	Fair	2	2	0	2
12	12: Sports Arena & Kemper Street	Signal	0	0	No	4	2	Poor	2	0	0	0	Signal	8		Yes	4	6	Fair	2	2	0	2
13	13: Sports Arena & Ralphs Driveway/Frontier Street	Signal	1	0	No	4	2	Poor	2	0	0	0	Signal	8		Yes	4	6	Fair	2	2	0	2
#VALUE!	Sports Arena Drive / Target Driveway	SSSC	0	0	No	3	1	Poor	1	0	0	0	SSSC	6		Yes	3	5	Fair	1	2	0	2
14	14: Sports Arena & East Drive/Greenwood Street	Signal	0	0	No	3	2	Poor	2	0	0	0	Signal	6		Yes	3	6	Fair	2	2	0	2
15	15: Rosecrans St/Sports Arena & Rosecrans St./Camino Del Rio W	Signal	0	0	No	5	2	Poor	2	0	0	0	Signal	10		Yes	5	6	Fair	2	2	0	2
16	16: Sports Arena Bl & Charles Lindbergh Parkway	Signal	N/A				4	Fair	2	2	0	0	Signal	8		Yes	4	6	Fair	2	2	0	2
17	17: Pacific Highway & Sports Arena Bl	Signal	N/A				4	Fair	2	2	0	0	Signal	8		Yes	4	6	Fair	2	2	0	2
18	18: Kemper Street & Kurtz St & Hancock/Hancock St	SSSC	0	0	No	3	1	Poor	1	0	0	0	SSSC	6		Yes	3	5	Fair	1	2	0	2
#VALUE!	Kurtz Street / Sherman Street	AWSC	0	0	No	3	1	Poor	1	0	0	0	AWSC	6		Yes	3	5	Fair	1	2	0	2
#VALUE!	Kurtz Street / Greenwood Street	SSSC	0	0	No	3	1	Poor	1	0	0	0	SSSC	6		Yes	3	5	Fair	1	2	0	2
#VALUE!	Kurtz Street / Riely Street	SSSC	0	0	No	3	1	Poor	1	0	0	0	SSSC	6		Yes	3	5	Fair	1	2	0	2
19	19: Kurtz/Kurtz St & Camino Del Rio W	Signal	0	0	No	4	2	Poor	2	0	0	0	Signal	8		Yes	4	6	Fair	2	2	0	2
20	20: Kurtz St/Kurtz & Rosecrans St	Signal	2	0	No	4	2	Poor	2	0	0	0	Signal	8		Yes	4	6	Fair	2	2	0	2
#VALUE!	Kurtz Street / Smith Street	SSSC	0	0	No	3	1	Poor	1	0	0	0	SSSC	6		Yes	3	5	Fair	1	2	0	2
21	21: Pacific Highway & Kurtz St	SSSC	0	0	Yes	3	3	Poor	1	0	0	2	Signal	6		Yes	3	6	Fair	2	2	0	2
22	22: Hancock & Channel Way	SSSC	0	0	No	3	1	Poor	1	0	0	0	SSSC	6		Yes	3	5	Fair	1	2	0	2
#VALUE!	Hancock Street / Hicock Street	SSSC	0	0	No	3	1	Poor	1	0	0	0	SSSC	6		Yes	3	5	Fair	1	2	0	2
#VALUE!	Hancock Street / Sherman Street	AWSC	0	0	No	4	1	Poor	1	0	0	0	AWSC	6		Yes	4	4	Poor	1	1	0	2
#VALUE!	Hancock Street / Greenwood Street	SSSC	1	0	Yes	4	3	Poor	1	0	0	2	SSSC	8		Yes	4	5	Fair	1	2	0	2
23	23: Hancock St & Camino Del Rio W	Signal	0	0	No	5	2	Poor	2	0	0	0	Signal	10		Yes	5	6	Fair	2	2	0	2
#VALUE!	Hancock Street & Gains Street	SSSC	0	0	No	4	1	Poor	1	0	0	0	SSSC	8		Yes	4	5	Fair	1	2	0	2
24	24: Rosecrans St & Hanccok Street	SSSC	0	0	No	3	1	Poor	1	0	0	0	SSSC	6		Yes	3	5	Fair	1	2	0	2
25	25: Hancock St & Old Town St	AWSC	0	0	No	3	1	Poor	1	0	0	0	AWSC	6		Yes	3	5	Fair	1	2	0	2
26	26: Hancock St & Witherby St	AWSC	0	0	No	3	1	Poor	1	0	0	0	AWSC	6		Yes	3	5	Fair	1	2	0	2
#VALUE!	Hancock Street & Noell Street	AWSC	0	0	No	4	1	Poor	1	0	0	0	AWSC	8		Yes	4	5	Fair	1	2	0	2
#VALUE!	Hancock Street & I-5 SB Ramp	SSSC	0	0	No	3	1	Poor	1	0	0	0	SSSC	6		Yes	3	5	Fair	1	2	0	2
27	27: Hancock St & Washington St	Signal	0	0	No	4	2	Poor	2	0	0	0	Signal	8		Yes	4	6	Fair	2	2	0	2
#VALUE!	Hancock Street & Emory Street	SSSC	0	0	Yes	3	3	Poor	1	0	0	2	SSSC	6		Yes	3	5	Fair	1	2	0	2
#VALUE!	Hancock Street & California Street	SSSC	0	0	Yes	3	3	Poor	1	0	0	2	SSSC	6		Yes	3	5	Fair	1	2	0	2
#VALUE!	Hancock Street & Chalmers Street	SSSC	0	0	Yes	3	3	Poor	1	0	0	2	SSSC	6		Yes	3	5	Fair	1	2	0	2
#VALUE!	Hancock Street & Walnut Avenue	SSSC	0	0	No	3	1	Poor	1	0	0	0	SSSC	6		Yes	3	5	Fair	1	2	0	2
28	28: Kettner Bl/Hancock St & Vine St	SSSC	0	0	No	3	1	Poor	1	0	0	0	SSSC	6		Yes	3	5	Fair	1	2	0	2
29	29: Kettner Blvd/Kettner Bl & Sassafras St	Signal	0	0	No	4	2	Poor	2	0	0	0	Signal	8		Yes	4	6	Fair	2	2	0	2
#VALUE!	Kettner Boulevard / Redwood Street	SSSC	0	0	No	3	1	Poor	1	0	0	0	SSSC	6		Yes	3	5	Fair	1	2	0	2
#VALUE!	Kettner Boulevard / Palm Street	SSSC	0	0	No	3	1	Poor	1	0	0	0	SSSC	6		Yes	3	5	Fair	1	2	0	2
#VALUE!	Kettner Boulevard / Olive Street	SSSC	0	0	No	4	1	Poor	1	0	0	0	SSSC	8		Yes	4	5	Fair	1	2	0	2
#VALUE!	Kettner Boulevard / Maple Street	SSSC	0	0	No	3	1	Poor	1	0	0	0	SSSC	6		Yes	3	5	Fair	1	2	0	2
30	30: Kettner Blvd & W Laurel St	Signal	0	0	No	4	2	Poor	2	0	0	0	Signal	8		Yes	4	6	Fair	2	2	0	2
31	31: Pacific Highway & Barnett Ave	Signal	N/A				4	Fair	2	2	0	0	Signal	6		Yes	3	6	Fair	2	2	0	2
#VALUE!	Pacific Highway & Witherby Street	SSSC	0	0	No	4	1	Poor	1	0	0	0	SSSC	8		Yes	4	5	Fair	1	2	0	2
32	32: Pacific Highway NB Frontage Road & Washington St	Signal	0	0	No	4	2	Poor	2	0	0	0	Signal	8		Yes	4	6	Fair	2	2	0	2
33	33: Washington St & Pacific Highway SB	Signal	0	0	No	4	2	Poor	2	0	0	0	Signal	8		Yes	4	6	Fair	2	2	0	2
34	34: Pacific Highway & Sassafras St	Signal	1	0	No	4	2	Poor	2	0	0	0	Signal	8		Yes	4	6	Fair	2	2	0	2
#VALUE!	Pacific Highway & Palm Street	Signal	0	0	No	4	2	Poor	2	0	0	0	Signal	8		Yes	4	6	Fair	2	2	0	2
35	35: Pacific Highway & W Laurel St	Signal	0	1	Yes	4	4	Fair	2	0	0	2	Signal	8		Yes	4	6	Fair	2	2	0	2
36	36: Pacific Highway & Rosecrans St/Taylor St	Signal	0	0	Yes	4	4	Fair	2	0	0	2	Signal	8		Yes	4	6	Fair	2	2	0	2
37	37: Moore St & Old Town St	Signal	0	0	No	4	2	Poor	2	0	0	0	Signal	8		Yes	4	6	Fair	2	2	0	2
38	38: Congress St & Taylor St	Signal	0	0	Yes	3	4	Fair	2	0	0	2	Signal	6		Yes	3	6	Fair	2	2	0	2
#VALUE!	Congress Street & Old Town Station Entrance	SSSC	0	0	No	3	1	Poor	1	0	0	0	SSSC	6		Yes	3	5	Fair	1	2	0	2
#VALUE!	Congress Street & Old Town Station Exit	Signal	1	0	No	3	2	Poor	2	0	0	0	Signal	8		Yes	3	6	Fair	2	2	0	2
#VALUE!	Congress Street & Mason Street	SSSC	0	0	No	3	1	Poor	1	0	0	0	SSSC	6		Yes	3	5	Fair	1	2	0	2
39	39: Congress St & Twiggs St	AWSC	0	0	No	4	1	Poor	1	0	0	0	AWSC	8		Yes	4	5	Fair	1	2	0	2
40	40: Congress St & Harney St	AWSC	0	0	No	4	1	Poor	1	0	0	0	AWSC	8		Yes	4	5	Fair	1	2	0	2
#VALUE!	Congress Street & Conde Street	SSSC	5	0	No	4	2	Poor	1	1	0	0	SSSC	8		Yes	4	5	Fair	1	2	0	2
#VALUE!	Congress Street & Arista Street	SSSC	0	0	No	3	1	Poor	1	0	0	0	SSSC	6		Yes	3	5	Fair	1	2	0	2
41	41: San Diego Ave & Congress St	SSSC	0	0	No	5	1	Poor	1	0	0	0	SSSC	10		Yes	5	5	Fair	1	2	0	2
#VALUE!	San Diego Avenue & Arista	SSSC	1	0	No	3	1	Poor	1	0	0	0	SSSC	8		Yes	3	5	Fair	1	2	0	2
#VALUE!	San Diego Avenue & Linwood Street	SSSC	0	0	No	3	1	Poor	1	0	0	0	SSSC	6		Yes	3	5	Fair	1	2	0	2
#VALUE!	San Diego Avenue & Conde Street	AWSC	0	0	No	4	1	Poor	1	0	0	0	AWSC	8		Yes	4	5	Fair	1	2	0	2
42	42: San Diego Ave & Twiggs St	AWSC	0	0	No	3	1	Poor	1	0	0	0	AWSC	6		Yes	3	5	Fair	1	2	0	2
43	43: San Diego Ave & Harney St	AWSC	1	0	No	4	1	Poor	1	0	0	0	AWSC	9		Yes	4	5	Fair	1	2	0	2
44	44: San Diego Ave & Old Town St	Signal	0	0	No	4	2	Poor	2	0	0	0	Signal	8		Yes	4	6	Fair	2	2	0	2
45	45: Juan St & Taylor St	Signal	1	0	Yes	3	4	Fair	2	0	0	2	Signal			Yes	3	4	Poor	2	0	0	2
46	46: Juan St & Twiggs St	AWSC	0	0	No	4	1	Poor	1	0	0	0	AWSC	8		Yes	4	5	Fair	1	2	0	2

47	47: Juan St & Harney St	AWSC	1	0 No	4	1 Poor	1	0	0	0	AWSC	8	Yes	4	5 Fair	1	2	0	2
48		Signal	1	0 Yes	3	4 Fair	2	0	0	2	Signal	8	Yes	3	6 Fair	2	2	0	2
61	61: Kurtz St & Frontier Street	SSSC	0		4	1 Poor	1	0	0	0	SSSC	8	Yes	4	5 Fair	1	2	0	2
63	63: Kurtz St & Charles Lindbergh Parkway	Signal	0		4	2 Poor	2	0	0	0	Signal	8	Yes	4	6 Fair	2	2	0	2
64	64: Barnett Ave & Dutch Flats Parkway	Signal	0		4	2 Poor	2	0	0	0	Signal	8	Yes	4	6 Fair	2	2	0	2
65	65: Midway Dr & Dutch Flats Parkway	Signal	0		4	2 Poor	2	0	0	0	Signal	8	Yes	4	6 Fair	2	2	0	2
66	66: Dutch Flats Parkway & Sports Arena Bl	Signal	0		4	2 Poor	2	0	0	0	Signal	8	Yes	4	6 Fair	2	2	0	2

Appendix G
Peak Hour Arterial Analysis Worksheets

Arterial Level of Service: EB Camino Del Rio West

Cross Street	Arterial Class	Flow Speed	Running Time	Signal Delay	Travel Time (s)	Dist (mi)	Arterial Speed	Arterial LOS
Kurtz	IV	35	16.2	45.3	61.5	0.10	5.7	F
Hancock St	IV	35	13.3	13.6	26.9	0.08	10.8	D
Total	IV		29.5	58.9	88.4	0.18	7.3	E

Arterial Level of Service: WB Camino Del Rio West

Cross Street	Arterial Class	Flow Speed	Running Time	Signal Delay	Travel Time (s)	Dist (mi)	Arterial Speed	Arterial LOS
Hancock St	III	35	24.3	62.1	86.4	0.20	8.4	F
Kurtz St	III	35	10.9	1.1	12.0	0.08	24.2	B
Sports Arena Blvd	III	35	13.2	38.7	51.9	0.10	6.8	F
Total	III		48.4	101.9	150.3	0.38	9.1	F

Arterial Level of Service: NB Midway Drive

Cross Street	Arterial Class	Flow Speed	Running Time	Signal Delay	Travel Time (s)	Dist (mi)	Arterial Speed	Arterial LOS
Dutch Flats Parkway	III	35	17.1	41.9	59.0	0.13	8.2	F
Charles Lindbergh Pa	III	35	25.2	13.1	38.3	0.21	19.7	C
Rosecrans St	III	35	19.8	34.2	54.0	0.15	10.3	E
East Drive	III	35	22.9	6.9	29.8	0.19	23.0	C
Kemper Street	III	35	39.9	22.6	62.5	0.33	19.1	C
Duke Street	III	35	21.1	9.8	30.9	0.18	20.5	C
Sports Arena Blvd	III	35	15.0	51.4	66.4	0.11	6.0	F
Total	III		161.0	179.9	340.9	1.31	13.8	E

Arterial Level of Service: SB Midway Drive

Cross Street	Arterial Class	Flow Speed	Running Time	Signal Delay	Travel Time (s)	Dist (mi)	Arterial Speed	Arterial LOS
Duke Street	III	35	15.0	23.5	38.5	0.11	10.4	E
Kemper St	III	35	21.1	14.7	35.8	0.18	17.7	D
East Drive	III	35	39.9	8.1	48.0	0.33	24.9	B
Rosecrans St	III	35	22.9	32.7	55.6	0.19	12.3	E
Charles Lindbergh Pa	III	35	19.8	4.4	24.2	0.15	23.0	C
Dutch Flats Parkway	III	35	25.2	37.0	62.2	0.21	12.1	E
Barnett Ave	III	35	17.1	28.6	45.7	0.13	10.5	E
Total	III		161.0	149.0	310.0	1.31	15.2	D

Arterial Level of Service: NB Pacific Highway

Cross Street	Arterial Class	Flow Speed	Running Time	Signal Delay	Travel Time (s)	Dist (mi)	Arterial Speed	Arterial LOS
Grape St	II	30	11.6	19.4	31.0	0.08	9.5	F
Hawthorne St	II	30	10.2	26.7	36.9	0.07	6.4	F
W Laurel St	II	32	34.3	48.9	83.2	0.27	11.7	F
Sassafras St	II	45	43.0	33.4	76.4	0.49	23.0	C
Witherby St	II	47	43.1	38.0	81.1	0.56	24.9	C
Barnett Ave	II	55	14.3	2.0	16.3	0.15	32.5	B
Sports Arena Blvd	II	45	17.4	0.8	18.2	0.16	31.6	B
Kurtz St	II	45	20.5	7.3	27.8	0.19	24.4	C
Taylor St	II	45	33.2	31.4	64.6	0.35	19.3	D
Total	II		227.6	207.9	435.5	2.31	19.1	D

Arterial Level of Service: SB Pacific Highway

Cross Street	Arterial Class	Flow Speed	Running Time	Signal Delay	Travel Time (s)	Dist (mi)	Arterial Speed	Arterial LOS
Rosecrans St	II	45	38.8	27.2	66.0	0.41	22.5	C
Kurtz St	II	45	33.2	23.6	56.8	0.35	21.9	D
Sports Arena Blvd	II	45	20.5	20.6	41.1	0.19	16.5	E
Barnett Ave	II	45	17.4	31.8	49.2	0.16	11.7	F
Witherby St	II	55	14.3	20.1	34.4	0.15	15.4	E
Washington St	II	49	41.4	27.6	69.0	0.56	29.3	B
Sassafras St	II	43	40.6	16.7	57.3	0.45	28.0	B
W Laurel St	II	45	43.0	72.1	115.1	0.49	15.3	E
Hawthorne St	II	32	34.3	56.8	91.1	0.27	10.7	F
Grape St	II	30	10.2	14.3	24.5	0.07	9.7	F
Total	II		293.7	310.8	604.5	3.09	18.4	D

Arterial Level of Service: EB Rosecrans St

Cross Street	Arterial Class	Flow Speed	Running Time	Signal Delay	Travel Time (s)	Dist (mi)	Arterial Speed	Arterial LOS
Hugo St	II	35	16.7	15.9	32.6	0.13	14.7	E
Nimitz Blvd	II	35	23.3	30.0	53.3	0.19	12.6	F
Laning Rd	II	40	29.3	35.2	64.5	0.29	16.0	E
Barnett Ave	II	40	85.6	51.2	136.8	0.95	25.0	C
Midway Drive	II	40	45.5	33.8	79.3	0.49	22.2	C
Sports Arena Blvd	II	40	15.0	0.0	15.0	0.13	31.2	B
Kurtz St	II	35	11.9	23.0	34.9	0.10	9.8	F
Pacific Highway	II	35	29.1	22.9	52.0	0.24	16.9	E
Total	II		256.4	212.0	468.4	2.52	19.4	D

Arterial Level of Service: WB Rosecrans St

Cross Street	Arterial Class	Flow Speed	Running Time	Signal Delay	Travel Time (s)	Dist (mi)	Arterial Speed	Arterial LOS
Kurtz	II	35	29.1	13.8	42.9	0.24	20.5	D
Camino Del Rio West	II	35	11.9	107.5	119.4	0.10	2.9	F
Midway Drive	II	40	15.0	35.5	50.5	0.13	9.3	F
Lytton St	II	40	45.5	139.5	185.0	0.49	9.5	F
Laning Rd	II	40	85.6	10.1	95.7	0.95	35.8	A
Lowell St	II	40	29.3	78.8	108.1	0.29	9.6	F
Hugo St	II	35	23.3	27.8	51.1	0.19	13.2	E
Total	II		239.7	413.0	652.7	2.38	13.2	E

Arterial Level of Service: NB Sports Arena Blvd

Cross Street	Arterial Class	Flow Speed	Running Time	Signal Delay	Travel Time (s)	Dist (mi)	Arterial Speed	Arterial LOS
Dutch Flats Parkway	III	25	23.3	11.4	34.7	0.11	11.0	E
Charles Lindbergh Pa	III	25	31.9	5.9	37.8	0.19	18.4	C
Greenwood Street	III	35	24.4	3.6	28.0	0.20	26.2	B
Frontier Street	III	35	19.6	26.2	45.8	0.15	12.0	E
Kemper Street	III	35	18.1	28.5	46.6	0.14	10.9	E
Hancock Street	III	35	22.7	22.3	45.0	0.19	15.1	D
Sports Arena Blvd	III	35	16.4	21.0	37.4	0.12	11.7	E
I-8 WB Off Ramp	III	35	36.1	15.5	51.6	0.30	21.0	C
Total	III		192.5	134.4	326.9	1.41	15.5	D

Arterial Level of Service: SB Sports Arena Blvd

Cross Street	Arterial Class	Flow Speed	Running Time	Signal Delay	Travel Time (s)	Dist (mi)	Arterial Speed	Arterial LOS
Sports Arena	III	35	36.1	97.7	133.8	0.30	8.1	F
Hancock Street	III	35	16.4	4.4	20.8	0.12	21.1	C
Kemper Street	III	35	22.7	26.9	49.6	0.19	13.7	E
Ralphs Driveway	III	35	18.1	17.6	35.7	0.14	14.3	D
East Drive	III	35	19.6	7.1	26.7	0.15	20.6	C
Rosecrans St	III	35	24.4	90.8	115.2	0.20	6.4	F
Charles Lindbergh Pa	III	25	29.0	4.9	33.9	0.16	17.1	D
Dutch Flats Parkway	III	25	31.9	3.2	35.1	0.19	19.8	C
Pacific Highway	III	25	23.3	60.7	84.0	0.11	4.5	F
Total	III		221.5	313.3	534.8	1.57	10.6	E

Arterial Level of Service: EB Taylor St

Cross Street	Arterial Class	Flow Speed	Running Time	Signal Delay	Travel Time (s)	Dist (mi)	Arterial Speed	Arterial LOS
Congress St	IV	35	15.7	11.8	27.5	0.10	12.5	D
Juan St	IV	35	11.2	14.1	25.3	0.07	9.7	D
	IV	35	18.3	8.5	26.8	0.13	17.5	C
Total	IV		45.2	34.4	79.6	0.29	13.3	C

Arterial Level of Service: WB Taylor St

Cross Street	Arterial Class	Flow Speed	Running Time	Signal Delay	Travel Time (s)	Dist (mi)	Arterial Speed	Arterial LOS
Morena Blvd	IV	35	17.7	23.7	41.4	0.11	9.3	D
	IV	35	18.3	14.6	32.9	0.13	14.3	C
Congress St	IV	35	11.2	7.8	19.0	0.07	12.9	D
Pacific Highway	IV	35	15.7	22.5	38.2	0.10	9.0	E
Total	IV		62.9	68.6	131.5	0.40	11.0	D

Arterial Level of Service: EB Camino Del Rio West

Cross Street	Arterial Class	Flow Speed	Running Time	Signal Delay	Travel Time (s)	Dist (mi)	Arterial Speed	Arterial LOS
Kurtz	IV	35	16.2	59.5	75.7	0.10	4.7	F
Hancock St	IV	35	13.3	13.3	26.6	0.08	10.9	D
Total	IV		29.5	72.8	102.3	0.18	6.3	F

Arterial Level of Service: WB Camino Del Rio West

Cross Street	Arterial Class	Flow Speed	Running Time	Signal Delay	Travel Time (s)	Dist (mi)	Arterial Speed	Arterial LOS
Hancock St	III	35	24.3	81.9	106.2	0.20	6.9	F
Kurtz St	III	35	10.9	1.7	12.6	0.08	23.1	C
Sports Arena Blvd	III	35	13.2	56.0	69.2	0.10	5.1	F
Total	III		48.4	139.6	188.0	0.38	7.3	F

Arterial Level of Service: NB Midway Drive

Cross Street	Arterial Class	Flow Speed	Running Time	Signal Delay	Travel Time (s)	Dist (mi)	Arterial Speed	Arterial LOS
Dutch Flats Parkway	III	35	15.9	46.5	62.4	0.12	6.8	F
Charles Lindbergh Pa	III	35	27.3	34.6	61.9	0.23	13.2	E
Rosecrans St	III	35	19.6	71.2	90.8	0.15	6.1	F
East Drive	III	35	22.9	11.4	34.3	0.19	20.0	C
Kemper Street	III	35	39.9	36.7	76.6	0.33	15.6	D
	III	35	21.6	16.1	37.7	0.17	16.1	D
Sports Arena Blvd	III	35	16.0	67.6	83.6	0.12	5.1	F
Total	III		163.2	284.1	447.3	1.31	10.5	E

Arterial Level of Service: SB Midway Drive

Cross Street	Arterial Class	Flow Speed	Running Time	Signal Delay	Travel Time (s)	Dist (mi)	Arterial Speed	Arterial LOS
	III	35	16.0	30.1	46.1	0.12	9.2	F
Kemper St	III	35	21.6	23.9	45.5	0.17	13.4	E
East Drive	III	35	39.9	10.6	50.5	0.33	23.7	C
Rosecrans St	III	35	22.9	58.6	81.5	0.19	8.4	F
Charles Lindbergh Pa	III	35	19.6	6.5	26.1	0.15	21.1	C
Dutch Flats Parkway	III	35	27.3	36.7	64.0	0.23	12.8	E
Barnett Ave	III	35	15.9	29.6	45.5	0.12	9.3	F
Total	III		163.2	196.0	359.2	1.31	13.1	E

Arterial Level of Service: NB Pacific Highway

Cross Street	Arterial Class	Flow Speed	Running Time	Signal Delay	Travel Time (s)	Dist (mi)	Arterial Speed	Arterial LOS
Grape St	II	30	11.6	42.7	54.3	0.08	5.4	F
Hawthorne St	II	30	10.2	20.7	30.9	0.07	7.7	F
W Laurel St	II	30	34.3	69.8	104.1	0.27	9.4	F
Sassafras St	II	45	42.6	89.8	132.4	0.48	13.2	E
Witherby St.	II	55	37.0	52.7	89.7	0.56	22.7	C
Barnett Ave	II	55	13.7	5.3	19.0	0.14	26.8	C
Sports Arena Blvd	II	45	17.4	3.2	20.6	0.16	27.9	C
Kurtz St	II	45	20.5	20.6	41.1	0.19	16.5	E
Taylor St	II	45	33.2	34.5	67.7	0.35	18.4	D
Total	II		220.5	339.3	559.8	2.30	14.8	E

Arterial Level of Service: SB Pacific Highway

Cross Street	Arterial Class	Flow Speed	Running Time	Signal Delay	Travel Time (s)	Dist (mi)	Arterial Speed	Arterial LOS
Rosecrans St	II	45	38.8	26.0	64.8	0.41	22.9	C
Kurtz St	II	45	33.2	47.0	80.2	0.35	15.5	E
Sports Arena Blvd	II	45	20.5	9.0	29.5	0.19	23.0	C
Barnett Ave	II	45	17.4	102.2	119.6	0.16	4.8	F
Witherby St.	II	55	13.7	20.7	34.4	0.14	14.8	E
Washington St	II	55	37.0	42.8	79.8	0.56	25.5	C
Sassafras St	II	45	39.7	16.1	55.8	0.44	28.1	B
W Laurel St	II	45	42.6	89.7	132.3	0.48	13.2	E
Hawthorne St	II	30	34.3	54.2	88.5	0.27	11.0	F
Grape St	II	30	10.2	12.2	22.4	0.07	10.6	F
Total	II		287.4	419.9	707.3	3.07	15.6	E

Arterial Level of Service: EB Rosecrans St

Cross Street	Arterial Class	Flow Speed	Running Time	Signal Delay	Travel Time (s)	Dist (mi)	Arterial Speed	Arterial LOS
Hugo St	II	35	16.7	20.9	37.6	0.13	12.8	F
Nimitz Blvd	II	35	23.3	126.3	149.6	0.19	4.5	F
Laning Rd	II	40	29.3	23.5	52.8	0.29	19.6	D
Barnett Ave	II	40	85.6	47.2	132.8	0.95	25.8	C
Midway Drive	II	40	45.5	91.6	137.1	0.49	12.9	F
Sports Arena Blvd	II	40	15.0	0.0	15.0	0.13	31.2	B
Kurtz St	II	35	12.0	36.1	48.1	0.10	7.2	F
Pacific Highway	II	35	29.1	31.7	60.8	0.24	14.5	E
Total	II		256.5	377.3	633.8	2.52	14.3	E

Arterial Level of Service: WB Rosecrans St

Cross Street	Arterial Class	Flow Speed	Running Time	Signal Delay	Travel Time (s)	Dist (mi)	Arterial Speed	Arterial LOS
Kurtz	II	35	29.1	14.0	43.1	0.24	20.4	D
Camino Del Rio West	II	35	12.0	116.6	128.6	0.10	2.7	F
Midway Drive	II	40	15.0	41.1	56.1	0.13	8.3	F
Lytton St	II	40	45.5	46.7	92.2	0.49	19.1	D
Laning Rd	II	40	85.6	9.2	94.8	0.95	36.1	A
Lowell St	II	40	29.3	102.7	132.0	0.29	7.8	F
Hugo St	II	35	23.3	11.9	35.2	0.19	19.1	D
Total	II		239.8	342.2	582.0	2.39	14.8	E

Arterial Level of Service: NB Sports Arena Blvd

Cross Street	Arterial Class	Flow Speed	Running Time	Signal Delay	Travel Time (s)	Dist (mi)	Arterial Speed	Arterial LOS
Dutch Flats Parkway	III	25	22.2	24.9	47.1	0.10	7.7	F
Charles Lindbergh Pa	III	25	32.2	13.8	46.0	0.19	15.3	D
Greenwood Street	III	35	24.4	6.5	30.9	0.20	23.7	C
Frontier Drive	III	35	19.5	25.2	44.7	0.15	12.3	E
Kemper Street	III	35	18.1	17.4	35.5	0.14	14.4	D
Hancock St.	III	35	22.7	14.7	37.4	0.19	18.2	C
Sports Arena Blvd	III	35	16.6	76.4	93.0	0.12	4.8	F
I-8 WB Off Ramp	III	35	36.1	86.5	122.6	0.30	8.8	F
Total	III		191.8	265.4	457.2	1.41	11.1	E

Arterial Level of Service: SB Sports Arena Blvd

Cross Street	Arterial Class	Flow Speed	Running Time	Signal Delay	Travel Time (s)	Dist (mi)	Arterial Speed	Arterial LOS
W Point Loma Blvd	III	35	36.1	109.3	145.4	0.30	7.5	F
Hancock St.	III	35	16.6	2.6	19.2	0.12	23.1	C
Kemper Street	III	35	22.7	48.9	71.6	0.19	9.5	F
Frontier Drive	III	35	18.1	10.7	28.8	0.14	17.7	D
East Drive	III	35	19.5	27.2	46.7	0.15	11.7	E
Rosecrans St	III	35	24.4	95.1	119.5	0.20	6.1	F
Charles Lindbergh Pa	III	25	29.7	15.6	45.3	0.16	13.1	E
Dutch Flats Parkway	III	25	32.2	8.6	40.8	0.19	17.2	D
Pacific Highway	III	25	22.2	50.9	73.1	0.10	5.0	F
Total	III		221.5	368.9	590.4	1.57	9.6	F

Arterial Level of Service: EB Taylor St

Cross Street	Arterial Class	Flow Speed	Running Time	Signal Delay	Travel Time (s)	Dist (mi)	Arterial Speed	Arterial LOS
Congress St	IV	35	15.7	22.0	37.7	0.10	9.1	D
Juan St	IV	35	11.2	25.3	36.5	0.07	6.7	F
	IV	35	18.3	12.3	30.6	0.13	15.4	C
Total	IV		45.2	59.6	104.8	0.29	10.1	D

Arterial Level of Service: WB Taylor St

Cross Street	Arterial Class	Flow Speed	Running Time	Signal Delay	Travel Time (s)	Dist (mi)	Arterial Speed	Arterial LOS
Morena Blvd	IV	35	17.7	23.4	41.1	0.11	9.4	D
	IV	35	18.3	12.5	30.8	0.13	15.3	C
Congress St	IV	35	11.2	6.5	17.7	0.07	13.8	C
Pacific Highway	IV	35	15.7	24.1	39.8	0.10	8.6	E
Total	IV		62.9	66.5	129.4	0.40	11.2	D

Mobility Report

Midway-Pacific Highway and Old Town Communities

May 2017

Prepared for:
City of San Diego

Prepared by:

CHEN RYAN
3900 Fifth Avenue, Suite 210
San Diego, CA 92103

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1.0 Introduction

1.1 Study Background and Purpose

This Mobility Report summarizes the physical and operational conditions of the Midway-Pacific Highway and Old Town communities' mobility systems as part of the City of San Diego's community plan update process. The evaluation culminates with an analysis of all travel modes under the horizon year 2035 Preferred Plan conditions. The report also describes key terms and methodologies utilized for conducting the analyses presented.

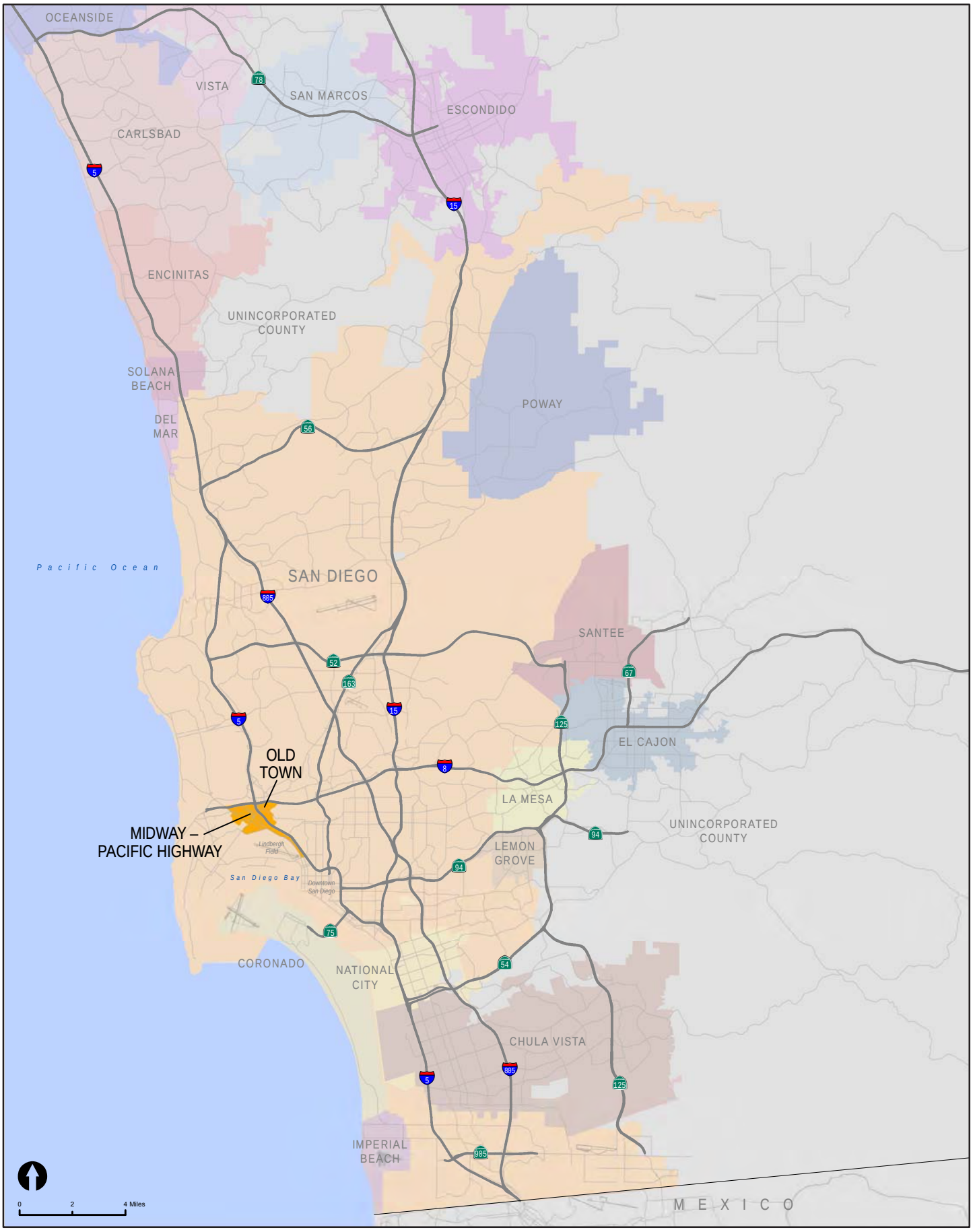
This Mobility Report is an update to the Midway-Pacific Highway Corridor Community Plan and Local Coastal Program Land Use Plan which was adopted by City Council in 1991, and the Old Town San Diego Community Plan, adopted in 1987.

The Preferred Plan is a strategy to address existing and forecast deficiencies related to mobility systems within the Midway-Pacific Highway and Old Town communities. The mobility networks are comprised of roadway and freeway systems, pedestrian and bicycle infrastructure, and public transit. Each of these transportation modes is discussed in the following chapters.

1.2 Study Location

The Midway-Pacific Highway and Old Town communities are located north of Downtown San Diego. The communities are both bound by Interstate 8 along the northern edge. Interstate 5 divides the communities, forming a north-south running boundary for each community. The Midway-Pacific Highway Community is bound by the Peninsula community and Barnett Avenue to west; and the Marine Corps Recruit Depot San Diego, the San Diego International Airport, and Laurel Street to the south. The Old Town Community is bound by Uptown and Mission Hills to the south and east.

Figure 1-1 displays the Midway-Pacific Highway and Old Town communities within the region.



Midway-Pacific Highway and Old Town Community Plan Update

CHEN RYAN

Figure 1-1
Midway-Pacific Highway and Old Town within the Region

Midway-Pacific Highway Community

The Midway-Pacific Highway community is situated north of Downtown San Diego and between the Old Town and Peninsula communities. The community encompasses approximately 800 acres of mostly flatland and is comprised of two basic elements: the central Midway area and the narrow, linear-shaped Pacific Highway Corridor.

Central Midway has an urbanized commercial core containing numerous shopping centers and institutional facilities which cater to the commercial needs of nearby residential and visitor populations. The area is characterized by wide streets, flat topography, and a varied mixture of flat-roofed large and small commercial buildings. The Pacific Highway Corridor, between Interstate 5 and Lindbergh Field, contains some of the City's oldest industrial areas. The corridor is defined by large scale buildings and unscreened commercial parking lots in the southern portion, and a group of smaller scale, low lying industrial buildings located between Witherby Street and Washington Street in the northern portion.

There are a few multifamily residential complexes located in the western portion of the community, adjacent to the Point Loma area. The planning area is generally characterized by a variety of commercial retail activities, and wide, multi-directional traffic intersections.

Since the 1960s, the Midway area has experienced an irregular development pattern, resulting in a lack of clear visual form both in terms of orientation and community legibility. The resulting diversity in development patterns, architectural styles, setbacks, and other development criteria has contributed to a disjointed and sporadic community image, where few buildings have compatibility or any functional relationship to each other and the surrounding neighborhood. Due to the area's low land valuations, high traffic utilization and inadequate zoning and development regulation, many auto-oriented commercial uses have located throughout the industrially zoned portions of the community. Much of the commercial development, including retail oriented auto sales and services, adult entertainment, and drive-thru restaurants, now exhibit a general lack of adequate parking, landscaping, and other commercial development amenities.

Old Town

The Old Town community covers 230 acres and is bound on the north by Interstate 8 and Mission Valley, on the west by Interstate 5 and Midway, and on the south and east by the Uptown/ Mission Hills hillsides.

Old Town San Diego, considered the "birthplace" of California, is the site of the first permanent Spanish Mission and settlement in California. The first Spanish Mission and Presidio were built on a hillside overlooking what is currently known as Old Town San Diego. At the base of the hill in the 1820's, a small Mexican community of adobe buildings was formed and by 1835 had attained the status of El Pueblo de San Diego.

In 1968, the State of California Department of Parks and Recreation established Old Town State Historic Park to preserve the rich heritage that characterized San Diego during the 1821 to 1872 period. The park includes a main plaza, exhibits, museums and living history demonstrations. Due to the historical nature and attractions within the community, Old Town San Diego is currently one of the region's largest tourist attractions. Within the community's central core (San Diego Avenue & Congress Street, between Twiggs Street and Ampudia Street) there are currently more than 150 shops, several restaurants, 17 museums, and historical sites.

There is a small number of residential neighborhoods located along the eastern, western and southern boundaries of the community.

1.3 Organization of the Report

The remainder of this Mobility Report is organized into the following chapters:

- *Chapter 2* describes the methodologies used to determine the study area and assess the pedestrian, transit, bicycle and vehicular systems.
- *Chapter 3* presents the Preferred Plan for the Midway-Pacific Highway community, including the development process, identification of existing community needs, and recommended improvements.
- *Chapter 4* presents the Preferred Plan for the Old Town community, including the development process, identification of existing community needs, and recommended improvements.
- *Chapter 5* provides an overview of the Transportation Demand Model Forecasting process utilized to project future travel patters under implementation of the Preferred Plan.
- *Chapter 6* concludes this document with the Preferred Plan analysis results for each mode. Additionally, Intelligent Transportation Systems (ITS), Transportation Demand Management (TDM) Systems, and Parking Management are described in this chapter.

2.0 Analysis Methodology

This chapter describes the methodologies used to determine the study area and assess the pedestrian, transit, bicycle and vehicular systems within the Midway-Pacific Highway and Old Town communities.

2.1 Selection of the Study Area

This section describes the process used to identify roadway segments and intersections for analysis.

2.1.1 Roadway Segments

Roadway segments were evaluated if one or more of the following circumstances applied:

- The roadway segment is an existing or planned circulation element roadway as identified in the Midway-Pacific Highway Corridor Community Plan and Local Coastal Program Land Use Plan (1991), or the Old Town San Diego Community Plan (1987).
- The roadway segment provides freeway access to/from the Midway-Pacific Highway or Old Town communities.
- The roadway segment is located outside of either study community, however, it may influence or impact the flow of transportation within either of the communities.

Based on the criteria listed above, Table 2.1 displays the roadway segments selected for analysis.

Table 2.1 Study Area Roadway Segments

ID	Roadway	From	To
North-South			
Midway Pacific Highway			
1	Lytton Street / Barnett Ave	Rosecrans St	Midway Dr
2	Midway Dr	W. Point Loma Blvd/Sports Arena Blvd	Kemper St
3		Kemper St	East Dr
4		East Dr	Rosecrans St
5		Rosecrans St	Barnett Ave
6	Sports Arena Blvd	I-8 WB Ramps	I-8 EB Ramps
7		I-8 EB Ramps	W. Point Loma Blvd
8		W. Point Loma Blvd/Midway Dr	Kemper St
9		Kemper St	East Dr
10		East Dr	Rosecrans St
11		Rosecrans St	Pacific Hwy
12	Kurtz St	Hancock St	Rosecrans St

Table 2.1 Study Area Roadway Segments

ID	Roadway	From	To
13	Kurtz St	Rosecrans St	Pacific Hwy
14	Hancock St	Sports Arena Blvd	Kurtz St
15		Kurtz St	Camino Del Rio West
16		Camino Del Rio West	Rosecrans St
17		Old Town Ave	Witherby St
18		Witherby St	Washington St
19	Kettner Blvd	Washington St	Vine St
20		Vine St	Sassafras St
21		Sassafras St	Laurel St
22	Pacific Hwy	Interstate-8	Taylor St
23		Taylor St	Kurtz St
24		Kurtz St	Sports Arena Blvd
25		Sports Arena Blvd	Barnett Ave
26		Barnett Ave	Washington St
27		Washington St	Sassafras St
28		Sassafras St	Laurel St
Old Town			
29	Congress St	Taylor St	Twiggs St
30		Twiggs St	Harney St
31		Harney St	San Diego Ave/ Ampudia St
32	San Diego Ave	Twiggs St	Conde St
33		Conde St	Ampudia St
34		Ampudia St	Old Town Ave
35		Old Town Ave	Hortensia St
36	Juan St	Taylor St	Twiggs St
37		Twiggs St	Harney St
38		Harney St	San Juan Rd
East-West			
Midway Pacific Highway			
39	Channel Wy	W. Mission Bay Dr	Hancock St
40	Kemper St	Kenyon St	Midway Dr
41		Midway Dr	Sports Arena Blvd
42		Sports Arena Blvd	Hancock St
43	Frontier Dr	Sports Arena Blvd	Kurtz St
44	Greenwood St	Sports Arena Blvd	Kurtz St
45	Camino Del Rio West	Rosecrans St	I-5/I-8 Ramps
46	Rosecrans St	Lytton St	Midway Dr
47		Midway Dr	Sports Arena Blvd
48	Rosecrans St	Sports Arena Blvd	Pacific Hwy/Taylor St

Table 2.1 Study Area Roadway Segments

ID	Roadway	From	To
49	Charles Lindbergh Pkwy	Midway Dr	Sports Arena Blvd
50		Sports Arena Blvd	Kurtz Street
51	Dutch Flats Pkwy	Barnett Avenue	Midway Dr
52		Midway Dr	Sports Arena Blvd
53	Barnett Ave	Midway Dr	Pacific Hwy
54	Washington St	Frontage Rd	Pacific St
55		Pacific St	Hancock St
56	Vine St	California St	Kettner Blvd
57	Sassafras St	Pacific Hwy	Kettner Blvd
58	Laurel St	Pacific Hwy	Kettner Blvd
Old Town			
59	Taylor St	Pacific Hwy/ Rosecrans St	Congress St
60		Congress St	Juan St
61		Juan St	Morena Blvd
62		Morena Blvd	I-8 EB Ramps
63	Twiggs St	Congress St	San Diego Ave
64		San Diego Ave	Juan St
65	Harney St	Congress St	San Diego Ave
66		San Diego Ave	Juan St
67	Old Town Ave	Hancock St	Moore St
68		Moore St	San Diego Ave

Source: Chen Ryan Associates (2016)

2.1.2 Intersections

Intersections were evaluated if one or more of the following circumstances applied:

- The intersection is comprised of a circulation element roadway intersecting with another circulation element roadway. This includes existing and future/planned circulation element roadways as identified in the Midway-Pacific Highway Corridor Community Plan and Local Coastal Program Land Use Plan (1991), or the Old Town San Diego Community Plan (1987).
- The intersection is at a freeway ramp interchange located within the Midway-Pacific Highway or Old Town communities or is a major gateway to either community.
- The intersection is a major intersection located outside of either community, however, it may influence or impact the flow of transportation within the communities.
- The intersection meets criteria used in previous studies, whereby both streets meet one of the following:
    - 4 lanes or greater

- 3 lanes and carries over 15,000 ADT
- 2 lanes and carries over 10,000 ADT

- Intersections at freeway access ramps.
- Significant intersections where travel time analysis is performed.

A total of 59 intersections were identified based on the criteria listed above, which include 11 intersections located outside the study communities. These intersections were added to the study area because of their proximity to the communities, and the likelihood that changes within the communities could directly affect traffic in/out of the communities. The 59 intersections include the following:

Midway-Pacific Highway

1. Lytton Street and Rosecrans Street
2. W. Mission Bay Drive and I-8 WB Off-Ramp
3. Sports Arena Boulevard and Channel Way
4. Midway Drive and Sports Arena/W. Point Loma Boulevard
5. Midway Drive and Kemper Street
6. Midway Drive and East Drive
7. Midway Drive and Rosecrans Street
8. Midway Drive and Charles Lindbergh Parkway
9. Midway Drive and Enterprise Street
10. Midway Drive and Barnett Avenue
11. Sports Arena Boulevard and Hancock Street
12. Sports Arena Boulevard and Kemper Street
13. Sports Arena Boulevard and Sports Arena Driveway
14. Sports Arena Boulevard and East Drive
15. Sports Arena Boulevard and Rosecrans Street
16. Sports Arena Boulevard and Charles Lindbergh Parkway
17. Sports Arena Boulevard and Pacific Highway
18. Kurtz Street and Hancock Street
19. Kurtz Street and Camino Del Rio West
20. Kurtz Street and Rosecrans Street
21. Kurtz Street and Pacific Highway
22. Hancock Street and Channel Way
23. Hancock Street and Camino Del Rio West
24. Hancock Street and Rosecrans Street
25. Hancock Street and Old Town Avenue
26. Hancock Street and Witherby Street
27. Hancock Street and Washington Street
28. Kettner Boulevard and Vine Street
29. Kettner Boulevard and Sassafras Street

30. Kettner Boulevard and West Laurel Street
31. Pacific Highway and Barnett Avenue
32. Pacific Highway and Washington Street @ Frontage Road
33. Pacific Highway and Washington Street
34. Pacific Highway and Sassafras Street
35. Pacific Highway and West Laurel Street

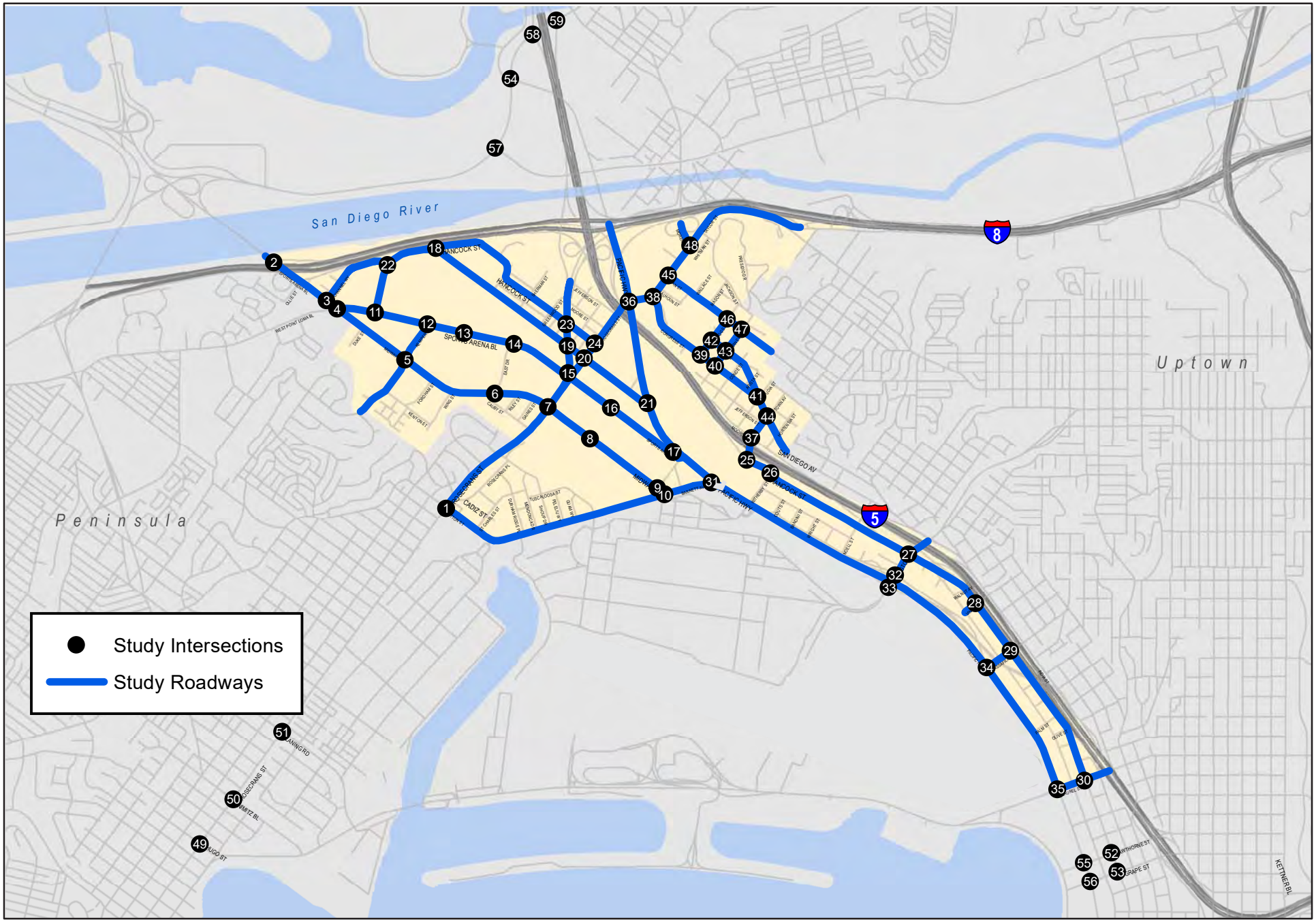
Old Town

36. Pacific Highway and Taylor Street
37. Moore Street and Old Town Avenue
38. Congress Street and Taylor Street
39. Congress Street and Twiggs Street
40. Congress Street and Harney Street
41. Congress Street and San Diego Avenue/Ampudia Street
42. San Diego Avenue and Twiggs Street
43. San Diego Avenue and Harney Street
44. San Diego Avenue and Old Town Avenue
45. Juan Street and Taylor Street
46. Juan Street and Twiggs Street
47. Juan Street and Harney Street
48. Morena Boulevard and Taylor Street

Intersections Outside of Study Communities

49. Hugo Street/N Harbor Drive and Rosecrans Street
50. Lowell Street/Nimitz Boulevard and Rosecrans Street
51. Kettner Boulevard and W Hawthorn Street
52. Kettner Boulevard and W Grape Street
53. Laning Road and Rosecrans Street
54. Pacific Highway and Sea World Drive
55. Pacific Highway and W Hawthorn Street
56. Pacific Highway and W Grape Street
57. Friars Road and Sea World Drive
58. I-5 SB Ramps and Sea World Drive
59. I-5 NB Ramps and Sea World Drive

Figure 2-1 displays the location of the 59 study intersections. As shown, this includes the 11 intersections located outside of the study communities.



Midway-Pacific Highway and
Old Town Community Plan Update

CHEN RYAN

Figure 2-1
Project Study Area

2.2 Vehicular Analysis

Analysis of the vehicular systems – roadways, intersections, and freeways – were prepared for this report in accordance with the City of San Diego and SANTEC/ITE Guidelines. Vehicular level of service (LOS) is a quantitative measure that represents the quality of service – or how well a transportation facility operates – as experienced by vehicular drivers. These conditions are generally described in terms of factors such as speed, travel time, freedom to maneuver, comfort, convenience, and safety. LOS A represents the best operating conditions from a driver's perspective, while LOS F represents the worst. Table 2.2 describes generalized definitions of vehicular LOS A through F as identified by the Highway Capacity Manual (2000).

Table 2.2 Vehicular Level of Service Definitions

LOS	Definition
A	Primarily free-flow operation. Vehicles are completely unimpeded in their ability to maneuver within the traffic stream. Controlled delay at the boundary intersections is minimal. The travel speed exceeds 85% of the base free-flow speed.
B	Reasonably unimpeded operation. The ability to maneuver within the traffic stream is only slightly restricted and control delay at the boundary intersections is not significant. The travel speed is between 67% and 85% of the base free-flow speed.
C	Stable operation. The ability to maneuver and change lanes at mid-segment locations may be more restricted than at LOS B. Longer queues at the boundary intersections may contribute to lower travel speeds. The travel speed is between 50% and 67% of the base free-flow speed.
D	Less stable condition in which small increases in flow may cause substantial increases in delay and decreases in travel speed. This operation may be due to adverse signal progression, high volume, or inappropriate signal timing at the boundary intersections. The travel speed is between 40% and 50% of the base free-flow speed.
E	Unstable operation and significant delay. Such operations may be due to some combination of adverse signal progression, high volume, and inappropriate signal timing at the boundary intersections. The travel speed is between 30% and 40% of the base free-flow speed.
F	Flow at extremely low speed. Congestion is likely occurring at the boundary intersections, as indicated by high delay and extensive queuing. The travel speed is 30% or less of the base free-flow speed. Also, LOS F is assigned to the subject direction of travel if the through movement at one or more boundary intersections have a volume-to-capacity ratio greater than 1.0.

Source: Highway Capacity Manual (2000)

2.2.1 Roadway Segment

Roadway segment level of service standards and thresholds provided the basis for analysis of arterial roadway segment performance. The analysis of roadway segment level of service is based on the functional classification of the roadway, the maximum capacity, roadway geometrics, and existing or forecast Average Daily Traffic (ADT) volumes.

Table 2.3 presents the roadway segment capacity and LOS standards utilized to analyze roadways evaluated in this report. These standards are generally used as long-range planning guidelines to determine the functional classification of roadways. The actual capacity of a roadway varies according to its physical and operational attributes. LOS D is considered acceptable for Mobility Element roadway segments in the City of San Diego. Often, a roadway segment operating at LOS

E or F based on theoretical capacity is found to operate acceptably in practice. In such cases, HCM arterial analysis may be conducted and utilized (or intersection analysis, if arterial analysis is not applicable) to provide a more accurate indication of LOS.

Table 2.3 City of San Diego Roadway Segment Daily Capacity and Level of Service Standards

Roadway Functional Classification	Level of Service				
	A	B	C	D	E
Expressway (6-lane)	< 30,000	< 42,000	< 60,000	< 70,000	< 80,000
Prime Arterial (6-lane)	< 25,000	< 35,000	< 50,000	< 55,000	< 60,000
Major Arterial (6-lane, divided)	< 20,000	< 28,000	< 40,000	< 45,000	< 50,000
Major Arterial (4-lane, divided)	< 15,000	< 21,000	< 30,000	< 35,000	< 40,000
Collector (4-lane w/ center left-turn lane)	< 10,000	< 14,000	< 20,000	< 25,000	< 30,000
Collector (3-lane w/ center left-turn lane)	< 7,500	< 10,500	< 15,000	< 19,000	< 22,500
Collector (4-lane w/o center lane)	< 5,000	< 7,000	< 10,000	< 13,000	< 15,000
Collector (2-lane w/ center left-turn lane)					
Collector (2-lane no fronting property)	< 4,000	< 5,500	< 7,500	< 9,000	< 10,000
Collector (2-lane w/ commercial fronting)	< 2,500	< 3,500	< 5,000	< 6,500	< 8,000
Collector (2-lane multi-family fronting)					
Sub-Collector (2-lane single-family)	-	-	< 2,200	-	-

Source: City of San Diego Traffic Impact Study Manual (1998)

Note: Bold numbers indicate the ADT thresholds for acceptable LOS.

2.2.2 Peak Hour Intersection

This section presents the methodologies used to perform peak hour intersection capacity analysis, for both signalized and unsignalized intersections. The following assumptions were utilized in conducting all intersection level of service analyses:

- Pedestrian Calls per Hour: Based on existing pedestrian counts.
- Heavy Vehicle Factor: A 2% heavy vehicle factor was assumed for all intersections within the study area.
- Peak Hour Factor: Based on existing peak hour counts.
- Signal Timing: Based on existing signal timing plans (as of November 2012).

Signalized Intersection Analysis

The signalized intersection analysis utilized in this study conforms to the operational analysis methodology outlined in 2000 Highway Capacity Manual (HCM), Transportation Research Board Special Report 209. This method defines LOS in terms of delay, or more specifically, average control delay per vehicle (sec/veh). The 2000 HCM methodology sets 1,900 passenger-cars per hour per lane (pcphpl) as the ideal saturation flow rate at signalized intersections based upon the minimum headway that can be sustained between departing vehicles at a signalized intersection. The service saturation flow rate, which reflects the saturation flow rate specific to the study facility, is determined by adjusting the ideal saturation flow rate for lane width, on-street parking, bus stops, pedestrian volume, traffic composition (or percentage of heavy vehicles), and shared

lane movements (e.g. through and right-turn movements sharing the same lane). The level of service criteria used for this technique are described in Table 2.4. The computerized analysis of intersection operations was performed utilizing the Synchro 8.0 (2000 HCM methodology) traffic analysis software (by Trafficware, 2011).

Table 2.4 Signalized intersection LOS – HCM Operational Analysis Method

Average Control Delay Per Vehicle (seconds)	Level of Service (LOS) Characteristics
≤10.0	*LOS A* occurs when the volume-to-capacity ratio is low and either progression is exceptionally favorable or the cycle length is very short. If it is due to favorable progression, most vehicles arrive during the green indication and travel through the intersection without stopping.
10.1 – 20.0	*LOS B* occurs when the volume-to-capacity ratio is low and either progression is highly favorable or the cycle length is short. More vehicles stop than with LOS A.
20.1 – 35.0	*LOS C* occurs when progression is favorable or the cycle length is moderate. The number of vehicles stopping is significant, although many vehicles still pass through the intersection without stopping.
35.1 – 55.0	*LOS D* occurs when the volume-to-capacity ratio is high and either progression is ineffective or the cycle length is long. Many vehicles stop and individual cycle failures are noticeable.
55.1 – 80.0	*LOS E* occurs when the volume-to-capacity ratio is high, progression is unfavorable, and the cycle length is long. Individual cycle failures are frequent.
>80.0	*LOS F* occurs when the volume-to-capacity ratio is very high, progression is very poor, and the cycle length is long. Most cycles fail to clear the queue.

Source: Highway Capacity Manual, Transportation Research Board Special Report 209 (2000)

Unsignalized Intersection Analysis

Unsignalized intersections, including two-way and all-way stop controlled intersections were analyzed using the *2000 HCM* unsignalized intersection analysis methodology. The Synchro 8.0 software supports this methodology and was utilized to produce LOS results. The LOS for a two-way stop controlled (TWSC) intersection is determined by the computed or measured control delay and is defined for each minor movement. The LOS for an all-way stop controlled (AWSC) intersection is determined by the computed or measured average control delay of all movements. Table 2.5 summarizes the level of service criteria for unsignalized intersections.

Table 2.5 Level of Service Criteria for Stop Controlled Unsignalized Intersections

Average Control Delay (sec/veh)	Level of Service
≤10.0	A
10.1 – 15.0	B
15.1 – 25.0	C
25.1 – 35.0	D
35.1 – 50.0	E
>50.0	F

Source: Highway Capacity Manual (2000)

The City of San Diego considers LOS D or better during the AM and PM peak hours to be an acceptable intersection level of service.

2.2.3 Freeway

The freeway level of service analysis followed procedures developed by Caltrans District 11. The procedure involves estimating a peak hour volume to capacity ratio (V/C). Peak hour volumes are estimated from the application of design hour ("K"), directional ("D"), and truck ("T") factors to average daily traffic (ADT) volumes). The base capacities were assumed to be 2,350 passenger-cars per hour per main lane (pc/h/ln) and 1,410 pc/h/ln for auxiliary lane. A 0.95 peak hour factor (PHF) was utilized for this analysis. The resulting V/C ratio was then compared to acceptable ranges of V/C values corresponding to the various levels of service for each facility classification, as shown in Table 2.6. The corresponding level of service represents an approximation of anticipated future freeway operating conditions in the peak direction of travel during the peak hour. LOS D or better was used in this study as the threshold for acceptable freeway operations based upon Caltrans and the SANDAG Regional Growth Management Strategy (RGMS) requirements.

Table 2.6 Caltrans District 11 Freeway Segment Level of Service Definitions

LOS	V/C	Congestion/Delay	Traffic Description
Used for freeways, expressways and conventional highways			
"A"	<0.41	None	Free flow.
"B"	0.42-0.62	None	Free to stable flow, light to moderate volumes.
"C"	0.63-0.79	None to minimal	Stable flow, moderate volumes, freedom to maneuver noticeably restricted.
"D"	0.80-0.92	Minimal to substantial	Approaches unstable flow, heavy volumes, very limited freedom to maneuver.
"E"	0.93-1.00	Significant	Extremely unstable flow, maneuverability and psychological comfort extremely poor.
Used for conventional highways			
"F"	>1.00	Considerable	Forced or breakdown flow. Delay measured in average travel speed (MPH). Signalized segments experience delays >60.0 seconds/vehicle.
Used for freeways and expressways			
"F0"	1.01–1.25	Considerable (0-1 hour delay)	Forced flow, heavy congestion, long queues form behind breakdown points, stop and go.
"F1"	1.26-1.35	Severe (1-2 hour delay)	Very heavy congestion, very long queues.
"F2"	1.36-1.45	Very severe (2-3 hour delay)	Extremely heavy congestion, longer queues, more numerous breakdown points, longer stop periods.
"F3"	>1.46	Extremely severe (3+ hours of delay)	Gridlock.

Source: SANTEC/ITE Guidelines for TIS in the San Diego Region

2.2.4 Ramp Metering Analysis

Ramp metering is a means of controlling the volume of traffic entering the freeway with the goal of improving freeway main lane traffic operations and flow. Freeway ramp meter analyses estimate peak hour queues and delays at freeway ramps by comparing existing volumes to the meter rate at the given location.

Meter rates, which represent the amount of vehicles permitted through the signal, onto the ramp and freeway, were obtained from Caltrans for use in the analysis. Ramp metering analyses to calculate delays at study area freeway ramps were conducted following the procedures outlined in the *City of San Diego Traffic Impact Study Manual (1998)*.

2.3 Multimodal Analysis

Recent planning efforts and legislative actions have redefined the way community transportation planning is carried out. An important unifying theme is to achieve a more balanced, multimodal transportation system that allows people of varying physical and economic conditions to accomplish daily activities without making a single-occupant vehicle trip. A balanced system will address many complex transportation issues such as traffic congestion, greenhouse gas emissions, community health, and economic vitality of a community.

Multimodal analyses are gaining attention among local and regional jurisdictions as one method of supporting progress toward these issues. This section describes the pedestrian, bicycle, and transit analysis methodologies used in this report.

2.3.1 Pedestrian Assessment

Three analyses were utilized to assess overall pedestrian mobility: 1) network connectivity; 2) facility quality; and 3) combined network connectivity and quality.

Pedestrian Connectivity Ratio

A pedestrian travelshed analysis was used to assess the level of connectivity provided from each Traffic Analysis Zone (TAZ) with pedestrian friendly land uses (residential, commercial, office or recreational). A 0.5 mile pedestrian network buffer was drawn around each TAZ within the community containing pedestrian friendly land uses. That area was then compared to the area of a 0.5 mile as-the-crow-flies buffer (502.7 acres) to develop a Pedestrian Connectivity Ratio for the intersection. The higher the Pedestrian Connectivity Ratio, the better the overall walking connectivity from the TAZ.

Pedestrian Environment Quality Evaluation (PEQE)

The quality of all roadway segments, intersections, and mid-block crossings within the Midway-Pacific Highway and Old Town communities were evaluated under Preferred Plan conditions using the Pedestrian Environmental Quality Evaluation (PEQE) tool. Table 2.7 outlines the evaluation system used to develop the PEQE scoring metric.

Table 2.7 Pedestrian Environment Quality Ranking System

Facility Type	Measure	Description/Feature	Scoring
Segment *(between two intersections)*	Horizontal Buffer	Between the edge of auto travel way and the edge of clear pedestrian zone	0 point: < 6 feet 1 point: 6 – 14 feet 2 points: > 14 feet
	Lighting	--	0 point: below standard/requirement 1 point: meet standard/requirement 2 points: exceed standard/requirement
	Clear Pedestrian Zone	5' minimum	0 point: has obstructions 2 points: no obstructions
	Posted Speed Limit	--	0 point: > 40 mph 1 point: 30 – 40 mph 2 points: < 30 mph
		Maximum Points	8 points
Intersection	Physical Feature	• Enhanced/High Visibility Crosswalk • Raised Crosswalk/Speed Table • Advanced Stop Bar • Bulb out/Curb Extension	0 point: < 1 feature per ped crossing 1 point: 1 – 2 features per ped crossing 2 points: > 2 features per ped crossing
	Operational Feature	• Pedestrian Countdown Signal • Pedestrian Lead Interval • No-Turn On Red Sign/Signal • Additional Pedestrian Signage	0 point: < 1 feature per ped crossing 1 point: 1 – 2 features per ped crossing 2 points: > 2 features per ped crossing
Intersection (Continued)	ADA Curb Ramp	--	0 point: below standard/requirement 2 points: meet standard/requirement
	Traffic Control	--	0 point: No control 1 point: Stop sign controlled 2 points: Signal/Roundabout/Traffic Circle
		Maximum Points	8 points
Mid-block Crossing	Visibility	--	0 point: w/o high visibility crosswalk 2 points: with high visibility crosswalk
	Crossing Distance	--	0 point: no treatment 2 points: with bulb out or pedestrian refuge
	ADA Curb Ramp	--	0 point: below standard/requirement 2 points: meet standard/requirement
	Traffic Control	--	0 point: No control 1 point: Flashing Beacon 2 points: Signal/Pedestrian Hybrid Beacon
		Maximum Points	8 points
Final PEQE Scoring:			
Low: < 4 points Medium: 4-6 points High: > 7 points			

Combined Pedestrian Network Connectivity and Quality Assessment

This evaluation involves assessing the connectivity and quality of the walking environment within each community. Pedestrian network connectivity and quality is assessed using a combination of the pedestrian travelshed and quality assessment previously described. The following steps outline the evaluation process used:

a. *Total Walking Distance* – a 0.5 mile pedestrian network buffer is drawn around each study intersection, regardless of PEQE score.

b. *Quality Walking Distance* – a 0.5 mile pedestrian network buffer is drawn around each study intersection, using only pedestrian facilities with a PEQE ranking of Medium or High (including roadway links and intersections, and not including mid-block crossings). PEQE scores on each side of the roadway segment are added together and assigned a quality rating using the following scale (Low: 0-7, Medium: 8-12, High: 13+), to get a single quality measure for the roadway segment. Segments with a "High" rating are considered quality segments.

c. *Quality Walk Ratio* – The ratio of high quality connectivity to overall connectivity along all pedestrian facilities is determined using the following equation:

$$\text{Quality Walk Ratio} = \frac{\textit{Quality Walking Distance}}{\textit{Total Walking Distance (Existing Conditions)}}$$

2.3.2 Bicycle Assessment

Three analyses were utilized to assess overall bicycle mobility: 1) network connectivity; 2) facility quality; and 3) combined network connectivity and quality.

Bicycle Connectivity Ratio – Travelshed Analysis

A bicycle travelshed analysis was used to assess the level of connectivity provided from each study intersection. A 1.0 mile bicycle network buffer (using all bikeable roadways plus multi-use paths) is drawn around each intersection. That area is then compared to the area of a 1.0 mile as-the-crow-flies buffer (2,010.6 acres) to develop a Bicycle Connectivity Ratio for the intersection. The higher the Connectivity Ratio, the better the overall connectivity from the intersection.

Bicycle Facility Quality

The bicycle environment is assessed using the Bicycle Level of Traffic Stress (LTS) methodology, as developed by Mekuria, et al. (2012) of the Mineta Transportation Institute and reported in *Low-Stress Bicycle and Network Connectivity*. LTS classifies the street network into categories according to the level of stress it causes cyclists, taking into consideration a cyclist's physical separation from vehicular traffic, vehicular traffic speeds along the roadway segment, number of travel lanes, and factors related to intersection approaches with right-turn lanes and unsignalized crossings. LTS scores range from 1 (lowest stress) to 4 (highest stress).

Table 2.8 displays the four LTS categories with descriptions of traffic stress experienced by the cyclist and the cycling conditions associated with each category.

Combined Bicycle Network Connectivity and Quality Assessment

This assessment quantifies the connectivity of low stress bicycle facilities (LTS score 1 or 2) between TAZs within the study communities. This measure results in each TAZ being assigned a percentage reflecting the number of total TAZ reachable via low stress bicycle facilities within the study area.

Table 2.8 Level of Traffic Stress Classifications and Descriptions

LTS Category	LTS Description	Cycling Conditions Fitting LTS Category
LTS 1	Presenting little traffic stress and demanding little attention from cyclists; suitable for almost all cyclists, including children trained to safely cross intersections	• Facility that is physically separated from traffic or an exclusive cycling zone next to a slow traffic stream with no more than one lane per direction • A shared roadway where cyclists only interact with the occasional motor vehicle with a low speed differential • Ample space for cyclist when alongside a parking lane • Intersections are easy to approach and cross
LTS 2	Presenting little traffic stress but demanding more attention than might be expected from children	• Facility that is physically separated from traffic or an exclusive cycling zone next to a well-connected traffic stream with adequate clearance from parking lanes • A shared roadway where cyclists only interact with the occasional motor vehicle (as opposed to a stream of traffic) with a low speed differential • Unambiguous priority to the cyclist where cars must cross bike lanes (e.g. at dedicated right-turn lanes); design speed for right-turn lanes comparable to bicycling speeds • Crossings not difficult for most adults
LTS 3	Presenting enough traffic stress to deter riders not comfortable with sharing the roadway with traffic	• An exclusive cycling zone (lane) next to moderate-speed vehicular traffic • A shared roadway that is not multilane and has moderately low automobile travel speeds • Crossings may be longer or across higher-speed roadways than allowed by LTS 2, but area still considered acceptably safe to most adult pedestrians
LTS 4	Presenting enough traffic stress to deter all but the Strong & Fearless cycling demographic (estimated at <1% of the population)	• An exclusive cycling zone (lane) next to high-speed and multi-lane vehicular traffic • A shared roadway with multiple lanes per direction with high traffic speeds • Cyclist must maneuver through dedicated right-turn lanes containing no dedicated bicycling space and designed for turning speeds faster than bicycling speeds

Source: Mekuria, et al. (2012)

2.3.3 Transit Assessment

Two performance measures were used to analyze transit conditions, including station quality and arterial speed.

Station Quality – Presence of Amenities

Each transit station/stop was reviewed for the presence of the following amenities:

- Shelters
- Benches
- Trash Receptacles
- Station Signs
- Maps/Wayfinding
- Lighting
- ADA Compliancy

Table 2.9 displays the standard amenities that should be provided at transit stops/stations based on daily passenger boardings (across all routes).

Table 2.9 Transit Amenity Standards by Ridership Levels

Amenity	Daily Passenger Boardings by Stop/Station				
	< 50	50 – 100	101 – 200	201 – 500	> 500
Sign and Pole	X	X	X	X	
Built-in Sign					X
Expanded Sidewalk			X	X	X
Bench		X	X	X	X
Shelter			X	X	X
Route Designations	X	X	X	X	X
Time Table				X	X
Route Map			X	X	X
System Map					X
Trash Receptacle				X	X
Lighting			X	X	X
ADA Compliant	X	X	X	X	X

Source: MTS Design for Transit (1993)

Arterial Speed

On-time bus performance can be directly impacted by vehicular traffic congestion along roadways servicing bus routes. An HCM roadway arterial speed analysis was used to identify locations in which on-time performance is currently or may be impacted under future conditions by vehicular traffic congestion.

Arterial Level of Service (LOS) is based on the average peak hour travel speeds along a roadway segment. The average travel speed is computed from the running time on the arterial segment(s) and the intersection approach delay. Average speed is strongly influenced by the number of signals per mile and the average intersection delay. On a given facility, factors such as

inappropriate signal timing, poor progression, and increasing traffic flow can substantially degrade the arterial LOS.

Table 2.10 displays the LOS thresholds used for the arterial analysis. Arterial speed analyses should be performed utilizing the methodologies in the version of the Highway Capacity Manual (HCM) that is currently accepted by the City of San Diego

Table 2.10 Arterial Analysis Level of Service Thresholds

Arterial Class	I	II	III
Range of Free Flow Speed (mph)	45 to 35	35 to 30	30 to 25
Typical Free Flow Speed (mph)	40 mph	33 mph	27 mph
Level of Service Analysis	**Average Travel Speed**		
A	35	30	25
B	28	24	19
C	22	18	13
D	17	14	9
E	13	10	7
F	< 13	< 10	< 7

Source: Highway Capacity Manual (TRB 1997)

3.0 Midway-Pacific Highway Preferred Plan

This section documents the mobility related issues and needs of the Midway-Pacific Highway community and the process used to identify those issues. This section also outlines the mobility improvements recommended under buildout of Preferred Plan conditions and the process used to develop these improvements.

3.1 Development of the Preferred Plan

3.1.1 Identification of Issues and Needs

Existing mobility related issues and needs within the Midway-Pacific Highway community were identified in the *Community of Midway/Pacific Highway Corridor and Old Town Mobility Existing Conditions Report; September 2012 (Existing Conditions Report)*. The issues and needs identified in the Existing Conditions Report were used, in conjunction with the other planning efforts and the overall community vision, to develop the recommended mobility improvements incorporated into the Preferred Plan.

3.1.2 Development of Preferred Plan Improvements

Preferred Plan improvements were developed by first cross checking the mobility issues and needs, identified in the Existing Conditions Report, against the mobility issues and needs identified in several other on-going or recent planning efforts, including:

- Midway/Pacific Highway Urban Greening Plan (December 2016)
- I-8 Corridor Study (August 2016)
- San Diego Forward, The Regional Plan (October 2015)
- City of San Diego Bicycle Master Plan (December 2013)
- City of San Diego Pedestrian Master Plan – Phase 4 (December 2013)
- Rosecrans Corridor Mobility Study (February 2010)
- Destination Lindbergh Technical Report: San Diego International Airport (November 2008)
- San Diego International Airport Master Plan (November 2008)

Where possible, the Preferred Plan carried forward or maintained the relevant improvements from on-going or previous planning efforts which have been adopted or vetted by the community. New improvement strategies were then developed for the issues and needs, identified in the Existing Conditions Report, which were not addressed in other planning efforts. Additional mobility improvements were also developed to accommodate the anticipated future growth within the community. The following sections outline the mobility issues and needs identified in the Existing Conditions Report and the associated improvements recommended under the Preferred Plan to alleviate them.

3.2 Street and Freeway System

3.2.1 Identified Street and Freeway Needs

There is constrained regional access to/from the Midway-Pacific Highway Community and to adjacent communities. A significant amount of regional traffic traverses the local roadway system within the community since there are limited regional access points, missing freeway-to-freeway connectors between I-8 and I-5, as well as major employment centers and trip generators within and adjacent to the community. Figure 3-1 displays regional access issues in the Midway-Pacific Highway community.

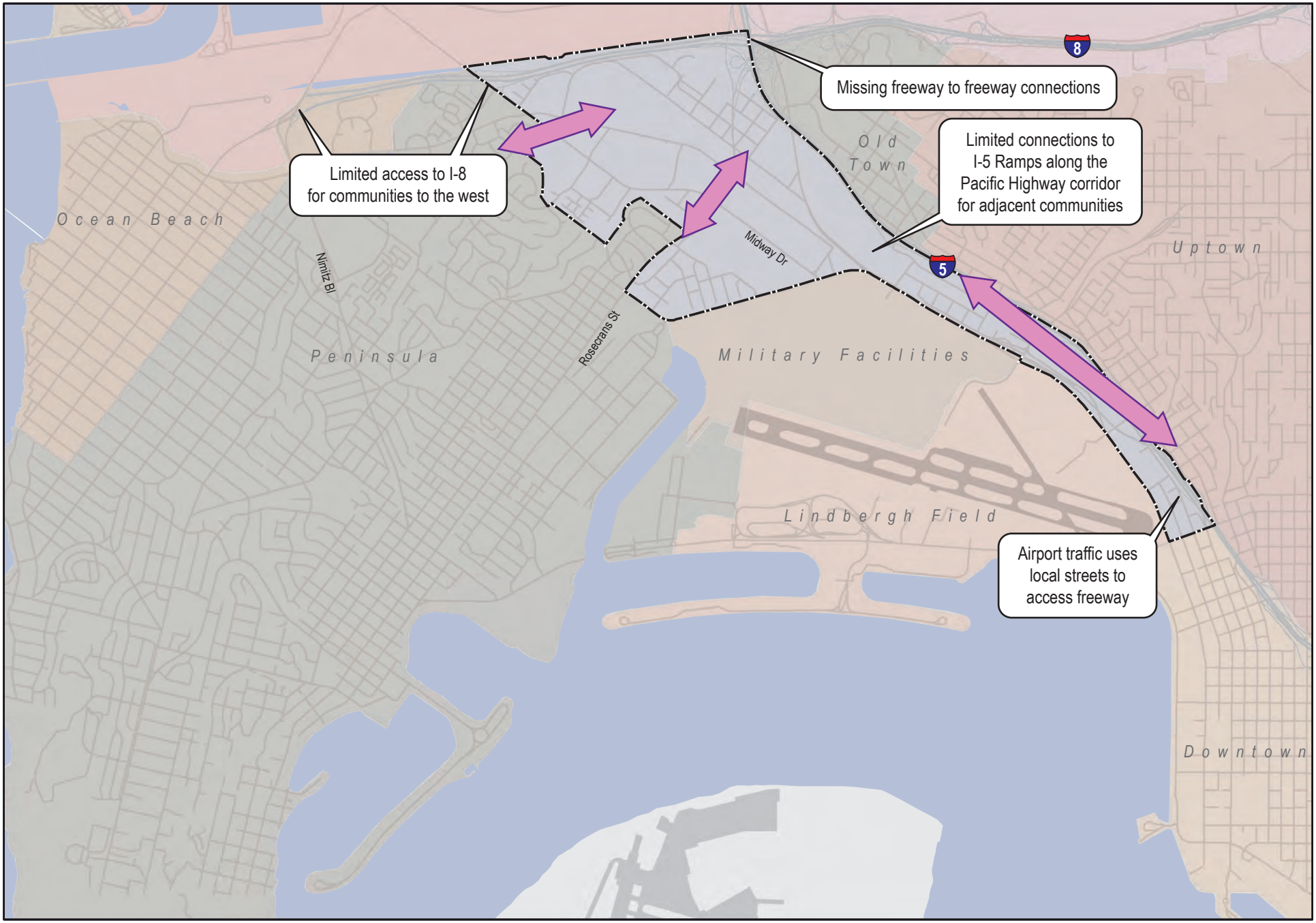
Constrained regional access, large trip generators, and limited circulation created by large blocks within and adjacent to the community, result in highly concentrated traffic volumes along study roadways providing freeway access. This concentration of traffic volumes creates congestion, low traffic speeds and delays on both the Rosecrans Street and Camino Del Rio West. Figure 3-2 displays the location of identified issues/needs within the Midway-Pacific Highway community.

3.2.2 Street and Freeway Improvements

A list of Preferred Plan proposed roadway improvements, new roadways, intersection improvements, new intersections, and freeway improvements are presented throughout this section. These improvements are predominantly based on the future year traffic volumes that are projected under buildout of the Preferred Plan, as displayed in Figure 5-1. Full analysis of all Preferred Plan roadways is provided in Chapter 6.

Roadways

- *Lytton Street/Barnett Avenue, between Rosecrans Street and Midway Drive* – Construct a raised median along these portions of Lytton Street / Barnett Avenue. This will improve Lytton Street to a four-lane major configuration.
- *Sports Arena Boulevard, between Interstate 8 and Rosecrans Street* – Improve this section of Sports Arena Boulevard to a six-lane major arterial. *(Note: Conceptual drawings of the improvements along Sports Arena Boulevard are provided in Figures 3-8 and 3-10).*
- *Sports Arena Boulevard, between Rosecrans Street and Pacific Highway* – Improve this section of Sports Arena Boulevard from a sub-collector to a two-lane collector with a continuous left-turn lane.
- *Kurtz Street, between Rosecrans Street and Pacific Highway* – Restripe this section of Kurtz Street from a two-lane collector to a two-lane collector with center left turn lane.
- *Rosecrans Street, between Lytton Street and Sports Arena Boulevard* – Improve this section of Rosecrans Street from a six-lane major to a six-lane prime arterial, which would require limiting driveway access. *(Note: A conceptual drawing of the improvements along Rosecrans Street are provided as Figure 3-6).*



Midway-Pacific Highway and
Old Town Community Plan Update

CHEN RYAN

Figure 3-1
Regional Access -
Midway-Pacific Highway Community

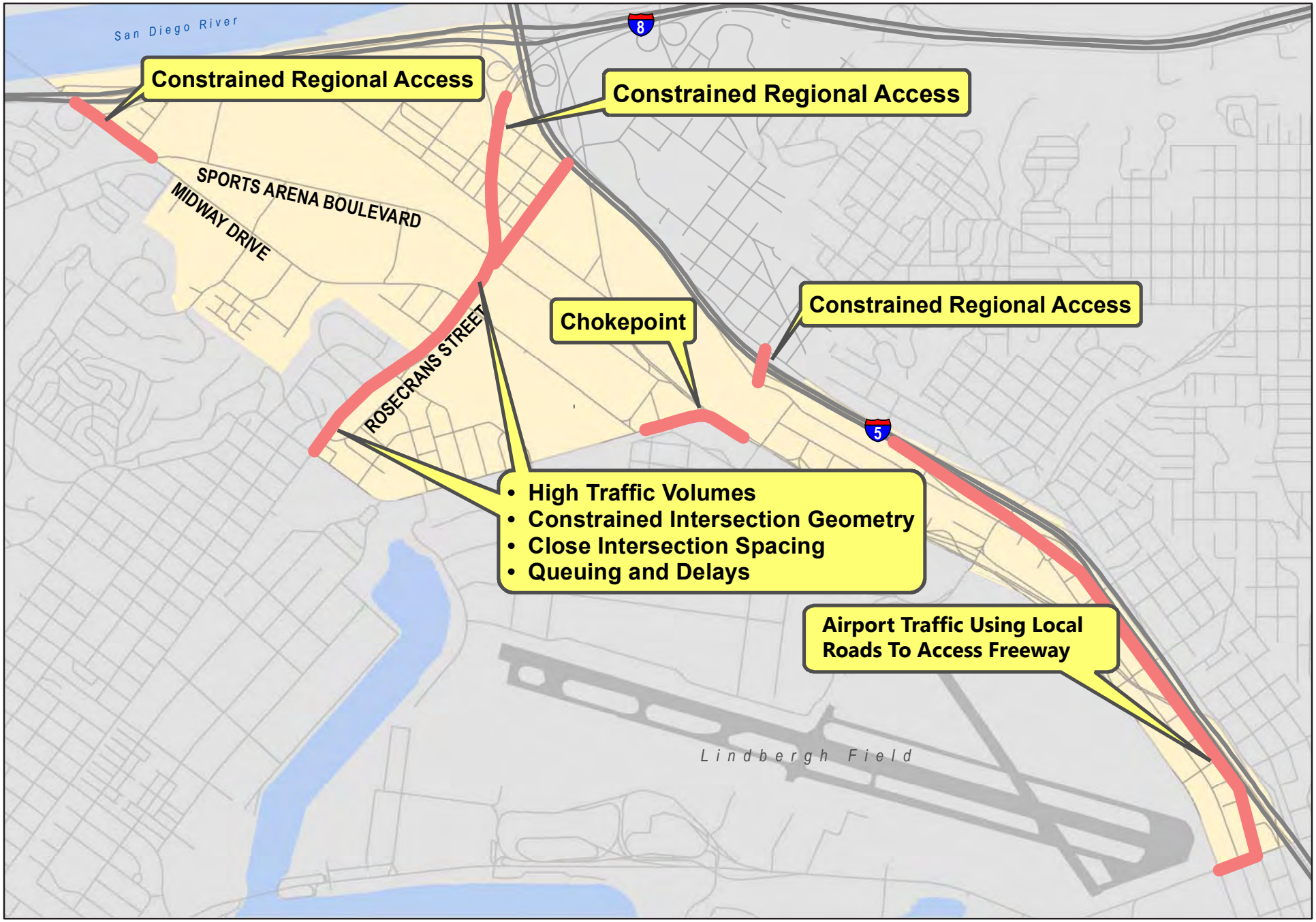


Figure 3-2
Identified Vehicular Issues and Needs -
Midway-Pacific Highway Community

Roadways (continued)

- *Rosecrans Street, between Sports Arena Boulevard and Taylor Street* – Construct a landscaped median along this section of Rosecrans Street. This will improve this section of Rosecrans Street to a four-lane major configuration. *(Note: A conceptual drawing of the improvements along this segment of Rosecrans Street is provided as Figure 3-7)*.
- *Hancock Street, between Kurtz Street and Rosecrans Street* – Widen this section of Hancock Street from a two-lane collector (one-way) to a three-lane major (one-way).
- *Hancock Street, between Old Town Avenue and Witherby Street* – Widen this section of Hancock Street from a two-lane collector to a four-lane collector.
- *Barnett Avenue, between Midway Drive and Pacific Highway* – Widen this section of Barnett Avenue from a four-lane major to a six-lane prime arterial.
- *W. Mission Bay Drive, between I-8 WB Ramps and I-8 EB Ramps* – Widen this section of W. Mission Bay Drive from a five-lane prime arterial to a six-lane prime arterial.
- *Camino Del Rio, Moore Street/Greenwood Street* – Extend the existing median to close the southbound left turn pocket along Camino Del Rio W at the intersection of Moore Street / Greenwood Street to reduce vehicular conflicts.

New Roadways

To provide better east/west connectivity throughout the Midway-Pacific Highway community and provide additional access to potential new developments within the existing "super blocks," the Preferred Plan proposes the following new roadways segments:

1. *Kemper Street Extension* – Kemper Street will be extended between Sports Arena Boulevard and Kurtz Street, connecting as the southwest leg of the Kurtz Street / Hancock Street intersection. The Kemper Street extension will be constructed as a two-lane collector with a continuous left-turn lane.
2. *Frontier Drive* – Frontier Drive will be a new roadway connecting between Sports Arena Boulevard and Kurtz Street. Frontier Drive will be located between the new Kemper Street extension and the Greenwood Street extension. Frontier Drive will be constructed as a two-lane collector with a continuous left-turn lane.
3. *Greenwood Street Extension* – Greenwood Street will be extended between Kurtz Street and Sports Arena Boulevard. Greenwood Street between Sports Arena Boulevard and Midway Drive will follow the alignment of the existing East Drive private street. Greenwood Street will be constructed as a two-lane collector.
4. *Charles Lindbergh Parkway* – Charles Lindbergh Parkway will be a new street connecting between Kurtz Street and Midway Drive. Charles Lindbergh Parkway will be located halfway between Rosecrans Street and the new Dutch Flats Parkway. Charles Lindbergh Parkway will be constructed as a two-lane collector with a continuous left-turn lane.
5. *Dutch Flats Parkway* – Dutch Flats Parkway will be a new roadway connecting between Sports Arena Boulevard and Barnett Avenue. Dutch Flats Parkway will be located between

the new Charles Lindbergh Parkway and Enterprise Street. Dutch Flats Parkway will be constructed as a two-lane collector with a continuous left-turn lane.

It should be noted that implementation of these new roadway segments would necessitate additional right-of-way and most likely require the redevelopment of adjacent properties. All roadways will be designed in accordance with the *City of San Diego Street Design Manual* and their corresponding classification. A summary of the roadway improvements in the Midway-Pacific Highway community is presented in Table 3.1.

Table 3.1 Summary of Roadway Improvements

Roadway	Segment	Existing Configuration	Recommended Classification
Segment Modifications			
Lytton St / Barnett Ave	Rosecrans St and Midway Dr	4-Lane Collector W/ CLTL	4-Lane Major
Sports Arena Blvd	Interstate 8 and Rosecrans St	5-Lane Major	6-Lane Major
Sports Arena Blvd	Rosecrans St and Pacific Hwy	Sub-Collector	2-Lane Collector W/ CLTL
Kurtz St	Rosecrans St and Pacific Hwy	2-Lane Collector	2-Lane Collector W/ CLTL
Rosecrans St	Lytton St and Sports Arena Blvd	6-Lane Major	6-Lane Prime
Rosecrans St	Sports Arena Blvd and Taylor St	4-Lane Collector W/ CLTL	4-Lane Major
Hancock St	Kurtz St and Rosecrans St	2-Lane Collector (One-Way)	3-Lane Major (One-Way)
Hancock St	Old Town Ave and Witherby St	2-Lane Collector	4-Lane Collector
Barnett Ave	Midway Dr and Pacific Hwy	4-Lane Major	6-Lane Prime
W. Mission Bay Dr	I-8 WB Ramps and I-8 EB Ramps	5-Lane Prime	6-Lane Prime
New Roadways			
Kemper St	Sports Arena Blvd and Kurtz St	Does Not Exist	2-Lane Collector W/CLTL
Frontier Dr	Sports Arena Blvd and Kurtz St	Does Not Exist	2-Lane Collector W/ CLTL
Greenwood St	Kurtz St and Sports Arena Blvd	Does Not Exist	2-Lane Collector
Charles Lindbergh Pkwy	Kurtz St and Midway Dr	Does Not Exist	2-Lane Collector W/ CLTL
Dutch Flats Pkwy	Sports Arena Blvd and Barnett Ave	Does Not Exist	2-Lane Collector W/ CLTL

Source: Chen Ryan Associates (June 2016)

Intersections

Rosecrans Street / Sports Arena Boulevard / Camino Del Rio West:

- Remove the southbound free right-turn movement from Camino Del Rio West onto Sports Arena Boulevard and replace it with an exclusive right-turn lane.
- Allow southbound movements to continue on Sports Arena Boulevard through the intersection. It should be noted that vehicles would still not be able to access the southern leg of Sports Arena Boulevard from westbound Rosecrans Street or southwest bound Camino del Rio West.

Additional improvement concepts were also considered for the Rosecrans Street / Sports Arena Boulevard / Camino Del Rio West intersection, but ultimately not selected. These alternative concepts include the following:

Alternative 1: This alternative would allow full access to the southern leg of Sports Area Boulevard from all approaches of the intersection and remove the eastbound (Rosecrans Street) to northbound (Sports Arena Boulevard) left-turn movements. The eastbound left-turn movement was removed to limit the number of signal phases at the intersection and provide for more efficient signal timing patterns. The removal of the eastbound left-turn movement is consistent with the recommendations provided in the *Rosecrans Corridor Mobility Study (February 2010).*

With the implementation of this concept the Rosecrans Street / Sports Arena Boulevard / Camino Del Rio West intersection was projected to perform at acceptable levels (AM: LOS C / PM: LOS D) with minor queuing impacts. However, the community does not support the removal of the eastbound left-turn movement and therefore this alterative was removed.

Alternative 2: This alternative would allow full access to the southern leg of Sports Area Boulevard from all approaches, and keep the eastbound left-turn movement intact. Due to the additional intersection phases and cycle length required to allow full access to the southern leg of Sports Arena Boulevard, the intersection performed poorly under this alternative (AM: LOS D / PM: LOS E) with excessive queuing issues on both Rosecrans Street and Camino del Rio West. Due to the poor intersection performance and queuing issues this alternative was not selected.

Alternative 3: This alternative would remove traffic from the westbound approach of Rosecrans Street and reroute the traffic up Kurtz Street and then to Camino del Rio West. To accommodate this improvement Kurtz Street would be reconfigured from a one-way southbound roadway to a one-way northbound roadway, between Hancock Street and Rosecrans Street. Conversely, Hancock Street would need to be reconfigured as a one-way southbound roadway along the same section to complete the couplet. While this configuration does allow the Rosecrans Street / Sports Arena Boulevard / Camino Del Rio West intersection to operate at acceptable levels (AM: LOS C / PM: LOS D), it is projected to result in substantial queuing issues along the short segment of Kurtz Street between Camino del Rio West and Rosecrans Street (260 feet). This excessive queuing is projected to negatively impact the operations at the Kurtz Street / Camino del Rio West intersection as well as the Kurtz Street / Rosecrans Street intersection and cause significant congestion at these intersections. Due to these queuing issues this alterative was not selected.

Sports Arena Boulevard / Pacific Highway:

- Move intersection approximately 500 feet to the north.
- Re-align Sports Arena Boulevard to create a right-angle with Pacific Highway.
- Signalize the intersection.

- Provide an exclusive eastbound left-turn lane from Sports Arena Boulevard onto Pacific Highway.
- Provide an exclusive northbound left-turn lane from Pacific Highway onto Sports Arena Boulevard.

The proposed relocation of the Sports Arena Boulevard / Pacific Highway intersection meets the 500 feet minimum spacing requirements for intersections. An additional focus during the design phase needs to ensure the curved radii resulting from the intersection realignment will adhere to design standards.

Sports Arena Boulevard / West Point Loma Boulevard / Midway Drive

- Square up and control the westbound free right-turn movement from Sports Arena Boulevard onto Sports Arena Boulevard with the intersection.
- Remove the northbound free right-turn movement from Midway Drive onto Sports Arena Boulevard. The right-of-way will be used to extend the curb and create a curb bulb-out to reduce the pedestrian crossing distance. Right-turn movements will be permitted from the outside through lane.

Camino Del Rio and Moore Street / Greenwood Street

- Extend the existing median to close the southbound left turn pocket along Camino Del Rio W at the intersection of Moore Street / Greenwood Street to reduce vehicular conflicts. (This improvement is also noted in the "Roadway" subheading above.)

<u>Pacific Highway Corridor – Barnett Avenue /Witherby Street / Washington Street</u>

As part of this mobility study, downgrading the section between Barnett Avenue and Washington Street of Pacific Highway from an expressway to a 6-lane major arterial was discussed. The purpose of this downgrade would be to improve safety for vehicles, pedestrians, and cyclists, create a community gateway along Pacific Highway, and enhance the multimodal connections between the community and Downtown San Diego. Ultimately, the recommendation for the Preferred Plan is to carry forward the expressway classification between Barnett Avenue and Washington Street, and the other sections of Pacific Highway in this community, to remain or be developed as a 5-lane or 6-lane major arterial roadway.

One of the main challenges associated with downgrading the expressway is bringing the Barnett Avenue and Witherby Street intersections to grade in order to meet the standards of a 6-lane major arterial roadway. The at-grade approach was not considered as part of the Mobility Study analysis; however, to fully understand the feasibility of these improvements, from both an engineering and constructability standpoint, an Engineering Feasibility Study is recommended. The Engineering Feasibility Study should analyze and address the following:

- The feasibility of bringing both interchanges to grade

- Multi-modal facility alternatives that do not require at-grade intersections (pedestrian and bicycle bridges, alternative multi-use urban path alignments, etc.)
- Addressing the existing flooding issues at both interchanges

Since it is unknown at this time if these improvements are feasible, they were not included in the technical analysis of the Preferred Plan. It is recommended that the feasibility of these improvements be further assessed and incorporated into a future plan. The Preferred Plan identifies Witherby Street as a 2-lane collector with continuous left-turn lane, however, the additional feasibility analysis may determine a need to widen Witherby Street to a 4-lane collector. A potential concept of what these improvements could look like is displayed in Figure 3-3. Additionally, the feasibility analysis may determine a need for additional improvements at Pacific Highway at West Washington Street that are not identified in this mobility study.

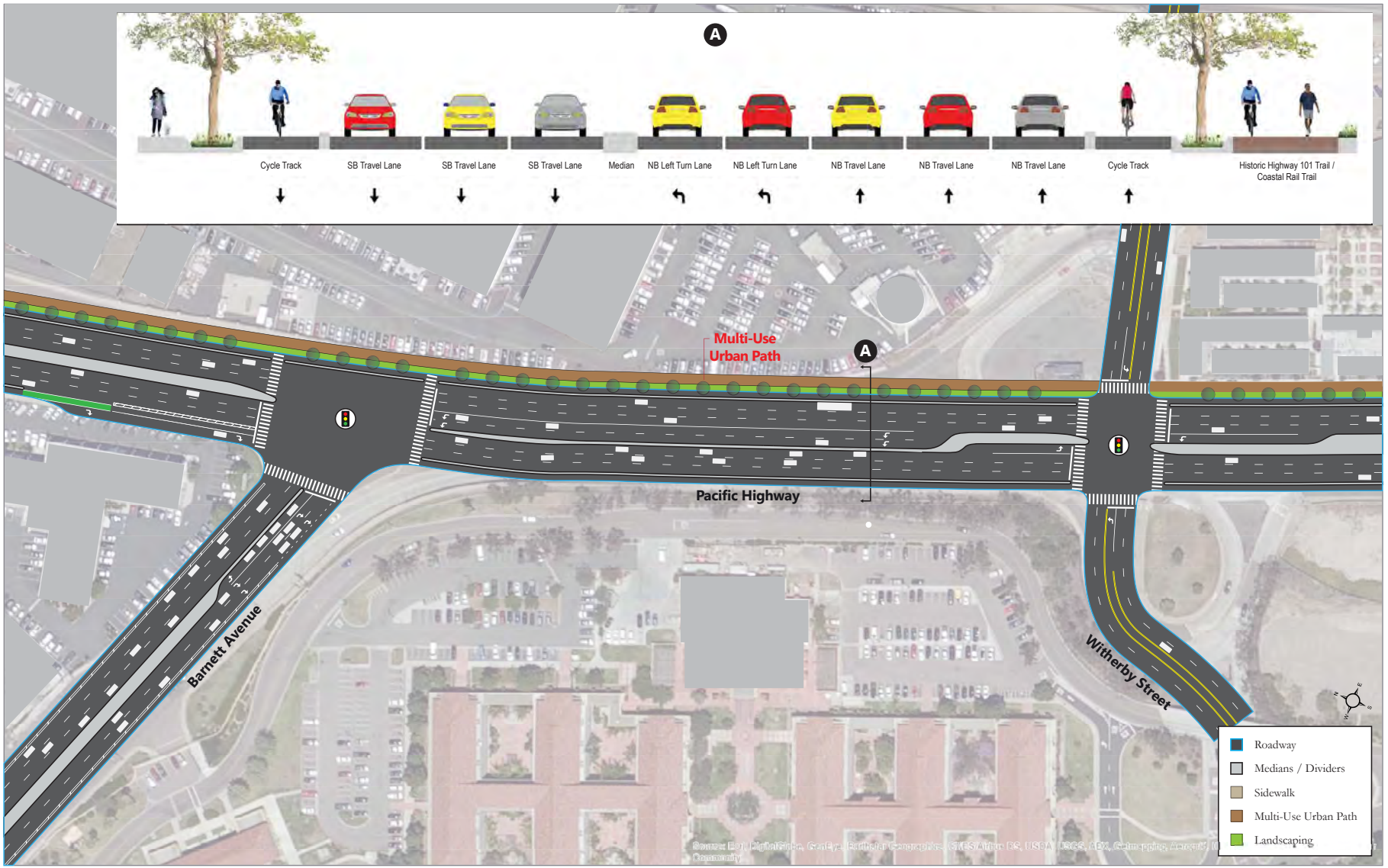
Based on the assumptions displayed in the Figure 3-3, the at-grade intersections would be anticipated to operate as follows:

- Barnett Avenue / Pacific Highway – AM: Delay 35.3 seconds, LOS D | PM: Delay 53.2 seconds, LOS D
- Witherby Street / Pacific Highway – AM: Delay 36.7 seconds, LOS D | PM: Delay 52.0 seconds, LOS D

Intersection Operations

Seven new intersections are recommended for the Midway-Pacific Highway community. Additionally, the roadway network was evaluated to identify intersection locations, both existing and new intersections, that would benefit from the implementation of a roundabout or signalization. A summary of recommended intersection improvements is displayed in Table 3.2. It is not known at this time if the implementation of a roundabout will be feasible at any or all intersections. A roundabout feasibility analysis will need to be performed once the new intersections and roadways are designed. Therefore, to be conservative, the analysis assumed that all new intersections would be signalized, unless otherwise noted. However, it is recommended that a roundabout be implemented in lieu of a signal at all new intersections, where feasible.

Traffic signal warrants were conducted at the intersections where signalization is recommended. Figure 4C-103 (CA) of the California Manual on Uniform Traffic Control Devices (MUTCD) 2012 Edition was utilized and all intersections would meet the warrants. Signal warrants worksheets are included in Appendix C.



This graphic is for conceptual purposes only. Further engineering study would be required at the project level prior to implementation.

Figure 3-3
Barnett Avenue and Witherby Street / Pacific Highway at-Grade Intersection Concepts

Table 3.2 Summary of Intersection Improvements

No.	Intersection	Improvement	Preferred Plan Control
8	Midway Drive / Charles Lindbergh Parkway	New intersection	Roundabout/Signalized
12	Kemper Street / Sports Arena Boulevard	Add north leg	Signalized
13	Sports Arena Boulevard / Frontier Drive	Add north leg	Signalized
14	Sports Arena Boulevard / Greenwood Street	Add north leg	Signalized
16	Sports Arena Boulevard / Charles Lindbergh Parkway	New intersection	Roundabout/Signalized
17	Sports Arena Boulevard / Pacific Highway	Relocate intersection and signalize	Signalized
18	Kurtz Street / Hancock Street / Kemper Street	Add south leg and signalize	Signalized
21	Kurtz Street / Pacific Highway	Signalize	Signalized
61	Kurtz Street / Frontier Drive	New intersection	Roundabout/SSSC
62	Kurtz Street / Greenwood Street	Add south leg and signalize	Signalized
63	Kurtz Street / Charles Lindbergh Parkway	New intersection	Roundabout/Signalized
64	Barnett Avenue / Dutch Flats Parkway	New intersection	Roundabout/Signalized
65	Midway Drive / Dutch Flats Parkway	New intersection	Roundabout/Signalized
66	Sports Arena Boulevard / Dutch Flats Parkway	New intersection	Roundabout/Signalized
N/A	Hancock Street / Greenwood Street	Signalize	Signalized

Source: Chen Ryan Associates (June 2016)

Freeway Improvements

There are no freeway improvements included in the Revenue Constrained alternative of *SANDAG's San Diego Forward, The Regional Plan (Adopted October 2015)* within the vicinity of the Midway-Pacific Highway community to be completed before this plan's horizon year (Year 2035).

I-8 / I-5 Ramp Connection – It should be noted that the missing I-8 East to I-5 North, and I-5 South to I-8 West ramps are included in the Unconstrained Revenue scenario of the Regional Transportation Plan (RTP); therefore, there is currently no funding mechanism for these ramps and they are not included in the Preferred Plan assessment. However, these ramps are needed to enhance the regional access for the community. A policy statement should be included in the Mobility Element recommending that the City of San Diego work with SANDAG and Caltrans to implement these ramps.

I-5 to Pacific Highway Ramps – Ramps connecting Interstate 5 to Pacific Highway are included in the RTP; however, since there is currently no funding mechanism for these ramps they are not included in the Preferred Plan assessment. These ramps are needed to enhance the regional access for the community. A policy should be included in the Mobility Element recommending that the City of San Diego work with SANDAG and Caltrans to implement these ramps.

3.3 Pedestrian Environment

3.3.1 Identified Pedestrian Needs

The Existing Conditions Report identified the following pedestrian issues/needs in the Midway-Pacific Highway community, as displayed in Figure 3-4:

Midway Drive / Sports Arena Boulevard / West Point Loma Boulevard Intersection – This is a major vehicular junction point within the community in which two major roadways (Sports Arena Boulevard and Midway Drive) intersect with two major regional access points (West Point Loma Boulevard connecting to both the Peninsula and Ocean Beach communities to the west, and West Mission Bay Drive and I-8 ramps). To accommodate the high intersecting traffic volumes there is currently a yield control northbound right-turn movement, a stop controlled southbound right-turn movement and a free westbound right-turn movement. The high traffic volumes and uncontrolled right-turn movements create an intimidating environment for pedestrians to cross.

East/West Connectivity – Due to the large block sizes within the community, there are currently few pedestrian corridors directly connecting the east and west sides of the community. Rosecrans Street is the only east/west corridor that currently spans the entire community from east to west.

Walkability Issues along Rosecrans Street and Camino Del Rio West – As mentioned above, Rosecrans Street is the only east/west pedestrian corridor that spans the entire length of the community and is the only corridor that connects to the Old Town Transit Center, located to the east. The retail and institutional uses along both Rosecrans Street and Camino Del Rio West are also major pedestrian attractions within the corridors. Currently both corridors have 5 - 7 foot sidewalks with no parkways or on-street parking to buffer pedestrians from vehicular traffic. The narrow sidewalks with a lack of buffer create an unfriendly pedestrian environment.

Rosecrans Street / I-5 Underpass – This is the only connection point for pedestrians between the Old Town Transit Center and the Midway-Pacific Highway community. The 200-foot wide underpass is poorly lit and has narrow sidewalks, with no parkways or on-street parking to buffer pedestrians from vehicular traffic, creating an unfriendly pedestrian environment.

Missing Sidewalk Facilities – There are currently no sidewalks provided along Sports Arena Boulevard from Rosecrans Street to Pacific Highway, with the exception of a small portion on its south side near the intersection of Rosecrans Street. This area currently predominantly serves industrial uses and attracts little pedestrian traffic; however, it is one of the few major north/south corridors that span the entire community.

Figure 3-4
Identified Pedestrian Issues and Needs -
Midway-Pacific Highway Community

Barnett Avenue / Pacific Highway – There is currently no pedestrian access to Pacific Highway from Barnett Avenue for pedestrians on the north side of Barnett Avenue. Pedestrians on the north side of the roadway heading east on Barnett Avenue hit a dead end and are forced to head north along Pacific Highway.

At-Grade Rail Crossings – Pedestrians accessing both the Washington Street and Middletown Trolley stations from Pacific Highway currently have to cross the rail right-of-way to access both stations. During gate down times, pedestrians may be delayed from accessing the station by on- coming trolleys or trains.

3.3.2 Pedestrian Improvements

Multi-Use Urban Paths

The Preferred Plan includes the implementation of several multi-use urban paths along key roadways, cumulatively creating an Urban Path system throughout the Midway-Pacific Highway community, which is consistent with recommendations in the Midway/Pacific Highway Urban Greening Plan. The individual multi-use urban paths are described below:

La Playa Trail – The La Playa Trail multi-use urban path will run along the south side of Rosecrans Street between Lytton Street and Pacific Highway. The path will be approximately 12 feet wide and replace the sidewalks on the southern side of the roadway. The ultimate right-of-way required along Rosecrans Street to implement this facility would be as follows:

- 127 feet between Lytton Street and Midway Drive.
- 116 feet between Midway Drive and Sports Arena Boulevard.
- 100 feet between Sports Arena Boulevard and Taylor Street.

It is recommended that pedestrian scale lighting be installed along the entire length of the path. The implementation of these improvements may necessitate acquiring additional right-of-way along the corridor.

Bay-to-Bay – The Bay-to-Bay multi-use urban path will be constructed along Sports Arena Boulevard, Lytton Street / Barnett Avenue, Kemper Street, and a connecting segment along the proposed Dutch Flats Parkway to mimic the previous Community Plan's Bay-to-Bay proposed canal alignment. The path will run along the southeast side of the Kemper Street extension between Kurtz Street and Sports Arena Boulevard, along the northeast side of Sports Arena Boulevard between Midway Drive and Dutch Flats Parkway, on the southern side of Dutch Flats Parkway between Barnett Avenue and Sports Arena Boulevard, and on the south side of Lytton Street / Barnett Avenue between Rosecrans Street and Pacific Highway. The segment of path on Sports Arena Boulevard between West Point Loma Boulevard and the I-8 should be further evaluated regarding its placement, whether on the southwest, or northeast side of the roadway. The path will be 12 feet wide and replace the sidewalks on the appropriate side of the roadway in each segment, as described.

The ultimate right-of-way required along each roadway segment to implement this facility is as follows:

- Kemper Street, between Kurtz Street and Sports Arena Boulevard: 90 feet
- Sports Arena Boulevard, between I-8 and Rosecrans Street: 117 feet
- Sports Arena Boulevard, between Rosecrans Street and Dutch Flats Parkway: 78 feet
- Lytton Street / Barnett Avenue, between Rosecrans Street and Pacific Highway: 90 feet
- Dutch Flats Parkway, between Barnett Avenue and Sports Arena Boulevard: 78 feet. An additional 30' of right-of-way will be required to provide for a linear park adjacent to Dutch Flats Parkway. This 30' may need to be obtained as public right-of-way or as an easement on privately held land.

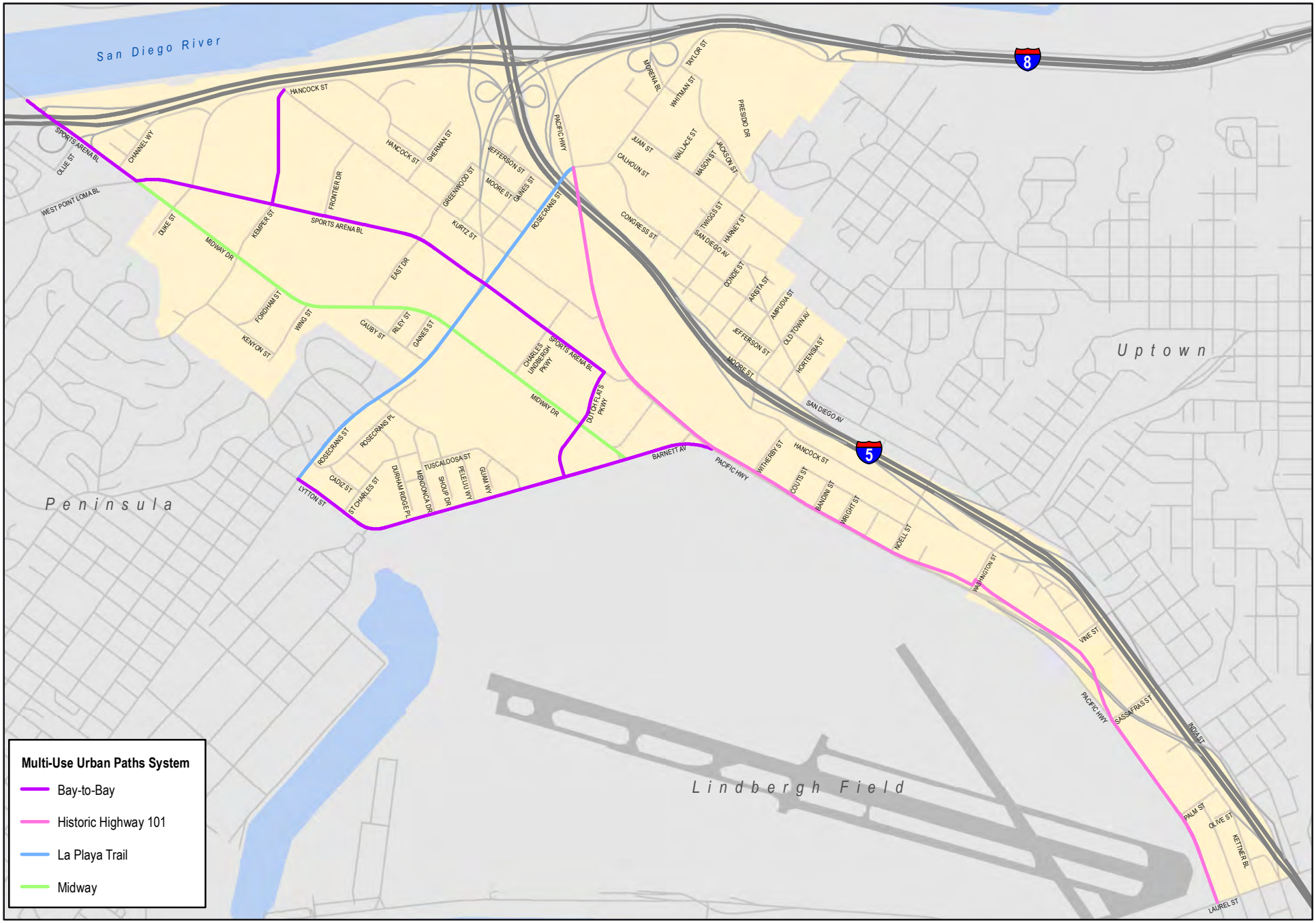
It is recommended that pedestrian scale lighting be installed along the entire length of the path. The implementation of these improvements may necessitate acquiring additional right-of-way along the corridor. *(Note: Figure 3-8 and Figure 3-10 provide conceptual drawings of the proposed Bay-to-Bay Path configuration along Sports Arena Boulevard)*.

Midway – The Midway multi-use urban path will run along the southwest side of Midway Drive between Sports Arena Boulevard and Barnett Avenue. The path will be approximately 12 feet and will replace the existing southwest sidewalk. The ultimate right-of-way required along Midway Drive to implement this facility would be 81 feet. It is recommended that pedestrian scale lighting be installed along the entire length of the path. The implementation of these improvements may necessitate acquiring additional right-of-way along the corridor.

Historic Highway 101 – The Historic Highway 101 multi-use urban path will run along the east side of Pacific Highway between Taylor Street and Laurel Street. The multi-use urban path will be 12 feet wide and will replace the existing sidewalk on the east side of the roadway. The ultimate right-of-way required along Pacific Highway to implement this facility would be 131 feet. It is recommended that pedestrian scale lighting be installed along the entire length of the path. The implementation of these improvements may necessitate acquiring additional right-of-way along the corridor.

Hancock Street Extension – Hancock Street will be extended between Midway Drive and Sports Arena Boulevard as a pedestrian and bicycle connection. This segment will not be open to vehicular traffic. *(Note: This pedestrian and bicycle connection, which is located just southeast of the W. Point Loma Boulevard / Sports Arena Boulevard / Midway Drive intersection, is illustrated in Figure 3-8 and Figure 3-10).*

The complete Multi-Use Urban Path system is displayed in Figure 3-5. Figure 3-6 and 3-7 provide concept drawings of the proposed La Playa Trail configuration along Rosecrans Street. Figure 3-8 displays a concept drawing of the Bay-to-Bay Path along Sports Arena Boulevard, north of Rosecrans Street. Figure 3-9 provides a concept drawing of the proposed Midway Path configuration along Midway Drive.



Midway-Pacific Highway and
Old Town Community Plan Update

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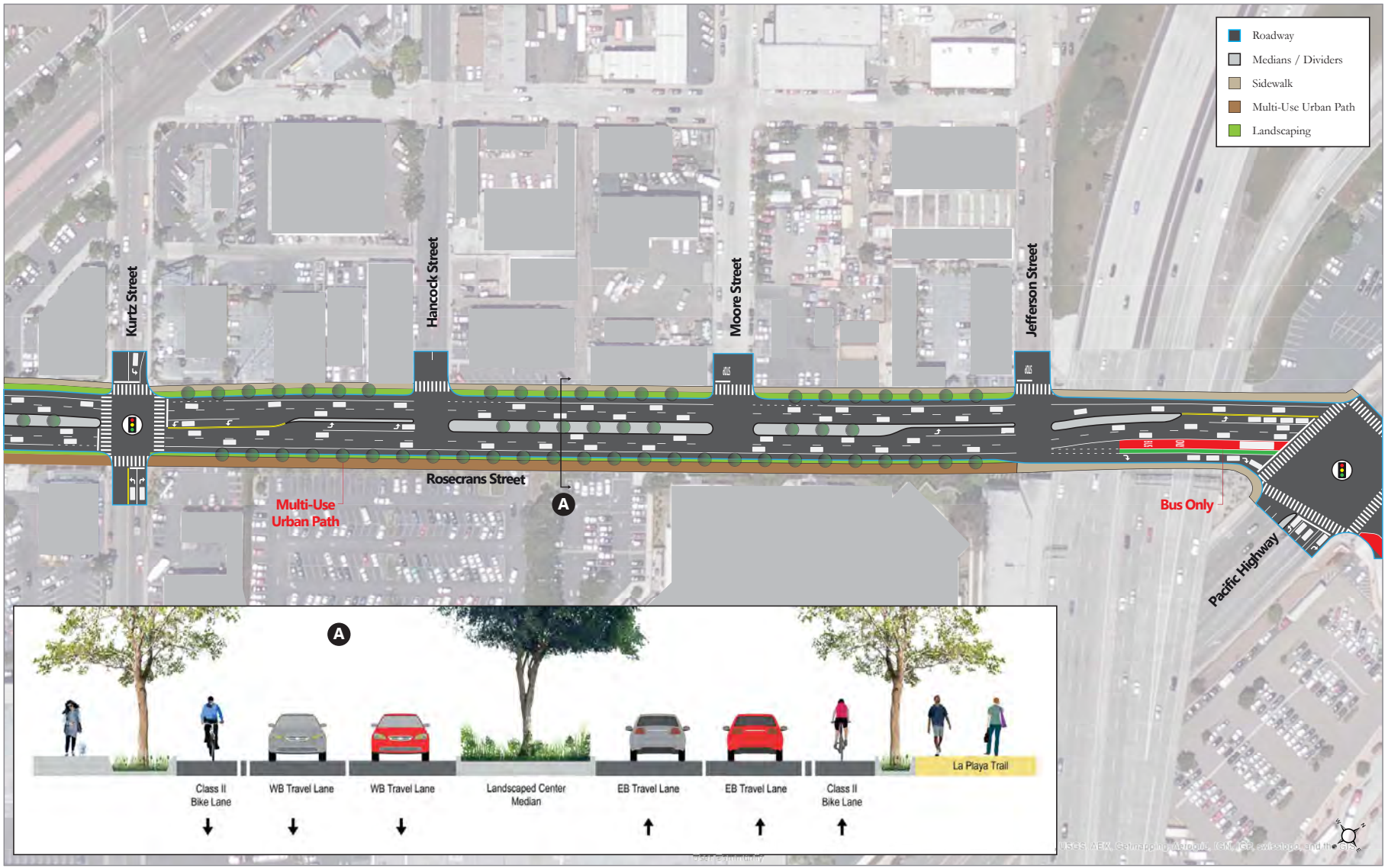
Figure 3-5
Multi-Use Urban Paths System

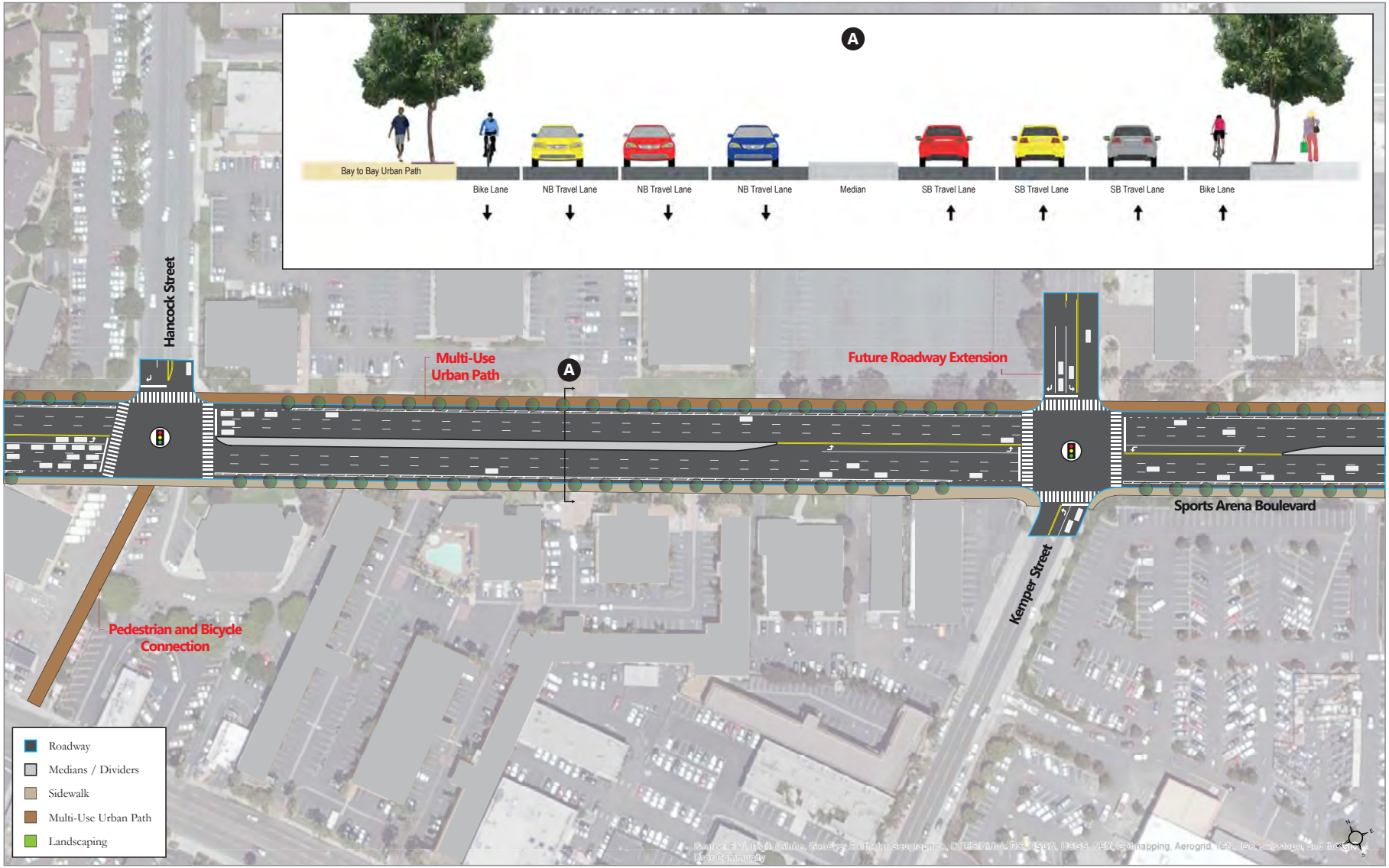
This graphic is for conceptual purposes only. Further engineering study would be required at the project level prior to implementation.

Figure 3-6
Rosecrans Street with La Playa Trail - West of Midway Drive



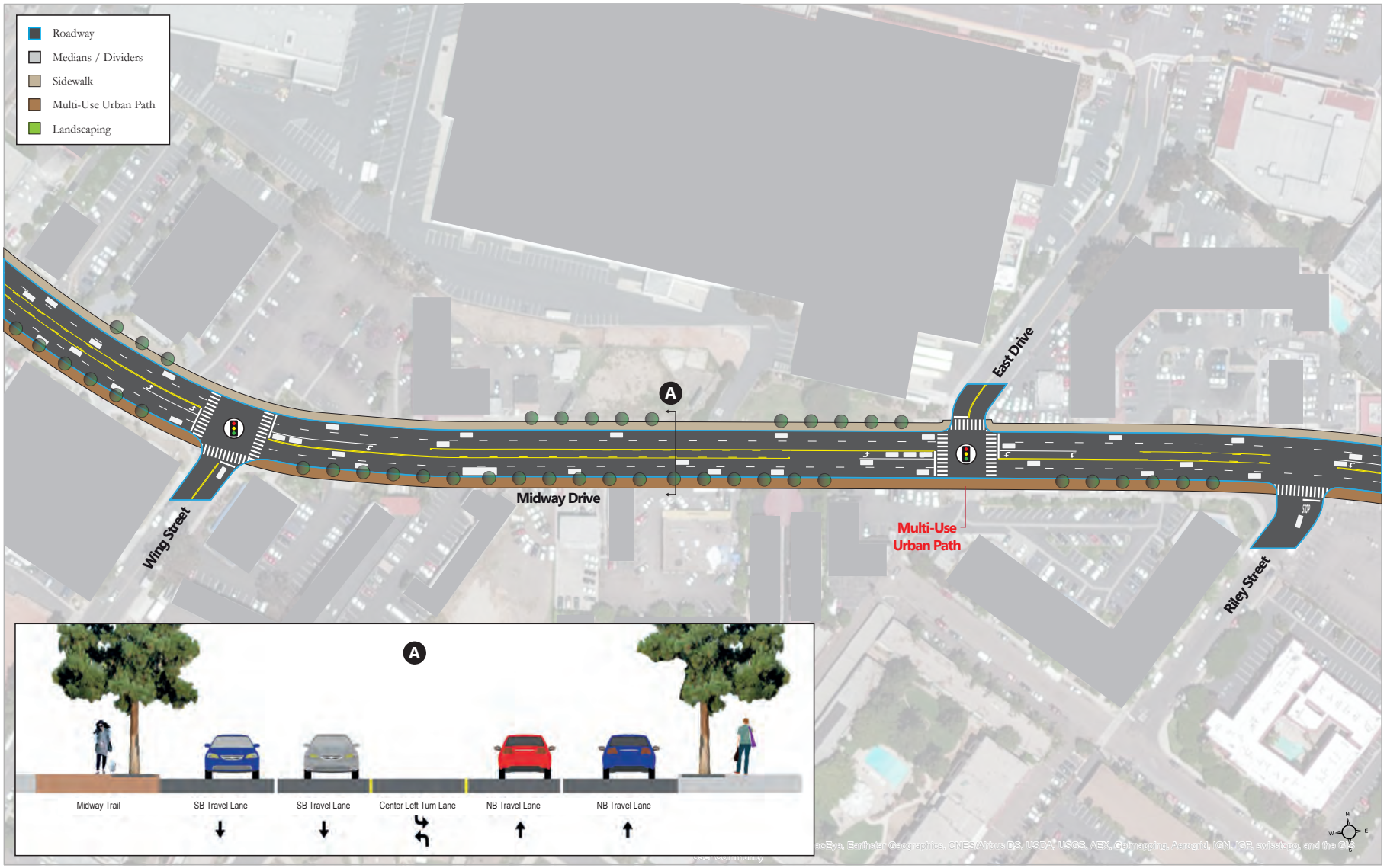
This graphic is for conceptual purposes only. Further engineering study would be required at the project level prior to implementation.

Figure 3-7
Rosecrans Street with La Playa Trail - East of Sports Arena Boulevard



This graphic is for conceptual purposes only. Further engineering study would be required at the project level prior to implementation.

Figure 3-8
Sports Arena Boulevard with Bay to Bay Trail - North of Rosecrans Street



This graphic is for conceptual purposes only. Further engineering study would be required at the project level prior to implementation.

Figure 3-9
Midway Drive with Midway Trail -
North of Rosecrans Street

Street Trees

The Preferred Plan includes the implementation of street trees along the following roadway corridors, which is consistent with the Midway/Pacific Highway Urban Greening Plan:

- Barnett Avenue, between Rosecrans Street and Pacific Highway
- Midway Drive, between Sports Arena Boulevard and Barnett Avenue
- Sports Arena Boulevard, between West Mission Bay Drive and Rosecrans Street
- Pacific Highway, between Taylor Street and Laurel Street
- Rosecrans Street, between Midway Drive and Taylor Street

Intersections

All crossing points at intersections should be upgraded to include the following:

- ADA compliant pedestrian ramps
- High visibility continental cross-walks
- Advanced stop bar placement
- Pedestrian count down signals

New Sidewalks

Sidewalk facilities will be implemented along the following roadways:

- Midway Drive, between Bogley Drive and Barnett Avenue
- Jessop Lane, between Enterprise Street and Barnett Avenue
- St. Charles Street, between Lytton Street and Cadiz Street
- Kemper Street, Kenyon Street to Midway Drive (south side)
- Sports Arena Boulevard, between Rosecrans Street and Pacific Highway (southwest side)
- Kurtz Street, between Rosecrans Street and Pacific Highway
- Pacific Highway, between Couts Street and Washington Street (southwest side)
- Witherby Street, between Hancock Street and Pacific Highway
- Hancock Street, between Witherby Street to 465 ft south of Witherby Street (south side)

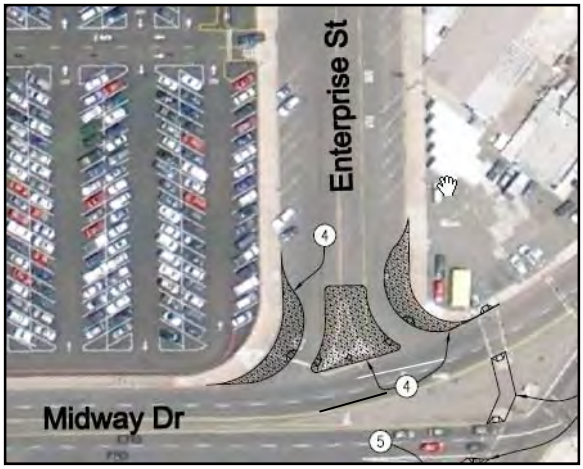
Specific Pedestrian-Related Intersection Improvements:

Midway Drive / Enterprise Street (Shown to the Right):

- Install bulb-outs and a pedestrian refuge island on the northeast leg of the intersection.

West Palm Street / Kettner Boulevard (intersection adjacent to the I-5 pedestrian bridge)

- Install bulb-outs on north leg of the intersection.
- Install continental cross-walk on the north leg of the intersection.
- Install a Pedestrian Hybrid Beacon on the north leg of the intersection (if warrants are met).



Conceptual Drawing from Phase IV of the City of San Diego Pedestrian Master Plan

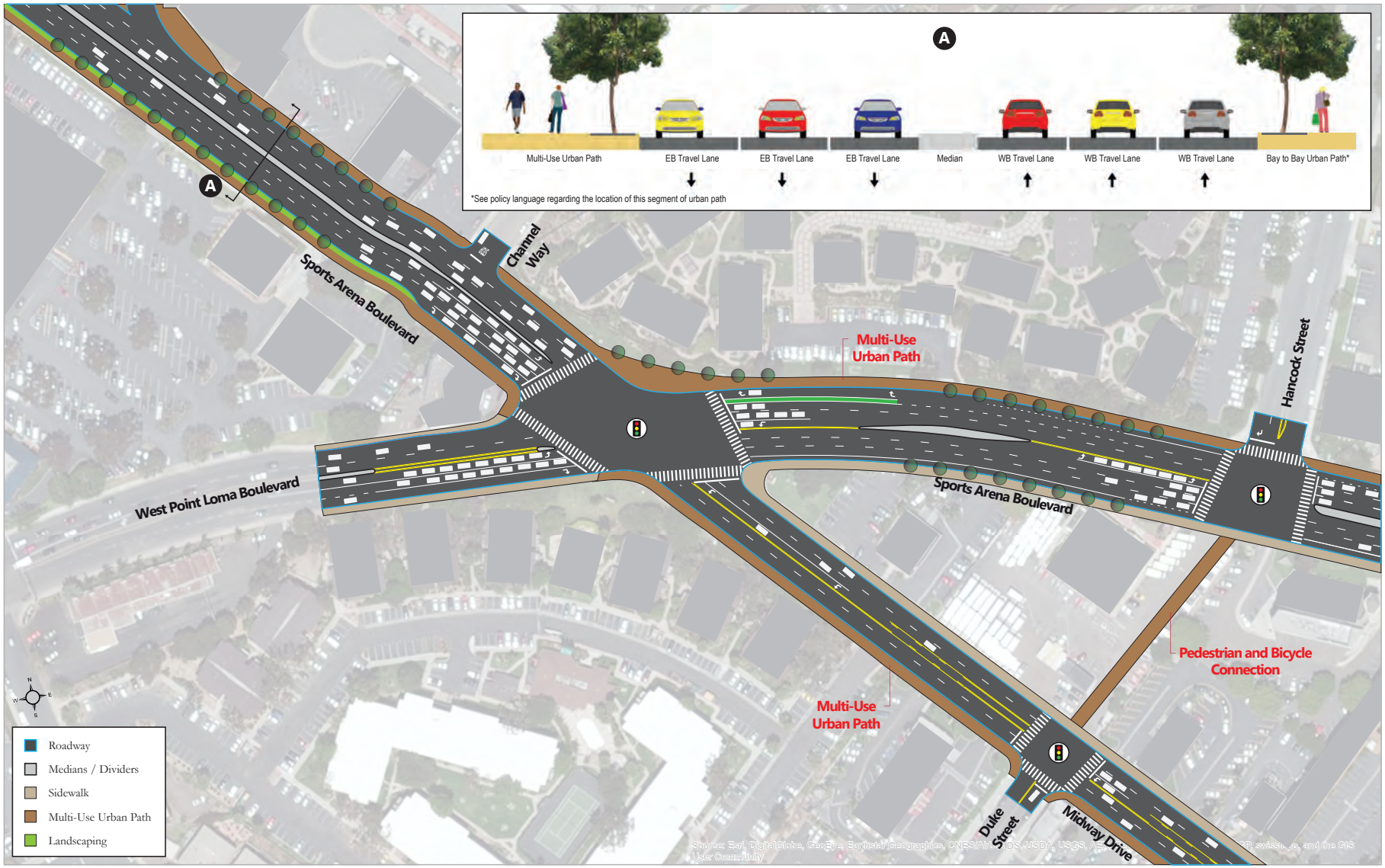
Sports Area Boulevard / West Point Loma Drive / Midway Drive

- Remove all free-right turn movements, which will decrease pedestrian crossing-distances.
- Improve the right-of-way with landscaping to improve the pedestrian environment.

Figure 3-10 displays a concept drawing of the proposed intersection improvements.

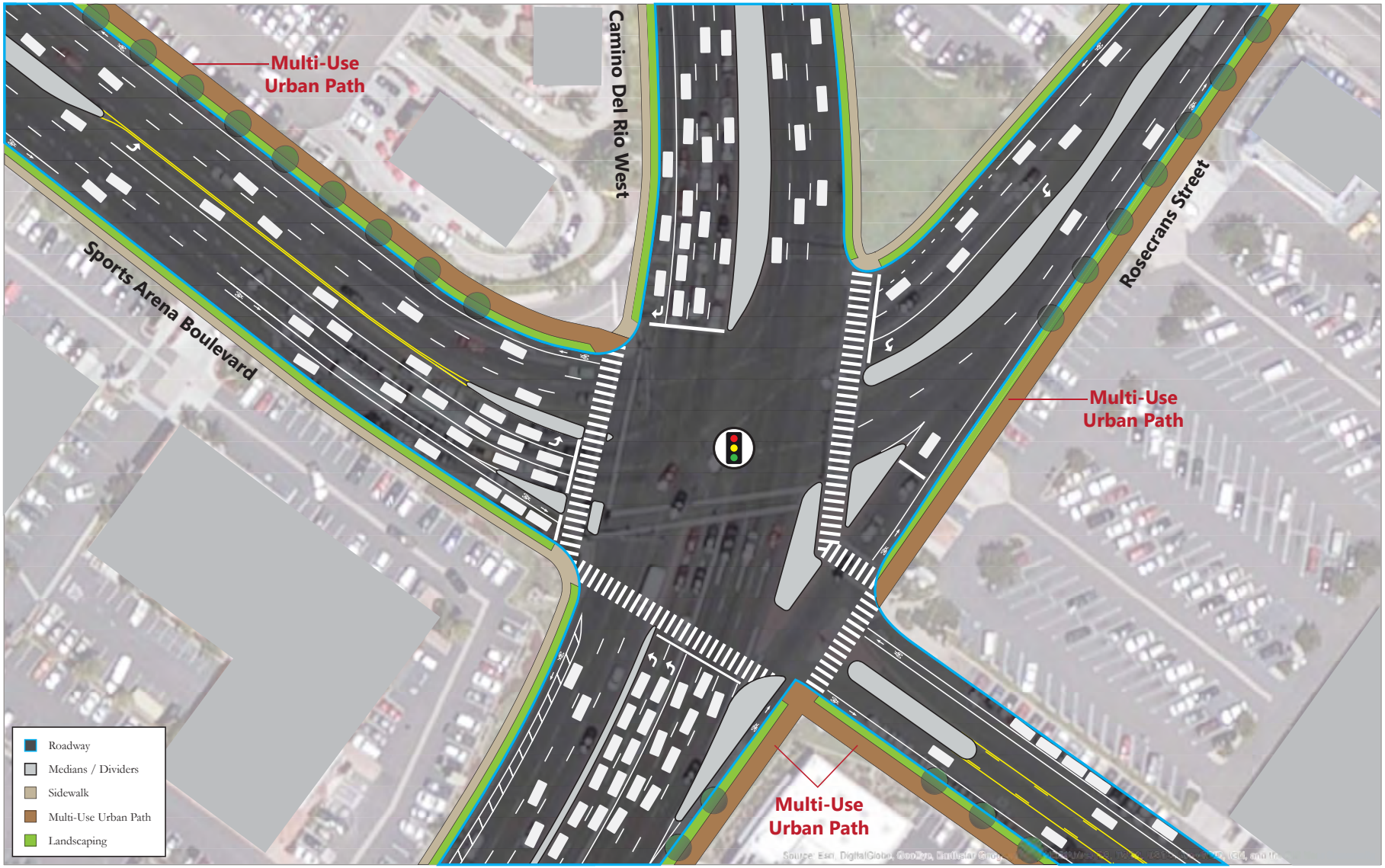
Sports Arena Boulevard / Rosecrans Street / Camino Del Rio West

- Remove the southbound free right-turn movement from Camino Del Rio West onto Sports Arena Boulevard and replace it with an exclusive right-turn lane, which will improve pedestrian safety while crossing the intersection. Figure 3-11 displays a concept drawing of the proposed intersection improvements.



This graphic is for conceptual purposes only. Further engineering study would be required at the project level prior to implementation.

Figure 3-10
Sports Arena Boulevard / West Point Loma Boulevard / Midway Drive - Proposed Pedestrian Improvements



This graphic is for conceptual purposes only. Further engineering study would be required at the project level prior to implementation.

Figure 3-11
Sports Arena Boulevard / Rosecrans Street / Camino Del Rio West - Proposed Pedestrian Improvements

3.4 Cycling Environment

3.4.1 Identified Bicycle Needs

The Midway-Pacific Highway Community is located at a junction point for several regional bicycle facilities including both the Coastal Rail Trail (along Pacific Highway) and the Ocean Beach Bike Path (along the San Diego River). Local bicycle connections to the surrounding neighborhoods are also provided, such as Class II Bike Lanes between Midway-Pacific Highway and the Peninsula communities along Rosecrans Street. A Class III Bike Route is provided along West Mission Bay Drive and terminates at its intersection with W. Point Loma Boulevard / Sports Arena Boulevard. These regional and local connections, along with strong transit service and high intensity commercial and institutional land uses, create high cycling demands within this community.

However, as shown in Figure 3-12 there are currently no bicycle facilities along the major corridors traversing the Midway-Pacific Highway Community (Midway Drive, Sports Arena Boulevard and Rosecrans Street) to accommodate the high bicycle demand. These corridors also have high vehicular traffic volumes and speeds as well as numerous conflict points (intersections, driveways, and alleyways) between motorists and cyclists, creating an uncomfortable environment for cyclists. Figure 3-5 displays the locations of issues/need, mainly defined as high cycling demand corridors that lack bicycle facilities and have high vehicular traffic volumes and speed.

3.4.2 Bicycle Improvements

The Bicycle Network under the Preferred Plan Conditions is shown in Figure 6-10 in this report. The recommended bicycle facilities proposed in this plan are consistent with and improve upon the recommendations outlined in The City of San Diego Bicycle Master Plan. The Preferred Plan proposes to implement the following bicycle facilities within the Midway-Pacific Highway Community:

<u>In Road Facilities</u>

- Class II Buffered Bike Lanes in both directions along Lytton Street / Barnett Avenue between Rosecrans Street and Pacific Highway.
- Class IV One-Way Cycle Tracks in both directions along Pacific Highway between Taylor Street and Laurel Street. This cycle track continues through the Old Town community, north to Sea World Drive.
- Class II Buffered Bike Lanes in both directions along Rosecrans Street between Lytton Street and Pacific Highway.
- Class II Buffered Bike Lanes in both directions along Sports Arena Boulevard between W. Point Loma Boulevard and Pacific Highway.
- Class II Bike Lanes in both directions along Hancock Street between Old Town Avenue and Noell Street.
- Class II Bike Lanes along the south side of Hancock Street/Kettner Boulevard between Noell Street and Laurel Street.

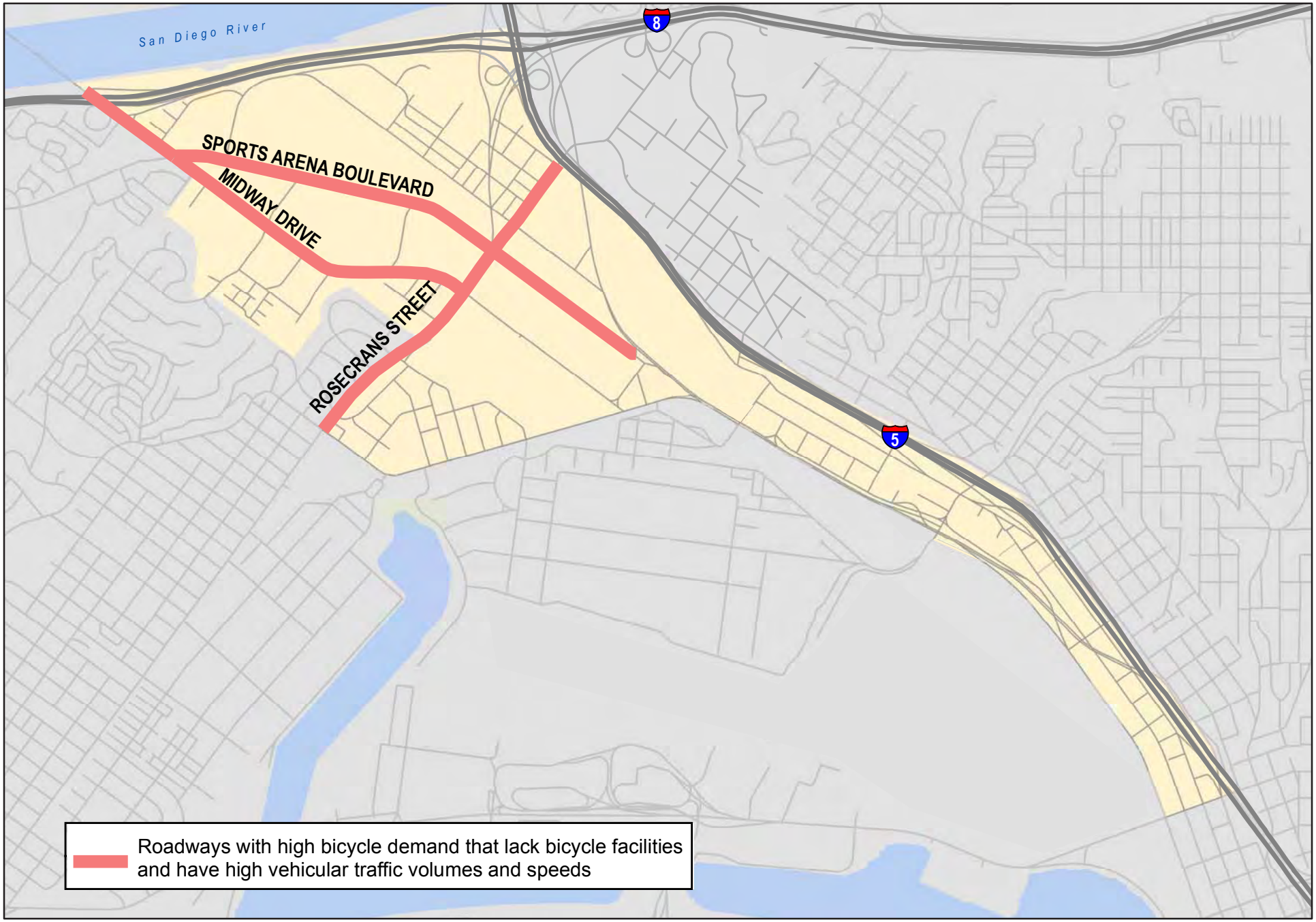


Figure 3-12
Bicycle Network Issues and Needs -
Midway-Pacific Highway Community

In Road Facilities (continued)

- Class II Buffered Bike Lanes in both directions along Kemper Street between Kenyon Street and Kurtz Street.
- Class IV Cycle Track on the north side of Washington Street between Pacific Highway and Interstate 5.
- Class II Bike Lanes in both directions along Old Town Avenue between Hancock Street and San Diego Avenue.
- Class II Buffered Bike lanes in both directions along Frontier Drive between Sports Arena Boulevard and Kurtz Street.
- Class II Buffered Bike lanes in both directions along Charles Lindbergh Parkway between Midway Drive and Kurtz Street.
- Class III Bicycle Route on Kurtz Street between Hancock Street and Rosecrans Street.
- Class III Bicycle Route on Noell Street between Pacific Highway and Hancock Street.
- Class III Bicycle Route on Hancock Street between Sports Arena Boulevard and Rosecrans Street.
- Class II Bike Lanes in both directions along Witherby Street between Pacific Highway and Hancock Street (The inclusion of bike lanes along this street would be determined by the available road width for these facilities; see section 3.2.2 for a discussion of a feasibility analysis to determine a need to widen Witherby Street)
- Class II Bike Lanes in both directions along Sassafras Street between Pacific Highway and Interstate 5.

Multi-Use Urban Paths

- Class I Multi-Use Urban Path connection, as an extension of Hancock Street between Sports Arena Boulevard and Midway Drive.
- Class I Multi-Use Urban Path along the south side of Rosecrans Street between Lytton Street and Pacific Highway.
- Class I Multi-Use Urban Path along the south side of Lytton Street / Barnett Avenue between Rosecrans Street and Pacific Highway.
- Class I Multi-Use Urban Path along the west side of Midway Drive between Sports Area Boulevard and Barnett Avenue.
- Class I Multi-Use Urban Path along the southwest or northeast side of Sports Arena Boulevard between I-8 and Midway Drive (to be determined by further study upon implementation), and on the northeast side of Sports Arena Boulevard between Midway Drive and Dutch Flats Parkway.
- Class I Multi-Use Urban Path along the south side of Dutch Flats Parkway between Barnett Avenue and Sports Arena Boulevard.
- Class I Multi-Use Urban Path along the east side of Pacific Highway between Taylor Street and Laurel Street.
- Class I Multi-Use Urban Path along the southeast side of Kemper Street between Sports Arena Boulevard and Kurtz Street.

3.5 Public Transit Service and Facilities

3.5.1 Identified Transit Needs

Underserved Areas – As shown in Figure 3-13, the following areas within the Midway-Pacific Highway Community are located beyond a quarter mile of a bus stop or transit station, indicating potentially poor levels of transit access:

- Barnett Avenue, between Truxtun Road and Midway Drive
- The northeast portion of the community (east of Kurtz Street and north of Sherman Street)
- Pacific Highway, between Wright Street and Noell Street
- Pacific Highway, between Vine Street and Sassafras Street

3.5.2 Transit Improvements

SANDAG's San Diego Forward, The Regional Plan (Adopted October 2015) indicates that a number of transit improvements are planned for the Midway-Pacific Highway Community, prior to this plan's Year 2035 horizon year, including:

Local Bus Service – Increase local bus service in key corridors to 10 minute headways programmed and scheduled for Year 2035.

Rapid Bus Route 28 – By the Year 2035, a new rapid bus route will be implemented providing service between Point Loma and Kearny Mesa via the Old Town Transit Center.

San Diego International Airport Intermodal Transit Center (ITC) – The ITC will act as an important hub connecting all modes of transportation accessing and departing from Lindbergh Field. The ITC is planned to be located on the north end of the airport, just south of Interstate 5 between Washington Street and Sassafras Street. The ITC is being planned as a major transit hub connecting all three existing trolley lines (Blue, Green and Orange), the COASTER, Amtrak, new MTS Express Bus routes directly serving the airport, several local MTS bus routes and the planned California High Speed Rail system. In addition to the transit connections, the ITC is planned to provide the following:

- 360 new parking spaces
- 126,000 SF of new retail uses
- Direct access to I-5 / via the Pacific Highway on/off-ramps
- Grade separation of the Washington Street and Sassafras at-grade rail crossings
- New grade separated crossing at Vine Street
- Raised bicycle lanes and cycle tracks on the street surrounding the ITC
- Wider sidewalks around both the ITC and new retail uses
- Curb extensions and planting/parking strips as well as provide new opportunities to employ green street strategies on impacted/new roadways.

The ITC is anticipated to be constructed and operational by the Year 2035.

Midway-Pacific Highway and
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Figure 3-13
Transit Coverage -
Midway-Pacific Highway Community

Transit Priority Improvements

Pacific Highway - Pacific Highway serves several express bus routes that link multiple communities. It is recommended that, as Pacific Highway is redeveloped, transit priority measures such as queue jumper lanes and transit priority signals be implemented at all signalized intersections along Pacific Highway between Taylor Street and Laurel Street.

Rosecrans Street – Rosecrans Street east of Camino Del Rio West currently serves four MTS bus Routes (8, 9, 28 and 35). A queue jumper lane and transit signal have already been implemented on the eastbound approach at the Taylor Street / Rosecrans Street and Pacific Highway intersection. Similar transit priority improvements should also be examined for feasibility at the Rosecrans Street / Camino Del Rio West / Sports Arena Boulevard intersection to allow westbound buses (Routes 8, 9 and 35) to turn right onto Sports Arena Boulevard and avoid congestion.

New Roadway Connections – The proposed new roadway connections can serve as alternative east/west routes for busses traveling through the community. Rerouting to these new facilities, if possible, may help avoid the congestion on Rosecrans Street. It is recommended that after the construction of any of the new roadways, the City of San Diego coordinate with MTS to examine opportunities for bus rerouting.

3.6 Currently Planned Improvements

The following section outlines the mobility improvements that are currently planned within the Midway-Pacific Highway community. Some improvements were too minor to incorporate at the community plan level, while others are mitigation measures from projects within the area and are not the responsibility of the community plan. Additionally, the pending improvements contained within the existing community Public Facilities Financing Plan are outlined and identified whether they are consistent with the Preferred Plan.

3.6.1 Auto

West Mission Bay Drive Bridge over San Diego River, CIP Project S00871 – the proposed City project will replace the existing bridge with a 6-lane bridge having a northbound and southbound Class I bicycle facility and pedestrian sidewalks. The project is in the final design phase and construction is estimated to start in July 2017. Improvements from this project were analyzed and its design was considered to develop recommendations in this study.

Midway/Pacific Highway Corridor Public Facilities Financing Plan, 2004 – this document contains several roadway improvements that have not yet been completed. It should be noted that all of these improvements are unfunded and currently not scheduled for implementation.

Signal Modifications:

- Barnett Avenue / Midway Drive (Project T7) – *Improvement has been completed and is consistent with the Preferred Plan.*

- Pacific Highway / West Washington Street (Project T29) – *Improvement is consistent the Preferred Plan.*

Extensions/New Streets:

- Extension of Barnett Avenue from Pacific Highway to Old Town Avenue (Project T8) – *Improvement is no longer recommended under the Preferred Plan.*
- Extension of Kemper Street as a four-lane collector from Sports Arena Boulevard to Hancock Street (Project T14) – *Improvement changed under the Preferred Plan.*
- New four-lane collector street connecting Sports Arena Boulevard and Midway Drive (Project T13) – *Improvement changed under the Preferred Plan.*

Street Widening:

- Improve Kurtz Street to a four-lane major between Rosecrans Street and Pacific Highway (Project T15) – *Improvement changed under the Preferred Plan.*
- Improve Sports Arena Boulevard to a four-lane collector between Rosecrans Street and Pacific Highway (Project T16) – *Improvement changed under the Preferred Plan.*
- *Add Project T23 and state whether improvement has changed under the Preferred Plan (we did not assumed it has in our cost estimating).*

Intersection Improvements

- Midway Drive / Sports Arena Boulevard (Project T17) – *Improvement changed under the Preferred Plan.*

Several roadway facility projects have been identified by the City of San Diego and are included on their Unfunded Transportation Needs List (8/5/2014). A list of the roadway related improvements located in the Midway-Pacific Highway Community is included in Appendix B. It should be noted that this list is updated on a regular basis and Appendix B only reflects a snapshot of the needs and planned improvements throughout the community at the time when this report was prepared.

3.6.2 Pedestrian

Public Facilities Financing Plans

The adopted Public Facilities Financing Plan for the Midway-Pacific Highway community currently contains planned pedestrian improvements that have not yet been completed, as follows:

- Install / upgrade 169 curb ramps to meet ADA standards (T25) – These improvements are currently not scheduled or funded. *Improvement is consistent with the Preferred Plan.*

Several pedestrian facility projects have been identified by the City of San Diego and are included on their Unfunded Transportation Needs List (8/5/2014). A list of the pedestrian improvements located in the Midway-Pacific Highway Community is included in Appendix B. It should be noted that this list is updated on a regular basis and Appendix B only reflects a snapshot of the needs and planned improvements throughout the community at the time when this report was prepared.

3.6.3 Bicycle

The City of San Diego's Transportation and Stormwater Department is currently resurfacing Barnett Avenue between Midway Drive and Pacific Coast Highway. The resurfaced pavement will include striping for a new Class II bicycle lane along the north side of Barnett Avenue between Pacific Highway and Midway Drive and green paint in areas of potential conflict zones between vehicular and bicycle traffic. The resurfacing project maintains the existing Class II bicycle facilities in this area on both sides of Barnett Avenue and enhances each facility with a 2' buffer on both sides of the roadway.

3.6.4 Transit

As noted in section 3.5.2 the Preferred Plan in consistent with *SANDAG's San Diego Forward, The Regional Plan* (Adopted October 2015).

4.0 Old Town Community Preferred Plan

4.1 Development of the Preferred Plan

4.1.1 Identification of Issues and Needs

Existing mobility related issues and needs within the Old Town Community were identified in the *Community of Midway/Pacific Highway Corridor and Old Town Mobility Existing Conditions Report; September 2012 (Existing Conditions Report)*. The issues and needs identified in the Existing Conditions Report were used, in conjunction with the other planning efforts and the overall community vision, to develop the recommended mobility improvements presented in the Preferred Plan.

4.1.2 Development of Preferred Plan Improvements

Preferred Plan improvements were developed by first cross checking the mobility issues and needs identified in the Existing Conditions Report against the mobility issues and needs identified in several other on-going or recent planning efforts, including:

- I-8 Corridor Study (August 2016)
- San Diego Forward, The Regional Plan (October 2015)
- Riding to 2050, The San Diego Regional Bike Plan (2010)
- City of San Diego Bicycle Master Plan (December 2013)
- Phase II Visitor Oriented Parking Facilities Study of the Old Town Community (May 2002)
- City of San Diego Pedestrian Master Plan - Phase 4 (Dec 2013)
- Mid-Coast Corridor Transit Project, Transportation Impacts and Mitigation Report (Sept 2014)

Where possible, the Preferred Plan carried forward or maintained the relevant improvements from on-going or previous planning efforts which have been adopted or vetted by the community. New improvement strategies were then developed to address the existing issues and needs, as identified in the Existing Conditions Report, which have not been addressed in other planning efforts. Additional mobility improvements were also developed to accommodate the anticipated future growth within the community. The following sections outline the mobility issues and needs identified in the Existing Conditions Report and the associated improvements recommended under the Preferred Plan to alleviate them.

4.2 Street and Freeway System

4.2.1 Identified Street and Freeway Issues and Needs

Taylor Street – Taylor Street provides connections to three major regional roadway facilities. To the east, Taylor Street provides a connection to I-8 and the regional freeway system. To the west, Taylor Street connects with both Rosecrans Street (which connects to communities to the west), and to Pacific Highway (which connects to communities to the north and the south). Taylor Street

accommodates a high volume of both regional and local traffic. There are currently two identified roadway related issues along Taylor Street, as described below:

At-Grade Rail Crossing – Currently the BNSF and MTS trolley right-of-way crosses Taylor Street at-grade between Pacific Highway and Congress Street. Gate down times at this crossing typically last between 30 seconds to 3 minutes, depending on the number of vehicles and train cars. During these gate down times, all other modes of transportation must stop, causing impacts to traffic operations at the adjacent intersections. Train crossings at this location typically cause additional intersection delay, queuing and congestion.

Taylor Street between Presidio Drive and I-8 Ramps – Taylor Street east of Presidio Drive reduces from four-lanes to two, with narrow lane widths (10 feet). Traffic volumes along this segment are high (13,140 ADT) since it leads to an I-8 interchange, and far exceeds the roadway LOS D maximum capacity of 9,000 ADT. The narrow lane widths and high traffic volumes result in congestion along this segment in the eastbound direction accessing the freeway ramps during the PM peak hour.

San Diego Avenue between Ampudia Street and Old Town Avenue – This segment of San Diego Avenue connects the commercial uses along both Congress Street and San Diego Avenue to the I-5 interchange located at Old Town Avenue. This segment of San Diego Avenue is currently a two-lane roadway with an average daily traffic volume of 10,160, which far exceeds the roadway LOS D maximum capacity of 6,500 ADT. This results in reduced speeds and congestion in the northbound direction during both the AM and PM peak hours.

*Old Town Avenue between Moore Street and San Diego Aven*ue – Old Town Avenue provides a regional connection point between the community and I-5. This segment of Old Town Avenue is currently two-lanes with an ADT of 11,750, which far exceeds the roadway LOS D maximum capacity of 6,500 ADT. This results in reduced speeds and congestion in the northbound direction during the PM peak hour.

The identified roadway issues and needs within the Old Town Community are displayed in Figure 4-1.

4.2.2 Street and Freeway Improvements

Due to the historic nature of the community, the Preferred Plan does not propose any roadway widenings or significant roadway capacity improvements.

Intersections

Congress Street / San Diego Avenue / Ampudia Street:

- Convert intersection to all-way stop control
- Implement bulb-outs on all legs of the intersection
- Widen the sidewalks along the north side of San Diego Avenue

Figure 4-2 displays a concept drawing of the proposed intersection improvements.

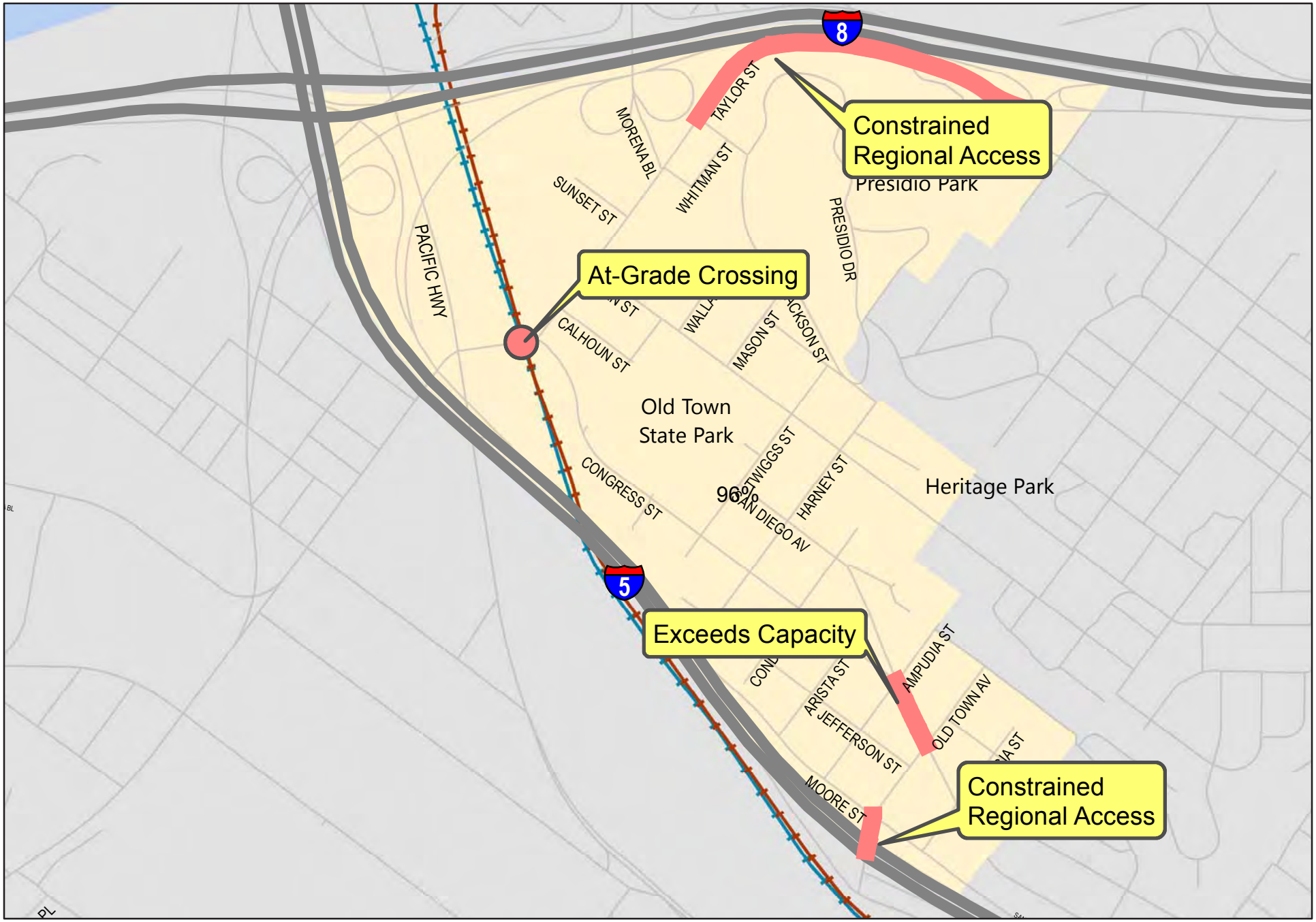


Figure 4-1
Identified Street and Freeway Related Issues and Needs - Old Town Community

This graphic is for conceptual purposes only. Further engineering study would be required at the project level prior to implementation.

Figure 4-2
Proposed Improvements - Congress Street / San Diego Avenue / Ampudia Street

Note: Converting the intersection control to a roundabout is also an option for this intersection. However, due to the tight spacing of the adjacent buildings there may not be enough right-of-way to accommodate a roundabout. Additional engineering study should be conducted to see if a roundabout is feasible at this intersection. If it is determined that a roundabout is feasible then it would become the preferred improvement.

Parking

San Diego Avenue between Twiggs Street and Conde Street has a large curb-to-curb width (50 feet) for a standard two-lane collector roadway (typically 40 feet wide). Therefore, in order to better utilize the curb-to-curb right-of-way, it is recommended that the parallel parking on the east side of the roadway be converted to angled parking, as shown in the figure below. The recommended improvement will not affect the capacity of the roadway and will increase the already constrained parking capacity within the Old Town community. Figure 4-3 displays a concept drawing of this improvement.

Freeway

There are no freeway improvements included in the Revenue Constrained alternative of *SANDAG's San Diego Forward, The Regional Plan (Adopted October 2015)* to be completed before this plan's Horizon Year (Year 2035). SANDAG prepared the Draft I-8 Corridor Study as a high level planning resource for potential improvements between Ocean Beach and Mission Valley. One of the identified improvements calls for the removal of all free movements from I-8 onto Morena Boulevard and "squaring up" each intersection. Since the plan has not yet been adopted and the improvements are not anticipated to be implemented until Year 2050, no improvements were assumed under Preferred Plan conditions.

This graphic is for conceptual purposes only. Further engineering study would be required at the project level prior to implementation.

Figure 4-3
Proposed San Diego Avenue Improvements between Twiggs Street and Conde Street

4.3 Pedestrian Environment

4.3.1 Identified Pedestrian Issues and Needs

The following pedestrian related issues and needs were identified in the Existing Conditions Report:

Taylor Street At-Grade Rail Crossing – Pedestrians accessing the Old Town Community or the Old Town Transit Center from Pacific Highway or Rosecrans Street currently have to cross the shared BNSF and MTS Trolley rail right-of-way. The Taylor Street at-grade rail crossing is over 100 feet wide, gate to gate, and pedestrians have to cross over four sets of rail tracks. During peak hours there are approximately 13 train crossing events lasting between 30 seconds and 3 minutes. During these times pedestrians are forced to wait until the train clears the crossing, causing excessive delays.

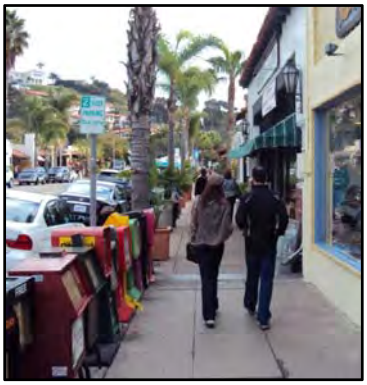
Old Town Transit Center Wayfinding – There is currently limited signage at the Old Town Transit Center directing pedestrians who are unfamiliar with the area, such as tourists, to the many restaurant, shops, historical monuments and structures, and parks in the community. Currently there is only a single map (identical to the map depicted in the picture below, which is located on San Diego Avenue) directing patrons to these various community features.

The Old Town San Diego Chamber of Commerce is implementing a wayfinding signage program that will install various signage types throughout the community to better inform patrons about how to access the various community features and help brand the community as a whole.

Missing Sidewalks – There are currently no sidewalks on Taylor Street, east of Presidio Drive and on the east side of San Diego Avenue, just north of Ampudia Street.

Connectivity between Community Features and Parks – There is currently no direct, convenient or identifiable path connecting the Old Town Transit Center, Old Town State Park and Presidio Park. Both parks are major community features attracting tourists and out of town guests who may not be familiar with the community or its amenities. The development of a clear, concise and well signed path connecting these three community assets would significantly improve pedestrian circulation within the community.

Sidewalk Capacity Issues – The retail and restaurant establishments along San Diego Avenue attract significant pedestrian traffic particularly during evenings and weekends. The sidewalks along San Diego Avenue are currently 7 to 8 feet wide with a limited parkway featuring street trees and planters. Retail shops and other merchants also take up part of the sidewalk with displays, racks and other attractions, as displayed in the photos to the right. During peak times, typical weekend evenings, pedestrian traffic along San Diego Avenue exceeds sidewalk capacity creating a congested pedestrian environment.



San Diego Avenue / Congress Street / Ampudia Street Intersection – This is currently a five legged intersection in which three of the approaches are stop-controlled (SB San Diego Avenue and EB & WB Ampudia Street) and the other two (NB San Diego Avenue and SB Congress Street) are free movements. There are also high vehicular traffic volumes crossing through the intersection along San Diego Avenue and Congress Street, which have no crosswalk facilities. This intersection is confusing and intimidating for pedestrians to cross due to the lack of traffic controls, high traffic volumes and missing crosswalk facilities.

The pedestrian related issues/needs within the Old Town Community, identified above, are displayed in Figure 4-4.

4.3.2 Pedestrian Improvements

Sidewalks

- Complete the sidewalks on the east side of San Diego Avenue, north of Ampudia Street.
- Complete sidewalks on Taylor Street, east of Presidio Drive.
- Implement sidewalks on the north side of Whitman Street.
- Complete sidewalks on Twiggs Street west of Congress Street.
- Implement sidewalks on Sunset Street between Juan Street and Mason Street.
- Implement a sidewalk on the west side of Mason Street between Juan Street and Jackson Street.
- Implement a sidewalk on the west side of Jackson Street between Presidio Drive and Mason Street

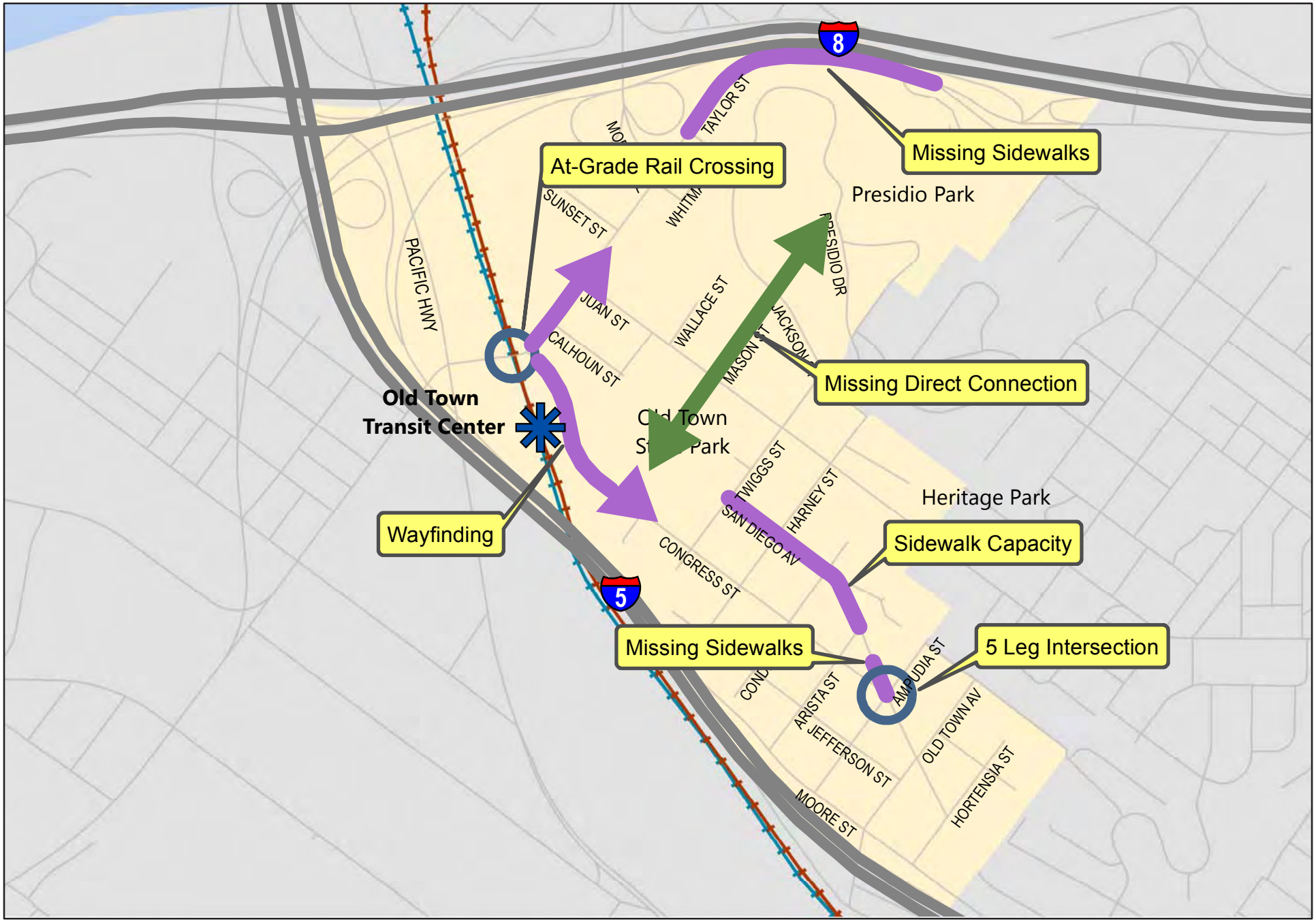
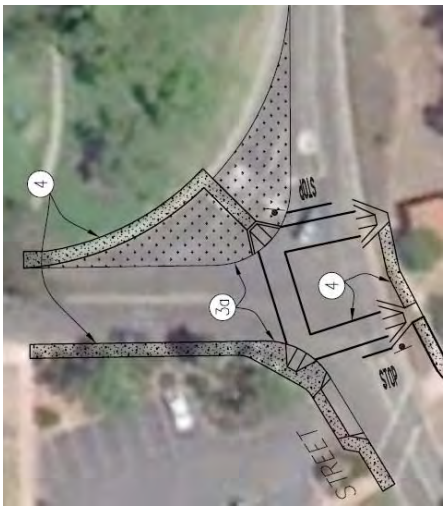


Figure 4-4
Identified Pedestrian Issues and Needs -
Old Town Community

Intersections

All crossing points at intersections should be upgraded to include the following:

- ADA compliant pedestrian ramps
- High visibility continental crosswalks
- Advanced stop bar placement
- Pedestrian count down signals



Proposed Improvements to Presidio Drive / Jackson Street intersection

Specific Intersection Improvements:

Presidio Drive / Jackson Street (Shown to the right):

- Implement bulb-outs on the west leg of the intersection
- Complete sidewalks on all sides of the intersection
- Square up intersection and remove southbound yielded right-turn movements
- Provide cross-walks across all legs of the intersection

Congress Street / Twiggs Street:

- Implement bulb-outs across all legs of the intersection

San Diego Avenue / Twiggs Street:

- Implement pavers or other high visible material in the center of the intersection to slow down and alert drivers to the heavy pedestrian presence, see example to the right.

Example of using bricks/pavers to create a highly visible intersection

Linwood Street / San Diego Avenue:

- Implement Pedestrian refuge island on the southern (Linwood Street) leg of the intersection.

Congress Street / San Diego Avenue / Ampudia Street (See figure 4-2):

- Convert intersection to all-way stop control
- Implement bulb-outs on all legs of the intersection
- Widen the sidewalks along the north side of San Diego Avenue

Note: As stated above, converting the intersection control to a roundabout is also an option for this intersection. However, due to the tight spacing of the adjacent buildings there may not be enough right-of-way to accommodate a roundabout. Additional engineering study should be conducted to see if a roundabout is feasible at this intersection. If it is determined that a roundabout is feasible then it would become the preferred improvement.

4.4 Cycling Environment

4.4.1 Identified Bicycle Issues and Needs

The following cycling related issues and needs were identified in the Existing Conditions Report:

Taylor Street – As mentioned previously, the Taylor Street corridor provides a significant regional east/west connection for vehicles as well as for cyclists. Taylor Street is currently classified as a Class III Bike Route within the Old Town Community; however, east of Presidio Drive, Taylor Street narrows to a two-lane roadway with narrow lane widths (10 feet) and no shoulders. Taylor Street is also a regional vehicular access point for the Old Town Community connecting the I-8 / Taylor Street interchange and Pacific Highway. The narrow lane widths, high vehicular traffic volumes and speeds along Taylor Street, east of Presidio Drive, create an uncomfortable environment for cyclists.

Congress Street / San Diego Avenue – Congress Street and San Diego Avenue (south of Ampudia Street) provide one of the few north/south connections for cyclists within the Old Town Community. Congress Street and San Diego Avenue (south of Ampudia Street) is currently classified as a Class III Bike Route designated by sharrow markings. Congress Street's proximity to the Old Town Transit Center and retail and restaurant uses make it a highly attractive route for cyclists. Both corridors currently have high traffic volumes, and on-street parking on both sides of the roadway which create an uncomfortable environment for cyclists.

The bicycle related issues/needs within the Old Town Community, identified above, are displayed in Figure 4-5.

4.4.2 Bicycle Improvements

The Preferred Plan proposes implementing the following bicycle facilities within the Old Town Community:

- Complete the Class II Bike Lanes in both directions along Taylor Street between Pacific Highway and the community boundary and bicycle boxes at appropriate intersections, as identified in the I-8 Corridor Study.
- Class III Bike Route in both directions along Juan Street between Taylor Street and community boundary.
- Class II Bike Lanes in both directions along Old Town Avenue between Hancock Street and San Diego Avenue.
- Class II Bike Lanes in both directions along Morena Boulevard between Taylor Street and the community boundary.

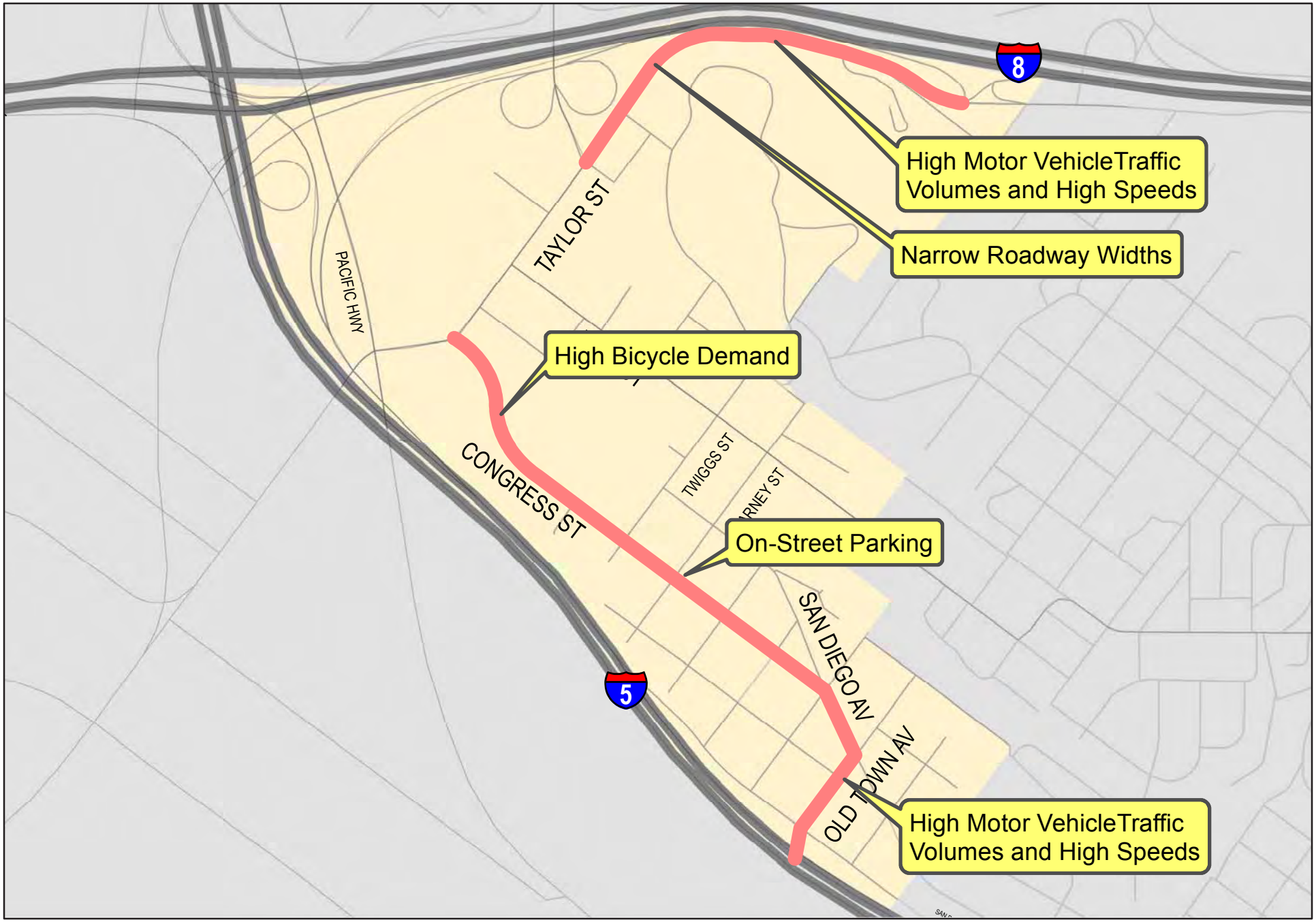


Figure 4-5
Bicycle Network Issues and Needs -
Old Town Community

A bicycle connection is currently lacking along Morena Boulevard between Taylor Street and Linda Vista Road. This is a critical connection that would link the Old Town and Linda Vista communities, as well as provide a connection to the Ocean Beach Bike Path. Unfortunately, the bridge along this segment of the roadway has a constrained right-of-way, and the current configuration of the I-8 Morena Boulevard ramps position four high-speed free-right turn movements on/off the bridge.

Due to these constraints there is not feasible bicycle facility that can be implemented along this segment without both widening the bridge and reconfiguring the I-8 / Morena Boulevard Ramps. However, it is recommended that the City work with both Caltrans and SANDAG to look for opportunities to implement bicycle facilities and better pedestrian facilities along this segment should any improvements be done to this segment. The I-8 Corridor Study identifies Class II bike lanes along Morena Boulevard, between W. Morena Boulevard and Taylor Street, as a high priority project. As described in section 4.2.2, the Corridor Study also proposes removing all free movements from I-8 onto Morena Boulevard and "squaring up" each intersection. Since the plan has not yet been adopted and the improvements are not anticipated to be implemented until Year 2050, no improvements were assumed under Preferred Plan conditions.

4.5 Public Transit Service and Facilities

4.5.1 Identified Transit Issues and Needs

The Old Town Community is served by 10 bus routes, a trolley line, a commuter rail service (The COASTER) and a regional rail line (Amtrak Surfliner), which all serve the Old Town Transit Center. Figure 4-6 displays the community's streets served by bus routes as well as the existing Trolley Lines.

This figure also shows the area within ½ mile of the Old Town Transit Center, which is considered a reasonable walking distance to a major transit center (as compared to a ¼ mile for bus stops). As depicted in this figure, nearly all of the commercial and recreational uses are within ½ mile of transit service.

Figure 4-6
Transit Coverage -
Old Town Community

4.5.2 Transit Improvements

SANDAG's *San Diego Forward, The Regional Plan* (Adopted October 2015), indicates that a number of transit improvements are planned for the Old Town Community, prior to this plan's Year 2035 Horizon Year, as described below.

COASTER – By the Year 2020, the frequency of the COASTER will be increased to every 20 minutes during peak periods and every 120 minutes during off-peak periods. The COASTER provides a commuter rail connection between the Old Town Transit Center and North County communities including Solana Beach, Encinitas and Oceanside.

COASTER – by the Year 2020, the COASTER line will be extended to the south and include stations at both Petco Park and the Convention Center.

Mid-Coast Trolley Line – The Mid-Coast Trolley will extend service from Santa Fe Depot in Downtown San Diego to the University City community, serving major activity centers such as Old Town, the University of California, San Diego (UCSD), and Westfield UTC. Construction of the Mid-Coast Trolley line is anticipated to be completed by the Year 2021.

Local Bus Service – Increase local bus service in key corridors to 10 minute headways programmed and scheduled for Year 2035.

Rapid Bus Route 28 – By the Year 2035, a new rapid bus route will be implemented providing service between Point Loma and Kearny Mesa via the Old Town Transit Center.

Rapid Bus Route 30 – By the Year 2035, a new rapid bus route will be implemented providing service between the Old Town Transit Center and Sorrento Mesa via Pacific Beach, La Jolla and UTC.

Rapid Bus Routes 640A – By the Year 2035, a new rapid bus route will be implemented providing service along I-5 between San Ysidro and the Old Town Transit Center, via City College downtown.

Transit Priority Treatments

Taylor Street serves several regional bus routes connecting multiple communities. Therefore, it is recommended that transit priority treatments be implemented along Taylor Street to help increase transit performance. It is recommended to implement queue jumper lanes and transit priority signals in either direction at both the Taylor Street / Juan Street and Taylor Street / Morena Boulevard intersections.

4.6 Currently Planned Improvements

The following section outlines the mobility improvements that are currently planned within the Old Town community. Some improvements were too minor to incorporate at the community plan level, while others are mitigation measures from projects within the area and are not the responsibility of the community plan. Additionally, the pending improvements contained within

the existing community Public Facilities Financing Plan are also outlined and identified if they are consistent with the Preferred Plan.

4.6.1 Auto

Mid-Coast Corridor Transit Project – The Mid-Coast Corridor and Transit Project Transportation Impacts and Mitigation Report; September 2014, identifies the following project related improvements at the Taylor Street / Rosecrans Street and Pacific Highway intersection:

- Provide second northbound right-turn lane
- Provide third eastbound through lane
- Provide second southbound left-turn lane

These improvements are designed to handle excess queuing at the intersection during gate down times. These improvements do not conflict with any improvements recommended by the Preferred Plan and have been incorporated into the future year analysis. However, since these improvements are mitigation measures for the Mid-Coast Corridor Transit Project they are not considered to be part of the Preferred Plan and should not be included in the IFS.

Old Town Public Facilities Financing Plan, 2004 – This plan identifies the widening of Presidio Drive to allow for a right-turn lane on Taylor Street (Project T10). This improvement is unfunded and is not currently scheduled for implementation. – *The Preferred Plan does not include this improvement as a recommendation.*

4.6.2 Pedestrian

Old Town Public Facilities Financing Plan, 2004 – Contains the following planned pedestrian improvements that have not yet been completed.

- Install / upgrade 20 curb ramps to meet ADA standards (Project T12) – These improvements are currently not scheduled or funded. – *Improvement is consistent with the Preferred Plan.*

Several pedestrian facility projects have been identified by the City of San Diego and are included on their Unfunded Transportation Needs List (8/5/2014). A list of the pedestrian improvements located in the Old Town Community are included in Appendix B. It should be noted that this list is updated on a regular basis and Appendix B only reflects a snapshot of the needs and planned improvements throughout the community at the time when this report was prepared.

SANDAG Uptown Bikeways Project – Phase 4 of the Uptown Bikeways project will include treatments to improve pedestrian safety (e.g., high visibility crosswalks, dual pedestrian ramps, bulb-outs). The project is located along Congress Street (from Taylor Street to San Diego Avenue) and San Diego Avenue (from Congress Street to south of Hortensia Avenue). The project is entering final design and is funded through construction. Since these improvements are funded through the Uptown Bikeways project, they should not be included in the IFS. *– Improvements are consistent with the Preferred Plan.*

Wayfinding Signage Program

The Old Town Chamber of Commerce is currently developing a wayfinding signage program in the Old Town Community. The wayfinding signage program will standardize and brand the various wayfinding signs currently within the community and highlight paths and links for pedestrians to access the various parks and attractions within the community.

4.6.3 Bicycle

SANDAG Uptown Bikeways Project – Phase 4 of the Uptown Bikeways project will include a mix of buffered bike lanes and shared lane markings along Congress Street (from Taylor Street to Mason Street) and shared lane markings, where not already marked (from Mason Street to San Diego Avenue). The project is currently in the design phase with specifications still being determined, therefore, it was not included as a recommendation in the Preferred Plan. Congress Street is currently designated as a Class III bicycle route, identifiable by vertical signage and shared lane markings. The Preferred Plan does not propose any modifications to the existing bicycle facility, nor does it include any recommendations that would prevent the Uptown Bikeways project from being implemented.

4.6.4 Transit

As noted in section 4.5.2 the Preferred Plan in consistent with *SANDAG's San Diego Forward, The Regional Plan (Adopted October 2015).*

5.0 Modeling and Forecasting

This chapter summarizes the future year travel demand model forecasting process utilized to project the future travel patterns within the Midway-Pacific Highway and Old Town communities, under buildout conditions. Future year traffic volumes were derived from a SANDAG Series 12 Transportation Forecast model run, which was verified per the City of San Diego's Small Study Area Traffic Modeling Process (April 2012) and calibrated for the Midway-Pacific Highway and Old Town communities.

5.1 Base Year (2012) Model Calibration

The base year model calibration process included verification and validation of base year model inputs (land uses and roadway network), as well as additional adjustments to the base year model (roadway speeds, centroid loadings, etc.) to calibrate the model to better represent existing travel patterns within the Midway-Pacific Highway and Old Town communities. Detailed descriptions of each validation step are provided in the following sections.

5.1.1 Base Year Land Use Verification/Validation

Existing land use data, as listed below, was collected for the Midway-Pacific Highway and Old Town communities and verified/adjusted in the Base Year model to correctly match actual conditions:

- Descriptions (land use type and code)
- Proper measurement unit types (square feet, units, acres)
- Quantity
- Vehicular trip generation rates

Land use types, descriptions and quantities were crosschecked with ground conditions using Google Earth imagery, as well as field verification, as necessary. Trip generation rates for individual land uses were coded based on the driveway rates provided in the *City of San Diego Land Development Code – Trip Generation Manual* (May 2003). Base year land use inputs for the project study area are provided in Appendix D.

5.1.2 Base Year Roadway Network Verification/Validation

The SANDAG Series 12 Base Year roadway network was compared to actual conditions to ensure an accurate model network. The following variables were compared and adjusted to match actual conditions:

- TAZ loading points
- Number of lanes for roadways
- Traffic controls
- Signalized intersection geometrics
- Street classification
- Roadway speed limits

5.1.3 Base Year Ground Count Validation & Adjustment

Historical ADT volumes over the past 11 years were compiled from the City of San Diego's Traffic Count Database and other recent studies for major roadway segments throughout the Midway-Pacific Highway and Old Town communities. The most recent historic counts along with counts from the past five (5) years were selected to establish a Base Year ground count database. This database included multiple counts from the same location on numerous segments, as well as the counts already included in the model. The final count was selected based upon nearby trip generators and traffic patterns along each roadway segment. Abnormally high or low traffic volumes were assumed to be outliers, and thus were not selected as model inputs.

5.1.4 Model Sensitivity Adjustment

Model calibration was performed by running a Base Year model estimate and comparing the results to the selected ground counts discussed above. Roadway segments that did not meet the model calibration targets established by the City of San Diego were identified for additional adjustments. These adjustments included the relocation of TAZ connectors and centroids, TAZ splitting, adjustments of roadway speed (to represent congestion), and in rare cases, ground count adjustments using historic counts older than three years.

5.2 Future Year Traffic Forecast Volume

The Future Year model was developed by inputting the future year land uses and roadway network into the calibrated Base Year model, described in the previous sections, with the following adjustments/assumptions:

- Implementation of the Preferred Plan land uses within the project study area (land use assumptions are provided in Appendix D).
- Existing roadway network within the study area with the following improvement projects:
    - Extension of Kemper Street between Sports Arena Boulevard and Kurtz Street
    - Implementation of Frontier Drive between Sports Arena Boulevard and Kurtz Street
    - Extension of Greenwood Street between Kurtz Street and Sports Arena Boulevard
    - Implementation of Charles Lindbergh Parkway between Sports Arena Boulevard and Midway Drive
    - Implementation of Dutch Flats Parkway between Sports Arena Boulevard and Barnett Avenue
- Year 2035 land uses outside of the study area
- Year 2035 roadway/transit network outside of the study area
- Year 2035 transit network both inside and outside of the study area

The model inputs described above were reviewed and approved by City staff prior to running the model forecasts.

Final SANDAG Series 12 Future Year Forecast Model results are provided in Appendix D. Figure 5-1 shows the final projected average daily traffic volumes that were used to develop and analyze the Preferred Plan mobility network, as described in the next chapter.

5.2.1 Vehicle Miles Traveled

The vehicle miles traveled (VMT) generated within the community was estimated using the SANDAG Series 12 Preferred Plan Future Year 2035 and Base Year models. VMT is the total number of miles driven by all vehicle trips within the Midway-Pacific Highway and Old Town communities, including trips to, from, and within the community. Table 5.1A and 5.1B display the total VMT generated within each community and the average trip length under both the Preferred Plan and Base Year conditions. VMT calculations are provided in Appendix D.

Table 5.1A Vehicle Miles Traveled (VMT) Comparison – Midway-Pacific Highway Community

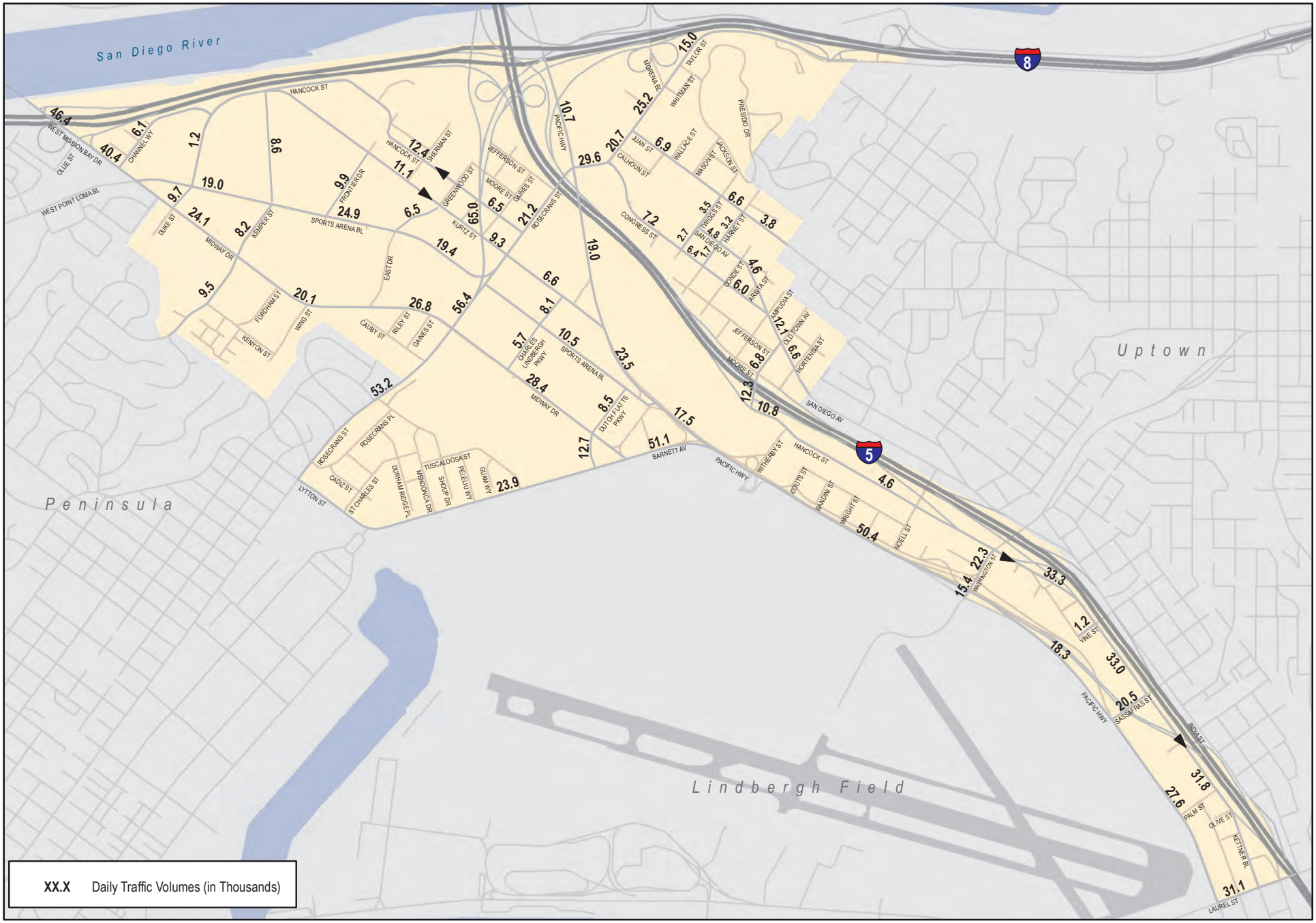
Measure	Community Planning Area				San Diego Region			
	Base Year	Preferred Plan	Δ in Value	Δ in %	Base Year	Year 2035	Δ in Value	Δ in %
Total VMT (miles)	730,121	764,628	34,507	4.7%	85,331,631	108,802,407	23,470,776	27.5%
Total # of Auto Trips	294,796	285,771	-9,025	-3.1%	16,458,692	20,183,171	3,724,479	22.6%
Average Trip Length[1] (miles)	2.5	2.7	0.2	8.0%	5.2	5.4	0.2	3.7%
Population	4,670	12,505	7,835	167.8%	3,130,717	4,035,834	905,117	28.9%
Daily VMT by Population (miles)	156	61	-95	-60.9%	27	27	0	-1.5%

Source: Chen Ryan Associates (May 2017)

Note:

1. Average trip length is estimated by dividing the total VMT by the total # of auto trips.

As shown, under implementation of the Preferred Plan the number of new auto trips and total VMT generated within the Midway-Pacific Highway community is only anticipated to experience minimal growth (based on the regional averages). With the implementation of the Preferred Plan infrastructure and land uses, the average vehicular trip length is anticipated to increase by 8.0%. However, with the significant population increase anticipated within the community, the daily VMT by population is anticipated to drop dramatically (-60.9%).



Midway-Pacific Highway and
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Figure 5-1
Daily Roadway Segment Traffic Volumes - Preferred Plan Conditions

Table 5.1B Vehicle Miles Traveled (VMT) Comparison – Old Town Community

Measure	Community Planning Area				San Diego Region			
	Base Year	Preferred Plan	Δ in Value	Δ in %	Base Year	Year 2035	Δ in Value	Δ in %
Total VMT (miles)	151,300	172,916	21,616	14.3%	85,331,631	108,802,407	23,470,776	27.5%
Total # of Auto Trips	57,898	59,412	1,514	2.6%	16,458,692	20,183,171	3,724,479	22.6%
Average Trip Length[1] (miles)	2.6	2.9	0.3	11.4%	5.2	5.4	0.2	3.7%
Population	830	1,280	450	54.2%	3,130,717	4,035,834	905,117	28.9%
Daily VMT by Population (miles)	182	135	-47	-25.9%	27	27	0	-1.5%

Source: Chen Ryan Associates (May 2017)

Note:

1. Average trip length is estimated by dividing the total VMT by the total # of auto trips.

As shown, under implementation of the Preferred Plan the number of new auto trips and total VMT generated within the Old Town community is only anticipated to experience average growth (based on the region. With the implementation of the Preferred Plan infrastructure and land uses the average vehicular trip length is anticipated to increase by 11.4%. However, the anticipated population increase within the community results in an overall decrease in the daily VMT by population (-25.9%).

5.2.2 Community Mode Choice

The Mode Choice Model used in the SANDAG Series 12 Transportation Forecast is not sensitive to changes in bicycle and pedestrian facilities. In other words, the model does not accurately adjust travel behaviors in response to implementation of multimodal facilities, such as bicycle lanes or separated multi-use paths, or reflect land use changes that create more mixed use environments. Due to these constraints, the SANDAG Series 12 Model was not utilized to project the demands of future year non-motorized travel.

SANDAG is currently in the process of developing Series 13, an Activity Based Model (ABM) which will more accurately account for shifts in transportation modes based on the implementation of pedestrian and bicycle facilities. However, SANDAG modeling staff has indicated that this model is currently under development and will not be ready for public release until later in 2016.

Since the ABM model is not ready for use at this time, a subsequent mode choice analysis will be prepared by the City as a separate document. The mode choice analysis will use the methods outlined in both the California Air Pollution Control Officers Association (CAPCOA) Quantifying Green House Gas Measures manual, as well as the Urban Land Institute's (ULI) Growing Cooler to post process the Series 12 model results and develop a more accurate mode split for each community.

6.0 Preferred Plan Analysis

6.1 Street and Freeway System Assessment and Results

The following section provides a summary of vehicular analysis results along key study roadways, including the projected daily roadway LOS, and the peak hour intersection LOS analysis under implementation of the Preferred Plan.

6.1.1 Roadway Segment Analysis

This analysis assumes implementation of the roadway segment-related improvements outlined in Sections 3.2.2 and 4.2.2 under the Preferred Plan. The associated roadway classifications under implementation of the Preferred Plan, within both communities, is displayed in Figure 6-1.

Table 6.1 and Figure 6-2 display the projected ADT volume and associated roadway LOS under implementation of the Preferred Plan. Section 5.2 describes the process used to develop projected ADT volume estimations.

As shown, all Mobility Element roadways are projected to operate at LOS D or better under Preferred Plan conditions, with the exception of the following:

Midway-Pacific Highway Community

- Midway Drive, between East Drive and Rosecrans Street (LOS E)
- Midway Drive, between Rosecrans Street and Barnett Avenue (LOS E)
- Kurtz Street, between Hancock Street and Rosecrans Street (LOS E)
- Kettner Boulevard, between Washington Street and Vine Street (LOS F)
- Kettner Boulevard, between Vine Street and Sassafras Street (LOS F)
- Kettner Boulevard, between Sassafras Street and Laurel Street (LOS F)
- Camino Del Rio West, between Rosecrans Street and the I-5/I-8 Ramps (LOS F)
- Rosecrans Street, between Midway Drive and Sports Arena Boulevard (LOS E)
- Sassafras Street, between Pacific Highway and Kettner Boulevard (LOS F)

Old Town Community

- Congress Street between Taylor Street and Twiggs Street (LOS E)
- San Diego Avenue, between Ampudia St and Old Town Avenue (LOS F)
- San Diego Avenue, between Old Town Avenue and Hortensia Street (LOS E)
- Juan Street, between Taylor Street and Twiggs Street (LOS E)
- Juan Street, between Twiggs Street and Harney Street (LOS E)
- Taylor Street, between Morena Boulevard and I-8 Ramps (LOS F)
- Old Town Avenue, between Hancock Street and Moore Street (LOS F)
- Old Town Avenue, between Moore Street and San Diego Avenue (LOS E)

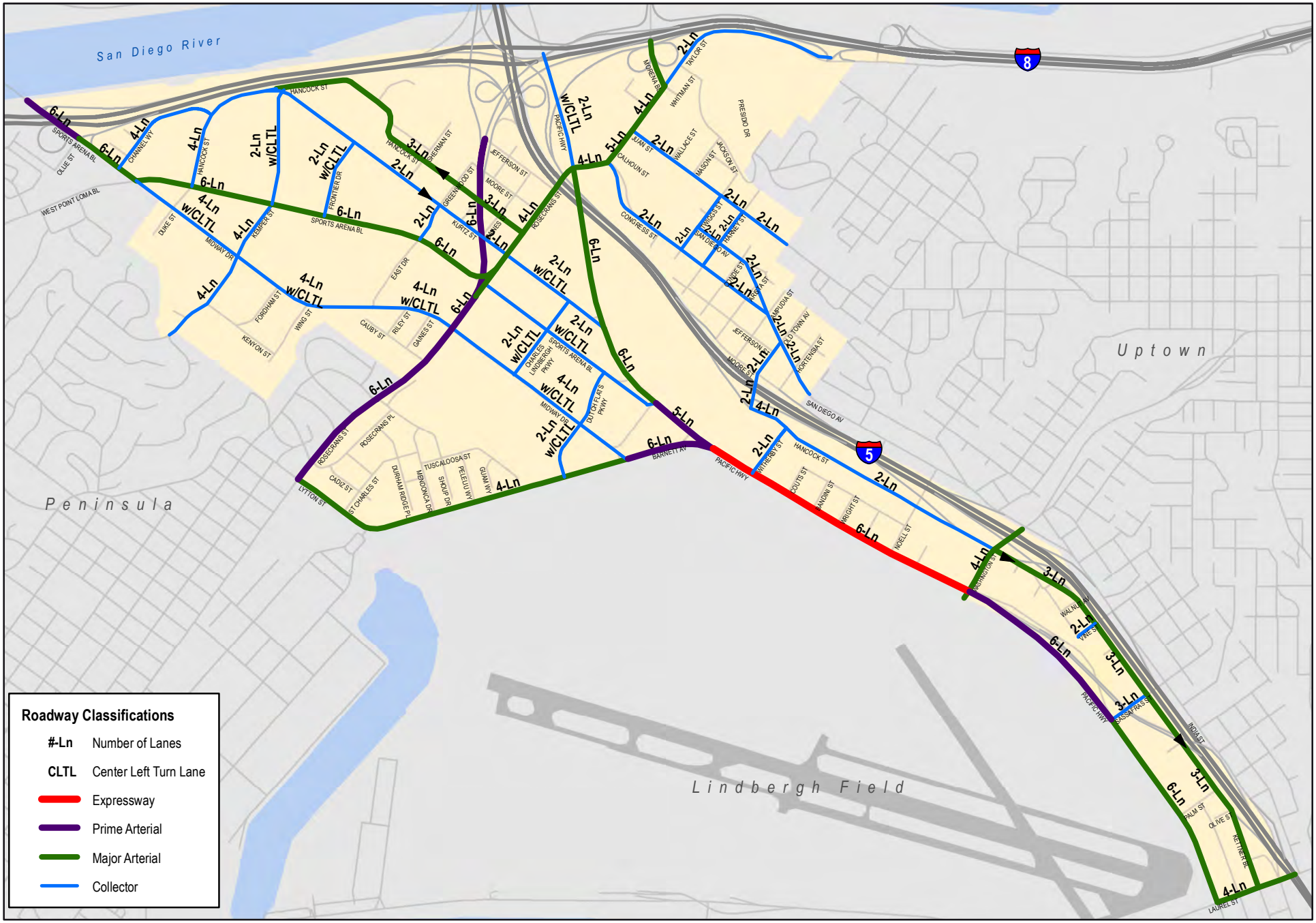

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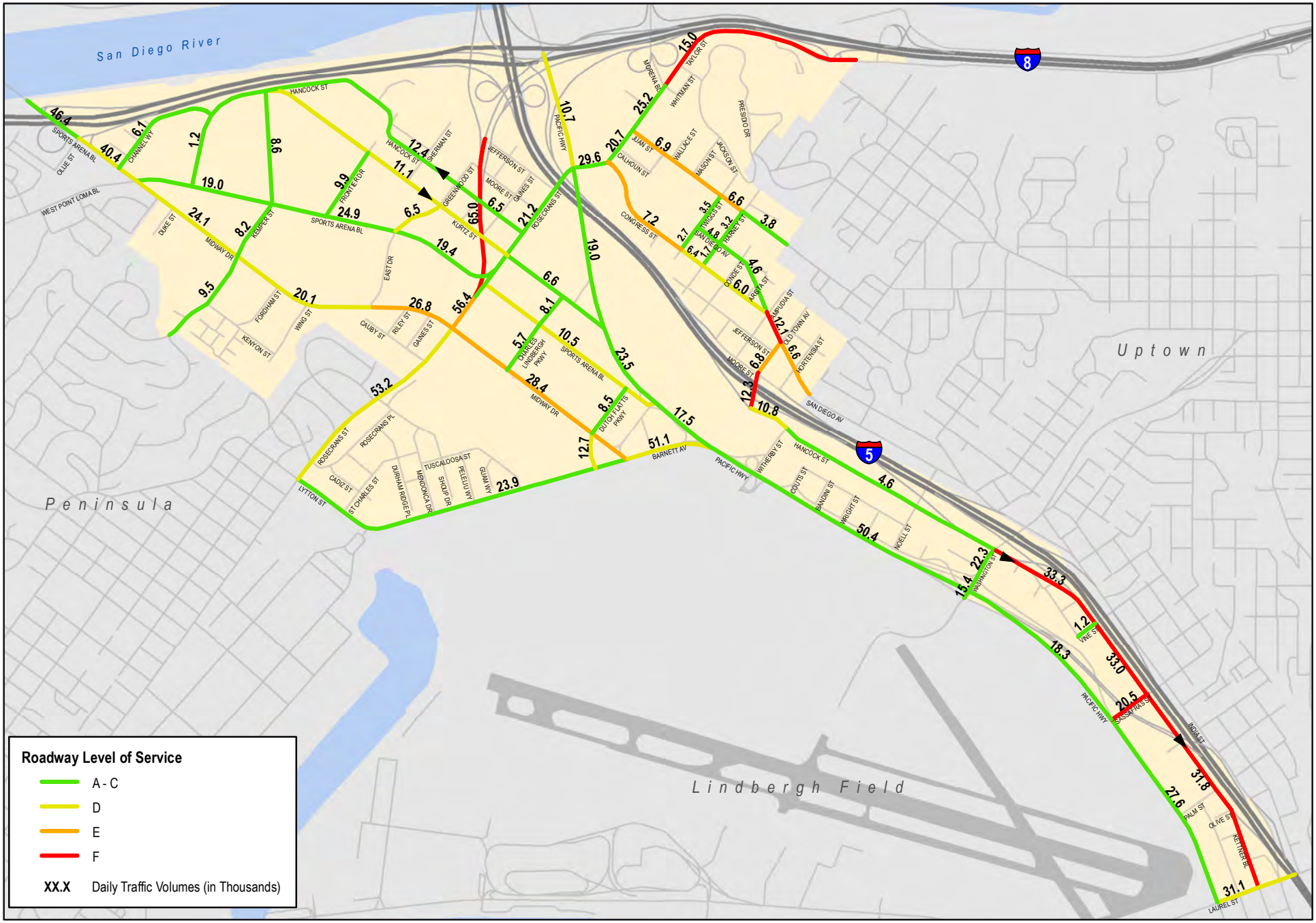
Figure 6-1
Roadway Classifications -
Preferred Plan Conditions



Midway-Pacific Highway and
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Figure 6-2
Daily Roadway Segment Traffic Volumes and LOS - Preferred Plan Conditions

Table 6.1 Daily Roadway Segment Analysis - Preferred Plan Conditions

Roadway	From	To	Classification	Maximum Capacity at LOS E	ADT	V/C	LOS
North-South							
Midway Pacific Highway							
Lytton Street/ Barnett Ave	Rosecrans St	Midway Dr	4-Lane Major Arterial	40,000	23,900	0.60	C
Midway Dr	W. Point Loma Blvd/ Sports Arena Blvd	Kemper St	4-Lane Collector (CLTL)	30,000	24,100	0.80	D
	Kemper St	East Dr	4-Lane Collector (CLTL)	30,000	20,100	0.67	D
	East Dr	Rosecrans St	4-Lane Collector (CLTL)	30,000	26,800	0.89	E
	Rosecrans St	Barnett Ave	4-Lane Collector (CLTL)	30,000	28,400	0.95	E
Sports Arena Blvd	I-8 WB Ramps	I-8 EB Ramps	6-Lane Prime Arterial	60,000	46,400	0.77	C
	I-8 EB Ramps	W. Point Loma Blvd	6-Lane Major Arterial	50,000	40,400	0.81	D
	W. Point Loma Blvd/Midway Dr	Kemper St	6-Lane Major Arterial	50,000	19,000	0.38	A
	Kemper St	East Dr	6-Lane Major Arterial	50,000	24,900	0.50	B
	East Dr	Rosecrans St	6-Lane Major Arterial	50,000	19,400	0.39	A
	Rosecrans St	Pacific Hwy	2-Lane Collector (CLTL)	15,000	10,500	0.70	D
Kurtz St	Hancock St	Rosecrans St	2-Lane Collector (One-Way)	15,000	11,100	0.74	D
	Rosecrans St	Pacific Hwy	2-Lane Collector (CLTL)	15,000	6,600	0.44	B
Hancock St	Sports Arena Blvd	Kurtz St	4-Lane Collector	15,000	1,200	0.08	A
	Kurtz St	Camino Del Rio West	3-Lane Major (One-Way)	30,000	12,400	0.41	B
	Camino Del Rio West	Rosecrans St	3-Lane Major (One-Way)	30,000	6,500	0.22	A
	Old Town Ave	Witherby St	4-Lane Collector	15,000	10,800	0.72	D
	Witherby St	Washington St	2-Lane Collector	8,000	4,600	0.58	C
Kettner Blvd	Washington St	Vine St	3-Lane Major (One-Way)	30,000	33,300	1.11	F
	Vine St	Sassafras St	3-Lane Major (One-Way)	30,000	33,000	1.10	F
	Sassafras St	Laurel St	3-Lane Major (One-Way)	30,000	31,800	1.06	F
Pacific Hwy	Sea World Dr	Taylor St	2-Lane Collector (CLTL)	15,000	10,700	0.71	D

Table 6.1 Daily Roadway Segment Analysis - Preferred Plan Conditions

Roadway	From	To	Classification	Maximum Capacity at LOS E	ADT	V/C	LOS
Pacific Hwy	Taylor St	Kurtz St	6-Lane Major Arterial	50,000	19,000	0.38	A
	Kurtz St	Sports Arena Blvd	6-Lane Major Arterial	50,000	23,500	0.47	B
	Sports Arena Blvd	Barnett Ave	5-Lane Major Arterial	50,000	17,500	0.35	B
	Barnett Ave	Washington St	Expressway	80,000	50,400	0.63	C
	Washington St	Sassafras St	6-Lane Prime Arterial	60,000	18,300	0.31	A
	Sassafras St	Laurel St	6-Lane Major Arterial	50,000	27,600	0.55	B
Old Town							
Congress St[1]	Taylor St	Twiggs St	2-Lane Collector	8,000	7,200	0.90	E
	Twiggs St	Harney St	2-Lane Collector	8,000	6,400	0.80	D
	Harney St	San Diego Ave/ Ampudia St	2-Lane Collector	8,000	6,000	0.75	D
San Diego Ave[1]	Twiggs St	Harney St	2-Lane Collector	8,000	4,800	0.60	C
	Conde St	Arista Ave	2-Lane Collector	8,000	4,600	0.58	C
	Ampudia St	Old Town Ave	2-Lane Collector	8,000	12,100	1.51	F
	Old Town Ave	Hortensia St	2-Lane Collector	8,000	6,600	0.83	E
Juan St[1]	Taylor St	Twiggs St	2-Lane Collector	8,000	6,900	0.86	E
	Twiggs St	Harney St	2-Lane Collector	8,000	6,600	0.83	E
	Harney St	San Juan Rd	2-Lane Collector	8,000	3,800	0.48	C
East-West							
Midway Pacific Highway							
Channel Wy	W. Mission Bay Dr	Hancock St	4-Lane Collector	15,000	6,100	0.41	B
Kemper St	Kenyon St	Midway Dr	4-Lane Collector	15,000	9,500	0.63	C
	Midway Dr	Sports Arena Blvd	4-Lane Collector	15,000	8,200	0.55	C
	Sports Arena Blvd	Hancock St	2-Lane Collector (CLTL)	15,000	8,600	0.57	C
Frontier St	Sports Arena Blvd	Kurtz St	2-Lane Collector (CLTL)	15,000	9,900	0.66	C

Table 6.1 Daily Roadway Segment Analysis - Preferred Plan Conditions

Roadway	From	To	Classification	Maximum Capacity at LOS E	ADT	V/C	LOS
Greenwood St	Sports Arena Blvd	Kurtz St	2-Lane Collector	8,000	6,500	0.81	D
Camino Del Rio West	Rosecrans St	I-5/I-8 Ramps	6-Lane Prime Arterial	60,000	65,000	1.08	F
Rosecrans St	Lytton St	Midway Dr	6-Lane Prime Arterial	60,000	53,200	0.89	D
	Midway Dr	Sports Arena Blvd	6-Lane Prime Arterial	60,000	56,400	0.94	E
	Sports Arena Blvd	Pacific Hwy/Taylor St	4- Lane Major Arterial	40,000	21,200	0.53	C
Charles Lindbergh Pkwy	Midway Dr	Sports Arena Blvd	2-Lane Collector (CLTL)	15,000	5,700	0.38	B
	Sports Arena Blvd	Kurtz Street	2-Lane Collector (CLTL)	15,000	8,100	0.54	C
Dutch Flats Pkwy	Barnett Avenue	Midway Dr	2-Lane Collector (CLTL)	15,000	12,700	0.85	D
	Midway Dr	Sports Arena Blvd	2-Lane Collector (CLTL)	15,000	8,500	0.57	C
Barnett Ave	Midway Dr	Pacific Hwy	6-Lane Prime Arterial	60,000	51,100	0.85	D
Washington St	Frontage Rd	Pacific St	4- Lane Major Arterial	40,000	15,400	0.39	B
	Pacific St	Hancock St	4- Lane Major Arterial	40,000	22,300	0.56	C
Vine St	California St	Kettner Blvd	2-Lane Collector	8,000	1,200	0.15	A
Sassafras St	Pacific Hwy	Kettner Blvd	3-Lane Collector	11,500	20,500	1.78	F
Laurel St	Pacific Hwy	Kettner Blvd	4- Lane Major Arterial	40,000	31,100	0.78	D
Old Town							
Taylor St[1]	Pacific Hwy/ Rosecrans St	Congress St	4- Lane Major Arterial	40,000	29,600	0.74	C
	Congress St	Juan St	5-Lane Major Arterial	45,000	20,700	0.46	B
	Juan St	Morena Blvd	4- Lane Major Arterial	40,000	25,200	0.63	C
	Morena Blvd	I-8 EB Ramps	2-Lane Collector	8,000	15,000	1.88	F
Twiggs St[1]	Congress St	San Diego Ave	2-Lane Collector	8,000	2,700	0.34	B
	San Diego Ave	Juan St	2-Lane Collector	8,000	3,500	0.44	C
Harney St[1]	Congress St	San Diego Ave	2-Lane Collector	8,000	1,700	0.21	A
	San Diego Ave	Juan St	2-Lane Collector	8,000	3,200	0.40	B

Table 6.1 Daily Roadway Segment Analysis - Preferred Plan Conditions

Roadway	From	To	Classification	Maximum Capacity at LOS E	ADT	V/C	LOS
Old Town Ave[1]	Hancock St	Moore St	2-Lane Collector	8,000	12,300	1.54	F
	Moore St	San Diego Ave	2-Lane Collector	8,000	6,800	0.85	E

Source: Chen Ryan Associates (May 2017)

Note: **Bold** letter indicates LOS E or F

The following mitigation measures were identified for the two communities:

Midway-Pacific Highway Community

Midway Drive, between Rosecrans Street and Barnett Avenue (LOS E) – Improving the roadway way from a 4-Lane Collector with Center Left-Turn Lane to a 4-Lane Major Arterial would improve the operations to LOS C. The identified significant traffic related impact to this roadway segment would be fully mitigated with the implementation of this mitigation measure.

Kettner Boulevard, between Washington Street and Vine Street (LOS F) – Widening the roadway from a 3-Lane Major (One-Way) Arterial to a 4-Lane - Lane Major (One-Way) Arterial would improve the operations to LOS D. The identified significant traffic related impact to this roadway segment would be fully mitigated with the implementation of this mitigation measure.

Kettner Boulevard, between Vine Street and Sassafras Street (LOS F) – Widening the roadway from a 3-Lane Major (One-Way) Arterial to a 4-Lane - Lane Major (One-Way) Arterial would improve the operations to LOS D. The identified significant traffic related impact to this roadway segment would be fully mitigated with the implementation of this mitigation measure.

Kettner Boulevard, between Sassafras Street and Laurel Street (LOS F) – Widening the roadway from a 3-Lane Major (One-Way) Arterial to a 4-Lane - Lane Major (One-Way) Arterial would improve the operations to LOS D. The identified significant traffic related impact to this roadway segment would be fully mitigated with the implementation of this mitigation measure.

Camino Del Rio West, between Rosecrans Street and the I-5/I-8 Ramps (LOS F) – Improving this roadway from a 6-Lane Prime Arterial to a 6-Lane Expressway would improve the operations to LOS D. The identified significant traffic related impact to this roadway segment would be fully mitigated with the implementation of this improvement.

Sassafras Street, between Pacific Highway and Kettner Boulevard (LOS F) - Widening the roadway from a 3-Lane Collector to a 4-Lane Collector with Center Left-Turn Lane would improve the operations to LOS D. The identified significant traffic related impact to this roadway segment would be fully mitigated with the implementation of this improvement.

Old Town Community

Congress Street between Taylor Street and Twiggs Street (LOS E) - Widening the roadway from a 2-Lane Collector to a 2-Lane Collector with Center Left-Turn Lane would improve the operations to LOS C. The identified significant traffic related impact to this roadway segment would be fully mitigated with the implementation of this improvement.

San Diego Avenue, between Ampudia St and Old Town Avenue (LOS F) - Widening the roadway from a 2-Lane Collector to a 2-Lane Collector with Center Left-Turn Lane would improve the operations to LOS D. The identified significant traffic related impact to this roadway segment would be fully mitigated with the implementation of this improvement.

San Diego Avenue, between Old Town Avenue and Hortensia Street (LOS E) - Widening the roadway from a 2-Lane Collector to a 2-Lane Collector with Center Left-Turn Lane would improve the

operations to LOS B. The identified significant traffic related impact to this roadway segment would be fully mitigated with the implementation of this improvement.

Juan Street, between Taylor Street and Twiggs Street (LOS E) - Widening the roadway from a 2-Lane Collector to a 2-Lane Collector with Center Left-Turn Lane would improve the operations to LOS B. The identified significant traffic related impact to this roadway segment would be fully mitigated with the implementation of this mitigation measure.

Juan Street, between Twiggs Street and Harney Street (LOS E) - Widening the roadway from a 2-Lane Collector to a 2-Lane Collector with Center Left-Turn Lane would improve the operations to LOS B. The identified significant traffic related impact to this roadway segment would be fully mitigated with the implementation of this improvement.

Taylor Street, between Morena Boulevard and I-8 Ramps (LOS F) - Widening the roadway from a 2-Lane Collector to a 4-Lane Collector with Center Left-Turn Lane would improve the operations to LOS C. The identified significant traffic related impact to this roadway segment would be fully mitigated with the implementation of this improvement.

Old Town Avenue, between Hancock Street and Moore Street (LOS F) - Widening the roadway from a 2-Lane Collector to a 2-Lane Collector with Center Left-Turn Lane would improve the operations to LOS D. The identified significant traffic related impact to this roadway segment would be fully mitigated with the implementation of this mitigation measure.

Old Town Avenue, between Moore Street and San Diego Avenue (LOS E) - Widening the roadway from a 2-Lane Collector to a 2-Lane Collector with Center Left-Turn Lane would improve the operations to LOS B. The identified significant traffic related impact to this roadway segment would be fully mitigated with the implementation of this mitigation measure.

6.1.2 Intersection Geometry and LOS Analysis

AM and PM peak hour intersection LOS analyses were conducted for Preferred Plan conditions. It was assumed under implementation of the Preferred Plan that the proposed intersection improvements outlined in Sections 3.2.2 and 4.2.2 would be in place. Figure 6-3 and Figure 6-4 display the proposed intersection geometrics and forecast AM and PM peak hour turning movements under implementation of the Preferred Plan, respectively.

Table 6.2 and Figure 6-5 display the LOS results for the key study intersections located within both communities under Preferred Plan conditions. LOS analyses were conducted using the methodologies described in Chapter 2.0. Intersection LOS calculation worksheets are provided in Appendix E. Signal timing were assumed to be optimized under implementation of Preferred Plan conditions, therefore some signal operations may be projected to operate better than under existing conditions.

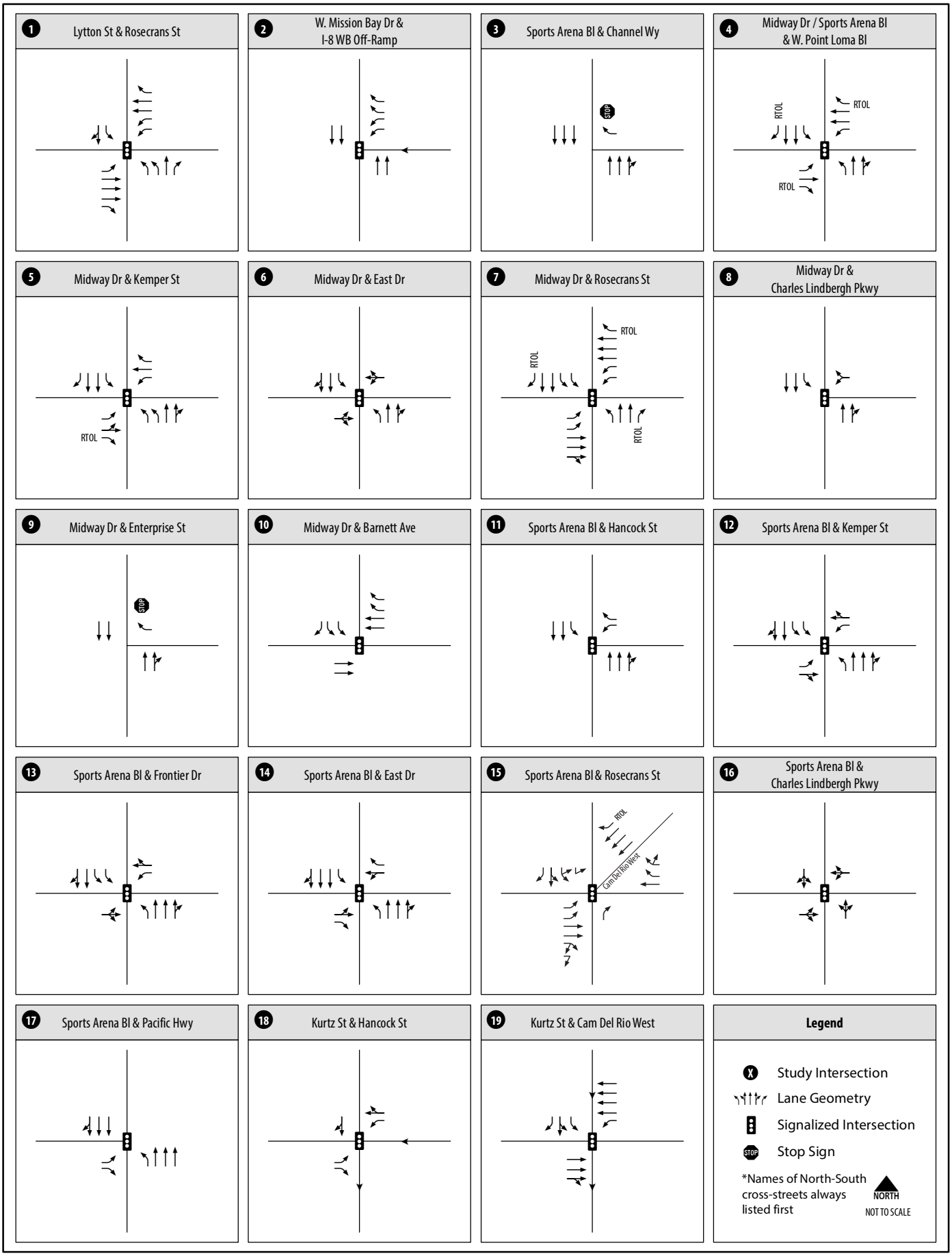

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Figure 6-3
Intersection Geometrics - Preferred Plan (Intersections 1-19)

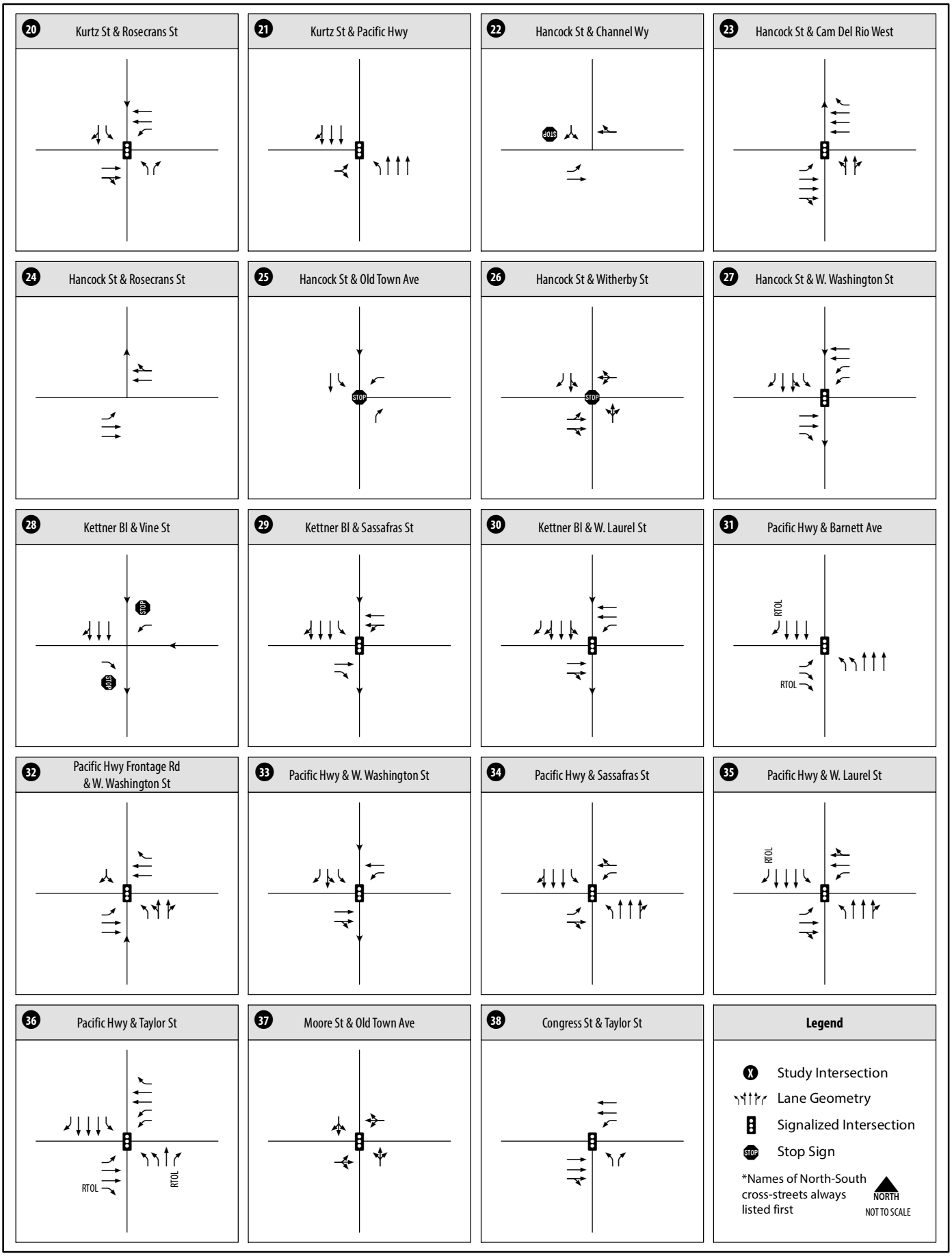

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Figure 6-3
Intersection Geometrics - Preferred Plan (Intersections 20-38)

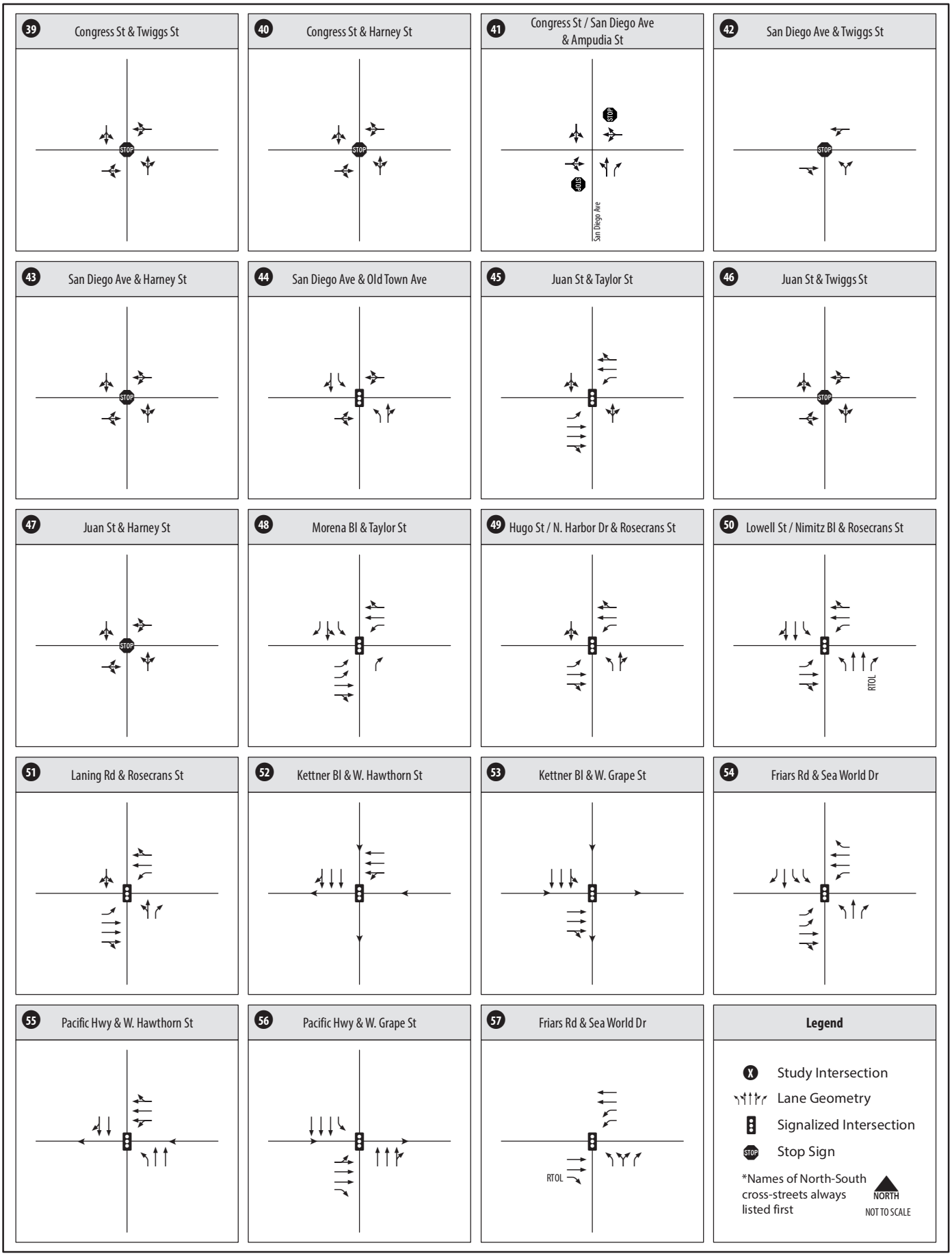

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Figure 6-3
Intersection Geometrics - Preferred Plan (Intersections 39-57)

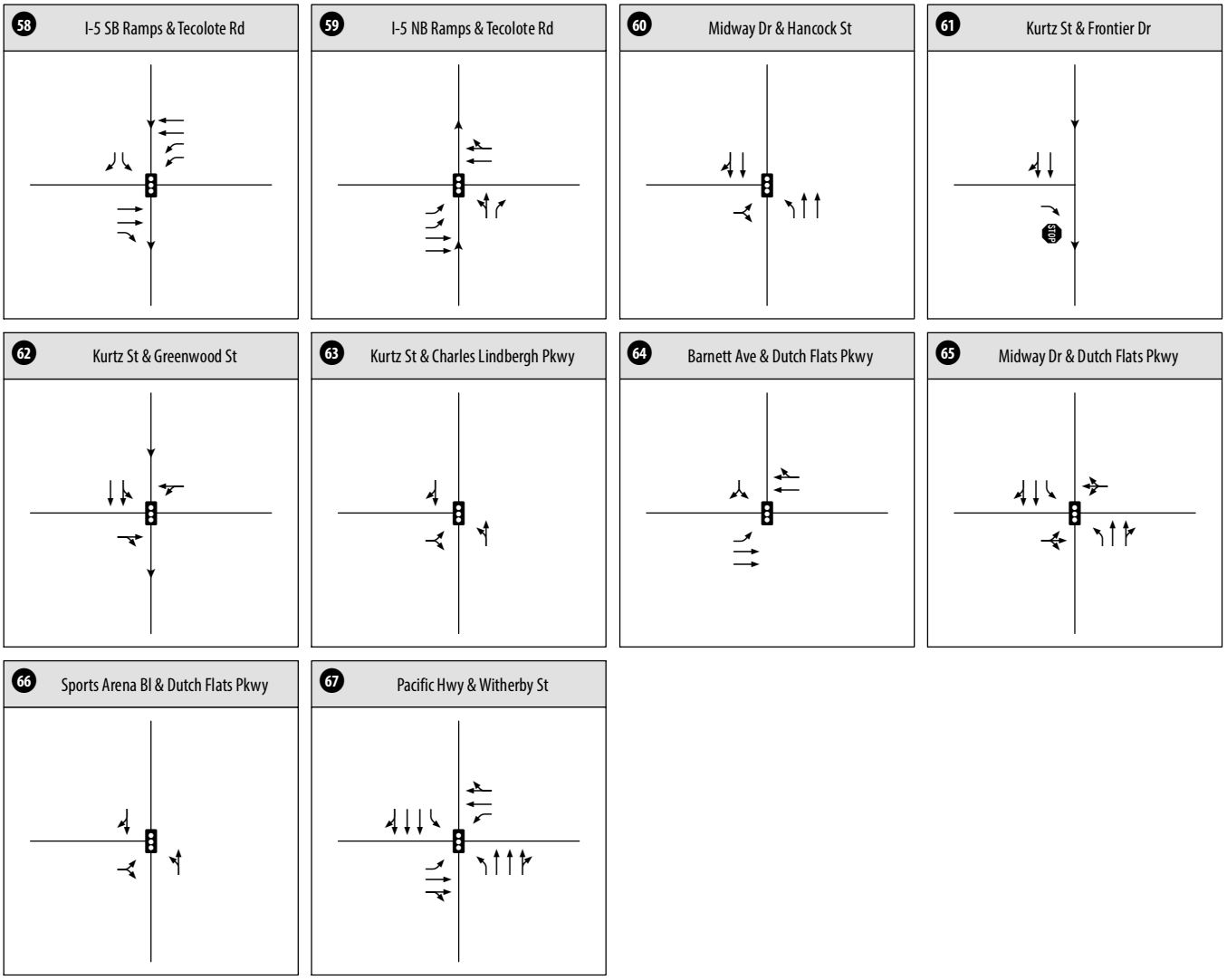

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Figure 6-3
Intersection Geometrics - Preferred Plan (Intersections 58-67)

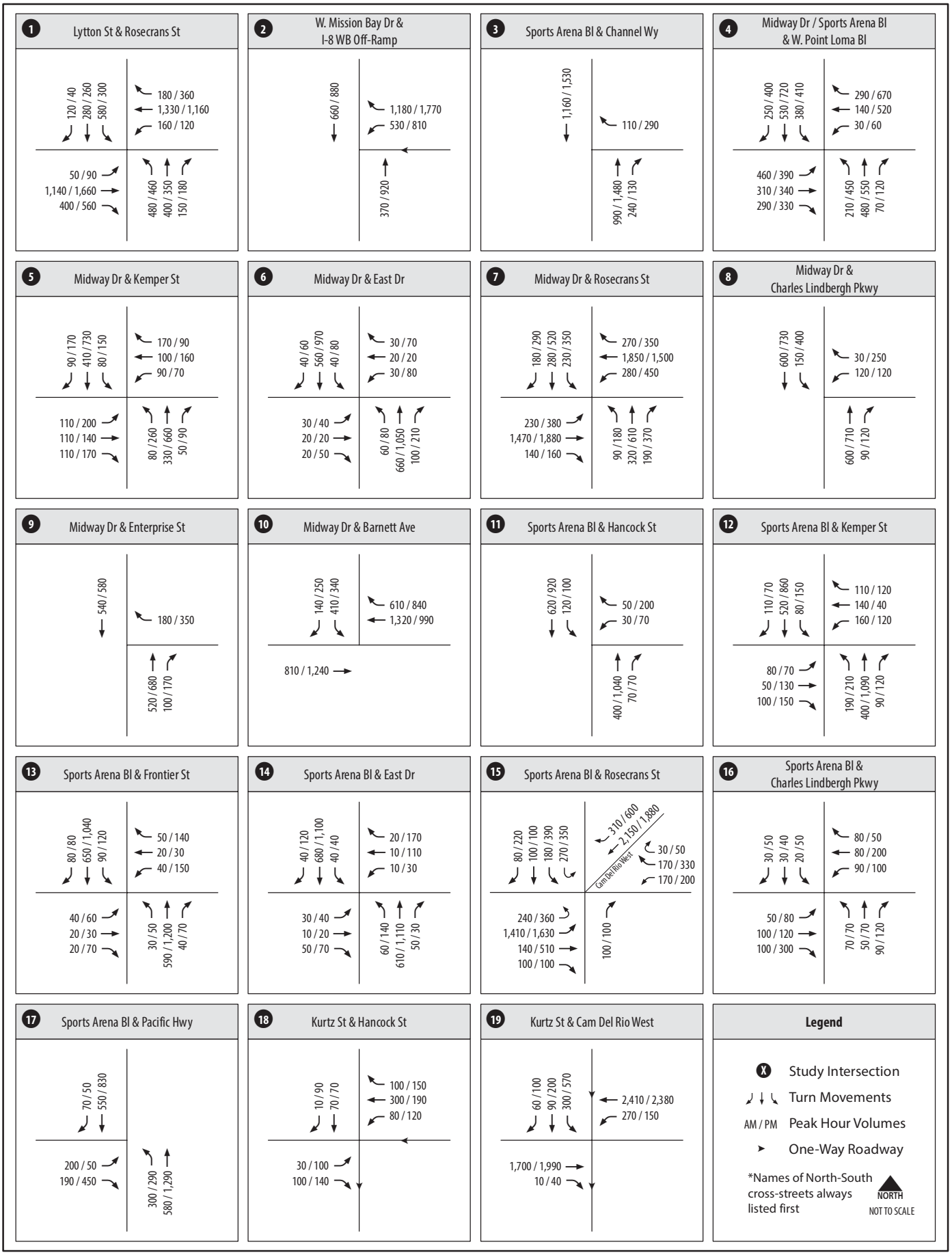

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Figure 6-4
Intersection Peak Hour Volumes - Preferred Plan (Intersections 1-19)

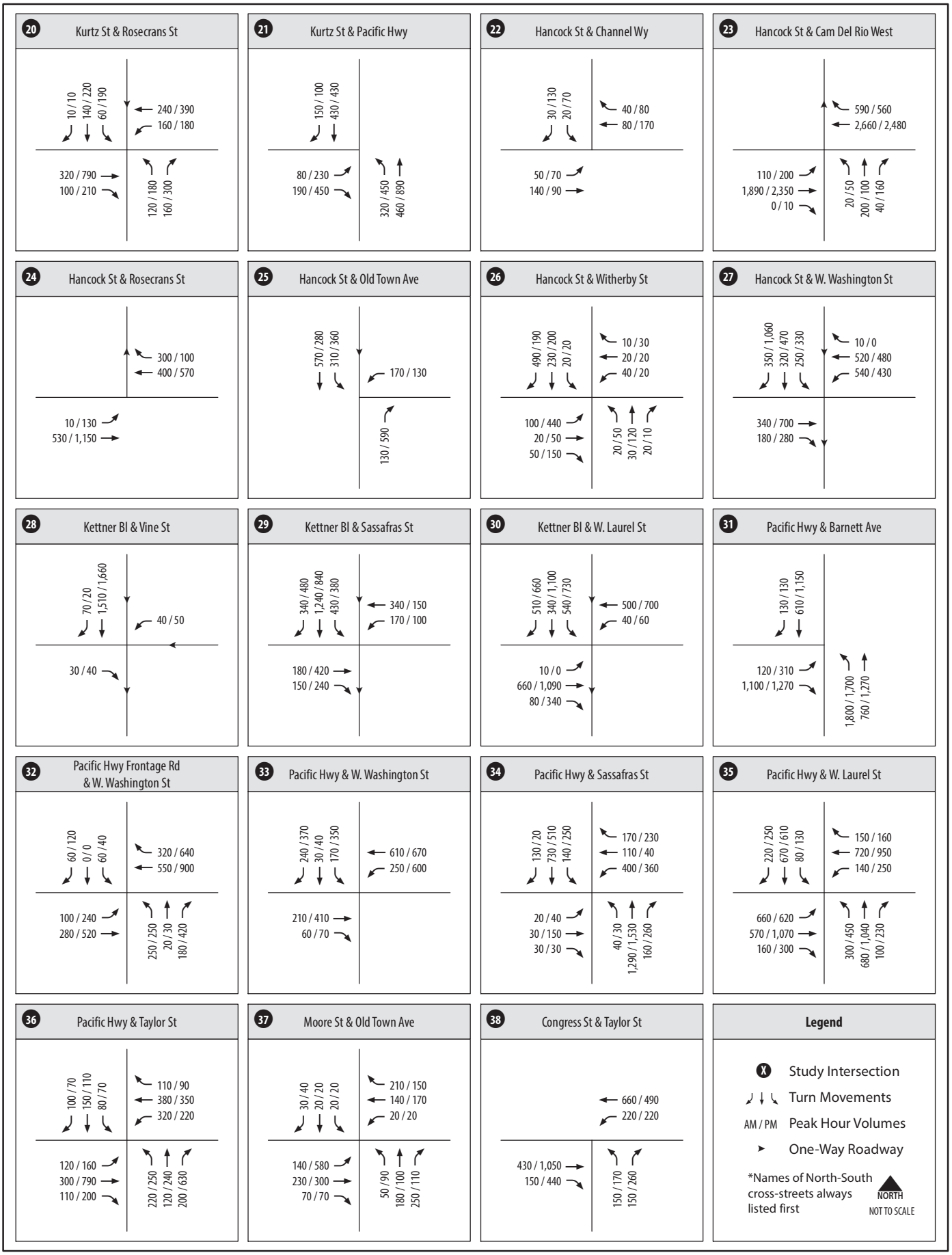

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Figure 6-4
Intersection Peak Hour Volumes - Preferred Plan (Intersections 20-38)

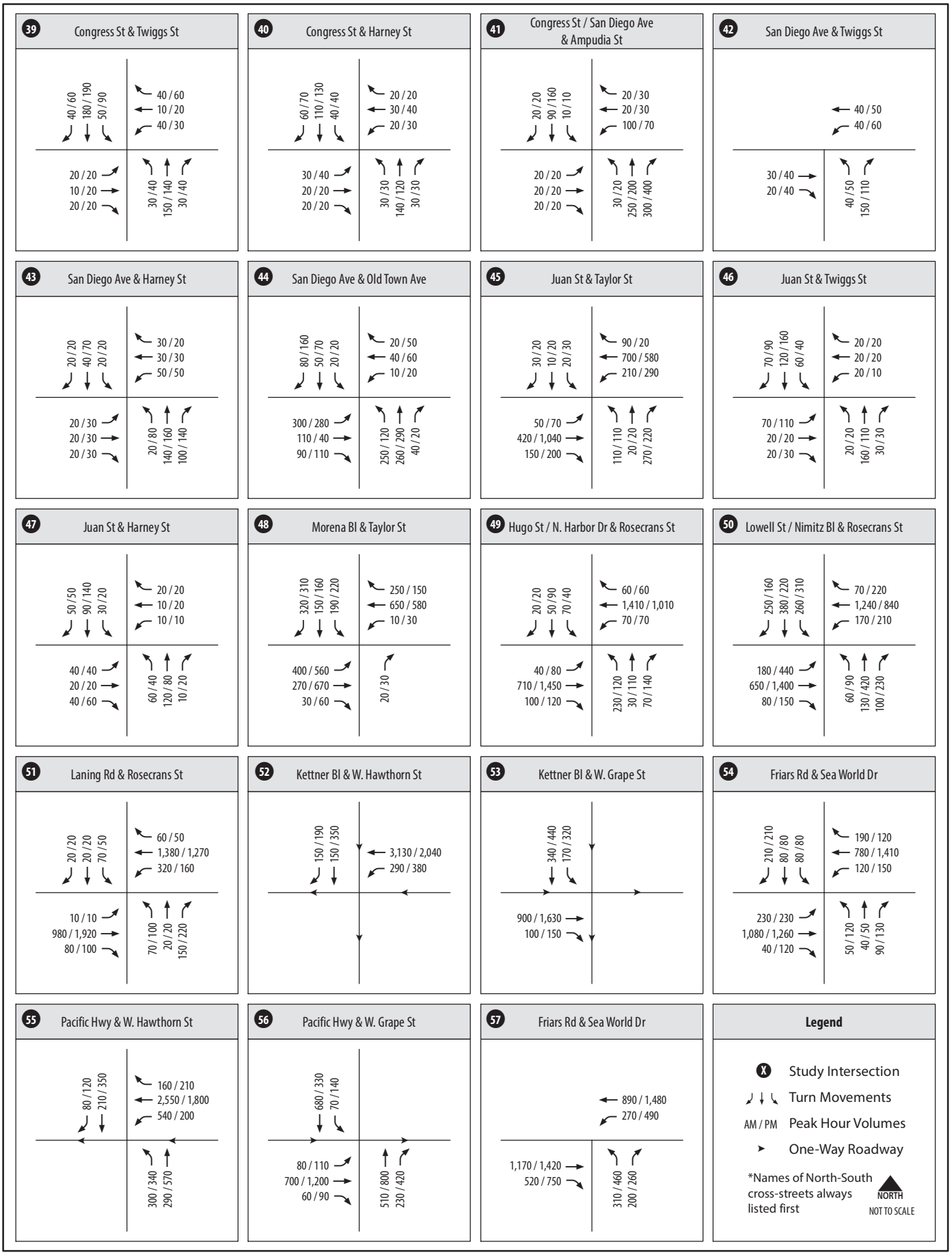

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Figure 6-4
Intersection Peak Hour Volumes - Preferred Plan (Intersections 39-57)

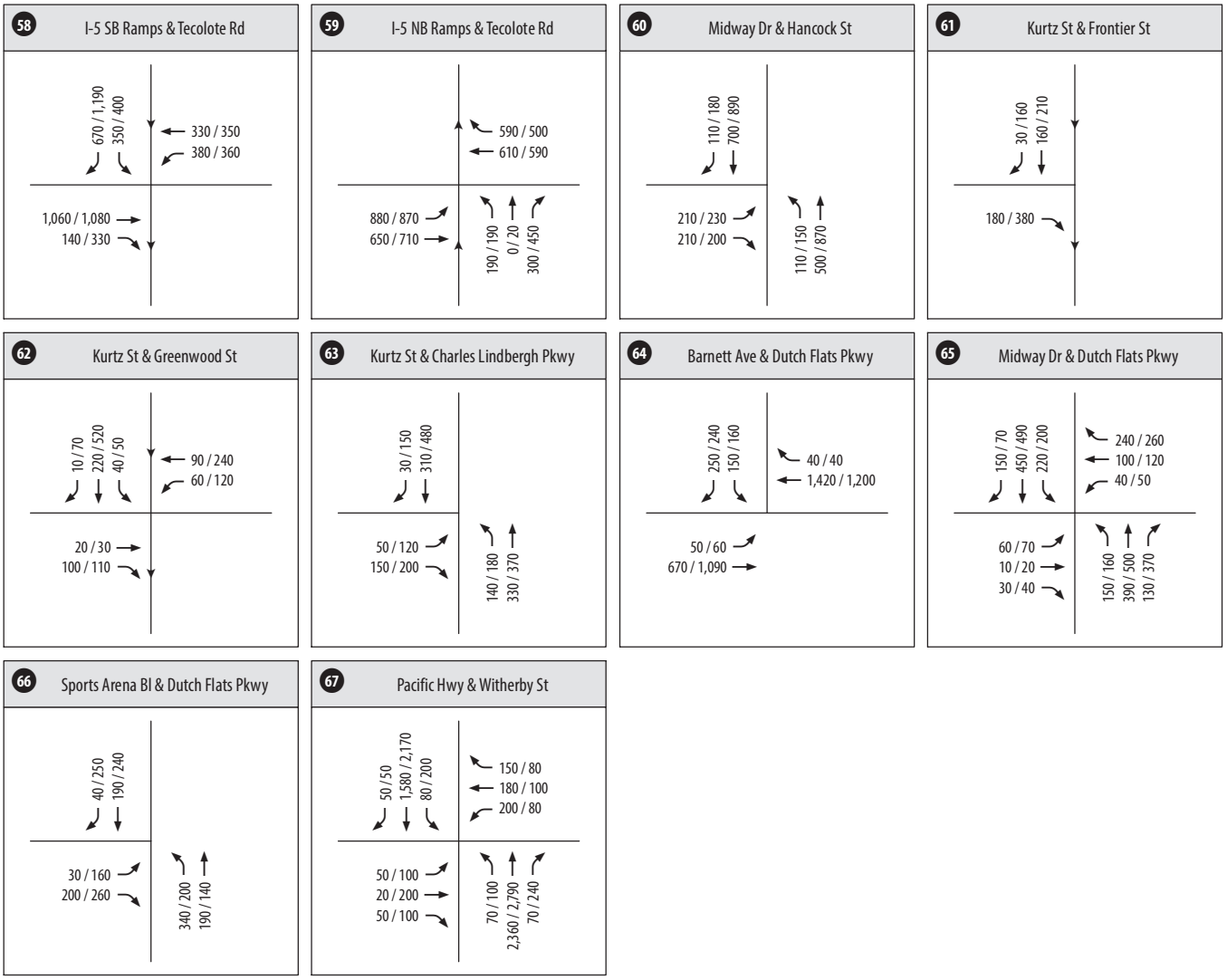

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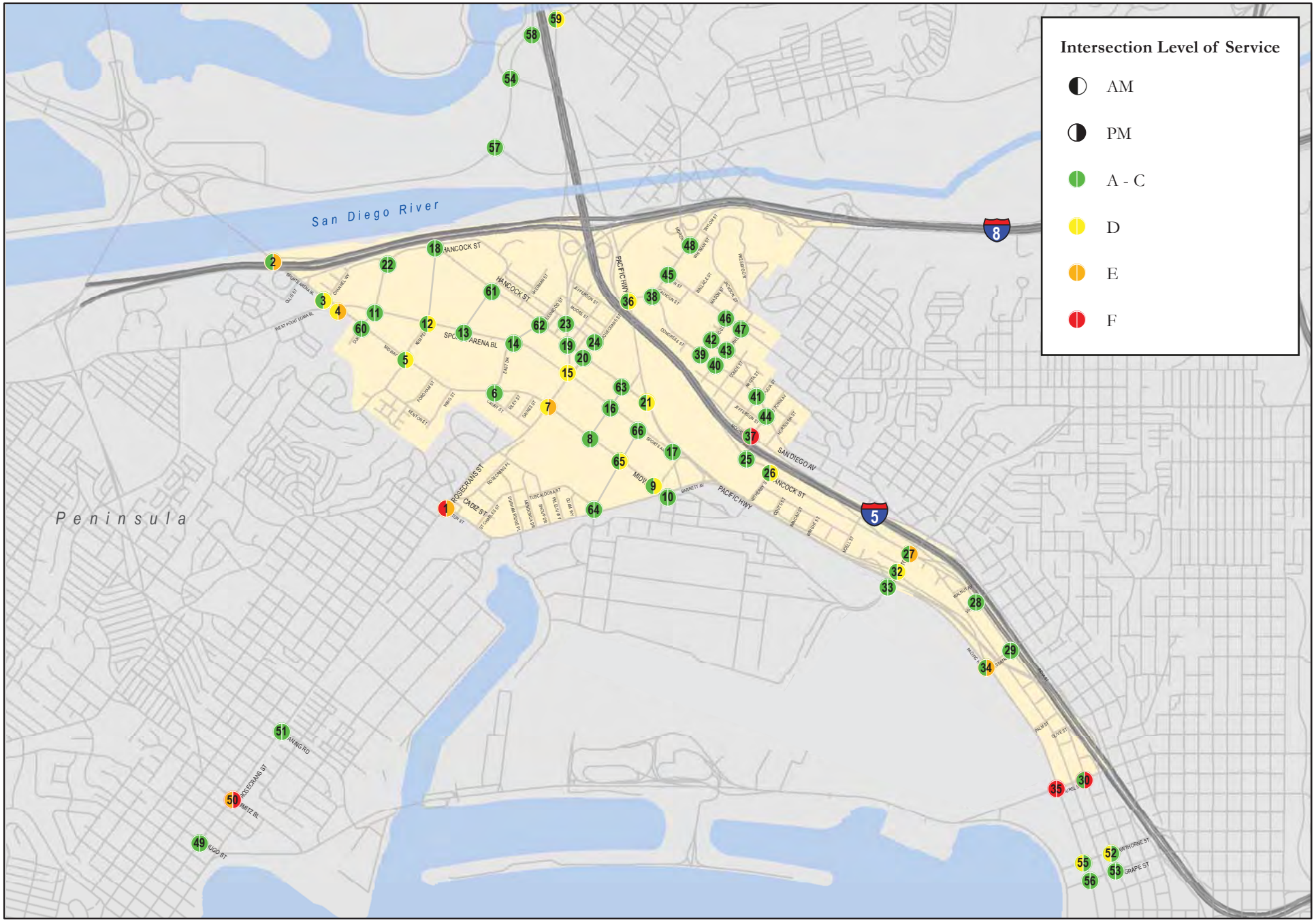
Figure 6-4
Intersection Peak Hour Volumes - Preferred Plan (Intersections 58-67)



Midway-Pacific Highway and
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Figure 6-5
Peak Hour Intersection LOS
Preferred Plan Conditions

Table 6.2 Peak Hour Intersection LOS and Delay Results – Preferred Plan Conditions

No.	Intersection	Control	AM			PM		
			Delay (Sec)	LOS	Existing LOS	Delay (Sec)	LOS	Existing LOS
Midway-Pacific Highway								
1	Lytton St and Rosecrans St	Signal	96.9	F	E	55.1	E	D
2	W Mission Bay Dr and I-8 WB Off-Ramp	Signal	15.4	B	B	68.5	E	E
3	Sports Arena Blvd and Channel Way	SSSC	14.0	B	B	31.9	D	B
4	Midway Dr and Sports Arena/W Point Loma Blvd	Signal	51.1	D	D	77.9	E	D
5	Midway Dr and Kemper St	Signal	32.0	C	C	40.5	D	D
6	Midway Dr and East Dr	Signal	7.0	A	A	17.8	B	B
7	Midway Dr and Rosecrans St	Signal	36.3	D	C	65.4	E	D
8	Midway Dr and Charles Lindbergh Pkwy	Signal	11.5	B	(1)	25.6	C	(1)
9	Midway Dr and Enterprise St	SSSC	12.9	B	B	26.0	D	C
10	Midway Dr and Barnett Ave	Signal	13.6	B	B	12.0	B	B
11	Sports Arena Blvd and Hancock St	Signal	14.8	B	A	18.6	B	B
12	Sports Arena Blvd and Kemper St	Signal	34.6	C	B	36.3	D	B
13	Sports Arena Blvd and Sports Arena Driveway	Signal	17.9	B	B	27.9	C	C
14	Sports Arena Blvd and East Dr	Signal	6.8	A	C	23.9	C	B
15	Sports Arena Blvd and Rosecrans St	Signal	36.7	D	D	53.9	D	D
16	Sports Arena Blvd and Charles Lindbergh Pkwy	Signal	13.9	B	(1)	16.0	B	(1)
17	Sports Arena Blvd and Pacific Hwy	Signal	26.9	C	B	17.6	B	B
18	Kurtz St and Hancock St	Signal	13.5	B	(2)	12.1	B	(2)
19	Kurtz St and Camino Del Rio West	Signal	19.2	B	A	28.6	C	C
20	Kurtz St and Rosecrans St	Signal	24.2	C	B	29.2	C	C
21	Kurtz St and Pacific Hwy	Signal	27.9	C	B	47.5	D	B
22	Hancock St and Channel Wy	SSSC	10.0	B	A	12.9	B	B
23	Hancock St and Camino Del Rio West	Signal	30.2	C	C	26.1	C	C
24	Hancock St and Rosecrans St	*No Conflicting Movements*						
25	Hancock St and Old Town Ave	AWSC	24.8	C	C	20.9	C	B
26	Hancock St and Witherby St	AWSC	13.9	B	C	33.6	D	C
27	Hancock St and Washington St	Signal	22.4	C	C	76.1	E	C
28	Kettner Blvd and Vine St	SSSC	16.0	C	B	18.5	C	C
29	Kettner Blvd and Sassafras St	Signal	14.3	B	B	14.9	B	B
30	Kettner Blvd and West Laurel St	Signal	19.5	B	B	89.0	F	C
31	Pacific Hwy and Barnett Ave	*No Conflicting Movements*						
32	Pacific Hwy and Washington St @ Frontage Rd	Signal	25.8	C	B	45.4	D	D
33	Pacific Hwy and Washington St	Signal	19.6	B	B	26.6	C	C

Table 6.2 Peak Hour Intersection LOS and Delay Results – Preferred Plan Conditions

No.	Intersection	Control	AM			PM		
			Delay (Sec)	LOS	Existing LOS	Delay (Sec)	LOS	Existing LOS
34	Pacific Hwy and Sassafras St	Signal	27.9	C	B	58.2	E	C
35	Pacific Hwy and West Laurel St	Signal	88.1	F	D	133.0	F	D
Old Town								
36	Pacific Hwy and Taylor St	Signal	30.8	C	E	50.5	D	C
37	Moore St and Old Town Ave	Signal	23.2	C	B	98.9	F	B
38	Congress St and Taylor St	Signal	13.5	B	B	18.2	B	C
39	Congress St and Twiggs St	AWSC	9.7	A	A	10.8	B	A
40	Congress St and Harney St	AWSC	9.0	A	A	9.3	A	A
41	Congress St and San Diego Ave/Ampudia St	SSSC	16.8	C	B	15.6	C	B
42	San Diego Ave and Twiggs St	AWSC	7.9	A	A	8.0	A	A
43	San Diego Ave and Harney St	AWSC	8.9	A	A	10.8	B	A
44	San Diego Ave and Old Town Ave	Signal	18.5	B	B	14.1	B	B
45	Juan St and Taylor St	Signal	14.6	B	B	17.4	B	B
46	Juan St and Twiggs St	AWSC	9.7	A	A	10.0	B	A
47	Juan St and Harney St	AWSC	8.8	A	A	8.8	A	A
48	Morena Blvd and Taylor St	Signal	21.8	C	C	23.5	C	B
Intersections Outside of Study Communities								
49	Hugo St/N. Harbor Dr and Rosecrans St	Signal	30.0	C	B	32.1	C	C
50	Lowell St/Nimitz Blvd and Rosecrans St	Signal	59.9	E	D	110.6	F	E
51	Laning Rd and Rosecrans St	Signal	25.6	C	B	23.2	C	B
52	Kettner Blvd and West Hawthorn St	Signal	41.2	D	B	13.3	B	B
53	Kettner Blvd and West Grape St	Signal	10.3	B	A	10.0	B	A
54	Pacific Hwy and Sea World Dr	Signal	23.9	C	B	33.4	C	C
55	Pacific Hwy and West Hawthorn St	Signal	35.3	D	D	32.4	C	C
56	Pacific Hwy and West Grape St	Signal	17.9	B	B	31.6	C	C
57	Friars Rd and Sea World Dr	Signal	15.1	B	B	25.7	C	B
58	I-5 SB Ramps and Sea World Dr	Signal	18.2	B	B	20.5	C	E
59	I-5 NB Ramps and Sea World Dr	Signal	28.8	C	C	42.4	D	C
New Intersections (Midway-Pacific Highway Community)								
60	Midway Dr & Duke Street / Hancock St	Signal	42.4	D	(1)	53.3	D	(1)
61	Kurtz St & Frontier Dr	SSSC	9.9	A	(1)	14.1	B	(1)
62	Kurtz St & Greenwood St	Signal	11.9	B	(1)	12.4	B	(1)
63	Kurtz St & Charles Lindbergh Pkwy	Signal	8.3	A	(1)	17.9	B	(1)
64	Barnett Ave & Dutch Flats Pkwy	Signal	24.6	C	(1)	14.4	B	(1)

Table 6.2 Peak Hour Intersection LOS and Delay Results – Preferred Plan Conditions

No.	Intersection	Control	AM Delay (Sec)	AM LOS	AM Existing LOS	PM Delay (Sec)	PM LOS	PM Existing LOS
65	Midway Dr & Dutch Flats Pkwy	Signal	32.2	C	(1)	44.6	D	(1)
66	Dutch Flats Pkwy & Sports Arena Bl	Signal	10.8	B	(1)	18.3	B	(1)

Source: Chen Ryan Associates (May 2017)

Notes:
(1) Intersection does not currently exist.
(2) Intersection experienced no control delay under existing conditions.
Bold letters indicate LOS E or F.

The following mitigation measures were identified for the two communities:

Midway-Pacific Highway Community

1. *Lytton Street and Rosecrans Street (LOS F: AM Peak Hour and LOS E PM Peak Hour)* – The westbound through movement, as well as the southbound left-turn and through movements are projected to be over capacity, under implementation of the Preferred Plan. Implementing the following improvements would allow the intersection to operate at LOS D or better during both peak hours.

    - Add a second southbound left-turn lane
    - Add an additional westbound through movement lane on Rosecrans Street (three total)
    - Implement right-turn overlap (RTOL) phases at all legs of the intersection

    The identified significant traffic related impact to this intersection would be fully mitigated with the implementation of this improvement.

    Partial Mitigation: If the second southbound left-turn and RTOL phase are implemented (feasible improvements) the overall intersection delay would be reduced to the following:

    AM: LOS E
    PM: LOS D

    Implementation of this improvement will partially mitigate the traffic related impact at the intersection.

2. *Sports Arena Boulevard / West Mission Bay and I-8 WB Off-Ramp (LOS E: PM Peak Hour)* – The westbound right-turn movement at this intersection is projected to be over capacity during the PM peak hour, under the implementation of the Preferred Plan. Providing a third exclusive westbound right-turn lane or converting the movement to free-right-turn movement would improve the intersection operations to LOS D. The identified significant traffic related impact to this intersection would be fully mitigated with the implementation of this improvement.

    Partial Mitigation: None recommended.

4. *Midway Drive / West Point Loma Drive and Sports Arena Boulevard (LOS E: PM Peak Hour)* – All four left-turn movements at this intersection are projected to be over capacity during the PM Peak Hour. Providing dual-left turn lanes in the northbound, southbound and eastbound directions would improve intersection operations to LOS D during the PM peak hour. The identified significant traffic related impact to this intersection would be fully mitigated with the implementation of this improvement.

   Partial Mitigation: None recommended.

7. *Midway Drive and Rosecrans Street* (LOS E: PM Peak Hour) – Rosecrans Street is projected to operate at LOS E during the PM peak hours, under implementation of the Preferred Plan. Widening the eastbound and westbound approaches of the intersection to include a fourth through lane would improve the intersection operations to LOS D. The identified significant traffic related impact to this intersection would be fully mitigated with the implementation of this improvement.

   Partial Mitigation: None recommended, limited to no right-of-way is anticipated to be available with proposed Multi-Use Urban Path improvements.

27. *Hancock Street and Washington Street (LOS E: PM Peak Hour)* – The southbound right-turn movement of the intersection is projected to be over capacity during the PM peak hour, under the implementation of the Preferred Plan. Restriping the southbound approach to include a second southbound right-turn lane would allow the intersection to operate at LOS C during the PM Peak Hour. This improvement is feasible but may require additional engineering study. The identified significant traffic related impact to this intersection would be fully mitigated with the implementation of this improvement.

   Partial Mitigation: None recommended.

30. *Kettner Boulevard and Laurel Street (LOS F: PM Peak Hour)* – The eastbound through movement at the intersection is projected to be over capacity during the PM peak hour, under implementation of the Preferred Plan. Widening the eastbound approach of the intersection to include a third through lane would improve the intersection operations to LOS D. The identified significant traffic related impact to this intersection would be fully mitigated with the implementation of this improvement.

   Partial Mitigation: None recommended.

34. *Pacific Highway and Sassafras Street (LOS E: PM Peak Hour)* – The southbound left-turn movement of the intersection is projected to be over capacity during the PM peak hour, under the implementation of the Preferred Plan. Adding a second southbound left-turn lane would allow the intersection to operate at LOS D during the PM peak hour. The

identified significant traffic related impact to this intersection would be fully mitigated with the implementation of this improvement.

Partial Mitigation: None recommended.

35. *Pacific Highway and Laurel Street (LOS F: AM and PM Peak Hours)* – Laurel Street is projected to be over capacity during both peak hours, under implementation of the Preferred Plan. Widening the eastbound, westbound and northbound approaches of the intersection to include a third through lane and a second eastbound left-turn lane, as well as a second northbound left-turn lane and exclusive right-turn lane would improve the intersection operations to LOS D. The identified significant traffic related impact to this intersection would be fully mitigated with the implementation of this improvement.

    Partial Mitigation: None recommended.

Old Town Community

37. *Moore Street and Old Town Street (LOS F: PM Peak Hour)* – The eastbound and westbound movements of the intersection are projected to be over capacity during the PM peak hour, under implementation of the Preferred Plan. Implementation of the following improvements would allow the intersection to operate at LOS D during the PM peak hour.

    - Implement exclusive eastbound and westbound left-turn lanes.
    - Convert the eastbound/westbound signal phasing from permitted to protected phasing.

    The identified significant traffic related impact to this intersection would be fully mitigated with the implementation of this improvement.

    Partial Mitigation: None recommended.

Outside of the Community

50. *Nimitz Boulevard / Lowell Street and Rosecrans Street (LOS E: AM Peak Hour and LOS F: PM Peak Hour*) – Both the southbound through movement and eastbound left-turn movement are anticipated to be over capacity during both peak hours, under implementation of Preferred Plan. Widening the northbound and southbound approaches of the intersection to include a third through lane and a second southbound left-turn lane would improve the intersection operations to LOS D or better during both the AM and PM peak hours. Implementation of the following improvements would allow the intersection to operate at LOS D or better during both the AM and PM peak hours.

    The identified significant traffic related impact to this intersection would be fully mitigated with the implementation of this improvement.

    Partial Mitigation: None recommended.

6.1.3 Intersection Queuing Analysis

A queuing analysis was conducted under Preferred Plan conditions, at each of the study intersections to assess potential overflowing issues at exclusive turn-lanes and closely spaced intersections. Closely spaced intersections include all ramp intersections and intersections within close proximity (less than 500 feet) to one another. The limitations in turn-lane storage capacity could result in turning vehicles overflow into adjacent lanes, while excessive queuing (queue length exceeds distance to upstream intersection) at closely spaced intersection could negatively affect the operations of the upstream intersection. When either situation occurs, traffic operations could deteriorate, resulting in additional levels of congestion.

Table 6.3 displays the average (50th percentile) and maximum (95th percentile) queue lengths at closely spaced intersections (500 feet apart), for relevant movements. Synchro intersection queuing reports are provided in Appendix E following the intersection LOS worksheets.

Table 6.3 Queue Lengths at Closely Spaced Intersections – Preferred Plan Conditions

#	Impacted Intersection	Peak Hour	Upstream Intersection	Spacing (Feet)	Turning Movement	95th% Queue Length (Feet)	50th% Queue Length (Feet)
7	Midway Dr and Rosecrans St	AM	15. Sports Arena Blvd and Rosecrans St	665	EBT	325	277
		PM				827	746
15	Sports Arena Blvd and Rosecrans St	AM	19. Kurtz St and Camino Del Rio West	380	EBT	622	465
		PM				660	569
19	Kurtz St and Camino Del Rio West	AM	23. Hancock St and Camino Del Rio West	315	NET	128	90
		PM				181	134
20	Kurtz St and Rosecrans St	AM	15. Sports Arena Blvd and Rosecrans St	310	WBT	694	561
		PM				824	777
N/A	I-5 SB Off-Ramp and Camino Del Rio West	AM	23. Hancock St and Camino Del Rio West	490	SWT	1,204	1,122
		PM				1,164	1,084

Source: Chen Ryan Associates (May 2017)

Midway-Pacific Highway Community

As shown, the maximum (95th percentile) and average (50th percentile) queue lengths at all closely spaced intersections, with the exception of the average queue length at Kurtz Street and Camino Del Rio West, are anticipated to exceed the spacing between intersections under implementation of Preferred Plan conditions. Queuing spillovers could degrade traffic operations at the upstream intersections.

Old Town

There are no signalized intersections within 500 feet of each other within the Old Town Community.

Table 6.4 displays the average (50th percentile) and maximum (95th percentile) queue lengths for intersection movements where the maximum peak hour queue length is projected to exceed the current storage length under Preferred Plan conditions. Synchro intersection queuing reports are provided in Appendix E following the intersection LOS worksheets.

Table 6.4 Queue Lengths at Closely Spaced Intersections – Preferred Plan Conditions

No.	Intersection	Movement	Peak	95th % Queue Length (Feet)	50th % Queue Length (Feet)	Pocket Length (Feet)	Excess 95th % Queue (Feet)	Excess 50th % Queue (feet)
Midway-Pacific Highway								
1	Lytton St and Rosecrans St	EBL	AM	137	48	105	32	0
			PM	223	98	105	118	0
		NBL	AM	309	215	230	79	0
			PM	384	267	230	154	37
		SBL	AM	976	741	185	791	556
			PM	551	350	185	366	165
4	Midway Dr and Sports Arena/W Point Loma Blvd	EBL	AM	790	374	380	410	0
			PM	718	501	380	338	121
		NBL	AM	342	161	230	112	0
			PM	798	573	230	568	343
5	Midway Dr and Kemper St	EBL	AM	127	93	100	27	0
			PM	196	147	100	96	47
7	Midway Dr and Rosecrans St	WBL	AM	186	106	340	0	0
			PM	366	251	340	26	0
		SBL	AM	164	87	90	74	0
			PM	299	189	90	209	99
		NBL	AM	139	65	190	0	0
			PM	350	187	190	160	0
		NBR	AM	80	34	190	0	0
			PM	346	234	190	156	44
12	Sports Arena Blvd and Kemper Street	EBL	AM	88	59	50	38	9
			PM	108	63	50	58	13
		NBL	AM	251	140	160	91	0
			PM	327	229	160	167	69
14	Sports Arena Blvd and East Drive	NBL	AM	48	28	130	0	0
			PM	170	131	130	40	1
15	Sports Arena Blvd and Rosecrans St	EBL	AM	171	95	220	0	0
			PM	309	200	220	89	0
		NBL	AM	260	130	130	130	0
			PM	385	215	130	255	85

Table 6.4 Queue Lengths at Closely Spaced Intersections – Preferred Plan Conditions

No.	Intersection	Movement	Peak	95th % Queue Length (Feet)	50th % Queue Length (Feet)	Pocket Length (Feet)	Excess 95th % Queue (Feet)	Excess 50th % Queue (feet)
19	Kurtz St and Camino Del Rio West	SBL	AM	298	240	210	88	30
			PM	746	482	210	536	272
		WBL	AM	218	245	110	108	135
			PM	173	170	110	63	60
20	Kurtz St and Rosecrans St	NBL	AM	167	106	60	107	46
			PM	220	104	60	160	44
		WBL	AM	106	58	85	21	0
			PM	198	63	85	113	0
23	Hancock St and Camino Del Rio West	WBR	AM	352	206	140	212	66
			PM	363	219	140	223	79
		EBL	AM	135	104	110	25	0
			PM	259	215	110	149	105
27	Hancock St and Washington St	WBL	AM	229	140	140	89	0
			PM	312	205	140	172	65
		SBR	AM	98	31	270	0	0
			PM	1291	1029	270	1021	759
29	Kettner Blvd and Sassafras Street	SBL	AM	190	115	80	110	35
			PM	187	112	80	107	32
34	Pacific Highway and Sassafras Street	WBL	AM	396	222	100	296	122
			PM	532	337	100	432	237
		SBL	AM	184	85	250	0	0
			PM	411	239	250	161	0
35	Pacific Hwy and West Laurel St	EBL	AM	1006	767	375	631	392
			PM	1146	900	375	771	525
		WBL	AM	195	125	70	125	55
			PM	470	281	70	400	211
		NBL	AM	533	344	90	443	254
			PM	870	645	90	780	555
		SBL	AM	150	73	250	0	0
			PM	324	178	250	74	0
Old Town								
36	Pacific Hwy and Taylor St	EBL	AM	172	64	150	22	0
			PM	245	95	150	95	0
		WBL	AM	212	90	160	52	0
			PM	130	65	160	0	0

Table 6.4 Queue Lengths at Closely Spaced Intersections – Preferred Plan Conditions

No.	Intersection	Movement	Peak	95th % Queue Length (Feet)	50th % Queue Length (Feet)	Pocket Length (Feet)	Excess 95th % Queue (Feet)	Excess 50th % Queue (feet)
36	Pacific Hwy and Taylor St	NBL	AM	159	62	100	59	0
			PM	183	78	100	83	0
		NBR	AM	41	0	200	0	0
			PM	571	351	200	371	151
38	Congress St and Taylor St	WBL	AM	220	74	100	120	0
			PM	226	91	100	126	0
44	San Diego Avenue and Old Town Street	NBL	AM	159	68	75	84	0
			PM	80	22	75	5	0
45	Juan Street and Taylor Street	WBL	AM	96	33	95	1	0
			PM	193	55	95	98	0
48	Morena Blvd and Taylor St	EBL	AM	186	86	180	6	0
			PM	270	125	180	90	0
Intersections Outside of Study Communities								
49	Hugo St and Rosecrans St	NBL	AM	297	191	115	182	76
			PM	188	119	115	73	4
50	Nimitz Blvd and Rosecrans St	EBL	AM	343	173	300	43	0
			PM	788	548	300	488	248
		WBL	AM	194	117	300	0	0
			PM	442	256	300	142	0
		NBL	AM	96	49	75	21	0
			PM	152	91	75	77	16
		SBL	AM	421	246	285	136	0
			PM	583	385	285	298	100
54	Pacific Highway and Seaworld Drive	WBL	AM	185	58	170	15	0
			PM	241	87	170	71	0
		NBL	AM	81	24	150	0	0
			PM	210	70	150	60	0
56	Pacific Highway and Grape St	SBL	AM	75	34	130	0	0
			PM	139	79	130	9	0
57	Friars Road and Seaworld Dr	EBR	AM	97	60	180	0	0
			PM	328	209	180	148	29
		WBL	AM	145	59	205	0	0
			PM	285	159	205	80	0
		NBL	AM	101	66	150	0	0
			PM	185	135	150	35	0

Table 6.4 Queue Lengths at Closely Spaced Intersections – Preferred Plan Conditions

No.	Intersection	Movement	Peak	95th % Queue Length (Feet)	50th % Queue Length (Feet)	Pocket Length (Feet)	Excess 95th % Queue (Feet)	Excess 50th % Queue (feet)
58	I-5 SB Ramps and Tecolote Road	WBL	AM	144	82	120	24	0
			PM	138	88	120	18	0
59	I-5 NB Ramps and Tecolote Road	EBL	AM	343	232	170	173	62
			PM	297	222	170	127	52

Source: Chen Ryan Associates (May 2017)

Midway-Pacific Highway Community

As shown, under implementation of the Preferred Plan, 30 different movements within the Midway-Pacific Highway Community are projected to have queue lengths exceeding their storage capacity at the most congested point of the peak hour (95th Percentile). The spillovers could degrade traffic operations within the intersection or adjacent closely spaced, upstream intersections for approximately one to two cycles during the peak hour. However, only 23 movements are anticipated to have queues that exceed their storage capacity on an average during either peak hour (50th Percentile).

Old Town

As shown, under implementation of the Preferred Plan, 8 different movements within the Old Town Community are projected to have queue lengths exceeding their storage capacity at the most congested point of the peak hour (95th Percentile). The spillovers could degrade traffic operations within the intersection or adjacent closely spaced, upstream intersections for approximately one to two cycles during the peak hour. However, only 1 movement is anticipated to have queues that exceed their storage capacity on an average during either peak hour (50th Percentile).

Other Communities

As shown, under implementation of the Preferred Plan, 13 different movements within other communities are projected to have queue lengths that exceed their storage capacity at the most congested point of the peak hour (95th Percentile). The spillovers could degrade traffic operations within the intersection or adjacent closely spaced, upstream intersections for approximately one to two cycles during the peak hour. However, only 6 movements are anticipated to have queues that exceed their storage capacity on an average during either peak hour (50th Percentile).

6.1.4 Freeway Segments and LOS Analysis

Neither the Revenue Constrained Alternative of SANDAG's *San Diego Forward Plan* (October 2015) nor the Preferred Plan include freeway improvements, as noted in Sections 3.2.2 and 4.2.2. Table 6.5 displays the freeway segment LOS in the vicinity of the Midway-Pacific Highway and Old Town communities. Forecast freeway volumes were obtained from the modeling process described in Section 5.0.

Table 6.5 Freeway Segment LOS Results – Preferred Plan Conditions

								AM					PM				
Freeway	To	From	Dir	Daily Volume	HVF	Lanes	Aux	K	D	Peak Volume	V/C	LOS	K	D	Peak Volume	V/C	LOS
I-8	Beginning of Freeway	Sports Arena Boulevard	EB	61,200	1.2%	2	0	6.3%	60%	2,600	0.55	B	8.5%	72%	3,100	0.66	C
			WB			2	0		40%	1,700	0.36	A		28%	2,700	0.57	B
	Sports Arena Boulevard	I-5	EB	122,400	2.8%	3	1	6.4%	60%	5,300	0.63	C	7.8%	63%	5,500	0.65	C
			WB			3	1		40%	3,500	0.41	B		37%	5,200	0.62	B
	I-5	Morena Boulevard	EB	183,300	2.8%	4	1	6.4%	41%	5,400	0.50	B	7.2%	51%	6,600	0.61	B
			WB			5	0		59%	7,600	0.65	C		49%	8,000	0.68	C
	Morena Boulevard	Hotel Circle	EB	217,200	2.8%	4	1	6.5%	47%	7,300	0.68	C	8.2%	55%	10,900	1.01	F
			WB			5	0		53%	8,300	0.71	C		45%	8,900	0.76	C
I-5	Clairemont Drive	Sea World Drive	NB	241,500	4.5%	5	0	6.4%	61%	10,900	0.93	E	8.3%	51%	11,700	1.00	E
			SB			5	0		39%	6,900	0.59	B		49%	11,200	0.95	E
	Sea World Drive	I-8	NB	231,800	4.5%	4	1	6.4%	62%	10,400	0.96	E	8.4%	52%	11,500	1.06	F
			SB			4	2		38%	6,300	0.52	B		48%	10,600	0.87	D
	I-8	Old Town Avenue	NB	243,000	4.1%	4	1	6.9%	49%	9,400	0.87	D	8.2%	39%	8,800	0.81	D
			SB			5	0		51%	9,600	0.82	D		61%	13,800	1.17	F
	Old Town Avenue	Washington Avenue	NB	227,800	4.1%	4	0	6.9%	49%	8,900	0.95	E	8.0%	51%	10,600	1.13	F
			SB			5	0		51%	9,100	0.77	C		49%	10,200	0.87	D
	Washington Avenue	Pacific Highway	NB	171,500	4.1%	4	0	6.9%	54%	7,300	0.78	C	8.1%	36%	5,700	0.61	B
			SB			4	0		46%	6,300	0.67	C		64%	10,100	1.07	F
	Pacific Highway	Laurel Street	NB	216,500	4.1%	4	1	6.7%	58%	9,800	0.91	D	7.0%	49%	8,200	0.76	C
			SB			4	1		42%	7,000	0.65	C		51%	9,300	0.86	D
	Laurel Street	Hawthorne Avenue	NB	222,200	4.1%	4	1	6.7%	57%	9,800	0.91	D	7.3%	46%	8,000	0.74	C
			SB			4	1		43%	7,300	0.68	C		54%	10,500	0.97	E

Source: Chen Ryan Associates (May 2017)

Note:
Bold letter indicates LOS E or F

As shown, all mainline freeway segments are projected to operate at LOS D or better under Preferred Plan conditions, with the exception of the following:

- I-8 EB, between Morena Boulevard and Hotel Circle Drive (LOS F: PM Peak Hour)
- I-5 NB, between Clairemont Drive and Sea World Drive (LOS E: AM & PM Peak Hours)
- I-5 SB, between Clairemont Drive and Sea World Drive (LOS E: PM Peak Hour)
- I-5 NB, between Sea World Drive and I-8 (LOS E: AM Peak Hour, LOS F PM Peak Hour)
- I-5 SB, between I-8 and Old Town Avenue (LOS F: PM Peak Hour)
- I-5 NB, between Old Town Avenue and Washington Avenue (LOS E: AM Peak Hour and LOS F: PM Peak Hour)
- I-5 SB, between Washington Avenue and Pacific Highway (LOS F: PM Peak Hour)
- I-5 SB, between Laurel Street and Hawthorne Avenue (LOS E: PM Peak Hour)

6.1.5 Meter Analysis

Table 6.6 summarizes the freeway ramp metering analysis results under implementation of the Preferred Plan for all ramp meter locations within both study communities. The volumes were derived using the outputs for the modeling described in Section 5.0. Existing ramp meter flow rates were assumed under Preferred Plan conditions.

Table 6.6 Freeway Ramp Metering Analysis – Preferred Plan Conditions

Ramp	Peak	Lanes		Flow Rate	Volume	Excess Demand	Delay (Minutes)	Queue (Feet)
		SOV	HOV					
I-8 EB / Sports Arena Boulevard	PM	2	1	641	930	289	27.1	8,381
I-5 SB / Sea World Drive	AM	1	1	444	530	86	11.6	2,494
	PM	1	1	444	670	226	30.5	6,554
I-5 NB / Sea World Drive	AM	2	0	1,555	1,530	0	0.0	0
	PM	2	0	1,656	1,250	0	0.0	0
I-5 SB / Old Town Avenue	PM	1	0	461	410	0	0.0	0
I-5 NB / Old Town Avenue	AM	2	0	905	370	0	0.0	0
	PM	2	0	888	690	0	0.0	0

Source: Chen Ryan Associates (May 2017)

Notes:
SOV = Single Occupancy Vehicle; HOV = High Occupancy Vehicle.
[1] Demand is the peak hour demand expected to use the on-ramp.
[2] Meter Rate is the peak hour capacity expected to be processed through the ramp meter. This value was obtained from Caltrans.
[3] Excess Demand = (Demand) – (Meter Rate) or zero, whichever is greater.
[4] Delay = (Excess Demand / Meter Rate) X 60 min/hr.
[5] Queue = (Excess Demand) X 29 ft/veh.

As shown in the table, the anticipated peak hour demand is not anticipated to exceed the anticipated meter rate at any of the study ramp meter locations creating a delay of 15 minutes[1], with the exception of the following:

- I-8 EB / Sports Arena Boulevard during the PM peak hour (27.1 minutes)
- I-5 SB / Sea World Drive during the PM peak hour (30.5 minutes)

6.2 Intelligent Transportation Systems (ITS)

The implementation of Intelligent Transportation Systems (ITS) can provide many benefits to the local roadway network, including improving roadway traffic operations, improving transit operations, relaying valuable traffic-related information and providing guidance to drivers (e.g. locations of available parking, traffic congestion points, and the location of accidents). Coordinated traffic signals and transit signal priority treatments are examples of ITS programs that can help improve both transit and roadway operations.

The City of San Diego should investigate the feasibility of the following ITS improvements within the Midway-Pacific Highway and Old Town communities:

- Expand signal coordination along major roadway corridors including Rosecrans Street, Taylor Street, Midway Drive, Sports Arena Boulevard, Pacific Highway, Kettner Street and San Diego Avenue.
- Regularly update the timing of traffic signals to reflect shifting travel patterns
- Use traffic responsive or adaptive traffic control in areas with variable traffic patterns
- Implement transit signal priority treatments at signalized intersections serving rapid bus routes
- Use variable message signs to direct motorists to available parking and to alert them of street closures.

The recommendations identified above are consistent with the goals of the future traffic signal communications network elements identified in the City of San Diego *Traffic Signal Communication Master Plan* (2014).

6.3 Transportation Demand Management (TDM) Strategies

The goal of the City's Transportation Demand Management (TDM) program is to improve mobility, reduce congestion and air pollution, and provide options for employees and residents to commute to/ from work. Typical TDM strategies include promoting the following:

- Teleworking
- Alternative Work Schedules
- Transit
- Mixed-Use Development

[1] The City of San Diego Traffic Impact Study Manual (July 1998) defines ramp meters with more than 15 minutes of delay as having a significant impact.

- Walking
- Bicycling
- Carpooling
- Vanpooling
- Shared Mobility Services (e.g., bikeshare, carshare, and on-demand ridesharing services)
- Other Transportation Options

TDM measures improve the efficiency of the transportation system by helping to reduce vehicle trips during peak periods of demand. The San Diego Association of Governments (SANDAG) has an established program (iCommute) that serves as the administrator for TDM programs throughout the region. iCommute provides the following services:

Ridematching Services – the iCommute TripPlanner tool allows users to compare multiple transportation choices in addition to finding vanpool and carpool matches.

Subsidized Vanpool Program – Through the SANDAG vanpool program, each qualified vanpool receives a $400 monthly subsidy when leased through SANDAG preferred vendors, Enterprise Rideshare and vRide. Vanpools range from 7 to 15 passenger vehicles where commuters share the ride to work and split the cost thereby saving money, wear and tear on their personal vehicles, as well as reducing Greenhouse Gas emissions.

Employer Services - The SANDAG iCommute program provides assistance and tools to help local San Diego organizations design and implement customized commuter programs that assist and support employees commute using alternative modes of transportation. The iCommute Diamond Awards recognizes employers with exemplary commute programs and mode-share.

Walk, Ride, and Roll to School – Part of the Safe Routes to School program, this service supports active transportation to and from K-12 schools including biking, walking, skating, skateboarding, or riding a scooter to help promote physical activity and healthier lifestyles for students.

Telework - Teleworking is a convenient solution that enables employees to work from home or a remote location one or more days per week. Telework has proven benefits to employees and employers such as reducing commute costs, lowering parking demand, and helping the environment.

Transit Information – Provides information about San Diego regional transit agencies in addition to Compass Card information.

Bike Parking Program– Provides secure bike parking spaces at more than sixty transit stops and some Park & Ride lots throughout San Diego County in addition to a Regional Bike Map, which has been updated to show bike paths, lanes and routes.

Guaranteed Ride Home – A free service that allows registered iCommute users getting to work by alternative modes to receive free emergency rides home in the cases of illness or unscheduled overtime. Commuters can use the service up to three times per year.

In addition to the iCommute program, Caltrans owns and/or maintains several Park & Ride lots throughout the region that are used to promote carpool and vanpool activity.

The City of San Diego's Land Development Code (LDC) requires new development to provide sufficient bicycle parking stalls, carpool parking, and motorcycle facilities to encourage the use of alternative modes of transportation. The City is early in the process of developing recommendations to amend the LDC requirements for pedestrian, bicycle, carpool, and commuter information facilities. The City's municipal code now allows for on-street carshare operations. Pricing strategies are also used to reduce demand on the transportation system.

6.4 Pedestrian Assessment and Results

This section presents an assessment of the pedestrian network under implementation of the Preferred Plan, which assumes the implementation of the pedestrian related improvements outlined in Sections 3.3.2 and 4.3.2. The City of San Diego Pedestrian Master Plan Phase I identifies the following six Pedestrian Route Typologies and the purpose they serve:

District Sidewalks – Sidewalks along roads that support heavy pedestrian levels in mixed-use concentrated urban areas.

Corridor Sidewalks – Sidewalks along roads that support moderate density business and shopping districts with moderate pedestrian level.

Connector Sidewalks – Sidewalks along roads that support institutional, industrial or business complexes with limited lateral access and low pedestrian levels.

Neighborhood Sidewalks – Sidewalks along roads that support low to moderate density housing with low to moderate pedestrian levels.

Ancillary pedestrian facilities – Facilities away or crossing over streets such as plazas, paseos, promenades, courtyards or pedestrian bridges and stairways.

Path – Walkways and paved paths that are not adjacent to roads that support recreational and transportation purposes.

The assumed Pedestrian Route Typologies within both communities is displayed in Figure 6-6.

The proposed pedestrian network under Preferred Plan conditions was assessed using the methodologies described in Section 2.3.1. The pedestrian network connectivity, quality and overall adequacy (combining both quality and connectivity) are discussed below.

6.4.1 Pedestrian Network Connectivity

Figure 6-7 displays the pedestrian network connectivity to/from pedestrian attracting land uses (residential, commercial, office and recreational uses) throughout both communities. This analysis calculates the percent of area accessible to pedestrians within a half mile walking distance from the respective land uses (connectivity ratio). A connectivity ratio of 50% or better is considered to be ideal.

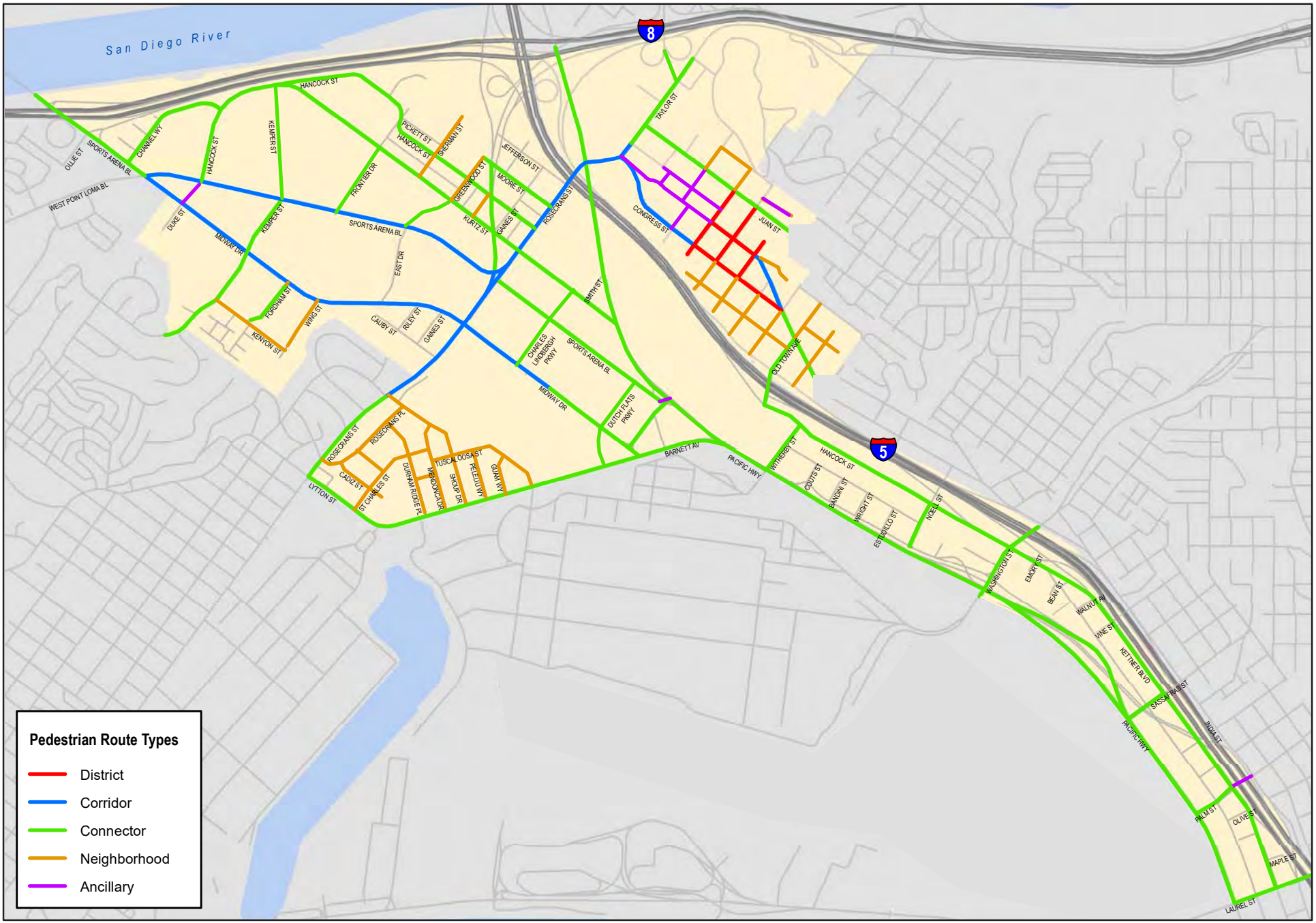


Figure 6-6
Pedestrian Route Typologies -
Preferred Plan Conditions

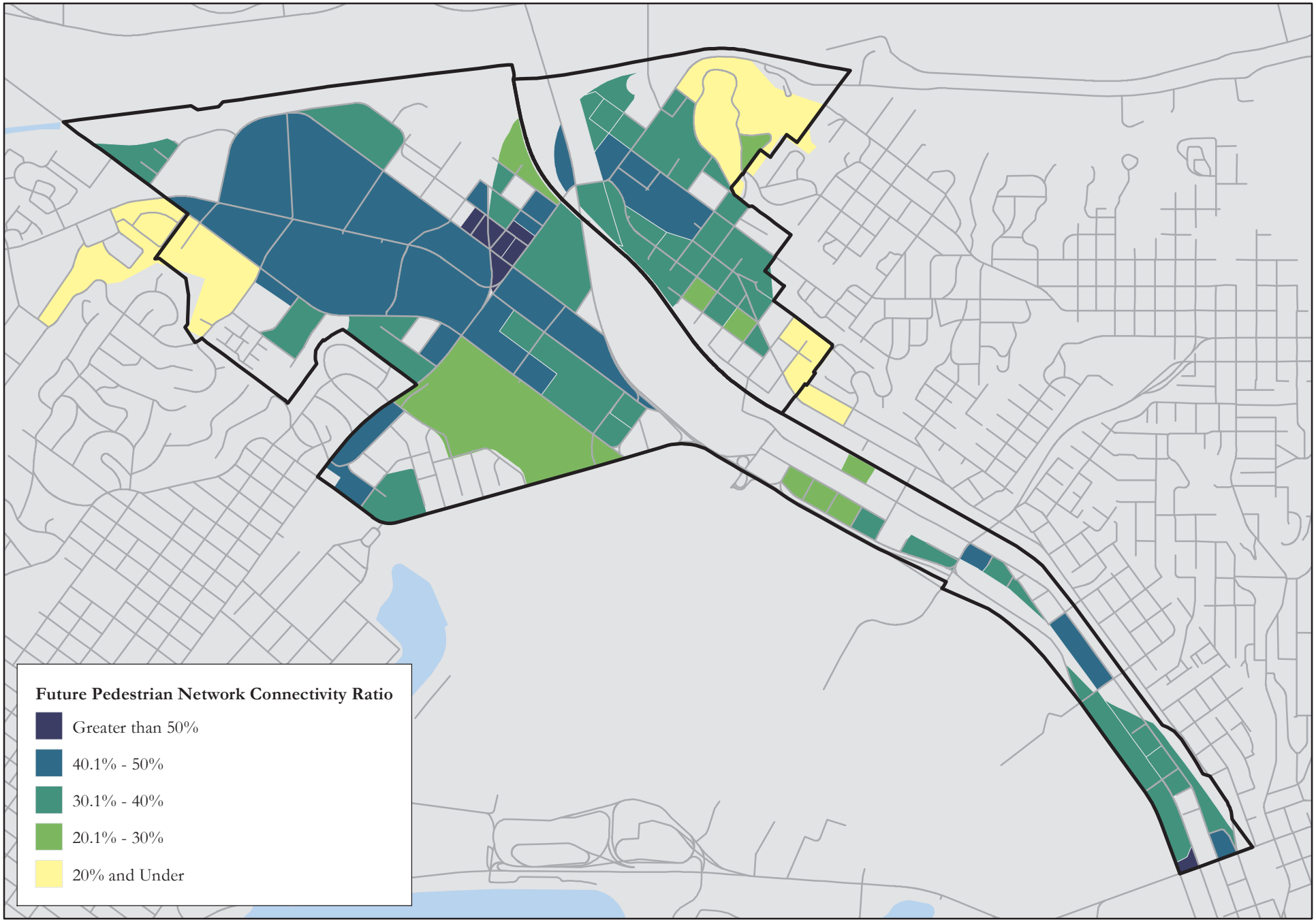


Figure 6-7
Pedestrian Network Connectivity -
Preferred Plan Conditions

Midway-Pacific Highway Community

As shown in the figure, pedestrian connectivity is at ideal levels (50%+ connectivity ratio) within the center of the community (in the area to the northeast of the intersection of Kurtz Street and Rosecrans Street, on either side of Camino Del Rio West. This is primarily due to the dense grid network present in this area. The lower connectivity ratio areas include the northwest area of the community west of Midway Drive and in the area west of Midway Drive and south of Rosecrans Street. The lower ratio is due to large, disconnected parking lots, superblocks, and private property with primary access points along Midway Drive.

Old Town Community

As shown in the figure, the Old Town Community generally has a good connectivity ratio between 40-50%, which is highest in the tourist areas around the Historic State Park and Transit Center Area, and gets lower toward the outskirts of the community. The lower connectivity ratio on the outskirts of the community is primarily due to the barriers created by the I-5 and I-8 freeways where pedestrian crossings are constrained.

6.4.2 Pedestrian Network Quality

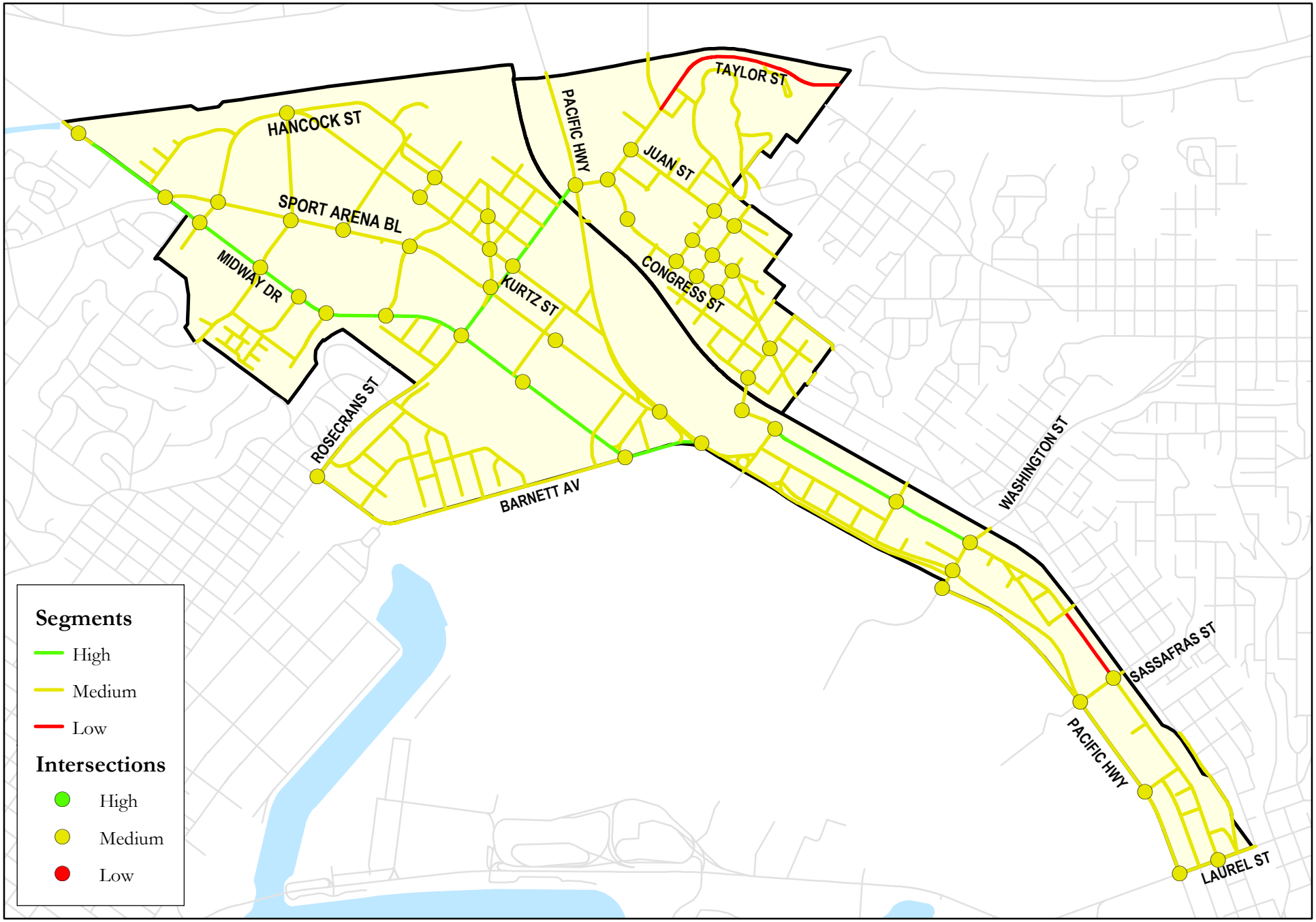
Figure 6-8 and Tables 6.7A and 6.7B display the PEQE analysis results for roadways segments and intersections, along the major pedestrian corridors within the community. PEQE calculation worksheets are provided in Appendix F. As shown in the table, with the implementation of the proposed improvements, the pedestrian facilities along all major roadways within both communities have a Medium or High grade under implementation of the Preferred Plan with the exception of the following:

Midway-Pacific Highway Community

Kettner Boulevard between Vine Street and Sassafras Street – This segment has a score of Low due to the lack of pedestrian facilities on the west side of the roadway (where there are no fronting land uses) and high posted speed limit (40 mph). It should be noted that the east side of the roadway, where the fronting land uses are located, has a grade of Medium. Based on the results of the PEQE analysis, the pedestrian improvements proposed under the Preferred Plan would significantly improve the walkability and safety within Midway-Pacific Highway community from their current conditions.

Old Town Community

Taylor Street between Morena Boulevard and I-8 Ramps – This segment has a grade of Low due to the lack of pedestrian facilities. However, it should be noted that there are no fronting land uses on either side of this segment, nor does this segment connect to any activity centers to the east of the community. While the Old Town community is very walkable today, the improvements proposed under the Preferred Plan provide both access and safety upgrades throughout the community. Improvements such as ADA ramps, continental cross-walks and bulb outs (at key intersections) upgrade many of the intersections within the community from Low to Medium conditions.



Midway-Pacific Highway and
Old Town Community Plan Update
CHEN RYAN

Figure 6-8
PEQE Scoring
Preferred Plan Conditions

Table 6.7A PEQE Results: Roadway Segments – Preferred Plan Conditions

Roadway	To	From	Northside/ Eastside		Southside/ Westside		Total	
			Score	Grade	Score	Grade	Score	Grade
North-South								
Midway/Pacific Highway Corridor								
Lytton Street/ Barnett Avenue	Rosecrans St	Midway Dr	4	Medium	4	Medium	8	Medium
	Midway Dr	Pacific Hwy	7	High	7	High	14	High
W. Mission Bay Dr	I-8 WB Ramps	I-8 EB Ramps	4	Medium	4	Medium	8	Medium
Midway Dr	W. Point Loma Blvd/Sports Arena Blvd	Kemper St	7	High	7	High	14	High
	Kemper St	East Dr	7	High	7	High	14	High
	East Dr	Rosecrans St	7	High	7	High	14	High
	Rosecrans St	Barnett Ave	7	High	7	High	14	High
Sports Arena Blvd	I-8 EB Ramps	W. Point Loma Blvd/Sports Arena Blvd	6	Medium	7	High	13	High
	W. Point Loma Blvd/Midway Dr	Kemper St	5	Medium	5	Medium	10	Medium
	Kemper St	East Dr	5	Medium	5	Medium	10	Medium
	East Dr	Rosecrans St	5	Medium	5	Medium	10	Medium
	Rosecrans St	Pacific Hwy	6	Medium	5	Medium	11	Medium
Kurtz St	Hancock St	Rosecrans St	6	Medium	6	Medium	12	Medium
	Rosecrans St	Pacific Hwy	4	Medium	4	Medium	8	Medium
Hancock St	Sports Arena Blvd	Kurtz St	3	Low	6	Medium	9	Medium
	Kurtz St	Camino Del Rio West	4	Medium	6	Medium	10	Medium
	Camino Del Rio West	Rosecrans St	5	Medium	5	Medium	10	Medium
	Old Town Ave	Witherby St	4	Medium	4	Medium	8	Medium
	Witherby St	Washington St	6	Medium	7	High	13	High
Kettner Blvd	Washington St	Vine St	3	Low	5	Medium	8	Medium
	Vine St	Sassafras St	4	Medium	2	Low	6	Medium
	Sassafras St	Laurel St	5	Medium	5	Medium	10	Medium
Pacific Hwy	Sea World Dr	Taylor St	5	Medium	5	Medium	10	Medium
	Taylor St	Kurtz St	6	Medium	6	Medium	12	Medium
	Kurtz St	Sports Arena Blvd	6	Medium	6	Medium	12	Medium
	Sports Arena Blvd	Barnett Ave	6	Medium	6	Medium	12	Medium
	Barnett Ave	Harney Washington St	6	Medium	6	Medium	12	Medium
	Washington St	Sassafras St	6	Medium	6	Medium	12	Medium
	Sassafras St	Laurel St	6	Medium	6	Medium	12	Medium
Old Town								
Congress St	Taylor St	Twiggs St	6	Medium	6	Medium	12	Medium
	Twiggs St	Harney St	6	Medium	6	Medium	12	Medium
	Harney St	San Diego Ave/Ampudia St	6	Medium	6	Medium	12	Medium
San Diego Ave	Twiggs St	Harney St	6	Medium	6	Medium	12	Medium
	Harney St	Ampudia St	6	Medium	6	Medium	12	Medium

Table 6.7A PEQE Results: Roadway Segments – Preferred Plan Conditions

Roadway	To	From	Northside/ Eastside		Southside/ Westside		Total	
			Score	Grade	Score	Grade	Score	Grade
San Diego Ave	Ampudia St	Old Town Ave	6	Medium	6	Medium	12	Medium
	Old Town Ave	Hortensia St	6	Medium	6	Medium	12	Medium
Juan St	Taylor St	Twiggs St	6	Medium	6	Medium	12	Medium
	Twiggs St	Harney St	6	Medium	6	Medium	12	Medium
	Harney St	San Juan Rd	6	Medium	6	Medium	12	Medium
East-West								
Midway/Pacific Highway Corridor								
Channel Wy	W. Mission Bay Dr	Hancock St	6	Medium	6	Medium	12	Medium
Kemper St	Kenyon St	Midway Dr	6	Medium	5	Medium	11	Medium
	Midway Dr	Sports Arena Blvd	6	Medium	6	Medium	12	Medium
Camino Del Rio West	Rosecrans St	I-5/I-8 Ramps	4	Medium	4	Medium	8	Medium
Rosecrans St	Lytton St	Midway Dr	6	Medium	6	Medium	12	Medium
	Midway Dr	Sports Arena Blvd	7	High	7	High	14	High
	Sports Arena Blvd	Pacific Hwy/Taylor St	7	High	7	High	14	High
Washington St	Frontage Rd	Pacific St	5	Medium	5	Medium	10	Medium
	Pacific St	Hancock St	6	Medium	5	Medium	11	Medium
Vine St	California St	Kettner Blvd	7	High	5	Medium	12	Medium
Sassafras St	Pacific Hwy	Kettner Blvd	5	Medium	5	Medium	10	Medium
Laurel St	Pacific Hwy	Kettner Blvd	5	Medium	5	Medium	10	Medium
Old Town								
Taylor St	Pacific Hwy/ Rosecrans St	Congress St	4	Medium	4	Medium	8	Medium
	Congress St	Juan St	4	Medium	4	Medium	8	Medium
	Juan St	Morena Blvd	4	Medium	4	Medium	8	Medium
	Morena Blvd	I-8 EB Ramps	1	Low	1	Low	2	Low
Twiggs St	Congress St	San Diego Ave	5	Medium	5	Medium	10	Medium
	San Diego Ave	Juan St	6	Medium	6	Medium	12	Medium
Harney St	Congress St	San Diego Ave	6	Medium	6	Medium	12	Medium
	San Diego Ave	Juan St	6	Medium	5	Medium	11	Medium
Old Town Ave	Hancock St	Moore St	5	Medium	5	Medium	10	Medium
	Moore St	San Diego Ave	5	Medium	5	Medium	10	Medium

Source: Chen Ryan Associates (June 2016)

Table 6.7B PEQE Results: Intersections – Preferred Plan Conditions

#	Intersection	Score	Grade
Midway-Pacific Highway			
1	Lytton St and Rosecrans St	6	Medium
2	W Mission Bay Dr and I-8 WB Off-Ramp	6	Medium
3	W Mission Bay Dr and Channel Way	5	Medium
4	Midway Dr and Sports Arena/W Point Loma Blvd	6	Medium
5	Midway Dr and Kemper St	6	Medium
6	Midway Dr and East Dr	6	Medium
7	Midway Dr and Rosecrans St	6	Medium
8	Midway Dr and Charles Lindbergh Pkwy	6	Medium
9	Midway Dr and Enterprise St	5	Medium
10	Midway Dr and Barnett Ave	6	Medium
11	Sports Arena Blvd and Hancock St	6	Medium
12	Sports Arena Blvd and Kemper St	6	Medium
13	Sports Arena Blvd and Sports Arena Driveway	6	Medium
14	Sports Arena Blvd and East Dr	6	Medium
15	Sports Arena Blvd and Rosecrans St	6	Medium
16	Sports Arena Blvd and Charles Lindbergh Pkwy	6	Medium
17	Sports Arena Blvd and Pacific Hwy	6	Medium
18	Kurtz St and Hancock St	5	Medium
19	Kurtz St and Camino Del Rio West	6	Medium
20	Kurtz St and Rosecrans St	6	Medium
21	Kurtz St and Pacific Hwy	6	Medium
22	Hancock St and Channel Wy	5	Medium
23	Hancock St and Camino Del Rio West	6	Medium
24	Hancock St and Rosecrans St	5	Medium
25	Hancock St and Old Town Ave	5	Medium
26	Hancock St and Witherby St	5	Medium
27	Hancock St and Washington St	6	Medium
28	Kettner Blvd and Vine St	5	Medium
29	Kettner Blvd and Sassafras St	6	Medium
30	Kettner Blvd and West Laurel St	6	Medium
31	Pacific Hwy and Barnett Ave	6	Medium
32	Pacific Hwy and Washington St @ Frontage Rd	6	Medium
33	Pacific Hwy and Washington St @ Pacific St	6	Medium
34	Pacific Hwy and Sassafras St	6	Medium
35	Pacific Hwy and West Laurel St	6	Medium
Old Town			
36	Pacific Hwy and Taylor St	6	Medium
37	Moore St and Old Town Ave	6	Medium
38	Congress St and Taylor St	6	Medium

Table 6.7B PEQE Results: Intersections – Preferred Plan Conditions

#	Intersection	Score	Grade
39	Congress St and Twiggs St	5	Medium
40	Congress St and Harney St	5	Medium
41	Congress St and San Diego Ave/Ampudia St	5	Medium
42	San Diego Ave and Twiggs St	5	Medium
43	San Diego Ave and Harney St	5	Medium
44	San Diego Ave and Old Town Ave	6	Medium
45	Juan St and Taylor St	6	Medium
46	Juan St and Twiggs St	5	Medium
47	Juan St and Harney St	5	Medium
48	Morena Blvd and Taylor St	6	Medium
New Intersections			
61	Kurtz St & Frontier Dr	5	Medium
63	Kurtz St & Charles Lindbergh Pkwy	6	Medium
64	Barnett Ave & Dutch Flats Pkwy	6	Medium
65	Midway Dr & Dutch Flats Pkwy	6	Medium
66	Dutch Flats Pkwy & Sports Arena Bl	6	Medium

Source: Chen Ryan Associates (June 2016)

As shown, all study intersections within both communities are projected to have a Medium grade under implementation of the Preferred Plan.

6.4.3 Pedestrian Quality Network Coverage

Figure 6-9 displays the Pedestrian Quality Network Coverage at all study intersections across both communities. This analysis calculates the ratio of the length of quality pedestrian network facilities (PEQE score Medium or High) within a half-mile walk from an intersection, compared to the total network available (based on existing conditions).

Midway-Pacific Highway Community

As shown in the figure, under implementation of the Preferred Plan, the Pedestrian Quality Network Coverage increases to over 75% at all study intersections within the community. The significant increase in coverage is primarily due to the new roadway links proposed under Preferred Plan conditions, including multi-use urban path improvements.

Old Town Community

As shown in the figure, under implementation of the Preferred Plan, the Pedestrian Quality Network Coverage increases to over 75% at all study intersections within the community. The significant increase in coverage is primarily due to the overall improvement to the intersections within the community by implementing minor improvements such as ADA ramps and Continental Crosswalks.

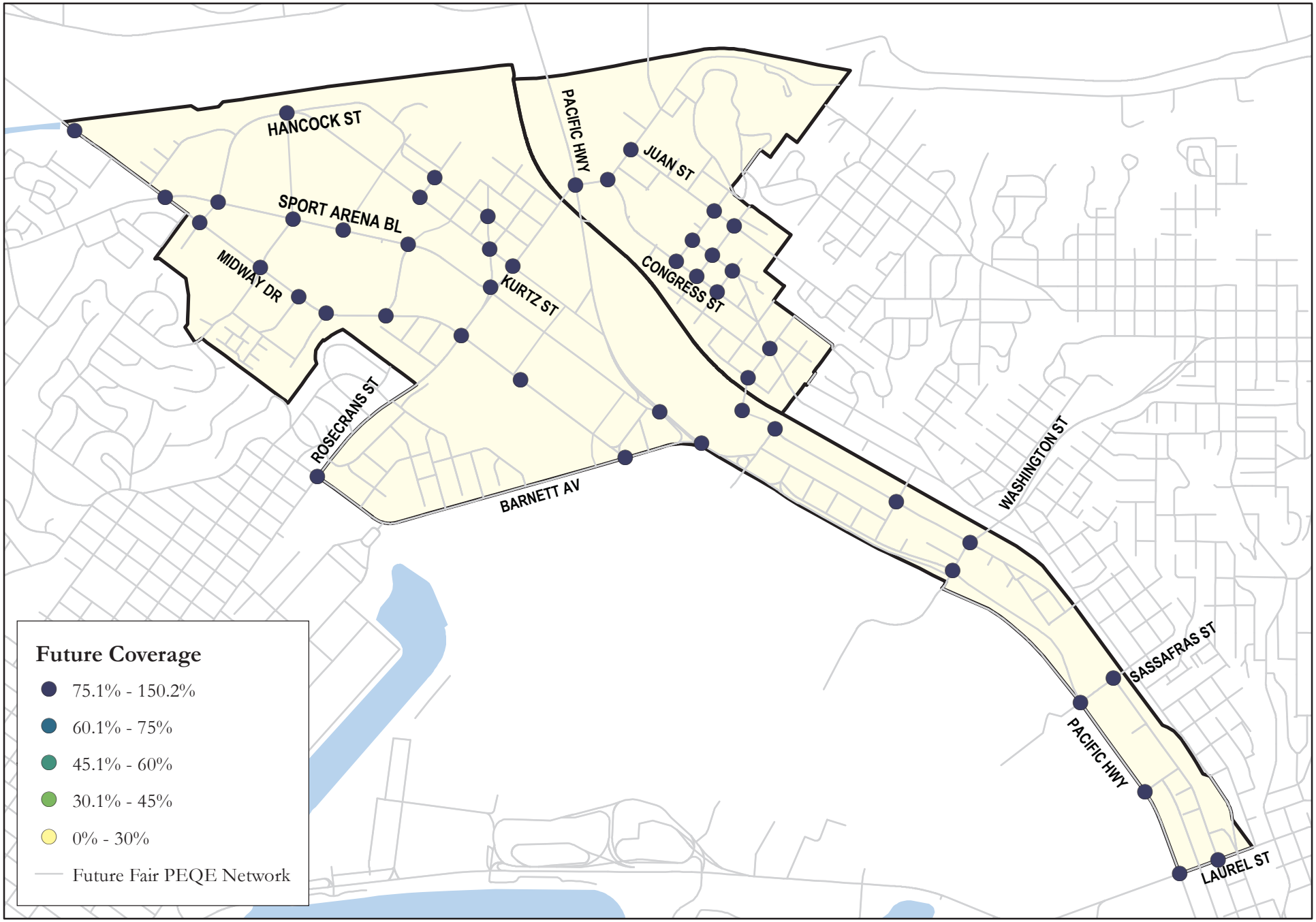


Figure 6-9
Pedestrian Quality Network Coverage -
Preferred Plan Conditions

6.5 Cycling Environment Assessment and Results

This section presents an assessment of the cycling environment under implementation of the Preferred Plan conditions, which assumes implementation of the cycling-related improvements outlined in Sections 3.4.2 and 4.4.2. Figure 6-10 displays the proposed bicycle network in both communities under implementation of the Preferred Plan.

The cycling environment under Preferred Plan conditions was assessed using the methodologies presented in Section 2.3.2. Cycling network connectivity, quality and overall adequacy (combining both quality and connectivity) are assessed below.

6.5.1 Bicycle Network Connectivity

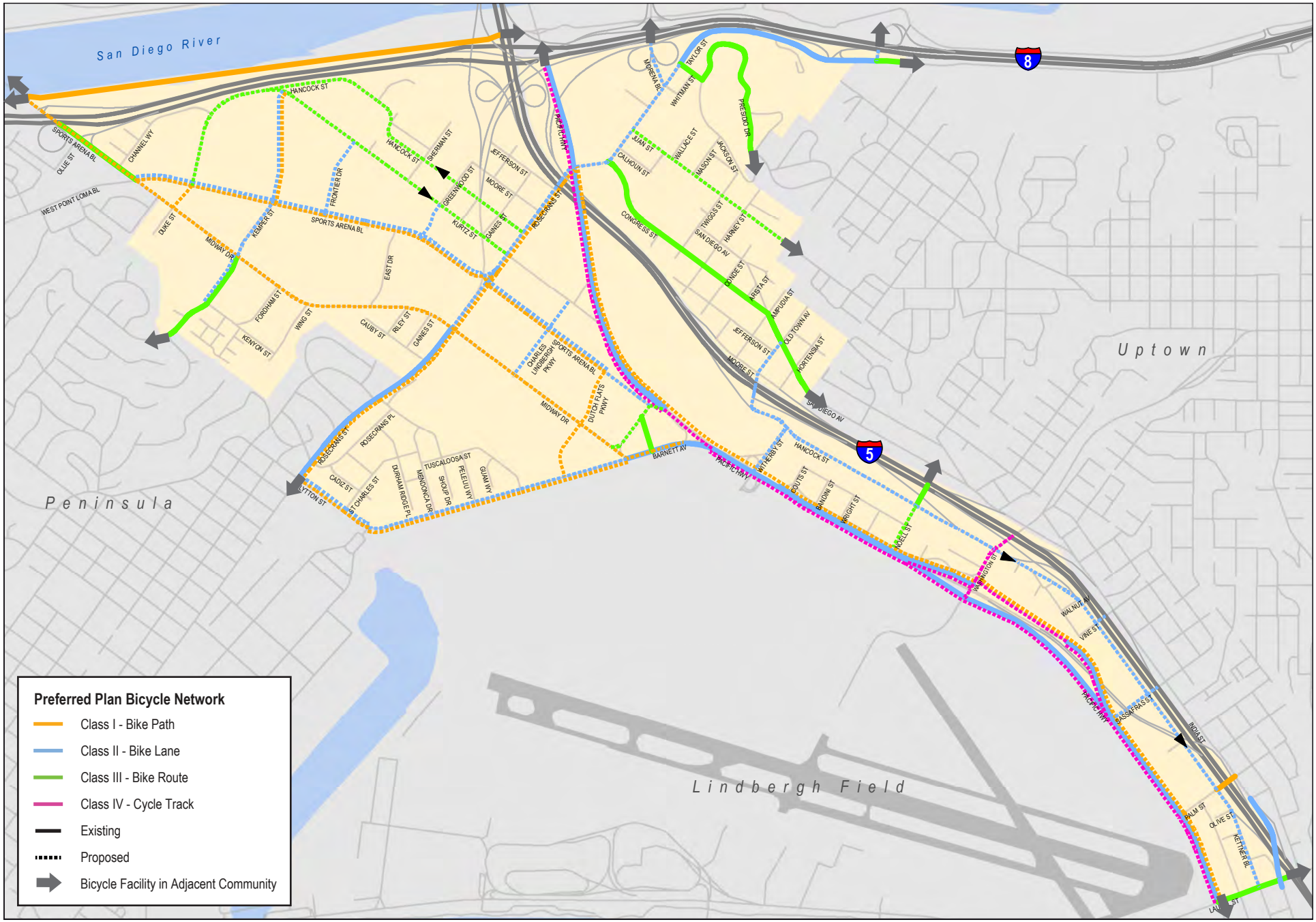
Figure 6-11 displays bicycle network connectivity to/from the study area intersections across both communities. This analysis calculates the percent of area that a cyclist can access within a one mile ride from the respective intersection (connectivity ratio). A connectivity ratio of 50% or better is considered to be ideal.

Midway-Pacific Highway Community

As shown in the figure, the bicycle connectivity is at good levels (40%+ connectivity ratio) in the center of the community around the block bound by Rosecrans Street, Midway Drive, Sports Arena Boulevard and East Drive. This improvement in connectivity is predominantly due to the new roadway connections between Midway and Sports Arena Boulevard.

Old Town Community

As shown in the figure, the Old Town community generally has a good connectivity ratio of 35+%, with the highest connectivity along Taylor Street, where regional connections are available from Taylor Street (Coastal Rail Trail and Ocean Beach Bike Path).



Midway-Pacific Highway and
Old Town Community Plan Update

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Figure 6-10
Bicycle Network -
Preferred Plan Conditions

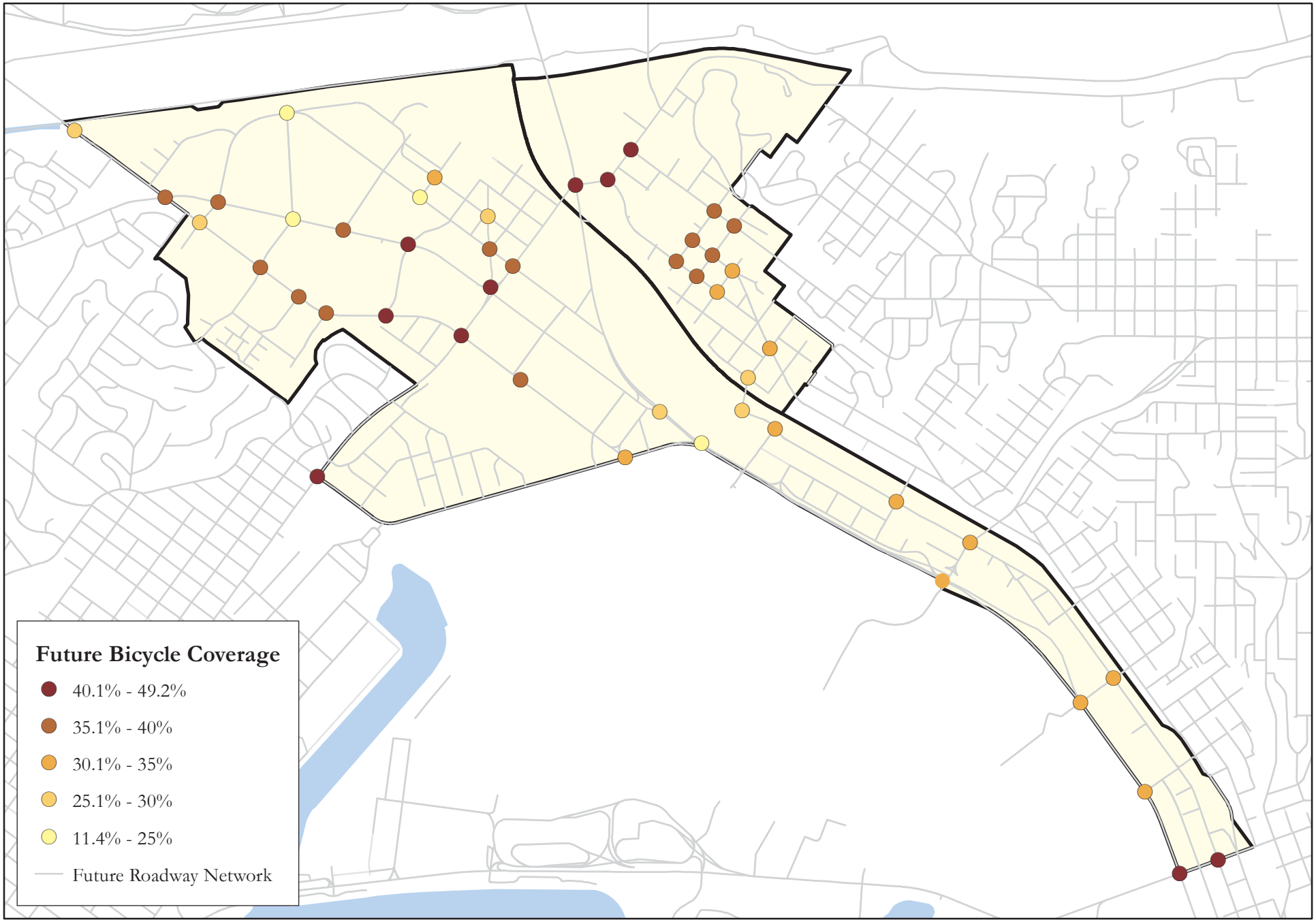


Figure 6-11
Bicycle Network Connectivity
Preferred Plan Conditions

6.5.2 Bicycle Network Quality

Figure 6-12 display the LTS analysis results for roadways segments and intersections along all Mobility Element roadways within the community.

Midway-Pacific Highway Community

As shown in the figure, the new multi-use urban paths proposed as part of the Midway/Pacific Highway Urban Greening Plan (La Playa Trail, Bay-to-Bay Path, the Historic Highway 101 Path, and the Midway Path), and the Preferred Plan, provide a slower low stress environment for cyclists (all paths have a score of LTS 1). Additionally, the proposed Class IV One-Way Cycle Tracks proposed along Pacific Highway provide a safe cycling environment for higher speed cyclists entering the community from either the north or south. These facilities have an LTS 1 score. Finally, the Enhanced Class II Buffered Bikes Lanes proposed along Sport Area Boulevard and Rosecrans Street provide more confident and higher speed cyclists a safe in-road alternative along these routes. Both facilities have a score of LTS 1.

Hancock Street between Kurtz Street and Rosecrans Street, and Hancock Street/Kettner Boulevard between Noel Street and Laurel Street were identified as providing LTS 4 environments under Preferred Plan conditions. The LTS 4 designation is largely due to the one-way directional travel. When calculating LTS scores for one-way streets the number of vehicular travel lanes is doubled, and the street is treated as though it has a median. This results in Hancock Street and Hancock Street/Kettner Boulevard as providing conditions equivalent to a 6-lane roadway, from the cyclist's perception. Hancock Street, between Kurtz Street and Rosecrans Street, does not have a bicycle facility, resulting in the LTS 4 score. Hancock Street/Kettner Boulevard, between Noel Street and Laurel Street, does have a Class II bike lane under Preferred Plan conditions, however, the posted speed limit of 40 MPH results in the LTS 4 score.

Based on the results of the LTS analysis, the bicycle facilities proposed under the Preferred Plan would significantly improve the connectivity and safety for cyclists within Midway-Pacific Highway community from their current conditions.

Old Town Community

As shown in the figure all roadways, with the exception of Taylor Street and Morena Boulevard, are projected to be low stress cycling environments (LTS 1 or 2). This is due to the low speed nature of the roadways within the Old Town Community. However, even with Class II Bike Lanes proposed along Taylor Street, the roadway is still projected to have an LTS score of 3. This is due to the high vehicular travel speed along Taylor Street and lack of a horizontal or vertical buffer between cyclists and motorists.

As noted in section 4.4.2, the connection along Morena Boulevard between Taylor Street and Linda Vista Road is critical. A connection here would link the Old Town and Linda Vista communities, as well as provide a connection to the Ocean Beach Bike Path.

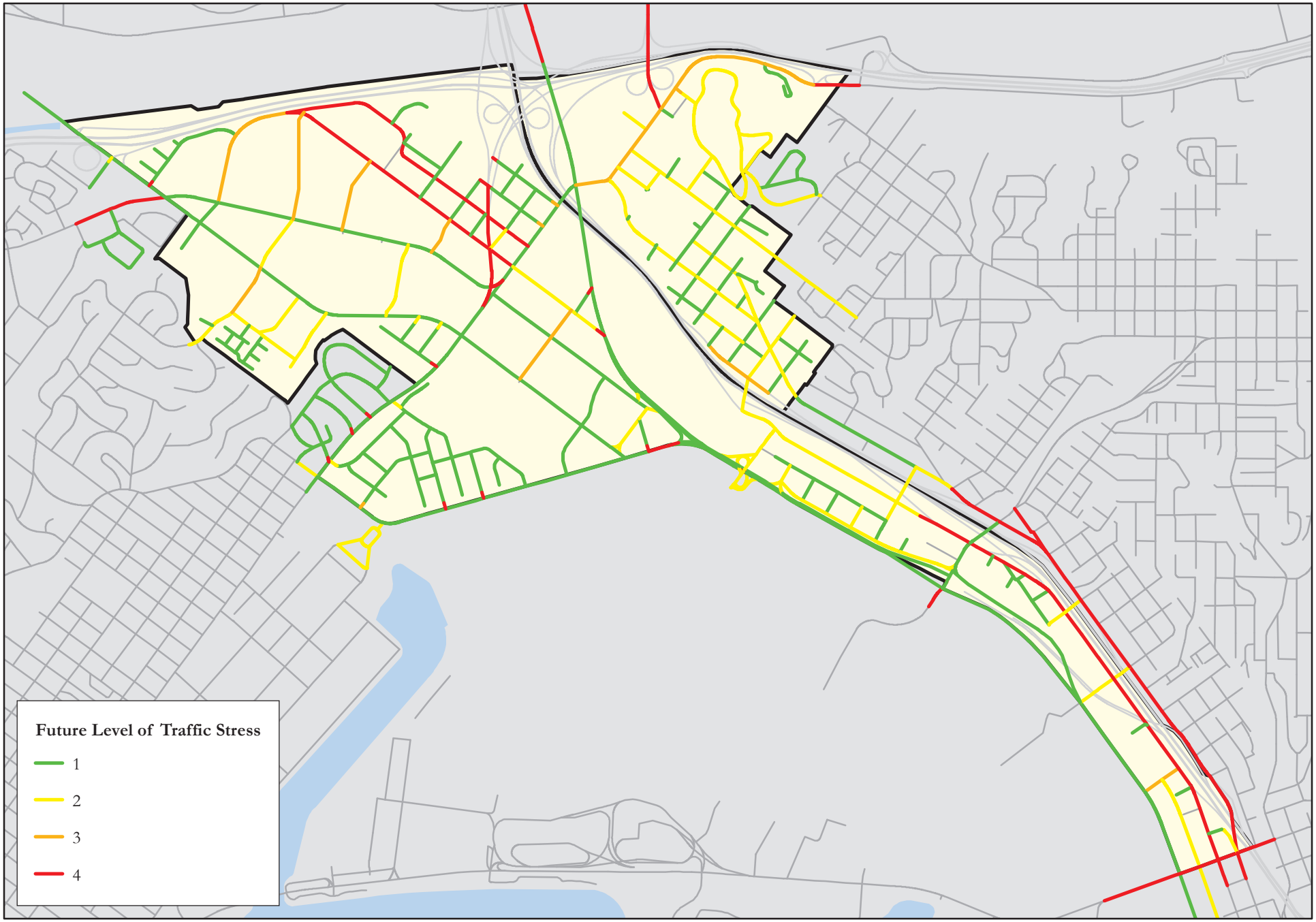


Figure 6-12
Bicycle LTS Score - Preferred Plan Conditions

Unfortunately, the bridge along this segment of the roadway has a constrained right-of-way, and the current configuration of the I-8 Morena Boulevard ramps position four high-speed free-right turn movements on/off the bridge. Due to these constraints there is not feasible bicycle facility that can be implemented along this segment without both widening the bridge and reconfiguring the I-8 / Morena Boulevard Ramps. However, it is recommended that the City work with both Caltrans and SANDAG to look for opportunities to implement bicycle facilities and better pedestrian facilities along this segment should any improvements be done to this segment.

6.5.3 Combined Bicycle Network Connectivity and Quality Assessment

Figure 6-13 displays the combined Bicycle Network Connectivity and Quality Assessment for all bicycle accessible land uses (residential, commercial, office, recreational and instructional land uses) throughout both communities. This analysis calculates the percent of TAZs with bicycle accessible land uses that a cyclist can reach using only LTS 1 and 2 facilities.

Midway-Pacific Highway Community

As shown in the figure, the proposed bicycle improvements enhance the level of connectivity to/from the residential land uses located on the western side of the community. In this area, cyclists can connect to 40+% of the bicycle accessible land uses within the community using only LTS 1 or 2 facilities. The proposed commercial areas within the community (north of Rosecrans Street) can typically connect to 30-40% of the bicycle accessible land uses within the community using only LTS 1 or 2 facilities. The only areas that have low connectivity (0-10%) are the more industrial areas located in the north and northeast portions of the community. However, these areas have very few bicycle accessible land uses.

Old Town Community

As shown in the figure, the community as a whole has generally moderate connectivity levels between 20% and 40%. The main barrier limiting the overall quality connectivity within the community is Taylor Street, which has an LTS score of 3. If the LTS score along Taylor Street can be improved to an LTS 1 or 2, the overall quality connectivity within the Old Town Community will increase significantly. However, based on the roadway's current configuration, enhanced bicycle facilities such as Buffered Class II Bike Lanes or a Class IV Cycle Track is not currently feasible along Taylor Street. Therefore, a policy should be included in the Mobility Element that if Taylor Street is ever widened beyond its current right-of-way, enhanced bicycle facilities such as Class II Buffered Bike Lanes or a Class IV Cycle Track should be implemented as well.

6.6 Public Transit Services and Facilities Assessment and Results

This section assesses the proposed transit network under implementation of the Preferred Plan conditions, which assumes implementation of the transit-related improvements outlined in Sections 3.5.2 and 4.5.2. The proposed Transit network under Preferred Plan conditions was assessed using the methodologies contained in Section 2.3.3. Transit stop/station ridership and amenities are assessed below as well as the roadway arterial speed along roadways continuing transit routes.

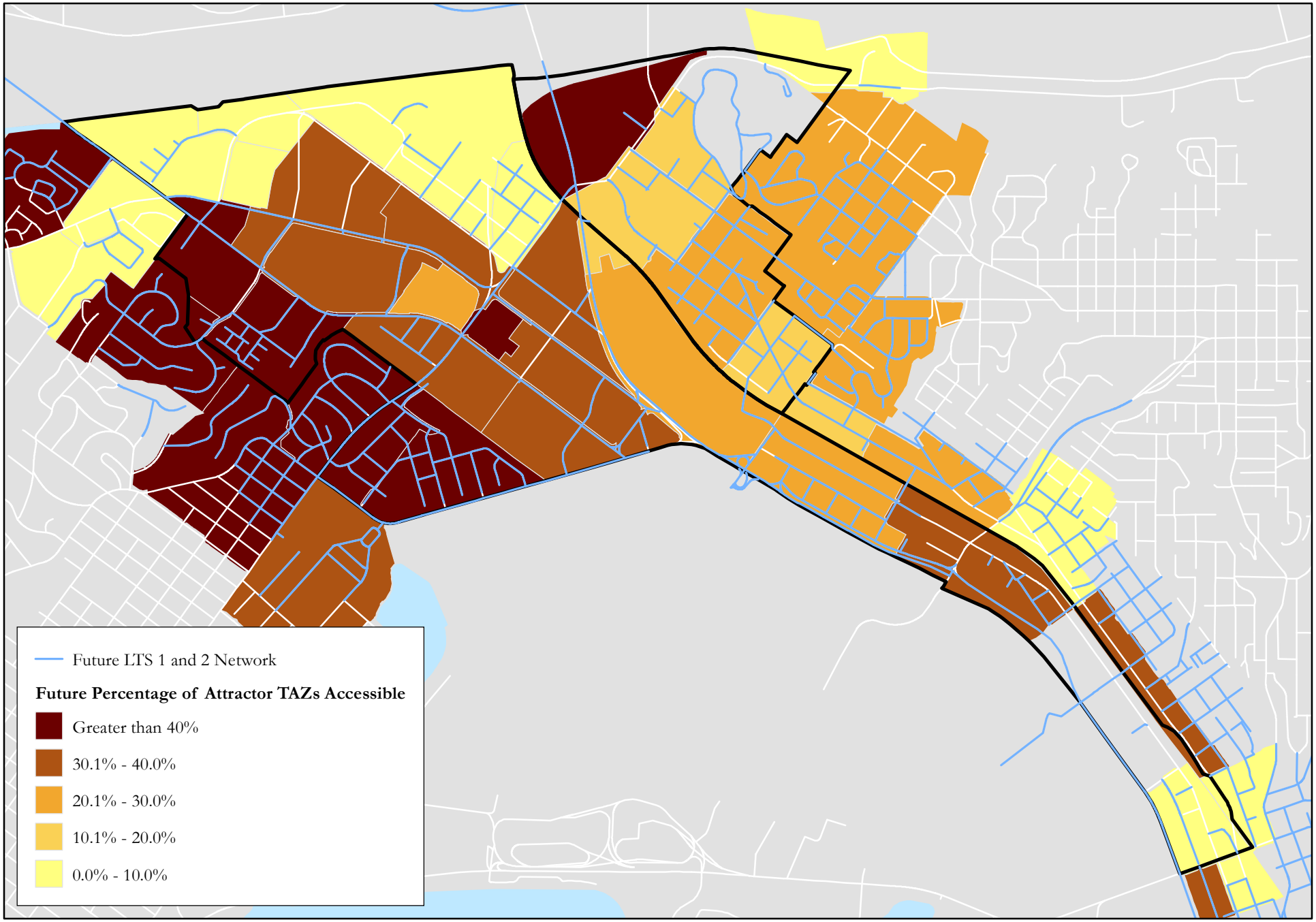


Figure 6-13
Combined Bicycle Network Connectivity and Quality Assessment
Preferred Plan Conditions

6.6.1 Transit Stop/Station Amenities and Average Daily Boardings and Alightings

While projecting increases in multimodal trips requires some level of judgment and is dependent on numerous factors, quantitative methods are available to assist in this process. A community-wide transit ridership growth factor was derived based on future growth estimates in SANDAG Series 12 Transportation Forecast Model, as documented in Section 5.0. Based on the SANDAG model results, a 1.75 growth factor was applied to existing transit ridership volumes, which is consistent with the projection of regional growth. Due to the methodology, projected ridership is only presented for existing locations and does not include the future Blue Line extension.

Table 6.8 displays the projected transit boarding and alightings by route and by stop within both communities under Preferred Plan conditions.

Table 6.8 Average Daily Transit Boardings and Alightings by Route and Station – Preferred Plan Conditions

Route # and Location	Boardings	Alightings	Total Trips
Bus Route 8 Clockwise			
Sports Arena Blvd and Midway Dr	30	30	60
Sports Arena Blvd and Midway Dr	150	50	200
Sports Arena Blvd Between Hancock and Kemper	60	20	70
Sports Arena Blvd Between Kemper and Sports Arena Driveway	70	50	160
Sports Arena Blvd and East Dr	120	50	170
Rosecrans St and Pacific Highway	40	40	70
Old Town Transit Center	20	1,090	1,110
Bus Route 9 Counter Clockwise			
Old Town Transit Center	1,110	20	1,120
Rosecrans St and Moore St	30	20	40
Rosecrans St and Kurtz St	20	40	50
Sports Arena Blvd and Camino Del Rio West	20	60	70
Sports Arena Blvd and East Dr	20	90	110
Sports Arena Blvd and Sports Arena Driveway	50	130	170
Sports Arena Blvd and Hancock St	60	180	230
Bus Route 10 East			
Old Town Transit Center	1,770	30	1,790
Pacific Highway and Sports Arena Blvd	50	30	70
Pacific Highway and Witherby St	100	170	260
Washington St and Pacific Highway	90	70	160
Washington St and Hancock St	40	10	50
Washington St and India St	90	30	120
Bus Route 10 West			
Washington St and India St	20	90	100

Table 6.8 Average Daily Transit Boardings and Alightings by Route and Station – Preferred Plan Conditions

Route # and Location	Boardings	Alightings	Total Trips
Washington St and Hancock St	10	20	30
Washington St and The Trolley Tracks	30	150	170
Pacific Highway and Washington St	30	30	60
Pacific Highway and Witherby St	90	110	200
Pacific Highway and Enterprise St	20	60	80
Pacific Highway and Kurtz St	10	10	10
Old Town Transit Center	30	1,450	1,470
Bus Route 28 East			
Rosecrans St and Lytton St	30	20	40
Rosecrans St and North Evergreen St	30	30	60
Rosecrans St and Loma Square	80	60	140
Rosecrans St and Sports Arena Blvd	60	60	110
Rosecrans St and Pacific Highway	30	10	30
Old Town Transit Center	N/A	1,090	1,090
Bus Route 28 West			
Old Town Transit Center	930	N/A	930
Rosecrans St and Moore St	20	N/A	20
Rosecrans St and Kurtz St	20	20	30
Rosecrans St and Midway Drive	50	50	90
Rosecrans St and Midway Drive	80	90	160
Rosecrans St and North Evergreen St	30	40	60
Rosecrans St and Lytton St	10	20	30
Bus Route 30 North			
Pacific Highway and Witherby St	90	80	170
Pacific Highway and Enterprise St	20	40	50
Pacific Highway and Kurtz St	10	10	10
Old Town Transit Center	1,110	610	1,710
Bus Route 30 South			
Old Town Transit Center	590	1,090	1,680
Pacific Highway and Sports Arena Blvd	20	590	60
Bus Route 35 East			
Midway Drive and Duke St	100	60	160
Midway Drive and Kemper St	70	40	110
Midway Drive and Fordham St	110	40	140
Midway Drive and East Drive	70	70	140
Rosecrans St and Sports Arena Blvd	100	30	130
Rosecrans St and Pacific Highway	20	20	30

Table 6.8 Average Daily Transit Boardings and Alightings by Route and Station – Preferred Plan Conditions

Route # and Location	Boardings	Alightings	Total Trips
Old Town Transit Center	N/A	990	990
Bus Route 35 West			
Old Town Transit Center	1,010	N/A	1,010
Rosecrans St and Moore St	40	10	50
Rosecrans St and Kurtz St	20	30	40
Rosecrans St and Midway Drive	50	70	110
Midway Drive and East Drive	80	60	140
Midway Drive and Fordham St	40	110	140
Midway Drive and Kemper St	50	110	150
Midway Drive and Duke St	40	130	160
Bus Route 44 North			
Old Town Transit Center	1,820	10	1,830
Taylor St and Juan St	20	10	20
Bus Route 44 South			
Taylor St and Sunset St	10	10	20
Old Town Transit Center	50	1,570	1,610
Bus Route 88 East			
Old Town Transit Center	240	20	250
Taylor St and Juan St	10	10	10
Taylor St and Presidio Drive	10	10	10
Taylor St and I-8 East	10	10	10
Bus Route 88 West			
Taylor St and I-8 East	10	10	10
Taylor St and Presidio Drive	10	10	10
Taylor St and Sunset St	10	10	10
Old Town Transit Center	10	140	150
Bus Route 105 North			
Old Town Transit Center	770	10	780
Taylor St and Juan St	10	10	10
Bus Route 105 South			
Taylor St and Juan St	10	10	10
Old Town Transit Center	10	570	570
Bus Route 150 North			
Pacific Highway and Witherby St	50	20	70
Pacific Highway and Enterprise St	10	20	20
Pacific Highway and Kurtz St	10	10	10
Old Town Transit Center	470	140	610

Table 6.8 Average Daily Transit Boardings and Alightings by Route and Station – Preferred Plan Conditions

Route # and Location	Boardings	Alightings	Total Trips
Bus Route 150 South			
Old Town Transit Center	120	660	80
Pacific Highway and Sports Arena Blvd	20	10	20
Green Line Trolley East			
Old Town Transit Center	8,280	390	8,670
Washington Street Station	280	660	930
Middletown Station	10	11,110	11,110
Green Line Trolley West			
Old Town Transit Center	10,600	7,680	18,270
Washington Street Station	690	220	910
Middletown Station	330	190	510

Source: Chen Ryan Associates (March 2017)

Table 6.9 displays the projected transit boardings and alightings at each transit stop/station within both communities under implementation of the Preferred Plan. The table also shows the required stop/station amenities, as shown in Table 2.2, based on the future ridership projects.

Table 6.9 Transit Station/Stop Locations, Amenities and Average Daily Boardings and Alightings – Preferred Plan Conditions

				Amenities at the Stops			
Station	Boardings	Alightings	Total	Signs	Shelter	Bench	Trash Can
Sports Arena Blvd and Midway Dr (Clockwise)	180	80	260	✓	✓	✓	✓
Sports Arena Blvd Between Hancock and Kemper (Clockwise)	60	20	70	✓	□	○	□
Sports Arena Blvd Between Kemper and Sports Arena Driveway (Clockwise)	70	50	160	✓	□	✓	□
Sports Arena Blvd and East Dr (Clockwise)	120	50	170	✓	○	✓	□
Rosecrans St and Pacific Highway (Clockwise)	40	40	70	✓	✓	✓	✓
Old Town Transit Center (Clockwise)	20	1,090	1,110	✓	✓	✓	✓
Old Town Transit Center (Counter Clockwise)	1,110	20	1,120	✓	✓	✓	✓
Rosecrans St and Moore St (Counter Clockwise)	30	20	40	✓	□	✓	✓
Rosecrans St and Kurtz St (Counter Clockwise)	20	40	50	✓	□	✓	□
Sports Arena Blvd and Camino Del Rio West (Counter Clockwise)	20	60	70	✓	□	✓	□
Sports Arena Blvd and East Dr (Counter Clockwise)	20	90	110	✓	□	✓	✓

Table 6.9 Transit Station/Stop Locations, Amenities and Average Daily Boardings and Alightings – Preferred Plan Conditions

Station	Boardings	Alightings	Total	Amenities at the Stops			
				Signs	Shelter	Bench	Trash Can
Sports Arena Blvd and Sports Arena Driveway (Counter Clockwise)	50	130	170	✓		✓	
Sports Arena Blvd and Hancock St (Counter Clockwise)	60	180	230	✓		✓	
Old Town Transit Center (Eastbound)	2,010	2,130	4,120	✓	✓	✓	✓
Pacific Highway and Sports Arena Blvd (Eastbound)	50	30	70	✓			
Pacific Highway and Witherby St (Eastbound)	100	170	260	✓		✓	✓
Washington St and Pacific Highway (Eastbound)	90	70	160	✓		✓	□
Washington St and Hancock St (Eastbound)	40	10	50	✓		✓	✓
Washington St and India St (Eastbound)	90	30	120	✓		✓	✓
Washington St and India St (Westbound)	20	90	100	✓			✓
Washington St and Hancock St (Westbound)	10	20	30	✓		✓	✓
Washington St and The Trolley Tracks (Westbound)	30	150	170	✓			
Pacific Highway and Washington St (Westbound)	30	30	60	✓		✓	
Pacific Highway and Witherby St (Westbound)	90	110	200	✓	✓	✓	✓
Pacific Highway and Enterprise St (Westbound)	20	60	80	✓			
Pacific Highway and Kurtz St (Westbound)	10	10	10	✓			
Old Town Transit Center (Westbound)	1,980	1,590	3,560	✓	✓	✓	✓
Rosecrans St and Lytton St (Eastbound)	30	20	40	✓	✓	✓	✓
Rosecrans St and North Evergreen St (Eastbound)	30	30	60	✓		✓	✓
Rosecrans St and Loma Square (Eastbound)	80	60	140	✓	✓	✓	✓
Rosecrans St and Sports Arena Blvd (Eastbound)	160	90	240	✓	✓	✓	✓
Rosecrans St and Pacific Highway (Eastbound)	50	30	60	✓	✓	✓	✓
Rosecrans St and Moore St (Westbound)	60	10	70	✓		✓	✓
Rosecrans St and Kurtz St (Westbound)	40	50	70	✓		✓	□
Rosecrans St and Midway Drive (Westbound)	180	210	360	✓	○	✓	✓
Rosecrans St and North Evergreen St (Westbound)	30	40	60	✓			
Rosecrans St and Lytton St (Westbound)	10	20	30	✓			

Table 6.9 Transit Station/Stop Locations, Amenities and Average Daily Boardings and Alightings – Preferred Plan Conditions

Station	Boardings	Alightings	Total	Amenities at the Stops			
				Signs	Shelter	Bench	Trash Can
Pacific Highway and Witherby St (Northbound)	140	100	240	✓	✓	✓	✓
Pacific Highway and Enterprise St (Northbound)	30	60	70	✓			
Pacific Highway and Kurtz St (Northbound)	20	20	20	✓			
Old Town Transit Center (Northbound)	4,170	770	4,930	✓	✓	✓	✓
Old Town Transit Center (Southbound)	770	3,890	3,940	✓	✓	✓	✓
Pacific Highway and Sports Arena Blvd (Southbound)	40	600	80	✓			
Midway Drive and Duke St (Eastbound)	100	60	160	✓	✓	✓	✓
Midway Drive and Fordham St (Eastbound)	110	40	140	✓	✓	✓	✓
Midway Drive and East Drive (Eastbound)	70	70	140	✓	✓	✓	✓
Midway Drive and East Drive (Westbound)	80	60	140	✓		✓	
Midway Drive and Fordham St (Westbound)	40	110	140	✓		✓	
Midway Drive and Kemper St (Westbound)	50	110	150	✓		✓	
Midway Drive and Duke St (Westbound)	40	130	160	✓		✓	
Taylor St and Juan St (Northbound)	30	20	30	✓		✓	
Taylor St and Sunset St (Southbound)	10	10	20	✓		✓	
Taylor St and Juan St (Eastbound)	10	10	10	✓		✓	
Taylor St and Presidio Drive (Eastbound)	10	10	10	✓		✓	
Taylor St and I-8 East (Eastbound)	10	10	10	✓			
Taylor St and I-8 East (Westbound)	10	10	10	✓		✓	
Taylor St and Presidio Drive (Westbound)	10	10	10	✓		✓	
Taylor St and Sunset St (Westbound)	10	10	10	✓		✓	
Taylor St and Juan St (Southbound)	10	10	10	✓		✓	
Old Town Transit Center	8,280	390	8,670	✓	✓	✓	✓
Washington Street Station	280	660	930	✓	✓	✓	✓
Middletown Station	10	11,110	11,110	✓	✓	✓	✓

Source: Chen Ryan Associates (March 2017)

Notes:
✓: Existing Amenity
O: Needed Amenity

As shown, the majority of the existing stops/stations already provide adequate amenities to accommodate the projected future ridership. However, additional amenities will be needed at the following stations as ridership increased:

Midway-Pacific Highway Community

- Sports Arena Boulevard, between Hancock Street and Kemper Street (Clockwise) – Bench
- Sports Arena Boulevard and East Drive (Clockwise) – Shelter
- Rosecrans Street and Midway Drive (Westbound) – Shelter

Old Town

- None

6.6.2 Arterial Speed Analysis Along Roadways Serving Transit Routes

An HCM peak hour arterial speed analysis was conducted along all roadway corridors where transit routes are projected to operate in order to identify future roadway congestion that could potentially impact transit route travel times and on-time performance. Transit priority measures such as queue jumper lanes and transit priority signal timing should be implemented in locations where future roadway congestion is anticipated.

Table 6.10 displays peak hour arterial speed analyses for all roadway facilities where a transit route operates under implementation of the Preferred Plan. Peak hour arterial analysis worksheets are provided in Appendix G.

Table 6.10 Arterial Speed Analysis Along Transit Corridors – Preferred Plan Conditions

Roadway	Segment	Posted Speed (MPH)	AM				PM			
			EB/NB		WB/SB		EB/NB		WB/SB	
			Speed	LOS	Speed	LOS	Speed	LOS	Speed	LOS
Midway-Pacific Highway Community										
Camino Del Rio West	Sports Arena Blvd to Kurtz Street	35	7.4	E	6.9	F	6.1	F	5.1	F
	Kurtz Street to Hancock Street	35	11.9	D	25.9	B	14.4	C	23.2	C
Rosecrans Street	Barnett Avenue to Midway Drive	35	22.3	C	9.5	F	13.8	E	19.1	D
	Midway Drive to Sports Arena Blvd	35	31.2	B	8.8	F	31.2	B	8.6	F
	Sports Arena Blvd to Kurtz Street	35	11.7	F	3.4	F	7.9	F	2.8	F
	Kurtz Street to Pacific Highway	35	17.2	D	22.4	C	15.2	E	20.9	D
Midway Drive	Sports Arena Blvd to Duke Street/Hancock Street	35	6.0	F	7.2	F	5.0	F	6.3	F
	Duke Street/Hancock Street to Kemper Street	35	14.4	D	15.2	D	11.5	E	11.4	E
	Kemper Street to East Drive	35	19.3	C	24.5	B	15.5	D	23.6	C
	East Drive to Rosecrans Street	35	22.2	C	12.4	E	19.5	C	8.4	F
Sports Arena Boulevard	I-8 WB Off-Ramp to W Point Loma Blvd	35	21.1	C	7.9	F	9.0	F	7.5	F
	W Point Loma Blvd to Hancock Street	35	11.0	E	14.9	D	6.3	F	14.1	D
	Hancock Street to Kemper Street	35	24.8	B	15.8	D	27.3	B	12.6	E
	Kemper Street to Frontier Drive	35	11.0	E	14.5	D	15.1	D	18.5	C
	Frontier Drive to Greenwood Street	35	12.1	E	20.9	C	11.7	E	12.2	E
	Greenwood Street to Rosecrans Street	35	27.3	B	7.1	F	24.6	B	7.0	F
Pacific Highway	Taylor Street to Kurtz Street	45	19.3	D	23.5	C	18.4	E	15.9	E
	Kurtz Street to Sports Arena Blvd	45	25.3	C	15.7	E	16.5	E	22.8	C

Table 6.10 Arterial Speed Analysis Along Transit Corridors – Preferred Plan Conditions

Roadway	Segment	Posted Speed (MPH)	AM				PM			
			EB/NB		WB/SB		EB/NB		WB/SB	
			Speed	LOS	Speed	LOS	Speed	LOS	Speed	LOS
Pacific Highway	Sports Arena Blvd to Barnett Avenue	45	31.6	B	11.8	F	28.2	C	5.2	F
	Washington Street to Sassafras Street	45	25.3	C	28.4	B	16.9	E	28.2	B
	Sassafras Street to W Laurel Street	45	24.5	C	16.1	E	16.9	E	15.0	E
Old Town Community										
Taylor Street	Pacific Highway to Congress Street	35	12.6	D	9.0	D	9.9	D	8.7	E
	Congress Street to Juan Street	35	9.9	D	13.0	D	7.4	E	13.9	C
	Juan Street to Whitman Street	35	17.6	C	14.6	C	15.4	C	15.6	C

Source: Chen Ryan Associates (March 2017)

Note:
Bold letter indicates LOS E or F

As shown, several segments within both communities are projected to operate at LOS E or F during both the AM and PM Peak hours:

<u>Midway-Pacific Highway</u>

- Camino del Rio West, between Sports Arena Boulevard and Kurtz Street
  - LOS E: AM peak hour, eastbound direction
  - LOS F: PM peak hour, eastbound direction
  - LOS F: AM & PM peak hours, westbound direction
- Rosecrans Street, between Barnett Avenue and Midway Drive
  - LOS F: AM peak hour, westbound direction
  - LOS E: PM peak hour, eastbound direction
- Rosecrans Street, between Midway Drive and Sports Arena Boulevard
  - LOS F: AM & PM peak hours, westbound direction
- Rosecrans Street, between Sports Arena Boulevard and Kurtz Street
  - LOS F: AM & PM peak hours, westbound & eastbound directions
- Rosecrans Street, between Kurtz Street and Pacific Highway
  - LOS E: PM peak hour, eastbound direction
- Midway Drive, between Sports Arena Boulevard and Hancock Street
  - LOS F: AM & PM peak hours, northbound & southbound directions
- Midway Driveway, between Hancock Street and Kemper Street
  - LOS E: PM peak hour, northbound & southbound directions
- Midway Drive, between East Drive and Rosecrans Street
  - LOS E: AM peak hour southbound direction
  - LOS F: PM peak hour southbound direction
- Sports Arena Boulevard, between I-8 Westbound Ramps and West Point Loma Boulevard
  - LOS F: AM peak hour, southbound direction
  - LOS F: PM peak hour, northbound & southbound directions
- Sports Arena Boulevard, between West Point Loma Boulevard and Hancock Street
  - LOS E: AM peak hour, northbound direction

    - LOS F: PM peak hour, northbound direction
- Sports Arena Boulevard, between Hancock Street and Kemper Street
    - LOS E: PM peak hour, southbound direction
- Sports Arena Boulevard, between Kemper Street and Frontier Drive
    - LOS E: AM peak hour, northbound direction
- Sports Arena Boulevard, between Frontier Drive and Greenwood Street
    - LOS E: AM peak hour, northbound direction
    - LOS E: PM peak hour, northbound & southbound directions
- Sports Arena Boulevard, between Greenwood Street and Rosecrans Street
    - LOS F: AM & PM peak hours, southbound direction
- Pacific Highway, between Taylor Street to Kurtz Street
    - LOS E: PM peak hour, northbound & southbound directions
- Pacific Highway, between Kurtz Street and Sports Arena Boulevard
    - LOS E: AM peak hour, southbound direction
    - LOS E: PM peak hour, northbound direction
- Pacific Highway, between Sports Arena Boulevard and Barnett Avenue
    - LOS F: AM & PM peak hours, southbound direction
- Pacific Highway, between Washington Avenue and Sassafras Street
    - LOS E: PM peak hour, northbound direction
- Pacific Highway, between Sassafras Street and Laurel Street
    - LOS E: AM peak hour, southbound direction
    - LOS E: PM peak hour, northbound & southbound directions

As noted in Section 3.5.2, the following transit priority treatments are recommended to help on-time performance for bus routes within the Midway-Pacific Highway community:

Pacific Highway - Pacific Highway serves several regional bus routes that connect multiple communities. The projected low travel speeds along several segments of Pacific Highway could impact the efficiency and on-time performance of these regional routes. Therefore, it is recommended that, transit priority measures such as queue jumper lanes and transit priority signals are implemented at all signalized intersections along Pacific Highway between Taylor Street and Laurel Street.

Rosecrans Street – Rosecrans Street east of Camino Del Rio West currently serves four MTS bus Routes (8, 9, 28 and 35). A queue jumper lane and transit signal have already been implemented on the eastbound approach at the Taylor Street / Rosecrans Street and Pacific Highway intersection. Similar transit priority improvements should also be looked at the Rosecrans Street Camino Del Rio West and Sports Arena Boulevard intersection to allow westbound buses (Routes 8, 9 and 35) to turn right onto Sports Arena Boulevard and avoid congestion.

New Roadway Connections – The proposed new roadway connections can serve as alternative east/west routes for busses traveling through the community. Rerouting to these new facilities, if possible, may help avoid the congestion on Rosecrans Street. It is recommended that after

the construction of any of the new roadways, the City of San Diego coordinate with MTS to look at bus rerouting opportunities.

Old Town

- Taylor Street, between Pacific Highway and Congress Street
  - LOS E: PM peak hour, southbound direction
- Taylor Street, between Congress Street and Juan Street
  - LOS E: PM peak hour, northbound direction

Taylor Street serves several regional bus routes connecting multiple communities. Therefore, it is recommended that transit priority treatments be implemented along Taylor Street to help increase transit performance. It is recommended to implement queue jumper lanes and transit priority signals in either direction at both the Taylor Street / Juan Street and Taylor Street / Morena Boulevard intersections.

6.7 Parking Management

It is anticipated that any additional parking demand associated with future developments will be accommodated on-site. It is assumed that all on-street public parking spaces will be maintained under Preferred Plan implementation, with the exception of the following:

Midway-Pacific Highway

Rosecrans Street, between Sports Arena Boulevard / Camino Del Rio West and Pacific Highway – To implement the multi-use urban path improvements proposed as part of the Preferred Plan, parking along both sides of Rosecrans Street will need to be removed. Approximately 65 on-street parking spaces will be removed along this segment. Since there is abundant off-street parking within the community and these spaces are not heavily utilized, the removal of these spaces should not negatively impact the community.

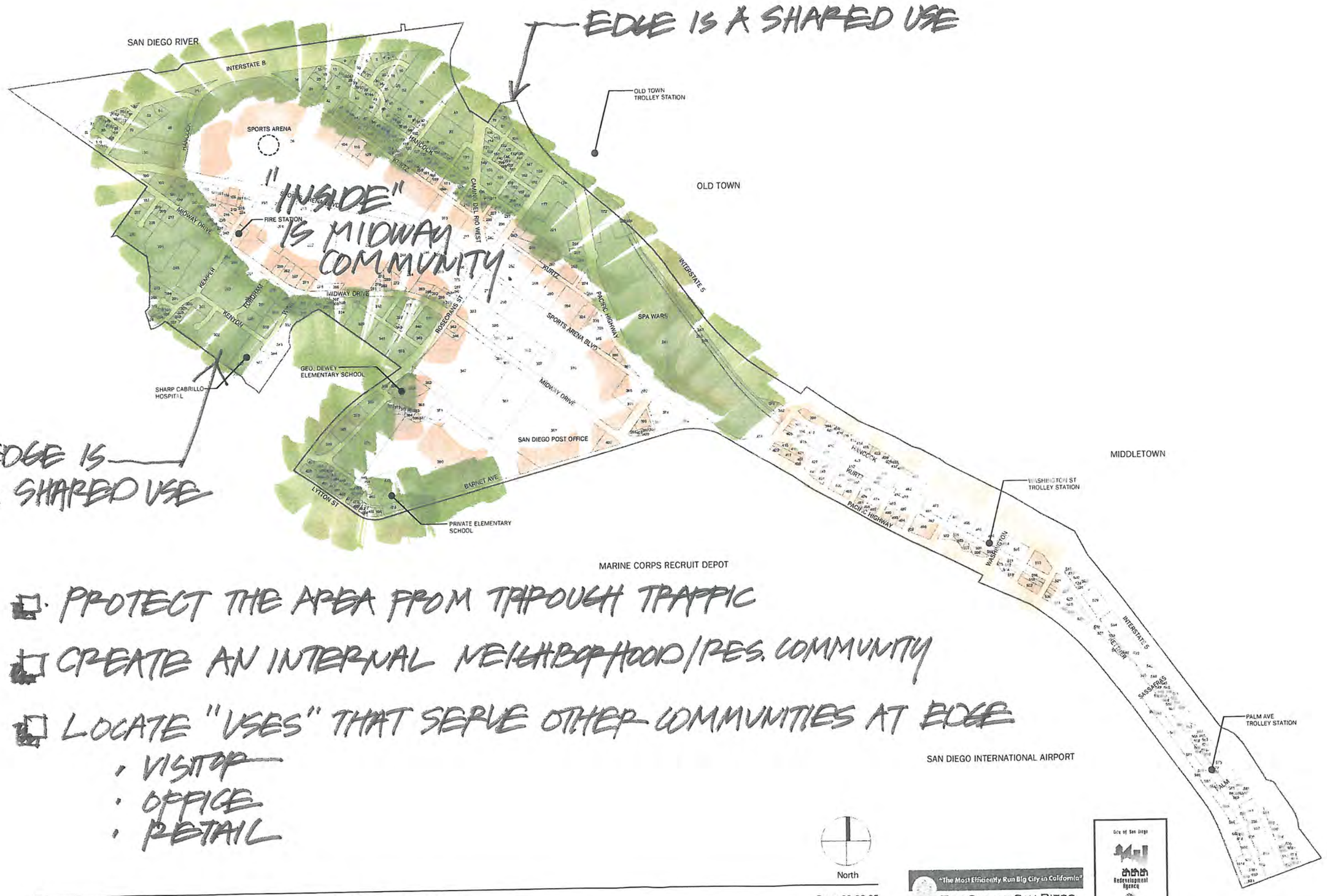
Sports Arena Boulevard, between West Point Loma Boulevard and Rosecrans Street – To implement the multi-use urban path improvements proposed as part of the Preferred Plan, parking along the southwest side of Sports Arena Boulevard will need to be removed. Approximately 24 on-street parking spaces will be removed along this segment. Since there is abundant off-street parking within the community and these spaces are not heavily utilized, removal of these spaces should not negatively impact the community.

Old Town

There is not anticipated to be any loss of on-street parking within the Old Town Community. However, as noted in Section 4.2.2 it is proposed that the parking along the east side of San Diego Avenue, between Twiggs Street and Conde Street, be converted from parallel to diagonal parking. This improvement could potentially result in up to 20 additional on-street parking spaces along San Diego Avenue.

The community is not currently in favor of metering parking within Old Town as a means to create parking turnover, therefore, use of the existing parking supply should be maximized to help meet parking demands. The Caltrans parking lot, located north of the Congress Street and Taylor Street intersection, provides approximately 800 parking spaces that are open to the public on nights and weekends and is frequently under capacity. Increased utilization of these spaces may help alleviate some of the parking demand experienced throughout the Old Town community. Additional wayfinding signage may be beneficial to help direct community visitors and employees to the lot.

Appendix A
Midway/Pacific Highway Urban Greening Plan
Cross-Sections and Concept Plans



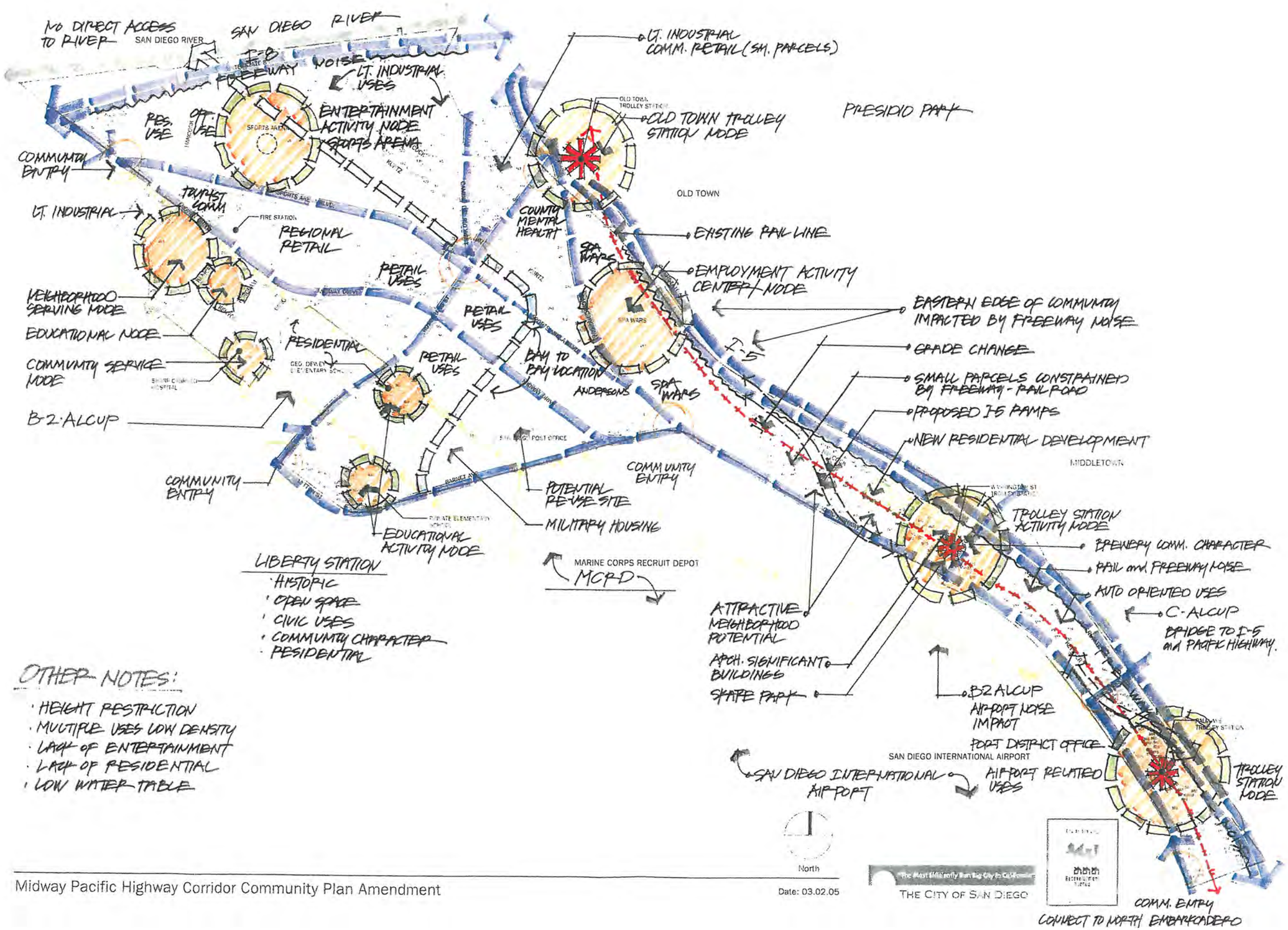
- PROTECT THE AREA FROM THROUGH TRAFFIC
- CREATE AN INTERNAL NEIGHBORHOOD/RES. COMMUNITY
- LOCATE "USES" THAT SERVE OTHER COMMUNITIES AT EDGE
  - VISITOR
  - OFFICE
  - RETAIL

North

"The Most Efficiently Run Big City in California"

THE CITY OF SAN DIEGO

City of San Diego Redevelopment Agency


NO DIRECT ACCESS TO RIVER
SAN DIEGO RIVER
SAN DIEGO RIVER
I-8 FREEWAY
NOISE
LT. INDUSTRIAL USES
RES. USE
OFF. USE
ENTERTAINMENT ACTIVITY NODE
SPORTS ARENA
COMMUNITY ENTRY
LT. INDUSTRIAL
TOURIST COMM.
FIRE STATION
REGIONAL RETAIL
NEIGHBORHOOD SERVING NODE
EDUCATIONAL NODE
COMMUNITY SERVICE NODE
B-2-ALCUP
RESIDENTIAL
RETAIL USES
RETAIL USES
RETAIL USES
BAY TO BAY CONNECTION
ANDERSONS
SPA WARS
LT. INDUSTRIAL COMM. RETAIL (SM. PARCELS)
OLD TOWN TROLLEY STATION
OLD TOWN TROLLEY STATION NODE
PRESIDIO PARK
OLD TOWN
COUNTY MENTAL HEALTH
SPA WARS
EXISTING RAIL LINE
EMPLOYMENT ACTIVITY CENTER/NODE
EASTERN EDGE OF COMMUNITY IMPACTED BY FREEWAY NOISE
I-5
GRADE CHANGE
SMALL PARCELS CONSTRAINED BY FREEWAY - RAILROAD
PROPOSED I-5 RAMPS
NEW RESIDENTIAL DEVELOPMENT
MIDDLETOWN
SAN DIEGO POST OFFICE
COMMUNITY ENTRY
POTENTIAL RE-USE SITE
MILITARY HOUSING
EDUCATIONAL ACTIVITY NODE
COMMUNITY ENTRY
LIBERTY STATION
· HISTORIC
· OPEN SPACE
· CIVIC USES
· COMMUNITY CHARACTER
· RESIDENTIAL
MARINE CORPS RECRUIT DEPOT
MCRD
ATTRACTIVE NEIGHBORHOOD POTENTIAL
ARCH. SIGNIFICANT BUILDINGS
SKATE PARK
B2 ALCUP
AIRPORT NOISE IMPACT
PORT DISTRICT OFFICE
SAN DIEGO INTERNATIONAL AIRPORT
SAN DIEGO INTERNATIONAL AIRPORT
AIRPORT RELATED USES
TROLLEY STATION NODE
TROLLEY STATION ACTIVITY NODE
BREWERY COMM. CHARACTER
RAIL and FREEWAY NOISE
AUTO ORIENTED USES
C-ALCUP
BRIDGE TO I-5 and PACIFIC HIGHWAY.
COMM. ENTRY
CONNECT TO NORTH EMBARCADERO
OTHER NOTES:
· HEIGHT RESTRICTION
· MULTIPLE USES LOW DENSITY
· LACK OF ENTERTAINMENT
· LACK OF RESIDENTIAL
· LOW WATER TABLE
North
THE CITY OF SAN DIEGO

Appendix B
City of San Diego Unfunded Transportation Needs List (8/5/14)

ID	Title	Prioritization_Score	Description	Status	Community	CD	CIP_NO	PFFP_NO	Estimate	Funding_Identified_in_Financing_Plan	Grant_Funding_Source	Comments	High_Accident	TR_Number	Mapped_By	Item Type	Path
2491	Market St @ Pitta St	0	Re-evaluated in August 2012 and no longer meets warrants.	No longer meets warrants	Encanto Neighborhoods, Southeastern	4							0	320405		Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
2503	Cardiff St @ San Vicente St	0	Re-evaluated March 2012 and no longer meets warrants.	No longer meets warrants	Encanto Neighborhoods, Southeastern	4							0	320397		Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
2767	58th St @ Skyline Dr/Trinidad Wy	0	Re-evaluated in Oct. 2012 and no longer meets warrants.	No longer meets warrants	Encanto Neighborhoods, Southeastern	4							0	326167		Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
3517	Sampson Street southwest of 28th Street 156', northwest side Street Light	0		No longer meets warrants	Southeastern San Diego, Southeastern	8			2000				0	329954	Hughes, Duncan	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
827	30th Street & Market Street Traffic Signal Upgrade	0	Install left-turn phasing for EB/WB traffic on Market Street	No longer meets warrants	Southeastern San Diego, Southeastern	8			13785			LT phasing installed by Streets Div. on 5/15/12.	0	305875	Pornan, Donald	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
751	Southcrest Redevelopment Project Area Street Lights	1	This project will install up to 73 street lights in the Southcrest Redevelopment Area.	PITS	Southeastern San Diego, Southeastern	4;#8	52-293.0		655600	Redevelopment			Yes		Pornan, Donald	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
530	60th St. from Upland St. to Weaver St.-Install New Guardrail	17	This project will install 1,230' of guardrail.	TEO Funded	Encanto Neighborhoods,	4			78000				No		Nascimento, Claudio	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
531	60th St. from Broadway to Radio Dr.-Install New Guardrail	20	This project will install 272' of guardrail along the west side of 60th St within the specified limits.	TEO Funded	Encanto Neighborhoods, Southeastern	4						In Design, estimate to be provided by consultant.	No	283409	Nascimento, Claudio	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
4109	Medio St and Pocatello St - Install New Guardrail	21	This project will install approximately 375' of new guardrail along the west side of Pocatello St and Medio St between Eleanor Dr and Bishop St.	TEO Unfunded	Southeastern San Diego, Southeastern	4			45000			Cost Estimate Complete.	No		Alo, Leo	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
491	Wunderlin Ave from 63rd Street to 900' east(North Side) - Install New Sidewalk	25	This project will provide PCC sidewalk on the north side of Wunderlin Avenue.	TEO Unfunded	Encanto Neighborhoods, Southeastern	4			115000	Other	CDBG;#Safe Route to School	Conflicts: Landscaping, Utility Poles, Trees	Yes	318208	Pornan, Donald	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
814	19th Street & Market Street Traffic Signal Upgrade	25	Install pedestrian heads for all crossings	TEO Unfunded	Southeastern San Diego, Southeastern	8			12500				0		Pornan, Donald	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
934	25th Street & Imperial Avenue Traffic Signal Upgrade	25	Install PPB (2010).	TEO Unfunded	Southeastern San Diego, Southeastern	8			6000				0		Pornan, Donald	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
935	25th Street & Market Street Traffic Signal Upgrade	25	Change out left turn signal; head from PV to regular signal heads with arrows .	TEO Unfunded	Southeastern San Diego, Southeastern	8			16100				0		Pornan, Donald	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
938	30th Street (S) & Ocean View Boulevard Traffic Signal Upgrade	25	Install pedestrian indications on the NWC and NEC	TEO Unfunded	Southeastern San Diego, Southeastern	8			9500				0		Pornan, Donald	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
449	Pocatello St from Eleanor Dr to Medio St, Medio St from Pocatello St to Bishop Dr, Bishop Dr from Medio St to Eleanor Dr - Improve to residential local street	27	This project will provide for a low volume, residential local street along Pocatello, Medio and Bishop per Street Design Manual Standards. It will require excavation, new AC street section,curb, gutter and sidewalk, street lights, retaining walls, and encroachment removal.	TEO Unfunded	Southeastern San Diego, Southeastern	4				Other			0		Pornan, Donald	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
498	Skyline Dr. at Woodman St.-Install New Guardrail	28	This project will install approximately 80' of guardrail at the southeast corner of this intersection.	TEO Unfunded	Encanto Neighborhoods, Southeastern;#Skyli	4			30000				No	308921	Nascimento, Claudio	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
551	Imperial Ave from I-5 to 32nd St - Widen to 4-lane major	28	This project provides for the widening of Imperial Avenue to a four-lane major street.	TEO Unfunded	Southeastern San Diego, Southeastern	4;#8		SESD-T9	2800000				0		Pornan, Donald	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
947	32nd St & Market St Traffic Signal Upgrade	28	Add pedestrian signal heads and push buttons	TEO Unfunded	Southeastern San Diego, Southeastern	8			14600				0		Pornan, Donald	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
984	Euclid Av & Logan Av/Olvera Av Traffic Signal Upgrade	28	Relocate PPB 180 degrees at NWC of Logan and Euclid (south leg of Logan, PPB on median); relocate PPB 180 degrees at SEC of Olvera & Euclid (2002)	TEO Unfunded	Encanto Neighborhoods, Southeastern	4			600				0		Pornan, Donald	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
1077	32nd St & Imperial Ave Traffic Signal Upgrade	28	Install new limit line loops to improve bicycle detection for all approaches (Mod. Type E)	TEO Unfunded	Southeastern San Diego, Southeastern	4			20000				0	314,613	Pornan, Donald	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
251	60th St from Imperial to Federal - Widen to 2-lane collector	29	This project provides for the widening of 60th Street to a two-lane collector.	TEO Unfunded	Southeastern San Diego, Southeastern	4;#8		SESD-17	7000000	Other			0		Pornan, Donald	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
267	Guymon St from 1000' w/o Euclid Ave to 1400' w/o Euclid Ave - Widen road	29	Widen road to standard 40' c/c	TEO Unfunded	Southeastern San Diego, Southeastern	8				Other		Conflicts: Environmental, No C&G, Drainage	0	313469	Pornan, Donald	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
3481	36th St & National Av APS Traffic Signal Upgrade	29	Install Polara push buttons Upgrade curb ramps Install ped countdown timers	TEO Unfunded	Southeastern San Diego, Southeastern	9			30000				0	329545		Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
3791	25th St & J St Traffic Signal Upgrade	29	Install ped countdown timers (8) Upgrade ped push buttons (7)	TEO Unfunded	Southeastern San Diego, Southeastern	8			2600				0	331,264		Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
474	35th St from Durant St to Webster Ave(West Side)-Install New Sidewalk	30	This project will provide approximately 100 linear feet of new PCC sidewalk on the west side of 35th Street. It will require excavation.	TEO Unfunded	Southeastern San Diego, Southeastern	9			27000	Other	CDBG	Conflicts: None Observed IMCAT Conflicts as of	0	308882	Nascimento, Claudio	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
4115	Merlin Drive north of Brooklyn Avenue 395', west side	30		TEO Unfunded	Encanto Neighborhoods,	4			2000		Smart Growth;#CDBG			TR334870	Semaan, Jerry	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
4116	Merlin Drive north of Brooklyn Avenue 575', west side	30		TEO Unfunded	Encanto Neighborhoods,	4			2000		Smart Growth;#CDBG			TR334870	Semaan, Jerry	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
4117	Merlin Drive north of Brooklyn Avenue 915', west side	30		TEO Unfunded	Encanto Neighborhoods,	4			2000		Smart Growth;#CDBG			TR334870		Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
3014	Skyline Dr & Sychar Rd Traffic Signal Upgrade	30	Upgrade curb ramps Install ped countdown timers	TEO Unfunded	Encanto Neighborhoods,	4			40000				0	328,180	Morabe, Lindsay	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
3015	Meadowbrook Dr & Skyline Dr Traffic Signal Upgrade	30	Upgrade curb ramps Install ped countdown timers	TEO Unfunded	Encanto Neighborhoods,	4			40000				0	328,179	Morabe, Lindsay	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List

3017	Skyline Dr & Woodman St Traffic Signal Upgrade	30	Install new loops for phases 2 & 5 Upgrade curb ramps Upgrade ped push buttons Install ped countdown timers	TEO Unfunded	Encanto Neighborhoods, Southeastern	4			55000				0	328,183	Morabe, Lindsay	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
116	Bancroft St from Island Ave to J St(West Side)- Install New Sidewalk	31	This project will provide approximately 291 linear feet of sidewalk, relocate three (3) street lights, 18 linear feet of driveway, and add five (5) pedestrian ramps.	TEO Unfunded	Southeastern San Diego, Southeastern	8			192000	Other	CDBG;#Safe Route to School	Conflicts: Utility Poles, Utility Boxes, Landscaping	0	308866	Tawfiq, Kharman	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
323	Geneva Ave from Winston Dr to Beverly St(South Side)- Install New Sidewalk	31	This project will install PCC sidewalk on the South Side of Geneva Ave.	TEO Unfunded	Encanto Neighborhoods, Southeastern	4				Other		Conflicts: Slope, Utility Poles, Mailboxes, Landscaping IMCAT Conflicts as of	0	309002	Pornan, Donald	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
353	58th St from South of Atla Vista Ave to End of 58th St(West Side)- Install New Sidewalk	31	This project will install PCC sidewalk on the west side of 58th Street.	TEO Unfunded	Encanto Neighborhoods, Southeastern	4				Other	CDBG	Conflicts: Drainage, Possible ROW Encroachment	0	318210	Pornan, Donald	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
493	Santa Isabel Dr from Bonita Dr to Olvera Ave(West Side)- Install New Sidewalk	31	This project will install PCC sidewalk on the west side of Santa Isabel Drive.	TEO Unfunded	Encanto Neighborhoods, Southeastern	4				Other	CDBG	Conflicts: Utility Poles, Landscaping, Driveway Clearance, Trees, Slop	Yes	309079	Pornan, Donald	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
3018	Skyline Dr & Valencia Traffic Signal Upgrade	31	Upgrade ped push buttons Install ped countdown timers	TEO Unfunded	Encanto Neighborhoods,	4			8000				0	328,186	Morabe, Lindsay	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
352	54th St from Imperial Ave to Santa Margarita St(East Side)- Install New Sidewalk	32	This project will install PCC sidewalk on the East Side of 54th Street.	TEO Unfunded	Encanto Neighborhoods, Southeastern	4					CDBG	Conflicts: No C&G, Drainage Concerns, Utility Poles IMCAT Conflicts as of	0	303500	Pornan, Donald	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
370	53rd St from Santa Margarita St to Imperial Ave(East Side)- Install New Sidewalk	32	This project will install PCC sidewalk on the east side of 53rd Street.	TEO Unfunded	Encanto Neighborhoods, Southeastern	4				Other	CDBG	Conflicts: None Oserved	0	306252	Pornan, Donald	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
1263	Roswell St from Swaner St to Old Memory Lane (North Side) -Install New Sidewalk	32	This project will install a missing sidewalk segment on the North Side of Roswell St.	TEO Unfunded	Encanto Neighborhoods, Southeastern	4						Conflicts: No C&G, Drainage Concerns	0		Pornan, Donald	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
1242	Citywide Streetlights FY 2011	32	Installation of street lights at various locations: Enterprise Street at Jessop Lane, north side Pershing Avenue at Upas Street, southeast corner Bancroft Street at Greely Avenue, southeast corner Houston Street at Kurtz Street, southwest corner Central Avenue at Dwight Street, northeast corner 62nd Street at Akins Avenue, southeast corner 31st Street at Juniper Street, northeast corner 32nd Street at Juniper Street, northeast corner 33rd Street at Juniper Street, northeast corner Bancroft Street at Juniper Street, northeast corner Dale Street at Juniper Street, northeast corner	TEO Funded	Encanto Neighborhoods, Southeastern;#Greater North Park;#Mid-City:City Heights;#Midway-Pacific Highway;#Southeastern San Diego, Southeastern	2;#3;#4;#8	B1114 7		96000				Yes		Pornan, Donald	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
3016	O'Meara St & Skyline Dr Traffic Signal Upgrade	32	Install ped countdown timers	TEO Unfunded	Encanto	4			2000				0	328,184	Morabe,	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
298	Brooklyn Ave from Merlin St to 63rd St(North Side)- Install New Sidewalk	33	This project will provide approximately 377 linear feet of sidewalk, six driveways, and two pedestrian ramps.	TEO Unfunded	Encanto Neighborhoods, Southeastern	4			116000	Other	CDBG;#Safe Route to School	Conflicts: Utility Box, Utility Poles, Decorative Pavement IMCAT Conflicts as of	0	309098A	Pornan, Donald	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
328	54th St from Imperial Ave to Naranja St(East Side)- Install New Sidewalk	33	This project will install PCC sidewalk on the East Side of 54th Street.	TEO Unfunded	Encanto Neighborhoods, Southeastern	4					CDBG	Conflicts: No C&G, Drainage Concerns	0	303499	Pornan, Donald	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
332	G St from 22nd St to 24th St(North Side)- Install New Sidewalk	33	This project will provide approximately 410 Linear feet of new PCC sidewalk and curb ramps on the north side of G Street. It will require clearing and grubbing, sign relocation, fence relocation, and Caltrans Encroachment Permit.	TEO Unfunded	Southeastern San Diego, Southeastern	8			148000	Other	CDBG;#Safe Route to School	Conflicts: Guardrail, Fence, ROW space, Utility Boxes IMCAT Conflicts as of 1/3/13: Overlay FY14	0	308999	Nascimento, Claudio	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
381	Groveland Dr from Euclid Ave to 53rd St(North Side)- Install New Sidewalk	33	This project will provide approximately 407 linear feet of sidewalk, 84 linear feet of driveway, 491 linear feet of curb and gutter, two pedestrian ramps, and relocate one fire hydrant.	TEO Unfunded	Encanto Neighborhoods, Southeastern	4			261000		CDBG	Conflicts: Utility Poles, Utility Boxes IMCAT Conflicts as of 12/28/12: None	0	309225	Pornan, Donald	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
463	Leghorn Ave from 66th St to Varney Dr(West Side)- Install New Sidewalk	33	This project will provide approximately 921 linear feet of guardrail, five driveways, 295 feet of curb, gutter, 141 linear feet of retaining wall, and 141 feet of guardrail.	TEO Unfunded	Encanto Neighborhoods, Southeastern	4			321000	Other		Conflicts: Mailboxes, Street Light, Utility Boxes, Guardrail, Storm Drain, Substandard Segment needs widening	0	309025	Nascimento, Claudio	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
470	Santa Margarita St from San Jacinto Dr to 55th St(South Side)- Install New Sidewalk	33	This project will install PCC sidewalk on the south side of Santa Margarita Street.	TEO Unfunded	Encanto Neighborhoods, Southeastern	4				Other	CDBG;#Safe Route to School	Conflicts: Utility Poles, Slopes, Landscaping, Trees, Draina IMCAT Conflicts as of	0	309080	Pornan, Donald	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List

665	Brooklyn Ave from 63rd St to Otay St(South Side)- Install New Sidewalk	33	This project will provide approximately 702 linear feet of sidewalk, 85 linear feet of driveway, three pedestrian ramps, and relocate two fire hydrants.	TEO Unfunded	Encanto Neighborhoods, Southeastern	4			201000		CDBG;#Safe Route to School	Conflicts: Utility Poles, Fire Hydrant, Fence IMCAT Conflicts as of	0	309097B	Pornan, Donald	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
666	Brooklyn Ave from Merlin St to 63rd St(South Side)- Install New Sidewalk	33	This project will install PCC sidewalk on the South Side of Brooklyn Avenue.	TEO Unfunded	Encanto Neighborhoods, Southeastern	4					CDBG;#Safe Route to School	Conflicts: Utility Box, Utility Poles, Decorative Pavement IMCAT Conflicts as of	0	309098B	Pornan, Donald	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
693	Benson Ave from Roth Ct to Jojo Ct (South Side) - Install New Sidewalk	33	This project will install PCC sidewalk on the south side of Benson Ave.	TEO Unfunded	Encanto Neighborhoods, Southeastern	4					CDBG;#Safe Route to School	Conflicts: Widening needed, Slope IMCAT Conflicts as of	0	309085	Pornan, Donald	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
785	29th St from Imperial Ave to Commercial St (East Side)- Install New Sidewalk	33	This project will provide approx. 330 LF of sidewalk, trees w/ grates, AC pavement, curb ramps, driveway apron, Type B inlet, and traffic striping. It will require sidewalk removal, pavement removal, inlet removal, sign relocation, meter box adjustment, and fire hydrant relocation.	TEO Unfunded	Southeastern San Diego, Southeastern	8			486000		CDBG	Conflicts: No Curb & Gutter, Drainage IMCAT Conflicts as of 1/3/13: Overlay FY15 (Start Cnst: 11/14 End Cnst: 7/15)	0	311510	Pornan, Donald	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
555	Akins Ave from 62nd St to 65th St Channel Improvements	33	This project provides for approximately 1400 feet of six foot high vinyl coated chain link fence with one gate. Remove existing fence.	PITS	Southeastern San Diego, Southeastern	4	527780		75000	Other			0			Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
813	19th Street & Imperial Avenue Traffic Signal Upgrade	33	Install signal poles and mast arms; upgrade to 12" signal heads; install detection; replace controller	TEO Unfunded	Southeastern San Diego, Southeastern	8			96000				0		Pornan, Donald	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
250	47th St from Market St to Imperial Ave - Widen to 4-lane major	34	This project provides for the widening of 47th Street to a four-lane Major.	TEO Unfunded	Southeastern San Diego, Southeastern	8		SESD-T18	5100000	Other			0		Pornan, Donald	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
263	Imperial Ave from I-15 to 40th St - Widen to 4-lane collector	34	This project provides for the widening of Imperial Avenue to a four-lane collector. Cost includes property acquisition and demolition of businesses and homes on southside.	TEO Unfunded	Southeastern San Diego, Southeastern	4;#8		SESD-T10		Other			0	315962	Pornan, Donald	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
266	Woodman St from Imperial Ave to Skyline Dr - Widen to 2-lane collector	34	This project provided for the improvement of Woodman Street to a two-lane collector.	PITS	Southeastern San Diego, Southeastern	4;#8		SESD-T14	1300000	Other			0		Pornan, Donald	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
283	33rd St from Imperial Ave to 75' N/O Imperial Ave(West Side)- Install New Sidewalk	34	This project will install PCC sidewalk on the west side of 33rd Street.	TEO Unfunded	Southeastern San Diego, Southeastern	8				Other	CDBG	Conflicts: Utility Boxes IMCAT Conflicts as of	0	318209	Pornan, Donald	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
334	Mallard St from Federal Blvd to 69th St (South Side)- Install New Sidewalk	34	This project will install PCC sidewak on the South Side of Mallard Street.	TEO Unfunded	Encanto Neighborhoods, Southeastern	4				Other		Conflicts: Utility POles, Mailboxes, Landscaping, Slopes, Fire Hydrant, Trees, Shrubs, Vegetation, Guardrail	0	309030	Pornan, Donald	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
469	Castana St from Euclid Ave to San Jacinto Dr(South Side) Install New Sidewalk	34	Install a sidewalk along the south side of Castana Street.	TEO Unfunded	Encanto Neighborhoods, Southeastern	4				Other	CDBG	Conflicts: Fire Hydrant, Utility Box, Utility Pole	0	309100	Pornan, Donald	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
1222	S 45th St from T Street to Logan Ave (East Side)- Install New Sidewalk	34	This project will install PCC sidewalk on the East Side of S 45th Street.	TEO Unfunded	Southeastern San Diego, Southeastern	4					CDBG	Conflicts: No C&G, Tree, Drainage, Business Access IMCAT Conflicts as of	0		Pornan, Donald	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
1234	Manzanares Wy from Euclid Ave to San Jacinto (South Side)- Install New Sidewalk	34	This project will install PCC sidewalk on the South Side of Manzanares Wy.	TEO Unfunded	Encanto Neighborhoods, Southeastern	4					CDBG	Conflicts: Utility Poles, Trees, Landscaping, Fire Hydrants, Fences	0		Pornan, Donald	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
441	Woodman St from Imperial Ave to Skyline Dr(West Side) - Install New Sidewalk	35	This project will install PCC sidewalk on the west side of Woodman Street.	TEO Unfunded	Encanto Neighborhoods, Southeastern	4			600000		CDBG	Water Group Job (Pipe Rehab) started 2/12 and Underground Utilities improvements will	No	317233, 325410, 333706	Pornan, Donald	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
3988	Radio Drive east of Paradise Street 850', south side street light	35		TEO Unfunded	Encanto Neighborhoods,	4			2000		CDBG		0	TR332999	Avila-Zepeda , Felipe R	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
264	Market St from Euclid Ave to 32nd St - Widen to 4-lane major	36	This project provides for the widening of Market Street to a four-lane major street with Class II bicycle lanes. The cost for property acquisition and building demolition are included in this estimate.	TEO Unfunded	Southeastern San Diego, Southeastern	4;#8		SESD-T11	6000000	Other			0		Pornan, Donald	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
363	Bluebird St from Mallard St to Mulberry St(West Side)- Install New Sidewalk	36	This project will install PCC sidewalk on the west side of Bluebird St.	TEO Unfunded	Encanto Neighborhoods, Southeastern	4				Other		Conflicts: Landscaping, No C&G, Mailboxes, Vegetation, Drainage, Utility Poles	0	309096B	Pornan, Donald	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
664	Bluebird St from Mallard St to Mulberry St(East Side)- Install New Sidewalk	36	This project will install PCC sidewalk on the East Side of Bluebird Street.	TEO Unfunded	Encanto Neighborhoods, Southeastern	4						Conflicts: Landscaping, No C&G, Mailboxes, Vegetation, Drainage, Utility Poles	0	309096A, 308872	Pornan, Donald	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
783	45th St from Benfield Ct to Imperial Ave (East Side)- Install New Sidewalk	36	This project will install PCC sidewalk on the east side of 45th Street.	TEO Unfunded	Southeastern San Diego, Southeastern	4			185000		CDBG	Conflicts: Needs Widening, Drainage, AC Curb, Utility Poles, Drain Inlet, Mailboxes, Outility Boxes	0	313467	Pornan, Donald	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List

112	Bittern St from Klauber Ave to Madera St(West Side)- Install New Sidewalk	37	This project will provide approximately 675 Linear Feet of sidewalk on the west side of Bittern Street. It will require excavation, sign relocation, mailbox relocation, meter box adjustment, and fire hydrant relocation. It will include new PCC sidewalk, curb ramps, and driveway aprons. .	TEO Unfunded	Encanto Neighborhoods, Southeastern	4			150000	Other		Conflicts: Landscaping, Mailboxes, Slope, Retaining Wall Fire Hydrants, Utility Poles IMCAT Conflicts as of	0	309095B	Nascimento, Claudio	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
262	Holly Dr from Willie James Jones Ave to Euclid Ave - Widen for CG&S	37	1000' widen road and CG&S & Drainage	PITS	Southeastern San Diego, Southeastern	4			1400000	Other			0		Pornan, Donald	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
270	Benson St from 61st St to Jenna St (South Side) - Install New Sidewalk	37	Widen, CG&S, Pvmt, Fill	TEO Unfunded	Southeastern San Diego, Southeastern	8			396000	Other		Conflicts: Needs Widening, Drainage, Utility Poles, Utility Boxes	0		Pornan, Donald	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
280	Beta St from 43rd St to End (North Side)- Install New Sidewalk	37	This project will provide approximately 601 linear feet of sidewalk. It will include curb and gutter, 13 driveways, and pavement.	TEO Unfunded	Southeastern San Diego, Southeastern	9			417000	Other	CDBG	Conflicts: Substandard Street, No C&G, Drainage, Trees, ROW Aquistion/Encroachm	0	309094B	Pornan, Donald	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
318	Coban St from Bonita Dr to Reynolds St(North Side)- Install New Sidewalk	37	This project will provide approximately 505 linear feet of sidewalk, five driveways, two pedestrian ramps, and 209 linear feet of curb and gutter.	TEO Unfunded	Encanto Neighborhoods, Southeastern	4			200000	Other	CDBG	Conflicts: Fire Hydrant, Utility Pole, No C&G, Wall, Tree, Landscaping	0	309103A	Pornan, Donald	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
466	Swan St from Springfield St to Tooley (West Side)- Install New Sidewalk	37	This project will install PCC sidewalk on the west side of Swan Street.	TEO Unfunded	Encanto Neighborhoods, Southeastern	4				Other		Conflicts: No C&G, Substandard Street Potentially, Landscaping,	0	309130	Pornan, Donald	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
662	Beta St from 43rd St to End (South Side)- Install New Sidewalk	37	This project will provide approximately 383 linear feet of sidewalk. It will include curb, gutter, 9 driveways, and pavement.	TEO Unfunded	Southeastern San Diego, Southeastern	9			310000		CDBG	Conflicts: Substandard Street, No C&G, Drainage, Trees, ROW Aquistion/Encroachm	0	309094A	Pornan, Donald	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
663	Bittern St from Klauber Ave to Madera St(East Side)- Install New Sidewalk	37	This project will provide approximately 1190 Linear Feet of sidewalk on the east side of ittern Street. It will require excavation, sign relocation, and mailbox relocation. It will include new PCC sidewalk, curb ramps, driveway aprons and a 130 LF 3" high retaining wall.	TEO Unfunded	Encanto Neighborhoods, Southeastern	4			243000			Conflicts: Landscaping, Mailboxes, Slope IMCAT Conflicts as of 12/28/12: None	0	309095A	Pornan, Donald	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
671	Coban St from Bonita Dr to Reynolds St(South Side)- Install New Sidewalk	37	This project will provide approximately 565 linear feet of sidewalk, 120 linear feet of curb and gutter, one driveway, and for pedestrian ramps.	TEO Unfunded	Encanto Neighborhoods, Southeastern	4			155000		CDBG	Conflicts: Fire Hydrant, Utility Pole, No C&G, Wall, Tree, Landscaping	0	309103B	Pornan, Donald	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
688	Swan St from Springfield St to Tooley (East Side)- Install New Sidewalk	37	This project will install PCC sidewalk on the East Side of Swan Street.	TEO Unfunded	Encanto Neighborhoods, Southeastern	4						Conflicts: No C&G, Substandard Street Potentially, Landscaping,	0	309130B	Pornan, Donald	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
265	Oceanview Blvd from 40th St to 32nd St - Widen to 4-lane major	38	This project provides for the widening of Oceanview Boulevard to a modified four-lane major street. No additional right of way is anticipated.	TEO Unfunded	Southeastern San Diego, Southeastern	4;#8		SESD-T12	96000000	Other			0		Pornan, Donald	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
394	Webster Avenue from 36th St to Western End of Webster (Both Sides) - Install New Sidewalk	38	This project will install PCC sidewalk on both side of Webster Avenue.	TEO Unfunded	Southeastern San Diego, Southeastern	9				Other	CDBG	Conflicts: Utility Poles, Drainage, Trees, Utility Boxes IMCAT Conflicts as of	0	309033	Pornan, Donald	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
533	Logan Ave from S47th St to 100' East (North Side)- Install New Sidewalk	38	This project will provide approximately 71 LF of sidewalk, and 71 feet of curb and gutter.	PITS	Encanto Neighborhoods,	4			41000		CDBG;#Safe Route to School	Funded by Brock Jones of Disability	0	308153	Pornan, Donald	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
3676	Nogal Street - 75' East of 47th Street (north side) - Install Driveway	38	Install missing (removed by previous owner) driveway	TEO Unfunded	Encanto Neighborhoods, Southeastern	4						Conflict Check: Undergrounding Utilities (start con:	0	330569	Turner, Scott	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
115	Cervantes Ave from Euclid Ave to Bonita Dr(North Side)- Install New Sidewalk	39	This project will provide approximately 2070 LF of CG&S, curb ramps, and driveway aprons. It will require AC curb removal, sign relocation, fence relocation, excavation, clearing and grubbing, and ROW acquisition.	TEO Unfunded	Encanto Neighborhoods, Southeastern	4			414000	Other	CDBG	Conflicts: Fire Hydrants, Fences, Landscaping, Utility Poles, Slope, Utility Boxes, Mailboxes	0	308880	Nascimento, Claudio	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
119	Alta Vista Ave from Cervantes Ave to 58th St(South Side)- Install New Sidewalk	39	This project will provide approximately install 1259 linear feet of sidewalk, 243 linear feet of driveway, with respective curb and gutter, four pedestrian ramps, 273 linear feet of retaining wall, relocate 12 mail boxes, and three signs on the south side of Alta Vista Avenue.	TEO Unfunded	Encanto Neighborhoods, Southeastern	4			492000	Other	CDBG	Conflicts: No C&G, Drainage, Mailboxes, Landscaping, Slope, Trees, Walls, Fences IMCAT Conflicts as of 12/28/12: None	0	306235	Tawfiq, Kharman	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
252	61st St from Akins St to Brooklyn St(East Side)- Install New Sidewalk	39	This project will provide approximately 701 linear feet of sidewalk, 432 linear feet of driveway, 1146 linear feet of curb and gutter, one pedestrian ramp, replace 3 fire hydrants, and replace one street sign.	TEO Unfunded	Encanto Neighborhoods, Southeastern	4			442000		CDBG	Conflicts: Utility Pole, Fire Hydrant, Trees IMCAT Conflicts as of 12/28/12: Overlay	0	306237	Tawfiq, Kharman	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
390	Radio Dr from 60th St to Springfield Dr(North Side)- Sidewalk Improvement	39	This project will install PCC sidewalk on the north side of Radio Drive.	TEO Unfunded	Encanto Neighborhoods, Southeastern	4			24150000	Other		Conflicts: Substandard Roadways- needs many improvements IMCAT Conflicts as of	0	284464	Nascimento, Claudio	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
465	Castana St from San Jacinto Dr to Groveland Dr(North Side)- Install New Sidewalk	39	This project will provide approximately 470 linear feet of sidewalk, and 31 feet of driveway.	TEO Unfunded	Encanto Neighborhoods, Southeastern	4			57000	Other	CDBG	Conflicts: None observed	0	309100A, 306233	Nascimento, Claudio	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List

518	Radio Dr from 60th St to Springfield Dr(South Side)- Sidewalk Improvement	39	This project will install PCC sidewalk on the South Side of Radio Drive.	TEO Unfunded	Encanto Neighborhoods, Southeastern	4			24150000			Conflicts: Substandard Roadways- needs many improvements IMCAT Conflicts as of	0	284464	Pornan, Donald	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
668	Castana St from San Jacinto Dr to Groveland Dr(South Side)- Install New Sidewalk	39	This project will provide approximately 377 linear feet of sidewalk, and 104 linear feet of driveway. It will be neccessary to relocate one fire hydrant and one traffic sign.	TEO Unfunded	Encanto Neighborhoods, Southeastern	4			84000		CDBG	Conflicts: None observed IMCAT Conflicts as of	0	309100B	Pornan, Donald	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
670	Cervantes Ave from Euclid Ave to Bonita Dr(South Side)- Install New Sidewalk	39	This project will provide approximately 2070 LF of sidewalk on the south side of Cervantes Avenue. It will require AC curb removal, sign relocation, fence relocation, excavation, clearing and grubbing, and ROW acquisition. It will include new CG&S, curb ramps, and driveway aprons.	TEO Unfunded	Encanto Neighborhoods, Southeastern	4			414000		CDBG	Conflicts: Fire Hydrants, Fences, Landscaping, Utility Poles, Slope, Utility Boxes, Mailboxes IMCAT Conflicts as of	0	308880	Pornan, Donald	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
701	Cervantes Ave from Bonita Dr to Alta Vista Ave(North Side)- Install New Sidewalk	39	This project will provide approximately 541 linear feet of sidewalk, six driveways, and six pedestrian ramps.	TEO Unfunded	Encanto Neighborhoods, Southeastern	4			240000		CDBG	Conflicts: ROW Encroachments, Fences, Landscaping, Utility Poles, Slope,	0	309229	Pornan, Donald	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
702	Cervantes Ave from Bonita Dr to Alta Vista Ave(South Side)- Install New Sidewalk	39	This project will provide approximatley 1032 linear feet of sidewalk, two driveways, nine pedesrtian ramps, and 132 linear feet of retaining wall.	TEO Unfunded	Encanto Neighborhoods, Southeastern	4			375000		CDBG	Conflicts: ROW Encroachments, Fences, Landscaping, Utility Poles, Slope,	0	309228	Pornan, Donald	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
703	Coban St from Euclid Ave to Reynolds St(North Side)- Install New Sidewalk	39	This project will install PCC sidewalk on the North Side of Coban Street.	TEO Unfunded	Encanto Neighborhoods, Southeastern	4					CDBG	Conflicts: Fire Hydrant, Utility Pole, Decorative Pavement, Trees, Landscaping	0	309227	Pornan, Donald	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
704	Coban St from Euclid Ave to Reynolds St(South Side)- Install New Sidewalk	39	This project will provide approximately 913 linear feet of sidewalk, 17 driveways, and two pedestrian ramps.	TEO Unfunded	Encanto Neighborhoods, Southeastern	4			276000		CDBG	Conflicts: Fire Hydrant, Utility Pole, Decorative Pavement, Trees, Landscaping	0	309226	Pornan, Donald	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
705	Groveland Dr from 53rd St to 54th St(North Side)- Install New Sidewalk	39	This project will provide approximately 407 linear feet of sidewalk, 84 linear feet of driveway, 491 linear feet of curb and gutter, two pedestrian ramps, and relocate one fire hydrant.	TEO Unfunded	Encanto Neighborhoods, Southeastern	4			261000		CDBG	Conflicts: Substandard Street, Drainage, No C&G, Utility Poles IMCAT Conflicts as of	0	309225	Pornan, Donald	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
706	Groveland Dr from 53rd St to 54th St(South Side)- Install New Sidewalk	39	This project will install PCC sidewalk on the South Side of Groveland Drive.	TEO Unfunded	Encanto Neighborhoods, Southeastern	4					CDBG	Conflicts: Substandard Street, Drainage, No C&G, Utility Poles	0	309224	Pornan, Donald	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
1154	Iona Dr from Kenwood St to Brooklyn Ave (Both Sides)- Install New Sidewalk	39	This location is missing sidewalk on both sides of Iona Drive.	TEO Unfunded	Encanto Neighborhoods, Southeastern	4					CDBG	Conflicts: Fire Hydrants, Landscaping	0	317012	Pornan, Donald	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
2776	47th St from Logan Ave to Division St (West Side)- Install New Sidewalk	39	This project will install PCC sidewalk on the west side of 47th St within the specified limits.	TEO Unfunded	Encanto Neighborhoods, Southeastern	4					CDBG		0			Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
308	60th St from Old Memory Lane to Broadway St - Widen to 2-lane collector	40	Widen to 2-lane collector (both sides)	TEO Unfunded	Encanto Neighborhoods, Southeastern	4		SESD-T17			Other	Road Widening PFFP SESD-T17 Project originally for east side only - estimated as $700,000 on 2/5/09. West side improvements added per CPC request. Cost estimate needs updating to include west side. Conflicts:ROW encroachment, Utility	No	306249	Tawfiq, Kharman	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
253	Akins Ave from Iona Dr to 69th St - Widen to install CG&S	40	3,120 linear feet of CG&S	No longer meets warrants	Southeastern San Diego, Southeastern	8					Other		***This location has sidewalk***	0	313015	Pornan, Donald	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
315	Fergus St from Brooklyn St to Akins St(East Side)- Install New Sidewalk	40	This project will provide approximately 611 linear feet of sidewalk, 242 linear feet of driveway, two pedestrian ramps, relocate one fire hydrant and one traffic sign.	TEO Unfunded	Encanto Neighborhoods, Southeastern	4			203000	Other	CDBG	Conflicts: ROW encroachment, Utility Poles	0	306243	Tawfiq, Kharman	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
333	West Street from south of Imerial Ave to End of West St (East Side) - Install New Sidewalk	40	This project will provide approximately 513 linear feet of sidewalk, 141 linear feet of driveways, 36 linear feet of curb and gutter, replace one street sign, and six mail boxes.	TEO Unfunded	Southeastern San Diego, Southeastern	4			104000	Other	CDBG	Conflicts: ROW encroachment, utility poles IMCAT conflicts as of 10/8/12: Sewer &	0	306240	Tawfiq, Kharman	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
694	Benson Ave from Pagel Pl to Aviation Dr (South Side) - Install New Sidewalk	40	This project will install new PCC sidewalk on the south side of Benson Ave.	TEO Unfunded	Encanto Neighborhoods, Southeastern	4			400000		CDBG	Conflicts: Trees, Utility Poles, Drainage, No C&G, Possible Property Aquisition Required, Mailboxes,	0	309084	Pornan, Donald	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
1223	Broadway from Scimitar Dr to 65th St (North Side)- Install New Sidewalk	40	This project will install CG&S on the North Side of Broadway from approx. 40' West of Scimitar Dr to 65th St.	TEO Unfunded	Encanto Neighborhoods, Southeastern	4					CDBG;#Safe Route to School	Conflicts: Utility Pole, Tree, Mailbox, Landscaping, Slope IMCAT Conflicts as of 12/28/12: Overlay	0	320593	Pornan, Donald	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List

1239	Euclid Frontage Rd from Trinidad Way to Manzaranres Way (East Side)- Install New Sidewalk	40	This project will install PCC sidewalk on the East side of S Euclid Frontage Road.	TEO Unfunded	Encanto Neighborhoods, Southeastern	4					CDBG;#Safe Route to School	Conflicts: Landscaping, Utility Boxes, Fire Hydrant, Walls	0	321112	Pornan, Donald	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
3382	69th Street north of Wunderlin Avenue 120', west side, streetlight	40		TEO Unfunded	Encanto Neighborhoods,	4			15000				0	TR327235		Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
3383	69th Street north of Brooklyn Avenue 265', est side, streetlight	40		TEO Unfunded	Encanto Neighborhoods,	4			2000				0	TR327235		Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
3384	69th Street north of Brooklyn Avenue 105', west side, streetlight	40		TEO Unfunded	Encanto Neighborhoods,	4							Yes	TR327235		Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
3727	Central Avenue south of Monroe Avenue 175', east side-streetlight	40	Priority 3a	TEO Unfunded	Encanto Neighborhoods,	9			8000		CDBG		0	TR316281	Semaan, Jerry	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
3808	Julian Avenue east of Dewey Street 295', north side streetlight	40		TEO Unfunded	Southeastern San Diego, Southeastern	8			15000				0	TR 331,383	Hughes, Duncan	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
3809	Julian Avenue east of Dewey Street 160', south side streetlight	40		TEO Unfunded	Southeastern San Diego, Southeastern	8			15000				0	TR 331.383	Hughes, Duncan	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
3810	Julian Avenue west of Evans Steet (S) 155', south side streetlight	40		TEO Unfunded	Southeastern San Diego, Southeastern	8			15000				0	TR 331,383	Hughes, Duncan	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
3927	Boston Avenue east of S 43th Street 170', north side street light	40		TEO Funded	Southeastern San Diego, Southeastern	9			8000		CDBG	B-14107	Yes	TR332941	Avila-Zepeda , Felipe R	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
3928	Boston Avenue east of S 44th Street 90', south side street light	40		TEO Funded	Southeastern San Diego, Southeastern	9			2000		CDBG	B-14107	Yes	TR332938	Avila-Zepeda , Felipe R	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
4020	S Evans Street south of Julian Avenue 180', west side, at alley	40		TEO Unfunded	Southeastern San Diego, Southeastern	8			2000		CDBG		0	TR333309	Semaan, Jerry	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
4031	60th Street north of Kenwood Street 110', west side	40		TEO Unfunded	Encanto Neighborhoods,	4			2000		CDBG		0	TR333433	Semaan, Jerry	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
4110	Merlin Drive south of Market Street 130', east side	40		TEO Unfunded	Encanto Neighborhoods,	4			2000		Smart Growth;#CDBG			TR334870	Semaan, Jerry	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
4111	Merlin Drive north of Market Street 110', west side	40		TEO Unfunded	Encanto Neighborhoods,	4			2000		Smart Growth;#CDBG			TR334870		Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
4112	Merlin Drive north of Market Street 260', west side	40		TEO Unfunded	Encanto Neighborhoods,	4			2000		Smart Growth;#CDBG			TR334870	Semaan, Jerry	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
4113	Merlin Drive south of Brooklyn Avenue 565', west side	40		TEO Unfunded	Encanto Neighborhoods,	4			2000		Smart Growth;#CDBG			TR334870	Semaan, Jerry	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
4114	Merlin Drive south of Brooklyn Avenue 240', west side	40		TEO Unfunded	Encanto Neighborhoods,	4			2000		Smart Growth;#CDBG			TR334870	Semaan, Jerry	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
2452	40th St and Alpha St Pop-Outs	40	This project will provide approximately 3886 square feet of pop out, 324 feet of curb and gutter, 192 linear feet of RCP for storm drain, three clean outs, four storm drain inlets, and eight pedestrian ramps.	PITS	Southeastern San Diego, Southeastern	8			430000				0		Pornan, Donald	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
248	43rd St from Imperial Ave to Logan Ave - Widen to 4-lane collector	41	This project provides for the construction of 43rd Street to a four-lane collector. This project is recommended for deletion. See comments.	TEO Unfunded	Southeastern San Diego, Southeastern	4;#8		SESD-T16	7400000	Other			No		Pornan, Donald	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
552	Valencia Pkwy from Imperial Ave to Market St - Widen to 4-lane major	41	This project provides for the extension of Valencia Parkway as a four-lane major street.	TEO Unfunded	Southeastern San Diego, Southeastern	4;#8		SESD-T13	5500000				No		Pornan, Donald	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
1235	San Alberto Wy from Santa Rosalia to Trinidad Wy (Both Sides)- Install New Sidewalk	41	This project will provide approximately 2015 LF of sidewalk within the project limits. It will require clearing and grubbing, inlet removal, sign relocation, tree removal, fence relocation, meter box adjustments, and fire hydrant relocations. It will include new CG&S, AC pavement, driveway aprons, curb ramps, and Type B inlets with 18" storm pipe.	TEO Unfunded	Encanto Neighborhoods, Southeastern	4			285000		CDBG	Conflicts: Drain Inlet on Corner, ROW encroachment (Trees, Landscaping, fences, bushes, walls), Utility Poles, Driveways IMCAT conflicts as of 10/8/12: FY10 Overlay Group 3 Start:	0	320991	Pornan, Donald	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
1236	Agua Vista Wy from Trinidad Wy to Northern Terminus (Both Sides)- Install New Sidewalk	41	This project will provide approximately 1700 LF of Sidewalk within the project limits. It will require excavation, clearing & grubbing, sign relocation, meter box adjustments, and fire hyrant relocation. It will include new PCC sidewalk, driveway aprons, and curb ramps.	TEO Unfunded	Encanto Neighborhoods, Southeastern	4			192000		CDBG	Conflicts: Utility Poles, ROW encroachment (Landscaping, Bushes, Fences), IMCAT conflicts as of 10/8/12: FY10 Overlay	0	321052	Pornan, Donald	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
1237	Santa Rosalia Dr from Manzanares Wy to Southern Terminus (Both Sides)- Install New Sidewalk	41	This project will install PCC sidewalk on both side of Santa Rosalia Dr.	TEO Unfunded	Encanto Neighborhoods, Southeastern	4					CDBG	Conflicts: ROW encroachment (Landscaping, Walls, Bushes), Utility Poles, Drainage Inlet	0	320992	Pornan, Donald	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
1238	Trinidad Wy from Santa Maria Terr to Euclid Ave (Both Sides)- Install New Sidewalk	41	This project will install PCC sidewalk on both side of Trinidad Way.	TEO Unfunded	Encanto Neighborhoods, Southeastern	4					CDBG;#Safe Route to School	Conflicts: Drainage, Utility Boxes/Poles, ROW encroachment (Landscaping, Trees, Walls, Bushes, Fences),	0	321051	Pornan, Donald	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
2524	S. Boundary St from Ocean View Bl to T St (Both Sides) - Install New Sidewalk	41	This project will install PCC sidewalk on both sides of South Boundary St	TEO Unfunded	Southeastern San Diego, Southeastern	9			55000			Conflicts: Phone, Cox, SDGE, Water, Large Trees, Shrubs IMCAT Conflicts as of 11/21/12: Water	0	326984		Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List

4108	56th Street from Glen Road (south) to northern cul-de-sac end - Install new sidewalk (west side)	41	This project installs new sidewalk, curb and gutter along west side of 56th Street. The project has several meter boxes, clean-outs and existing vaults that will need to be adjusted to grade. Many conflicts with transformer boxes, trees, tree roots, stairs, decorative paving, masonary blocks, and signs also exist. Will require minor earthwork.	TEO Unfunded	Encanto Neighborhoods, Southeastern	4								333726	Turner, Scott	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
254	Klauber Ave from Bittern St to 69th St - Widen to 2-lane collector	42	4000' Widen CG&S, Rwall, Drainage Major Road Proj	TEO Unfunded	Southeastern San Diego, Southeastern	8				Other		Conflicts: Substandard Road, Slopes, ROW Encroachments/Aquisition, Utility Poles, Mailboxes, Drainage, No C&G, Landscaping,	No	313021	Pornan, Donald	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
110	53rd St from Imperial Ave to Groveland St(Both Sides)- Install New Sidewalk	42	This project will provide approximately 400 linear feet of sidewalk, one pedestrian ramp, relocate three signs and two fire hydrants.	TEO Unfunded	Encanto Neighborhoods, Southeastern	4			72000	Other	CDBG	Conflicts: Utility Poles/Boxes IMCAT conflicts as of	0	323284	Tawfiq, Kharman	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
383	La Paz Dr from Euclid Ave to San Bernardo(North Side)- Install New Sidewalk	42	This project will provide approximately 1445 linear feet of sidewalk, 339 linear feet of driveways, four pedestrian ramps, and relocate six signs on the north side of the street.	TEO Funded	Encanto Neighborhoods, Southeastern	4	B-13085		228000	Other	CDBG		0	323283	Nascimento, Claudio	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
483	Solola Ave from Euclid Ave to Palin St(Both Sides)- Install New Sidewalk	42	This project will provide approximately 460 linear feet of sidewalk, 108 linear feet of driveway, seven pedestrian ramps, and 11 linear feet of retaining wall. It will include sidewalk and median modification at existing bus stop to comply with ADA standards.	TEO Unfunded	Encanto Neighborhoods, Southeastern	4			163000	Other	CDBG	Poles/Boxes IMCAT conflicts as of 10/8/12: None observed	0	323294	Nascimento, Claudio	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
268	Madera St from 66th St to 69th St - Widen for CG&S	43	CG&S 3200'	TEO Unfunded	Encanto Neighborhoods, Southeastern	4				Other		Conflicts: SLopes, Landscaping Utility Poles, Mailboxes, Drainage, Missing	0	313022	Pornan, Donald	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
2782	56th St from North of Roswell St to South of Roswell St (west Side)- Install New Sidewalk	43	This project will install PCC sidewalk on the west side of 56th Street within the limits.	TEO Unfunded	Encanto Neighborhoods,	4							0			Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
3596	Cielo Drive - Woodman St to 65th St - Install new sidewalk	43	Install new sidewalk, curb and gutter - south side of Cielo Dr from Woodman St to 61st St; north side of Cielo Dr from Woodman St to Pagel Pl. 7 curb ramps, driveway replacement and retaining wall	TEO Unfunded	Encanto Neighborhoods, Southeastern	4			525000			ADA project OS-13-02-0015	0	TR328222		Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
3854	51st Street from Hilltop Ave to approx. 340 ft. north (west side) - Install new sidewalk	43	This project will construct approx. 340 LF of sidewalk, a curb return and two ped ramps. Earthwork and a retaining wall are required. Also, removal of several cactus, bushes and a tree is necessary. Curb and gutter are in.	TEO Unfunded	Encanto Neighborhoods, Southeastern	4							No	333667	Turner, Scott	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
3909	Mariposa Street (Both sides) and Mariposa Place from Mariposa St to Shell Ave (North Side) - Install New Sidewalk	43	Mariposa St: Install curb, gutter, sidewalk and driveway entrances (both sides). Mariposa Place: Install curb, gutter, sidewalk and driveway entrances (north side only), may require power pole, blowoff/AV&AR, and fire hydrant relocation.	TEO Unfunded	Encanto Neighborhoods, Southeastern	4							0	331976	Turner, Scott	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
4072	Ocean View Blvd from Willie James Jones W to Willie James Jones E - Widening	43	This project will widen Ocean View Blvd from Willie James Jones W Ave to Willie James Jones E Ave and provide 265' of curb, gutter, and sidewalk.	TEO Unfunded	Encanto Neighborhoods, Southeastern	4						IMCAT Conflicts (4/7/2014): Water Main Replacement DESIGN: (9/6/2013 - 1/23/2014) CONST: (8/21/2014 - 7/21/2015)		334044		Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
794	Kelton Rd at Kelton Pl Electronic Speed Sign	43	This project will one Electronic V-Calm sign on Kelton Rd by Kelton Pl facing southbound traffic	TEO Funded	Encanto Neighborhoods, Southeastern	4			8000		TransNet	Funded by "Old Transnet" funding	Yes		Pornan, Donald	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
255	Cesar Chavez Pkwy from Commercial St to I-5 - Widen to 4-lane collector	44	This project will provide for the widening of Cesar Chavez Pkwy to a four-lane Collector.	TEO Unfunded	Southeastern San Diego, Southeastern	8		SESD-T20	1900000	Other			No		Pornan, Donald	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
261	Division St from Lorenz Ave to 61st St - Widen to 4-lane collector	44	This project will provide for the widening of Division Street to a modified four lane Collector.	TEO Unfunded	Southeastern San Diego, Southeastern	8		SESD-T19	1300000	Other			No		Pornan, Donald	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
269	Brooklyn Ave from 65th St to 66th St - Improve road	44	Fully improve to 40' c/c, Rwalls, Grade adjustment	TEO Unfunded	Southeastern San Diego, Southeastern	8				Other		TR request submitted	No	311608	Pornan, Donald	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
2777	63rd St from Broadway to Imperial Ave (Both Sides)- Install New Sidewalk	44	This project will provide approximately 2320 LF of sidewalk within the project limits. It will require clearing and grubbing, sign relocation, meter box adjustment, and fire hydrant relocation. It will new PCC sidewalk. driveway aprons, curb ramps, and 125 LF of 3' retaining walls.	TEO Funded	Encanto Neighborhoods, Southeastern	4	B1403 9		307000			Project was sent to Street Division for review for construction.	0			Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
4032	26th St & Market St New Traffic Signal	45	Install new traffic signal	PITS	Southeastern San Diego, Southeastern	8			275000		TransNet	Design to be provided by Fehr & Peers.	0			Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
271	69th St from Madera St to Mallard St - Widen for CG&S	45	CG&S, Pavement, Drainage, Road widening	TEO Unfunded	Encanto Neighborhoods, Southeastern	4				Other		CONFLICTS: Utility poles, Trees, bushes, fence	0	313016	Pornan, Donald	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List

2762	Madrone Ave from 63rd St to Shaules Ave (Both Sides)- Install New Sidewalk	45	This project will install sidewalk on both sides of Madrone Ave.	TEO Unfunded	Encanto Neighborhoods, Southeastern	4						Conflicts: Slopes both sides, nonstandard width roadway, guardrails, utility poles, water valves, drainage issues, no c&g, fire hydrants, ROW encroachments:	0			Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
2811	Olvera Ave from Gwen St to Santa Isabel Dr (South Side) Install New Sidewalk	45	This project will install PCC sidewalk on the south sides of Olver Ave within the specified limits. Conflicts include fire hydrants and a small masonary wall. Will also require relocation of an existing driveway entrance at curb return. Some adjustments to grade for existing meter boxes. Some earthwork also needed. Curb and gutter in.	TEO Unfunded	Encanto Neighborhoods, Southeastern	4						IMCAT Conflicts as of 2/20/14: Street segment SS-020537, Project ID FY10-S3 Slurry moratorium Start 3/6/2012 End 3/6/2015	No		Turner, Scott	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
2812	Olvera Ave from San Onofre Ter. to Las Flores (South Side)- Install New Sidewalk	45	This project will install PCC sidewalk on the south side of Olvera Ave within the specified limits. Conflicts include fire hydrants, masonary walls, decorative rock, utility poles, vegitation and shrubs. Some adjustments to grade to clean outs and meter boxes will be needed. Curb is in, but in deteriorated condition and may need repair/replacement.	TEO Unfunded	Encanto Neighborhoods, Southeastern	4						IMCAT Conflicts as of 2/20/14: Street segment SS-020533, project ID FY10-S3 Slurry Overlay Moratorium start 3/6/2012 end 3/6/2015	No	333730	Turner, Scott	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
3956	Pitta St from Market St to Kenwood St (Both Sides) - Install New Sidewalk	45	This project will provide curb/gutter and sidewalk on both sides of Pitta Street north of Market Street.	TEO Unfunded	Encanto Neighborhoods, Southeastern	4						ROW width of street is 40 feet with curb to curb of 25 feet. IMCAT Conflicts: Pipeline Rehabilitation Design: 1/2014 to 4/2014 Construction: 8/2014	0	332534		Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
2823	Egret Street north of Weaver Street 300', east side streetlight	45	Priority 2b	TEO Funded	Encanto Neighborhoods,	4			2000				Yes	TR246076		Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
3001	31st St @ Imperial Ave New Traffic Signal	46	Install a new traffic signal	PITS	Southeastern San	8			275000				0	306689	Hughes,	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
2779	Scimitar Dr from Broadway to Kluaber Ave (Both Sides)- Install New Sidewalk	46	This project will install PCC sidewalk on both sides of Scimitar Dr, also to include road widening.	TEO Unfunded	Encanto Neighborhoods, Southeastern	4							0			Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
2453	40th St at National Ave	46		PITS	Southeastern San	4			502000				0		Pornan,	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
1230	41st St @ National Ave New Traffic Signal	47	Install a new traffic signal	PITS	Southeastern San	4;#8			275000				0	318737	Pornan,	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
2809	Eider St from Scimitar Dr to Klauber Ave (Both Sides)- Install New Sidewalk	47	This project will install sidewalk,curb and gutter on both sides of Eider St within the specified limits. Drainage will become an issue. Extensive earthwork, shoring and retaining walls necessary for project. Right of Way acquisition may be necessary due to limited street widths and room for sidewalk. Numerous conflicts with trees, slopes, utilities, poles, walls. Street also in poor condition and needs overlay.	TEO Unfunded	Encanto Neighborhoods, Southeastern	4						IMCAT conflicts as of 6/3/14: No conflicts	No			Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
2810	Wren St from Scimitar Dr to Klauber Ave (Both Sides)- Install New Sidewalk	48	This project will install PCC sidewalk and curb returns on Wren St within the specified limits. Will require earthwork and retaining walls. Conflicts include several utility poles, mail boxes, several medium to tall trees, shrubs, and ground vegitation. Curb and gutter are mostly in.	TEO Unfunded	Encanto Neighborhoods, Southeastern	4						IMCAT conflicts as of 6/3/14: None	No	333986	Turner, Scott	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
3853	Elwood Ave from Lenox Dr to Geneva Ave (West Side) - Install new sidewalk	48	This project will provide sidewalk and install/upgrade curb return ped ramps. Will require utility pole relocation, meter box adjustment to grade and minor vegitation removal. One masonary wall conflicts w/ proposed 4' wide path of travel.	TEO Unfunded	Encanto Neighborhoods, Southeastern	4							No	333668	Turner, Scott	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
770	31st St @ National Ave New Traffic Signal	49	Install a new traffic signal	TEO Unfunded	Southeastern San Diego, Southeastern	8			275000				0	308,848	Nascimento, Claudio	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
1316	31st St @ Ocean View Bl New Traffic Signal	49	Install a new traffic signal.	PITS	Southeastern San	4			275000				0	321035	Pornan,	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
543	S 38th St at Alpha St- Pop-Outs(4)	49	This project will provide approximately 2980 square feet of pop out, 249 feet of curb and gutter, four pedestrian ramps, relocate one fire hydrant, one manhole, and two storm drain inlets. Assume: grades flat, subsurface drainage proposed.	TEO Unfunded	Southeastern San Diego, Southeastern	8			294000		CDBG;#Safe Route to School	FY 14: $75,000 Prelim Fy 15: $100,000 Design FY 16: $119,000 Construction	0	308053	Nascimento, Claudio	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
440	Market St from Euclid Ave to 54th St. - Widening	50	This project provides for the widening of Market St to a four lane major street.	TEO Unfunded	Encanto Neighborhoods,	4			1300000	Other			No		Pornan, Donald	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
468	Creston Dr from Selma Pl to Roswell St(Both Sides)- Install New Sidewalk	50	This project will provide approximately 544 linear feet of PCC sidewalk, 156 linear feet of driveway, one pedestrian ramp, and relocate two signs.	TEO Unfunded	Encanto Neighborhoods, Southeastern	4			114000			Conflicts: Fire Hydrant, Landscaping, Utility Pole, Trees IMCAT Conflicts as of 12/28/12: Pipeline	Yes	306231, 333725	Nascimento, Claudio	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
2778	65th St from Imperial Ave to Madrone (Both Sides)- Install New Sidewalk	50	This project will install PCC sidewalk on 65th St within the specified limits. It will also include road widening.	TEO Unfunded	Encanto Neighborhoods, Southeastern	4					CDBG		0			Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List

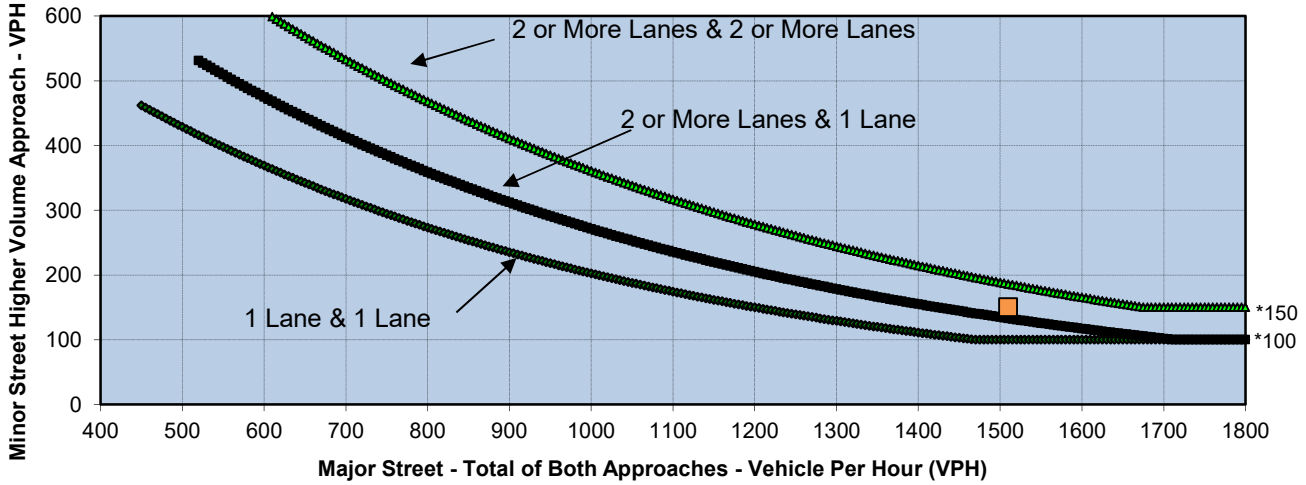
3851	Lenox Drive from Winston Dr to Beverly St (Both Sides) - Install new sidewalk	50	This project will install sidewalk and ped ramps, earthwork and retaining walls required. Conflicts include utility poles, mail boxes, masonary walls, fire hydrants, a large tree stump, shrubs and ground vegitation, and decorative paving/rocks. Several meter boxes require adjustment to grade. Curb and gutter are in.	TEO Unfunded	Encanto Neighborhoods, Southeastern	4						IMCAT conflits as of 6/3/14: Pipeline Rehab - Phase G-2 (laterals) start 1/22/2015 end 8/24/2016	No	333727	Turner, Scott	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
3852	Winston Drive from Lenox Dr to Hilltop Dr (Both Sides) - Install new sidewalk	50	This project will provide sidewalk on both the east and west side of Winston Drive. Will require earthwork and retaining walls. Conflicts include large palm trees, smaller trees, shrubs and ground vegitation. Will require adjustment to grade of meter boxes. Curb and gutter are in, but are deteriorated and damaged. May require replacement/repair.	TEO Unfunded	Encanto Neighborhoods, Southeastern	4						IMCAT conflicts as of 2/21/14: Street segment SS-029003, project ID FY10-O2 Asphalt overlay moratorium Stert 9/20/2011 end 9/20/2016	No	333723	Turner, Scott	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
3073	Raven Street south of Hilltop Drive 137', east side streetlight	50		TEO Unfunded	Southeastern San Diego, Southeastern	9			8000				Yes	TR256791		Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
3078	Southlook Avenue south of Gilmore Street 165', west side streetlight	50		TEO Unfunded	Southeastern San Diego, Southeastern	9			8000				Yes	TR258639A		Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
3079	Southlook Avenue south of Imperial Avenue 110', west side streetlight	50		TEO Unfunded	Southeastern San Diego, Southeastern	9			8000				Yes	TR258639A		Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
3081	Ada Street north of Franklin Avenue 155', west side streetlight	50		TEO Unfunded	Southeastern San Diego, Southeastern	9			8000				Yes	TR258944		Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
3082	Ada Street south of Imperial Avenue 150', west side streetlight	50		TEO Unfunded	Southeastern San Diego, Southeastern	9			8000				Yes	TR258944		Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
3083	Ada Street south of Imperial Avenue 346', west side streetlight	50		TEO Unfunded	Southeastern San Diego, Southeastern	9			8000				Yes	TR258944		Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
3087	Bancroft Street south of Greely Avenue 100', west side streetlight	50		TEO Unfunded	Southeastern San Diego, Southeastern	8			8000				Yes	TR260576		Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
3089	Solola Avenue west of Palin Street 132', south side streetlight	50		TEO Unfunded	Encanto Neighborhoods,	4			2000				Yes	TR261798A		Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
3097	K Street east of 26th Street 312', south side streetlight	50		TEO Unfunded	Southeastern San Diego, Southeastern	8			8000				Yes	TR264211		Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
3177	39TH (S) Street north of Superior Street at alley 120', west side streetlight	50		TEO Unfunded	Southeastern San Diego, Southeastern	9			2000				Yes	TR314106		Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
3178	39TH (S) Street south of Imperial Avenue at alley 120', west side streetlight	50		TEO Unfunded	Southeastern San Diego, Southeastern	9			2000				Yes	TR314106		Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
3209	Acacia Street west of South 35th Street 140', north side streetlight	50		TEO Unfunded	Southeastern San Diego, Southeastern	9			8000				Yes	TR320603		Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
3210	Boston Avenue east of South 35th Street 175', north side streetlight	50		TEO Unfunded	Southeastern San Diego, Southeastern	9			8000				Yes	TR320603		Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
3220	35th Street (South) south of Martin Avenue 275', west side streetlight	50		TEO Unfunded	Southeastern San Diego, Southeastern	9			2000				Yes	TR322078		Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
3228	33rd Street north of Imperial Avenue 130', west side at alley streetlight	50	Priority 2a	TEO Funded	Southeastern San Diego, Southeastern	8			2000				Yes	TR324036		Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
3259	Bonita Drive north of Cervantes Avenue 180', west side streetlight	50		TEO Unfunded	Encanto Neighborhoods,	4			8000				Yes	TR326417		Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
3269	42nd Street south of Broadway 145' at alley, southwest corner streetlight	50		TEO Unfunded	Southeastern San Diego, Southeastern	9			2000				Yes	TR326746		Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
3274	Superba Street east of 38th Street 160', south side streetlight	50		TEO Unfunded	Southeastern San Diego, Southeastern	9			8000				Yes	TR219413		Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
3278	Valle Avenue west of South 35th Street 220', north side streetlight	50		TEO Unfunded	Southeastern San Diego, Southeastern	9			8000				Yes	TR228103		Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
3284	Ada Street south of Imperial Avenue 630', west side streetlight	50		TEO Unfunded	Southeastern San Diego, Southeastern	9			8000				Yes	TR229556		Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
3287	Jewell Drive south of T Street 164', east side streetlight	50		TEO Unfunded	Southeastern San Diego, Southeastern	9			8000				Yes	TR231558		Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
3377	Franklin Avenue east of 40th Street 145', south side at alley streetlight	50		TEO Unfunded	Southeastern San Diego, Southeastern	9			5000				Yes	TR244871		Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
3688	Alta Vista Avenue east of Paradise Road 590', north side street lights	50		TEO Unfunded	Encanto Neighborhoods,	4			2000		CDBG		0	TR329548	Avila-Zepeda , Felipe R	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
3691	NWC of S 47th Street and Franklin Avenue street lights	50		TEO Unfunded	Encanto Neighborhoods,	4			15000		CDBG		0	TR330817	Avila-Zepeda , Felipe R	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
3692	NEC of S 47th Street and Franklin Avenue street lights	50		TEO Unfunded	Encanto Neighborhoods,	4			15000		CDBG		0	TR330817	Avila-Zepeda , Felipe R	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
3693	S 47th Street north of T street 175', east side street lights	50		TEO Unfunded	Encanto Neighborhoods,	4			15000		CDBG		0	TR330817	Avila-Zepeda , Felipe R	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
3694	S 47th Street south of T street 190', east side street lights	50		TEO Unfunded	Encanto Neighborhoods,	4			15000		CDBG		0	TR330817	Avila-Zepeda , Felipe R	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
3817	Dodson Street south of Market Street 135', west side streetlight	50	Priority 2a	TEO Funded	Southeastern San Diego, Southeastern	8			2000		Smart Growth	Smart Growth Area SD SE-3	Yes	TR 331,935	Hughes, Duncan	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
3874	Franklin Avenue west of S 30th Street 175', north side street light	50		TEO Unfunded	Southeastern San Diego, Southeastern	8			15000		CDBG		0	TR332395	Avila-Zepeda , Felipe R	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
3926	Boston Avenue east of S 38th Street 130', north side street light	50		TEO Unfunded	Southeastern San Diego, Southeastern	9			8000		CDBG		0	TR332926	Avila-Zepeda , Felipe R	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
3929	Boston Avenue west of S 38th Street 260', north side street light	50		TEO Funded	Southeastern San Diego, Southeastern	9			8000		CDBG	B-14107	Yes	TR332936	Avila-Zepeda , Felipe R	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
3930	Boston Avenue west of S 36th Street 106', north side street light	50		TEO Unfunded	Southeastern San Diego, Southeastern	9			15000		CDBG		0	TR332937	Avila-Zepeda , Felipe R	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
3931	Boston Avenue west of S 40th Street 165', north side street light	50		TEO Unfunded	Southeastern San Diego, Southeastern	9			15000		CDBG		0	TR332935	Avila-Zepeda , Felipe R	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
3954	Boston Avenue east of S 39th Street 150', north side street light	50		TEO Unfunded	Southeastern San Diego, Southeastern	9			15000		CDBG		0	TR332925	Avila-Zepeda , Felipe R	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
3957	33rd Street north of Imperial Avenue 135', west side, at alley	50	Priority 2a	TEO Funded	Southeastern San Diego, Southeastern	8			2000		CDBG	DUPLICATE - SEE GIS_ID 3228	Yes	TR332756	Semaan, Jerry	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List

3958	33rd Street north of L Street 150', west side, at alley	50	Priority 2a	TEO Funded	Southeastern San Diego, Southeastern	8			2000		CDBG		Yes	TR332756	Semaan, Jerry	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
4064	San Jacinto Dr south of Groveland Dr 182', west side	50		TEO Unfunded	Southeastern San Diego, Southeastern	4			2000			Install pole attachment between 264 & 274 San Jacinto				Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
4089	S 28th Street south of Imperial Avenue 160' at alley, west side	50	Priority 2a	TEO Funded	Southeastern San Diego, Southeastern	8			2000		Smart Growth;#CDBG	Duplicate: See TUNL ID 3020		TR334489	Semaan, Jerry	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
4090	S 29th Street south of Imperial Avenue 175' at alley, southwest corner	50	Priority 2a	TEO Funded	Southeastern San Diego, Southeastern	8			2000		Smart Growth;#CDBG			TR334489		Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
4124	S 33rd Street north of Webster Avenue 85, west side	50		TEO Unfunded	Southeastern San Diego, Southeastern	8			2000		CDBG			TR335463B	Semaan, Jerry	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
1179	SR-94 / Euclid Ave Interchange	51	Provides a PRS for improvements to the interchange.	TEO Unfunded	Encanto Neighborhoods,	4	S-11046		1000000		TransNet		No		Pornan, Donald	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
2780	Market St from Euclid Ave to Pita St (Both Sides)- Install New Sidewalk	51	This project will install PCC sidewalk on both sides of Maket St witin the limits, also to include road widening.	TEO Unfunded	Encanto Neighborhoods, Southeastern	4						IMCAT: FY-15 Object ID#7717 Strt: 11/15/2014 End:	0			Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
1216	Division St @ Valencia Pkwy New Traffic Signal	52	Install a new traffic signal	TEO Unfunded	Encanto	4			275000				0	315440	Pornan,	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
3850	Beverly St from Roswell St to Lenox Dr (Both Sides) - Install new sidewalk	52	This project will provide 3 curb returns, 16 driveways and sidewalk along both sides of Beverly. Many utility boxes need adjustment to grade. Curb and gutter are in.	TEO Unfunded	Encanto Neighborhoods, Southeastern	4			287000				No	333649	Turner, Scott	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
2841	Egret Street north of Weaver Street 800', north side at cul de sac streetlight	62	Priority 1e	TEO Funded	Encanto Neighborhoods,	4			8000			DUPLICATE LOCATION	Yes	TR246076		Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
3680	Radio Drive north of Market Street 170', west side street lights	62		TEO Unfunded	Encanto Neighborhoods,	4			2000		Smart Growth		0	TR330816	Avila-Zepeda , Felipe R	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
2824	Egret Street north of Weaver Street 300', east side streetlight	64		No longer meets warrants	Encanto Neighborhoods, Southeastern	4			2000			DUPLICATE: REFER TO GIS_ID 2823	Yes	TR246076		Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
2828	Kelton Road north of Kelton Place 250', west side streetlight	64	Priority 1d	TEO Funded	Encanto Neighborhoods,	4			15000		TransNet		Yes	TR239339		Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
2829	Kelton Road north of Kelton Place 500', west side streetlight	64	Priority 1d	TEO Funded	Encanto Neighborhoods,	4			15000		TransNet		Yes	TR239339		Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
2891	Market Street east of 45th Street 170', north side	66	FY15 budget $1.4M	TEO Funded	Encanto	4			15000			Priority 1c	Yes	TR258616		Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
2910	National Avenue east of S 32nd Street 155', south side streetlight	66	Priority 1c	TEO Funded	Southeastern San Diego, Southeastern	8			2000				Yes	TR322359		Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
2988	Market Street east of 45th Street 450', north side streetlight	66	FY15 budget $1.4M	TEO Funded	Encanto Neighborhoods,	4			15000			Priority 1c	Yes	TR258616		Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
2876	6308 63rd Street at Shaules Avenue, northeast corner streetlight	70	Priority 1a	TEO Funded	Encanto Neighborhoods,	4			2000		TransNet	B-14106 FY 2014	Yes	TR312615		Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
2885	Ginna Place at Logan Avenue, southeast corner streetlight	70	Priority 1a	TEO Funded	Encanto Neighborhoods,	4			2000		TransNet	Duplicate: See TUNL ID 3961	Yes	TR304278		Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
2941	Brooklyn Ave & Madera St streetlight	70	Priority 1a	TEO Funded	Encanto Neighborhoods,	4			2000		TransNet	B-14106 FY 2013	Yes	TR310491		Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
3682	Sicard Street southwest of S 28th Street 185', west side street light	70	Priority 2a	TEO Funded	Southeastern San Diego, Southeastern	8			2000			FY 2014	Yes	330,687	Hughes, Duncan	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
3925	S 44th Street and Boston Avenue southwest street light	70		TEO Funded	Southeastern San Diego, Southeastern	9			2000		CDBG	B-14107	Yes		Avila-Zepeda , Felipe R	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
3961	Ginna Place at Logan Avenue, south side street light	70	Priority 1a	TEO Funded	Encanto Neighborhoods,	4			2000		CDBG	B-14106 FY 2014	Yes	TR333000	Avila-Zepeda , Felipe R	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
3987	37th Street (S) and Logan Avenue, northeast corner	70	FY15 budget $1.4M	TEO Funded	Southeastern San Diego, Southeastern	9			8000		CDBG	Priority 1a	Yes	TR332842	Avila-Zepeda , Felipe R	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
3997	Clay Avenue at Sampson Street, at alley, northwest corner street ;ight	70	Priority 1a	TEO Funded	Southeastern San Diego, Southeastern	8			2000		CDBG;#TransNet		Yes	TR275743	Avila-Zepeda , Felipe R	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
3856	Hilltop Drive from Winston Dr to Roswell St (Both Sides) - Install new sidewalk		This project will provide sidewalk on both sides of Hilltop Drive. Project requires earthwork and retaining walls. Conflict includes very large, medium and small palm trees (will probably require removal) and utility poles. Several metar boxes will need to be adjusted to grade. Curb and gutter are in.	TEO Unfunded	Encanto Neighborhoods, Southeastern	4						IMCAT conflicts as of 2/21/14: PROJECT ID B11074 Sewer pipeline rehabilitation start6/11/2012 end 5/8/2014 Street segment SS-	No		Turner, Scott	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
3858	Pitta St from Market St to end of street [south] (both sides) - Install new sidewalk			TEO Unfunded	Encanto Neighborhoods,	4							0		Turner, Scott	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
3859	Castana Street from 47th St to Escuela St (both sides) - Install new sidewalk			TEO Unfunded	Encanto Neighborhoods,	4							0		Turner, Scott	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
4085	San Jacinto from Groveland to Imperial (west side) - Sidewalk		This project will install approximately 640 LF of sidewalk within the project limits.	TEO Unfunded	Encanto Neighborhoods,	4			95000					335596		Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
3624	61st Street at Flipper Flashing Beacon		Installation of a flashing beacon at the school crosswalk	TEO Unfunded	Encanto Neighborhoods,	4					TransNet		0			Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
3720	Market Street Electronic Speed Signs		Installation of two electronic speed signs on Market Street near 26th street	TEO Funded	Southeastern San Diego, Southeastern	8			16000		TransNet	Funded with "Old Transnet" funding	0			Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List

Appendix C
Signal Warrant Worksheets

Sheet No 1 of 2

Figure 4C-3
Warrant 3, Peak Hour



* Note: 150 VPH APPLIES AS THE LOWER THRESHOLD VOLUME FOR A MINOR STREET APPROACH WITH TWO OR MORE LANES AND 100 VPH APPLIES AS THE LOWER THRESHOLD VOLUME FOR A MINOR STREET APPROACHING WITH ONE LANE.

Source: *California Manual on Uniform Traffic Control Devices*, Caltrans, 2006

#8

Major Street	Midway Drive
Minor Street	Charles Lindbergh Parkway

Project	Midway & Old Town CPU
Scenario	1A
Peak Hour	AM

Turn Movement Volumes

	NB	SB	EB	WB
Left	0	140	0	120
Through	600	680	0	0
Right	90	0	0	30
Total	690	820	0	150

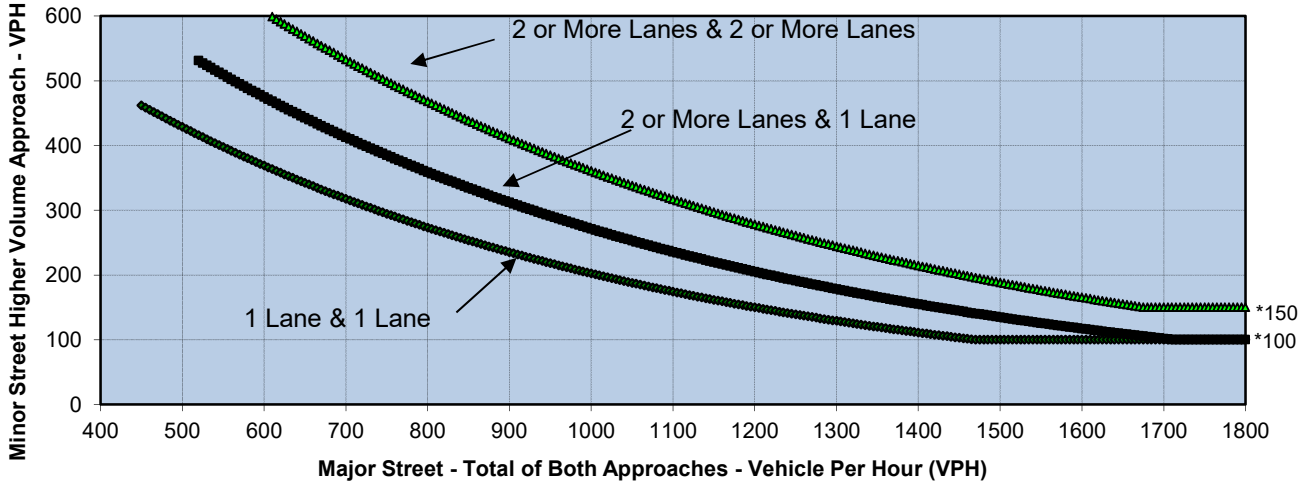
Major Street Direction

X	North/South
	East/West

	Major Street	Minor Street	Warrant Met
	Midway Drive	Charles Lindbergh Parkway	
Number of Approach Lanes	**2**	**1**	**YES**
Traffic Volume (VPH) *	**1,510**	**150**	

Sheet No 2 of 2

Figure 4C-3
Warrant 3, Peak Hour



* Note: 150 VPH APPLIES AS THE LOWER THRESHOLD VOLUME FOR A MINOR STREET APPROACH WITH TWO OR MORE LANES AND 100 VPH APPLIES AS THE LOWER THRESHOLD VOLUME FOR A MINOR STREET APPROACHING WITH ONE LANE.

Source: *California Manual on Uniform Traffic Control Devices*, Caltrans, 2006

#8

Major Street	Midway Drive
Minor Street	Charles Lindbergh Parkway

Project	Midway & Old Town CPU
Scenario	1A
Peak Hour	PM

Turn Movement Volumes

	NB	SB	EB	WB
Left	0	400	0	120
Through	780	840	0	0
Right	120	0	0	300
Total	900	1,240	0	420

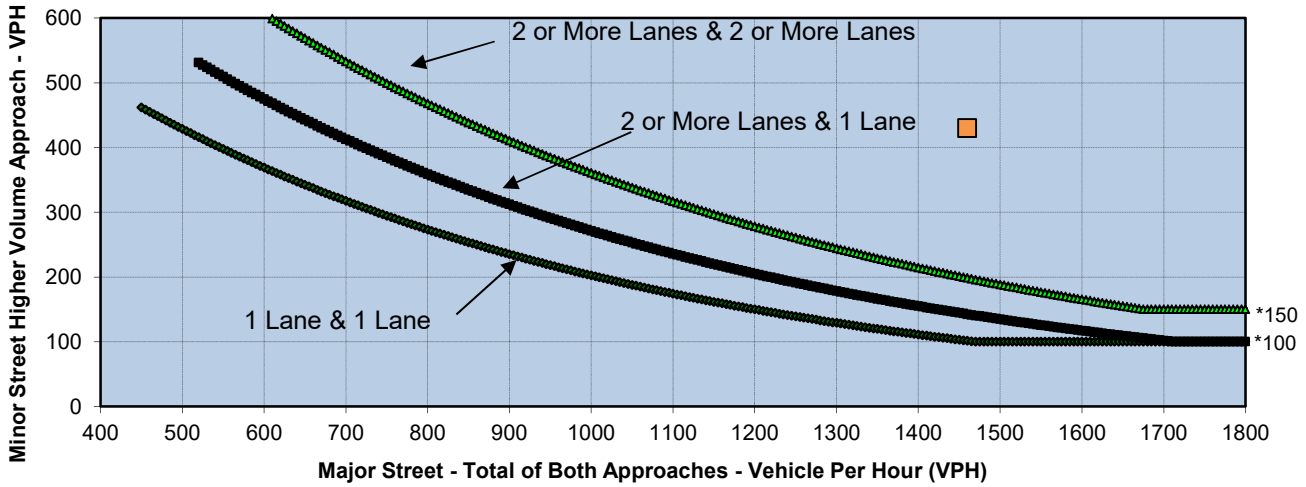
Major Street Direction

X	North/South
	East/West

	Major Street	Minor Street	Warrant Met
	Midway Drive	Charles Lindbergh Parkway	
Number of Approach Lanes	2	1	YES
Traffic Volume (VPH) *	2,140	420	

Sheet No 1 of 2

Figure 4C-3
Warrant 3, Peak Hour



* Note: 150 VPH APPLIES AS THE LOWER THRESHOLD VOLUME FOR A MINOR STREET APPROACH WITH TWO OR MORE LANES AND 100 VPH APPLIES AS THE LOWER THRESHOLD VOLUME FOR A MINOR STREET APPROACHING WITH ONE LANE.

Source: *California Manual on Uniform Traffic Control Devices*, Caltrans, 2006

#12

Major Street	Sports Arean Boulevard
Minor Street	Kemper Street

Project	Midway & Old Town CPU
Scenario	1A
Peak Hour	AM

Turn Movement Volumes

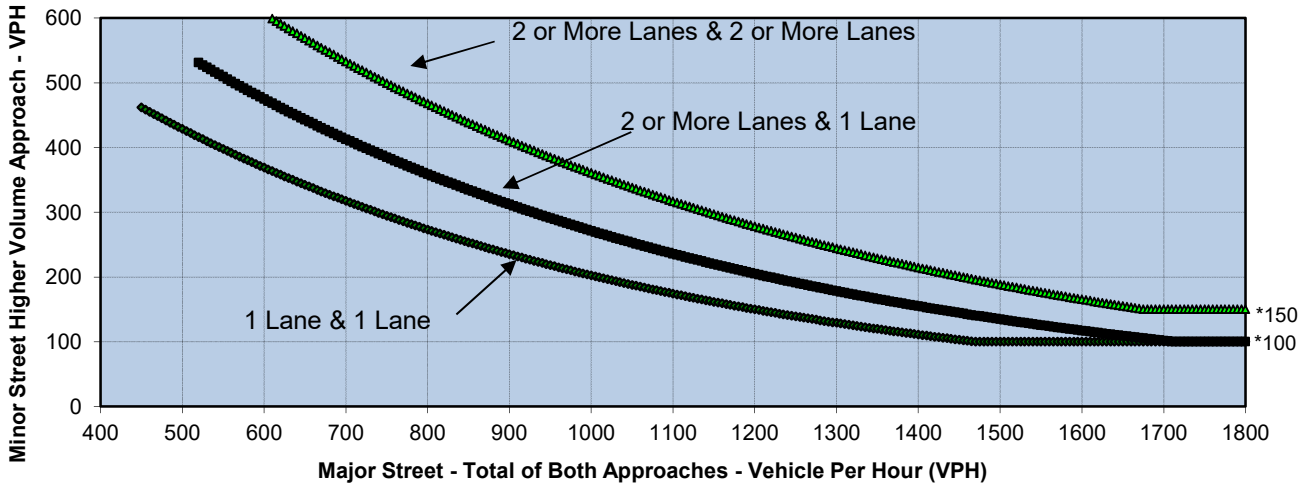
	NB	SB	EB	WB
Left	200	80	80	160
Through	410	540	50	140
Right	100	130	110	130
Total	710	750	240	430

Major Street Direction

X	North/South
	East/West

	Major Street	Minor Street	Warrant Met
	Sports Arean Boulevard	Kemper Street	
Number of Approach Lanes	**3**	**1**	**YES**
Traffic Volume (VPH) *	**1,460**	**430**	

Figure 4C-3
Warrant 3, Peak Hour



* Note: 150 VPH APPLIES AS THE LOWER THRESHOLD VOLUME FOR A MINOR STREET APPROACH WITH TWO OR MORE LANES AND 100 VPH APPLIES AS THE LOWER THRESHOLD VOLUME FOR A MINOR STREET APPROACHING WITH ONE LANE.

Source: *California Manual on Uniform Traffic Control Devices*, Caltrans, 2006

#12

Major Street	Sports Arean Boulevard
Minor Street	Kemper Street

Project	Midway & Old Town CPU
Scenario	1A
Peak Hour	PM

Turn Movement Volumes

	NB	SB	EB	WB
Left	230	150	90	130
Through	1,120	890	130	40
Right	120	90	150	180
Total	1,470	1,130	370	350

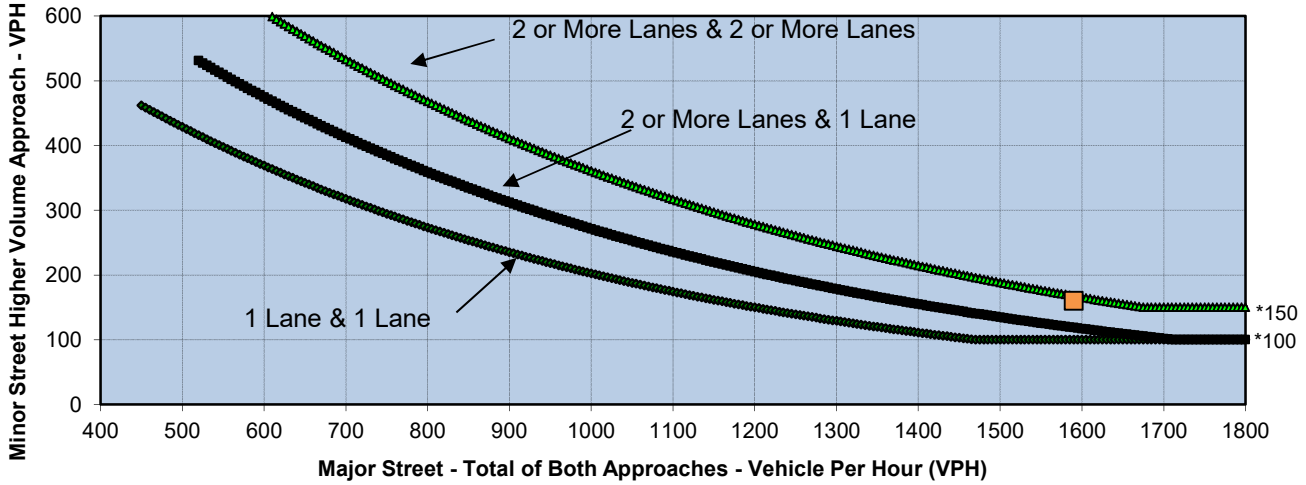
Major Street Direction

X	North/South
	East/West

	Major Street	Minor Street	Warrant Met
	Sports Arean Boulevard	Kemper Street	
Number of Approach Lanes	3	1	YES
Traffic Volume (VPH) *	2,600	370	

Sheet No 1 of 2

Figure 4C-3
Warrant 3, Peak Hour



* Note: 150 VPH APPLIES AS THE LOWER THRESHOLD VOLUME FOR A MINOR STREET APPROACH WITH TWO OR MORE LANES AND 100 VPH APPLIES AS THE LOWER THRESHOLD VOLUME FOR A MINOR STREET APPROACHING WITH ONE LANE.

Source: *California Manual on Uniform Traffic Control Devices*, Caltrans, 2006

#13

Major Street	Sports Arean Boulevard
Minor Street	Frontier Street

Project	Midway & Old Town CPU
Scenario	1A
Peak Hour	AM

Turn Movement Volumes

	NB	SB	EB	WB
Left	30	130	40	90
Through	620	640	20	20
Right	90	80	20	50
Total	740	850	80	160

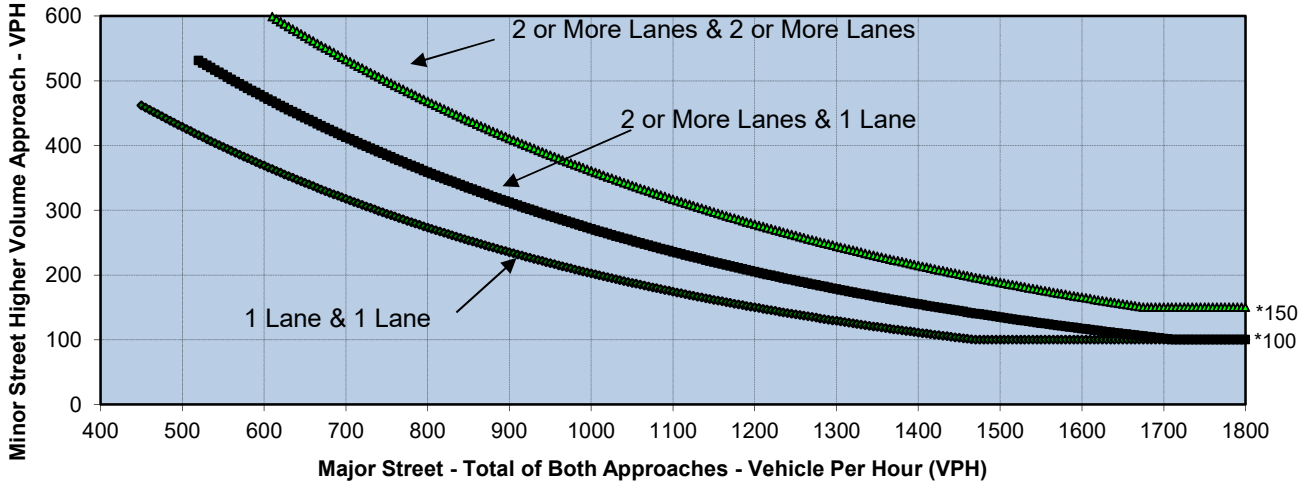
Major Street Direction

X	North/South
	East/West

	Major Street	Minor Street	Warrant Met
	Sports Arean Boulevard	Frontier Street	
Number of Approach Lanes	**3**	**1**	**YES**
Traffic Volume (VPH) *	**1,590**	**160**	

Sheet No 2 of 2

Figure 4C-3
Warrant 3, Peak Hour



* Note: 150 VPH APPLIES AS THE LOWER THRESHOLD VOLUME FOR A MINOR STREET APPROACH WITH TWO OR MORE LANES AND 100 VPH APPLIES AS THE LOWER THRESHOLD VOLUME FOR A MINOR STREET APPROACHING WITH ONE LANE.

Source: *California Manual on Uniform Traffic Control Devices*, Caltrans, 2006

#13

Major Street	Sports Arean Boulevard
Minor Street	Frontier Street

Project	Midway & Old Town CPU
Scenario	1A
Peak Hour	PM

Turn Movement Volumes

	NB	SB	EB	WB
Left	50	120	60	150
Through	1,250	1,080	30	30
Right	70	80	70	140
Total	1,370	1,280	160	320

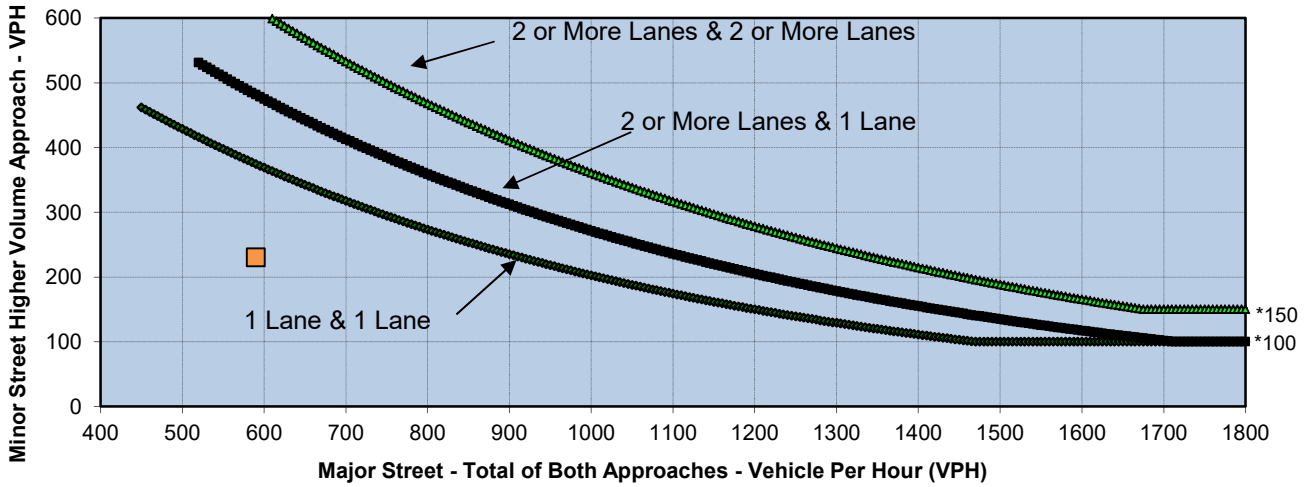
Major Street Direction

X	North/South
	East/West

	Major Street	Minor Street	Warrant Met
	Sports Arean Boulevard	Frontier Street	
Number of Approach Lanes	3	1	YES
Traffic Volume (VPH) *	2,650	320	

Sheet No 1 of 2

Figure 4C-3
Warrant 3, Peak Hour



* Note: 150 VPH APPLIES AS THE LOWER THRESHOLD VOLUME FOR A MINOR STREET APPROACH WITH TWO OR MORE LANES AND 100 VPH APPLIES AS THE LOWER THRESHOLD VOLUME FOR A MINOR STREET APPROACHING WITH ONE LANE.

Source: *California Manual on Uniform Traffic Control Devices*, Caltrans, 2006

#16

Major Street	Sports Arean Boulevard
Minor Street	Charles Lindbergh Parkway

Project	Midway & Old Town CPU
Scenario	1A
Peak Hour	AM

Turn Movement Volumes

	NB	SB	EB	WB
Left	70	30	50	90
Through	50	80	130	140
Right	110	90	100	80
Total	230	200	280	310

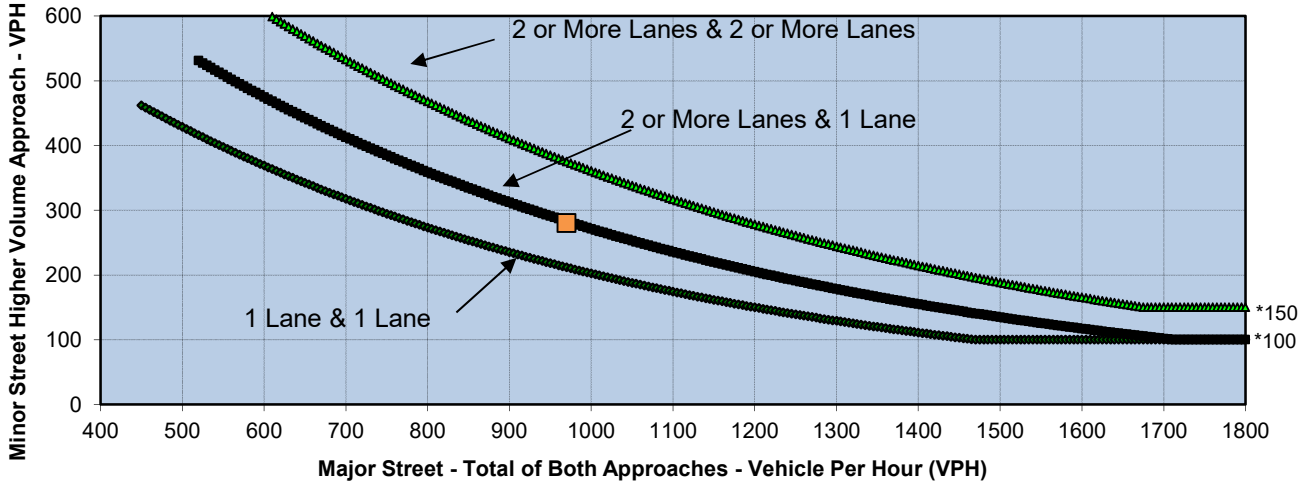
Major Street Direction

	North/South
X	East/West

	Major Street	Minor Street	Warrant Met
	Sports Arean Boulevard	Charles Lindbergh Parkway	
Number of Approach Lanes	**1**	**1**	**NO**
Traffic Volume (VPH) *	**590**	**230**	

Sheet No 2 of 2

Figure 4C-3
Warrant 3, Peak Hour



* Note: 150 VPH APPLIES AS THE LOWER THRESHOLD VOLUME FOR A MINOR STREET APPROACH WITH TWO OR MORE LANES AND 100 VPH APPLIES AS THE LOWER THRESHOLD VOLUME FOR A MINOR STREET APPROACHING WITH ONE LANE.

Source: *California Manual on Uniform Traffic Control Devices*, Caltrans, 2006

#16

Major Street	Sports Arean Boulevard
Minor Street	Charles Lindbergh Parkway

Project	Midway & Old Town CPU
Scenario	1A
Peak Hour	PM

Turn Movement Volumes

	NB	SB	EB	WB
Left	70	90	100	130
Through	90	90	120	250
Right	120	100	300	70
Total	280	280	520	450

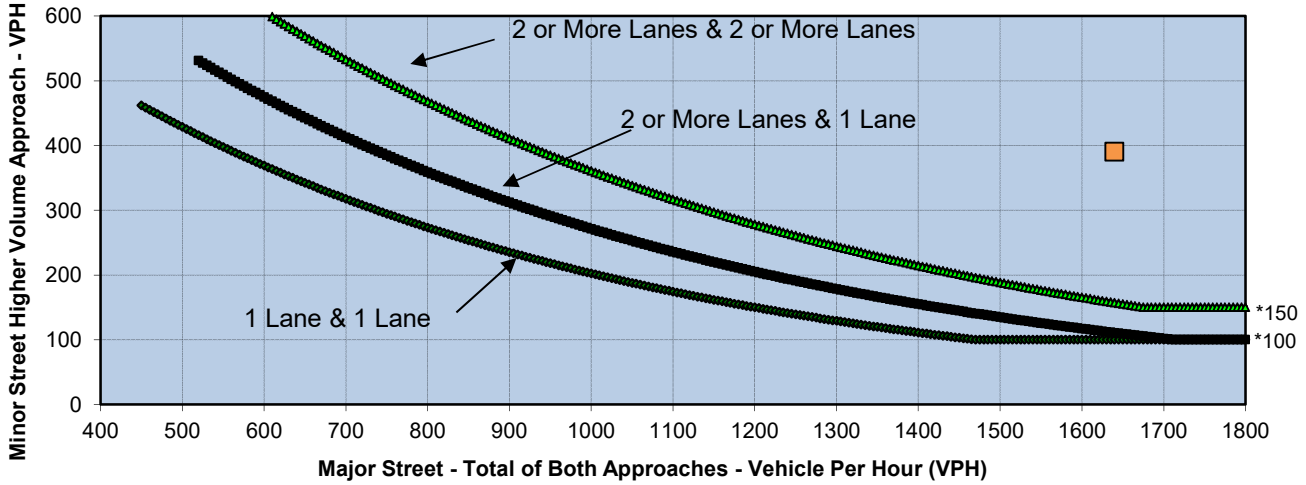
Major Street Direction

	North/South
X	East/West

	Major Street	Minor Street	Warrant Met
	Sports Arean Boulevard	Charles Lindbergh Parkway	
Number of Approach Lanes	1	1	YES
Traffic Volume (VPH) *	970	280	

Sheet No 1 of 2

Figure 4C-3
Warrant 3, Peak Hour



* Note: 150 VPH APPLIES AS THE LOWER THRESHOLD VOLUME FOR A MINOR STREET APPROACH WITH TWO OR MORE LANES AND 100 VPH APPLIES AS THE LOWER THRESHOLD VOLUME FOR A MINOR STREET APPROACHING WITH ONE LANE.

Source: *California Manual on Uniform Traffic Control Devices*, Caltrans, 2006

#17

Major Street	Pacific Highway
Minor Street	Sports Arena Blvd

Project	Midway & Old Town CPU
Scenario	1A
Peak Hour	AM

Turn Movement Volumes

	NB	SB	EB	WB
Left	300	0	200	0
Through	610	600	0	0
Right	0	130	190	0
Total	910	730	390	0

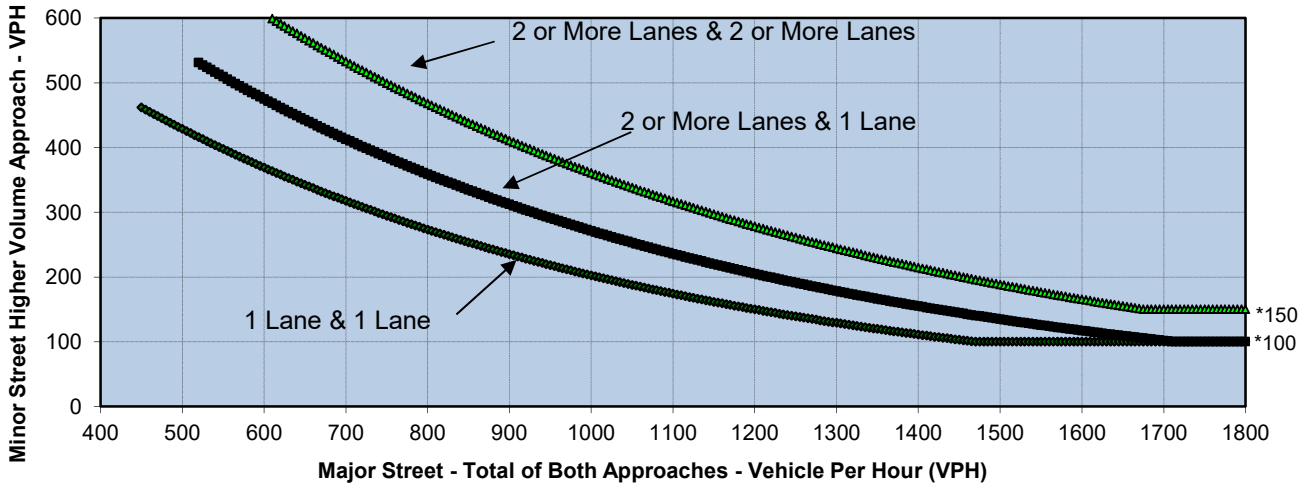
Major Street Direction

X	North/South
	East/West

	Major Street	Minor Street	Warrant Met
	Pacific Highway	Sports Arena Blvd	
Number of Approach Lanes	**3**	**1**	**YES**
Traffic Volume (VPH) *	**1,640**	**390**	

Sheet No 2 of 2

Figure 4C-3
Warrant 3, Peak Hour



* Note: 150 VPH APPLIES AS THE LOWER THRESHOLD VOLUME FOR A MINOR STREET APPROACH WITH TWO OR MORE LANES AND 100 VPH APPLIES AS THE LOWER THRESHOLD VOLUME FOR A MINOR STREET APPROACHING WITH ONE LANE.

Source: *California Manual on Uniform Traffic Control Devices*, Caltrans, 2006

#17

Major Street	Pacific Highway
Minor Street	Sports Arena Blvd

Project	Midway & Old Town CPU
Scenario	1A
Peak Hour	PM

Turn Movement Volumes

	NB	SB	EB	WB
Left	290	0	50	0
Through	1,320	830	0	0
Right	0	50	480	0
Total	1,610	880	530	0

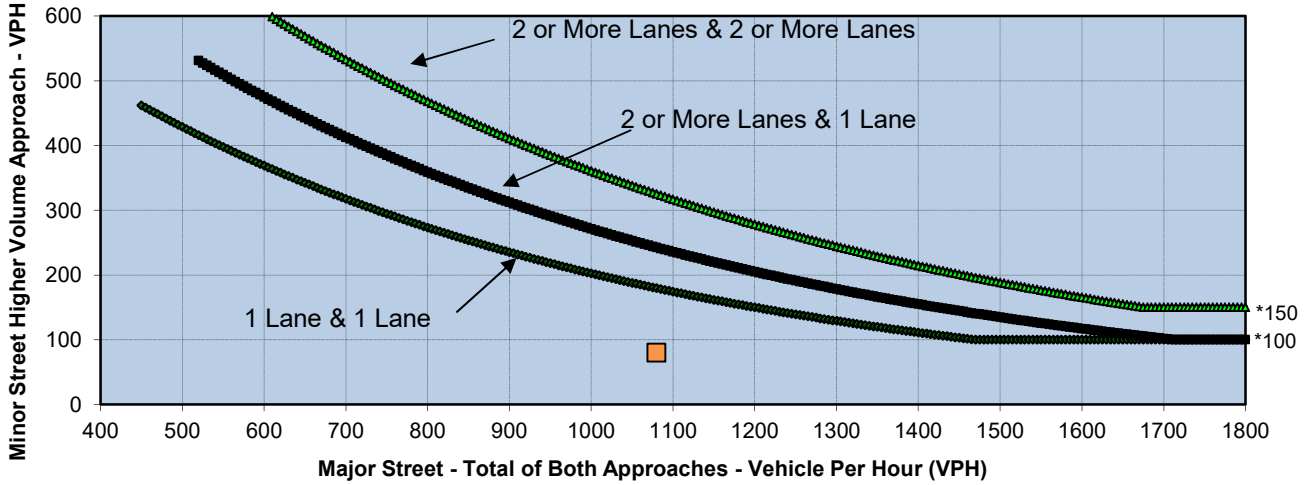
Major Street Direction

X	North/South
	East/West

	Major Street	Minor Street	Warrant Met
	Pacific Highway	Sports Arena Blvd	
Number of Approach Lanes	3	1	YES
Traffic Volume (VPH) *	2,490	530	

Sheet No 1 of 2

Figure 4C-3
Warrant 3, Peak Hour



* Note: 150 VPH APPLIES AS THE LOWER THRESHOLD VOLUME FOR A MINOR STREET APPROACH WITH TWO OR MORE LANES AND 100 VPH APPLIES AS THE LOWER THRESHOLD VOLUME FOR A MINOR STREET APPROACHING WITH ONE LANE.

Source: *California Manual on Uniform Traffic Control Devices*, Caltrans, 2006

#18

Major Street	Kurtz Street
Minor Street	Hancock Street

Project	Midway & Old Town CPU
Scenario	1A
Peak Hour	AM

Turn Movement Volumes

	NB	SB	EB	WB
Left	0	0	30	460
Through	0	70	0	390
Right	0	10	100	100
Total	0	80	130	950

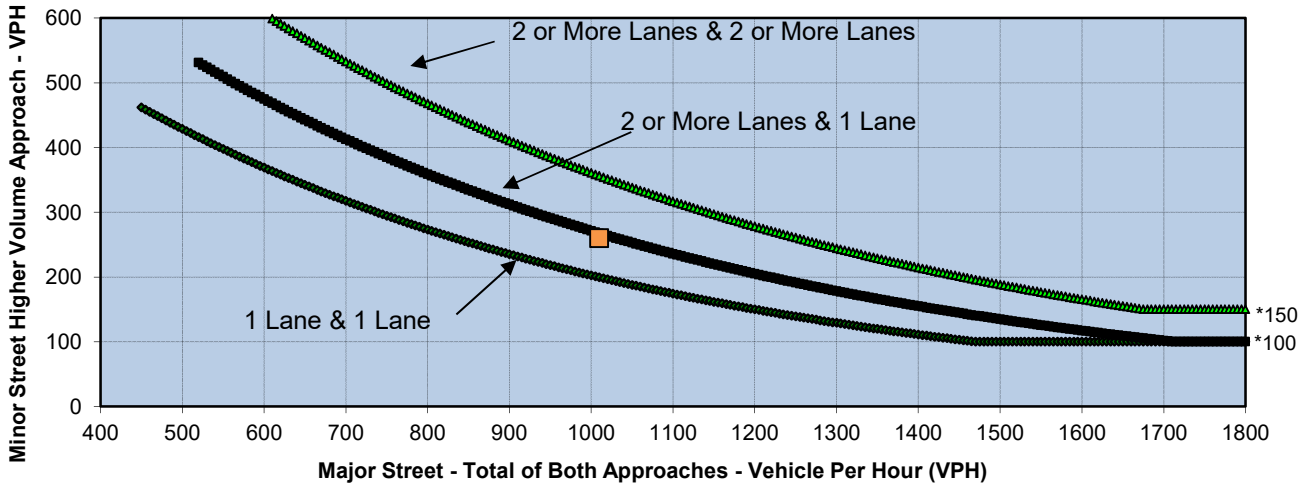
Major Street Direction

	North/South
X	East/West

	Major Street	Minor Street	Warrant Met
	Kurtz Street	Hancock Street	
Number of Approach Lanes	**1**	**1**	**NO**
Traffic Volume (VPH) *	**1,080**	**80**	

Sheet No 2 of 2

Figure 4C-3
Warrant 3, Peak Hour



* Note: 150 VPH APPLIES AS THE LOWER THRESHOLD VOLUME FOR A MINOR STREET APPROACH WITH TWO OR MORE LANES AND 100 VPH APPLIES AS THE LOWER THRESHOLD VOLUME FOR A MINOR STREET APPROACHING WITH ONE LANE.

Source: *California Manual on Uniform Traffic Control Devices*, Caltrans, 2006

#18		Project	Midway & Old Town CPU
Major Street	Kurtz Street	Scenario	1A
Minor Street	Hancock Street	Peak Hour	PM

Turn Movement Volumes

	NB	SB	EB	WB
Left	0	0	100	310
Through	0	170	0	310
Right	0	90	140	150
Total	0	260	240	770

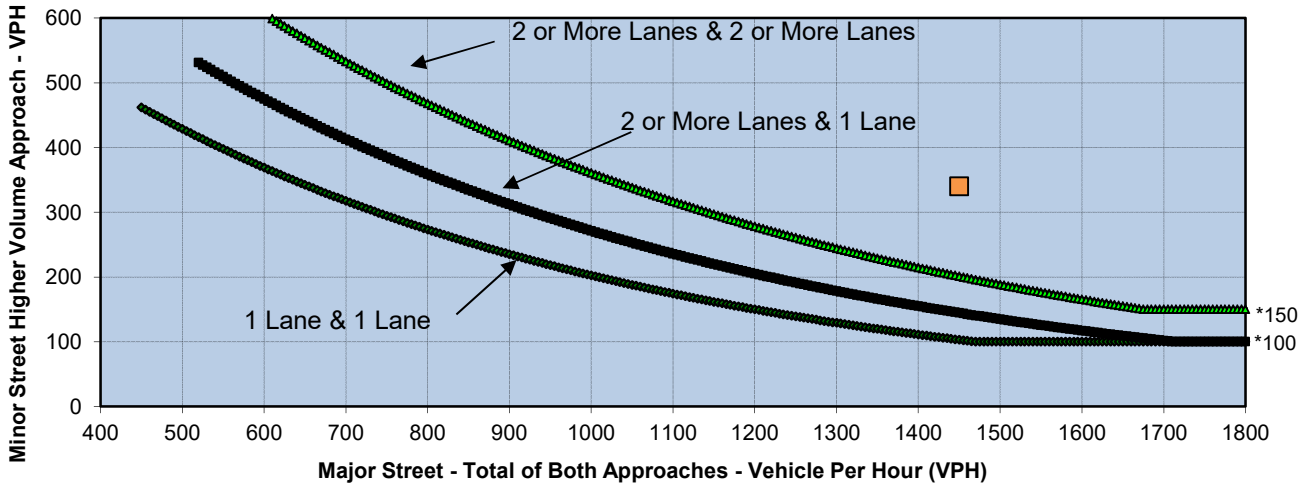
Major Street Direction

	North/South
X	East/West

	Major Street	Minor Street	Warrant Met
	Kurtz Street	Hancock Street	
Number of Approach Lanes	1	1	YES
Traffic Volume (VPH) *	1,010	260	

Sheet No 1 of 2

Figure 4C-3
Warrant 3, Peak Hour



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Source: *California Manual on Uniform Traffic Control Devices*, Caltrans, 2006

#21

Major Street	Pacific Highway
Minor Street	Kurtz Street

Project	Midway & Old Town CPU
Scenario	1A
Peak Hour	AM

Turn Movement Volumes

	NB	SB	EB	WB
Left	350	0	100	0
Through	460	490	0	0
Right	0	150	240	0
Total	810	640	340	0

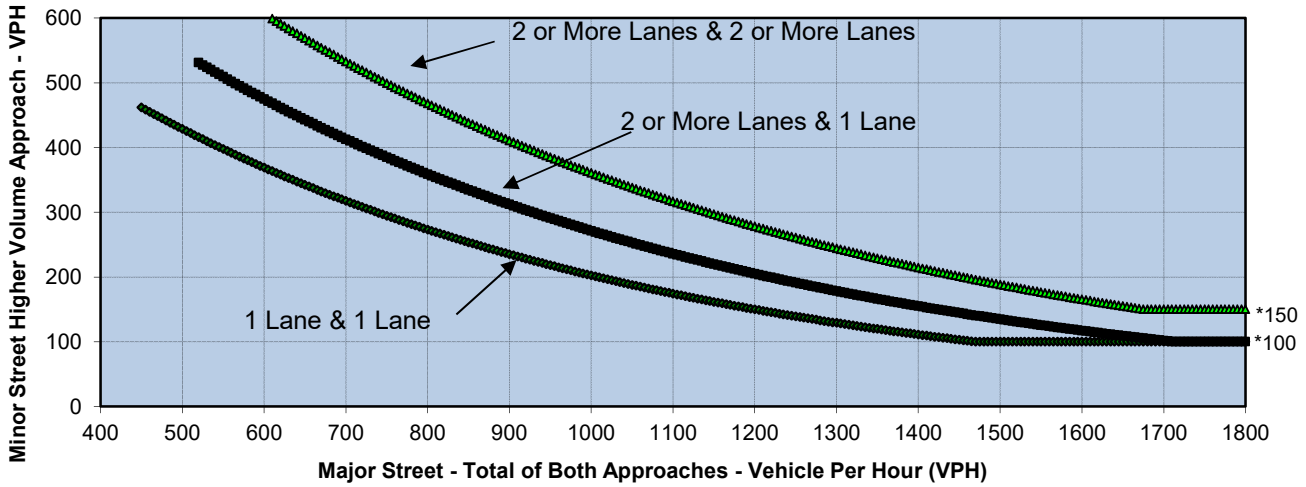
Major Street Direction

X	North/South
	East/West

	Major Street	Minor Street	Warrant Met
	Pacific Highway	Kurtz Street	
Number of Approach Lanes	**3**	**1**	**YES**
Traffic Volume (VPH) *	**1,450**	**340**	

Sheet No 2 of 2

Figure 4C-3
Warrant 3, Peak Hour



* Note: 150 VPH APPLIES AS THE LOWER THRESHOLD VOLUME FOR A MINOR STREET APPROACH WITH TWO OR MORE LANES AND 100 VPH APPLIES AS THE LOWER THRESHOLD VOLUME FOR A MINOR STREET APPROACHING WITH ONE LANE.

Source: *California Manual on Uniform Traffic Control Devices*, Caltrans, 2006

#21

Major Street	Pacific Highway
Minor Street	Kurtz Street

Project	Midway & Old Town CPU
Scenario	1A
Peak Hour	PM

Turn Movement Volumes

	NB	SB	EB	WB
Left	490	0	230	0
Through	880	430	0	0
Right	0	100	450	0
Total	1,370	530	680	0

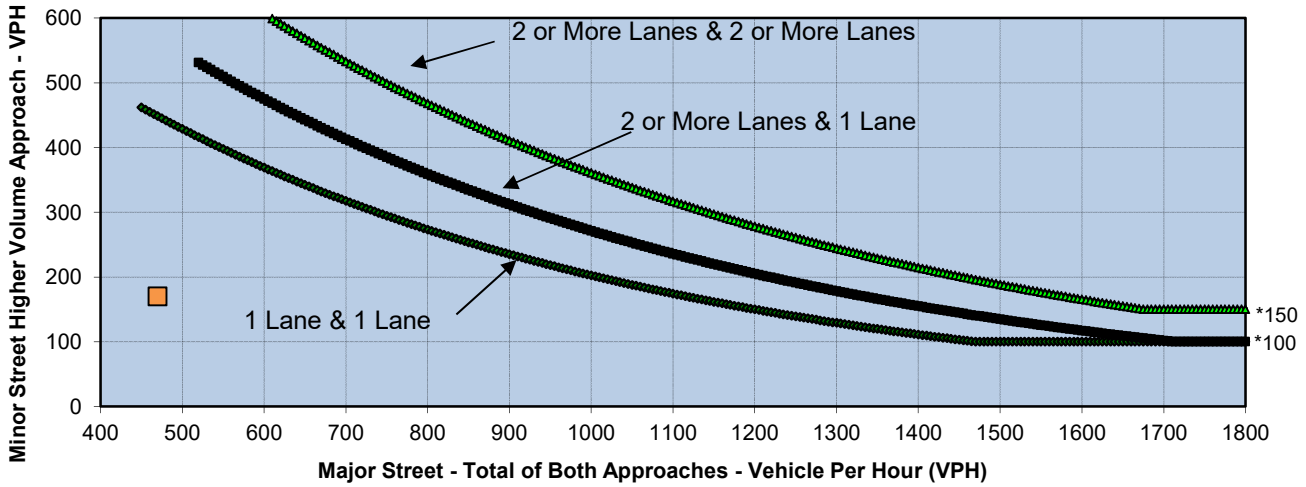
Major Street Direction

X	North/South
	East/West

	Major Street	Minor Street	Warrant Met
	Pacific Highway	Kurtz Street	
Number of Approach Lanes	**3**	**1**	**YES**
Traffic Volume (VPH) *	**1,900**	**680**	

Sheet No 1 of 2

Figure 4C-3
Warrant 3, Peak Hour



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Source: *California Manual on Uniform Traffic Control Devices*, Caltrans, 2006

#62

Major Street	Kurtz Street
Minor Street	Greenwood Street

Project	Midway & Old Town CPU
Scenario	1A
Peak Hour	AM

Turn Movement Volumes

	NB	SB	EB	WB
Left	0	40	0	60
Through	0	420	20	90
Right	0	10	150	0
Total	0	470	170	150

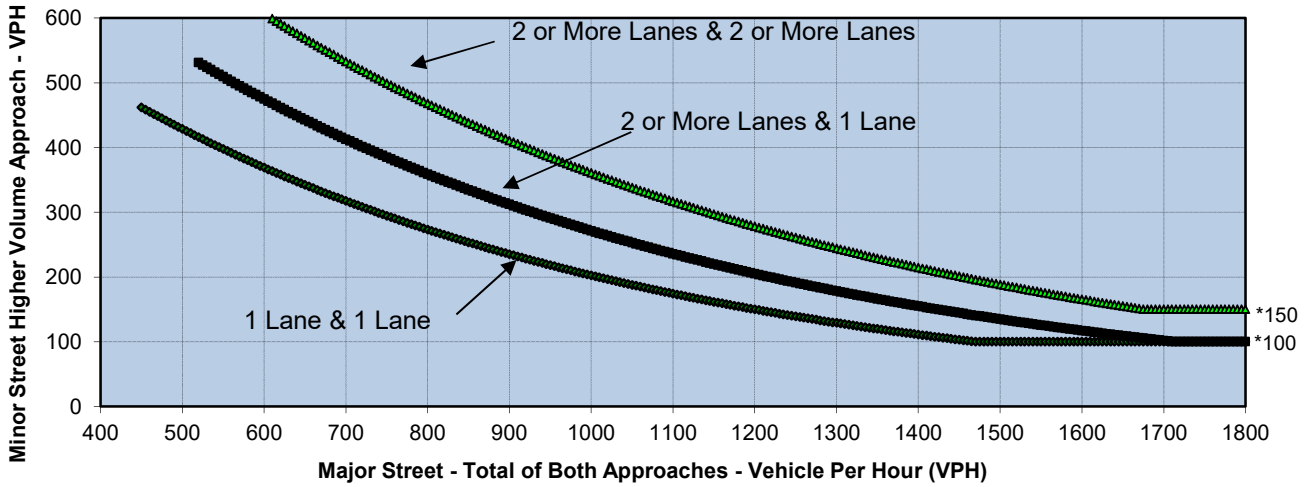
Major Street Direction

X	North/South
	East/West

	Major Street	Minor Street	Warrant Met
	Kurtz Street	Greenwood Street	
Number of Approach Lanes	**2**	**1**	**NO**
Traffic Volume (VPH) *	**470**	**170**	

Sheet No 2 of 2

Figure 4C-3
Warrant 3, Peak Hour



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Source: *California Manual on Uniform Traffic Control Devices*, Caltrans, 2006

#62

Major Street	Kurtz Street
Minor Street	Greenwood Street

Project	Midway & Old Town CPU
Scenario	1A
Peak Hour	PM

Turn Movement Volumes

	NB	SB	EB	WB
Left	0	50	0	370
Through	0	820	30	340
Right	0	70	310	0
Total	0	940	340	710

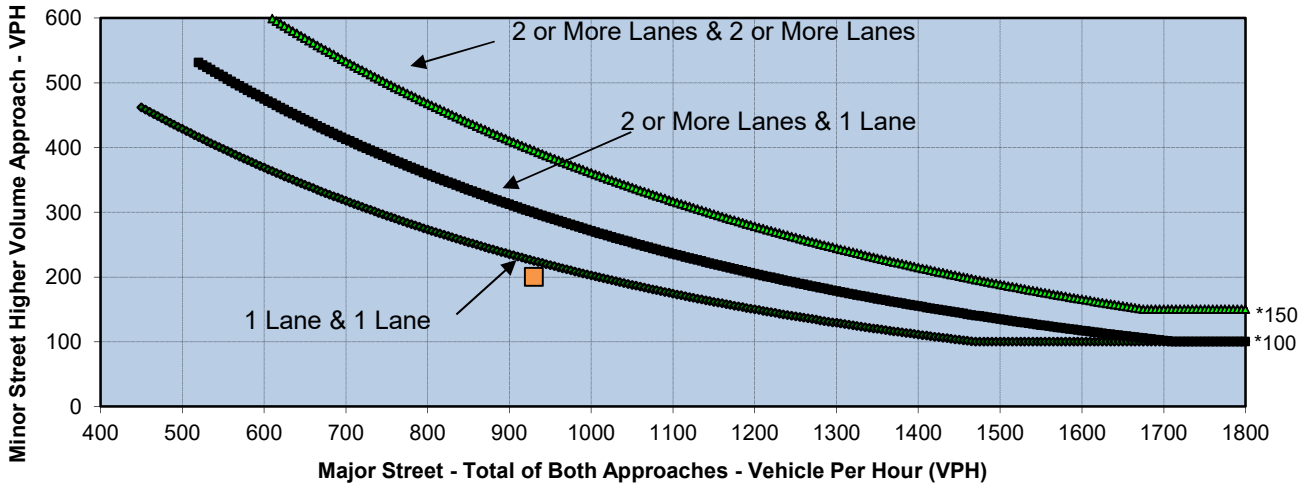
Major Street Direction

X	North/South
	East/West

	Major Street	Minor Street	Warrant Met
	Kurtz Street	Greenwood Street	
Number of Approach Lanes	2	1	YES
Traffic Volume (VPH) *	940	710	

Sheet No 1 of 2

Figure 4C-3
Warrant 3, Peak Hour



* Note: 150 VPH APPLIES AS THE LOWER THRESHOLD VOLUME FOR A MINOR STREET APPROACH WITH TWO OR MORE LANES AND 100 VPH APPLIES AS THE LOWER THRESHOLD VOLUME FOR A MINOR STREET APPROACHING WITH ONE LANE.

Source: *California Manual on Uniform Traffic Control Devices*, Caltrans, 2006

#63		Project	Midway & Old Town CPU
Major Street	Kurtz Street	Scenario	1A
Minor Street	Charles Lindbergh Parkway	Peak Hour	AM

Turn Movement Volumes

	NB	SB	EB	WB
Left	170	0	50	0
Through	330	370	0	0
Right	0	60	150	0
Total	500	430	200	0

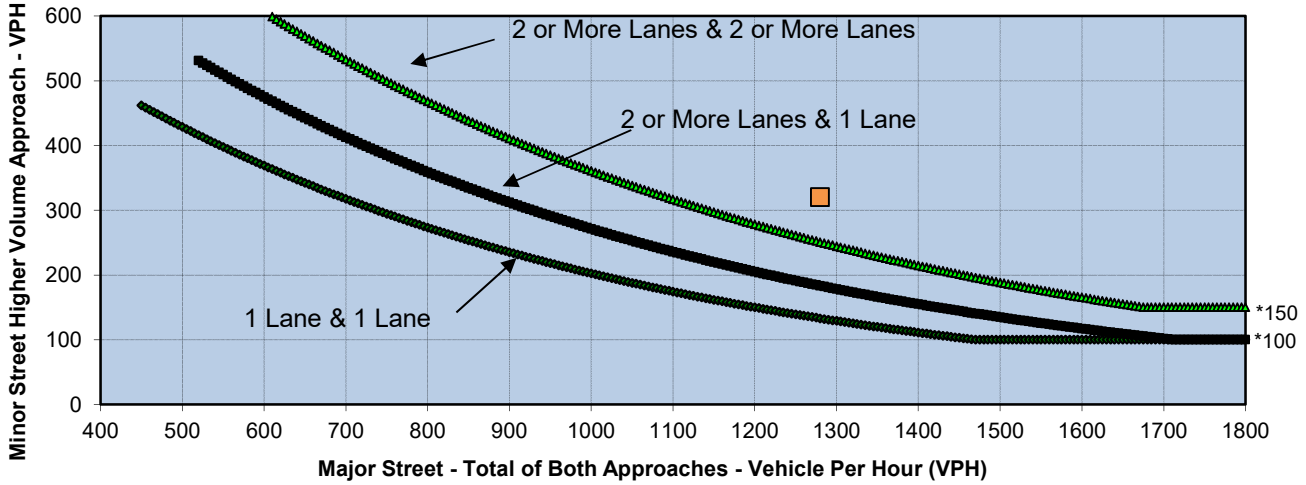
Major Street Direction

X	North/South
	East/West

	Major Street	Minor Street	Warrant Met
	Kurtz Street	Charles Lindbergh Parkway	
Number of Approach Lanes	**2**	**1**	**NO**
Traffic Volume (VPH) *	**930**	**200**	

Sheet No 2 of 2

Figure 4C-3
Warrant 3, Peak Hour



* Note: 150 VPH APPLIES AS THE LOWER THRESHOLD VOLUME FOR A MINOR STREET APPROACH WITH TWO OR MORE LANES AND 100 VPH APPLIES AS THE LOWER THRESHOLD VOLUME FOR A MINOR STREET APPROACHING WITH ONE LANE.

Source: *California Manual on Uniform Traffic Control Devices*, Caltrans, 2006

#63		Project	Midway & Old Town CPU
Major Street	Kurtz Street	Scenario	1A
Minor Street	Charles Lindbergh Parkway	Peak Hour	PM

Turn Movement Volumes

	NB	SB	EB	WB
Left	180	0	120	0
Through	370	480	0	0
Right	0	250	200	0
Total	550	730	320	0

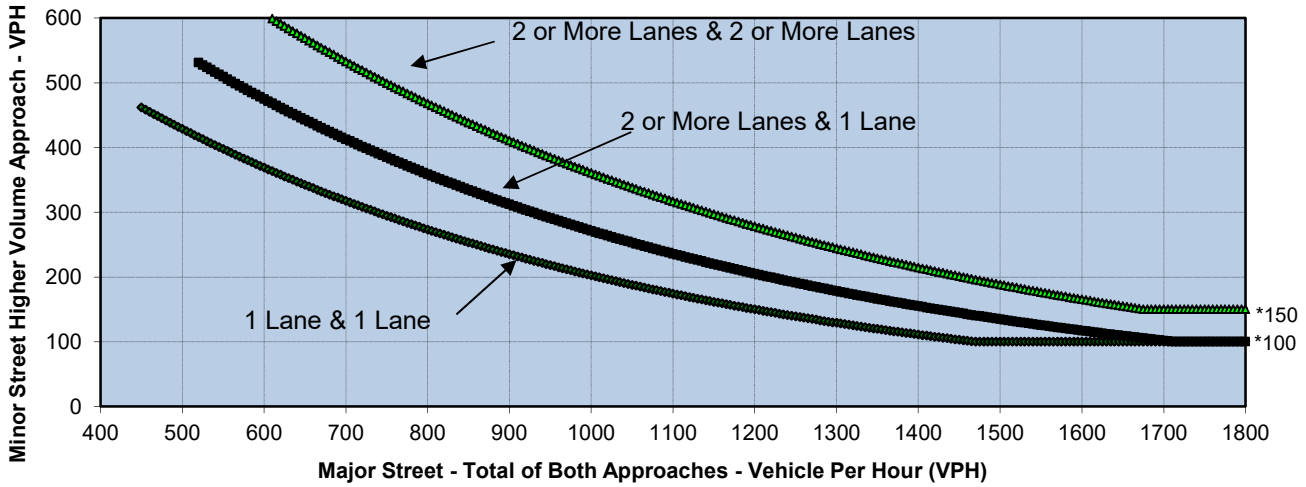
Major Street Direction

X	North/South
	East/West

	Major Street	Minor Street	Warrant Met
	Kurtz Street	Charles Lindbergh Parkway	
Number of Approach Lanes	2	1	YES
Traffic Volume (VPH) *	1,280	320	

Sheet No 1 of 2

Figure 4C-3
Warrant 3, Peak Hour



* Note: 150 VPH APPLIES AS THE LOWER THRESHOLD VOLUME FOR A MINOR STREET APPROACH WITH TWO OR MORE LANES AND 100 VPH APPLIES AS THE LOWER THRESHOLD VOLUME FOR A MINOR STREET APPROACHING WITH ONE LANE.

Source: *California Manual on Uniform Traffic Control Devices*, Caltrans, 2006

#64		Project	Midway & Old Town CPU
Major Street	Barnett Avenue	Scenario	1A
Minor Street	Dutch Flats Parkway	Peak Hour	AM

Turn Movement Volumes

	NB	SB	EB	WB
Left	0	0	50	0
Through	0	150	670	1,410
Right	0	250	0	40
Total	0	400	720	1,450

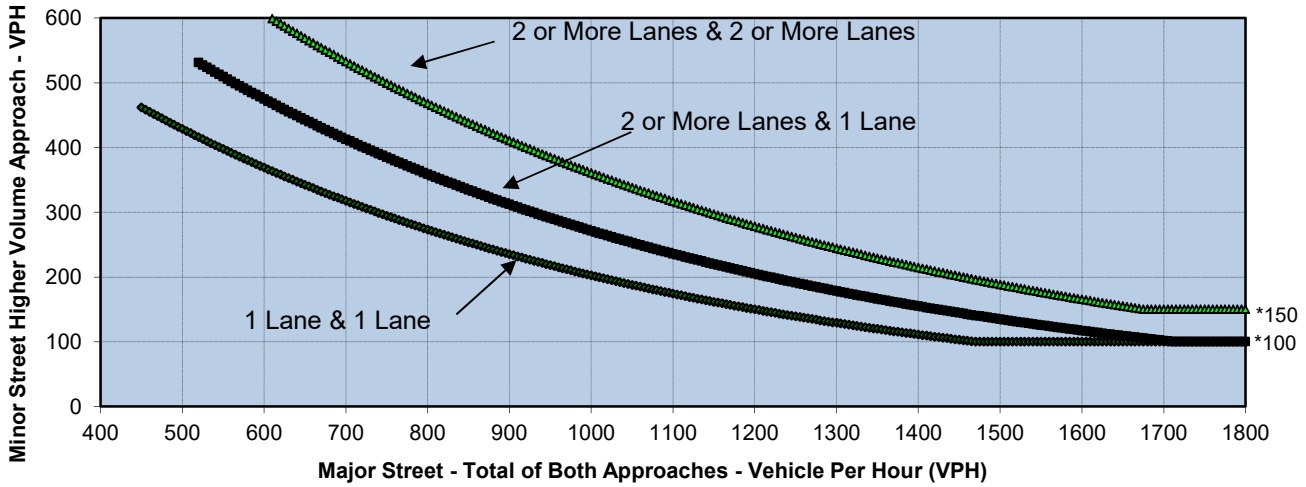
Major Street Direction

	North/South
X	East/West

	Major Street	Minor Street	Warrant Met
	Barnett Avenue	Dutch Flats Parkway	
Number of Approach Lanes	**2**	**1**	**YES**
Traffic Volume (VPH) *	**2,170**	**400**	

Sheet No 2 of 2

Figure 4C-3
Warrant 3, Peak Hour



* Note: 150 VPH APPLIES AS THE LOWER THRESHOLD VOLUME FOR A MINOR STREET APPROACH WITH TWO OR MORE LANES AND 100 VPH APPLIES AS THE LOWER THRESHOLD VOLUME FOR A MINOR STREET APPROACHING WITH ONE LANE.

Source: *California Manual on Uniform Traffic Control Devices*, Caltrans, 2006

#64		Project	Midway & Old Town CPU
Major Street	Barnett Avenue	Scenario	1A
Minor Street	Dutch Flats Parkway	Peak Hour	PM

Turn Movement Volumes

	NB	SB	EB	WB
Left	0	0	60	0
Through	0	160	1,090	1,200
Right	0	240	0	70
Total	0	400	1,150	1,270

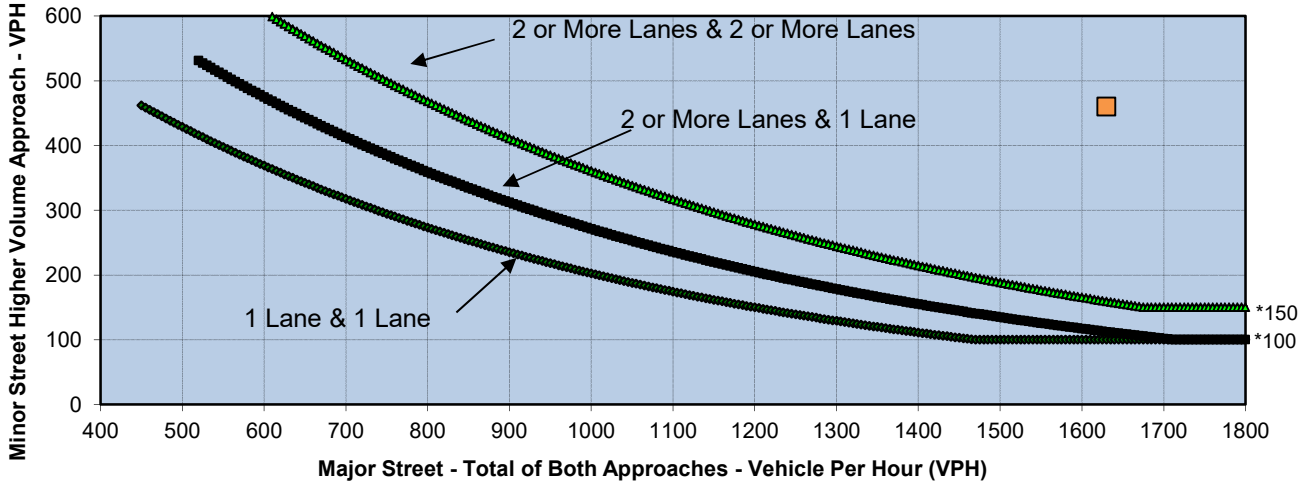
Major Street Direction

	North/South
X	East/West

	Major Street	Minor Street	Warrant Met
	Barnett Avenue	Dutch Flats Parkway	
Number of Approach Lanes	2	1	YES
Traffic Volume (VPH) *	2,420	400	

Sheet No 1 of 2

Figure 4C-3
Warrant 3, Peak Hour



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Source: *California Manual on Uniform Traffic Control Devices*, Caltrans, 2006

#65

Major Street	Midway Drive
Minor Street	Dutch Flats Parkway

Project	Midway & Old Town CPU
Scenario	1A
Peak Hour	AM

Turn Movement Volumes

	NB	SB	EB	WB
Left	200	260	60	40
Through	400	450	10	180
Right	130	190	90	240
Total	730	900	160	460

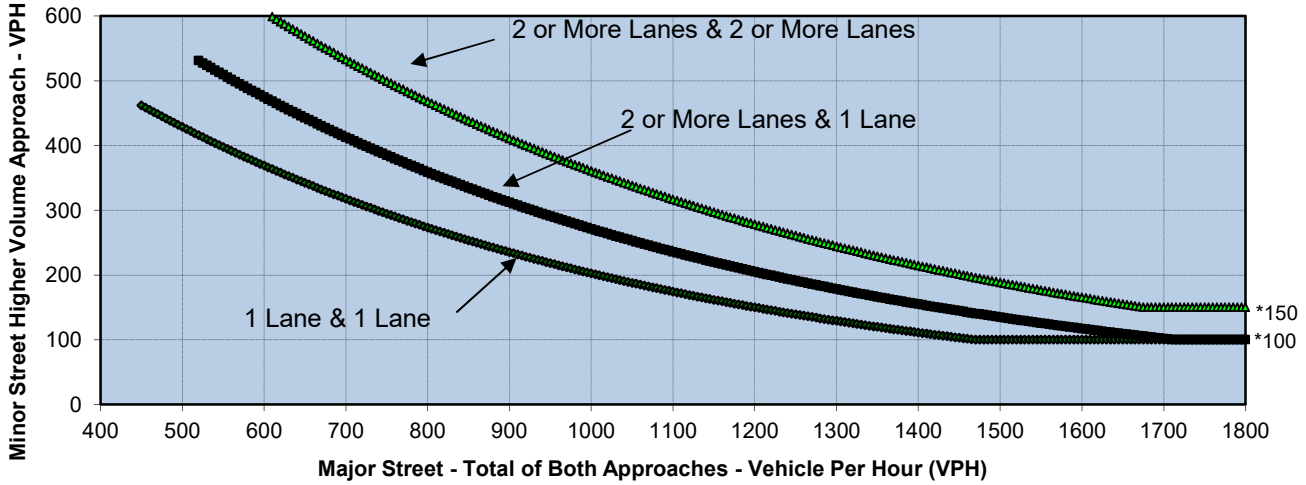
Major Street Direction

X	North/South
	East/West

	Major Street	Minor Street	Warrant Met
	Midway Drive	Dutch Flats Parkway	
Number of Approach Lanes	**2**	**1**	**YES**
Traffic Volume (VPH) *	**1,630**	**460**	

Sheet No 2 of 2

Figure 4C-3
Warrant 3, Peak Hour



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Source: *California Manual on Uniform Traffic Control Devices*, Caltrans, 2006

#65

Major Street	Midway Drive
Minor Street	Dutch Flats Parkway

Project	Midway & Old Town CPU
Scenario	1A
Peak Hour	PM

Turn Movement Volumes

	NB	SB	EB	WB
Left	160	210	110	60
Through	510	520	20	110
Right	370	140	80	280
Total	1,040	870	210	450

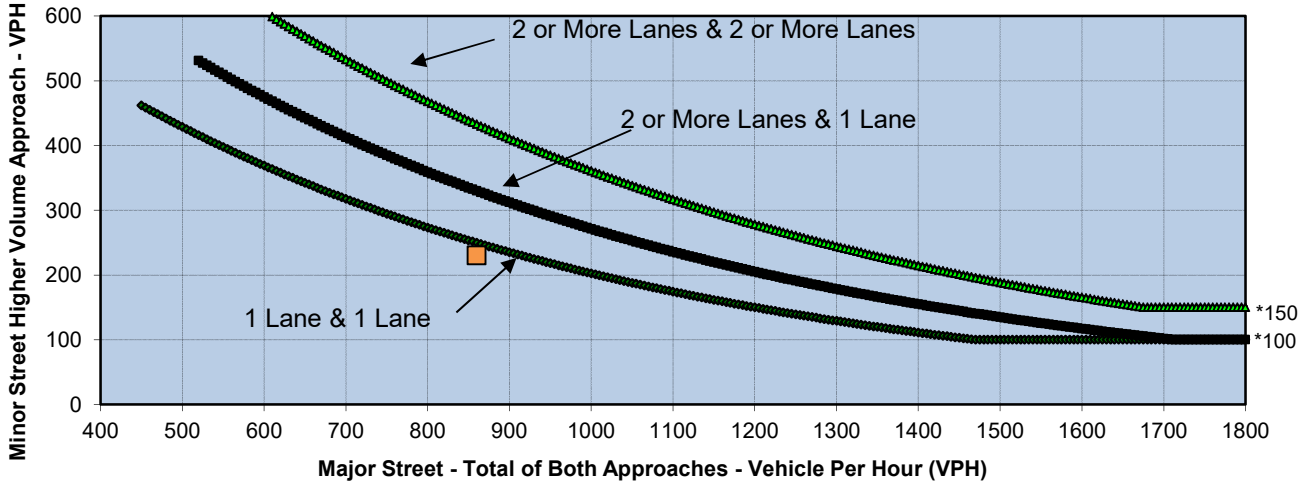
Major Street Direction

X	North/South
	East/West

	Major Street	Minor Street	Warrant Met
	Midway Drive	Dutch Flats Parkway	
Number of Approach Lanes	**2**	**1**	**YES**
Traffic Volume (VPH) *	**1,910**	**450**	

Sheet No 1 of 2

Figure 4C-3
Warrant 3, Peak Hour



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Source: *California Manual on Uniform Traffic Control Devices*, Caltrans, 2006

#66

Major Street	Sports Arena Boulevard
Minor Street	Dutch Flats Parkway

Project	Midway & Old Town CPU
Scenario	1A
Peak Hour	AM

Turn Movement Volumes

	NB	SB	EB	WB
Left	370	0	30	0
Through	210	190	0	0
Right	0	90	200	0
Total	580	280	230	0

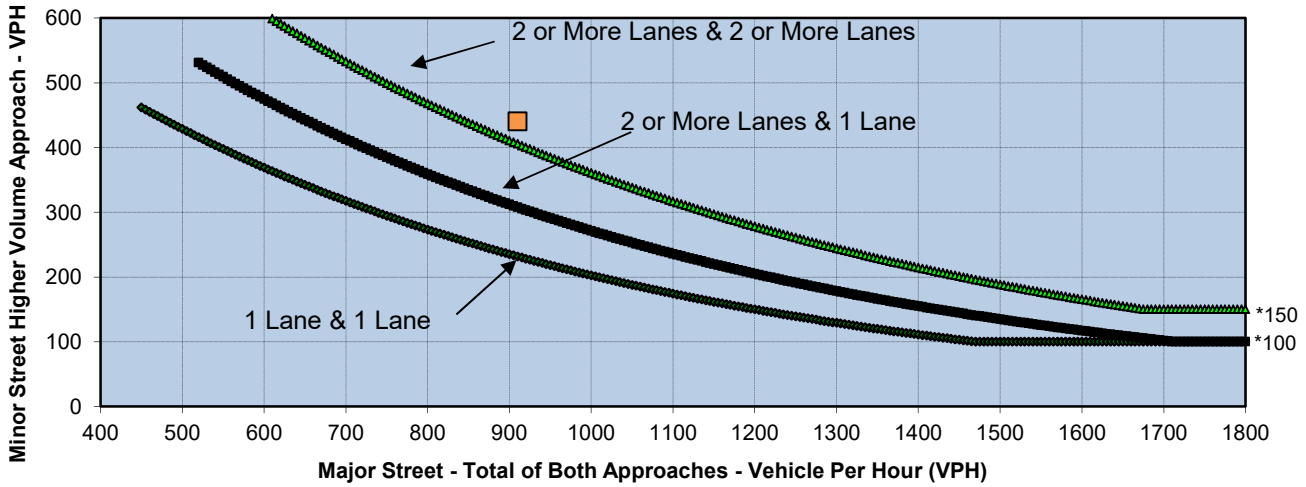
Major Street Direction

X	North/South
	East/West

	Major Street	Minor Street	Warrant Met
	Sports Arena Boulevard	Dutch Flats Parkway	
Number of Approach Lanes	**1**	**1**	**NO**
Traffic Volume (VPH) *	**860**	**230**	

Sheet No 2 of 2

Figure 4C-3
Warrant 3, Peak Hour



* Note: 150 VPH APPLIES AS THE LOWER THRESHOLD VOLUME FOR A MINOR STREET APPROACH WITH TWO OR MORE LANES AND 100 VPH APPLIES AS THE LOWER THRESHOLD VOLUME FOR A MINOR STREET APPROACHING WITH ONE LANE.

Source: *California Manual on Uniform Traffic Control Devices*, Caltrans, 2006

#66

Major Street	Sports Arena Boulevard
Minor Street	Dutch Flats Parkway

Project	Midway & Old Town CPU
Scenario	1A
Peak Hour	PM

Turn Movement Volumes

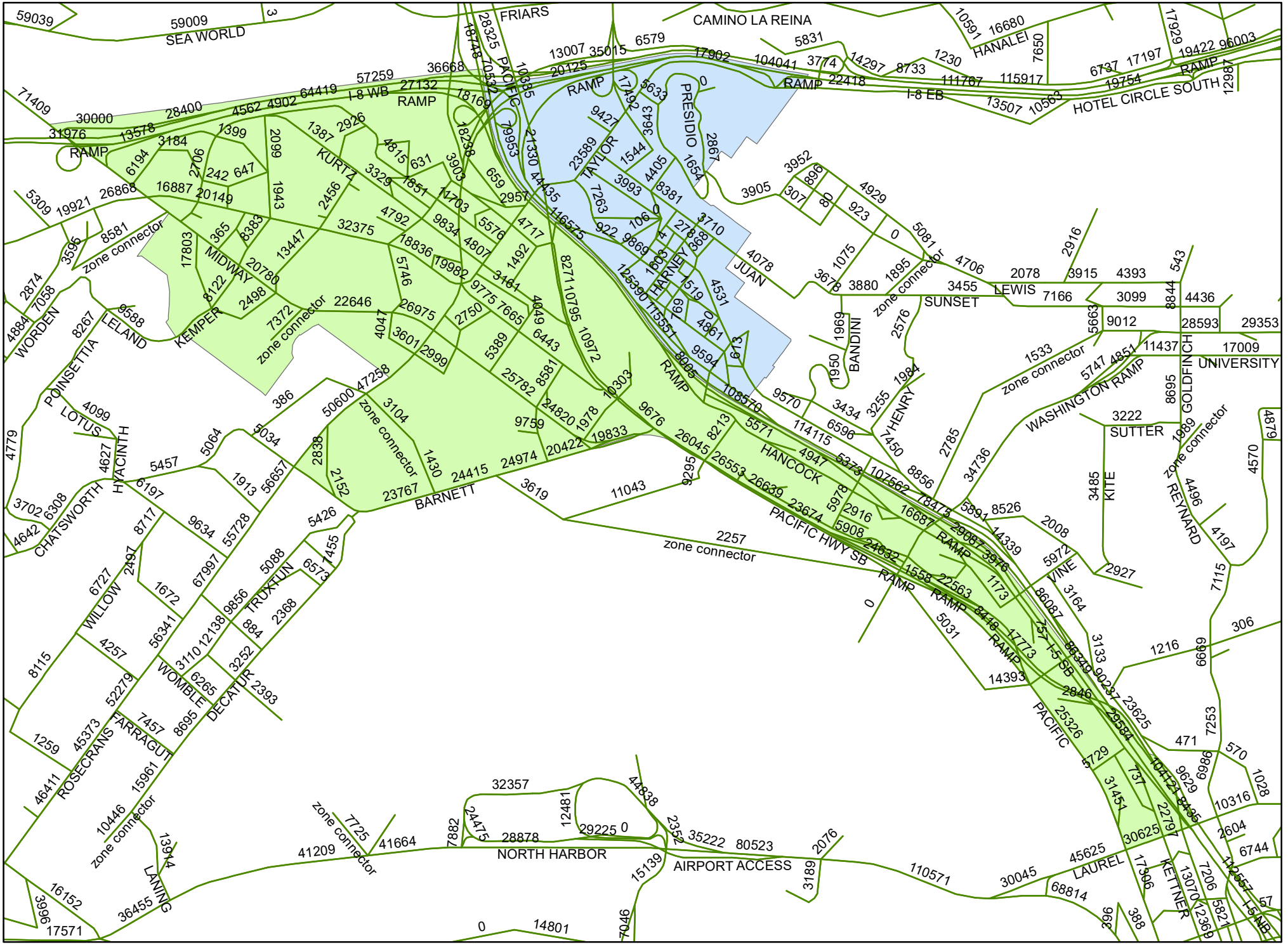
	NB	SB	EB	WB
Left	200	0	180	0
Through	140	270	0	0
Right	0	300	260	0
Total	340	570	440	0

Major Street Direction

X	North/South
	East/West

	Major Street	Minor Street	Warrant Met
	Sports Arena Boulevard	Dutch Flats Parkway	
Number of Approach Lanes	1	1	YES
Traffic Volume (VPH) *	910	440	

Appendix D
SANDAG Series 12 Model Outputs, Documentation and VMT Analysis



Midway-Pacific Highway and Old Town Community Plan

Scenario 1A

VMT Analysis

	Base Year 2008										
	SF (1)			MF			Mobile Homes				Estimated
	VR(2)	PPH(3)	SFDU	VR(2)	PPH(3)	MFDU	VR(2)	PPH(3)	MHDU	TOTAL DU	Populatio
Midway	2.00%	1.78	1,274	3.10%	1.78	484	0.00%	1.78		1,758	3,057
Old Town	6.90%	1.62	229	7.10%	1.62	25	0.00%	1.62	-	254	383

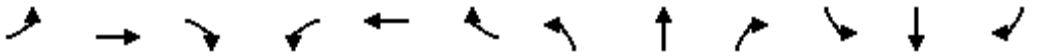
	Preferred CPU - Buildout for Communities, Year 2035 for Region										
	SF (1)			MF			Mobile Homes				Estimated
	VR(4)	PPH(5)	SFDU	VR(4)	PPH(5)	MFDU	VR(4)	PPH(5)	MHDU	TOTAL DU	Populatio
Midway	1.70%	1.82	-	2.40%	1.82	11,415	0.00%	1.82		11,415	20,277
Old Town	0.00%	1.66	79	5.10%	1.66	1,253	0.00%	1.66	-	1,332	2,105

	Delta (CPU Buildout for SESD & Encanto, Year 2035 for Region) - Base Year (2008)						
	DELTAS				Percent increase	Estimated Population Increase	Percent Increase
	SFDU	MFDU	MHDU	Total DU			
Midway	-1274	10931	0	9657	5.493174	17219.5143	5.632486
Old Town	-150	1228	0	1078	4.244094	1722.03414	4.496092

(1) Single family includes detached single family and multi-unit single family
(2) Vacancy Rate data for 2010 per SANDAG Community Profiles
(3) Persons Per Household data for 2010 per SANDAG Community Profiles
(4) Vacancy Rate data for 2050 per SANDAG Community Profiles
(5) Persons Per Household data for 2050 per SANDAG Community Profiles

Appendix E
Peak Hour Intersection Calculation Worksheets and Queuing Reports

Peak Hour Intersection Calculation Worksheets



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	50	1140	400	160	1330	180	480	400	150	580	280	120
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	
Lane Util. Factor	1.00	0.91	1.00	0.97	0.95	1.00	0.97	1.00	1.00	1.00	1.00	
Frpb, ped/bikes	1.00	1.00	0.99	1.00	1.00	0.95	1.00	1.00	0.98	1.00	1.00	
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.96	
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)	1770	5085	1563	3433	3539	1497	3433	1863	1559	1770	1771	
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (perm)	1770	5085	1563	3433	3539	1497	3433	1863	1559	1770	1771	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	54	1239	435	174	1446	196	522	435	163	630	304	130
RTOR Reduction (vph)	0	0	286	0	0	85	0	0	99	0	12	0
Lane Group Flow (vph)	54	1239	149	174	1446	111	522	435	64	630	422	0
Confl. Peds. (#/hr)	8					8			3	3		
Confl. Bikes (#/hr)			1			5						3
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases			2			6			8			
Actuated Green, G (s)	4.0	37.7	37.7	10.8	44.4	44.4	31.4	33.2	33.2	35.8	35.8	
Effective Green, g (s)	4.4	39.0	39.0	11.2	45.8	45.8	31.8	34.0	34.0	34.8	37.0	
Actuated g/C Ratio	0.03	0.29	0.29	0.08	0.34	0.34	0.24	0.25	0.25	0.26	0.27	
Clearance Time (s)	4.4	5.3	5.3	4.4	5.4	5.4	4.4	4.8	4.8	3.0	5.2	
Vehicle Extension (s)	2.0	4.4	4.4	2.0	4.4	4.4	2.0	3.8	3.8	2.0	2.0	
Lane Grp Cap (vph)	57	1469	451	284	1200	507	808	469	392	456	485	
v/s Ratio Prot	0.03	0.24		c0.05	c0.41		0.15	c0.23		c0.36	0.24	
v/s Ratio Perm			0.10			0.07			0.04			
v/c Ratio	0.95	0.84	0.33	0.61	1.21	0.22	0.65	0.93	0.16	1.38	0.87	
Uniform Delay, d1	65.2	45.1	37.7	59.8	44.6	31.8	46.5	49.3	39.4	50.1	46.7	
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	98.4	6.1	2.0	2.7	100.4	1.0	1.3	24.8	0.3	185.0	14.8	
Delay (s)	163.6	51.2	39.7	62.5	145.0	32.8	47.9	74.1	39.7	235.1	61.5	
Level of Service	F	D	D	E	F	C	D	E	D	F	E	
Approach Delay (s)		51.8			125.0			56.9			164.3	
Approach LOS		D			F			E			F	

Intersection Summary			
HCM 2000 Control Delay	96.9	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.17		
Actuated Cycle Length (s)	135.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	107.3%	ICU Level of Service	G
Analysis Period (min)	15		
c Critical Lane Group			

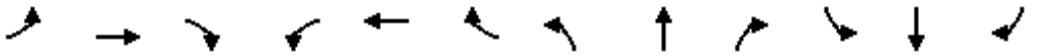
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (vph)	530	1180	370	0	0	660
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	7.0	7.0	7.0			7.0
Lane Util. Factor	0.97	0.88	0.95			0.95
Frt	1.00	0.85	1.00			1.00
Flt Protected	0.95	1.00	1.00			1.00
Satd. Flow (prot)	3433	2787	3539			3539
Flt Permitted	0.95	1.00	1.00			1.00
Satd. Flow (perm)	3433	2787	3539			3539
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	576	1283	402	0	0	717
RTOR Reduction (vph)	0	303	0	0	0	0
Lane Group Flow (vph)	576	980	402	0	0	717
Turn Type	Prot	Perm	NA			NA
Protected Phases	4		2			6
Permitted Phases		4				
Actuated Green, G (s)	19.4	19.4	13.1			13.1
Effective Green, g (s)	19.4	19.4	13.1			13.1
Actuated g/C Ratio	0.42	0.42	0.28			0.28
Clearance Time (s)	7.0	7.0	7.0			7.0
Vehicle Extension (s)	0.2	0.2	0.2			0.2
Lane Grp Cap (vph)	1432	1162	997			997
v/s Ratio Prot	0.17		0.11			c0.20
v/s Ratio Perm		c0.35				
v/c Ratio	0.40	0.84	0.40			0.72
Uniform Delay, d1	9.5	12.2	13.5			15.0
Progression Factor	1.00	1.00	1.00			1.00
Incremental Delay, d2	0.1	5.5	0.1			2.1
Delay (s)	9.6	17.7	13.6			17.1
Level of Service	A	B	B			B
Approach Delay (s)	15.2		13.6			17.1
Approach LOS	B		B			B

Intersection Summary			
HCM 2000 Control Delay	15.4	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.79		
Actuated Cycle Length (s)	46.5	Sum of lost time (s)	14.0
Intersection Capacity Utilization	63.2%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (veh/h)	0	110	990	240	0	1160
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	120	1076	261	0	1261
Pedestrians						3
Lane Width (ft)						12.0
Walking Speed (ft/s)						4.0
Percent Blockage						0
Right turn flare (veh)						
Median type			None			None
Median storage veh)						
Upstream signal (ft)			810			780
pX, platoon unblocked						
vC, conflicting volume	1627	492			1337	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1627	492			1337	
tC, single (s)	6.8	6.9			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	100	77			100	
cM capacity (veh/h)	93	521			512	

Direction, Lane #	WB 1	NB 1	NB 2	NB 3	SB 1	SB 2	SB 3
Volume Total	120	430	430	476	420	420	420
Volume Left	0	0	0	0	0	0	0
Volume Right	120	0	0	261	0	0	0
cSH	521	1700	1700	1700	1700	1700	1700
Volume to Capacity	0.23	0.25	0.25	0.28	0.25	0.25	0.25
Queue Length 95th (ft)	22	0	0	0	0	0	0
Control Delay (s)	14.0	0.0	0.0	0.0	0.0	0.0	0.0
Lane LOS	B						
Approach Delay (s)	14.0	0.0			0.0		
Approach LOS	B						

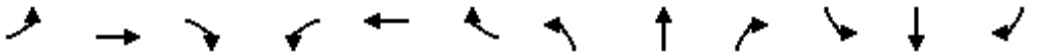
Intersection Summary			
Average Delay	0.6		
Intersection Capacity Utilization	38.9%	ICU Level of Service	A
Analysis Period (min)	15		



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	460	310	290	30	140	290	210	480	70	380	530	250
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.1	4.0	3.1	3.0	4.0	4.0	3.1	4.0		3.1	4.0	4.0
Lane Util. Factor	1.00	1.00	1.00	1.00	0.95	1.00	1.00	0.95		1.00	0.95	1.00
Frpb, ped/bikes	1.00	1.00	0.99	1.00	1.00	0.99	1.00	1.00		1.00	1.00	0.99
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.98		1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1770	1863	1565	1770	3539	1573	1770	3464		1770	3539	1568
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)	1770	1863	1565	1770	3539	1573	1770	3464		1770	3539	1568
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	500	337	315	33	152	315	228	522	76	413	576	272
RTOR Reduction (vph)	0	0	52	0	0	47	0	9	0	0	0	126
Lane Group Flow (vph)	500	337	263	33	152	268	228	589	0	413	576	146
Confl. Peds. (#/hr)			4			3			5			8
Turn Type	Prot	NA	pm+ov	Prot	NA	pm+ov	Prot	NA		Prot	NA	pm+ov
Protected Phases	5	2	3	1	6	7	3	8		7	4	5
Permitted Phases			2			6						4
Actuated Green, G (s)	33.3	49.2	68.8	3.4	19.2	45.4	19.6	25.7		26.2	32.3	65.6
Effective Green, g (s)	34.2	50.1	70.6	4.4	20.2	45.4	20.5	26.6		27.1	33.2	65.6
Actuated g/C Ratio	0.28	0.41	0.58	0.04	0.17	0.37	0.17	0.22		0.22	0.27	0.54
Clearance Time (s)	4.0	4.9	4.0	4.0	5.0	4.0	4.0	4.9		4.0	4.9	4.0
Vehicle Extension (s)	3.0	0.2	3.0	3.0	8.0	3.0	3.0	3.1		3.0	5.5	3.0
Lane Grp Cap (vph)	494	763	903	63	584	583	296	753		392	960	841
v/s Ratio Prot	c0.28	c0.18	0.05	0.02	0.04	0.10	0.13	c0.17		c0.23	0.16	0.05
v/s Ratio Perm			0.12			0.07						0.05
v/c Ratio	1.01	0.44	0.29	0.52	0.26	0.46	0.77	0.78		1.05	0.60	0.17
Uniform Delay, d1	44.0	26.0	13.1	57.9	44.5	29.2	48.6	45.1		47.6	38.8	14.5
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	43.6	0.1	0.2	7.6	1.0	0.6	11.7	5.4		60.2	1.7	0.1
Delay (s)	87.6	26.2	13.3	65.6	45.5	29.7	60.3	50.5		107.8	40.5	14.6
Level of Service	F	C	B	E	D	C	E	D		F	D	B
Approach Delay (s)		49.3			36.9			53.2			57.0	
Approach LOS		D			D			D			E	

Intersection Summary			
HCM 2000 Control Delay	51.1	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.88		
Actuated Cycle Length (s)	122.3	Sum of lost time (s)	16.0
Intersection Capacity Utilization	84.5%	ICU Level of Service	E
Analysis Period (min)	15		

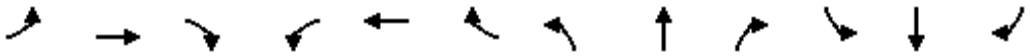
c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	110	110	110	90	100	170	80	330	50	80	410	90
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0
Lane Util. Factor	0.95	0.95	1.00	1.00	1.00	1.00	0.97	0.95		1.00	0.95	1.00
Frpb, ped/bikes	1.00	1.00	0.98	1.00	1.00	0.98	1.00	1.00		1.00	1.00	1.00
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.98		1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1681	1770	1556	1770	1863	1551	3433	3461		1770	3539	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)	1681	1770	1556	1770	1863	1551	3433	3461		1770	3539	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	120	120	120	98	109	185	87	359	54	87	446	98
RTOR Reduction (vph)	0	0	96	0	0	159	0	7	0	0	0	47
Lane Group Flow (vph)	120	120	25	98	109	26	87	406	0	87	446	51
Confl. Peds. (#/hr)			12			8			5			
Turn Type	Split	NA	pm+ov	Split	NA	Perm	Prot	NA		Prot	NA	Perm
Protected Phases	8	8	1	7	7		1	6		5	2	
Permitted Phases			8			7						2
Actuated Green, G (s)	17.0	17.0	23.7	16.0	16.0	16.0	6.7	57.2		10.7	61.2	61.2
Effective Green, g (s)	17.9	17.9	24.5	16.9	16.9	16.9	7.1	58.1		11.1	62.1	62.1
Actuated g/C Ratio	0.15	0.15	0.20	0.14	0.14	0.14	0.06	0.48		0.09	0.52	0.52
Clearance Time (s)	4.9	4.9	4.4	4.9	4.9	4.9	4.4	4.9		4.4	4.9	4.9
Vehicle Extension (s)	3.0	3.0	2.0	3.0	3.0	3.0	2.0	4.5		2.0	4.6	4.6
Lane Grp Cap (vph)	250	264	317	249	262	218	203	1675		163	1831	819
v/s Ratio Prot	c0.07	0.07	0.00	0.06	c0.06		0.03	0.12		c0.05	c0.13	
v/s Ratio Perm			0.01			0.02						0.03
v/c Ratio	0.48	0.45	0.08	0.39	0.42	0.12	0.43	0.24		0.53	0.24	0.06
Uniform Delay, d1	46.8	46.6	38.6	46.9	47.0	45.0	54.5	18.1		52.0	16.0	14.4
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	1.5	1.2	0.0	1.0	1.1	0.2	0.5	0.3		1.7	0.3	0.1
Delay (s)	48.2	47.8	38.6	47.9	48.1	45.3	55.0	18.4		53.7	16.3	14.6
Level of Service	D	D	D	D	D	D	E	B		D	B	B
Approach Delay (s)		44.9			46.7			24.8			21.2	
Approach LOS		D			D			C			C	

Intersection Summary			
HCM 2000 Control Delay	32.0	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.34		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	58.9%	ICU Level of Service	B
Analysis Period (min)	15		

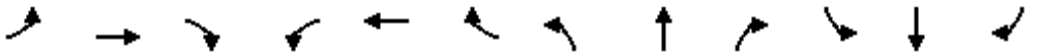
c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	30	20	20	30	20	30	60	660	100	40	560	40
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0			4.0		4.0	4.0		4.0	4.0	
Lane Util. Factor		1.00			1.00		1.00	0.95		1.00	0.95	
Frpb, ped/bikes		1.00			0.99		1.00	1.00		1.00	1.00	
Flpb, ped/bikes		1.00			1.00		1.00	1.00		1.00	1.00	
Frt		0.96			0.95		1.00	0.98		1.00	0.99	
Flt Protected		0.98			0.98		0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1746			1724		1770	3469		1770	3498	
Flt Permitted		0.86			0.84		0.37	1.00		0.32	1.00	
Satd. Flow (perm)		1542			1482		687	3469		600	3498	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	33	22	22	33	22	33	65	717	109	43	609	43
RTOR Reduction (vph)	0	19	0	0	28	0	0	15	0	0	7	0
Lane Group Flow (vph)	0	58	0	0	60	0	65	811	0	43	645	0
Confl. Peds. (#/hr)			1			10						3
Turn Type	Perm	NA		Perm	NA		pm+pt	NA		pm+pt	NA	
Protected Phases		8			4		1	6		5	2	
Permitted Phases	8			4			6			2		
Actuated Green, G (s)		5.0			5.0		24.9	22.4		22.7	21.3	
Effective Green, g (s)		5.9			5.9		25.7	23.3		23.5	22.2	
Actuated g/C Ratio		0.14			0.14		0.60	0.54		0.55	0.52	
Clearance Time (s)		4.9			4.9		4.4	4.9		4.4	4.9	
Vehicle Extension (s)		2.0			2.0		2.0	2.9		2.0	2.9	
Lane Grp Cap (vph)		211			203		483	1879		376	1805	
v/s Ratio Prot							c0.01	c0.23		0.00	0.18	
v/s Ratio Perm		0.04			c0.04		0.07			0.06		
v/c Ratio		0.27			0.29		0.13	0.43		0.11	0.36	
Uniform Delay, d1		16.6			16.7		3.7	5.9		4.5	6.2	
Progression Factor		1.00			1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2		0.3			0.3		0.0	0.2		0.0	0.1	
Delay (s)		16.9			17.0		3.7	6.0		4.6	6.3	
Level of Service		B			B		A	A		A	A	
Approach Delay (s)		16.9			17.0			5.9			6.2	
Approach LOS		B			B			A			A	

Intersection Summary			
HCM 2000 Control Delay	7.0	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.39		
Actuated Cycle Length (s)	43.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	43.8%	ICU Level of Service	A
Analysis Period (min)	15		

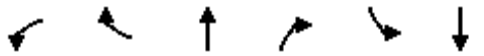
c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	230	1470	140	280	1850	270	90	320	190	230	280	180
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0	4.4	4.0	4.0	3.5	4.0	4.0	3.5
Lane Util. Factor	0.97	0.91		0.97	0.91	1.00	1.00	0.95	1.00	0.97	0.95	1.00
Frpb, ped/bikes	1.00	1.00		1.00	1.00	0.98	1.00	1.00	0.97	1.00	1.00	0.98
Flpb, ped/bikes	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.99		1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	5001		3433	5085	1544	1770	3539	1542	3433	3539	1554
Flt Permitted	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	5001		3433	5085	1544	1770	3539	1542	3433	3539	1554
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	250	1598	152	304	2011	293	98	348	207	250	304	196
RTOR Reduction (vph)	0	10	0	0	0	79	0	0	77	0	0	78
Lane Group Flow (vph)	250	1740	0	304	2011	214	98	348	130	250	304	118
Confl. Peds. (#/hr)	14		25	25		14	18		27	27		14
Turn Type	Prot	NA		Prot	NA	pm+ov	Prot	NA	pm+ov	Prot	NA	pm+ov
Protected Phases	5	2		1	6	7	3	8	1	7	4	5
Permitted Phases						6			8			4
Actuated Green, G (s)	9.2	42.4		10.8	44.1	53.2	8.0	23.9	34.7	9.1	25.0	34.2
Effective Green, g (s)	9.6	43.5		11.2	45.1	53.2	8.4	24.8	36.5	9.5	25.9	36.0
Actuated g/C Ratio	0.09	0.41		0.11	0.43	0.51	0.08	0.24	0.35	0.09	0.25	0.34
Clearance Time (s)	4.4	5.1		4.4	5.0	4.4	4.4	4.9	4.4	4.4	4.9	4.4
Vehicle Extension (s)	2.0	3.5		2.0	3.7	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lane Grp Cap (vph)	313	2071		366	2184	782	141	835	587	310	872	532
v/s Ratio Prot	0.07	c0.35		0.09	c0.40	0.02	c0.06	c0.10	0.02	c0.07	0.09	0.02
v/s Ratio Perm						0.11			0.06			0.05
v/c Ratio	0.80	0.84		0.83	0.92	0.27	0.70	0.42	0.22	0.81	0.35	0.22
Uniform Delay, d1	46.8	27.6		46.0	28.3	14.8	47.1	34.0	24.2	46.8	32.6	24.5
Progression Factor	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	12.4	4.3		14.1	7.9	0.1	11.3	0.1	0.1	13.4	0.1	0.1
Delay (s)	59.2	31.9		60.1	36.1	14.9	58.4	34.1	24.3	60.3	32.7	24.6
Level of Service	E	C		E	D	B	E	C	C	E	C	C
Approach Delay (s)		35.3			36.5			34.6			39.8	
Approach LOS		D			D			C			D	

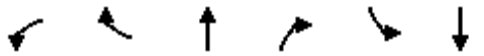
Intersection Summary			
HCM 2000 Control Delay	36.3	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.80		
Actuated Cycle Length (s)	105.0	Sum of lost time (s)	16.4
Intersection Capacity Utilization	81.6%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (vph)	120	30	600	90	150	600
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.5		4.5		4.5	4.5
Lane Util. Factor	1.00		0.95		1.00	0.95
Frt	0.97		0.98		1.00	1.00
Flt Protected	0.96		1.00		0.95	1.00
Satd. Flow (prot)	1742		3470		1770	3539
Flt Permitted	0.96		1.00		0.95	1.00
Satd. Flow (perm)	1742		3470		1770	3539
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	130	33	652	98	163	652
RTOR Reduction (vph)	16	0	14	0	0	0
Lane Group Flow (vph)	147	0	736	0	163	652
Turn Type	Prot		NA		Prot	NA
Protected Phases	8		2		1	6
Permitted Phases						
Actuated Green, G (s)	8.9		30.2		8.8	43.5
Effective Green, g (s)	8.9		30.2		8.8	43.5
Actuated g/C Ratio	0.14		0.49		0.14	0.71
Clearance Time (s)	4.5		4.5		4.5	4.5
Vehicle Extension (s)	3.0		3.0		3.0	3.0
Lane Grp Cap (vph)	252		1706		253	2507
v/s Ratio Prot	c0.08		c0.21		c0.09	0.18
v/s Ratio Perm						
v/c Ratio	0.58		0.43		0.64	0.26
Uniform Delay, d1	24.5		10.1		24.8	3.2
Progression Factor	1.00		1.00		1.00	1.00
Incremental Delay, d2	3.4		0.8		5.5	0.3
Delay (s)	27.9		10.9		30.4	3.5
Level of Service	C		B		C	A
Approach Delay (s)	27.9		10.9			8.8
Approach LOS	C		B			A

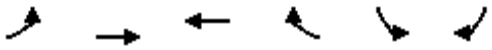
Intersection Summary			
HCM 2000 Control Delay	11.5	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.50		
Actuated Cycle Length (s)	61.4	Sum of lost time (s)	13.5
Intersection Capacity Utilization	47.5%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (veh/h)	0	180	520	100	0	540
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	196	565	109	0	587
Pedestrians	2					3
Lane Width (ft)	12.0					12.0
Walking Speed (ft/s)	4.0					4.0
Percent Blockage	0					0
Right turn flare (veh)						
Median type			None			None
Median storage veh)						
Upstream signal (ft)			215			491
pX, platoon unblocked	0.87					
vC, conflicting volume	915	342			676	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	609	342			676	
tC, single (s)	6.8	6.9			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	100	70			100	
cM capacity (veh/h)	372	651			910	

Direction, Lane #	WB 1	NB 1	NB 2	SB 1	SB 2
Volume Total	196	377	297	293	293
Volume Left	0	0	0	0	0
Volume Right	196	0	109	0	0
cSH	651	1700	1700	1700	1700
Volume to Capacity	0.30	0.22	0.17	0.17	0.17
Queue Length 95th (ft)	32	0	0	0	0
Control Delay (s)	12.9	0.0	0.0	0.0	0.0
Lane LOS	B				
Approach Delay (s)	12.9	0.0		0.0	
Approach LOS	B				

Intersection Summary			
Average Delay	1.7		
Intersection Capacity Utilization	35.9%	ICU Level of Service	A
Analysis Period (min)	15		



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (vph)	0	810	1320	610	410	140
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.4	5.4	5.9	5.2	5.2
Lane Util. Factor		0.95	0.95	0.88	0.97	1.00
Frpb, ped/bikes		1.00	1.00	1.00	1.00	1.00
Flpb, ped/bikes		1.00	1.00	1.00	1.00	1.00
Frt		1.00	1.00	0.85	1.00	0.85
Flt Protected		1.00	1.00	1.00	0.95	1.00
Satd. Flow (prot)		3539	3539	2787	3433	1583
Flt Permitted		1.00	1.00	1.00	0.95	1.00
Satd. Flow (perm)		3539	3539	2787	3433	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	880	1435	663	446	152
RTOR Reduction (vph)	0	0	0	253	0	123
Lane Group Flow (vph)	0	880	1435	410	446	29
Confl. Peds. (#/hr)				8	8	
Turn Type		NA	NA	custom	Prot	Perm
Protected Phases		2	2	8	1	
Permitted Phases						1
Actuated Green, G (s)		33.8	33.8	29.2	11.9	11.9
Effective Green, g (s)		33.8	33.8	28.7	11.9	11.9
Actuated g/C Ratio		0.54	0.54	0.46	0.19	0.19
Clearance Time (s)		5.4	5.4	5.4	5.2	5.2
Vehicle Extension (s)		2.9	2.9	3.0	2.5	2.5
Lane Grp Cap (vph)		1910	1910	1277	652	300
v/s Ratio Prot		0.25	c0.41	0.15	c0.13	
v/s Ratio Perm						0.02
v/c Ratio		0.46	0.75	0.32	0.68	0.10
Uniform Delay, d1		8.8	11.1	10.8	23.6	20.9
Progression Factor		1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2		0.2	1.7	0.1	2.7	0.1
Delay (s)		9.0	12.8	10.9	26.3	21.0
Level of Service		A	B	B	C	C
Approach Delay (s)		9.0	12.2		25.0	
Approach LOS		A	B		C	

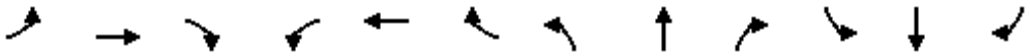
Intersection Summary			
HCM 2000 Control Delay	13.6	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.74		
Actuated Cycle Length (s)	62.6	Sum of lost time (s)	17.1
Intersection Capacity Utilization	57.0%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (vph)	30	50	400	70	120	640
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.9	4.0	4.9		4.4	4.9
Lane Util. Factor	1.00	1.00	0.91		1.00	0.91
Frpb, ped/bikes	1.00	0.98	1.00		1.00	1.00
Flpb, ped/bikes	1.00	1.00	1.00		1.00	1.00
Frt	1.00	0.85	0.98		1.00	1.00
Flt Protected	0.95	1.00	1.00		0.95	1.00
Satd. Flow (prot)	1770	1550	4956		1770	5085
Flt Permitted	0.95	1.00	1.00		0.95	1.00
Satd. Flow (perm)	1770	1550	4956		1770	5085
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	33	54	435	76	130	696
RTOR Reduction (vph)	0	48	12	0	0	0
Lane Group Flow (vph)	33	6	499	0	130	696
Confl. Peds. (#/hr)	4	11		9	9	
Turn Type	Prot	Perm	NA		Prot	NA
Protected Phases	4		6		5	2
Permitted Phases		4				
Actuated Green, G (s)	11.9	11.9	71.5		12.4	88.3
Effective Green, g (s)	11.9	12.8	71.5		12.4	88.3
Actuated g/C Ratio	0.11	0.12	0.65		0.11	0.80
Clearance Time (s)	4.9	4.9	4.9		4.4	4.9
Vehicle Extension (s)	2.0	2.0	5.0		2.0	3.2
Lane Grp Cap (vph)	191	180	3221		199	4081
v/s Ratio Prot	c0.02		0.10		c0.07	c0.14
v/s Ratio Perm		0.00				
v/c Ratio	0.17	0.03	0.16		0.65	0.17
Uniform Delay, d1	44.6	43.1	7.5		46.7	2.5
Progression Factor	1.00	1.00	2.15		1.00	1.00
Incremental Delay, d2	0.2	0.0	0.1		5.8	0.1
Delay (s)	44.7	43.1	16.2		52.5	2.6
Level of Service	D	D	B		D	A
Approach Delay (s)	43.8		16.2			10.4
Approach LOS	D		B			B

Intersection Summary			
HCM 2000 Control Delay	14.8	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.24		
Actuated Cycle Length (s)	110.0	Sum of lost time (s)	14.2
Intersection Capacity Utilization	56.0%	ICU Level of Service	B
Analysis Period (min)	15		

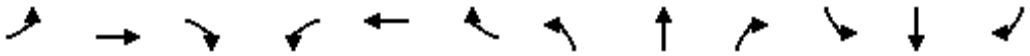
c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	80	50	100	160	140	110	190	400	90	80	520	110
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.5	4.0	
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	0.91		0.97	0.95	
Frpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	0.97		1.00	1.00	
Flpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Frt	1.00	0.90		1.00	0.93		1.00	0.97		1.00	0.97	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1770	1676		1770	1739		1770	4781		3433	3446	
Flt Permitted	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (perm)	1770	1676		1770	1739		1770	4781		3433	3446	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	87	54	109	174	152	120	207	435	98	87	565	120
RTOR Reduction (vph)	0	80	0	0	25	0	0	29	0	0	14	0
Lane Group Flow (vph)	87	83	0	174	247	0	207	504	0	87	671	0
Confl. Peds. (#/hr)									120			
Turn Type	Split	NA		Split	NA		Prot	NA		Prot	NA	
Protected Phases	7	7		8	8		1	6		5	2	
Permitted Phases												
Actuated Green, G (s)	13.9	13.9		19.0	19.0		16.2	33.9		23.6	41.8	
Effective Green, g (s)	14.8	14.8		19.9	19.9		16.6	34.8		24.0	42.7	
Actuated g/C Ratio	0.13	0.13		0.18	0.18		0.15	0.32		0.22	0.39	
Clearance Time (s)	4.9	4.9		4.9	4.9		4.4	4.9		4.9	4.9	
Vehicle Extension (s)	3.0	3.0		2.0	2.0		2.0	3.9		3.9	3.9	
Lane Grp Cap (vph)	238	225		320	314		267	1512		749	1337	
v/s Ratio Prot	0.05	c0.05		0.10	c0.14		c0.12	0.11		0.03	c0.19	
v/s Ratio Perm												
v/c Ratio	0.37	0.37		0.54	0.79		0.78	0.33		0.12	0.50	
Uniform Delay, d1	43.3	43.4		40.9	43.0		44.9	28.7		34.5	25.6	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		0.72	0.72	
Incremental Delay, d2	1.0	1.0		1.0	11.4		12.1	0.6		0.1	1.3	
Delay (s)	44.3	44.4		41.9	54.5		57.0	29.3		24.8	19.7	
Level of Service	D	D		D	D		E	C		C	B	
Approach Delay (s)		44.4			49.6			37.1			20.3	
Approach LOS		D			D			D			C	

Intersection Summary			
HCM 2000 Control Delay	34.6	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.59		
Actuated Cycle Length (s)	110.0	Sum of lost time (s)	16.5
Intersection Capacity Utilization	61.7%	ICU Level of Service	B
Analysis Period (min)	15		

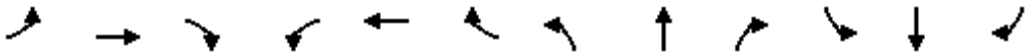
c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	40	20	20	40	20	50	30	590	40	90	650	80
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.9		4.9	4.9		4.4	4.9		4.9	4.9	
Lane Util. Factor		1.00		1.00	1.00		1.00	0.91		0.97	0.95	
Frpb, ped/bikes		1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Flpb, ped/bikes		1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Frt		0.97		1.00	0.89		1.00	0.99		1.00	0.98	
Flt Protected		0.98		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1749		1770	1664		1770	5029		3433	3469	
Flt Permitted		0.98		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (perm)		1749		1770	1664		1770	5029		3433	3469	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	43	22	22	43	22	54	33	641	43	98	707	87
RTOR Reduction (vph)	0	10	0	0	50	0	0	5	0	0	6	0
Lane Group Flow (vph)	0	77	0	43	26	0	33	679	0	98	788	0
Confl. Peds. (#/hr)			7	7			9		4	4		9
Turn Type	Split	NA		Split	NA		Prot	NA		Prot	NA	
Protected Phases	8	8		7	7		1	6		5	2	
Permitted Phases												
Actuated Green, G (s)		9.0		5.4	5.4		2.1	19.2		13.4	31.0	
Effective Green, g (s)		9.0		5.4	5.4		2.1	19.2		13.4	31.0	
Actuated g/C Ratio		0.14		0.08	0.08		0.03	0.29		0.20	0.47	
Clearance Time (s)		4.9		4.9	4.9		4.4	4.9		4.9	4.9	
Vehicle Extension (s)		2.0		2.0	2.0		2.0	2.0		2.0	2.0	
Lane Grp Cap (vph)		236		143	134		55	1449		690	1614	
v/s Ratio Prot		c0.04		c0.02	0.02		c0.02	0.14		0.03	c0.23	
v/s Ratio Perm												
v/c Ratio		0.32		0.30	0.20		0.60	0.47		0.14	0.49	
Uniform Delay, d1		26.1		28.8	28.6		31.8	19.5		21.9	12.3	
Progression Factor		1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2		0.3		0.4	0.3		11.2	0.1		0.0	0.1	
Delay (s)		26.3		29.3	28.8		43.0	19.6		21.9	12.4	
Level of Service		C		C	C		D	B		C	B	
Approach Delay (s)		26.3			29.0			20.7			13.4	
Approach LOS		C			C			C			B	

Intersection Summary			
HCM 2000 Control Delay	17.9	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.44		
Actuated Cycle Length (s)	66.6	Sum of lost time (s)	19.6
Intersection Capacity Utilization	51.0%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	30	10	50	10	10	20	60	610	50	40	680	40
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0	4.0		4.9	4.0	4.0	4.0		4.0	4.0	
Lane Util. Factor		1.00	1.00		1.00	1.00	1.00	0.91		1.00	0.91	
Frt		1.00	0.85		1.00	0.85	1.00	0.99		1.00	0.99	
Flt Protected		0.96	1.00		0.98	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1795	1583		1817	1583	1770	5028		1770	5043	
Flt Permitted		0.77	1.00		0.82	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (perm)		1426	1583		1526	1583	1770	5028		1770	5043	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	33	11	54	11	11	22	65	663	54	43	739	43
RTOR Reduction (vph)	0	0	48	0	0	20	0	11	0	0	8	0
Lane Group Flow (vph)	0	44	6	0	22	2	65	706	0	43	774	0
Turn Type	Perm	NA	Perm	Perm	NA	Perm	Prot	NA		Prot	NA	
Protected Phases		8			8		1	6		5	2	
Permitted Phases	8		8	8		8						
Actuated Green, G (s)		6.2	6.2		6.2	6.2	4.4	34.3		2.5	32.4	
Effective Green, g (s)		6.2	6.2		5.3	6.2	4.4	34.3		2.5	32.4	
Actuated g/C Ratio		0.11	0.11		0.10	0.11	0.08	0.62		0.05	0.59	
Clearance Time (s)		4.0	4.0		4.0	4.0	4.0	4.0		4.0	4.0	
Vehicle Extension (s)		3.0	3.0		3.0	3.0	3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)		160	178		147	178	141	3135		80	2970	
v/s Ratio Prot							c0.04	0.14		c0.02	c0.15	
v/s Ratio Perm		c0.03	0.00		0.01	0.00						
v/c Ratio		0.28	0.03		0.15	0.01	0.46	0.23		0.54	0.26	
Uniform Delay, d1		22.3	21.7		22.8	21.7	24.2	4.5		25.7	5.5	
Progression Factor		1.00	1.00		1.00	1.00	0.79	0.58		1.00	1.00	
Incremental Delay, d2		0.9	0.1		0.5	0.0	2.0	0.1		6.8	0.2	
Delay (s)		23.3	21.8		23.3	21.7	21.1	2.7		32.5	5.7	
Level of Service		C	C		C	C	C	A		C	A	
Approach Delay (s)		22.5			22.5			4.3			7.1	
Approach LOS		C			C			A			A	

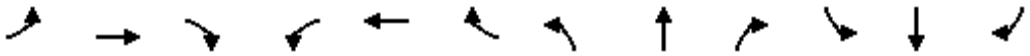
Intersection Summary			
HCM 2000 Control Delay	6.8	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.30		
Actuated Cycle Length (s)	55.0	Sum of lost time (s)	12.9
Intersection Capacity Utilization	36.2%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	EBR2	WBT	WBR	NBR2	SBL2	SBL	SBT	SBR	NWL
Lane Configurations												
Volume (vph)	240	1410	140	100	2150	310	100	270	180	100	80	170
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	2.6	4.0		6.1	4.0	7.8	5.9	5.9	5.9	5.9	5.9	5.9
Lane Util. Factor	0.97	0.86		0.86	0.91	1.00	1.00	0.95	0.91	0.91	1.00	1.00
Frpb, ped/bikes	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.88	1.00
Flpb, ped/bikes	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.99		0.85	1.00	0.85	0.86	1.00	1.00	1.00	0.85	1.00
Flt Protected	0.95	1.00		1.00	1.00	1.00	1.00	0.95	0.95	0.98	1.00	0.95
Satd. Flow (prot)	3433	4737		1362	5085	1583	1611	1681	1610	1655	1398	1770
Flt Permitted	0.95	1.00		1.00	1.00	1.00	1.00	0.95	0.95	0.98	1.00	0.95
Satd. Flow (perm)	3433	4737		1362	5085	1583	1611	1681	1610	1655	1398	1770
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	261	1533	152	109	2337	337	109	293	196	109	87	185
RTOR Reduction (vph)	0	0	0	42	0	33	75	0	0	0	75	0
Lane Group Flow (vph)	261	1696	0	56	2337	304	34	179	206	213	12	185
Confl. Peds. (#/hr)								9			45	18
Confl. Bikes (#/hr)											10	
Turn Type	Prot	NA		Perm	NA	pm+ov	Perm	Split	Split	NA	Perm	Prot
Protected Phases	5	2			6	4		4	4	4		3
Permitted Phases				2		6	8				4	
Actuated Green, G (s)	8.6	63.3		63.3	50.9	66.7	34.7	15.8	15.8	15.8	15.8	13.0
Effective Green, g (s)	10.0	65.4		63.3	52.8	62.9	34.7	15.8	15.8	15.8	15.8	13.0
Actuated g/C Ratio	0.09	0.59		0.58	0.48	0.57	0.32	0.14	0.14	0.14	0.14	0.12
Clearance Time (s)	4.0	6.1		6.1	5.9	5.9	5.9	5.9	5.9	5.9	5.9	5.9
Vehicle Extension (s)	3.0	2.8		2.8	3.2	2.9	4.1	2.9	2.9	2.9	2.9	2.9
Lane Grp Cap (vph)	312	2816		783	2440	905	508	241	231	237	200	209
v/s Ratio Prot	c0.08	0.36			c0.46	0.04		0.11	0.13	c0.13		c0.10
v/s Ratio Perm				0.04		0.15	0.02				0.01	
v/c Ratio	0.84	0.60		0.07	0.96	0.34	0.07	0.74	0.89	0.90	0.06	0.89
Uniform Delay, d1	49.2	14.1		10.3	27.5	12.5	26.3	45.2	46.3	46.3	40.7	47.8
Progression Factor	1.00	1.00		1.00	1.00	1.00	1.00	0.86	0.87	0.87	3.01	1.00
Incremental Delay, d2	17.4	1.0		0.2	10.7	0.2	0.1	11.4	31.7	32.2	0.1	32.8
Delay (s)	66.6	15.0		10.5	38.2	12.7	26.4	50.4	72.1	72.6	122.8	80.6
Level of Service	E	B		B	D	B	C	D	E	E	F	F
Approach Delay (s)		21.4			35.0					73.0		61.3
Approach LOS		C			D					E		E

Intersection Summary			
HCM 2000 Control Delay	36.7	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.94		
Actuated Cycle Length (s)	110.0	Sum of lost time (s)	20.3
Intersection Capacity Utilization	84.4%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			

Movement	NWR	NWR2
Lane Configurations		
Volume (vph)	170	30
Ideal Flow (vphpl)	1900	1900
Total Lost time (s)	5.9	
Lane Util. Factor	0.88	
Frpb, ped/bikes	1.00	
Flpb, ped/bikes	1.00	
Frt	0.85	
Flt Protected	1.00	
Satd. Flow (prot)	2787	
Flt Permitted	1.00	
Satd. Flow (perm)	2787	
Peak-hour factor, PHF	0.92	0.92
Adj. Flow (vph)	185	33
RTOR Reduction (vph)	114	0
Lane Group Flow (vph)	104	0
Confl. Peds. (#/hr)		9
Confl. Bikes (#/hr)		1
Turn Type	Prot	
Protected Phases	3	
Permitted Phases		
Actuated Green, G (s)	13.0	
Effective Green, g (s)	13.0	
Actuated g/C Ratio	0.12	
Clearance Time (s)	5.9	
Vehicle Extension (s)	2.9	
Lane Grp Cap (vph)	329	
v/s Ratio Prot	0.04	
v/s Ratio Perm		
v/c Ratio	0.32	
Uniform Delay, d1	44.4	
Progression Factor	1.00	
Incremental Delay, d2	0.5	
Delay (s)	45.0	
Level of Service	D	
Approach Delay (s)		
Approach LOS		

Intersection Summary

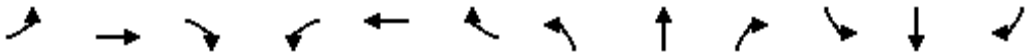


Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	50	100	100	90	80	80	70	50	90	20	30	30
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.5			4.5			4.5			4.0	
Lane Util. Factor		1.00			1.00			1.00			1.00	
Frt		0.95			0.96			0.94			0.95	
Flt Protected		0.99			0.98			0.98			0.99	
Satd. Flow (prot)		1745			1751			1726			1747	
Flt Permitted		0.90			0.75			0.89			0.92	
Satd. Flow (perm)		1577			1335			1563			1635	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	54	109	109	98	87	87	76	54	98	22	33	33
RTOR Reduction (vph)	0	50	0	0	35	0	0	32	0	0	15	0
Lane Group Flow (vph)	0	222	0	0	237	0	0	196	0	0	73	0
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)		12.9			12.9			26.7			27.2	
Effective Green, g (s)		12.9			12.9			26.7			27.2	
Actuated g/C Ratio		0.27			0.27			0.55			0.56	
Clearance Time (s)		4.5			4.5			4.5			4.0	
Vehicle Extension (s)		3.0			3.0			3.0			3.0	
Lane Grp Cap (vph)		418			354			858			915	
v/s Ratio Prot												
v/s Ratio Perm		0.14			c0.18			c0.13			0.04	
v/c Ratio		0.53			0.67			0.23			0.08	
Uniform Delay, d1		15.3			15.9			5.6			4.9	
Progression Factor		1.00			1.00			1.00			1.00	
Incremental Delay, d2		1.3			4.7			0.6			0.0	
Delay (s)		16.6			20.7			6.3			5.0	
Level of Service		B			C			A			A	
Approach Delay (s)		16.6			20.7			6.3			5.0	
Approach LOS		B			C			A			A	

Intersection Summary			
HCM 2000 Control Delay	13.9	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.37		
Actuated Cycle Length (s)	48.6	Sum of lost time (s)	9.0
Intersection Capacity Utilization	50.0%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

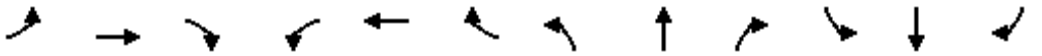
Movement	NBL	NBT	SBT	SBR	SEL	SER
Lane Configurations						
Volume (vph)	300	580	550	70	200	190
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0		4.0	4.0
Lane Util. Factor	1.00	0.91	0.91		1.00	1.00
Frt	1.00	1.00	0.98		1.00	0.85
Flt Protected	0.95	1.00	1.00		0.95	1.00
Satd. Flow (prot)	1770	5085	4999		1770	1583
Flt Permitted	0.95	1.00	1.00		0.95	1.00
Satd. Flow (perm)	1770	5085	4999		1770	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	326	630	598	76	217	207
RTOR Reduction (vph)	0	0	9	0	0	172
Lane Group Flow (vph)	326	630	665	0	217	35
Turn Type	Prot	NA	NA		Prot	Perm
Protected Phases	7	4	8		5	
Permitted Phases						5
Actuated Green, G (s)	27.5	91.7	60.2		20.3	20.3
Effective Green, g (s)	27.5	91.7	60.2		20.3	20.3
Actuated g/C Ratio	0.23	0.76	0.50		0.17	0.17
Clearance Time (s)	4.0	4.0	4.0		4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0		3.0	3.0
Lane Grp Cap (vph)	405	3885	2507		299	267
v/s Ratio Prot	c0.18	0.12	c0.13		c0.12	
v/s Ratio Perm						0.02
v/c Ratio	0.80	0.16	0.27		0.73	0.13
Uniform Delay, d1	43.7	3.8	17.2		47.2	42.4
Progression Factor	1.14	0.17	1.20		1.00	1.00
Incremental Delay, d2	10.9	0.1	0.2		8.5	0.2
Delay (s)	60.6	0.7	20.9		55.7	42.6
Level of Service	E	A	C		E	D
Approach Delay (s)		21.2	20.9		49.3	
Approach LOS		C	C		D	

Intersection Summary			
HCM 2000 Control Delay	26.9	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.49		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	49.9%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



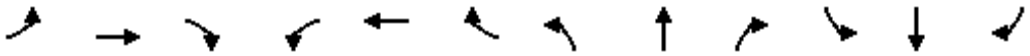
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	30	0	100	80	300	100	0	0	0	0	70	10
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0		4.0	4.0	4.0						4.0	
Lane Util. Factor	1.00		1.00	1.00	1.00						1.00	
Frt	1.00		0.85	1.00	0.96						0.98	
Flt Protected	0.95		1.00	0.95	1.00						1.00	
Satd. Flow (prot)	1770		1583	1770	1793						1831	
Flt Permitted	0.55		1.00	0.95	1.00						1.00	
Satd. Flow (perm)	1021		1583	1770	1793						1831	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	33	0	109	87	326	109	0	0	0	0	76	11
RTOR Reduction (vph)	0	0	90	56	17	0	0	0	0	0	9	0
Lane Group Flow (vph)	33	0	19	31	418	0	0	0	0	0	78	0
Turn Type	Perm		Perm	Split	NA						NA	
Protected Phases				8	8						6	
Permitted Phases	4		4									
Actuated Green, G (s)	7.3		7.3	15.4	15.4						7.9	
Effective Green, g (s)	7.3		7.3	15.4	15.4						7.9	
Actuated g/C Ratio	0.17		0.17	0.36	0.36						0.19	
Clearance Time (s)	4.0		4.0	4.0	4.0						4.0	
Vehicle Extension (s)	3.0		3.0	3.0	3.0						3.0	
Lane Grp Cap (vph)	174		271	639	648						339	
v/s Ratio Prot				0.02	c0.23						c0.04	
v/s Ratio Perm	c0.03		0.01									
v/c Ratio	0.19		0.07	0.05	0.65						0.23	
Uniform Delay, d1	15.1		14.8	8.8	11.3						14.8	
Progression Factor	1.00		1.00	1.00	1.00						1.00	
Incremental Delay, d2	0.5		0.1	0.0	2.2						0.3	
Delay (s)	15.6		14.9	8.9	13.5						15.1	
Level of Service	B		B	A	B						B	
Approach Delay (s)		15.1			12.8			0.0			15.1	
Approach LOS		B			B			A			B	

Intersection Summary			
HCM 2000 Control Delay	13.5	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.43		
Actuated Cycle Length (s)	42.6	Sum of lost time (s)	12.0
Intersection Capacity Utilization	35.9%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	1700	10	270	2410	0	0	0	0	300	90	60
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0		4.0	4.0					4.0	4.0	4.0
Lane Util. Factor		0.91		1.00	0.86					0.95	0.95	1.00
Frt		1.00		1.00	1.00					1.00	1.00	0.85
Flt Protected		1.00		0.95	1.00					0.95	0.98	1.00
Satd. Flow (prot)		5081		1770	6408					1681	1738	1583
Flt Permitted		1.00		0.95	1.00					0.95	0.98	1.00
Satd. Flow (perm)		5081		1770	6408					1681	1738	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	1848	11	293	2620	0	0	0	0	326	98	65
RTOR Reduction (vph)	0	1	0	0	0	0	0	0	0	0	0	41
Lane Group Flow (vph)	0	1858	0	293	2620	0	0	0	0	271	153	24
Turn Type		NA		Prot	NA					Perm	NA	Perm
Protected Phases		2		1	6						4	
Permitted Phases										4		4
Actuated Green, G (s)		65.6		24.7	95.0					30.2	30.2	30.2
Effective Green, g (s)		66.8		25.1	95.9					31.1	31.1	31.1
Actuated g/C Ratio		0.49		0.19	0.71					0.23	0.23	0.23
Clearance Time (s)		5.2		4.4	4.9					4.9	4.9	4.9
Vehicle Extension (s)		3.8		2.0	4.6					2.0	2.0	2.0
Lane Grp Cap (vph)		2514		329	4552					387	400	364
v/s Ratio Prot		c0.37		c0.17	0.41							
v/s Ratio Perm										c0.16	0.09	0.02
v/c Ratio		0.74		0.89	0.58					0.70	0.38	0.07
Uniform Delay, d1		27.2		53.6	9.6					47.7	43.8	40.6
Progression Factor		1.00		1.29	0.02					1.00	1.00	1.00
Incremental Delay, d2		2.0		7.5	0.1					4.6	0.2	0.0
Delay (s)		29.2		76.5	0.3					52.3	44.1	40.6
Level of Service		C		E	A					D	D	D
Approach Delay (s)		29.2			8.0			0.0			48.2	
Approach LOS		C			A			A			D	

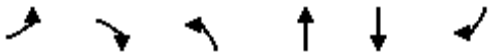
Intersection Summary			
HCM 2000 Control Delay	19.2	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.76		
Actuated Cycle Length (s)	135.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	74.9%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	320	100	160	240	0	120	0	160	60	140	10
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0		4.0	4.0		4.0		4.0	4.0	4.0	
Lane Util. Factor		0.95		1.00	0.95		1.00		1.00	1.00	1.00	
Frpb, ped/bikes		0.97		1.00	1.00		1.00		0.98	1.00	1.00	
Flpb, ped/bikes		1.00		0.99	1.00		1.00		1.00	1.00	1.00	
Frt		0.96		1.00	1.00		1.00		0.85	1.00	0.99	
Flt Protected		1.00		0.95	1.00		0.95		1.00	0.95	1.00	
Satd. Flow (prot)		3324		1746	3539		1770		1548	1770	1842	
Flt Permitted		1.00		0.43	1.00		0.95		1.00	0.95	1.00	
Satd. Flow (perm)		3324		784	3539		1770		1548	1770	1842	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	348	109	174	261	0	130	0	174	65	152	11
RTOR Reduction (vph)	0	14	0	0	0	0	0	0	81	0	3	0
Lane Group Flow (vph)	0	443	0	174	261	0	130	0	93	65	160	0
Confl. Peds. (#/hr)			21	21		47	2		4			2
Turn Type		NA		pm+pt	NA		Prot		Perm	Split	NA	
Protected Phases		2		1	6		3			4	4	
Permitted Phases				6					2			
Actuated Green, G (s)		68.7		83.0	83.0		14.9		68.7	17.9	17.9	
Effective Green, g (s)		69.6		83.4	83.9		15.3		69.6	18.8	18.8	
Actuated g/C Ratio		0.54		0.64	0.65		0.12		0.54	0.14	0.14	
Clearance Time (s)		4.9		4.4	4.9		4.4		4.9	4.9	4.9	
Vehicle Extension (s)		6.7		2.0	6.7		3.0		6.7	3.0	3.0	
Lane Grp Cap (vph)		1779		579	2284		208		828	255	266	
v/s Ratio Prot		0.13		c0.02	0.07		c0.07			0.04	c0.09	
v/s Ratio Perm				c0.17					0.06			
v/c Ratio		0.25		0.30	0.11		0.62		0.11	0.25	0.60	
Uniform Delay, d1		16.2		9.7	8.8		54.6		14.9	49.4	52.1	
Progression Factor		1.00		1.00	1.00		1.00		1.00	1.00	1.00	
Incremental Delay, d2		0.3		0.1	0.1		5.7		0.3	0.5	3.8	
Delay (s)		16.5		9.8	8.9		60.4		15.2	49.9	55.9	
Level of Service		B		A	A		E		B	D	E	
Approach Delay (s)		16.5			9.3			34.5			54.2	
Approach LOS		B			A			C			D	

Intersection Summary			
HCM 2000 Control Delay	24.2	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.40		
Actuated Cycle Length (s)	130.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	50.0%	ICU Level of Service	A
Analysis Period (min)	15		

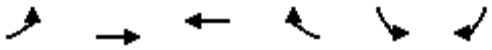
c Critical Lane Group



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (vph)	80	190	320	460	430	150
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0		4.4	4.0	4.9	
Lane Util. Factor	1.00		1.00	0.91	0.91	
Frpb, ped/bikes	0.99		1.00	1.00	1.00	
Flpb, ped/bikes	1.00		1.00	1.00	1.00	
Frt	0.90		1.00	1.00	0.96	
Flt Protected	0.99		0.95	1.00	1.00	
Satd. Flow (prot)	1642		1770	5085	4888	
Flt Permitted	0.99		0.95	1.00	1.00	
Satd. Flow (perm)	1642		1770	5085	4888	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	87	207	348	500	467	163
RTOR Reduction (vph)	81	0	0	0	34	0
Lane Group Flow (vph)	213	0	348	500	596	0
Confl. Peds. (#/hr)		2				
Turn Type	Prot		Prot	NA	NA	
Protected Phases	2		3	8	4	
Permitted Phases						
Actuated Green, G (s)	20.6		29.9	91.4	57.5	
Effective Green, g (s)	20.6		29.5	91.4	56.6	
Actuated g/C Ratio	0.17		0.25	0.76	0.47	
Clearance Time (s)	4.0		4.0	4.0	4.0	
Vehicle Extension (s)	3.0		3.0	3.0	3.0	
Lane Grp Cap (vph)	281		435	3873	2305	
v/s Ratio Prot	c0.13		c0.20	0.10	c0.12	
v/s Ratio Perm						
v/c Ratio	0.76		0.80	0.13	0.26	
Uniform Delay, d1	47.3		42.5	3.8	19.1	
Progression Factor	1.00		0.94	1.42	1.00	
Incremental Delay, d2	11.1		10.0	0.1	0.3	
Delay (s)	58.4		50.1	5.5	19.3	
Level of Service	E		D	A	B	
Approach Delay (s)	58.4			23.8	19.3	
Approach LOS	E			C	B	

Intersection Summary			
HCM 2000 Control Delay	27.9	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.50		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	13.3
Intersection Capacity Utilization	56.4%	ICU Level of Service	B
Analysis Period (min)	15		

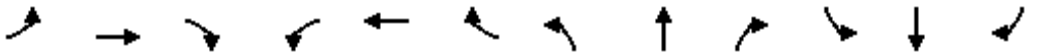
c Critical Lane Group



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (veh/h)	50	140	80	40	20	30
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	54	152	87	43	22	33
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type		None	None			
Median storage veh)						
Upstream signal (ft)		1157	644			
pX, platoon unblocked						
vC, conflicting volume	130				370	109
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	130				370	109
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	96				96	97
cM capacity (veh/h)	1455				607	945

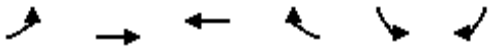
Direction, Lane #	EB 1	EB 2	WB 1	SB 1
Volume Total	54	152	130	54
Volume Left	54	0	0	22
Volume Right	0	0	43	33
cSH	1455	1700	1700	773
Volume to Capacity	0.04	0.09	0.08	0.07
Queue Length 95th (ft)	3	0	0	6
Control Delay (s)	7.6	0.0	0.0	10.0
Lane LOS	A			B
Approach Delay (s)	2.0		0.0	10.0
Approach LOS				B

Intersection Summary			
Average Delay	2.4		
Intersection Capacity Utilization	19.4%	ICU Level of Service	A
Analysis Period (min)	15		



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	110	1890	0	0	2660	590	20	200	40	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0			4.0	4.0		4.0				
Lane Util. Factor	1.00	0.91			0.91	1.00		0.95				
Frt	1.00	1.00			1.00	0.85		0.98				
Flt Protected	0.95	1.00			1.00	1.00		1.00				
Satd. Flow (prot)	1770	5085			5085	1583		3445				
Flt Permitted	0.95	1.00			1.00	1.00		1.00				
Satd. Flow (perm)	1770	5085			5085	1583		3445				
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	120	2054	0	0	2891	641	22	217	43	0	0	0
RTOR Reduction (vph)	0	0	0	0	0	145	0	8	0	0	0	0
Lane Group Flow (vph)	120	2054	0	0	2891	496	0	274	0	0	0	0
Turn Type	Prot	NA			NA	Perm	Split	NA				
Protected Phases	5	2			6		4	4				
Permitted Phases						6						
Actuated Green, G (s)	13.6	94.0			76.0	76.0		31.2				
Effective Green, g (s)	14.0	94.9			76.9	76.9		32.1				
Actuated g/C Ratio	0.10	0.70			0.57	0.57		0.24				
Clearance Time (s)	4.4	4.9			4.9	4.9		4.9				
Vehicle Extension (s)	2.0	3.8			4.6	4.6		2.0				
Lane Grp Cap (vph)	183	3574			2896	901		819				
v/s Ratio Prot	0.07	c0.40			c0.57			c0.08				
v/s Ratio Perm						0.31						
v/c Ratio	0.66	0.57			1.00	0.55		0.33				
Uniform Delay, d1	58.2	10.0			29.0	18.2		42.6				
Progression Factor	0.82	0.84			1.00	1.00		1.00				
Incremental Delay, d2	4.5	0.5			16.3	2.4		0.1				
Delay (s)	52.1	8.9			45.3	20.6		42.7				
Level of Service	D	A			D	C		D				
Approach Delay (s)		11.2			40.8			42.7			0.0	
Approach LOS		B			D			D			A	

Intersection Summary			
HCM 2000 Control Delay	30.2	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.79		
Actuated Cycle Length (s)	135.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	74.9%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (veh/h)	10	530	400	300	0	0
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	11	576	435	326	0	0
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type		None	None			
Median storage veh)						
Upstream signal (ft)		480	811			
pX, platoon unblocked	0.94				0.96	0.94
vC, conflicting volume	761				908	380
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	618				625	213
tC, single (s)	4.1				6.8	6.9
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	99				100	100
cM capacity (veh/h)	901				396	744

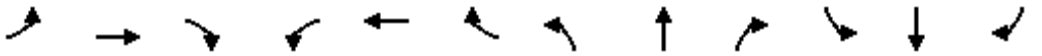
Direction, Lane #	EB 1	EB 2	EB 3	WB 1	WB 2
Volume Total	11	288	288	290	471
Volume Left	11	0	0	0	0
Volume Right	0	0	0	0	326
cSH	901	1700	1700	1700	1700
Volume to Capacity	0.01	0.17	0.17	0.17	0.28
Queue Length 95th (ft)	1	0	0	0	0
Control Delay (s)	9.0	0.0	0.0	0.0	0.0
Lane LOS	A				
Approach Delay (s)	0.2			0.0	
Approach LOS					

Intersection Summary			
Average Delay	0.1		
Intersection Capacity Utilization	24.0%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Sign Control	Stop		Stop			Stop
Volume (vph)	170	0	0	130	310	570
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	185	0	0	141	337	620

Direction, Lane #	WB 1	NB 1	SB 1	SB 2
Volume Total (vph)	185	141	337	620
Volume Left (vph)	185	0	337	0
Volume Right (vph)	0	141	0	0
Hadj (s)	0.23	-0.57	0.53	0.03
Departure Headway (s)	6.2	5.0	5.8	5.3
Degree Utilization, x	0.32	0.19	0.54	0.91
Capacity (veh/h)	567	702	611	675
Control Delay (s)	12.0	9.1	14.3	37.9
Approach Delay (s)	12.0	9.1	29.6	
Approach LOS	B	A	D	

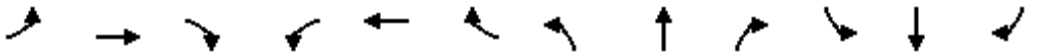
Intersection Summary			
Delay	24.8		
Level of Service	C		
Intersection Capacity Utilization	46.5%	ICU Level of Service	A
Analysis Period (min)	15		



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Volume (vph)	100	20	50	40	20	10	20	30	20	20	230	490
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	109	22	54	43	22	11	22	33	22	22	250	533

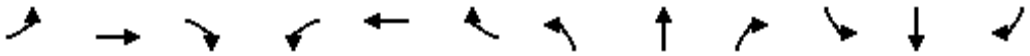
Direction, Lane #	EB 1	EB 2	WB 1	NB 1	SB 1	SB 2
Volume Total (vph)	120	65	76	76	272	533
Volume Left (vph)	109	0	43	22	22	0
Volume Right (vph)	0	54	11	22	0	533
Hadj (s)	0.49	-0.55	0.06	-0.08	0.07	-0.67
Departure Headway (s)	7.1	6.1	6.7	6.1	5.5	4.8
Degree Utilization, x	0.24	0.11	0.14	0.13	0.42	0.71
Capacity (veh/h)	473	547	493	553	632	730
Control Delay (s)	11.1	8.6	10.9	10.0	11.3	17.5
Approach Delay (s)	10.2		10.9	10.0	15.4	
Approach LOS	B		B	B	C	

Intersection Summary				
Delay	13.9			
Level of Service	B			
Intersection Capacity Utilization	48.1%	ICU Level of Service	A	
Analysis Period (min)	15			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	340	180	540	520	10	0	0	0	250	320	350
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0	4.0	4.0	4.0					4.0	4.0	4.0
Lane Util. Factor		0.95	1.00	0.97	0.95					0.91	0.91	1.00
Frt		1.00	0.85	1.00	1.00					1.00	1.00	0.85
Flt Protected		1.00	1.00	0.95	1.00					0.95	0.99	1.00
Satd. Flow (prot)		3539	1583	3433	3529					1610	3358	1583
Flt Permitted		1.00	1.00	0.95	1.00					0.95	0.99	1.00
Satd. Flow (perm)		3539	1583	3433	3529					1610	3358	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	370	196	587	565	11	0	0	0	272	348	380
RTOR Reduction (vph)	0	0	105	0	1	0	0	0	0	0	0	231
Lane Group Flow (vph)	0	370	91	587	575	0	0	0	0	190	430	149
Turn Type		NA	Perm	Prot	NA					Perm	NA	Perm
Protected Phases		2		1	6						4	
Permitted Phases			2							4		4
Actuated Green, G (s)		31.2	31.2	16.1	51.7					18.5	18.5	18.5
Effective Green, g (s)		32.1	32.1	16.5	52.6					19.4	19.4	19.4
Actuated g/C Ratio		0.40	0.40	0.21	0.66					0.24	0.24	0.24
Clearance Time (s)		4.9	4.9	4.4	4.9					4.9	4.9	4.9
Vehicle Extension (s)		3.8	3.8	2.0	4.2					2.0	2.0	2.0
Lane Grp Cap (vph)		1420	635	708	2320					390	814	383
v/s Ratio Prot		c0.10		c0.17	0.16							
v/s Ratio Perm			0.06							0.12	0.13	0.09
v/c Ratio		0.26	0.14	0.83	0.25					0.49	0.53	0.39
Uniform Delay, d1		16.0	15.2	30.4	5.6					26.0	26.3	25.3
Progression Factor		1.00	1.00	1.00	1.00					1.00	1.00	1.00
Incremental Delay, d2		0.4	0.5	7.6	0.3					0.4	0.3	0.2
Delay (s)		16.5	15.7	38.0	5.9					26.4	26.6	25.6
Level of Service		B	B	D	A					C	C	C
Approach Delay (s)		16.2			22.1			0.0			26.2	
Approach LOS		B			C			A			C	

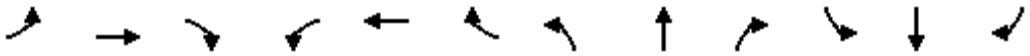
Intersection Summary			
HCM 2000 Control Delay	22.4	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.47		
Actuated Cycle Length (s)	80.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	47.3%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	0	0	30	40	0	0	0	0	0	0	1510	70
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	0	33	43	0	0	0	0	0	0	1641	76
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)								1066				
pX, platoon unblocked												
vC, conflicting volume	1679	1679	585	580	1717	0	1717			0		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	1679	1679	585	580	1717	0	1717			0		
tC, single (s)	7.5	6.5	6.9	7.5	6.5	6.9	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	100	100	93	88	100	100	100			100		
cM capacity (veh/h)	62	94	454	369	89	1084	365			1622		

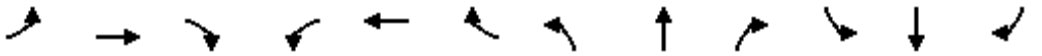
Direction, Lane #	EB 1	WB 1	SB 1	SB 2	SB 3
Volume Total	33	43	657	657	404
Volume Left	0	43	0	0	0
Volume Right	33	0	0	0	76
cSH	454	369	1700	1700	1700
Volume to Capacity	0.07	0.12	0.39	0.39	0.24
Queue Length 95th (ft)	6	10	0	0	0
Control Delay (s)	13.5	16.0	0.0	0.0	0.0
Lane LOS	B	C			
Approach Delay (s)	13.5	16.0	0.0		
Approach LOS	B	C			

Intersection Summary				
Average Delay	0.6			
Intersection Capacity Utilization	49.2%	ICU Level of Service	A	
Analysis Period (min)	15			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	180	150	170	340	0	0	0	0	430	1240	340
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0	4.0		4.0					4.0	4.0	
Lane Util. Factor		1.00	1.00		0.95					1.00	0.91	
Frt		1.00	0.85		1.00					1.00	0.97	
Flt Protected		1.00	1.00		0.98					0.95	1.00	
Satd. Flow (prot)		1863	1583		3481					1770	4921	
Flt Permitted		1.00	1.00		0.77					0.95	1.00	
Satd. Flow (perm)		1863	1583		2711					1770	4921	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	196	163	185	370	0	0	0	0	467	1348	370
RTOR Reduction (vph)	0	0	35	0	0	0	0	0	0	0	76	0
Lane Group Flow (vph)	0	196	128	0	555	0	0	0	0	467	1642	0
Turn Type		NA	Perm	Perm	NA					Perm	NA	
Protected Phases		4			8						6	
Permitted Phases			4	8						6		
Actuated Green, G (s)		21.3	21.3		21.3					30.7	30.7	
Effective Green, g (s)		24.0	24.0		24.0					33.0	33.0	
Actuated g/C Ratio		0.37	0.37		0.37					0.51	0.51	
Clearance Time (s)		6.7	6.7		6.7					6.3	6.3	
Vehicle Extension (s)		2.0	2.0		2.5					4.6	4.6	
Lane Grp Cap (vph)		687	584		1000					898	2498	
v/s Ratio Prot		0.11									c0.33	
v/s Ratio Perm			0.08		c0.20					0.26		
v/c Ratio		0.29	0.22		0.56					0.52	0.66	
Uniform Delay, d1		14.5	14.1		16.3					10.7	11.8	
Progression Factor		1.00	1.00		1.00					1.00	1.00	
Incremental Delay, d2		1.0	0.9		2.2					2.2	1.4	
Delay (s)		15.5	14.9		18.5					12.9	13.2	
Level of Service		B	B		B					B	B	
Approach Delay (s)		15.2			18.5			0.0			13.1	
Approach LOS		B			B			A			B	

Intersection Summary			
HCM 2000 Control Delay	14.3	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.61		
Actuated Cycle Length (s)	65.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	65.4%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

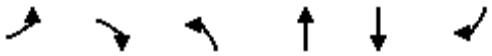


Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	660	80	40	500	0	0	0	0	540	340	510
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		6.7		4.0	6.7						6.3	4.0
Lane Util. Factor		0.95		1.00	0.95						0.86	0.86
Frt		0.98		1.00	1.00						1.00	0.85
Flt Protected		1.00		0.95	1.00						0.97	1.00
Satd. Flow (prot)		3482		1770	3539						4663	1362
Flt Permitted		1.00		0.95	1.00						0.97	1.00
Satd. Flow (perm)		3482		1770	3539						4663	1362
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	717	87	43	543	0	0	0	0	587	370	554
RTOR Reduction (vph)	0	14	0	0	0	0	0	0	0	0	0	124
Lane Group Flow (vph)	0	790	0	43	543	0	0	0	0	0	957	430
Turn Type		NA		Prot	NA					Perm	NA	Perm
Protected Phases		2		1	6						4	
Permitted Phases										4		4
Actuated Green, G (s)		22.4		2.8	27.9						25.1	25.1
Effective Green, g (s)		20.6		3.2	27.8						24.2	26.5
Actuated g/C Ratio		0.32		0.05	0.43						0.37	0.41
Clearance Time (s)		4.9		4.4	6.6						5.4	5.4
Vehicle Extension (s)		1.0		2.0	1.0						1.0	1.0
Lane Grp Cap (vph)		1103		87	1513						1736	555
v/s Ratio Prot		c0.23		0.02	c0.15							
v/s Ratio Perm											0.21	c0.32
v/c Ratio		0.72		0.49	0.36						0.94dl	0.78
Uniform Delay, d1		19.6		30.1	12.6						16.1	16.7
Progression Factor		1.00		1.34	0.84						1.00	1.00
Incremental Delay, d2		4.0		1.5	0.6						0.2	6.1
Delay (s)		23.6		42.0	11.1						16.3	22.8
Level of Service		C		D	B						B	C
Approach Delay (s)		23.6			13.4			0.0			18.7	
Approach LOS		C			B			A			B	

Intersection Summary			
HCM 2000 Control Delay	19.5	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.77		
Actuated Cycle Length (s)	65.0	Sum of lost time (s)	17.0
Intersection Capacity Utilization	79.2%	ICU Level of Service	D
Analysis Period (min)	15		

dl Defacto Left Lane. Recode with 1 though lane as a left lane.

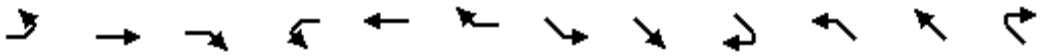
c Critical Lane Group



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (vph)	120	1100	1800	760	610	130
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	0.88	0.97	0.91	0.91	1.00
Frpb, ped/bikes	1.00	0.99	1.00	1.00	1.00	1.00
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected	0.95	1.00	0.95	1.00	1.00	1.00
Satd. Flow (prot)	1770	2766	3433	5085	5085	1583
Flt Permitted	0.95	1.00	0.95	1.00	1.00	1.00
Satd. Flow (perm)	1770	2766	3433	5085	5085	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	130	1196	1957	826	663	141
RTOR Reduction (vph)	0	25	0	0	0	1
Lane Group Flow (vph)	130	1171	1957	826	663	140
Confl. Peds. (#/hr)	129	61	34			
Turn Type	Prot	pm+ov	Prot	NA	NA	pm+ov
Protected Phases	5	7	7	4	8	5
Permitted Phases		5				8
Actuated Green, G (s)	14.1	76.0	61.9	97.9	32.0	46.1
Effective Green, g (s)	14.1	76.0	61.9	97.9	32.0	46.1
Actuated g/C Ratio	0.12	0.63	0.52	0.82	0.27	0.38
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	207	1844	1770	4148	1356	660
v/s Ratio Prot	0.07	c0.33	c0.57	0.16	c0.13	0.02
v/s Ratio Perm		0.10				0.06
v/c Ratio	0.63	0.64	1.11	0.20	0.49	0.21
Uniform Delay, d1	50.5	13.5	29.1	2.4	37.1	24.8
Progression Factor	1.00	1.00	0.42	0.57	0.80	0.94
Incremental Delay, d2	5.8	0.7	51.3	0.0	1.2	0.2
Delay (s)	56.3	14.2	63.4	1.4	31.1	23.4
Level of Service	E	B	E	A	C	C
Approach Delay (s)	18.3			45.0	29.7	
Approach LOS	B			D	C	

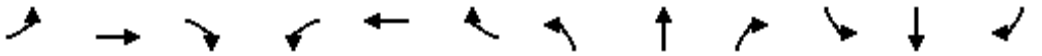
Intersection Summary			
HCM 2000 Control Delay	35.3	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.87		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	79.8%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	SEL	SET	SER	NWL	NWT	NWR
Lane Configurations												
Volume (vph)	100	280	0	0	550	320	60	0	60	250	20	180
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0			4.0	4.0		4.0		4.0	4.0	4.0
Lane Util. Factor	1.00	0.95			0.95	1.00		1.00		0.95	0.95	1.00
Frt	1.00	1.00			1.00	0.85		0.93		1.00	1.00	0.85
Flt Protected	0.95	1.00			1.00	1.00		0.98		0.95	0.96	1.00
Satd. Flow (prot)	1770	3539			3539	1583		1695		1681	1697	1583
Flt Permitted	0.95	1.00			1.00	1.00		0.76		0.50	0.54	1.00
Satd. Flow (perm)	1770	3539			3539	1583		1326		893	964	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	109	304	0	0	598	348	65	0	65	272	22	196
RTOR Reduction (vph)	0	0	0	0	0	232	0	118	0	0	0	151
Lane Group Flow (vph)	109	304	0	0	598	116	0	12	0	147	147	45
Turn Type	Prot	NA			NA	Perm	Perm	NA		Perm	NA	Perm
Protected Phases	5	2			6			8			7	
Permitted Phases						6	8			7		7
Actuated Green, G (s)	4.6	28.4			19.8	19.8		5.3		13.7	13.7	13.7
Effective Green, g (s)	4.6	28.4			19.8	19.8		5.3		13.7	13.7	13.7
Actuated g/C Ratio	0.08	0.48			0.33	0.33		0.09		0.23	0.23	0.23
Clearance Time (s)	4.0	4.0			4.0	4.0		4.0		4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0			3.0	3.0		3.0		3.0	3.0	3.0
Lane Grp Cap (vph)	137	1692			1179	527		118		205	222	365
v/s Ratio Prot	c0.06	0.09			c0.17							
v/s Ratio Perm						0.07		c0.01		c0.16	0.15	0.03
v/c Ratio	0.80	0.18			0.51	0.22		0.10		0.72	0.66	0.12
Uniform Delay, d1	26.9	8.8			15.9	14.2		24.9		21.1	20.7	18.1
Progression Factor	1.00	1.00			1.00	1.00		1.00		1.00	1.00	1.00
Incremental Delay, d2	26.5	0.2			1.6	1.0		0.4		11.3	7.2	0.2
Delay (s)	53.4	9.1			17.4	15.2		25.2		32.4	28.0	18.3
Level of Service	D	A			B	B		C		C	C	B
Approach Delay (s)		20.8			16.6			25.2			25.4	
Approach LOS		C			B			C			C	

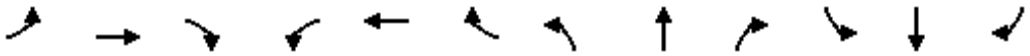
Intersection Summary			
HCM 2000 Control Delay	25.8	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.55		
Actuated Cycle Length (s)	59.4	Sum of lost time (s)	16.0
Intersection Capacity Utilization	44.4%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	210	60	250	610	0	0	0	0	170	30	240
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0		5.9	5.9					1.8	1.8	1.8
Lane Util. Factor		0.95		1.00	1.00					0.95	0.95	1.00
Frpb, ped/bikes		1.00		1.00	1.00					1.00	1.00	1.00
Flpb, ped/bikes		1.00		1.00	1.00					1.00	1.00	1.00
Frt		0.97		1.00	1.00					1.00	1.00	0.85
Flt Protected		1.00		0.95	1.00					0.95	0.97	1.00
Satd. Flow (prot)		3408		1763	1863					1681	1708	1583
Flt Permitted		1.00		0.57	1.00					0.95	0.97	1.00
Satd. Flow (perm)		3408		1063	1863					1681	1708	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	228	65	272	663	0	0	0	0	185	33	261
RTOR Reduction (vph)	0	34	0	0	0	0	0	0	0	0	0	76
Lane Group Flow (vph)	0	259	0	272	663	0	0	0	0	100	118	185
Confl. Peds. (#/hr)	5		5	5		10						
Turn Type		NA		Perm	NA					Perm	NA	custom
Protected Phases		7			8						6	7
Permitted Phases				8						6		6
Actuated Green, G (s)		11.1		25.9	25.9					10.0	10.0	21.1
Effective Green, g (s)		11.1		26.2	26.2					12.2	12.2	25.5
Actuated g/C Ratio		0.18		0.43	0.43					0.20	0.20	0.42
Clearance Time (s)		4.0		6.2	6.2					4.0	4.0	4.0
Vehicle Extension (s)		3.0		2.0	2.0					3.0	3.0	3.0
Lane Grp Cap (vph)		618		455	797					335	340	706
v/s Ratio Prot		c0.08			c0.36							0.06
v/s Ratio Perm				0.26						0.06	0.07	0.06
v/c Ratio		0.42		0.60	0.83					0.30	0.35	0.26
Uniform Delay, d1		22.2		13.5	15.5					20.9	21.1	11.7
Progression Factor		1.00		1.00	1.00					1.00	1.00	1.00
Incremental Delay, d2		0.5		1.4	7.1					0.5	0.6	0.2
Delay (s)		22.7		14.9	22.6					21.4	21.7	11.9
Level of Service		C		B	C					C	C	B
Approach Delay (s)		22.7			20.4			0.0			16.3	
Approach LOS		C			C			A			B	

Intersection Summary			
HCM 2000 Control Delay	19.6	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.61		
Actuated Cycle Length (s)	61.2	Sum of lost time (s)	11.7
Intersection Capacity Utilization	55.2%	ICU Level of Service	B
Analysis Period (min)	15		

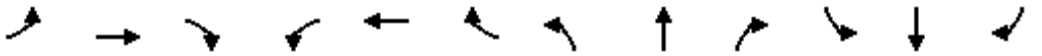
c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	20	30	30	400	110	170	40	1290	160	140	730	130
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.3	4.3		4.0	4.0		4.0	4.0	
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	0.91		1.00	0.91	
Frpb, ped/bikes	1.00	0.99		1.00	1.00		1.00	1.00		1.00	1.00	
Flpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Frt	1.00	0.93		1.00	0.91		1.00	0.98		1.00	0.98	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1770	1710		1764	1693		1770	5001		1770	4953	
Flt Permitted	0.44	1.00		0.71	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (perm)	823	1710		1326	1693		1770	5001		1770	4953	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	22	33	33	435	120	185	43	1402	174	152	793	141
RTOR Reduction (vph)	0	21	0	0	64	0	0	16	0	0	26	0
Lane Group Flow (vph)	22	45	0	435	241	0	43	1560	0	152	908	0
Confl. Peds. (#/hr)			4	4			1					1
Turn Type	Perm	NA		Perm	NA		Prot	NA		Prot	NA	
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4			8								
Actuated Green, G (s)	31.8	31.8		31.1	31.1		3.5	33.5		9.3	39.1	
Effective Green, g (s)	31.8	31.8		31.5	31.5		3.5	34.9		9.8	41.2	
Actuated g/C Ratio	0.36	0.36		0.36	0.36		0.04	0.39		0.11	0.47	
Clearance Time (s)	4.0	4.0		4.7	4.7		4.0	5.4		4.5	6.1	
Vehicle Extension (s)	2.0	2.0		3.0	3.0		2.0	4.8		3.0	3.7	
Lane Grp Cap (vph)	295	614		471	602		70	1972		196	2305	
v/s Ratio Prot		0.03			0.14		0.02	c0.31		c0.09	0.18	
v/s Ratio Perm	0.03			c0.33								
v/c Ratio	0.07	0.07		0.92	0.40		0.61	0.79		0.78	0.39	
Uniform Delay, d1	18.7	18.7		27.3	21.4		41.8	23.6		38.3	15.5	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	0.0	0.0		23.8	0.4		10.7	3.3		17.3	0.5	
Delay (s)	18.7	18.7		51.1	21.8		52.6	26.9		55.6	16.0	
Level of Service	B	B		D	C		D	C		E	B	
Approach Delay (s)		18.7			39.1			27.6			21.5	
Approach LOS		B			D			C			C	

Intersection Summary			
HCM 2000 Control Delay	27.9	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.84		
Actuated Cycle Length (s)	88.5	Sum of lost time (s)	12.3
Intersection Capacity Utilization	75.3%	ICU Level of Service	D
Analysis Period (min)	15		

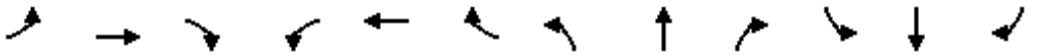
c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	660	570	160	140	720	150	300	680	100	80	670	220
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	4.0
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00	0.91		1.00	0.91	1.00
Frpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	0.99
Flpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	1.00
Frt	1.00	0.97		1.00	0.97		1.00	0.98		1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1770	3423		1770	3438		1770	4978		1770	5085	1571
Flt Permitted	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)	1770	3423		1770	3438		1770	4978		1770	5085	1571
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	717	620	174	152	783	163	326	739	109	87	728	239
RTOR Reduction (vph)	0	19	0	0	13	0	0	15	0	0	0	51
Lane Group Flow (vph)	717	775	0	152	933	0	326	833	0	87	728	188
Confl. Peds. (#/hr)	4					4	5		1	1		5
Turn Type	Prot	NA		Prot	NA		Prot	NA		Prot	NA	pm+ov
Protected Phases	7	4		3	8		5	2		1	6	7
Permitted Phases												6
Actuated Green, G (s)	40.6	57.2		15.0	31.0		18.6	30.2		8.7	20.2	60.8
Effective Green, g (s)	41.0	58.4		15.4	32.8		19.0	31.1		9.1	21.2	61.6
Actuated g/C Ratio	0.32	0.45		0.12	0.25		0.15	0.24		0.07	0.16	0.47
Clearance Time (s)	4.4	5.2		4.4	5.8		4.4	4.9		4.4	5.0	4.4
Vehicle Extension (s)	2.0	3.9		2.0	2.7		2.0	3.3		2.0	4.1	2.0
Lane Grp Cap (vph)	558	1537		209	867		258	1190		123	829	744
v/s Ratio Prot	c0.41	0.23		0.09	c0.27		c0.18	0.17		0.05	c0.14	0.08
v/s Ratio Perm												0.04
v/c Ratio	1.28	0.50		0.73	1.08		1.26	0.70		0.71	0.88	0.25
Uniform Delay, d1	44.5	25.5		55.3	48.6		55.5	45.2		59.1	53.1	20.4
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	141.4	0.3		10.2	53.0		145.8	3.4		14.1	12.7	0.1
Delay (s)	185.9	25.8		65.5	101.6		201.3	48.6		73.2	65.8	20.5
Level of Service	F	C		E	F		F	D		E	E	C
Approach Delay (s)		101.8			96.6			91.0			56.2	
Approach LOS		F			F			F			E	

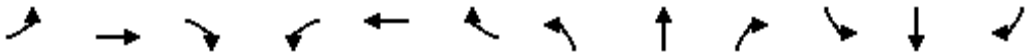
Intersection Summary			
HCM 2000 Control Delay	88.1	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.14		
Actuated Cycle Length (s)	130.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	106.4%	ICU Level of Service	G
Analysis Period (min)	15		

c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	120	300	110	320	380	110	220	120	200	80	150	100
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	5.5	5.5	4.0	5.4	5.4
Lane Util. Factor	1.00	0.95	0.88	0.97	0.95	1.00	0.97	1.00	1.00	1.00	0.91	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1770	3539	2787	3433	3539	1583	3433	1863	1583	1770	5085	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1770	3539	2787	3433	3539	1583	3433	1863	1583	1770	5085	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	130	326	120	348	413	120	239	130	217	87	163	109
RTOR Reduction (vph)	0	0	65	0	0	74	0	0	146	0	0	85
Lane Group Flow (vph)	130	326	55	348	413	46	239	130	71	87	163	24
Turn Type	Prot	NA	pm+ov	Prot	NA	Perm	Prot	NA	pm+ov	Prot	NA	Perm
Protected Phases	5	2	3	1	6		3	8	1	7	4	
Permitted Phases			2			6			8			4
Actuated Green, G (s)	9.6	32.8	40.4	10.9	34.1	34.1	7.6	20.8	31.7	7.3	20.5	20.5
Effective Green, g (s)	10.0	33.7	41.2	11.3	35.0	35.0	8.0	20.2	29.5	7.7	20.0	20.0
Actuated g/C Ratio	0.11	0.37	0.46	0.12	0.39	0.39	0.09	0.22	0.33	0.09	0.22	0.22
Clearance Time (s)	4.4	4.9	4.4	4.4	4.9	4.9	4.4	4.9	4.4	4.4	4.9	4.9
Vehicle Extension (s)	2.0	2.1	2.0	2.0	2.3	2.3	2.0	4.5	2.0	2.0	4.5	4.5
Lane Grp Cap (vph)	195	1319	1270	429	1370	612	303	416	516	150	1125	350
v/s Ratio Prot	0.07	0.09	0.00	c0.10	c0.12		c0.07	c0.07	0.01	0.05	0.03	
v/s Ratio Perm			0.02			0.03			0.03			0.02
v/c Ratio	0.67	0.25	0.04	0.81	0.30	0.08	0.79	0.31	0.14	0.58	0.14	0.07
Uniform Delay, d1	38.6	19.6	13.7	38.5	19.2	17.5	40.4	29.3	21.5	39.8	28.3	27.8
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	6.5	0.4	0.0	10.6	0.6	0.2	11.8	0.7	0.0	3.4	0.1	0.1
Delay (s)	45.1	20.0	13.7	49.1	19.8	17.7	52.2	30.0	21.5	43.1	28.4	28.0
Level of Service	D	C	B	D	B	B	D	C	C	D	C	C
Approach Delay (s)		24.4			31.1			35.9			31.9	
Approach LOS		C			C			D			C	

Intersection Summary			
HCM 2000 Control Delay	30.8	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.45		
Actuated Cycle Length (s)	90.4	Sum of lost time (s)	19.0
Intersection Capacity Utilization	44.1%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	140	230	70	20	140	210	50	180	250	20	20	30
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0			4.0			4.0			4.0	
Lane Util. Factor		1.00			1.00			1.00			1.00	
Frpb, ped/bikes		1.00			1.00			0.98			1.00	
Flpb, ped/bikes		1.00			1.00			1.00			1.00	
Frt		0.98			0.92			0.93			0.94	
Flt Protected		0.98			1.00			0.99			0.99	
Satd. Flow (prot)		1787			1715			1691			1728	
Flt Permitted		0.78			0.97			0.96			0.80	
Satd. Flow (perm)		1410			1664			1634			1398	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	152	250	76	22	152	228	54	196	272	22	22	33
RTOR Reduction (vph)	0	10	0	0	40	0	0	57	0	0	23	0
Lane Group Flow (vph)	0	468	0	0	362	0	0	465	0	0	54	0
Confl. Peds. (#/hr)			3	3					8	8		
Turn Type	pm+pt	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases	5	2			6			8			4	
Permitted Phases	2			6			8			4		
Actuated Green, G (s)		39.1			39.1			20.3			20.3	
Effective Green, g (s)		40.0			40.0			21.2			21.2	
Actuated g/C Ratio		0.58			0.58			0.31			0.31	
Clearance Time (s)		4.9			4.9			4.9			4.9	
Vehicle Extension (s)		2.0			2.0			2.0			2.0	
Lane Grp Cap (vph)		815			961			500			428	
v/s Ratio Prot												
v/s Ratio Perm		c0.33			0.22			c0.28			0.04	
v/c Ratio		0.57			0.38			0.93			0.13	
Uniform Delay, d1		9.2			7.9			23.3			17.3	
Progression Factor		1.00			1.00			1.00			1.00	
Incremental Delay, d2		0.6			1.1			23.8			0.0	
Delay (s)		9.8			9.0			47.1			17.4	
Level of Service		A			A			D			B	
Approach Delay (s)		9.8			9.0			47.1			17.4	
Approach LOS		A			A			D			B	

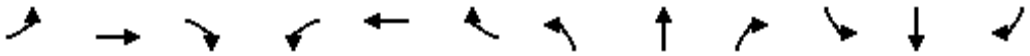
Intersection Summary			
HCM 2000 Control Delay	23.2	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.75		
Actuated Cycle Length (s)	69.2	Sum of lost time (s)	12.0
Intersection Capacity Utilization	85.8%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (vph)	430	150	220	660	150	150
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0		4.0	4.9	4.0	4.0
Lane Util. Factor	0.91		1.00	0.95	1.00	1.00
Frpb, ped/bikes	0.99		1.00	1.00	1.00	1.00
Flpb, ped/bikes	1.00		1.00	1.00	1.00	1.00
Frt	0.96		1.00	1.00	1.00	0.85
Flt Protected	1.00		0.95	1.00	0.95	1.00
Satd. Flow (prot)	4850		1770	3539	1770	1583
Flt Permitted	1.00		0.95	1.00	0.95	1.00
Satd. Flow (perm)	4850		1770	3539	1770	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	467	163	239	717	163	163
RTOR Reduction (vph)	81	0	0	0	0	124
Lane Group Flow (vph)	549	0	239	717	163	39
Confl. Peds. (#/hr)		7	7		30	15
Turn Type	NA		Prot	NA	Prot	Prot
Protected Phases	2		1	6	8	8
Permitted Phases						
Actuated Green, G (s)	21.9		10.4	36.7	13.4	13.4
Effective Green, g (s)	23.8		10.8	36.7	14.3	14.3
Actuated g/C Ratio	0.40		0.18	0.61	0.24	0.24
Clearance Time (s)	4.9		4.4	4.9	4.9	4.9
Vehicle Extension (s)	2.9		2.0	2.0	2.0	2.0
Lane Grp Cap (vph)	1927		319	2168	422	377
v/s Ratio Prot	0.11		c0.14	c0.20	c0.09	0.02
v/s Ratio Perm						
v/c Ratio	0.29		0.75	0.33	0.39	0.10
Uniform Delay, d1	12.3		23.3	5.6	19.1	17.8
Progression Factor	1.00		1.00	1.00	1.00	1.00
Incremental Delay, d2	0.4		8.2	0.4	0.2	0.0
Delay (s)	12.6		31.4	6.0	19.3	17.8
Level of Service	B		C	A	B	B
Approach Delay (s)	12.6			12.4	18.6	
Approach LOS	B			B	B	

Intersection Summary			
HCM 2000 Control Delay	13.5	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.44		
Actuated Cycle Length (s)	59.9	Sum of lost time (s)	11.0
Intersection Capacity Utilization	48.0%	ICU Level of Service	A
Analysis Period (min)	15		

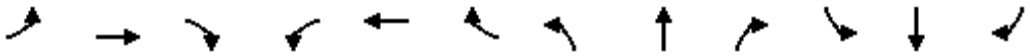
c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Volume (vph)	20	10	20	40	10	40	30	150	30	50	180	40
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	22	11	22	43	11	43	33	163	33	54	196	43

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total (vph)	54	98	228	293
Volume Left (vph)	22	43	33	54
Volume Right (vph)	22	43	33	43
Hadj (s)	-0.13	-0.14	-0.02	-0.02
Departure Headway (s)	5.1	5.1	4.6	4.6
Degree Utilization, x	0.08	0.14	0.29	0.37
Capacity (veh/h)	618	637	744	756
Control Delay (s)	8.6	8.9	9.5	10.2
Approach Delay (s)	8.6	8.9	9.5	10.2
Approach LOS	A	A	A	B

Intersection Summary				
Delay	9.7			
Level of Service	A			
Intersection Capacity Utilization	36.3%	ICU Level of Service	A	
Analysis Period (min)	15			



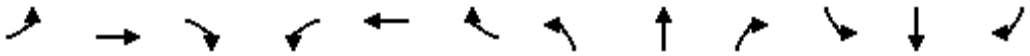
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Volume (vph)	30	20	20	20	30	20	30	140	30	40	110	60
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	33	22	22	22	33	22	33	152	33	43	120	65

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total (vph)	76	76	217	228
Volume Left (vph)	33	22	33	43
Volume Right (vph)	22	22	33	65
Hadj (s)	-0.05	-0.08	-0.03	-0.10
Departure Headway (s)	5.0	5.0	4.5	4.4
Degree Utilization, x	0.11	0.10	0.27	0.28
Capacity (veh/h)	651	654	760	770
Control Delay (s)	8.6	8.5	9.2	9.2
Approach Delay (s)	8.6	8.5	9.2	9.2
Approach LOS	A	A	A	A

Intersection Summary				
Delay	9.0			
Level of Service	A			
Intersection Capacity Utilization	30.9%	ICU Level of Service	A	
Analysis Period (min)	15			

HCM Unsignalized Intersection Capacity Analysis
41: San Diego Ave & Congress St

12/12/2017



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Traffic Volume (vph)	20	20	20	100	20	20	30	250	300	10	90	20
Future Volume (vph)	20	20	20	100	20	20	30	250	300	10	90	20
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	22	22	22	109	22	22	33	272	326	11	98	22

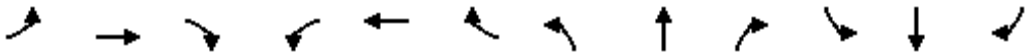
Direction, Lane #	EB 1	WB 1	NB 1	NB 2	SB 1
Volume Total (vph)	66	153	305	326	131
Volume Left (vph)	22	109	33	0	11
Volume Right (vph)	22	22	0	326	22
Hadj (s)	-0.10	0.09	0.09	-0.67	-0.05
Departure Headway (s)	5.7	5.7	5.4	4.6	5.3
Degree Utilization, x	0.10	0.24	0.46	0.42	0.19
Capacity (veh/h)	568	583	652	757	641
Control Delay (s)	9.4	10.5	11.7	9.8	9.5
Approach Delay (s)	9.4	10.5	10.7		9.5
Approach LOS	A	B	B		A

Intersection Summary				
Delay	16.8			
Level of Service	C			
Intersection Capacity Utilization	45.1%	ICU Level of Service	A	
Analysis Period (min)	15			

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Sign Control	Stop			Stop	Stop	
Volume (vph)	30	20	40	40	40	150
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	33	22	43	43	43	163

Direction, Lane #	EB 1	WB 1	NB 1
Volume Total (vph)	54	87	207
Volume Left (vph)	0	43	43
Volume Right (vph)	22	0	163
Hadj (s)	-0.21	0.13	-0.40
Departure Headway (s)	4.2	4.5	3.8
Degree Utilization, x	0.06	0.11	0.22
Capacity (veh/h)	806	750	906
Control Delay (s)	7.5	8.1	7.9
Approach Delay (s)	7.5	8.1	7.9
Approach LOS	A	A	A

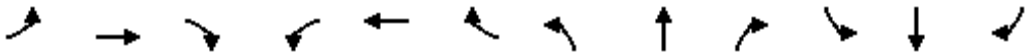
Intersection Summary			
Delay	7.9		
Level of Service	A		
Intersection Capacity Utilization	35.7%	ICU Level of Service	A
Analysis Period (min)	15		



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Volume (vph)	20	20	20	50	30	30	20	140	100	20	40	20
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	22	22	22	54	33	33	22	152	109	22	43	22

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total (vph)	65	120	283	87
Volume Left (vph)	22	54	22	22
Volume Right (vph)	22	33	109	22
Hadj (s)	-0.10	-0.04	-0.18	-0.07
Departure Headway (s)	4.8	4.8	4.3	4.6
Degree Utilization, x	0.09	0.16	0.34	0.11
Capacity (veh/h)	681	691	806	729
Control Delay (s)	8.3	8.7	9.4	8.2
Approach Delay (s)	8.3	8.7	9.4	8.2
Approach LOS	A	A	A	A

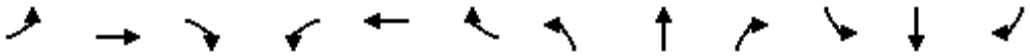
Intersection Summary			
Delay	8.9		
Level of Service	A		
Intersection Capacity Utilization	38.2%	ICU Level of Service	A
Analysis Period (min)	15		



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	300	110	90	10	40	20	250	260	40	20	50	80
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0			4.0		4.0	4.0		4.0	4.0	
Lane Util. Factor		1.00			1.00		1.00	1.00		1.00	1.00	
Frpb, ped/bikes		1.00			1.00		1.00	1.00		1.00	0.98	
Flpb, ped/bikes		1.00			1.00		1.00	1.00		1.00	1.00	
Frt		0.98			0.96		1.00	0.98		1.00	0.91	
Flt Protected		0.97			0.99		0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1760			1769		1763	1820		1764	1665	
Flt Permitted		0.77			0.93		0.67	1.00		0.49	1.00	
Satd. Flow (perm)		1401			1659		1238	1820		903	1665	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	326	120	98	11	43	22	272	283	43	22	54	87
RTOR Reduction (vph)	0	14	0	0	12	0	0	7	0	0	50	0
Lane Group Flow (vph)	0	530	0	0	64	0	272	319	0	22	91	0
Confl. Peds. (#/hr)	5					5	3		4	4		3
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		8			4			2			6	
Permitted Phases	8			4			2			6		
Actuated Green, G (s)		25.2			25.2		24.4	24.4		24.4	24.4	
Effective Green, g (s)		25.2			25.2		24.4	24.4		24.4	24.4	
Actuated g/C Ratio		0.44			0.44		0.42	0.42		0.42	0.42	
Clearance Time (s)		4.0			4.0		4.0	4.0		4.0	4.0	
Vehicle Extension (s)		2.0			2.0		4.4	4.4		2.1	2.1	
Lane Grp Cap (vph)		612			725		524	770		382	705	
v/s Ratio Prot								0.18			0.05	
v/s Ratio Perm		c0.38			0.04		c0.22			0.02		
v/c Ratio		0.87			0.09		0.52	0.41		0.06	0.13	
Uniform Delay, d1		14.7			9.5		12.3	11.6		9.8	10.1	
Progression Factor		1.00			1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2		11.9			0.0		3.6	1.6		0.3	0.4	
Delay (s)		26.5			9.5		15.9	13.2		10.1	10.5	
Level of Service		C			A		B	B		B	B	
Approach Delay (s)		26.5			9.5			14.5			10.4	
Approach LOS		C			A			B			B	

Intersection Summary			
HCM 2000 Control Delay	18.5	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.69		
Actuated Cycle Length (s)	57.6	Sum of lost time (s)	8.0
Intersection Capacity Utilization	74.2%	ICU Level of Service	D
Analysis Period (min)	15		

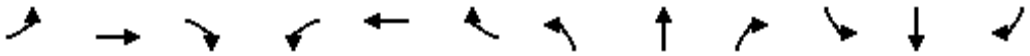
c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	50	420	150	210	700	90	110	20	270	20	10	30
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0			4.0			4.0	
Lane Util. Factor	1.00	0.91		1.00	0.95			1.00			1.00	
Frpb, ped/bikes	1.00	1.00		1.00	1.00			0.99			1.00	
Flpb, ped/bikes	1.00	1.00		1.00	1.00			1.00			1.00	
Frt	1.00	0.96		1.00	0.98			0.91			0.93	
Flt Protected	0.95	1.00		0.95	1.00			0.99			0.98	
Satd. Flow (prot)	1769	4885		1770	3470			1646			1706	
Flt Permitted	0.32	1.00		0.32	1.00			0.89			0.82	
Satd. Flow (perm)	602	4885		595	3470			1478			1425	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	54	457	163	228	761	98	120	22	293	22	11	33
RTOR Reduction (vph)	0	78	0	0	12	0	0	127	0	0	24	0
Lane Group Flow (vph)	54	542	0	228	847	0	0	308	0	0	42	0
Confl. Peds. (#/hr)	2					2			13	13		
Turn Type	pm+pt	NA		pm+pt	NA		Perm	NA		Perm	NA	
Protected Phases	5	2		1	6			8			4	
Permitted Phases	2			6			8			4		
Actuated Green, G (s)	22.7	20.5		33.2	26.6			15.5			15.5	
Effective Green, g (s)	23.5	21.5		33.6	27.5			16.4			16.4	
Actuated g/C Ratio	0.40	0.37		0.57	0.47			0.28			0.28	
Clearance Time (s)	4.4	5.0		4.4	4.9			4.9			4.9	
Vehicle Extension (s)	2.0	3.3		2.0	3.3			2.0			2.0	
Lane Grp Cap (vph)	293	1795		514	1631			414			399	
v/s Ratio Prot	0.01	0.11		c0.07	c0.24							
v/s Ratio Perm	0.07			0.19				c0.21			0.03	
v/c Ratio	0.18	0.30		0.44	0.52			0.74			0.11	
Uniform Delay, d1	10.8	13.2		6.4	10.9			19.1			15.6	
Progression Factor	1.00	1.00		1.00	1.00			1.00			1.00	
Incremental Delay, d2	0.1	0.4		0.2	1.2			6.2			0.0	
Delay (s)	10.9	13.6		6.7	12.1			25.3			15.7	
Level of Service	B	B		A	B			C			B	
Approach Delay (s)		13.4			10.9			25.3			15.7	
Approach LOS		B			B			C			B	

Intersection Summary			
HCM 2000 Control Delay	14.6	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.62		
Actuated Cycle Length (s)	58.5	Sum of lost time (s)	12.0
Intersection Capacity Utilization	65.8%	ICU Level of Service	C
Analysis Period (min)	15		

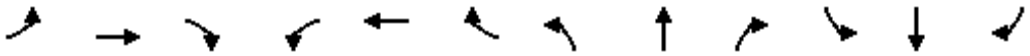
c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Volume (vph)	70	20	20	20	20	20	20	160	30	60	120	70
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	76	22	22	22	22	22	22	174	33	65	130	76

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total (vph)	120	65	228	272
Volume Left (vph)	76	22	22	65
Volume Right (vph)	22	22	33	76
Hadj (s)	0.05	-0.10	-0.03	-0.09
Departure Headway (s)	5.2	5.2	4.7	4.6
Degree Utilization, x	0.17	0.09	0.30	0.35
Capacity (veh/h)	622	616	729	744
Control Delay (s)	9.3	8.7	9.7	10.0
Approach Delay (s)	9.3	8.7	9.7	10.0
Approach LOS	A	A	A	B

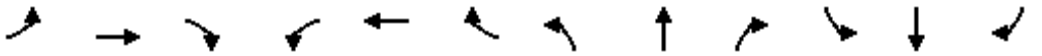
Intersection Summary				
Delay	9.7			
Level of Service	A			
Intersection Capacity Utilization	45.2%	ICU Level of Service	A	
Analysis Period (min)	15			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Volume (vph)	40	20	40	10	10	20	60	120	10	30	90	50
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	43	22	43	11	11	22	65	130	11	33	98	54

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total (vph)	109	43	207	185
Volume Left (vph)	43	11	65	33
Volume Right (vph)	43	22	11	54
Hadj (s)	-0.13	-0.22	0.07	-0.11
Departure Headway (s)	4.7	4.7	4.6	4.4
Degree Utilization, x	0.14	0.06	0.26	0.23
Capacity (veh/h)	696	683	758	775
Control Delay (s)	8.5	8.0	9.2	8.7
Approach Delay (s)	8.5	8.0	9.2	8.7
Approach LOS	A	A	A	A

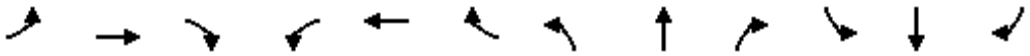
Intersection Summary			
Delay	8.8		
Level of Service	A		
Intersection Capacity Utilization	34.0%	ICU Level of Service	A
Analysis Period (min)	15		



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	400	270	30	10	650	250	0	0	20	190	150	320
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0				4.0	4.0	4.0	4.0
Lane Util. Factor	0.97	0.95		1.00	0.95				1.00	0.95	0.95	1.00
Frpb, ped/bikes	1.00	1.00		1.00	1.00				0.99	1.00	1.00	1.00
Flpb, ped/bikes	1.00	1.00		1.00	1.00				1.00	1.00	1.00	1.00
Frt	1.00	0.98		1.00	0.96				0.86	1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00				1.00	0.95	0.98	1.00
Satd. Flow (prot)	3433	3478		1770	3392				1590	1681	1737	1583
Flt Permitted	0.95	1.00		0.95	1.00				1.00	0.95	0.98	1.00
Satd. Flow (perm)	3433	3478		1770	3392				1590	1681	1737	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	435	293	33	11	707	272	0	0	22	207	163	348
RTOR Reduction (vph)	0	8	0	0	44	0	0	0	0	0	0	215
Lane Group Flow (vph)	435	318	0	11	935	0	0	0	22	108	262	133
Confl. Peds. (#/hr)			1	1					4	4		
Turn Type	Prot	NA		Prot	NA				Free	Split	NA	Perm
Protected Phases	5	2		1	6					4	4	
Permitted Phases									Free			4
Actuated Green, G (s)	11.2	38.3		0.7	27.8				71.1	17.5	17.5	17.5
Effective Green, g (s)	11.6	39.2		1.1	28.7				71.1	18.8	18.8	18.8
Actuated g/C Ratio	0.16	0.55		0.02	0.40				1.00	0.26	0.26	0.26
Clearance Time (s)	4.4	4.9		4.4	4.9					5.3	5.3	5.3
Vehicle Extension (s)	2.0	3.3		2.0	3.8					4.4	4.4	4.4
Lane Grp Cap (vph)	560	1917		27	1369				1590	444	459	418
v/s Ratio Prot	c0.13	0.09		0.01	c0.28					0.06	c0.15	
v/s Ratio Perm									0.01			0.08
v/c Ratio	0.78	0.17		0.41	0.68				0.01	0.24	0.57	0.32
Uniform Delay, d1	28.5	7.9		34.7	17.5				0.0	20.6	22.7	21.0
Progression Factor	1.00	1.00		1.00	1.00				1.00	1.00	1.00	1.00
Incremental Delay, d2	6.1	0.2		3.6	2.8				0.0	0.5	2.3	0.7
Delay (s)	34.6	8.1		38.3	20.2				0.0	21.0	25.0	21.7
Level of Service	C	A		D	C				A	C	C	C
Approach Delay (s)		23.2			20.4			0.0			22.8	
Approach LOS		C			C			A			C	

Intersection Summary			
HCM 2000 Control Delay	21.8	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.67		
Actuated Cycle Length (s)	71.1	Sum of lost time (s)	12.0
Intersection Capacity Utilization	63.2%	ICU Level of Service	B
Analysis Period (min)	15		

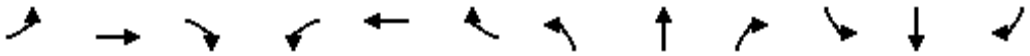
c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	40	710	100	70	1410	60	230	30	70	70	50	20
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0		4.0	4.0			4.0	
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00	1.00			1.00	
Frpb, ped/bikes	1.00	0.99		1.00	1.00		1.00	0.98			1.00	
Flpb, ped/bikes	1.00	1.00		1.00	1.00		0.99	1.00			0.99	
Frt	1.00	0.98		1.00	0.99		1.00	0.90			0.98	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00			0.98	
Satd. Flow (prot)	1678	3356		1671	3411		1635	1527			1669	
Flt Permitted	0.95	1.00		0.95	1.00		0.63	1.00			0.80	
Satd. Flow (perm)	1678	3356		1671	3411		1078	1527			1374	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	43	772	109	76	1533	65	250	33	76	76	54	22
RTOR Reduction (vph)	0	8	0	0	2	0	0	56	0	0	5	0
Lane Group Flow (vph)	43	873	0	76	1596	0	250	53	0	0	147	0
Confl. Peds. (#/hr)	14		16	16		14	13		13	13		13
Confl. Bikes (#/hr)			3			3			1			
Bus Blockages (#/hr)	13	13	13	14	14	14	16	16	16	13	13	13
Turn Type	Prot	NA		Prot	NA		Perm	NA		Perm	NA	
Protected Phases	5	2		1	6			4			4	
Permitted Phases							4			4		
Actuated Green, G (s)	4.6	67.0		8.0	70.4		30.8	30.8			30.8	
Effective Green, g (s)	5.0	67.9		8.4	71.3		31.7	31.7			31.7	
Actuated g/C Ratio	0.04	0.57		0.07	0.59		0.26	0.26			0.26	
Clearance Time (s)	4.4	4.9		4.4	4.9		4.9	4.9			4.9	
Vehicle Extension (s)	2.0	2.1		2.0	2.1		2.0	2.0			2.0	
Lane Grp Cap (vph)	69	1898		116	2026		284	403			362	
v/s Ratio Prot	0.03	0.26		c0.05	c0.47			0.03				
v/s Ratio Perm							c0.23				0.11	
v/c Ratio	0.62	0.46		0.66	0.79		0.88	0.13			0.41	
Uniform Delay, d1	56.6	15.3		54.4	18.6		42.3	33.7			36.4	
Progression Factor	1.00	1.00		0.84	1.52		1.00	1.00			1.00	
Incremental Delay, d2	11.9	0.8		2.8	0.9		25.0	0.1			0.3	
Delay (s)	68.5	16.1		48.5	29.1		67.3	33.7			36.7	
Level of Service	E	B		D	C		E	C			D	
Approach Delay (s)		18.5			30.0			57.1			36.7	
Approach LOS		B			C			E			D	

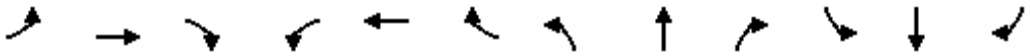
Intersection Summary			
HCM 2000 Control Delay	30.0	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.82		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	74.2%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group



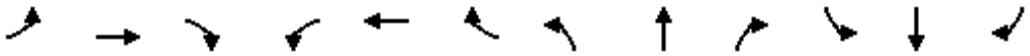
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	180	650	80	170	1240	70	60	130	100	260	380	250
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0		4.0	4.0	4.0	4.0	4.0	
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00	0.95	1.00	1.00	0.95	
Frpb, ped/bikes	1.00	0.99		1.00	1.00		1.00	1.00	0.98	1.00	0.98	
Flpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	
Frt	1.00	0.98		1.00	0.99		1.00	1.00	0.85	1.00	0.94	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)	1770	3461		1770	3501		1770	3539	1550	1770	3267	
Flt Permitted	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (perm)	1770	3461		1770	3501		1770	3539	1550	1770	3267	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	196	707	87	185	1348	76	65	141	109	283	413	272
RTOR Reduction (vph)	0	7	0	0	3	0	0	0	45	0	92	0
Lane Group Flow (vph)	196	787	0	185	1421	0	65	141	64	283	593	0
Confl. Peds. (#/hr)	23		24	24		23	19		14	14		19
Confl. Bikes (#/hr)			9			5			12			6
Turn Type	Prot	NA		Prot	NA		Prot	NA	pm+ov	Prot	NA	
Protected Phases	5	2		1	6		3	8	1	7	4	
Permitted Phases									8			
Actuated Green, G (s)	13.9	41.0		16.3	42.9		7.0	21.4	37.7	22.6	37.1	
Effective Green, g (s)	14.3	41.9		16.7	44.3		7.4	22.4	38.5	23.0	38.0	
Actuated g/C Ratio	0.12	0.35		0.14	0.37		0.06	0.19	0.32	0.19	0.32	
Clearance Time (s)	4.4	4.9		4.4	5.4		4.4	5.0	4.4	4.4	4.9	
Vehicle Extension (s)	2.0	4.2		2.0	3.0		2.0	4.0	2.0	2.0	2.6	
Lane Grp Cap (vph)	210	1208		246	1292		109	660	497	339	1034	
v/s Ratio Prot	c0.11	0.23		0.10	c0.41		c0.04	0.04	0.02	c0.16	c0.18	
v/s Ratio Perm									0.02			
v/c Ratio	0.93	0.65		0.75	1.10		0.60	0.21	0.13	0.83	0.57	
Uniform Delay, d1	52.4	32.9		49.7	37.9		54.8	41.3	28.9	46.7	34.2	
Progression Factor	1.21	0.77		1.05	0.84		1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	41.2	2.6		9.1	55.2		5.7	0.2	0.0	15.4	0.7	
Delay (s)	104.5	28.0		61.0	87.1		60.6	41.6	28.9	62.1	34.9	
Level of Service	F	C		E	F		E	D	C	E	C	
Approach Delay (s)		43.1			84.1			41.1			42.9	
Approach LOS		D			F			D			D	

Intersection Summary			
HCM 2000 Control Delay	59.9	HCM 2000 Level of Service	E
HCM 2000 Volume to Capacity ratio	0.89		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	88.6%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	10	980	80	320	1380	60	70	20	150	70	20	20
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0			4.0	4.0		4.0	
Lane Util. Factor	1.00	0.91		1.00	0.95			1.00	1.00		1.00	
Frpb, ped/bikes	1.00	1.00		1.00	1.00			1.00	0.98		0.99	
Flpb, ped/bikes	1.00	1.00		1.00	1.00			1.00	1.00		1.00	
Frt	1.00	0.99		1.00	0.99			1.00	0.85		0.98	
Flt Protected	0.95	1.00		0.95	1.00			0.96	1.00		0.97	
Satd. Flow (prot)	1770	5014		1770	3514			1792	1552		1750	
Flt Permitted	0.95	1.00		0.95	1.00			0.70	1.00		0.70	
Satd. Flow (perm)	1770	5014		1770	3514			1309	1552		1267	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	11	1065	87	348	1500	65	76	22	163	76	22	22
RTOR Reduction (vph)	0	6	0	0	2	0	0	0	135	0	7	0
Lane Group Flow (vph)	11	1146	0	348	1563	0	0	98	28	0	113	0
Confl. Peds. (#/hr)	1		1	1		1	1		1	1		1
Confl. Bikes (#/hr)			17			4			5			12
Turn Type	Prot	NA		Prot	NA		Perm	NA	Perm	Perm	NA	
Protected Phases	5	2		1	6			8			4	
Permitted Phases							8		8	4		
Actuated Green, G (s)	0.8	57.1		28.3	84.6			20.0	20.0		20.0	
Effective Green, g (s)	1.2	58.4		28.7	85.9			20.9	20.9		20.9	
Actuated g/C Ratio	0.01	0.49		0.24	0.72			0.17	0.17		0.17	
Clearance Time (s)	4.4	5.3		4.4	5.3			4.9	4.9		4.9	
Vehicle Extension (s)	2.0	4.4		2.0	4.4			2.0	2.0		2.0	
Lane Grp Cap (vph)	17	2440		423	2515			227	270		220	
v/s Ratio Prot	0.01	0.23		c0.20	c0.44							
v/s Ratio Perm								0.07	0.02		c0.09	
v/c Ratio	0.65	0.47		0.82	0.62			0.43	0.11		0.51	
Uniform Delay, d1	59.2	20.5		43.2	8.7			44.2	41.7		44.9	
Progression Factor	0.83	1.50		1.00	1.00			1.00	1.00		1.00	
Incremental Delay, d2	40.4	0.5		11.6	1.2			0.5	0.1		0.8	
Delay (s)	89.3	31.3		54.9	9.9			44.7	41.7		45.8	
Level of Service	F	C		D	A			D	D		D	
Approach Delay (s)		31.9			18.1			42.9			45.8	
Approach LOS		C			B			D			D	

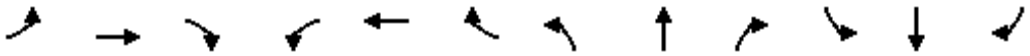
Intersection Summary			
HCM 2000 Control Delay	25.6	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.67		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	66.5%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	0	0	290	3130	0	0	0	0	0	150	150
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)					4.0						4.0	
Lane Util. Factor					0.91						0.91	
Frpb, ped/bikes					1.00						0.99	
Flpb, ped/bikes					1.00						1.00	
Frt					1.00						0.93	
Flt Protected					1.00						1.00	
Satd. Flow (prot)					5060						4651	
Flt Permitted					1.00						1.00	
Satd. Flow (perm)					5060						4651	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	315	3402	0	0	0	0	0	163	163
RTOR Reduction (vph)	0	0	0	0	9	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	0	0	0	3708	0	0	0	0	0	326	0
Confl. Peds. (#/hr)				6								7
Turn Type				Perm	NA						NA	
Protected Phases					6						4	
Permitted Phases				6								
Actuated Green, G (s)					61.8						18.0	
Effective Green, g (s)					63.1						18.9	
Actuated g/C Ratio					0.70						0.21	
Clearance Time (s)					5.3						4.9	
Vehicle Extension (s)					0.2						0.2	
Lane Grp Cap (vph)					3547						976	
v/s Ratio Prot											c0.07	
v/s Ratio Perm					0.73							
v/c Ratio					1.05						0.33	
Uniform Delay, d1					13.4						30.2	
Progression Factor					1.00						1.00	
Incremental Delay, d2					28.7						0.1	
Delay (s)					42.2						30.3	
Level of Service					D						C	
Approach Delay (s)		0.0			42.2			0.0			30.3	
Approach LOS		A			D			A			C	

Intersection Summary			
HCM 2000 Control Delay	41.2	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.88		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	88.0%	ICU Level of Service	E
Analysis Period (min)	15		

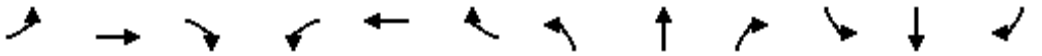
c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	900	100	0	0	0	0	0	0	170	340	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0									4.0	
Lane Util. Factor		0.91									0.91	
Frpb, ped/bikes		1.00									1.00	
Flpb, ped/bikes		1.00									0.99	
Frt		0.98									1.00	
Flt Protected		1.00									0.98	
Satd. Flow (prot)		4997									4974	
Flt Permitted		1.00									0.98	
Satd. Flow (perm)		4997									4974	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	978	109	0	0	0	0	0	0	185	370	0
RTOR Reduction (vph)	0	15	0	0	0	0	0	0	0	0	70	0
Lane Group Flow (vph)	0	1072	0	0	0	0	0	0	0	0	485	0
Confl. Peds. (#/hr)			9							14		
Turn Type		NA								Perm	NA	
Protected Phases		2									4	
Permitted Phases										4		
Actuated Green, G (s)		47.0									19.0	
Effective Green, g (s)		47.0									20.0	
Actuated g/C Ratio		0.63									0.27	
Clearance Time (s)		4.0									5.0	
Vehicle Extension (s)		3.0									3.0	
Lane Grp Cap (vph)		3131									1326	
v/s Ratio Prot		c0.21										
v/s Ratio Perm											0.10	
v/c Ratio		0.34									0.37	
Uniform Delay, d1		6.7									22.3	
Progression Factor		0.58									1.00	
Incremental Delay, d2		0.3									0.2	
Delay (s)		4.1									22.5	
Level of Service		A									C	
Approach Delay (s)		4.1			0.0			0.0			22.5	
Approach LOS		A			A			A			C	

Intersection Summary			
HCM 2000 Control Delay	10.3	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.35		
Actuated Cycle Length (s)	75.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	43.3%	ICU Level of Service	A
Analysis Period (min)	15		

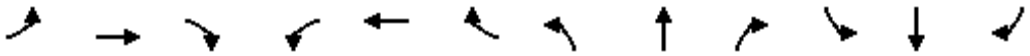
c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	230	1080	40	120	780	190	50	40	90	80	80	210
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.97	0.95		1.00	0.95	1.00	1.00	1.00	1.00	0.97	1.00	1.00
Frpb, ped/bikes	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.99
Flpb, ped/bikes	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.99		1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	3520		1770	3539	1583	1770	1863	1583	3433	1863	1562
Flt Permitted	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	3520		1770	3539	1583	1770	1863	1583	3433	1863	1562
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	250	1174	43	130	848	207	54	43	98	87	87	228
RTOR Reduction (vph)	0	3	0	0	0	192	0	0	84	0	0	187
Lane Group Flow (vph)	250	1214	0	130	848	15	54	43	14	87	87	41
Confl. Peds. (#/hr)	2											2
Turn Type	Prot	NA		Prot	NA	custom	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases						7			8			4
Actuated Green, G (s)	8.5	34.2		7.1	32.9	5.5	2.8	8.9	8.9	5.5	12.5	12.5
Effective Green, g (s)	8.5	35.7		7.1	34.3	5.5	2.8	10.7	10.7	5.5	13.4	13.4
Actuated g/C Ratio	0.11	0.48		0.09	0.46	0.07	0.04	0.14	0.14	0.07	0.18	0.18
Clearance Time (s)	4.0	5.5		4.0	5.4	4.0	4.0	5.8	5.8	4.0	4.9	4.9
Vehicle Extension (s)	2.0	3.7		2.0	4.0	2.0	2.0	2.0	2.0	2.0	3.0	3.0
Lane Grp Cap (vph)	389	1675		167	1618	116	66	265	225	251	332	279
v/s Ratio Prot	0.07	c0.34		c0.07	0.24		c0.03	0.02		0.03	c0.05	
v/s Ratio Perm						0.01			0.01			0.03
v/c Ratio	0.64	0.73		0.78	0.52	0.13	0.82	0.16	0.06	0.35	0.26	0.15
Uniform Delay, d1	31.8	15.7		33.2	14.5	32.5	35.8	28.2	27.8	33.0	26.5	26.0
Progression Factor	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	2.7	2.8		18.5	1.2	0.2	50.1	0.1	0.0	0.3	0.4	0.2
Delay (s)	34.5	18.5		51.7	15.7	32.7	85.9	28.3	27.9	33.3	27.0	26.2
Level of Service	C	B		D	B	C	F	C	C	C	C	C
Approach Delay (s)		21.2			22.7			44.0			27.9	
Approach LOS		C			C			D			C	

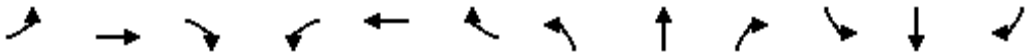
Intersection Summary			
HCM 2000 Control Delay	23.9	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.63		
Actuated Cycle Length (s)	75.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	57.5%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	0	0	540	2550	160	300	290	0	0	210	80
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)					4.9		4.4	4.9			5.4	
Lane Util. Factor					0.86		1.00	0.95			0.95	
Frpb, ped/bikes					1.00		1.00	1.00			1.00	
Flpb, ped/bikes					1.00		1.00	1.00			1.00	
Frt					0.99		1.00	1.00			0.96	
Flt Protected					0.99		0.95	1.00			1.00	
Satd. Flow (prot)					6276		1770	3539			3376	
Flt Permitted					0.99		0.95	1.00			1.00	
Satd. Flow (perm)					6276		1770	3539			3376	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	0	0	0	568	2684	168	316	305	0	0	221	84
RTOR Reduction (vph)	0	0	0	0	6	0	0	0	0	0	27	0
Lane Group Flow (vph)	0	0	0	0	3414	0	316	305	0	0	278	0
Confl. Peds. (#/hr)	4		13	13		4	2		2	2		2
Confl. Bikes (#/hr)												1
Turn Type				Perm	NA		Prot	NA			NA	
Protected Phases					6		3	8			4	
Permitted Phases				6								
Actuated Green, G (s)					62.7		20.6	37.5			12.0	
Effective Green, g (s)					62.7		20.6	37.5			12.0	
Actuated g/C Ratio					0.57		0.19	0.34			0.11	
Clearance Time (s)					4.9		4.4	4.9			5.4	
Vehicle Extension (s)					2.4		3.0	3.3			2.4	
Lane Grp Cap (vph)					3577		331	1206			368	
v/s Ratio Prot							c0.18	0.09			c0.08	
v/s Ratio Perm					0.54							
v/c Ratio					0.95		0.95	0.25			0.76	
Uniform Delay, d1					22.3		44.2	26.1			47.6	
Progression Factor					1.00		1.00	1.00			1.00	
Incremental Delay, d2					7.7		37.3	0.1			8.1	
Delay (s)					30.0		81.5	26.3			55.7	
Level of Service					C		F	C			E	
Approach Delay (s)		0.0			30.0			54.4			55.7	
Approach LOS		A			C			D			E	

Intersection Summary			
HCM 2000 Control Delay	35.3	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.93		
Actuated Cycle Length (s)	110.0	Sum of lost time (s)	14.7
Intersection Capacity Utilization	85.5%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	80	700	60	0	0	0	0	510	230	70	680	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0	4.0					4.9		4.0	4.9	
Lane Util. Factor		0.91	1.00					0.91		1.00	0.91	
Frpb, ped/bikes		1.00	0.98					0.99		1.00	1.00	
Flpb, ped/bikes		1.00	1.00					1.00		1.00	1.00	
Frt		1.00	0.85					0.95		1.00	1.00	
Flt Protected		0.99	1.00					1.00		0.95	1.00	
Satd. Flow (prot)		5058	1551					4809		1770	5085	
Flt Permitted		0.99	1.00					1.00		0.95	1.00	
Satd. Flow (perm)		5058	1551					4809		1770	5085	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	87	761	65	0	0	0	0	554	250	76	739	0
RTOR Reduction (vph)	0	0	36	0	0	0	0	106	0	0	0	0
Lane Group Flow (vph)	0	848	29	0	0	0	0	698	0	76	739	0
Confl. Peds. (#/hr)	4		12				6		12	12		6
Turn Type	Perm	NA	Perm					NA		Prot	NA	
Protected Phases		2						8		7	4	
Permitted Phases	2		2									
Actuated Green, G (s)		32.2	32.2					22.0		6.6	33.0	
Effective Green, g (s)		33.1	33.1					22.0		7.0	33.0	
Actuated g/C Ratio		0.44	0.44					0.29		0.09	0.44	
Clearance Time (s)		4.9	4.9					4.9		4.4	4.9	
Vehicle Extension (s)		4.4	4.4					3.3		2.0	3.3	
Lane Grp Cap (vph)		2232	684					1410		165	2237	
v/s Ratio Prot								c0.15		c0.04	0.15	
v/s Ratio Perm		0.17	0.02									
v/c Ratio		0.38	0.04					0.50		0.46	0.33	
Uniform Delay, d1		14.1	11.9					21.9		32.2	13.8	
Progression Factor		1.00	1.00					1.00		1.00	1.00	
Incremental Delay, d2		0.5	0.1					1.2		9.0	0.4	
Delay (s)		14.6	12.0					23.2		41.2	14.2	
Level of Service		B	B					C		D	B	
Approach Delay (s)		14.4			0.0			23.2			16.7	
Approach LOS		B			A			C			B	

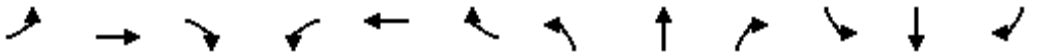
Intersection Summary				
HCM 2000 Control Delay	17.9	HCM 2000 Level of Service	B	
HCM 2000 Volume to Capacity ratio	0.43			
Actuated Cycle Length (s)	75.0	Sum of lost time (s)	12.9	
Intersection Capacity Utilization	85.5%	ICU Level of Service	E	
Analysis Period (min)	15			

c Critical Lane Group

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (vph)	1170	520	270	890	310	200
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.5	4.0	4.0	4.0
Lane Util. Factor	0.95	1.00	0.97	0.95	0.97	0.91
Frpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	0.99
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.85	1.00	1.00	0.98	0.85
Flt Protected	1.00	1.00	0.95	1.00	0.96	1.00
Satd. Flow (prot)	3539	1583	3433	3539	3377	1421
Flt Permitted	1.00	1.00	0.95	1.00	0.96	1.00
Satd. Flow (perm)	3539	1583	3433	3539	3377	1421
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	1272	565	293	967	337	217
RTOR Reduction (vph)	0	5	0	0	24	116
Lane Group Flow (vph)	1272	560	293	967	378	36
Confl. Peds. (#/hr)						2
Turn Type	NA	pm+ov	Prot	NA	Prot	Perm
Protected Phases	2	8	1	6	8	
Permitted Phases		2				8
Actuated Green, G (s)	28.6	42.3	8.0	41.8	13.7	13.7
Effective Green, g (s)	30.8	46.7	7.9	43.2	15.9	15.9
Actuated g/C Ratio	0.46	0.70	0.12	0.64	0.24	0.24
Clearance Time (s)	6.2	6.2	4.4	5.4	6.2	6.2
Vehicle Extension (s)	4.0	2.0	2.0	5.2	2.0	2.0
Lane Grp Cap (vph)	1624	1196	404	2278	800	336
v/s Ratio Prot	c0.36	c0.11	c0.09	0.27	0.11	
v/s Ratio Perm		0.24				0.03
v/c Ratio	0.78	0.47	0.73	0.42	0.47	0.11
Uniform Delay, d1	15.3	4.6	28.6	5.9	22.0	20.0
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	3.9	0.1	5.4	0.6	0.2	0.1
Delay (s)	19.2	4.7	34.0	6.4	22.2	20.1
Level of Service	B	A	C	A	C	C
Approach Delay (s)	14.7			12.8	21.6	
Approach LOS	B			B	C	

Intersection Summary			
HCM 2000 Control Delay	15.1	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.70		
Actuated Cycle Length (s)	67.1	Sum of lost time (s)	12.5
Intersection Capacity Utilization	62.2%	ICU Level of Service	B
Analysis Period (min)	15		

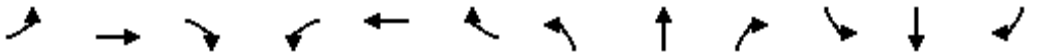
c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	1060	140	380	330	0	0	0	0	350	0	670
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0	4.0	4.0	4.0					4.0		3.4
Lane Util. Factor		0.95	1.00	0.97	0.95					1.00		1.00
Frpb, ped/bikes		1.00	0.99	1.00	1.00					1.00		1.00
Flpb, ped/bikes		1.00	1.00	1.00	1.00					1.00		1.00
Frt		1.00	0.85	1.00	1.00					1.00		0.85
Flt Protected		1.00	1.00	0.95	1.00					0.95		1.00
Satd. Flow (prot)		3539	1561	3433	3539					1770		1583
Flt Permitted		1.00	1.00	0.95	1.00					0.95		1.00
Satd. Flow (perm)		3539	1561	3433	3539					1770		1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	1152	152	413	359	0	0	0	0	380	0	728
RTOR Reduction (vph)	0	0	88	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	1152	64	413	359	0	0	0	0	380	0	728
Confl. Peds. (#/hr)			2	2								
Turn Type		NA	Perm	Prot	NA					Prot		Free
Protected Phases		2		1	6					4		
Permitted Phases			2									Free
Actuated Green, G (s)		25.9	25.9	9.0	39.1					14.8		63.5
Effective Green, g (s)		26.9	26.9	9.2	40.1					15.4		63.5
Actuated g/C Ratio		0.42	0.42	0.14	0.63					0.24		1.00
Clearance Time (s)		5.0	5.0	4.2	5.0					4.6		
Vehicle Extension (s)		0.2	0.2	0.2	0.2					0.2		
Lane Grp Cap (vph)		1499	661	497	2234					429		1583
v/s Ratio Prot		c0.33		c0.12	0.10					c0.21		
v/s Ratio Perm			0.04									0.46
v/c Ratio		0.77	0.10	0.83	0.16					0.89		0.46
Uniform Delay, d1		15.6	11.0	26.4	4.8					23.2		0.0
Progression Factor		1.00	1.00	1.00	1.00					1.00		1.00
Incremental Delay, d2		3.8	0.3	10.8	0.2					18.7		1.0
Delay (s)		19.5	11.3	37.2	5.0					41.9		1.0
Level of Service		B	B	D	A					D		A
Approach Delay (s)		18.5			22.2			0.0			15.0	
Approach LOS		B			C			A			B	

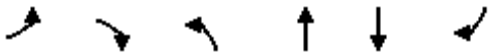
Intersection Summary			
HCM 2000 Control Delay	18.2	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.81		
Actuated Cycle Length (s)	63.5	Sum of lost time (s)	12.0
Intersection Capacity Utilization	82.3%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	880	650	0	0	610	590	190	0	300	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	5.0			5.0			4.0	4.0			
Lane Util. Factor	0.97	0.95			0.95			1.00	1.00			
Frt	1.00	1.00			0.93			1.00	0.85			
Flt Protected	0.95	1.00			1.00			0.95	1.00			
Satd. Flow (prot)	3433	3539			3278			1770	1583			
Flt Permitted	0.95	1.00			1.00			0.95	1.00			
Satd. Flow (perm)	3433	3539			3278			1770	1583			
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	957	707	0	0	663	641	207	0	326	0	0	0
RTOR Reduction (vph)	0	0	0	0	201	0	0	0	277	0	0	0
Lane Group Flow (vph)	957	707	0	0	1103	0	0	207	49	0	0	0
Turn Type	Prot	NA			NA		Split	NA	Perm			
Protected Phases	5	2			6		4	4				
Permitted Phases									4			
Actuated Green, G (s)	23.5	59.4			31.7			10.0	10.0			
Effective Green, g (s)	23.7	59.9			32.2			10.6	10.6			
Actuated g/C Ratio	0.30	0.75			0.41			0.13	0.13			
Clearance Time (s)	4.2	5.5			5.5			4.6	4.6			
Vehicle Extension (s)	0.2	0.2			0.2			0.2	0.2			
Lane Grp Cap (vph)	1023	2666			1327			236	211			
v/s Ratio Prot	c0.28	0.20			c0.34			c0.12				
v/s Ratio Perm									0.03			
v/c Ratio	0.94	0.27			0.83			0.88	0.23			
Uniform Delay, d1	27.2	3.0			21.2			33.8	30.8			
Progression Factor	1.00	1.00			1.00			1.00	1.00			
Incremental Delay, d2	14.8	0.2			6.2			27.8	0.2			
Delay (s)	41.9	3.3			27.4			61.6	31.0			
Level of Service	D	A			C			E	C			
Approach Delay (s)		25.5			27.4			42.9			0.0	
Approach LOS		C			C			D			A	

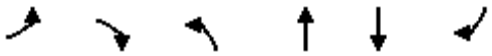
Intersection Summary			
HCM 2000 Control Delay	28.8	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.88		
Actuated Cycle Length (s)	79.5	Sum of lost time (s)	13.0
Intersection Capacity Utilization	82.3%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	210	210	110	500	700	110
Future Volume (vph)	210	210	110	500	700	110
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0		4.0	4.0	4.0	
Lane Util. Factor	1.00		1.00	0.95	0.95	
Frt	0.93		1.00	1.00	0.98	
Flt Protected	0.98		0.95	1.00	1.00	
Satd. Flow (prot)	1695		1770	3539	3467	
Flt Permitted	0.98		0.95	1.00	1.00	
Satd. Flow (perm)	1695		1770	3539	3467	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	228	228	120	543	761	120
RTOR Reduction (vph)	30	0	0	0	10	0
Lane Group Flow (vph)	426	0	120	543	871	0
Turn Type	Prot		Prot	NA	NA	
Protected Phases	7		1	6	2	
Permitted Phases						
Actuated Green, G (s)	26.0		12.6	86.0	69.4	
Effective Green, g (s)	26.0		12.6	86.0	69.4	
Actuated g/C Ratio	0.22		0.10	0.72	0.58	
Clearance Time (s)	4.0		4.0	4.0	4.0	
Vehicle Extension (s)	3.0		3.0	3.0	3.0	
Lane Grp Cap (vph)	367		185	2536	2005	
v/s Ratio Prot	c0.25		c0.07	0.15	c0.25	
v/s Ratio Perm						
v/c Ratio	1.16		0.65	0.21	0.43	
Uniform Delay, d1	47.0		51.6	5.7	14.2	
Progression Factor	1.00		0.91	0.75	1.00	
Incremental Delay, d2	98.6		7.4	0.2	0.7	
Delay (s)	145.6		54.2	4.5	14.9	
Level of Service	F		D	A	B	
Approach Delay (s)	145.6			13.5	14.9	
Approach LOS	F			B	B	

Intersection Summary			
HCM 2000 Control Delay	42.4	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.63		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	63.5%	ICU Level of Service	B
Analysis Period (min)	15		

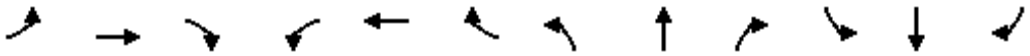
c Critical Lane Group



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (veh/h)	0	180	0	0	160	30
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	196	0	0	174	33
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage veh)						
Upstream signal (ft)				973	1298	
pX, platoon unblocked						
vC, conflicting volume	190	103	207			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	190	103	207			
tC, single (s)	6.8	6.9	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	100	79	100			
cM capacity (veh/h)	781	932	1362			

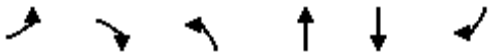
Direction, Lane #	EB 1	SB 1	SB 2
Volume Total	196	116	91
Volume Left	0	0	0
Volume Right	196	0	33
cSH	932	1700	1700
Volume to Capacity	0.21	0.07	0.05
Queue Length 95th (ft)	20	0	0
Control Delay (s)	9.9	0.0	0.0
Lane LOS	A		
Approach Delay (s)	9.9	0.0	
Approach LOS	A		

Intersection Summary			
Average Delay	4.8		
Intersection Capacity Utilization	23.2%	ICU Level of Service	A
Analysis Period (min)	15		



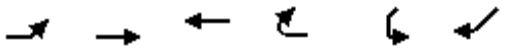
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	20	100	60	90	0	0	0	0	40	220	10
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.5			4.5						4.5	
Lane Util. Factor		1.00			1.00						0.95	
Frt		0.89			1.00						0.99	
Flt Protected		1.00			0.98						0.99	
Satd. Flow (prot)		1654			1826						3494	
Flt Permitted		1.00			0.86						0.99	
Satd. Flow (perm)		1654			1598						3494	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	22	109	65	98	0	0	0	0	43	239	11
RTOR Reduction (vph)	0	56	0	0	0	0	0	0	0	0	4	0
Lane Group Flow (vph)	0	75	0	0	163	0	0	0	0	0	289	0
Turn Type		NA		Perm	NA					Perm	NA	
Protected Phases		2			6						4	
Permitted Phases				6						4		
Actuated Green, G (s)		31.5			31.5						24.5	
Effective Green, g (s)		31.5			31.5						24.5	
Actuated g/C Ratio		0.48			0.48						0.38	
Clearance Time (s)		4.5			4.5						4.5	
Vehicle Extension (s)		3.0			3.0						3.0	
Lane Grp Cap (vph)		801			774						1316	
v/s Ratio Prot		0.05										
v/s Ratio Perm					c0.10						0.08	
v/c Ratio		0.09			0.21						0.22	
Uniform Delay, d1		9.0			9.6						13.8	
Progression Factor		1.00			1.00						1.00	
Incremental Delay, d2		0.1			0.6						0.4	
Delay (s)		9.1			10.2						14.1	
Level of Service		A			B						B	
Approach Delay (s)		9.1			10.2			0.0			14.1	
Approach LOS		A			B			A			B	

Intersection Summary			
HCM 2000 Control Delay	11.9	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.21		
Actuated Cycle Length (s)	65.0	Sum of lost time (s)	9.0
Intersection Capacity Utilization	29.8%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



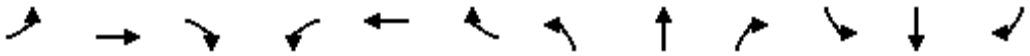
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (vph)	50	150	140	330	310	30
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0			4.0	4.0	
Lane Util. Factor	1.00			1.00	1.00	
Frt	0.90			1.00	0.99	
Flt Protected	0.99			0.99	1.00	
Satd. Flow (prot)	1653			1835	1840	
Flt Permitted	0.99			0.80	1.00	
Satd. Flow (perm)	1653			1481	1840	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	54	163	152	359	337	33
RTOR Reduction (vph)	141	0	0	0	4	0
Lane Group Flow (vph)	76	0	0	511	366	0
Turn Type	Prot		Perm	NA	NA	
Protected Phases	4			2	6	
Permitted Phases			2			
Actuated Green, G (s)	8.3			45.5	45.5	
Effective Green, g (s)	8.3			45.5	45.5	
Actuated g/C Ratio	0.13			0.74	0.74	
Clearance Time (s)	4.0			4.0	4.0	
Vehicle Extension (s)	3.0			3.0	3.0	
Lane Grp Cap (vph)	222			1090	1354	
v/s Ratio Prot	c0.05				0.20	
v/s Ratio Perm				c0.35		
v/c Ratio	0.34			0.47	0.27	
Uniform Delay, d1	24.3			3.3	2.7	
Progression Factor	1.00			1.00	1.00	
Incremental Delay, d2	0.9			1.4	0.5	
Delay (s)	25.2			4.7	3.2	
Level of Service	C			A	A	
Approach Delay (s)	25.2			4.7	3.2	
Approach LOS	C			A	A	

Intersection Summary			
HCM 2000 Control Delay	8.3	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.45		
Actuated Cycle Length (s)	61.8	Sum of lost time (s)	8.0
Intersection Capacity Utilization	65.3%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			



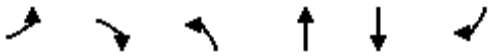
Movement	EBL	EBT	WBT	WBR	SWL	SWR
Lane Configurations						
Volume (vph)	50	670	1420	40	150	250
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.5	4.5	4.5		4.5	
Lane Util. Factor	1.00	0.95	0.95		1.00	
Frt	1.00	1.00	1.00		0.92	
Flt Protected	0.95	1.00	1.00		0.98	
Satd. Flow (prot)	1770	3539	3525		1674	
Flt Permitted	0.95	1.00	1.00		0.98	
Satd. Flow (perm)	1770	3539	3525		1674	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	54	728	1543	43	163	272
RTOR Reduction (vph)	0	0	3	0	74	0
Lane Group Flow (vph)	54	728	1583	0	361	0
Turn Type	Prot	NA	NA		Prot	
Protected Phases	7	4	8		6	
Permitted Phases						
Actuated Green, G (s)	3.5	46.0	38.0		23.6	
Effective Green, g (s)	3.5	46.0	38.0		23.6	
Actuated g/C Ratio	0.04	0.59	0.48		0.30	
Clearance Time (s)	4.5	4.5	4.5		4.5	
Vehicle Extension (s)	3.0	3.0	3.0		3.0	
Lane Grp Cap (vph)	78	2071	1704		502	
v/s Ratio Prot	c0.03	0.21	c0.45		c0.22	
v/s Ratio Perm						
v/c Ratio	0.69	0.35	0.93		0.72	
Uniform Delay, d1	37.0	8.5	19.0		24.5	
Progression Factor	1.00	1.00	1.00		1.00	
Incremental Delay, d2	23.3	0.1	9.4		8.6	
Delay (s)	60.3	8.6	28.4		33.1	
Level of Service	E	A	C		C	
Approach Delay (s)		12.2	28.4		33.1	
Approach LOS		B	C		C	

Intersection Summary			
HCM 2000 Control Delay	24.6	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.84		
Actuated Cycle Length (s)	78.6	Sum of lost time (s)	13.5
Intersection Capacity Utilization	72.7%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			



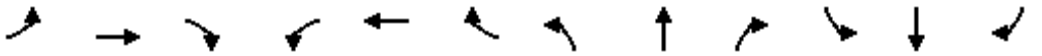
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	60	10	30	40	100	240	150	390	130	220	450	150
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.5			4.5		4.5	4.5		4.5	4.5	
Lane Util. Factor		1.00			1.00		1.00	0.95		1.00	0.95	
Frt		0.96			0.91		1.00	0.96		1.00	0.96	
Flt Protected		0.97			0.99		0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1735			1695		1770	3407		1770	3406	
Flt Permitted		0.97			0.99		0.95	1.00		0.95	1.00	
Satd. Flow (perm)		1735			1695		1770	3407		1770	3406	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	65	11	33	43	109	261	163	424	141	239	489	163
RTOR Reduction (vph)	0	20	0	0	67	0	0	35	0	0	35	0
Lane Group Flow (vph)	0	89	0	0	346	0	163	530	0	239	617	0
Turn Type	Split	NA		Split	NA		Prot	NA		Prot	NA	
Protected Phases	2	2		6	6		3	8		7	4	
Permitted Phases												
Actuated Green, G (s)		7.6			19.3		10.8	15.5		14.1	18.8	
Effective Green, g (s)		7.6			19.3		10.8	15.5		14.1	18.8	
Actuated g/C Ratio		0.10			0.26		0.14	0.21		0.19	0.25	
Clearance Time (s)		4.5			4.5		4.5	4.5		4.5	4.5	
Vehicle Extension (s)		3.0			3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)		176			439		256	708		334	859	
v/s Ratio Prot		c0.05			c0.20		0.09	0.16		c0.14	c0.18	
v/s Ratio Perm												
v/c Ratio		0.51			0.79		0.64	0.75		0.72	0.72	
Uniform Delay, d1		31.7			25.7		30.0	27.7		28.3	25.4	
Progression Factor		1.00			1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2		2.3			9.1		5.1	4.3		7.1	2.9	
Delay (s)		34.0			34.8		35.1	32.0		35.4	28.3	
Level of Service		C			C		D	C		D	C	
Approach Delay (s)		34.0			34.8			32.7			30.2	
Approach LOS		C			C			C			C	

Intersection Summary			
HCM 2000 Control Delay	32.2	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.74		
Actuated Cycle Length (s)	74.5	Sum of lost time (s)	18.0
Intersection Capacity Utilization	60.4%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (vph)	30	200	340	190	190	40
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.5			4.5	4.5	
Lane Util. Factor	1.00			1.00	1.00	
Frt	0.88			1.00	0.98	
Flt Protected	0.99			0.97	1.00	
Satd. Flow (prot)	1634			1805	1819	
Flt Permitted	0.99			0.66	1.00	
Satd. Flow (perm)	1634			1237	1819	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	33	217	370	207	207	43
RTOR Reduction (vph)	188	0	0	0	8	0
Lane Group Flow (vph)	62	0	0	577	242	0
Turn Type	Prot		Perm	NA	NA	
Protected Phases	4			2	6	
Permitted Phases			2			
Actuated Green, G (s)	8.1			43.5	43.5	
Effective Green, g (s)	8.1			43.5	43.5	
Actuated g/C Ratio	0.13			0.72	0.72	
Clearance Time (s)	4.5			4.5	4.5	
Vehicle Extension (s)	3.0			3.0	3.0	
Lane Grp Cap (vph)	218			887	1305	
v/s Ratio Prot	c0.04				0.13	
v/s Ratio Perm				c0.47		
v/c Ratio	0.28			0.65	0.19	
Uniform Delay, d1	23.6			4.5	2.8	
Progression Factor	1.00			1.00	1.00	
Incremental Delay, d2	0.7			3.7	0.3	
Delay (s)	24.4			8.2	3.1	
Level of Service	C			A	A	
Approach Delay (s)	24.4			8.2	3.1	
Approach LOS	C			A	A	

Intersection Summary			
HCM 2000 Control Delay	10.8	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.59		
Actuated Cycle Length (s)	60.6	Sum of lost time (s)	9.0
Intersection Capacity Utilization	66.5%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	90	1660	560	120	1160	360	460	350	180	300	260	40
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	
Lane Util. Factor	1.00	0.91	1.00	0.97	0.95	1.00	0.97	1.00	1.00	1.00	1.00	
Frpb, ped/bikes	1.00	1.00	0.99	1.00	1.00	0.95	1.00	1.00	0.98	1.00	1.00	
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.98	
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)	1770	5085	1561	3433	3539	1506	3433	1863	1552	1770	1822	
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (perm)	1770	5085	1561	3433	3539	1506	3433	1863	1552	1770	1822	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	98	1804	609	130	1261	391	500	380	196	326	283	43
RTOR Reduction (vph)	0	0	241	0	0	160	0	0	95	0	4	0
Lane Group Flow (vph)	98	1804	368	130	1261	231	500	380	101	326	322	0
Confl. Peds. (#/hr)	6		1	1		6			6	6		
Confl. Bikes (#/hr)			1			5						3
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases			2			6			8			
Actuated Green, G (s)	8.7	59.6	59.6	10.0	60.8	60.8	23.1	32.9	32.9	30.0	38.0	
Effective Green, g (s)	9.1	60.9	60.9	10.4	62.2	62.2	23.5	33.7	33.7	29.0	39.2	
Actuated g/C Ratio	0.06	0.41	0.41	0.07	0.41	0.41	0.16	0.22	0.22	0.19	0.26	
Clearance Time (s)	4.4	5.3	5.3	4.4	5.4	5.4	4.4	4.8	4.8	3.0	5.2	
Vehicle Extension (s)	2.0	4.4	4.4	2.0	4.4	4.4	2.0	3.8	3.8	2.0	2.0	
Lane Grp Cap (vph)	107	2064	633	238	1467	624	537	418	348	342	476	
v/s Ratio Prot	c0.06	0.35		0.04	c0.36		0.15	c0.20		c0.18	0.18	
v/s Ratio Perm			0.24			0.15			0.06			
v/c Ratio	0.92	0.87	0.58	0.55	0.86	0.37	0.93	0.91	0.29	0.95	0.68	
Uniform Delay, d1	70.1	41.0	34.6	67.5	39.9	30.4	62.5	56.7	48.2	59.8	49.7	
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	59.6	5.5	3.9	1.4	6.8	1.7	22.8	23.5	0.6	36.0	3.0	
Delay (s)	129.7	46.5	38.5	68.9	46.7	32.0	85.3	80.2	48.8	95.8	52.7	
Level of Service	F	D	D	E	D	C	F	F	D	F	D	
Approach Delay (s)		47.8			45.1			76.8			74.3	
Approach LOS		D			D			E			E	

Intersection Summary			
HCM 2000 Control Delay	55.1	HCM 2000 Level of Service	E
HCM 2000 Volume to Capacity ratio	0.90		
Actuated Cycle Length (s)	150.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	87.2%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			

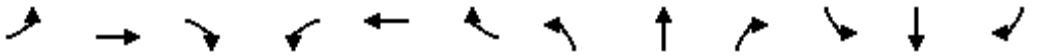
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (vph)	810	1770	920	0	0	880
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	7.0	7.0	7.0			7.0
Lane Util. Factor	0.97	0.88	0.95			0.95
Frt	1.00	0.85	1.00			1.00
Flt Protected	0.95	1.00	1.00			1.00
Satd. Flow (prot)	3433	2787	3539			3539
Flt Permitted	0.95	1.00	1.00			1.00
Satd. Flow (perm)	3433	2787	3539			3539
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	880	1924	1000	0	0	957
RTOR Reduction (vph)	0	5	0	0	0	0
Lane Group Flow (vph)	880	1919	1000	0	0	957
Turn Type	Prot	Perm	NA			NA
Protected Phases	4		2			6
Permitted Phases		4				
Actuated Green, G (s)	94.0	94.0	42.0			42.0
Effective Green, g (s)	94.0	94.0	42.0			42.0
Actuated g/C Ratio	0.63	0.63	0.28			0.28
Clearance Time (s)	7.0	7.0	7.0			7.0
Vehicle Extension (s)	0.2	0.2	0.2			0.2
Lane Grp Cap (vph)	2151	1746	990			990
v/s Ratio Prot	0.26		c0.28			0.27
v/s Ratio Perm		c0.69				
v/c Ratio	0.41	1.10	1.01			0.97
Uniform Delay, d1	14.1	28.0	54.0			53.3
Progression Factor	1.00	1.00	1.00			1.00
Incremental Delay, d2	0.0	54.0	31.1			20.6
Delay (s)	14.1	82.0	85.1			73.9
Level of Service	B	F	F			E
Approach Delay (s)	60.7		85.1			73.9
Approach LOS	E		F			E

Intersection Summary			
HCM 2000 Control Delay	68.5	HCM 2000 Level of Service	E
HCM 2000 Volume to Capacity ratio	1.07		
Actuated Cycle Length (s)	150.0	Sum of lost time (s)	14.0
Intersection Capacity Utilization	99.0%	ICU Level of Service	F
Analysis Period (min)	15		
c Critical Lane Group			

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (veh/h)	0	290	1480	130	0	1530
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	315	1609	141	0	1663
Pedestrians						3
Lane Width (ft)						12.0
Walking Speed (ft/s)						4.0
Percent Blockage						0
Right turn flare (veh)						
Median type			None			None
Median storage veh)						
Upstream signal (ft)			810			779
pX, platoon unblocked	0.81					
vC, conflicting volume	2234	610			1750	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1708	610			1750	
tC, single (s)	6.8	6.9			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	100	28			100	
cM capacity (veh/h)	67	436			354	

Direction, Lane #	WB 1	NB 1	NB 2	NB 3	SB 1	SB 2	SB 3
Volume Total	315	643	643	463	554	554	554
Volume Left	0	0	0	0	0	0	0
Volume Right	315	0	0	141	0	0	0
cSH	436	1700	1700	1700	1700	1700	1700
Volume to Capacity	0.72	0.38	0.38	0.27	0.33	0.33	0.33
Queue Length 95th (ft)	142	0	0	0	0	0	0
Control Delay (s)	31.9	0.0	0.0	0.0	0.0	0.0	0.0
Lane LOS	D						
Approach Delay (s)	31.9	0.0			0.0		
Approach LOS	D						

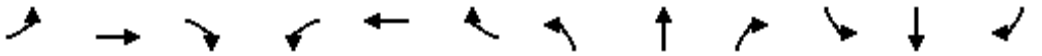
Intersection Summary			
Average Delay	2.7		
Intersection Capacity Utilization	56.4%	ICU Level of Service	B
Analysis Period (min)	15		



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	390	340	330	60	520	670	450	550	120	410	720	400
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.9	4.0	4.0		4.0	4.0	4.9
Lane Util. Factor	1.00	1.00	1.00	1.00	0.95	1.00	1.00	0.95		1.00	0.95	1.00
Frpb, ped/bikes	1.00	1.00	0.99	1.00	1.00	0.99	1.00	1.00		1.00	1.00	0.99
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.97		1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1770	1863	1568	1770	3539	1568	1770	3444		1770	3539	1567
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)	1770	1863	1568	1770	3539	1568	1770	3444		1770	3539	1567
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	424	370	359	65	565	728	489	598	130	446	783	435
RTOR Reduction (vph)	0	0	42	0	0	28	0	12	0	0	0	49
Lane Group Flow (vph)	424	370	317	65	565	700	489	716	0	446	783	386
Confl. Peds. (#/hr)	6		3	3		6	6					6
Turn Type	Prot	NA	pm+ov	Prot	NA	pm+ov	Prot	NA		Prot	NA	pm+ov
Protected Phases	5	2	3	1	6	7	3	8		7	4	5
Permitted Phases			2			6						4
Actuated Green, G (s)	30.1	52.4	86.5	8.8	31.1	66.5	34.1	33.7		35.4	35.0	65.1
Effective Green, g (s)	31.0	53.3	88.3	9.8	32.1	66.5	35.0	34.6		36.3	35.9	65.1
Actuated g/C Ratio	0.21	0.36	0.59	0.07	0.21	0.44	0.23	0.23		0.24	0.24	0.43
Clearance Time (s)	4.9	4.9	4.9	5.0	5.0	4.9	4.9	4.9		4.9	4.9	4.9
Vehicle Extension (s)	0.2	0.2	3.1	8.0	8.0	5.5	3.1	3.1		5.5	5.5	0.2
Lane Grp Cap (vph)	365	661	964	115	757	746	413	794		428	847	680
v/s Ratio Prot	c0.24	0.20	0.08	0.04	0.16	c0.22	c0.28	0.21		c0.25	0.22	0.11
v/s Ratio Perm			0.13			0.23						0.13
v/c Ratio	1.16	0.56	0.33	0.57	0.75	0.94	1.18	0.90		1.04	0.92	0.57
Uniform Delay, d1	59.5	38.9	15.7	68.0	55.1	39.8	57.5	56.0		56.9	55.7	31.9
Progression Factor	1.00	1.00	1.00	0.86	0.65	0.60	1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	98.8	3.4	0.2	16.4	6.3	19.3	104.9	13.4		54.9	16.4	0.7
Delay (s)	158.3	42.3	16.0	74.7	41.9	43.0	162.4	69.5		111.7	72.1	32.5
Level of Service	F	D	B	E	D	D	F	E		F	E	C
Approach Delay (s)		76.8			44.1			106.8			72.4	
Approach LOS		E			D			F			E	

Intersection Summary			
HCM 2000 Control Delay	77.9	HCM 2000 Level of Service	E
HCM 2000 Volume to Capacity ratio	1.11		
Actuated Cycle Length (s)	150.0	Sum of lost time (s)	17.8
Intersection Capacity Utilization	107.3%	ICU Level of Service	G
Analysis Period (min)	15		

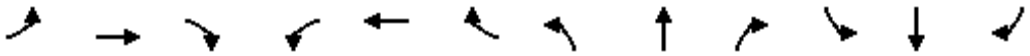
c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	200	140	170	70	160	90	260	660	90	150	730	170
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0
Lane Util. Factor	0.95	0.95	1.00	1.00	1.00	1.00	0.97	0.95		1.00	0.95	1.00
Frpb, ped/bikes	1.00	1.00	0.98	1.00	1.00	0.98	1.00	1.00		1.00	1.00	0.97
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.98		1.00	1.00	0.85
Flt Protected	0.95	0.99	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1681	1750	1558	1770	1863	1547	3433	3462		1770	3539	1531
Flt Permitted	0.95	0.99	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)	1681	1750	1558	1770	1863	1547	3433	3462		1770	3539	1531
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	217	152	185	76	174	98	283	717	98	163	793	185
RTOR Reduction (vph)	0	0	131	0	0	80	0	6	0	0	0	107
Lane Group Flow (vph)	174	195	54	76	174	18	283	809	0	163	793	78
Confl. Peds. (#/hr)	10		12	12		10	15		12	12		15
Turn Type	Split	NA	pm+ov	Split	NA	Perm	Prot	NA		Prot	NA	Perm
Protected Phases	8	8	1	7	7		1	6		5	2	
Permitted Phases			8			7						2
Actuated Green, G (s)	23.9	23.9	37.2	22.4	22.4	22.4	13.3	50.2		14.4	51.3	51.3
Effective Green, g (s)	24.8	24.8	38.0	23.3	23.3	23.3	13.7	51.1		14.8	52.2	52.2
Actuated g/C Ratio	0.19	0.19	0.29	0.18	0.18	0.18	0.11	0.39		0.11	0.40	0.40
Clearance Time (s)	4.9	4.9	4.4	4.9	4.9	4.9	4.4	4.9		4.4	4.9	4.9
Vehicle Extension (s)	3.0	3.0	2.0	3.0	3.0	3.0	2.0	4.5		2.0	4.6	4.6
Lane Grp Cap (vph)	320	333	455	317	333	277	361	1360		201	1421	614
v/s Ratio Prot	0.10	c0.11	0.01	0.04	c0.09		0.08	c0.23		c0.09	0.22	
v/s Ratio Perm			0.02			0.01						0.05
v/c Ratio	0.54	0.59	0.12	0.24	0.52	0.06	0.78	0.59		0.81	0.56	0.13
Uniform Delay, d1	47.5	47.9	33.7	45.8	48.3	44.3	56.7	31.2		56.2	30.0	24.5
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.27	0.90	1.12
Incremental Delay, d2	1.9	2.6	0.0	0.4	1.5	0.1	9.9	1.9		8.7	0.6	0.2
Delay (s)	49.4	50.5	33.8	46.1	49.8	44.4	66.6	33.2		80.2	27.5	27.5
Level of Service	D	D	C	D	D	D	E	C		F	C	C
Approach Delay (s)		44.6			47.5			41.8			35.0	
Approach LOS		D			D			D			D	

Intersection Summary			
HCM 2000 Control Delay	40.5	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.61		
Actuated Cycle Length (s)	130.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	73.1%	ICU Level of Service	D
Analysis Period (min)	15		

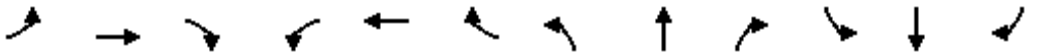
c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	40	20	50	80	20	70	80	1050	210	80	970	60
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0			4.0		4.0	4.0		4.0	4.0	
Lane Util. Factor		1.00			1.00		1.00	0.95		1.00	0.95	
Frpb, ped/bikes		1.00			0.97		1.00	0.99		1.00	1.00	
Flpb, ped/bikes		0.99			1.00		1.00	1.00		1.00	1.00	
Frt		0.94			0.94		1.00	0.98		1.00	0.99	
Flt Protected		0.98			0.98		0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1696			1659		1770	3430		1770	3508	
Flt Permitted		0.78			0.71		0.21	1.00		0.15	1.00	
Satd. Flow (perm)		1351			1208		398	3430		283	3508	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	43	22	54	87	22	76	87	1141	228	87	1054	65
RTOR Reduction (vph)	0	22	0	0	18	0	0	8	0	0	2	0
Lane Group Flow (vph)	0	97	0	0	167	0	87	1361	0	87	1117	0
Confl. Peds. (#/hr)	33					33			3	3		
Turn Type	Perm	NA		Perm	NA		pm+pt	NA		pm+pt	NA	
Protected Phases		8			4		1	6		5	2	
Permitted Phases	8			4			6			2		
Actuated Green, G (s)		23.6			23.6		112.2	105.9		112.2	105.9	
Effective Green, g (s)		24.5			24.5		113.0	106.8		113.0	106.8	
Actuated g/C Ratio		0.16			0.16		0.75	0.71		0.75	0.71	
Clearance Time (s)		4.9			4.9		4.4	4.9		4.4	4.9	
Vehicle Extension (s)		2.0			2.0		2.0	2.9		2.0	2.9	
Lane Grp Cap (vph)		220			197		361	2442		279	2497	
v/s Ratio Prot							0.01	c0.40		c0.01	0.32	
v/s Ratio Perm		0.07			c0.14		0.17			0.22		
v/c Ratio		0.44			0.85		0.24	0.56		0.31	0.45	
Uniform Delay, d1		56.6			60.9		6.0	10.3		7.5	9.1	
Progression Factor		1.00			1.25		1.00	1.00		1.00	1.00	
Incremental Delay, d2		0.5			24.3		0.1	0.9		0.2	0.6	
Delay (s)		57.1			100.8		6.1	11.2		7.7	9.7	
Level of Service		E			F		A	B		A	A	
Approach Delay (s)		57.1			100.8			10.9			9.6	
Approach LOS		E			F			B			A	

Intersection Summary			
HCM 2000 Control Delay	17.8	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.60		
Actuated Cycle Length (s)	150.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	66.5%	ICU Level of Service	C
Analysis Period (min)	15		

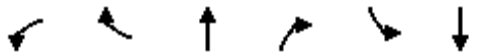
c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	380	1880	160	450	1500	350	180	610	370	350	520	290
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0	4.4	4.0	4.0	3.5	4.0	4.0	3.5
Lane Util. Factor	0.97	0.91		0.97	0.91	1.00	1.00	0.95	1.00	0.97	0.95	1.00
Frpb, ped/bikes	1.00	0.99		1.00	1.00	0.92	1.00	1.00	0.96	1.00	1.00	0.96
Flpb, ped/bikes	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.99		1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	4979		3433	5085	1464	1770	3539	1522	3433	3539	1516
Flt Permitted	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	4979		3433	5085	1464	1770	3539	1522	3433	3539	1516
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	413	2043	174	489	1630	380	196	663	402	380	565	315
RTOR Reduction (vph)	0	7	0	0	0	38	0	0	55	0	0	55
Lane Group Flow (vph)	413	2210	0	489	1630	342	196	663	347	380	565	260
Confl. Peds. (#/hr)	48		65	65		48	42		40	40		42
Turn Type	Prot	NA		Prot	NA	pm+ov	Prot	NA	pm+ov	Prot	NA	pm+ov
Protected Phases	5	2		1	6	7	3	8	1	7	4	5
Permitted Phases						6			8			4
Actuated Green, G (s)	19.7	59.0		19.9	59.3	76.6	16.2	30.0	49.9	17.3	31.1	50.8
Effective Green, g (s)	20.1	60.1		20.3	60.3	76.6	16.6	30.9	51.7	17.7	32.0	52.6
Actuated g/C Ratio	0.14	0.41		0.14	0.42	0.53	0.11	0.21	0.36	0.12	0.22	0.36
Clearance Time (s)	4.4	5.1		4.4	5.0	4.4	4.4	4.9	4.4	4.4	4.9	4.4
Vehicle Extension (s)	2.0	3.5		2.0	3.7	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lane Grp Cap (vph)	475	2063		480	2114	773	202	754	579	419	781	549
v/s Ratio Prot	0.12	c0.44		c0.14	0.32	0.05	c0.11	c0.19	0.09	c0.11	0.16	0.07
v/s Ratio Perm						0.18			0.14			0.10
v/c Ratio	0.87	1.07		1.02	0.77	0.44	0.97	0.88	0.60	0.91	0.72	0.47
Uniform Delay, d1	61.2	42.5		62.4	36.4	21.0	64.0	55.2	38.2	62.8	52.4	35.5
Progression Factor	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	15.0	42.1		45.9	1.9	0.1	54.4	11.1	1.1	22.4	2.8	0.2
Delay (s)	76.2	84.5		108.2	38.3	21.2	118.3	66.3	39.3	85.2	55.2	35.8
Level of Service	E	F		F	D	C	F	E	D	F	E	D
Approach Delay (s)		83.2			49.4			65.8			59.4	
Approach LOS		F			D			E			E	

Intersection Summary			
HCM 2000 Control Delay	65.4	HCM 2000 Level of Service	E
HCM 2000 Volume to Capacity ratio	1.00		
Actuated Cycle Length (s)	145.0	Sum of lost time (s)	16.4
Intersection Capacity Utilization	100.5%	ICU Level of Service	G
Analysis Period (min)	15		

c Critical Lane Group



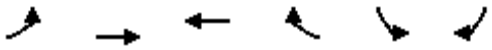
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (vph)	120	250	710	120	400	730
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.5		4.5		4.5	4.5
Lane Util. Factor	1.00		0.95		1.00	0.95
Frt	0.91		0.98		1.00	1.00
Flt Protected	0.98		1.00		0.95	1.00
Satd. Flow (prot)	1666		3463		1770	3539
Flt Permitted	0.98		1.00		0.95	1.00
Satd. Flow (perm)	1666		3463		1770	3539
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	130	272	772	130	435	793
RTOR Reduction (vph)	110	0	19	0	0	0
Lane Group Flow (vph)	292	0	883	0	435	793
Turn Type	Prot		NA		Prot	NA
Protected Phases	8		2		1	6
Permitted Phases						
Actuated Green, G (s)	14.5		21.9		18.7	45.1
Effective Green, g (s)	14.5		21.9		18.7	45.1
Actuated g/C Ratio	0.21		0.32		0.27	0.66
Clearance Time (s)	4.5		4.5		4.5	4.5
Vehicle Extension (s)	3.0		3.0		3.0	3.0
Lane Grp Cap (vph)	352		1105		482	2326
v/s Ratio Prot	c0.18		c0.25		c0.25	0.22
v/s Ratio Perm						
v/c Ratio	0.83		0.80		0.90	0.34
Uniform Delay, d1	25.9		21.3		24.1	5.2
Progression Factor	1.00		1.00		1.00	1.00
Incremental Delay, d2	15.2		6.1		20.0	0.4
Delay (s)	41.1		27.4		44.0	5.6
Level of Service	D		C		D	A
Approach Delay (s)	41.1		27.4			19.2
Approach LOS	D		C			B

Intersection Summary			
HCM 2000 Control Delay	25.6	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.84		
Actuated Cycle Length (s)	68.6	Sum of lost time (s)	13.5
Intersection Capacity Utilization	78.9%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (veh/h)	0	350	680	170	0	580
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	380	739	185	0	630
Pedestrians	2					3
Lane Width (ft)	12.0					12.0
Walking Speed (ft/s)	4.0					4.0
Percent Blockage	0					0
Right turn flare (veh)						
Median type			None			None
Median storage veh)						
Upstream signal (ft)			215			407
pX, platoon unblocked	0.86					
vC, conflicting volume	1149	467			926	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	849	467			926	
tC, single (s)	6.8	6.9			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	100	30			100	
cM capacity (veh/h)	258	540			733	

Direction, Lane #	WB 1	NB 1	NB 2	SB 1	SB 2
Volume Total	380	493	431	315	315
Volume Left	0	0	0	0	0
Volume Right	380	0	185	0	0
cSH	540	1700	1700	1700	1700
Volume to Capacity	0.70	0.29	0.25	0.19	0.19
Queue Length 95th (ft)	140	0	0	0	0
Control Delay (s)	26.0	0.0	0.0	0.0	0.0
Lane LOS	D				
Approach Delay (s)	26.0	0.0		0.0	
Approach LOS	D				

Intersection Summary			
Average Delay	5.1		
Intersection Capacity Utilization	52.9%	ICU Level of Service	A
Analysis Period (min)	15		



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (vph)	0	1240	990	840	340	250
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.4	5.4	5.9	5.2	5.2
Lane Util. Factor		0.95	0.95	0.88	0.97	1.00
Frpb, ped/bikes		1.00	1.00	1.00	1.00	1.00
Flpb, ped/bikes		1.00	1.00	1.00	1.00	1.00
Frt		1.00	1.00	0.85	1.00	0.85
Flt Protected		1.00	1.00	1.00	0.95	1.00
Satd. Flow (prot)		3539	3539	2787	3433	1583
Flt Permitted		1.00	1.00	1.00	0.95	1.00
Satd. Flow (perm)		3539	3539	2787	3433	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	1348	1076	913	370	272
RTOR Reduction (vph)	0	0	0	420	0	223
Lane Group Flow (vph)	0	1348	1076	493	370	49
Confl. Peds. (#/hr)				6	3	
Turn Type		NA	NA	custom	Prot	Perm
Protected Phases		2	2	2	1	
Permitted Phases				8		1
Actuated Green, G (s)		34.0	34.0	34.0	11.2	11.2
Effective Green, g (s)		34.0	34.0	33.5	11.2	11.2
Actuated g/C Ratio		0.55	0.55	0.54	0.18	0.18
Clearance Time (s)		5.4	5.4	5.4	5.2	5.2
Vehicle Extension (s)		2.9	2.9	2.9	2.5	2.5
Lane Grp Cap (vph)		1940	1940	1505	620	285
v/s Ratio Prot		c0.38	0.30	0.18	c0.11	
v/s Ratio Perm						0.03
v/c Ratio		0.69	0.55	0.33	0.60	0.17
Uniform Delay, d1		10.2	9.1	8.0	23.3	21.5
Progression Factor		1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2		1.1	0.3	0.1	1.3	0.2
Delay (s)		11.3	9.4	8.1	24.6	21.7
Level of Service		B	A	A	C	C
Approach Delay (s)		11.3	8.8		23.4	
Approach LOS		B	A		C	

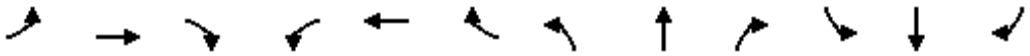
Intersection Summary			
HCM 2000 Control Delay	12.0	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.67		
Actuated Cycle Length (s)	62.0	Sum of lost time (s)	16.6
Intersection Capacity Utilization	52.8%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (vph)	70	200	1040	70	100	920
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	3.1	4.9		4.4	4.9
Lane Util. Factor	1.00	1.00	0.91		1.00	0.91
Frpb, ped/bikes	1.00	0.94	1.00		1.00	1.00
Flpb, ped/bikes	1.00	1.00	1.00		1.00	1.00
Frt	1.00	0.85	0.99		1.00	1.00
Flt Protected	0.95	1.00	1.00		0.95	1.00
Satd. Flow (prot)	1770	1495	5025		1770	5085
Flt Permitted	0.95	1.00	1.00		0.95	1.00
Satd. Flow (perm)	1770	1495	5025		1770	5085
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	76	217	1130	76	109	1000
RTOR Reduction (vph)	0	199	2	0	0	0
Lane Group Flow (vph)	76	18	1204	0	109	1000
Confl. Peds. (#/hr)	11	16		18	18	
Turn Type	Prot	Perm	NA		Prot	NA
Protected Phases	4		6		5	2
Permitted Phases		4				
Actuated Green, G (s)	11.8	11.8	111.2		13.7	129.3
Effective Green, g (s)	11.8	12.7	111.2		13.7	129.3
Actuated g/C Ratio	0.08	0.08	0.74		0.09	0.86
Clearance Time (s)	4.0	4.0	4.9		4.4	4.9
Vehicle Extension (s)	3.0	3.0	5.0		2.0	3.2
Lane Grp Cap (vph)	139	126	3725		161	4383
v/s Ratio Prot	c0.04		c0.24		c0.06	0.20
v/s Ratio Perm		0.01				
v/c Ratio	0.55	0.15	0.32		0.68	0.23
Uniform Delay, d1	66.5	63.6	6.6		66.0	1.8
Progression Factor	1.00	1.00	1.45		1.17	1.09
Incremental Delay, d2	4.3	0.5	0.2		6.0	0.1
Delay (s)	70.9	64.2	9.8		83.1	2.0
Level of Service	E	E	A		F	A
Approach Delay (s)	65.9		9.8			10.0
Approach LOS	E		A			A

Intersection Summary			
HCM 2000 Control Delay	18.6	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.38		
Actuated Cycle Length (s)	150.0	Sum of lost time (s)	13.3
Intersection Capacity Utilization	49.4%	ICU Level of Service	A
Analysis Period (min)	15		

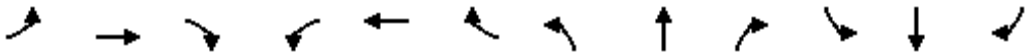
c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	70	130	150	120	40	120	210	1090	120	150	860	70
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	0.91		0.97	0.95	
Frpb, ped/bikes	1.00	0.99		1.00	0.98		1.00	1.00		1.00	1.00	
Flpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Frt	1.00	0.92		1.00	0.89		1.00	0.99		1.00	0.99	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1770	1690		1770	1627		1770	4991		3433	3489	
Flt Permitted	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (perm)	1770	1690		1770	1627		1770	4991		3433	3489	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	76	141	163	130	43	130	228	1185	130	163	935	76
RTOR Reduction (vph)	0	29	0	0	74	0	0	8	0	0	3	0
Lane Group Flow (vph)	76	275	0	130	99	0	228	1307	0	163	1008	0
Confl. Peds. (#/hr)	3		9	9		3	14		14	14		14
Turn Type	Split	NA		Split	NA		Prot	NA		Prot	NA	
Protected Phases	7	7		8	8		1	6		5	2	
Permitted Phases												
Actuated Green, G (s)	28.2	28.2		14.5	14.5		22.8	70.2		18.0	65.4	
Effective Green, g (s)	29.1	29.1		15.4	15.4		23.2	71.1		18.4	66.3	
Actuated g/C Ratio	0.19	0.19		0.10	0.10		0.15	0.47		0.12	0.44	
Clearance Time (s)	4.9	4.9		4.9	4.9		4.4	4.9		4.4	4.9	
Vehicle Extension (s)	3.0	3.0		2.0	2.0		2.0	3.9		2.0	3.9	
Lane Grp Cap (vph)	343	327		181	167		273	2365		421	1542	
v/s Ratio Prot	0.04	c0.16		c0.07	0.06		c0.13	0.26		0.05	c0.29	
v/s Ratio Perm												
v/c Ratio	0.22	0.84		0.72	0.60		0.84	0.55		0.39	0.65	
Uniform Delay, d1	50.9	58.2		65.2	64.3		61.5	28.1		60.6	32.8	
Progression Factor	1.00	1.00		1.00	1.00		1.03	0.50		0.76	0.82	
Incremental Delay, d2	0.3	17.4		10.7	3.8		16.7	0.8		0.2	2.0	
Delay (s)	51.2	75.6		75.9	68.1		79.9	14.9		46.0	29.0	
Level of Service	D	E		E	E		E	B		D	C	
Approach Delay (s)		70.8			71.5			24.5			31.3	
Approach LOS		E			E			C			C	

Intersection Summary			
HCM 2000 Control Delay	36.3	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.73		
Actuated Cycle Length (s)	150.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	76.4%	ICU Level of Service	D
Analysis Period (min)	15		

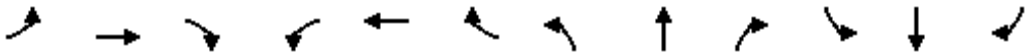
c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	60	30	70	150	30	140	50	1200	70	120	1040	80
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.9		4.9	4.9		4.4	4.9		4.4	4.9	
Lane Util. Factor		1.00		1.00	1.00		1.00	0.91		0.97	0.95	
Frpb, ped/bikes		0.99		1.00	1.00		1.00	1.00		1.00	1.00	
Flpb, ped/bikes		1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Frt		0.94		1.00	0.88		1.00	0.99		1.00	0.99	
Flt Protected		0.98		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1706		1770	1633		1770	5022		3433	3491	
Flt Permitted		0.98		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (perm)		1706		1770	1633		1770	5022		3433	3491	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	65	33	76	163	33	152	54	1304	76	130	1130	87
RTOR Reduction (vph)	0	22	0	0	115	0	0	3	0	0	3	0
Lane Group Flow (vph)	0	152	0	163	70	0	54	1377	0	130	1214	0
Confl. Peds. (#/hr)			6	6			7		18	18		7
Turn Type	Split	NA		Split	NA		Prot	NA		Prot	NA	
Protected Phases	8	8		7	7		1	6		5	2	
Permitted Phases												
Actuated Green, G (s)		19.9		17.6	17.6		7.1	79.0		14.4	86.3	
Effective Green, g (s)		19.9		17.6	17.6		7.1	79.0		14.4	86.3	
Actuated g/C Ratio		0.13		0.12	0.12		0.05	0.53		0.10	0.58	
Clearance Time (s)		4.9		4.9	4.9		4.4	4.9		4.4	4.9	
Vehicle Extension (s)		2.0		2.0	2.0		2.0	2.0		2.0	2.0	
Lane Grp Cap (vph)		226		207	191		83	2644		329	2008	
v/s Ratio Prot		c0.09		c0.09	0.04		0.03	c0.27		0.04	c0.35	
v/s Ratio Perm												
v/c Ratio		0.67		0.79	0.37		0.65	0.52		0.40	0.60	
Uniform Delay, d1		62.0		64.4	61.1		70.2	23.2		63.7	20.7	
Progression Factor		1.00		1.00	1.00		1.05	1.05		0.64	0.36	
Incremental Delay, d2		6.1		16.5	0.4		12.7	0.7		0.2	1.1	
Delay (s)		68.1		80.9	61.5		86.1	25.1		41.2	8.5	
Level of Service		E		F	E		F	C		D	A	
Approach Delay (s)		68.1			70.6			27.4			11.7	
Approach LOS		E			E			C			B	

Intersection Summary			
HCM 2000 Control Delay	27.9	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.64		
Actuated Cycle Length (s)	150.0	Sum of lost time (s)	19.1
Intersection Capacity Utilization	74.0%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	40	20	70	30	110	170	140	1110	30	40	1100	120
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.9	4.9		5.8	4.0	4.4	4.9		4.4	4.9	
Lane Util. Factor		1.00	1.00		1.00	1.00	1.00	0.91		1.00	0.91	
Frpb, ped/bikes		1.00	0.99		1.00	1.00	1.00	1.00		1.00	0.99	
Flpb, ped/bikes		1.00	1.00		1.00	1.00	1.00	1.00		1.00	1.00	
Frt		1.00	0.85		1.00	0.85	1.00	1.00		1.00	0.99	
Flt Protected		0.97	1.00		0.99	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1803	1562		1842	1583	1770	5055		1770	4963	
Flt Permitted		0.48	1.00		0.91	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (perm)		903	1562		1696	1583	1770	5055		1770	4963	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	43	22	76	33	120	185	152	1207	33	43	1196	130
RTOR Reduction (vph)	0	0	67	0	0	0	0	1	0	0	7	0
Lane Group Flow (vph)	0	65	9	0	153	185	152	1239	0	43	1319	0
Confl. Peds. (#/hr)			1	1			19		19	19		19
Turn Type	Perm	NA	Perm	Perm	NA	Free	Prot	NA		Prot	NA	
Protected Phases		8			8		1	6		5	2	
Permitted Phases	8		8	8		Free						
Actuated Green, G (s)		18.5	18.5		18.5	150.0	31.5	110.2		7.1	85.8	
Effective Green, g (s)		18.5	18.5		17.6	150.0	31.5	110.2		7.1	85.8	
Actuated g/C Ratio		0.12	0.12		0.12	1.00	0.21	0.73		0.05	0.57	
Clearance Time (s)		4.9	4.9		4.9		4.4	4.9		4.4	4.9	
Vehicle Extension (s)		2.0	2.0		2.0		2.0	2.9		2.0	3.9	
Lane Grp Cap (vph)		111	192		198	1583	371	3713		83	2838	
v/s Ratio Prot							c0.09	0.25		0.02	c0.27	
v/s Ratio Perm		0.07	0.01		c0.09	0.12						
v/c Ratio		0.59	0.05		0.77	0.12	0.41	0.33		0.52	0.46	
Uniform Delay, d1		62.1	58.0		64.3	0.0	51.2	7.0		69.8	18.7	
Progression Factor		1.24	2.55		1.00	1.00	0.81	0.68		0.96	1.34	
Incremental Delay, d2		4.5	0.0		15.6	0.2	0.1	0.1		1.8	0.4	
Delay (s)		81.8	147.7		79.8	0.2	41.5	4.9		68.9	25.5	
Level of Service		F	F		E	A	D	A		E	C	
Approach Delay (s)		117.3			36.2			8.9			26.9	
Approach LOS		F			D			A			C	

Intersection Summary			
HCM 2000 Control Delay	23.9	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.49		
Actuated Cycle Length (s)	150.0	Sum of lost time (s)	15.1
Intersection Capacity Utilization	58.6%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

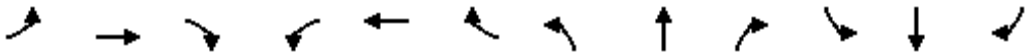
Movement	EBL	EBT	EBR	EBR2	WBT	WBR	NBR2	SBL2	SBL	SBT	SBR	NWL
Lane Configurations												
Volume (vph)	360	1630	510	100	1880	600	100	350	390	100	220	200
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	2.6	4.0		6.1	4.0	5.9	5.9	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.97	0.86		0.86	0.91	1.00	1.00	0.95	0.91	0.91	1.00	1.00
Frpb, ped/bikes	1.00	0.99		1.00	1.00	0.94	1.00	1.00	1.00	1.00	0.81	1.00
Flpb, ped/bikes	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.96		0.85	1.00	0.85	0.86	1.00	1.00	1.00	0.85	1.00
Flt Protected	0.95	1.00		1.00	1.00	1.00	1.00	0.95	0.95	0.97	1.00	0.95
Satd. Flow (prot)	3433	4569		1362	5085	1487	1611	1681	1610	1640	1289	1770
Flt Permitted	0.95	1.00		1.00	1.00	1.00	1.00	0.95	0.95	0.97	1.00	0.95
Satd. Flow (perm)	3433	4569		1362	5085	1487	1611	1681	1610	1640	1289	1770
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	391	1772	554	109	2043	652	109	380	424	109	239	217
RTOR Reduction (vph)	0	0	0	30	0	14	69	0	0	0	155	0
Lane Group Flow (vph)	391	2337	0	68	2043	638	40	243	332	338	84	217
Confl. Peds. (#/hr)	29		31			29		10			63	63
Turn Type	Prot	NA		Perm	NA	pm+ov	Perm	Split	Split	NA	Perm	Prot
Protected Phases	5	2			6	4		4	4	4		3
Permitted Phases				2		6	8				4	
Actuated Green, G (s)	16.0	82.9		82.9	63.1	96.5	55.1	33.4	33.4	33.4	33.4	19.6
Effective Green, g (s)	17.4	85.0		82.9	65.0	92.7	55.1	33.4	33.4	33.4	33.4	19.6
Actuated g/C Ratio	0.12	0.57		0.55	0.43	0.62	0.37	0.22	0.22	0.22	0.22	0.13
Clearance Time (s)	4.0	6.1		6.1	5.9	4.0	5.9	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	2.8		2.8	3.2	3.0	4.1	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	398	2589		752	2203	918	591	374	358	365	287	231
v/s Ratio Prot	c0.11	c0.51			0.40	0.15		0.14	c0.21	0.21		c0.12
v/s Ratio Perm				0.05		0.28	0.02				0.07	
v/c Ratio	0.98	0.90		0.09	0.93	0.70	0.07	0.65	0.93	0.93	0.29	0.94
Uniform Delay, d1	66.1	28.8		15.8	40.3	19.2	30.8	53.0	57.1	57.1	48.5	64.6
Progression Factor	1.00	1.00		1.00	1.22	1.78	1.00	0.86	0.86	0.86	0.95	1.00
Incremental Delay, d2	40.2	5.7		0.2	6.9	1.9	0.1	3.5	27.7	27.1	0.5	42.1
Delay (s)	106.4	34.5		16.0	56.1	35.9	30.9	48.9	77.0	76.4	46.7	106.8
Level of Service	F	C		B	E	D	C	D	E	E	D	F
Approach Delay (s)		43.8			51.2					64.6		95.6
Approach LOS		D			D					E		F

Intersection Summary			
HCM 2000 Control Delay	53.9	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.95		
Actuated Cycle Length (s)	150.0	Sum of lost time (s)	16.5
Intersection Capacity Utilization	88.6%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group

Movement	NWR	NWR2
Lane Configurations		
Volume (vph)	330	50
Ideal Flow (vphpl)	1900	1900
Total Lost time (s)	4.0	
Lane Util. Factor	0.88	
Frpb, ped/bikes	1.00	
Flpb, ped/bikes	1.00	
Frt	0.85	
Flt Protected	1.00	
Satd. Flow (prot)	2787	
Flt Permitted	1.00	
Satd. Flow (perm)	2787	
Peak-hour factor, PHF	0.92	0.92
Adj. Flow (vph)	359	54
RTOR Reduction (vph)	83	0
Lane Group Flow (vph)	330	0
Confl. Peds. (#/hr)		31
Turn Type	Prot	
Protected Phases	3	
Permitted Phases		
Actuated Green, G (s)	19.6	
Effective Green, g (s)	19.6	
Actuated g/C Ratio	0.13	
Clearance Time (s)	4.0	
Vehicle Extension (s)	3.0	
Lane Grp Cap (vph)	364	
v/s Ratio Prot	0.12	
v/s Ratio Perm		
v/c Ratio	0.91	
Uniform Delay, d1	64.3	
Progression Factor	1.00	
Incremental Delay, d2	25.4	
Delay (s)	89.7	
Level of Service	F	
Approach Delay (s)		
Approach LOS		

Intersection Summary

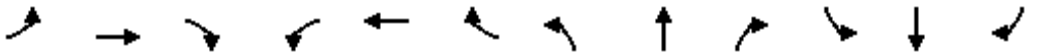


Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	80	120	300	100	200	50	70	70	120	50	40	50
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.5			4.5			4.5			4.0	
Lane Util. Factor		1.00			1.00			1.00			1.00	
Frt		0.92			0.98			0.94			0.95	
Flt Protected		0.99			0.99			0.99			0.98	
Satd. Flow (prot)		1698			1801			1724			1742	
Flt Permitted		0.89			0.71			0.89			0.84	
Satd. Flow (perm)		1523			1295			1550			1488	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	87	130	326	109	217	54	76	76	130	54	43	54
RTOR Reduction (vph)	0	109	0	0	12	0	0	40	0	0	26	0
Lane Group Flow (vph)	0	434	0	0	368	0	0	242	0	0	125	0
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)		19.4			19.4			22.1			22.6	
Effective Green, g (s)		19.4			19.4			22.1			22.6	
Actuated g/C Ratio		0.38			0.38			0.44			0.45	
Clearance Time (s)		4.5			4.5			4.5			4.0	
Vehicle Extension (s)		3.0			3.0			3.0			3.0	
Lane Grp Cap (vph)		585			497			678			665	
v/s Ratio Prot												
v/s Ratio Perm		c0.28			0.28			c0.16			0.08	
v/c Ratio		0.74			0.74			0.36			0.19	
Uniform Delay, d1		13.4			13.4			9.5			8.4	
Progression Factor		1.00			1.00			1.00			1.00	
Incremental Delay, d2		5.1			5.7			1.5			0.1	
Delay (s)		18.4			19.1			10.9			8.6	
Level of Service		B			B			B			A	
Approach Delay (s)		18.4			19.1			10.9			8.6	
Approach LOS		B			B			B			A	

Intersection Summary			
HCM 2000 Control Delay	16.0	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.54		
Actuated Cycle Length (s)	50.5	Sum of lost time (s)	9.0
Intersection Capacity Utilization	58.8%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

Movement	NBL	NBT	SBT	SBR	SEL	SER
Lane Configurations						
Volume (vph)	290	1290	830	50	50	450
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0		4.0	4.0
Lane Util. Factor	1.00	0.91	0.91		1.00	1.00
Frt	1.00	1.00	0.99		1.00	0.85
Flt Protected	0.95	1.00	1.00		0.95	1.00
Satd. Flow (prot)	1770	5085	5042		1770	1583
Flt Permitted	0.95	1.00	1.00		0.95	1.00
Satd. Flow (perm)	1770	5085	5042		1770	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	315	1402	902	54	54	489
RTOR Reduction (vph)	0	0	3	0	0	441
Lane Group Flow (vph)	315	1402	953	0	54	48
Turn Type	Prot	NA	NA		Prot	Perm
Protected Phases	7	4	8		5	
Permitted Phases						5
Actuated Green, G (s)	26.6	100.2	69.6		11.8	11.8
Effective Green, g (s)	26.6	100.2	69.6		11.8	11.8
Actuated g/C Ratio	0.22	0.84	0.58		0.10	0.10
Clearance Time (s)	4.0	4.0	4.0		4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0		3.0	3.0
Lane Grp Cap (vph)	392	4245	2924		174	155
v/s Ratio Prot	c0.18	c0.28	0.19		c0.03	
v/s Ratio Perm						0.03
v/c Ratio	0.80	0.33	0.33		0.31	0.31
Uniform Delay, d1	44.2	2.3	13.0		50.3	50.3
Progression Factor	1.00	1.00	0.61		1.00	1.00
Incremental Delay, d2	11.3	0.2	0.2		1.0	1.1
Delay (s)	55.5	2.5	8.1		51.3	51.5
Level of Service	E	A	A		D	D
Approach Delay (s)		12.2	8.1		51.4	
Approach LOS		B	A		D	

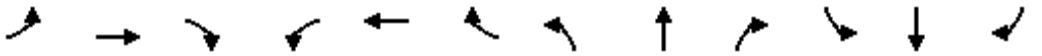
Intersection Summary			
HCM 2000 Control Delay	17.6	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.45		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	51.7%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	100	0	140	120	190	150	0	0	0	0	70	90
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0		4.0	4.0	4.0						4.0	
Lane Util. Factor	1.00		1.00	1.00	1.00						1.00	
Frt	1.00		0.85	1.00	0.93						0.92	
Flt Protected	0.95		1.00	0.95	1.00						1.00	
Satd. Flow (prot)	1770		1583	1770	1740						1721	
Flt Permitted	0.95		1.00	0.95	1.00						1.00	
Satd. Flow (perm)	1770		1583	1770	1740						1721	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	109	0	152	130	207	163	0	0	0	0	76	98
RTOR Reduction (vph)	0	0	133	86	42	0	0	0	0	0	75	0
Lane Group Flow (vph)	109	0	19	44	328	0	0	0	0	0	99	0
Turn Type	Prot		Perm	Split	NA						NA	
Protected Phases	2!			8	8						6!	
Permitted Phases			4									
Actuated Green, G (s)	8.5		4.9	12.9	12.9						8.5	
Effective Green, g (s)	8.5		4.9	12.9	12.9						8.5	
Actuated g/C Ratio	0.22		0.13	0.34	0.34						0.22	
Clearance Time (s)	4.0		4.0	4.0	4.0						4.0	
Vehicle Extension (s)	3.0		3.0	3.0	3.0						3.0	
Lane Grp Cap (vph)	392		202	596	586						381	
v/s Ratio Prot	c0.06			0.02	c0.19						0.06	
v/s Ratio Perm			c0.01									
v/c Ratio	0.28		0.10	0.07	0.56						0.26	
Uniform Delay, d1	12.4		14.7	8.6	10.4						12.3	
Progression Factor	1.00		1.00	1.00	1.00						1.00	
Incremental Delay, d2	0.4		0.2	0.1	1.2						0.4	
Delay (s)	12.7		15.0	8.7	11.6						12.7	
Level of Service	B		B	A	B						B	
Approach Delay (s)		14.0			10.8			0.0			12.7	
Approach LOS		B			B			A			B	

Intersection Summary			
HCM 2000 Control Delay	12.1	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.38		
Actuated Cycle Length (s)	38.3	Sum of lost time (s)	12.0
Intersection Capacity Utilization	43.9%	ICU Level of Service	A
Analysis Period (min)	15		

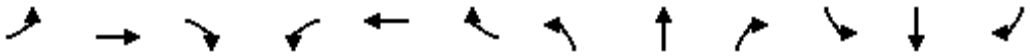
! Phase conflict between lane groups.
c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	1990	40	150	2380	0	0	0	0	570	200	100
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0		4.0	4.0					4.0	4.0	4.0
Lane Util. Factor		0.91		1.00	0.86					0.95	0.95	1.00
Frpb, ped/bikes		1.00		1.00	1.00					1.00	1.00	0.98
Flpb, ped/bikes		1.00		1.00	1.00					0.98	0.99	1.00
Frt		1.00		1.00	1.00					1.00	1.00	0.85
Flt Protected		1.00		0.95	1.00					0.95	0.98	1.00
Satd. Flow (prot)		5070		1770	6408					1656	1725	1559
Flt Permitted		1.00		0.95	1.00					0.95	0.98	1.00
Satd. Flow (perm)		5070		1770	6408					1656	1725	1559
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	2163	43	163	2587	0	0	0	0	620	217	109
RTOR Reduction (vph)	0	2	0	0	0	0	0	0	0	0	0	33
Lane Group Flow (vph)	0	2204	0	163	2587	0	0	0	0	477	360	76
Confl. Peds. (#/hr)				13						14		3
Turn Type		NA		Prot	NA					Perm	NA	Perm
Protected Phases		2		1	6						4	
Permitted Phases										4		4
Actuated Green, G (s)		72.9		17.5	95.1					45.1	45.1	45.1
Effective Green, g (s)		74.1		17.9	96.0					46.0	46.0	46.0
Actuated g/C Ratio		0.49		0.12	0.64					0.31	0.31	0.31
Clearance Time (s)		5.2		4.4	4.9					4.9	4.9	4.9
Vehicle Extension (s)		3.8		2.0	4.6					2.0	2.0	2.0
Lane Grp Cap (vph)		2504		211	4101					507	529	478
v/s Ratio Prot		c0.43		c0.09	0.40							
v/s Ratio Perm										c0.29	0.21	0.05
v/c Ratio		0.88		0.77	0.63					0.94	0.68	0.16
Uniform Delay, d1		34.0		64.1	16.3					50.7	45.6	37.9
Progression Factor		1.14		1.47	0.08					1.00	1.00	1.00
Incremental Delay, d2		2.4		5.6	0.3					25.6	2.9	0.1
Delay (s)		40.9		99.5	1.6					76.3	48.4	38.0
Level of Service		D		F	A					E	D	D
Approach Delay (s)		40.9			7.4			0.0			61.3	
Approach LOS		D			A			A			E	

Intersection Summary			
HCM 2000 Control Delay	28.6	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.89		
Actuated Cycle Length (s)	150.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	80.0%	ICU Level of Service	D
Analysis Period (min)	15		

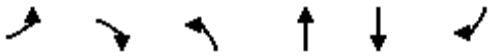
c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	790	210	180	390	0	180	0	300	190	220	10
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0		4.0	4.0		4.0		4.0	4.0	4.0	
Lane Util. Factor		0.95		1.00	0.95		1.00		1.00	1.00	1.00	
Frpb, ped/bikes		0.97		1.00	1.00		1.00		0.98	1.00	1.00	
Flpb, ped/bikes		1.00		1.00	1.00		1.00		1.00	1.00	1.00	
Frt		0.97		1.00	1.00		1.00		0.85	1.00	0.99	
Flt Protected		1.00		0.95	1.00		0.95		1.00	0.95	1.00	
Satd. Flow (prot)		3323		1770	3539		1770		1556	1770	1848	
Flt Permitted		1.00		0.10	1.00		0.95		1.00	0.95	1.00	
Satd. Flow (perm)		3323		195	3539		1770		1556	1770	1848	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	859	228	196	424	0	196	0	326	207	239	11
RTOR Reduction (vph)	0	26	0	0	0	0	0	0	200	0	2	0
Lane Group Flow (vph)	0	1061	0	196	424	0	196	0	126	207	248	0
Confl. Peds. (#/hr)			43	43		51	17		3	3		17
Turn Type		NA		pm+pt	NA		Prot		Perm	Split	NA	
Protected Phases		2		1	6		3			4	4	
Permitted Phases				6					2			
Actuated Green, G (s)		33.9		45.9	45.9		12.9		33.9	17.0	17.0	
Effective Green, g (s)		34.8		46.3	46.8		13.3		34.8	17.9	17.9	
Actuated g/C Ratio		0.39		0.51	0.52		0.15		0.39	0.20	0.20	
Clearance Time (s)		4.9		4.4	4.9		4.4		4.9	4.9	4.9	
Vehicle Extension (s)		6.7		2.0	6.7		3.0		6.7	3.0	3.0	
Lane Grp Cap (vph)		1284		240	1840		261		601	352	367	
v/s Ratio Prot		0.32		c0.07	0.12		c0.11			0.12	c0.13	
v/s Ratio Perm				c0.35					0.08			
v/c Ratio		0.83		0.82	0.23		0.75		0.21	0.59	0.68	
Uniform Delay, d1		24.9		17.6	11.8		36.8		18.4	32.7	33.4	
Progression Factor		1.00		1.00	1.00		1.00		1.00	1.00	1.00	
Incremental Delay, d2		6.2		18.0	0.3		11.5		0.8	2.5	4.9	
Delay (s)		31.1		35.6	12.1		48.3		19.2	35.2	38.3	
Level of Service		C		D	B		D		B	D	D	
Approach Delay (s)		31.1			19.5			30.1			36.9	
Approach LOS		C			B			C			D	

Intersection Summary			
HCM 2000 Control Delay	29.2	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.79		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	77.1%	ICU Level of Service	D
Analysis Period (min)	15		

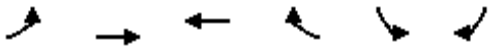
c Critical Lane Group



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (vph)	230	450	450	890	430	100
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0		4.4	4.0	4.9	
Lane Util. Factor	1.00		1.00	0.91	0.91	
Frpb, ped/bikes	1.00		1.00	1.00	0.99	
Flpb, ped/bikes	1.00		1.00	1.00	1.00	
Frt	0.91		1.00	1.00	0.97	
Flt Protected	0.98		0.95	1.00	1.00	
Satd. Flow (prot)	1668		1770	5085	4915	
Flt Permitted	0.98		0.95	1.00	1.00	
Satd. Flow (perm)	1668		1770	5085	4915	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	250	489	489	967	467	109
RTOR Reduction (vph)	59	0	0	0	32	0
Lane Group Flow (vph)	680	0	489	967	544	0
Confl. Peds. (#/hr)			2			2
Turn Type	Prot		Prot	NA	NA	
Protected Phases	2		3	8	4	
Permitted Phases						
Actuated Green, G (s)	49.0		35.6	63.0	23.4	
Effective Green, g (s)	49.0		35.2	63.0	22.5	
Actuated g/C Ratio	0.41		0.29	0.52	0.19	
Clearance Time (s)	4.0		4.0	4.0	4.0	
Vehicle Extension (s)	3.0		3.0	3.0	3.0	
Lane Grp Cap (vph)	681		519	2669	921	
v/s Ratio Prot	c0.41		c0.28	0.19	c0.11	
v/s Ratio Perm						
v/c Ratio	1.00		0.94	0.36	0.59	
Uniform Delay, d1	35.5		41.4	16.7	44.5	
Progression Factor	1.00		1.04	1.20	1.00	
Incremental Delay, d2	34.0		25.1	0.4	2.8	
Delay (s)	69.5		68.1	20.4	47.3	
Level of Service	E		E	C	D	
Approach Delay (s)	69.5			36.4	47.3	
Approach LOS	E			D	D	

Intersection Summary			
HCM 2000 Control Delay	47.5	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.89		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	13.3
Intersection Capacity Utilization	89.4%	ICU Level of Service	E
Analysis Period (min)	15		

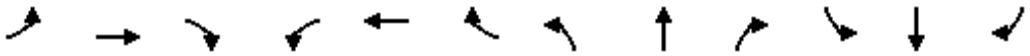
c Critical Lane Group



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (veh/h)	70	90	170	80	70	130
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	76	98	185	87	76	141
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type		None	None			
Median storage veh)						
Upstream signal (ft)		1226	738			
pX, platoon unblocked						
vC, conflicting volume	272				478	228
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	272				478	228
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	94				85	83
cM capacity (veh/h)	1292				514	811

Direction, Lane #	EB 1	EB 2	WB 1	SB 1
Volume Total	76	98	272	217
Volume Left	76	0	0	76
Volume Right	0	0	87	141
cSH	1292	1700	1700	674
Volume to Capacity	0.06	0.06	0.16	0.32
Queue Length 95th (ft)	5	0	0	35
Control Delay (s)	8.0	0.0	0.0	12.9
Lane LOS	A			B
Approach Delay (s)	3.5		0.0	12.9
Approach LOS				B

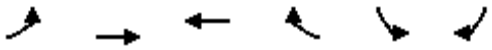
Intersection Summary			
Average Delay	5.1		
Intersection Capacity Utilization	39.6%	ICU Level of Service	A
Analysis Period (min)	15		



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	200	2350	10	0	2480	560	50	100	160	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0			4.0	4.0		4.0				
Lane Util. Factor	1.00	0.91			0.91	1.00		0.95				
Frpb, ped/bikes	1.00	1.00			1.00	0.96		0.98				
Flpb, ped/bikes	1.00	1.00			1.00	1.00		1.00				
Frt	1.00	1.00			1.00	0.85		0.92				
Flt Protected	0.95	1.00			1.00	1.00		0.99				
Satd. Flow (prot)	1770	5081			5085	1519		3186				
Flt Permitted	0.95	1.00			1.00	1.00		0.99				
Satd. Flow (perm)	1770	5081			5085	1519		3186				
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	217	2554	11	0	2696	609	54	109	174	0	0	0
RTOR Reduction (vph)	0	0	0	0	0	140	0	3	0	0	0	0
Lane Group Flow (vph)	217	2565	0	0	2696	469	0	334	0	0	0	0
Confl. Peds. (#/hr)	15		2			15	1		20			
Turn Type	Prot	NA			NA	Perm	Split	NA				
Protected Phases	5	2			6		4	4				
Permitted Phases						6						
Actuated Green, G (s)	19.8	107.2			83.0	83.0		33.0				
Effective Green, g (s)	20.2	108.1			83.9	83.9		33.9				
Actuated g/C Ratio	0.13	0.72			0.56	0.56		0.23				
Clearance Time (s)	4.4	4.9			4.9	4.9		4.9				
Vehicle Extension (s)	2.0	3.8			4.6	4.6		2.0				
Lane Grp Cap (vph)	238	3661			2844	849		720				
v/s Ratio Prot	c0.12	0.50			c0.53			c0.10				
v/s Ratio Perm						0.31						
v/c Ratio	0.91	0.70			0.95	0.55		0.46				
Uniform Delay, d1	64.0	11.8			31.0	21.1		50.2				
Progression Factor	0.78	0.45			1.00	1.00		1.00				
Incremental Delay, d2	19.7	0.5			8.5	2.6		0.2				
Delay (s)	69.4	5.9			39.5	23.7		50.4				
Level of Service	E	A			D	C		D				
Approach Delay (s)		10.8			36.6			50.4			0.0	
Approach LOS		B			D			D			A	

Intersection Summary			
HCM 2000 Control Delay	26.1	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.82		
Actuated Cycle Length (s)	150.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	92.2%	ICU Level of Service	F
Analysis Period (min)	15		

c Critical Lane Group



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (veh/h)	130	1150	570	100	0	0
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	141	1250	620	109	0	0
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type		None	None			
Median storage veh)						
Upstream signal (ft)		345	945			
pX, platoon unblocked	0.95				0.77	0.95
vC, conflicting volume	728				1582	364
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	613				864	230
tC, single (s)	4.1				6.8	6.9
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	85				100	100
cM capacity (veh/h)	916				190	735

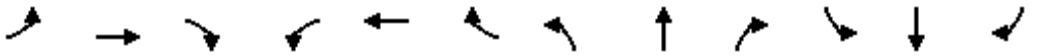
Direction, Lane #	EB 1	EB 2	EB 3	WB 1	WB 2
Volume Total	141	625	625	413	315
Volume Left	141	0	0	0	0
Volume Right	0	0	0	0	109
cSH	916	1700	1700	1700	1700
Volume to Capacity	0.15	0.37	0.37	0.24	0.19
Queue Length 95th (ft)	14	0	0	0	0
Control Delay (s)	9.6	0.0	0.0	0.0	0.0
Lane LOS	A				
Approach Delay (s)	1.0			0.0	
Approach LOS					

Intersection Summary			
Average Delay	0.6		
Intersection Capacity Utilization	35.1%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Sign Control	Stop		Stop			Stop
Volume (vph)	130	0	0	590	360	280
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	141	0	0	641	391	304

Direction, Lane #	WB 1	NB 1	SB 1	SB 2
Volume Total (vph)	141	641	391	304
Volume Left (vph)	141	0	391	0
Volume Right (vph)	0	641	0	0
Hadj (s)	0.23	-0.57	0.53	0.03
Departure Headway (s)	6.9	4.7	6.2	5.7
Degree Utilization, x	0.27	0.84	0.67	0.48
Capacity (veh/h)	499	751	565	623
Control Delay (s)	12.4	27.5	19.7	12.6
Approach Delay (s)	12.4	27.5	16.6	
Approach LOS	B	D	C	

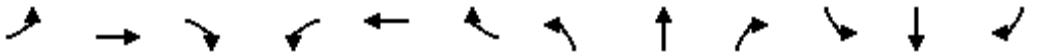
Intersection Summary			
Delay	20.9		
Level of Service	C		
Intersection Capacity Utilization	63.1%	ICU Level of Service	B
Analysis Period (min)	15		



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Volume (vph)	440	50	150	20	20	30	50	120	10	20	200	190
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	478	54	163	22	22	33	54	130	11	22	217	207

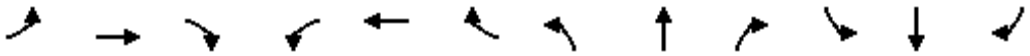
Direction, Lane #	EB 1	EB 2	WB 1	NB 1	SB 1	SB 2
Volume Total (vph)	505	190	76	196	239	207
Volume Left (vph)	478	0	22	54	22	0
Volume Right (vph)	0	163	33	11	0	207
Hadj (s)	0.51	-0.57	-0.17	0.06	0.08	-0.67
Departure Headway (s)	7.2	6.1	7.7	7.5	7.3	6.6
Degree Utilization, x	1.0	0.32	0.16	0.41	0.49	0.38
Capacity (veh/h)	491	575	440	467	482	537
Control Delay (s)	69.4	10.8	12.1	15.6	15.9	12.3
Approach Delay (s)	53.4		12.1	15.6	14.2	
Approach LOS	F		B	C	B	

Intersection Summary				
Delay	33.6			
Level of Service	D			
Intersection Capacity Utilization	62.8%	ICU Level of Service		B
Analysis Period (min)	15			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	700	280	430	480	0	0	0	0	330	470	1060
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0	4.0	4.0	4.0					4.0	4.0	4.0
Lane Util. Factor		0.95	1.00	0.97	0.95					0.91	0.91	1.00
Frt		1.00	0.85	1.00	1.00					1.00	1.00	0.85
Flt Protected		1.00	1.00	0.95	1.00					0.95	1.00	1.00
Satd. Flow (prot)		3539	1583	3433	3539					1610	3390	1583
Flt Permitted		1.00	1.00	0.95	1.00					0.95	1.00	1.00
Satd. Flow (perm)		3539	1583	3433	3539					1610	3390	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	761	304	467	522	0	0	0	0	359	511	1152
RTOR Reduction (vph)	0	0	203	0	0	0	0	0	0	0	0	87
Lane Group Flow (vph)	0	761	101	467	522	0	0	0	0	359	511	1065
Turn Type		NA	Perm	Prot	NA					Perm	NA	Perm
Protected Phases		2		1	6						4	
Permitted Phases			2							4		4
Actuated Green, G (s)		26.7	26.7	15.0	46.1					64.1	64.1	64.1
Effective Green, g (s)		27.6	27.6	15.4	47.0					65.0	65.0	65.0
Actuated g/C Ratio		0.23	0.23	0.13	0.39					0.54	0.54	0.54
Clearance Time (s)		4.9	4.9	4.4	4.9					4.9	4.9	4.9
Vehicle Extension (s)		3.8	3.8	2.0	4.2					2.0	2.0	2.0
Lane Grp Cap (vph)		813	364	440	1386					872	1836	857
v/s Ratio Prot		c0.22		c0.14	0.15							
v/s Ratio Perm			0.06							0.22	0.15	c0.67
v/c Ratio		0.94	0.28	1.06	0.38					0.41	0.28	1.24
Uniform Delay, d1		45.3	38.0	52.3	26.0					16.2	14.8	27.5
Progression Factor		1.00	1.00	1.00	1.00					1.00	1.00	1.00
Incremental Delay, d2		19.4	1.9	60.1	0.8					0.1	0.0	119.0
Delay (s)		64.7	39.9	112.4	26.8					16.3	14.9	146.5
Level of Service		E	D	F	C					B	B	F
Approach Delay (s)		57.6			67.2			0.0			90.1	
Approach LOS		E			E			A			F	

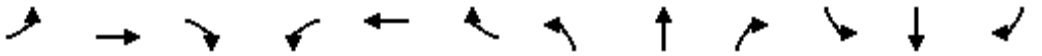
Intersection Summary			
HCM 2000 Control Delay	76.1	HCM 2000 Level of Service	E
HCM 2000 Volume to Capacity ratio	1.14		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	85.6%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	0	0	40	50	0	0	0	0	0	0	1660	20
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	0	43	54	0	0	0	0	0	0	1804	22
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)								1066				
pX, platoon unblocked												
vC, conflicting volume	1815	1815	612	645	1826	0	1826			0		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	1815	1815	612	645	1826	0	1826			0		
tC, single (s)	7.5	6.5	6.9	7.5	6.5	6.9	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	100	100	90	83	100	100	100			100		
cM capacity (veh/h)	49	77	436	322	76	1084	331			1622		

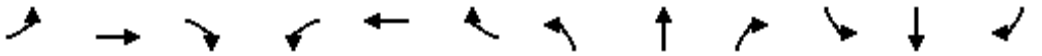
Direction, Lane #	EB 1	WB 1	SB 1	SB 2	SB 3
Volume Total	43	54	722	722	383
Volume Left	0	54	0	0	0
Volume Right	43	0	0	0	22
cSH	436	322	1700	1700	1700
Volume to Capacity	0.10	0.17	0.42	0.42	0.23
Queue Length 95th (ft)	8	15	0	0	0
Control Delay (s)	14.2	18.5	0.0	0.0	0.0
Lane LOS	B	C			
Approach Delay (s)	14.2	18.5	0.0		
Approach LOS	B	C			

Intersection Summary				
Average Delay	0.8			
Intersection Capacity Utilization	51.0%	ICU Level of Service	A	
Analysis Period (min)	15			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	420	240	100	150	0	0	0	0	380	840	480
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0	4.0		4.0					4.0	4.0	
Lane Util. Factor		1.00	1.00		0.95					1.00	0.91	
Frt		1.00	0.85		1.00					1.00	0.95	
Flt Protected		1.00	1.00		0.98					0.95	1.00	
Satd. Flow (prot)		1863	1583		3470					1770	4808	
Flt Permitted		1.00	1.00		0.64					0.95	1.00	
Satd. Flow (perm)		1863	1583		2255					1770	4808	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	457	261	109	163	0	0	0	0	413	913	522
RTOR Reduction (vph)	0	0	40	0	0	0	0	0	0	0	159	0
Lane Group Flow (vph)	0	457	221	0	272	0	0	0	0	413	1276	0
Turn Type		NA	Perm	Perm	NA					Perm	NA	
Protected Phases		4			8						6	
Permitted Phases			4	8						6		
Actuated Green, G (s)		25.3	25.3		25.3					26.7	26.7	
Effective Green, g (s)		28.0	28.0		28.0					29.0	29.0	
Actuated g/C Ratio		0.43	0.43		0.43					0.45	0.45	
Clearance Time (s)		6.7	6.7		6.7					6.3	6.3	
Vehicle Extension (s)		2.0	2.0		2.5					4.6	4.6	
Lane Grp Cap (vph)		802	681		971					789	2145	
v/s Ratio Prot		c0.25									c0.27	
v/s Ratio Perm			0.14		0.12					0.23		
v/c Ratio		0.57	0.32		0.28					0.52	0.59	
Uniform Delay, d1		14.0	12.2		12.0					13.0	13.6	
Progression Factor		1.00	1.00		1.00					1.00	1.00	
Incremental Delay, d2		2.9	1.3		0.7					2.5	1.2	
Delay (s)		16.9	13.5		12.7					15.5	14.8	
Level of Service		B	B		B					B	B	
Approach Delay (s)		15.7			12.7			0.0			14.9	
Approach LOS		B			B			A			B	

Intersection Summary			
HCM 2000 Control Delay	14.9	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.58		
Actuated Cycle Length (s)	65.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	66.1%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

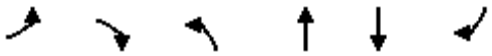


Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	1090	340	60	700	0	0	0	0	730	1100	660
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		6.7		4.0	6.7						6.3	4.0
Lane Util. Factor		0.95		1.00	0.95						0.86	0.86
Frt		0.96		1.00	1.00						1.00	0.85
Flt Protected		1.00		0.95	1.00						0.98	1.00
Satd. Flow (prot)		3413		1770	3539						4712	1362
Flt Permitted		1.00		0.95	1.00						0.98	1.00
Satd. Flow (perm)		3413		1770	3539						4712	1362
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	1185	370	65	761	0	0	0	0	793	1196	717
RTOR Reduction (vph)	0	29	0	0	0	0	0	0	0	0	0	52
Lane Group Flow (vph)	0	1526	0	65	761	0	0	0	0	0	1989	665
Turn Type		NA		Prot	NA					Perm	NA	Perm
Protected Phases		2		1	6						4	
Permitted Phases										4		4
Actuated Green, G (s)		31.5		3.4	37.6						40.4	40.4
Effective Green, g (s)		29.7		3.8	37.5						39.5	41.8
Actuated g/C Ratio		0.33		0.04	0.42						0.44	0.46
Clearance Time (s)		4.9		4.4	6.6						5.4	5.4
Vehicle Extension (s)		1.0		2.0	1.0						1.0	1.0
Lane Grp Cap (vph)		1126		74	1474						2068	632
v/s Ratio Prot		c0.45		c0.04	0.22							
v/s Ratio Perm											0.42	c0.49
v/c Ratio		1.35		0.88	0.52						1.08dl	1.05
Uniform Delay, d1		30.1		42.9	19.5						24.5	24.1
Progression Factor		1.00		1.00	1.00						1.00	1.00
Incremental Delay, d2		165.6		62.7	1.3						12.0	50.3
Delay (s)		195.7		105.6	20.8						36.5	74.4
Level of Service		F		F	C						D	E
Approach Delay (s)		195.7			27.5			0.0			46.6	
Approach LOS		F			C			A			D	

Intersection Summary			
HCM 2000 Control Delay	89.0	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.20		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	17.0
Intersection Capacity Utilization	99.5%	ICU Level of Service	F
Analysis Period (min)	15		

dl Defacto Left Lane. Recode with 1 though lane as a left lane.

c Critical Lane Group



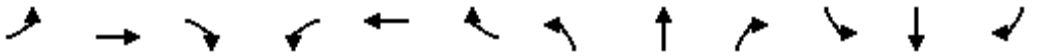
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (vph)	310	1270	1700	1270	1150	130
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	0.88	0.97	0.91	0.91	1.00
Frpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	0.99
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected	0.95	1.00	0.95	1.00	1.00	1.00
Satd. Flow (prot)	1770	2787	3433	5085	5085	1566
Flt Permitted	0.95	1.00	0.95	1.00	1.00	1.00
Satd. Flow (perm)	1770	2787	3433	5085	5085	1566
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	337	1380	1848	1380	1250	141
RTOR Reduction (vph)	0	0	0	0	0	4
Lane Group Flow (vph)	337	1380	1848	1380	1250	137
Confl. Peds. (#/hr)			3			3
Turn Type	Prot	pm+ov	Prot	NA	NA	pm+ov
Protected Phases	5	7	7	4	8	5
Permitted Phases		5				8
Actuated Green, G (s)	23.0	88.0	65.0	99.0	30.0	53.0
Effective Green, g (s)	23.0	88.0	65.0	99.0	30.0	53.0
Actuated g/C Ratio	0.18	0.68	0.50	0.76	0.23	0.41
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	313	1972	1716	3872	1173	686
v/s Ratio Prot	c0.19	0.35	c0.54	0.27	c0.25	0.04
v/s Ratio Perm		0.15				0.05
v/c Ratio	1.08	0.70	1.08	0.36	1.07	0.20
Uniform Delay, d1	53.5	12.9	32.5	5.1	50.0	24.8
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	72.8	1.1	45.7	0.3	45.7	0.1
Delay (s)	126.3	14.0	78.2	5.3	95.7	25.0
Level of Service	F	B	E	A	F	C
Approach Delay (s)	36.0			47.1	88.5	
Approach LOS	D			D	F	

Intersection Summary			
HCM 2000 Control Delay	53.2	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	1.07		
Actuated Cycle Length (s)	130.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	97.9%	ICU Level of Service	F
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	SEL	SET	SER	NWL	NWT	NWR
Lane Configurations												
Volume (vph)	240	520	0	0	900	640	40	0	120	250	30	420
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.5	4.0			4.4	4.4		6.4		4.0	4.0	
Lane Util. Factor	1.00	0.95			0.95	1.00		1.00		0.91	0.91	
Frt	1.00	1.00			1.00	0.85		0.90		1.00	0.87	
Flt Protected	0.95	1.00			1.00	1.00		0.99		0.95	1.00	
Satd. Flow (prot)	1770	3539			3539	1583		1653		1610	2933	
Flt Permitted	0.95	1.00			1.00	1.00		0.99		0.95	1.00	
Satd. Flow (perm)	1770	3539			3539	1583		1653		1610	2933	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	261	565	0	0	978	696	43	0	130	272	33	457
RTOR Reduction (vph)	0	0	0	0	0	427	0	111	0	0	399	0
Lane Group Flow (vph)	261	565	0	0	978	269	0	62	0	245	118	0
Turn Type	Prot	NA			NA	Perm	Split	NA		Split	NA	
Protected Phases	5	2			6		8	8		7	7	
Permitted Phases						6						
Actuated Green, G (s)	10.6	49.2			33.7	33.7		12.6		11.1	11.1	
Effective Green, g (s)	10.6	49.2			33.7	33.7		12.6		11.1	11.1	
Actuated g/C Ratio	0.12	0.56			0.39	0.39		0.14		0.13	0.13	
Clearance Time (s)	4.5	4.0			4.4	4.4		6.4		4.0	4.0	
Vehicle Extension (s)	3.5	2.0			3.5	3.5		2.0		2.0	2.0	
Lane Grp Cap (vph)	214	1994			1366	611		238		204	372	
v/s Ratio Prot	c0.15	0.16			c0.28			c0.04		c0.15	0.04	
v/s Ratio Perm						0.17						
v/c Ratio	1.22	0.28			0.72	0.44		0.26		1.20	0.32	
Uniform Delay, d1	38.4	9.9			22.7	19.8		33.2		38.1	34.7	
Progression Factor	1.00	1.00			1.00	1.00		1.00		1.00	1.00	
Incremental Delay, d2	133.4	0.4			3.2	2.3		0.2		127.8	0.2	
Delay (s)	171.8	10.3			26.0	22.1		33.4		165.9	34.8	
Level of Service	F	B			C	C		C		F	C	
Approach Delay (s)		61.3			24.4			33.4			77.0	
Approach LOS		E			C			C			E	

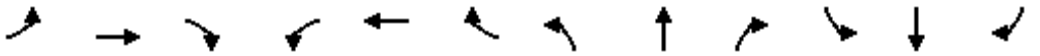
Intersection Summary			
HCM 2000 Control Delay	45.4	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.79		
Actuated Cycle Length (s)	87.3	Sum of lost time (s)	19.3
Intersection Capacity Utilization	78.3%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	410	70	600	670	0	0	0	0	350	40	370
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0		5.9	5.9					1.8	1.8	1.8
Lane Util. Factor		0.95		1.00	1.00					0.95	0.95	1.00
Frpb, ped/bikes		1.00		1.00	1.00					1.00	1.00	1.00
Flpb, ped/bikes		1.00		1.00	1.00					1.00	1.00	1.00
Frt		0.98		1.00	1.00					1.00	1.00	0.85
Flt Protected		1.00		0.95	1.00					0.95	0.96	1.00
Satd. Flow (prot)		3453		1770	1863					1681	1701	1583
Flt Permitted		1.00		0.95	1.00					0.95	0.96	1.00
Satd. Flow (perm)		3453		1770	1863					1681	1701	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	446	76	652	728	0	0	0	0	380	43	402
RTOR Reduction (vph)	0	18	0	0	0	0	0	0	0	0	0	71
Lane Group Flow (vph)	0	504	0	652	728	0	0	0	0	201	222	331
Confl. Peds. (#/hr)	5		5	5		10						
Turn Type		NA		Split	NA					Split	NA	custom
Protected Phases		7		8	8					6	6	6
Permitted Phases												7
Actuated Green, G (s)		14.2		29.7	29.7					10.7	10.7	24.9
Effective Green, g (s)		14.2		30.0	30.0					12.9	12.9	29.3
Actuated g/C Ratio		0.21		0.44	0.44					0.19	0.19	0.43
Clearance Time (s)		4.0		6.2	6.2					4.0	4.0	4.0
Vehicle Extension (s)		3.0		2.0	2.0					3.0	3.0	3.0
Lane Grp Cap (vph)		712		771	812					315	318	715
v/s Ratio Prot		c0.15		0.37	c0.39					0.12	c0.13	0.09
v/s Ratio Perm												0.12
v/c Ratio		0.71		0.85	0.90					0.64	0.70	0.46
Uniform Delay, d1		25.4		17.3	18.0					25.8	26.1	14.1
Progression Factor		1.00		1.00	1.00					1.00	1.00	1.00
Incremental Delay, d2		3.2		8.2	12.2					4.2	6.5	0.5
Delay (s)		28.6		25.5	30.2					30.0	32.7	14.6
Level of Service		C		C	C					C	C	B
Approach Delay (s)		28.6			28.0			0.0			23.2	
Approach LOS		C			C			A			C	

Intersection Summary			
HCM 2000 Control Delay	26.6	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.80		
Actuated Cycle Length (s)	68.8	Sum of lost time (s)	11.7
Intersection Capacity Utilization	69.2%	ICU Level of Service	C
Analysis Period (min)	15		

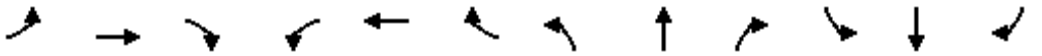
c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	40	150	30	360	40	230	30	1530	260	250	510	20
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.3	4.3		4.0	4.0		6.2	4.0	
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	0.91		1.00	0.91	
Frpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Flpb, ped/bikes	1.00	1.00		0.99	1.00		1.00	1.00		1.00	1.00	
Frt	1.00	0.97		1.00	0.87		1.00	0.98		1.00	0.99	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1770	1809		1757	1624		1770	4974		1770	5051	
Flt Permitted	0.43	1.00		0.55	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (perm)	805	1809		1020	1624		1770	4974		1770	5051	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	43	163	33	391	43	250	33	1663	283	272	554	22
RTOR Reduction (vph)	0	6	0	0	162	0	0	20	0	0	3	0
Lane Group Flow (vph)	43	190	0	391	131	0	33	1927	0	272	573	0
Confl. Peds. (#/hr)			9	9			2					2
Turn Type	Perm	NA		Perm	NA		Prot	NA		Prot	NA	
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4			8								
Actuated Green, G (s)	43.1	43.1		42.4	42.4		3.6	46.1		19.0	60.8	
Effective Green, g (s)	43.1	43.1		42.8	42.8		3.6	47.5		16.8	62.9	
Actuated g/C Ratio	0.35	0.35		0.35	0.35		0.03	0.39		0.14	0.52	
Clearance Time (s)	4.0	4.0		4.7	4.7		4.0	5.4		4.0	6.1	
Vehicle Extension (s)	2.0	2.0		3.0	3.0		2.0	4.8		2.0	3.7	
Lane Grp Cap (vph)	285	641		359	571		52	1942		244	2612	
v/s Ratio Prot		0.11			0.08		0.02	c0.39		c0.15	0.11	
v/s Ratio Perm	0.05			c0.38								
v/c Ratio	0.15	0.30		1.09	0.23		0.63	0.99		1.11	0.22	
Uniform Delay, d1	26.8	28.3		39.4	27.8		58.3	36.9		52.4	16.0	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	0.1	0.1		73.5	0.2		17.1	18.6		91.9	0.2	
Delay (s)	26.9	28.4		112.9	28.0		75.4	55.5		144.3	16.2	
Level of Service	C	C		F	C		E	E		F	B	
Approach Delay (s)		28.1			76.5			55.8			57.3	
Approach LOS		C			E			E			E	

Intersection Summary			
HCM 2000 Control Delay	58.2	HCM 2000 Level of Service	E
HCM 2000 Volume to Capacity ratio	1.05		
Actuated Cycle Length (s)	121.6	Sum of lost time (s)	14.5
Intersection Capacity Utilization	97.9%	ICU Level of Service	F
Analysis Period (min)	15		

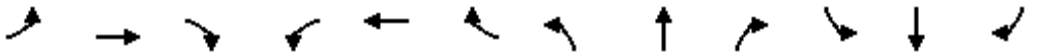
c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	620	1070	300	250	950	160	450	1040	230	130	610	250
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	4.0
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00	0.91		1.00	0.91	1.00
Frpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	0.99
Flpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	1.00
Frt	1.00	0.97		1.00	0.98		1.00	0.97		1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1770	3423		1770	3454		1770	4934		1770	5085	1569
Flt Permitted	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)	1770	3423		1770	3454		1770	4934		1770	5085	1569
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	674	1163	326	272	1033	174	489	1130	250	141	663	272
RTOR Reduction (vph)	0	17	0	0	9	0	0	24	0	0	0	50
Lane Group Flow (vph)	674	1472	0	272	1198	0	489	1356	0	141	663	222
Confl. Peds. (#/hr)	4					4	5		1	1		5
Turn Type	Prot	NA		Prot	NA		Prot	NA		Prot	NA	pm+ov
Protected Phases	7	4		3	8		5	2		1	6	7
Permitted Phases												6
Actuated Green, G (s)	38.6	58.2		22.2	41.2		28.6	42.1		8.6	22.0	60.6
Effective Green, g (s)	39.0	59.4		22.6	43.0		29.0	43.0		9.0	23.0	61.4
Actuated g/C Ratio	0.26	0.40		0.15	0.29		0.19	0.29		0.06	0.15	0.41
Clearance Time (s)	4.4	5.2		4.4	5.8		4.4	4.9		4.4	5.0	4.4
Vehicle Extension (s)	2.0	3.9		2.0	2.7		2.0	3.3		2.0	4.1	2.0
Lane Grp Cap (vph)	460	1355		266	990		342	1414		106	779	642
v/s Ratio Prot	c0.38	0.43		0.15	c0.35		c0.28	c0.27		0.08	0.13	0.09
v/s Ratio Perm												0.05
v/c Ratio	1.47	1.09		1.02	1.21		1.43	0.96		1.33	0.85	0.35
Uniform Delay, d1	55.5	45.3		63.7	53.5		60.5	52.6		70.5	61.8	30.5
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	221.0	51.5		61.1	103.9		209.6	16.0		199.5	11.3	0.1
Delay (s)	276.5	96.8		124.8	157.4		270.1	68.6		270.0	73.1	30.6
Level of Service	F	F		F	F		F	E		F	E	C
Approach Delay (s)		152.8			151.4			121.4			88.2	
Approach LOS		F			F			F			F	

Intersection Summary			
HCM 2000 Control Delay	133.0	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.31		
Actuated Cycle Length (s)	150.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	119.0%	ICU Level of Service	H
Analysis Period (min)	15		

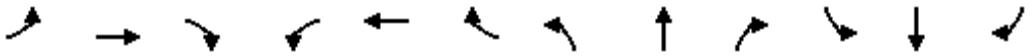
c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	160	790	200	220	350	90	250	240	630	70	110	70
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	5.5	5.5	4.0	5.4	5.4
Lane Util. Factor	1.00	0.95	0.88	0.97	0.95	1.00	0.97	1.00	1.00	1.00	0.91	1.00
Frpb, ped/bikes	1.00	1.00	0.97	1.00	1.00	0.71	1.00	1.00	0.98	1.00	1.00	0.97
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1770	3539	2709	3433	3539	1131	3433	1863	1555	1770	5085	1537
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1770	3539	2709	3433	3539	1131	3433	1863	1555	1770	5085	1537
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	174	859	217	239	380	98	272	261	685	76	120	76
RTOR Reduction (vph)	0	0	119	0	0	63	0	0	63	0	0	58
Lane Group Flow (vph)	174	859	98	239	380	35	272	261	622	76	120	18
Confl. Peds. (#/hr)			27	27		170	23		15	15		23
Turn Type	Prot	NA	pm+ov	Prot	NA	Perm	Prot	NA	pm+ov	Prot	NA	Perm
Protected Phases	5	2	3	1	6		3	8	1	7	4	
Permitted Phases			2			6			8			4
Actuated Green, G (s)	11.0	33.2	41.1	10.1	32.3	32.3	7.9	24.0	34.1	6.6	22.7	22.7
Effective Green, g (s)	11.4	34.1	41.9	10.5	33.2	33.2	8.3	23.4	31.9	7.0	22.2	22.2
Actuated g/C Ratio	0.12	0.37	0.45	0.11	0.36	0.36	0.09	0.25	0.34	0.08	0.24	0.24
Clearance Time (s)	4.4	4.9	4.4	4.4	4.9	4.9	4.4	4.9	4.4	4.4	4.9	4.9
Vehicle Extension (s)	2.0	2.1	2.0	2.0	2.3	2.3	2.0	4.5	2.0	2.0	4.5	4.5
Lane Grp Cap (vph)	218	1304	1227	389	1270	405	308	471	536	133	1220	368
v/s Ratio Prot	0.10	c0.24	0.01	0.07	0.11		c0.08	0.14	c0.11	0.04	0.02	
v/s Ratio Perm			0.03			0.03			0.29			0.01
v/c Ratio	0.80	0.66	0.08	0.61	0.30	0.09	0.88	0.55	1.16	0.57	0.10	0.05
Uniform Delay, d1	39.4	24.3	14.4	39.1	21.3	19.6	41.6	30.0	30.3	41.3	27.4	27.0
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	17.0	2.6	0.0	2.0	0.6	0.4	23.8	2.1	91.5	3.6	0.1	0.1
Delay (s)	56.5	27.0	14.4	41.1	21.9	20.0	65.4	32.1	121.8	44.9	27.4	27.1
Level of Service	E	C	B	D	C	C	E	C	F	D	C	C
Approach Delay (s)		28.9			28.0			90.0			32.2	
Approach LOS		C			C			F			C	

Intersection Summary			
HCM 2000 Control Delay	50.5	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.91		
Actuated Cycle Length (s)	92.5	Sum of lost time (s)	19.0
Intersection Capacity Utilization	82.3%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	580	300	70	20	170	150	90	100	110	20	20	40
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0			4.0			4.0			4.0	
Lane Util. Factor		1.00			1.00			1.00			1.00	
Frpb, ped/bikes		1.00			0.99			0.99			0.99	
Flpb, ped/bikes		1.00			1.00			1.00			1.00	
Frt		0.99			0.94			0.95			0.93	
Flt Protected		0.97			1.00			0.99			0.99	
Satd. Flow (prot)		1784			1731			1722			1698	
Flt Permitted		0.62			0.92			0.86			0.79	
Satd. Flow (perm)		1136			1599			1495			1365	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	630	326	76	22	185	163	98	109	120	22	22	43
RTOR Reduction (vph)	0	3	0	0	16	0	0	19	0	0	32	0
Lane Group Flow (vph)	0	1029	0	0	354	0	0	308	0	0	55	0
Confl. Peds. (#/hr)	1		3	3		1	1		4	4		1
Turn Type	pm+pt	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases	5	2			6			8			4	
Permitted Phases	2			6			8			4		
Actuated Green, G (s)		79.2			79.2			21.0			21.0	
Effective Green, g (s)		80.1			80.1			21.9			21.9	
Actuated g/C Ratio		0.73			0.73			0.20			0.20	
Clearance Time (s)		4.9			4.9			4.9			4.9	
Vehicle Extension (s)		2.0			2.0			2.0			2.0	
Lane Grp Cap (vph)		827			1164			297			271	
v/s Ratio Prot												
v/s Ratio Perm		c0.91			0.22			c0.21			0.04	
v/c Ratio		1.24			0.30			1.04			0.20	
Uniform Delay, d1		15.0			5.2			44.0			36.8	
Progression Factor		1.00			1.00			1.00			1.00	
Incremental Delay, d2		120.2			0.7			62.0			0.1	
Delay (s)		135.2			5.9			106.0			36.9	
Level of Service		F			A			F			D	
Approach Delay (s)		135.2			5.9			106.0			36.9	
Approach LOS		F			A			F			D	

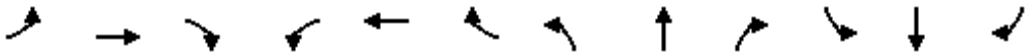
Intersection Summary			
HCM 2000 Control Delay	98.9	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.25		
Actuated Cycle Length (s)	110.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	105.2%	ICU Level of Service	G
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (vph)	1050	440	220	490	170	260
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0		4.0	4.9	4.0	4.0
Lane Util. Factor	0.91		1.00	0.95	1.00	1.00
Frpb, ped/bikes	0.97		1.00	1.00	1.00	1.00
Flpb, ped/bikes	1.00		1.00	1.00	1.00	1.00
Frt	0.96		1.00	1.00	1.00	0.85
Flt Protected	1.00		0.95	1.00	0.95	1.00
Satd. Flow (prot)	4706		1770	3539	1770	1583
Flt Permitted	1.00		0.95	1.00	0.95	1.00
Satd. Flow (perm)	4706		1770	3539	1770	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	1141	478	239	533	185	283
RTOR Reduction (vph)	83	0	0	0	0	222
Lane Group Flow (vph)	1536	0	239	533	185	61
Confl. Peds. (#/hr)		53	53		46	81
Turn Type	NA		Prot	NA	Prot	Prot
Protected Phases	2		1	6	8	8
Permitted Phases						
Actuated Green, G (s)	30.0		12.2	46.6	14.5	14.5
Effective Green, g (s)	31.9		12.6	46.6	15.4	15.4
Actuated g/C Ratio	0.45		0.18	0.66	0.22	0.22
Clearance Time (s)	4.9		4.4	4.9	4.9	4.9
Vehicle Extension (s)	2.9		2.0	2.0	2.0	2.0
Lane Grp Cap (vph)	2117		314	2326	384	343
v/s Ratio Prot	c0.33		c0.14	0.15	c0.10	0.04
v/s Ratio Perm						
v/c Ratio	0.73		0.76	0.23	0.48	0.18
Uniform Delay, d1	15.9		27.7	4.9	24.3	22.6
Progression Factor	1.00		1.00	1.00	1.00	1.00
Incremental Delay, d2	2.2		9.4	0.2	0.3	0.1
Delay (s)	18.1		37.1	5.1	24.6	22.7
Level of Service	B		D	A	C	C
Approach Delay (s)	18.1			15.0	23.5	
Approach LOS	B			B	C	

Intersection Summary			
HCM 2000 Control Delay	18.2	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.67		
Actuated Cycle Length (s)	70.9	Sum of lost time (s)	11.0
Intersection Capacity Utilization	62.9%	ICU Level of Service	B
Analysis Period (min)	15		

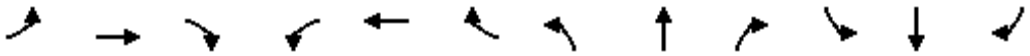
c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Volume (vph)	20	20	20	30	20	60	40	140	40	90	190	60
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	22	22	22	33	22	65	43	152	43	98	207	65

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total (vph)	65	120	239	370
Volume Left (vph)	22	33	43	98
Volume Right (vph)	22	65	43	65
Hadj (s)	-0.10	-0.24	-0.04	-0.02
Departure Headway (s)	5.5	5.2	4.8	4.7
Degree Utilization, x	0.10	0.17	0.32	0.48
Capacity (veh/h)	572	610	708	736
Control Delay (s)	9.1	9.3	10.1	12.0
Approach Delay (s)	9.1	9.3	10.1	12.0
Approach LOS	A	A	B	B

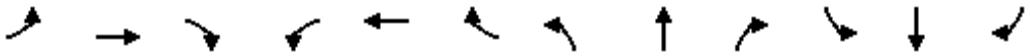
Intersection Summary				
Delay	10.8			
Level of Service	B			
Intersection Capacity Utilization	48.9%	ICU Level of Service	A	
Analysis Period (min)	15			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Volume (vph)	40	20	20	30	40	20	30	120	30	40	130	70
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	43	22	22	33	43	22	33	130	33	43	141	76

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total (vph)	87	98	196	261
Volume Left (vph)	43	33	33	43
Volume Right (vph)	22	22	33	76
Hadj (s)	-0.02	-0.03	-0.03	-0.11
Departure Headway (s)	5.1	5.1	4.7	4.5
Degree Utilization, x	0.12	0.14	0.25	0.33
Capacity (veh/h)	634	640	732	757
Control Delay (s)	8.8	8.9	9.2	9.7
Approach Delay (s)	8.8	8.9	9.2	9.7
Approach LOS	A	A	A	A

Intersection Summary				
Delay	9.3			
Level of Service	A			
Intersection Capacity Utilization	34.5%	ICU Level of Service	A	
Analysis Period (min)	15			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Traffic Volume (vph)	20	20	20	70	30	30	20	200	400	10	160	20
Future Volume (vph)	20	20	20	70	30	30	20	200	400	10	160	20
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	22	22	22	76	33	33	22	217	435	11	174	22

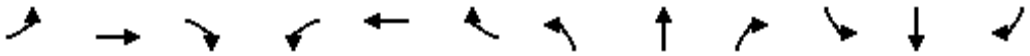
Direction, Lane #	EB 1	WB 1	NB 1	NB 2	SB 1
Volume Total (vph)	66	142	239	435	207
Volume Left (vph)	22	76	22	0	11
Volume Right (vph)	22	33	0	435	22
Hadj (s)	-0.10	0.00	0.08	-0.67	-0.02
Departure Headway (s)	6.0	5.9	5.5	4.7	5.3
Degree Utilization, x	0.11	0.23	0.36	0.57	0.31
Capacity (veh/h)	533	557	644	747	640
Control Delay (s)	9.7	10.6	10.3	12.6	10.7
Approach Delay (s)	9.7	10.6	15.8		10.7
Approach LOS	A	B	C		B

Intersection Summary				
Delay	15.6			
Level of Service	C			
Intersection Capacity Utilization	51.5%	ICU Level of Service	A	
Analysis Period (min)	15			

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Sign Control	Stop			Stop	Stop	
Volume (vph)	40	40	60	50	50	110
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	43	43	65	54	54	120

Direction, Lane #	EB 1	WB 1	NB 1
Volume Total (vph)	87	120	174
Volume Left (vph)	0	65	54
Volume Right (vph)	43	0	120
Hadj (s)	-0.27	0.14	-0.32
Departure Headway (s)	4.2	4.5	4.1
Degree Utilization, x	0.10	0.15	0.20
Capacity (veh/h)	825	757	846
Control Delay (s)	7.6	8.3	8.0
Approach Delay (s)	7.6	8.3	8.0
Approach LOS	A	A	A

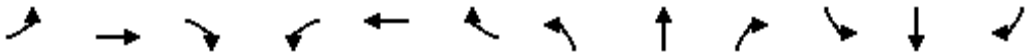
Intersection Summary			
Delay	8.0		
Level of Service	A		
Intersection Capacity Utilization	34.1%	ICU Level of Service	A
Analysis Period (min)	15		



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Volume (vph)	30	30	30	50	30	20	80	160	140	20	70	20
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	33	33	33	54	33	22	87	174	152	22	76	22

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total (vph)	98	109	413	120
Volume Left (vph)	33	54	87	22
Volume Right (vph)	33	22	152	22
Hadj (s)	-0.10	0.01	-0.14	-0.04
Departure Headway (s)	5.2	5.3	4.5	4.9
Degree Utilization, x	0.14	0.16	0.51	0.16
Capacity (veh/h)	612	605	777	677
Control Delay (s)	9.1	9.3	12.1	8.9
Approach Delay (s)	9.1	9.3	12.1	8.9
Approach LOS	A	A	B	A

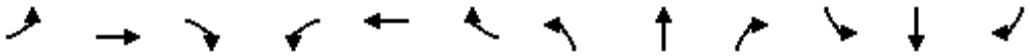
Intersection Summary			
Delay	10.8		
Level of Service	B		
Intersection Capacity Utilization	50.7%	ICU Level of Service	A
Analysis Period (min)	15		



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	280	40	110	20	60	50	120	290	20	20	70	160
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0			4.0		4.0	4.0		4.0	4.0	
Lane Util. Factor		1.00			1.00		1.00	1.00		1.00	1.00	
Frpb, ped/bikes		1.00			0.99		1.00	1.00		1.00	0.98	
Flpb, ped/bikes		1.00			1.00		1.00	1.00		1.00	1.00	
Frt		0.97			0.95		1.00	0.99		1.00	0.90	
Flt Protected		0.97			0.99		0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1738			1742		1765	1841		1764	1641	
Flt Permitted		0.75			0.92		0.58	1.00		0.49	1.00	
Satd. Flow (perm)		1353			1607		1087	1841		910	1641	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	304	43	120	22	65	54	130	315	22	22	76	174
RTOR Reduction (vph)	0	25	0	0	32	0	0	3	0	0	98	0
Lane Group Flow (vph)	0	442	0	0	109	0	130	334	0	22	152	0
Confl. Peds. (#/hr)	5					5	3		4	4		3
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		8			4			6			2	
Permitted Phases	8			4			6			2		
Actuated Green, G (s)		21.2			21.2		22.5	22.5		22.5	22.5	
Effective Green, g (s)		21.2			21.2		22.5	22.5		22.5	22.5	
Actuated g/C Ratio		0.41			0.41		0.44	0.44		0.44	0.44	
Clearance Time (s)		4.0			4.0		4.0	4.0		4.0	4.0	
Vehicle Extension (s)		2.0			2.0		2.1	2.1		2.1	2.1	
Lane Grp Cap (vph)		554			658		473	801		396	714	
v/s Ratio Prot								c0.18			0.09	
v/s Ratio Perm		c0.33			0.07		0.12			0.02		
v/c Ratio		0.80			0.17		0.27	0.42		0.06	0.21	
Uniform Delay, d1		13.4			9.7		9.4	10.1		8.5	9.1	
Progression Factor		1.00			1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2		7.4			0.0		1.4	1.6		0.3	0.7	
Delay (s)		20.7			9.7		10.8	11.7		8.7	9.8	
Level of Service		C			A		B	B		A	A	
Approach Delay (s)		20.7			9.7			11.4			9.7	
Approach LOS		C			A			B			A	

Intersection Summary			
HCM 2000 Control Delay	14.1	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.60		
Actuated Cycle Length (s)	51.7	Sum of lost time (s)	8.0
Intersection Capacity Utilization	65.1%	ICU Level of Service	C
Analysis Period (min)	15		

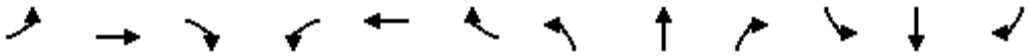
c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	70	1040	200	290	580	20	110	20	220	30	20	20
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0			4.0			4.0	
Lane Util. Factor	1.00	0.91		1.00	0.95			1.00			1.00	
Frpb, ped/bikes	1.00	0.99		1.00	1.00			0.99			1.00	
Flpb, ped/bikes	1.00	1.00		1.00	1.00			1.00			1.00	
Frt	1.00	0.98		1.00	0.99			0.92			0.96	
Flt Protected	0.95	1.00		0.95	1.00			0.98			0.98	
Satd. Flow (prot)	1765	4927		1769	3517			1662			1745	
Flt Permitted	0.40	1.00		0.15	1.00			0.88			0.76	
Satd. Flow (perm)	751	4927		282	3517			1480			1347	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	76	1130	217	315	630	22	120	22	239	33	22	22
RTOR Reduction (vph)	0	36	0	0	3	0	0	100	0	0	16	0
Lane Group Flow (vph)	76	1311	0	315	649	0	0	281	0	0	61	0
Confl. Peds. (#/hr)	13		12	12		13	6		2	2		6
Turn Type	pm+pt	NA		pm+pt	NA		Perm	NA		Perm	NA	
Protected Phases	5	2		1	6			8			4	
Permitted Phases	2			6			8			4		
Actuated Green, G (s)	24.6	21.9		36.3	29.2			15.0			15.0	
Effective Green, g (s)	25.4	22.9		36.7	30.1			15.9			15.9	
Actuated g/C Ratio	0.42	0.37		0.60	0.49			0.26			0.26	
Clearance Time (s)	4.4	5.0		4.4	4.9			4.9			4.9	
Vehicle Extension (s)	2.0	3.3		2.0	3.3			2.0			2.0	
Lane Grp Cap (vph)	363	1846		420	1732			385			350	
v/s Ratio Prot	0.01	0.27		c0.13	0.18							
v/s Ratio Perm	0.08			c0.32				c0.19			0.05	
v/c Ratio	0.21	0.71		0.75	0.37			0.73			0.17	
Uniform Delay, d1	10.9	16.3		10.7	9.6			20.6			17.5	
Progression Factor	1.00	1.00		1.00	1.00			1.00			1.00	
Incremental Delay, d2	0.1	2.3		6.6	0.6			6.0			0.1	
Delay (s)	11.0	18.6		17.2	10.3			26.7			17.6	
Level of Service	B	B		B	B			C			B	
Approach Delay (s)		18.2			12.5			26.7			17.6	
Approach LOS		B			B			C			B	

Intersection Summary			
HCM 2000 Control Delay	17.4	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.78		
Actuated Cycle Length (s)	61.1	Sum of lost time (s)	12.0
Intersection Capacity Utilization	75.0%	ICU Level of Service	D
Analysis Period (min)	15		

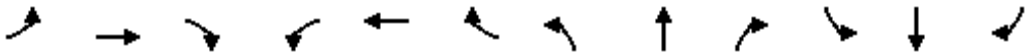
c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Volume (vph)	110	20	30	10	20	20	20	110	30	40	160	90
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	120	22	33	11	22	22	22	120	33	43	174	98

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total (vph)	174	54	174	315
Volume Left (vph)	120	11	22	43
Volume Right (vph)	33	22	33	98
Hadj (s)	0.06	-0.17	-0.05	-0.12
Departure Headway (s)	5.2	5.2	4.9	4.6
Degree Utilization, x	0.25	0.08	0.23	0.40
Capacity (veh/h)	631	609	693	740
Control Delay (s)	10.0	8.6	9.3	10.7
Approach Delay (s)	10.0	8.6	9.3	10.7
Approach LOS	A	A	A	B

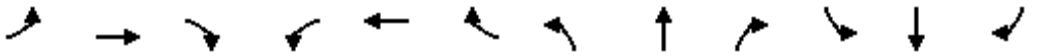
Intersection Summary			
Delay	10.0		
Level of Service	B		
Intersection Capacity Utilization	45.4%	ICU Level of Service	A
Analysis Period (min)	15		



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Volume (vph)	40	20	60	10	20	20	40	80	20	20	140	50
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	43	22	65	11	22	22	43	87	22	22	152	54

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total (vph)	130	54	152	228
Volume Left (vph)	43	11	43	22
Volume Right (vph)	65	22	22	54
Hadj (s)	-0.20	-0.17	0.01	-0.09
Departure Headway (s)	4.7	4.8	4.6	4.4
Degree Utilization, x	0.17	0.07	0.20	0.28
Capacity (veh/h)	709	676	737	768
Control Delay (s)	8.6	8.2	8.7	9.2
Approach Delay (s)	8.6	8.2	8.7	9.2
Approach LOS	A	A	A	A

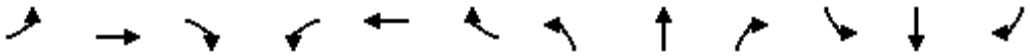
Intersection Summary				
Delay	8.8			
Level of Service	A			
Intersection Capacity Utilization	35.9%	ICU Level of Service	A	
Analysis Period (min)	15			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	560	670	60	30	580	150	0	0	30	220	160	310
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0				4.0	4.0	4.0	4.0
Lane Util. Factor	0.97	0.95		1.00	0.95				1.00	0.95	0.95	1.00
Frpb, ped/bikes	1.00	1.00		1.00	1.00				1.00	1.00	1.00	0.99
Flpb, ped/bikes	1.00	1.00		1.00	1.00				1.00	1.00	1.00	1.00
Frt	1.00	0.99		1.00	0.97				0.86	1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00				1.00	0.95	0.98	1.00
Satd. Flow (prot)	3433	3487		1770	3418				1611	1681	1736	1561
Flt Permitted	0.95	1.00		0.95	1.00				1.00	0.95	0.98	1.00
Satd. Flow (perm)	3433	3487		1770	3418				1611	1681	1736	1561
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	609	728	65	33	630	163	0	0	33	239	174	337
RTOR Reduction (vph)	0	7	0	0	25	0	0	0	0	0	0	244
Lane Group Flow (vph)	609	786	0	33	768	0	0	0	33	127	286	93
Confl. Peds. (#/hr)	5		4	4		5						3
Turn Type	Prot	NA		Prot	NA				Free	Split	NA	Perm
Protected Phases	5	2		1	6					4	4	
Permitted Phases									Free			4
Actuated Green, G (s)	13.5	36.5		2.0	25.0				71.4	18.3	18.3	18.3
Effective Green, g (s)	13.9	37.4		2.4	25.9				71.4	19.6	19.6	19.6
Actuated g/C Ratio	0.19	0.52		0.03	0.36				1.00	0.27	0.27	0.27
Clearance Time (s)	4.4	4.9		4.4	4.9					5.3	5.3	5.3
Vehicle Extension (s)	2.0	3.3		2.0	3.8					4.4	4.4	4.4
Lane Grp Cap (vph)	668	1826		59	1239				1611	461	476	428
v/s Ratio Prot	c0.18	0.23		0.02	c0.22					0.08	c0.16	
v/s Ratio Perm									0.02			0.06
v/c Ratio	0.91	0.43		0.56	0.62				0.02	0.28	0.60	0.22
Uniform Delay, d1	28.1	10.5		34.0	18.7				0.0	20.3	22.5	20.0
Progression Factor	1.00	1.00		1.00	1.00				1.00	1.00	1.00	1.00
Incremental Delay, d2	16.5	0.7		6.4	2.3				0.0	0.5	2.7	0.4
Delay (s)	44.6	11.2		40.4	21.0				0.0	20.9	25.2	20.4
Level of Service	D	B		D	C				A	C	C	C
Approach Delay (s)		25.7			21.8			0.0			22.3	
Approach LOS		C			C			A			C	

Intersection Summary			
HCM 2000 Control Delay	23.5	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.68		
Actuated Cycle Length (s)	71.4	Sum of lost time (s)	12.0
Intersection Capacity Utilization	58.6%	ICU Level of Service	B
Analysis Period (min)	15		

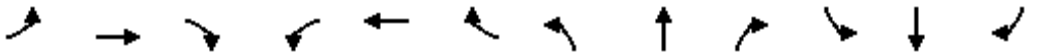
c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	80	1450	120	70	1010	60	120	110	140	40	90	20
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0		4.0	4.0			4.0	
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00	1.00			1.00	
Frpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	0.99			1.00	
Flpb, ped/bikes	1.00	1.00		1.00	1.00		0.99	1.00			1.00	
Frt	1.00	0.99		1.00	0.99		1.00	0.92			0.98	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00			0.99	
Satd. Flow (prot)	1678	3400		1671	3405		1646	1575			1704	
Flt Permitted	0.95	1.00		0.95	1.00		0.49	1.00			0.44	
Satd. Flow (perm)	1678	3400		1671	3405		852	1575			764	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	87	1576	130	76	1098	65	130	120	152	43	98	22
RTOR Reduction (vph)	0	3	0	0	3	0	0	34	0	0	4	0
Lane Group Flow (vph)	87	1703	0	76	1160	0	130	238	0	0	159	0
Confl. Peds. (#/hr)	4		3	3		4	6		5	5		6
Confl. Bikes (#/hr)			3			2			4			
Bus Blockages (#/hr)	13	13	13	14	14	14	16	16	16	13	13	13
Turn Type	Prot	NA		Prot	NA		Perm	NA		Perm	NA	
Protected Phases	5	2		1	6			4			4	
Permitted Phases							4			4		
Actuated Green, G (s)	12.9	94.7		10.0	91.8		26.1	26.1			26.1	
Effective Green, g (s)	13.3	95.6		10.4	92.7		27.0	27.0			27.0	
Actuated g/C Ratio	0.09	0.66		0.07	0.64		0.19	0.19			0.19	
Clearance Time (s)	4.4	4.9		4.4	4.9		4.9	4.9			4.9	
Vehicle Extension (s)	2.0	2.1		2.0	2.1		2.0	2.0			2.0	
Lane Grp Cap (vph)	153	2241		119	2176		158	293			142	
v/s Ratio Prot	c0.05	c0.50		0.05	0.34			0.15				
v/s Ratio Perm							0.15				c0.21	
v/c Ratio	0.57	0.76		0.64	0.53		0.82	0.81			1.12	
Uniform Delay, d1	63.1	16.9		65.5	14.3		56.7	56.6			59.0	
Progression Factor	1.00	1.00		1.01	0.78		1.00	1.00			1.00	
Incremental Delay, d2	2.9	2.5		3.2	0.4		26.8	14.8			111.1	
Delay (s)	66.0	19.3		69.4	11.5		83.5	71.4			170.1	
Level of Service	E	B		E	B		F	E			F	
Approach Delay (s)		21.6			15.1			75.3			170.1	
Approach LOS		C			B			E			F	

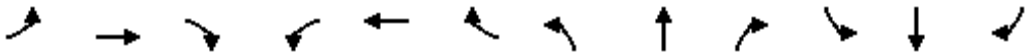
Intersection Summary			
HCM 2000 Control Delay	32.1	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.82		
Actuated Cycle Length (s)	145.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	87.3%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group



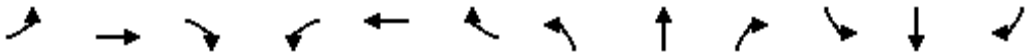
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	440	1400	150	210	840	220	90	420	230	310	220	160
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0		4.0	4.0	4.0	4.0	4.0	
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00	0.95	1.00	1.00	0.95	
Frpb, ped/bikes	1.00	0.99		1.00	0.99		1.00	1.00	0.96	1.00	0.96	
Flpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	
Frt	1.00	0.99		1.00	0.97		1.00	1.00	0.85	1.00	0.94	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)	1770	3468		1770	3380		1770	3539	1526	1770	3180	
Flt Permitted	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (perm)	1770	3468		1770	3380		1770	3539	1526	1770	3180	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	478	1522	163	228	913	239	98	457	250	337	239	174
RTOR Reduction (vph)	0	6	0	0	16	0	0	0	62	0	89	0
Lane Group Flow (vph)	478	1679	0	228	1136	0	98	457	188	337	324	0
Confl. Peds. (#/hr)	26		26	26		26	41		25	25		41
Confl. Bikes (#/hr)			8			2			13			8
Turn Type	Prot	NA		Prot	NA		Prot	NA	pm+ov	Prot	NA	
Protected Phases	5	2		1	6		3	8	1	7	4	
Permitted Phases									8			
Actuated Green, G (s)	31.6	59.1		15.6	42.6		11.9	25.8	41.4	25.8	39.8	
Effective Green, g (s)	32.0	60.0		16.0	44.0		12.3	26.8	42.2	26.2	40.7	
Actuated g/C Ratio	0.22	0.41		0.11	0.30		0.08	0.18	0.29	0.18	0.28	
Clearance Time (s)	4.4	4.9		4.4	5.4		4.4	5.0	4.4	4.4	4.9	
Vehicle Extension (s)	2.0	4.2		2.0	3.0		2.0	4.0	2.0	2.0	2.6	
Lane Grp Cap (vph)	390	1435		195	1025		150	654	444	319	892	
v/s Ratio Prot	c0.27	c0.48		0.13	0.34		0.06	c0.13	0.05	c0.19	0.10	
v/s Ratio Perm									0.08			
v/c Ratio	1.23	1.17		1.17	1.11		0.65	0.70	0.42	1.06	0.36	
Uniform Delay, d1	56.5	42.5		64.5	50.5		64.3	55.3	41.6	59.4	41.8	
Progression Factor	1.07	0.96		1.10	0.93		1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	118.5	82.8		113.0	61.0		7.5	3.5	0.2	66.0	0.2	
Delay (s)	179.1	123.6		183.7	107.9		71.8	58.8	41.8	125.4	42.0	
Level of Service	F	F		F	F		E	E	D	F	D	
Approach Delay (s)		135.8			120.4			55.1			79.5	
Approach LOS		F			F			E			E	

Intersection Summary			
HCM 2000 Control Delay	110.6	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.08		
Actuated Cycle Length (s)	145.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	104.6%	ICU Level of Service	G
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	10	1920	100	160	1270	50	100	20	220	50	20	20
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0			4.0	4.0		4.0	
Lane Util. Factor	1.00	0.91		1.00	0.95			1.00	1.00		1.00	
Frpb, ped/bikes	1.00	1.00		1.00	1.00			1.00	0.98		0.99	
Flpb, ped/bikes	1.00	1.00		1.00	1.00			1.00	1.00		1.00	
Frt	1.00	0.99		1.00	0.99			1.00	0.85		0.97	
Flt Protected	0.95	1.00		0.95	1.00			0.96	1.00		0.97	
Satd. Flow (prot)	1770	5038		1770	3517			1788	1553		1742	
Flt Permitted	0.95	1.00		0.95	1.00			0.67	1.00		0.63	
Satd. Flow (perm)	1770	5038		1770	3517			1248	1553		1126	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	11	2087	109	174	1380	54	109	22	239	54	22	22
RTOR Reduction (vph)	0	3	0	0	2	0	0	0	202	0	8	0
Lane Group Flow (vph)	11	2193	0	174	1432	0	0	131	37	0	90	0
Confl. Peds. (#/hr)			3	3								
Confl. Bikes (#/hr)			11			1			5			20
Turn Type	Prot	NA		Prot	NA		Perm	NA	Perm	Perm	NA	
Protected Phases	5	2		1	6			8			4	
Permitted Phases							8		8	4		
Actuated Green, G (s)	2.0	90.1		18.6	106.7			21.7	21.7		21.7	
Effective Green, g (s)	2.4	91.4		19.0	108.0			22.6	22.6		22.6	
Actuated g/C Ratio	0.02	0.63		0.13	0.74			0.16	0.16		0.16	
Clearance Time (s)	4.4	5.3		4.4	5.3			4.9	4.9		4.9	
Vehicle Extension (s)	2.0	4.4		2.0	4.4			2.0	2.0		2.0	
Lane Grp Cap (vph)	29	3175		231	2619			194	242		175	
v/s Ratio Prot	0.01	c0.44		c0.10	0.41							
v/s Ratio Perm								c0.10	0.02		0.08	
v/c Ratio	0.38	0.69		0.75	0.55			0.68	0.15		0.52	
Uniform Delay, d1	70.6	17.5		60.7	8.0			57.7	52.9		56.2	
Progression Factor	0.85	1.21		1.00	1.00			1.00	1.00		1.00	
Incremental Delay, d2	0.3	0.1		11.6	0.8			7.1	0.1		1.1	
Delay (s)	60.5	21.4		72.4	8.8			64.8	53.0		57.3	
Level of Service	E	C		E	A			E	D		E	
Approach Delay (s)		21.6			15.7			57.2			57.3	
Approach LOS		C			B			E			E	

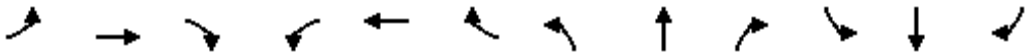
Intersection Summary			
HCM 2000 Control Delay	23.2	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.70		
Actuated Cycle Length (s)	145.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	69.9%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	0	0	380	2040	0	0	0	0	0	350	190
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)					4.0						4.0	
Lane Util. Factor					0.91						0.91	
Frpb, ped/bikes					1.00						0.99	
Flpb, ped/bikes					1.00						1.00	
Frt					1.00						0.95	
Flt Protected					0.99						1.00	
Satd. Flow (prot)					5038						4778	
Flt Permitted					0.99						1.00	
Satd. Flow (perm)					5038						4778	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	413	2217	0	0	0	0	0	380	207
RTOR Reduction (vph)	0	0	0	0	13	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	0	0	0	2617	0	0	0	0	0	587	0
Confl. Peds. (#/hr)				6								7
Turn Type				Perm	NA						NA	
Protected Phases					6						4	
Permitted Phases				6								
Actuated Green, G (s)					61.8						18.0	
Effective Green, g (s)					63.1						18.9	
Actuated g/C Ratio					0.70						0.21	
Clearance Time (s)					5.3						4.9	
Vehicle Extension (s)					0.2						0.2	
Lane Grp Cap (vph)					3532						1003	
v/s Ratio Prot											c0.12	
v/s Ratio Perm					0.52							
v/c Ratio					0.74						0.59	
Uniform Delay, d1					8.4						32.0	
Progression Factor					1.00						0.91	
Incremental Delay, d2					1.4						0.1	
Delay (s)					9.8						29.1	
Level of Service					A						C	
Approach Delay (s)		0.0			9.8			0.0			29.1	
Approach LOS		A			A			A			C	

Intersection Summary			
HCM 2000 Control Delay	13.3	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.71		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	68.8%	ICU Level of Service	C
Analysis Period (min)	15		

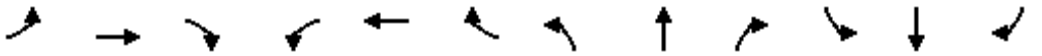
c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	1630	150	0	0	0	0	0	0	320	440	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0									4.0	
Lane Util. Factor		0.91									0.91	
Frpb, ped/bikes		1.00									1.00	
Flpb, ped/bikes		1.00									0.99	
Frt		0.99									1.00	
Flt Protected		1.00									0.98	
Satd. Flow (prot)		5010									4939	
Flt Permitted		1.00									0.98	
Satd. Flow (perm)		5010									4939	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	1772	163	0	0	0	0	0	0	348	478	0
RTOR Reduction (vph)	0	11	0	0	0	0	0	0	0	0	16	0
Lane Group Flow (vph)	0	1924	0	0	0	0	0	0	0	0	810	0
Confl. Peds. (#/hr)			9							14		
Turn Type		NA								Perm	NA	
Protected Phases		2									4	
Permitted Phases										4		
Actuated Green, G (s)		58.6									22.4	
Effective Green, g (s)		58.6									23.4	
Actuated g/C Ratio		0.65									0.26	
Clearance Time (s)		4.0									5.0	
Vehicle Extension (s)		3.0									3.0	
Lane Grp Cap (vph)		3262									1284	
v/s Ratio Prot		c0.38										
v/s Ratio Perm											0.16	
v/c Ratio		0.59									0.63	
Uniform Delay, d1		8.9									29.5	
Progression Factor		0.40									0.78	
Incremental Delay, d2		0.5									0.9	
Delay (s)		4.0									24.0	
Level of Service		A									C	
Approach Delay (s)		4.0			0.0			0.0			24.0	
Approach LOS		A			A			A			C	

Intersection Summary			
HCM 2000 Control Delay	10.0	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.60		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	59.3%	ICU Level of Service	B
Analysis Period (min)	15		

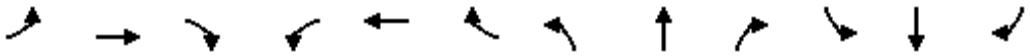
c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	230	1260	120	150	1410	120	120	50	130	80	80	210
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.97	0.95		1.00	0.95	1.00	1.00	1.00	1.00	0.97	1.00	1.00
Frpb, ped/bikes	1.00	1.00		1.00	1.00	0.98	1.00	1.00	1.00	1.00	1.00	0.99
Flpb, ped/bikes	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.99		1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	3493		1770	3539	1557	1770	1863	1583	3433	1863	1563
Flt Permitted	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	3493		1770	3539	1557	1770	1863	1583	3433	1863	1563
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	250	1370	130	163	1533	130	130	54	141	87	87	228
RTOR Reduction (vph)	0	6	0	0	0	121	0	0	118	0	0	136
Lane Group Flow (vph)	250	1494	0	163	1533	9	130	54	23	87	87	92
Confl. Peds. (#/hr)	1					1	1					1
Turn Type	Prot	NA		Prot	NA	custom	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases						7			8			4
Actuated Green, G (s)	7.0	40.8		9.0	42.9	5.7	7.0	12.2	12.2	5.7	11.8	11.8
Effective Green, g (s)	7.0	42.3		9.0	44.3	5.7	7.0	14.0	14.0	5.7	12.7	12.7
Actuated g/C Ratio	0.08	0.49		0.10	0.51	0.07	0.08	0.16	0.16	0.07	0.15	0.15
Clearance Time (s)	4.0	5.5		4.0	5.4	4.0	4.0	5.8	5.8	4.0	4.9	4.9
Vehicle Extension (s)	2.0	3.7		2.0	4.0	2.0	2.0	2.0	2.0	2.0	3.0	3.0
Lane Grp Cap (vph)	276	1698		183	1802	102	142	299	254	224	271	228
v/s Ratio Prot	0.07	0.43		c0.09	c0.43		c0.07	0.03		0.03	0.05	
v/s Ratio Perm						0.01			0.01			c0.06
v/c Ratio	0.91	0.88		0.89	0.85	0.08	0.92	0.18	0.09	0.39	0.32	0.40
Uniform Delay, d1	39.7	20.1		38.5	18.5	38.2	39.7	31.5	31.1	39.0	33.3	33.7
Progression Factor	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	30.1	6.9		36.8	5.3	0.1	49.8	0.1	0.1	0.4	0.7	1.2
Delay (s)	69.8	26.9		75.3	23.8	38.3	89.5	31.6	31.1	39.4	34.0	34.9
Level of Service	E	C		E	C	D	F	C	C	D	C	C
Approach Delay (s)		33.1			29.4			54.6			35.7	
Approach LOS		C			C			D			D	

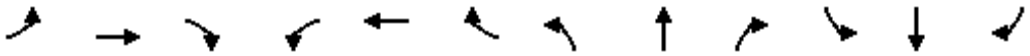
Intersection Summary			
HCM 2000 Control Delay	33.4	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.80		
Actuated Cycle Length (s)	87.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	70.3%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	0	0	200	1800	210	340	570	0	0	350	120
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)					4.9		4.4	4.9			5.4	
Lane Util. Factor					0.86		1.00	0.95			0.95	
Frpb, ped/bikes					1.00		1.00	1.00			1.00	
Flpb, ped/bikes					1.00		1.00	1.00			1.00	
Frt					0.99		1.00	1.00			0.96	
Flt Protected					1.00		0.95	1.00			1.00	
Satd. Flow (prot)					6262		1770	3539			3389	
Flt Permitted					1.00		0.95	1.00			1.00	
Satd. Flow (perm)					6262		1770	3539			3389	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	0	0	0	211	1895	221	358	600	0	0	368	126
RTOR Reduction (vph)	0	0	0	0	15	0	0	0	0	0	31	0
Lane Group Flow (vph)	0	0	0	0	2312	0	358	600	0	0	463	0
Confl. Peds. (#/hr)	4		13	13		4	2		2	2		2
Confl. Bikes (#/hr)												1
Turn Type				Perm	NA		Prot	NA			NA	
Protected Phases					6		3	8			4	
Permitted Phases				6								
Actuated Green, G (s)					51.4		25.7	48.8			18.2	
Effective Green, g (s)					51.4		25.7	48.8			18.2	
Actuated g/C Ratio					0.47		0.23	0.44			0.17	
Clearance Time (s)					4.9		4.4	4.9			5.4	
Vehicle Extension (s)					2.4		3.0	3.3			2.4	
Lane Grp Cap (vph)					2926		413	1570			560	
v/s Ratio Prot							c0.20	0.17			c0.14	
v/s Ratio Perm					0.37							
v/c Ratio					0.79		0.87	0.38			0.83	
Uniform Delay, d1					24.7		40.5	20.5			44.4	
Progression Factor					1.00		1.00	1.00			1.00	
Incremental Delay, d2					2.3		17.1	0.2			9.5	
Delay (s)					27.0		57.6	20.7			53.9	
Level of Service					C		E	C			D	
Approach Delay (s)		0.0			27.0			34.5			53.9	
Approach LOS		A			C			C			D	

Intersection Summary			
HCM 2000 Control Delay	32.4	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.82		
Actuated Cycle Length (s)	110.0	Sum of lost time (s)	14.7
Intersection Capacity Utilization	77.4%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			



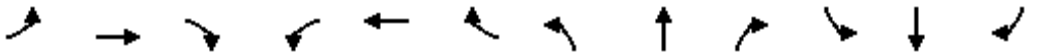
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	110	1200	90	0	0	0	0	800	420	140	330	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0	4.0					4.9		4.0	4.9	
Lane Util. Factor		0.91	1.00					0.91		1.00	0.91	
Frpb, ped/bikes		1.00	0.97					0.99		1.00	1.00	
Flpb, ped/bikes		1.00	1.00					1.00		1.00	1.00	
Frt		1.00	0.85					0.95		1.00	1.00	
Flt Protected		1.00	1.00					1.00		0.95	1.00	
Satd. Flow (prot)		5062	1532					4775		1770	5085	
Flt Permitted		1.00	1.00					1.00		0.95	1.00	
Satd. Flow (perm)		5062	1532					4775		1770	5085	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	120	1304	98	0	0	0	0	870	457	152	359	0
RTOR Reduction (vph)	0	0	59	0	0	0	0	85	0	0	0	0
Lane Group Flow (vph)	0	1424	39	0	0	0	0	1242	0	152	359	0
Confl. Peds. (#/hr)	5		25				6		12	12		6
Turn Type	Perm	NA	Perm					NA		Prot	NA	
Protected Phases		2						8		7	4	
Permitted Phases	2		2									
Actuated Green, G (s)		35.1	35.1					25.1		15.6	45.1	
Effective Green, g (s)		36.0	36.0					25.1		16.0	45.1	
Actuated g/C Ratio		0.40	0.40					0.28		0.18	0.50	
Clearance Time (s)		4.9	4.9					4.9		4.4	4.9	
Vehicle Extension (s)		4.4	4.4					3.3		2.0	3.3	
Lane Grp Cap (vph)		2024	612					1331		314	2548	
v/s Ratio Prot								c0.26		c0.09	0.07	
v/s Ratio Perm		0.28	0.03									
v/c Ratio		0.70	0.06					0.93		0.48	0.14	
Uniform Delay, d1		22.5	16.6					31.6		33.3	12.1	
Progression Factor		1.00	1.00					1.00		1.00	1.00	
Incremental Delay, d2		2.1	0.2					13.1		5.3	0.1	
Delay (s)		24.6	16.8					44.8		38.5	12.2	
Level of Service		C	B					D		D	B	
Approach Delay (s)		24.1			0.0			44.8			20.0	
Approach LOS		C			A			D			C	

Intersection Summary			
HCM 2000 Control Delay	31.6	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.73		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	12.9
Intersection Capacity Utilization	77.4%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (vph)	1420	750	490	1480	460	260
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.5	4.0	4.0	4.0
Lane Util. Factor	0.95	1.00	0.97	0.95	0.97	0.91
Frpb, ped/bikes	1.00	0.99	1.00	1.00	1.00	0.98
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected	1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (prot)	3539	1569	3433	3539	3433	1418
Flt Permitted	1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (perm)	3539	1569	3433	3539	3433	1418
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	1543	815	533	1609	500	283
RTOR Reduction (vph)	0	3	0	0	0	217
Lane Group Flow (vph)	1543	812	533	1609	500	66
Confl. Peds. (#/hr)						1
Confl. Bikes (#/hr)		6				3
Turn Type	NA	pm+ov	Prot	NA	Prot	Perm
Protected Phases	2	8	1	6	8	
Permitted Phases		2				8
Actuated Green, G (s)	40.6	60.1	15.8	61.6	19.5	19.5
Effective Green, g (s)	42.8	64.5	15.7	63.0	21.7	21.7
Actuated g/C Ratio	0.46	0.70	0.17	0.68	0.23	0.23
Clearance Time (s)	6.2	6.2	4.4	5.4	6.2	6.2
Vehicle Extension (s)	4.0	2.0	2.0	5.2	2.0	2.0
Lane Grp Cap (vph)	1633	1159	581	2405	803	331
v/s Ratio Prot	c0.44	c0.16	c0.16	0.45	0.15	
v/s Ratio Perm		0.35				0.05
v/c Ratio	0.94	0.70	0.92	0.67	0.62	0.20
Uniform Delay, d1	23.8	8.4	37.9	8.7	31.8	28.5
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	12.5	1.6	19.1	1.5	1.1	0.1
Delay (s)	36.4	9.9	56.9	10.2	32.9	28.6
Level of Service	D	A	E	B	C	C
Approach Delay (s)	27.2			21.8	31.4	
Approach LOS	C			C	C	

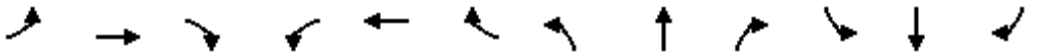
Intersection Summary			
HCM 2000 Control Delay	25.7	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.89		
Actuated Cycle Length (s)	92.7	Sum of lost time (s)	12.5
Intersection Capacity Utilization	79.7%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	1080	330	360	350	0	0	0	0	400	0	1190
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0	4.0	4.0	4.0					4.0		3.4
Lane Util. Factor		0.95	1.00	0.97	0.95					1.00		1.00
Frpb, ped/bikes		1.00	0.99	1.00	1.00					1.00		1.00
Flpb, ped/bikes		1.00	1.00	1.00	1.00					1.00		1.00
Frt		1.00	0.85	1.00	1.00					1.00		0.85
Flt Protected		1.00	1.00	0.95	1.00					0.95		1.00
Satd. Flow (prot)		3539	1560	3433	3539					1770		1583
Flt Permitted		1.00	1.00	0.95	1.00					0.95		1.00
Satd. Flow (perm)		3539	1560	3433	3539					1770		1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	1174	359	391	380	0	0	0	0	435	0	1293
RTOR Reduction (vph)	0	0	230	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	1174	129	391	380	0	0	0	0	435	0	1293
Confl. Peds. (#/hr)			2	2								
Turn Type		NA	Perm	Prot	NA					Prot		Free
Protected Phases		2		1	6					4		
Permitted Phases			2									Free
Actuated Green, G (s)		25.9	25.9	13.4	43.5					21.9		75.0
Effective Green, g (s)		26.9	26.9	13.6	44.5					22.5		75.0
Actuated g/C Ratio		0.36	0.36	0.18	0.59					0.30		1.00
Clearance Time (s)		5.0	5.0	4.2	5.0					4.6		
Vehicle Extension (s)		0.2	0.2	0.2	0.2					0.2		
Lane Grp Cap (vph)		1269	559	622	2099					531		1583
v/s Ratio Prot		0.33		0.11	0.11					0.25		
v/s Ratio Perm			0.08									c0.82
v/c Ratio		0.93	0.23	0.63	0.18					0.82		0.82
Uniform Delay, d1		23.1	16.8	28.4	6.9					24.4		0.0
Progression Factor		1.00	1.00	0.86	1.39					1.00		1.00
Incremental Delay, d2		12.7	1.0	0.8	0.1					9.1		4.8
Delay (s)		35.8	17.8	25.2	9.7					33.5		4.8
Level of Service		D	B	C	A					C		A
Approach Delay (s)		31.6			17.6			0.0			12.0	
Approach LOS		C			B			A			B	

Intersection Summary			
HCM 2000 Control Delay	20.5	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.97		
Actuated Cycle Length (s)	75.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	79.7%	ICU Level of Service	D
Analysis Period (min)	15		

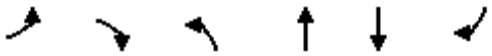
c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	870	710	0	0	590	500	190	20	450	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	5.0			5.0			4.0	4.0			
Lane Util. Factor	0.97	0.95			0.95			1.00	1.00			
Frpb, ped/bikes	1.00	1.00			0.99			1.00	1.00			
Flpb, ped/bikes	1.00	1.00			1.00			1.00	1.00			
Frt	1.00	1.00			0.93			1.00	0.85			
Flt Protected	0.95	1.00			1.00			0.96	1.00			
Satd. Flow (prot)	3433	3539			3272			1782	1583			
Flt Permitted	0.95	1.00			1.00			0.96	1.00			
Satd. Flow (perm)	3433	3539			3272			1782	1583			
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	946	772	0	0	641	543	207	22	489	0	0	0
RTOR Reduction (vph)	0	0	0	0	185	0	0	0	236	0	0	0
Lane Group Flow (vph)	946	772	0	0	999	0	0	229	253	0	0	0
Confl. Peds. (#/hr)	3		1	1		3						
Turn Type	Prot	NA			NA		Split	NA	Perm			
Protected Phases	5	2			6		4	4				
Permitted Phases									4			
Actuated Green, G (s)	20.8	54.5			29.5			10.4	10.4			
Effective Green, g (s)	21.0	55.0			30.0			11.0	11.0			
Actuated g/C Ratio	0.28	0.73			0.40			0.15	0.15			
Clearance Time (s)	4.2	5.5			5.5			4.6	4.6			
Vehicle Extension (s)	0.2	0.2			0.2			0.2	0.2			
Lane Grp Cap (vph)	961	2595			1308			261	232			
v/s Ratio Prot	c0.28	0.22			c0.31			0.13				
v/s Ratio Perm									c0.16			
v/c Ratio	0.98	0.30			0.76			0.88	1.09			
Uniform Delay, d1	26.8	3.4			19.4			31.3	32.0			
Progression Factor	1.41	0.66			1.00			1.00	1.00			
Incremental Delay, d2	18.7	0.2			4.3			25.8	84.8			
Delay (s)	56.4	2.4			23.7			57.1	116.8			
Level of Service	E	A			C			E	F			
Approach Delay (s)		32.2			23.7			97.8			0.0	
Approach LOS		C			C			F			A	

Intersection Summary			
HCM 2000 Control Delay	42.4	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.90		
Actuated Cycle Length (s)	75.0	Sum of lost time (s)	13.0
Intersection Capacity Utilization	79.7%	ICU Level of Service	D
Analysis Period (min)	15		

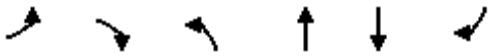
c Critical Lane Group



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	230	200	150	870	890	180
Future Volume (vph)	230	200	150	870	890	180
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.5		4.5	4.5	4.5	
Lane Util. Factor	1.00		1.00	0.95	0.95	
Frt	0.94		1.00	1.00	0.97	
Flt Protected	0.97		0.95	1.00	1.00	
Satd. Flow (prot)	1700		1770	3539	3450	
Flt Permitted	0.97		0.95	1.00	1.00	
Satd. Flow (perm)	1700		1770	3539	3450	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	250	217	163	946	967	196
RTOR Reduction (vph)	27	0	0	0	15	0
Lane Group Flow (vph)	440	0	163	946	1148	0
Turn Type	Prot		Prot	NA	NA	
Protected Phases	7		1	6	2	
Permitted Phases						
Actuated Green, G (s)	39.3		25.0	81.7	52.2	
Effective Green, g (s)	39.3		25.0	81.7	52.2	
Actuated g/C Ratio	0.30		0.19	0.63	0.40	
Clearance Time (s)	4.5		4.5	4.5	4.5	
Vehicle Extension (s)	3.0		3.0	3.0	3.0	
Lane Grp Cap (vph)	513		340	2224	1385	
v/s Ratio Prot	c0.26		c0.09	0.27	c0.33	
v/s Ratio Perm						
v/c Ratio	0.86		0.48	0.43	0.83	
Uniform Delay, d1	42.7		46.7	12.2	34.9	
Progression Factor	1.00		1.07	1.39	1.00	
Incremental Delay, d2	13.3		1.0	0.5	5.9	
Delay (s)	56.0		51.1	17.6	40.7	
Level of Service	E		D	B	D	
Approach Delay (s)	56.0			22.5	40.7	
Approach LOS	E			C	D	

Intersection Summary			
HCM 2000 Control Delay	53.3	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.76		
Actuated Cycle Length (s)	130.0	Sum of lost time (s)	13.5
Intersection Capacity Utilization	74.9%	ICU Level of Service	D
Analysis Period (min)	15		

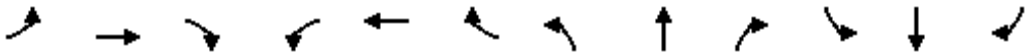
c Critical Lane Group



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (veh/h)	0	380	0	0	210	160
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	413	0	0	228	174
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage veh)						
Upstream signal (ft)				897	1285	
pX, platoon unblocked						
vC, conflicting volume	315	201	402			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	315	201	402			
tC, single (s)	6.8	6.9	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	100	49	100			
cM capacity (veh/h)	653	806	1153			

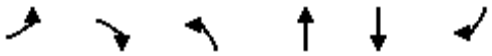
Direction, Lane #	EB 1	SB 1	SB 2
Volume Total	413	152	250
Volume Left	0	0	0
Volume Right	413	0	174
cSH	806	1700	1700
Volume to Capacity	0.51	0.09	0.15
Queue Length 95th (ft)	74	0	0
Control Delay (s)	14.1	0.0	0.0
Lane LOS	B		
Approach Delay (s)	14.1	0.0	
Approach LOS	B		

Intersection Summary			
Average Delay	7.1		
Intersection Capacity Utilization	41.1%	ICU Level of Service	A
Analysis Period (min)	15		



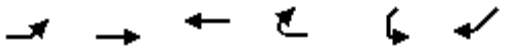
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	30	110	120	240	0	0	0	0	50	520	70
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0			4.0						4.0	
Lane Util. Factor		1.00			1.00						0.95	
Frt		0.89			1.00						0.98	
Flt Protected		1.00			0.98						1.00	
Satd. Flow (prot)		1666			1832						3468	
Flt Permitted		1.00			0.84						1.00	
Satd. Flow (perm)		1666			1563						3468	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	33	120	130	261	0	0	0	0	54	565	76
RTOR Reduction (vph)	0	79	0	0	0	0	0	0	0	0	12	0
Lane Group Flow (vph)	0	74	0	0	391	0	0	0	0	0	683	0
Turn Type		NA		Perm	NA					Perm	NA	
Protected Phases		4			8						6	
Permitted Phases				8						6		
Actuated Green, G (s)		17.5			17.5						25.3	
Effective Green, g (s)		17.5			17.5						25.3	
Actuated g/C Ratio		0.34			0.34						0.50	
Clearance Time (s)		4.0			4.0						4.0	
Vehicle Extension (s)		3.0			3.0						3.0	
Lane Grp Cap (vph)		573			538						1727	
v/s Ratio Prot		0.04										
v/s Ratio Perm					c0.25						0.20	
v/c Ratio		0.13			0.73						0.40	
Uniform Delay, d1		11.4			14.6						8.0	
Progression Factor		1.00			1.00						1.00	
Incremental Delay, d2		0.1			4.9						0.7	
Delay (s)		11.5			19.4						8.6	
Level of Service		B			B						A	
Approach Delay (s)		11.5			19.4			0.0			8.6	
Approach LOS		B			B			A			A	

Intersection Summary			
HCM 2000 Control Delay	12.4	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.53		
Actuated Cycle Length (s)	50.8	Sum of lost time (s)	8.0
Intersection Capacity Utilization	55.7%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			



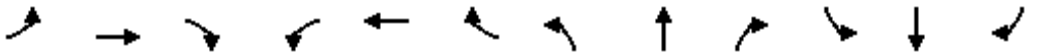
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (vph)	120	200	180	370	480	150
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0			4.0	4.0	
Lane Util. Factor	1.00			1.00	1.00	
Frt	0.92			1.00	0.97	
Flt Protected	0.98			0.98	1.00	
Satd. Flow (prot)	1674			1833	1803	
Flt Permitted	0.98			0.56	1.00	
Satd. Flow (perm)	1674			1044	1803	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	130	217	196	402	522	163
RTOR Reduction (vph)	89	0	0	0	15	0
Lane Group Flow (vph)	258	0	0	598	670	0
Turn Type	Prot		Perm	NA	NA	
Protected Phases	4			2	6	
Permitted Phases			2			
Actuated Green, G (s)	13.9			47.0	47.0	
Effective Green, g (s)	13.9			47.0	47.0	
Actuated g/C Ratio	0.20			0.68	0.68	
Clearance Time (s)	4.0			4.0	4.0	
Vehicle Extension (s)	3.0			3.0	3.0	
Lane Grp Cap (vph)	337			712	1229	
v/s Ratio Prot	c0.15				0.37	
v/s Ratio Perm				c0.57		
v/c Ratio	0.77			0.84	0.55	
Uniform Delay, d1	26.0			8.1	5.5	
Progression Factor	1.00			1.00	1.00	
Incremental Delay, d2	10.0			11.4	1.7	
Delay (s)	36.0			19.6	7.3	
Level of Service	D			B	A	
Approach Delay (s)	36.0			19.6	7.3	
Approach LOS	D			B	A	

Intersection Summary			
HCM 2000 Control Delay	17.9	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.82		
Actuated Cycle Length (s)	68.9	Sum of lost time (s)	8.0
Intersection Capacity Utilization	92.8%	ICU Level of Service	F
Analysis Period (min)	15		
c Critical Lane Group			



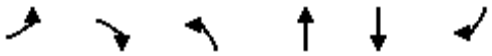
Movement	EBL	EBT	WBT	WBR	SWL	SWR
Lane Configurations						
Volume (vph)	60	1090	1200	40	160	240
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0		4.0	
Lane Util. Factor	1.00	0.95	0.95		1.00	
Frt	1.00	1.00	1.00		0.92	
Flt Protected	0.95	1.00	1.00		0.98	
Satd. Flow (prot)	1770	3539	3522		1678	
Flt Permitted	0.13	1.00	1.00		0.98	
Satd. Flow (perm)	240	3539	3522		1678	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	65	1185	1304	43	174	261
RTOR Reduction (vph)	0	0	4	0	27	0
Lane Group Flow (vph)	65	1185	1343	0	408	0
Turn Type	Perm	NA	NA		Prot	
Protected Phases		4	8		6	
Permitted Phases	4					
Actuated Green, G (s)	31.0	31.0	31.0		22.2	
Effective Green, g (s)	31.0	31.0	31.0		22.2	
Actuated g/C Ratio	0.51	0.51	0.51		0.36	
Clearance Time (s)	4.0	4.0	4.0		4.0	
Vehicle Extension (s)	3.0	3.0	3.0		3.0	
Lane Grp Cap (vph)	121	1792	1784		608	
v/s Ratio Prot		0.33	c0.38		c0.24	
v/s Ratio Perm	0.27					
v/c Ratio	0.54	0.66	0.75		0.67	
Uniform Delay, d1	10.2	11.2	12.0		16.4	
Progression Factor	1.00	1.00	1.00		1.00	
Incremental Delay, d2	4.5	0.9	1.8		5.8	
Delay (s)	14.8	12.1	13.9		22.2	
Level of Service	B	B	B		C	
Approach Delay (s)		12.3	13.9		22.2	
Approach LOS		B	B		C	

Intersection Summary			
HCM 2000 Control Delay	14.4	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.72		
Actuated Cycle Length (s)	61.2	Sum of lost time (s)	8.0
Intersection Capacity Utilization	71.4%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	70	20	40	50	120	260	160	500	370	200	490	70
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.5			4.5		4.5	4.5		4.5	4.5	
Lane Util. Factor		1.00			1.00		1.00	0.95		1.00	0.95	
Frt		0.96			0.92		1.00	0.94		1.00	0.98	
Flt Protected		0.97			0.99		0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1739			1701		1770	3313		1770	3473	
Flt Permitted		0.97			0.99		0.95	1.00		0.95	1.00	
Satd. Flow (perm)		1739			1701		1770	3313		1770	3473	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	76	22	43	54	130	283	174	543	402	217	533	76
RTOR Reduction (vph)	0	18	0	0	61	0	0	146	0	0	12	0
Lane Group Flow (vph)	0	123	0	0	406	0	174	799	0	217	597	0
Turn Type	Split	NA		Split	NA		Prot	NA		Prot	NA	
Protected Phases	8	8		4	4		5	2		1	6	
Permitted Phases												
Actuated Green, G (s)		11.1			21.5		11.6	22.7		11.9	23.0	
Effective Green, g (s)		11.1			21.5		11.6	22.7		11.9	23.0	
Actuated g/C Ratio		0.13			0.25		0.14	0.27		0.14	0.27	
Clearance Time (s)		4.5			4.5		4.5	4.5		4.5	4.5	
Vehicle Extension (s)		3.0			3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)		226			429		240	882		247	937	
v/s Ratio Prot		c0.07			c0.24		0.10	c0.24		c0.12	0.17	
v/s Ratio Perm												
v/c Ratio		0.54			0.95		0.72	0.91		0.88	0.64	
Uniform Delay, d1		34.7			31.3		35.3	30.2		35.9	27.4	
Progression Factor		1.00			1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2		2.7			30.1		10.4	12.7		27.7	1.4	
Delay (s)		37.3			61.4		45.6	42.9		63.6	28.9	
Level of Service		D			E		D	D		E	C	
Approach Delay (s)		37.3			61.4			43.3			38.0	
Approach LOS		D			E			D			D	

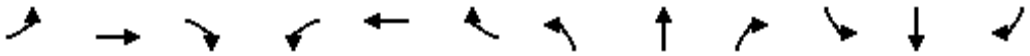
Intersection Summary			
HCM 2000 Control Delay	44.6	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.85		
Actuated Cycle Length (s)	85.2	Sum of lost time (s)	18.0
Intersection Capacity Utilization	73.1%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (vph)	160	260	200	140	240	250
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0			4.0	4.0	
Lane Util. Factor	1.00			1.00	1.00	
Frt	0.92			1.00	0.93	
Flt Protected	0.98			0.97	1.00	
Satd. Flow (prot)	1675			1810	1734	
Flt Permitted	0.98			0.49	1.00	
Satd. Flow (perm)	1675			921	1734	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	174	283	217	152	261	272
RTOR Reduction (vph)	94	0	0	0	54	0
Lane Group Flow (vph)	363	0	0	369	479	0
Turn Type	Prot		Perm	NA	NA	
Protected Phases	4			2	6	
Permitted Phases			2			
Actuated Green, G (s)	16.5			38.2	38.2	
Effective Green, g (s)	16.5			38.2	38.2	
Actuated g/C Ratio	0.26			0.61	0.61	
Clearance Time (s)	4.0			4.0	4.0	
Vehicle Extension (s)	3.0			3.0	3.0	
Lane Grp Cap (vph)	440			561	1056	
v/s Ratio Prot	c0.22				0.28	
v/s Ratio Perm				c0.40		
v/c Ratio	0.83			0.66	0.45	
Uniform Delay, d1	21.7			8.0	6.6	
Progression Factor	1.00			1.00	1.00	
Incremental Delay, d2	12.0			5.9	1.4	
Delay (s)	33.7			13.9	8.0	
Level of Service	C			B	A	
Approach Delay (s)	33.7			13.9	8.0	
Approach LOS	C			B	A	

Intersection Summary			
HCM 2000 Control Delay	18.3	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.71		
Actuated Cycle Length (s)	62.7	Sum of lost time (s)	8.0
Intersection Capacity Utilization	81.2%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

Peak Hour Intersection Calculation Worksheets - Mitigation



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	50	1140	400	160	1330	180	480	400	150	580	280	120
Future Volume (vph)	50	1140	400	160	1330	180	480	400	150	580	280	120
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	3.1	4.0	4.0	1.6	4.0	4.0	3.6	4.0	4.0	
Lane Util. Factor	1.00	0.91	1.00	0.97	0.91	1.00	0.97	1.00	1.00	0.97	1.00	
Frpb, ped/bikes	1.00	1.00	0.99	1.00	1.00	0.97	1.00	1.00	0.99	1.00	1.00	
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.96	
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)	1770	5085	1573	3433	5085	1544	3433	1863	1564	3433	1771	
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (perm)	1770	5085	1573	3433	5085	1544	3433	1863	1564	3433	1771	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	54	1239	435	174	1446	196	522	435	163	630	304	130
RTOR Reduction (vph)	0	0	162	0	0	92	0	0	47	0	17	0
Lane Group Flow (vph)	54	1239	273	174	1446	104	522	435	116	630	417	0
Confl. Peds. (#/hr)	8					8			3	3		
Confl. Bikes (#/hr)			1			5						3
Turn Type	Prot	NA	pm+ov	Prot	NA	pm+ov	Prot	NA	pm+ov	Prot	NA	
Protected Phases	5	2	3	1	6	7	3	8	1	7	4	
Permitted Phases			2			6			8			
Actuated Green, G (s)	3.2	25.7	47.0	5.8	28.2	50.4	21.3	28.8	34.6	22.2	27.9	
Effective Green, g (s)	3.6	27.0	49.6	6.2	29.6	53.2	21.7	29.6	36.2	21.2	29.1	
Actuated g/C Ratio	0.04	0.27	0.50	0.06	0.30	0.53	0.22	0.30	0.36	0.21	0.29	
Clearance Time (s)	4.4	5.3	4.4	4.4	5.4	3.0	4.4	4.8	4.4	3.0	5.2	
Vehicle Extension (s)	2.0	4.4	2.0	2.0	4.4	2.0	2.0	3.8	2.0	2.0	2.0	
Lane Grp Cap (vph)	63	1372	828	212	1505	846	744	551	622	727	515	
v/s Ratio Prot	0.03	0.24	0.07	c0.05	c0.28	0.03	0.15	0.23	0.01	c0.18	c0.24	
v/s Ratio Perm			0.10			0.04			0.06			
v/c Ratio	0.86	0.90	0.33	0.82	0.96	0.12	0.70	0.79	0.19	0.87	0.81	
Uniform Delay, d1	47.9	35.2	15.2	46.4	34.6	11.7	36.2	32.3	21.8	38.0	32.9	
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	63.1	10.0	0.1	20.9	15.6	0.0	2.5	7.7	0.1	10.3	8.6	
Delay (s)	111.1	45.2	15.3	67.2	50.2	11.7	38.6	40.1	21.9	48.3	41.5	
Level of Service	F	D	B	E	D	B	D	D	C	D	D	
Approach Delay (s)		39.7			47.7			36.8			45.5	
Approach LOS		D			D			D			D	

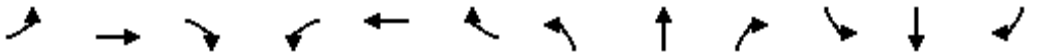
Intersection Summary			
HCM 2000 Control Delay	42.7	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.89		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	80.7%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	530	1180	370	0	0	660
Future Volume (vph)	530	1180	370	0	0	660
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	7.0	7.0	7.0			7.0
Lane Util. Factor	0.97	0.76	0.95			0.95
Frt	1.00	0.85	1.00			1.00
Flt Protected	0.95	1.00	1.00			1.00
Satd. Flow (prot)	3433	3610	3539			3539
Flt Permitted	0.95	1.00	1.00			1.00
Satd. Flow (perm)	3433	3610	3539			3539
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	576	1283	402	0	0	717
RTOR Reduction (vph)	0	550	0	0	0	0
Lane Group Flow (vph)	576	733	402	0	0	717
Turn Type	Prot	Perm	NA			NA
Protected Phases	4		2			6
Permitted Phases		4				
Actuated Green, G (s)	9.7	9.7	12.2			12.2
Effective Green, g (s)	9.7	9.7	12.2			12.2
Actuated g/C Ratio	0.27	0.27	0.34			0.34
Clearance Time (s)	7.0	7.0	7.0			7.0
Vehicle Extension (s)	0.2	0.2	0.2			0.2
Lane Grp Cap (vph)	927	975	1202			1202
v/s Ratio Prot	0.17		0.11			c0.20
v/s Ratio Perm		c0.20				
v/c Ratio	0.62	0.75	0.33			0.60
Uniform Delay, d1	11.5	12.0	8.8			9.8
Progression Factor	1.00	1.00	1.00			1.00
Incremental Delay, d2	0.9	2.9	0.1			0.5
Delay (s)	12.4	14.9	8.9			10.3
Level of Service	B	B	A			B
Approach Delay (s)	14.2		8.9			10.3
Approach LOS	B		A			B

Intersection Summary			
HCM 2000 Control Delay	12.5	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.66		
Actuated Cycle Length (s)	35.9	Sum of lost time (s)	14.0
Intersection Capacity Utilization	49.4%	ICU Level of Service	A
Analysis Period (min)	15		

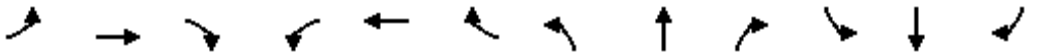
c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	460	310	290	30	140	290	210	480	70	380	530	250
Future Volume (vph)	460	310	290	30	140	290	210	480	70	380	530	250
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.1	4.0	3.1	3.0	4.0	4.0	3.1	4.0		3.1	4.0	4.0
Lane Util. Factor	0.97	1.00	1.00	1.00	0.95	1.00	0.97	0.95		0.97	0.95	1.00
Frpb, ped/bikes	1.00	1.00	0.99	1.00	1.00	0.99	1.00	1.00		1.00	1.00	0.99
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.98		1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	3433	1863	1565	1770	3539	1571	3433	3465		3433	3539	1566
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)	3433	1863	1565	1770	3539	1571	3433	3465		3433	3539	1566
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	500	337	315	33	152	315	228	522	76	413	576	272
RTOR Reduction (vph)	0	0	78	0	0	46	0	8	0	0	0	134
Lane Group Flow (vph)	500	337	237	33	152	269	228	590	0	413	576	138
Confl. Peds. (#/hr)			4			3			5			8
Turn Type	Prot	NA	pm+ov	Prot	NA	pm+ov	Prot	NA		Prot	NA	pm+ov
Protected Phases	5	2	3	1	6	7	3	8		7	4	5
Permitted Phases			2			6						4
Actuated Green, G (s)	21.1	37.2	49.5	3.2	19.2	37.6	12.3	23.7		18.4	29.8	50.9
Effective Green, g (s)	22.0	38.1	51.3	4.2	20.2	37.6	13.2	24.6		19.3	30.7	50.9
Actuated g/C Ratio	0.22	0.38	0.51	0.04	0.20	0.37	0.13	0.25		0.19	0.31	0.51
Clearance Time (s)	4.0	4.9	4.0	4.0	5.0	4.0	4.0	4.9		4.0	4.9	4.0
Vehicle Extension (s)	3.0	0.2	3.0	3.0	8.0	3.0	3.0	3.1		3.0	5.5	3.0
Lane Grp Cap (vph)	753	707	800	74	712	588	451	849		660	1083	794
v/s Ratio Prot	c0.15	c0.18	0.04	0.02	0.04	0.08	0.07	c0.17		c0.12	0.16	0.04
v/s Ratio Perm			0.11			0.09						0.05
v/c Ratio	0.66	0.48	0.30	0.45	0.21	0.46	0.51	0.69		0.63	0.53	0.17
Uniform Delay, d1	35.8	23.6	14.1	46.9	33.4	23.6	40.5	34.4		37.2	28.8	13.3
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	2.2	0.2	0.2	4.2	0.6	0.6	0.9	2.5		1.9	1.1	0.1
Delay (s)	38.0	23.7	14.3	51.1	34.1	24.2	41.4	36.9		39.0	29.9	13.4
Level of Service	D	C	B	D	C	C	D	D		D	C	B
Approach Delay (s)		27.3			29.0			38.2			29.3	
Approach LOS		C			C			D			C	

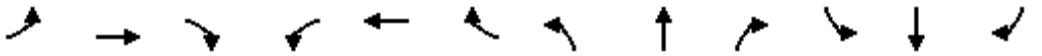
Intersection Summary			
HCM 2000 Control Delay	30.6	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.65		
Actuated Cycle Length (s)	100.3	Sum of lost time (s)	16.0
Intersection Capacity Utilization	62.7%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	230	1470	140	280	1850	270	90	320	190	230	280	180
Future Volume (vph)	230	1470	140	280	1850	270	90	320	190	230	280	180
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0	4.4	4.0	4.0	3.5	4.0	4.0	3.5
Lane Util. Factor	0.97	0.86		0.97	0.86	1.00	1.00	0.95	1.00	0.97	0.95	1.00
Frpb, ped/bikes	1.00	1.00		1.00	1.00	0.98	1.00	1.00	0.97	1.00	1.00	0.98
Flpb, ped/bikes	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.99		1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	6305		3433	6408	1553	1770	3539	1543	3433	3539	1557
Flt Permitted	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	6305		3433	6408	1553	1770	3539	1543	3433	3539	1557
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	250	1598	152	304	2011	293	98	348	207	250	304	196
RTOR Reduction (vph)	0	17	0	0	0	130	0	0	100	0	0	85
Lane Group Flow (vph)	250	1733	0	304	2011	163	98	348	107	250	304	111
Confl. Peds. (#/hr)	14		25	25		14	18		27	27		14
Turn Type	Prot	NA		Prot	NA	pm+ov	Prot	NA	pm+ov	Prot	NA	pm+ov
Protected Phases	5	2		1	6	7	3	8	1	7	4	5
Permitted Phases						6			8			4
Actuated Green, G (s)	9.0	30.8		5.2	27.1	37.7	4.8	19.6	24.8	10.6	25.4	34.4
Effective Green, g (s)	9.4	31.9		5.6	28.1	37.7	5.2	20.5	26.6	11.0	26.3	36.2
Actuated g/C Ratio	0.11	0.38		0.07	0.33	0.44	0.06	0.24	0.31	0.13	0.31	0.43
Clearance Time (s)	4.4	5.1		4.4	5.0	4.4	4.4	4.9	4.4	4.4	4.9	4.4
Vehicle Extension (s)	2.0	3.5		2.0	3.7	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lane Grp Cap (vph)	379	2366		226	2118	688	108	853	546	444	1095	663
v/s Ratio Prot	0.07	c0.27		0.09	c0.31	0.03	c0.06	c0.10	0.01	c0.07	0.09	0.02
v/s Ratio Perm						0.08			0.06			0.05
v/c Ratio	0.66	0.73		1.35	0.95	0.24	0.91	0.41	0.20	0.56	0.28	0.17
Uniform Delay, d1	36.3	22.9		39.7	27.8	14.7	39.7	27.1	21.4	34.7	22.2	15.1
Progression Factor	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	3.2	2.0		181.8	10.8	0.1	56.7	0.1	0.1	1.0	0.1	0.0
Delay (s)	39.4	24.9		221.5	38.6	14.8	96.4	27.3	21.4	35.7	22.2	15.1
Level of Service	D	C		F	D	B	F	C	C	D	C	B
Approach Delay (s)		26.7			57.2			35.8			24.9	
Approach LOS		C			E			D			C	

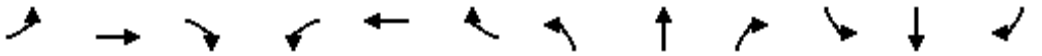
Intersection Summary			
HCM 2000 Control Delay	40.7	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.75		
Actuated Cycle Length (s)	85.0	Sum of lost time (s)	16.4
Intersection Capacity Utilization	72.7%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	340	180	540	520	0	0	0	0	250	320	350
Future Volume (vph)	0	340	180	540	520	0	0	0	0	250	320	350
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0	4.0	4.0	4.0					4.0	4.0	4.0
Lane Util. Factor		0.95	1.00	0.97	0.95					0.91	0.91	0.88
Frt		1.00	0.85	1.00	1.00					1.00	1.00	0.85
Flt Protected		1.00	1.00	0.95	1.00					0.95	0.99	1.00
Satd. Flow (prot)		3539	1583	3433	3539					1610	3358	2787
Flt Permitted		1.00	1.00	0.95	1.00					0.95	0.99	1.00
Satd. Flow (perm)		3539	1583	3433	3539					1610	3358	2787
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	370	196	587	565	0	0	0	0	272	348	380
RTOR Reduction (vph)	0	0	105	0	0	0	0	0	0	0	0	288
Lane Group Flow (vph)	0	370	91	587	565	0	0	0	0	190	430	92
Turn Type		NA	Perm	Prot	NA					Perm	NA	Perm
Protected Phases		2		1	6						4	
Permitted Phases			2							4		4
Actuated Green, G (s)		31.2	31.2	16.1	51.7					18.5	18.5	18.5
Effective Green, g (s)		32.1	32.1	16.5	52.6					19.4	19.4	19.4
Actuated g/C Ratio		0.40	0.40	0.21	0.66					0.24	0.24	0.24
Clearance Time (s)		4.9	4.9	4.4	4.9					4.9	4.9	4.9
Vehicle Extension (s)		3.8	3.8	2.0	4.2					2.0	2.0	2.0
Lane Grp Cap (vph)		1420	635	708	2326					390	814	675
v/s Ratio Prot		c0.10		c0.17	0.16							
v/s Ratio Perm			0.06							0.12	0.13	0.03
v/c Ratio		0.26	0.14	0.83	0.24					0.49	0.53	0.14
Uniform Delay, d1		16.0	15.2	30.4	5.6					26.0	26.3	23.7
Progression Factor		1.00	1.00	1.00	1.00					1.00	1.00	1.00
Incremental Delay, d2		0.4	0.5	7.6	0.2					0.4	0.3	0.0
Delay (s)		16.5	15.7	38.0	5.8					26.4	26.6	23.8
Level of Service		B	B	D	A					C	C	C
Approach Delay (s)		16.2			22.2			0.0			25.5	
Approach LOS		B			C			A			C	

Intersection Summary			
HCM 2000 Control Delay	22.2	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.47		
Actuated Cycle Length (s)	80.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	47.3%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

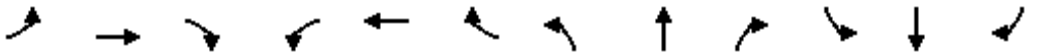


Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	660	80	40	500	0	0	0	0	540	340	510
Future Volume (vph)	0	660	80	40	500	0	0	0	0	540	340	510
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		6.7		4.0	6.7						6.3	4.0
Lane Util. Factor		0.91		1.00	0.95						0.86	0.86
Frt		0.98		1.00	1.00						1.00	0.85
Flt Protected		1.00		0.95	1.00						0.97	1.00
Satd. Flow (prot)		5003		1770	3539						4663	1362
Flt Permitted		1.00		0.95	1.00						0.97	1.00
Satd. Flow (perm)		5003		1770	3539						4663	1362
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	717	87	43	543	0	0	0	0	587	370	554
RTOR Reduction (vph)	0	22	0	0	0	0	0	0	0	0	0	114
Lane Group Flow (vph)	0	782	0	43	543	0	0	0	0	0	957	440
Turn Type		NA		Prot	NA					Perm	NA	Perm
Protected Phases		2		1	6						4	
Permitted Phases										4		4
Actuated Green, G (s)		22.1		2.4	27.2						25.8	25.8
Effective Green, g (s)		20.3		2.8	27.1						24.9	27.2
Actuated g/C Ratio		0.31		0.04	0.42						0.38	0.42
Clearance Time (s)		4.9		4.4	6.6						5.4	5.4
Vehicle Extension (s)		1.0		2.0	1.0						1.0	1.0
Lane Grp Cap (vph)		1562		76	1475						1786	569
v/s Ratio Prot		c0.16		0.02	c0.15							
v/s Ratio Perm											0.21	c0.32
v/c Ratio		0.50		0.57	0.37						0.91dl	0.77
Uniform Delay, d1		18.2		30.5	13.1						15.6	16.2
Progression Factor		1.00		1.35	0.83						1.00	1.00
Incremental Delay, d2		1.1		5.2	0.7						0.2	5.9
Delay (s)		19.4		46.4	11.4						15.7	22.2
Level of Service		B		D	B						B	C
Approach Delay (s)		19.4			14.0			0.0			18.1	
Approach LOS		B			B			A			B	

Intersection Summary			
HCM 2000 Control Delay	17.5	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.68		
Actuated Cycle Length (s)	65.0	Sum of lost time (s)	17.0
Intersection Capacity Utilization	75.1%	ICU Level of Service	D
Analysis Period (min)	15		

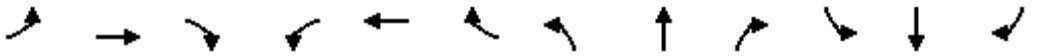
dl Defacto Left Lane. Recode with 1 though lane as a left lane.

c Critical Lane Group



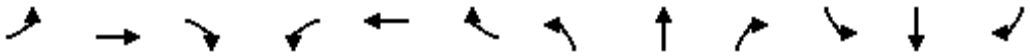
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	20	30	30	400	110	170	40	1290	160	140	730	130
Future Volume (vph)	20	30	30	400	110	170	40	1290	160	140	730	130
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.3	4.3		4.0	4.0		4.0	4.0	
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	0.91		0.97	0.91	
Frpb, ped/bikes	1.00	0.99		1.00	1.00		1.00	1.00		1.00	1.00	
Flpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Frt	1.00	0.93		1.00	0.91		1.00	0.98		1.00	0.98	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1770	1710		1765	1693		1770	5001		3433	4954	
Flt Permitted	0.47	1.00		0.71	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (perm)	876	1710		1327	1693		1770	5001		3433	4954	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	22	33	33	435	120	185	43	1402	174	152	793	141
RTOR Reduction (vph)	0	21	0	0	80	0	0	20	0	0	30	0
Lane Group Flow (vph)	22	45	0	435	225	0	43	1556	0	152	904	0
Confl. Peds. (#/hr)			4	4			1					1
Turn Type	Perm	NA		Perm	NA		Prot	NA		Prot	NA	
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4			8								
Actuated Green, G (s)	27.4	27.4		26.7	26.7		3.4	26.7		4.5	27.6	
Effective Green, g (s)	27.4	27.4		27.1	27.1		3.4	28.1		5.0	29.7	
Actuated g/C Ratio	0.38	0.38		0.37	0.37		0.05	0.39		0.07	0.41	
Clearance Time (s)	4.0	4.0		4.7	4.7		4.0	5.4		4.5	6.1	
Vehicle Extension (s)	2.0	2.0		3.0	3.0		2.0	4.8		3.0	3.7	
Lane Grp Cap (vph)	331	646		496	632		83	1938		236	2029	
v/s Ratio Prot		0.03			0.13		0.02	c0.31		c0.04	0.18	
v/s Ratio Perm	0.03			c0.33								
v/c Ratio	0.07	0.07		0.88	0.36		0.52	0.80		0.64	0.45	
Uniform Delay, d1	14.4	14.4		21.1	16.4		33.7	19.7		32.9	15.5	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	0.0	0.0		15.9	0.3		2.3	3.6		5.9	0.7	
Delay (s)	14.4	14.4		37.1	16.7		36.0	23.4		38.8	16.2	
Level of Service	B	B		D	B		D	C		D	B	
Approach Delay (s)		14.4			28.7			23.7			19.3	
Approach LOS		B			C			C			B	

Intersection Summary			
HCM 2000 Control Delay	23.2	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.82		
Actuated Cycle Length (s)	72.5	Sum of lost time (s)	12.3
Intersection Capacity Utilization	71.6%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			



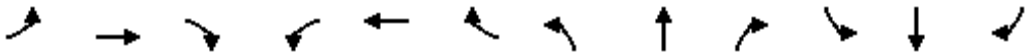
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	660	570	160	140	720	150	300	680	100	80	670	220
Future Volume (vph)	660	570	160	140	720	150	300	680	100	80	670	220
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0		4.0	4.0	4.9	4.0	4.0	4.0
Lane Util. Factor	0.97	0.91		1.00	0.91		0.97	0.91	1.00	1.00	0.91	1.00
Frpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00	0.99	1.00	1.00	0.99
Flpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.97		1.00	0.97		1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	4918		1770	4941		3433	5085	1562	1770	5085	1568
Flt Permitted	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	4918		1770	4941		3433	5085	1562	1770	5085	1568
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	717	620	174	152	783	163	326	739	109	87	728	239
RTOR Reduction (vph)	0	51	0	0	34	0	0	0	81	0	0	44
Lane Group Flow (vph)	717	743	0	152	912	0	326	739	28	87	728	195
Confl. Peds. (#/hr)	4					4	5		1	1		5
Turn Type	Prot	NA		Prot	NA		Prot	NA	Perm	Prot	NA	pm+ov
Protected Phases	7	4		3	8		5	2		1	6	7
Permitted Phases									2			6
Actuated Green, G (s)	20.5	33.7		11.9	24.5		9.6	24.5	24.5	5.7	20.5	41.0
Effective Green, g (s)	20.9	34.9		12.3	26.3		10.0	25.4	24.5	6.1	21.5	41.8
Actuated g/C Ratio	0.22	0.37		0.13	0.28		0.11	0.27	0.26	0.06	0.23	0.44
Clearance Time (s)	4.4	5.2		4.4	5.8		4.4	4.9	4.9	4.4	5.0	4.4
Vehicle Extension (s)	2.0	3.9		2.0	2.7		2.0	3.3	3.3	2.0	4.1	2.0
Lane Grp Cap (vph)	757	1812		229	1372		362	1363	404	114	1154	692
v/s Ratio Prot	c0.21	0.15		0.09	c0.18		c0.09	c0.15		0.05	c0.14	0.06
v/s Ratio Perm									0.02			0.06
v/c Ratio	0.95	0.41		0.66	0.66		0.90	0.54	0.07	0.76	0.63	0.28
Uniform Delay, d1	36.4	22.2		39.2	30.3		41.9	29.7	26.5	43.6	33.0	16.9
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	20.4	0.2		5.5	1.2		24.0	1.6	0.3	23.4	2.6	0.1
Delay (s)	56.8	22.4		44.7	31.4		65.9	31.2	26.8	67.0	35.6	17.0
Level of Service	E	C		D	C		E	C	C	E	D	B
Approach Delay (s)		38.7			33.3			40.4			34.0	
Approach LOS		D			C			D			C	

Intersection Summary			
HCM 2000 Control Delay	36.9	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.74		
Actuated Cycle Length (s)	94.7	Sum of lost time (s)	16.0
Intersection Capacity Utilization	74.1%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	140	230	70	20	140	210	50	180	250	20	20	30
Future Volume (vph)	140	230	70	20	140	210	50	180	250	20	20	30
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		3.1	4.0			4.0			4.0	
Lane Util. Factor	1.00	1.00		1.00	1.00			1.00			1.00	
Frpb, ped/bikes	1.00	0.99		1.00	1.00			0.98			1.00	
Flpb, ped/bikes	1.00	1.00		1.00	1.00			1.00			1.00	
Frt	1.00	0.97		1.00	0.91			0.93			0.94	
Flt Protected	0.95	1.00		0.95	1.00			0.99			0.99	
Satd. Flow (prot)	1770	1787		1770	1695			1690			1728	
Flt Permitted	0.95	1.00		0.95	1.00			0.96			0.81	
Satd. Flow (perm)	1770	1787		1770	1695			1633			1412	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	152	250	76	22	152	228	54	196	272	22	22	33
RTOR Reduction (vph)	0	13	0	0	66	0	0	53	0	0	23	0
Lane Group Flow (vph)	152	313	0	22	314	0	0	469	0	0	54	0
Confl. Peds. (#/hr)			3	3					8	8		
Turn Type	Prot	NA		Prot	NA		Perm	NA		Perm	NA	
Protected Phases	5	2		1	6			8			4	
Permitted Phases							8			4		
Actuated Green, G (s)	11.5	36.4		1.5	26.0			22.4			22.4	
Effective Green, g (s)	11.9	37.3		2.4	26.9			23.3			23.3	
Actuated g/C Ratio	0.16	0.50		0.03	0.36			0.31			0.31	
Clearance Time (s)	4.4	4.9		4.0	4.9			4.9			4.9	
Vehicle Extension (s)	1.0	2.0		3.0	2.0			2.0			2.0	
Lane Grp Cap (vph)	284	899		57	615			513			443	
v/s Ratio Prot	c0.09	0.17		0.01	c0.19							
v/s Ratio Perm								c0.29			0.04	
v/c Ratio	0.54	0.35		0.39	0.51			0.91			0.12	
Uniform Delay, d1	28.6	11.1		35.1	18.5			24.4			18.1	
Progression Factor	1.00	1.00		1.00	1.00			1.00			1.00	
Incremental Delay, d2	1.0	1.1		4.3	3.0			20.4			0.0	
Delay (s)	29.5	12.1		39.4	21.5			44.8			18.2	
Level of Service	C	B		D	C			D			B	
Approach Delay (s)		17.7			22.5			44.8			18.2	
Approach LOS		B			C			D			B	

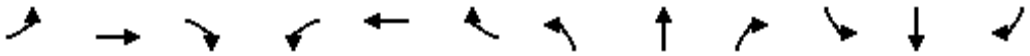
Intersection Summary			
HCM 2000 Control Delay	28.6	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.67		
Actuated Cycle Length (s)	74.1	Sum of lost time (s)	12.0
Intersection Capacity Utilization	73.0%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	180	650	80	170	1240	70	60	130	100	260	380	250
Future Volume (vph)	180	650	80	170	1240	70	60	130	100	260	380	250
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0		4.0	4.0	4.0	4.0	4.0	
Lane Util. Factor	0.97	0.91		1.00	0.91		1.00	0.95	1.00	0.97	0.95	
Frpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00	0.98	1.00	0.98	
Flpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	
Frt	1.00	0.98		1.00	0.99		1.00	1.00	0.85	1.00	0.94	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)	3433	4978		1770	5033		1770	3539	1555	3433	3278	
Flt Permitted	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (perm)	3433	4978		1770	5033		1770	3539	1555	3433	3278	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	196	707	87	185	1348	76	65	141	109	283	413	272
RTOR Reduction (vph)	0	18	0	0	6	0	0	0	59	0	143	0
Lane Group Flow (vph)	196	776	0	185	1418	0	65	141	50	283	542	0
Confl. Peds. (#/hr)	23		24	24		23	19		14	14		19
Confl. Bikes (#/hr)			9			5			12			6
Turn Type	Prot	NA		Prot	NA		Prot	NA	pm+ov	Prot	NA	
Protected Phases	5	2		1	6		3	8	1	7	4	
Permitted Phases									8			
Actuated Green, G (s)	7.9	24.3		13.0	28.9		6.1	17.6	30.6	11.4	23.0	
Effective Green, g (s)	8.3	25.2		13.4	30.3		6.5	18.6	31.4	11.8	23.9	
Actuated g/C Ratio	0.10	0.30		0.16	0.36		0.08	0.22	0.37	0.14	0.28	
Clearance Time (s)	4.4	4.9		4.4	5.4		4.4	5.0	4.4	4.4	4.9	
Vehicle Extension (s)	2.0	4.2		2.0	3.0		2.0	4.0	2.0	2.0	2.6	
Lane Grp Cap (vph)	335	1475		279	1794		135	774	574	476	921	
v/s Ratio Prot	0.06	0.16		c0.10	c0.28		c0.04	0.04	0.01	0.08	c0.17	
v/s Ratio Perm									0.02			
v/c Ratio	0.59	0.53		0.66	0.79		0.48	0.18	0.09	0.59	0.59	
Uniform Delay, d1	36.7	24.9		33.7	24.5		37.6	27.0	17.5	34.4	26.3	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	1.7	1.3		4.5	3.6		1.0	0.2	0.0	1.3	0.8	
Delay (s)	38.4	26.3		38.2	28.1		38.6	27.2	17.5	35.7	27.1	
Level of Service	D	C		D	C		D	C	B	D	C	
Approach Delay (s)		28.7			29.3			26.2			29.6	
Approach LOS		C			C			C			C	

Intersection Summary			
HCM 2000 Control Delay	29.0	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.69		
Actuated Cycle Length (s)	85.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	68.3%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	90	1660	560	120	1160	360	460	350	180	300	260	40
Future Volume (vph)	90	1660	560	120	1160	360	460	350	180	300	260	40
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	3.1	4.0	4.0	1.6	4.0	4.0	3.6	4.0	4.0	
Lane Util. Factor	1.00	0.91	1.00	0.97	0.91	1.00	0.97	1.00	1.00	0.97	1.00	
Frpb, ped/bikes	1.00	1.00	0.99	1.00	1.00	0.97	1.00	1.00	0.99	1.00	1.00	
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.98	
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)	1770	5085	1568	3433	5085	1537	3433	1863	1560	3433	1822	
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (perm)	1770	5085	1568	3433	5085	1537	3433	1863	1560	3433	1822	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	98	1804	609	130	1261	391	500	380	196	326	283	43
RTOR Reduction (vph)	0	0	139	0	0	117	0	0	50	0	5	0
Lane Group Flow (vph)	98	1804	470	130	1261	274	500	380	146	326	321	0
Confl. Peds. (#/hr)	6		1	1		6			6	6		
Confl. Bikes (#/hr)			1			5						3
Turn Type	Prot	NA	pm+ov	Prot	NA	pm+ov	Prot	NA	pm+ov	Prot	NA	
Protected Phases	5	2	3	1	6	7	3	8	1	7	4	
Permitted Phases			2			6			8			
Actuated Green, G (s)	8.3	41.6	57.2	5.7	38.9	54.2	15.6	29.9	35.6	15.3	27.8	
Effective Green, g (s)	8.7	42.9	59.8	6.1	40.3	57.0	16.0	30.7	37.2	14.3	29.0	
Actuated g/C Ratio	0.08	0.39	0.54	0.06	0.37	0.52	0.15	0.28	0.34	0.13	0.26	
Clearance Time (s)	4.4	5.3	4.4	4.4	5.4	3.0	4.4	4.8	4.4	3.0	5.2	
Vehicle Extension (s)	2.0	4.4	2.0	2.0	4.4	2.0	2.0	3.8	2.0	2.0	2.0	
Lane Grp Cap (vph)	139	1983	852	190	1862	796	499	519	527	446	480	
v/s Ratio Prot	c0.06	c0.35	0.08	0.04	0.25	0.05	c0.15	c0.20	0.02	0.09	c0.18	
v/s Ratio Perm			0.22			0.13			0.08			
v/c Ratio	0.71	0.91	0.55	0.68	0.68	0.34	1.00	0.73	0.28	0.73	0.67	
Uniform Delay, d1	49.4	31.7	16.4	51.0	29.4	15.5	47.0	35.9	26.6	46.0	36.2	
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	12.5	7.7	0.4	7.9	2.0	0.1	40.8	5.6	0.1	5.3	2.7	
Delay (s)	61.8	39.4	16.8	58.9	31.4	15.6	87.8	41.5	26.7	51.3	38.9	
Level of Service	E	D	B	E	C	B	F	D	C	D	D	
Approach Delay (s)		34.8			29.9			60.3			45.1	
Approach LOS		C			C			E			D	

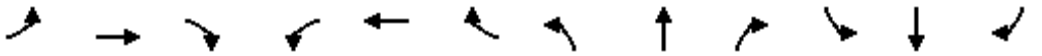
Intersection Summary			
HCM 2000 Control Delay	39.0	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.86		
Actuated Cycle Length (s)	110.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	78.1%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	810	1770	920	0	0	880
Future Volume (vph)	810	1770	920	0	0	880
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	7.0	7.0	7.0			7.0
Lane Util. Factor	0.97	0.76	0.95			0.95
Frt	1.00	0.85	1.00			1.00
Flt Protected	0.95	1.00	1.00			1.00
Satd. Flow (prot)	3433	3610	3539			3539
Flt Permitted	0.95	1.00	1.00			1.00
Satd. Flow (perm)	3433	3610	3539			3539
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	880	1924	1000	0	0	957
RTOR Reduction (vph)	0	14	0	0	0	0
Lane Group Flow (vph)	880	1910	1000	0	0	957
Turn Type	Prot	Perm	NA			NA
Protected Phases	4		2			6
Permitted Phases		4				
Actuated Green, G (s)	47.3	47.3	26.3			26.3
Effective Green, g (s)	47.3	47.3	26.3			26.3
Actuated g/C Ratio	0.54	0.54	0.30			0.30
Clearance Time (s)	7.0	7.0	7.0			7.0
Vehicle Extension (s)	0.2	0.2	0.2			0.2
Lane Grp Cap (vph)	1853	1949	1062			1062
v/s Ratio Prot	0.26		c0.28			0.27
v/s Ratio Perm		c0.53				
v/c Ratio	0.47	0.98	0.94			0.90
Uniform Delay, d1	12.5	19.7	29.9			29.4
Progression Factor	1.00	1.00	1.00			1.00
Incremental Delay, d2	0.1	15.6	15.4			10.3
Delay (s)	12.5	35.3	45.3			39.7
Level of Service	B	D	D			D
Approach Delay (s)	28.2		45.3			39.7
Approach LOS	C		D			D

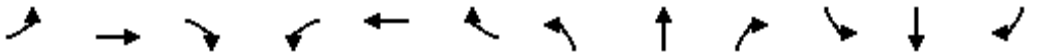
Intersection Summary			
HCM 2000 Control Delay	34.1	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.97		
Actuated Cycle Length (s)	87.6	Sum of lost time (s)	14.0
Intersection Capacity Utilization	78.4%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group



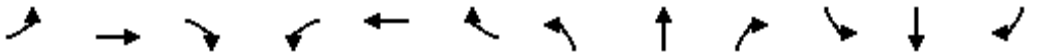
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	390	340	330	60	520	670	450	550	120	410	720	400
Future Volume (vph)	390	340	330	60	520	670	450	550	120	410	720	400
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.9	4.0	4.0		4.0	4.0	4.9
Lane Util. Factor	0.97	1.00	1.00	1.00	0.95	1.00	0.97	0.95		0.97	0.95	1.00
Frpb, ped/bikes	1.00	1.00	0.99	1.00	1.00	0.99	1.00	1.00		1.00	1.00	0.99
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.97		1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	3433	1863	1567	1770	3539	1567	3433	3444		3433	3539	1563
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)	3433	1863	1567	1770	3539	1567	3433	3444		3433	3539	1563
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	424	370	359	65	565	728	489	598	130	446	783	435
RTOR Reduction (vph)	0	0	54	0	0	57	0	16	0	0	0	62
Lane Group Flow (vph)	424	370	305	65	565	671	489	712	0	446	783	373
Confl. Peds. (#/hr)	6		3	3		6	6					6
Turn Type	Prot	NA	pm+ov	Prot	NA	pm+ov	Prot	NA		Prot	NA	pm+ov
Protected Phases	5	2	3	1	6	7	3	8		7	4	5
Permitted Phases			2			6						4
Actuated Green, G (s)	15.1	38.8	58.0	6.4	30.1	55.5	19.2	29.7		25.4	35.9	51.0
Effective Green, g (s)	16.0	39.7	59.8	7.4	31.1	55.5	20.1	30.6		26.3	36.8	51.0
Actuated g/C Ratio	0.13	0.33	0.50	0.06	0.26	0.46	0.17	0.26		0.22	0.31	0.42
Clearance Time (s)	4.9	4.9	4.9	5.0	5.0	4.9	4.9	4.9		4.9	4.9	4.9
Vehicle Extension (s)	0.2	0.2	3.1	8.0	8.0	5.5	3.1	3.1		5.5	5.5	0.2
Lane Grp Cap (vph)	457	616	833	109	917	788	575	878		752	1085	664
v/s Ratio Prot	c0.12	0.20	0.06	0.04	0.16	c0.18	0.14	c0.21		0.13	0.22	0.07
v/s Ratio Perm			0.13			0.25						0.17
v/c Ratio	0.93	0.60	0.37	0.60	0.62	0.85	0.85	0.81		0.59	0.72	0.56
Uniform Delay, d1	51.4	33.5	18.5	54.8	39.2	28.6	48.5	42.0		42.0	37.0	26.1
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	24.6	4.3	0.3	20.2	3.1	9.8	11.6	5.7		2.1	3.2	0.7
Delay (s)	76.1	37.8	18.8	75.1	42.3	38.4	60.1	47.7		44.2	40.2	26.7
Level of Service	E	D	B	E	D	D	E	D		D	D	C
Approach Delay (s)		46.0			41.8			52.7			37.7	
Approach LOS		D			D			D			D	

Intersection Summary			
HCM 2000 Control Delay	43.9	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.89		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	17.8
Intersection Capacity Utilization	84.7%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	380	1880	160	450	1500	350	180	610	370	350	520	290
Future Volume (vph)	380	1880	160	450	1500	350	180	610	370	350	520	290
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0	4.4	4.0	4.0	3.5	4.0	4.0	3.5
Lane Util. Factor	0.97	0.86		0.97	0.86	1.00	1.00	0.95	1.00	0.97	0.95	1.00
Frpb, ped/bikes	1.00	0.99		1.00	1.00	0.94	1.00	1.00	0.96	1.00	1.00	0.96
Flpb, ped/bikes	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.99		1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	6281		3433	6408	1483	1770	3539	1527	3433	3539	1524
Flt Permitted	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	6281		3433	6408	1483	1770	3539	1527	3433	3539	1524
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	413	2043	174	489	1630	380	196	663	402	380	565	315
RTOR Reduction (vph)	0	10	0	0	0	49	0	0	61	0	0	60
Lane Group Flow (vph)	413	2207	0	489	1630	331	196	663	341	380	565	255
Confl. Peds. (#/hr)	48		65	65		48	42		40	40		42
Turn Type	Prot	NA		Prot	NA	pm+ov	Prot	NA	pm+ov	Prot	NA	pm+ov
Protected Phases	5	2		1	6	7	3	8	1	7	4	5
Permitted Phases						6			8			4
Actuated Green, G (s)	18.4	44.5		17.8	44.0	59.3	14.6	28.6	46.4	15.3	29.3	47.7
Effective Green, g (s)	18.8	45.6		18.2	45.0	59.3	15.0	29.5	48.2	15.7	30.2	49.5
Actuated g/C Ratio	0.15	0.36		0.15	0.36	0.47	0.12	0.24	0.39	0.13	0.24	0.40
Clearance Time (s)	4.4	5.1		4.4	5.0	4.4	4.4	4.9	4.4	4.4	4.9	4.4
Vehicle Extension (s)	2.0	3.5		2.0	3.7	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lane Grp Cap (vph)	516	2291		499	2306	703	212	835	631	431	855	603
v/s Ratio Prot	0.12	c0.35		c0.14	0.25	0.06	c0.11	c0.19	0.08	c0.11	0.16	0.07
v/s Ratio Perm						0.17			0.14			0.10
v/c Ratio	0.80	0.96		0.98	0.71	0.47	0.92	0.79	0.54	0.88	0.66	0.42
Uniform Delay, d1	51.3	38.9		53.2	34.3	22.2	54.4	44.9	29.8	53.7	42.8	27.4
Progression Factor	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	8.2	12.0		34.5	1.1	0.2	40.6	4.9	0.5	18.2	1.5	0.2
Delay (s)	59.5	50.8		87.8	35.4	22.4	95.0	49.8	30.3	71.9	44.3	27.6
Level of Service	E	D		F	D	C	F	D	C	E	D	C
Approach Delay (s)		52.2			43.7			50.6			48.4	
Approach LOS		D			D			D			D	

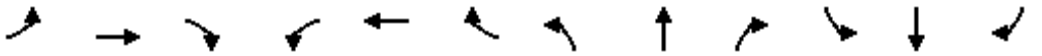
Intersection Summary			
HCM 2000 Control Delay	48.5	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.92		
Actuated Cycle Length (s)	125.0	Sum of lost time (s)	16.4
Intersection Capacity Utilization	90.5%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	700	280	430	480	0	0	0	0	330	470	1060
Future Volume (vph)	0	700	280	430	480	0	0	0	0	330	470	1060
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0	4.0	4.0	4.0					4.0	4.0	4.0
Lane Util. Factor		0.95	1.00	0.97	0.95					0.91	0.91	0.88
Frt		1.00	0.85	1.00	1.00					1.00	1.00	0.85
Flt Protected		1.00	1.00	0.95	1.00					0.95	1.00	1.00
Satd. Flow (prot)		3539	1583	3433	3539					1610	3390	2787
Flt Permitted		1.00	1.00	0.95	1.00					0.95	1.00	1.00
Satd. Flow (perm)		3539	1583	3433	3539					1610	3390	2787
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	761	304	467	522	0	0	0	0	359	511	1152
RTOR Reduction (vph)	0	0	101	0	0	0	0	0	0	0	0	332
Lane Group Flow (vph)	0	761	203	467	522	0	0	0	0	359	511	820
Turn Type		NA	Perm	Prot	NA					Perm	NA	Perm
Protected Phases		2		1	6						4	
Permitted Phases			2							4		4
Actuated Green, G (s)		42.5	42.5	19.9	66.8					43.4	43.4	43.4
Effective Green, g (s)		43.4	43.4	20.3	67.7					44.3	44.3	44.3
Actuated g/C Ratio		0.36	0.36	0.17	0.56					0.37	0.37	0.37
Clearance Time (s)		4.9	4.9	4.4	4.9					4.9	4.9	4.9
Vehicle Extension (s)		3.8	3.8	2.0	4.2					2.0	2.0	2.0
Lane Grp Cap (vph)		1279	572	580	1996					594	1251	1028
v/s Ratio Prot		c0.22		c0.14	0.15							
v/s Ratio Perm			0.13							0.22	0.15	c0.29
v/c Ratio		0.59	0.36	0.81	0.26					0.60	0.41	0.80
Uniform Delay, d1		31.2	28.1	47.9	13.4					30.7	28.1	33.8
Progression Factor		1.00	1.00	1.00	1.00					1.00	1.00	1.00
Incremental Delay, d2		2.0	1.7	7.6	0.3					1.2	0.1	4.1
Delay (s)		33.2	29.8	55.5	13.7					31.9	28.2	37.9
Level of Service		C	C	E	B					C	C	D
Approach Delay (s)		32.2			33.4			0.0			34.4	
Approach LOS		C			C			A			C	

Intersection Summary			
HCM 2000 Control Delay	33.6	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.72		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	57.0%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

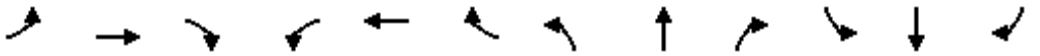


Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	1090	340	60	700	0	0	0	0	730	1100	660
Future Volume (vph)	0	1090	340	60	700	0	0	0	0	730	1100	660
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		6.7		4.0	6.7						6.3	4.0
Lane Util. Factor		0.91		1.00	0.95						0.86	0.86
Frt		0.96		1.00	1.00						1.00	0.85
Flt Protected		1.00		0.95	1.00						0.98	1.00
Satd. Flow (prot)		4904		1770	3539						4712	1362
Flt Permitted		1.00		0.95	1.00						0.98	1.00
Satd. Flow (perm)		4904		1770	3539						4712	1362
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	1185	370	65	761	0	0	0	0	793	1196	717
RTOR Reduction (vph)	0	32	0	0	0	0	0	0	0	0	0	51
Lane Group Flow (vph)	0	1523	0	65	761	0	0	0	0	0	1989	666
Turn Type		NA		Prot	NA					Perm	NA	Perm
Protected Phases		2		1	6						4	
Permitted Phases										4		4
Actuated Green, G (s)		30.2		3.4	36.3						41.7	41.7
Effective Green, g (s)		28.4		3.8	36.2						40.8	43.1
Actuated g/C Ratio		0.32		0.04	0.40						0.45	0.48
Clearance Time (s)		4.9		4.4	6.6						5.4	5.4
Vehicle Extension (s)		1.0		2.0	1.0						1.0	1.0
Lane Grp Cap (vph)		1547		74	1423						2136	652
v/s Ratio Prot		c0.31		c0.04	0.22							
v/s Ratio Perm											0.42	c0.49
v/c Ratio		0.98		0.88	0.53						1.04dl	1.02
Uniform Delay, d1		30.6		42.9	20.5						23.3	23.4
Progression Factor		1.00		1.00	1.00						1.00	1.00
Incremental Delay, d2		19.5		62.7	1.4						7.9	41.0
Delay (s)		50.0		105.6	21.9						31.2	64.4
Level of Service		D		F	C						C	E
Approach Delay (s)		50.0			28.5			0.0			40.0	
Approach LOS		D			C			A			D	

Intersection Summary			
HCM 2000 Control Delay	41.2	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	1.03		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	17.0
Intersection Capacity Utilization	87.1%	ICU Level of Service	E
Analysis Period (min)	15		

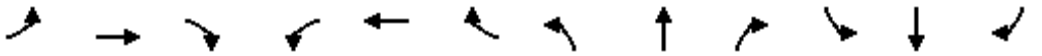
dl Defacto Left Lane. Recode with 1 though lane as a left lane.

c Critical Lane Group



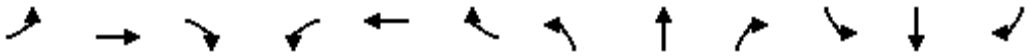
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	40	150	30	360	40	230	30	1530	260	250	510	20
Future Volume (vph)	40	150	30	360	40	230	30	1530	260	250	510	20
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.3	4.3		4.0	4.0		6.2	4.0	
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	0.91		0.97	0.91	
Frpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Flpb, ped/bikes	1.00	1.00		0.99	1.00		1.00	1.00		1.00	1.00	
Frt	1.00	0.97		1.00	0.87		1.00	0.98		1.00	0.99	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1770	1810		1759	1624		1770	4974		3433	5051	
Flt Permitted	0.46	1.00		0.57	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (perm)	848	1810		1062	1624		1770	4974		3433	5051	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	43	163	33	391	43	250	33	1663	283	272	554	22
RTOR Reduction (vph)	0	8	0	0	110	0	0	26	0	0	4	0
Lane Group Flow (vph)	43	188	0	391	183	0	33	1920	0	272	572	0
Confl. Peds. (#/hr)			9	9			2					2
Turn Type	Perm	NA		Perm	NA		Prot	NA		Prot	NA	
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4			8								
Actuated Green, G (s)	33.0	33.0		32.3	32.3		3.0	35.2		9.9	41.4	
Effective Green, g (s)	33.0	33.0		32.7	32.7		3.0	36.6		7.7	43.5	
Actuated g/C Ratio	0.36	0.36		0.36	0.36		0.03	0.40		0.08	0.48	
Clearance Time (s)	4.0	4.0		4.7	4.7		4.0	5.4		4.0	6.1	
Vehicle Extension (s)	2.0	2.0		3.0	3.0		2.0	4.8		2.0	3.7	
Lane Grp Cap (vph)	305	652		379	580		58	1989		288	2401	
v/s Ratio Prot		0.10			0.11		0.02	c0.39		c0.08	0.11	
v/s Ratio Perm	0.05			c0.37								
v/c Ratio	0.14	0.29		1.03	0.32		0.57	0.97		0.94	0.24	
Uniform Delay, d1	19.7	20.9		29.4	21.3		43.6	26.8		41.7	14.2	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	0.1	0.1		54.6	0.3		7.4	13.5		37.8	0.2	
Delay (s)	19.8	21.0		84.0	21.6		51.0	40.3		79.4	14.4	
Level of Service	B	C		F	C		D	D		E	B	
Approach Delay (s)		20.7			57.3			40.5			35.3	
Approach LOS		C			E			D			D	

Intersection Summary			
HCM 2000 Control Delay	41.1	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.99		
Actuated Cycle Length (s)	91.5	Sum of lost time (s)	14.5
Intersection Capacity Utilization	91.9%	ICU Level of Service	F
Analysis Period (min)	15		
c Critical Lane Group			



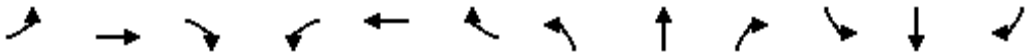
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	620	1070	300	250	950	160	450	1040	230	130	610	250
Future Volume (vph)	620	1070	300	250	950	160	450	1040	230	130	610	250
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0		4.0	4.0	4.9	4.0	4.0	4.0
Lane Util. Factor	0.97	0.91		1.00	0.91		0.97	0.91	1.00	1.00	0.91	1.00
Frpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00	0.99	1.00	1.00	0.99
Flpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.97		1.00	0.98		1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	4918		1770	4964		3433	5085	1562	1770	5085	1566
Flt Permitted	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	4918		1770	4964		3433	5085	1562	1770	5085	1566
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	674	1163	326	272	1033	174	489	1130	250	141	663	272
RTOR Reduction (vph)	0	51	0	0	24	0	0	0	188	0	0	49
Lane Group Flow (vph)	674	1438	0	272	1183	0	489	1130	62	141	663	223
Confl. Peds. (#/hr)	4					4	5		1	1		5
Turn Type	Prot	NA		Prot	NA		Prot	NA	Perm	Prot	NA	pm+ov
Protected Phases	7	4		3	8		5	2		1	6	7
Permitted Phases									2			6
Actuated Green, G (s)	16.6	31.6		15.9	30.3		12.6	24.7	24.7	8.2	20.2	36.8
Effective Green, g (s)	17.0	32.8		16.3	32.1		13.0	25.6	24.7	8.6	21.2	37.6
Actuated g/C Ratio	0.17	0.33		0.16	0.32		0.13	0.26	0.25	0.09	0.21	0.38
Clearance Time (s)	4.4	5.2		4.4	5.8		4.4	4.9	4.9	4.4	5.0	4.4
Vehicle Extension (s)	2.0	3.9		2.0	2.7		2.0	3.3	3.3	2.0	4.1	2.0
Lane Grp Cap (vph)	587	1624		290	1604		449	1310	388	153	1085	592
v/s Ratio Prot	c0.20	c0.29		0.15	0.24		c0.14	c0.22		0.08	0.13	0.06
v/s Ratio Perm									0.04			0.08
v/c Ratio	1.15	0.89		0.94	0.74		1.09	0.86	0.16	0.92	0.61	0.38
Uniform Delay, d1	41.1	31.5		41.0	29.9		43.1	35.2	29.2	45.0	35.3	22.4
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	85.3	6.3		35.9	1.7		68.7	7.7	0.9	49.3	2.6	0.1
Delay (s)	126.4	37.8		76.9	31.6		111.8	42.8	30.1	94.4	37.9	22.5
Level of Service	F	D		E	C		F	D	C	F	D	C
Approach Delay (s)		65.4			39.9			59.2			41.4	
Approach LOS		E			D			E			D	

Intersection Summary			
HCM 2000 Control Delay	54.0	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	1.00		
Actuated Cycle Length (s)	99.3	Sum of lost time (s)	16.0
Intersection Capacity Utilization	82.4%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	580	300	70	20	170	150	90	100	110	20	20	40
Future Volume (vph)	580	300	70	20	170	150	90	100	110	20	20	40
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.6	4.0		3.1	4.0			4.0			4.0	
Lane Util. Factor	1.00	1.00		1.00	1.00			1.00			1.00	
Frpb, ped/bikes	1.00	0.99		1.00	0.99			0.99			0.99	
Flpb, ped/bikes	1.00	1.00		1.00	1.00			1.00			1.00	
Frt	1.00	0.97		1.00	0.93			0.95			0.93	
Flt Protected	0.95	1.00		0.95	1.00			0.99			0.99	
Satd. Flow (prot)	1770	1800		1770	1714			1724			1696	
Flt Permitted	0.95	1.00		0.95	1.00			0.88			0.84	
Satd. Flow (perm)	1770	1800		1770	1714			1537			1436	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	630	326	76	22	185	163	98	109	120	22	22	43
RTOR Reduction (vph)	0	8	0	0	33	0	0	24	0	0	33	0
Lane Group Flow (vph)	630	394	0	22	315	0	0	303	0	0	54	0
Confl. Peds. (#/hr)	1		3	3		1	1		4	4		1
Turn Type	Prot	NA		Prot	NA		Perm	NA		Perm	NA	
Protected Phases	5	2		1	6			8			4	
Permitted Phases							8			4		
Actuated Green, G (s)	32.6	54.3		1.5	23.2			18.8			18.8	
Effective Green, g (s)	33.0	55.2		2.4	24.1			19.7			19.7	
Actuated g/C Ratio	0.37	0.62		0.03	0.27			0.22			0.22	
Clearance Time (s)	4.0	4.9		4.0	4.9			4.9			4.9	
Vehicle Extension (s)	3.0	2.0		3.0	2.0			2.0			2.0	
Lane Grp Cap (vph)	660	1123		48	467			342			320	
v/s Ratio Prot	c0.36	0.22		0.01	c0.18							
v/s Ratio Perm								c0.20			0.04	
v/c Ratio	0.95	0.35		0.46	0.67			0.89			0.17	
Uniform Delay, d1	27.0	8.0		42.4	28.6			33.3			27.7	
Progression Factor	1.00	1.00		1.00	1.00			1.00			1.00	
Incremental Delay, d2	24.2	0.9		6.8	7.6			22.3			0.1	
Delay (s)	51.1	8.8		49.2	36.2			55.6			27.8	
Level of Service	D	A		D	D			E			C	
Approach Delay (s)		34.7			37.0			55.6			27.8	
Approach LOS		C			D			E			C	

Intersection Summary			
HCM 2000 Control Delay	38.6	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.85		
Actuated Cycle Length (s)	88.4	Sum of lost time (s)	11.6
Intersection Capacity Utilization	84.1%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	440	1400	150	210	840	220	90	420	230	310	220	160
Future Volume (vph)	440	1400	150	210	840	220	90	420	230	310	220	160
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0		4.0	4.0	4.0	4.0	4.0	
Lane Util. Factor	0.97	0.91		1.00	0.91		1.00	0.95	1.00	0.97	0.95	
Frpb, ped/bikes	1.00	1.00		1.00	0.99		1.00	1.00	0.97	1.00	0.97	
Flpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	
Frt	1.00	0.99		1.00	0.97		1.00	1.00	0.85	1.00	0.94	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)	3433	4988		1770	4872		1770	3539	1539	3433	3210	
Flt Permitted	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (perm)	3433	4988		1770	4872		1770	3539	1539	3433	3210	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	478	1522	163	228	913	239	98	457	250	337	239	174
RTOR Reduction (vph)	0	12	0	0	43	0	0	0	47	0	126	0
Lane Group Flow (vph)	478	1673	0	228	1109	0	98	457	203	337	287	0
Confl. Peds. (#/hr)	26		26	26		26	41		25	25		41
Confl. Bikes (#/hr)			8			2			13			8
Turn Type	Prot	NA		Prot	NA		Prot	NA	pm+ov	Prot	NA	
Protected Phases	5	2		1	6		3	8	1	7	4	
Permitted Phases									8			
Actuated Green, G (s)	17.0	34.5		15.1	32.1		8.5	24.0	39.1	12.7	28.3	
Effective Green, g (s)	17.4	35.4		15.5	33.5		8.9	25.0	39.9	13.1	29.2	
Actuated g/C Ratio	0.17	0.34		0.15	0.32		0.08	0.24	0.38	0.12	0.28	
Clearance Time (s)	4.4	4.9		4.4	5.4		4.4	5.0	4.4	4.4	4.9	
Vehicle Extension (s)	2.0	4.2		2.0	3.0		2.0	4.0	2.0	2.0	2.6	
Lane Grp Cap (vph)	568	1681		261	1554		150	842	584	428	892	
v/s Ratio Prot	c0.14	c0.34		0.13	0.23		c0.06	c0.13	0.05	c0.10	0.09	
v/s Ratio Perm									0.08			
v/c Ratio	0.84	1.00		0.87	0.71		0.65	0.54	0.35	0.79	0.32	
Uniform Delay, d1	42.5	34.7		43.8	31.5		46.6	35.0	23.3	44.6	30.1	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	10.5	20.9		25.3	2.8		7.5	0.9	0.1	8.6	0.2	
Delay (s)	52.9	55.6		69.1	34.3		54.1	35.9	23.4	53.2	30.2	
Level of Service	D	E		E	C		D	D	C	D	C	
Approach Delay (s)		55.0			40.1			34.2			40.5	
Approach LOS		D			D			C			D	

Intersection Summary			
HCM 2000 Control Delay	45.5	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.83		
Actuated Cycle Length (s)	105.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	83.1%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group

Queuing Reports

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	54	1239	435	174	1446	196	522	435	163	630	434
v/c Ratio	0.95	0.84	0.59	0.61	1.21	0.33	0.65	0.93	0.33	1.38	0.87
Control Delay	168.6	51.2	8.5	70.2	139.5	13.5	52.1	76.4	12.2	223.4	63.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	168.6	51.2	8.5	70.2	139.5	13.5	52.1	76.4	12.2	223.4	63.0
Queue Length 50th (ft)	48	368	21	78	~810	41	215	371	21	~741	349
Queue Length 95th (ft)	#137	427	115	#127	#950	105	#309	#566	80	#976	455
Internal Link Dist (ft)		2325			484			648			1369
Turn Bay Length (ft)											
Base Capacity (vph)	57	1533	752	284	1200	592	808	480	499	456	589
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.95	0.81	0.58	0.61	1.21	0.33	0.65	0.91	0.33	1.38	0.74

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Lane Group	WBL	WBR	NBT	SBT
Lane Group Flow (vph)	576	1283	402	717
v/c Ratio	0.40	0.88	0.40	0.72
Control Delay	11.0	17.0	15.3	20.2
Queue Delay	0.0	0.0	0.0	0.0
Total Delay	11.0	17.0	15.3	20.2
Queue Length 50th (ft)	50	91	50	98
Queue Length 95th (ft)	102	#285	79	145
Internal Link Dist (ft)	810		406	1779
Turn Bay Length (ft)				
Base Capacity (vph)	1644	1605	1849	1849
Starvation Cap Reductn	0	0	0	0
Spillback Cap Reductn	0	0	0	0
Storage Cap Reductn	0	0	0	0
Reduced v/c Ratio	0.35	0.80	0.22	0.39

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT	SBR
Lane Group Flow (vph)	500	337	315	33	152	315	228	598	413	576	272
v/c Ratio	1.00	0.44	0.32	0.32	0.28	0.50	0.76	0.78	1.04	0.59	0.28
Control Delay	83.9	29.1	8.0	67.8	46.9	23.4	65.8	51.4	101.5	41.6	2.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	83.9	29.1	8.0	67.8	46.9	23.4	65.8	51.4	101.5	41.6	2.4
Queue Length 50th (ft)	374	194	63	24	55	132	161	221	~322	203	0
Queue Length 95th (ft)	#790	314	135	68	94	239	#342	329	#692	307	42
Internal Link Dist (ft)		611			563			507		730	
Turn Bay Length (ft)											
Base Capacity (vph)	501	918	1008	103	946	629	338	1108	398	1242	985
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	1.00	0.37	0.31	0.32	0.16	0.50	0.67	0.54	1.04	0.46	0.28

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT	SBR
Lane Group Flow (vph)	120	120	120	98	109	185	87	413	87	446	98
v/c Ratio	0.48	0.45	0.29	0.40	0.42	0.49	0.43	0.25	0.53	0.24	0.11
Control Delay	50.8	49.7	6.7	48.9	49.4	9.9	61.5	22.1	75.5	14.7	4.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	50.8	49.7	6.7	48.9	49.4	9.9	61.5	22.1	75.5	14.7	4.3
Queue Length 50th (ft)	93	93	0	73	81	0	34	84	72	38	0
Queue Length 95th (ft)	127	126	39	102	112	54	#63	197	m#156	231	m72
Internal Link Dist (ft)		644			610			685		849	
Turn Bay Length (ft)											
Base Capacity (vph)	502	529	419	514	541	582	201	1687	163	1837	870
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.24	0.23	0.29	0.19	0.20	0.32	0.43	0.24	0.53	0.24	0.11

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.

Lane Group	EBT	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	77	88	65	826	43	652
v/c Ratio	0.20	0.22	0.11	0.35	0.08	0.30
Control Delay	12.2	11.3	5.2	8.0	5.3	8.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	12.2	11.3	5.2	8.0	5.3	8.9
Queue Length 50th (ft)	9	9	4	33	3	51
Queue Length 95th (ft)	40	42	26	173	19	133
Internal Link Dist (ft)	218	191		927		475
Turn Bay Length (ft)						
Base Capacity (vph)	969	934	617	2588	551	2591
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.08	0.09	0.11	0.32	0.08	0.25

Intersection Summary

Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	250	1750	304	2011	293	98	348	207	250	304	196
v/c Ratio	0.80	0.84	0.83	0.92	0.34	0.69	0.42	0.33	0.80	0.35	0.32
Control Delay	67.2	33.6	66.3	38.1	5.9	71.7	34.0	9.8	67.5	32.5	9.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	67.2	33.6	66.3	38.1	5.9	71.7	34.0	9.8	67.5	32.5	9.6
Queue Length 50th (ft)	87	415	106	~536	35	65	93	34	87	81	31
Queue Length 95th (ft)	#167	#530	#186	#633	74	#139	132	80	#164	117	77
Internal Link Dist (ft)		286		607			736			927	
Turn Bay Length (ft)											
Base Capacity (vph)	313	2077	367	2181	869	150	1108	620	312	1085	617
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.80	0.84	0.83	0.92	0.34	0.65	0.31	0.33	0.80	0.28	0.32

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Lane Group	WBL	NBT	SBL	SBT
Lane Group Flow (vph)	163	750	163	652
v/c Ratio	0.52	0.41	0.54	0.25
Control Delay	25.5	13.1	29.5	4.2
Queue Delay	0.0	0.0	0.0	0.0
Total Delay	25.5	13.1	29.5	4.2
Queue Length 50th (ft)	46	94	53	38
Queue Length 95th (ft)	95	168	107	75
Internal Link Dist (ft)	266	258		736
Turn Bay Length (ft)				
Base Capacity (vph)	497	1821	374	2581
Starvation Cap Reductn	0	0	0	0
Spillback Cap Reductn	0	0	0	0
Storage Cap Reductn	0	0	0	0
Reduced v/c Ratio	0.33	0.41	0.44	0.25

Intersection Summary

Lane Group	EBT	WBT	WBR	SBL	SBR
Lane Group Flow (vph)	880	1435	663	446	152
v/c Ratio	0.46	0.75	0.41	0.63	0.34
Control Delay	10.7	15.9	5.5	29.7	8.3
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	10.7	15.9	5.5	29.7	8.3
Queue Length 50th (ft)	68	141	13	65	0
Queue Length 95th (ft)	243	#537	109	#217	52
Internal Link Dist (ft)	776	812		135	
Turn Bay Length (ft)					
Base Capacity (vph)	2303	2303	1614	707	446
Starvation Cap Reductn	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.38	0.62	0.41	0.63	0.34

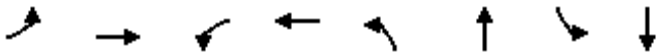
Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Lane Group	WBL	WBR	NBT	SBL	SBT
Lane Group Flow (vph)	33	54	511	130	696
v/c Ratio	0.16	0.23	0.16	0.65	0.17
Control Delay	39.8	10.5	21.9	61.3	4.4
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	39.8	10.5	21.9	61.3	4.4
Queue Length 50th (ft)	23	0	79	89	21
Queue Length 95th (ft)	36	26	m150	145	113
Internal Link Dist (ft)	700		918		563
Turn Bay Length (ft)					
Base Capacity (vph)	645	611	3277	331	4173
Starvation Cap Reductn	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.05	0.09	0.16	0.39	0.17

Intersection Summary

m Volume for 95th percentile queue is metered by upstream signal.



Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	87	163	174	272	207	533	87	685
v/c Ratio	0.36	0.53	0.54	0.80	0.78	0.35	0.12	0.51
Control Delay	45.0	24.9	49.5	58.1	64.8	28.4	32.7	26.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	45.0	24.9	49.5	58.1	64.8	28.4	32.7	26.5
Queue Length 50th (ft)	59	48	111	164	140	94	24	174
Queue Length 95th (ft)	88	93	#217	#355	#251	149	52	318
Internal Link Dist (ft)		610		1546		668		918
Turn Bay Length (ft)								
Base Capacity (vph)	497	536	320	340	289	1538	759	1350
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.18	0.30	0.54	0.80	0.72	0.35	0.11	0.51

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Lane Group	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	87	43	76	33	684	98	794
v/c Ratio	0.27	0.19	0.30	0.18	0.55	0.13	0.43
Control Delay	24.1	36.1	19.6	38.1	25.8	27.0	17.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	24.1	36.1	19.6	38.1	25.8	27.0	17.0
Queue Length 50th (ft)	23	13	7	10	74	14	82
Queue Length 95th (ft)	77	66	61	56	208	53	312
Internal Link Dist (ft)	465		807		727		668
Turn Bay Length (ft)							
Base Capacity (vph)	1135	949	916	233	2737	1840	2849
Starvation Cap Reductn	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.08	0.05	0.08	0.14	0.25	0.05	0.28

Intersection Summary

Lane Group	EBT	EBR	WBT	WBR	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	44	54	22	22	65	717	43	782
v/c Ratio	0.20	0.14	0.11	0.06	0.34	0.20	0.22	0.22
Control Delay	20.6	0.7	19.4	0.2	22.3	3.0	25.4	6.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	20.6	0.7	19.4	0.2	22.3	3.0	25.4	6.7
Queue Length 50th (ft)	13	0	7	0	28	9	13	43
Queue Length 95th (ft)	30	0	19	0	m48	m42	38	91
Internal Link Dist (ft)	286		160			994		727
Turn Bay Length (ft)								
Base Capacity (vph)	415	587	418	587	193	3661	196	3497
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.11	0.09	0.05	0.04	0.34	0.20	0.22	0.22

Intersection Summary

m Volume for 95th percentile queue is metered by upstream signal.

Lane Group	EBL	EBT	EBR2	WBT	WBR	NBR2	SBL2	SBL	SBT	SBR	NWL	NWR
Lane Group Flow (vph)	261	1696	98	2337	337	109	179	206	213	87	185	218
v/c Ratio	0.84	0.60	0.12	0.96	0.36	0.10	0.74	0.90	0.90	0.28	0.89	0.49
Control Delay	73.3	15.2	2.5	38.3	6.0	0.2	58.4	79.0	78.9	9.6	87.7	23.1
Queue Delay	0.0	0.0	0.0	43.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	73.3	15.2	2.5	82.2	6.0	0.2	58.4	79.0	78.9	9.6	87.7	23.1
Queue Length 50th (ft)	95	277	0	561	45	0	129	159	163	0	130	32
Queue Length 95th (ft)	#171	325	25	#694	73	0	#235	#308	#316	37	#260	74
Internal Link Dist (ft)		607		437					994		422	
Turn Bay Length (ft)												
Base Capacity (vph)	310	2820	825	2450	944	1049	246	235	242	315	210	445
Starvation Cap Reductn	0	0	0	404	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.84	0.60	0.12	1.14	0.36	0.10	0.73	0.88	0.88	0.28	0.88	0.49

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Lane Group	EBT	WBT	NBT	SBT
Lane Group Flow (vph)	272	272	228	88
v/c Ratio	0.58	0.70	0.26	0.09
Control Delay	16.5	23.2	5.9	4.9
Queue Delay	0.0	0.0	0.0	0.0
Total Delay	16.5	23.2	5.9	4.9
Queue Length 50th (ft)	48	55	19	6
Queue Length 95th (ft)	103	118	63	27
Internal Link Dist (ft)	271	339	940	771
Turn Bay Length (ft)				
Base Capacity (vph)	989	834	889	928
Starvation Cap Reductn	0	0	0	0
Spillback Cap Reductn	0	0	0	0
Storage Cap Reductn	0	0	0	0
Reduced v/c Ratio	0.28	0.33	0.26	0.09

Intersection Summary

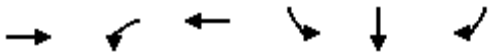
Lane Group	NBL	NBT	SBT	SEL	SER
Lane Group Flow (vph)	326	630	674	217	207
v/c Ratio	0.80	0.16	0.27	0.73	0.47
Control Delay	64.2	0.8	22.7	60.7	8.9
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	64.2	0.8	22.7	60.7	8.9
Queue Length 50th (ft)	208	6	132	161	0
Queue Length 95th (ft)	223	9	189	229	61
Internal Link Dist (ft)		764	913	479	
Turn Bay Length (ft)					
Base Capacity (vph)	575	3886	2517	545	631
Starvation Cap Reductn	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.57	0.16	0.27	0.40	0.33

Intersection Summary

Lane Group	EBL	EBR	WBL	WBT	SBT
Lane Group Flow (vph)	33	109	87	435	87
v/c Ratio	0.15	0.25	0.12	0.65	0.25
Control Delay	17.5	5.9	4.2	18.3	18.7
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	17.5	5.9	4.2	18.3	18.7
Queue Length 50th (ft)	7	0	0	81	17
Queue Length 95th (ft)	26	30	24	#223	55
Internal Link Dist (ft)				363	564
Turn Bay Length (ft)					
Base Capacity (vph)	429	729	927	908	872
Starvation Cap Reductn	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.08	0.15	0.09	0.48	0.10

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.



Lane Group	EBT	WBL	WBT	SBL	SBT	SBR
Lane Group Flow (vph)	1859	293	2620	271	153	65
v/c Ratio	0.74	0.89	0.58	0.70	0.38	0.16
Control Delay	31.4	76.9	0.3	56.2	44.4	12.3
Queue Delay	7.5	3.6	0.6	0.0	0.0	0.0
Total Delay	38.9	80.4	1.0	56.2	44.4	12.3
Queue Length 50th (ft)	465	245	1	240	124	9
Queue Length 95th (ft)	622	m218	m1	298	168	42
Internal Link Dist (ft)	437		346		833	
Turn Bay Length (ft)						
Base Capacity (vph)	2513	340	4552	535	553	540
Starvation Cap Reductn	622	16	1377	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.98	0.90	0.83	0.51	0.28	0.12

Intersection Summary

m Volume for 95th percentile queue is metered by upstream signal.

Lane Group	EBT	WBL	WBT	NBL	NBR	SBL	SBT
Lane Group Flow (vph)	457	174	261	130	174	65	163
v/c Ratio	0.25	0.30	0.11	0.62	0.19	0.25	0.61
Control Delay	17.4	12.0	10.2	67.3	3.6	50.2	60.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	17.4	12.0	10.2	67.3	3.6	50.2	60.2
Queue Length 50th (ft)	103	58	44	106	0	48	124
Queue Length 95th (ft)	166	106	74	167	43	91	196
Internal Link Dist (ft)	422		400				360
Turn Bay Length (ft)							
Base Capacity (vph)	1795	650	2285	364	910	447	468
Starvation Cap Reductn	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.25	0.27	0.11	0.36	0.19	0.15	0.35

Intersection Summary

Lane Group	EBL	NBL	NBT	SBT
Lane Group Flow (vph)	294	348	500	630
v/c Ratio	0.81	0.80	0.13	0.27
Control Delay	48.4	53.4	6.3	19.8
Queue Delay	0.0	0.0	0.0	0.0
Total Delay	48.4	53.4	6.3	19.8
Queue Length 50th (ft)	150	254	47	93
Queue Length 95th (ft)	231	383	78	160
Internal Link Dist (ft)	648		913	1745
Turn Bay Length (ft)				
Base Capacity (vph)	522	775	3875	2341
Starvation Cap Reductn	0	0	0	0
Spillback Cap Reductn	0	0	0	0
Storage Cap Reductn	0	0	0	0
Reduced v/c Ratio	0.56	0.45	0.13	0.27

Intersection Summary

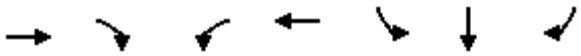
Lane Group	EBL	EBT	WBT	WBR	NBT
Lane Group Flow (vph)	120	2054	2891	641	282
v/c Ratio	0.66	0.57	1.00	0.61	0.34
Control Delay	60.5	11.1	46.4	13.3	39.9
Queue Delay	0.0	0.1	2.4	0.0	0.0
Total Delay	60.5	11.2	48.8	13.3	39.9
Queue Length 50th (ft)	104	158	~1122	206	90
Queue Length 95th (ft)	m135	306	#1204	352	128
Internal Link Dist (ft)		346	988		517
Turn Bay Length (ft)					
Base Capacity (vph)	183	3574	2896	1047	1152
Starvation Cap Reductn	0	318	0	0	0
Spillback Cap Reductn	0	0	28	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.66	0.63	1.01	0.61	0.24

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

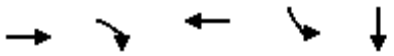
m Volume for 95th percentile queue is metered by upstream signal.



Lane Group	EBT	EBR	WBL	WBT	SBL	SBT	SBR
Lane Group Flow (vph)	370	196	587	565	190	430	380
v/c Ratio	0.26	0.26	0.83	0.24	0.49	0.53	0.62
Control Delay	18.2	5.5	42.4	6.8	29.0	27.8	10.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	18.2	5.5	42.4	6.8	29.0	27.8	10.2
Queue Length 50th (ft)	64	6	140	49	92	104	31
Queue Length 95th (ft)	108	51	#229	96	139	131	98
Internal Link Dist (ft)	269			774		2836	
Turn Bay Length (ft)							
Base Capacity (vph)	1425	742	722	2328	521	1087	718
Starvation Cap Reductn	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.26	0.26	0.81	0.24	0.36	0.40	0.53

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.



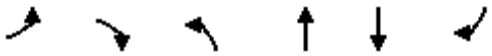
Lane Group	EBT	EBR	WBT	SBL	SBT
Lane Group Flow (vph)	196	163	555	467	1718
v/c Ratio	0.29	0.26	0.56	0.52	0.67
Control Delay	15.9	10.9	18.9	13.3	12.3
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	15.9	10.9	18.9	13.3	12.3
Queue Length 50th (ft)	53	28	89	115	155
Queue Length 95th (ft)	98	66	134	190	202
Internal Link Dist (ft)	458		806		986
Turn Bay Length (ft)					
Base Capacity (vph)	687	619	1000	898	2575
Starvation Cap Reductn	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.29	0.26	0.56	0.52	0.67

Intersection Summary

Lane Group	EBT	WBL	WBT	SBT	SBR
Lane Group Flow (vph)	804	43	543	957	554
v/c Ratio	0.66	0.31	0.36	0.94dl	0.82
Control Delay	22.3	44.2	11.3	17.6	22.6
Queue Delay	0.0	0.0	0.2	0.5	0.0
Total Delay	22.3	44.2	11.5	18.1	22.6
Queue Length 50th (ft)	151	19	54	110	132
Queue Length 95th (ft)	#214	m43	70	152	#351
Internal Link Dist (ft)	458		157	1023	
Turn Bay Length (ft)					
Base Capacity (vph)	1218	139	1519	1738	679
Starvation Cap Reductn	0	0	358	0	0
Spillback Cap Reductn	1	0	0	366	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.66	0.31	0.47	0.70	0.82

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.
dl Defacto Left Lane. Recode with 1 though lane as a left lane.



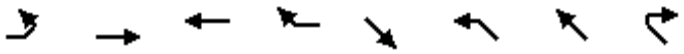
Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Group Flow (vph)	130	1196	1957	826	663	141
v/c Ratio	0.63	0.67	1.11	0.20	0.49	0.21
Control Delay	63.2	14.7	67.3	1.6	31.2	20.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	63.2	14.7	67.3	1.6	31.2	20.9
Queue Length 50th (ft)	97	263	~904	24	187	100
Queue Length 95th (ft)	157	334	m#1052	m53	233	145
Internal Link Dist (ft)	812			696	764	
Turn Bay Length (ft)						
Base Capacity (vph)	354	1776	1770	4148	1356	792
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.37	0.67	1.11	0.20	0.49	0.18

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

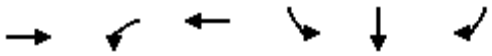
m Volume for 95th percentile queue is metered by upstream signal.



Lane Group	EBL	EBT	WBT	WBR	SET	NWL	NWT	NWR
Lane Group Flow (vph)	109	304	598	348	130	147	147	196
v/c Ratio	0.61	0.19	0.53	0.47	0.48	0.62	0.57	0.35
Control Delay	44.6	11.2	20.8	5.1	11.1	34.8	31.1	5.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	44.6	11.2	20.8	5.1	11.1	34.8	31.1	5.4
Queue Length 50th (ft)	38	33	98	0	0	48	47	0
Queue Length 95th (ft)	#110	63	162	57	37	#136	#129	43
Internal Link Dist (ft)		323	269		463		382	
Turn Bay Length (ft)								
Base Capacity (vph)	178	1604	1139	745	457	238	257	567
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.61	0.19	0.53	0.47	0.28	0.62	0.57	0.35

Intersection Summary

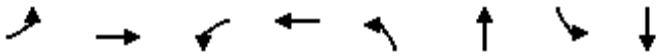
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.



Lane Group	EBT	WBL	WBT	SBL	SBT	SBR
Lane Group Flow (vph)	293	272	663	100	118	261
v/c Ratio	0.45	0.61	0.84	0.30	0.35	0.34
Control Delay	23.6	21.6	28.4	26.9	27.6	7.7
Queue Delay	0.0	0.0	0.4	0.0	0.0	0.0
Total Delay	23.6	21.6	28.8	26.9	27.6	7.7
Queue Length 50th (ft)	45	74	209	34	41	29
Queue Length 95th (ft)	92	180	#469	87	100	81
Internal Link Dist (ft)	435		323		512	
Turn Bay Length (ft)						
Base Capacity (vph)	954	614	1077	519	527	912
Starvation Cap Reductn	0	0	102	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.31	0.44	0.68	0.19	0.22	0.29

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.



Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	22	66	435	305	43	1576	152	934
v/c Ratio	0.07	0.10	0.90	0.45	0.38	0.82	0.76	0.39
Control Delay	18.2	10.9	50.4	15.9	50.0	28.8	63.8	16.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	18.2	10.9	50.4	15.9	50.0	28.8	63.8	16.0
Queue Length 50th (ft)	8	12	222	81	24	293	85	129
Queue Length 95th (ft)	24	37	#396	150	57	356	#184	166
Internal Link Dist (ft)		526		458		1888		582
Turn Bay Length (ft)								
Base Capacity (vph)	333	711	532	739	123	1924	204	2372
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.07	0.09	0.82	0.41	0.35	0.82	0.75	0.39

Intersection Summary

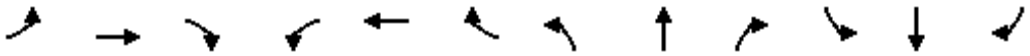
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT	SBR
Lane Group Flow (vph)	717	794	152	946	326	848	87	728	239
v/c Ratio	1.28	0.51	0.73	1.07	1.26	0.70	0.71	0.88	0.30
Control Delay	178.7	26.3	74.7	97.6	190.4	47.9	88.3	66.0	11.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	178.7	26.3	74.7	97.6	190.4	47.9	88.3	66.0	11.6
Queue Length 50th (ft)	~767	238	125	~460	~344	236	73	221	63
Queue Length 95th (ft)	#1006	313	195	#596	#533	287	#150	#289	117
Internal Link Dist (ft)		403		458		623		529	
Turn Bay Length (ft)									
Base Capacity (vph)	558	1557	262	880	258	1207	130	829	802
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	1.28	0.51	0.58	1.07	1.26	0.70	0.67	0.88	0.30

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

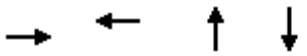
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	130	326	120	348	413	120	239	130	217	87	163	109
v/c Ratio	0.66	0.25	0.08	0.81	0.30	0.17	0.78	0.31	0.29	0.50	0.15	0.26
Control Delay	57.9	22.2	3.6	56.0	22.4	5.7	60.8	31.4	3.5	51.0	27.2	6.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	57.9	22.2	3.6	56.0	22.4	5.7	60.8	31.4	3.5	51.0	27.2	6.3
Queue Length 50th (ft)	64	56	0	90	74	0	62	63	0	43	27	0
Queue Length 95th (ft)	#172	124	18	#212	156	40	#159	114	41	106	43	36
Internal Link Dist (ft)		731			423			1745			245	
Turn Bay Length (ft)									100			
Base Capacity (vph)	223	1330	1483	432	1382	691	308	669	758	235	2050	704
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.58	0.25	0.08	0.81	0.30	0.17	0.78	0.19	0.29	0.37	0.08	0.15

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.



Lane Group	EBT	WBT	NBT	SBT
Lane Group Flow (vph)	478	402	522	77
v/c Ratio	0.58	0.40	0.94	0.17
Control Delay	12.5	7.5	47.5	12.5
Queue Delay	0.0	0.0	0.0	0.0
Total Delay	12.5	7.5	47.5	12.5
Queue Length 50th (ft)	114	63	184	13
Queue Length 95th (ft)	199	116	#369	42
Internal Link Dist (ft)	342	520	255	125
Turn Bay Length (ft)				
Base Capacity (vph)	826	1002	576	467
Starvation Cap Reductn	0	0	0	0
Spillback Cap Reductn	0	0	0	0
Storage Cap Reductn	0	0	0	0
Reduced v/c Ratio	0.58	0.40	0.91	0.16

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Lane Group	EBT	WBL	WBT	NBL	NBR
Lane Group Flow (vph)	630	239	717	163	163
v/c Ratio	0.31	0.75	0.33	0.39	0.33
Control Delay	11.6	43.8	7.7	20.7	5.0
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	11.6	43.8	7.7	20.7	5.0
Queue Length 50th (ft)	36	74	43	49	0
Queue Length 95th (ft)	85	#220	128	91	35
Internal Link Dist (ft)	423		279	871	
Turn Bay Length (ft)					
Base Capacity (vph)	2002	329	2163	749	764
Starvation Cap Reductn	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.31	0.73	0.33	0.22	0.21

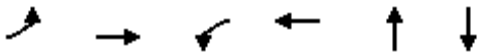
Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Lane Group	EBT	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	544	76	272	326	22	141
v/c Ratio	0.88	0.10	0.51	0.41	0.06	0.19
Control Delay	31.6	7.0	18.7	14.9	13.3	6.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	31.6	7.0	18.7	14.9	13.3	6.9
Queue Length 50th (ft)	152	10	68	74	4	11
Queue Length 95th (ft)	#322	28	159	159	19	46
Internal Link Dist (ft)	520	293		203		240
Turn Bay Length (ft)						
Base Capacity (vph)	834	984	529	786	389	761
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.65	0.08	0.51	0.41	0.06	0.19

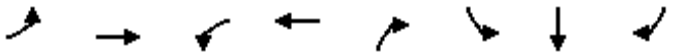
Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.



Lane Group	EBL	EBT	WBL	WBT	NBT	SBT
Lane Group Flow (vph)	54	620	228	859	435	66
v/c Ratio	0.15	0.35	0.44	0.50	0.79	0.15
Control Delay	9.5	13.3	10.7	13.6	22.0	9.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	9.5	13.3	10.7	13.6	22.0	9.6
Queue Length 50th (ft)	7	42	33	107	81	8
Queue Length 95th (ft)	29	96	96	217	174	31
Internal Link Dist (ft)		279		609	1265	205
Turn Bay Length (ft)						
Base Capacity (vph)	351	1759	599	1701	838	740
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.15	0.35	0.38	0.50	0.52	0.09

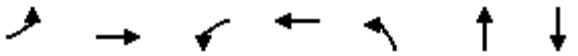
Intersection Summary



Lane Group	EBL	EBT	WBL	WBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	435	326	11	979	22	108	262	348
v/c Ratio	0.74	0.16	0.09	0.75	0.01	0.23	0.54	0.53
Control Delay	36.8	8.4	34.9	23.4	0.0	19.3	24.7	7.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	36.8	8.4	34.9	23.4	0.0	19.3	24.7	7.4
Queue Length 50th (ft)	86	24	4	163	0	35	96	17
Queue Length 95th (ft)	#186	80	21	#344	0	71	161	72
Internal Link Dist (ft)		609		486			881	
Turn Bay Length (ft)								
Base Capacity (vph)	616	2027	119	1300	1590	787	813	897
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.71	0.16	0.09	0.75	0.01	0.14	0.32	0.39

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.



Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBT
Lane Group Flow (vph)	43	881	76	1598	250	109	152
v/c Ratio	0.46	0.45	0.61	0.76	0.96	0.25	0.45
Control Delay	71.2	16.0	51.8	30.9	91.1	13.3	39.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	71.2	16.0	51.8	30.9	91.1	13.3	39.3
Queue Length 50th (ft)	32	201	61	553	191	20	95
Queue Length 95th (ft)	#96	272	m66	m363	#297	61	147
Internal Link Dist (ft)		624		906		244	377
Turn Bay Length (ft)							
Base Capacity (vph)	93	1954	125	2101	336	535	438
Starvation Cap Reductn	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.46	0.45	0.61	0.76	0.74	0.20	0.35

Intersection Summary

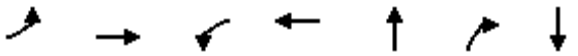
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	196	794	185	1424	65	141	109	283	685
v/c Ratio	0.93	0.64	0.75	1.08	0.51	0.21	0.20	0.87	0.61
Control Delay	103.3	29.3	67.1	79.0	67.7	39.9	6.2	74.3	30.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	103.3	29.3	67.1	79.0	67.7	39.9	6.2	74.3	30.4
Queue Length 50th (ft)	~173	286	117	~650	49	45	13	~246	188
Queue Length 95th (ft)	#343	375	194	#778	96	73	33	#421	255
Internal Link Dist (ft)		906		1436		1074			606
Turn Bay Length (ft)									
Base Capacity (vph)	211	1238	314	1318	146	884	608	327	1160
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.93	0.64	0.59	1.08	0.45	0.16	0.18	0.87	0.59

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

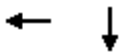
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.



Lane Group	EBL	EBT	WBL	WBT	NBT	NBR	SBT
Lane Group Flow (vph)	11	1152	348	1565	98	163	120
v/c Ratio	0.14	0.47	0.82	0.60	0.43	0.40	0.53
Control Delay	49.0	35.3	58.9	10.0	47.8	8.8	48.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	49.0	35.3	58.9	10.0	47.8	8.8	48.0
Queue Length 50th (ft)	9	273	257	306	63	0	73
Queue Length 95th (ft)	m15	324	335	476	115	55	133
Internal Link Dist (ft)		1436		2539	649		441
Turn Bay Length (ft)							
Base Capacity (vph)	77	2447	604	2620	305	487	302
Starvation Cap Reductn	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.14	0.47	0.58	0.60	0.32	0.33	0.40

Intersection Summary

m Volume for 95th percentile queue is metered by upstream signal.



Lane Group	WBT	SBT
Lane Group Flow (vph)	3717	326
v/c Ratio	1.04	0.33
Control Delay	43.7	31.3
Queue Delay	0.0	0.0
Total Delay	43.7	31.3
Queue Length 50th (ft)	~847	58
Queue Length 95th (ft)	#936	84
Internal Link Dist (ft)	692	1330
Turn Bay Length (ft)		
Base Capacity (vph)	3557	1364
Starvation Cap Reductn	0	0
Spillback Cap Reductn	0	0
Storage Cap Reductn	0	0
Reduced v/c Ratio	1.04	0.24

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Lane Group	EBT	SBT
Lane Group Flow (vph)	1087	555
v/c Ratio	0.35	0.40
Control Delay	4.0	19.5
Queue Delay	0.0	0.0
Total Delay	4.0	19.5
Queue Length 50th (ft)	42	63
Queue Length 95th (ft)	50	92
Internal Link Dist (ft)	496	288
Turn Bay Length (ft)		
Base Capacity (vph)	3146	1852
Starvation Cap Reductn	0	0
Spillback Cap Reductn	0	0
Storage Cap Reductn	0	0
Reduced v/c Ratio	0.35	0.30

Intersection Summary

Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	250	1217	130	848	207	54	43	98	87	87	228
v/c Ratio	0.63	0.71	0.76	0.51	0.67	0.45	0.15	0.28	0.34	0.26	0.48
Control Delay	40.9	19.9	65.0	17.2	18.4	49.6	27.1	4.8	39.8	28.0	7.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	40.9	19.9	65.0	17.2	18.4	49.6	27.1	4.8	39.8	28.0	7.6
Queue Length 50th (ft)	55	213	58	136	0	24	17	0	19	36	0
Queue Length 95th (ft)	#124	#460	#185	272	#93	#81	42	22	49	72	51
Internal Link Dist (ft)		445		606			613			390	
Turn Bay Length (ft)											
Base Capacity (vph)	426	1713	171	1651	309	122	688	665	255	688	720
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.59	0.71	0.76	0.51	0.67	0.44	0.06	0.15	0.34	0.13	0.32

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Lane Group	WBT	NBL	NBT	SBT
Lane Group Flow (vph)	3420	316	305	305
v/c Ratio	0.95	0.95	0.25	0.77
Control Delay	30.3	84.4	26.7	56.8
Queue Delay	41.2	1.6	0.0	0.0
Total Delay	71.5	86.0	26.7	56.8
Queue Length 50th (ft)	632	223	80	100
Queue Length 95th (ft)	#709	#397	115	#156
Internal Link Dist (ft)	485		269	645
Turn Bay Length (ft)				
Base Capacity (vph)	3585	331	1225	413
Starvation Cap Reductn	457	3	0	0
Spillback Cap Reductn	0	0	0	0
Storage Cap Reductn	0	0	0	0
Reduced v/c Ratio	1.09	0.96	0.25	0.74

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

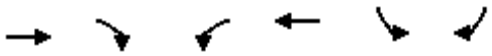
Lane Group	EBT	EBR	NBT	SBL	SBT
Lane Group Flow (vph)	848	65	804	76	739
v/c Ratio	0.38	0.09	0.53	0.46	0.33
Control Delay	14.7	1.9	19.3	41.9	14.3
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	14.7	1.9	19.3	41.9	14.3
Queue Length 50th (ft)	93	0	91	34	79
Queue Length 95th (ft)	122	13	127	75	106
Internal Link Dist (ft)	183		353		269
Turn Bay Length (ft)					
Base Capacity (vph)	2232	735	1516	165	2237
Starvation Cap Reductn	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.38	0.09	0.53	0.46	0.33

Intersection Summary

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Group Flow (vph)	1272	565	293	967	402	152
v/c Ratio	0.79	0.47	0.73	0.43	0.49	0.34
Control Delay	21.7	4.3	42.9	7.7	21.7	5.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	21.7	4.3	42.9	7.7	21.7	5.8
Queue Length 50th (ft)	210	60	59	80	66	0
Queue Length 95th (ft)	#458	97	#145	202	101	39
Internal Link Dist (ft)	216			273	735	
Turn Bay Length (ft)						
Base Capacity (vph)	1620	1496	401	2274	1498	708
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.79	0.38	0.73	0.43	0.27	0.21

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.



Lane Group	EBT	EBR	WBL	WBT	SBL	SBR
Lane Group Flow (vph)	1152	152	413	359	380	728
v/c Ratio	0.77	0.20	0.83	0.16	0.89	0.46
Control Delay	21.0	3.4	42.2	5.3	48.0	1.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	21.0	3.4	42.2	5.3	48.0	1.0
Queue Length 50th (ft)	206	0	82	27	141	0
Queue Length 95th (ft)	283	30	#144	43	#276	0
Internal Link Dist (ft)	139			450		
Turn Bay Length (ft)						
Base Capacity (vph)	1495	747	542	2234	474	1583
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.77	0.20	0.76	0.16	0.80	0.46

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

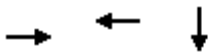
Lane Group	EBL	EBT	WBT	NBT	NBR
Lane Group Flow (vph)	957	707	1304	207	326
v/c Ratio	0.94	0.27	0.85	0.88	0.67
Control Delay	44.4	3.4	23.2	70.1	11.9
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	44.4	3.4	23.2	70.1	11.9
Queue Length 50th (ft)	232	45	241	102	3
Queue Length 95th (ft)	#343	62	#383	#217	76
Internal Link Dist (ft)		450	517	531	
Turn Bay Length (ft)					
Base Capacity (vph)	1080	2665	1527	249	497
Starvation Cap Reductn	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.89	0.27	0.85	0.83	0.66

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Lane Group	EBL	NBL	NBT	SBT
Lane Group Flow (vph)	456	120	543	881
v/c Ratio	0.85	0.62	0.24	0.51
Control Delay	49.9	64.6	9.8	23.5
Queue Delay	0.0	0.0	0.0	0.0
Total Delay	49.9	64.6	9.8	23.5
Queue Length 50th (ft)	299	97	70	233
Queue Length 95th (ft)	382	153	215	364
Internal Link Dist (ft)	72		849	507
Turn Bay Length (ft)				
Base Capacity (vph)	707	229	2255	1723
Starvation Cap Reductn	0	0	0	0
Spillback Cap Reductn	0	0	0	0
Storage Cap Reductn	0	0	0	0
Reduced v/c Ratio	0.64	0.52	0.24	0.51

Intersection Summary

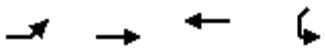


Lane Group	EBT	WBT	SBT
Lane Group Flow (vph)	131	163	293
v/c Ratio	0.15	0.21	0.22
Control Delay	3.5	10.5	14.0
Queue Delay	0.0	0.0	0.0
Total Delay	3.5	10.5	14.0
Queue Length 50th (ft)	4	35	39
Queue Length 95th (ft)	28	67	64
Internal Link Dist (ft)	272	260	893
Turn Bay Length (ft)			
Base Capacity (vph)	857	774	1320
Starvation Cap Reductn	0	0	0
Spillback Cap Reductn	0	0	0
Storage Cap Reductn	0	0	0
Reduced v/c Ratio	0.15	0.21	0.22

Intersection Summary

Lane Group	EBL	NBT	SBT
Lane Group Flow (vph)	217	511	370
v/c Ratio	0.60	0.47	0.27
Control Delay	14.5	5.7	3.7
Queue Delay	0.0	0.0	0.0
Total Delay	14.5	5.7	3.7
Queue Length 50th (ft)	17	52	29
Queue Length 95th (ft)	67	146	80
Internal Link Dist (ft)	339	648	504
Turn Bay Length (ft)			
Base Capacity (vph)	550	1089	1356
Starvation Cap Reductn	0	0	0
Spillback Cap Reductn	0	0	0
Storage Cap Reductn	0	0	0
Reduced v/c Ratio	0.39	0.47	0.27

Intersection Summary



Lane Group	EBL	EBT	WBT	SWL
Lane Group Flow (vph)	54	728	1586	435
v/c Ratio	0.52	0.36	0.92	0.75
Control Delay	56.7	9.1	29.2	28.4
Queue Delay	0.0	0.0	0.0	0.0
Total Delay	56.7	9.1	29.2	28.4
Queue Length 50th (ft)	27	88	372	150
Queue Length 95th (ft)	#76	121	#542	#292
Internal Link Dist (ft)		1988	776	623
Turn Bay Length (ft)				
Base Capacity (vph)	103	2175	1759	583
Starvation Cap Reductn	0	0	0	0
Spillback Cap Reductn	0	0	0	0
Storage Cap Reductn	0	0	0	0
Reduced v/c Ratio	0.52	0.33	0.90	0.75

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

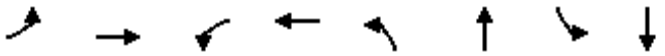
Lane Group	EBT	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	109	413	163	565	239	652
v/c Ratio	0.46	0.81	0.63	0.76	0.71	0.72
Control Delay	33.7	36.3	45.8	35.0	44.0	30.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	33.7	36.3	45.8	35.0	44.0	30.5
Queue Length 50th (ft)	42	153	79	132	114	147
Queue Length 95th (ft)	90	#323	#169	#220	#229	222
Internal Link Dist (ft)	623	665		411		690
Turn Bay Length (ft)						
Base Capacity (vph)	472	580	291	832	389	1020
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.23	0.71	0.56	0.68	0.61	0.64

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Lane Group	EBL	NBT	SBT
Lane Group Flow (vph)	250	577	250
v/c Ratio	0.62	0.65	0.19
Control Delay	12.5	10.1	3.3
Queue Delay	0.0	0.0	0.0
Total Delay	12.5	10.1	3.3
Queue Length 50th (ft)	10	73	17
Queue Length 95th (ft)	63	245	53
Internal Link Dist (ft)	665	479	940
Turn Bay Length (ft)			
Base Capacity (vph)	592	888	1315
Starvation Cap Reductn	0	0	0
Spillback Cap Reductn	0	0	0
Storage Cap Reductn	0	0	0
Reduced v/c Ratio	0.42	0.65	0.19

Intersection Summary



Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	54	76	217	359	76	2641	87	1771
v/c Ratio	0.46	0.16	0.98	0.45	0.54	0.96	0.74	0.64
Control Delay	66.1	19.1	108.8	26.1	67.2	36.7	75.7	19.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	66.1	19.1	108.8	26.1	67.2	36.7	75.7	19.6
Queue Length 50th (ft)	41	7	170	73	57	686	67	359
Queue Length 95th (ft)	84	31	#329	123	109	#838	m#125	395
Internal Link Dist (ft)		306		551		569		696
Turn Bay Length (ft)								
Base Capacity (vph)	132	468	221	806	162	2749	118	2766
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.41	0.16	0.98	0.45	0.47	0.96	0.74	0.64

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.

Lane Group	EBL	NBL	NBT
Lane Group Flow (vph)	120	217	761
v/c Ratio	0.17	0.31	0.54
Control Delay	8.6	9.7	10.9
Queue Delay	0.0	0.0	0.0
Total Delay	8.6	9.7	10.9
Queue Length 50th (ft)	16	31	63
Queue Length 95th (ft)	38	65	101
Internal Link Dist (ft)	260		609
Turn Bay Length (ft)			
Base Capacity (vph)	708	708	1415
Starvation Cap Reductn	0	0	0
Spillback Cap Reductn	0	0	0
Storage Cap Reductn	0	0	0
Reduced v/c Ratio	0.17	0.31	0.54

Intersection Summary

Lane Group	EBL	EBT	WBT	NBT	NBR
Lane Group Flow (vph)	446	859	641	380	22
v/c Ratio	0.59	0.69	0.47	0.61	0.06
Control Delay	25.1	11.8	13.4	28.5	0.3
Queue Delay	0.0	29.5	0.0	0.0	0.0
Total Delay	25.1	41.3	13.4	28.5	0.3
Queue Length 50th (ft)	93	194	73	74	0
Queue Length 95th (ft)	142	319	126	104	0
Internal Link Dist (ft)		157	779	808	
Turn Bay Length (ft)					
Base Capacity (vph)	761	1247	1369	1119	583
Starvation Cap Reductn	0	425	0	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.59	1.05	0.47	0.34	0.04

Intersection Summary

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	98	1804	609	130	1261	391	500	380	196	326	326
v/c Ratio	0.92	0.87	0.70	0.55	0.86	0.50	0.93	0.91	0.44	0.96	0.68
Control Delay	135.2	46.7	16.0	76.1	46.7	11.0	87.1	82.6	21.9	97.9	57.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	135.2	46.7	16.0	76.1	46.7	11.0	87.1	82.6	21.9	97.9	57.2
Queue Length 50th (ft)	98	578	161	64	567	73	~267	362	58	~350	284
Queue Length 95th (ft)	#223	663	318	99	665	165	#384	#541	137	#551	398
Internal Link Dist (ft)		2325			484			648			1369
Turn Bay Length (ft)											
Base Capacity (vph)	107	2069	875	297	1526	804	536	432	454	341	482
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.92	0.87	0.70	0.44	0.83	0.49	0.93	0.88	0.43	0.96	0.68

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Lane Group	WBL	WBR	NBT	SBT
Lane Group Flow (vph)	880	1924	1000	957
v/c Ratio	0.41	1.10	1.01	0.97
Control Delay	14.8	81.7	84.0	74.6
Queue Delay	0.0	0.0	0.0	0.0
Total Delay	14.8	81.7	84.0	74.6
Queue Length 50th (ft)	212	~1207	~526	488
Queue Length 95th (ft)	255	#1353	#677	#629
Internal Link Dist (ft)	810		699	1779
Turn Bay Length (ft)				
Base Capacity (vph)	2151	1751	990	990
Starvation Cap Reductn	0	0	0	0
Spillback Cap Reductn	0	0	0	0
Storage Cap Reductn	0	0	0	0
Reduced v/c Ratio	0.41	1.10	1.01	0.97

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT	SBR
Lane Group Flow (vph)	424	370	359	65	565	728	489	728	446	783	435
v/c Ratio	1.20	0.55	0.37	0.46	0.72	0.99	1.18	0.90	1.04	0.92	0.61
Control Delay	163.0	43.0	11.4	80.0	36.6	68.1	153.6	70.0	108.7	72.9	17.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	163.0	43.0	11.4	80.0	36.6	68.1	153.6	70.0	108.7	72.9	17.0
Queue Length 50th (ft)	~501	298	120	44	244	~560	~573	356	~486	397	122
Queue Length 95th (ft)	#718	409	185	110	187	#893	#798	#455	#705	#517	177
Internal Link Dist (ft)		614			571			545		730	
Turn Bay Length (ft)											
Base Capacity (vph)	354	674	974	141	780	733	413	836	428	847	719
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	1.20	0.55	0.37	0.46	0.72	0.99	1.18	0.87	1.04	0.92	0.61

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT	SBR
Lane Group Flow (vph)	174	195	185	76	174	98	283	815	163	793	185
v/c Ratio	0.54	0.58	0.31	0.24	0.52	0.27	0.78	0.60	0.81	0.56	0.26
Control Delay	52.0	53.4	4.9	44.3	52.1	8.8	72.2	37.2	98.7	24.3	3.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	52.0	53.4	4.9	44.3	52.1	8.8	72.2	37.2	98.7	24.3	3.2
Queue Length 50th (ft)	146	166	0	58	141	0	118	256	147	87	0
Queue Length 95th (ft)	196	218	47	91	186	44	#212	#530	m#219	#447	m30
Internal Link Dist (ft)		644			610			685		811	
Turn Bay Length (ft)											
Base Capacity (vph)	464	483	591	475	500	487	362	1367	211	1420	721
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.38	0.40	0.31	0.16	0.35	0.20	0.78	0.60	0.77	0.56	0.26

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.

Lane Group	EBT	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	119	185	87	1369	87	1119
v/c Ratio	0.50	0.86	0.24	0.56	0.31	0.45
Control Delay	49.8	97.3	6.3	12.2	7.6	10.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	49.8	97.3	6.3	12.2	7.6	10.7
Queue Length 50th (ft)	84	140	17	300	17	220
Queue Length 95th (ft)	140	180	40	465	40	344
Internal Link Dist (ft)	218	191		926		474
Turn Bay Length (ft)						
Base Capacity (vph)	339	306	401	2449	340	2498
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.35	0.60	0.22	0.56	0.26	0.45

Intersection Summary

Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	413	2217	489	1630	380	196	663	402	380	565	315
v/c Ratio	0.87	1.07	1.02	0.77	0.47	0.97	0.88	0.67	0.91	0.72	0.52
Control Delay	79.9	82.3	106.3	39.7	10.6	119.0	68.9	34.0	88.8	58.5	26.8
Queue Delay	0.0	0.0	0.0	0.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	79.9	82.3	106.3	40.4	10.6	119.0	68.9	34.0	88.8	58.5	26.8
Queue Length 50th (ft)	198	~852	~251	488	92	187	316	234	~189	262	156
Queue Length 95th (ft)	#276	#943	#366	550	139	#350	392	346	#299	330	245
Internal Link Dist (ft)		286		607			727			926	
Turn Bay Length (ft)											
Base Capacity (vph)	497	2070	480	2114	816	202	805	602	417	790	619
Starvation Cap Reductn	0	0	0	186	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.83	1.07	1.02	0.85	0.47	0.97	0.82	0.67	0.91	0.72	0.51

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Lane Group	WBL	NBT	SBL	SBT
Lane Group Flow (vph)	402	902	435	793
v/c Ratio	0.87	0.81	0.90	0.34
Control Delay	38.2	28.7	48.9	5.9
Queue Delay	0.0	0.0	0.0	0.0
Total Delay	38.2	28.7	48.9	5.9
Queue Length 50th (ft)	108	185	178	71
Queue Length 95th (ft)	#254	#286	#336	98
Internal Link Dist (ft)	633	267		727
Turn Bay Length (ft)				
Base Capacity (vph)	496	1120	504	2326
Starvation Cap Reductn	0	0	0	0
Spillback Cap Reductn	0	0	0	0
Storage Cap Reductn	0	0	0	0
Reduced v/c Ratio	0.81	0.81	0.86	0.34

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Lane Group	EBT	WBT	WBR	SBL	SBR
Lane Group Flow (vph)	1348	1076	913	370	272
v/c Ratio	0.70	0.56	0.48	0.55	0.52
Control Delay	14.0	11.4	1.9	28.8	8.5
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	14.0	11.4	1.9	28.8	8.5
Queue Length 50th (ft)	122	87	0	54	0
Queue Length 95th (ft)	#476	312	36	#174	69
Internal Link Dist (ft)	621	812		135	
Turn Bay Length (ft)					
Base Capacity (vph)	2477	2477	2211	683	532
Starvation Cap Reductn	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.54	0.43	0.41	0.54	0.51

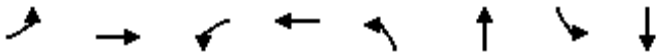
Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Lane Group	WBL	WBR	NBT	SBL	SBT
Lane Group Flow (vph)	76	217	1206	109	1000
v/c Ratio	0.55	0.67	0.32	0.68	0.23
Control Delay	80.2	18.0	10.6	91.2	2.2
Queue Delay	0.0	0.1	0.0	0.0	0.0
Total Delay	80.2	18.1	10.6	91.2	2.2
Queue Length 50th (ft)	73	0	376	108	20
Queue Length 95th (ft)	125	82	316	m138	m127
Internal Link Dist (ft)	835		918		571
Turn Bay Length (ft)					
Base Capacity (vph)	448	548	3730	325	4381
Starvation Cap Reductn	0	0	0	0	0
Spillback Cap Reductn	0	23	60	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.17	0.41	0.33	0.34	0.23

Intersection Summary

m Volume for 95th percentile queue is metered by upstream signal.



Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	76	304	130	173	228	1315	163	1011
v/c Ratio	0.22	0.85	0.72	0.72	0.84	0.55	0.39	0.65
Control Delay	50.9	72.6	86.7	50.8	85.1	15.6	55.8	48.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	50.9	72.6	86.7	50.8	85.1	15.6	55.8	48.4
Queue Length 50th (ft)	63	256	125	87	229	393	70	390
Queue Length 95th (ft)	108	364	197	171	327	66	124	587
Internal Link Dist (ft)		610		1517		668		918
Turn Bay Length (ft)								
Base Capacity (vph)	401	411	213	268	330	2495	420	1546
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	15
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.19	0.74	0.61	0.65	0.69	0.53	0.39	0.66

Intersection Summary

Lane Group	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	174	163	185	54	1380	130	1217
v/c Ratio	0.70	0.79	0.60	0.56	0.51	0.42	0.60
Control Delay	66.7	89.3	28.3	93.4	27.5	46.2	10.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.1
Total Delay	66.7	89.3	28.3	93.4	27.5	46.2	10.7
Queue Length 50th (ft)	144	157	50	56	264	65	185
Queue Length 95th (ft)	199	234	131	#94	437	m88	360
Internal Link Dist (ft)	465		811		724		668
Turn Bay Length (ft)							
Base Capacity (vph)	429	260	351	107	2733	325	2030
Starvation Cap Reductn	0	0	0	0	0	0	98
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.41	0.63	0.53	0.50	0.50	0.40	0.63

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.

Lane Group	EBT	EBR	WBT	WBR	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	65	76	153	185	152	1240	43	1326
v/c Ratio	0.59	0.29	0.77	0.12	0.42	0.33	0.45	0.46
Control Delay	94.5	26.1	87.9	0.2	44.3	5.4	78.2	25.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	94.5	26.1	87.9	0.2	44.3	5.4	78.2	25.2
Queue Length 50th (ft)	63	12	148	0	131	85	41	240
Queue Length 95th (ft)	m112	63	214	0	m170	m201	m73	443
Internal Link Dist (ft)	286		160			995		724
Turn Bay Length (ft)								
Base Capacity (vph)	217	437	397	1583	361	3744	160	2875
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.30	0.17	0.39	0.12	0.42	0.33	0.27	0.46

Intersection Summary

m Volume for 95th percentile queue is metered by upstream signal.

Lane Group	EBL	EBT	EBR2	WBT	WBR	NBR2	SBL2	SBL	SBT	SBR	NWL	NWR
Lane Group Flow (vph)	391	2337	98	2043	652	109	243	332	338	239	217	413
v/c Ratio	0.98	0.90	0.13	0.93	0.69	0.14	0.65	0.93	0.93	0.54	0.94	0.93
Control Delay	106.1	34.7	6.3	55.9	18.5	0.4	54.5	80.4	80.2	15.2	109.5	77.0
Queue Delay	0.0	29.5	0.0	46.7	2.6	0.0	81.2	71.3	0.0	0.0	0.0	43.0
Total Delay	106.1	64.2	6.3	102.6	21.1	0.4	135.8	151.7	80.2	15.2	109.5	120.0
Queue Length 50th (ft)	200	746	16	777	458	0	227	379	385	48	215	181
Queue Length 95th (ft)	#309	827	48	824	552	0	202	#543	#550	96	#385	#298
Internal Link Dist (ft)		607		437					995		195	
Turn Bay Length (ft)												
Base Capacity (vph)	398	2620	790	2237	950	787	373	358	364	441	231	445
Starvation Cap Reductn	0	417	0	921	185	0	0	0	0	0	0	0
Spillback Cap Reductn	0	8	0	0	0	0	291	279	0	0	0	67
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.98	1.06	0.12	1.55	0.85	0.14	2.96	4.20	0.93	0.54	0.94	1.09

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Lane Group	EBT	WBT	NBT	SBT
Lane Group Flow (vph)	543	380	282	151
v/c Ratio	0.79	0.76	0.39	0.22
Control Delay	18.0	23.1	11.1	9.3
Queue Delay	0.0	0.0	0.0	0.0
Total Delay	18.0	23.1	11.1	9.3
Queue Length 50th (ft)	86	86	36	16
Queue Length 95th (ft)	179	162	121	64
Internal Link Dist (ft)	633	311	949	790
Turn Bay Length (ft)				
Base Capacity (vph)	1124	913	720	695
Starvation Cap Reductn	0	0	0	0
Spillback Cap Reductn	0	0	0	0
Storage Cap Reductn	0	0	0	0
Reduced v/c Ratio	0.48	0.42	0.39	0.22

Intersection Summary

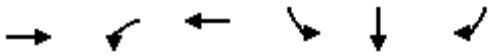
Lane Group	NBL	NBT	SBT	SEL	SER
Lane Group Flow (vph)	315	1402	956	54	489
v/c Ratio	0.80	0.33	0.33	0.31	0.82
Control Delay	59.4	3.0	9.2	52.2	16.2
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	59.4	3.0	9.2	52.2	16.2
Queue Length 50th (ft)	232	54	139	41	0
Queue Length 95th (ft)	311	145	m215	72	101
Internal Link Dist (ft)		763	913	452	
Turn Bay Length (ft)					
Base Capacity (vph)	531	4246	2929	575	844
Starvation Cap Reductn	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.59	0.33	0.33	0.09	0.58

Intersection Summary

m Volume for 95th percentile queue is metered by upstream signal.

Lane Group	EBL	EBR	WBL	WBT	SBT
Lane Group Flow (vph)	109	152	130	370	174
v/c Ratio	0.28	0.37	0.19	0.59	0.38
Control Delay	17.4	7.3	3.5	13.9	10.9
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	17.4	7.3	3.5	13.9	10.9
Queue Length 50th (ft)	20	0	0	50	14
Queue Length 95th (ft)	64	39	26	139	63
Internal Link Dist (ft)				439	658
Turn Bay Length (ft)					
Base Capacity (vph)	878	820	1087	1042	903
Starvation Cap Reductn	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.12	0.19	0.12	0.36	0.19

Intersection Summary



Lane Group	EBT	WBL	WBT	SBL	SBT	SBR
Lane Group Flow (vph)	2206	163	2587	477	360	109
v/c Ratio	0.88	0.77	0.63	0.94	0.68	0.21
Control Delay	41.5	102.5	1.6	78.1	53.8	23.5
Queue Delay	45.7	0.0	0.9	0.0	0.0	0.0
Total Delay	87.1	102.5	2.5	78.1	53.8	23.5
Queue Length 50th (ft)	569	170	13	482	327	43
Queue Length 95th (ft)	660	m173	13	#746	465	97
Internal Link Dist (ft)	437		346		820	
Turn Bay Length (ft)						
Base Capacity (vph)	2507	261	4220	507	529	511
Starvation Cap Reductn	499	0	910	0	0	0
Spillback Cap Reductn	0	0	1207	0	0	15
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	1.10	0.62	0.86	0.94	0.68	0.22

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.

Lane Group	EBT	WBL	WBT	NBL	NBR	SBL	SBT
Lane Group Flow (vph)	1087	196	424	196	326	207	250
v/c Ratio	0.83	0.82	0.23	0.75	0.41	0.59	0.68
Control Delay	31.5	45.4	13.0	56.0	4.1	39.1	42.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	31.5	45.4	13.0	56.0	4.1	39.1	42.1
Queue Length 50th (ft)	287	63	71	104	0	107	131
Queue Length 95th (ft)	#408	#198	101	#220	53	169	201
Internal Link Dist (ft)	152		265				360
Turn Bay Length (ft)							
Base Capacity (vph)	1307	240	1837	268	800	430	450
Starvation Cap Reductn	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.83	0.82	0.23	0.73	0.41	0.48	0.56

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Lane Group	EBL	NBL	NBT	SBT
Lane Group Flow (vph)	739	489	967	576
v/c Ratio	1.00	0.94	0.36	0.60
Control Delay	64.5	70.3	20.5	45.0
Queue Delay	0.0	0.0	0.0	0.0
Total Delay	64.5	70.3	20.5	45.0
Queue Length 50th (ft)	512	378	147	143
Queue Length 95th (ft)	#787	#577	279	185
Internal Link Dist (ft)	585		913	1745
Turn Bay Length (ft)				
Base Capacity (vph)	739	539	2669	954
Starvation Cap Reductn	0	0	0	0
Spillback Cap Reductn	0	0	0	0
Storage Cap Reductn	0	0	0	0
Reduced v/c Ratio	1.00	0.91	0.36	0.60

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

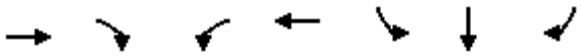
Lane Group	EBL	EBT	WBT	WBR	NBT
Lane Group Flow (vph)	217	2565	2696	609	337
v/c Ratio	0.91	0.70	0.95	0.62	0.47
Control Delay	72.8	6.9	40.5	14.5	50.1
Queue Delay	0.0	0.2	0.0	0.0	0.0
Total Delay	72.8	7.1	40.5	14.5	50.1
Queue Length 50th (ft)	215	218	~1084	219	134
Queue Length 95th (ft)	m#259	228	#1164	363	181
Internal Link Dist (ft)		346	988		236
Turn Bay Length (ft)					
Base Capacity (vph)	238	3662	2845	989	956
Starvation Cap Reductn	0	302	0	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.91	0.76	0.95	0.62	0.35

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

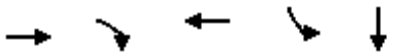


Lane Group	EBT	EBR	WBL	WBT	SBL	SBT	SBR
Lane Group Flow (vph)	761	304	467	522	359	511	1152
v/c Ratio	0.94	0.54	1.06	0.38	0.41	0.28	1.22
Control Delay	65.0	11.3	109.9	27.0	18.0	15.3	132.4
Queue Delay	17.7	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	82.8	11.3	109.9	27.0	18.0	15.3	132.4
Queue Length 50th (ft)	306	25	~205	150	172	112	~1029
Queue Length 95th (ft)	#425	109	#312	196	253	148	#1291
Internal Link Dist (ft)	321			774		2836	
Turn Bay Length (ft)							
Base Capacity (vph)	813	566	440	1386	872	1836	944
Starvation Cap Reductn	72	3	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	1.03	0.54	1.06	0.38	0.41	0.28	1.22

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.



Lane Group	EBT	EBR	WBT	SBL	SBT
Lane Group Flow (vph)	457	261	272	413	1435
v/c Ratio	0.57	0.36	0.28	0.52	0.62
Control Delay	17.4	10.6	13.0	16.0	12.2
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	17.4	10.6	13.0	16.0	12.2
Queue Length 50th (ft)	131	47	35	112	118
Queue Length 95th (ft)	213	96	59	187	161
Internal Link Dist (ft)	451		806		986
Turn Bay Length (ft)					
Base Capacity (vph)	802	722	970	789	2303
Starvation Cap Reductn	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.57	0.36	0.28	0.52	0.62

Intersection Summary

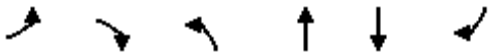
Lane Group	EBT	WBL	WBT	SBT	SBR
Lane Group Flow (vph)	1555	65	761	1989	717
v/c Ratio	1.31	0.72	0.52	1.08dl	1.05
Control Delay	172.3	84.1	21.1	38.1	70.6
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	172.3	84.1	21.1	38.1	70.6
Queue Length 50th (ft)	~620	37	164	413	~483
Queue Length 95th (ft)	#758	#106	218	#544	#738
Internal Link Dist (ft)	458		38	1023	
Turn Bay Length (ft)					
Base Capacity (vph)	1189	90	1474	2067	684
Starvation Cap Reductn	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	1.31	0.72	0.52	0.96	1.05

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

dl Defacto Left Lane. Recode with 1 though lane as a left lane.



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Group Flow (vph)	337	1380	1848	1380	1250	141
v/c Ratio	1.08	0.70	1.08	0.36	1.07	0.22
Control Delay	122.8	13.4	77.7	5.4	93.1	22.5
Queue Delay	0.0	0.0	9.9	0.0	0.0	0.0
Total Delay	122.8	13.4	87.6	5.4	93.1	22.5
Queue Length 50th (ft)	~316	345	~893	120	~425	68
Queue Length 95th (ft)	#507	430	#1028	139	#521	115
Internal Link Dist (ft)	812			667	763	
Turn Bay Length (ft)						
Base Capacity (vph)	313	1972	1716	3872	1173	642
Starvation Cap Reductn	0	0	120	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	1.08	0.70	1.16	0.36	1.07	0.22

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

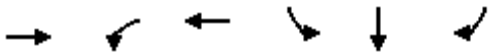
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Lane Group	EBL	EBT	WBT	WBR	SET	NWL	NWT
Lane Group Flow (vph)	261	565	978	696	173	245	517
v/c Ratio	1.22	0.28	0.72	0.67	0.50	1.20	0.67
Control Delay	168.8	12.0	28.5	5.8	14.8	163.1	11.5
Queue Delay	0.0	0.5	2.5	0.3	0.0	0.0	0.0
Total Delay	168.8	12.5	31.0	6.1	14.8	163.1	11.5
Queue Length 50th (ft)	~155	64	205	0	21	~158	14
Queue Length 95th (ft)	#380	150	382	88	74	#396	72
Internal Link Dist (ft)		269	321		401		767
Turn Bay Length (ft)							
Base Capacity (vph)	214	1990	1359	1036	588	205	772
Starvation Cap Reductn	0	958	254	57	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	1.22	0.55	0.89	0.71	0.29	1.20	0.67

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

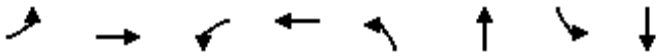
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.



Lane Group	EBT	WBL	WBT	SBL	SBT	SBR
Lane Group Flow (vph)	522	652	728	201	222	402
v/c Ratio	0.72	0.85	0.90	0.64	0.70	0.51
Control Delay	31.4	30.1	34.6	39.1	42.1	12.5
Queue Delay	0.0	6.9	16.0	0.0	0.0	0.0
Total Delay	31.4	36.9	50.5	39.1	42.1	12.5
Queue Length 50th (ft)	113	251	290	92	104	86
Queue Length 95th (ft)	165	#441	#502	#186	#211	164
Internal Link Dist (ft)	435		269		2903	
Turn Bay Length (ft)						
Base Capacity (vph)	832	890	937	327	331	782
Starvation Cap Reductn	0	192	208	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.63	0.93	1.00	0.61	0.67	0.51

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.



Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	43	196	391	293	33	1946	272	576
v/c Ratio	0.15	0.30	1.07	0.40	0.40	1.01	1.10	0.22
Control Delay	27.9	27.8	106.1	7.1	69.8	60.2	134.8	16.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	27.9	27.8	106.1	7.1	69.8	60.2	134.8	16.0
Queue Length 50th (ft)	22	103	~337	22	25	~556	~239	89
Queue Length 95th (ft)	51	164	#532	86	60	#673	#411	115
Internal Link Dist (ft)		480		451		1866		540
Turn Bay Length (ft)								
Base Capacity (vph)	289	655	364	740	88	1921	247	2650
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.15	0.30	1.07	0.40	0.38	1.01	1.10	0.22

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT	SBR
Lane Group Flow (vph)	674	1489	272	1207	489	1380	141	663	272
v/c Ratio	1.47	1.09	1.02	1.21	1.43	0.96	1.33	0.85	0.39
Control Delay	259.9	92.8	122.2	147.9	251.8	67.0	250.0	73.2	20.8
Queue Delay	0.0	0.0	0.0	0.4	0.0	0.0	0.0	0.0	0.0
Total Delay	259.9	92.8	122.2	148.3	251.8	67.0	250.0	73.2	20.8
Queue Length 50th (ft)	~900	~849	~281	~753	~645	479	~178	234	119
Queue Length 95th (ft)	#1146	#991	#470	#894	#870	#580	#324	#287	193
Internal Link Dist (ft)		403		458		623		529	
Turn Bay Length (ft)									
Base Capacity (vph)	460	1372	266	999	342	1438	106	779	697
Starvation Cap Reductn	0	0	0	79	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	1.47	1.09	1.02	1.31	1.43	0.96	1.33	0.85	0.39

Intersection Summary

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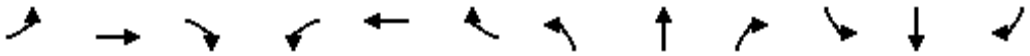
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

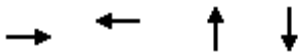


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	174	859	217	239	380	98	272	261	685	76	120	76
v/c Ratio	0.79	0.65	0.16	0.61	0.30	0.21	0.87	0.55	1.12	0.48	0.10	0.17
Control Delay	68.3	28.8	2.8	48.5	23.9	5.4	71.7	34.5	99.4	53.4	26.0	2.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	68.3	28.8	2.8	48.5	23.9	5.4	71.7	34.5	99.4	53.4	26.0	2.8
Queue Length 50th (ft)	95	201	0	65	77	0	78	135	~351	41	19	0
Queue Length 95th (ft)	#245	345	23	#130	145	31	#183	214	#571	97	34	15
Internal Link Dist (ft)		865			423			1745			245	
Turn Bay Length (ft)									100			
Base Capacity (vph)	223	1317	1367	391	1282	460	311	691	610	198	1999	669
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.78	0.65	0.16	0.61	0.30	0.21	0.87	0.38	1.12	0.38	0.06	0.11

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.



Lane Group	EBT	WBT	NBT	SBT
Lane Group Flow (vph)	1032	370	327	87
v/c Ratio	1.24	0.31	1.03	0.29
Control Delay	139.3	5.1	100.8	24.5
Queue Delay	0.0	0.0	0.0	0.0
Total Delay	139.3	5.1	100.8	24.5
Queue Length 50th (ft)	~912	64	~234	28
Queue Length 95th (ft)	#1166	102	#414	74
Internal Link Dist (ft)	342	520	255	125
Turn Bay Length (ft)				
Base Capacity (vph)	829	1180	316	303
Starvation Cap Reductn	0	0	0	0
Spillback Cap Reductn	0	0	0	0
Storage Cap Reductn	0	0	0	0
Reduced v/c Ratio	1.24	0.31	1.03	0.29

Intersection Summary

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Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Lane Group	EBT	WBL	WBT	NBL	NBR
Lane Group Flow (vph)	1619	239	533	185	283
v/c Ratio	0.74	0.76	0.23	0.48	0.50
Control Delay	19.1	46.6	6.4	27.7	6.2
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	19.1	46.6	6.4	27.7	6.2
Queue Length 50th (ft)	174	91	34	70	0
Queue Length 95th (ft)	#313	#226	90	124	52
Internal Link Dist (ft)	423		279	871	
Turn Bay Length (ft)					
Base Capacity (vph)	2188	352	2322	629	745
Starvation Cap Reductn	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.74	0.68	0.23	0.29	0.38

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

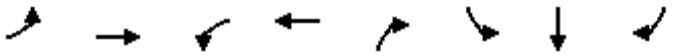
Lane Group	EBT	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	467	141	130	337	22	250
v/c Ratio	0.82	0.21	0.27	0.42	0.05	0.31
Control Delay	24.6	6.6	14.4	14.2	12.8	6.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	24.6	6.6	14.4	14.2	12.8	6.0
Queue Length 50th (ft)	105	15	22	61	3	12
Queue Length 95th (ft)	197	39	80	176	20	67
Internal Link Dist (ft)	520	293		203		240
Turn Bay Length (ft)						
Base Capacity (vph)	963	1142	478	810	401	816
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.48	0.12	0.27	0.42	0.05	0.31

Intersection Summary

Lane Group	EBL	EBT	WBL	WBT	NBT	SBT
Lane Group Flow (vph)	76	1347	315	652	381	77
v/c Ratio	0.18	0.76	0.74	0.36	0.77	0.21
Control Delay	8.7	21.9	23.4	11.8	24.2	14.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	8.7	21.9	23.4	11.8	24.2	14.0
Queue Length 50th (ft)	10	145	55	79	82	16
Queue Length 95th (ft)	33	#289	#193	150	170	43
Internal Link Dist (ft)		279		609	1265	205
Turn Bay Length (ft)						
Base Capacity (vph)	429	1779	502	1795	716	592
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.18	0.76	0.63	0.36	0.53	0.13

Intersection Summary

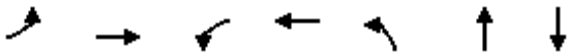
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.



Lane Group	EBL	EBT	WBL	WBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	609	793	33	793	33	127	286	337
v/c Ratio	0.88	0.42	0.23	0.67	0.02	0.27	0.58	0.49
Control Delay	44.1	12.3	36.4	23.2	0.0	19.7	25.5	4.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	44.1	12.3	36.4	23.2	0.0	19.7	25.5	4.9
Queue Length 50th (ft)	125	75	13	136	0	43	107	0
Queue Length 95th (ft)	#270	214	43	250	0	82	176	49
Internal Link Dist (ft)		609		486			881	
Turn Bay Length (ft)								
Base Capacity (vph)	695	1909	148	1175	1611	772	797	899
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.88	0.42	0.22	0.67	0.02	0.16	0.36	0.37

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.



Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBT
Lane Group Flow (vph)	87	1706	76	1163	130	272	163
v/c Ratio	0.56	0.76	0.63	0.53	0.82	0.83	1.12
Control Delay	76.7	21.3	75.3	12.1	92.3	68.1	160.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	76.7	21.3	75.3	12.1	92.3	68.1	160.1
Queue Length 50th (ft)	79	557	75	158	119	214	~172
Queue Length 95th (ft)	#209	762	m86	m77	188	300	#280
Internal Link Dist (ft)		624		906		244	377
Turn Bay Length (ft)							
Base Capacity (vph)	154	2244	129	2200	211	422	193
Starvation Cap Reductn	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.56	0.76	0.59	0.53	0.62	0.64	0.84

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

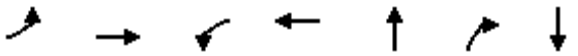
Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	478	1685	228	1152	98	457	250	337	413
v/c Ratio	1.23	1.17	1.17	1.11	0.65	0.70	0.49	1.05	0.42
Control Delay	167.5	119.8	171.4	102.9	83.9	61.1	18.0	120.5	31.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	167.5	119.8	171.4	102.9	83.9	61.1	18.0	120.5	31.2
Queue Length 50th (ft)	~548	~996	~256	~646	91	208	79	~385	116
Queue Length 95th (ft)	m#788	#1124	#442	#616	152	270	135	#583	173
Internal Link Dist (ft)		906		1436		1074			606
Turn Bay Length (ft)									
Base Capacity (vph)	390	1440	195	1041	189	732	512	320	981
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	1.23	1.17	1.17	1.11	0.52	0.62	0.49	1.05	0.42

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.



Lane Group	EBL	EBT	WBL	WBT	NBT	NBR	SBT
Lane Group Flow (vph)	11	2196	174	1434	131	239	98
v/c Ratio	0.17	0.69	0.75	0.53	0.69	0.54	0.55
Control Delay	58.4	23.6	79.9	9.0	75.5	10.6	61.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	58.4	23.6	79.9	9.0	75.5	10.6	61.7
Queue Length 50th (ft)	9	521	161	263	113	0	75
Queue Length 95th (ft)	m13	m328	233	402	187	75	137
Internal Link Dist (ft)		1436		2539	649		441
Turn Bay Length (ft)							
Base Capacity (vph)	66	3194	339	2698	244	496	225
Starvation Cap Reductn	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.17	0.69	0.51	0.53	0.54	0.48	0.44

Intersection Summary

m Volume for 95th percentile queue is metered by upstream signal.

Lane Group	WBT	SBT
Lane Group Flow (vph)	2630	587
v/c Ratio	0.74	0.59
Control Delay	9.9	29.5
Queue Delay	0.0	0.0
Total Delay	9.9	29.5
Queue Length 50th (ft)	287	128
Queue Length 95th (ft)	342	m126
Internal Link Dist (ft)	692	1330
Turn Bay Length (ft)		
Base Capacity (vph)	3544	2888
Starvation Cap Reductn	0	0
Spillback Cap Reductn	0	0
Storage Cap Reductn	0	0
Reduced v/c Ratio	0.74	0.20

Intersection Summary

m Volume for 95th percentile queue is metered by upstream signal.

Lane Group	EBT	SBT
Lane Group Flow (vph)	1935	826
v/c Ratio	0.59	0.64
Control Delay	4.2	24.5
Queue Delay	0.1	0.0
Total Delay	4.3	24.5
Queue Length 50th (ft)	81	96
Queue Length 95th (ft)	m113	126
Internal Link Dist (ft)	496	288
Turn Bay Length (ft)		
Base Capacity (vph)	3272	1495
Starvation Cap Reductn	215	0
Spillback Cap Reductn	0	0
Storage Cap Reductn	0	0
Reduced v/c Ratio	0.63	0.55

Intersection Summary

m Volume for 95th percentile queue is metered by upstream signal.

Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	250	1500	163	1533	130	130	54	141	87	87	228
v/c Ratio	0.90	0.88	0.89	0.85	0.57	0.92	0.18	0.38	0.39	0.32	0.63
Control Delay	76.8	28.9	84.7	25.8	18.3	99.4	32.0	8.5	46.0	35.5	19.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	76.8	28.9	84.7	25.8	18.3	99.4	32.0	8.5	46.0	35.5	19.5
Queue Length 50th (ft)	69	346	87	340	0	70	26	0	23	43	34
Queue Length 95th (ft)	#168	#671	#241	#664	55	#210	57	45	53	83	101
Internal Link Dist (ft)		445		509			613			390	
Turn Bay Length (ft)											
Base Capacity (vph)	277	1701	183	1799	232	142	577	588	237	556	578
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.90	0.88	0.89	0.85	0.56	0.92	0.09	0.24	0.37	0.16	0.39

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Lane Group	WBT	NBL	NBT	SBT
Lane Group Flow (vph)	2327	358	600	494
v/c Ratio	0.79	0.86	0.38	0.84
Control Delay	27.9	61.3	20.7	54.2
Queue Delay	0.2	17.6	1.2	0.0
Total Delay	28.1	78.9	21.9	54.2
Queue Length 50th (ft)	413	238	136	163
Queue Length 95th (ft)	473	#371	176	225
Internal Link Dist (ft)	485		269	645
Turn Bay Length (ft)				
Base Capacity (vph)	2937	460	1708	635
Starvation Cap Reductn	137	95	844	0
Spillback Cap Reductn	0	0	0	0
Storage Cap Reductn	0	0	0	0
Reduced v/c Ratio	0.83	0.98	0.69	0.78

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Lane Group	EBT	EBR	NBT	SBL	SBT
Lane Group Flow (vph)	1424	98	1327	152	359
v/c Ratio	0.70	0.15	0.94	0.48	0.14
Control Delay	24.9	4.4	42.6	39.2	12.2
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	24.9	4.4	42.6	39.2	12.2
Queue Length 50th (ft)	242	0	248	79	38
Queue Length 95th (ft)	295	29	#343	139	54
Internal Link Dist (ft)	183		353		269
Turn Bay Length (ft)					
Base Capacity (vph)	2025	671	1416	314	2548
Starvation Cap Reductn	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.70	0.15	0.94	0.48	0.14

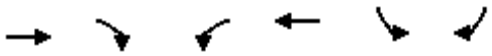
Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Group Flow (vph)	1543	815	533	1609	500	283
v/c Ratio	0.95	0.75	0.92	0.67	0.62	0.52
Control Delay	38.4	11.8	61.1	11.3	35.2	7.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	38.4	11.8	61.1	11.3	35.2	7.1
Queue Length 50th (ft)	437	209	159	253	135	0
Queue Length 95th (ft)	#691	328	#285	420	185	65
Internal Link Dist (ft)	216			273	735	
Turn Bay Length (ft)						
Base Capacity (vph)	1630	1221	582	2403	1084	641
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.95	0.67	0.92	0.67	0.46	0.44

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.



Lane Group	EBT	EBR	WBL	WBT	SBL	SBR
Lane Group Flow (vph)	1174	359	391	380	435	1293
v/c Ratio	0.93	0.46	0.63	0.18	0.82	0.82
Control Delay	38.8	4.5	30.3	11.4	36.8	5.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	38.8	4.5	30.3	11.4	36.8	5.1
Queue Length 50th (ft)	275	0	88	61	186	0
Queue Length 95th (ft)	#437	55	m#138	m87	249	0
Internal Link Dist (ft)	222			450		
Turn Bay Length (ft)						
Base Capacity (vph)	1267	789	624	2099	755	1583
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.93	0.46	0.63	0.18	0.58	0.82

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.

Lane Group	EBL	EBT	WBT	NBT	NBR
Lane Group Flow (vph)	946	772	1184	229	489
v/c Ratio	0.98	0.30	0.79	0.88	1.04
Control Delay	57.8	2.5	19.1	65.8	70.7
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	57.8	2.5	19.1	65.8	70.7
Queue Length 50th (ft)	222	33	184	106	~129
Queue Length 95th (ft)	m#297	m42	267	#227	#309
Internal Link Dist (ft)		450	517	531	
Turn Bay Length (ft)					
Base Capacity (vph)	961	2595	1493	261	468
Starvation Cap Reductn	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.98	0.30	0.79	0.88	1.04

Intersection Summary

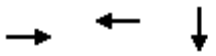
~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

Lane Group	EBL	NBL	NBT	SBT
Lane Group Flow (vph)	467	163	946	1163
v/c Ratio	0.90	0.75	0.42	0.70
Control Delay	60.9	75.7	16.2	30.1
Queue Delay	0.0	0.0	0.0	0.9
Total Delay	60.9	75.7	16.2	31.0
Queue Length 50th (ft)	347	119	88	402
Queue Length 95th (ft)	471	206	320	528
Internal Link Dist (ft)	112		811	545
Turn Bay Length (ft)				
Base Capacity (vph)	592	251	2261	1672
Starvation Cap Reductn	0	0	0	245
Spillback Cap Reductn	0	0	0	0
Storage Cap Reductn	0	0	0	0
Reduced v/c Ratio	0.79	0.65	0.42	0.81

Intersection Summary



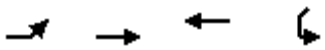
Lane Group	EBT	WBT	SBT
Lane Group Flow (vph)	153	391	695
v/c Ratio	0.24	0.73	0.40
Control Delay	4.7	22.8	9.7
Queue Delay	0.0	0.0	0.0
Total Delay	4.7	22.8	9.7
Queue Length 50th (ft)	6	98	57
Queue Length 95th (ft)	33	173	130
Internal Link Dist (ft)	276	303	817
Turn Bay Length (ft)			
Base Capacity (vph)	1102	994	1735
Starvation Cap Reductn	0	0	0
Spillback Cap Reductn	0	0	0
Storage Cap Reductn	0	0	0
Reduced v/c Ratio	0.14	0.39	0.40

Intersection Summary

Lane Group	EBL	NBT	SBT
Lane Group Flow (vph)	347	598	685
v/c Ratio	0.82	0.84	0.55
Control Delay	34.2	23.1	7.6
Queue Delay	0.0	0.0	0.0
Total Delay	34.2	23.1	7.6
Queue Length 50th (ft)	93	175	126
Queue Length 95th (ft)	#212	#416	207
Internal Link Dist (ft)	311	585	567
Turn Bay Length (ft)			
Base Capacity (vph)	474	712	1245
Starvation Cap Reductn	0	0	0
Spillback Cap Reductn	0	0	0
Storage Cap Reductn	0	0	0
Reduced v/c Ratio	0.73	0.84	0.55

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.



Lane Group	EBL	EBT	WBT	SWL
Lane Group Flow (vph)	65	1185	1347	435
v/c Ratio	0.54	0.66	0.75	0.69
Control Delay	30.1	13.1	15.0	23.2
Queue Delay	0.0	0.0	0.0	0.0
Total Delay	30.1	13.1	15.0	23.2
Queue Length 50th (ft)	15	156	190	132
Queue Length 95th (ft)	#71	214	260	#262
Internal Link Dist (ft)		2143	621	511
Turn Bay Length (ft)				
Base Capacity (vph)	138	2039	2033	634
Starvation Cap Reductn	0	0	0	0
Spillback Cap Reductn	0	0	0	0
Storage Cap Reductn	0	0	0	0
Reduced v/c Ratio	0.47	0.58	0.66	0.69

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Lane Group	EBT	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	141	467	174	945	217	609
v/c Ratio	0.58	0.95	0.72	0.92	0.88	0.64
Control Delay	38.9	59.2	54.2	40.0	71.8	31.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	38.9	59.2	54.2	40.0	71.8	31.3
Queue Length 50th (ft)	61	209	90	210	116	150
Queue Length 95th (ft)	118	#431	#188	#361	#258	222
Internal Link Dist (ft)	511	686		327		774
Turn Bay Length (ft)						
Base Capacity (vph)	344	490	259	1026	247	946
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.41	0.95	0.67	0.92	0.88	0.64

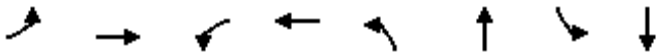
Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Lane Group	EBL	NBT	SBT
Lane Group Flow (vph)	457	369	533
v/c Ratio	0.86	0.66	0.48
Control Delay	33.0	16.4	7.0
Queue Delay	0.0	0.0	0.0
Total Delay	33.0	16.4	7.0
Queue Length 50th (ft)	119	90	75
Queue Length 95th (ft)	#264	#200	141
Internal Link Dist (ft)	686	452	949
Turn Bay Length (ft)			
Base Capacity (vph)	597	559	1109
Starvation Cap Reductn	0	0	0
Spillback Cap Reductn	0	0	0
Storage Cap Reductn	0	0	0
Reduced v/c Ratio	0.77	0.66	0.48

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.



Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	109	326	87	196	109	3294	217	2413
v/c Ratio	1.03	0.82	0.82	0.46	0.73	1.03	1.32	0.74
Control Delay	161.5	72.9	117.3	38.3	93.0	52.7	227.9	20.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.3
Total Delay	161.5	72.9	117.3	38.3	93.0	52.7	227.9	22.6
Queue Length 50th (ft)	~113	144	86	52	105	~1261	~273	572
Queue Length 95th (ft)	#245	#218	#188	95	#185	#1327	#445	628
Internal Link Dist (ft)		253		576		2903		667
Turn Bay Length (ft)								
Base Capacity (vph)	106	399	106	429	165	3188	165	3255
Starvation Cap Reductn	0	0	0	0	0	0	0	673
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	1.03	0.82	0.82	0.46	0.66	1.03	1.32	0.93

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Lane Group	EBL	NBL	NBT
Lane Group Flow (vph)	109	402	533
v/c Ratio	0.15	0.57	0.38
Control Delay	8.4	13.2	9.5
Queue Delay	0.0	0.0	0.0
Total Delay	8.4	13.2	9.5
Queue Length 50th (ft)	15	65	41
Queue Length 95th (ft)	36	127	68
Internal Link Dist (ft)	303		541
Turn Bay Length (ft)			
Base Capacity (vph)	708	708	1415
Starvation Cap Reductn	0	0	0
Spillback Cap Reductn	0	0	0
Storage Cap Reductn	0	0	0
Reduced v/c Ratio	0.15	0.57	0.38

Intersection Summary

Appendix F
PEQE Calculation Worksheets

Roadway	To	From	Horizontal Buffer North/East	Lighting	Clear Zone	Posted Speed Limit	Score		Horizontal Buffer	Lighting	Clear Zone South/West	Posted Speed Limit	Score		Horizontal Buffer	Lighting	Clear Zone	Posted Speed Limit	Horizontal Buffer	Lighting	Clear Zone	Posted Speed Limit
Midway/Pacific Highway Corridor																						
Lytton Street/ Barnett Avenue	Rosecrans St	Midway Dr	0	Standard	No Obstructions	40	4	Fair	0	Standard	No Obstructions	40	4	Fair	0	1	2	1	0	1	2	1
	Midway Dr	Pacific Hwy	15	Exceed Standard	No Obstructions	40	7	Good	15	Exceed Standard	No Obstructions	40	7	Good	2	2	2	1	2	2	2	1
W. Mission Bay Dr	I-8 WB Ramps	I-8 EB Ramps	0	Standard	No Obstructions	35	4	Fair	0	Standard	No Obstructions	35	4	Fair	0	1	2	1	0	1	2	1
Midway Dr	W. Point Loma Blvd/Sports Arena Blvd	Kemper St	15	Exceed Standard	No Obstructions	35	7	Good	15	Exceed Standard	No Obstructions	35	7	Good	2	2	2	1	2	2	2	1
	Kemper St	East Dr	15	Exceed Standard	No Obstructions	35	7	Good	15	Exceed Standard	No Obstructions	35	7	Good	2	2	2	1	2	2	2	1
	East Dr	Rosecrans St	15	Exceed Standard	No Obstructions	35	7	Good	15	Exceed Standard	No Obstructions	35	7	Good	2	2	2	1	2	2	2	1
	Rosecrans St	Barnett Ave	15	Exceed Standard	No Obstructions	35	7	Good	15	Exceed Standard	No Obstructions	35	7	Good	2	2	2	1	2	2	2	1
Sports Arena Blvd	I-8 EB Ramps	W. Point Loma Blvd/Sports Arena Blvd	15	Standard	No Obstructions	35	6	Fair	15	Exceed Standard	No Obstructions	35	7	Good	2	1	2	1	2	2	2	1
	W. Point Loma Blvd/Midway	Kemper St	8	Standard	No Obstructions	35	5	Fair	8	Standard	No Obstructions	35	5	Fair	1	1	2	1	1	1	2	1
	Kemper St	East Dr	7	Standard	No Obstructions	35	5	Fair	7	Standard	No Obstructions	35	5	Fair	1	1	2	1	1	1	2	1
	East Dr	Rosecrans St	7	Standard	No Obstructions	35	5	Fair	7	Standard	No Obstructions	35	5	Fair	1	1	2	1	1	1	2	1
	Rosecrans St	Pacific Hwy	13	Exceed Standard	No Obstructions	35	6	Fair	13	Standard	No Obstructions	35	5	Fair	1	2	2	1	1	1	2	1
Kurtz St	Hancock St	Rosecrans St	8	Standard	No Obstructions	30	6	Fair	8	Standard	No Obstructions	30	6	Fair	1	1	2	2	1	1	2	2
	Rosecrans St	Pacific Hwy	0	Standard	No Obstructions	30	4	Fair	0	Standard	No Obstructions	30	4	Fair	0	0	2	2	0	0	2	2
Hancock St	Sports Arena Blvd	Kurtz St	0	Standard	Obstructed	30	3	Poor	8	Standard	No Obstructions	30	6	Fair	0	1	0	2	1	1	2	2
	Kurtz St	Camino Del Rio West	8	Standard	Obstructed	30	4	Fair	8	Standard	No Obstructions	30	6	Fair	1	1	0	2	1	1	2	2
	Camino Del Rio West	Rosecrans St	0	Standard	No Obstructions	30	5	Fair	0	Standard	No Obstructions	30	5	Fair	0	1	2	2	0	1	2	2
	Old Town Ave	Witherby St	0	Standard	Obstructed	30	2	Poor	0	Standard	Obstructed	30	2	Poor	0	0	0	2	0	0	0	2
	Witherby St	Washington St	8	Standard	No Obstructions	30	6	Fair	16	Standard	No Obstructions	30	7	Good	1	1	2	2	2	1	2	2
Kettner Blvd	Washington St	Vine St	0	Exceed Standard	Obstructed	40	3	Poor	0	Exceed Standard	No Obstructions	40	5	Fair	0	2	0	1	0	2	2	1
	Vine St	Sassafras St	0	Standard	Obstructed	40	1	Poor	8	Standard	No Obstructions	40	5	Fair	0	0	0	1	1	1	2	1
	Sassafras St	Laurel St	8	Standard	No Obstructions	40	5	Fair	8	Standard	No Obstructions	40	5	Fair	1	1	2	1	1	1	2	1
Pacific Hwy	Sea World Dr	Taylor St	17	Standard	No Obstructions	45	5	Fair	17	Standard	No Obstructions	45	5	Fair	2	1	2	0	2	1	2	0
	Taylor St	Kurtz St	17	Exceed Standard	No Obstructions	45	6	Standard	17	Exceed Standard	No Obstructions	45	6	Fair	2	2	2	0	2	2	2	0
	Kurtz St	Sports Arena Blvd	17	Exceed Standard	No Obstructions	45	6	Standard	17	Exceed Standard	No Obstructions	45	6	Fair	2	2	2	0	2	2	2	0
	Sports Arena Blvd	Barnett Ave	17	Exceed Standard	No Obstructions	45	6	Standard	17	Exceed Standard	No Obstructions	45	6	Fair	2	2	2	0	2	2	2	0
	Barnett Ave	Harney Washington St	17	Exceed Standard	No Obstructions	55	6	Standard	17	Exceed Standard	No Obstructions	55	6	Fair	2	2	2	0	2	2	2	0
	Washington St	Sassafras St	17	Exceed Standard	No Obstructions	45	6	Standard	17	Exceed Standard	No Obstructions	45	6	Fair	2	2	2	0	2	2	2	0
	Sassafras St	Laurel St	17	Exceed Standard	No Obstructions	45	6	Standard	17	Exceed Standard	No Obstructions	45	6	Fair	2	2	2	0	2	2	2	0
Old Town								Poor						Poor								
Congress St	Taylor St	Twiggs St	8	Standard	No Obstructions	25	6	Fair	8	Standard	No Obstructions	25	6	Fair	1	1	2	2	1	1	2	2
	Twiggs St	Harney St	8	Standard	No Obstructions	25	6	Fair	8	Standard	No Obstructions	25	6	Fair	1	1	2	2	1	1	2	2
	Harney St	San Diego Ave/ Ampudia St	8	Standard	No Obstructions	25	6	Fair	8	Standard	No Obstructions	25	6	Fair	1	1	2	2	1	1	2	2
San Diego Ave	Twiggs St	Harney St	8	Standard	No Obstructions	25	6	Fair	8	Standard	No Obstructions	25	6	Fair	1	1	2	2	1	1	2	2
	Harney St	Ampudia St	8	Standard	No Obstructions	25	6	Fair	8	Standard	No Obstructions	25	6	Fair	1	1	2	2	1	1	2	2
	Ampudia St	Old Town Ave	8	Standard	No Obstructions	25	6	Fair	8	Standard	No Obstructions	25	6	Fair	1	1	2	2	1	1	2	2
	Old Town Ave	Hortensia St	13	Standard	No Obstructions	25	6	Fair	13	Standard	No Obstructions	25	6	Fair	1	1	2	2	1	1	2	2
Juan St	Taylor St	Twiggs St	8	Standard	No Obstructions	30	6	Fair	8	Standard	No Obstructions	30	6	Fair	1	1	2	2	1	1	2	2
	Twiggs St	Harney St	8	Standard	No Obstructions	30	6	Fair	8	Standard	No Obstructions	30	6	Fair	1	1	2	2	1	1	2	2
	Harney St	San Juan Rd	8	Standard	No Obstructions	30	6	Fair	8	Standard	No Obstructions	30	6	Fair	1	1	2	2	1	1	2	2
East-West								Poor						Poor								
Midway/Pacific Highway Corridor								Poor						Poor								
Channel Wy	W. Mission Bay Dr	Hancock St	8	Standard	No Obstructions	25	6	Fair	8	Standard	No Obstructions	25	6	Fair	1	1	2	2	1	1	2	2
Kemper St	Kenyon St	Midway Dr	8	Below Standard	No Obstructions	25	5	Fair	0	Standard	No Obstructions	25	5	Fair	1	0	2	2	0	1	2	2
	Midway Dr	Sports Arena Blvd	8	Standard	No Obstructions	25	6	Fair	8	Standard	No Obstructions	25	6	Fair	1	1	2	2	1	1	2	2
Camino Del Rio West	Rosecrans St	I-5/I-8 Ramps	0	Standard	No Obstructions	35	4	Fair	0	Standard	No Obstructions	35	4	Fair	0	1	2	1	0	1	2	1
Rosecrans St	Lytton St	Midway Dr	9	Exceed Standard	No Obstructions	35	6	Fair	10	Exceed Standard	No Obstructions	35	6	Fair	1	2	2	1	1	2	2	1
	Midway Dr	Sports Arena Blvd	15	Exceed Standard	No Obstructions	35	7	Good	15	Exceed Standard	No Obstructions	35	7	Good	2	2	2	1	2	2	2	1
	Sports Arena Blvd	Pacific Hwy/Taylor St	15	Exceed Standard	No Obstructions	35	7	Good	15	Exceed Standard	No Obstructions	35	7	Good	2	2	2	1	2	2	2	1
Washington St	Frontage Rd	Pacific St	0	Standard	No Obstructions	25	5	Fair	0	Standard	No Obstructions	25	5	Fair	0	1	2	2	0	1	2	2
	Pacific St	Hancock St	8	Standard	No Obstructions	25	6	Fair	0	Standard	No Obstructions	25	5	Fair	1	1	2	2	0	1	2	2
Vine St	California St	Kettner Blvd	16	Standard	No Obstructions	25	7	Good	0	Standard	No Obstructions	25	5	Fair	2	1	2	2	0	1	2	2
Sassafras St	Pacific Hwy	Kettner Blvd	0	Standard	No Obstructions	25	5	Fair	0	Standard	No Obstructions	25	5	Fair	0	1	2	2	0	1	2	2
Laurel St	Pacific Hwy	Kettner Blvd	0	Standard	No Obstructions	25	5	Fair	0	Standard	No Obstructions	25	5	Fair	0	1	2	2	0	1	2	2
Old Town								Poor						Poor								
Taylor St	Pacific Hwy/ Rosecrans St	Congress St	0	Standard	No Obstructions	35	4	Fair	0	Standard	No Obstructions	35	4	Fair	0	1	2	1	0	1	2	1
	Congress St	Juan St	0	Standard	No Obstructions	35	4	Fair	0	Standard	No Obstructions	35	4	Fair	0	1	2	1	0	1	2	1
	Juan St	Morena Blvd	0	Standard	No Obstructions	35	4	Fair	0	Standard	No Obstructions	35	4	Fair	0	1	2	1	0	1	2	1
	Morena Blvd	I-8 EB Ramps	0	Below Standard	Obstructed	35	1	Poor	0	Below Standard	Obstructed	35	1	Poor	0	0	0	1	0	0	0	1
Twiggs St	Congress St	San Diego Ave	0	Standard	No Obstructions	25	5	Fair	0	Standard	No Obstructions	25	5	Fair	0	1	2	2	0	1	2	2
	San Diego Ave	Juan St	8	Standard	No Obstructions	25	6	Fair	8	Standard	No Obstructions	25	6	Fair	1	1	2	2	1	1	2	2
Harney St	Congress St	San Diego Ave	8	Standard	No Obstructions	25	6	Fair	8	Standard	No Obstructions	25	6	Fair	1	1	2	2	1	1	2	2
	San Diego Ave	Juan St	8	Standard	No Obstructions	25	6	Fair	0	Standard	No Obstructions	25	5	Fair	1	1	2	2	0	1	2	2
Old Town Ave	Hancock St	Moore St	0	Standard	No Obstructions	25	5	Fair	0	Standard	No Obstructions	25	5	Fair	0	1	2	2	0	1	2	2
	Moore St	San Diego Ave	0	Standard	No Obstructions	25	5	Fair	0	Standard	No Obstructions	25	5	Fair	0	1	2	2	0	1	2	2

Features 3.1 7.1

Grade 3.1 6.1

Intersection

		Control	Physical	Ops	ADA	Legs	Score	Grade	Control	Physical	Ops	ADA	Control	Physical	Ops	ADA	Legs	Score	Grade	Control	Physical	Ops	ADA
1	1: Barnett Ave/Lytton St & Rosecrans St.	Signal	0	0	No	4	2	Poor	2	0	0	0	Signal	8		Yes	4	6	Fair	2	2	0	2
2	2: Midway Dr/W Mission Bay Dr & I-8 WB Off Ramp	Signal	0	0	Yes	3	4	Fair	2	0	0	2	Signal	6		Yes	3	6	Fair	2	2	0	2
3	3: W Mission Bay Dr & Channel Way	SSSC	0	0	No	3	1	Poor	1	0	0	0	SSSC	6		Yes	3	5	Fair	1	2	0	2
4	4: Midway Dr/W Mission Bay Dr & Sports Arena	Signal	0	0	No	4	2	Poor	2	0	0	0	Signal	8		Yes	4	6	Fair	2	2	0	2
	Midway Dr & Duke Street	Signal	0	0	No	3	2	Poor	2	0	0	0	Signal	6		Yes	3	6	Fair	2	2	0	2
5	5: Midway Dr & Kemper St/Kemper Street	Signal	3	0	No	4	2	Poor	2	0	0	0	Signal	8		Yes	4	6	Fair	2	2	0	2
	Midway Dr & Fodam Street	Signal	0	0	No	4	2	Poor	2	0	0	0	Signal	8		Yes	4	6	Fair	2	2	0	2
	Midway Dr & Wing Street	Signal	0	0	No	3	2	Poor	2	0	0	0	Signal	6		Yes	3	6	Fair	2	2	0	2
6	6: Midway Dr & East Drive	Signal	0	0	No	3	2	Poor	2	0	0	0	Signal	6		Yes	3	6	Fair	2	2	0	2
	Midway Drive & Riely Street	SSSC	0	0	No	3	1	Poor	1	0	0	0	SSSC	6		Yes	3	5	Fair	1	2	0	2
	Midway Drive & Gaines Street	SSSC	0	0	No	3	1	Poor	1	0	0	0	SSSC	6		Yes	3	5	Fair	1	2	0	2
7	7: Midway Dr & Rosecrans St.	Signal	0	0	No	4	2	Poor	2	0	0	0	Signal	8		Yes	4	6	Fair	2	2	0	2
8	8: Midway Dr & Charles Lindbergh Parkway	Signal	N/A				4	Fair	2	2	0	0	Signal	8		Yes	4	6	Fair	2	2	0	2
9	9: Midway Dr & Enterprise St	SSSC	0	0	No	3	1	Poor	1	0	0	0	SSSC	8		Yes	3	5	Fair	1	2	0	2
10	10: Barnett Ave & Midway Dr	Signal	3	0	No	3	3	Poor	2	1	0	0	Signal	8		Yes	3	6	Fair	2	2	0	2
11	11: Sports Arena & Hancock Street	Signal	2	0	Yes	3	4	Fair	2	0	0	2	Signal	8		Yes	3	6	Fair	2	2	0	2
12	12: Sports Arena & Kemper Street	Signal	0	0	No	4	2	Poor	2	0	0	0	Signal	8		Yes	4	6	Fair	2	2	0	2
13	13: Sports Arena & Ralphs Driveway/Frontier Street	Signal	1	0	No	4	2	Poor	2	0	0	0	Signal	8		Yes	4	6	Fair	2	2	0	2
#VALUE!	Sports Arena Drive / Target Driveway	SSSC	0	0	No	3	1	Poor	1	0	0	0	SSSC	6		Yes	3	5	Fair	1	2	0	2
14	14: Sports Arena & East Drive/Greenwood Street	Signal	0	0	No	3	2	Poor	2	0	0	0	Signal	6		Yes	3	6	Fair	2	2	0	2
15	15: Rosecrans St/Sports Arena & Rosecrans St./Camino Del Rio W	Signal	0	0	No	5	2	Poor	2	0	0	0	Signal	10		Yes	5	6	Fair	2	2	0	2
16	16: Sports Arena Bl & Charles Lindbergh Parkway	Signal	N/A				4	Fair	2	2	0	0	Signal	8		Yes	4	6	Fair	2	2	0	2
17	17: Pacific Highway & Sports Arena Bl	Signal	N/A				4	Fair	2	2	0	0	Signal	8		Yes	4	6	Fair	2	2	0	2
18	18: Kemper Street & Kurtz St & Hancock/Hancock St	SSSC	0	0	No	3	1	Poor	1	0	0	0	SSSC	6		Yes	3	5	Fair	1	2	0	2
#VALUE!	Kurtz Street / Sherman Street	AWSC	0	0	No	3	1	Poor	1	0	0	0	AWSC	6		Yes	3	5	Fair	1	2	0	2
#VALUE!	Kurtz Street / Greenwood Street	SSSC	0	0	No	3	1	Poor	1	0	0	0	SSSC	6		Yes	3	5	Fair	1	2	0	2
#VALUE!	Kurtz Street / Riely Street	SSSC	0	0	No	3	1	Poor	1	0	0	0	SSSC	6		Yes	3	5	Fair	1	2	0	2
19	19: Kurtz/Kurtz St & Camino Del Rio W	Signal	0	0	No	4	2	Poor	2	0	0	0	Signal	8		Yes	4	6	Fair	2	2	0	2
20	20: Kurtz St/Kurtz & Rosecrans St	Signal	2	0	No	4	2	Poor	2	0	0	0	Signal	8		Yes	4	6	Fair	2	2	0	2
#VALUE!	Kurtz Street / Smith Street	SSSC	0	0	No	3	1	Poor	1	0	0	0	SSSC	6		Yes	3	5	Fair	1	2	0	2
21	21: Pacific Highway & Kurtz St	SSSC	0	0	Yes	3	3	Poor	1	0	0	2	Signal	6		Yes	3	6	Fair	2	2	0	2
22	22: Hancock & Channel Way	SSSC	0	0	No	3	1	Poor	1	0	0	0	SSSC	6		Yes	3	5	Fair	1	2	0	2
#VALUE!	Hancock Street / Hicock Street	SSSC	0	0	No	3	1	Poor	1	0	0	0	SSSC	6		Yes	3	5	Fair	1	2	0	2
#VALUE!	Hancock Street / Sherman Street	AWSC	0	0	No	4	1	Poor	1	0	0	0	AWSC	6		Yes	4	4	Poor	1	1	0	2
#VALUE!	Hancock Street / Greenwood Street	SSSC	1	0	Yes	4	3	Poor	1	0	0	2	SSSC	8		Yes	4	5	Fair	1	2	0	2
23	23: Hancock St & Camino Del Rio W	Signal	0	0	No	5	2	Poor	2	0	0	0	Signal	10		Yes	5	6	Fair	2	2	0	2
#VALUE!	Hancock Street & Gains Street	SSSC	0	0	No	4	1	Poor	1	0	0	0	SSSC	8		Yes	4	5	Fair	1	2	0	2
24	24: Rosecrans St & Hanccok Street	SSSC	0	0	No	3	1	Poor	1	0	0	0	SSSC	6		Yes	3	5	Fair	1	2	0	2
25	25: Hancock St & Old Town St	AWSC	0	0	No	3	1	Poor	1	0	0	0	AWSC	6		Yes	3	5	Fair	1	2	0	2
26	26: Hancock St & Witherby St	AWSC	0	0	No	3	1	Poor	1	0	0	0	AWSC	6		Yes	3	5	Fair	1	2	0	2
#VALUE!	Hancock Street & Noell Street	AWSC	0	0	No	4	1	Poor	1	0	0	0	AWSC	8		Yes	4	5	Fair	1	2	0	2
#VALUE!	Hancock Street & I-5 SB Ramp	SSSC	0	0	No	3	1	Poor	1	0	0	0	SSSC	6		Yes	3	5	Fair	1	2	0	2
27	27: Hancock St & Washington St	Signal	0	0	No	4	2	Poor	2	0	0	0	Signal	8		Yes	4	6	Fair	2	2	0	2
#VALUE!	Hancock Street & Emory Street	SSSC	0	0	Yes	3	3	Poor	1	0	0	2	SSSC	6		Yes	3	5	Fair	1	2	0	2
#VALUE!	Hancock Street & California Street	SSSC	0	0	Yes	3	3	Poor	1	0	0	2	SSSC	6		Yes	3	5	Fair	1	2	0	2
#VALUE!	Hancock Street & Chalmers Street	SSSC	0	0	Yes	3	3	Poor	1	0	0	2	SSSC	6		Yes	3	5	Fair	1	2	0	2
#VALUE!	Hancock Street & Walnut Avenue	SSSC	0	0	No	3	1	Poor	1	0	0	0	SSSC	6		Yes	3	5	Fair	1	2	0	2
28	28: Kettner Bl/Hancock St & Vine St	SSSC	0	0	No	3	1	Poor	1	0	0	0	SSSC	6		Yes	3	5	Fair	1	2	0	2
29	29: Kettner Blvd/Kettner Bl & Sassafras St	Signal	0	0	No	4	2	Poor	2	0	0	0	Signal	8		Yes	4	6	Fair	2	2	0	2
#VALUE!	Kettner Boulevard / Redwood Street	SSSC	0	0	No	3	1	Poor	1	0	0	0	SSSC	6		Yes	3	5	Fair	1	2	0	2
#VALUE!	Kettner Boulevard / Palm Street	SSSC	0	0	No	3	1	Poor	1	0	0	0	SSSC	6		Yes	3	5	Fair	1	2	0	2
#VALUE!	Kettner Boulevard / Olive Street	SSSC	0	0	No	4	1	Poor	1	0	0	0	SSSC	8		Yes	4	5	Fair	1	2	0	2
#VALUE!	Kettner Boulevard / Maple Street	SSSC	0	0	No	3	1	Poor	1	0	0	0	SSSC	6		Yes	3	5	Fair	1	2	0	2
30	30: Kettner Blvd & W Laurel St	Signal	0	0	No	4	2	Poor	2	0	0	0	Signal	8		Yes	4	6	Fair	2	2	0	2
31	31: Pacific Highway & Barnett Ave	Signal	N/A				4	Fair	2	2	0	0	Signal	6		Yes	3	6	Fair	2	2	0	2
#VALUE!	Pacific Highway & Witherby Street	SSSC	0	0	No	4	1	Poor	1	0	0	0	SSSC	8		Yes	4	5	Fair	1	2	0	2
32	32: Pacific Highway NB Frontage Road & Washington St	Signal	0	0	No	4	2	Poor	2	0	0	0	Signal	8		Yes	4	6	Fair	2	2	0	2
33	33: Washington St & Pacific Highway SB	Signal	0	0	No	4	2	Poor	2	0	0	0	Signal	8		Yes	4	6	Fair	2	2	0	2
34	34: Pacific Highway & Sassafras St	Signal	1	0	No	4	2	Poor	2	0	0	0	Signal	8		Yes	4	6	Fair	2	2	0	2
#VALUE!	Pacific Highway & Palm Street	Signal	0	0	No	4	2	Poor	2	0	0	0	Signal	8		Yes	4	6	Fair	2	2	0	2
35	35: Pacific Highway & W Laurel St	Signal	0	1	Yes	4	4	Fair	2	0	0	2	Signal	8		Yes	4	6	Fair	2	2	0	2
36	36: Pacific Highway & Rosecrans St/Taylor St	Signal	0	0	Yes	4	4	Fair	2	0	0	2	Signal	8		Yes	4	6	Fair	2	2	0	2
37	37: Moore St & Old Town St	Signal	0	0	No	4	2	Poor	2	0	0	0	Signal	8		Yes	4	6	Fair	2	2	0	2
38	38: Congress St & Taylor St	Signal	0	0	Yes	3	4	Fair	2	0	0	2	Signal	6		Yes	3	6	Fair	2	2	0	2
#VALUE!	Congress Street & Old Town Station Entrance	SSSC	0	0	No	3	1	Poor	1	0	0	0	SSSC	6		Yes	3	5	Fair	1	2	0	2
#VALUE!	Congress Street & Old Town Station Exit	Signal	1	0	No	3	2	Poor	2	0	0	0	Signal	8		Yes	3	6	Fair	2	2	0	2
#VALUE!	Congress Street & Mason Street	SSSC	0	0	No	3	1	Poor	1	0	0	0	SSSC	6		Yes	3	5	Fair	1	2	0	2
39	39: Congress St & Twiggs St	AWSC	0	0	No	4	1	Poor	1	0	0	0	AWSC	8		Yes	4	5	Fair	1	2	0	2
40	40: Congress St & Harney St	AWSC	0	0	No	4	1	Poor	1	0	0	0	AWSC	8		Yes	4	5	Fair	1	2	0	2
#VALUE!	Congress Street & Conde Street	SSSC	5	0	No	4	2	Poor	1	1	0	0	SSSC	8		Yes	4	5	Fair	1	2	0	2
#VALUE!	Congress Street & Arista Street	SSSC	0	0	No	3	1	Poor	1	0	0	0	SSSC	6		Yes	3	5	Fair	1	2	0	2
41	41: San Diego Ave & Congress St	SSSC	0	0	No	5	1	Poor	1	0	0	0	SSSC	10		Yes	5	5	Fair	1	2	0	2
#VALUE!	San Diego Avenue & Arista	SSSC	1	0	No	3	1	Poor	1	0	0	0	SSSC	8		Yes	3	5	Fair	1	2	0	2
#VALUE!	San Diego Avenue & Linwood Street	SSSC	0	0	No	3	1	Poor	1	0	0	0	SSSC	6		Yes	3	5	Fair	1	2	0	2
#VALUE!	San Diego Avenue & Conde Street	AWSC	0	0	No	4	1	Poor	1	0	0	0	AWSC	8		Yes	4	5	Fair	1	2	0	2
42	42: San Diego Ave & Twiggs St	AWSC	0	0	No	3	1	Poor	1	0	0	0	AWSC	6		Yes	3	5	Fair	1	2	0	2
43	43: San Diego Ave & Harney St	AWSC	1	0	No	4	1	Poor	1	0	0	0	AWSC	9		Yes	4	5	Fair	1	2	0	2
44	44: San Diego Ave & Old Town St	Signal	0	0	No	4	2	Poor	2	0	0	0	Signal	8		Yes	4	6	Fair	2	2	0	2
45	45: Juan St & Taylor St	Signal	1	0	Yes	3	4	Fair	2	0	0	2	Signal			Yes	3	4	Poor	2	0	0	2
46	46: Juan St & Twiggs St	AWSC	0	0	No	4	1	Poor	1	0	0	0	AWSC	8		Yes	4	5	Fair	1	2	0	2

47	47: Juan St & Harney St	AWSC	1	0 No	4	1 Poor	1	0	0	0	AWSC	8	Yes	4	5 Fair	1	2	0	2
48		Signal	1	0 Yes	3	4 Fair	2	0	0	2	Signal	8	Yes	3	6 Fair	2	2	0	2
61	61: Kurtz St & Frontier Street	SSSC	0		4	1 Poor	1	0	0	0	SSSC	8	Yes	4	5 Fair	1	2	0	2
63	63: Kurtz St & Charles Lindbergh Parkway	Signal	0		4	2 Poor	2	0	0	0	Signal	8	Yes	4	6 Fair	2	2	0	2
64	64: Barnett Ave & Dutch Flats Parkway	Signal	0		4	2 Poor	2	0	0	0	Signal	8	Yes	4	6 Fair	2	2	0	2
65	65: Midway Dr & Dutch Flats Parkway	Signal	0		4	2 Poor	2	0	0	0	Signal	8	Yes	4	6 Fair	2	2	0	2
66	66: Dutch Flats Parkway & Sports Arena Bl	Signal	0		4	2 Poor	2	0	0	0	Signal	8	Yes	4	6 Fair	2	2	0	2

Appendix G
Peak Hour Arterial Analysis Worksheets

Arterial Level of Service: EB Camino Del Rio West

Cross Street	Arterial Class	Flow Speed	Running Time	Signal Delay	Travel Time (s)	Dist (mi)	Arterial Speed	Arterial LOS
Kurtz	IV	35	16.2	31.4	47.6	0.10	7.4	E
Hancock St	IV	35	13.3	11.1	24.4	0.08	11.9	D
Total	IV		29.5	42.5	72.0	0.18	8.9	E

Arterial Level of Service: WB Camino Del Rio West

Cross Street	Arterial Class	Flow Speed	Running Time	Signal Delay	Travel Time (s)	Dist (mi)	Arterial Speed	Arterial LOS
Hancock St	III	35	24.3	46.4	70.7	0.20	10.3	E
Kurtz St	III	35	10.9	0.3	11.2	0.08	25.9	B
Sports Arena Blvd	III	35	13.2	38.0	51.2	0.10	6.9	F
Total	III		48.4	84.7	133.1	0.38	10.3	E

Arterial Level of Service: NB Midway Drive

Cross Street	Arterial Class	Flow Speed	Running Time	Signal Delay	Travel Time (s)	Dist (mi)	Arterial Speed	Arterial LOS
Dutch Flats Parkway	III	35	17.1	35.0	52.1	0.13	9.2	F
Charles Lindbergh Pa	III	35	25.2	13.1	38.3	0.21	19.7	C
Rosecrans St	III	35	19.8	34.0	53.8	0.15	10.3	E
East Drive	III	35	22.9	8.0	30.9	0.19	22.2	C
Kemper Street	III	35	39.9	22.0	61.9	0.33	19.3	C
Hancock Street	III	35	21.1	23.0	44.1	0.18	14.4	D
Sports Arena Blvd	III	35	15.0	51.4	66.4	0.11	6.0	F
Total	III		161.0	186.5	347.5	1.31	13.6	E

Arterial Level of Service: SB Midway Drive

Cross Street	Arterial Class	Flow Speed	Running Time	Signal Delay	Travel Time (s)	Dist (mi)	Arterial Speed	Arterial LOS
Duke Street	III	35	15.0	40.3	55.3	0.11	7.2	F
Kemper St	III	35	21.1	20.7	41.8	0.18	15.2	D
East Drive	III	35	39.9	8.9	48.8	0.33	24.5	B
Rosecrans St	III	35	22.9	32.5	55.4	0.19	12.4	E
Charles Lindbergh Pa	III	35	19.8	4.2	24.0	0.15	23.2	C
Dutch Flats Parkway	III	35	25.2	30.5	55.7	0.21	13.6	E
Barnett Ave	III	35	17.1	29.7	46.8	0.13	10.3	E
Total	III		161.0	166.8	327.8	1.31	14.4	D

Arterial Level of Service: NB Pacific Highway

Cross Street	Arterial Class	Flow Speed	Running Time	Signal Delay	Travel Time (s)	Dist (mi)	Arterial Speed	Arterial LOS
Grape St	II	30	11.6	19.3	30.9	0.08	9.6	F
Hawthorne St	II	30	10.2	26.7	36.9	0.07	6.4	F
W Laurel St	II	32	34.3	47.9	82.2	0.27	11.8	F
Sassafras St	II	45	43.0	28.8	71.8	0.49	24.5	C
Witherby St	II	47	43.1	36.7	79.8	0.56	25.3	C
Barnett Ave	II	55	14.3	1.6	15.9	0.15	33.3	B
Sports Arena Blvd	II	45	17.4	0.8	18.2	0.16	31.6	B
Kurtz St	II	45	20.5	6.3	26.8	0.19	25.3	C
Taylor St	II	45	33.2	31.4	64.6	0.35	19.3	D
Total	II		227.6	199.5	427.1	2.31	19.5	D

Arterial Level of Service: SB Pacific Highway

Cross Street	Arterial Class	Flow Speed	Running Time	Signal Delay	Travel Time (s)	Dist (mi)	Arterial Speed	Arterial LOS
Rosecrans St	II	45	38.8	27.2	66.0	0.41	22.5	C
Kurtz St	II	45	33.2	19.8	53.0	0.35	23.5	C
Sports Arena Blvd	II	45	20.5	22.7	43.2	0.19	15.7	E
Barnett Ave	II	45	17.4	31.2	48.6	0.16	11.8	F
Witherby St	II	55	14.3	19.6	33.9	0.15	15.6	E
Washington St	II	49	41.4	27.6	69.0	0.56	29.3	B
Sassafras St	II	43	40.6	16.0	56.6	0.45	28.4	B
W Laurel St	II	45	43.0	66.0	109.0	0.49	16.1	E
Hawthorne St	II	32	34.3	56.8	91.1	0.27	10.7	F
Grape St	II	30	10.2	14.3	24.5	0.07	9.7	F
Total	II		293.7	301.2	594.9	3.09	18.7	D

Arterial Level of Service: EB Rosecrans St

Cross Street	Arterial Class	Flow Speed	Running Time	Signal Delay	Travel Time (s)	Dist (mi)	Arterial Speed	Arterial LOS
Hugo St	II	35	16.7	16.8	33.5	0.13	14.3	E
Nimitz Blvd	II	35	23.3	28.4	51.7	0.19	13.0	E
Laning Rd	II	40	29.3	35.3	64.6	0.29	16.0	E
Barnett Ave	II	40	85.6	51.2	136.8	0.95	25.0	C
Midway Drive	II	40	45.5	33.6	79.1	0.49	22.3	C
Sports Arena Blvd	II	40	15.0	0.0	15.0	0.13	31.2	B
Kurtz St	II	35	11.9	17.4	29.3	0.10	11.7	F
Pacific Highway	II	35	29.1	22.2	51.3	0.24	17.2	D
Total	II		256.4	204.9	461.3	2.52	19.7	D

Arterial Level of Service: WB Rosecrans St

Cross Street	Arterial Class	Flow Speed	Running Time	Signal Delay	Travel Time (s)	Dist (mi)	Arterial Speed	Arterial LOS
Kurtz	II	35	29.1	10.2	39.3	0.24	22.4	C
Camino Del Rio West	II	35	11.9	87.7	99.6	0.10	3.4	F
Midway Drive	II	40	15.0	38.1	53.1	0.13	8.8	F
Lytton St	II	40	45.5	139.5	185.0	0.49	9.5	F
Laning Rd	II	40	85.6	10.0	95.6	0.95	35.8	A
Lowell St	II	40	29.3	79.0	108.3	0.29	9.5	F
Hugo St	II	35	23.3	31.5	54.8	0.19	12.3	F
Total	II		239.7	396.0	635.7	2.38	13.5	E

Arterial Level of Service: NB Sports Arena Blvd

Cross Street	Arterial Class	Flow Speed	Running Time	Signal Delay	Travel Time (s)	Dist (mi)	Arterial Speed	Arterial LOS
Dutch Flats Parkway	III	25	23.3	10.1	33.4	0.11	11.4	E
Charles Lindbergh Pa	III	25	31.9	5.9	37.8	0.19	18.4	C
Greenwood Street	III	35	24.4	2.4	26.8	0.20	27.3	B
Frontier Street	III	35	19.6	25.8	45.4	0.15	12.1	E
Kemper Street	III	35	18.1	28.4	46.5	0.14	11.0	E
Hancock Street	III	35	22.7	4.7	27.4	0.19	24.8	B
Sports Arena Blvd	III	35	16.4	23.4	39.8	0.12	11.0	E
I-8 WB Off Ramp	III	35	36.1	15.3	51.4	0.30	21.1	C
Total	III		192.5	116.0	308.5	1.41	16.4	D

Arterial Level of Service: SB Sports Arena Blvd

Cross Street	Arterial Class	Flow Speed	Running Time	Signal Delay	Travel Time (s)	Dist (mi)	Arterial Speed	Arterial LOS
Sports Arena	III	35	36.1	101.6	137.7	0.30	7.9	F
Hancock Street	III	35	16.4	13.0	29.4	0.12	14.9	D
Kemper Street	III	35	22.7	20.3	43.0	0.19	15.8	D
Ralphs Driveway	III	35	18.1	17.0	35.1	0.14	14.5	D
East Drive	III	35	19.6	6.7	26.3	0.15	20.9	C
Rosecrans St	III	35	24.4	78.9	103.3	0.20	7.1	F
Charles Lindbergh Pa	III	25	29.0	4.9	33.9	0.16	17.1	D
Dutch Flats Parkway	III	25	31.9	3.3	35.2	0.19	19.8	C
Pacific Highway	III	25	23.3	60.7	84.0	0.11	4.5	F
Total	III		221.5	306.4	527.9	1.57	10.7	E

Arterial Level of Service: EB Taylor St

Cross Street	Arterial Class	Flow Speed	Running Time	Signal Delay	Travel Time (s)	Dist (mi)	Arterial Speed	Arterial LOS
Congress St	IV	35	15.7	11.6	27.3	0.10	12.6	D
Juan St	IV	35	11.2	13.5	24.7	0.07	9.9	D
	IV	35	18.3	8.4	26.7	0.13	17.6	C
Total	IV		45.2	33.5	78.7	0.29	13.4	C

Arterial Level of Service: WB Taylor St

Cross Street	Arterial Class	Flow Speed	Running Time	Signal Delay	Travel Time (s)	Dist (mi)	Arterial Speed	Arterial LOS
Morena Blvd	IV	35	17.7	23.4	41.1	0.11	9.4	D
	IV	35	18.3	13.8	32.1	0.13	14.6	C
Congress St	IV	35	11.2	7.7	18.9	0.07	13.0	D
Pacific Highway	IV	35	15.7	22.4	38.1	0.10	9.0	D
Total	IV		62.9	67.3	130.2	0.40	11.1	D

Arterial Level of Service: EB Camino Del Rio West

Cross Street	Arterial Class	Flow Speed	Running Time	Signal Delay	Travel Time (s)	Dist (mi)	Arterial Speed	Arterial LOS
Kurtz	IV	35	16.2	41.5	57.7	0.10	6.1	F
Hancock St	IV	35	13.3	6.9	20.2	0.08	14.4	C
Total	IV		29.5	48.4	77.9	0.18	8.3	E

Arterial Level of Service: WB Camino Del Rio West

Cross Street	Arterial Class	Flow Speed	Running Time	Signal Delay	Travel Time (s)	Dist (mi)	Arterial Speed	Arterial LOS
Hancock St	III	35	24.3	40.5	64.8	0.20	11.2	E
Kurtz St	III	35	10.9	1.6	12.5	0.08	23.2	C
Sport Arena Blvd	III	35	13.2	55.9	69.1	0.10	5.1	F
Total	III		48.4	98.0	146.4	0.38	9.4	F

Arterial Level of Service: NB Midway Drive

Cross Street	Arterial Class	Flow Speed	Running Time	Signal Delay	Travel Time (s)	Dist (mi)	Arterial Speed	Arterial LOS
Dutch Flats Parkway	III	35	15.9	40.0	55.9	0.12	7.6	F
Charles Lindbergh Pa	III	35	27.3	28.7	56.0	0.23	14.6	D
Rosecrans St	III	35	19.6	68.9	88.5	0.15	6.2	F
East Drive	III	35	22.9	12.2	35.1	0.19	19.5	C
Kemper Street	III	35	39.9	37.2	77.1	0.33	15.5	D
Hancock St.	III	35	21.6	31.0	52.6	0.17	11.5	E
Sport Arena Blvd	III	35	16.0	70.0	86.0	0.12	5.0	F
Total	III		163.2	288.0	451.2	1.31	10.4	E

Arterial Level of Service: SB Midway Drive

Cross Street	Arterial Class	Flow Speed	Running Time	Signal Delay	Travel Time (s)	Dist (mi)	Arterial Speed	Arterial LOS
	III	35	16.0	51.7	67.7	0.12	6.3	F
Kemper St	III	35	21.6	31.5	53.1	0.17	11.4	E
East Drive	III	35	39.9	10.7	50.6	0.33	23.6	C
Rosecrans St	III	35	22.9	58.5	81.4	0.19	8.4	F
Charles Lindbergh Pa	III	35	19.6	5.9	25.5	0.15	21.6	C
Dutch Flats Parkway	III	35	27.3	31.3	58.6	0.23	14.0	E
Barnett Ave	III	35	15.9	28.8	44.7	0.12	9.5	F
Total	III		163.2	218.4	381.6	1.31	12.3	E

Arterial Level of Service: NB Pacific Highway

Cross Street	Arterial Class	Flow Speed	Running Time	Signal Delay	Travel Time (s)	Dist (mi)	Arterial Speed	Arterial LOS
Witherby St.	I	55	8.4	107.8	116.2	0.09	2.7	F
Barnett Ave	I	55	13.7	5.4	19.1	0.14	26.7	D
Sport Arena Blvd	I	45	16.6	3.0	19.6	0.16	29.3	C
Kurtz St	I	45	19.6	20.5	40.1	0.19	16.9	E
Taylor St	I	45	33.5	34.5	68.0	0.35	18.3	E
Total	I		91.8	171.2	263.0	0.92	12.6	F

Arterial Level of Service: SB Pacific Highway

Cross Street	Arterial Class	Flow Speed	Running Time	Signal Delay	Travel Time (s)	Dist (mi)	Arterial Speed	Arterial LOS
Rosecrans St	I	45	38.8	26.0	64.8	0.41	22.9	D
Kurtz St	I	45	33.5	45.0	78.5	0.35	15.9	F
Sport Arena Blvd	I	45	19.6	9.2	28.8	0.19	23.5	D
Barnett Ave	I	45	16.6	93.1	109.7	0.16	5.2	F
Witherby St.	I	55	13.7	19.8	33.5	0.14	15.2	F
Total	I		122.2	193.1	315.3	1.25	14.2	F

Arterial Level of Service: EB Rosecrans St

Cross Street	Arterial Class	Flow Speed	Running Time	Signal Delay	Travel Time (s)	Dist (mi)	Arterial Speed	Arterial LOS
Hugo St	II	35	16.7	21.3	38.0	0.13	12.6	F
Nimitz Blvd	II	35	23.3	119.8	143.1	0.19	4.7	F
Laning Rd	II	40	29.3	23.8	53.1	0.29	19.5	D
Barnett Ave	II	40	85.6	46.7	132.3	0.95	25.9	C
Midway Drive	II	40	45.5	82.3	127.8	0.49	13.8	E
Sport Arena Blvd	II	40	15.0	0.0	15.0	0.13	31.2	B
Kurtz St	II	35	12.0	31.5	43.5	0.10	7.9	F
Pacific Highway	II	35	29.1	28.8	57.9	0.24	15.2	E
Total	II		256.5	354.2	610.7	2.52	14.8	E

Arterial Level of Service: WB Rosecrans St

Cross Street	Arterial Class	Flow Speed	Running Time	Signal Delay	Travel Time (s)	Dist (mi)	Arterial Speed	Arterial LOS
Kurtz	II	35	29.1	13.0	42.1	0.24	20.9	D
Camino Del Rio West	II	35	12.0	109.5	121.5	0.10	2.8	F
Midway Drive	II	40	15.0	39.7	54.7	0.13	8.6	F
Lytton St	II	40	45.5	46.7	92.2	0.49	19.1	D
Laning Rd	II	40	85.6	9.1	94.7	0.95	36.2	A
Lowell St	II	40	29.3	102.8	132.1	0.29	7.8	F
Hugo St	II	35	23.3	12.1	35.4	0.19	19.0	D
Total	II		239.8	332.9	572.7	2.39	15.0	E

Arterial Level of Service: NB Sport Arena Blvd

Cross Street	Arterial Class	Flow Speed	Running Time	Signal Delay	Travel Time (s)	Dist (mi)	Arterial Speed	Arterial LOS
Dutch Flats Parkway	III	25	22.2	16.4	38.6	0.10	9.4	F
Charles Lindbergh Pa	III	25	32.2	11.5	43.7	0.19	16.1	D
Greenwood Street	III	35	24.4	5.4	29.8	0.20	24.6	B
Frontier Drive	III	35	19.5	27.5	47.0	0.15	11.7	E
Kemper Street	III	35	18.1	15.6	33.7	0.14	15.1	D
Hancock St.	III	35	22.7	2.2	24.9	0.19	27.3	B
Sport Arena Blvd	III	35	16.6	53.5	70.1	0.12	6.3	F
I-8 WB Off Ramp	III	35	36.1	84.0	120.1	0.30	9.0	F
Total	III		191.8	216.1	407.9	1.41	12.4	E

Arterial Level of Service: SB Sport Arena Blvd

Cross Street	Arterial Class	Flow Speed	Running Time	Signal Delay	Travel Time (s)	Dist (mi)	Arterial Speed	Arterial LOS
W Point Loma Blvd	III	35	36.1	108.7	144.8	0.30	7.5	F
Hancock St.	III	35	16.6	14.9	31.5	0.12	14.1	D
Kemper Street	III	35	22.7	31.1	53.8	0.19	12.6	E
Frontier Drive	III	35	18.1	9.5	27.6	0.14	18.5	C
East Drive	III	35	19.5	25.5	45.0	0.15	12.2	E
Rosecrans St	III	35	24.4	79.8	104.2	0.20	7.0	F
Charles Lindbergh Pa	III	25	29.7	9.7	39.4	0.16	15.1	D
Dutch Flats Parkway	III	25	32.2	7.0	39.2	0.19	17.9	D
Pacific Highway	III	25	22.2	52.2	74.4	0.10	4.9	F
Total	III		221.5	338.4	559.9	1.57	10.1	E

Arterial Level of Service: EB Taylor St

Cross Street	Arterial Class	Flow Speed	Running Time	Signal Delay	Travel Time (s)	Dist (mi)	Arterial Speed	Arterial LOS
Congress St	IV	35	15.7	19.1	34.8	0.10	9.9	D
Juan St	IV	35	11.2	22.1	33.3	0.07	7.4	E
	IV	35	18.3	12.3	30.6	0.13	15.4	C
Total	IV		45.2	53.5	98.7	0.29	10.7	D

Arterial Level of Service: WB Taylor St

Cross Street	Arterial Class	Flow Speed	Running Time	Signal Delay	Travel Time (s)	Dist (mi)	Arterial Speed	Arterial LOS
Morena Blvd	IV	35	17.7	23.2	40.9	0.11	9.4	D
	IV	35	18.3	11.9	30.2	0.13	15.6	C
Congress St	IV	35	11.2	6.4	17.6	0.07	13.9	C
Pacific Highway	IV	35	15.7	23.9	39.6	0.10	8.7	E
Total	IV		62.9	65.4	128.3	0.40	11.3	D

Mobility Report

Midway-Pacific Highway and Old Town Communities

May 2017

Prepared for:
City of San Diego

Prepared by:

CHEN RYAN
3900 Fifth Avenue, Suite 210
San Diego, CA 92103

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1.0 Introduction

1.1 Study Background and Purpose

This Mobility Report summarizes the physical and operational conditions of the Midway-Pacific Highway and Old Town communities' mobility systems as part of the City of San Diego's community plan update process. The evaluation culminates with an analysis of all travel modes under the horizon year 2035 Preferred Plan conditions. The report also describes key terms and methodologies utilized for conducting the analyses presented.

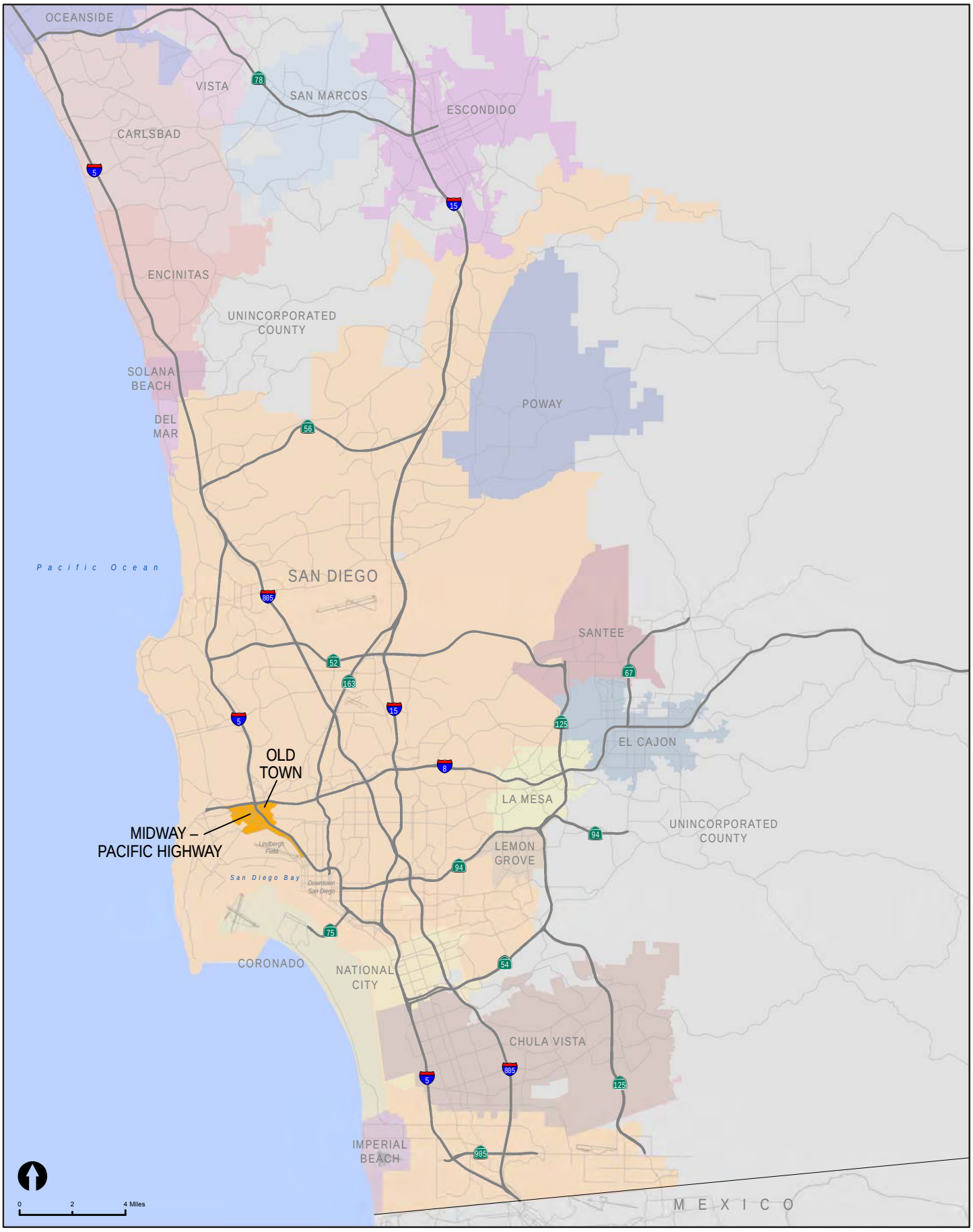
This Mobility Report is an update to the Midway-Pacific Highway Corridor Community Plan and Local Coastal Program Land Use Plan which was adopted by City Council in 1991, and the Old Town San Diego Community Plan, adopted in 1987.

The Preferred Plan is a strategy to address existing and forecast deficiencies related to mobility systems within the Midway-Pacific Highway and Old Town communities. The mobility networks are comprised of roadway and freeway systems, pedestrian and bicycle infrastructure, and public transit. Each of these transportation modes is discussed in the following chapters.

1.2 Study Location

The Midway-Pacific Highway and Old Town communities are located north of Downtown San Diego. The communities are both bound by Interstate 8 along the northern edge. Interstate 5 divides the communities, forming a north-south running boundary for each community. The Midway-Pacific Highway Community is bound by the Peninsula community and Barnett Avenue to west; and the Marine Corps Recruit Depot San Diego, the San Diego International Airport, and Laurel Street to the south. The Old Town Community is bound by Uptown and Mission Hills to the south and east.

Figure 1-1 displays the Midway-Pacific Highway and Old Town communities within the region.



Midway-Pacific Highway and Old Town Community Plan Update

CHEN RYAN

Figure 1-1
Midway-Pacific Highway and Old Town within the Region

Midway-Pacific Highway Community

The Midway-Pacific Highway community is situated north of Downtown San Diego and between the Old Town and Peninsula communities. The community encompasses approximately 800 acres of mostly flatland and is comprised of two basic elements: the central Midway area and the narrow, linear-shaped Pacific Highway Corridor.

Central Midway has an urbanized commercial core containing numerous shopping centers and institutional facilities which cater to the commercial needs of nearby residential and visitor populations. The area is characterized by wide streets, flat topography, and a varied mixture of flat-roofed large and small commercial buildings. The Pacific Highway Corridor, between Interstate 5 and Lindbergh Field, contains some of the City's oldest industrial areas. The corridor is defined by large scale buildings and unscreened commercial parking lots in the southern portion, and a group of smaller scale, low lying industrial buildings located between Witherby Street and Washington Street in the northern portion.

There are a few multifamily residential complexes located in the western portion of the community, adjacent to the Point Loma area. The planning area is generally characterized by a variety of commercial retail activities, and wide, multi-directional traffic intersections.

Since the 1960s, the Midway area has experienced an irregular development pattern, resulting in a lack of clear visual form both in terms of orientation and community legibility. The resulting diversity in development patterns, architectural styles, setbacks, and other development criteria has contributed to a disjointed and sporadic community image, where few buildings have compatibility or any functional relationship to each other and the surrounding neighborhood. Due to the area's low land valuations, high traffic utilization and inadequate zoning and development regulation, many auto-oriented commercial uses have located throughout the industrially zoned portions of the community. Much of the commercial development, including retail oriented auto sales and services, adult entertainment, and drive-thru restaurants, now exhibit a general lack of adequate parking, landscaping, and other commercial development amenities.

Old Town

The Old Town community covers 230 acres and is bound on the north by Interstate 8 and Mission Valley, on the west by Interstate 5 and Midway, and on the south and east by the Uptown/ Mission Hills hillsides.

Old Town San Diego, considered the "birthplace" of California, is the site of the first permanent Spanish Mission and settlement in California. The first Spanish Mission and Presidio were built on a hillside overlooking what is currently known as Old Town San Diego. At the base of the hill in the 1820's, a small Mexican community of adobe buildings was formed and by 1835 had attained the status of El Pueblo de San Diego.

In 1968, the State of California Department of Parks and Recreation established Old Town State Historic Park to preserve the rich heritage that characterized San Diego during the 1821 to 1872 period. The park includes a main plaza, exhibits, museums and living history demonstrations. Due to the historical nature and attractions within the community, Old Town San Diego is currently one of the region's largest tourist attractions. Within the community's central core (San Diego Avenue & Congress Street, between Twiggs Street and Ampudia Street) there are currently more than 150 shops, several restaurants, 17 museums, and historical sites.

There is a small number of residential neighborhoods located along the eastern, western and southern boundaries of the community.

1.3 Organization of the Report

The remainder of this Mobility Report is organized into the following chapters:

- *Chapter 2* describes the methodologies used to determine the study area and assess the pedestrian, transit, bicycle and vehicular systems.
- *Chapter 3* presents the Preferred Plan for the Midway-Pacific Highway community, including the development process, identification of existing community needs, and recommended improvements.
- *Chapter 4* presents the Preferred Plan for the Old Town community, including the development process, identification of existing community needs, and recommended improvements.
- *Chapter 5* provides an overview of the Transportation Demand Model Forecasting process utilized to project future travel patters under implementation of the Preferred Plan.
- *Chapter 6* concludes this document with the Preferred Plan analysis results for each mode. Additionally, Intelligent Transportation Systems (ITS), Transportation Demand Management (TDM) Systems, and Parking Management are described in this chapter.

2.0 Analysis Methodology

This chapter describes the methodologies used to determine the study area and assess the pedestrian, transit, bicycle and vehicular systems within the Midway-Pacific Highway and Old Town communities.

2.1 Selection of the Study Area

This section describes the process used to identify roadway segments and intersections for analysis.

2.1.1 Roadway Segments

Roadway segments were evaluated if one or more of the following circumstances applied:

- The roadway segment is an existing or planned circulation element roadway as identified in the Midway-Pacific Highway Corridor Community Plan and Local Coastal Program Land Use Plan (1991), or the Old Town San Diego Community Plan (1987).
- The roadway segment provides freeway access to/from the Midway-Pacific Highway or Old Town communities.
- The roadway segment is located outside of either study community, however, it may influence or impact the flow of transportation within either of the communities.

Based on the criteria listed above, Table 2.1 displays the roadway segments selected for analysis.

Table 2.1 Study Area Roadway Segments

ID	Roadway	From	To
North-South			
Midway Pacific Highway			
1	Lytton Street / Barnett Ave	Rosecrans St	Midway Dr
2	Midway Dr	W. Point Loma Blvd/Sports Arena Blvd	Kemper St
3		Kemper St	East Dr
4		East Dr	Rosecrans St
5		Rosecrans St	Barnett Ave
6	Sports Arena Blvd	I-8 WB Ramps	I-8 EB Ramps
7		I-8 EB Ramps	W. Point Loma Blvd
8		W. Point Loma Blvd/Midway Dr	Kemper St
9		Kemper St	East Dr
10		East Dr	Rosecrans St
11		Rosecrans St	Pacific Hwy
12	Kurtz St	Hancock St	Rosecrans St

Table 2.1 Study Area Roadway Segments

ID	Roadway	From	To
13	Kurtz St	Rosecrans St	Pacific Hwy
14	Hancock St	Sports Arena Blvd	Kurtz St
15		Kurtz St	Camino Del Rio West
16		Camino Del Rio West	Rosecrans St
17		Old Town Ave	Witherby St
18		Witherby St	Washington St
19	Kettner Blvd	Washington St	Vine St
20		Vine St	Sassafras St
21		Sassafras St	Laurel St
22	Pacific Hwy	Interstate-8	Taylor St
23		Taylor St	Kurtz St
24		Kurtz St	Sports Arena Blvd
25		Sports Arena Blvd	Barnett Ave
26		Barnett Ave	Washington St
27		Washington St	Sassafras St
28		Sassafras St	Laurel St
Old Town			
29	Congress St	Taylor St	Twiggs St
30		Twiggs St	Harney St
31		Harney St	San Diego Ave/ Ampudia St
32	San Diego Ave	Twiggs St	Conde St
33		Conde St	Ampudia St
34		Ampudia St	Old Town Ave
35		Old Town Ave	Hortensia St
36	Juan St	Taylor St	Twiggs St
37		Twiggs St	Harney St
38		Harney St	San Juan Rd
East-West			
Midway Pacific Highway			
39	Channel Wy	W. Mission Bay Dr	Hancock St
40	Kemper St	Kenyon St	Midway Dr
41		Midway Dr	Sports Arena Blvd
42		Sports Arena Blvd	Hancock St
43	Frontier Dr	Sports Arena Blvd	Kurtz St
44	Greenwood St	Sports Arena Blvd	Kurtz St
45	Camino Del Rio West	Rosecrans St	I-5/I-8 Ramps
46	Rosecrans St	Lytton St	Midway Dr
47		Midway Dr	Sports Arena Blvd
48	Rosecrans St	Sports Arena Blvd	Pacific Hwy/Taylor St

Table 2.1 Study Area Roadway Segments

ID	Roadway	From	To
49	Charles Lindbergh Pkwy	Midway Dr	Sports Arena Blvd
50		Sports Arena Blvd	Kurtz Street
51	Dutch Flats Pkwy	Barnett Avenue	Midway Dr
52		Midway Dr	Sports Arena Blvd
53	Barnett Ave	Midway Dr	Pacific Hwy
54	Washington St	Frontage Rd	Pacific St
55		Pacific St	Hancock St
56	Vine St	California St	Kettner Blvd
57	Sassafras St	Pacific Hwy	Kettner Blvd
58	Laurel St	Pacific Hwy	Kettner Blvd
Old Town			
59	Taylor St	Pacific Hwy/ Rosecrans St	Congress St
60		Congress St	Juan St
61		Juan St	Morena Blvd
62		Morena Blvd	I-8 EB Ramps
63	Twiggs St	Congress St	San Diego Ave
64		San Diego Ave	Juan St
65	Harney St	Congress St	San Diego Ave
66		San Diego Ave	Juan St
67	Old Town Ave	Hancock St	Moore St
68		Moore St	San Diego Ave

Source: Chen Ryan Associates (2016)

2.1.2 Intersections

Intersections were evaluated if one or more of the following circumstances applied:

- The intersection is comprised of a circulation element roadway intersecting with another circulation element roadway. This includes existing and future/planned circulation element roadways as identified in the Midway-Pacific Highway Corridor Community Plan and Local Coastal Program Land Use Plan (1991), or the Old Town San Diego Community Plan (1987).
- The intersection is at a freeway ramp interchange located within the Midway-Pacific Highway or Old Town communities or is a major gateway to either community.
- The intersection is a major intersection located outside of either community, however, it may influence or impact the flow of transportation within the communities.
- The intersection meets criteria used in previous studies, whereby both streets meet one of the following:
    - 4 lanes or greater

- 3 lanes and carries over 15,000 ADT
- 2 lanes and carries over 10,000 ADT

- Intersections at freeway access ramps.
- Significant intersections where travel time analysis is performed.

A total of 59 intersections were identified based on the criteria listed above, which include 11 intersections located outside the study communities. These intersections were added to the study area because of their proximity to the communities, and the likelihood that changes within the communities could directly affect traffic in/out of the communities. The 59 intersections include the following:

Midway-Pacific Highway

1. Lytton Street and Rosecrans Street
2. W. Mission Bay Drive and I-8 WB Off-Ramp
3. Sports Arena Boulevard and Channel Way
4. Midway Drive and Sports Arena/W. Point Loma Boulevard
5. Midway Drive and Kemper Street
6. Midway Drive and East Drive
7. Midway Drive and Rosecrans Street
8. Midway Drive and Charles Lindbergh Parkway
9. Midway Drive and Enterprise Street
10. Midway Drive and Barnett Avenue
11. Sports Arena Boulevard and Hancock Street
12. Sports Arena Boulevard and Kemper Street
13. Sports Arena Boulevard and Sports Arena Driveway
14. Sports Arena Boulevard and East Drive
15. Sports Arena Boulevard and Rosecrans Street
16. Sports Arena Boulevard and Charles Lindbergh Parkway
17. Sports Arena Boulevard and Pacific Highway
18. Kurtz Street and Hancock Street
19. Kurtz Street and Camino Del Rio West
20. Kurtz Street and Rosecrans Street
21. Kurtz Street and Pacific Highway
22. Hancock Street and Channel Way
23. Hancock Street and Camino Del Rio West
24. Hancock Street and Rosecrans Street
25. Hancock Street and Old Town Avenue
26. Hancock Street and Witherby Street
27. Hancock Street and Washington Street
28. Kettner Boulevard and Vine Street
29. Kettner Boulevard and Sassafras Street

30. Kettner Boulevard and West Laurel Street
31. Pacific Highway and Barnett Avenue
32. Pacific Highway and Washington Street @ Frontage Road
33. Pacific Highway and Washington Street
34. Pacific Highway and Sassafras Street
35. Pacific Highway and West Laurel Street

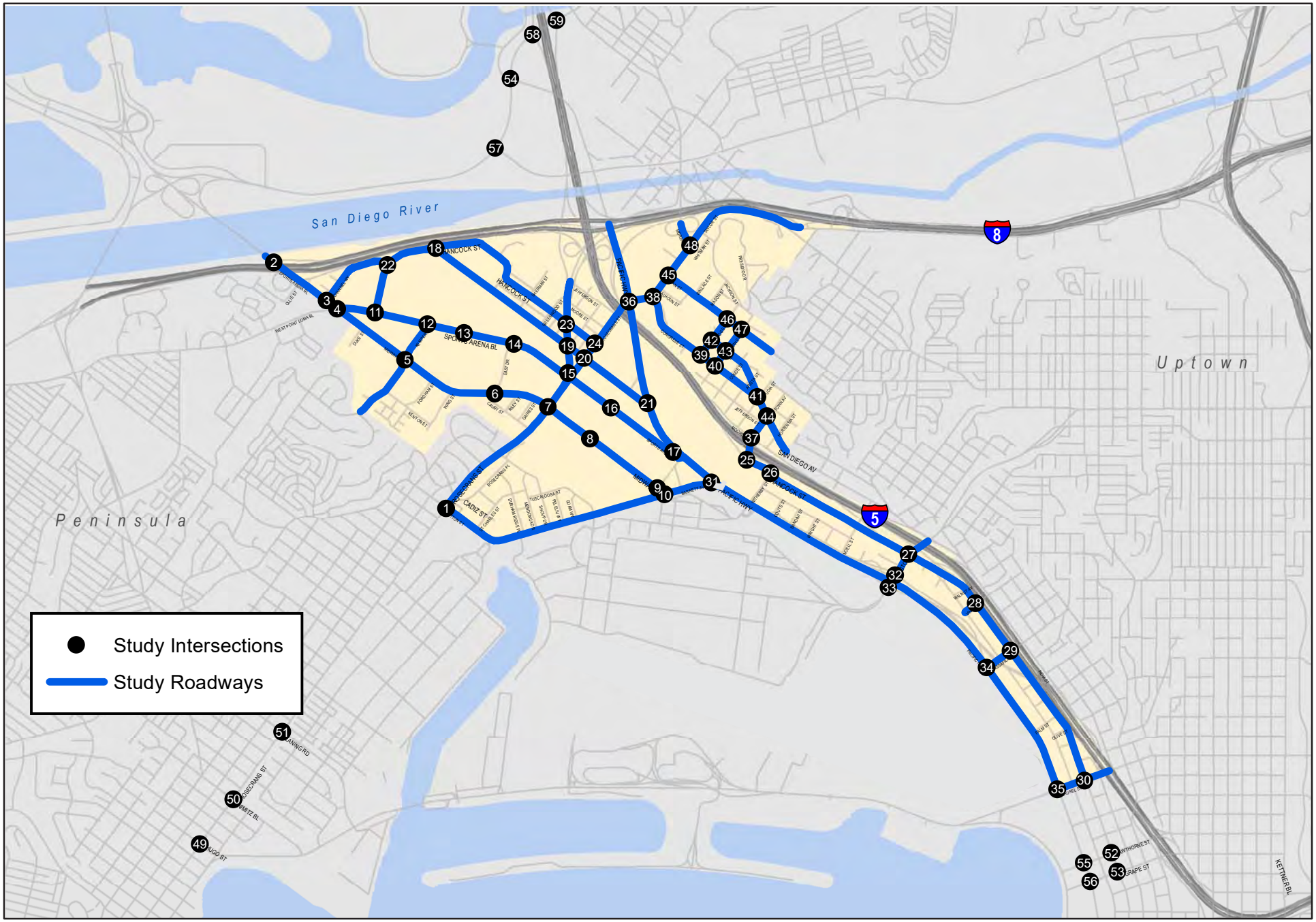
Old Town

36. Pacific Highway and Taylor Street
37. Moore Street and Old Town Avenue
38. Congress Street and Taylor Street
39. Congress Street and Twiggs Street
40. Congress Street and Harney Street
41. Congress Street and San Diego Avenue/Ampudia Street
42. San Diego Avenue and Twiggs Street
43. San Diego Avenue and Harney Street
44. San Diego Avenue and Old Town Avenue
45. Juan Street and Taylor Street
46. Juan Street and Twiggs Street
47. Juan Street and Harney Street
48. Morena Boulevard and Taylor Street

Intersections Outside of Study Communities

49. Hugo Street/N Harbor Drive and Rosecrans Street
50. Lowell Street/Nimitz Boulevard and Rosecrans Street
51. Kettner Boulevard and W Hawthorn Street
52. Kettner Boulevard and W Grape Street
53. Laning Road and Rosecrans Street
54. Pacific Highway and Sea World Drive
55. Pacific Highway and W Hawthorn Street
56. Pacific Highway and W Grape Street
57. Friars Road and Sea World Drive
58. I-5 SB Ramps and Sea World Drive
59. I-5 NB Ramps and Sea World Drive

Figure 2-1 displays the location of the 59 study intersections. As shown, this includes the 11 intersections located outside of the study communities.



Midway-Pacific Highway and
Old Town Community Plan Update

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Figure 2-1
Project Study Area

2.2 Vehicular Analysis

Analysis of the vehicular systems – roadways, intersections, and freeways – were prepared for this report in accordance with the City of San Diego and SANTEC/ITE Guidelines. Vehicular level of service (LOS) is a quantitative measure that represents the quality of service – or how well a transportation facility operates – as experienced by vehicular drivers. These conditions are generally described in terms of factors such as speed, travel time, freedom to maneuver, comfort, convenience, and safety. LOS A represents the best operating conditions from a driver's perspective, while LOS F represents the worst. Table 2.2 describes generalized definitions of vehicular LOS A through F as identified by the Highway Capacity Manual (2000).

Table 2.2 Vehicular Level of Service Definitions

LOS	Definition
A	Primarily free-flow operation. Vehicles are completely unimpeded in their ability to maneuver within the traffic stream. Controlled delay at the boundary intersections is minimal. The travel speed exceeds 85% of the base free-flow speed.
B	Reasonably unimpeded operation. The ability to maneuver within the traffic stream is only slightly restricted and control delay at the boundary intersections is not significant. The travel speed is between 67% and 85% of the base free-flow speed.
C	Stable operation. The ability to maneuver and change lanes at mid-segment locations may be more restricted than at LOS B. Longer queues at the boundary intersections may contribute to lower travel speeds. The travel speed is between 50% and 67% of the base free-flow speed.
D	Less stable condition in which small increases in flow may cause substantial increases in delay and decreases in travel speed. This operation may be due to adverse signal progression, high volume, or inappropriate signal timing at the boundary intersections. The travel speed is between 40% and 50% of the base free-flow speed.
E	Unstable operation and significant delay. Such operations may be due to some combination of adverse signal progression, high volume, and inappropriate signal timing at the boundary intersections. The travel speed is between 30% and 40% of the base free-flow speed.
F	Flow at extremely low speed. Congestion is likely occurring at the boundary intersections, as indicated by high delay and extensive queuing. The travel speed is 30% or less of the base free-flow speed. Also, LOS F is assigned to the subject direction of travel if the through movement at one or more boundary intersections have a volume-to-capacity ratio greater than 1.0.

Source: Highway Capacity Manual (2000)

2.2.1 Roadway Segment

Roadway segment level of service standards and thresholds provided the basis for analysis of arterial roadway segment performance. The analysis of roadway segment level of service is based on the functional classification of the roadway, the maximum capacity, roadway geometrics, and existing or forecast Average Daily Traffic (ADT) volumes.

Table 2.3 presents the roadway segment capacity and LOS standards utilized to analyze roadways evaluated in this report. These standards are generally used as long-range planning guidelines to determine the functional classification of roadways. The actual capacity of a roadway varies according to its physical and operational attributes. LOS D is considered acceptable for Mobility Element roadway segments in the City of San Diego. Often, a roadway segment operating at LOS

E or F based on theoretical capacity is found to operate acceptably in practice. In such cases, HCM arterial analysis may be conducted and utilized (or intersection analysis, if arterial analysis is not applicable) to provide a more accurate indication of LOS.

Table 2.3 City of San Diego Roadway Segment Daily Capacity and Level of Service Standards

Roadway Functional Classification	Level of Service				
	A	B	C	D	E
Expressway (6-lane)	< 30,000	< 42,000	< 60,000	< 70,000	< 80,000
Prime Arterial (6-lane)	< 25,000	< 35,000	< 50,000	< 55,000	< 60,000
Major Arterial (6-lane, divided)	< 20,000	< 28,000	< 40,000	< 45,000	< 50,000
Major Arterial (4-lane, divided)	< 15,000	< 21,000	< 30,000	< 35,000	< 40,000
Collector (4-lane w/ center left-turn lane)	< 10,000	< 14,000	< 20,000	< 25,000	< 30,000
Collector (3-lane w/ center left-turn lane)	< 7,500	< 10,500	< 15,000	< 19,000	< 22,500
Collector (4-lane w/o center lane)	< 5,000	< 7,000	< 10,000	< 13,000	< 15,000
Collector (2-lane w/ center left-turn lane)					
Collector (2-lane no fronting property)	< 4,000	< 5,500	< 7,500	< 9,000	< 10,000
Collector (2-lane w/ commercial fronting)	< 2,500	< 3,500	< 5,000	< 6,500	< 8,000
Collector (2-lane multi-family fronting)					
Sub-Collector (2-lane single-family)	-	-	< 2,200	-	-

Source: City of San Diego Traffic Impact Study Manual (1998)

Note: Bold numbers indicate the ADT thresholds for acceptable LOS.

2.2.2 Peak Hour Intersection

This section presents the methodologies used to perform peak hour intersection capacity analysis, for both signalized and unsignalized intersections. The following assumptions were utilized in conducting all intersection level of service analyses:

- Pedestrian Calls per Hour: Based on existing pedestrian counts.
- Heavy Vehicle Factor: A 2% heavy vehicle factor was assumed for all intersections within the study area.
- Peak Hour Factor: Based on existing peak hour counts.
- Signal Timing: Based on existing signal timing plans (as of November 2012).

Signalized Intersection Analysis

The signalized intersection analysis utilized in this study conforms to the operational analysis methodology outlined in 2000 Highway Capacity Manual (HCM), Transportation Research Board Special Report 209. This method defines LOS in terms of delay, or more specifically, average control delay per vehicle (sec/veh). The 2000 HCM methodology sets 1,900 passenger-cars per hour per lane (pcphpl) as the ideal saturation flow rate at signalized intersections based upon the minimum headway that can be sustained between departing vehicles at a signalized intersection. The service saturation flow rate, which reflects the saturation flow rate specific to the study facility, is determined by adjusting the ideal saturation flow rate for lane width, on-street parking, bus stops, pedestrian volume, traffic composition (or percentage of heavy vehicles), and shared

lane movements (e.g. through and right-turn movements sharing the same lane). The level of service criteria used for this technique are described in Table 2.4. The computerized analysis of intersection operations was performed utilizing the Synchro 8.0 (2000 HCM methodology) traffic analysis software (by Trafficware, 2011).

Table 2.4 Signalized intersection LOS – HCM Operational Analysis Method

Average Control Delay Per Vehicle (seconds)	Level of Service (LOS) Characteristics
≤10.0	*LOS A* occurs when the volume-to-capacity ratio is low and either progression is exceptionally favorable or the cycle length is very short. If it is due to favorable progression, most vehicles arrive during the green indication and travel through the intersection without stopping.
10.1 – 20.0	*LOS B* occurs when the volume-to-capacity ratio is low and either progression is highly favorable or the cycle length is short. More vehicles stop than with LOS A.
20.1 – 35.0	*LOS C* occurs when progression is favorable or the cycle length is moderate. The number of vehicles stopping is significant, although many vehicles still pass through the intersection without stopping.
35.1 – 55.0	*LOS D* occurs when the volume-to-capacity ratio is high and either progression is ineffective or the cycle length is long. Many vehicles stop and individual cycle failures are noticeable.
55.1 – 80.0	*LOS E* occurs when the volume-to-capacity ratio is high, progression is unfavorable, and the cycle length is long. Individual cycle failures are frequent.
>80.0	*LOS F* occurs when the volume-to-capacity ratio is very high, progression is very poor, and the cycle length is long. Most cycles fail to clear the queue.

Source: Highway Capacity Manual, Transportation Research Board Special Report 209 (2000)

Unsignalized Intersection Analysis

Unsignalized intersections, including two-way and all-way stop controlled intersections were analyzed using the *2000 HCM* unsignalized intersection analysis methodology. The Synchro 8.0 software supports this methodology and was utilized to produce LOS results. The LOS for a two-way stop controlled (TWSC) intersection is determined by the computed or measured control delay and is defined for each minor movement. The LOS for an all-way stop controlled (AWSC) intersection is determined by the computed or measured average control delay of all movements. Table 2.5 summarizes the level of service criteria for unsignalized intersections.

Table 2.5 Level of Service Criteria for Stop Controlled Unsignalized Intersections

Average Control Delay (sec/veh)	Level of Service
≤10.0	A
10.1 – 15.0	B
15.1 – 25.0	C
25.1 – 35.0	D
35.1 – 50.0	E
>50.0	F

Source: Highway Capacity Manual (2000)

The City of San Diego considers LOS D or better during the AM and PM peak hours to be an acceptable intersection level of service.

2.2.3 Freeway

The freeway level of service analysis followed procedures developed by Caltrans District 11. The procedure involves estimating a peak hour volume to capacity ratio (V/C). Peak hour volumes are estimated from the application of design hour ("K"), directional ("D"), and truck ("T") factors to average daily traffic (ADT) volumes). The base capacities were assumed to be 2,350 passenger-cars per hour per main lane (pc/h/ln) and 1,410 pc/h/ln for auxiliary lane. A 0.95 peak hour factor (PHF) was utilized for this analysis. The resulting V/C ratio was then compared to acceptable ranges of V/C values corresponding to the various levels of service for each facility classification, as shown in Table 2.6. The corresponding level of service represents an approximation of anticipated future freeway operating conditions in the peak direction of travel during the peak hour. LOS D or better was used in this study as the threshold for acceptable freeway operations based upon Caltrans and the SANDAG Regional Growth Management Strategy (RGMS) requirements.

Table 2.6 Caltrans District 11 Freeway Segment Level of Service Definitions

LOS	V/C	Congestion/Delay	Traffic Description
Used for freeways, expressways and conventional highways			
"A"	<0.41	None	Free flow.
"B"	0.42-0.62	None	Free to stable flow, light to moderate volumes.
"C"	0.63-0.79	None to minimal	Stable flow, moderate volumes, freedom to maneuver noticeably restricted.
"D"	0.80-0.92	Minimal to substantial	Approaches unstable flow, heavy volumes, very limited freedom to maneuver.
"E"	0.93-1.00	Significant	Extremely unstable flow, maneuverability and psychological comfort extremely poor.
Used for conventional highways			
"F"	>1.00	Considerable	Forced or breakdown flow. Delay measured in average travel speed (MPH). Signalized segments experience delays >60.0 seconds/vehicle.
Used for freeways and expressways			
"F0"	1.01–1.25	Considerable (0-1 hour delay)	Forced flow, heavy congestion, long queues form behind breakdown points, stop and go.
"F1"	1.26-1.35	Severe (1-2 hour delay)	Very heavy congestion, very long queues.
"F2"	1.36-1.45	Very severe (2-3 hour delay)	Extremely heavy congestion, longer queues, more numerous breakdown points, longer stop periods.
"F3"	>1.46	Extremely severe (3+ hours of delay)	Gridlock.

Source: SANTEC/ITE Guidelines for TIS in the San Diego Region

2.2.4 Ramp Metering Analysis

Ramp metering is a means of controlling the volume of traffic entering the freeway with the goal of improving freeway main lane traffic operations and flow. Freeway ramp meter analyses estimate peak hour queues and delays at freeway ramps by comparing existing volumes to the meter rate at the given location.

Meter rates, which represent the amount of vehicles permitted through the signal, onto the ramp and freeway, were obtained from Caltrans for use in the analysis. Ramp metering analyses to calculate delays at study area freeway ramps were conducted following the procedures outlined in the *City of San Diego Traffic Impact Study Manual (1998)*.

2.3 Multimodal Analysis

Recent planning efforts and legislative actions have redefined the way community transportation planning is carried out. An important unifying theme is to achieve a more balanced, multimodal transportation system that allows people of varying physical and economic conditions to accomplish daily activities without making a single-occupant vehicle trip. A balanced system will address many complex transportation issues such as traffic congestion, greenhouse gas emissions, community health, and economic vitality of a community.

Multimodal analyses are gaining attention among local and regional jurisdictions as one method of supporting progress toward these issues. This section describes the pedestrian, bicycle, and transit analysis methodologies used in this report.

2.3.1 Pedestrian Assessment

Three analyses were utilized to assess overall pedestrian mobility: 1) network connectivity; 2) facility quality; and 3) combined network connectivity and quality.

Pedestrian Connectivity Ratio

A pedestrian travelshed analysis was used to assess the level of connectivity provided from each Traffic Analysis Zone (TAZ) with pedestrian friendly land uses (residential, commercial, office or recreational). A 0.5 mile pedestrian network buffer was drawn around each TAZ within the community containing pedestrian friendly land uses. That area was then compared to the area of a 0.5 mile as-the-crow-flies buffer (502.7 acres) to develop a Pedestrian Connectivity Ratio for the intersection. The higher the Pedestrian Connectivity Ratio, the better the overall walking connectivity from the TAZ.

Pedestrian Environment Quality Evaluation (PEQE)

The quality of all roadway segments, intersections, and mid-block crossings within the Midway-Pacific Highway and Old Town communities were evaluated under Preferred Plan conditions using the Pedestrian Environmental Quality Evaluation (PEQE) tool. Table 2.7 outlines the evaluation system used to develop the PEQE scoring metric.

Table 2.7 Pedestrian Environment Quality Ranking System

Facility Type	Measure	Description/Feature	Scoring
Segment *(between two intersections)*	Horizontal Buffer	Between the edge of auto travel way and the edge of clear pedestrian zone	0 point: < 6 feet 1 point: 6 – 14 feet 2 points: > 14 feet
	Lighting	--	0 point: below standard/requirement 1 point: meet standard/requirement 2 points: exceed standard/requirement
	Clear Pedestrian Zone	5' minimum	0 point: has obstructions 2 points: no obstructions
	Posted Speed Limit	--	0 point: > 40 mph 1 point: 30 – 40 mph 2 points: < 30 mph
		Maximum Points	8 points
Intersection	Physical Feature	• Enhanced/High Visibility Crosswalk • Raised Crosswalk/Speed Table • Advanced Stop Bar • Bulb out/Curb Extension	0 point: < 1 feature per ped crossing 1 point: 1 – 2 features per ped crossing 2 points: > 2 features per ped crossing
	Operational Feature	• Pedestrian Countdown Signal • Pedestrian Lead Interval • No-Turn On Red Sign/Signal • Additional Pedestrian Signage	0 point: < 1 feature per ped crossing 1 point: 1 – 2 features per ped crossing 2 points: > 2 features per ped crossing
Intersection (Continued)	ADA Curb Ramp	--	0 point: below standard/requirement 2 points: meet standard/requirement
	Traffic Control	--	0 point: No control 1 point: Stop sign controlled 2 points: Signal/Roundabout/Traffic Circle
		Maximum Points	8 points
Mid-block Crossing	Visibility	--	0 point: w/o high visibility crosswalk 2 points: with high visibility crosswalk
	Crossing Distance	--	0 point: no treatment 2 points: with bulb out or pedestrian refuge
	ADA Curb Ramp	--	0 point: below standard/requirement 2 points: meet standard/requirement
	Traffic Control	--	0 point: No control 1 point: Flashing Beacon 2 points: Signal/Pedestrian Hybrid Beacon
		Maximum Points	8 points
Final PEQE Scoring:			
Low: < 4 points Medium: 4-6 points High: > 7 points			

Combined Pedestrian Network Connectivity and Quality Assessment

This evaluation involves assessing the connectivity and quality of the walking environment within each community. Pedestrian network connectivity and quality is assessed using a combination of the pedestrian travelshed and quality assessment previously described. The following steps outline the evaluation process used:

a. *Total Walking Distance* – a 0.5 mile pedestrian network buffer is drawn around each study intersection, regardless of PEQE score.

b. *Quality Walking Distance* – a 0.5 mile pedestrian network buffer is drawn around each study intersection, using only pedestrian facilities with a PEQE ranking of Medium or High (including roadway links and intersections, and not including mid-block crossings). PEQE scores on each side of the roadway segment are added together and assigned a quality rating using the following scale (Low: 0-7, Medium: 8-12, High: 13+), to get a single quality measure for the roadway segment. Segments with a "High" rating are considered quality segments.

c. *Quality Walk Ratio* – The ratio of high quality connectivity to overall connectivity along all pedestrian facilities is determined using the following equation:

$$\text{Quality Walk Ratio} = \frac{\textit{Quality Walking Distance}}{\textit{Total Walking Distance (Existing Conditions)}}$$

2.3.2 Bicycle Assessment

Three analyses were utilized to assess overall bicycle mobility: 1) network connectivity; 2) facility quality; and 3) combined network connectivity and quality.

Bicycle Connectivity Ratio – Travelshed Analysis

A bicycle travelshed analysis was used to assess the level of connectivity provided from each study intersection. A 1.0 mile bicycle network buffer (using all bikeable roadways plus multi-use paths) is drawn around each intersection. That area is then compared to the area of a 1.0 mile as-the-crow-flies buffer (2,010.6 acres) to develop a Bicycle Connectivity Ratio for the intersection. The higher the Connectivity Ratio, the better the overall connectivity from the intersection.

Bicycle Facility Quality

The bicycle environment is assessed using the Bicycle Level of Traffic Stress (LTS) methodology, as developed by Mekuria, et al. (2012) of the Mineta Transportation Institute and reported in *Low-Stress Bicycle and Network Connectivity*. LTS classifies the street network into categories according to the level of stress it causes cyclists, taking into consideration a cyclist's physical separation from vehicular traffic, vehicular traffic speeds along the roadway segment, number of travel lanes, and factors related to intersection approaches with right-turn lanes and unsignalized crossings. LTS scores range from 1 (lowest stress) to 4 (highest stress).

Table 2.8 displays the four LTS categories with descriptions of traffic stress experienced by the cyclist and the cycling conditions associated with each category.

Combined Bicycle Network Connectivity and Quality Assessment

This assessment quantifies the connectivity of low stress bicycle facilities (LTS score 1 or 2) between TAZs within the study communities. This measure results in each TAZ being assigned a percentage reflecting the number of total TAZ reachable via low stress bicycle facilities within the study area.

Table 2.8 Level of Traffic Stress Classifications and Descriptions

LTS Category	LTS Description	Cycling Conditions Fitting LTS Category
LTS 1	Presenting little traffic stress and demanding little attention from cyclists; suitable for almost all cyclists, including children trained to safely cross intersections	• Facility that is physically separated from traffic or an exclusive cycling zone next to a slow traffic stream with no more than one lane per direction • A shared roadway where cyclists only interact with the occasional motor vehicle with a low speed differential • Ample space for cyclist when alongside a parking lane • Intersections are easy to approach and cross
LTS 2	Presenting little traffic stress but demanding more attention than might be expected from children	• Facility that is physically separated from traffic or an exclusive cycling zone next to a well-connected traffic stream with adequate clearance from parking lanes • A shared roadway where cyclists only interact with the occasional motor vehicle (as opposed to a stream of traffic) with a low speed differential • Unambiguous priority to the cyclist where cars must cross bike lanes (e.g. at dedicated right-turn lanes); design speed for right-turn lanes comparable to bicycling speeds • Crossings not difficult for most adults
LTS 3	Presenting enough traffic stress to deter riders not comfortable with sharing the roadway with traffic	• An exclusive cycling zone (lane) next to moderate-speed vehicular traffic • A shared roadway that is not multilane and has moderately low automobile travel speeds • Crossings may be longer or across higher-speed roadways than allowed by LTS 2, but area still considered acceptably safe to most adult pedestrians
LTS 4	Presenting enough traffic stress to deter all but the Strong & Fearless cycling demographic (estimated at <1% of the population)	• An exclusive cycling zone (lane) next to high-speed and multi-lane vehicular traffic • A shared roadway with multiple lanes per direction with high traffic speeds • Cyclist must maneuver through dedicated right-turn lanes containing no dedicated bicycling space and designed for turning speeds faster than bicycling speeds

Source: Mekuria, et al. (2012)

2.3.3 Transit Assessment

Two performance measures were used to analyze transit conditions, including station quality and arterial speed.

Station Quality – Presence of Amenities

Each transit station/stop was reviewed for the presence of the following amenities:

- Shelters
- Benches
- Trash Receptacles
- Station Signs
- Maps/Wayfinding
- Lighting
- ADA Compliancy

Table 2.9 displays the standard amenities that should be provided at transit stops/stations based on daily passenger boardings (across all routes).

Table 2.9 Transit Amenity Standards by Ridership Levels

Amenity	Daily Passenger Boardings by Stop/Station				
	< 50	50 – 100	101 – 200	201 – 500	> 500
Sign and Pole	X	X	X	X	
Built-in Sign					X
Expanded Sidewalk			X	X	X
Bench		X	X	X	X
Shelter			X	X	X
Route Designations	X	X	X	X	X
Time Table				X	X
Route Map			X	X	X
System Map					X
Trash Receptacle				X	X
Lighting			X	X	X
ADA Compliant	X	X	X	X	X

Source: MTS Design for Transit (1993)

Arterial Speed

On-time bus performance can be directly impacted by vehicular traffic congestion along roadways servicing bus routes. An HCM roadway arterial speed analysis was used to identify locations in which on-time performance is currently or may be impacted under future conditions by vehicular traffic congestion.

Arterial Level of Service (LOS) is based on the average peak hour travel speeds along a roadway segment. The average travel speed is computed from the running time on the arterial segment(s) and the intersection approach delay. Average speed is strongly influenced by the number of signals per mile and the average intersection delay. On a given facility, factors such as

inappropriate signal timing, poor progression, and increasing traffic flow can substantially degrade the arterial LOS.

Table 2.10 displays the LOS thresholds used for the arterial analysis. Arterial speed analyses should be performed utilizing the methodologies in the version of the Highway Capacity Manual (HCM) that is currently accepted by the City of San Diego

Table 2.10 Arterial Analysis Level of Service Thresholds

Arterial Class	I	II	III
Range of Free Flow Speed (mph)	45 to 35	35 to 30	30 to 25
Typical Free Flow Speed (mph)	40 mph	33 mph	27 mph
Level of Service Analysis	**Average Travel Speed**		
A	35	30	25
B	28	24	19
C	22	18	13
D	17	14	9
E	13	10	7
F	< 13	< 10	< 7

Source: Highway Capacity Manual (TRB 1997)

3.0 Midway-Pacific Highway Preferred Plan

This section documents the mobility related issues and needs of the Midway-Pacific Highway community and the process used to identify those issues. This section also outlines the mobility improvements recommended under buildout of Preferred Plan conditions and the process used to develop these improvements.

3.1 Development of the Preferred Plan

3.1.1 Identification of Issues and Needs

Existing mobility related issues and needs within the Midway-Pacific Highway community were identified in the *Community of Midway/Pacific Highway Corridor and Old Town Mobility Existing Conditions Report; September 2012 (Existing Conditions Report)*. The issues and needs identified in the Existing Conditions Report were used, in conjunction with the other planning efforts and the overall community vision, to develop the recommended mobility improvements incorporated into the Preferred Plan.

3.1.2 Development of Preferred Plan Improvements

Preferred Plan improvements were developed by first cross checking the mobility issues and needs, identified in the Existing Conditions Report, against the mobility issues and needs identified in several other on-going or recent planning efforts, including:

- Midway/Pacific Highway Urban Greening Plan (December 2016)
- I-8 Corridor Study (August 2016)
- San Diego Forward, The Regional Plan (October 2015)
- City of San Diego Bicycle Master Plan (December 2013)
- City of San Diego Pedestrian Master Plan – Phase 4 (December 2013)
- Rosecrans Corridor Mobility Study (February 2010)
- Destination Lindbergh Technical Report: San Diego International Airport (November 2008)
- San Diego International Airport Master Plan (November 2008)

Where possible, the Preferred Plan carried forward or maintained the relevant improvements from on-going or previous planning efforts which have been adopted or vetted by the community. New improvement strategies were then developed for the issues and needs, identified in the Existing Conditions Report, which were not addressed in other planning efforts. Additional mobility improvements were also developed to accommodate the anticipated future growth within the community. The following sections outline the mobility issues and needs identified in the Existing Conditions Report and the associated improvements recommended under the Preferred Plan to alleviate them.

3.2 Street and Freeway System

3.2.1 Identified Street and Freeway Needs

There is constrained regional access to/from the Midway-Pacific Highway Community and to adjacent communities. A significant amount of regional traffic traverses the local roadway system within the community since there are limited regional access points, missing freeway-to-freeway connectors between I-8 and I-5, as well as major employment centers and trip generators within and adjacent to the community. Figure 3-1 displays regional access issues in the Midway-Pacific Highway community.

Constrained regional access, large trip generators, and limited circulation created by large blocks within and adjacent to the community, result in highly concentrated traffic volumes along study roadways providing freeway access. This concentration of traffic volumes creates congestion, low traffic speeds and delays on both the Rosecrans Street and Camino Del Rio West. Figure 3-2 displays the location of identified issues/needs within the Midway-Pacific Highway community.

3.2.2 Street and Freeway Improvements

A list of Preferred Plan proposed roadway improvements, new roadways, intersection improvements, new intersections, and freeway improvements are presented throughout this section. These improvements are predominantly based on the future year traffic volumes that are projected under buildout of the Preferred Plan, as displayed in Figure 5-1. Full analysis of all Preferred Plan roadways is provided in Chapter 6.

Roadways

- *Lytton Street/Barnett Avenue, between Rosecrans Street and Midway Drive* – Construct a raised median along these portions of Lytton Street / Barnett Avenue. This will improve Lytton Street to a four-lane major configuration.
- *Sports Arena Boulevard, between Interstate 8 and Rosecrans Street* – Improve this section of Sports Arena Boulevard to a six-lane major arterial. *(Note: Conceptual drawings of the improvements along Sports Arena Boulevard are provided in Figures 3-8 and 3-10).*
- *Sports Arena Boulevard, between Rosecrans Street and Pacific Highway* – Improve this section of Sports Arena Boulevard from a sub-collector to a two-lane collector with a continuous left-turn lane.
- *Kurtz Street, between Rosecrans Street and Pacific Highway* – Restripe this section of Kurtz Street from a two-lane collector to a two-lane collector with center left turn lane.
- *Rosecrans Street, between Lytton Street and Sports Arena Boulevard* – Improve this section of Rosecrans Street from a six-lane major to a six-lane prime arterial, which would require limiting driveway access. *(Note: A conceptual drawing of the improvements along Rosecrans Street are provided as Figure 3-6).*

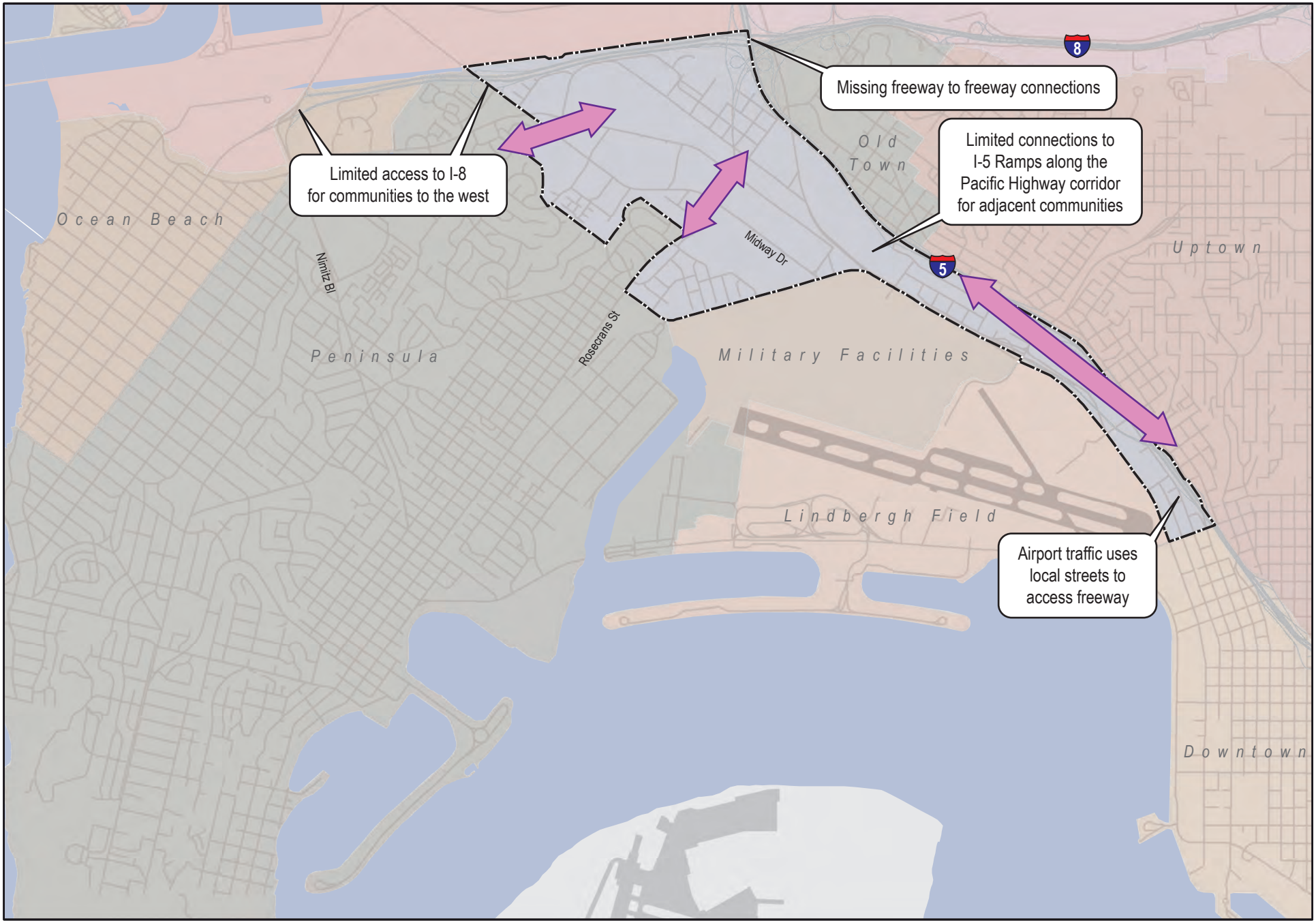

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Figure 3-1
Regional Access -
Midway-Pacific Highway Community

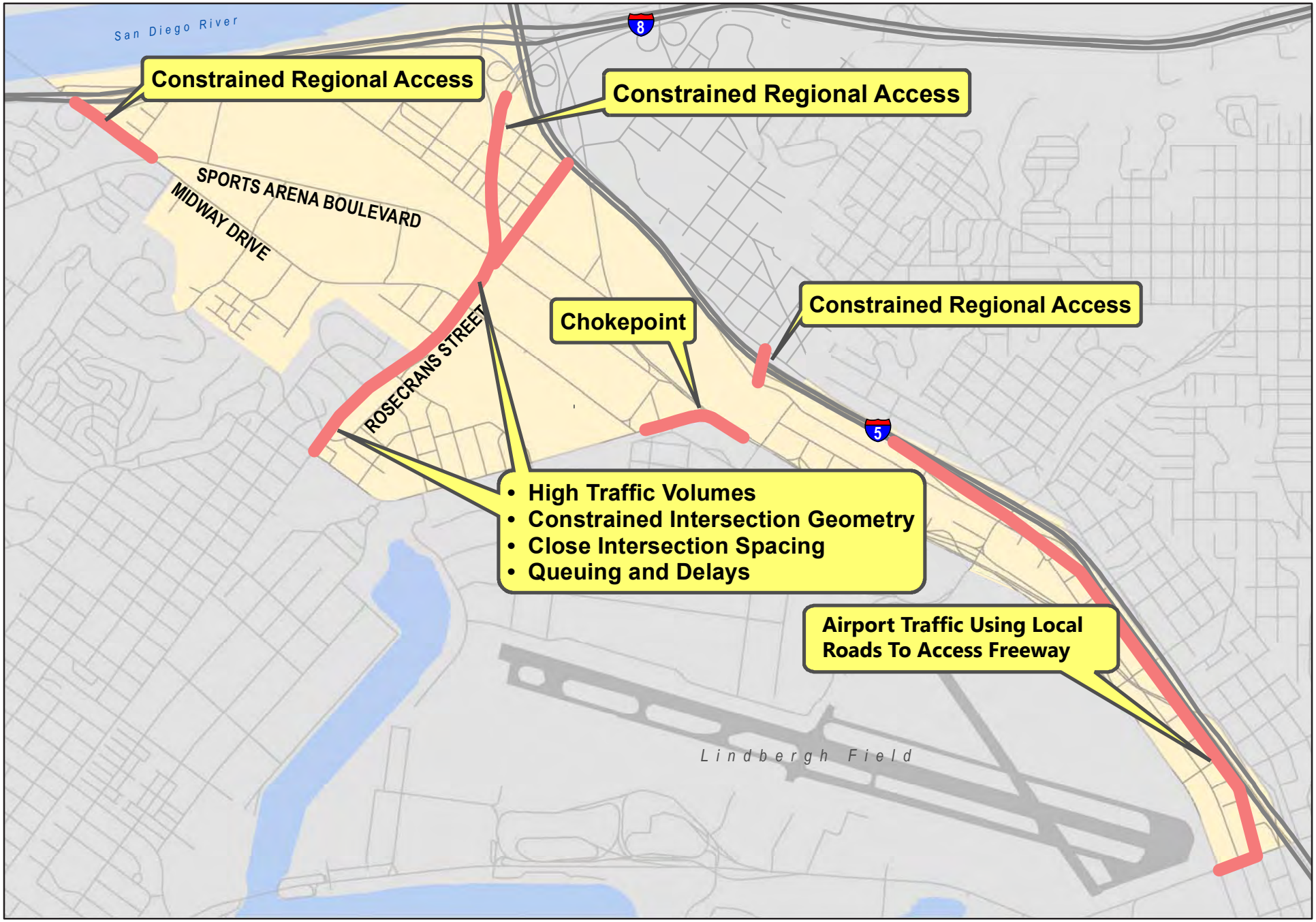


Figure 3-2
Identified Vehicular Issues and Needs -
Midway-Pacific Highway Community

Roadways (continued)

- *Rosecrans Street, between Sports Arena Boulevard and Taylor Street* – Construct a landscaped median along this section of Rosecrans Street. This will improve this section of Rosecrans Street to a four-lane major configuration. *(Note: A conceptual drawing of the improvements along this segment of Rosecrans Street is provided as Figure 3-7)*.
- *Hancock Street, between Kurtz Street and Rosecrans Street* – Widen this section of Hancock Street from a two-lane collector (one-way) to a three-lane major (one-way).
- *Hancock Street, between Old Town Avenue and Witherby Street* – Widen this section of Hancock Street from a two-lane collector to a four-lane collector.
- *Barnett Avenue, between Midway Drive and Pacific Highway* – Widen this section of Barnett Avenue from a four-lane major to a six-lane prime arterial.
- *W. Mission Bay Drive, between I-8 WB Ramps and I-8 EB Ramps* – Widen this section of W. Mission Bay Drive from a five-lane prime arterial to a six-lane prime arterial.
- *Camino Del Rio, Moore Street/Greenwood Street* – Extend the existing median to close the southbound left turn pocket along Camino Del Rio W at the intersection of Moore Street / Greenwood Street to reduce vehicular conflicts.

New Roadways

To provide better east/west connectivity throughout the Midway-Pacific Highway community and provide additional access to potential new developments within the existing "super blocks," the Preferred Plan proposes the following new roadways segments:

1. *Kemper Street Extension* – Kemper Street will be extended between Sports Arena Boulevard and Kurtz Street, connecting as the southwest leg of the Kurtz Street / Hancock Street intersection. The Kemper Street extension will be constructed as a two-lane collector with a continuous left-turn lane.
2. *Frontier Drive* – Frontier Drive will be a new roadway connecting between Sports Arena Boulevard and Kurtz Street. Frontier Drive will be located between the new Kemper Street extension and the Greenwood Street extension. Frontier Drive will be constructed as a two-lane collector with a continuous left-turn lane.
3. *Greenwood Street Extension* – Greenwood Street will be extended between Kurtz Street and Sports Arena Boulevard. Greenwood Street between Sports Arena Boulevard and Midway Drive will follow the alignment of the existing East Drive private street. Greenwood Street will be constructed as a two-lane collector.
4. *Charles Lindbergh Parkway* – Charles Lindbergh Parkway will be a new street connecting between Kurtz Street and Midway Drive. Charles Lindbergh Parkway will be located halfway between Rosecrans Street and the new Dutch Flats Parkway. Charles Lindbergh Parkway will be constructed as a two-lane collector with a continuous left-turn lane.
5. *Dutch Flats Parkway* – Dutch Flats Parkway will be a new roadway connecting between Sports Arena Boulevard and Barnett Avenue. Dutch Flats Parkway will be located between

the new Charles Lindbergh Parkway and Enterprise Street. Dutch Flats Parkway will be constructed as a two-lane collector with a continuous left-turn lane.

It should be noted that implementation of these new roadway segments would necessitate additional right-of-way and most likely require the redevelopment of adjacent properties. All roadways will be designed in accordance with the *City of San Diego Street Design Manual* and their corresponding classification. A summary of the roadway improvements in the Midway-Pacific Highway community is presented in Table 3.1.

Table 3.1 Summary of Roadway Improvements

Roadway	Segment	Existing Configuration	Recommended Classification
Segment Modifications			
Lytton St / Barnett Ave	Rosecrans St and Midway Dr	4-Lane Collector W/ CLTL	4-Lane Major
Sports Arena Blvd	Interstate 8 and Rosecrans St	5-Lane Major	6-Lane Major
Sports Arena Blvd	Rosecrans St and Pacific Hwy	Sub-Collector	2-Lane Collector W/ CLTL
Kurtz St	Rosecrans St and Pacific Hwy	2-Lane Collector	2-Lane Collector W/ CLTL
Rosecrans St	Lytton St and Sports Arena Blvd	6-Lane Major	6-Lane Prime
Rosecrans St	Sports Arena Blvd and Taylor St	4-Lane Collector W/ CLTL	4-Lane Major
Hancock St	Kurtz St and Rosecrans St	2-Lane Collector (One-Way)	3-Lane Major (One-Way)
Hancock St	Old Town Ave and Witherby St	2-Lane Collector	4-Lane Collector
Barnett Ave	Midway Dr and Pacific Hwy	4-Lane Major	6-Lane Prime
W. Mission Bay Dr	I-8 WB Ramps and I-8 EB Ramps	5-Lane Prime	6-Lane Prime
New Roadways			
Kemper St	Sports Arena Blvd and Kurtz St	Does Not Exist	2-Lane Collector W/CLTL
Frontier Dr	Sports Arena Blvd and Kurtz St	Does Not Exist	2-Lane Collector W/ CLTL
Greenwood St	Kurtz St and Sports Arena Blvd	Does Not Exist	2-Lane Collector
Charles Lindbergh Pkwy	Kurtz St and Midway Dr	Does Not Exist	2-Lane Collector W/ CLTL
Dutch Flats Pkwy	Sports Arena Blvd and Barnett Ave	Does Not Exist	2-Lane Collector W/ CLTL

Source: Chen Ryan Associates (June 2016)

Intersections

Rosecrans Street / Sports Arena Boulevard / Camino Del Rio West:

- Remove the southbound free right-turn movement from Camino Del Rio West onto Sports Arena Boulevard and replace it with an exclusive right-turn lane.
- Allow southbound movements to continue on Sports Arena Boulevard through the intersection. It should be noted that vehicles would still not be able to access the southern leg of Sports Arena Boulevard from westbound Rosecrans Street or southwest bound Camino del Rio West.

Additional improvement concepts were also considered for the Rosecrans Street / Sports Arena Boulevard / Camino Del Rio West intersection, but ultimately not selected. These alternative concepts include the following:

Alternative 1: This alternative would allow full access to the southern leg of Sports Area Boulevard from all approaches of the intersection and remove the eastbound (Rosecrans Street) to northbound (Sports Arena Boulevard) left-turn movements. The eastbound left-turn movement was removed to limit the number of signal phases at the intersection and provide for more efficient signal timing patterns. The removal of the eastbound left-turn movement is consistent with the recommendations provided in the *Rosecrans Corridor Mobility Study (February 2010).*

With the implementation of this concept the Rosecrans Street / Sports Arena Boulevard / Camino Del Rio West intersection was projected to perform at acceptable levels (AM: LOS C / PM: LOS D) with minor queuing impacts. However, the community does not support the removal of the eastbound left-turn movement and therefore this alterative was removed.

Alternative 2: This alternative would allow full access to the southern leg of Sports Area Boulevard from all approaches, and keep the eastbound left-turn movement intact. Due to the additional intersection phases and cycle length required to allow full access to the southern leg of Sports Arena Boulevard, the intersection performed poorly under this alternative (AM: LOS D / PM: LOS E) with excessive queuing issues on both Rosecrans Street and Camino del Rio West. Due to the poor intersection performance and queuing issues this alternative was not selected.

Alternative 3: This alternative would remove traffic from the westbound approach of Rosecrans Street and reroute the traffic up Kurtz Street and then to Camino del Rio West. To accommodate this improvement Kurtz Street would be reconfigured from a one-way southbound roadway to a one-way northbound roadway, between Hancock Street and Rosecrans Street. Conversely, Hancock Street would need to be reconfigured as a one-way southbound roadway along the same section to complete the couplet. While this configuration does allow the Rosecrans Street / Sports Arena Boulevard / Camino Del Rio West intersection to operate at acceptable levels (AM: LOS C / PM: LOS D), it is projected to result in substantial queuing issues along the short segment of Kurtz Street between Camino del Rio West and Rosecrans Street (260 feet). This excessive queuing is projected to negatively impact the operations at the Kurtz Street / Camino del Rio West intersection as well as the Kurtz Street / Rosecrans Street intersection and cause significant congestion at these intersections. Due to these queuing issues this alterative was not selected.

Sports Arena Boulevard / Pacific Highway:

- Move intersection approximately 500 feet to the north.
- Re-align Sports Arena Boulevard to create a right-angle with Pacific Highway.
- Signalize the intersection.

- Provide an exclusive eastbound left-turn lane from Sports Arena Boulevard onto Pacific Highway.
- Provide an exclusive northbound left-turn lane from Pacific Highway onto Sports Arena Boulevard.

The proposed relocation of the Sports Arena Boulevard / Pacific Highway intersection meets the 500 feet minimum spacing requirements for intersections. An additional focus during the design phase needs to ensure the curved radii resulting from the intersection realignment will adhere to design standards.

Sports Arena Boulevard / West Point Loma Boulevard / Midway Drive

- Square up and control the westbound free right-turn movement from Sports Arena Boulevard onto Sports Arena Boulevard with the intersection.
- Remove the northbound free right-turn movement from Midway Drive onto Sports Arena Boulevard. The right-of-way will be used to extend the curb and create a curb bulb-out to reduce the pedestrian crossing distance. Right-turn movements will be permitted from the outside through lane.

Camino Del Rio and Moore Street / Greenwood Street

- Extend the existing median to close the southbound left turn pocket along Camino Del Rio W at the intersection of Moore Street / Greenwood Street to reduce vehicular conflicts. (This improvement is also noted in the "Roadway" subheading above.)

<u>Pacific Highway Corridor – Barnett Avenue /Witherby Street / Washington Street</u>

As part of this mobility study, downgrading the section between Barnett Avenue and Washington Street of Pacific Highway from an expressway to a 6-lane major arterial was discussed. The purpose of this downgrade would be to improve safety for vehicles, pedestrians, and cyclists, create a community gateway along Pacific Highway, and enhance the multimodal connections between the community and Downtown San Diego. Ultimately, the recommendation for the Preferred Plan is to carry forward the expressway classification between Barnett Avenue and Washington Street, and the other sections of Pacific Highway in this community, to remain or be developed as a 5-lane or 6-lane major arterial roadway.

One of the main challenges associated with downgrading the expressway is bringing the Barnett Avenue and Witherby Street intersections to grade in order to meet the standards of a 6-lane major arterial roadway. The at-grade approach was not considered as part of the Mobility Study analysis; however, to fully understand the feasibility of these improvements, from both an engineering and constructability standpoint, an Engineering Feasibility Study is recommended. The Engineering Feasibility Study should analyze and address the following:

- The feasibility of bringing both interchanges to grade

- Multi-modal facility alternatives that do not require at-grade intersections (pedestrian and bicycle bridges, alternative multi-use urban path alignments, etc.)
- Addressing the existing flooding issues at both interchanges

Since it is unknown at this time if these improvements are feasible, they were not included in the technical analysis of the Preferred Plan. It is recommended that the feasibility of these improvements be further assessed and incorporated into a future plan. The Preferred Plan identifies Witherby Street as a 2-lane collector with continuous left-turn lane, however, the additional feasibility analysis may determine a need to widen Witherby Street to a 4-lane collector. A potential concept of what these improvements could look like is displayed in Figure 3-3. Additionally, the feasibility analysis may determine a need for additional improvements at Pacific Highway at West Washington Street that are not identified in this mobility study.

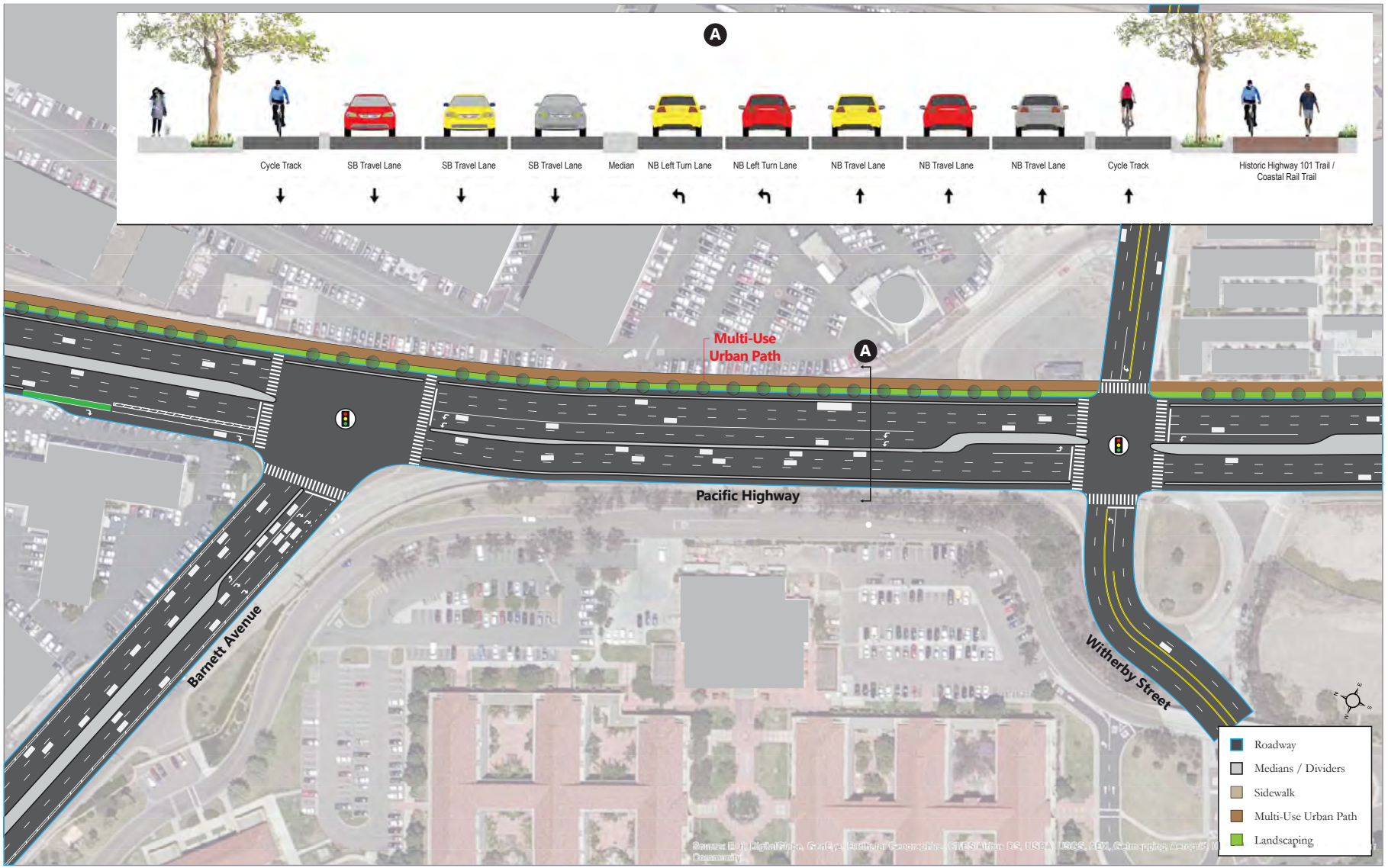
Based on the assumptions displayed in the Figure 3-3, the at-grade intersections would be anticipated to operate as follows:

- Barnett Avenue / Pacific Highway – AM: Delay 35.3 seconds, LOS D | PM: Delay 53.2 seconds, LOS D
- Witherby Street / Pacific Highway – AM: Delay 36.7 seconds, LOS D | PM: Delay 52.0 seconds, LOS D

Intersection Operations

Seven new intersections are recommended for the Midway-Pacific Highway community. Additionally, the roadway network was evaluated to identify intersection locations, both existing and new intersections, that would benefit from the implementation of a roundabout or signalization. A summary of recommended intersection improvements is displayed in Table 3.2. It is not known at this time if the implementation of a roundabout will be feasible at any or all intersections. A roundabout feasibility analysis will need to be performed once the new intersections and roadways are designed. Therefore, to be conservative, the analysis assumed that all new intersections would be signalized, unless otherwise noted. However, it is recommended that a roundabout be implemented in lieu of a signal at all new intersections, where feasible.

Traffic signal warrants were conducted at the intersections where signalization is recommended. Figure 4C-103 (CA) of the California Manual on Uniform Traffic Control Devices (MUTCD) 2012 Edition was utilized and all intersections would meet the warrants. Signal warrants worksheets are included in Appendix C.



This graphic is for conceptual purposes only. Further engineering study would be required at the project level prior to implementation.

Figure 3-3
Barnett Avenue and Witherby Street / Pacific Highway at-Grade Intersection Concepts

Table 3.2 Summary of Intersection Improvements

No.	Intersection	Improvement	Preferred Plan Control
8	Midway Drive / Charles Lindbergh Parkway	New intersection	Roundabout/Signalized
12	Kemper Street / Sports Arena Boulevard	Add north leg	Signalized
13	Sports Arena Boulevard / Frontier Drive	Add north leg	Signalized
14	Sports Arena Boulevard / Greenwood Street	Add north leg	Signalized
16	Sports Arena Boulevard / Charles Lindbergh Parkway	New intersection	Roundabout/Signalized
17	Sports Arena Boulevard / Pacific Highway	Relocate intersection and signalize	Signalized
18	Kurtz Street / Hancock Street / Kemper Street	Add south leg and signalize	Signalized
21	Kurtz Street / Pacific Highway	Signalize	Signalized
61	Kurtz Street / Frontier Drive	New intersection	Roundabout/SSSC
62	Kurtz Street / Greenwood Street	Add south leg and signalize	Signalized
63	Kurtz Street / Charles Lindbergh Parkway	New intersection	Roundabout/Signalized
64	Barnett Avenue / Dutch Flats Parkway	New intersection	Roundabout/Signalized
65	Midway Drive / Dutch Flats Parkway	New intersection	Roundabout/Signalized
66	Sports Arena Boulevard / Dutch Flats Parkway	New intersection	Roundabout/Signalized
N/A	Hancock Street / Greenwood Street	Signalize	Signalized

Source: Chen Ryan Associates (June 2016)

Freeway Improvements

There are no freeway improvements included in the Revenue Constrained alternative of *SANDAG's San Diego Forward, The Regional Plan (Adopted October 2015)* within the vicinity of the Midway-Pacific Highway community to be completed before this plan's horizon year (Year 2035).

I-8 / I-5 Ramp Connection – It should be noted that the missing I-8 East to I-5 North, and I-5 South to I-8 West ramps are included in the Unconstrained Revenue scenario of the Regional Transportation Plan (RTP); therefore, there is currently no funding mechanism for these ramps and they are not included in the Preferred Plan assessment. However, these ramps are needed to enhance the regional access for the community. A policy statement should be included in the Mobility Element recommending that the City of San Diego work with SANDAG and Caltrans to implement these ramps.

I-5 to Pacific Highway Ramps – Ramps connecting Interstate 5 to Pacific Highway are included in the RTP; however, since there is currently no funding mechanism for these ramps they are not included in the Preferred Plan assessment. These ramps are needed to enhance the regional access for the community. A policy should be included in the Mobility Element recommending that the City of San Diego work with SANDAG and Caltrans to implement these ramps.

3.3 Pedestrian Environment

3.3.1 Identified Pedestrian Needs

The Existing Conditions Report identified the following pedestrian issues/needs in the Midway-Pacific Highway community, as displayed in Figure 3-4:

Midway Drive / Sports Arena Boulevard / West Point Loma Boulevard Intersection – This is a major vehicular junction point within the community in which two major roadways (Sports Arena Boulevard and Midway Drive) intersect with two major regional access points (West Point Loma Boulevard connecting to both the Peninsula and Ocean Beach communities to the west, and West Mission Bay Drive and I-8 ramps). To accommodate the high intersecting traffic volumes there is currently a yield control northbound right-turn movement, a stop controlled southbound right-turn movement and a free westbound right-turn movement. The high traffic volumes and uncontrolled right-turn movements create an intimidating environment for pedestrians to cross.

East/West Connectivity – Due to the large block sizes within the community, there are currently few pedestrian corridors directly connecting the east and west sides of the community. Rosecrans Street is the only east/west corridor that currently spans the entire community from east to west.

Walkability Issues along Rosecrans Street and Camino Del Rio West – As mentioned above, Rosecrans Street is the only east/west pedestrian corridor that spans the entire length of the community and is the only corridor that connects to the Old Town Transit Center, located to the east. The retail and institutional uses along both Rosecrans Street and Camino Del Rio West are also major pedestrian attractions within the corridors. Currently both corridors have 5 - 7 foot sidewalks with no parkways or on-street parking to buffer pedestrians from vehicular traffic. The narrow sidewalks with a lack of buffer create an unfriendly pedestrian environment.

Rosecrans Street / I-5 Underpass – This is the only connection point for pedestrians between the Old Town Transit Center and the Midway-Pacific Highway community. The 200-foot wide underpass is poorly lit and has narrow sidewalks, with no parkways or on-street parking to buffer pedestrians from vehicular traffic, creating an unfriendly pedestrian environment.

Missing Sidewalk Facilities – There are currently no sidewalks provided along Sports Arena Boulevard from Rosecrans Street to Pacific Highway, with the exception of a small portion on its south side near the intersection of Rosecrans Street. This area currently predominantly serves industrial uses and attracts little pedestrian traffic; however, it is one of the few major north/south corridors that span the entire community.

Figure 3-4
Identified Pedestrian Issues and Needs -
Midway-Pacific Highway Community

Barnett Avenue / Pacific Highway – There is currently no pedestrian access to Pacific Highway from Barnett Avenue for pedestrians on the north side of Barnett Avenue. Pedestrians on the north side of the roadway heading east on Barnett Avenue hit a dead end and are forced to head north along Pacific Highway.

At-Grade Rail Crossings – Pedestrians accessing both the Washington Street and Middletown Trolley stations from Pacific Highway currently have to cross the rail right-of-way to access both stations. During gate down times, pedestrians may be delayed from accessing the station by on- coming trolleys or trains.

3.3.2 Pedestrian Improvements

Multi-Use Urban Paths

The Preferred Plan includes the implementation of several multi-use urban paths along key roadways, cumulatively creating an Urban Path system throughout the Midway-Pacific Highway community, which is consistent with recommendations in the Midway/Pacific Highway Urban Greening Plan. The individual multi-use urban paths are described below:

La Playa Trail – The La Playa Trail multi-use urban path will run along the south side of Rosecrans Street between Lytton Street and Pacific Highway. The path will be approximately 12 feet wide and replace the sidewalks on the southern side of the roadway. The ultimate right-of-way required along Rosecrans Street to implement this facility would be as follows:

- 127 feet between Lytton Street and Midway Drive.
- 116 feet between Midway Drive and Sports Arena Boulevard.
- 100 feet between Sports Arena Boulevard and Taylor Street.

It is recommended that pedestrian scale lighting be installed along the entire length of the path. The implementation of these improvements may necessitate acquiring additional right-of-way along the corridor.

Bay-to-Bay – The Bay-to-Bay multi-use urban path will be constructed along Sports Arena Boulevard, Lytton Street / Barnett Avenue, Kemper Street, and a connecting segment along the proposed Dutch Flats Parkway to mimic the previous Community Plan's Bay-to-Bay proposed canal alignment. The path will run along the southeast side of the Kemper Street extension between Kurtz Street and Sports Arena Boulevard, along the northeast side of Sports Arena Boulevard between Midway Drive and Dutch Flats Parkway, on the southern side of Dutch Flats Parkway between Barnett Avenue and Sports Arena Boulevard, and on the south side of Lytton Street / Barnett Avenue between Rosecrans Street and Pacific Highway. The segment of path on Sports Arena Boulevard between West Point Loma Boulevard and the I-8 should be further evaluated regarding its placement, whether on the southwest, or northeast side of the roadway. The path will be 12 feet wide and replace the sidewalks on the appropriate side of the roadway in each segment, as described.

The ultimate right-of-way required along each roadway segment to implement this facility is as follows:

- Kemper Street, between Kurtz Street and Sports Arena Boulevard: 90 feet
- Sports Arena Boulevard, between I-8 and Rosecrans Street: 117 feet
- Sports Arena Boulevard, between Rosecrans Street and Dutch Flats Parkway: 78 feet
- Lytton Street / Barnett Avenue, between Rosecrans Street and Pacific Highway: 90 feet
- Dutch Flats Parkway, between Barnett Avenue and Sports Arena Boulevard: 78 feet. An additional 30' of right-of-way will be required to provide for a linear park adjacent to Dutch Flats Parkway. This 30' may need to be obtained as public right-of-way or as an easement on privately held land.

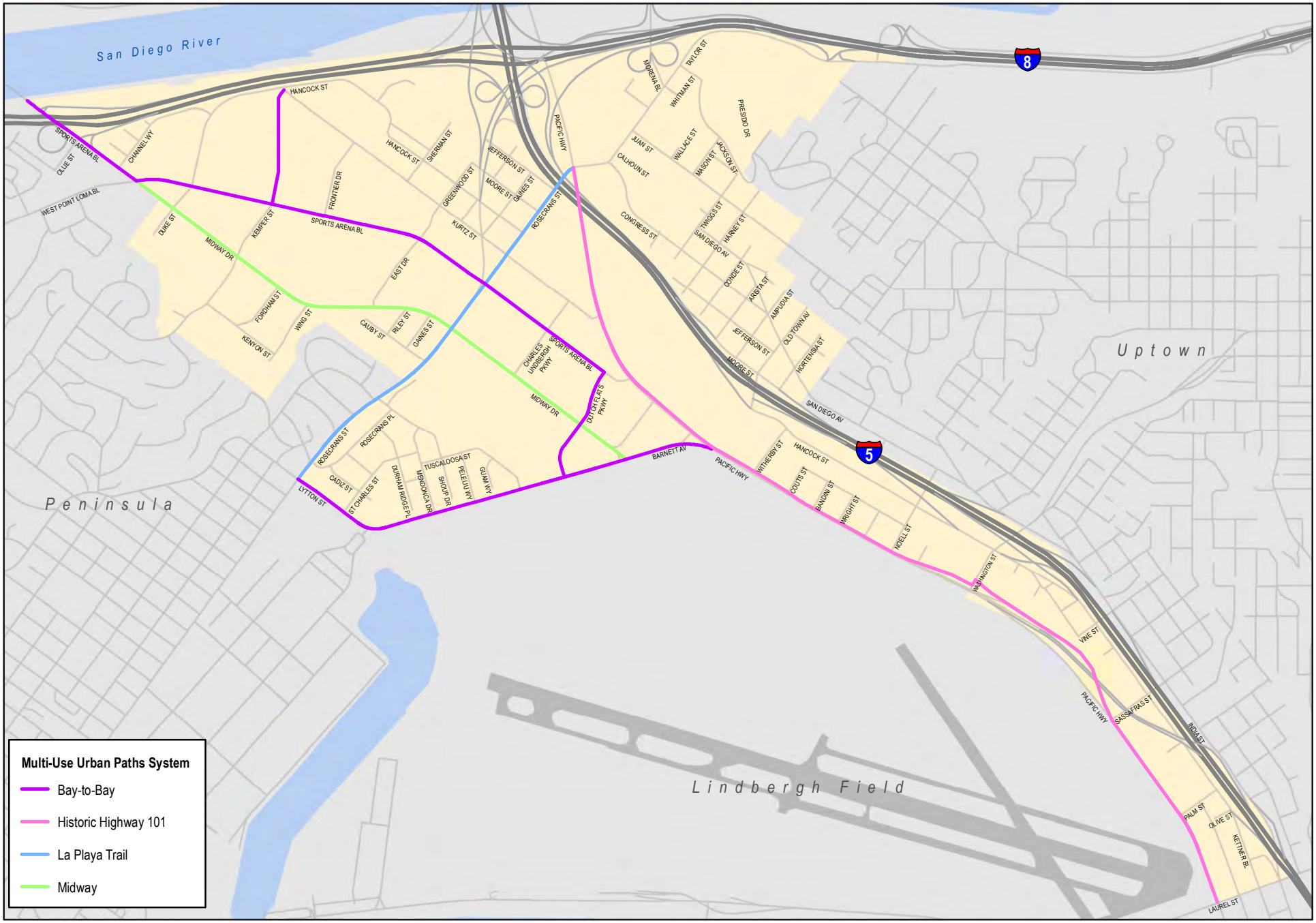
It is recommended that pedestrian scale lighting be installed along the entire length of the path. The implementation of these improvements may necessitate acquiring additional right-of-way along the corridor. *(Note: Figure 3-8 and Figure 3-10 provide conceptual drawings of the proposed Bay-to-Bay Path configuration along Sports Arena Boulevard)*.

Midway – The Midway multi-use urban path will run along the southwest side of Midway Drive between Sports Arena Boulevard and Barnett Avenue. The path will be approximately 12 feet and will replace the existing southwest sidewalk. The ultimate right-of-way required along Midway Drive to implement this facility would be 81 feet. It is recommended that pedestrian scale lighting be installed along the entire length of the path. The implementation of these improvements may necessitate acquiring additional right-of-way along the corridor.

Historic Highway 101 – The Historic Highway 101 multi-use urban path will run along the east side of Pacific Highway between Taylor Street and Laurel Street. The multi-use urban path will be 12 feet wide and will replace the existing sidewalk on the east side of the roadway. The ultimate right-of-way required along Pacific Highway to implement this facility would be 131 feet. It is recommended that pedestrian scale lighting be installed along the entire length of the path. The implementation of these improvements may necessitate acquiring additional right-of-way along the corridor.

Hancock Street Extension – Hancock Street will be extended between Midway Drive and Sports Arena Boulevard as a pedestrian and bicycle connection. This segment will not be open to vehicular traffic. *(Note: This pedestrian and bicycle connection, which is located just southeast of the W. Point Loma Boulevard / Sports Arena Boulevard / Midway Drive intersection, is illustrated in Figure 3-8 and Figure 3-10).*

The complete Multi-Use Urban Path system is displayed in Figure 3-5. Figure 3-6 and 3-7 provide concept drawings of the proposed La Playa Trail configuration along Rosecrans Street. Figure 3-8 displays a concept drawing of the Bay-to-Bay Path along Sports Arena Boulevard, north of Rosecrans Street. Figure 3-9 provides a concept drawing of the proposed Midway Path configuration along Midway Drive.



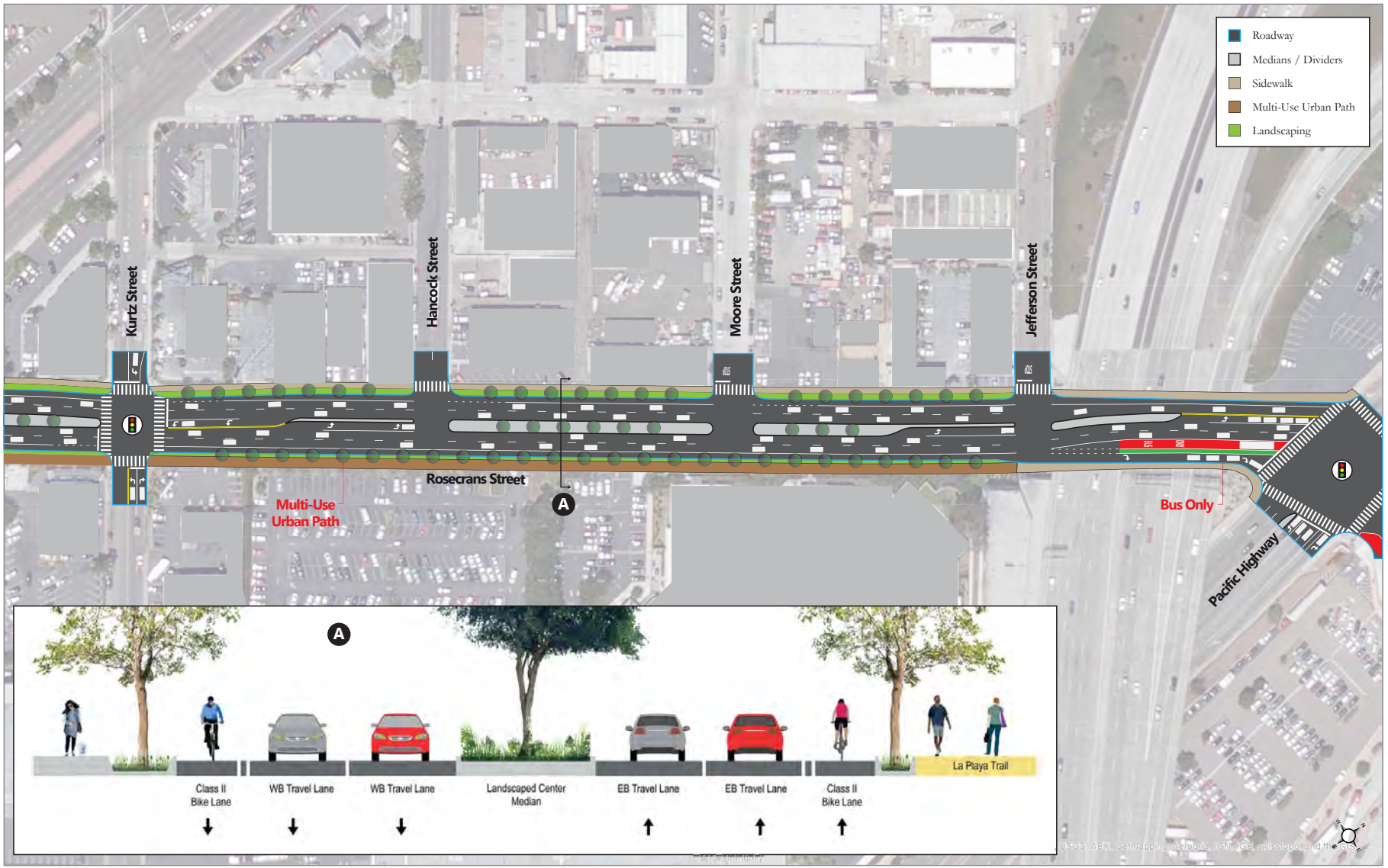
Midway-Pacific Highway and
Old Town Community Plan Update

CHEN RYAN

Figure 3-5
Multi-Use Urban Paths System

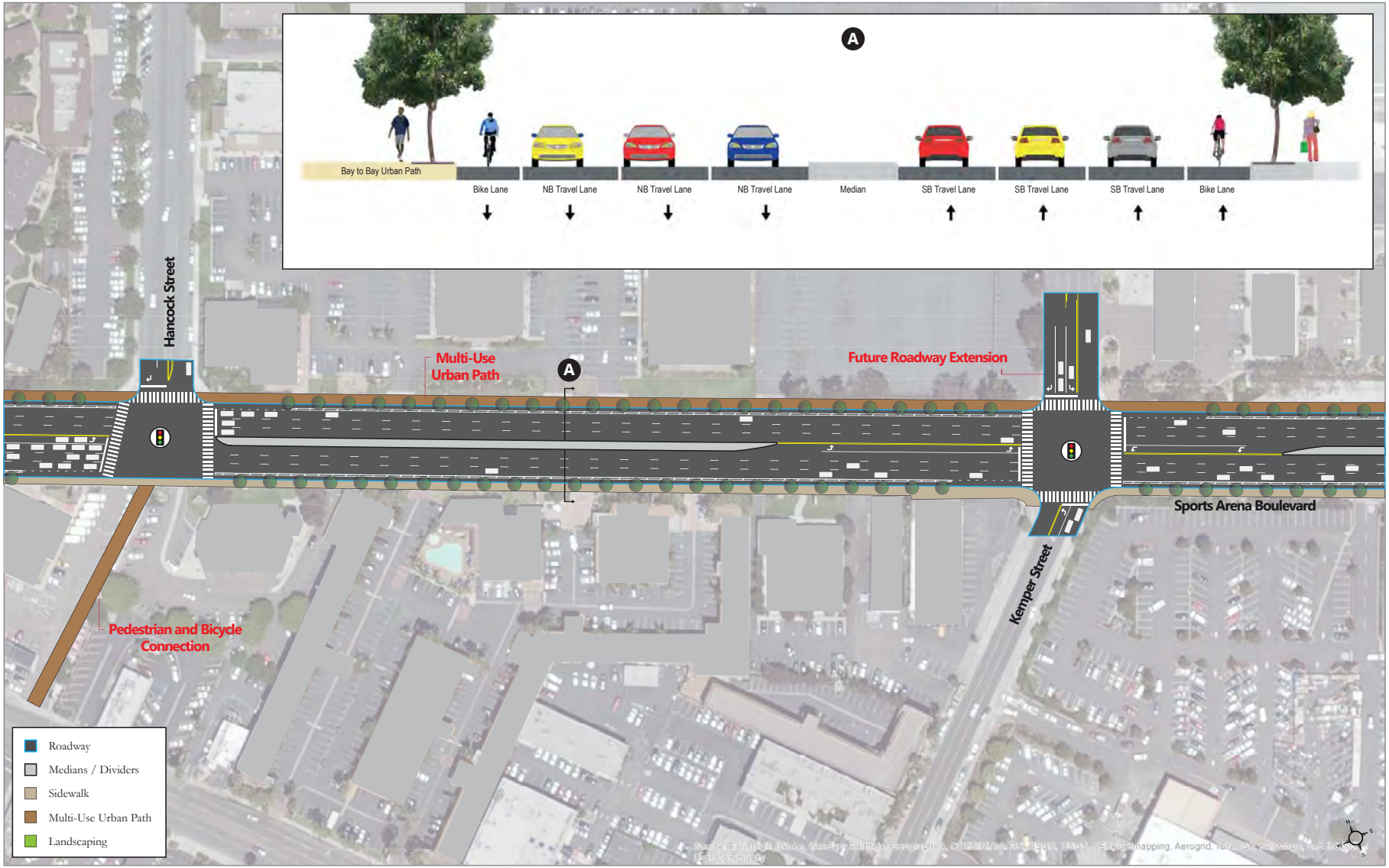
This graphic is for conceptual purposes only. Further engineering study would be required at the project level prior to implementation.

Figure 3-6
Rosecrans Street with La Playa Trail - West of Midway Drive



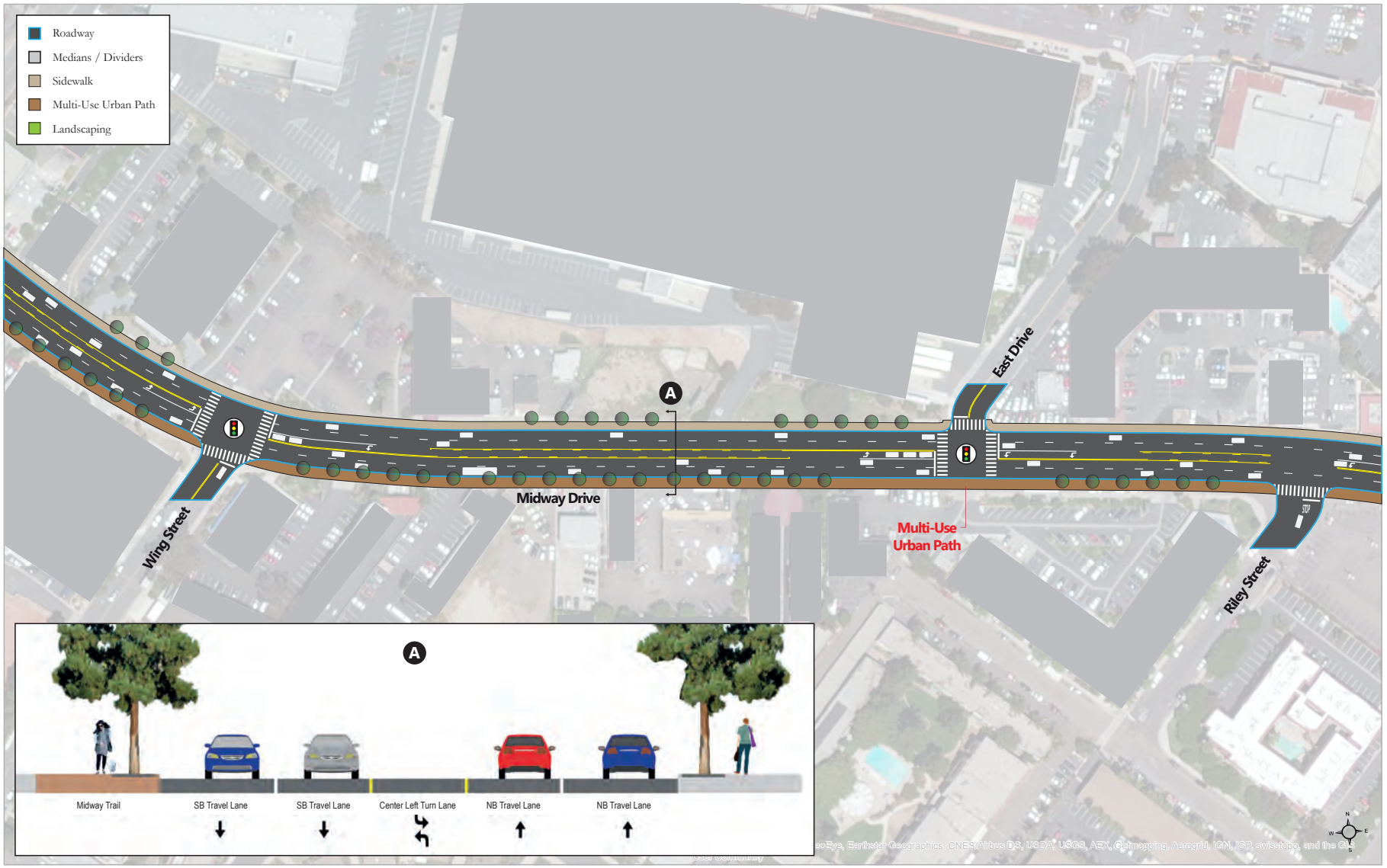
This graphic is for conceptual purposes only. Further engineering study would be required at the project level prior to implementation.

Figure 3-7
Rosecrans Street with La Playa Trail - East of Sports Arena Boulevard



This graphic is for conceptual purposes only. Further engineering study would be required at the project level prior to implementation.

Figure 3-8
Sports Arena Boulevard with Bay to Bay Trail - North of Rosecrans Street



This graphic is for conceptual purposes only. Further engineering study would be required at the project level prior to implementation.

Figure 3-9
Midway Drive with Midway Trail -
North of Rosecrans Street

Street Trees

The Preferred Plan includes the implementation of street trees along the following roadway corridors, which is consistent with the Midway/Pacific Highway Urban Greening Plan:

- Barnett Avenue, between Rosecrans Street and Pacific Highway
- Midway Drive, between Sports Arena Boulevard and Barnett Avenue
- Sports Arena Boulevard, between West Mission Bay Drive and Rosecrans Street
- Pacific Highway, between Taylor Street and Laurel Street
- Rosecrans Street, between Midway Drive and Taylor Street

Intersections

All crossing points at intersections should be upgraded to include the following:

- ADA compliant pedestrian ramps
- High visibility continental cross-walks
- Advanced stop bar placement
- Pedestrian count down signals

New Sidewalks

Sidewalk facilities will be implemented along the following roadways:

- Midway Drive, between Bogley Drive and Barnett Avenue
- Jessop Lane, between Enterprise Street and Barnett Avenue
- St. Charles Street, between Lytton Street and Cadiz Street
- Kemper Street, Kenyon Street to Midway Drive (south side)
- Sports Arena Boulevard, between Rosecrans Street and Pacific Highway (southwest side)
- Kurtz Street, between Rosecrans Street and Pacific Highway
- Pacific Highway, between Couts Street and Washington Street (southwest side)
- Witherby Street, between Hancock Street and Pacific Highway
- Hancock Street, between Witherby Street to 465 ft south of Witherby Street (south side)

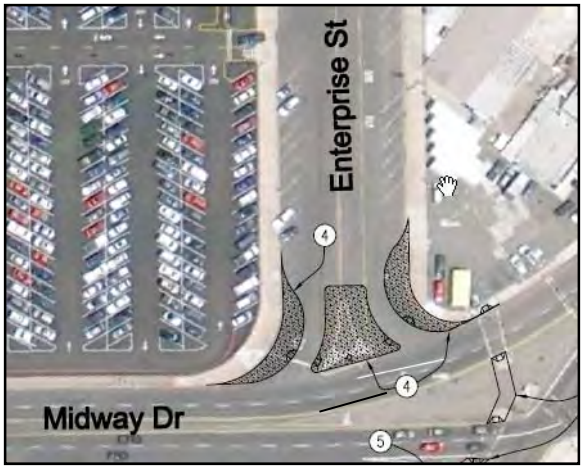
Specific Pedestrian-Related Intersection Improvements:

Midway Drive / Enterprise Street (Shown to the Right):

- Install bulb-outs and a pedestrian refuge island on the northeast leg of the intersection.

West Palm Street / Kettner Boulevard (intersection adjacent to the I-5 pedestrian bridge)

- Install bulb-outs on north leg of the intersection.
- Install continental cross-walk on the north leg of the intersection.
- Install a Pedestrian Hybrid Beacon on the north leg of the intersection (if warrants are met).



Conceptual Drawing from Phase IV of the City of San Diego Pedestrian Master Plan

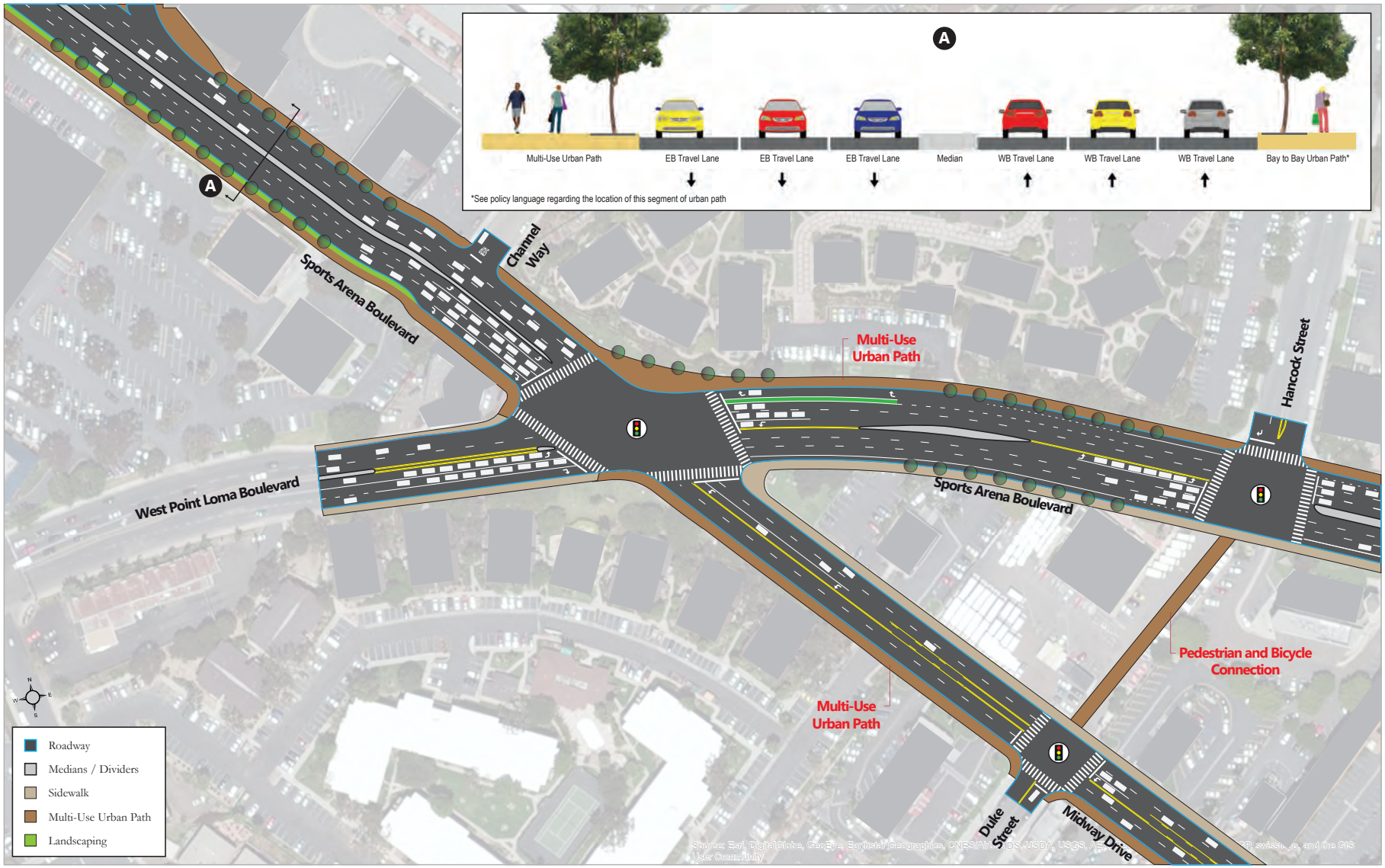
Sports Area Boulevard / West Point Loma Drive / Midway Drive

- Remove all free-right turn movements, which will decrease pedestrian crossing-distances.
- Improve the right-of-way with landscaping to improve the pedestrian environment.

Figure 3-10 displays a concept drawing of the proposed intersection improvements.

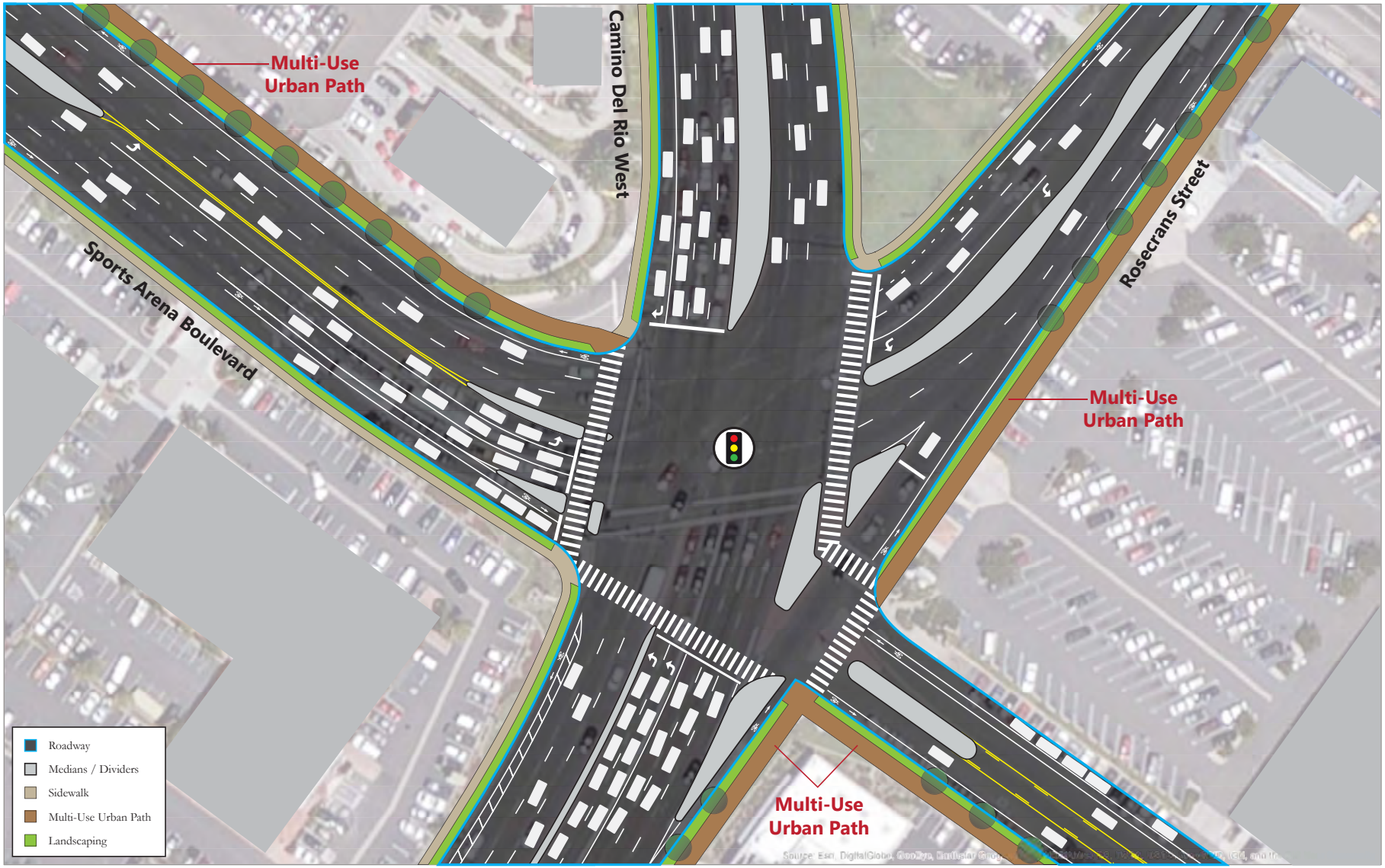
Sports Arena Boulevard / Rosecrans Street / Camino Del Rio West

- Remove the southbound free right-turn movement from Camino Del Rio West onto Sports Arena Boulevard and replace it with an exclusive right-turn lane, which will improve pedestrian safety while crossing the intersection. Figure 3-11 displays a concept drawing of the proposed intersection improvements.



This graphic is for conceptual purposes only. Further engineering study would be required at the project level prior to implementation.

Figure 3-10
Sports Arena Boulevard / West Point Loma Boulevard / Midway Drive - Proposed Pedestrian Improvements



This graphic is for conceptual purposes only. Further engineering study would be required at the project level prior to implementation.

Figure 3-11
Sports Arena Boulevard / Rosecrans Street / Camino Del Rio West - Proposed Pedestrian Improvements

3.4 Cycling Environment

3.4.1 Identified Bicycle Needs

The Midway-Pacific Highway Community is located at a junction point for several regional bicycle facilities including both the Coastal Rail Trail (along Pacific Highway) and the Ocean Beach Bike Path (along the San Diego River). Local bicycle connections to the surrounding neighborhoods are also provided, such as Class II Bike Lanes between Midway-Pacific Highway and the Peninsula communities along Rosecrans Street. A Class III Bike Route is provided along West Mission Bay Drive and terminates at its intersection with W. Point Loma Boulevard / Sports Arena Boulevard. These regional and local connections, along with strong transit service and high intensity commercial and institutional land uses, create high cycling demands within this community.

However, as shown in Figure 3-12 there are currently no bicycle facilities along the major corridors traversing the Midway-Pacific Highway Community (Midway Drive, Sports Arena Boulevard and Rosecrans Street) to accommodate the high bicycle demand. These corridors also have high vehicular traffic volumes and speeds as well as numerous conflict points (intersections, driveways, and alleyways) between motorists and cyclists, creating an uncomfortable environment for cyclists. Figure 3-5 displays the locations of issues/need, mainly defined as high cycling demand corridors that lack bicycle facilities and have high vehicular traffic volumes and speed.

3.4.2 Bicycle Improvements

The Bicycle Network under the Preferred Plan Conditions is shown in Figure 6-10 in this report. The recommended bicycle facilities proposed in this plan are consistent with and improve upon the recommendations outlined in The City of San Diego Bicycle Master Plan. The Preferred Plan proposes to implement the following bicycle facilities within the Midway-Pacific Highway Community:

<u>In Road Facilities</u>

- Class II Buffered Bike Lanes in both directions along Lytton Street / Barnett Avenue between Rosecrans Street and Pacific Highway.
- Class IV One-Way Cycle Tracks in both directions along Pacific Highway between Taylor Street and Laurel Street. This cycle track continues through the Old Town community, north to Sea World Drive.
- Class II Buffered Bike Lanes in both directions along Rosecrans Street between Lytton Street and Pacific Highway.
- Class II Buffered Bike Lanes in both directions along Sports Arena Boulevard between W. Point Loma Boulevard and Pacific Highway.
- Class II Bike Lanes in both directions along Hancock Street between Old Town Avenue and Noell Street.
- Class II Bike Lanes along the south side of Hancock Street/Kettner Boulevard between Noell Street and Laurel Street.

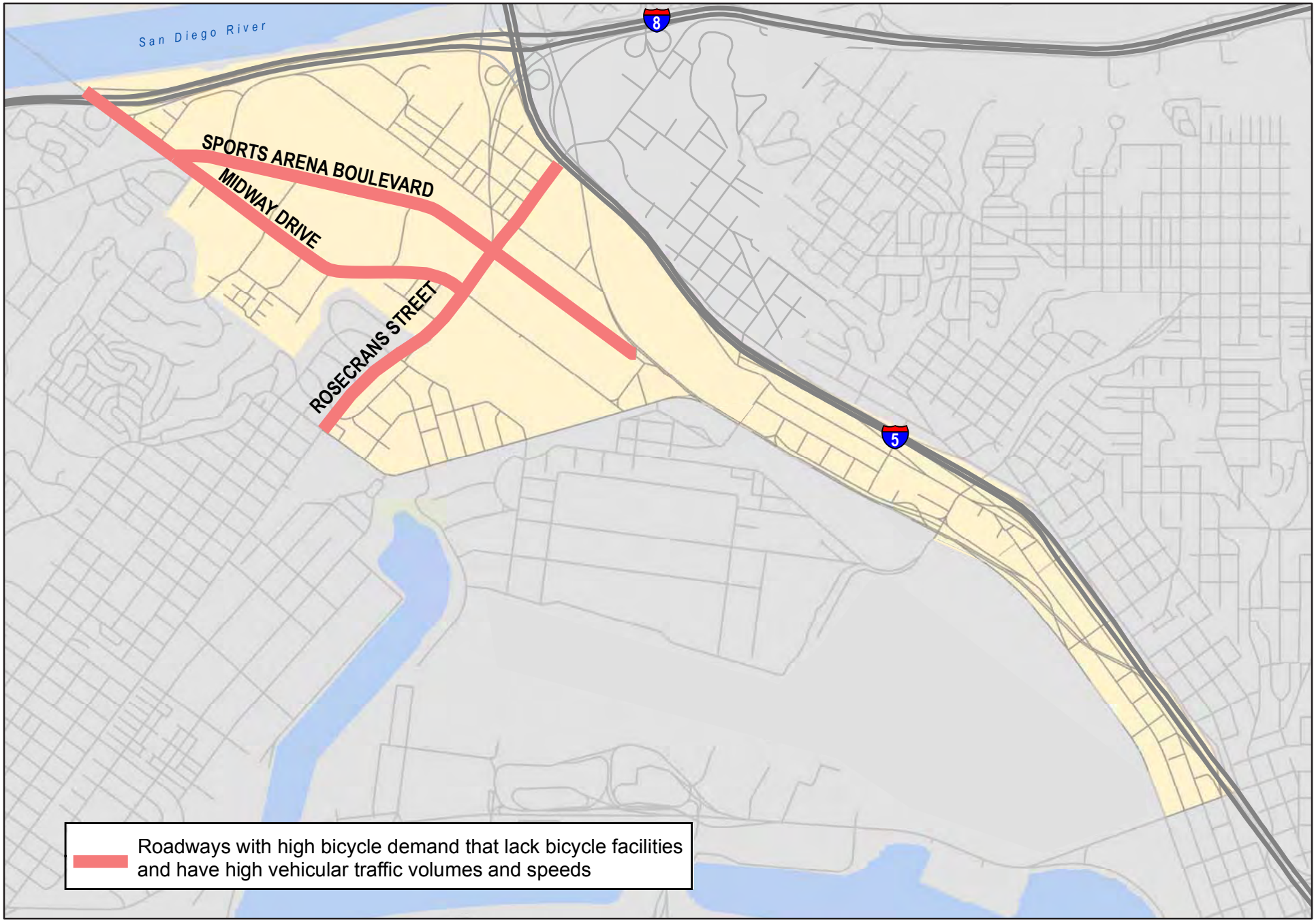


Figure 3-12
Bicycle Network Issues and Needs -
Midway-Pacific Highway Community

In Road Facilities (continued)

- Class II Buffered Bike Lanes in both directions along Kemper Street between Kenyon Street and Kurtz Street.
- Class IV Cycle Track on the north side of Washington Street between Pacific Highway and Interstate 5.
- Class II Bike Lanes in both directions along Old Town Avenue between Hancock Street and San Diego Avenue.
- Class II Buffered Bike lanes in both directions along Frontier Drive between Sports Arena Boulevard and Kurtz Street.
- Class II Buffered Bike lanes in both directions along Charles Lindbergh Parkway between Midway Drive and Kurtz Street.
- Class III Bicycle Route on Kurtz Street between Hancock Street and Rosecrans Street.
- Class III Bicycle Route on Noell Street between Pacific Highway and Hancock Street.
- Class III Bicycle Route on Hancock Street between Sports Arena Boulevard and Rosecrans Street.
- Class II Bike Lanes in both directions along Witherby Street between Pacific Highway and Hancock Street (The inclusion of bike lanes along this street would be determined by the available road width for these facilities; see section 3.2.2 for a discussion of a feasibility analysis to determine a need to widen Witherby Street)
- Class II Bike Lanes in both directions along Sassafras Street between Pacific Highway and Interstate 5.

Multi-Use Urban Paths

- Class I Multi-Use Urban Path connection, as an extension of Hancock Street between Sports Arena Boulevard and Midway Drive.
- Class I Multi-Use Urban Path along the south side of Rosecrans Street between Lytton Street and Pacific Highway.
- Class I Multi-Use Urban Path along the south side of Lytton Street / Barnett Avenue between Rosecrans Street and Pacific Highway.
- Class I Multi-Use Urban Path along the west side of Midway Drive between Sports Area Boulevard and Barnett Avenue.
- Class I Multi-Use Urban Path along the southwest or northeast side of Sports Arena Boulevard between I-8 and Midway Drive (to be determined by further study upon implementation), and on the northeast side of Sports Arena Boulevard between Midway Drive and Dutch Flats Parkway.
- Class I Multi-Use Urban Path along the south side of Dutch Flats Parkway between Barnett Avenue and Sports Arena Boulevard.
- Class I Multi-Use Urban Path along the east side of Pacific Highway between Taylor Street and Laurel Street.
- Class I Multi-Use Urban Path along the southeast side of Kemper Street between Sports Arena Boulevard and Kurtz Street.

3.5 Public Transit Service and Facilities

3.5.1 Identified Transit Needs

Underserved Areas – As shown in Figure 3-13, the following areas within the Midway-Pacific Highway Community are located beyond a quarter mile of a bus stop or transit station, indicating potentially poor levels of transit access:

- Barnett Avenue, between Truxtun Road and Midway Drive
- The northeast portion of the community (east of Kurtz Street and north of Sherman Street)
- Pacific Highway, between Wright Street and Noell Street
- Pacific Highway, between Vine Street and Sassafras Street

3.5.2 Transit Improvements

SANDAG's San Diego Forward, The Regional Plan (Adopted October 2015) indicates that a number of transit improvements are planned for the Midway-Pacific Highway Community, prior to this plan's Year 2035 horizon year, including:

Local Bus Service – Increase local bus service in key corridors to 10 minute headways programmed and scheduled for Year 2035.

Rapid Bus Route 28 – By the Year 2035, a new rapid bus route will be implemented providing service between Point Loma and Kearny Mesa via the Old Town Transit Center.

San Diego International Airport Intermodal Transit Center (ITC) – The ITC will act as an important hub connecting all modes of transportation accessing and departing from Lindbergh Field. The ITC is planned to be located on the north end of the airport, just south of Interstate 5 between Washington Street and Sassafras Street. The ITC is being planned as a major transit hub connecting all three existing trolley lines (Blue, Green and Orange), the COASTER, Amtrak, new MTS Express Bus routes directly serving the airport, several local MTS bus routes and the planned California High Speed Rail system. In addition to the transit connections, the ITC is planned to provide the following:

- 360 new parking spaces
- 126,000 SF of new retail uses
- Direct access to I-5 / via the Pacific Highway on/off-ramps
- Grade separation of the Washington Street and Sassafras at-grade rail crossings
- New grade separated crossing at Vine Street
- Raised bicycle lanes and cycle tracks on the street surrounding the ITC
- Wider sidewalks around both the ITC and new retail uses
- Curb extensions and planting/parking strips as well as provide new opportunities to employ green street strategies on impacted/new roadways.

The ITC is anticipated to be constructed and operational by the Year 2035.

Midway-Pacific Highway and
Old Town Community Plan Update

CHEN RYAN

Figure 3-13
Transit Coverage -
Midway-Pacific Highway Community

Transit Priority Improvements

Pacific Highway - Pacific Highway serves several express bus routes that link multiple communities. It is recommended that, as Pacific Highway is redeveloped, transit priority measures such as queue jumper lanes and transit priority signals be implemented at all signalized intersections along Pacific Highway between Taylor Street and Laurel Street.

Rosecrans Street – Rosecrans Street east of Camino Del Rio West currently serves four MTS bus Routes (8, 9, 28 and 35). A queue jumper lane and transit signal have already been implemented on the eastbound approach at the Taylor Street / Rosecrans Street and Pacific Highway intersection. Similar transit priority improvements should also be examined for feasibility at the Rosecrans Street / Camino Del Rio West / Sports Arena Boulevard intersection to allow westbound buses (Routes 8, 9 and 35) to turn right onto Sports Arena Boulevard and avoid congestion.

New Roadway Connections – The proposed new roadway connections can serve as alternative east/west routes for busses traveling through the community. Rerouting to these new facilities, if possible, may help avoid the congestion on Rosecrans Street. It is recommended that after the construction of any of the new roadways, the City of San Diego coordinate with MTS to examine opportunities for bus rerouting.

3.6 Currently Planned Improvements

The following section outlines the mobility improvements that are currently planned within the Midway-Pacific Highway community. Some improvements were too minor to incorporate at the community plan level, while others are mitigation measures from projects within the area and are not the responsibility of the community plan. Additionally, the pending improvements contained within the existing community Public Facilities Financing Plan are outlined and identified whether they are consistent with the Preferred Plan.

3.6.1 Auto

West Mission Bay Drive Bridge over San Diego River, CIP Project S00871 – the proposed City project will replace the existing bridge with a 6-lane bridge having a northbound and southbound Class I bicycle facility and pedestrian sidewalks. The project is in the final design phase and construction is estimated to start in July 2017. Improvements from this project were analyzed and its design was considered to develop recommendations in this study.

Midway/Pacific Highway Corridor Public Facilities Financing Plan, 2004 – this document contains several roadway improvements that have not yet been completed. It should be noted that all of these improvements are unfunded and currently not scheduled for implementation.

Signal Modifications:

- Barnett Avenue / Midway Drive (Project T7) – *Improvement has been completed and is consistent with the Preferred Plan.*

- Pacific Highway / West Washington Street (Project T29) – *Improvement is consistent the Preferred Plan.*

Extensions/New Streets:

- Extension of Barnett Avenue from Pacific Highway to Old Town Avenue (Project T8) – *Improvement is no longer recommended under the Preferred Plan.*
- Extension of Kemper Street as a four-lane collector from Sports Arena Boulevard to Hancock Street (Project T14) – *Improvement changed under the Preferred Plan.*
- New four-lane collector street connecting Sports Arena Boulevard and Midway Drive (Project T13) – *Improvement changed under the Preferred Plan.*

Street Widening:

- Improve Kurtz Street to a four-lane major between Rosecrans Street and Pacific Highway (Project T15) – *Improvement changed under the Preferred Plan.*
- Improve Sports Arena Boulevard to a four-lane collector between Rosecrans Street and Pacific Highway (Project T16) – *Improvement changed under the Preferred Plan.*
- *Add Project T23 and state whether improvement has changed under the Preferred Plan (we did not assumed it has in our cost estimating).*

Intersection Improvements

- Midway Drive / Sports Arena Boulevard (Project T17) – *Improvement changed under the Preferred Plan.*

Several roadway facility projects have been identified by the City of San Diego and are included on their Unfunded Transportation Needs List (8/5/2014). A list of the roadway related improvements located in the Midway-Pacific Highway Community is included in Appendix B. It should be noted that this list is updated on a regular basis and Appendix B only reflects a snapshot of the needs and planned improvements throughout the community at the time when this report was prepared.

3.6.2 Pedestrian

Public Facilities Financing Plans

The adopted Public Facilities Financing Plan for the Midway-Pacific Highway community currently contains planned pedestrian improvements that have not yet been completed, as follows:

- Install / upgrade 169 curb ramps to meet ADA standards (T25) – These improvements are currently not scheduled or funded. *Improvement is consistent with the Preferred Plan.*

Several pedestrian facility projects have been identified by the City of San Diego and are included on their Unfunded Transportation Needs List (8/5/2014). A list of the pedestrian improvements located in the Midway-Pacific Highway Community is included in Appendix B. It should be noted that this list is updated on a regular basis and Appendix B only reflects a snapshot of the needs and planned improvements throughout the community at the time when this report was prepared.

3.6.3 Bicycle

The City of San Diego's Transportation and Stormwater Department is currently resurfacing Barnett Avenue between Midway Drive and Pacific Coast Highway. The resurfaced pavement will include striping for a new Class II bicycle lane along the north side of Barnett Avenue between Pacific Highway and Midway Drive and green paint in areas of potential conflict zones between vehicular and bicycle traffic. The resurfacing project maintains the existing Class II bicycle facilities in this area on both sides of Barnett Avenue and enhances each facility with a 2' buffer on both sides of the roadway.

3.6.4 Transit

As noted in section 3.5.2 the Preferred Plan in consistent with *SANDAG's San Diego Forward, The Regional Plan* (Adopted October 2015).

4.0 Old Town Community Preferred Plan

4.1 Development of the Preferred Plan

4.1.1 Identification of Issues and Needs

Existing mobility related issues and needs within the Old Town Community were identified in the *Community of Midway/Pacific Highway Corridor and Old Town Mobility Existing Conditions Report; September 2012 (Existing Conditions Report)*. The issues and needs identified in the Existing Conditions Report were used, in conjunction with the other planning efforts and the overall community vision, to develop the recommended mobility improvements presented in the Preferred Plan.

4.1.2 Development of Preferred Plan Improvements

Preferred Plan improvements were developed by first cross checking the mobility issues and needs identified in the Existing Conditions Report against the mobility issues and needs identified in several other on-going or recent planning efforts, including:

- I-8 Corridor Study (August 2016)
- San Diego Forward, The Regional Plan (October 2015)
- Riding to 2050, The San Diego Regional Bike Plan (2010)
- City of San Diego Bicycle Master Plan (December 2013)
- Phase II Visitor Oriented Parking Facilities Study of the Old Town Community (May 2002)
- City of San Diego Pedestrian Master Plan - Phase 4 (Dec 2013)
- Mid-Coast Corridor Transit Project, Transportation Impacts and Mitigation Report (Sept 2014)

Where possible, the Preferred Plan carried forward or maintained the relevant improvements from on-going or previous planning efforts which have been adopted or vetted by the community. New improvement strategies were then developed to address the existing issues and needs, as identified in the Existing Conditions Report, which have not been addressed in other planning efforts. Additional mobility improvements were also developed to accommodate the anticipated future growth within the community. The following sections outline the mobility issues and needs identified in the Existing Conditions Report and the associated improvements recommended under the Preferred Plan to alleviate them.

4.2 Street and Freeway System

4.2.1 Identified Street and Freeway Issues and Needs

Taylor Street – Taylor Street provides connections to three major regional roadway facilities. To the east, Taylor Street provides a connection to I-8 and the regional freeway system. To the west, Taylor Street connects with both Rosecrans Street (which connects to communities to the west), and to Pacific Highway (which connects to communities to the north and the south). Taylor Street

accommodates a high volume of both regional and local traffic. There are currently two identified roadway related issues along Taylor Street, as described below:

At-Grade Rail Crossing – Currently the BNSF and MTS trolley right-of-way crosses Taylor Street at-grade between Pacific Highway and Congress Street. Gate down times at this crossing typically last between 30 seconds to 3 minutes, depending on the number of vehicles and train cars. During these gate down times, all other modes of transportation must stop, causing impacts to traffic operations at the adjacent intersections. Train crossings at this location typically cause additional intersection delay, queuing and congestion.

Taylor Street between Presidio Drive and I-8 Ramps – Taylor Street east of Presidio Drive reduces from four-lanes to two, with narrow lane widths (10 feet). Traffic volumes along this segment are high (13,140 ADT) since it leads to an I-8 interchange, and far exceeds the roadway LOS D maximum capacity of 9,000 ADT. The narrow lane widths and high traffic volumes result in congestion along this segment in the eastbound direction accessing the freeway ramps during the PM peak hour.

San Diego Avenue between Ampudia Street and Old Town Avenue – This segment of San Diego Avenue connects the commercial uses along both Congress Street and San Diego Avenue to the I-5 interchange located at Old Town Avenue. This segment of San Diego Avenue is currently a two-lane roadway with an average daily traffic volume of 10,160, which far exceeds the roadway LOS D maximum capacity of 6,500 ADT. This results in reduced speeds and congestion in the northbound direction during both the AM and PM peak hours.

*Old Town Avenue between Moore Street and San Diego Aven*ue – Old Town Avenue provides a regional connection point between the community and I-5. This segment of Old Town Avenue is currently two-lanes with an ADT of 11,750, which far exceeds the roadway LOS D maximum capacity of 6,500 ADT. This results in reduced speeds and congestion in the northbound direction during the PM peak hour.

The identified roadway issues and needs within the Old Town Community are displayed in Figure 4-1.

4.2.2 Street and Freeway Improvements

Due to the historic nature of the community, the Preferred Plan does not propose any roadway widenings or significant roadway capacity improvements.

Intersections

Congress Street / San Diego Avenue / Ampudia Street:

- Convert intersection to all-way stop control
- Implement bulb-outs on all legs of the intersection
- Widen the sidewalks along the north side of San Diego Avenue

Figure 4-2 displays a concept drawing of the proposed intersection improvements.

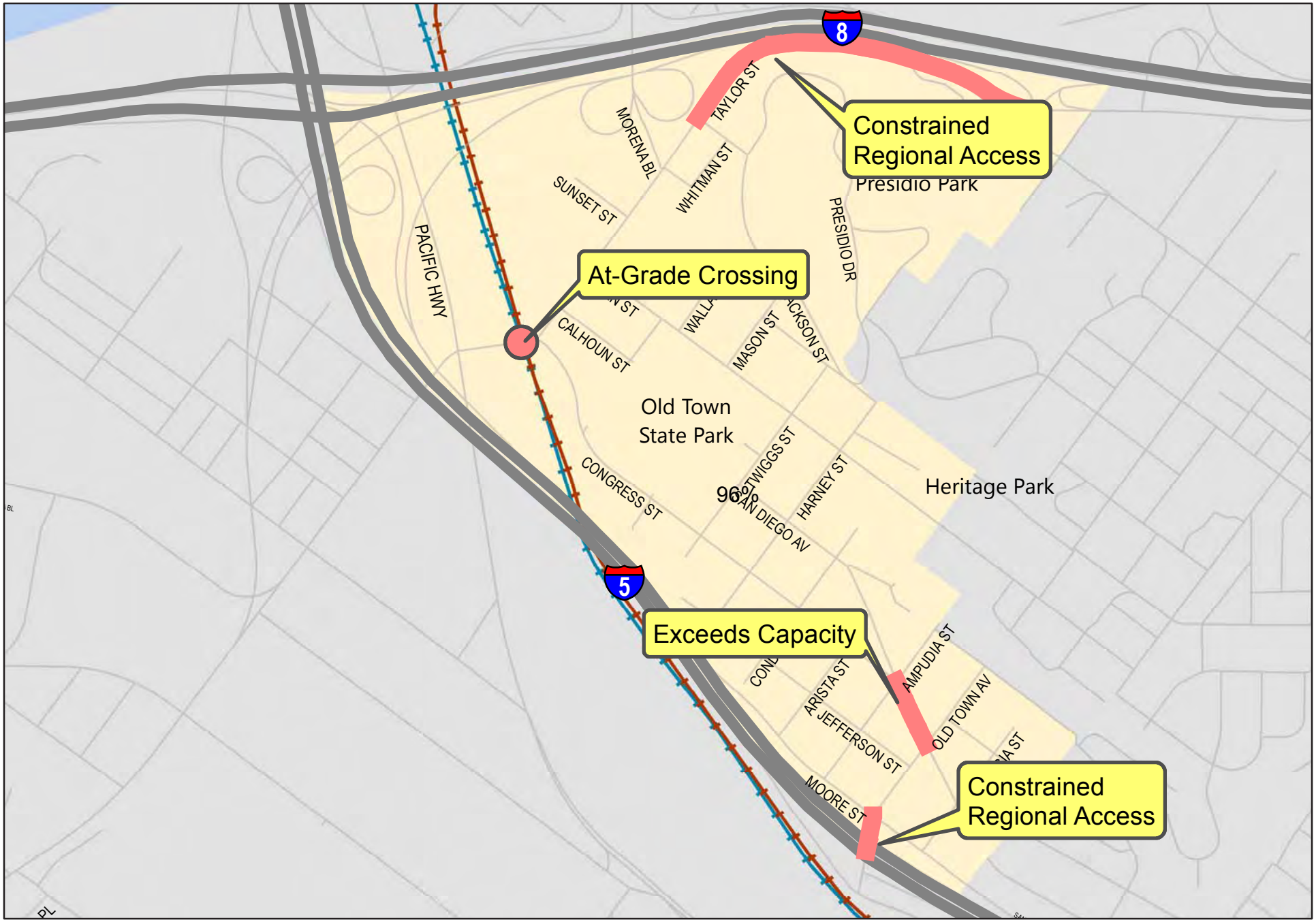


Figure 4-1
Identified Street and Freeway Related Issues and Needs - Old Town Community

This graphic is for conceptual purposes only. Further engineering study would be required at the project level prior to implementation.

Figure 4-2
Proposed Improvements - Congress Street / San Diego Avenue / Ampudia Street

Note: Converting the intersection control to a roundabout is also an option for this intersection. However, due to the tight spacing of the adjacent buildings there may not be enough right-of-way to accommodate a roundabout. Additional engineering study should be conducted to see if a roundabout is feasible at this intersection. If it is determined that a roundabout is feasible then it would become the preferred improvement.

Parking

San Diego Avenue between Twiggs Street and Conde Street has a large curb-to-curb width (50 feet) for a standard two-lane collector roadway (typically 40 feet wide). Therefore, in order to better utilize the curb-to-curb right-of-way, it is recommended that the parallel parking on the east side of the roadway be converted to angled parking, as shown in the figure below. The recommended improvement will not affect the capacity of the roadway and will increase the already constrained parking capacity within the Old Town community. Figure 4-3 displays a concept drawing of this improvement.

Freeway

There are no freeway improvements included in the Revenue Constrained alternative of *SANDAG's San Diego Forward, The Regional Plan (Adopted October 2015)* to be completed before this plan's Horizon Year (Year 2035). SANDAG prepared the Draft I-8 Corridor Study as a high level planning resource for potential improvements between Ocean Beach and Mission Valley. One of the identified improvements calls for the removal of all free movements from I-8 onto Morena Boulevard and "squaring up" each intersection. Since the plan has not yet been adopted and the improvements are not anticipated to be implemented until Year 2050, no improvements were assumed under Preferred Plan conditions.

This graphic is for conceptual purposes only. Further engineering study would be required at the project level prior to implementation.

Figure 4-3
Proposed San Diego Avenue Improvements between Twiggs Street and Conde Street

4.3 Pedestrian Environment

4.3.1 Identified Pedestrian Issues and Needs

The following pedestrian related issues and needs were identified in the Existing Conditions Report:

Taylor Street At-Grade Rail Crossing – Pedestrians accessing the Old Town Community or the Old Town Transit Center from Pacific Highway or Rosecrans Street currently have to cross the shared BNSF and MTS Trolley rail right-of-way. The Taylor Street at-grade rail crossing is over 100 feet wide, gate to gate, and pedestrians have to cross over four sets of rail tracks. During peak hours there are approximately 13 train crossing events lasting between 30 seconds and 3 minutes. During these times pedestrians are forced to wait until the train clears the crossing, causing excessive delays.

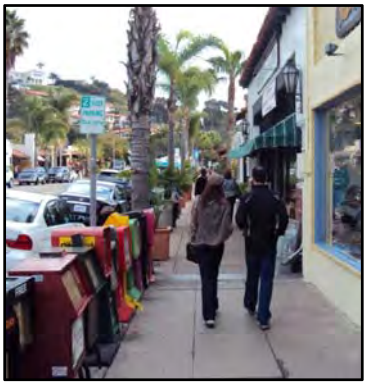
Old Town Transit Center Wayfinding – There is currently limited signage at the Old Town Transit Center directing pedestrians who are unfamiliar with the area, such as tourists, to the many restaurant, shops, historical monuments and structures, and parks in the community. Currently there is only a single map (identical to the map depicted in the picture below, which is located on San Diego Avenue) directing patrons to these various community features.

The Old Town San Diego Chamber of Commerce is implementing a wayfinding signage program that will install various signage types throughout the community to better inform patrons about how to access the various community features and help brand the community as a whole.

Missing Sidewalks – There are currently no sidewalks on Taylor Street, east of Presidio Drive and on the east side of San Diego Avenue, just north of Ampudia Street.

Connectivity between Community Features and Parks – There is currently no direct, convenient or identifiable path connecting the Old Town Transit Center, Old Town State Park and Presidio Park. Both parks are major community features attracting tourists and out of town guests who may not be familiar with the community or its amenities. The development of a clear, concise and well signed path connecting these three community assets would significantly improve pedestrian circulation within the community.

Sidewalk Capacity Issues – The retail and restaurant establishments along San Diego Avenue attract significant pedestrian traffic particularly during evenings and weekends. The sidewalks along San Diego Avenue are currently 7 to 8 feet wide with a limited parkway featuring street trees and planters. Retail shops and other merchants also take up part of the sidewalk with displays, racks and other attractions, as displayed in the photos to the right. During peak times, typical weekend evenings, pedestrian traffic along San Diego Avenue exceeds sidewalk capacity creating a congested pedestrian environment.



San Diego Avenue / Congress Street / Ampudia Street Intersection – This is currently a five legged intersection in which three of the approaches are stop-controlled (SB San Diego Avenue and EB & WB Ampudia Street) and the other two (NB San Diego Avenue and SB Congress Street) are free movements. There are also high vehicular traffic volumes crossing through the intersection along San Diego Avenue and Congress Street, which have no crosswalk facilities. This intersection is confusing and intimidating for pedestrians to cross due to the lack of traffic controls, high traffic volumes and missing crosswalk facilities.

The pedestrian related issues/needs within the Old Town Community, identified above, are displayed in Figure 4-4.

4.3.2 Pedestrian Improvements

Sidewalks

- Complete the sidewalks on the east side of San Diego Avenue, north of Ampudia Street.
- Complete sidewalks on Taylor Street, east of Presidio Drive.
- Implement sidewalks on the north side of Whitman Street.
- Complete sidewalks on Twiggs Street west of Congress Street.
- Implement sidewalks on Sunset Street between Juan Street and Mason Street.
- Implement a sidewalk on the west side of Mason Street between Juan Street and Jackson Street.
- Implement a sidewalk on the west side of Jackson Street between Presidio Drive and Mason Street

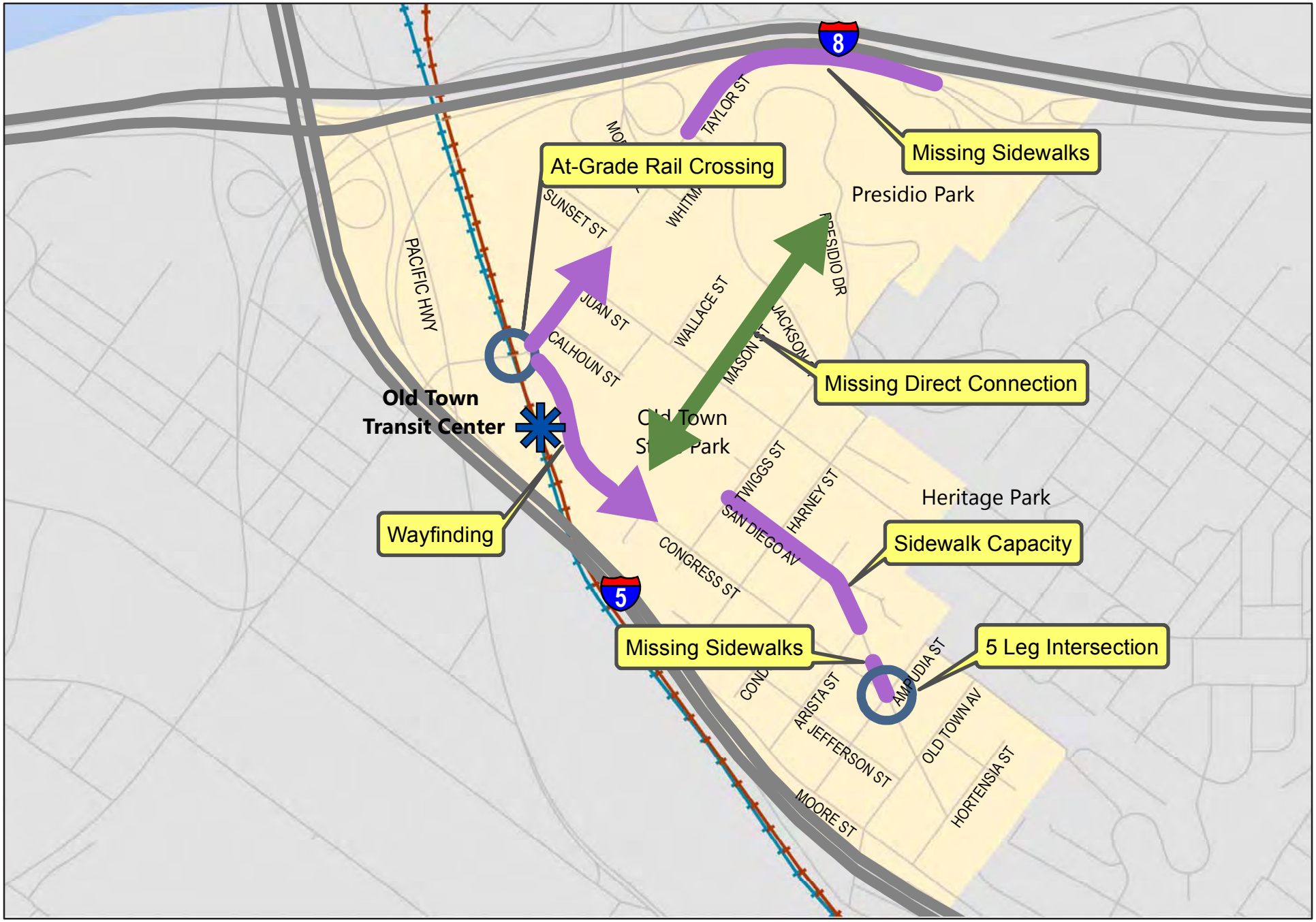
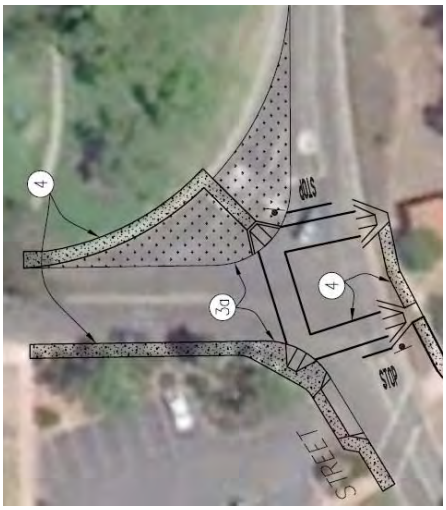


Figure 4-4
Identified Pedestrian Issues and Needs -
Old Town Community

Intersections

All crossing points at intersections should be upgraded to include the following:

- ADA compliant pedestrian ramps
- High visibility continental crosswalks
- Advanced stop bar placement
- Pedestrian count down signals



Proposed Improvements to Presidio Drive / Jackson Street intersection

Specific Intersection Improvements:

Presidio Drive / Jackson Street (Shown to the right):

- Implement bulb-outs on the west leg of the intersection
- Complete sidewalks on all sides of the intersection
- Square up intersection and remove southbound yielded right-turn movements
- Provide cross-walks across all legs of the intersection

Congress Street / Twiggs Street:

- Implement bulb-outs across all legs of the intersection

San Diego Avenue / Twiggs Street:

- Implement pavers or other high visible material in the center of the intersection to slow down and alert drivers to the heavy pedestrian presence, see example to the right.

Example of using bricks/pavers to create a highly visible intersection

Linwood Street / San Diego Avenue:

- Implement Pedestrian refuge island on the southern (Linwood Street) leg of the intersection.

Congress Street / San Diego Avenue / Ampudia Street (See figure 4-2):

- Convert intersection to all-way stop control
- Implement bulb-outs on all legs of the intersection
- Widen the sidewalks along the north side of San Diego Avenue

Note: As stated above, converting the intersection control to a roundabout is also an option for this intersection. However, due to the tight spacing of the adjacent buildings there may not be enough right-of-way to accommodate a roundabout. Additional engineering study should be conducted to see if a roundabout is feasible at this intersection. If it is determined that a roundabout is feasible then it would become the preferred improvement.

4.4 Cycling Environment

4.4.1 Identified Bicycle Issues and Needs

The following cycling related issues and needs were identified in the Existing Conditions Report:

Taylor Street – As mentioned previously, the Taylor Street corridor provides a significant regional east/west connection for vehicles as well as for cyclists. Taylor Street is currently classified as a Class III Bike Route within the Old Town Community; however, east of Presidio Drive, Taylor Street narrows to a two-lane roadway with narrow lane widths (10 feet) and no shoulders. Taylor Street is also a regional vehicular access point for the Old Town Community connecting the I-8 / Taylor Street interchange and Pacific Highway. The narrow lane widths, high vehicular traffic volumes and speeds along Taylor Street, east of Presidio Drive, create an uncomfortable environment for cyclists.

Congress Street / San Diego Avenue – Congress Street and San Diego Avenue (south of Ampudia Street) provide one of the few north/south connections for cyclists within the Old Town Community. Congress Street and San Diego Avenue (south of Ampudia Street) is currently classified as a Class III Bike Route designated by sharrow markings. Congress Street's proximity to the Old Town Transit Center and retail and restaurant uses make it a highly attractive route for cyclists. Both corridors currently have high traffic volumes, and on-street parking on both sides of the roadway which create an uncomfortable environment for cyclists.

The bicycle related issues/needs within the Old Town Community, identified above, are displayed in Figure 4-5.

4.4.2 Bicycle Improvements

The Preferred Plan proposes implementing the following bicycle facilities within the Old Town Community:

- Complete the Class II Bike Lanes in both directions along Taylor Street between Pacific Highway and the community boundary and bicycle boxes at appropriate intersections, as identified in the I-8 Corridor Study.
- Class III Bike Route in both directions along Juan Street between Taylor Street and community boundary.
- Class II Bike Lanes in both directions along Old Town Avenue between Hancock Street and San Diego Avenue.
- Class II Bike Lanes in both directions along Morena Boulevard between Taylor Street and the community boundary.

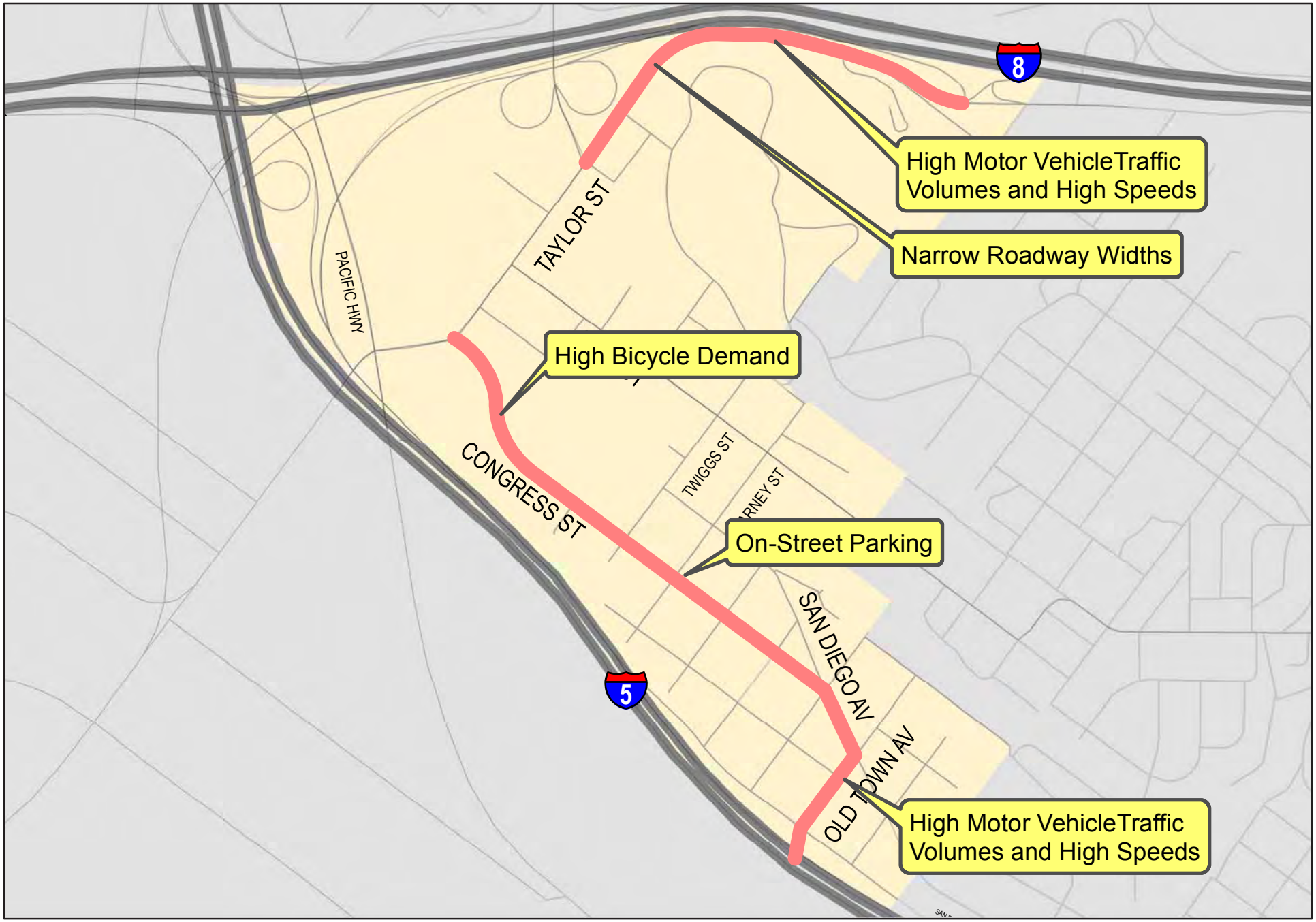


Figure 4-5
Bicycle Network Issues and Needs -
Old Town Community

A bicycle connection is currently lacking along Morena Boulevard between Taylor Street and Linda Vista Road. This is a critical connection that would link the Old Town and Linda Vista communities, as well as provide a connection to the Ocean Beach Bike Path. Unfortunately, the bridge along this segment of the roadway has a constrained right-of-way, and the current configuration of the I-8 Morena Boulevard ramps position four high-speed free-right turn movements on/off the bridge.

Due to these constraints there is not feasible bicycle facility that can be implemented along this segment without both widening the bridge and reconfiguring the I-8 / Morena Boulevard Ramps. However, it is recommended that the City work with both Caltrans and SANDAG to look for opportunities to implement bicycle facilities and better pedestrian facilities along this segment should any improvements be done to this segment. The I-8 Corridor Study identifies Class II bike lanes along Morena Boulevard, between W. Morena Boulevard and Taylor Street, as a high priority project. As described in section 4.2.2, the Corridor Study also proposes removing all free movements from I-8 onto Morena Boulevard and "squaring up" each intersection. Since the plan has not yet been adopted and the improvements are not anticipated to be implemented until Year 2050, no improvements were assumed under Preferred Plan conditions.

4.5 Public Transit Service and Facilities

4.5.1 Identified Transit Issues and Needs

The Old Town Community is served by 10 bus routes, a trolley line, a commuter rail service (The COASTER) and a regional rail line (Amtrak Surfliner), which all serve the Old Town Transit Center. Figure 4-6 displays the community's streets served by bus routes as well as the existing Trolley Lines.

This figure also shows the area within ½ mile of the Old Town Transit Center, which is considered a reasonable walking distance to a major transit center (as compared to a ¼ mile for bus stops). As depicted in this figure, nearly all of the commercial and recreational uses are within ½ mile of transit service.

Figure 4-6
Transit Coverage -
Old Town Community

4.5.2 Transit Improvements

SANDAG's *San Diego Forward, The Regional Plan* (Adopted October 2015), indicates that a number of transit improvements are planned for the Old Town Community, prior to this plan's Year 2035 Horizon Year, as described below.

COASTER – By the Year 2020, the frequency of the COASTER will be increased to every 20 minutes during peak periods and every 120 minutes during off-peak periods. The COASTER provides a commuter rail connection between the Old Town Transit Center and North County communities including Solana Beach, Encinitas and Oceanside.

COASTER – by the Year 2020, the COASTER line will be extended to the south and include stations at both Petco Park and the Convention Center.

Mid-Coast Trolley Line – The Mid-Coast Trolley will extend service from Santa Fe Depot in Downtown San Diego to the University City community, serving major activity centers such as Old Town, the University of California, San Diego (UCSD), and Westfield UTC. Construction of the Mid-Coast Trolley line is anticipated to be completed by the Year 2021.

Local Bus Service – Increase local bus service in key corridors to 10 minute headways programmed and scheduled for Year 2035.

Rapid Bus Route 28 – By the Year 2035, a new rapid bus route will be implemented providing service between Point Loma and Kearny Mesa via the Old Town Transit Center.

Rapid Bus Route 30 – By the Year 2035, a new rapid bus route will be implemented providing service between the Old Town Transit Center and Sorrento Mesa via Pacific Beach, La Jolla and UTC.

Rapid Bus Routes 640A – By the Year 2035, a new rapid bus route will be implemented providing service along I-5 between San Ysidro and the Old Town Transit Center, via City College downtown.

Transit Priority Treatments

Taylor Street serves several regional bus routes connecting multiple communities. Therefore, it is recommended that transit priority treatments be implemented along Taylor Street to help increase transit performance. It is recommended to implement queue jumper lanes and transit priority signals in either direction at both the Taylor Street / Juan Street and Taylor Street / Morena Boulevard intersections.

4.6 Currently Planned Improvements

The following section outlines the mobility improvements that are currently planned within the Old Town community. Some improvements were too minor to incorporate at the community plan level, while others are mitigation measures from projects within the area and are not the responsibility of the community plan. Additionally, the pending improvements contained within

the existing community Public Facilities Financing Plan are also outlined and identified if they are consistent with the Preferred Plan.

4.6.1 Auto

Mid-Coast Corridor Transit Project – The Mid-Coast Corridor and Transit Project Transportation Impacts and Mitigation Report; September 2014, identifies the following project related improvements at the Taylor Street / Rosecrans Street and Pacific Highway intersection:

- Provide second northbound right-turn lane
- Provide third eastbound through lane
- Provide second southbound left-turn lane

These improvements are designed to handle excess queuing at the intersection during gate down times. These improvements do not conflict with any improvements recommended by the Preferred Plan and have been incorporated into the future year analysis. However, since these improvements are mitigation measures for the Mid-Coast Corridor Transit Project they are not considered to be part of the Preferred Plan and should not be included in the IFS.

Old Town Public Facilities Financing Plan, 2004 – This plan identifies the widening of Presidio Drive to allow for a right-turn lane on Taylor Street (Project T10). This improvement is unfunded and is not currently scheduled for implementation. – *The Preferred Plan does not include this improvement as a recommendation.*

4.6.2 Pedestrian

Old Town Public Facilities Financing Plan, 2004 – Contains the following planned pedestrian improvements that have not yet been completed.

- Install / upgrade 20 curb ramps to meet ADA standards (Project T12) – These improvements are currently not scheduled or funded. – *Improvement is consistent with the Preferred Plan.*

Several pedestrian facility projects have been identified by the City of San Diego and are included on their Unfunded Transportation Needs List (8/5/2014). A list of the pedestrian improvements located in the Old Town Community are included in Appendix B. It should be noted that this list is updated on a regular basis and Appendix B only reflects a snapshot of the needs and planned improvements throughout the community at the time when this report was prepared.

SANDAG Uptown Bikeways Project – Phase 4 of the Uptown Bikeways project will include treatments to improve pedestrian safety (e.g., high visibility crosswalks, dual pedestrian ramps, bulb-outs). The project is located along Congress Street (from Taylor Street to San Diego Avenue) and San Diego Avenue (from Congress Street to south of Hortensia Avenue). The project is entering final design and is funded through construction. Since these improvements are funded through the Uptown Bikeways project, they should not be included in the IFS. *– Improvements are consistent with the Preferred Plan.*

Wayfinding Signage Program

The Old Town Chamber of Commerce is currently developing a wayfinding signage program in the Old Town Community. The wayfinding signage program will standardize and brand the various wayfinding signs currently within the community and highlight paths and links for pedestrians to access the various parks and attractions within the community.

4.6.3 Bicycle

SANDAG Uptown Bikeways Project – Phase 4 of the Uptown Bikeways project will include a mix of buffered bike lanes and shared lane markings along Congress Street (from Taylor Street to Mason Street) and shared lane markings, where not already marked (from Mason Street to San Diego Avenue). The project is currently in the design phase with specifications still being determined, therefore, it was not included as a recommendation in the Preferred Plan. Congress Street is currently designated as a Class III bicycle route, identifiable by vertical signage and shared lane markings. The Preferred Plan does not propose any modifications to the existing bicycle facility, nor does it include any recommendations that would prevent the Uptown Bikeways project from being implemented.

4.6.4 Transit

As noted in section 4.5.2 the Preferred Plan in consistent with *SANDAG's San Diego Forward, The Regional Plan (Adopted October 2015).*

5.0 Modeling and Forecasting

This chapter summarizes the future year travel demand model forecasting process utilized to project the future travel patterns within the Midway-Pacific Highway and Old Town communities, under buildout conditions. Future year traffic volumes were derived from a SANDAG Series 12 Transportation Forecast model run, which was verified per the City of San Diego's Small Study Area Traffic Modeling Process (April 2012) and calibrated for the Midway-Pacific Highway and Old Town communities.

5.1 Base Year (2012) Model Calibration

The base year model calibration process included verification and validation of base year model inputs (land uses and roadway network), as well as additional adjustments to the base year model (roadway speeds, centroid loadings, etc.) to calibrate the model to better represent existing travel patterns within the Midway-Pacific Highway and Old Town communities. Detailed descriptions of each validation step are provided in the following sections.

5.1.1 Base Year Land Use Verification/Validation

Existing land use data, as listed below, was collected for the Midway-Pacific Highway and Old Town communities and verified/adjusted in the Base Year model to correctly match actual conditions:

- Descriptions (land use type and code)
- Proper measurement unit types (square feet, units, acres)
- Quantity
- Vehicular trip generation rates

Land use types, descriptions and quantities were crosschecked with ground conditions using Google Earth imagery, as well as field verification, as necessary. Trip generation rates for individual land uses were coded based on the driveway rates provided in the *City of San Diego Land Development Code – Trip Generation Manual* (May 2003). Base year land use inputs for the project study area are provided in Appendix D.

5.1.2 Base Year Roadway Network Verification/Validation

The SANDAG Series 12 Base Year roadway network was compared to actual conditions to ensure an accurate model network. The following variables were compared and adjusted to match actual conditions:

- TAZ loading points
- Number of lanes for roadways
- Traffic controls
- Signalized intersection geometrics
- Street classification
- Roadway speed limits

5.1.3 Base Year Ground Count Validation & Adjustment

Historical ADT volumes over the past 11 years were compiled from the City of San Diego's Traffic Count Database and other recent studies for major roadway segments throughout the Midway-Pacific Highway and Old Town communities. The most recent historic counts along with counts from the past five (5) years were selected to establish a Base Year ground count database. This database included multiple counts from the same location on numerous segments, as well as the counts already included in the model. The final count was selected based upon nearby trip generators and traffic patterns along each roadway segment. Abnormally high or low traffic volumes were assumed to be outliers, and thus were not selected as model inputs.

5.1.4 Model Sensitivity Adjustment

Model calibration was performed by running a Base Year model estimate and comparing the results to the selected ground counts discussed above. Roadway segments that did not meet the model calibration targets established by the City of San Diego were identified for additional adjustments. These adjustments included the relocation of TAZ connectors and centroids, TAZ splitting, adjustments of roadway speed (to represent congestion), and in rare cases, ground count adjustments using historic counts older than three years.

5.2 Future Year Traffic Forecast Volume

The Future Year model was developed by inputting the future year land uses and roadway network into the calibrated Base Year model, described in the previous sections, with the following adjustments/assumptions:

- Implementation of the Preferred Plan land uses within the project study area (land use assumptions are provided in Appendix D).
- Existing roadway network within the study area with the following improvement projects:
    - Extension of Kemper Street between Sports Arena Boulevard and Kurtz Street
    - Implementation of Frontier Drive between Sports Arena Boulevard and Kurtz Street
    - Extension of Greenwood Street between Kurtz Street and Sports Arena Boulevard
    - Implementation of Charles Lindbergh Parkway between Sports Arena Boulevard and Midway Drive
    - Implementation of Dutch Flats Parkway between Sports Arena Boulevard and Barnett Avenue
- Year 2035 land uses outside of the study area
- Year 2035 roadway/transit network outside of the study area
- Year 2035 transit network both inside and outside of the study area

The model inputs described above were reviewed and approved by City staff prior to running the model forecasts.

Final SANDAG Series 12 Future Year Forecast Model results are provided in Appendix D. Figure 5-1 shows the final projected average daily traffic volumes that were used to develop and analyze the Preferred Plan mobility network, as described in the next chapter.

5.2.1 Vehicle Miles Traveled

The vehicle miles traveled (VMT) generated within the community was estimated using the SANDAG Series 12 Preferred Plan Future Year 2035 and Base Year models. VMT is the total number of miles driven by all vehicle trips within the Midway-Pacific Highway and Old Town communities, including trips to, from, and within the community. Table 5.1A and 5.1B display the total VMT generated within each community and the average trip length under both the Preferred Plan and Base Year conditions. VMT calculations are provided in Appendix D.

Table 5.1A Vehicle Miles Traveled (VMT) Comparison – Midway-Pacific Highway Community

Measure	Community Planning Area				San Diego Region			
	Base Year	Preferred Plan	Δ in Value	Δ in %	Base Year	Year 2035	Δ in Value	Δ in %
Total VMT (miles)	730,121	769,800	39,679	5.4%	85,331,631	108,802,407	23,470,776	27.5%
Total # of Auto Trips	294,796	288,243	-6,553	-2.2%	16,458,692	20,183,171	3,724,479	22.6%
Average Trip Length[1] (miles)	2.5	2.7	0.2	7.8%	5.2	5.4	0.2	3.7%
Population	4,670	12,505	7,835	167.8%	3,130,717	4,035,834	905,117	28.9%
Daily VMT by Population (miles)	156	62	-95	-60.6%	27	27	0	-1.5%

Source: Chen Ryan Associates (May 2017)

Note:
1. Average trip length is estimated by dividing the total VMT by the total # of auto trips.

As shown, under implementation of the Preferred Plan the number of new auto trips and total VMT generated within the Midway-Pacific Highway community is only anticipated to experience minimal growth (based on the regional averages). With the implementation of the Preferred Plan infrastructure and land uses, the average vehicular trip length is anticipated to increase by 7.8%. However, with the significant population increase anticipated within the community, the daily VMT by population is anticipated to drop dramatically (-60.6%).

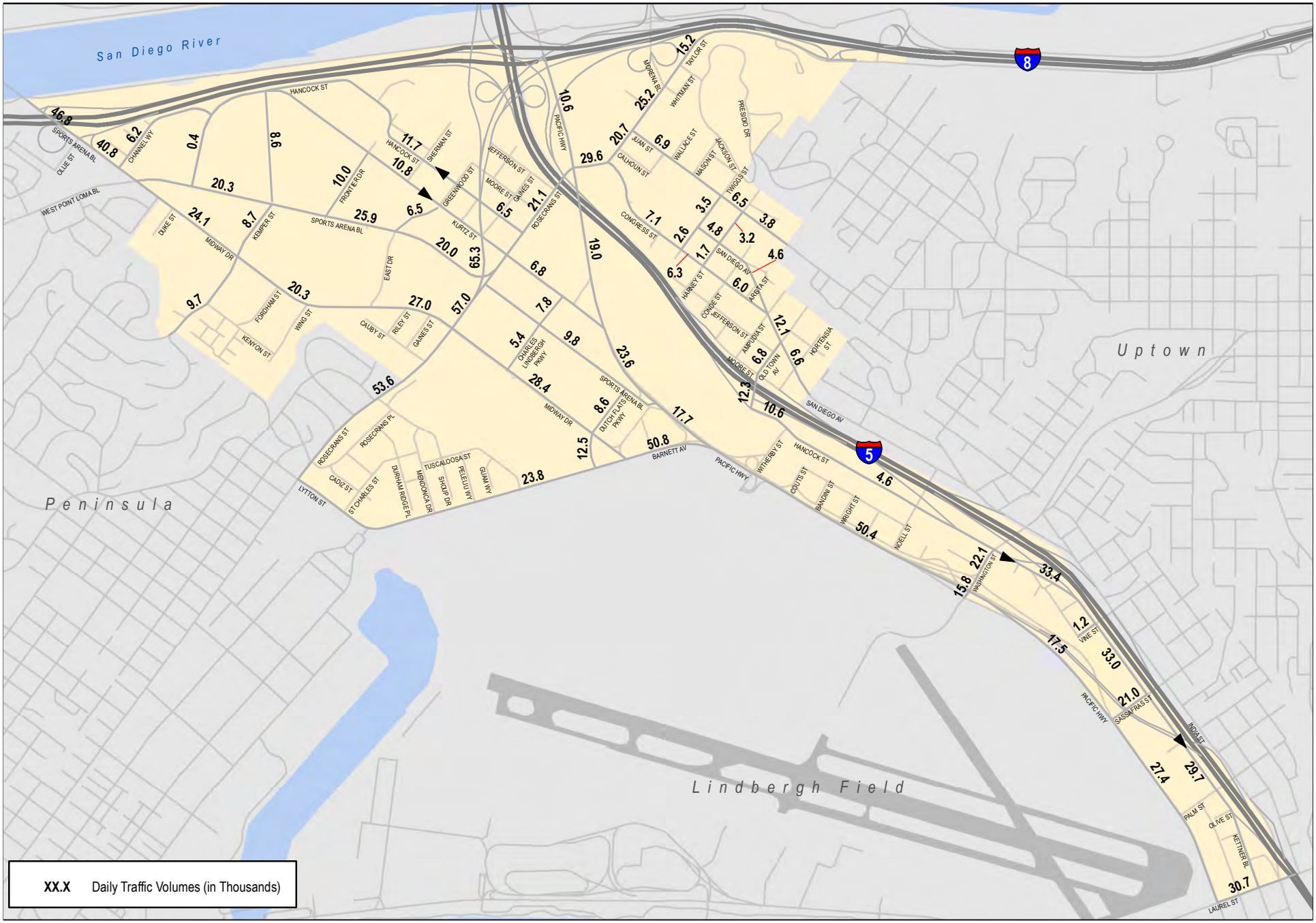


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Figure 5-1
Daily Roadway Segment Traffic Volumes -
Preferred Plan Conditions

Table 5.1B Vehicle Miles Traveled (VMT) Comparison – Old Town Community

Measure	Community Planning Area				San Diego Region			
	Base Year	Preferred Plan	Δ in Value	Δ in %	Base Year	Year 2035	Δ in Value	Δ in %
Total VMT (miles)	151,300	171,482	20,182	13.3%	85,331,631	108,802,407	23,470,776	27.5%
Total # of Auto Trips	57,898	59,412	1,514	2.6%	16,458,692	20,183,171	3,724,479	22.6%
Average Trip Length[1] (miles)	2.6	2.9	0.3	10.5%	5.2	5.4	0.2	3.7%
Population	830	1,280	450	54.2%	3,130,717	4,035,834	905,117	28.9%
Daily VMT by Population (miles)	182	134	-48	-26.5%	27	27	0	-1.5%

Source: Chen Ryan Associates (May 2017)

Note:

1. Average trip length is estimated by dividing the total VMT by the total # of auto trips.

As shown, under implementation of the Preferred Plan the number of new auto trips and total VMT generated within the Old Town community is only anticipated to experience average growth (based on the region. With the implementation of the Preferred Plan infrastructure and land uses the average vehicular trip length is anticipated to increase by 10.5%. However, the anticipated population increase within the community results in an overall decrease in the daily VMT by population (-26.5%).

5.2.2 Community Mode Choice

The Mode Choice Model used in the SANDAG Series 12 Transportation Forecast is not sensitive to changes in bicycle and pedestrian facilities. In other words, the model does not accurately adjust travel behaviors in response to implementation of multimodal facilities, such as bicycle lanes or separated multi-use paths, or reflect land use changes that create more mixed use environments. Due to these constraints, the SANDAG Series 12 Model was not utilized to project the demands of future year non-motorized travel.

SANDAG is currently in the process of developing Series 13, an Activity Based Model (ABM) which will more accurately account for shifts in transportation modes based on the implementation of pedestrian and bicycle facilities. However, SANDAG modeling staff has indicated that this model is currently under development and will not be ready for public release until later in 2016.

Since the ABM model is not ready for use at this time, a subsequent mode choice analysis will be prepared by the City as a separate document. The mode choice analysis will use the methods outlined in both the California Air Pollution Control Officers Association (CAPCOA) Quantifying Green House Gas Measures manual, as well as the Urban Land Institute's (ULI) Growing Cooler to post process the Series 12 model results and develop a more accurate mode split for each community.

6.0 Preferred Plan Analysis

6.1 Street and Freeway System Assessment and Results

The following section provides a summary of vehicular analysis results along key study roadways, including the projected daily roadway LOS, and the peak hour intersection LOS analysis under implementation of the Preferred Plan.

6.1.1 Roadway Segment Analysis

This analysis assumes implementation of the roadway segment-related improvements outlined in Sections 3.2.2 and 4.2.2 under the Preferred Plan. The associated roadway classifications under implementation of the Preferred Plan, within both communities, is displayed in Figure 6-1.

Table 6.1 and Figure 6-2 display the projected ADT volume and associated roadway LOS under implementation of the Preferred Plan. Section 5.2 describes the process used to develop projected ADT volume estimations.

As shown, all Mobility Element roadways are projected to operate at LOS D or better under Preferred Plan conditions, with the exception of the following:

Midway-Pacific Highway Community

- Midway Drive, between Rosecrans Street and Barnett Avenue (LOS E)
- Kettner Boulevard, between Washington Street and Vine Street (LOS F)
- Kettner Boulevard, between Vine Street and Sassafras Street (LOS F)
- Kettner Boulevard, between Sassafras Street and Laurel Street (LOS F)
- Camino Del Rio West, between Rosecrans Street and the I-5/I-8 Ramps (LOS F)
- Sassafras Street, between Pacific Highway and Kettner Boulevard (LOS F)

Old Town Community

- Congress Street between Taylor Street and Twiggs Street (LOS E)
- San Diego Avenue, between Ampudia St and Old Town Avenue (LOS F)
- San Diego Avenue, between Old Town Avenue and Hortensia Street (LOS E)
- Juan Street, between Taylor Street and Twiggs Street (LOS E)
- Juan Street, between Twiggs Street and Harney Street (LOS E)
- Taylor Street, between Morena Boulevard and I-8 Ramps (LOS F)
- Old Town Avenue, between Hancock Street and Moore Street (LOS F)
- Old Town Avenue, between Moore Street and San Diego Avenue (LOS E)

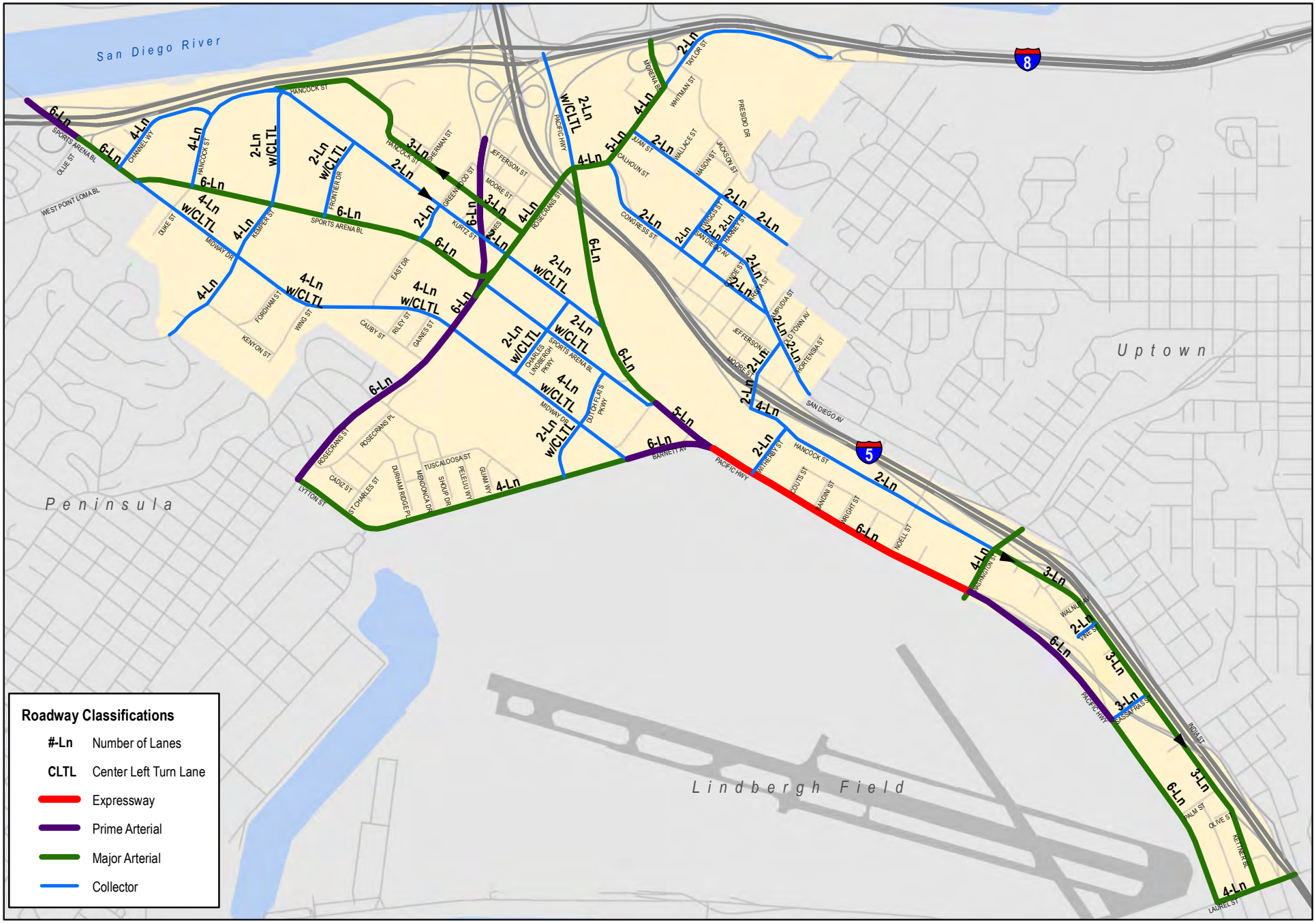

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Figure 6-1
Roadway Classifications -
Preferred Plan Conditions

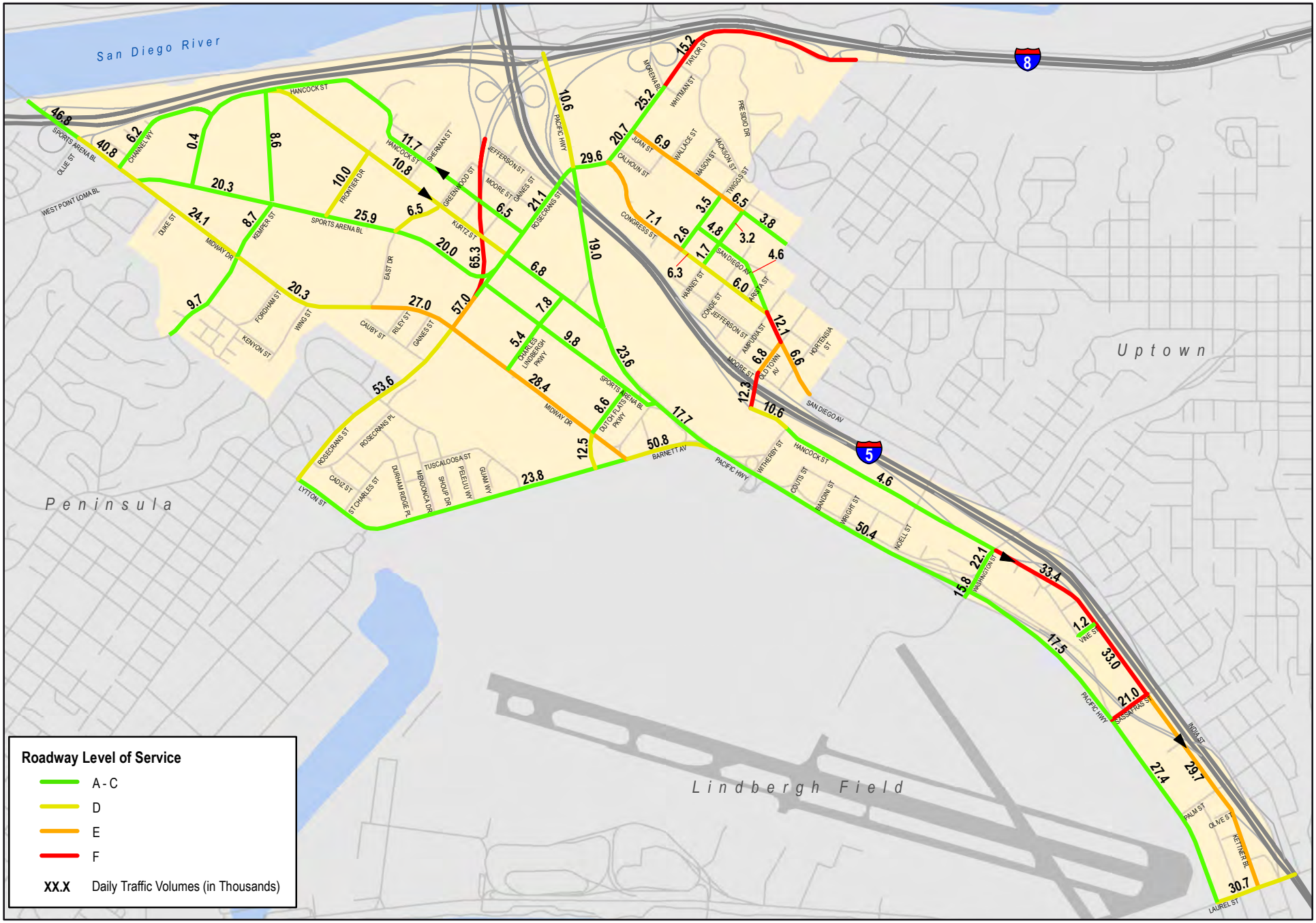

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Figure 6-2
Daily Roadway Segment Traffic Volumes and LOS - Preferred Plan Conditions

Table 6.1 Daily Roadway Segment Analysis - Preferred Plan Conditions

Roadway	From	To	Classification	Maximum Capacity at LOS E	ADT	V/C	LOS
North-South							
Midway Pacific Highway							
Lytton Street/ Barnett Ave	Rosecrans St	Midway Dr	4-Lane Major Arterial	40,000	23,800	0.60	C
Midway Dr	W. Point Loma Blvd/ Sports Arena Blvd	Kemper St	4-Lane Collector (CLTL)	30,000	24,100	0.80	D
	Kemper St	East Dr	4-Lane Collector (CLTL)	30,000	20,300	0.68	D
	East Dr	Rosecrans St	4-Lane Collector (CLTL)	30,000	27,000	0.90	E
	Rosecrans St	Barnett Ave	4-Lane Collector (CLTL)	30,000	28,400	0.95	E
Sports Arena Blvd	I-8 WB Ramps	I-8 EB Ramps	6-Lane Prime Arterial	60,000	46,800	0.78	C
	I-8 EB Ramps	W. Point Loma Blvd	6-Lane Major Arterial	50,000	40,800	0.82	D
	W. Point Loma Blvd/Midway Dr	Kemper St	6-Lane Major Arterial	50,000	20,300	0.41	B
	Kemper St	East Dr	6-Lane Major Arterial	50,000	25,900	0.52	B
	East Dr	Rosecrans St	6-Lane Major Arterial	50,000	20,000	0.40	B
	Rosecrans St	Pacific Hwy	2-Lane Collector (CLTL)	15,000	9,800	0.65	C
Kurtz St	Hancock St	Rosecrans St	2-Lane Collector (One-Way)	15,000	10,800	0.72	D
	Rosecrans St	Pacific Hwy	2-Lane Collector (CLTL)	15,000	6,800	0.45	B
Hancock St	Sports Arena Blvd	Kurtz St	4-Lane Collector	15,000	400	0.03	A
	Kurtz St	Camino Del Rio West	3-Lane Major (One-Way)	30,000	11,700	0.39	B
	Camino Del Rio West	Rosecrans St	3-Lane Major (One-Way)	30,000	6,500	0.22	A
	Old Town Ave	Witherby St	4-Lane Collector	15,000	10,600	0.71	D
	Witherby St	Washington St	2-Lane Collector	8,000	4,600	0.58	C
Kettner Blvd	Washington St	Vine St	3-Lane Major (One-Way)	30,000	33,400	1.11	F
	Vine St	Sassafras St	3-Lane Major (One-Way)	30,000	33,000	1.10	F
	Sassafras St	Laurel St	3-Lane Major (One-Way)	30,000	29,700	0.99	E
Pacific Hwy	Sea World Dr	Taylor St	2-Lane Collector (CLTL)	15,000	10,600	0.71	D

Table 6.1 Daily Roadway Segment Analysis - Preferred Plan Conditions

Roadway	From	To	Classification	Maximum Capacity at LOS E	ADT	V/C	LOS
Pacific Hwy	Taylor St	Kurtz St	6-Lane Major Arterial	50,000	19,000	0.38	A
	Kurtz St	Sports Arena Blvd	6-Lane Major Arterial	50,000	23,600	0.47	B
	Sports Arena Blvd	Barnett Ave	5-Lane Major Arterial	50,000	17,700	0.35	A
	Barnett Ave	Washington St	Expressway	80,000	50,400	0.63	C
	Washington St	Sassafras St	6-Lane Prime Arterial	60,000	17,500	0.29	A
	Sassafras St	Laurel St	6-Lane Major Arterial	50,000	27,400	0.55	B
Old Town							
Congress St[1]	Taylor St	Twiggs St	2-Lane Collector	8,000	7,200	7,100	0.89
	Twiggs St	Harney St	2-Lane Collector	8,000	6,400	6,300	0.79
	Harney St	San Diego Ave/ Ampudia St	2-Lane Collector	8,000	6,000	6,000	0.75
San Diego Ave[1]	Twiggs St	Harney St	2-Lane Collector	8,000	4,800	4,800	0.60
	Conde St	Arista Ave	2-Lane Collector	8,000	4,600	4,600	0.58
	Ampudia St	Old Town Ave	2-Lane Collector	8,000	12,100	12,100	1.51
	Old Town Ave	Hortensia St	2-Lane Collector	8,000	6,600	6,600	0.83
Juan St[1]	Taylor St	Twiggs St	2-Lane Collector	8,000	6,900	6,900	0.86
	Twiggs St	Harney St	2-Lane Collector	8,000	6,600	6,500	0.81
	Harney St	San Juan Rd	2-Lane Collector	8,000	3,800	3,800	0.48
East-West							
Midway Pacific Highway							
Channel Wy	W. Mission Bay Dr	Hancock St	4-Lane Collector	15,000	6,200	0.41	B
Kemper St	Kenyon St	Midway Dr	4-Lane Collector	15,000	9,700	0.65	C
	Midway Dr	Sports Arena Blvd	4-Lane Collector	15,000	8,700	0.58	C
	Sports Arena Blvd	Hancock St	2-Lane Collector (CLTL)	15,000	8,600	0.57	C
Frontier St	Sports Arena Blvd	Kurtz St	2-Lane Collector (CLTL)	15,000	10,000	0.67	D

Table 6.1 Daily Roadway Segment Analysis - Preferred Plan Conditions

Roadway	From	To	Classification	Maximum Capacity at LOS E	ADT	V/C	LOS
Greenwood St	Sports Arena Blvd	Kurtz St	2-Lane Collector	8,000	6,500	0.81	D
Camino Del Rio West	Rosecrans St	I-5/I-8 Ramps	6-Lane Prime Arterial	60,000	65,300	1.09	F
Rosecrans St	Lytton St	Midway Dr	6-Lane Prime Arterial	60,000	53,600	0.89	D
	Midway Dr	Sports Arena Blvd	6-Lane Prime Arterial	60,000	57,000	0.95	E
	Sports Arena Blvd	Pacific Hwy/Taylor St	4- Lane Major Arterial	40,000	21,100	0.53	C
Charles Lindbergh Pkwy	Midway Dr	Sports Arena Blvd	2-Lane Collector (CLTL)	15,000	5,400	0.36	B
	Sports Arena Blvd	Kurtz Street	2-Lane Collector (CLTL)	15,000	7,800	0.52	C
Dutch Flats Pkwy	Barnett Avenue	Midway Dr	2-Lane Collector (CLTL)	15,000	12,500	0.83	D
	Midway Dr	Sports Arena Blvd	2-Lane Collector (CLTL)	15,000	8,600	0.57	C
Barnett Ave	Midway Dr	Pacific Hwy	6-Lane Prime Arterial	60,000	50,800	0.85	D
Washington St	Frontage Rd	Pacific St	4- Lane Major Arterial	40,000	15,800	0.40	B
	Pacific St	Hancock St	4- Lane Major Arterial	40,000	22,100	0.55	C
Vine St	California St	Kettner Blvd	2-Lane Collector	8,000	1,200	0.15	A
Sassafras St	Pacific Hwy	Kettner Blvd	3-Lane Collector	11,500	21,000	1.83	F
Laurel St	Pacific Hwy	Kettner Blvd	4- Lane Major Arterial	40,000	30,700	0.77	D
Old Town							
Taylor St[1]	Pacific Hwy/ Rosecrans St	Congress St	4- Lane Major Arterial	40,000	29,600	0.74	C
	Congress St	Juan St	5-Lane Major Arterial	45,000	20,700	0.46	B
	Juan St	Morena Blvd	4- Lane Major Arterial	40,000	25,200	0.63	C
	Morena Blvd	I-8 EB Ramps	2-Lane Collector	8,000	15,200	1.90	F
Twiggs St[1]	Congress St	San Diego Ave	2-Lane Collector	8,000	2,600	0.33	B
	San Diego Ave	Juan St	2-Lane Collector	8,000	3,500	0.44	C
Harney St[1]	Congress St	San Diego Ave	2-Lane Collector	8,000	1,700	0.21	A
	San Diego Ave	Juan St	2-Lane Collector	8,000	3,200	0.40	B

Table 6.1 Daily Roadway Segment Analysis - Preferred Plan Conditions

Roadway	From	To	Classification	Maximum Capacity at LOS E	ADT	V/C	LOS
Old Town Ave[1]	Hancock St	Moore St	2-Lane Collector	8,000	12,300	1.54	**F**
	Moore St	San Diego Ave	2-Lane Collector	8,000	6,800	0.85	**E**

Source: Chen Ryan Associates (May 2017)

Note: **Bold** letter indicates LOS E or F

The following mitigation measures were identified for the two communities:

Midway-Pacific Highway Community

Midway Drive, between Rosecrans Street and Barnett Avenue (LOS E) – Improving the roadway way from a 4-Lane Collector with Center Left-Turn Lane to a 4-Lane Major Arterial would improve the operations to LOS C. The identified significant traffic related impact to this roadway segment would be fully mitigated with the implementation of this mitigation measure.

Kettner Boulevard, between Washington Street and Vine Street (LOS F) – Widening the roadway from a 3-Lane Major (One-Way) Arterial to a 4-Lane - Lane Major (One-Way) Arterial would improve the operations to LOS D. The identified significant traffic related impact to this roadway segment would be fully mitigated with the implementation of this mitigation measure.

Kettner Boulevard, between Vine Street and Sassafras Street (LOS F) – Widening the roadway from a 3-Lane Major (One-Way) Arterial to a 4-Lane - Lane Major (One-Way) Arterial would improve the operations to LOS D. The identified significant traffic related impact to this roadway segment would be fully mitigated with the implementation of this mitigation measure.

Kettner Boulevard, between Sassafras Street and Laurel Street (LOS F) – Widening the roadway from a 3-Lane Major (One-Way) Arterial to a 4-Lane - Lane Major (One-Way) Arterial would improve the operations to LOS D. The identified significant traffic related impact to this roadway segment would be fully mitigated with the implementation of this mitigation measure.

Camino Del Rio West, between Rosecrans Street and the I-5/I-8 Ramps (LOS F) – Improving this roadway from a 6-Lane Prime Arterial to a 6-Lane Expressway would improve the operations to LOS D. The identified significant traffic related impact to this roadway segment would be fully mitigated with the implementation of this improvement.

Sassafras Street, between Pacific Highway and Kettner Boulevard (LOS F) - Widening the roadway from a 3-Lane Collector to a 4-Lane Collector with Center Left-Turn Lane would improve the operations to LOS D. The identified significant traffic related impact to this roadway segment would be fully mitigated with the implementation of this improvement.

Old Town Community

Congress Street between Taylor Street and Twiggs Street (LOS E) - Widening the roadway from a 2-Lane Collector to a 2-Lane Collector with Center Left-Turn Lane would improve the operations to LOS C. The identified significant traffic related impact to this roadway segment would be fully mitigated with the implementation of this improvement.

San Diego Avenue, between Ampudia St and Old Town Avenue (LOS F) - Widening the roadway from a 2-Lane Collector to a 2-Lane Collector with Center Left-Turn Lane would improve the operations to LOS D. The identified significant traffic related impact to this roadway segment would be fully mitigated with the implementation of this improvement.

San Diego Avenue, between Old Town Avenue and Hortensia Street (LOS E) - Widening the roadway from a 2-Lane Collector to a 2-Lane Collector with Center Left-Turn Lane would improve the

operations to LOS B. The identified significant traffic related impact to this roadway segment would be fully mitigated with the implementation of this improvement.

Juan Street, between Taylor Street and Twiggs Street (LOS E) - Widening the roadway from a 2-Lane Collector to a 2-Lane Collector with Center Left-Turn Lane would improve the operations to LOS B. The identified significant traffic related impact to this roadway segment would be fully mitigated with the implementation of this mitigation measure.

Juan Street, between Twiggs Street and Harney Street (LOS E) - Widening the roadway from a 2-Lane Collector to a 2-Lane Collector with Center Left-Turn Lane would improve the operations to LOS B. The identified significant traffic related impact to this roadway segment would be fully mitigated with the implementation of this improvement.

Taylor Street, between Morena Boulevard and I-8 Ramps (LOS F) - Widening the roadway from a 2-Lane Collector to a 4-Lane Collector with Center Left-Turn Lane would improve the operations to LOS C. The identified significant traffic related impact to this roadway segment would be fully mitigated with the implementation of this improvement.

Old Town Avenue, between Hancock Street and Moore Street (LOS F) - Widening the roadway from a 2-Lane Collector to a 2-Lane Collector with Center Left-Turn Lane would improve the operations to LOS D. The identified significant traffic related impact to this roadway segment would be fully mitigated with the implementation of this mitigation measure.

Old Town Avenue, between Moore Street and San Diego Avenue (LOS E) - Widening the roadway from a 2-Lane Collector to a 2-Lane Collector with Center Left-Turn Lane would improve the operations to LOS B. The identified significant traffic related impact to this roadway segment would be fully mitigated with the implementation of this mitigation measure.

6.1.2 Intersection Geometry and LOS Analysis

AM and PM peak hour intersection LOS analyses were conducted for Preferred Plan conditions. It was assumed under implementation of the Preferred Plan that the proposed intersection improvements outlined in Sections 3.2.2 and 4.2.2 would be in place. Figure 6-3 and Figure 6-4 display the proposed intersection geometrics and forecast AM and PM peak hour turning movements under implementation of the Preferred Plan, respectively.

Table 6.2 and Figure 6-5 display the LOS results for the key study intersections located within both communities under Preferred Plan conditions. LOS analyses were conducted using the methodologies described in Chapter 2.0. Intersection LOS calculation worksheets are provided in Appendix E. Signal timing were assumed to be optimized under implementation of Preferred Plan conditions, therefore some signal operations may be projected to operate better than under existing conditions.

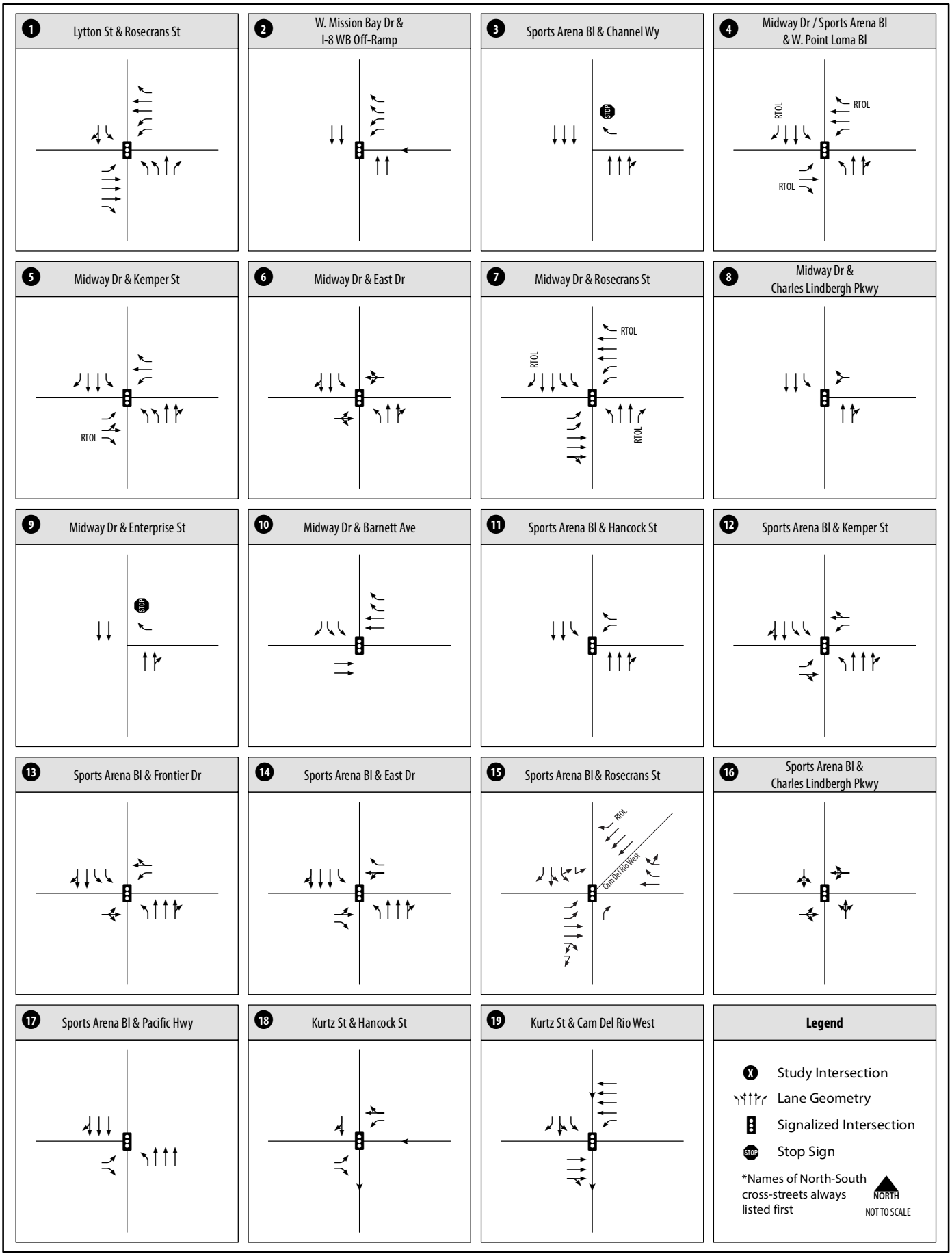

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Figure 6-3
Intersection Geometrics - Preferred Plan (Intersections 1-19)

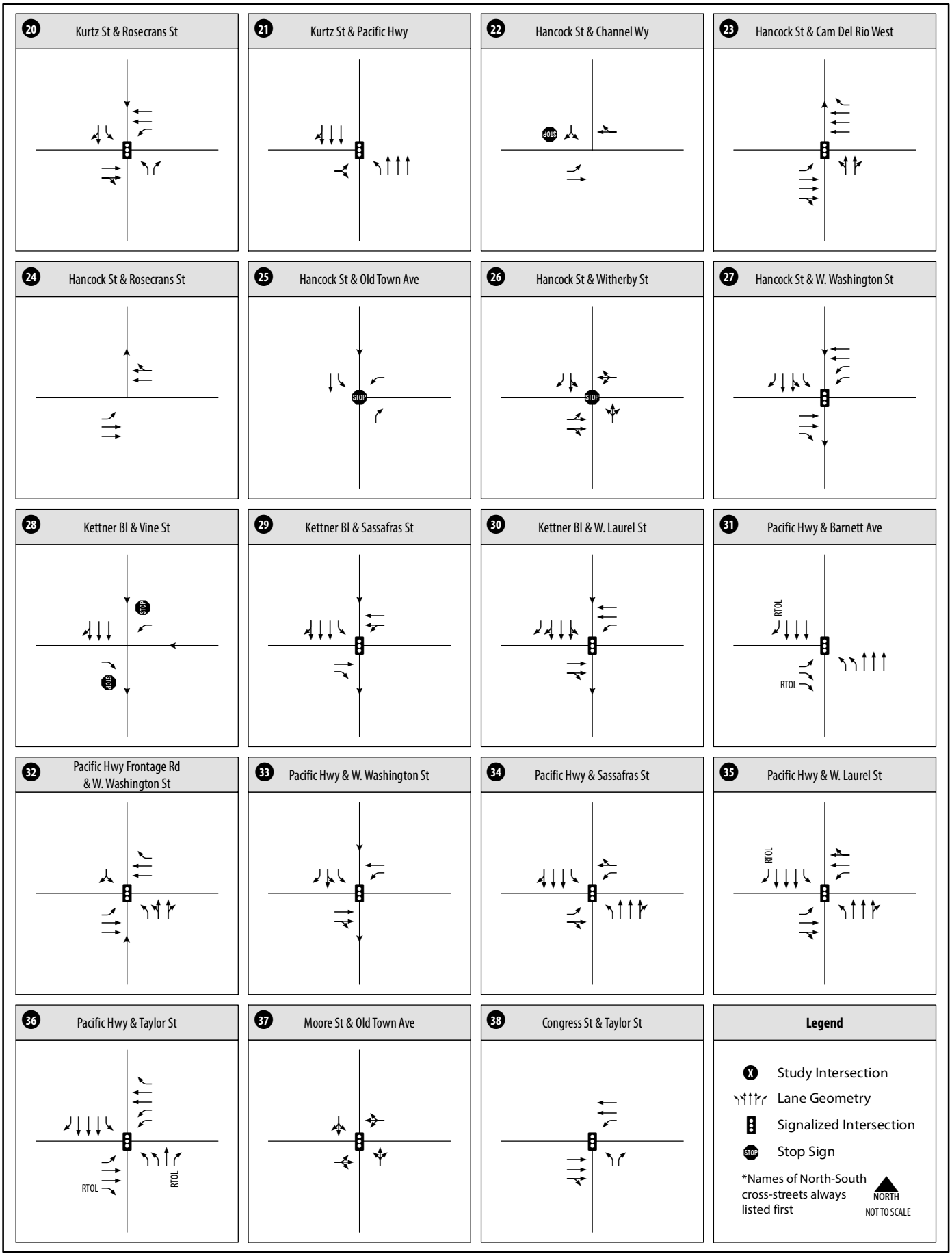

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Figure 6-3
Intersection Geometrics - Preferred Plan (Intersections 20-38)

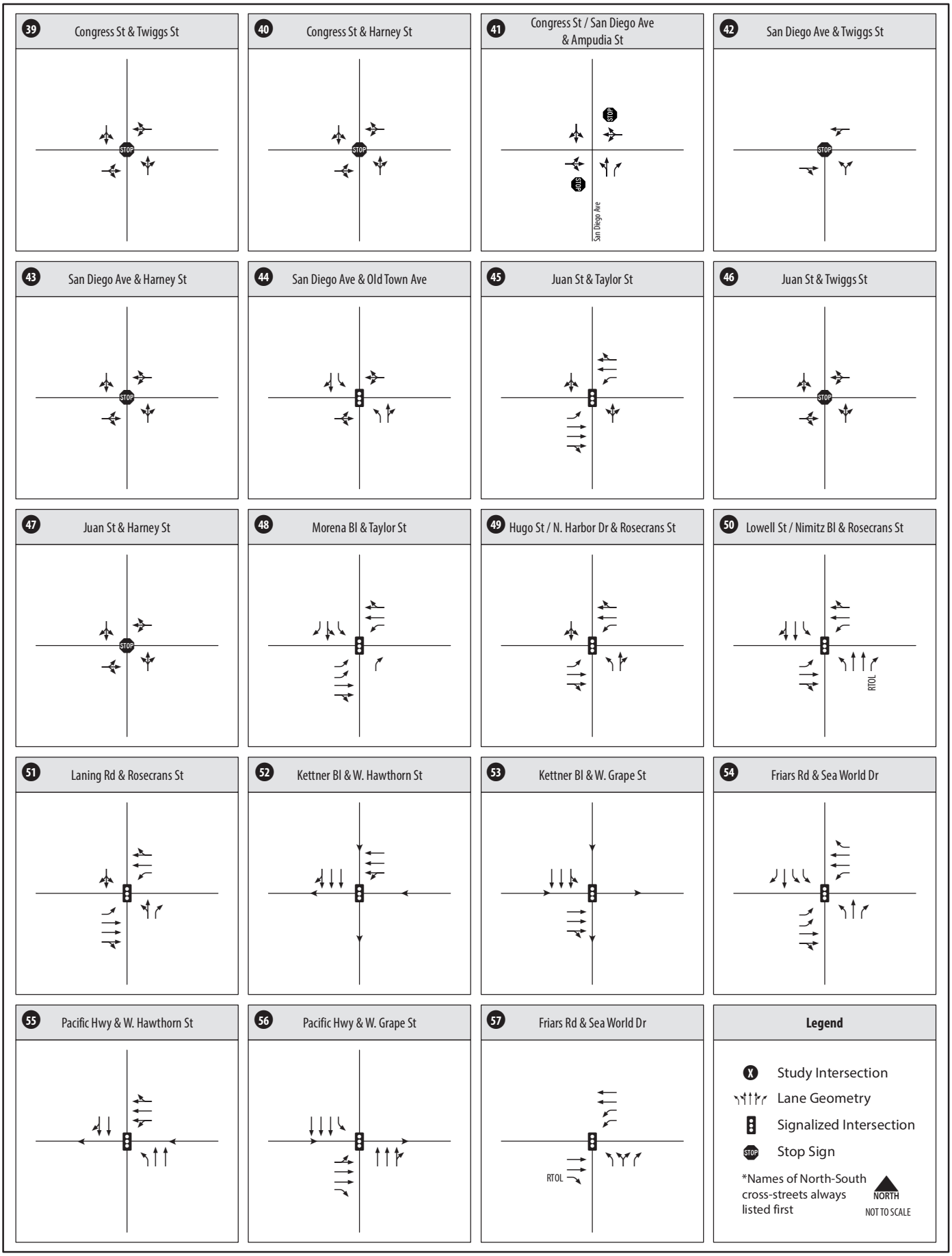

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Figure 6-3
Intersection Geometrics - Preferred Plan (Intersections 39-57)

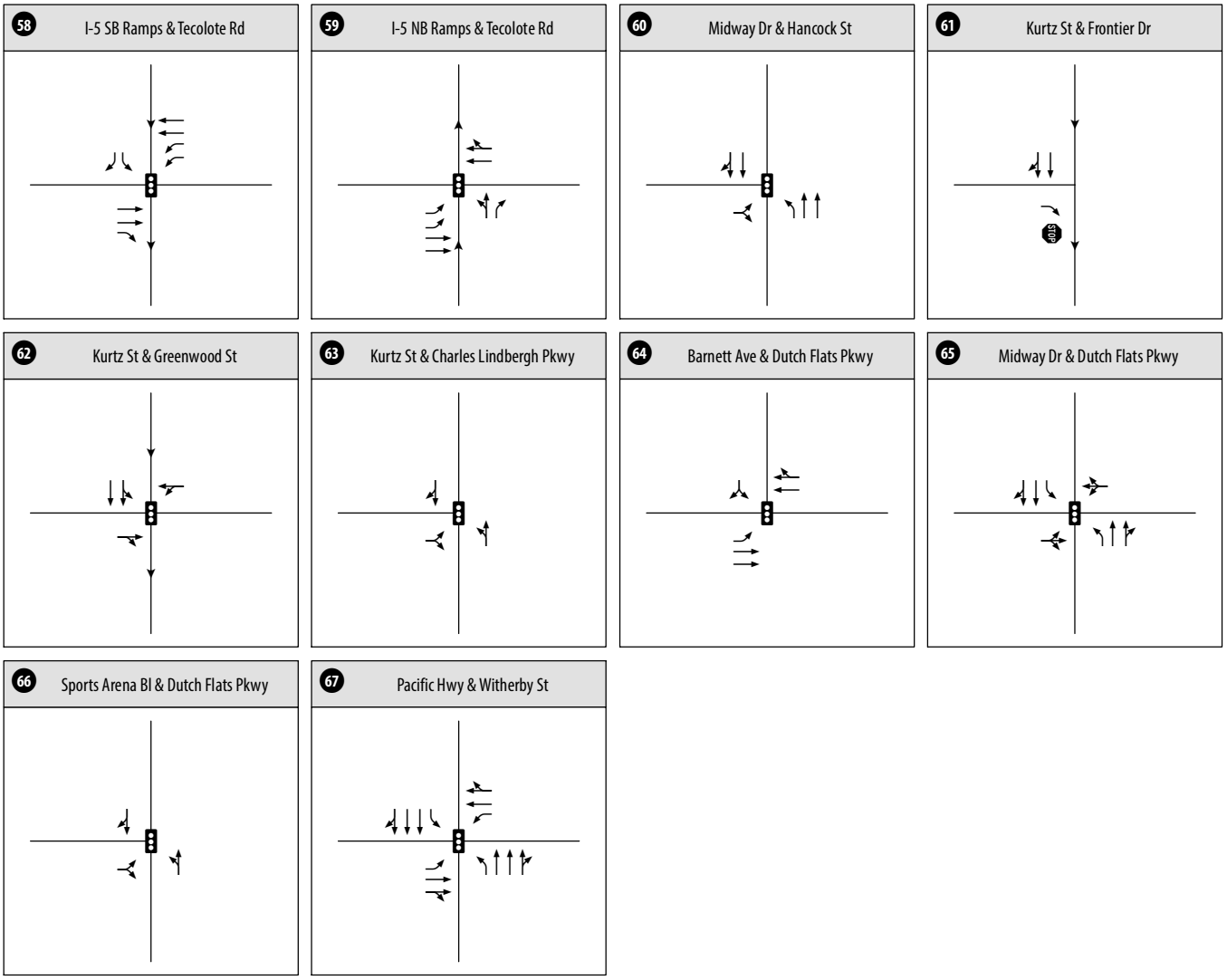

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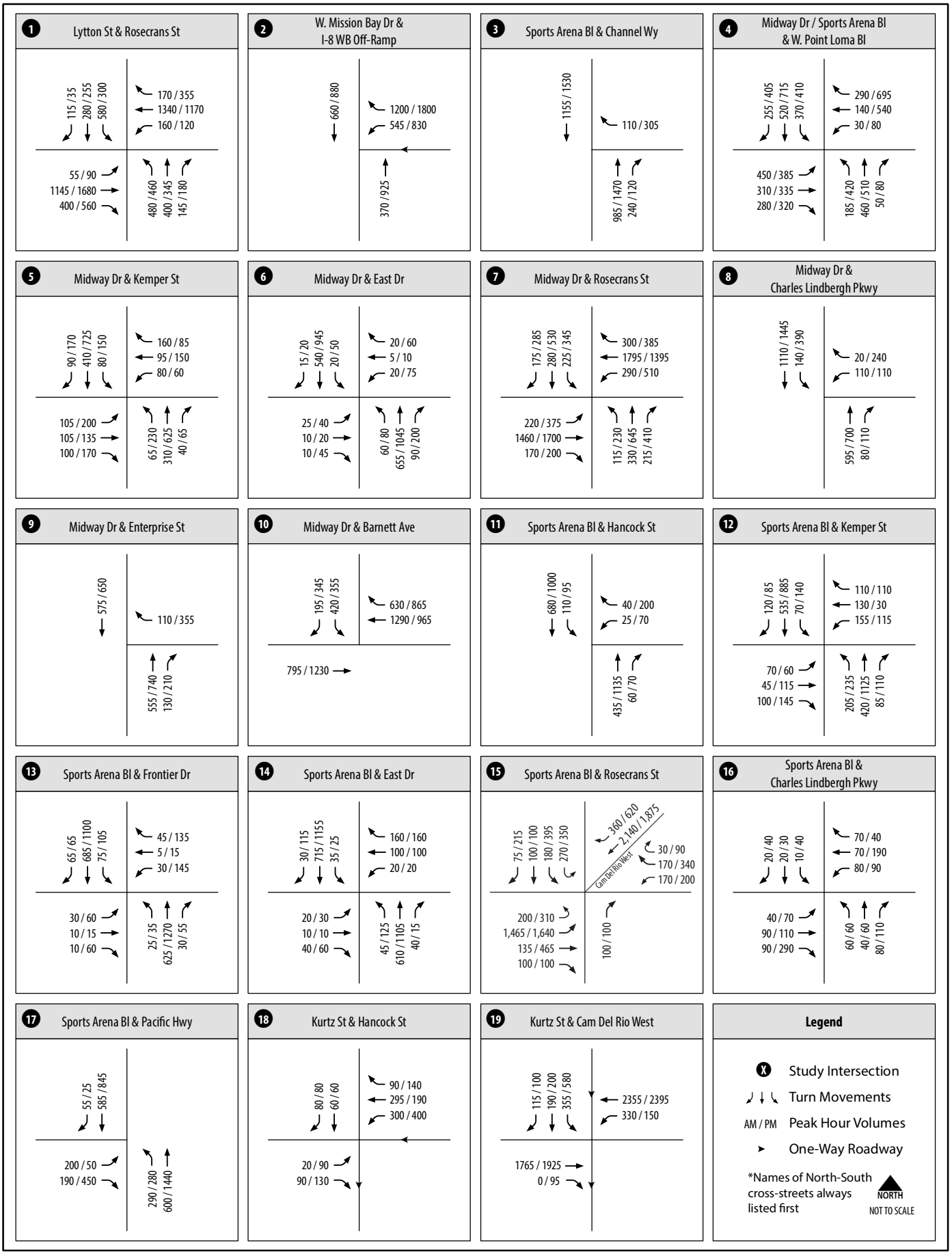
Figure 6-3
Intersection Geometrics - Preferred Plan (Intersections 58-67)



Midway-Pacific Highway and Old Town Community Plan Update

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Figure 6-4

Peak Hour Turning Movement Volumes - Preferred Plan Conditions (Intersections 1-19)

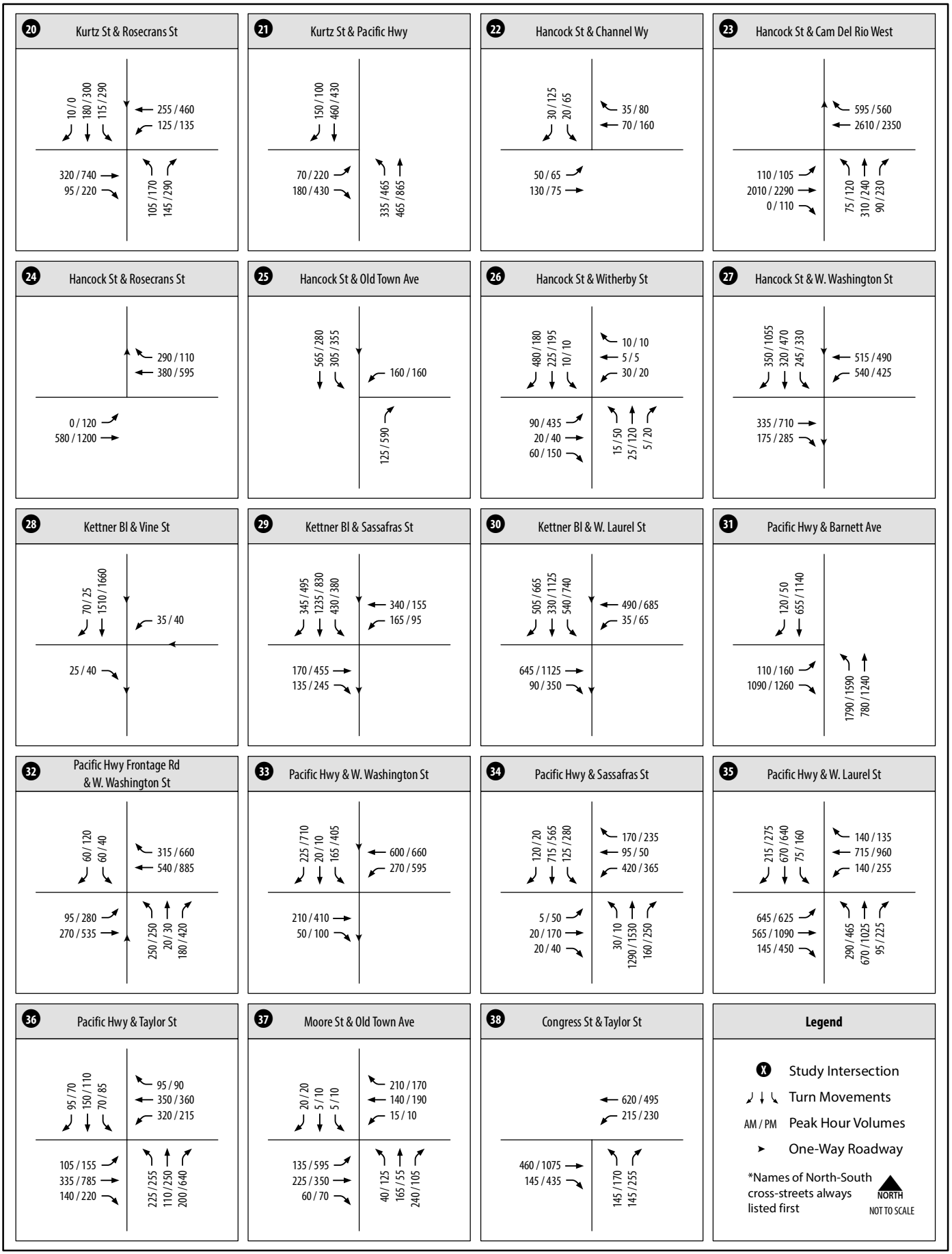

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Figure 6-4

Peak Hour Turning Movement Volumes - Preferred Plan Conditions (Intersections 20-38)

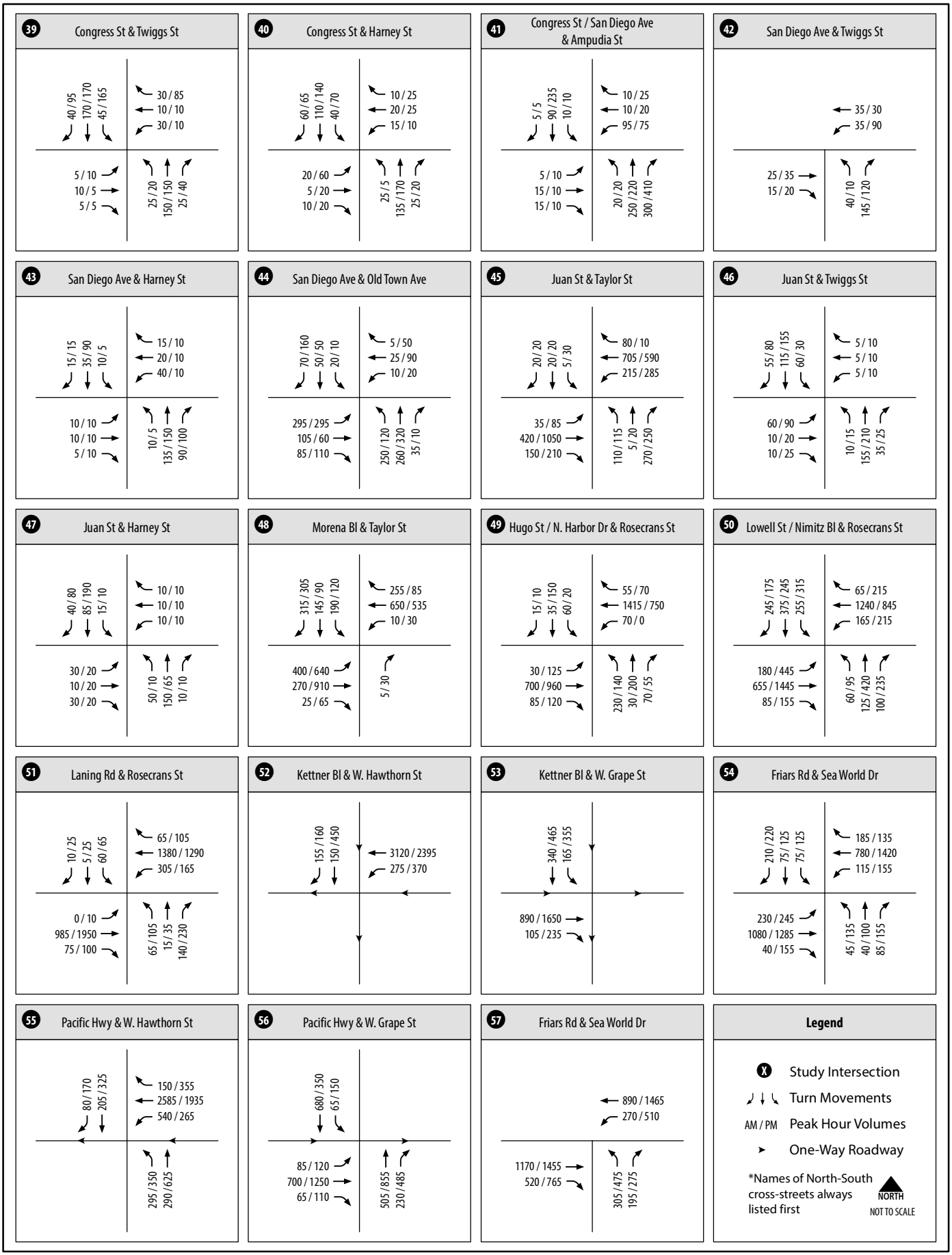

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Figure 6-4

Peak Hour Turning Movement Volumes - Preferred Plan Conditions (Intersections 39-57)

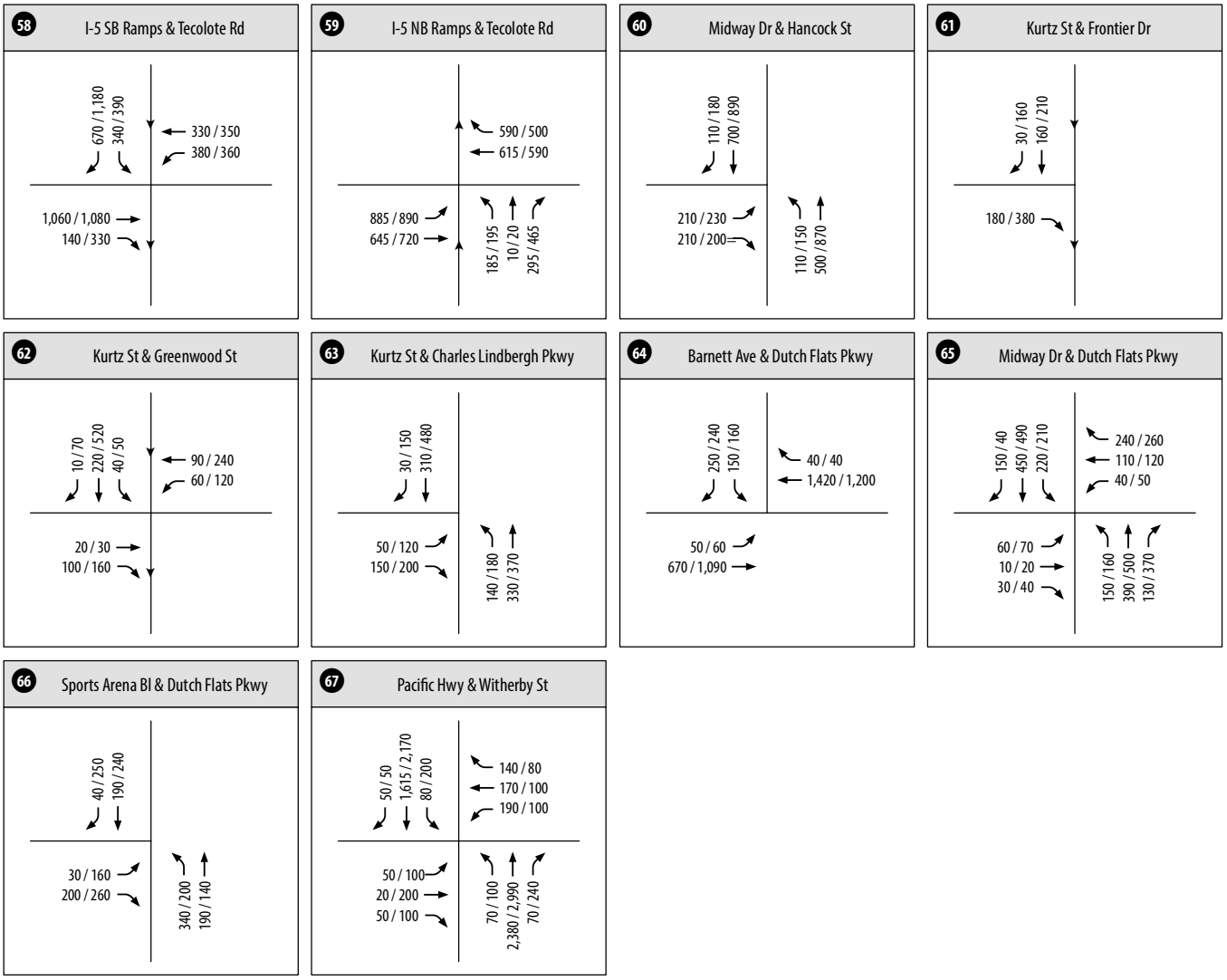

Figure 6-4
Peak Hour Turning Movement Volumes - Preferred Plan Conditions (Intersections 58-67)

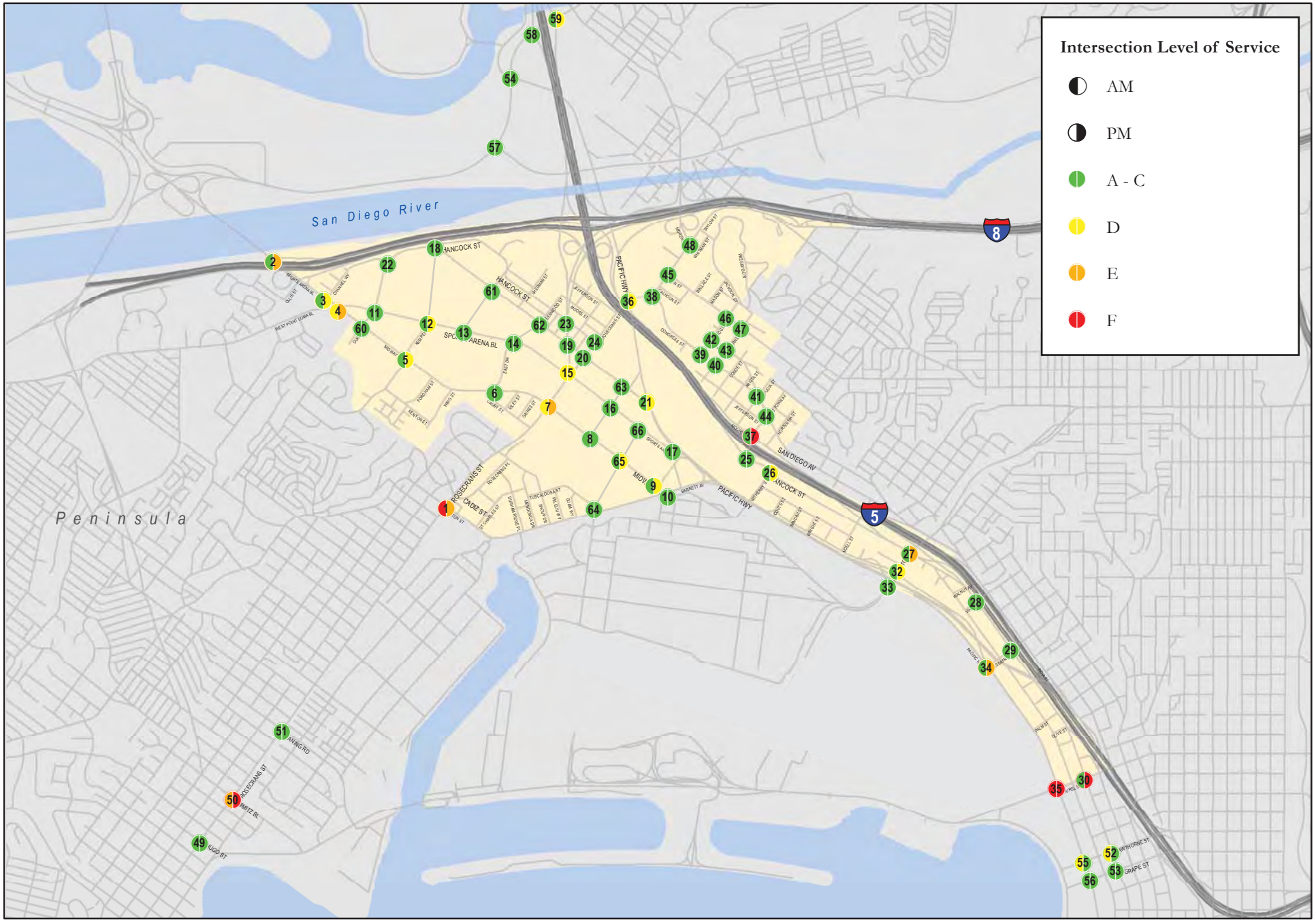

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Figure 6-5
Peak Hour Intersection LOS
Preferred Plan Conditions

Table 6.2 Peak Hour Intersection LOS and Delay Results – Preferred Plan Conditions

No.	Intersection	Control	AM Delay (Sec)	AM LOS	AM Existing LOS	PM Delay (Sec)	PM LOS	PM Existing LOS
Midway-Pacific Highway								
1	Lytton St and Rosecrans St	Signal	98.5	F	E	55.2	E	D
2	W Mission Bay Dr and I-8 WB Off-Ramp	Signal	15.7	B	B	71.7	E	E
3	Sports Arena Blvd and Channel Way	SSSC	12.1	B	B	33.8	D	B
4	Midway Dr and Sports Arena/W Point Loma Blvd	Signal	47.0	D	D	71.9	E	D
5	Midway Dr and Kemper St	Signal	30.6	C	C	37.6	D	D
6	Midway Dr and East Dr	Signal	5.6	A	A	16.0	B	B
7	Midway Dr and Rosecrans St	Signal	36.2	D	C	66.7	E	D
8	Midway Dr and Charles Lindbergh Pkwy	Signal	9.5	A	(1)	20.5	C	(1)
9	Midway Dr and Enterprise St	SSSC	12.2	B	B	32.9	D	C
10	Midway Dr and Barnett Ave	Signal	13.8	B	B	12.3	B	B
11	Sports Arena Blvd and Hancock St	Signal	13.4	B	A	16.1	B	B
12	Sports Arena Blvd and Kemper St	Signal	36.9	D	B	41.5	D	B
13	Sports Arena Blvd and Sports Arena Driveway	Signal	16.1	B	B	23.4	C	C
14	Sports Arena Blvd and East Dr	Signal	9.5	A	C	24.3	C	B
15	Sports Arena Blvd and Rosecrans St	Signal	34.9	C	D	50.6	D	D
16	Sports Arena Blvd and Charles Lindbergh Pkwy	Signal	13.4	B	(1)	15.0	B	(1)
17	Sports Arena Blvd and Pacific Hwy	Signal	26.7	C	B	16.8	B	B
18	Kurtz St and Hancock St	Signal	11.2	B	(2)	11.1	B	(2)
19	Kurtz St and Camino Del Rio West	Signal	25.3	C	A	31.9	C	C
20	Kurtz St and Rosecrans St	Signal	26.4	C	B	29.5	C	C
21	Kurtz St and Pacific Hwy	Signal	26.8	C	B	45.9	D	B
22	Hancock St and Channel Wy	SSSC	9.9	A	A	12.3	B	B
23	Hancock St and Camino Del Rio West	Signal	35.7	D	C	32.7	C	C
24	Hancock St and Rosecrans St	*No Conflicting Movements*						
25	Hancock St and Old Town Ave	AWSC	23.5	C	C	22.9	C	B
26	Hancock St and Witherby St	AWSC	12.7	B	C	29.5	D	C
27	Hancock St and Washington St	Signal	22.4	C	C	76.8	E	C
28	Kettner Blvd and Vine St	SSSC	15.6	C	B	17.9	C	C
29	Kettner Blvd and Sassafras St	Signal	14.2	B	B	15.1	B	B
30	Kettner Blvd and West Laurel St	Signal	18.5	B	B	77.7	E	C
31	Pacific Hwy and Barnett Ave	*No Conflicting Movements*						
32	Pacific Hwy and Washington St @ Frontage Rd	Signal	19.9	B	B	38.7	D	D

Table 6.2 Peak Hour Intersection LOS and Delay Results – Preferred Plan Conditions

No.	Intersection	Control	AM			PM		
			Delay (Sec)	LOS	Existing LOS	Delay (Sec)	LOS	Existing LOS
33	Pacific Hwy and Washington St	Signal	19.1	B	B	33.7	C	C
34	Pacific Hwy and Sassafras St	Signal	28.2	C	B	67.3	E	C
35	Pacific Hwy and West Laurel St	Signal	83.5	F	D	144.7	F	D
Old Town								
36	Pacific Hwy and Taylor St	Signal	29.6	C	E	43.4	D	C
37	Moore St and Old Town Ave	Signal	19.2	B	B	118.4	F	B
38	Congress St and Taylor St	Signal	13.5	B	B	18.6	B	C
39	Congress St and Twiggs St	AWSC	9.2	A	A	11.9	B	A
40	Congress St and Harney St	AWSC	8.7	A	A	9.7	A	A
41	Congress St and San Diego Ave/Ampudia St	SSSC	15.2	C	B	16.8	C	B
42	San Diego Ave and Twiggs St	AWSC	7.8	A	A	7.8	A	A
43	San Diego Ave and Harney St	AWSC	8.4	A	A	8.4	A	A
44	San Diego Ave and Old Town Ave	Signal	17.7	B	B	16.2	B	B
45	Juan St and Taylor St	Signal	13.3	B	B	18.6	B	B
46	Juan St and Twiggs St	AWSC	9.0	A	A	10.1	B	A
47	Juan St and Harney St	AWSC	8.6	A	A	8.8	A	A
48	Morena Blvd and Taylor St	Signal	21.9	C	C	20.2	C	B
Intersections Outside of Study Communities								
49	Hugo St/N. Harbor Dr and Rosecrans St	Signal	28.1	C	B	32.6	C	C
50	Lowell St/Nimitz Blvd and Rosecrans St	Signal	58.9	E	D	118.0	F	E
51	Laning Rd and Rosecrans St	Signal	23.0	C	B	20.5	C	B
52	Kettner Blvd and West Hawthorn St	Signal	38.7	D	B	16.5	B	B
53	Kettner Blvd and West Grape St	Signal	10.3	B	A	14.8	B	A
54	Pacific Hwy and Sea World Dr	Signal	23.3	C	B	37.3	D	C
55	Pacific Hwy and West Hawthorn St	Signal	35.5	D	D	37.1	D	C
56	Pacific Hwy and West Grape St	Signal	17.8	B	B	31.7	C	C
57	Friars Rd and Sea World Dr	Signal	15.1	B	B	27.4	C	B
58	I-5 SB Ramps and Sea World Dr	Signal	17.8	B	B	18.7	B	E
59	I-5 NB Ramps and Sea World Dr	Signal	29.6	C	C	38.3	D	C
New Intersections (Midway-Pacific Highway Community)								
60	Midway Dr & Duke Street / Hancock St	Signal	27.1	C	(1)	32.1	C	(1)
61	Kurtz St & Frontier Dr	SSSC	9.9	A	(1)	14.1	B	(1)
62	Kurtz St & Greenwood St	Signal	11.9	B	(1)	12.4	B	(1)
63	Kurtz St & Charles Lindbergh Pkwy	Signal	8.3	A	(1)	17.9	B	(1)

Table 6.2 Peak Hour Intersection LOS and Delay Results – Preferred Plan Conditions

No.	Intersection	Control	AM Delay (Sec)	AM LOS	AM Existing LOS	PM Delay (Sec)	PM LOS	PM Existing LOS
64	Barnett Ave & Dutch Flats Pkwy	Signal	24.6	C	(1)	14.4	B	(1)
65	Midway Dr & Dutch Flats Pkwy	Signal	32.2	C	(1)	44.6	D	(1)
66	Dutch Flats Pkwy & Sports Arena Bl	Signal	10.8	B	(1)	18.3	B	(1)

Source: Chen Ryan Associates (May 2017)

Notes:
(1) Intersection does not currently exist.
(2) Intersection experienced no control delay under existing conditions.
Bold letters indicate LOS E or F.

The following mitigation measures were identified for the two communities:

Midway-Pacific Highway Community

1. *Lytton Street and Rosecrans Street (LOS F: AM Peak Hour and LOS E PM Peak Hour)* – The westbound through movement, as well as the southbound left-turn and through movements are projected to be over capacity, under implementation of the Preferred Plan. Implementing the following improvements would allow the intersection to operate at LOS D or better during both peak hours.

    - Add a second southbound left-turn lane
    - Add an additional westbound through movement lane on Rosecrans Street (three total)
    - Implement right-turn overlap (RTOL) phases at all legs of the intersection

    The identified significant traffic related impact to this intersection would be fully mitigated with the implementation of this improvement.

    Partial Mitigation: If the second southbound left-turn and RTOL phase are implemented (feasible improvements) the overall intersection delay would be reduced to the following:

    AM: LOS E
    PM: LOS D

    Implementation of this improvement will partially mitigate the traffic related impact at the intersection.

2. *Sports Arena Boulevard / West Mission Bay and I-8 WB Off-Ramp (LOS E: PM Peak Hour)* – The westbound right-turn movement at this intersection is projected to be over capacity during the PM peak hour, under the implementation of the Preferred Plan. Providing a third exclusive westbound right-turn lane or converting the movement to free-right-turn movement would improve the intersection operations to LOS D. The identified significant traffic related impact to this intersection would be fully mitigated with the implementation of this improvement.

Partial Mitigation: None recommended.

4. *Midway Drive / West Point Loma Drive and Sports Arena Boulevard (LOS E: PM Peak Hour)* – All four left-turn movements at this intersection are projected to be over capacity during the PM Peak Hour. Providing dual-left turn lanes in the northbound, southbound and eastbound directions would improve intersection operations to LOS D during the PM peak hour. The identified significant traffic related impact to this intersection would be fully mitigated with the implementation of this improvement.

   Partial Mitigation: None recommended.

7. *Midway Drive and Rosecrans Street* (LOS E: PM Peak Hour) – Rosecrans Street is projected to operate at LOS E during the PM peak hours, under implementation of the Preferred Plan. Widening the eastbound and westbound approaches of the intersection to include a fourth through lane would improve the intersection operations to LOS D. The identified significant traffic related impact to this intersection would be fully mitigated with the implementation of this improvement.

   Partial Mitigation: None recommended, limited to no right-of-way is anticipated to be available with proposed Multi-Use Urban Path improvements.

27. *Hancock Street and Washington Street (LOS E: PM Peak Hour)* – The southbound right-turn movement of the intersection is projected to be over capacity during the PM peak hour, under the implementation of the Preferred Plan. Restriping the southbound approach to include a second southbound right-turn lane would allow the intersection to operate at LOS C during the PM Peak Hour. This improvement is feasible but may require additional engineering study. The identified significant traffic related impact to this intersection would be fully mitigated with the implementation of this improvement.

    Partial Mitigation: None recommended.

30. *Kettner Boulevard and Laurel Street (LOS F: PM Peak Hour)* – The eastbound through movement at the intersection is projected to be over capacity during the PM peak hour, under implementation of the Preferred Plan. Widening the eastbound approach of the intersection to include a third through lane would improve the intersection operations to LOS D. The identified significant traffic related impact to this intersection would be fully mitigated with the implementation of this improvement.

    Partial Mitigation: None recommended.

34. *Pacific Highway and Sassafras Street (LOS E: PM Peak Hour)* – The southbound left-turn movement of the intersection is projected to be over capacity during the PM peak hour, under the implementation of the Preferred Plan. Adding a second southbound left-turn

lane would allow the intersection to operate at LOS D during the PM peak hour. The identified significant traffic related impact to this intersection would be fully mitigated with the implementation of this improvement.

Partial Mitigation: None recommended.

35. *Pacific Highway and Laurel Street (LOS F: AM and PM Peak Hours)* – Laurel Street is projected to be over capacity during both peak hours, under implementation of the Preferred Plan. Widening the eastbound, westbound and northbound approaches of the intersection to include a third through lane and a second eastbound left-turn lane, as well as a second northbound left-turn lane and exclusive right-turn lane would improve the intersection operations to LOS D. The identified significant traffic related impact to this intersection would be fully mitigated with the implementation of this improvement.

    Partial Mitigation: None recommended.

Old Town Community

37. *Moore Street and Old Town Street (LOS F: PM Peak Hour)* – The eastbound and westbound movements of the intersection are projected to be over capacity during the PM peak hour, under implementation of the Preferred Plan. Implementation of the following improvements would allow the intersection to operate at LOS D during the PM peak hour.

    - Implement exclusive eastbound and westbound left-turn lanes.
    - Convert the eastbound/westbound signal phasing from permitted to protected phasing.

    The identified significant traffic related impact to this intersection would be fully mitigated with the implementation of this improvement.

    Partial Mitigation: None recommended.

Outside of the Community

50. *Nimitz Boulevard / Lowell Street and Rosecrans Street (LOS E: AM Peak Hour and LOS F: PM Peak Hour*) – Both the southbound through movement and eastbound left-turn movement are anticipated to be over capacity during both peak hours, under implementation of Preferred Plan. Widening the northbound and southbound approaches of the intersection to include a third through lane and a second southbound left-turn lane would improve the intersection operations to LOS D or better during both the AM and PM peak hours. Implementation of the following improvements would allow the intersection to operate at LOS D or better during both the AM and PM peak hours.

    The identified significant traffic related impact to this intersection would be fully mitigated with the implementation of this improvement.

    Partial Mitigation: None recommended.

6.1.3 Intersection Queuing Analysis

A queuing analysis was conducted under Preferred Plan conditions, at each of the study intersections to assess potential overflowing issues at exclusive turn-lanes and closely spaced intersections. Closely spaced intersections include all ramp intersections and intersections within close proximity (less than 500 feet) to one another. The limitations in turn-lane storage capacity could result in turning vehicles overflow into adjacent lanes, while excessive queuing (queue length exceeds distance to upstream intersection) at closely spaced intersection could negatively affect the operations of the upstream intersection. When either situation occurs, traffic operations could deteriorate, resulting in additional levels of congestion.

Table 6.3 displays the average (50th percentile) and maximum (95th percentile) queue lengths at closely spaced intersections (500 feet apart), for relevant movements. Synchro intersection queuing reports are provided in Appendix E following the intersection LOS worksheets.

Table 6.3 Queue Lengths at Closely Spaced Intersections – Preferred Plan Conditions

#	Impacted Intersection	Peak Hour	Upstream Intersection	Spacing (Feet)	Turning Movement	95th% Queue Length (Feet)	50th% Queue Length (Feet)
7	Midway Dr and Rosecrans St	AM	15. Sports Arena Blvd and Rosecrans St	665	EBT	341	291
		PM				596	443
15	Sports Arena Blvd and Rosecrans St	AM	19. Kurtz St and Camino Del Rio West	380	EBT	652	579
		PM				736	640
19	Kurtz St and Camino Del Rio West	AM	23. Hancock St and Camino Del Rio West	315	NET	238	184
		PM				357	286
20	Kurtz St and Rosecrans St	AM	15. Sports Arena Blvd and Rosecrans St	310	WBT	689	556
		PM				539	444
N/A	I-5 SB Off-Ramp and Camino Del Rio West	AM	23. Hancock St and Camino Del Rio West	490	SWT	1,168	1,086
		PM				1,061	979

Source: Chen Ryan Associates (May 2017)

Midway-Pacific Highway Community

As shown, the maximum (95th percentile) and average (50th percentile) queue lengths at all closely spaced intersections, with the exception of the average queue length at Kurtz Street and Camino Del Rio West, are anticipated to exceed the spacing between intersections under implementation of Preferred Plan conditions. Queuing spillovers could degrade traffic operations at the upstream intersections.

Old Town

There are no signalized intersections within 500 feet of each other within the Old Town Community.

Table 6.4 displays the average (50th percentile) and maximum (95th percentile) queue lengths for intersection movements where the maximum peak hour queue length is projected to exceed the current storage length under Preferred Plan conditions. Synchro intersection queuing reports are provided in Appendix E following the intersection LOS worksheets.

Table 6.4 Queue Lengths at Closely Spaced Intersections – Preferred Plan Conditions

No.	Intersection	Movement	Peak	95th % Queue Length (Feet)	50th % Queue Length (Feet)	Pocket Length (Feet)	Excess 95th % Queue (Feet)	Excess 50th % Queue (feet)
Study Intersections within the Midway-Pacific Highway Community Planning Area								
1	Lytton St and Rosecrans St	EBL	AM	163	62	105	58	0
			PM	223	98	105	118	0
		NBL	AM	339	241	230	109	11
			PM	384	267	230	154	37
		SBL	AM	1029	787	185	844	602
			PM	551	350	185	366	165
4	Midway Dr and Sports Arena/W Point Loma Blvd	EBL	AM	769	360	380	389	0
			PM	706	489	380	326	109
		NBL	AM	265	144	230	35	0
			PM	729	508	230	499	278
5	Midway Dr and Kemper St	EBL	AM	122	89	100	22	0
			PM	196	147	100	96	47
7	Midway Dr and Rosecrans St	WBL	AM	195	110	340	0	0
			PM	436	317	340	96	0
		SBL	AM	160	85	90	70	0
			PM	294	185	90	204	95
		NBL	AM	189	84	190	0	0
			PM	472	291	190	282	101
		NBR	AM	97	45	190	0	0
			PM	405	278	190	215	88
12	Sports Arena Blvd and Kemper Street	EBL	AM	88	59	50	38	9
			PM	108	63	50	58	13
		NBL	AM	269	146	160	109	0
			PM	386	264	160	226	104
14	Sports Arena Blvd and East Drive	NBL	AM	47	25	130	0	0
			PM	165	132	130	35	2
15	Sports Arena Blvd and Rosecrans St	EBL	AM	131	78	220	0	0
			PM	180	94	220	0	0
		NBL	AM	260	130	130	130	0
			PM	263	127	130	133	0

Table 6.4 Queue Lengths at Closely Spaced Intersections – Preferred Plan Conditions

No.	Intersection	Movement	Peak	95th % Queue Length (Feet)	50th % Queue Length (Feet)	Pocket Length (Feet)	Excess 95th % Queue (Feet)	Excess 50th % Queue (feet)
19	Kurtz St and Camino Del Rio West	SBL	AM	357	282	210	147	72
			PM	474	346	210	264	136
		WBL	AM	333	219	110	223	109
			PM	253	117	110	143	7
20	Kurtz St and Rosecrans St	NBL	AM	150	93	60	90	33
			PM	203	102	60	143	42
		WBL	AM	90	43	85	5	0
			PM	122	45	85	37	0
23	Hancock St and Camino Del Rio West	WBR	AM	417	260	140	277	120
			PM	364	220	140	224	80
		EBL	AM	112	89	110	2	0
			PM	172	105	110	62	0
27	Hancock St and Washington St	WBL	AM	229	140	140	89	0
			PM	335	226	140	195	86
		SBR	AM	96	29	270	0	0
			PM	1367	1102	270	1097	832
29	Kettner Blvd and Sassafras Street	SBL	AM	190	115	80	110	35
			PM	187	112	80	107	32
34	Pacific Highway and Sassafras Street	WBL	AM	419	237	100	319	137
			PM	550	354	100	450	254
		SBL	AM	159	76	250	0	0
			PM	469	290	250	219	40
35	Pacific Hwy and West Laurel St	EBL	AM	977	739	375	602	364
			PM	1156	911	375	781	536
		WBL	AM	195	125	70	125	55
			PM	547	358	70	477	288
		NBL	AM	512	325	90	422	235
			PM	893	665	90	803	575
		SBL	AM	138	68	250	0	0
			PM	380	221	250	130	0
Study Intersections within the Old Town Community Planning Area								
36	Pacific Hwy and Taylor St	EBL	AM	142	55	150	0	0
			PM	212	124	150	62	0
		WBL	AM	212	89	160	52	0
			PM	118	82	160	0	0

Table 6.4 Queue Lengths at Closely Spaced Intersections – Preferred Plan Conditions

No.	Intersection	Movement	Peak	95th % Queue Length (Feet)	50th % Queue Length (Feet)	Pocket Length (Feet)	Excess 95th % Queue (Feet)	Excess 50th % Queue (feet)
36	Pacific Hwy and Taylor St	NBL	AM	163	63	100	63	0
			PM	233	110	100	133	10
		NBR	AM	41	0	200	0	0
			PM	560	400	200	360	200
38	Congress St and Taylor St	WBL	AM	215	71	100	115	0
			PM	240	95	100	140	0
44	San Diego Avenue and Old Town Street	NBL	AM	158	62	75	83	0
			PM	80	26	75	5	0
45	Juan Street and Taylor Street	WBL	AM	97	31	95	2	0
			PM	196	58	95	101	0
48	Morena Blvd and Taylor St	EBL	AM	186	85	180	6	0
			PM	255	138	180	75	0
49	Hugo St and Rosecrans St	NBL	AM	270	183	115	155	68
			PM	209	138	115	94	23
50	Nimitz Blvd and Rosecrans St	EBL	AM	344	172	300	44	0
			PM	783	568	300	483	268
		WBL	AM	184	114	300	0	0
			PM	441	267	300	141	0
		NBL	AM	96	49	75	21	0
			PM	158	96	75	83	21
		SBL	AM	409	236	285	124	0
			PM	597	395	285	312	110
54	Pacific Highway and Seaworld Drive	WBL	AM	177	56	170	7	0
			PM	254	104	170	84	0
		NBL	AM	73	22	150	0	0
			PM	240	92	150	90	0
56	Pacific Highway and Grape St	SBL	AM	71	32	130	0	0
			PM	188	81	130	58	0
57	Friars Road and Seaworld Dr	EBR	AM	97	60	180	0	0
			PM	373	245	180	193	65
		WBL	AM	145	59	205	0	0
			PM	318	190	205	113	0
		NBL	AM	98	65	150	0	0
			PM	217	162	150	67	12

Table 6.4 Queue Lengths at Closely Spaced Intersections – Preferred Plan Conditions

No.	Intersection	Movement	Peak	95th % Queue Length (Feet)	50th % Queue Length (Feet)	Pocket Length (Feet)	Excess 95th % Queue (Feet)	Excess 50th % Queue (feet)
58	I-5 SB Ramps and Tecolote Road	WBL	AM	144	82	120	24	0
			PM	107	85	120	0	0
59	I-5 NB Ramps and Tecolote Road	EBL	AM	347	234	170	177	64
			PM	355	243	170	185	73

Source: Chen Ryan Associates (May 2017)

Midway-Pacific Highway Community

As shown, under implementation of the Preferred Plan, 29 different movements within the Midway-Pacific Highway Community are projected to have queue lengths exceeding their storage capacity at the most congested point of the peak hour (95th Percentile). The spillovers could degrade traffic operations within the intersection or adjacent closely spaced, upstream intersections for approximately one to two cycles during the peak hour. However, only 24 movements are anticipated to have queues that exceed their storage capacity on an average during either peak hour (50th Percentile).

Old Town

As shown, under implementation of the Preferred Plan, 8 different movements within the Old Town Community are projected to have queue lengths exceeding their storage capacity at the most congested point of the peak hour (95th Percentile). The spillovers could degrade traffic operations within the intersection or adjacent closely spaced, upstream intersections for approximately one to two cycles during the peak hour. However, only 1 movement is anticipated to have queues that exceed their storage capacity on an average during either peak hour (50th Percentile).

Other Communities

As shown, under implementation of the Preferred Plan, 13 different movements within other communities are projected to have queue lengths that exceed their storage capacity at the most congested point of the peak hour (95th Percentile). The spillovers could degrade traffic operations within the intersection or adjacent closely spaced, upstream intersections for approximately one to two cycles during the peak hour. However, only 6 movements are anticipated to have queues that exceed their storage capacity on an average during either peak hour (50th Percentile).

6.1.4 Freeway Segments and LOS Analysis

Neither the Revenue Constrained Alternative of SANDAG's *San Diego Forward Plan* (October 2015) nor the Preferred Plan include freeway improvements, as noted in Sections 3.2.2 and 4.2.2. Table 6.5 displays the freeway segment LOS in the vicinity of the Midway-Pacific Highway and Old Town communities. Forecast freeway volumes were obtained from the modeling process described in Section 5.0.

Table 6.5 Freeway Segment LOS Results – Preferred Plan Conditions

								AM					PM				
Freeway	To	From	Dir	Daily Volume	HVF	Lanes	Aux	K	D	Peak Volume	V/C	LOS	K	D	Peak Volume	V/C	LOS
I-8	Beginning of Freeway	Sports Arena Boulevard	EB	60,400	1.2%	2	0	6.3%	60%	2,600	0.55	B	8.7%	72%	3,100	0.66	C
			WB			2	0		40%	1,700	0.36	A		28%	2,700	0.57	B
	Sports Arena Boulevard	I-5	EB	121,800	2.8%	3	1	6.4%	60%	5,300	0.63	C	7.9%	63%	5,500	0.65	C
			WB			3	1		40%	3,500	0.41	B		37%	5,200	0.62	B
	I-5	Morena Boulevard	EB	181,800	2.8%	4	1	6.4%	41%	5,400	0.50	B	7.3%	51%	6,600	0.61	B
			WB			5	0		59%	7,600	0.65	C		49%	8,000	0.68	C
	Morena Boulevard	Hotel Circle	EB	215,400	2.8%	4	1	6.5%	47%	7,300	0.68	C	8.2%	55%	10,900	1.01	F
			WB			5	0		53%	8,300	0.71	C		45%	9,000	0.77	C
I-5	Clairemont Drive	Sea World Drive	NB	240,800	4.5%	5	0	6.4%	61%	10,900	0.93	E	8.3%	51%	11,700	1.00	E
			SB			5	0		39%	6,900	0.59	B		49%	11,200	0.95	E
	Sea World Drive	I-8	NB	230,400	4.5%	4	1	6.4%	62%	10,400	0.96	E	8.4%	52%	11,600	1.07	F
			SB			4	2		38%	6,300	0.52	B		48%	10,700	0.88	D
	I-8	Old Town Avenue	NB	242,000	4.1%	4	1	6.9%	49%	9,400	0.87	D	8.2%	39%	8,900	0.82	D
			SB			5	0		51%	9,600	0.82	D		61%	13,800	1.17	F
	Old Town Avenue	Washington Avenue	NB	227,200	4.1%	4	0	6.9%	49%	8,900	0.95	E	8.0%	51%	10,600	1.13	F
			SB			5	0		51%	9,100	0.77	C		49%	10,200	0.87	D
	Washington Avenue	Pacific Highway	NB	172,500	4.1%	4	0	6.9%	54%	7,300	0.78	C	8.1%	36%	5,800	0.62	B
			SB			4	0		46%	6,300	0.67	C		64%	10,200	1.09	F
	Pacific Highway	Laurel Street	NB	217,000	4.1%	4	1	6.7%	58%	9,800	0.91	D	7.1%	49%	8,200	0.76	C
			SB			4	1		42%	7,000	0.65	C		51%	9,300	0.86	D
	Laurel Street	Hawthorne Avenue	NB	219,000	4.1%	4	1	6.7%	57%	9,800	0.91	D	7.4%	46%	8,000	0.74	C
			SB			4	1		43%	7,300	0.68	C		54%	10,500	0.97	E

Source: Chen Ryan Associates (May 2017)

Note:
Bold letter indicates LOS E or F

As shown, all mainline freeway segments are projected to operate at LOS D or better under Preferred Plan conditions, with the exception of the following:

- I-8 EB, between Morena Boulevard and Hotel Circle Drive (LOS F: PM Peak Hour)
- I-5 NB, between Clairemont Drive and Sea World Drive (LOS E: AM & PM Peak Hours)
- I-5 SB, between Clairemont Drive and Sea World Drive (LOS E: PM Peak Hour)
- I-5 NB, between Sea World Drive and I-8 (LOS E: AM Peak Hour, LOS F: PM Peak Hour)
- I-5 SB, between I-8 and Old Town Avenue (LOS F: PM Peak Hour)
- I-5 NB, between Old Town Avenue and Washington Avenue (LOS E: AM Peak Hour and LOS F: PM Peak Hour)
- I-5 SB, between Washington Avenue and Pacific Highway (LOS F: PM Peak Hour)
- I-5 SB, between Laurel Street and Hawthorne Avenue (LOS E: PM Peak Hour)

6.1.5 Meter Analysis

Table 6.6 summarizes the freeway ramp metering analysis results under implementation of the Preferred Plan for all ramp meter locations within both study communities. The volumes were derived using the outputs for the modeling described in Section 5.0. Existing ramp meter flow rates were assumed under Preferred Plan conditions.

Table 6.6 Freeway Ramp Metering Analysis – Preferred Plan Conditions

Ramp	Peak	Lanes		Flow Rate	Volume	Excess Demand	Delay (Minutes)	Queue (Feet)
		SOV	HOV					
I-8 EB / Sports Arena Boulevard	PM	2	1	641	920	279	26.1	8,091
I-5 SB / Sea World Drive	AM	1	1	444	520	76	10.3	2,204
	PM	1	1	444	690	246	33.2	7,134
I-5 NB / Sea World Drive	AM	2	0	1,555	1,470	0	0.0	0
	PM	2	0	1,656	1,370	0	0.0	0
I-5 SB / Old Town Avenue	PM	1	0	461	410	0	0.0	0
I-5 NB / Old Town Avenue	AM	2	0	905	370	0	0.0	0
	PM	2	0	888	690	0	0.0	0

Source: Chen Ryan Associates (May 2017)

Notes:
SOV = Single Occupancy Vehicle; HOV = High Occupancy Vehicle.
[1] Demand is the peak hour demand expected to use the on-ramp.
[2] Meter Rate is the peak hour capacity expected to be processed through the ramp meter. This value was obtained from Caltrans.
[3] Excess Demand = (Demand) – (Meter Rate) or zero, whichever is greater.
[4] Delay = (Excess Demand / Meter Rate) X 60 min/hr.
[5] Queue = (Excess Demand) X 29 ft/veh.

As shown in the table, the anticipated peak hour demand is not anticipated to exceed the anticipated meter rate at any of the study ramp meter locations creating a delay of 15 minutes[1], with the exception of the following:

- I-8 EB / Sports Arena Boulevard during the PM peak hour (26.1 minutes)
- I-5 SB / Sea World Drive during the PM peak hour (33.2 minutes)

6.2 Intelligent Transportation Systems (ITS)

The implementation of Intelligent Transportation Systems (ITS) can provide many benefits to the local roadway network, including improving roadway traffic operations, improving transit operations, relaying valuable traffic-related information and providing guidance to drivers (e.g. locations of available parking, traffic congestion points, and the location of accidents). Coordinated traffic signals and transit signal priority treatments are examples of ITS programs that can help improve both transit and roadway operations.

The City of San Diego should investigate the feasibility of the following ITS improvements within the Midway-Pacific Highway and Old Town communities:

- Expand signal coordination along major roadway corridors including Rosecrans Street, Taylor Street, Midway Drive, Sports Arena Boulevard, Pacific Highway, Kettner Street and San Diego Avenue.
- Regularly update the timing of traffic signals to reflect shifting travel patterns
- Use traffic responsive or adaptive traffic control in areas with variable traffic patterns
- Implement transit signal priority treatments at signalized intersections serving rapid bus routes
- Use variable message signs to direct motorists to available parking and to alert them of street closures.

The recommendations identified above are consistent with the goals of the future traffic signal communications network elements identified in the City of San Diego *Traffic Signal Communication Master Plan* (2014).

6.3 Transportation Demand Management (TDM) Strategies

The goal of the City's Transportation Demand Management (TDM) program is to improve mobility, reduce congestion and air pollution, and provide options for employees and residents to commute to/ from work. Typical TDM strategies include promoting the following:

- Teleworking
- Alternative Work Schedules
- Transit
- Mixed-Use Development

[1] The City of San Diego Traffic Impact Study Manual (July 1998) defines ramp meters with more than 15 minutes of delay as having a significant impact.

- Walking
- Bicycling
- Carpooling
- Vanpooling
- Shared Mobility Services (e.g., bikeshare, carshare, and on-demand ridesharing services)
- Other Transportation Options

TDM measures improve the efficiency of the transportation system by helping to reduce vehicle trips during peak periods of demand. The San Diego Association of Governments (SANDAG) has an established program (iCommute) that serves as the administrator for TDM programs throughout the region. iCommute provides the following services:

Ridematching Services – the iCommute TripPlanner tool allows users to compare multiple transportation choices in addition to finding vanpool and carpool matches.

Subsidized Vanpool Program – Through the SANDAG vanpool program, each qualified vanpool receives a $400 monthly subsidy when leased through SANDAG preferred vendors, Enterprise Rideshare and vRide. Vanpools range from 7 to 15 passenger vehicles where commuters share the ride to work and split the cost thereby saving money, wear and tear on their personal vehicles, as well as reducing Greenhouse Gas emissions.

Employer Services - The SANDAG iCommute program provides assistance and tools to help local San Diego organizations design and implement customized commuter programs that assist and support employees commute using alternative modes of transportation. The iCommute Diamond Awards recognizes employers with exemplary commute programs and mode-share.

Walk, Ride, and Roll to School – Part of the Safe Routes to School program, this service supports active transportation to and from K-12 schools including biking, walking, skating, skateboarding, or riding a scooter to help promote physical activity and healthier lifestyles for students.

Telework - Teleworking is a convenient solution that enables employees to work from home or a remote location one or more days per week. Telework has proven benefits to employees and employers such as reducing commute costs, lowering parking demand, and helping the environment.

Transit Information – Provides information about San Diego regional transit agencies in addition to Compass Card information.

Bike Parking Program– Provides secure bike parking spaces at more than sixty transit stops and some Park & Ride lots throughout San Diego County in addition to a Regional Bike Map, which has been updated to show bike paths, lanes and routes.

Guaranteed Ride Home – A free service that allows registered iCommute users getting to work by alternative modes to receive free emergency rides home in the cases of illness or unscheduled overtime. Commuters can use the service up to three times per year.

In addition to the iCommute program, Caltrans owns and/or maintains several Park & Ride lots throughout the region that are used to promote carpool and vanpool activity.

The City of San Diego's Land Development Code (LDC) requires new development to provide sufficient bicycle parking stalls, carpool parking, and motorcycle facilities to encourage the use of alternative modes of transportation. The City is early in the process of developing recommendations to amend the LDC requirements for pedestrian, bicycle, carpool, and commuter information facilities. The City's municipal code now allows for on-street carshare operations. Pricing strategies are also used to reduce demand on the transportation system.

6.4 Pedestrian Assessment and Results

This section presents an assessment of the pedestrian network under implementation of the Preferred Plan, which assumes the implementation of the pedestrian related improvements outlined in Sections 3.3.2 and 4.3.2. The City of San Diego Pedestrian Master Plan Phase I identifies the following six Pedestrian Route Typologies and the purpose they serve:

District Sidewalks – Sidewalks along roads that support heavy pedestrian levels in mixed-use concentrated urban areas.

Corridor Sidewalks – Sidewalks along roads that support moderate density business and shopping districts with moderate pedestrian level.

Connector Sidewalks – Sidewalks along roads that support institutional, industrial or business complexes with limited lateral access and low pedestrian levels.

Neighborhood Sidewalks – Sidewalks along roads that support low to moderate density housing with low to moderate pedestrian levels.

Ancillary pedestrian facilities – Facilities away or crossing over streets such as plazas, paseos, promenades, courtyards or pedestrian bridges and stairways.

Path – Walkways and paved paths that are not adjacent to roads that support recreational and transportation purposes.

The assumed Pedestrian Route Typologies within both communities is displayed in Figure 6-6.

The proposed pedestrian network under Preferred Plan conditions was assessed using the methodologies described in Section 2.3.1. The pedestrian network connectivity, quality and overall adequacy (combining both quality and connectivity) are discussed below.

6.4.1 Pedestrian Network Connectivity

Figure 6-7 displays the pedestrian network connectivity to/from pedestrian attracting land uses (residential, commercial, office and recreational uses) throughout both communities. This analysis calculates the percent of area accessible to pedestrians within a half mile walking distance from the respective land uses (connectivity ratio). A connectivity ratio of 50% or better is considered to be ideal.

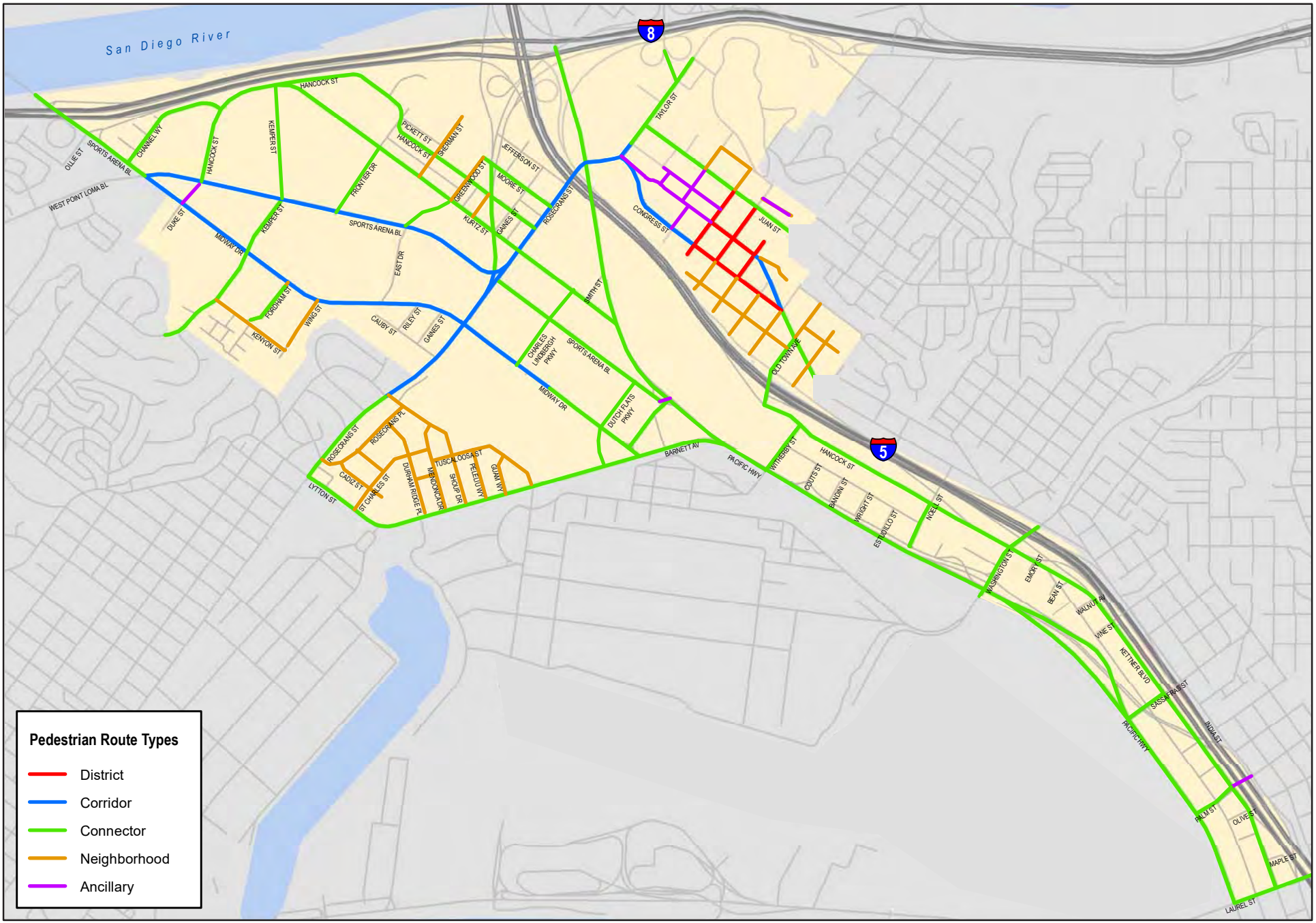

Figure 6-6
Pedestrian Route Typologies -
Preferred Plan Conditions

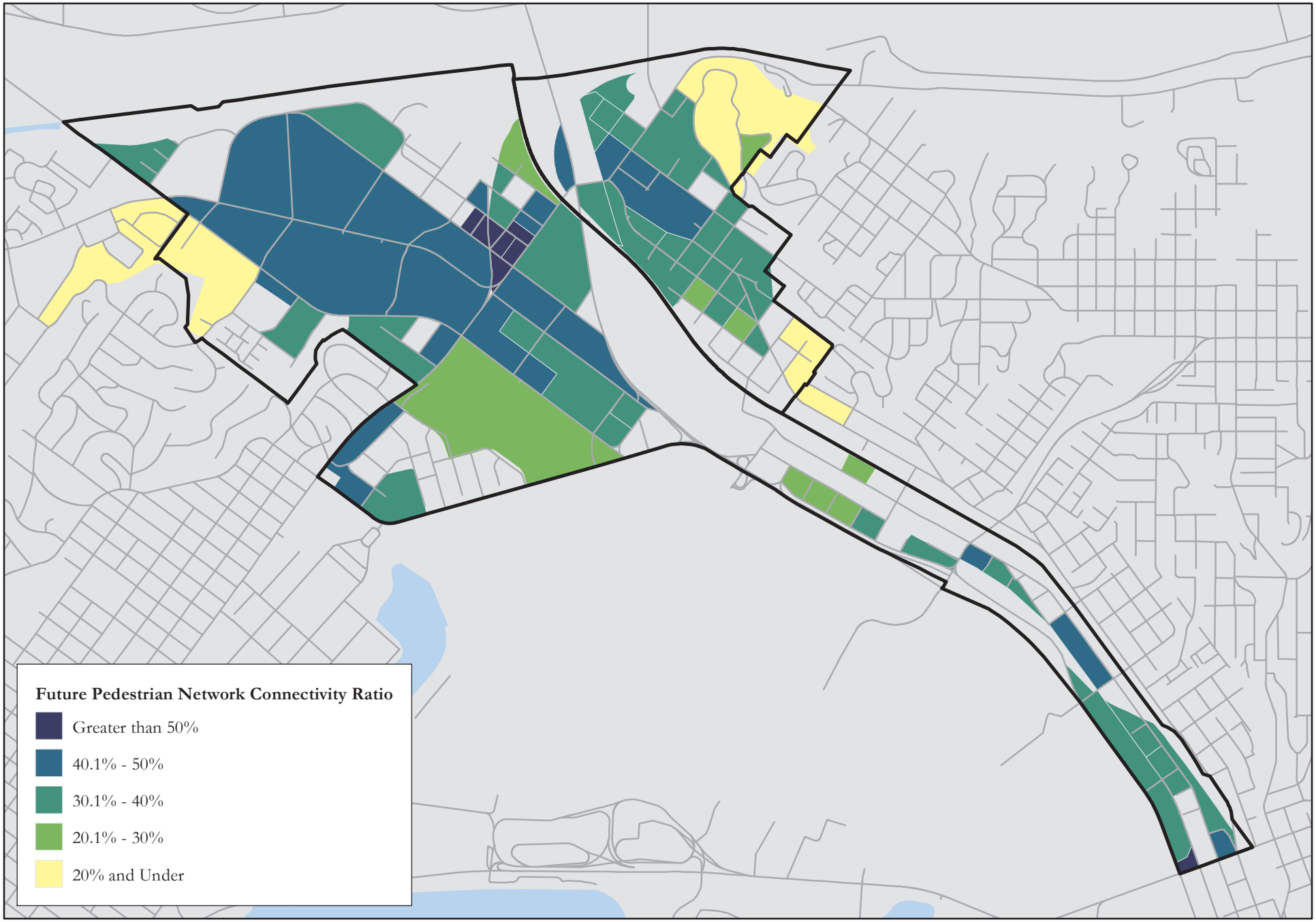

Figure 6-7
Pedestrian Network Connectivity -
Preferred Plan Conditions

Midway-Pacific Highway Community

As shown in the figure, pedestrian connectivity is at ideal levels (50%+ connectivity ratio) within the center of the community (in the area to the northeast of the intersection of Kurtz Street and Rosecrans Street, on either side of Camino Del Rio West. This is primarily due to the dense grid network present in this area. The lower connectivity ratio areas include the northwest area of the community west of Midway Drive and in the area west of Midway Drive and south of Rosecrans Street. The lower ratio is due to large, disconnected parking lots, superblocks, and private property with primary access points along Midway Drive.

Old Town Community

As shown in the figure, the Old Town Community generally has a good connectivity ratio between 40-50%, which is highest in the tourist areas around the Historic State Park and Transit Center Area, and gets lower toward the outskirts of the community. The lower connectivity ratio on the outskirts of the community is primarily due to the barriers created by the I-5 and I-8 freeways where pedestrian crossings are constrained.

6.4.2 Pedestrian Network Quality

Figure 6-8 and Tables 6.7A and 6.7B display the PEQE analysis results for roadways segments and intersections, along the major pedestrian corridors within the community. PEQE calculation worksheets are provided in Appendix F. As shown in the table, with the implementation of the proposed improvements, the pedestrian facilities along all major roadways within both communities have a Medium or High grade under implementation of the Preferred Plan with the exception of the following:

Midway-Pacific Highway Community

Kettner Boulevard between Vine Street and Sassafras Street – This segment has a score of Low due to the lack of pedestrian facilities on the west side of the roadway (where there are no fronting land uses) and high posted speed limit (40 mph). It should be noted that the east side of the roadway, where the fronting land uses are located, has a grade of Medium. Based on the results of the PEQE analysis, the pedestrian improvements proposed under the Preferred Plan would significantly improve the walkability and safety within Midway-Pacific Highway community from their current conditions.

Old Town Community

Taylor Street between Morena Boulevard and I-8 Ramps – This segment has a grade of Low due to the lack of pedestrian facilities. However, it should be noted that there are no fronting land uses on either side of this segment, nor does this segment connect to any activity centers to the east of the community. While the Old Town community is very walkable today, the improvements proposed under the Preferred Plan provide both access and safety upgrades throughout the community. Improvements such as ADA ramps, continental cross-walks and bulb outs (at key intersections) upgrade many of the intersections within the community from Low to Medium conditions.

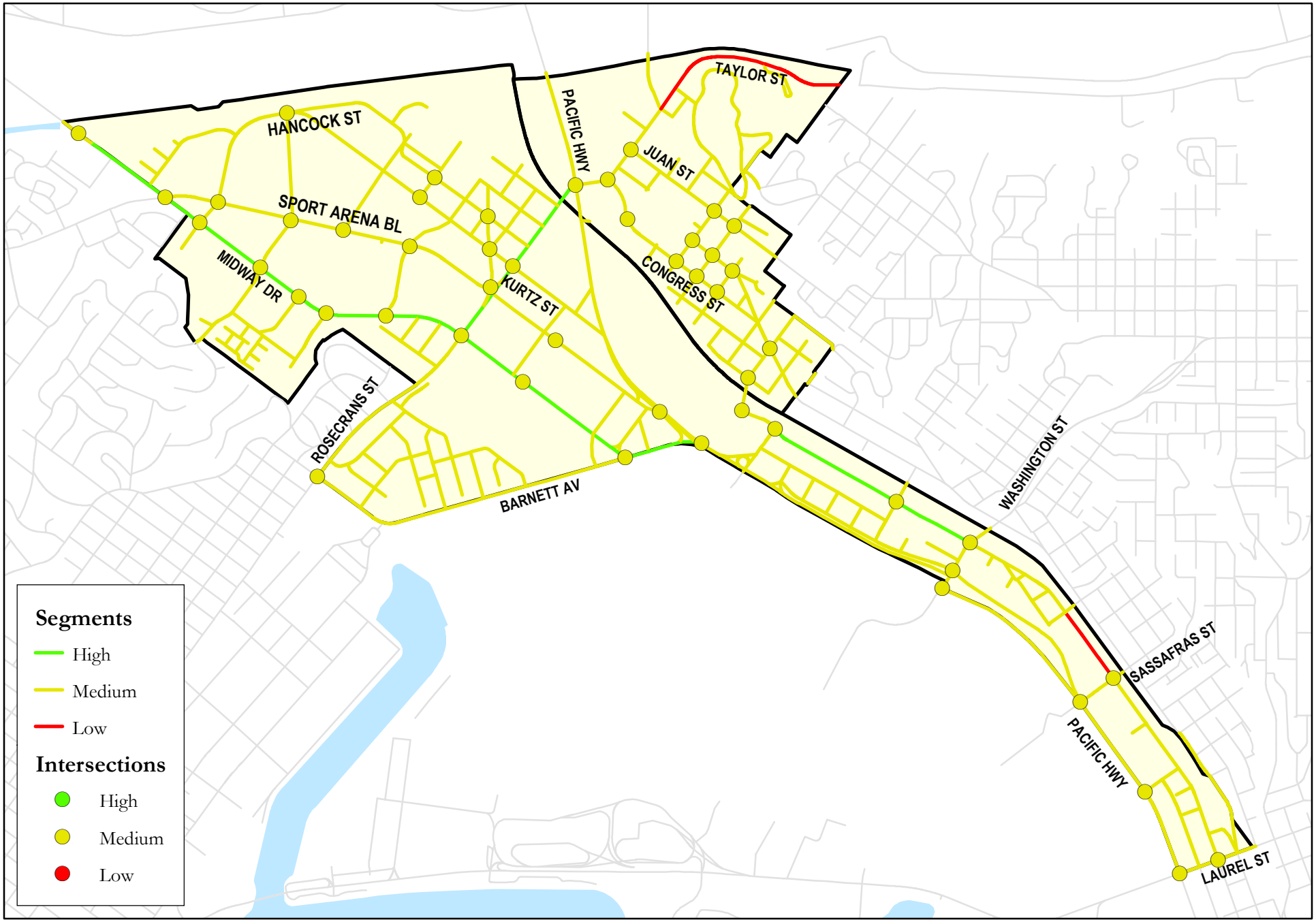

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Figure 6-8
PEQE Scoring
Preferred Plan Conditions

Table 6.7A PEQE Results: Roadway Segments – Preferred Plan Conditions

Roadway	To	From	Northside/ Eastside		Southside/ Westside		Total	
			Score	Grade	Score	Grade	Score	Grade
North-South								
Midway/Pacific Highway Corridor								
Lytton Street/ Barnett Avenue	Rosecrans St	Midway Dr	4	Medium	4	Medium	8	Medium
	Midway Dr	Pacific Hwy	7	High	7	High	14	High
W. Mission Bay Dr	I-8 WB Ramps	I-8 EB Ramps	4	Medium	4	Medium	8	Medium
Midway Dr	W. Point Loma Blvd/Sports Arena Blvd	Kemper St	7	High	7	High	14	High
	Kemper St	East Dr	7	High	7	High	14	High
	East Dr	Rosecrans St	7	High	7	High	14	High
	Rosecrans St	Barnett Ave	7	High	7	High	14	High
Sports Arena Blvd	I-8 EB Ramps	W. Point Loma Blvd/Sports Arena Blvd	6	Medium	7	High	13	High
	W. Point Loma Blvd/Midway Dr	Kemper St	5	Medium	5	Medium	10	Medium
	Kemper St	East Dr	5	Medium	5	Medium	10	Medium
	East Dr	Rosecrans St	5	Medium	5	Medium	10	Medium
	Rosecrans St	Pacific Hwy	6	Medium	5	Medium	11	Medium
Kurtz St	Hancock St	Rosecrans St	6	Medium	6	Medium	12	Medium
	Rosecrans St	Pacific Hwy	4	Medium	4	Medium	8	Medium
Hancock St	Sports Arena Blvd	Kurtz St	3	Low	6	Medium	9	Medium
	Kurtz St	Camino Del Rio West	4	Medium	6	Medium	10	Medium
	Camino Del Rio West	Rosecrans St	5	Medium	5	Medium	10	Medium
	Old Town Ave	Witherby St	4	Medium	4	Medium	8	Medium
	Witherby St	Washington St	6	Medium	7	High	13	High
Kettner Blvd	Washington St	Vine St	3	Low	5	Medium	8	Medium
	Vine St	Sassafras St	4	Medium	2	Low	6	Medium
	Sassafras St	Laurel St	5	Medium	5	Medium	10	Medium
Pacific Hwy	Sea World Dr	Taylor St	5	Medium	5	Medium	10	Medium
	Taylor St	Kurtz St	6	Medium	6	Medium	12	Medium
	Kurtz St	Sports Arena Blvd	6	Medium	6	Medium	12	Medium
	Sports Arena Blvd	Barnett Ave	6	Medium	6	Medium	12	Medium
	Barnett Ave	Harney Washington St	6	Medium	6	Medium	12	Medium
	Washington St	Sassafras St	6	Medium	6	Medium	12	Medium
	Sassafras St	Laurel St	6	Medium	6	Medium	12	Medium
Old Town								
Congress St	Taylor St	Twiggs St	6	Medium	6	Medium	12	Medium
	Twiggs St	Harney St	6	Medium	6	Medium	12	Medium
	Harney St	San Diego Ave/Ampudia St	6	Medium	6	Medium	12	Medium
San Diego Ave	Twiggs St	Harney St	6	Medium	6	Medium	12	Medium
	Harney St	Ampudia St	6	Medium	6	Medium	12	Medium

Table 6.7A PEQE Results: Roadway Segments – Preferred Plan Conditions

Roadway	To	From	Northside/ Eastside		Southside/ Westside		Total	
			Score	Grade	Score	Grade	Score	Grade
San Diego Ave	Ampudia St	Old Town Ave	6	Medium	6	Medium	12	Medium
	Old Town Ave	Hortensia St	6	Medium	6	Medium	12	Medium
Juan St	Taylor St	Twiggs St	6	Medium	6	Medium	12	Medium
	Twiggs St	Harney St	6	Medium	6	Medium	12	Medium
	Harney St	San Juan Rd	6	Medium	6	Medium	12	Medium
East-West								
Midway/Pacific Highway Corridor								
Channel Wy	W. Mission Bay Dr	Hancock St	6	Medium	6	Medium	12	Medium
Kemper St	Kenyon St	Midway Dr	6	Medium	5	Medium	11	Medium
	Midway Dr	Sports Arena Blvd	6	Medium	6	Medium	12	Medium
Camino Del Rio West	Rosecrans St	I-5/I-8 Ramps	4	Medium	4	Medium	8	Medium
Rosecrans St	Lytton St	Midway Dr	6	Medium	6	Medium	12	Medium
	Midway Dr	Sports Arena Blvd	7	High	7	High	14	High
	Sports Arena Blvd	Pacific Hwy/Taylor St	7	High	7	High	14	High
Washington St	Frontage Rd	Pacific St	5	Medium	5	Medium	10	Medium
	Pacific St	Hancock St	6	Medium	5	Medium	11	Medium
Vine St	California St	Kettner Blvd	7	High	5	Medium	12	Medium
Sassafras St	Pacific Hwy	Kettner Blvd	5	Medium	5	Medium	10	Medium
Laurel St	Pacific Hwy	Kettner Blvd	5	Medium	5	Medium	10	Medium
Old Town								
Taylor St	Pacific Hwy/ Rosecrans St	Congress St	4	Medium	4	Medium	8	Medium
	Congress St	Juan St	4	Medium	4	Medium	8	Medium
	Juan St	Morena Blvd	4	Medium	4	Medium	8	Medium
	Morena Blvd	I-8 EB Ramps	1	Low	1	Low	2	Low
Twiggs St	Congress St	San Diego Ave	5	Medium	5	Medium	10	Medium
	San Diego Ave	Juan St	6	Medium	6	Medium	12	Medium
Harney St	Congress St	San Diego Ave	6	Medium	6	Medium	12	Medium
	San Diego Ave	Juan St	6	Medium	5	Medium	11	Medium
Old Town Ave	Hancock St	Moore St	5	Medium	5	Medium	10	Medium
	Moore St	San Diego Ave	5	Medium	5	Medium	10	Medium

Source: Chen Ryan Associates (June 2016)

Table 6.7B PEQE Results: Intersections – Preferred Plan Conditions

#	Intersection	Score	Grade
Midway-Pacific Highway			
1	Lytton St and Rosecrans St	6	Medium
2	W Mission Bay Dr and I-8 WB Off-Ramp	6	Medium
3	W Mission Bay Dr and Channel Way	5	Medium
4	Midway Dr and Sports Arena/W Point Loma Blvd	6	Medium
5	Midway Dr and Kemper St	6	Medium
6	Midway Dr and East Dr	6	Medium
7	Midway Dr and Rosecrans St	6	Medium
8	Midway Dr and Charles Lindbergh Pkwy	6	Medium
9	Midway Dr and Enterprise St	5	Medium
10	Midway Dr and Barnett Ave	6	Medium
11	Sports Arena Blvd and Hancock St	6	Medium
12	Sports Arena Blvd and Kemper St	6	Medium
13	Sports Arena Blvd and Sports Arena Driveway	6	Medium
14	Sports Arena Blvd and East Dr	6	Medium
15	Sports Arena Blvd and Rosecrans St	6	Medium
16	Sports Arena Blvd and Charles Lindbergh Pkwy	6	Medium
17	Sports Arena Blvd and Pacific Hwy	6	Medium
18	Kurtz St and Hancock St	5	Medium
19	Kurtz St and Camino Del Rio West	6	Medium
20	Kurtz St and Rosecrans St	6	Medium
21	Kurtz St and Pacific Hwy	6	Medium
22	Hancock St and Channel Wy	5	Medium
23	Hancock St and Camino Del Rio West	6	Medium
24	Hancock St and Rosecrans St	5	Medium
25	Hancock St and Old Town Ave	5	Medium
26	Hancock St and Witherby St	5	Medium
27	Hancock St and Washington St	6	Medium
28	Kettner Blvd and Vine St	5	Medium
29	Kettner Blvd and Sassafras St	6	Medium
30	Kettner Blvd and West Laurel St	6	Medium
31	Pacific Hwy and Barnett Ave	6	Medium
32	Pacific Hwy and Washington St @ Frontage Rd	6	Medium
33	Pacific Hwy and Washington St @ Pacific St	6	Medium
34	Pacific Hwy and Sassafras St	6	Medium
35	Pacific Hwy and West Laurel St	6	Medium
Old Town			
36	Pacific Hwy and Taylor St	6	Medium
37	Moore St and Old Town Ave	6	Medium
38	Congress St and Taylor St	6	Medium

Table 6.7B PEQE Results: Intersections – Preferred Plan Conditions

#	Intersection	Score	Grade
39	Congress St and Twiggs St	5	Medium
40	Congress St and Harney St	5	Medium
41	Congress St and San Diego Ave/Ampudia St	5	Medium
42	San Diego Ave and Twiggs St	5	Medium
43	San Diego Ave and Harney St	5	Medium
44	San Diego Ave and Old Town Ave	6	Medium
45	Juan St and Taylor St	6	Medium
46	Juan St and Twiggs St	5	Medium
47	Juan St and Harney St	5	Medium
48	Morena Blvd and Taylor St	6	Medium
New Intersections			
61	Kurtz St & Frontier Dr	5	Medium
63	Kurtz St & Charles Lindbergh Pkwy	6	Medium
64	Barnett Ave & Dutch Flats Pkwy	6	Medium
65	Midway Dr & Dutch Flats Pkwy	6	Medium
66	Dutch Flats Pkwy & Sports Arena Bl	6	Medium

Source: Chen Ryan Associates (June 2016)

As shown, all study intersections within both communities are projected to have a Medium grade under implementation of the Preferred Plan.

6.4.3 Pedestrian Quality Network Coverage

Figure 6-9 displays the Pedestrian Quality Network Coverage at all study intersections across both communities. This analysis calculates the ratio of the length of quality pedestrian network facilities (PEQE score Medium or High) within a half-mile walk from an intersection, compared to the total network available (based on existing conditions).

Midway-Pacific Highway Community

As shown in the figure, under implementation of the Preferred Plan, the Pedestrian Quality Network Coverage increases to over 75% at all study intersections within the community. The significant increase in coverage is primarily due to the new roadway links proposed under Preferred Plan conditions, including multi-use urban path improvements.

Old Town Community

As shown in the figure, under implementation of the Preferred Plan, the Pedestrian Quality Network Coverage increases to over 75% at all study intersections within the community. The significant increase in coverage is primarily due to the overall improvement to the intersections within the community by implementing minor improvements such as ADA ramps and Continental Crosswalks.

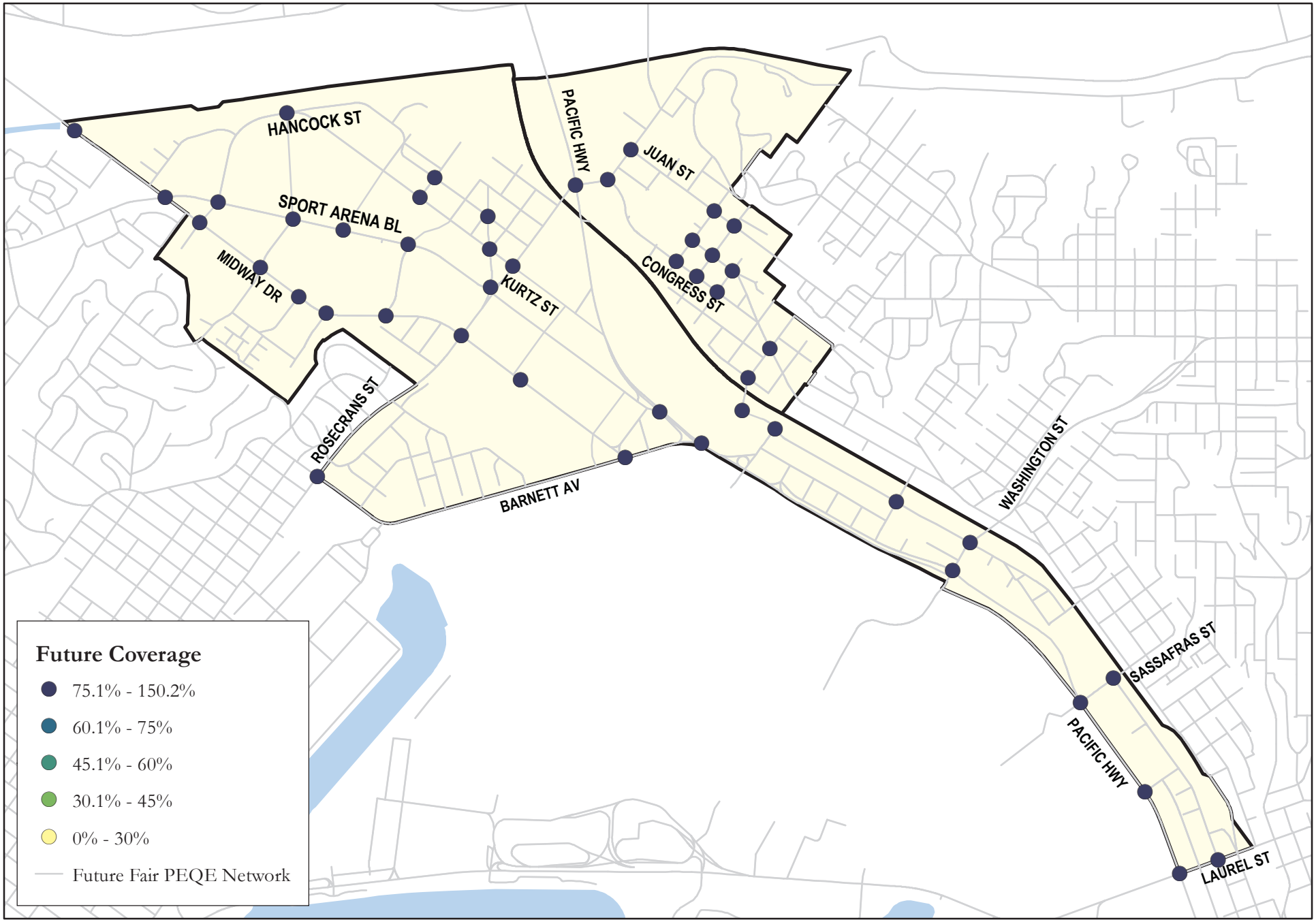

Figure 6-9
Pedestrian Quality Network Coverage -
Preferred Plan Conditions

6.5 Cycling Environment Assessment and Results

This section presents an assessment of the cycling environment under implementation of the Preferred Plan conditions, which assumes implementation of the cycling-related improvements outlined in Sections 3.4.2 and 4.4.2. Figure 6-10 displays the proposed bicycle network in both communities under implementation of the Preferred Plan.

The cycling environment under Preferred Plan conditions was assessed using the methodologies presented in Section 2.3.2. Cycling network connectivity, quality and overall adequacy (combining both quality and connectivity) are assessed below.

6.5.1 Bicycle Network Connectivity

Figure 6-11 displays bicycle network connectivity to/from the study area intersections across both communities. This analysis calculates the percent of area that a cyclist can access within a one mile ride from the respective intersection (connectivity ratio). A connectivity ratio of 50% or better is considered to be ideal.

Midway-Pacific Highway Community

As shown in the figure, the bicycle connectivity is at good levels (40%+ connectivity ratio) in the center of the community around the block bound by Rosecrans Street, Midway Drive, Sports Arena Boulevard and East Drive. This improvement in connectivity is predominantly due to the new roadway connections between Midway and Sports Arena Boulevard.

Old Town Community

As shown in the figure, the Old Town community generally has a good connectivity ratio of 35+%, with the highest connectivity along Taylor Street, where regional connections are available from Taylor Street (Coastal Rail Trail and Ocean Beach Bike Path).

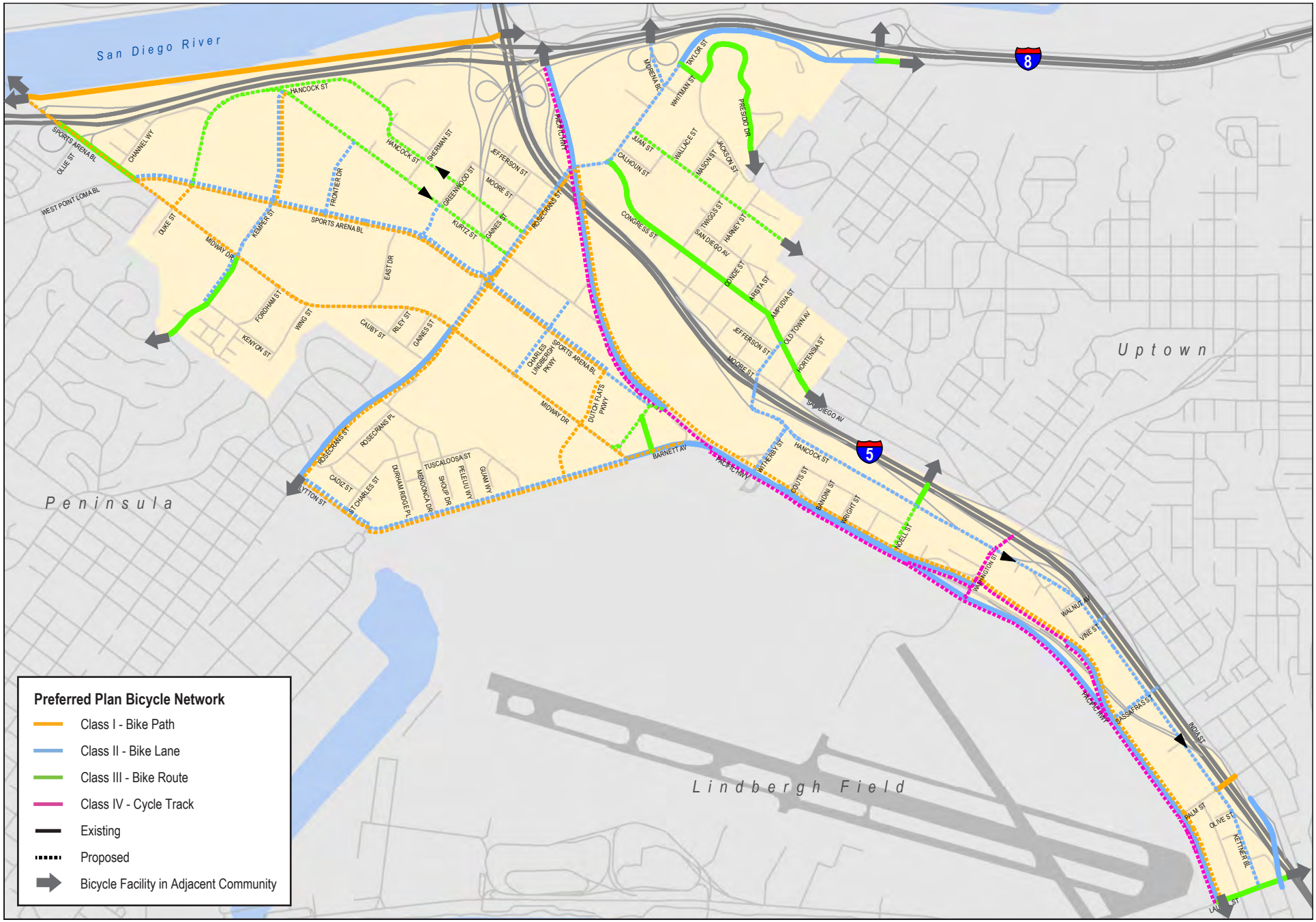

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Figure 6-10
Bicycle Network -
Preferred Plan Conditions

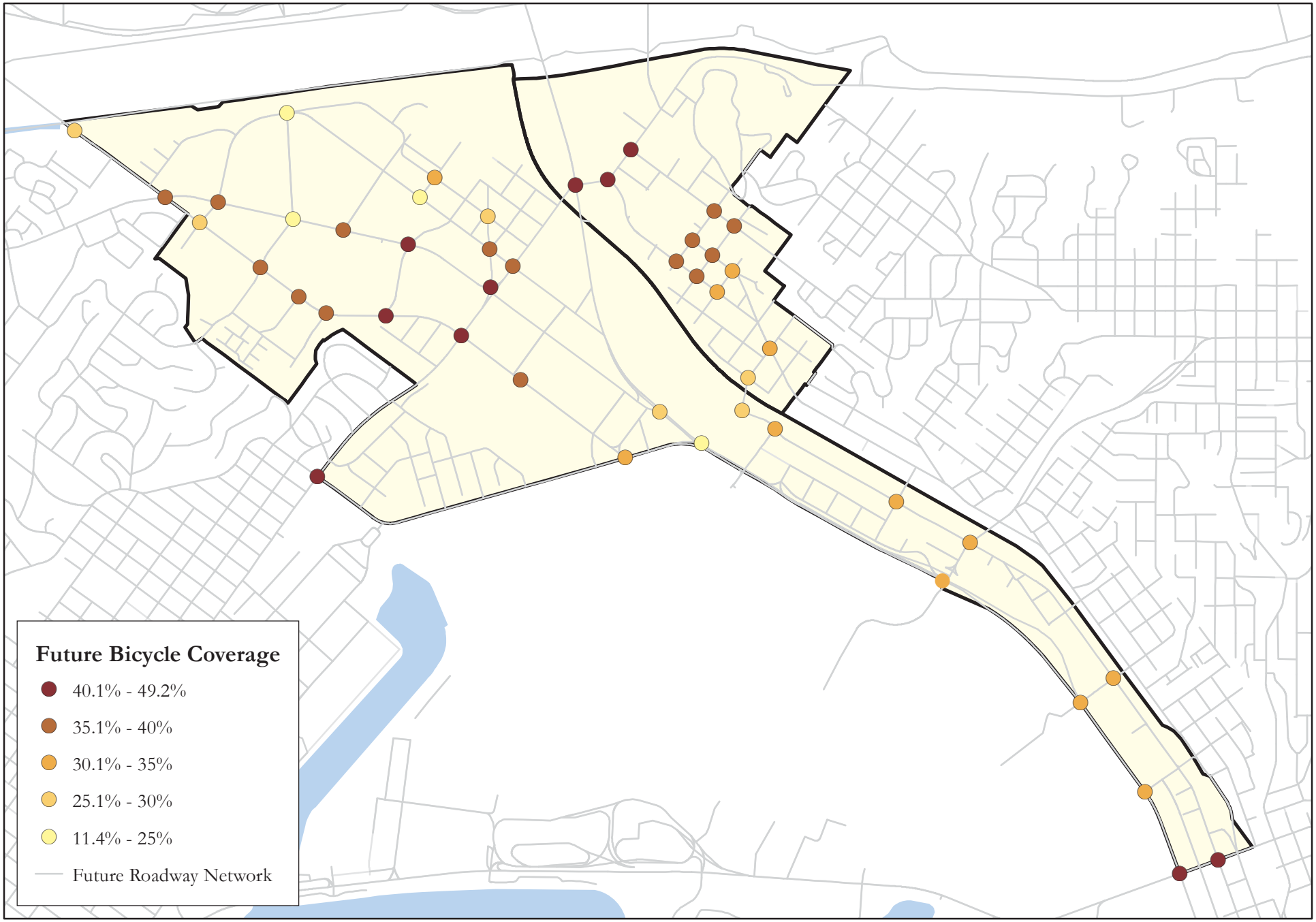


Figure 6-11
Bicycle Network Connectivity
Preferred Plan Conditions

6.5.2 Bicycle Network Quality

Figure 6-12 display the LTS analysis results for roadways segments and intersections along all Mobility Element roadways within the community.

Midway-Pacific Highway Community

As shown in the figure, the new multi-use urban paths proposed as part of the Midway/Pacific Highway Urban Greening Plan (La Playa Trail, Bay-to-Bay Path, the Historic Highway 101 Path, and the Midway Path), and the Preferred Plan, provide a slower low stress environment for cyclists (all paths have a score of LTS 1). Additionally, the proposed Class IV One-Way Cycle Tracks proposed along Pacific Highway provide a safe cycling environment for higher speed cyclists entering the community from either the north or south. These facilities have an LTS 1 score. Finally, the Enhanced Class II Buffered Bikes Lanes proposed along Sport Area Boulevard and Rosecrans Street provide more confident and higher speed cyclists a safe in-road alternative along these routes. Both facilities have a score of LTS 1.

Hancock Street between Kurtz Street and Rosecrans Street, and Hancock Street/Kettner Boulevard between Noel Street and Laurel Street were identified as providing LTS 4 environments under Preferred Plan conditions. The LTS 4 designation is largely due to the one-way directional travel. When calculating LTS scores for one-way streets the number of vehicular travel lanes is doubled, and the street is treated as though it has a median. This results in Hancock Street and Hancock Street/Kettner Boulevard as providing conditions equivalent to a 6-lane roadway, from the cyclist's perception. Hancock Street, between Kurtz Street and Rosecrans Street, does not have a bicycle facility, resulting in the LTS 4 score. Hancock Street/Kettner Boulevard, between Noel Street and Laurel Street, does have a Class II bike lane under Preferred Plan conditions, however, the posted speed limit of 40 MPH results in the LTS 4 score.

Based on the results of the LTS analysis, the bicycle facilities proposed under the Preferred Plan would significantly improve the connectivity and safety for cyclists within Midway-Pacific Highway community from their current conditions.

Old Town Community

As shown in the figure all roadways, with the exception of Taylor Street and Morena Boulevard, are projected to be low stress cycling environments (LTS 1 or 2). This is due to the low speed nature of the roadways within the Old Town Community. However, even with Class II Bike Lanes proposed along Taylor Street, the roadway is still projected to have an LTS score of 3. This is due to the high vehicular travel speed along Taylor Street and lack of a horizontal or vertical buffer between cyclists and motorists.

As noted in section 4.4.2, the connection along Morena Boulevard between Taylor Street and Linda Vista Road is critical. A connection here would link the Old Town and Linda Vista communities, as well as provide a connection to the Ocean Beach Bike Path.

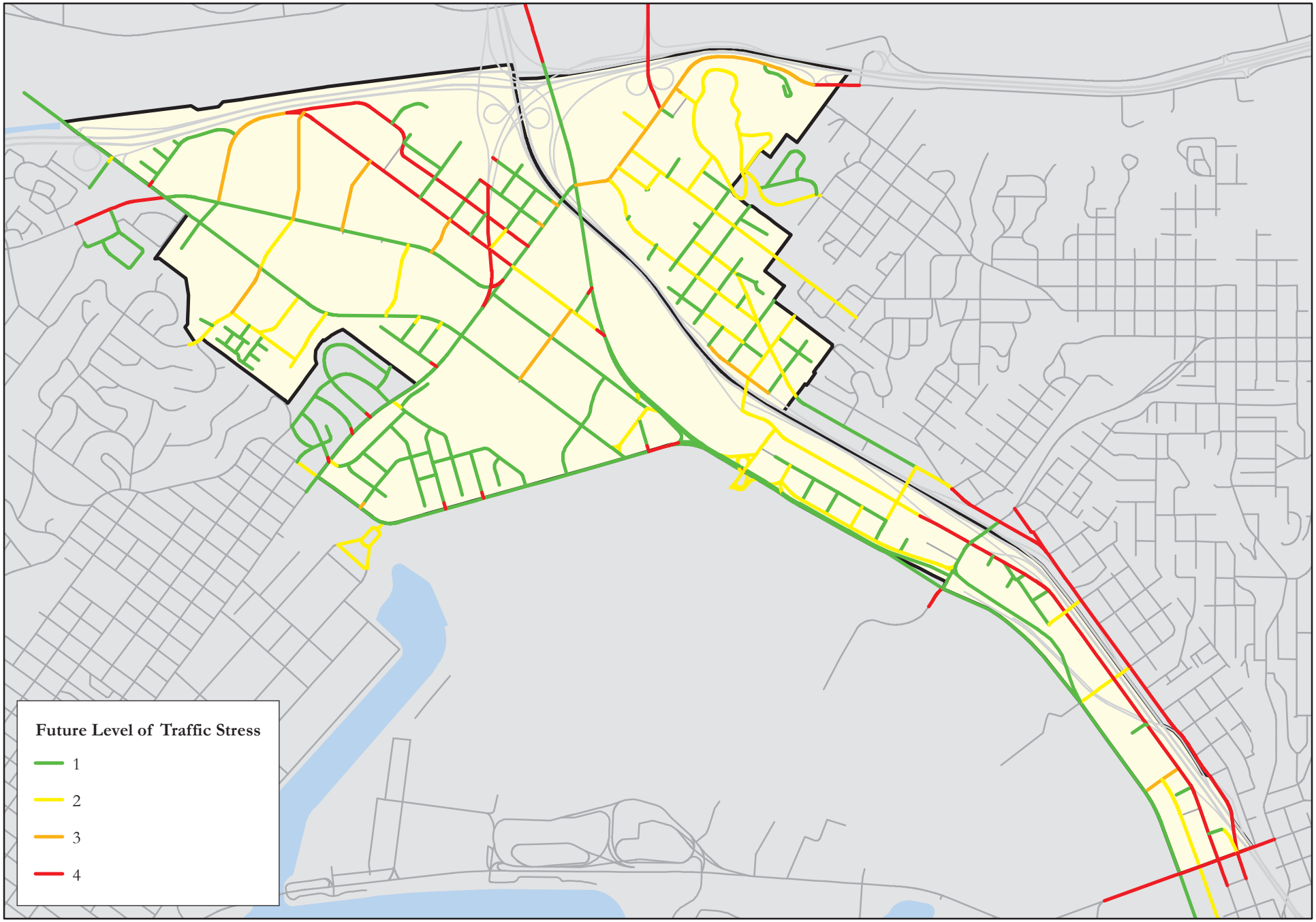


Figure 6-12
Bicycle LTS Score - Preferred Plan Conditions

Unfortunately, the bridge along this segment of the roadway has a constrained right-of-way, and the current configuration of the I-8 Morena Boulevard ramps position four high-speed free-right turn movements on/off the bridge. Due to these constraints there is not feasible bicycle facility that can be implemented along this segment without both widening the bridge and reconfiguring the I-8 / Morena Boulevard Ramps. However, it is recommended that the City work with both Caltrans and SANDAG to look for opportunities to implement bicycle facilities and better pedestrian facilities along this segment should any improvements be done to this segment.

6.5.3 Combined Bicycle Network Connectivity and Quality Assessment

Figure 6-13 displays the combined Bicycle Network Connectivity and Quality Assessment for all bicycle accessible land uses (residential, commercial, office, recreational and instructional land uses) throughout both communities. This analysis calculates the percent of TAZs with bicycle accessible land uses that a cyclist can reach using only LTS 1 and 2 facilities.

Midway-Pacific Highway Community

As shown in the figure, the proposed bicycle improvements enhance the level of connectivity to/from the residential land uses located on the western side of the community. In this area, cyclists can connect to 40+% of the bicycle accessible land uses within the community using only LTS 1 or 2 facilities. The proposed commercial areas within the community (north of Rosecrans Street) can typically connect to 30-40% of the bicycle accessible land uses within the community using only LTS 1 or 2 facilities. The only areas that have low connectivity (0-10%) are the more industrial areas located in the north and northeast portions of the community. However, these areas have very few bicycle accessible land uses.

Old Town Community

As shown in the figure, the community as a whole has generally moderate connectivity levels between 20% and 40%. The main barrier limiting the overall quality connectivity within the community is Taylor Street, which has an LTS score of 3. If the LTS score along Taylor Street can be improved to an LTS 1 or 2, the overall quality connectivity within the Old Town Community will increase significantly. However, based on the roadway's current configuration, enhanced bicycle facilities such as Buffered Class II Bike Lanes or a Class IV Cycle Track is not currently feasible along Taylor Street. Therefore, a policy should be included in the Mobility Element that if Taylor Street is ever widened beyond its current right-of-way, enhanced bicycle facilities such as Class II Buffered Bike Lanes or a Class IV Cycle Track should be implemented as well.

6.6 Public Transit Services and Facilities Assessment and Results

This section assesses the proposed transit network under implementation of the Preferred Plan conditions, which assumes implementation of the transit-related improvements outlined in Sections 3.5.2 and 4.5.2. The proposed Transit network under Preferred Plan conditions was assessed using the methodologies contained in Section 2.3.3. Transit stop/station ridership and amenities are assessed below as well as the roadway arterial speed along roadways continuing transit routes.

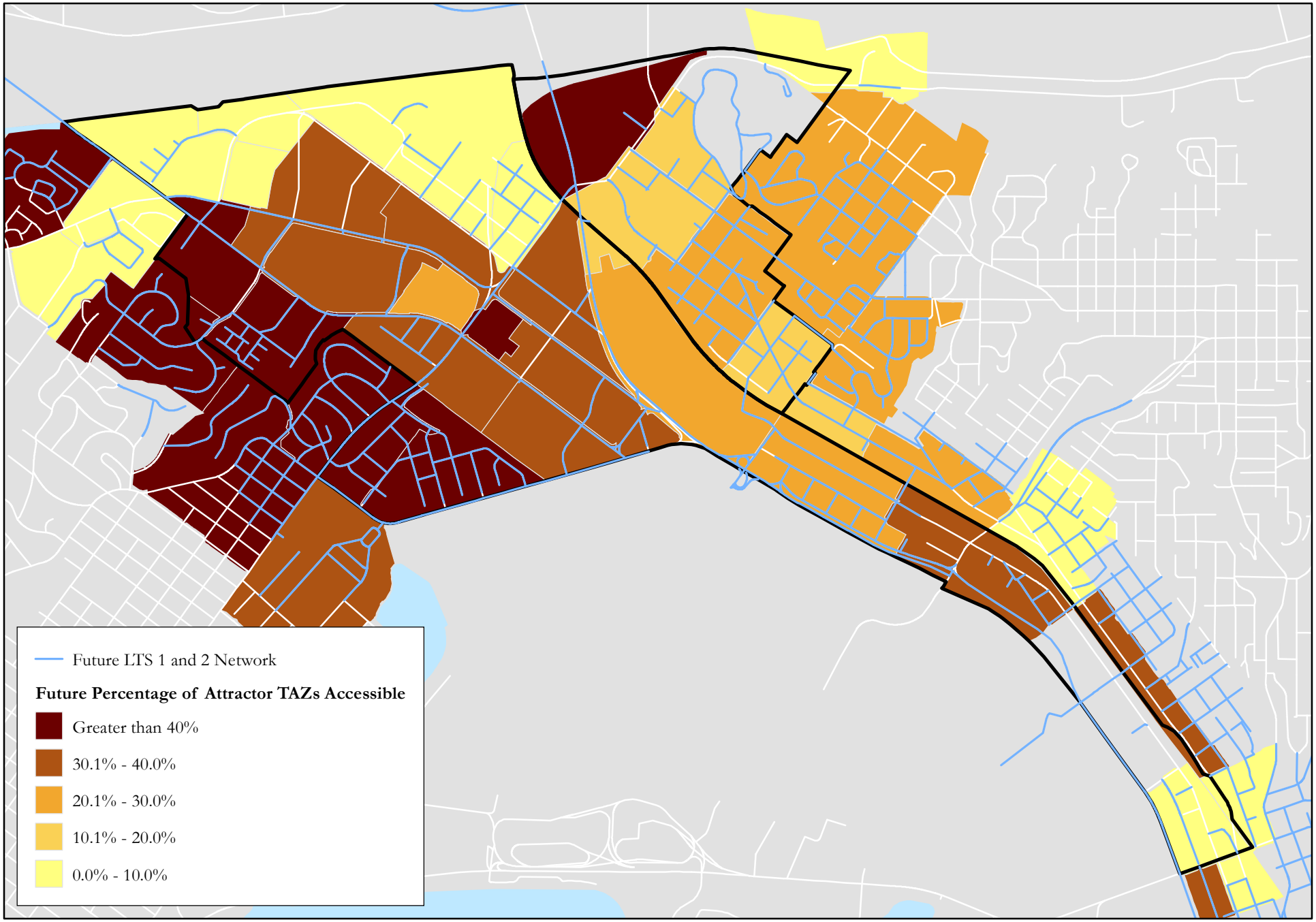


Figure 6-13
Combined Bicycle Network Connectivity and Quality Assessment
Preferred Plan Conditions

6.6.1 Transit Stop/Station Amenities and Average Daily Boardings and Alightings

While projecting increases in multimodal trips requires some level of judgment and is dependent on numerous factors, quantitative methods are available to assist in this process. A community-wide transit ridership growth factor was derived based on future growth estimates in SANDAG Series 12 Transportation Forecast Model, as documented in Section 5.0. Based on the SANDAG model results, a 1.75 growth factor was applied to existing transit ridership volumes, which is consistent with the projection of regional growth. Due to the methodology, projected ridership is only presented for existing locations and does not include the future Blue Line extension.

Table 6.8 displays the projected transit boarding and alightings by route and by stop within both communities under Preferred Plan conditions.

Table 6.8 Average Daily Transit Boardings and Alightings by Route and Station – Preferred Plan Conditions

Route # and Location	Boardings	Alightings	Total Trips
Bus Route 8 Clockwise			
Sports Arena Blvd and Midway Dr	30	30	60
Sports Arena Blvd and Midway Dr	150	50	200
Sports Arena Blvd Between Hancock and Kemper	60	20	70
Sports Arena Blvd Between Kemper and Sports Arena Driveway	70	50	160
Sports Arena Blvd and East Dr	120	50	170
Rosecrans St and Pacific Highway	40	40	70
Old Town Transit Center	20	1,090	1,110
Bus Route 9 Counter Clockwise			
Old Town Transit Center	1,110	20	1,120
Rosecrans St and Moore St	30	20	40
Rosecrans St and Kurtz St	20	40	50
Sports Arena Blvd and Camino Del Rio West	20	60	70
Sports Arena Blvd and East Dr	20	90	110
Sports Arena Blvd and Sports Arena Driveway	50	130	170
Sports Arena Blvd and Hancock St	60	180	230
Bus Route 10 East			
Old Town Transit Center	1,770	30	1,790
Pacific Highway and Sports Arena Blvd	50	30	70
Pacific Highway and Witherby St	100	170	260
Washington St and Pacific Highway	90	70	160
Washington St and Hancock St	40	10	50
Washington St and India St	90	30	120
Bus Route 10 West			
Washington St and India St	20	90	100

Table 6.8 Average Daily Transit Boardings and Alightings by Route and Station – Preferred Plan Conditions

Route # and Location	Boardings	Alightings	Total Trips
Washington St and Hancock St	10	20	30
Washington St and The Trolley Tracks	30	150	170
Pacific Highway and Washington St	30	30	60
Pacific Highway and Witherby St	90	110	200
Pacific Highway and Enterprise St	20	60	80
Pacific Highway and Kurtz St	10	10	10
Old Town Transit Center	30	1,450	1,470
Bus Route 28 East			
Rosecrans St and Lytton St	30	20	40
Rosecrans St and North Evergreen St	30	30	60
Rosecrans St and Loma Square	80	60	140
Rosecrans St and Sports Arena Blvd	60	60	110
Rosecrans St and Pacific Highway	30	10	30
Old Town Transit Center	N/A	1,090	1,090
Bus Route 28 West			
Old Town Transit Center	930	N/A	930
Rosecrans St and Moore St	20	N/A	20
Rosecrans St and Kurtz St	20	20	30
Rosecrans St and Midway Drive	50	50	90
Rosecrans St and Midway Drive	80	90	160
Rosecrans St and North Evergreen St	30	40	60
Rosecrans St and Lytton St	10	20	30
Bus Route 30 North			
Pacific Highway and Witherby St	90	80	170
Pacific Highway and Enterprise St	20	40	50
Pacific Highway and Kurtz St	10	10	10
Old Town Transit Center	1,110	610	1,710
Bus Route 30 South			
Old Town Transit Center	590	1,090	1,680
Pacific Highway and Sports Arena Blvd	20	590	60
Bus Route 35 East			
Midway Drive and Duke St	100	60	160
Midway Drive and Kemper St	70	40	110
Midway Drive and Fordham St	110	40	140
Midway Drive and East Drive	70	70	140
Rosecrans St and Sports Arena Blvd	100	30	130
Rosecrans St and Pacific Highway	20	20	30

Table 6.8 Average Daily Transit Boardings and Alightings by Route and Station – Preferred Plan Conditions

Route # and Location	Boardings	Alightings	Total Trips
Old Town Transit Center	N/A	990	990
Bus Route 35 West			
Old Town Transit Center	1,010	N/A	1,010
Rosecrans St and Moore St	40	10	50
Rosecrans St and Kurtz St	20	30	40
Rosecrans St and Midway Drive	50	70	110
Midway Drive and East Drive	80	60	140
Midway Drive and Fordham St	40	110	140
Midway Drive and Kemper St	50	110	150
Midway Drive and Duke St	40	130	160
Bus Route 44 North			
Old Town Transit Center	1,820	10	1,830
Taylor St and Juan St	20	10	20
Bus Route 44 South			
Taylor St and Sunset St	10	10	20
Old Town Transit Center	50	1,570	1,610
Bus Route 88 East			
Old Town Transit Center	240	20	250
Taylor St and Juan St	10	10	10
Taylor St and Presidio Drive	10	10	10
Taylor St and I-8 East	10	10	10
Bus Route 88 West			
Taylor St and I-8 East	10	10	10
Taylor St and Presidio Drive	10	10	10
Taylor St and Sunset St	10	10	10
Old Town Transit Center	10	140	150
Bus Route 105 North			
Old Town Transit Center	770	10	780
Taylor St and Juan St	10	10	10
Bus Route 105 South			
Taylor St and Juan St	10	10	10
Old Town Transit Center	10	570	570
Bus Route 150 North			
Pacific Highway and Witherby St	50	20	70
Pacific Highway and Enterprise St	10	20	20
Pacific Highway and Kurtz St	10	10	10
Old Town Transit Center	470	140	610

Table 6.8 Average Daily Transit Boardings and Alightings by Route and Station – Preferred Plan Conditions

Route # and Location	Boardings	Alightings	Total Trips
Bus Route 150 South			
Old Town Transit Center	120	660	80
Pacific Highway and Sports Arena Blvd	20	10	20
Green Line Trolley East			
Old Town Transit Center	8,280	390	8,670
Washington Street Station	280	660	930
Middletown Station	10	11,110	11,110
Green Line Trolley West			
Old Town Transit Center	10,600	7,680	18,270
Washington Street Station	690	220	910
Middletown Station	330	190	510

Source: Chen Ryan Associates (March 2017)

Table 6.9 displays the projected transit boardings and alightings at each transit stop/station within both communities under implementation of the Preferred Plan. The table also shows the required stop/station amenities, as shown in Table 2.2, based on the future ridership projects.

Table 6.9 Transit Station/Stop Locations, Amenities and Average Daily Boardings and Alightings – Preferred Plan Conditions

				Amenities at the Stops			
Station	Boardings	Alightings	Total	Signs	Shelter	Bench	Trash Can
Sports Arena Blvd and Midway Dr (Clockwise)	180	80	260	✓	✓	✓	✓
Sports Arena Blvd Between Hancock and Kemper (Clockwise)	60	20	70	✓	□	○	□
Sports Arena Blvd Between Kemper and Sports Arena Driveway (Clockwise)	70	50	160	✓	□	✓	□
Sports Arena Blvd and East Dr (Clockwise)	120	50	170	✓	○	✓	□
Rosecrans St and Pacific Highway (Clockwise)	40	40	70	✓	✓	✓	✓
Old Town Transit Center (Clockwise)	20	1,090	1,110	✓	✓	✓	✓
Old Town Transit Center (Counter Clockwise)	1,110	20	1,120	✓	✓	✓	✓
Rosecrans St and Moore St (Counter Clockwise)	30	20	40	✓	□	✓	✓
Rosecrans St and Kurtz St (Counter Clockwise)	20	40	50	✓	□	✓	□
Sports Arena Blvd and Camino Del Rio West (Counter Clockwise)	20	60	70	✓	□	✓	□
Sports Arena Blvd and East Dr (Counter Clockwise)	20	90	110	✓	□	✓	✓

Table 6.9 Transit Station/Stop Locations, Amenities and Average Daily Boardings and Alightings – Preferred Plan Conditions

Station	Boardings	Alightings	Total	Amenities at the Stops			
				Signs	Shelter	Bench	Trash Can
Sports Arena Blvd and Sports Arena Driveway (Counter Clockwise)	50	130	170	✓		✓	
Sports Arena Blvd and Hancock St (Counter Clockwise)	60	180	230	✓		✓	
Old Town Transit Center (Eastbound)	2,010	2,130	4,120	✓	✓	✓	✓
Pacific Highway and Sports Arena Blvd (Eastbound)	50	30	70	✓			
Pacific Highway and Witherby St (Eastbound)	100	170	260	✓		✓	✓
Washington St and Pacific Highway (Eastbound)	90	70	160	✓		✓	□
Washington St and Hancock St (Eastbound)	40	10	50	✓		✓	✓
Washington St and India St (Eastbound)	90	30	120	✓		✓	✓
Washington St and India St (Westbound)	20	90	100	✓			✓
Washington St and Hancock St (Westbound)	10	20	30	✓		✓	✓
Washington St and The Trolley Tracks (Westbound)	30	150	170	✓			
Pacific Highway and Washington St (Westbound)	30	30	60	✓		✓	
Pacific Highway and Witherby St (Westbound)	90	110	200	✓	✓	✓	✓
Pacific Highway and Enterprise St (Westbound)	20	60	80	✓			
Pacific Highway and Kurtz St (Westbound)	10	10	10	✓			
Old Town Transit Center (Westbound)	1,980	1,590	3,560	✓	✓	✓	✓
Rosecrans St and Lytton St (Eastbound)	30	20	40	✓	✓	✓	✓
Rosecrans St and North Evergreen St (Eastbound)	30	30	60	✓		✓	✓
Rosecrans St and Loma Square (Eastbound)	80	60	140	✓	✓	✓	✓
Rosecrans St and Sports Arena Blvd (Eastbound)	160	90	240	✓	✓	✓	✓
Rosecrans St and Pacific Highway (Eastbound)	50	30	60	✓	✓	✓	✓
Rosecrans St and Moore St (Westbound)	60	10	70	✓		✓	✓
Rosecrans St and Kurtz St (Westbound)	40	50	70	✓		✓	□
Rosecrans St and Midway Drive (Westbound)	180	210	360	✓	○	✓	✓
Rosecrans St and North Evergreen St (Westbound)	30	40	60	✓			
Rosecrans St and Lytton St (Westbound)	10	20	30	✓			

Table 6.9 Transit Station/Stop Locations, Amenities and Average Daily Boardings and Alightings – Preferred Plan Conditions

Station	Boardings	Alightings	Total	Amenities at the Stops			
				Signs	Shelter	Bench	Trash Can
Pacific Highway and Witherby St (Northbound)	140	100	240	✓	✓	✓	✓
Pacific Highway and Enterprise St (Northbound)	30	60	70	✓			
Pacific Highway and Kurtz St (Northbound)	20	20	20	✓			
Old Town Transit Center (Northbound)	4,170	770	4,930	✓	✓	✓	✓
Old Town Transit Center (Southbound)	770	3,890	3,940	✓	✓	✓	✓
Pacific Highway and Sports Arena Blvd (Southbound)	40	600	80	✓			
Midway Drive and Duke St (Eastbound)	100	60	160	✓	✓	✓	✓
Midway Drive and Fordham St (Eastbound)	110	40	140	✓	✓	✓	✓
Midway Drive and East Drive (Eastbound)	70	70	140	✓	✓	✓	✓
Midway Drive and East Drive (Westbound)	80	60	140	✓		✓	
Midway Drive and Fordham St (Westbound)	40	110	140	✓		✓	
Midway Drive and Kemper St (Westbound)	50	110	150	✓		✓	
Midway Drive and Duke St (Westbound)	40	130	160	✓		✓	
Taylor St and Juan St (Northbound)	30	20	30	✓		✓	
Taylor St and Sunset St (Southbound)	10	10	20	✓		✓	
Taylor St and Juan St (Eastbound)	10	10	10	✓		✓	
Taylor St and Presidio Drive (Eastbound)	10	10	10	✓		✓	
Taylor St and I-8 East (Eastbound)	10	10	10	✓			
Taylor St and I-8 East (Westbound)	10	10	10	✓		✓	
Taylor St and Presidio Drive (Westbound)	10	10	10	✓		✓	
Taylor St and Sunset St (Westbound)	10	10	10	✓		✓	
Taylor St and Juan St (Southbound)	10	10	10	✓		✓	
Old Town Transit Center	8,280	390	8,670	✓	✓	✓	✓
Washington Street Station	280	660	930	✓	✓	✓	✓
Middletown Station	10	11,110	11,110	✓	✓	✓	✓

Source: Chen Ryan Associates (March 2017)

Notes:
✓: Existing Amenity
O: Needed Amenity

As shown, the majority of the existing stops/stations already provide adequate amenities to accommodate the projected future ridership. However, additional amenities will be needed at the following stations as ridership increased:

Midway-Pacific Highway Community

- Sports Arena Boulevard, between Hancock Street and Kemper Street (Clockwise) – Bench
- Sports Arena Boulevard and East Drive (Clockwise) – Shelter
- Rosecrans Street and Midway Drive (Westbound) – Shelter

Old Town

- None

6.6.2 Arterial Speed Analysis Along Roadways Serving Transit Routes

An HCM peak hour arterial speed analysis was conducted along all roadway corridors where transit routes are projected to operate in order to identify future roadway congestion that could potentially impact transit route travel times and on-time performance. Transit priority measures such as queue jumper lanes and transit priority signal timing should be implemented in locations where future roadway congestion is anticipated.

Table 6.10 displays peak hour arterial speed analyses for all roadway facilities where a transit route operates under implementation of the Preferred Plan. Peak hour arterial analysis worksheets are provided in Appendix G.

Table 6.10 Arterial Speed Analysis Along Transit Corridors – Preferred Plan Conditions

Roadway	Segment	Posted Speed (MPH)	AM				PM			
			EB/NB		WB/SB		EB/NB		WB/SB	
			Speed	LOS	Speed	LOS	Speed	LOS	Speed	LOS
Midway-Pacific Highway Community										
Camino Del Rio West	Sports Arena Blvd to Kurtz Street	35	5.9	F	7.1	F	5.8	F	4.4	F
	Kurtz Street to Hancock Street	35	10.7	D	24.6	B	9.3	D	10.2	E
Rosecrans Street	Barnett Avenue to Midway Drive	35	22.3	C	10.4	F	16.3	E	19.1	D
	Midway Drive to Sports Arena Blvd	35	31.2	B	9.3	F	31.2	B	8.9	F
	Sports Arena Blvd to Kurtz Street	35	11.7	F	3.4	F	8.3	F	2.7	F
	Kurtz Street to Pacific Highway	35	17.1	D	22.1	C	11.9	F	20.5	D
Midway Drive	Sports Arena Blvd to Duke Street/Hancock Street	35	6	F	10.4	E	5.2	F	9.2	F
	Duke Street/Hancock Street to Kemper Street	35	20.5	C	17.8	D	16.2	D	13.5	E
	Kemper Street to East Drive	35	19.5	C	25.4	B	15.7	D	24.4	B
	East Drive to Rosecrans Street	35	23.6	C	12.3	E	20.9	C	8.4	F
Sports Arena Boulevard	I-8 WB Off-Ramp to W Point Loma Blvd	35	21	C	9	F	8.9	F	8.4	F
	W Point Loma Blvd to Hancock Street	35	11.3	E	21.1	C	5.2	F	23.4	C
	Hancock Street to Kemper Street	35	15.4	D	13.9	E	19.7	C	9.5	F
	Kemper Street to Frontier Drive	35	11.1	E	15.1	D	14.8	D	17.9	D
	Frontier Drive to Greenwood Street	35	12.6	E	20.4	C	13.8	E	12.2	E
	Greenwood Street to Rosecrans Street	35	25.5	B	7.1	F	23.7	C	8.8	F
Pacific Highway	Taylor Street to Kurtz Street	45	24.9	C	23.6	C	17.7	D	16	E
	Kurtz Street to Sports Arena Blvd	45	24.3	C	15.4	E	15.2	E	22.8	C

Table 6.10 Arterial Speed Analysis Along Transit Corridors – Preferred Plan Conditions

Roadway	Segment	Posted Speed (MPH)	AM				PM			
			EB/NB		WB/SB		EB/NB		WB/SB	
			Speed	LOS	Speed	LOS	Speed	LOS	Speed	LOS
Pacific Highway	Sports Arena Blvd to Barnett Avenue	45	11.9	F	11.6	F	9.4	F	5.3	F
	Washington Street to Sassafras Street	45	9.6	F	28.3	B	5.2	F	28.9	B
	Sassafras Street to W Laurel Street	45	31.6	B	16.1	E	28	B	14.6	E
Old Town Community										
Taylor Street	Pacific Highway to Congress Street	35	12.3	D	9.2	D	9.7	D	8	E
	Congress Street to Juan Street	35	10.2	D	13	C	7.4	E	13.9	C
	Juan Street to Whitman Street	35	17.5	C	15.6	C	15.9	C	14.8	C

Source: Chen Ryan Associates (March 2017)

Note:
Bold letter indicates LOS E or F

As shown, several segments within both communities are projected to operate at LOS E or F during both the AM and PM Peak hours:

<u>Midway-Pacific Highway</u>

- Camino Del Rio West, between Sports Arena Boulevard and Kurtz Street
  - LOS F: AM & PM peak hours, eastbound & westbound directions
- Camino Del Rio West, between Kurtz Street and Hancock Street
  - LOS E: PM peak hour, westbound direction
- Rosecrans Street, between Barnett Avenue and Midway Drive
  - LOS F: AM peak hour, westbound direction
  - LOS E: PM peak hour, eastbound direction
- Rosecrans Street, between Midway Drive and Sports Arena Boulevard
  - LOS F: AM & PM peak hours, westbound direction
- Rosecrans Street, between Sports Arena Boulevard and Kurtz Street
  - LOS F: AM & PM peak hours, eastbound & westbound directions
- Rosecrans Street, between Kurtz Street and Pacific Highway
  - LOS F: PM peak hour, eastbound direction
- Midway Drive, between Sports Arena Boulevard and Hancock Street
  - LOS F: AM & PM peak hours, northbound direction
  - LOS E: AM peak hour, southbound direction
  - LOS F: PM peak hour, southbound direction
- Midway Driveway, between Hancock Street and Kemper Street
  - LOS E: PM peak hour, northbound & southbound directions
- Midway Drive, between East Drive and Rosecrans Street
  - LOS E: AM peak hour southbound direction
  - LOS F: PM peak hour southbound direction
- Sports Arena Boulevard, between I-8 Westbound Ramps and West Point Loma Boulevard
  - LOS F: AM peak hour, southbound direction

    - LOS F: PM peak hour, northbound & southbound directions
- Sports Arena Boulevard, between West Point Loma Boulevard and Hancock Street
    - LOS E: AM peak hour, northbound direction
    - LOS F: PM peak hour, northbound direction
- Sports Arena Boulevard, between Hancock Street and Kemper Street
    - LOS E: AM peak hour, southbound direction
    - LOS F: PM peak hour, southbound direction
- Sports Arena Boulevard, between Kemper Street and Frontier Drive
    - LOS E: AM peak hour, northbound direction
- Sports Arena Boulevard, between Frontier Drive and Greenwood Street
    - LOS E: AM peak hour, northbound direction
    - LOS E: PM peak hour, northbound & southbound directions
- Sports Arena Boulevard, between Greenwood Street and Rosecrans Street
    - LOS F: AM & PM peak hours, southbound direction
- Pacific Highway, between Taylor Street to Kurtz Street
    - LOS E: PM peak hour, southbound direction
- Pacific Highway, between Kurtz Street and Sports Arena Boulevard
    - LOS E: AM peak hour, southbound direction
    - LOS E: PM peak hour, northbound direction
- Pacific Highway, between Sports Arena Boulevard and Barnett Avenue
    - LOS F: AM & PM peak hours, northbound & southbound directions
- Pacific Highway, between Washington Avenue and Sassafras Street
    - LOS F: AM & PM peak hours, northbound direction
- Pacific Highway, between Sassafras Street and Laurel Street
    - LOS E: AM & PM peak hours, southbound direction

As noted in Section 3.5.2, the following transit priority treatments are recommended to help on-time performance for bus routes within the Midway-Pacific Highway community:

Pacific Highway - Pacific Highway serves several regional bus routes that connect multiple communities. The projected low travel speeds along several segments of Pacific Highway could impact the efficiency and on-time performance of these regional routes. Therefore, it is recommended that, transit priority measures such as queue jumper lanes and transit priority signals are implemented at all signalized intersections along Pacific Highway between Taylor Street and Laurel Street.

Rosecrans Street – Rosecrans Street east of Camino Del Rio West currently serves four MTS bus Routes (8, 9, 28 and 35). A queue jumper lane and transit signal have already been implemented on the eastbound approach at the Taylor Street / Rosecrans Street and Pacific Highway intersection. Similar transit priority improvements should also be looked at the Rosecrans Street Camino Del Rio West and Sports Arena Boulevard intersection to allow westbound buses (Routes 8, 9 and 35) to turn right onto Sports Arena Boulevard and avoid congestion.

New Roadway Connections – The proposed new roadway connections can serve as alternative east/west routes for busses traveling through the community. Rerouting to these new facilities, if possible, may help avoid the congestion on Rosecrans Street. It is recommended that after the construction of any of the new roadways, the City of San Diego coordinate with MTS to look at bus rerouting opportunities.

Old Town

- Taylor Street, between Pacific Highway and Congress Street
  - LOS E: PM peak hour, westbound direction
- Taylor Street, between Congress Street and Juan Street
  - LOS E: PM peak hour, eastbound direction

Taylor Street serves several regional bus routes connecting multiple communities. Therefore, it is recommended that transit priority treatments be implemented along Taylor Street to help increase transit performance. It is recommended to implement queue jumper lanes and transit priority signals in either direction at both the Taylor Street / Juan Street and Taylor Street / Morena Boulevard intersections.

6.7 Parking Management

It is anticipated that any additional parking demand associated with future developments will be accommodated on-site. It is assumed that all on-street public parking spaces will be maintained under Preferred Plan implementation, with the exception of the following:

Midway-Pacific Highway

Rosecrans Street, between Sports Arena Boulevard / Camino Del Rio West and Pacific Highway – To implement the multi-use urban path improvements proposed as part of the Preferred Plan, parking along both sides of Rosecrans Street will need to be removed. Approximately 65 on-street parking spaces will be removed along this segment. Since there is abundant off-street parking within the community and these spaces are not heavily utilized, the removal of these spaces should not negatively impact the community.

Sports Arena Boulevard, between West Point Loma Boulevard and Rosecrans Street – To implement the multi-use urban path improvements proposed as part of the Preferred Plan, parking along the southwest side of Sports Arena Boulevard will need to be removed. Approximately 24 on-street parking spaces will be removed along this segment. Since there is abundant off-street parking within the community and these spaces are not heavily utilized, removal of these spaces should not negatively impact the community.

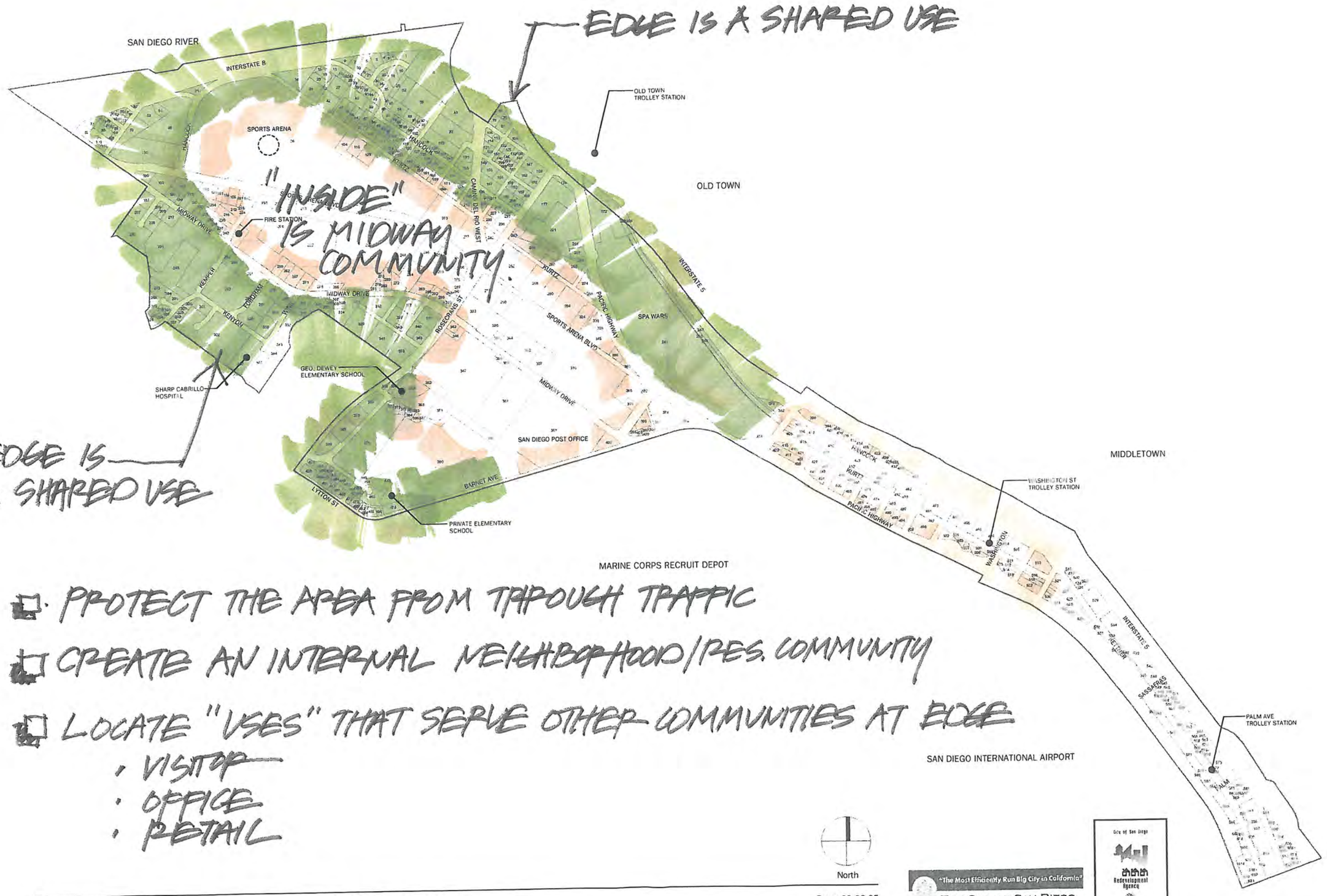
Old Town

There is not anticipated to be any loss of on-street parking within the Old Town Community. However, as noted in Section 4.2.2 it is proposed that the parking along the east side of San Diego Avenue, between Twiggs Street and Conde Street, be converted from parallel to diagonal parking.

This improvement could potentially result in up to 20 additional on-street parking spaces along San Diego Avenue.

The community is not currently in favor of metering parking within Old Town as a means to create parking turnover, therefore, use of the existing parking supply should be maximized to help meet parking demands. The Caltrans parking lot, located north of the Congress Street and Taylor Street intersection, provides approximately 800 parking spaces that are open to the public on nights and weekends and is frequently under capacity. Increased utilization of these spaces may help alleviate some of the parking demand experienced throughout the Old Town community. Additional wayfinding signage may be beneficial to help direct community visitors and employees to the lot.

Appendix A
Midway/Pacific Highway Urban Greening Plan
Cross-Sections and Concept Plans



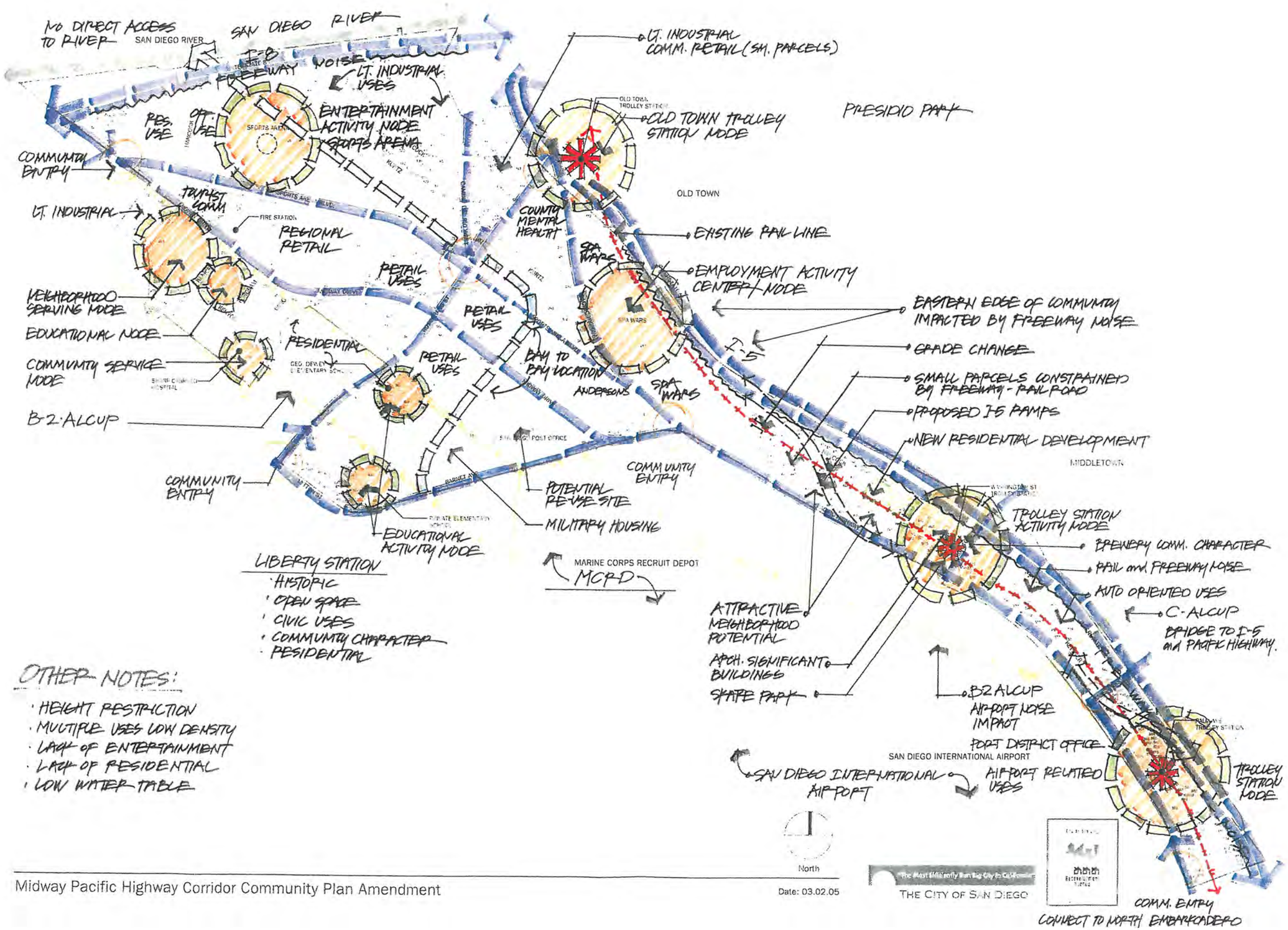
- PROTECT THE AREA FROM THROUGH TRAFFIC
- CREATE AN INTERNAL NEIGHBORHOOD/RES. COMMUNITY
- LOCATE "USES" THAT SERVE OTHER COMMUNITIES AT EDGE
  - VISITOR
  - OFFICE
  - RETAIL

North

"The Most Efficiently Run Big City in California"

THE CITY OF SAN DIEGO

City of San Diego Redevelopment Agency


NO DIRECT ACCESS TO RIVER
SAN DIEGO RIVER
SAN DIEGO RIVER
I-8 FREEWAY
NOISE
LT. INDUSTRIAL USES
RES. USE
OFF. USE
ENTERTAINMENT ACTIVITY NODE
SPORTS ARENA
COMMUNITY ENTRY
LT. INDUSTRIAL
TOURIST COMM.
FIRE STATION
REGIONAL RETAIL
NEIGHBORHOOD SERVING NODE
EDUCATIONAL NODE
COMMUNITY SERVICE NODE
B-2-ALCUP
RESIDENTIAL
RETAIL USES
RETAIL USES
RETAIL USES
BAY TO BAY CONNECTION
ANDERSONS
SPA WARS
LT. INDUSTRIAL COMM. RETAIL (SM. PARCELS)
OLD TOWN TROLLEY STATION
OLD TOWN TROLLEY STATION NODE
PRESIDIO PARK
OLD TOWN
COUNTY MENTAL HEALTH
SPA WARS
EXISTING RAIL LINE
EMPLOYMENT ACTIVITY CENTER/NODE
EASTERN EDGE OF COMMUNITY IMPACTED BY FREEWAY NOISE
I-5
GRADE CHANGE
SMALL PARCELS CONSTRAINED BY FREEWAY - RAILROAD
PROPOSED I-5 RAMPS
NEW RESIDENTIAL DEVELOPMENT
MIDDLETOWN
SAN DIEGO POST OFFICE
COMMUNITY ENTRY
POTENTIAL RE-USE SITE
MILITARY HOUSING
EDUCATIONAL ACTIVITY NODE
COMMUNITY ENTRY
LIBERTY STATION
· HISTORIC
· OPEN SPACE
· CIVIC USES
· COMMUNITY CHARACTER
· RESIDENTIAL
MARINE CORPS RECRUIT DEPOT
MCRD
ATTRACTIVE NEIGHBORHOOD POTENTIAL
ARCH. SIGNIFICANT BUILDINGS
SKATE PARK
B2 ALCUP
AIRPORT NOISE IMPACT
PORT DISTRICT OFFICE
SAN DIEGO INTERNATIONAL AIRPORT
SAN DIEGO INTERNATIONAL AIRPORT
AIRPORT RELATED USES
TROLLEY STATION NODE
TROLLEY STATION ACTIVITY NODE
BREWERY COMM. CHARACTER
RAIL and FREEWAY NOISE
AUTO ORIENTED USES
C-ALCUP
BRIDGE TO I-5 and PACIFIC HIGHWAY.
COMM. ENTRY
CONNECT TO NORTH EMBARCADERO
OTHER NOTES:
· HEIGHT RESTRICTION
· MULTIPLE USES LOW DENSITY
· LACK OF ENTERTAINMENT
· LACK OF RESIDENTIAL
· LOW WATER TABLE
North
THE CITY OF SAN DIEGO

Appendix B
City of San Diego Unfunded Transportation Needs List (8/5/14)

ID	Title	Prioritization_Score	Description	Status	Community	CD	CIP_NO	PFFP_NO	Estimate	Funding_Identified_in_Financing_Plan	Grant_Funding_Source	Comments	High_Accident	TR_Number	Mapped_By	Item Type	Path
2491	Market St @ Pitta St	0	Re-evaluated in August 2012 and no longer meets warrants.	No longer meets warrants	Encanto Neighborhoods, Southeastern	4							0	320405		Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
2503	Cardiff St @ San Vicente St	0	Re-evaluated March 2012 and no longer meets warrants.	No longer meets warrants	Encanto Neighborhoods, Southeastern	4							0	320397		Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
2767	58th St @ Skyline Dr/Trinidad Wy	0	Re-evaluated in Oct. 2012 and no longer meets warrants.	No longer meets warrants	Encanto Neighborhoods, Southeastern	4							0	326167		Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
3517	Sampson Street southwest of 28th Street 156', northwest side Street Light	0		No longer meets warrants	Southeastern San Diego, Southeastern	8			2000				0	329954	Hughes, Duncan	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
827	30th Street & Market Street Traffic Signal Upgrade	0	Install left-turn phasing for EB/WB traffic on Market Street	No longer meets warrants	Southeastern San Diego, Southeastern	8			13785			LT phasing installed by Streets Div. on 5/15/12.	0	305875	Pornan, Donald	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
751	Southcrest Redevelopment Project Area Street Lights	1	This project will install up to 73 street lights in the Southcrest Redevelopment Area.	PITS	Southeastern San Diego, Southeastern	4;#8	52-293.0		655600	Redevelopment			Yes		Pornan, Donald	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
530	60th St. from Upland St. to Weaver St.-Install New Guardrail	17	This project will install 1,230' of guardrail.	TEO Funded	Encanto Neighborhoods,	4			78000				No		Nascimento, Claudio	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
531	60th St. from Broadway to Radio Dr.-Install New Guardrail	20	This project will install 272' of guardrail along the west side of 60th St within the specified limits.	TEO Funded	Encanto Neighborhoods, Southeastern	4						In Design, estimate to be provided by consultant.	No	283409	Nascimento, Claudio	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
4109	Medio St and Pocatello St - Install New Guardrail	21	This project will install approximately 375' of new guardrail along the west side of Pocatello St and Medio St between Eleanor Dr and Bishop St.	TEO Unfunded	Southeastern San Diego, Southeastern	4			45000			Cost Estimate Complete.	No		Alo, Leo	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
491	Wunderlin Ave from 63rd Street to 900' east(North Side) - Install New Sidewalk	25	This project will provide PCC sidewalk on the north side of Wunderlin Avenue.	TEO Unfunded	Encanto Neighborhoods, Southeastern	4			115000	Other	CDBG;#Safe Route to School	Conflicts: Landscaping, Utility Poles, Trees	Yes	318208	Pornan, Donald	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
814	19th Street & Market Street Traffic Signal Upgrade	25	Install pedestrian heads for all crossings	TEO Unfunded	Southeastern San Diego, Southeastern	8			12500				0		Pornan, Donald	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
934	25th Street & Imperial Avenue Traffic Signal Upgrade	25	Install PPB (2010).	TEO Unfunded	Southeastern San Diego, Southeastern	8			6000				0		Pornan, Donald	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
935	25th Street & Market Street Traffic Signal Upgrade	25	Change out left turn signal; head from PV to regular signal heads with arrows .	TEO Unfunded	Southeastern San Diego, Southeastern	8			16100				0		Pornan, Donald	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
938	30th Street (S) & Ocean View Boulevard Traffic Signal Upgrade	25	Install pedestrian indications on the NWC and NEC	TEO Unfunded	Southeastern San Diego, Southeastern	8			9500				0		Pornan, Donald	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
449	Pocatello St from Eleanor Dr to Medio St, Medio St from Pocatello St to Bishop Dr, Bishop Dr from Medio St to Eleanor Dr - Improve to residential local street	27	This project will provide for a low volume, residential local street along Pocatello, Medio and Bishop per Street Design Manual Standards. It will require excavation, new AC street section,curb, gutter and sidewalk, street lights, retaining walls, and encroachment removal.	TEO Unfunded	Southeastern San Diego, Southeastern	4				Other			0		Pornan, Donald	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
498	Skyline Dr. at Woodman St.-Install New Guardrail	28	This project will install approximately 80' of guardrail at the southeast corner of this intersection.	TEO Unfunded	Encanto Neighborhoods, Southeastern;#Skyli	4			30000				No	308921	Nascimento, Claudio	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
551	Imperial Ave from I-5 to 32nd St - Widen to 4-lane major	28	This project provides for the widening of Imperial Avenue to a four-lane major street.	TEO Unfunded	Southeastern San Diego, Southeastern	4;#8		SESD-T9	2800000				0		Pornan, Donald	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
947	32nd St & Market St Traffic Signal Upgrade	28	Add pedestrian signal heads and push buttons	TEO Unfunded	Southeastern San Diego, Southeastern	8			14600				0		Pornan, Donald	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
984	Euclid Av & Logan Av/Olvera Av Traffic Signal Upgrade	28	Relocate PPB 180 degrees at NWC of Logan and Euclid (south leg of Logan, PPB on median); relocate PPB 180 degrees at SEC of Olvera & Euclid (2002)	TEO Unfunded	Encanto Neighborhoods, Southeastern	4			600				0		Pornan, Donald	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
1077	32nd St & Imperial Ave Traffic Signal Upgrade	28	Install new limit line loops to improve bicycle detection for all approaches (Mod. Type E)	TEO Unfunded	Southeastern San Diego, Southeastern	4			20000				0	314,613	Pornan, Donald	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
251	60th St from Imperial to Federal - Widen to 2-lane collector	29	This project provides for the widening of 60th Street to a two-lane collector.	TEO Unfunded	Southeastern San Diego, Southeastern	4;#8		SESD-17	7000000	Other			0		Pornan, Donald	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
267	Guymon St from 1000' w/o Euclid Ave to 1400' w/o Euclid Ave - Widen road	29	Widen road to standard 40' c/c	TEO Unfunded	Southeastern San Diego, Southeastern	8				Other		Conflicts: Environmental, No C&G, Drainage	0	313469	Pornan, Donald	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
3481	36th St & National Av APS Traffic Signal Upgrade	29	Install Polara push buttons Upgrade curb ramps Install ped countdown timers	TEO Unfunded	Southeastern San Diego, Southeastern	9			30000				0	329545		Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
3791	25th St & J St Traffic Signal Upgrade	29	Install ped countdown timers (8) Upgrade ped push buttons (7)	TEO Unfunded	Southeastern San Diego, Southeastern	8			2600				0	331,264		Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
474	35th St from Durant St to Webster Ave(West Side)-Install New Sidewalk	30	This project will provide approximately 100 linear feet of new PCC sidewalk on the west side of 35th Street. It will require excavation.	TEO Unfunded	Southeastern San Diego, Southeastern	9			27000	Other	CDBG	Conflicts: None Observed IMCAT Conflicts as of	0	308882	Nascimento, Claudio	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
4115	Merlin Drive north of Brooklyn Avenue 395', west side	30		TEO Unfunded	Encanto Neighborhoods,	4			2000		Smart Growth;#CDBG			TR334870	Semaan, Jerry	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
4116	Merlin Drive north of Brooklyn Avenue 575', west side	30		TEO Unfunded	Encanto Neighborhoods,	4			2000		Smart Growth;#CDBG			TR334870	Semaan, Jerry	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
4117	Merlin Drive north of Brooklyn Avenue 915', west side	30		TEO Unfunded	Encanto Neighborhoods,	4			2000		Smart Growth;#CDBG			TR334870		Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
3014	Skyline Dr & Sychar Rd Traffic Signal Upgrade	30	Upgrade curb ramps Install ped countdown timers	TEO Unfunded	Encanto Neighborhoods,	4			40000				0	328,180	Morabe, Lindsay	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
3015	Meadowbrook Dr & Skyline Dr Traffic Signal Upgrade	30	Upgrade curb ramps Install ped countdown timers	TEO Unfunded	Encanto Neighborhoods,	4			40000				0	328,179	Morabe, Lindsay	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List

3017	Skyline Dr & Woodman St Traffic Signal Upgrade	30	Install new loops for phases 2 & 5 Upgrade curb ramps Upgrade ped push buttons Install ped countdown timers	TEO Unfunded	Encanto Neighborhoods, Southeastern	4			55000				0	328,183	Morabe, Lindsay	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
116	Bancroft St from Island Ave to J St(West Side)- Install New Sidewalk	31	This project will provide approximately 291 linear feet of sidewalk, relocate three (3) street lights, 18 linear feet of driveway, and add five (5) pedestrian ramps.	TEO Unfunded	Southeastern San Diego, Southeastern	8			192000	Other	CDBG;#Safe Route to School	Conflicts: Utility Poles, Utility Boxes, Landscaping	0	308866	Tawfiq, Kharman	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
323	Geneva Ave from Winston Dr to Beverly St(South Side)- Install New Sidewalk	31	This project will install PCC sidewalk on the South Side of Geneva Ave.	TEO Unfunded	Encanto Neighborhoods, Southeastern	4				Other		Conflicts: Slope, Utility Poles, Mailboxes, Landscaping IMCAT Conflicts as of	0	309002	Pornan, Donald	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
353	58th St from South of Atla Vista Ave to End of 58th St(West Side)- Install New Sidewalk	31	This project will install PCC sidewalk on the west side of 58th Street.	TEO Unfunded	Encanto Neighborhoods, Southeastern	4				Other	CDBG	Conflicts: Drainage, Possible ROW Encroachment	0	318210	Pornan, Donald	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
493	Santa Isabel Dr from Bonita Dr to Olvera Ave(West Side)- Install New Sidewalk	31	This project will install PCC sidewalk on the west side of Santa Isabel Drive.	TEO Unfunded	Encanto Neighborhoods, Southeastern	4				Other	CDBG	Conflicts: Utility Poles, Landscaping, Driveway Clearance, Trees, Slop	Yes	309079	Pornan, Donald	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
3018	Skyline Dr & Valencia Traffic Signal Upgrade	31	Upgrade ped push buttons Install ped countdown timers	TEO Unfunded	Encanto Neighborhoods,	4			8000				0	328,186	Morabe, Lindsay	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
352	54th St from Imperial Ave to Santa Margarita St(East Side)- Install New Sidewalk	32	This project will install PCC sidewalk on the East Side of 54th Street.	TEO Unfunded	Encanto Neighborhoods, Southeastern	4					CDBG	Conflicts: No C&G, Drainage Concerns, Utility Poles IMCAT Conflicts as of	0	303500	Pornan, Donald	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
370	53rd St from Santa Margarita St to Imperial Ave(East Side)- Install New Sidewalk	32	This project will install PCC sidewalk on the east side of 53rd Street.	TEO Unfunded	Encanto Neighborhoods, Southeastern	4				Other	CDBG	Conflicts: None Oserved	0	306252	Pornan, Donald	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
1263	Roswell St from Swaner St to Old Memory Lane (North Side) -Install New Sidewalk	32	This project will install a missing sidewalk segment on the North Side of Roswell St.	TEO Unfunded	Encanto Neighborhoods, Southeastern	4						Conflicts: No C&G, Drainage Concerns	0		Pornan, Donald	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
1242	Citywide Streetlights FY 2011	32	Installation of street lights at various locations: Enterprise Street at Jessop Lane, north side Pershing Avenue at Upas Street, southeast corner Bancroft Street at Greely Avenue, southeast corner Houston Street at Kurtz Street, southwest corner Central Avenue at Dwight Street, northeast corner 62nd Street at Akins Avenue, southeast corner 31st Street at Juniper Street, northeast corner 32nd Street at Juniper Street, northeast corner 33rd Street at Juniper Street, northeast corner Bancroft Street at Juniper Street, northeast corner Dale Street at Juniper Street, northeast corner	TEO Funded	Encanto Neighborhoods, Southeastern;#Greater North Park;#Mid-City:City Heights;#Midway-Pacific Highway;#Southeastern San Diego, Southeastern	2;#3;#4;#8	B1114 7		96000				Yes		Pornan, Donald	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
3016	O'Meara St & Skyline Dr Traffic Signal Upgrade	32	Install ped countdown timers	TEO Unfunded	Encanto	4			2000				0	328,184	Morabe,	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
298	Brooklyn Ave from Merlin St to 63rd St(North Side)- Install New Sidewalk	33	This project will provide approximately 377 linear feet of sidewalk, six driveways, and two pedestrian ramps.	TEO Unfunded	Encanto Neighborhoods, Southeastern	4			116000	Other	CDBG;#Safe Route to School	Conflicts: Utility Box, Utility Poles, Decorative Pavement IMCAT Conflicts as of	0	309098A	Pornan, Donald	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
328	54th St from Imperial Ave to Naranja St(East Side)- Install New Sidewalk	33	This project will install PCC sidewalk on the East Side of 54th Street.	TEO Unfunded	Encanto Neighborhoods, Southeastern	4					CDBG	Conflicts: No C&G, Drainage Concerns	0	303499	Pornan, Donald	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
332	G St from 22nd St to 24th St(North Side)- Install New Sidewalk	33	This project will provide approximately 410 Linear feet of new PCC sidewalk and curb ramps on the north side of G Street. It will require clearing and grubbing, sign relocation, fence relocation, and Caltrans Encroachment Permit.	TEO Unfunded	Southeastern San Diego, Southeastern	8			148000	Other	CDBG;#Safe Route to School	Conflicts: Guardrail, Fence, ROW space, Utility Boxes IMCAT Conflicts as of 1/3/13: Overlay FY14	0	308999	Nascimento, Claudio	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
381	Groveland Dr from Euclid Ave to 53rd St(North Side)- Install New Sidewalk	33	This project will provide approximately 407 linear feet of sidewalk, 84 linear feet of driveway, 491 linear feet of curb and gutter, two pedestrian ramps, and relocate one fire hydrant.	TEO Unfunded	Encanto Neighborhoods, Southeastern	4			261000		CDBG	Conflicts: Utility Poles, Utility Boxes IMCAT Conflicts as of 12/28/12: None	0	309225	Pornan, Donald	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
463	Leghorn Ave from 66th St to Varney Dr(West Side)- Install New Sidewalk	33	This project will provide approximately 921 linear feet of guardrail, five driveways, 295 feet of curb, gutter, 141 linear feet of retaining wall, and 141 feet of guardrail.	TEO Unfunded	Encanto Neighborhoods, Southeastern	4			321000	Other		Conflicts: Mailboxes, Street Light, Utility Boxes, Guardrail, Storm Drain, Substandard Segment needs widening	0	309025	Nascimento, Claudio	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
470	Santa Margarita St from San Jacinto Dr to 55th St(South Side)- Install New Sidewalk	33	This project will install PCC sidewalk on the south side of Santa Margarita Street.	TEO Unfunded	Encanto Neighborhoods, Southeastern	4				Other	CDBG;#Safe Route to School	Conflicts: Utility Poles, Slopes, Landscaping, Trees, Draina IMCAT Conflicts as of	0	309080	Pornan, Donald	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List

665	Brooklyn Ave from 63rd St to Otay St(South Side)- Install New Sidewalk	33	This project will provide approximately 702 linear feet of sidewalk, 85 linear feet of driveway, three pedestrian ramps, and relocate two fire hydrants.	TEO Unfunded	Encanto Neighborhoods, Southeastern	4			201000		CDBG;#Safe Route to School	Conflicts: Utility Poles, Fire Hydrant, Fence IMCAT Conflicts as of	0	309097B	Pornan, Donald	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
666	Brooklyn Ave from Merlin St to 63rd St(South Side)- Install New Sidewalk	33	This project will install PCC sidewalk on the South Side of Brooklyn Avenue.	TEO Unfunded	Encanto Neighborhoods, Southeastern	4					CDBG;#Safe Route to School	Conflicts: Utility Box, Utility Poles, Decorative Pavement IMCAT Conflicts as of	0	309098B	Pornan, Donald	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
693	Benson Ave from Roth Ct to Jojo Ct (South Side) - Install New Sidewalk	33	This project will install PCC sidewalk on the south side of Benson Ave.	TEO Unfunded	Encanto Neighborhoods, Southeastern	4					CDBG;#Safe Route to School	Conflicts: Widening needed, Slope IMCAT Conflicts as of	0	309085	Pornan, Donald	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
785	29th St from Imperial Ave to Commercial St (East Side)- Install New Sidewalk	33	This project will provide approx. 330 LF of sidewalk, trees w/ grates, AC pavement, curb ramps, driveway apron, Type B inlet, and traffic striping. It will require sidewalk removal, pavement removal, inlet removal, sign relocation, meter box adjustment, and fire hydrant relocation.	TEO Unfunded	Southeastern San Diego, Southeastern	8			486000		CDBG	Conflicts: No Curb & Gutter, Drainage IMCAT Conflicts as of 1/3/13: Overlay FY15 (Start Cnst: 11/14 End Cnst: 7/15)	0	311510	Pornan, Donald	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
555	Akins Ave from 62nd St to 65th St Channel Improvements	33	This project provides for approximately 1400 feet of six foot high vinyl coated chain link fence with one gate. Remove existing fence.	PITS	Southeastern San Diego, Southeastern	4	527780		75000	Other			0			Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
813	19th Street & Imperial Avenue Traffic Signal Upgrade	33	Install signal poles and mast arms; upgrade to 12" signal heads; install detection; replace controller	TEO Unfunded	Southeastern San Diego, Southeastern	8			96000				0		Pornan, Donald	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
250	47th St from Market St to Imperial Ave - Widen to 4-lane major	34	This project provides for the widening of 47th Street to a four-lane Major.	TEO Unfunded	Southeastern San Diego, Southeastern	8		SESD-T18	5100000	Other			0		Pornan, Donald	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
263	Imperial Ave from I-15 to 40th St - Widen to 4-lane collector	34	This project provides for the widening of Imperial Avenue to a four-lane collector. Cost includes property acquisition and demolition of businesses and homes on southside.	TEO Unfunded	Southeastern San Diego, Southeastern	4;#8		SESD-T10		Other			0	315962	Pornan, Donald	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
266	Woodman St from Imperial Ave to Skyline Dr - Widen to 2-lane collector	34	This project provided for the improvement of Woodman Street to a two-lane collector.	PITS	Southeastern San Diego, Southeastern	4;#8		SESD-T14	1300000	Other			0		Pornan, Donald	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
283	33rd St from Imperial Ave to 75' N/O Imperial Ave(West Side)- Install New Sidewalk	34	This project will install PCC sidewalk on the west side of 33rd Street.	TEO Unfunded	Southeastern San Diego, Southeastern	8				Other	CDBG	Conflicts: Utility Boxes IMCAT Conflicts as of	0	318209	Pornan, Donald	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
334	Mallard St from Federal Blvd to 69th St (South Side)- Install New Sidewalk	34	This project will install PCC sidewak on the South Side of Mallard Street.	TEO Unfunded	Encanto Neighborhoods, Southeastern	4				Other		Conflicts: Utility POles, Mailboxes, Landscaping, Slopes, Fire Hydrant, Trees, Shrubs, Vegetation, Guardrail	0	309030	Pornan, Donald	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
469	Castana St from Euclid Ave to San Jacinto Dr(South Side) Install New Sidewalk	34	Install a sidewalk along the south side of Castana Street.	TEO Unfunded	Encanto Neighborhoods, Southeastern	4				Other	CDBG	Conflicts: Fire Hydrant, Utility Box, Utility Pole	0	309100	Pornan, Donald	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
1222	S 45th St from T Street to Logan Ave (East Side)- Install New Sidewalk	34	This project will install PCC sidewalk on the East Side of S 45th Street.	TEO Unfunded	Southeastern San Diego, Southeastern	4					CDBG	Conflicts: No C&G, Tree, Drainage, Business Access IMCAT Conflicts as of	0		Pornan, Donald	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
1234	Manzanares Wy from Euclid Ave to San Jacinto (South Side)- Install New Sidewalk	34	This project will install PCC sidewalk on the South Side of Manzanares Wy.	TEO Unfunded	Encanto Neighborhoods, Southeastern	4					CDBG	Conflicts: Utility Poles, Trees, Landscaping, Fire Hydrants, Fences	0		Pornan, Donald	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
441	Woodman St from Imperial Ave to Skyline Dr(West Side) - Install New Sidewalk	35	This project will install PCC sidewalk on the west side of Woodman Street.	TEO Unfunded	Encanto Neighborhoods, Southeastern	4			600000		CDBG	Water Group Job (Pipe Rehab) started 2/12 and Underground Utilities improvements will	No	317233, 325410, 333706	Pornan, Donald	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
3988	Radio Drive east of Paradise Street 850', south side street light	35		TEO Unfunded	Encanto Neighborhoods,	4			2000		CDBG		0	TR332999	Avila-Zepeda , Felipe R	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
264	Market St from Euclid Ave to 32nd St - Widen to 4-lane major	36	This project provides for the widening of Market Street to a four-lane major street with Class II bicycle lanes. The cost for property acquisition and building demolition are included in this estimate.	TEO Unfunded	Southeastern San Diego, Southeastern	4;#8		SESD-T11	6000000	Other			0		Pornan, Donald	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
363	Bluebird St from Mallard St to Mulberry St(West Side)- Install New Sidewalk	36	This project will install PCC sidewalk on the west side of Bluebird St.	TEO Unfunded	Encanto Neighborhoods, Southeastern	4				Other		Conflicts: Landscaping, No C&G, Mailboxes, Vegetation, Drainage, Utility Poles	0	309096B	Pornan, Donald	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
664	Bluebird St from Mallard St to Mulberry St(East Side)- Install New Sidewalk	36	This project will install PCC sidewalk on the East Side of Bluebird Street.	TEO Unfunded	Encanto Neighborhoods, Southeastern	4						Conflicts: Landscaping, No C&G, Mailboxes, Vegetation, Drainage, Utility Poles	0	309096A, 308872	Pornan, Donald	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
783	45th St from Benfield Ct to Imperial Ave (East Side)- Install New Sidewalk	36	This project will install PCC sidewalk on the east side of 45th Street.	TEO Unfunded	Southeastern San Diego, Southeastern	4			185000		CDBG	Conflicts: Needs Widening, Drainage, AC Curb, Utility Poles, Drain Inlet, Mailboxes, Outility Boxes	0	313467	Pornan, Donald	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List

112	Bittern St from Klauber Ave to Madera St(West Side)- Install New Sidewalk	37	This project will provide approximately 675 Linear Feet of sidewalk on the west side of Bittern Street. It will require excavation, sign relocation, mailbox relocation, meter box adjustment, and fire hydrant relocation. It will include new PCC sidewalk, curb ramps, and driveway aprons. .	TEO Unfunded	Encanto Neighborhoods, Southeastern	4			150000	Other		Conflicts: Landscaping, Mailboxes, Slope, Retaining Wall Fire Hydrants, Utility Poles IMCAT Conflicts as of	0	309095B	Nascimento, Claudio	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
262	Holly Dr from Willie James Jones Ave to Euclid Ave - Widen for CG&S	37	1000' widen road and CG&S & Drainage	PITS	Southeastern San Diego, Southeastern	4			1400000	Other			0		Pornan, Donald	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
270	Benson St from 61st St to Jenna St (South Side) - Install New Sidewalk	37	Widen, CG&S, Pvmt, Fill	TEO Unfunded	Southeastern San Diego, Southeastern	8			396000	Other		Conflicts: Needs Widening, Drainage, Utility Poles, Utility Boxes	0		Pornan, Donald	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
280	Beta St from 43rd St to End (North Side)- Install New Sidewalk	37	This project will provide approximately 601 linear feet of sidewalk. It will include curb and gutter, 13 driveways, and pavement.	TEO Unfunded	Southeastern San Diego, Southeastern	9			417000	Other	CDBG	Conflicts: Substandard Street, No C&G, Drainage, Trees, ROW Aquistion/Encroachm	0	309094B	Pornan, Donald	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
318	Coban St from Bonita Dr to Reynolds St(North Side)- Install New Sidewalk	37	This project will provide approximately 505 linear feet of sidewalk, five driveways, two pedestrian ramps, and 209 linear feet of curb and gutter.	TEO Unfunded	Encanto Neighborhoods, Southeastern	4			200000	Other	CDBG	Conflicts: Fire Hydrant, Utility Pole, No C&G, Wall, Tree, Landscaping	0	309103A	Pornan, Donald	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
466	Swan St from Springfield St to Tooley (West Side)- Install New Sidewalk	37	This project will install PCC sidewalk on the west side of Swan Street.	TEO Unfunded	Encanto Neighborhoods, Southeastern	4				Other		Conflicts: No C&G, Substandard Street Potentially, Landscaping,	0	309130	Pornan, Donald	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
662	Beta St from 43rd St to End (South Side)- Install New Sidewalk	37	This project will provide approximately 383 linear feet of sidewalk. It will include curb, gutter, 9 driveways, and pavement.	TEO Unfunded	Southeastern San Diego, Southeastern	9			310000		CDBG	Conflicts: Substandard Street, No C&G, Drainage, Trees, ROW Aquistion/Encroachm	0	309094A	Pornan, Donald	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
663	Bittern St from Klauber Ave to Madera St(East Side)- Install New Sidewalk	37	This project will provide approximately 1190 Linear Feet of sidewalk on the east side of ittern Street. It will require excavation, sign relocation, and mailbox relocation. It will include new PCC sidewalk, curb ramps, driveway aprons and a 130 LF 3" high retaining wall.	TEO Unfunded	Encanto Neighborhoods, Southeastern	4			243000			Conflicts: Landscaping, Mailboxes, Slope IMCAT Conflicts as of 12/28/12: None	0	309095A	Pornan, Donald	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
671	Coban St from Bonita Dr to Reynolds St(South Side)- Install New Sidewalk	37	This project will provide approximately 565 linear feet of sidewalk, 120 linear feet of curb and gutter, one driveway, and for pedestrian ramps.	TEO Unfunded	Encanto Neighborhoods, Southeastern	4			155000		CDBG	Conflicts: Fire Hydrant, Utility Pole, No C&G, Wall, Tree, Landscaping	0	309103B	Pornan, Donald	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
688	Swan St from Springfield St to Tooley (East Side)- Install New Sidewalk	37	This project will install PCC sidewalk on the East Side of Swan Street.	TEO Unfunded	Encanto Neighborhoods, Southeastern	4						Conflicts: No C&G, Substandard Street Potentially, Landscaping,	0	309130B	Pornan, Donald	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
265	Oceanview Blvd from 40th St to 32nd St - Widen to 4-lane major	38	This project provides for the widening of Oceanview Boulevard to a modified four-lane major street. No additional right of way is anticipated.	TEO Unfunded	Southeastern San Diego, Southeastern	4;#8		SESD-T12	96000000	Other			0		Pornan, Donald	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
394	Webster Avenue from 36th St to Western End of Webster (Both Sides) - Install New Sidewalk	38	This project will install PCC sidewalk on both side of Webster Avenue.	TEO Unfunded	Southeastern San Diego, Southeastern	9				Other	CDBG	Conflicts: Utility Poles, Drainage, Trees, Utility Boxes IMCAT Conflicts as of	0	309033	Pornan, Donald	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
533	Logan Ave from S47th St to 100' East (North Side)- Install New Sidewalk	38	This project will provide approximately 71 LF of sidewalk, and 71 feet of curb and gutter.	PITS	Encanto Neighborhoods,	4			41000		CDBG;#Safe Route to School	Funded by Brock Jones of Disability	0	308153	Pornan, Donald	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
3676	Nogal Street - 75' East of 47th Street (north side) - Install Driveway	38	Install missing (removed by previous owner) driveway	TEO Unfunded	Encanto Neighborhoods, Southeastern	4						Conflict Check: Undergrounding Utilities (start con:	0	330569	Turner, Scott	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
115	Cervantes Ave from Euclid Ave to Bonita Dr(North Side)- Install New Sidewalk	39	This project will provide approximately 2070 LF of CG&S, curb ramps, and driveway aprons. It will require AC curb removal, sign relocation, fence relocation, excavation, clearing and grubbing, and ROW acquisition.	TEO Unfunded	Encanto Neighborhoods, Southeastern	4			414000	Other	CDBG	Conflicts: Fire Hydrants, Fences, Landscaping, Utility Poles, Slope, Utility Boxes, Mailboxes	0	308880	Nascimento, Claudio	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
119	Alta Vista Ave from Cervantes Ave to 58th St(South Side)- Install New Sidewalk	39	This project will provide approximately install 1259 linear feet of sidewalk, 243 linear feet of driveway, with respective curb and gutter, four pedestrian ramps, 273 linear feet of retaining wall, relocate 12 mail boxes, and three signs on the south side of Alta Vista Avenue.	TEO Unfunded	Encanto Neighborhoods, Southeastern	4			492000	Other	CDBG	Conflicts: No C&G, Drainage, Mailboxes, Landscaping, Slope, Trees, Walls, Fences IMCAT Conflicts as of 12/28/12: None	0	306235	Tawfiq, Kharman	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
252	61st St from Akins St to Brooklyn St(East Side)- Install New Sidewalk	39	This project will provide approximately 701 linear feet of sidewalk, 432 linear feet of driveway, 1146 linear feet of curb and gutter, one pedestrian ramp, replace 3 fire hydrants, and replace one street sign.	TEO Unfunded	Encanto Neighborhoods, Southeastern	4			442000		CDBG	Conflicts: Utility Pole, Fire Hydrant, Trees IMCAT Conflicts as of 12/28/12: Overlay	0	306237	Tawfiq, Kharman	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
390	Radio Dr from 60th St to Springfield Dr(North Side)- Sidewalk Improvement	39	This project will install PCC sidewalk on the north side of Radio Drive.	TEO Unfunded	Encanto Neighborhoods, Southeastern	4			24150000	Other		Conflicts: Substandard Roadways- needs many improvements IMCAT Conflicts as of	0	284464	Nascimento, Claudio	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
465	Castana St from San Jacinto Dr to Groveland Dr(North Side)- Install New Sidewalk	39	This project will provide approximately 470 linear feet of sidewalk, and 31 feet of driveway.	TEO Unfunded	Encanto Neighborhoods, Southeastern	4			57000	Other	CDBG	Conflicts: None observed	0	309100A, 306233	Nascimento, Claudio	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List

518	Radio Dr from 60th St to Springfield Dr(South Side)- Sidewalk Improvement	39	This project will install PCC sidewalk on the South Side of Radio Drive.	TEO Unfunded	Encanto Neighborhoods, Southeastern	4			24150000			Conflicts: Substandard Roadways- needs many improvements IMCAT Conflicts as of	0	284464	Pornan, Donald	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
668	Castana St from San Jacinto Dr to Groveland Dr(South Side)- Install New Sidewalk	39	This project will provide approximately 377 linear feet of sidewalk, and 104 linear feet of driveway. It will be neccessary to relocate one fire hydrant and one traffic sign.	TEO Unfunded	Encanto Neighborhoods, Southeastern	4			84000		CDBG	Conflicts: None observed IMCAT Conflicts as of	0	309100B	Pornan, Donald	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
670	Cervantes Ave from Euclid Ave to Bonita Dr(South Side)- Install New Sidewalk	39	This project will provide approximately 2070 LF of sidewalk on the south side of Cervantes Avenue. It will require AC curb removal, sign relocation, fence relocation, excavation, clearing and grubbing, and ROW acquisition. It will include new CG&S, curb ramps, and driveway aprons.	TEO Unfunded	Encanto Neighborhoods, Southeastern	4			414000		CDBG	Conflicts: Fire Hydrants, Fences, Landscaping, Utility Poles, Slope, Utility Boxes, Mailboxes IMCAT Conflicts as of	0	308880	Pornan, Donald	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
701	Cervantes Ave from Bonita Dr to Alta Vista Ave(North Side)- Install New Sidewalk	39	This project will provide approximately 541 linear feet of sidewalk, six driveways, and six pedestrian ramps.	TEO Unfunded	Encanto Neighborhoods, Southeastern	4			240000		CDBG	Conflicts: ROW Encroachments, Fences, Landscaping, Utility Poles, Slope,	0	309229	Pornan, Donald	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
702	Cervantes Ave from Bonita Dr to Alta Vista Ave(South Side)- Install New Sidewalk	39	This project will provide approximatley 1032 linear feet of sidewalk, two driveways, nine pedesrtian ramps, and 132 linear feet of retaining wall.	TEO Unfunded	Encanto Neighborhoods, Southeastern	4			375000		CDBG	Conflicts: ROW Encroachments, Fences, Landscaping, Utility Poles, Slope,	0	309228	Pornan, Donald	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
703	Coban St from Euclid Ave to Reynolds St(North Side)- Install New Sidewalk	39	This project will install PCC sidewalk on the North Side of Coban Street.	TEO Unfunded	Encanto Neighborhoods, Southeastern	4					CDBG	Conflicts: Fire Hydrant, Utility Pole, Decorative Pavement, Trees, Landscaping	0	309227	Pornan, Donald	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
704	Coban St from Euclid Ave to Reynolds St(South Side)- Install New Sidewalk	39	This project will provide approximately 913 linear feet of sidewalk, 17 driveways, and two pedestrian ramps.	TEO Unfunded	Encanto Neighborhoods, Southeastern	4			276000		CDBG	Conflicts: Fire Hydrant, Utility Pole, Decorative Pavement, Trees, Landscaping	0	309226	Pornan, Donald	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
705	Groveland Dr from 53rd St to 54th St(North Side)- Install New Sidewalk	39	This project will provide approximately 407 linear feet of sidewalk, 84 linear feet of driveway, 491 linear feet of curb and gutter, two pedestrian ramps, and relocate one fire hydrant.	TEO Unfunded	Encanto Neighborhoods, Southeastern	4			261000		CDBG	Conflicts: Substandard Street, Drainage, No C&G, Utility Poles IMCAT Conflicts as of	0	309225	Pornan, Donald	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
706	Groveland Dr from 53rd St to 54th St(South Side)- Install New Sidewalk	39	This project will install PCC sidewalk on the South Side of Groveland Drive.	TEO Unfunded	Encanto Neighborhoods, Southeastern	4					CDBG	Conflicts: Substandard Street, Drainage, No C&G, Utility Poles	0	309224	Pornan, Donald	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
1154	Iona Dr from Kenwood St to Brooklyn Ave (Both Sides)- Install New Sidewalk	39	This location is missing sidewalk on both sides of Iona Drive.	TEO Unfunded	Encanto Neighborhoods, Southeastern	4					CDBG	Conflicts: Fire Hydrants, Landscaping	0	317012	Pornan, Donald	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
2776	47th St from Logan Ave to Division St (West Side)- Install New Sidewalk	39	This project will install PCC sidewalk on the west side of 47th St within the specified limits.	TEO Unfunded	Encanto Neighborhoods, Southeastern	4					CDBG		0			Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
308	60th St from Old Memory Lane to Broadway St - Widen to 2-lane collector	40	Widen to 2-lane collector (both sides)	TEO Unfunded	Encanto Neighborhoods, Southeastern	4		SESD-T17			Other	Road Widening PFFP SESD-T17 Project originally for east side only - estimated as $700,000 on 2/5/09. West side improvements added per CPC request. Cost estimate needs updating to include west side. Conflicts:ROW encroachment, Utility	No	306249	Tawfiq, Kharman	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
253	Akins Ave from Iona Dr to 69th St - Widen to install CG&S	40	3,120 linear feet of CG&S	No longer meets warrants	Southeastern San Diego, Southeastern	8					Other		***This location has sidewalk***	0	313015	Pornan, Donald	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
315	Fergus St from Brooklyn St to Akins St(East Side)- Install New Sidewalk	40	This project will provide approximately 611 linear feet of sidewalk, 242 linear feet of driveway, two pedestrian ramps, relocate one fire hydrant and one traffic sign.	TEO Unfunded	Encanto Neighborhoods, Southeastern	4			203000	Other	CDBG	Conflicts: ROW encroachment, Utility Poles	0	306243	Tawfiq, Kharman	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
333	West Street from south of Imerial Ave to End of West St (East Side) - Install New Sidewalk	40	This project will provide approximately 513 linear feet of sidewalk, 141 linear feet of driveways, 36 linear feet of curb and gutter, replace one street sign, and six mail boxes.	TEO Unfunded	Southeastern San Diego, Southeastern	4			104000	Other	CDBG	Conflicts: ROW encroachment, utility poles IMCAT conflicts as of 10/8/12: Sewer &	0	306240	Tawfiq, Kharman	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
694	Benson Ave from Pagel Pl to Aviation Dr (South Side) - Install New Sidewalk	40	This project will install new PCC sidewalk on the south side of Benson Ave.	TEO Unfunded	Encanto Neighborhoods, Southeastern	4			400000		CDBG	Conflicts: Trees, Utility Poles, Drainage, No C&G, Possible Property Aquisition Required, Mailboxes,	0	309084	Pornan, Donald	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
1223	Broadway from Scimitar Dr to 65th St (North Side)- Install New Sidewalk	40	This project will install CG&S on the North Side of Broadway from approx. 40' West of Scimitar Dr to 65th St.	TEO Unfunded	Encanto Neighborhoods, Southeastern	4					CDBG;#Safe Route to School	Conflicts: Utility Pole, Tree, Mailbox, Landscaping, Slope IMCAT Conflicts as of 12/28/12: Overlay	0	320593	Pornan, Donald	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List

1239	Euclid Frontage Rd from Trinidad Way to Manzaranres Way (East Side)- Install New Sidewalk	40	This project will install PCC sidewalk on the East side of S Euclid Frontage Road.	TEO Unfunded	Encanto Neighborhoods, Southeastern	4					CDBG;#Safe Route to School	Conflicts: Landscaping, Utility Boxes, Fire Hydrant, Walls	0	321112	Pornan, Donald	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
3382	69th Street north of Wunderlin Avenue 120', west side, streetlight	40		TEO Unfunded	Encanto Neighborhoods,	4			15000				0	TR327235		Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
3383	69th Street north of Brooklyn Avenue 265', est side, streetlight	40		TEO Unfunded	Encanto Neighborhoods,	4			2000				0	TR327235		Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
3384	69th Street north of Brooklyn Avenue 105', west side, streetlight	40		TEO Unfunded	Encanto Neighborhoods,	4							Yes	TR327235		Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
3727	Central Avenue south of Monroe Avenue 175', east side-streetlight	40	Priority 3a	TEO Unfunded	Encanto Neighborhoods,	9			8000		CDBG		0	TR316281	Semaan, Jerry	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
3808	Julian Avenue east of Dewey Street 295', north side streetlight	40		TEO Unfunded	Southeastern San Diego, Southeastern	8			15000				0	TR 331,383	Hughes, Duncan	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
3809	Julian Avenue east of Dewey Street 160', south side streetlight	40		TEO Unfunded	Southeastern San Diego, Southeastern	8			15000				0	TR 331.383	Hughes, Duncan	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
3810	Julian Avenue west of Evans Steet (S) 155', south side streetlight	40		TEO Unfunded	Southeastern San Diego, Southeastern	8			15000				0	TR 331,383	Hughes, Duncan	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
3927	Boston Avenue east of S 43th Street 170', north side street light	40		TEO Funded	Southeastern San Diego, Southeastern	9			8000		CDBG	B-14107	Yes	TR332941	Avila-Zepeda , Felipe R	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
3928	Boston Avenue east of S 44th Street 90', south side street light	40		TEO Funded	Southeastern San Diego, Southeastern	9			2000		CDBG	B-14107	Yes	TR332938	Avila-Zepeda , Felipe R	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
4020	S Evans Street south of Julian Avenue 180', west side, at alley	40		TEO Unfunded	Southeastern San Diego, Southeastern	8			2000		CDBG		0	TR333309	Semaan, Jerry	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
4031	60th Street north of Kenwood Street 110', west side	40		TEO Unfunded	Encanto Neighborhoods,	4			2000		CDBG		0	TR333433	Semaan, Jerry	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
4110	Merlin Drive south of Market Street 130', east side	40		TEO Unfunded	Encanto Neighborhoods,	4			2000		Smart Growth;#CDBG			TR334870	Semaan, Jerry	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
4111	Merlin Drive north of Market Street 110', west side	40		TEO Unfunded	Encanto Neighborhoods,	4			2000		Smart Growth;#CDBG			TR334870		Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
4112	Merlin Drive north of Market Street 260', west side	40		TEO Unfunded	Encanto Neighborhoods,	4			2000		Smart Growth;#CDBG			TR334870	Semaan, Jerry	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
4113	Merlin Drive south of Brooklyn Avenue 565', west side	40		TEO Unfunded	Encanto Neighborhoods,	4			2000		Smart Growth;#CDBG			TR334870	Semaan, Jerry	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
4114	Merlin Drive south of Brooklyn Avenue 240', west side	40		TEO Unfunded	Encanto Neighborhoods,	4			2000		Smart Growth;#CDBG			TR334870	Semaan, Jerry	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
2452	40th St and Alpha St Pop-Outs	40	This project will provide approximately 3886 square feet of pop out, 324 feet of curb and gutter, 192 linear feet of RCP for storm drain, three clean outs, four storm drain inlets, and eight pedestrian ramps.	PITS	Southeastern San Diego, Southeastern	8			430000				0		Pornan, Donald	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
248	43rd St from Imperial Ave to Logan Ave - Widen to 4-lane collector	41	This project provides for the construction of 43rd Street to a four-lane collector. This project is recommended for deletion. See comments.	TEO Unfunded	Southeastern San Diego, Southeastern	4;#8		SESD-T16	7400000	Other			No		Pornan, Donald	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
552	Valencia Pkwy from Imperial Ave to Market St - Widen to 4-lane major	41	This project provides for the extension of Valencia Parkway as a four-lane major street.	TEO Unfunded	Southeastern San Diego, Southeastern	4;#8		SESD-T13	5500000				No		Pornan, Donald	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
1235	San Alberto Wy from Santa Rosalia to Trinidad Wy (Both Sides)- Install New Sidewalk	41	This project will provide approximately 2015 LF of sidewalk within the project limits. It will require clearing and grubbing, inlet removal, sign relocation, tree removal, fence relocation, meter box adjustments, and fire hydrant relocations. It will include new CG&S, AC pavement, driveway aprons, curb ramps, and Type B inlets with 18" storm pipe.	TEO Unfunded	Encanto Neighborhoods, Southeastern	4			285000		CDBG	Conflicts: Drain Inlet on Corner, ROW encroachment (Trees, Landscaping, fences, bushes, walls), Utility Poles, Driveways IMCAT conflicts as of 10/8/12: FY10 Overlay Group 3 Start:	0	320991	Pornan, Donald	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
1236	Agua Vista Wy from Trinidad Wy to Northern Terminus (Both Sides)- Install New Sidewalk	41	This project will provide approximately 1700 LF of Sidewalk within the project limits. It will require excavation, clearing & grubbing, sign relocation, meter box adjustments, and fire hyrant relocation. It will include new PCC sidewalk, driveway aprons, and curb ramps.	TEO Unfunded	Encanto Neighborhoods, Southeastern	4			192000		CDBG	Conflicts: Utility Poles, ROW encroachment (Landscaping, Bushes, Fences), IMCAT conflicts as of 10/8/12: FY10 Overlay	0	321052	Pornan, Donald	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
1237	Santa Rosalia Dr from Manzanares Wy to Southern Terminus (Both Sides)- Install New Sidewalk	41	This project will install PCC sidewalk on both side of Santa Rosalia Dr.	TEO Unfunded	Encanto Neighborhoods, Southeastern	4					CDBG	Conflicts: ROW encroachment (Landscaping, Walls, Bushes), Utility Poles, Drainage Inlet	0	320992	Pornan, Donald	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
1238	Trinidad Wy from Santa Maria Terr to Euclid Ave (Both Sides)- Install New Sidewalk	41	This project will install PCC sidewalk on both side of Trinidad Way.	TEO Unfunded	Encanto Neighborhoods, Southeastern	4					CDBG;#Safe Route to School	Conflicts: Drainage, Utility Boxes/Poles, ROW encroachment (Landscaping, Trees, Walls, Bushes, Fences),	0	321051	Pornan, Donald	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
2524	S. Boundary St from Ocean View Bl to T St (Both Sides) - Install New Sidewalk	41	This project will install PCC sidewalk on both sides of South Boundary St	TEO Unfunded	Southeastern San Diego, Southeastern	9			55000			Conflicts: Phone, Cox, SDGE, Water, Large Trees, Shrubs IMCAT Conflicts as of 11/21/12: Water	0	326984		Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List

4108	56th Street from Glen Road (south) to northern cul-de-sac end - Install new sidewalk (west side)	41	This project installs new sidewalk, curb and gutter along west side of 56th Street. The project has several meter boxes, clean-outs and existing vaults that will need to be adjusted to grade. Many conflicts with transformer boxes, trees, tree roots, stairs, decorative paving, masonary blocks, and signs also exist. Will require minor earthwork.	TEO Unfunded	Encanto Neighborhoods, Southeastern	4								333726	Turner, Scott	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
254	Klauber Ave from Bittern St to 69th St - Widen to 2-lane collector	42	4000' Widen CG&S, Rwall, Drainage Major Road Proj	TEO Unfunded	Southeastern San Diego, Southeastern	8				Other		Conflicts: Substandard Road, Slopes, ROW Encroachments/Aquisition, Utility Poles, Mailboxes, Drainage, No C&G, Landscaping,	No	313021	Pornan, Donald	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
110	53rd St from Imperial Ave to Groveland St(Both Sides)- Install New Sidewalk	42	This project will provide approximately 400 linear feet of sidewalk, one pedestrian ramp, relocate three signs and two fire hydrants.	TEO Unfunded	Encanto Neighborhoods, Southeastern	4			72000	Other	CDBG	Conflicts: Utility Poles/Boxes IMCAT conflicts as of	0	323284	Tawfiq, Kharman	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
383	La Paz Dr from Euclid Ave to San Bernardo(North Side)- Install New Sidewalk	42	This project will provide approximately 1445 linear feet of sidewalk, 339 linear feet of driveways, four pedestrian ramps, and relocate six signs on the north side of the street.	TEO Funded	Encanto Neighborhoods, Southeastern	4	B-13085		228000	Other	CDBG		0	323283	Nascimento, Claudio	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
483	Solola Ave from Euclid Ave to Palin St(Both Sides)- Install New Sidewalk	42	This project will provide approximately 460 linear feet of sidewalk, 108 linear feet of driveway, seven pedestrian ramps, and 11 linear feet of retaining wall. It will include sidewalk and median modification at existing bus stop to comply with ADA standards.	TEO Unfunded	Encanto Neighborhoods, Southeastern	4			163000	Other	CDBG	Poles/Boxes IMCAT conflicts as of 10/8/12: None observed	0	323294	Nascimento, Claudio	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
268	Madera St from 66th St to 69th St - Widen for CG&S	43	CG&S 3200'	TEO Unfunded	Encanto Neighborhoods, Southeastern	4				Other		Conflicts: SLopes, Landscaping Utility Poles, Mailboxes, Drainage, Missing	0	313022	Pornan, Donald	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
2782	56th St from North of Roswell St to South of Roswell St (west Side)- Install New Sidewalk	43	This project will install PCC sidewalk on the west side of 56th Street within the limits.	TEO Unfunded	Encanto Neighborhoods,	4							0			Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
3596	Cielo Drive - Woodman St to 65th St - Install new sidewalk	43	Install new sidewalk, curb and gutter - south side of Cielo Dr from Woodman St to 61st St; north side of Cielo Dr from Woodman St to Pagel Pl. 7 curb ramps, driveway replacement and retaining wall	TEO Unfunded	Encanto Neighborhoods, Southeastern	4			525000			ADA project OS-13-02-0015	0	TR328222		Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
3854	51st Street from Hilltop Ave to approx. 340 ft. north (west side) - Install new sidewalk	43	This project will construct approx. 340 LF of sidewalk, a curb return and two ped ramps. Earthwork and a retaining wall are required. Also, removal of several cactus, bushes and a tree is necessary. Curb and gutter are in.	TEO Unfunded	Encanto Neighborhoods, Southeastern	4							No	333667	Turner, Scott	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
3909	Mariposa Street (Both sides) and Mariposa Place from Mariposa St to Shell Ave (North Side) - Install New Sidewalk	43	Mariposa St: Install curb, gutter, sidewalk and driveway entrances (both sides). Mariposa Place: Install curb, gutter, sidewalk and driveway entrances (north side only), may require power pole, blowoff/AV&AR, and fire hydrant relocation.	TEO Unfunded	Encanto Neighborhoods, Southeastern	4							0	331976	Turner, Scott	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
4072	Ocean View Blvd from Willie James Jones W to Willie James Jones E - Widening	43	This project will widen Ocean View Blvd from Willie James Jones W Ave to Willie James Jones E Ave and provide 265' of curb, gutter, and sidewalk.	TEO Unfunded	Encanto Neighborhoods, Southeastern	4						IMCAT Conflicts (4/7/2014): Water Main Replacement DESIGN: (9/6/2013 - 1/23/2014) CONST: (8/21/2014 - 7/21/2015)		334044		Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
794	Kelton Rd at Kelton Pl Electronic Speed Sign	43	This project will one Electronic V-Calm sign on Kelton Rd by Kelton Pl facing southbound traffic	TEO Funded	Encanto Neighborhoods, Southeastern	4			8000		TransNet	Funded by "Old Transnet" funding	Yes		Pornan, Donald	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
255	Cesar Chavez Pkwy from Commercial St to I-5 - Widen to 4-lane collector	44	This project will provide for the widening of Cesar Chavez Pkwy to a four-lane Collector.	TEO Unfunded	Southeastern San Diego, Southeastern	8		SESD-T20	1900000	Other			No		Pornan, Donald	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
261	Division St from Lorenz Ave to 61st St - Widen to 4-lane collector	44	This project will provide for the widening of Division Street to a modified four lane Collector.	TEO Unfunded	Southeastern San Diego, Southeastern	8		SESD-T19	1300000	Other			No		Pornan, Donald	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
269	Brooklyn Ave from 65th St to 66th St - Improve road	44	Fully improve to 40' c/c, Rwalls, Grade adjustment	TEO Unfunded	Southeastern San Diego, Southeastern	8				Other		TR request submitted	No	311608	Pornan, Donald	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
2777	63rd St from Broadway to Imperial Ave (Both Sides)- Install New Sidewalk	44	This project will provide approximately 2320 LF of sidewalk within the project limits. It will require clearing and grubbing, sign relocation, meter box adjustment, and fire hydrant relocation. It will new PCC sidewalk. driveway aprons, curb ramps, and 125 LF of 3' retaining walls.	TEO Funded	Encanto Neighborhoods, Southeastern	4	B1403 9		307000			Project was sent to Street Division for review for construction.	0			Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
4032	26th St & Market St New Traffic Signal	45	Install new traffic signal	PITS	Southeastern San Diego, Southeastern	8			275000		TransNet	Design to be provided by Fehr & Peers.	0			Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
271	69th St from Madera St to Mallard St - Widen for CG&S	45	CG&S, Pavement, Drainage, Road widening	TEO Unfunded	Encanto Neighborhoods, Southeastern	4				Other		CONFLICTS: Utility poles, Trees, bushes, fence	0	313016	Pornan, Donald	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List

2762	Madrone Ave from 63rd St to Shaules Ave (Both Sides)- Install New Sidewalk	45	This project will install sidewalk on both sides of Madrone Ave.	TEO Unfunded	Encanto Neighborhoods, Southeastern	4						Conflicts: Slopes both sides, nonstandard width roadway, guardrails, utility poles, water valves, drainage issues, no c&g, fire hydrants, ROW encroachments:	0			Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
2811	Olvera Ave from Gwen St to Santa Isabel Dr (South Side) Install New Sidewalk	45	This project will install PCC sidewalk on the south sides of Olver Ave within the specified limits. Conflicts include fire hydrants and a small masonary wall. Will also require relocation of an existing driveway entrance at curb return. Some adjustments to grade for existing meter boxes. Some earthwork also needed. Curb and gutter in.	TEO Unfunded	Encanto Neighborhoods, Southeastern	4						IMCAT Conflicts as of 2/20/14: Street segment SS-020537, Project ID FY10-S3 Slurry moratorium Start 3/6/2012 End 3/6/2015	No		Turner, Scott	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
2812	Olvera Ave from San Onofre Ter. to Las Flores (South Side)- Install New Sidewalk	45	This project will install PCC sidewalk on the south side of Olvera Ave within the specified limits. Conflicts include fire hydrants, masonary walls, decorative rock, utility poles, vegitation and shrubs. Some adjustments to grade to clean outs and meter boxes will be needed. Curb is in, but in deteriorated condition and may need repair/replacement.	TEO Unfunded	Encanto Neighborhoods, Southeastern	4						IMCAT Conflicts as of 2/20/14: Street segment SS-020533, project ID FY10-S3 Slurry Overlay Moratorium start 3/6/2012 end 3/6/2015	No	333730	Turner, Scott	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
3956	Pitta St from Market St to Kenwood St (Both Sides) - Install New Sidewalk	45	This project will provide curb/gutter and sidewalk on both sides of Pitta Street north of Market Street.	TEO Unfunded	Encanto Neighborhoods, Southeastern	4						ROW width of street is 40 feet with curb to curb of 25 feet. IMCAT Conflicts: Pipeline Rehabilitation Design: 1/2014 to 4/2014 Construction: 8/2014	0	332534		Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
2823	Egret Street north of Weaver Street 300', east side streetlight	45	Priority 2b	TEO Funded	Encanto Neighborhoods,	4			2000				Yes	TR246076		Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
3001	31st St @ Imperial Ave New Traffic Signal	46	Install a new traffic signal	PITS	Southeastern San	8			275000				0	306689	Hughes,	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
2779	Scimitar Dr from Broadway to Kluaber Ave (Both Sides)- Install New Sidewalk	46	This project will install PCC sidewalk on both sides of Scimitar Dr, also to include road widening.	TEO Unfunded	Encanto Neighborhoods, Southeastern	4							0			Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
2453	40th St at National Ave	46		PITS	Southeastern San	4			502000				0		Pornan,	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
1230	41st St @ National Ave New Traffic Signal	47	Install a new traffic signal	PITS	Southeastern San	4;#8			275000				0	318737	Pornan,	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
2809	Eider St from Scimitar Dr to Klauber Ave (Both Sides)- Install New Sidewalk	47	This project will install sidewalk,curb and gutter on both sides of Eider St within the specified limits. Drainage will become an issue. Extensive earthwork, shoring and retaining walls necessary for project. Right of Way acquisition may be necessary due to limited street widths and room for sidewalk. Numerous conflicts with trees, slopes, utilities, poles, walls. Street also in poor condition and needs overlay.	TEO Unfunded	Encanto Neighborhoods, Southeastern	4						IMCAT conflicts as of 6/3/14: No conflicts	No			Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
2810	Wren St from Scimitar Dr to Klauber Ave (Both Sides)- Install New Sidewalk	48	This project will install PCC sidewalk and curb returns on Wren St within the specified limits. Will require earthwork and retaining walls. Conflicts include several utility poles, mail boxes, several medium to tall trees, shrubs, and ground vegitation. Curb and gutter are mostly in.	TEO Unfunded	Encanto Neighborhoods, Southeastern	4						IMCAT conflicts as of 6/3/14: None	No	333986	Turner, Scott	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
3853	Elwood Ave from Lenox Dr to Geneva Ave (West Side) - Install new sidewalk	48	This project will provide sidewalk and install/upgrade curb return ped ramps. Will require utility pole relocation, meter box adjustment to grade and minor vegitation removal. One masonary wall conflicts w/ proposed 4' wide path of travel.	TEO Unfunded	Encanto Neighborhoods, Southeastern	4							No	333668	Turner, Scott	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
770	31st St @ National Ave New Traffic Signal	49	Install a new traffic signal	TEO Unfunded	Southeastern San Diego, Southeastern	8			275000				0	308,848	Nascimento, Claudio	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
1316	31st St @ Ocean View Bl New Traffic Signal	49	Install a new traffic signal.	PITS	Southeastern San	4			275000				0	321035	Pornan,	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
543	S 38th St at Alpha St- Pop-Outs(4)	49	This project will provide approximately 2980 square feet of pop out, 249 feet of curb and gutter, four pedestrian ramps, relocate one fire hydrant, one manhole, and two storm drain inlets. Assume: grades flat, subsurface drainage proposed.	TEO Unfunded	Southeastern San Diego, Southeastern	8			294000		CDBG;#Safe Route to School	FY 14: $75,000 Prelim Fy 15: $100,000 Design FY 16: $119,000 Construction	0	308053	Nascimento, Claudio	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
440	Market St from Euclid Ave to 54th St. - Widening	50	This project provides for the widening of Market St to a four lane major street.	TEO Unfunded	Encanto Neighborhoods,	4			1300000	Other			No		Pornan, Donald	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
468	Creston Dr from Selma Pl to Roswell St(Both Sides)- Install New Sidewalk	50	This project will provide approximately 544 linear feet of PCC sidewalk, 156 linear feet of driveway, one pedestrian ramp, and relocate two signs.	TEO Unfunded	Encanto Neighborhoods, Southeastern	4			114000			Conflicts: Fire Hydrant, Landscaping, Utility Pole, Trees IMCAT Conflicts as of 12/28/12: Pipeline	Yes	306231, 333725	Nascimento, Claudio	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
2778	65th St from Imperial Ave to Madrone (Both Sides)- Install New Sidewalk	50	This project will install PCC sidewalk on 65th St within the specified limits. It will also include road widening.	TEO Unfunded	Encanto Neighborhoods, Southeastern	4					CDBG		0			Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List

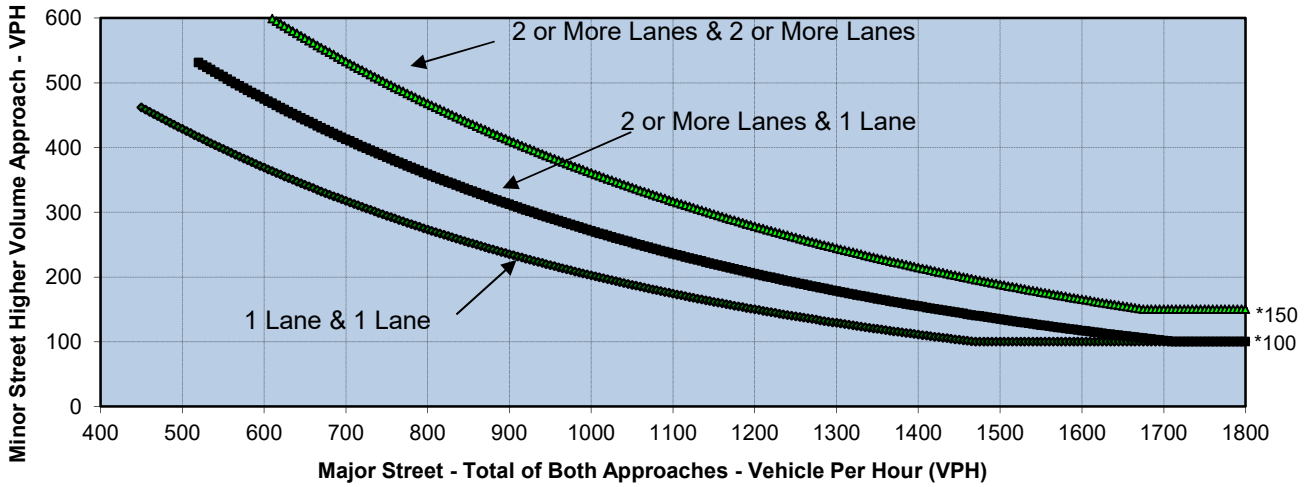
3851	Lenox Drive from Winston Dr to Beverly St (Both Sides) - Install new sidewalk	50	This project will install sidewalk and ped ramps, earthwork and retaining walls required. Conflicts include utility poles, mail boxes, masonary walls, fire hydrants, a large tree stump, shrubs and ground vegitation, and decorative paving/rocks. Several meter boxes require adjustment to grade. Curb and gutter are in.	TEO Unfunded	Encanto Neighborhoods, Southeastern	4						IMCAT conflits as of 6/3/14: Pipeline Rehab - Phase G-2 (laterals) start 1/22/2015 end 8/24/2016	No	333727	Turner, Scott	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
3852	Winston Drive from Lenox Dr to Hilltop Dr (Both Sides) - Install new sidewalk	50	This project will provide sidewalk on both the east and west side of Winston Drive. Will require earthwork and retaining walls. Conflicts include large palm trees, smaller trees, shrubs and ground vegitation. Will require adjustment to grade of meter boxes. Curb and gutter are in, but are deteriorated and damaged. May require replacement/repair.	TEO Unfunded	Encanto Neighborhoods, Southeastern	4						IMCAT conflicts as of 2/21/14: Street segment SS-029003, project ID FY10-O2 Asphalt overlay moratorium Stert 9/20/2011 end 9/20/2016	No	333723	Turner, Scott	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
3073	Raven Street south of Hilltop Drive 137', east side streetlight	50		TEO Unfunded	Southeastern San Diego, Southeastern	9			8000				Yes	TR256791		Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
3078	Southlook Avenue south of Gilmore Street 165', west side streetlight	50		TEO Unfunded	Southeastern San Diego, Southeastern	9			8000				Yes	TR258639A		Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
3079	Southlook Avenue south of Imperial Avenue 110', west side streetlight	50		TEO Unfunded	Southeastern San Diego, Southeastern	9			8000				Yes	TR258639A		Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
3081	Ada Street north of Franklin Avenue 155', west side streetlight	50		TEO Unfunded	Southeastern San Diego, Southeastern	9			8000				Yes	TR258944		Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
3082	Ada Street south of Imperial Avenue 150', west side streetlight	50		TEO Unfunded	Southeastern San Diego, Southeastern	9			8000				Yes	TR258944		Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
3083	Ada Street south of Imperial Avenue 346', west side streetlight	50		TEO Unfunded	Southeastern San Diego, Southeastern	9			8000				Yes	TR258944		Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
3087	Bancroft Street south of Greely Avenue 100', west side streetlight	50		TEO Unfunded	Southeastern San Diego, Southeastern	8			8000				Yes	TR260576		Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
3089	Solola Avenue west of Palin Street 132', south side streetlight	50		TEO Unfunded	Encanto Neighborhoods,	4			2000				Yes	TR261798A		Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
3097	K Street east of 26th Street 312', south side streetlight	50		TEO Unfunded	Southeastern San Diego, Southeastern	8			8000				Yes	TR264211		Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
3177	39TH (S) Street north of Superior Street at alley 120', west side streetlight	50		TEO Unfunded	Southeastern San Diego, Southeastern	9			2000				Yes	TR314106		Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
3178	39TH (S) Street south of Imperial Avenue at alley 120', west side streetlight	50		TEO Unfunded	Southeastern San Diego, Southeastern	9			2000				Yes	TR314106		Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
3209	Acacia Street west of South 35th Street 140', north side streetlight	50		TEO Unfunded	Southeastern San Diego, Southeastern	9			8000				Yes	TR320603		Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
3210	Boston Avenue east of South 35th Street 175', north side streetlight	50		TEO Unfunded	Southeastern San Diego, Southeastern	9			8000				Yes	TR320603		Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
3220	35th Street (South) south of Martin Avenue 275', west side streetlight	50		TEO Unfunded	Southeastern San Diego, Southeastern	9			2000				Yes	TR322078		Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
3228	33rd Street north of Imperial Avenue 130', west side at alley streetlight	50	Priority 2a	TEO Funded	Southeastern San Diego, Southeastern	8			2000				Yes	TR324036		Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
3259	Bonita Drive north of Cervantes Avenue 180', west side streetlight	50		TEO Unfunded	Encanto Neighborhoods,	4			8000				Yes	TR326417		Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
3269	42nd Street south of Broadway 145' at alley, southwest corner streetlight	50		TEO Unfunded	Southeastern San Diego, Southeastern	9			2000				Yes	TR326746		Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
3274	Superba Street east of 38th Street 160', south side streetlight	50		TEO Unfunded	Southeastern San Diego, Southeastern	9			8000				Yes	TR219413		Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
3278	Valle Avenue west of South 35th Street 220', north side streetlight	50		TEO Unfunded	Southeastern San Diego, Southeastern	9			8000				Yes	TR228103		Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
3284	Ada Street south of Imperial Avenue 630', west side streetlight	50		TEO Unfunded	Southeastern San Diego, Southeastern	9			8000				Yes	TR229556		Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
3287	Jewell Drive south of T Street 164', east side streetlight	50		TEO Unfunded	Southeastern San Diego, Southeastern	9			8000				Yes	TR231558		Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
3377	Franklin Avenue east of 40th Street 145', south side at alley streetlight	50		TEO Unfunded	Southeastern San Diego, Southeastern	9			5000				Yes	TR244871		Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
3688	Alta Vista Avenue east of Paradise Road 590', north side street lights	50		TEO Unfunded	Encanto Neighborhoods,	4			2000		CDBG		0	TR329548	Avila-Zepeda , Felipe R	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
3691	NWC of S 47th Street and Franklin Avenue street lights	50		TEO Unfunded	Encanto Neighborhoods,	4			15000		CDBG		0	TR330817	Avila-Zepeda , Felipe R	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
3692	NEC of S 47th Street and Franklin Avenue street lights	50		TEO Unfunded	Encanto Neighborhoods,	4			15000		CDBG		0	TR330817	Avila-Zepeda , Felipe R	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
3693	S 47th Street north of T street 175', east side street lights	50		TEO Unfunded	Encanto Neighborhoods,	4			15000		CDBG		0	TR330817	Avila-Zepeda , Felipe R	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
3694	S 47th Street south of T street 190', east side street lights	50		TEO Unfunded	Encanto Neighborhoods,	4			15000		CDBG		0	TR330817	Avila-Zepeda , Felipe R	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
3817	Dodson Street south of Market Street 135', west side streetlight	50	Priority 2a	TEO Funded	Southeastern San Diego, Southeastern	8			2000		Smart Growth	Smart Growth Area SD SE-3	Yes	TR 331,935	Hughes, Duncan	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
3874	Franklin Avenue west of S 30th Street 175', north side street light	50		TEO Unfunded	Southeastern San Diego, Southeastern	8			15000		CDBG		0	TR332395	Avila-Zepeda , Felipe R	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
3926	Boston Avenue east of S 38th Street 130', north side street light	50		TEO Unfunded	Southeastern San Diego, Southeastern	9			8000		CDBG		0	TR332926	Avila-Zepeda , Felipe R	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
3929	Boston Avenue west of S 38th Street 260', north side street light	50		TEO Funded	Southeastern San Diego, Southeastern	9			8000		CDBG	B-14107	Yes	TR332936	Avila-Zepeda , Felipe R	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
3930	Boston Avenue west of S 36th Street 106', north side street light	50		TEO Unfunded	Southeastern San Diego, Southeastern	9			15000		CDBG		0	TR332937	Avila-Zepeda , Felipe R	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
3931	Boston Avenue west of S 40th Street 165', north side street light	50		TEO Unfunded	Southeastern San Diego, Southeastern	9			15000		CDBG		0	TR332935	Avila-Zepeda , Felipe R	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
3954	Boston Avenue east of S 39th Street 150', north side street light	50		TEO Unfunded	Southeastern San Diego, Southeastern	9			15000		CDBG		0	TR332925	Avila-Zepeda , Felipe R	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
3957	33rd Street north of Imperial Avenue 135', west side, at alley	50	Priority 2a	TEO Funded	Southeastern San Diego, Southeastern	8			2000		CDBG	DUPLICATE - SEE GIS_ID 3228	Yes	TR332756	Semaan, Jerry	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List

3958	33rd Street north of L Street 150', west side, at alley	50	Priority 2a	TEO Funded	Southeastern San Diego, Southeastern	8			2000		CDBG		Yes	TR332756	Semaan, Jerry	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
4064	San Jacinto Dr south of Groveland Dr 182', west side	50		TEO Unfunded	Southeastern San Diego, Southeastern	4			2000			Install pole attachment between 264 & 274 San Jacinto				Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
4089	S 28th Street south of Imperial Avenue 160' at alley, west side	50	Priority 2a	TEO Funded	Southeastern San Diego, Southeastern	8			2000		Smart Growth;#CDBG	Duplicate: See TUNL ID 3020		TR334489	Semaan, Jerry	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
4090	S 29th Street south of Imperial Avenue 175' at alley, southwest corner	50	Priority 2a	TEO Funded	Southeastern San Diego, Southeastern	8			2000		Smart Growth;#CDBG			TR334489		Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
4124	S 33rd Street north of Webster Avenue 85, west side	50		TEO Unfunded	Southeastern San Diego, Southeastern	8			2000		CDBG			TR335463B	Semaan, Jerry	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
1179	SR-94 / Euclid Ave Interchange	51	Provides a PRS for improvements to the interchange.	TEO Unfunded	Encanto Neighborhoods,	4	S-11046		1000000		TransNet		No		Pornan, Donald	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
2780	Market St from Euclid Ave to Pita St (Both Sides)- Install New Sidewalk	51	This project will install PCC sidewalk on both sides of Maket St witin the limits, also to include road widening.	TEO Unfunded	Encanto Neighborhoods, Southeastern	4						IMCAT: FY-15 Object ID#7717 Strt: 11/15/2014 End:	0			Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
1216	Division St @ Valencia Pkwy New Traffic Signal	52	Install a new traffic signal	TEO Unfunded	Encanto	4			275000				0	315440	Pornan,	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
3850	Beverly St from Roswell St to Lenox Dr (Both Sides) - Install new sidewalk	52	This project will provide 3 curb returns, 16 driveways and sidewalk along both sides of Beverly. Many utility boxes need adjustment to grade. Curb and gutter are in.	TEO Unfunded	Encanto Neighborhoods, Southeastern	4			287000				No	333649	Turner, Scott	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
2841	Egret Street north of Weaver Street 800', north side at cul de sac streetlight	62	Priority 1e	TEO Funded	Encanto Neighborhoods,	4			8000			DUPLICATE LOCATION	Yes	TR246076		Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
3680	Radio Drive north of Market Street 170', west side street lights	62		TEO Unfunded	Encanto Neighborhoods,	4			2000		Smart Growth		0	TR330816	Avila-Zepeda , Felipe R	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
2824	Egret Street north of Weaver Street 300', east side streetlight	64		No longer meets warrants	Encanto Neighborhoods, Southeastern	4			2000			DUPLICATE: REFER TO GIS_ID 2823	Yes	TR246076		Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
2828	Kelton Road north of Kelton Place 250', west side streetlight	64	Priority 1d	TEO Funded	Encanto Neighborhoods,	4			15000		TransNet		Yes	TR239339		Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
2829	Kelton Road north of Kelton Place 500', west side streetlight	64	Priority 1d	TEO Funded	Encanto Neighborhoods,	4			15000		TransNet		Yes	TR239339		Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
2891	Market Street east of 45th Street 170', north side	66	FY15 budget $1.4M	TEO Funded	Encanto	4			15000			Priority 1c	Yes	TR258616		Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
2910	National Avenue east of S 32nd Street 155', south side streetlight	66	Priority 1c	TEO Funded	Southeastern San Diego, Southeastern	8			2000				Yes	TR322359		Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
2988	Market Street east of 45th Street 450', north side streetlight	66	FY15 budget $1.4M	TEO Funded	Encanto Neighborhoods,	4			15000			Priority 1c	Yes	TR258616		Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
2876	6308 63rd Street at Shaules Avenue, northeast corner streetlight	70	Priority 1a	TEO Funded	Encanto Neighborhoods,	4			2000		TransNet	B-14106 FY 2014	Yes	TR312615		Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
2885	Ginna Place at Logan Avenue, southeast corner streetlight	70	Priority 1a	TEO Funded	Encanto Neighborhoods,	4			2000		TransNet	Duplicate: See TUNL ID 3961	Yes	TR304278		Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
2941	Brooklyn Ave & Madera St streetlight	70	Priority 1a	TEO Funded	Encanto Neighborhoods,	4			2000		TransNet	B-14106 FY 2013	Yes	TR310491		Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
3682	Sicard Street southwest of S 28th Street 185', west side street light	70	Priority 2a	TEO Funded	Southeastern San Diego, Southeastern	8			2000			FY 2014	Yes	330,687	Hughes, Duncan	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
3925	S 44th Street and Boston Avenue southwest street light	70		TEO Funded	Southeastern San Diego, Southeastern	9			2000		CDBG	B-14107	Yes		Avila-Zepeda , Felipe R	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
3961	Ginna Place at Logan Avenue, south side street light	70	Priority 1a	TEO Funded	Encanto Neighborhoods,	4			2000		CDBG	B-14106 FY 2014	Yes	TR333000	Avila-Zepeda , Felipe R	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
3987	37th Street (S) and Logan Avenue, northeast corner	70	FY15 budget $1.4M	TEO Funded	Southeastern San Diego, Southeastern	9			8000		CDBG	Priority 1a	Yes	TR332842	Avila-Zepeda , Felipe R	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
3997	Clay Avenue at Sampson Street, at alley, northwest corner street ;ight	70	Priority 1a	TEO Funded	Southeastern San Diego, Southeastern	8			2000		CDBG;#TransNet		Yes	TR275743	Avila-Zepeda , Felipe R	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
3856	Hilltop Drive from Winston Dr to Roswell St (Both Sides) - Install new sidewalk		This project will provide sidewalk on both sides of Hilltop Drive. Project requires earthwork and retaining walls. Conflict includes very large, medium and small palm trees (will probably require removal) and utility poles. Several metar boxes will need to be adjusted to grade. Curb and gutter are in.	TEO Unfunded	Encanto Neighborhoods, Southeastern	4						IMCAT conflicts as of 2/21/14: PROJECT ID B11074 Sewer pipeline rehabilitation start6/11/2012 end 5/8/2014 Street segment SS-	No		Turner, Scott	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
3858	Pitta St from Market St to end of street [south] (both sides) - Install new sidewalk			TEO Unfunded	Encanto Neighborhoods,	4							0		Turner, Scott	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
3859	Castana Street from 47th St to Escuela St (both sides) - Install new sidewalk			TEO Unfunded	Encanto Neighborhoods,	4							0		Turner, Scott	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
4085	San Jacinto from Groveland to Imperial (west side) - Sidewalk		This project will install approximately 640 LF of sidewalk within the project limits.	TEO Unfunded	Encanto Neighborhoods,	4			95000					335596		Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
3624	61st Street at Flipper Flashing Beacon		Installation of a flashing beacon at the school crosswalk	TEO Unfunded	Encanto Neighborhoods,	4					TransNet		0			Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
3720	Market Street Electronic Speed Signs		Installation of two electronic speed signs on Market Street near 26th street	TEO Funded	Southeastern San Diego, Southeastern	8			16000		TransNet	Funded with "Old Transnet" funding	0			Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List

Appendix C
Signal Warrant Worksheets

Sheet No 1 of 2

Figure 4C-3
Warrant 3, Peak Hour



* Note: 150 VPH APPLIES AS THE LOWER THRESHOLD VOLUME FOR A MINOR STREET APPROACH WITH TWO OR MORE LANES AND 100 VPH APPLIES AS THE LOWER THRESHOLD VOLUME FOR A MINOR STREET APPROACHING WITH ONE LANE.

Source: *California Manual on Uniform Traffic Control Devices*, Caltrans, 2006

#8

Major Street	Midway Drive
Minor Street	Charles Lindbergh Parkway

Project	Midway & Old Town CPU
Scenario	1B
Peak Hour	AM

Turn Movement Volumes

	NB	SB	EB	WB
Left	0	140	0	110
Through	595	1,110	0	0
Right	80	0	0	20
Total	675	1,250	0	130

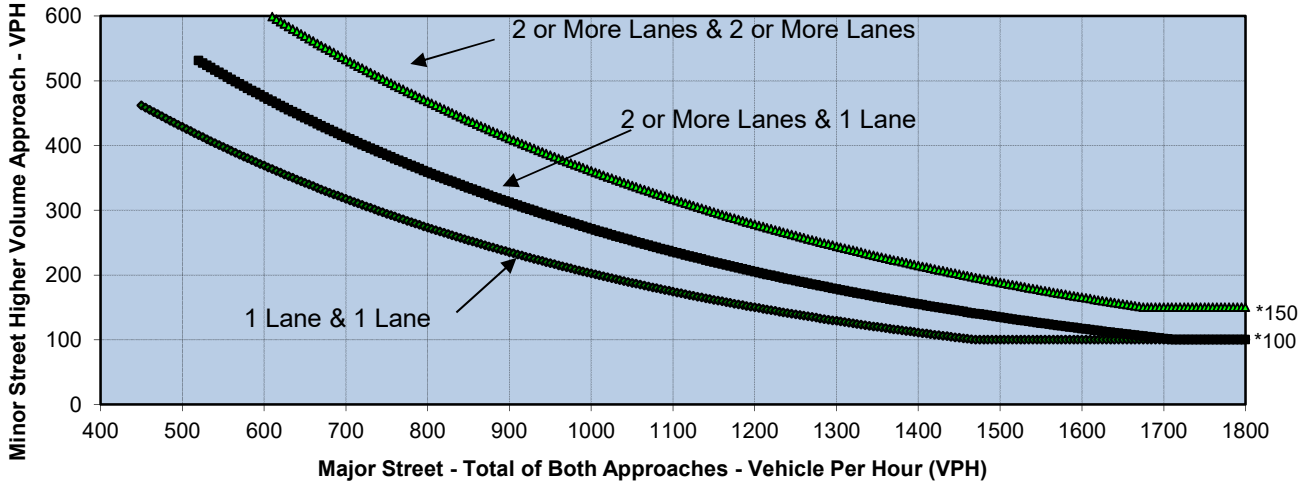
Major Street Direction

X	North/South
	East/West

	Major Street	Minor Street	Warrant Met
	Midway Drive	Charles Lindbergh Parkway	
Number of Approach Lanes	**2**	**1**	**YES**
Traffic Volume (VPH) *	**1,925**	**130**	

Sheet No 2 of 2

Figure 4C-3
Warrant 3, Peak Hour



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Source: *California Manual on Uniform Traffic Control Devices*, Caltrans, 2006

#8

Major Street	Midway Drive
Minor Street	Charles Lindbergh Parkway

Project	Midway & Old Town CPU
Scenario	1B
Peak Hour	PM

Turn Movement Volumes

	NB	SB	EB	WB
Left	0	390	0	110
Through	700	1,445	0	0
Right	110	0	0	240
Total	810	1,835	0	350

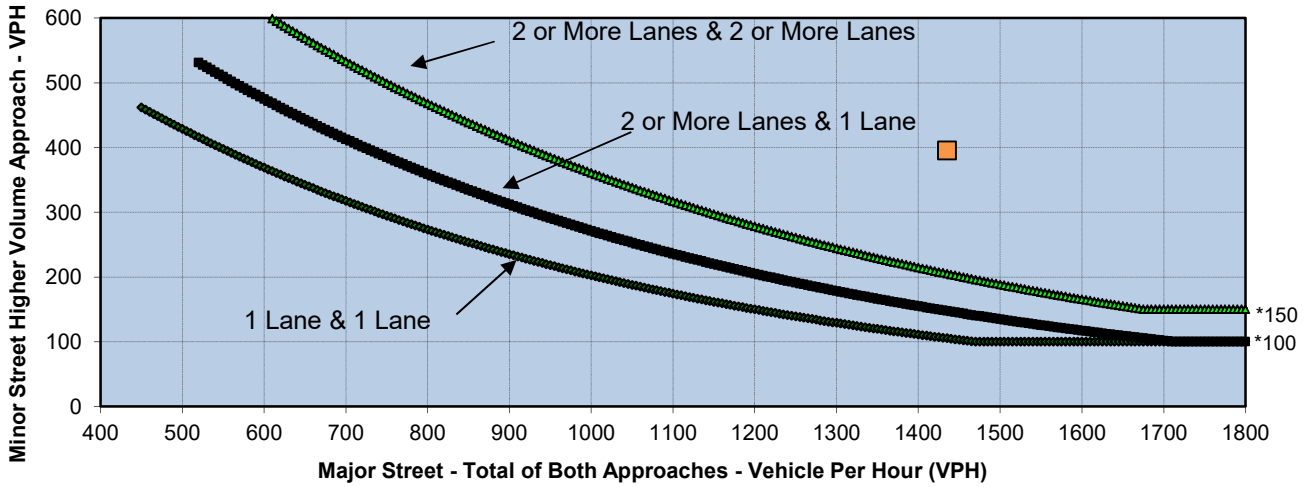
Major Street Direction

X	North/South
	East/West

	Major Street	Minor Street	Warrant Met
	Midway Drive	Charles Lindbergh Parkway	
Number of Approach Lanes	2	1	YES
Traffic Volume (VPH) *	2,645	350	

Sheet No 1 of 2

Figure 4C-3
Warrant 3, Peak Hour



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Source: *California Manual on Uniform Traffic Control Devices*, Caltrans, 2006

#12

Major Street	Sports Arean Boulevard
Minor Street	Kemper Street

Project	Midway & Old Town CPU
Scenario	1B
Peak Hour	AM

Turn Movement Volumes

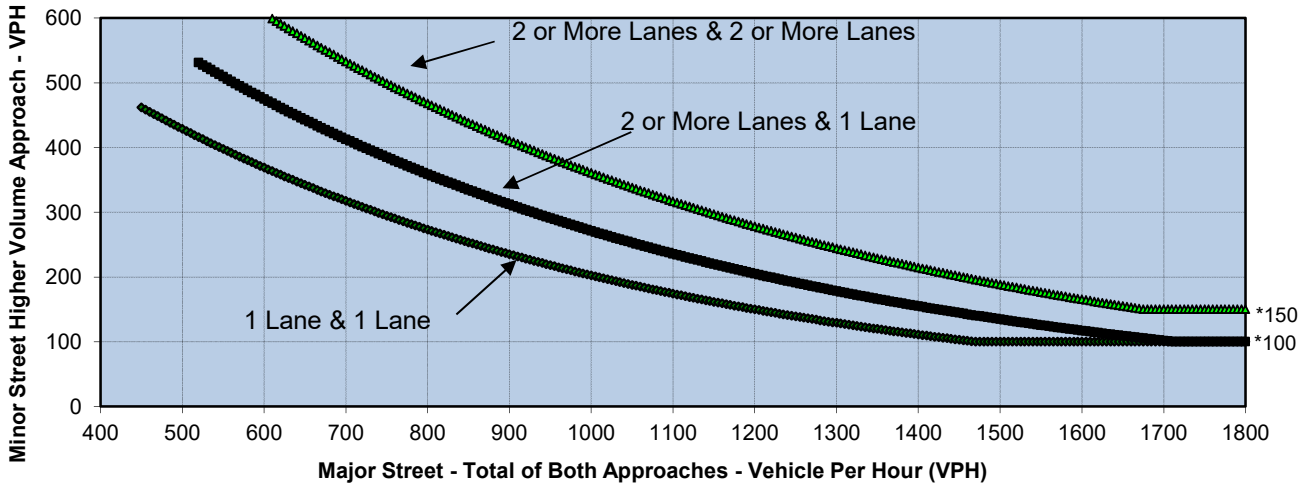
	NB	SB	EB	WB
Left	205	70	70	155
Through	420	535	45	130
Right	85	120	100	110
Total	710	725	215	395

Major Street Direction

X	North/South
	East/West

	Major Street	Minor Street	Warrant Met
	Sports Arean Boulevard	Kemper Street	
Number of Approach Lanes	**3**	**1**	**YES**
Traffic Volume (VPH) *	**1,435**	**395**	

Figure 4C-3
Warrant 3, Peak Hour



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Source: *California Manual on Uniform Traffic Control Devices*, Caltrans, 2006

#12

Major Street	Sports Arean Boulevard
Minor Street	Kemper Street

Project	Midway & Old Town CPU
Scenario	1B
Peak Hour	PM

Turn Movement Volumes

	NB	SB	EB	WB
Left	235	140	60	115
Through	1,125	885	115	30
Right	110	85	145	110
Total	1,470	1,110	320	255

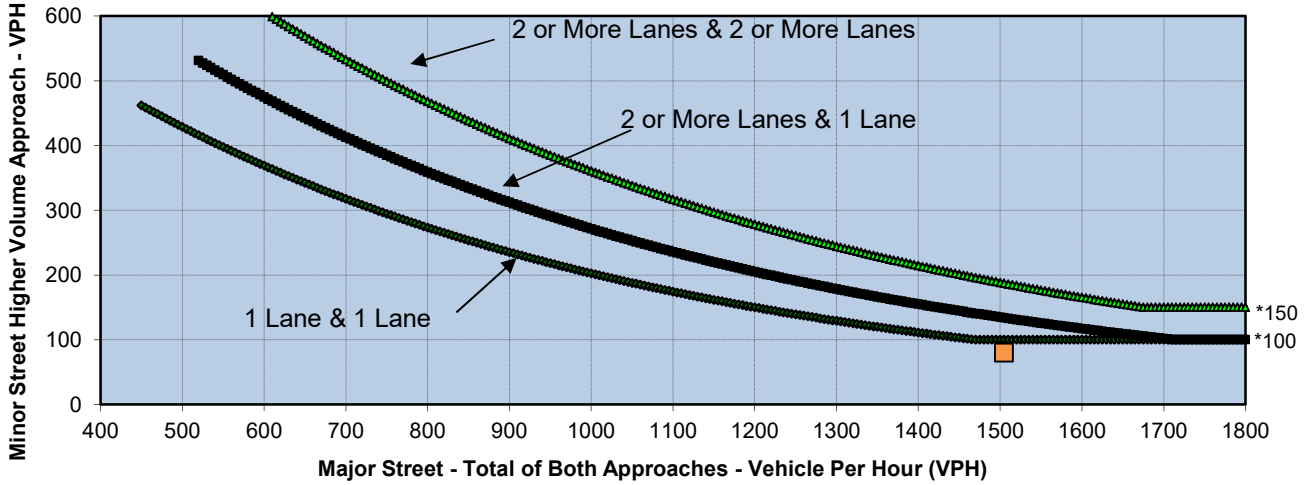
Major Street Direction

X	North/South
	East/West

	Major Street	Minor Street	Warrant Met
	Sports Arean Boulevard	Kemper Street	
Number of Approach Lanes	3	1	YES
Traffic Volume (VPH) *	2,580	320	

Sheet No 1 of 2

Figure 4C-3
Warrant 3, Peak Hour



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Source: *California Manual on Uniform Traffic Control Devices*, Caltrans, 2006

#13

Major Street	Sports Arean Boulevard
Minor Street	Frontier Street

Project	Midway & Old Town CPU
Scenario	1B
Peak Hour	AM

Turn Movement Volumes

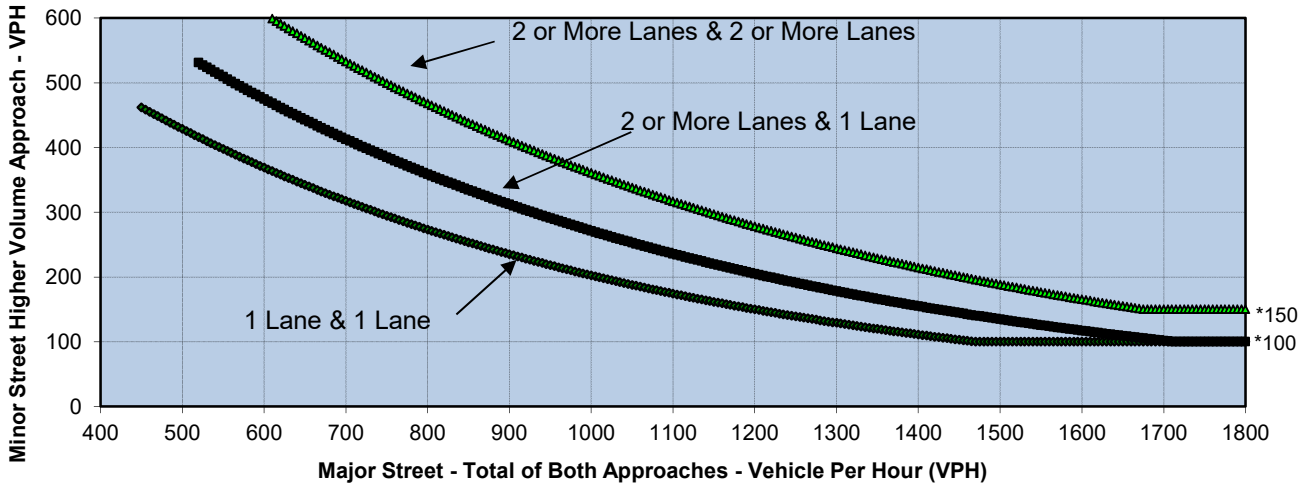
	NB	SB	EB	WB
Left	25	75	30	30
Through	625	685	10	5
Right	30	65	10	45
Total	680	825	50	80

Major Street Direction

X	North/South
	East/West

	Major Street	Minor Street	Warrant Met
	Sports Arean Boulevard	Frontier Street	
Number of Approach Lanes	**3**	**1**	**NO**
Traffic Volume (VPH) *	**1,505**	**80**	

Figure 4C-3
Warrant 3, Peak Hour



* Note: 150 VPH APPLIES AS THE LOWER THRESHOLD VOLUME FOR A MINOR STREET APPROACH WITH TWO OR MORE LANES AND 100 VPH APPLIES AS THE LOWER THRESHOLD VOLUME FOR A MINOR STREET APPROACHING WITH ONE LANE.

Source: *California Manual on Uniform Traffic Control Devices*, Caltrans, 2006

#13

Major Street	Sports Arean Boulevard
Minor Street	Frontier Street

Project	Midway & Old Town CPU
Scenario	1B
Peak Hour	PM

Turn Movement Volumes

	NB	SB	EB	WB
Left	35	105	60	145
Through	1,270	1,100	15	15
Right	55	65	60	135
Total	1,360	1,270	135	295

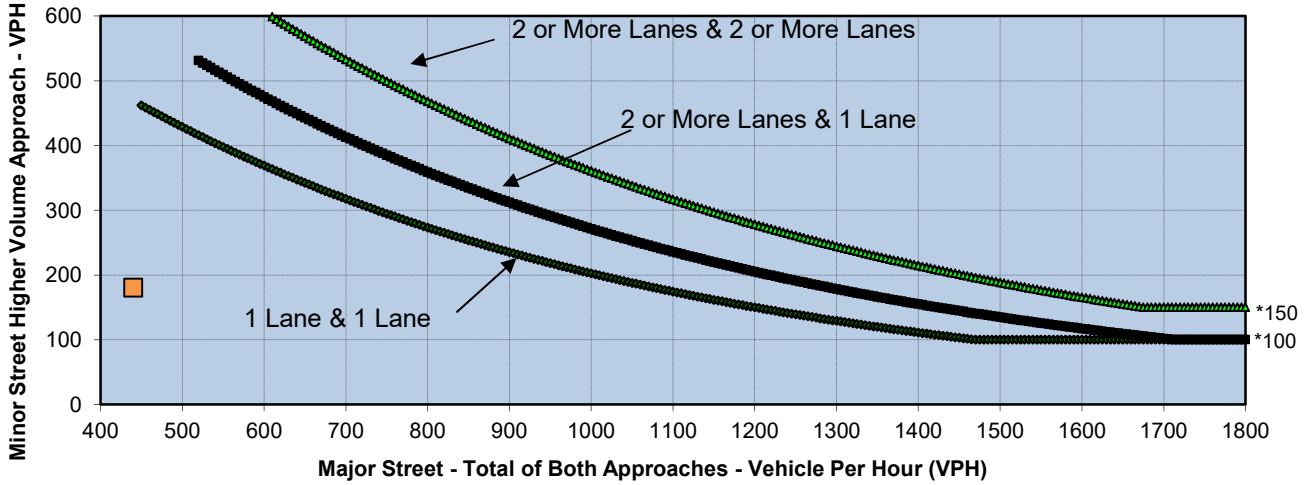
Major Street Direction

X	North/South
	East/West

	Major Street	Minor Street	Warrant Met
	Sports Arean Boulevard	Frontier Street	
Number of Approach Lanes	3	1	YES
Traffic Volume (VPH) *	2,630	295	

Sheet No 1 of 2

Figure 4C-3
Warrant 3, Peak Hour



* Note: 150 VPH APPLIES AS THE LOWER THRESHOLD VOLUME FOR A MINOR STREET APPROACH WITH TWO OR MORE LANES AND 100 VPH APPLIES AS THE LOWER THRESHOLD VOLUME FOR A MINOR STREET APPROACHING WITH ONE LANE.

Source: *California Manual on Uniform Traffic Control Devices*, Caltrans, 2006

#16

Major Street	Sports Arean Boulevard
Minor Street	Charles Lindbergh Parkway

Project	Midway & Old Town CPU
Scenario	1B
Peak Hour	AM

Turn Movement Volumes

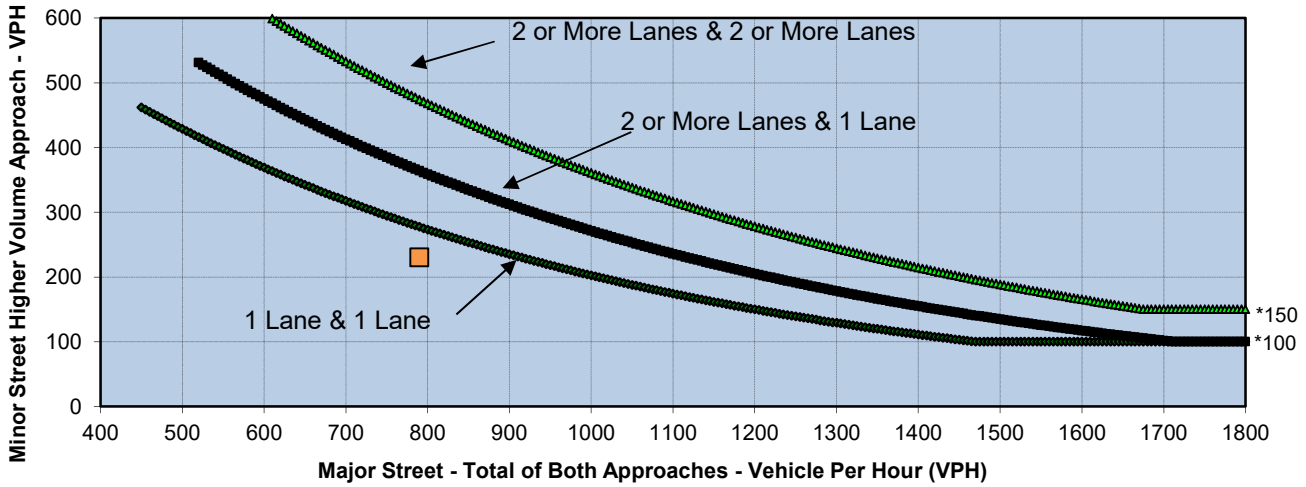
	NB	SB	EB	WB
Left	60	10	40	80
Through	40	20	90	70
Right	80	20	90	70
Total	180	50	220	220

Major Street Direction

	North/South
X	East/West

	Major Street	Minor Street	Warrant Met
	Sports Arean Boulevard	Charles Lindbergh Parkway	
Number of Approach Lanes	**1**	**1**	**NO**
Traffic Volume (VPH) *	**440**	**180**	

Figure 4C-3
Warrant 3, Peak Hour



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Source: *California Manual on Uniform Traffic Control Devices*, Caltrans, 2006

#16

Major Street	Sports Arean Boulevard
Minor Street	Charles Lindbergh Parkway

Project	Midway & Old Town CPU
Scenario	1B
Peak Hour	PM

Turn Movement Volumes

	NB	SB	EB	WB
Left	60	40	70	90
Through	60	30	110	190
Right	110	40	290	40
Total	230	110	470	320

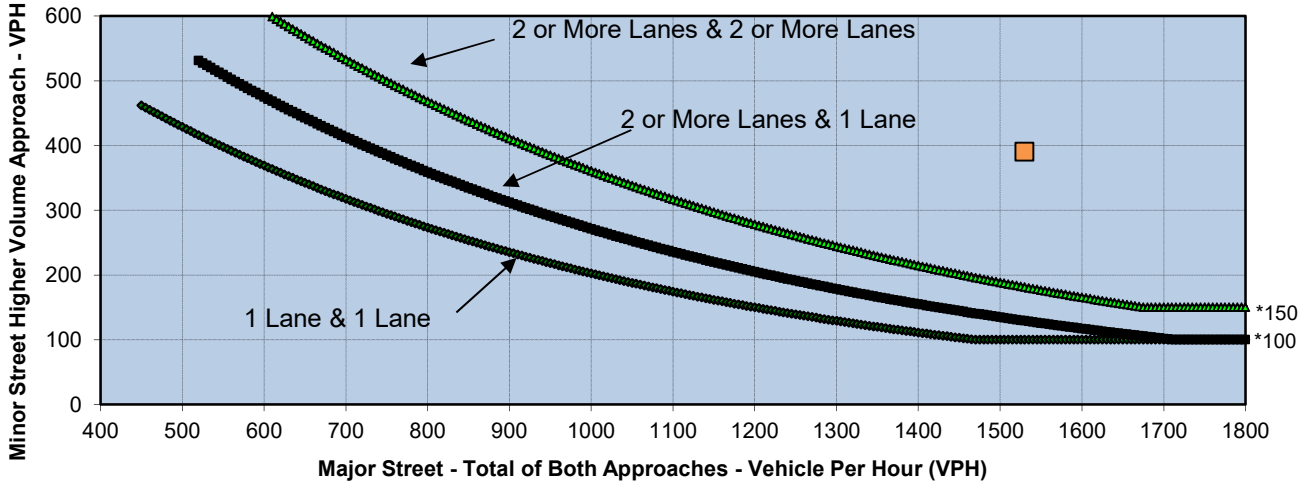
Major Street Direction

	North/South
X	East/West

	Major Street	Minor Street	Warrant Met
	Sports Arean Boulevard	Charles Lindbergh Parkway	
Number of Approach Lanes	1	1	NO
Traffic Volume (VPH) *	790	230	

Sheet No 1 of 2

Figure 4C-3
Warrant 3, Peak Hour



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Source: *California Manual on Uniform Traffic Control Devices*, Caltrans, 2006

#17

Major Street	Pacific Highway
Minor Street	Sports Arena Blvd

Project	Midway & Old Town CPU
Scenario	1B
Peak Hour	AM

Turn Movement Volumes

	NB	SB	EB	WB
Left	290	0	200	0
Through	600	585	0	0
Right	0	55	190	0
Total	890	640	390	0

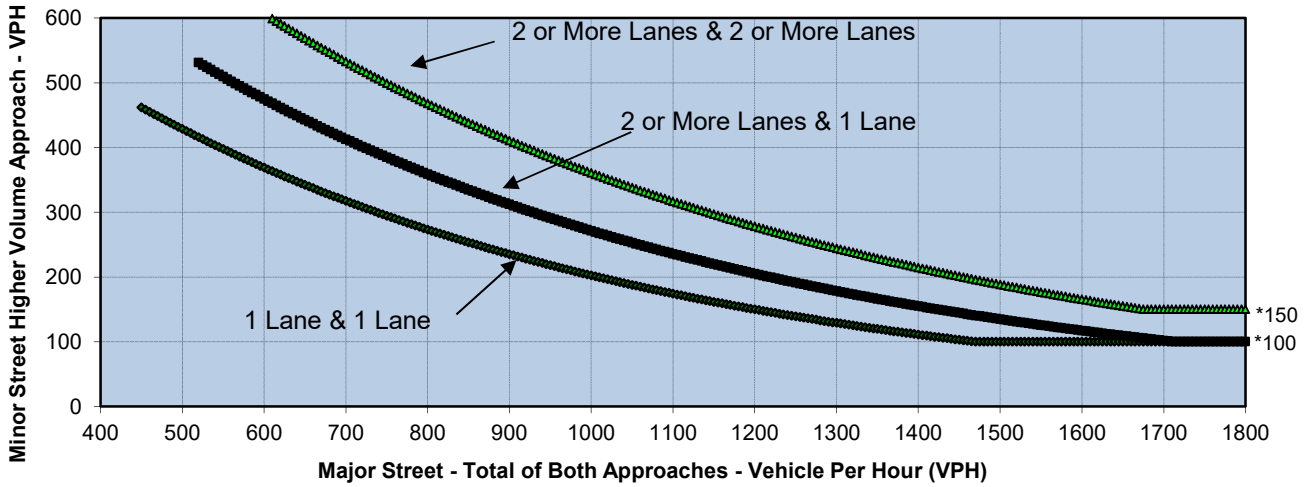
Major Street Direction

X	North/South
	East/West

	Major Street	Minor Street	Warrant Met
	Pacific Highway	Sports Arena Blvd	
Number of Approach Lanes	**3**	**1**	**YES**
Traffic Volume (VPH) *	**1,530**	**390**	

Sheet No 2 of 2

Figure 4C-3
Warrant 3, Peak Hour



* Note: 150 VPH APPLIES AS THE LOWER THRESHOLD VOLUME FOR A MINOR STREET APPROACH WITH TWO OR MORE LANES AND 100 VPH APPLIES AS THE LOWER THRESHOLD VOLUME FOR A MINOR STREET APPROACHING WITH ONE LANE.

Source: *California Manual on Uniform Traffic Control Devices*, Caltrans, 2006

#17

Major Street	Pacific Highway
Minor Street	Sports Arena Blvd

Project	Midway & Old Town CPU
Scenario	1B
Peak Hour	PM

Turn Movement Volumes

	NB	SB	EB	WB
Left	280	0	50	0
Through	1,440	845	0	0
Right	0	25	450	0
Total	1,720	870	500	0

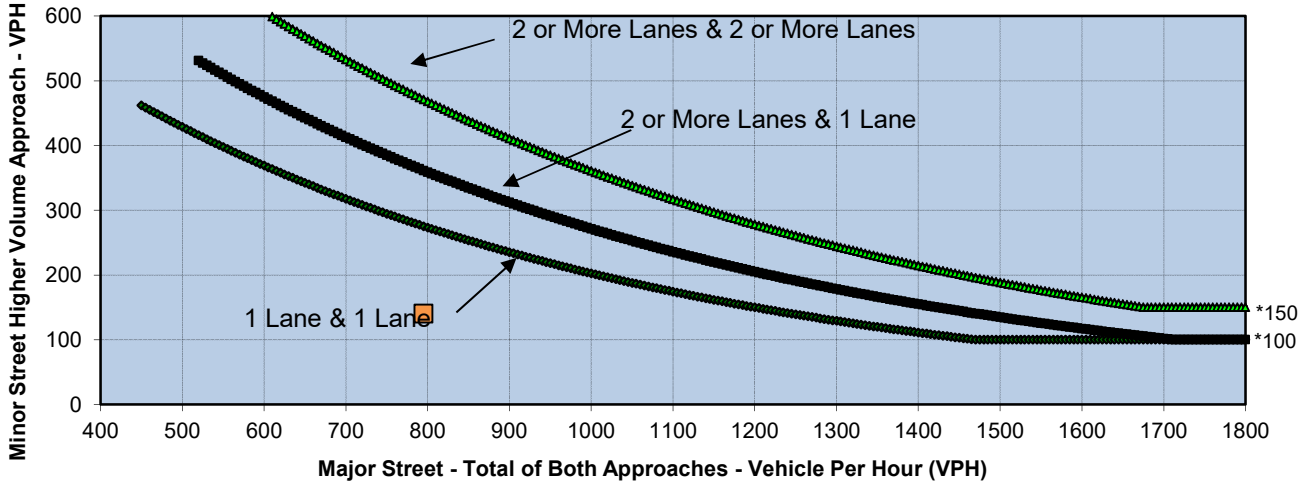
Major Street Direction

X	North/South
	East/West

	Major Street	Minor Street	Warrant Met
	Pacific Highway	Sports Arena Blvd	
Number of Approach Lanes	3	1	YES
Traffic Volume (VPH) *	2,590	500	

Sheet No 1 of 2

Figure 4C-3
Warrant 3, Peak Hour



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Source: *California Manual on Uniform Traffic Control Devices*, Caltrans, 2006

#18		Project	Midway & Old Town CPU
Major Street	Kurtz Street	Scenario	1B
Minor Street	Hancock Street	Peak Hour	AM

Turn Movement Volumes

	NB	SB	EB	WB
Left	0	0	20	300
Through	0	60	0	295
Right	0	80	90	90
Total	0	140	110	685

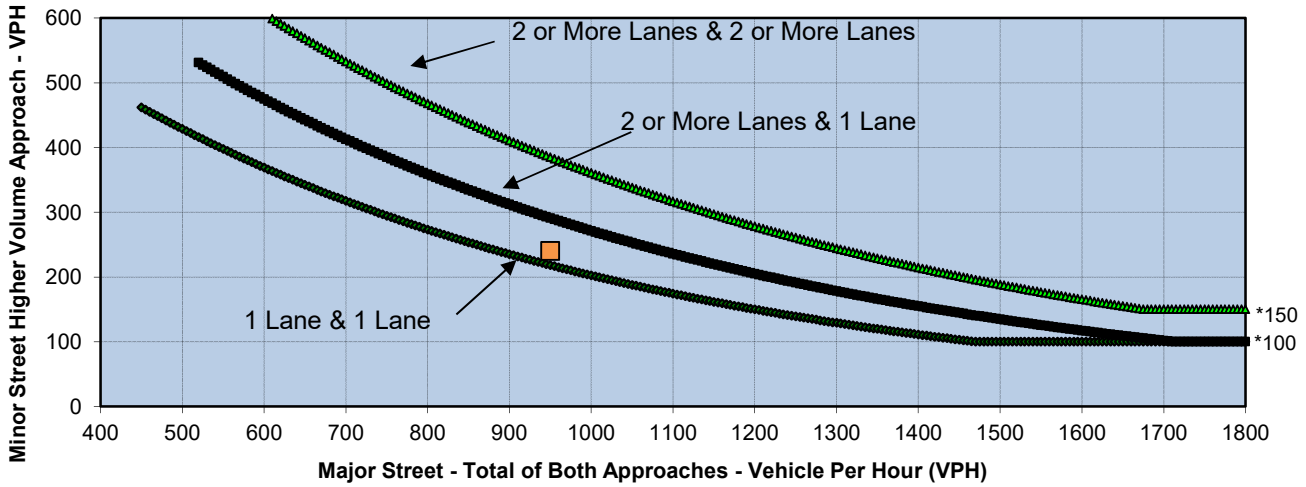
Major Street Direction

	North/South
X	East/West

	Major Street	Minor Street	Warrant Met
	Kurtz Street	Hancock Street	
Number of Approach Lanes	**1**	**1**	**NO**
Traffic Volume (VPH) *	**795**	**140**	

Sheet No 2 of 2

Figure 4C-3
Warrant 3, Peak Hour



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Source: *California Manual on Uniform Traffic Control Devices*, Caltrans, 2006

#18

Major Street	Kurtz Street
Minor Street	Hancock Street

Project	Midway & Old Town CPU
Scenario	1B
Peak Hour	PM

Turn Movement Volumes

	NB	SB	EB	WB
Left	0	0	90	400
Through	0	160	0	190
Right	0	80	130	140
Total	0	240	220	730

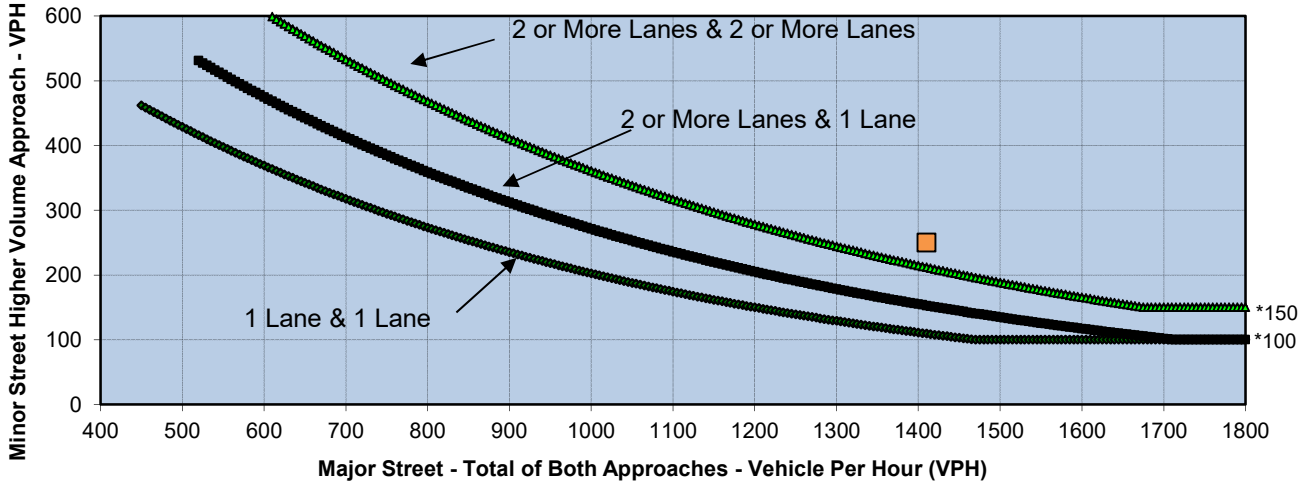
Major Street Direction

	North/South
X	East/West

	Major Street	Minor Street	Warrant Met
	Kurtz Street	Hancock Street	
Number of Approach Lanes	1	1	YES
Traffic Volume (VPH) *	950	240	

Sheet No 1 of 2

Figure 4C-3
Warrant 3, Peak Hour



* Note: 150 VPH APPLIES AS THE LOWER THRESHOLD VOLUME FOR A MINOR STREET APPROACH WITH TWO OR MORE LANES AND 100 VPH APPLIES AS THE LOWER THRESHOLD VOLUME FOR A MINOR STREET APPROACHING WITH ONE LANE.

Source: *California Manual on Uniform Traffic Control Devices*, Caltrans, 2006

#21

Major Street	Pacific Highway
Minor Street	Kurtz Street

Project	Midway & Old Town CPU
Scenario	1B
Peak Hour	AM

Turn Movement Volumes

	NB	SB	EB	WB
Left	335	0	70	0
Through	465	460	0	0
Right	0	150	180	0
Total	800	610	250	0

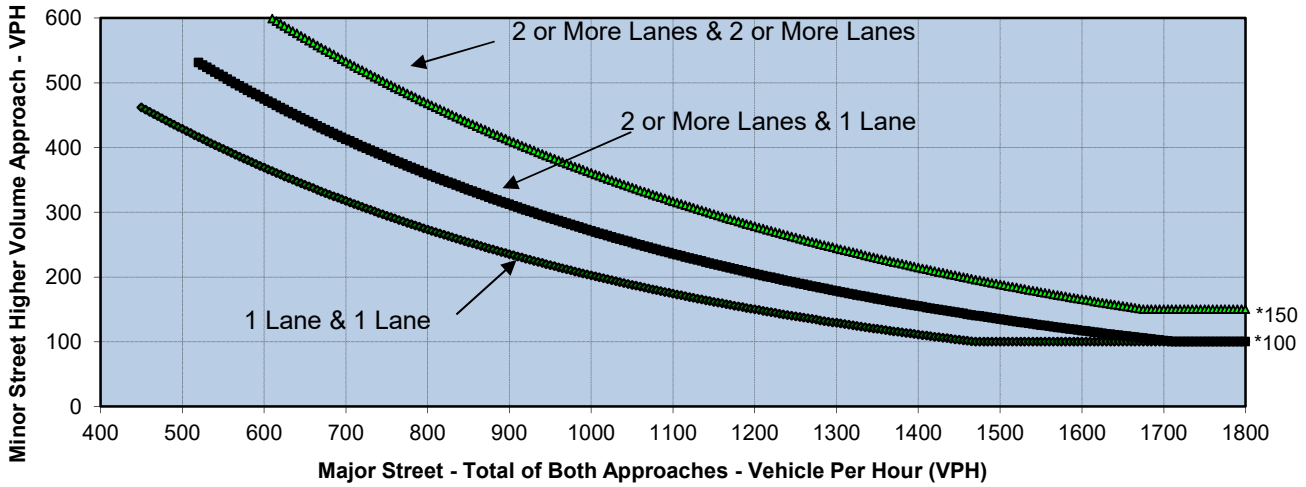
Major Street Direction

X	North/South
	East/West

	Major Street	Minor Street	Warrant Met
	Pacific Highway	Kurtz Street	
Number of Approach Lanes	**3**	**1**	**YES**
Traffic Volume (VPH) *	**1,410**	**250**	

Sheet No 2 of 2

Figure 4C-3
Warrant 3, Peak Hour



* Note: 150 VPH APPLIES AS THE LOWER THRESHOLD VOLUME FOR A MINOR STREET APPROACH WITH TWO OR MORE LANES AND 100 VPH APPLIES AS THE LOWER THRESHOLD VOLUME FOR A MINOR STREET APPROACHING WITH ONE LANE.

Source: *California Manual on Uniform Traffic Control Devices*, Caltrans, 2006

#21

Major Street	Pacific Highway
Minor Street	Kurtz Street

Project	Midway & Old Town CPU
Scenario	1B
Peak Hour	PM

Turn Movement Volumes

	NB	SB	EB	WB
Left	465	0	220	0
Through	865	430	0	0
Right	0	100	430	0
Total	1,330	530	650	0

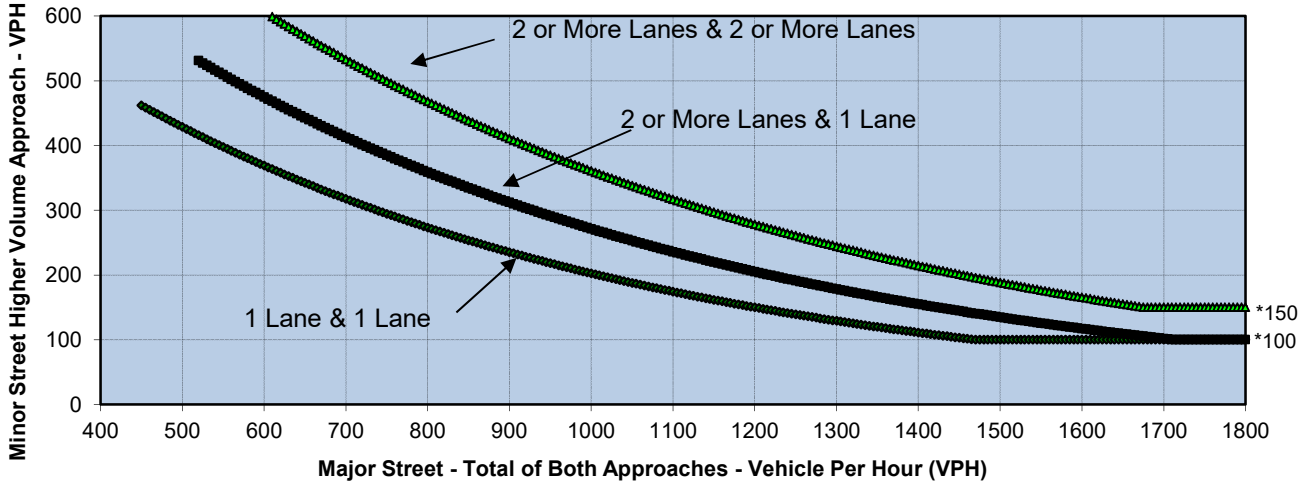
Major Street Direction

X	North/South
	East/West

	Major Street	Minor Street	Warrant Met
	Pacific Highway	Kurtz Street	
Number of Approach Lanes	3	1	YES
Traffic Volume (VPH) *	1,860	650	

Sheet No 1 of 2

Figure 4C-3
Warrant 3, Peak Hour



* Note: 150 VPH APPLIES AS THE LOWER THRESHOLD VOLUME FOR A MINOR STREET APPROACH WITH TWO OR MORE LANES AND 100 VPH APPLIES AS THE LOWER THRESHOLD VOLUME FOR A MINOR STREET APPROACHING WITH ONE LANE.

Source: *California Manual on Uniform Traffic Control Devices*, Caltrans, 2006

#62

Major Street	Kurtz Street	Project	Midway & Old Town CPU
Minor Street	Greenwood Street	Scenario	1B
		Peak Hour	AM

Turn Movement Volumes

	NB	SB	EB	WB
Left	0	40	0	60
Through	0	220	20	90
Right	0	10	100	0
Total	0	270	120	150

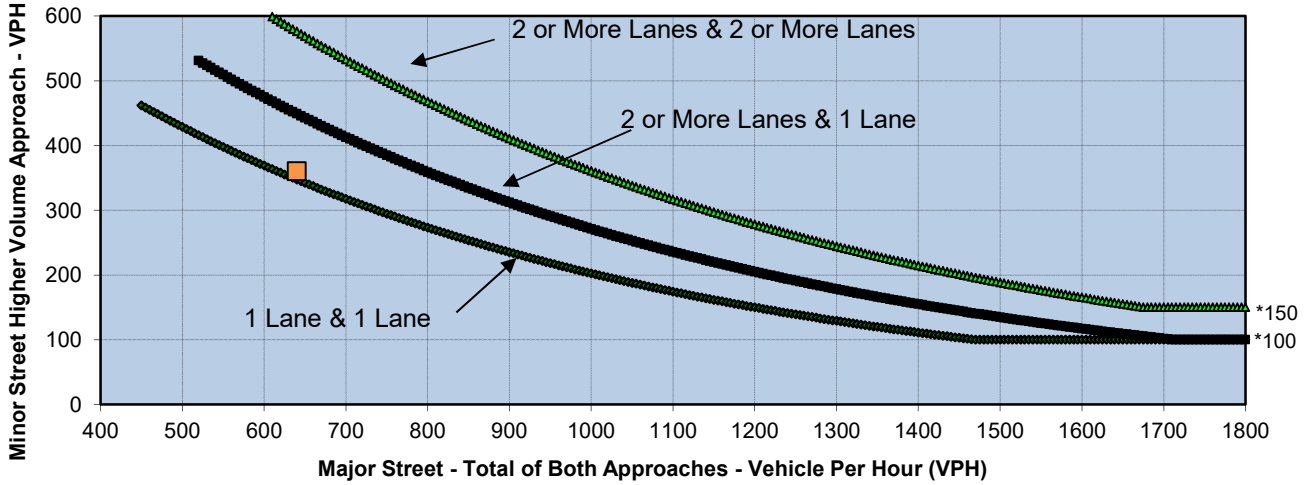
Major Street Direction

X	North/South
	East/West

	Major Street	Minor Street	Warrant Met
	Kurtz Street	Greenwood Street	
Number of Approach Lanes	**2**	**1**	**NO**
Traffic Volume (VPH) *	**270**	**150**	

Sheet No 2 of 2

Figure 4C-3
Warrant 3, Peak Hour



* Note: 150 VPH APPLIES AS THE LOWER THRESHOLD VOLUME FOR A MINOR STREET APPROACH WITH TWO OR MORE LANES AND 100 VPH APPLIES AS THE LOWER THRESHOLD VOLUME FOR A MINOR STREET APPROACHING WITH ONE LANE.

Source: *California Manual on Uniform Traffic Control Devices*, Caltrans, 2006

#62

Major Street	Kurtz Street
Minor Street	Greenwood Street

Project	Midway & Old Town CPU
Scenario	1B
Peak Hour	PM

Turn Movement Volumes

	NB	SB	EB	WB
Left	0	50	0	120
Through	0	520	30	240
Right	0	70	110	0
Total	0	640	140	360

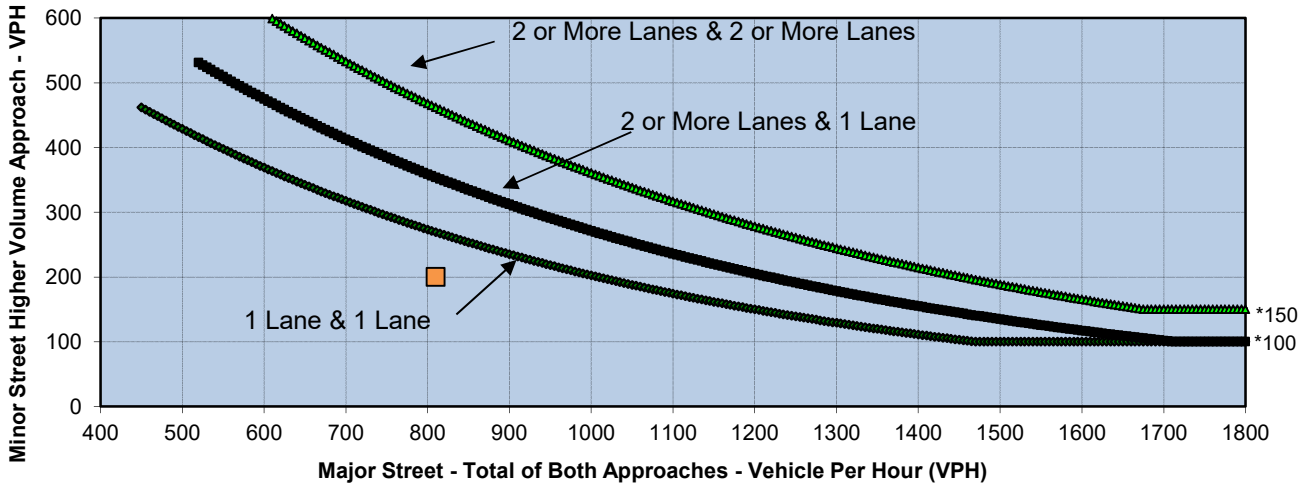
Major Street Direction

X	North/South
	East/West

	Major Street	Minor Street	Warrant Met
	Kurtz Street	Greenwood Street	
Number of Approach Lanes	2	1	NO
Traffic Volume (VPH) *	640	360	

Sheet No 1 of 2

Figure 4C-3
Warrant 3, Peak Hour



* Note: 150 VPH APPLIES AS THE LOWER THRESHOLD VOLUME FOR A MINOR STREET APPROACH WITH TWO OR MORE LANES AND 100 VPH APPLIES AS THE LOWER THRESHOLD VOLUME FOR A MINOR STREET APPROACHING WITH ONE LANE.

Source: *California Manual on Uniform Traffic Control Devices*, Caltrans, 2006

#63

Major Street	Kurtz Street
Minor Street	Charles Lindbergh Parkway

Project	Midway & Old Town CPU
Scenario	1B
Peak Hour	AM

Turn Movement Volumes

	NB	SB	EB	WB
Left	140	0	50	0
Through	330	310	0	0
Right	0	30	150	0
Total	470	340	200	0

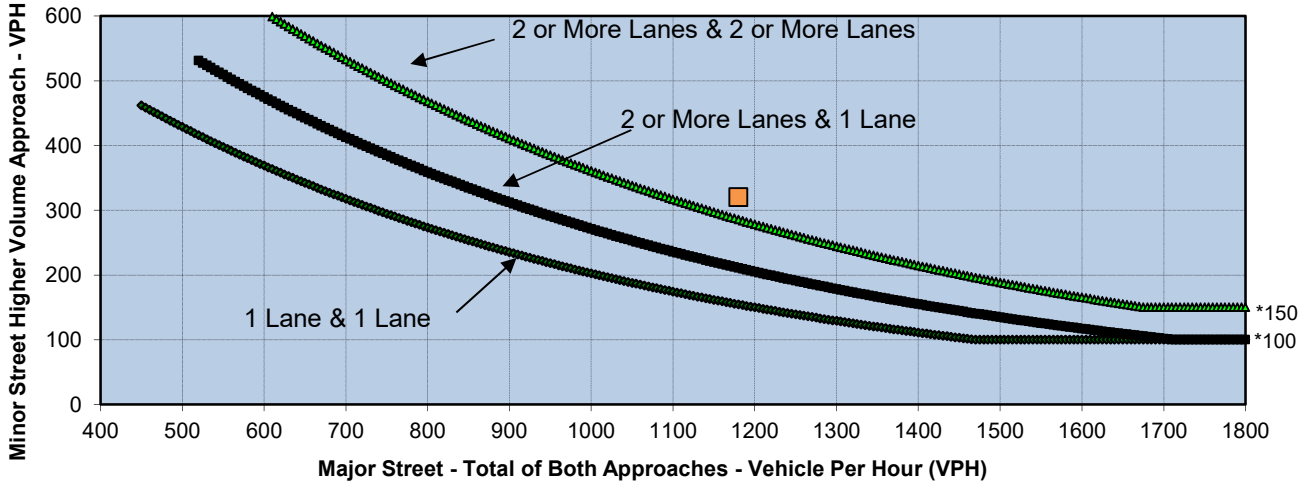
Major Street Direction

X	North/South
	East/West

	Major Street	Minor Street	Warrant Met
	Kurtz Street	Charles Lindbergh Parkway	
Number of Approach Lanes	**2**	**1**	**NO**
Traffic Volume (VPH) *	**810**	**200**	

Sheet No 2 of 2

Figure 4C-3
Warrant 3, Peak Hour



* Note: 150 VPH APPLIES AS THE LOWER THRESHOLD VOLUME FOR A MINOR STREET APPROACH WITH TWO OR MORE LANES AND 100 VPH APPLIES AS THE LOWER THRESHOLD VOLUME FOR A MINOR STREET APPROACHING WITH ONE LANE.

Source: *California Manual on Uniform Traffic Control Devices*, Caltrans, 2006

#63		Project	Midway & Old Town CPU
Major Street	Kurtz Street	Scenario	1B
Minor Street	Charles Lindbergh Parkway	Peak Hour	PM

Turn Movement Volumes

	NB	SB	EB	WB
Left	180	0	120	0
Through	370	480	0	0
Right	0	150	200	0
Total	550	630	320	0

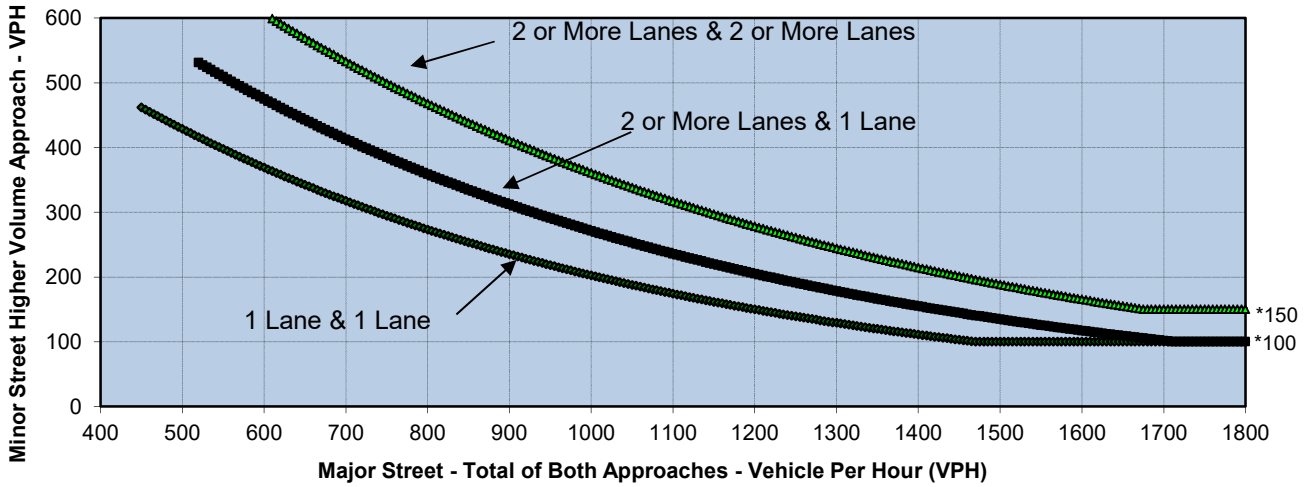
Major Street Direction

X	North/South
	East/West

	Major Street	Minor Street	Warrant Met
	Kurtz Street	Charles Lindbergh Parkway	
Number of Approach Lanes	2	1	YES
Traffic Volume (VPH) *	1,180	320	

Sheet No 1 of 2

Figure 4C-3
Warrant 3, Peak Hour



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Source: *California Manual on Uniform Traffic Control Devices*, Caltrans, 2006

#64		Project	Midway & Old Town CPU
Major Street	Barnett Avenue	Scenario	1B
Minor Street	Dutch Flats Parkway	Peak Hour	AM

Turn Movement Volumes

	NB	SB	EB	WB
Left	0	150	50	0
Through	0	0	670	1,420
Right	0	250	0	40
Total	0	400	720	1,460

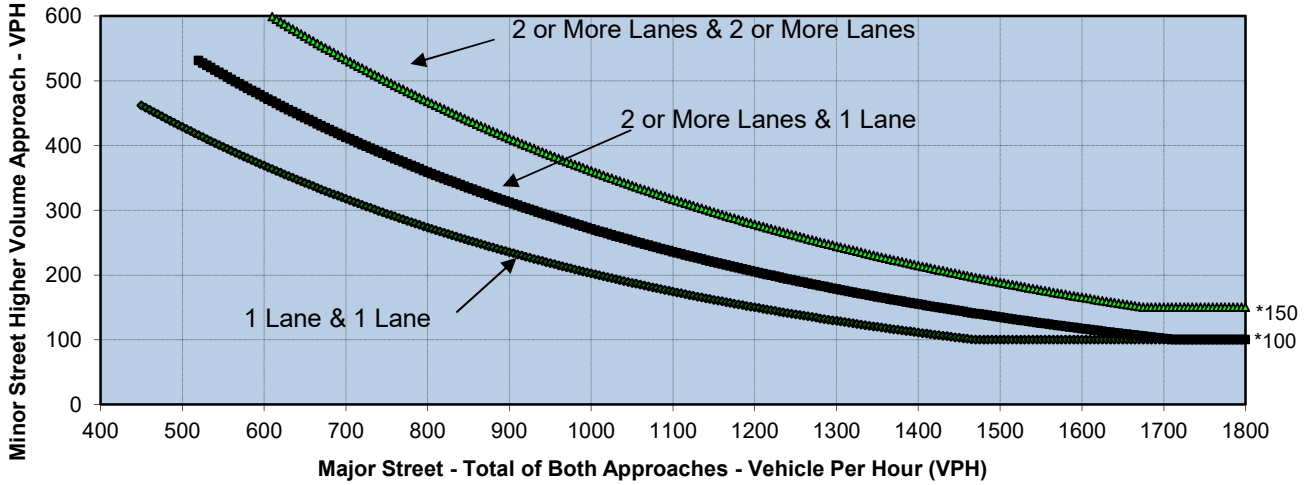
Major Street Direction

	North/South
X	East/West

	Major Street	Minor Street	Warrant Met
	Barnett Avenue	Dutch Flats Parkway	
Number of Approach Lanes	**2**	**1**	**YES**
Traffic Volume (VPH) *	**2,180**	**400**	

Sheet No 2 of 2

Figure 4C-3
Warrant 3, Peak Hour



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Source: *California Manual on Uniform Traffic Control Devices*, Caltrans, 2006

#64		Project	Midway & Old Town CPU
Major Street	Barnett Avenue	Scenario	1B
Minor Street	Dutch Flats Parkway	Peak Hour	PM

Turn Movement Volumes

	NB	SB	EB	WB
Left	0	160	60	0
Through	0	0	1,090	1,200
Right	0	240	0	40
Total	0	400	1,150	1,240

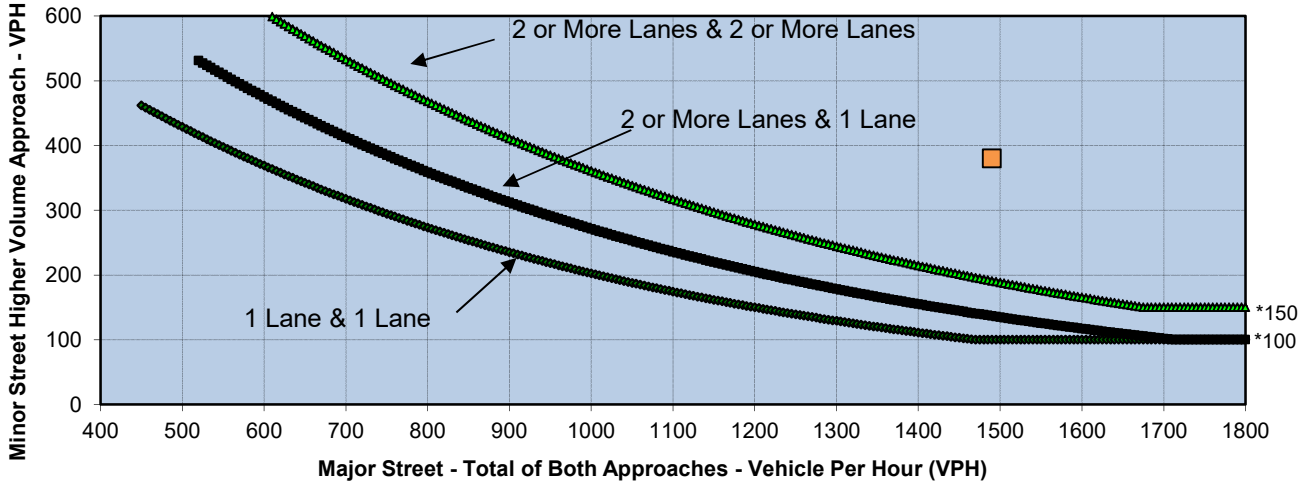
Major Street Direction

	North/South
X	East/West

	Major Street	Minor Street	Warrant Met
	Barnett Avenue	Dutch Flats Parkway	
Number of Approach Lanes	2	1	YES
Traffic Volume (VPH) *	2,390	400	

Sheet No 1 of 2

Figure 4C-3
Warrant 3, Peak Hour



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Source: *California Manual on Uniform Traffic Control Devices*, Caltrans, 2006

#65		Project	Midway & Old Town CPU
Major Street	Midway Drive	Scenario	1B
Minor Street	Dutch Flats Parkway	Peak Hour	AM

Turn Movement Volumes

	NB	SB	EB	WB
Left	150	220	60	40
Through	390	450	10	100
Right	130	150	30	240
Total	670	820	100	380

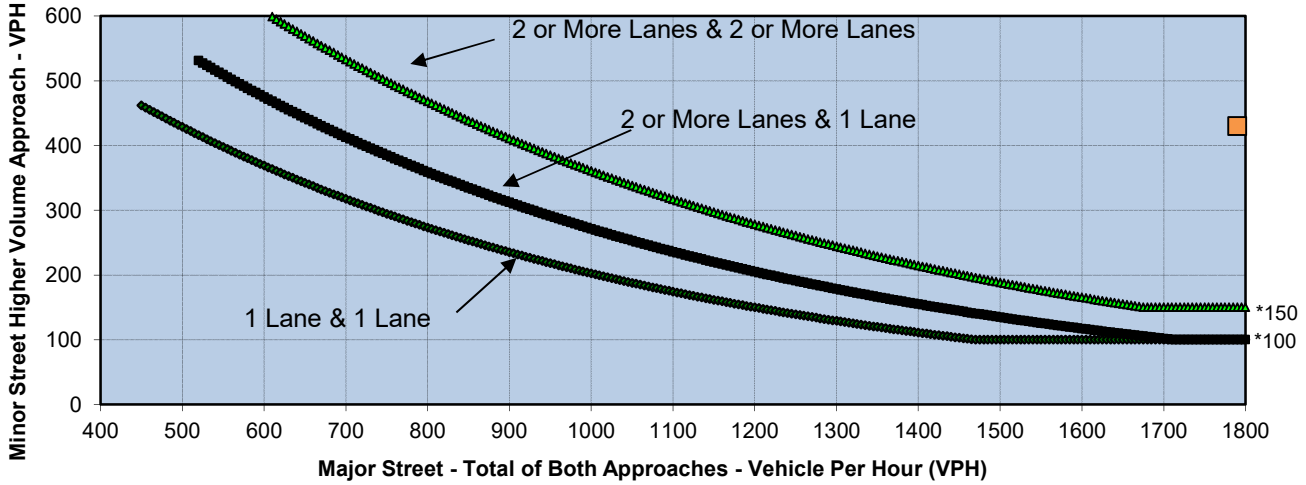
Major Street Direction

X	North/South
	East/West

	Major Street	Minor Street	Warrant Met
	Midway Drive	Dutch Flats Parkway	
Number of Approach Lanes	**2**	**1**	**YES**
Traffic Volume (VPH) *	**1,490**	**380**	

Sheet No 2 of 2

Figure 4C-3
Warrant 3, Peak Hour



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Source: *California Manual on Uniform Traffic Control Devices*, Caltrans, 2006

#65

Major Street	Midway Drive
Minor Street	Dutch Flats Parkway

Project	Midway & Old Town CPU
Scenario	1B
Peak Hour	PM

Turn Movement Volumes

	NB	SB	EB	WB
Left	160	200	70	50
Through	500	490	20	120
Right	370	70	40	260
Total	1,030	760	130	430

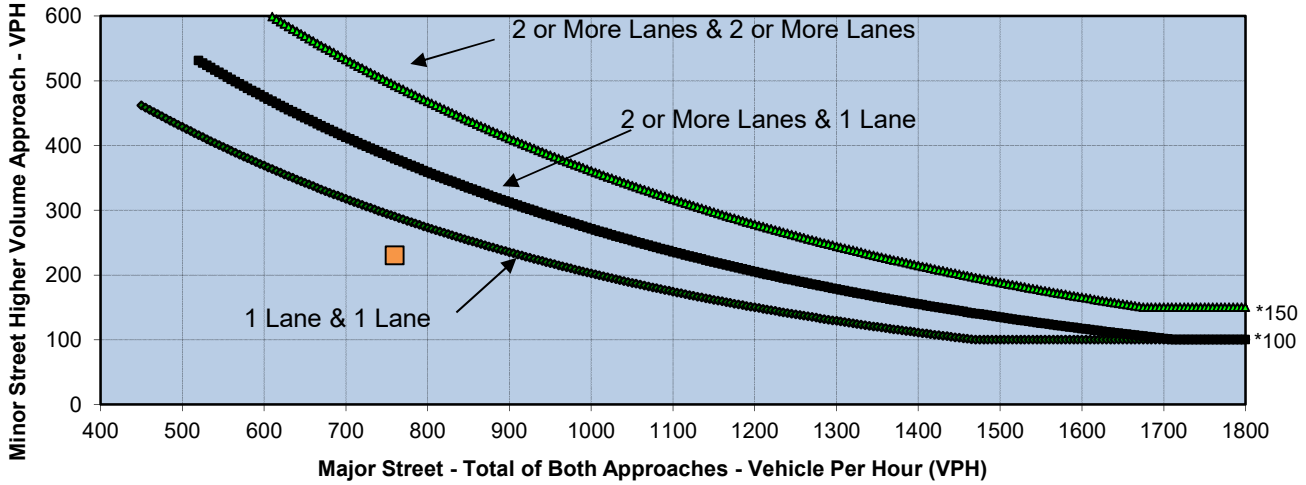
Major Street Direction

X	North/South
	East/West

	Major Street	Minor Street	Warrant Met
	Midway Drive	Dutch Flats Parkway	
Number of Approach Lanes	2	1	YES
Traffic Volume (VPH) *	1,790	430	

Sheet No 1 of 2

Figure 4C-3
Warrant 3, Peak Hour



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Source: *California Manual on Uniform Traffic Control Devices*, Caltrans, 2006

#66

Major Street	Sports Arena Boulevard
Minor Street	Dutch Flats Parkway

Project	Midway & Old Town CPU
Scenario	1B
Peak Hour	AM

Turn Movement Volumes

	NB	SB	EB	WB
Left	340	0	30	0
Through	190	190	0	0
Right	0	40	200	0
Total	530	230	230	0

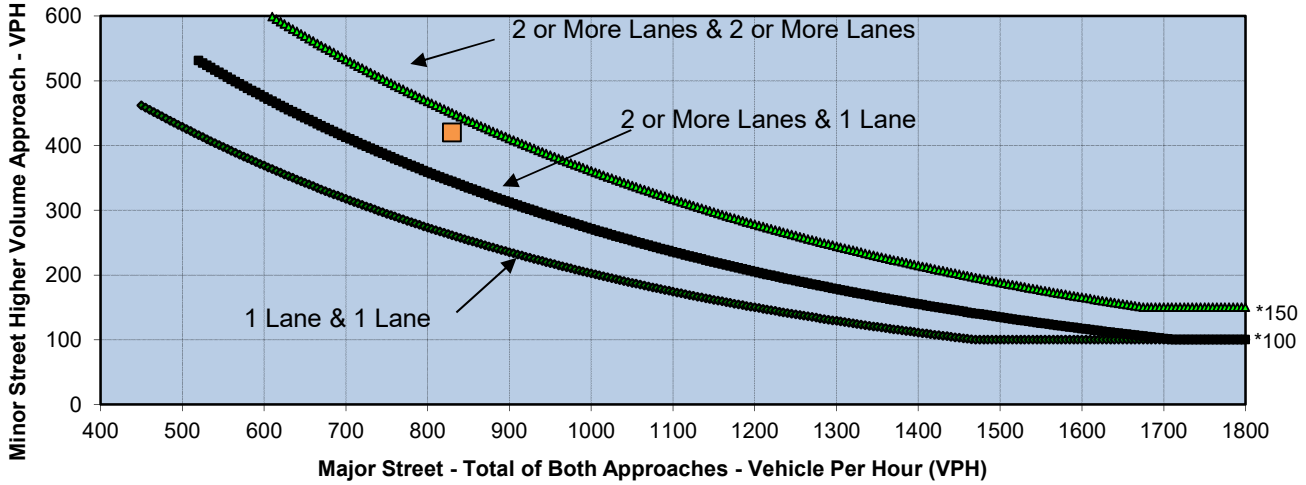
Major Street Direction

X	North/South
	East/West

	Major Street	Minor Street	Warrant Met
	Sports Arena Boulevard	Dutch Flats Parkway	
Number of Approach Lanes	**1**	**1**	**NO**
Traffic Volume (VPH) *	**760**	**230**	

Sheet No 2 of 2

Figure 4C-3
Warrant 3, Peak Hour



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Source: *California Manual on Uniform Traffic Control Devices*, Caltrans, 2006

#66

Major Street	Sports Arena Boulevard
Minor Street	Dutch Flats Parkway

Project	Midway & Old Town CPU
Scenario	1B
Peak Hour	PM

Turn Movement Volumes

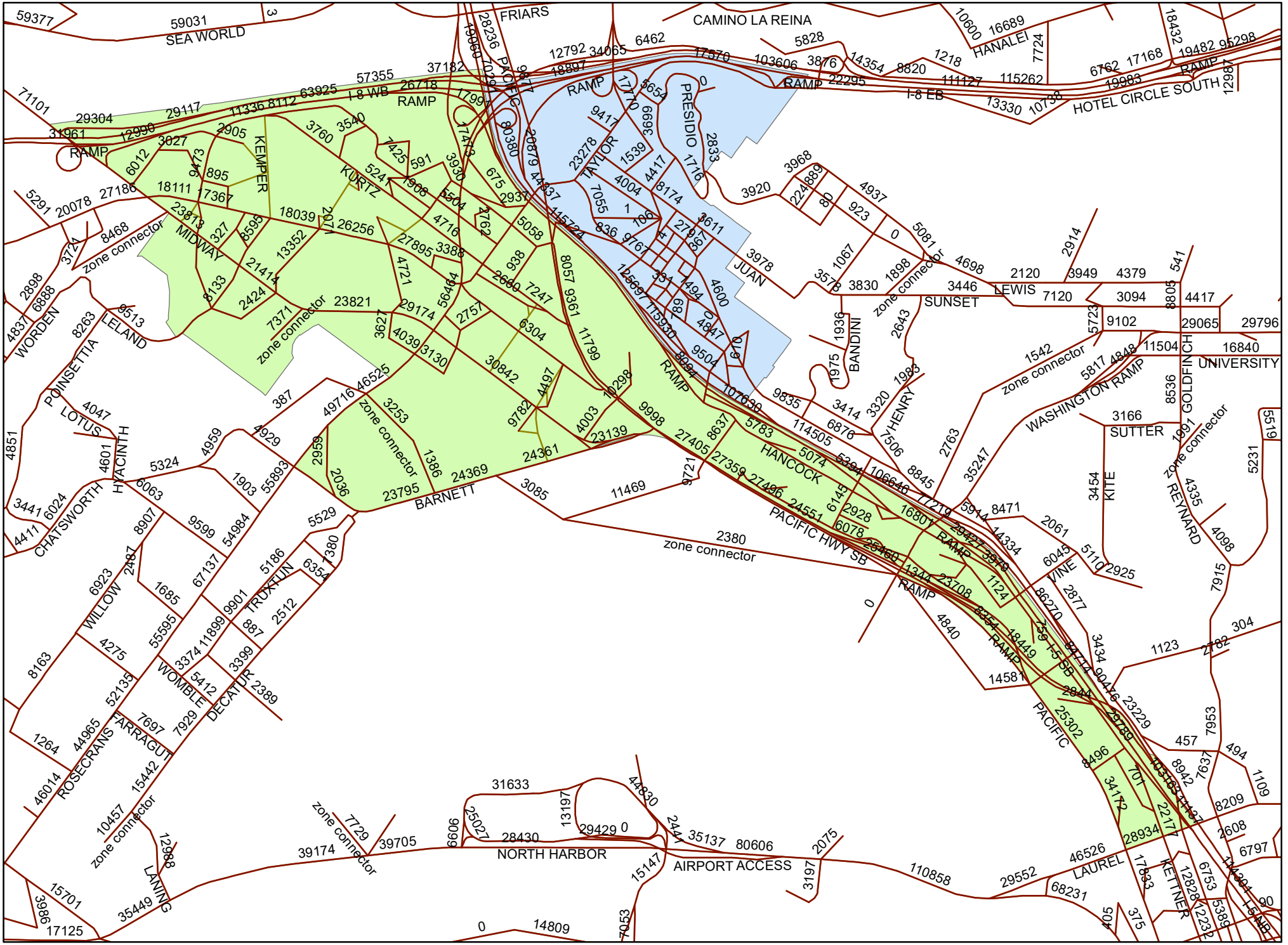
	NB	SB	EB	WB
Left	200	0	160	0
Through	140	240	0	0
Right	0	250	260	0
Total	340	490	420	0

Major Street Direction

X	North/South
	East/West

	Major Street	Minor Street	Warrant Met
	Sports Arena Boulevard	Dutch Flats Parkway	
Number of Approach Lanes	1	1	YES
Traffic Volume (VPH) *	830	420	

Appendix D
SANDAG Series 12 Model Outputs, Documentation and VMT Analysis



Midway-Pacific Highway and Old Town Community Plan

Scenario 1B

VMT Analysis

	Base Year 2008										
	SF (1)			MF			Mobile Homes				Estimated
	VR(2)	PPH(3)	SFDU	VR(2)	PPH(3)	MFDU	VR(2)	PPH(3)	MHDU	TOTAL DU	Populatio
Midway	2.00%	1.78	1,274	3.10%	1.78	484	0.00%	1.78		1,758	3,057
Old Town	6.90%	1.62	229	7.10%	1.62	25	0.00%	1.62	-	254	383

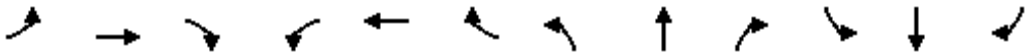
	Preferred CPU - Buildout for Communities, Year 2035 for Region										
	SF (1)			MF			Mobile Homes				Estimated
	VR(4)	PPH(5)	SFDU	VR(4)	PPH(5)	MFDU	VR(4)	PPH(5)	MHDU	TOTAL DU	Populatio
Midway	1.70%	1.82	-	2.40%	1.82	11,415	0.00%	1.82		11,415	20,277
Old Town	0.00%	1.66	79	5.10%	1.66	1,253	0.00%	1.66	-	1,332	2,105

	Delta (CPU Buildout for SESD & Encanto, Year 2035 for Region) - Base Year (2008)						
	DELTAS				Percent increase	Estimated Population Increase	Percent Increase
	SFDU	MFDU	MHDU	Total DU			
Midway	-1274	10931	0	9657	5.493174	17219.5143	5.632486
Old Town	-150	1228	0	1078	4.244094	1722.03414	4.496092

(1) Single family includes detached single family and multi-unit single family
(2) Vacancy Rate data for 2010 per SANDAG Community Profiles
(3) Persons Per Household data for 2010 per SANDAG Community Profiles
(4) Vacancy Rate data for 2050 per SANDAG Community Profiles
(5) Persons Per Household data for 2050 per SANDAG Community Profiles

Appendix E
Peak Hour Intersection Calculation Worksheets and Queuing Reports

Peak Hour Intersection Calculation Worksheets



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	55	1145	400	160	1340	170	480	400	145	580	280	115
Future Volume (vph)	55	1145	400	160	1340	170	480	400	145	580	280	115
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	
Lane Util. Factor	1.00	0.91	1.00	0.97	0.95	1.00	0.97	1.00	1.00	1.00	1.00	
Frpb, ped/bikes	1.00	1.00	0.99	1.00	1.00	0.94	1.00	1.00	0.98	1.00	1.00	
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.96	
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)	1770	5085	1563	3433	3539	1492	3433	1863	1558	1770	1774	
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (perm)	1770	5085	1563	3433	3539	1492	3433	1863	1558	1770	1774	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	60	1245	435	174	1457	185	522	435	158	630	304	125
RTOR Reduction (vph)	0	0	261	0	0	74	0	0	91	0	11	0
Lane Group Flow (vph)	60	1245	174	174	1457	111	522	435	67	630	418	0
Confl. Peds. (#/hr)	8					8			3	3		
Confl. Bikes (#/hr)			1			5						3
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases			2			6			8			
Actuated Green, G (s)	4.6	43.0	43.0	13.5	51.8	51.8	34.9	34.0	34.0	42.0	39.3	
Effective Green, g (s)	5.0	44.3	44.3	13.9	53.2	53.2	35.3	34.8	34.8	41.0	40.5	
Actuated g/C Ratio	0.03	0.30	0.30	0.09	0.35	0.35	0.24	0.23	0.23	0.27	0.27	
Clearance Time (s)	4.4	5.3	5.3	4.4	5.4	5.4	4.4	4.8	4.8	3.0	5.2	
Vehicle Extension (s)	2.0	4.4	4.4	2.0	4.4	4.4	2.0	3.8	3.8	2.0	2.0	
Lane Grp Cap (vph)	59	1501	461	318	1255	529	807	432	361	483	478	
v/s Ratio Prot	c0.03	0.24		0.05	c0.41		0.15	c0.23		c0.36	0.24	
v/s Ratio Perm			0.11			0.07			0.04			
v/c Ratio	1.02	0.83	0.38	0.55	1.16	0.21	0.65	1.01	0.18	1.30	0.87	
Uniform Delay, d1	72.5	49.3	41.9	65.0	48.4	33.7	51.7	57.6	46.2	54.5	52.3	
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	122.0	5.4	2.4	1.0	81.6	0.9	1.3	45.0	0.3	151.4	15.7	
Delay (s)	194.5	54.8	44.3	66.1	130.0	34.6	53.1	102.6	46.5	205.9	68.1	
Level of Service	F	D	D	E	F	C	D	F	D	F	E	
Approach Delay (s)		57.0			114.2			71.5			150.1	
Approach LOS		E			F			E			F	

Intersection Summary			
HCM 2000 Control Delay	98.5	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.16		
Actuated Cycle Length (s)	150.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	107.6%	ICU Level of Service	G
Analysis Period (min)	15		

c Critical Lane Group

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	545	1200	370	0	0	660
Future Volume (vph)	545	1200	370	0	0	660
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	7.0	7.0	7.0			7.0
Lane Util. Factor	0.97	0.88	0.95			0.95
Frt	1.00	0.85	1.00			1.00
Flt Protected	0.95	1.00	1.00			1.00
Satd. Flow (prot)	3433	2787	3539			3539
Flt Permitted	0.95	1.00	1.00			1.00
Satd. Flow (perm)	3433	2787	3539			3539
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	592	1304	402	0	0	717
RTOR Reduction (vph)	0	299	0	0	0	0
Lane Group Flow (vph)	592	1005	402	0	0	717
Turn Type	Prot	Perm	NA			NA
Protected Phases	4		2			6
Permitted Phases		4				
Actuated Green, G (s)	20.1	20.1	13.1			13.1
Effective Green, g (s)	20.1	20.1	13.1			13.1
Actuated g/C Ratio	0.43	0.43	0.28			0.28
Clearance Time (s)	7.0	7.0	7.0			7.0
Vehicle Extension (s)	0.2	0.2	0.2			0.2
Lane Grp Cap (vph)	1461	1186	982			982
v/s Ratio Prot	0.17		0.11			c0.20
v/s Ratio Perm		c0.36				
v/c Ratio	0.41	0.85	0.41			0.73
Uniform Delay, d1	9.4	12.2	13.9			15.4
Progression Factor	1.00	1.00	1.00			1.00
Incremental Delay, d2	0.1	5.6	0.1			2.4
Delay (s)	9.5	17.7	14.0			17.9
Level of Service	A	B	B			B
Approach Delay (s)	15.2		14.0			17.9
Approach LOS	B		B			B

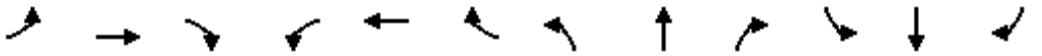
Intersection Summary			
HCM 2000 Control Delay	15.7	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.80		
Actuated Cycle Length (s)	47.2	Sum of lost time (s)	14.0
Intersection Capacity Utilization	63.9%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	0	110	985	240	0	1155
Future Volume (Veh/h)	0	110	985	240	0	1155
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	120	1071	261	0	1255
Pedestrians						3
Lane Width (ft)						12.0
Walking Speed (ft/s)						4.0
Percent Blockage						0
Right turn flare (veh)						
Median type			None			None
Median storage veh)						
Upstream signal (ft)			810			780
pX, platoon unblocked	0.96	0.96			0.96	
vC, conflicting volume	1620	490			1332	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1515	345			1217	
tC, single (s)	6.8	6.9			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	100	81			100	
cM capacity (veh/h)	106	627			549	

Direction, Lane #	WB 1	NB 1	NB 2	NB 3	SB 1	SB 2	SB 3
Volume Total	120	428	428	475	418	418	418
Volume Left	0	0	0	0	0	0	0
Volume Right	120	0	0	261	0	0	0
cSH	627	1700	1700	1700	1700	1700	1700
Volume to Capacity	0.19	0.25	0.25	0.28	0.25	0.25	0.25
Queue Length 95th (ft)	18	0	0	0	0	0	0
Control Delay (s)	12.1	0.0	0.0	0.0	0.0	0.0	0.0
Lane LOS	B						
Approach Delay (s)	12.1	0.0			0.0		
Approach LOS	B						

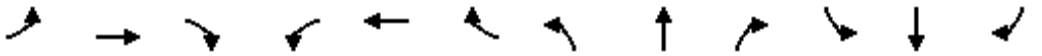
Intersection Summary			
Average Delay	0.5		
Intersection Capacity Utilization	38.8%	ICU Level of Service	A
Analysis Period (min)	15		



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	450	310	280	30	140	290	185	460	50	370	520	255
Future Volume (vph)	450	310	280	30	140	290	185	460	50	370	520	255
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.1	4.0	3.1	3.0	4.0	4.0	3.1	4.0		3.1	4.0	4.0
Lane Util. Factor	1.00	1.00	1.00	1.00	0.95	1.00	1.00	0.95		1.00	0.95	1.00
Frpb, ped/bikes	1.00	1.00	0.99	1.00	1.00	0.99	1.00	1.00		1.00	1.00	0.99
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.99		1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1770	1863	1564	1770	3539	1573	1770	3482		1770	3539	1567
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)	1770	1863	1564	1770	3539	1573	1770	3482		1770	3539	1567
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	489	337	304	33	152	315	201	500	54	402	565	277
RTOR Reduction (vph)	0	0	50	0	0	46	0	6	0	0	0	126
Lane Group Flow (vph)	489	337	254	33	152	269	201	548	0	402	565	151
Confl. Peds. (#/hr)			4			3			5			8
Turn Type	Prot	NA	pm+ov	Prot	NA	pm+ov	Prot	NA		Prot	NA	pm+ov
Protected Phases	5	2	3	1	6	7	3	8		7	4	5
Permitted Phases			2			6						4
Actuated Green, G (s)	33.3	49.2	67.5	3.4	19.2	46.5	18.3	24.3		27.3	33.3	66.6
Effective Green, g (s)	34.2	50.1	69.3	4.4	20.2	46.5	19.2	25.2		28.2	34.2	66.6
Actuated g/C Ratio	0.28	0.41	0.57	0.04	0.17	0.38	0.16	0.21		0.23	0.28	0.55
Clearance Time (s)	4.0	4.9	4.0	4.0	5.0	4.0	4.0	4.9		4.0	4.9	4.0
Vehicle Extension (s)	3.0	0.2	3.0	3.0	8.0	3.0	3.0	3.1		3.0	5.5	3.0
Lane Grp Cap (vph)	496	765	888	63	585	599	278	719		409	992	855
v/s Ratio Prot	c0.28	c0.18	0.04	0.02	0.04	0.10	0.11	c0.16		c0.23	0.16	0.05
v/s Ratio Perm			0.12			0.07						0.05
v/c Ratio	0.99	0.44	0.29	0.52	0.26	0.45	0.72	0.76		0.98	0.57	0.18
Uniform Delay, d1	43.7	25.9	13.6	57.8	44.4	28.2	48.9	45.6		46.7	37.6	13.9
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	36.4	0.1	0.2	7.6	1.0	0.5	9.0	4.8		39.7	1.4	0.1
Delay (s)	80.1	26.0	13.8	65.4	45.4	28.7	57.8	50.4		86.4	39.0	14.0
Level of Service	F	C	B	E	D	C	E	D		F	D	B
Approach Delay (s)		46.1			36.2			52.4			48.8	
Approach LOS		D			D			D			D	

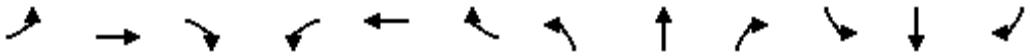
Intersection Summary			
HCM 2000 Control Delay	47.0	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.85		
Actuated Cycle Length (s)	122.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	82.4%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group



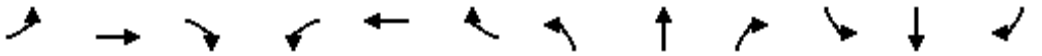
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	105	105	100	80	95	160	65	310	40	80	410	90
Future Volume (vph)	105	105	100	80	95	160	65	310	40	80	410	90
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0
Lane Util. Factor	0.95	0.95	1.00	1.00	1.00	1.00	0.97	0.95		1.00	0.95	1.00
Frpb, ped/bikes	1.00	1.00	0.98	1.00	1.00	0.98	1.00	1.00		1.00	1.00	1.00
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.98		1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1681	1770	1556	1770	1863	1551	3433	3472		1770	3539	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)	1681	1770	1556	1770	1863	1551	3433	3472		1770	3539	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	114	114	109	87	103	174	71	337	43	87	446	98
RTOR Reduction (vph)	0	0	88	0	0	150	0	6	0	0	0	46
Lane Group Flow (vph)	114	114	21	87	103	24	71	374	0	87	446	52
Confl. Peds. (#/hr)			12			8			5			
Turn Type	Split	NA	pm+ov	Split	NA	Perm	Prot	NA		Prot	NA	Perm
Protected Phases	8	8	1	7	7		1	6		5	2	
Permitted Phases			8			7						2
Actuated Green, G (s)	16.7	16.7	22.8	15.5	15.5	15.5	6.1	58.8		9.9	62.6	62.6
Effective Green, g (s)	17.6	17.6	23.6	16.4	16.4	16.4	6.5	59.7		10.3	63.5	63.5
Actuated g/C Ratio	0.15	0.15	0.20	0.14	0.14	0.14	0.05	0.50		0.09	0.53	0.53
Clearance Time (s)	4.9	4.9	4.4	4.9	4.9	4.9	4.4	4.9		4.4	4.9	4.9
Vehicle Extension (s)	3.0	3.0	2.0	3.0	3.0	3.0	2.0	4.5		2.0	4.6	4.6
Lane Grp Cap (vph)	246	259	306	241	254	211	185	1727		151	1872	837
v/s Ratio Prot	c0.07	0.06	0.00	0.05	c0.06		0.02	0.11		c0.05	c0.13	
v/s Ratio Perm			0.01			0.02						0.03
v/c Ratio	0.46	0.44	0.07	0.36	0.41	0.11	0.38	0.22		0.58	0.24	0.06
Uniform Delay, d1	46.9	46.7	39.3	47.0	47.3	45.4	54.8	17.0		52.8	15.2	13.8
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.22	0.72	0.72
Incremental Delay, d2	1.4	1.2	0.0	0.9	1.1	0.2	0.5	0.3		2.8	0.3	0.1
Delay (s)	48.3	47.9	39.3	48.0	48.4	45.7	55.3	17.3		67.0	11.1	10.0
Level of Service	D	D	D	D	D	D	E	B		E	B	B
Approach Delay (s)		45.2			47.0			23.3			18.7	
Approach LOS		D			D			C			B	

Intersection Summary			
HCM 2000 Control Delay	30.6	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.33		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	58.4%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	25	10	10	20	5	20	60	655	90	20	540	15
Future Volume (vph)	25	10	10	20	5	20	60	655	90	20	540	15
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0			4.0		4.0	4.0		4.0	4.0	
Lane Util. Factor		1.00			1.00		1.00	0.95		1.00	0.95	
Frpb, ped/bikes		1.00			0.99		1.00	1.00		1.00	1.00	
Flpb, ped/bikes		1.00			1.00		1.00	1.00		1.00	1.00	
Frt		0.97			0.94		1.00	0.98		1.00	1.00	
Flt Protected		0.97			0.98		0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1752			1698		1770	3475		1770	3523	
Flt Permitted		0.80			0.83		0.41	1.00		0.33	1.00	
Satd. Flow (perm)		1443			1444		765	3475		623	3523	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	27	11	11	22	5	22	65	712	98	22	587	16
RTOR Reduction (vph)	0	10	0	0	20	0	0	13	0	0	2	0
Lane Group Flow (vph)	0	39	0	0	29	0	65	797	0	22	601	0
Confl. Peds. (#/hr)			1			10						3
Turn Type	Perm	NA		Perm	NA		pm+pt	NA		pm+pt	NA	
Protected Phases		8			4		1	6		5	2	
Permitted Phases	8			4			6			2		
Actuated Green, G (s)		3.6			3.6		23.0	21.8		21.6	21.1	
Effective Green, g (s)		4.5			4.5		23.8	22.7		22.4	22.0	
Actuated g/C Ratio		0.11			0.11		0.59	0.57		0.56	0.55	
Clearance Time (s)		4.9			4.9		4.4	4.9		4.4	4.9	
Vehicle Extension (s)		2.0			2.0		2.0	2.9		2.0	2.9	
Lane Grp Cap (vph)		161			162		494	1967		373	1932	
v/s Ratio Prot							c0.01	c0.23		0.00	0.17	
v/s Ratio Perm		c0.03			0.02		0.07			0.03		
v/c Ratio		0.24			0.18		0.13	0.41		0.06	0.31	
Uniform Delay, d1		16.2			16.1		3.4	4.9		4.0	4.9	
Progression Factor		1.00			1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2		0.3			0.2		0.0	0.1		0.0	0.1	
Delay (s)		16.5			16.3		3.5	5.0		4.0	5.0	
Level of Service		B			B		A	A		A	A	
Approach Delay (s)		16.5			16.3			4.9			5.0	
Approach LOS		B			B			A			A	

Intersection Summary			
HCM 2000 Control Delay	5.6	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.37		
Actuated Cycle Length (s)	40.1	Sum of lost time (s)	12.0
Intersection Capacity Utilization	42.6%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	220	1460	170	290	1795	300	115	330	215	225	280	175
Future Volume (vph)	220	1460	170	290	1795	300	115	330	215	225	280	175
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0	4.4	4.0	4.0	3.5	4.0	4.0	3.5
Lane Util. Factor	0.97	0.91		0.97	0.91	1.00	1.00	0.95	1.00	0.97	0.95	1.00
Frpb, ped/bikes	1.00	1.00		1.00	1.00	0.98	1.00	1.00	0.97	1.00	1.00	0.98
Flpb, ped/bikes	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.98		1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	4984		3433	5085	1544	1770	3539	1542	3433	3539	1554
Flt Permitted	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	4984		3433	5085	1544	1770	3539	1542	3433	3539	1554
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	239	1587	185	315	1951	326	125	359	234	245	304	190
RTOR Reduction (vph)	0	12	0	0	0	76	0	0	77	0	0	79
Lane Group Flow (vph)	239	1760	0	315	1951	250	125	359	157	245	304	111
Confl. Peds. (#/hr)	14		25	25		14	18		27	27		14
Turn Type	Prot	NA		Prot	NA	pm+ov	Prot	NA	pm+ov	Prot	NA	pm+ov
Protected Phases	5	2		1	6	7	3	8	1	7	4	5
Permitted Phases						6			8			4
Actuated Green, G (s)	8.8	42.8		10.4	44.5	53.5	8.4	24.0	34.4	9.0	24.6	33.4
Effective Green, g (s)	9.2	43.9		10.8	45.5	53.5	8.8	24.9	36.2	9.4	25.5	35.2
Actuated g/C Ratio	0.09	0.42		0.10	0.43	0.51	0.08	0.24	0.34	0.09	0.24	0.34
Clearance Time (s)	4.4	5.1		4.4	5.0	4.4	4.4	4.9	4.4	4.4	4.9	4.4
Vehicle Extension (s)	2.0	3.5		2.0	3.7	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lane Grp Cap (vph)	300	2083		353	2203	786	148	839	583	307	859	520
v/s Ratio Prot	0.07	c0.35		0.09	c0.38	0.03	c0.07	c0.10	0.03	c0.07	0.09	0.02
v/s Ratio Perm						0.13			0.07			0.05
v/c Ratio	0.80	0.84		0.89	0.89	0.32	0.84	0.43	0.27	0.80	0.35	0.21
Uniform Delay, d1	47.0	27.5		46.5	27.4	15.1	47.4	34.0	24.8	46.9	32.9	25.0
Progression Factor	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	12.8	4.4		23.0	5.7	0.1	32.2	0.1	0.1	12.6	0.1	0.1
Delay (s)	59.8	31.9		69.5	33.1	15.2	79.6	34.1	24.9	59.5	33.0	25.1
Level of Service	E	C		E	C	B	E	C	C	E	C	C
Approach Delay (s)		35.2			35.2			39.1			39.7	
Approach LOS		D			D			D			D	

Intersection Summary			
HCM 2000 Control Delay	36.2	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.80		
Actuated Cycle Length (s)	105.0	Sum of lost time (s)	16.4
Intersection Capacity Utilization	80.2%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	110	20	595	80	140	1110
Future Volume (vph)	110	20	595	80	140	1110
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.5		4.5		4.5	4.5
Lane Util. Factor	1.00		0.95		1.00	0.95
Frt	0.98		0.98		1.00	1.00
Flt Protected	0.96		1.00		0.95	1.00
Satd. Flow (prot)	1750		3476		1770	3539
Flt Permitted	0.96		1.00		0.95	1.00
Satd. Flow (perm)	1750		3476		1770	3539
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	120	22	647	87	152	1207
RTOR Reduction (vph)	12	0	13	0	0	0
Lane Group Flow (vph)	130	0	721	0	152	1207
Turn Type	Prot		NA		Prot	NA
Protected Phases	8		2		1	6
Permitted Phases						
Actuated Green, G (s)	8.4		30.4		8.6	43.5
Effective Green, g (s)	8.4		30.4		8.6	43.5
Actuated g/C Ratio	0.14		0.50		0.14	0.71
Clearance Time (s)	4.5		4.5		4.5	4.5
Vehicle Extension (s)	3.0		3.0		3.0	3.0
Lane Grp Cap (vph)	241		1735		249	2527
v/s Ratio Prot	c0.07		0.21		c0.09	c0.34
v/s Ratio Perm						
v/c Ratio	0.54		0.42		0.61	0.48
Uniform Delay, d1	24.4		9.6		24.6	3.8
Progression Factor	1.00		1.00		1.00	1.00
Incremental Delay, d2	2.3		0.7		4.4	0.6
Delay (s)	26.8		10.4		29.0	4.4
Level of Service	C		B		C	A
Approach Delay (s)	26.8		10.4			7.2
Approach LOS	C		B			A

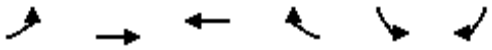
Intersection Summary			
HCM 2000 Control Delay	9.5	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.54		
Actuated Cycle Length (s)	60.9	Sum of lost time (s)	13.5
Intersection Capacity Utilization	45.5%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	0	110	555	130	0	575
Future Volume (Veh/h)	0	110	555	130	0	575
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	120	603	141	0	625
Pedestrians	2					3
Lane Width (ft)	12.0					12.0
Walking Speed (ft/s)	4.0					4.0
Percent Blockage	0					0
Right turn flare (veh)						
Median type			None			None
Median storage veh)						
Upstream signal (ft)			215			491
pX, platoon unblocked	0.87					
vC, conflicting volume	988	377			746	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	692	377			746	
tC, single (s)	6.8	6.9			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	100	81			100	
cM capacity (veh/h)	329	618			856	

Direction, Lane #	WB 1	NB 1	NB 2	SB 1	SB 2
Volume Total	120	402	342	312	312
Volume Left	0	0	0	0	0
Volume Right	120	0	141	0	0
cSH	618	1700	1700	1700	1700
Volume to Capacity	0.19	0.24	0.20	0.18	0.18
Queue Length 95th (ft)	18	0	0	0	0
Control Delay (s)	12.2	0.0	0.0	0.0	0.0
Lane LOS	B				
Approach Delay (s)	12.2	0.0		0.0	
Approach LOS	B				

Intersection Summary			
Average Delay	1.0		
Intersection Capacity Utilization	33.9%	ICU Level of Service	A
Analysis Period (min)	15		

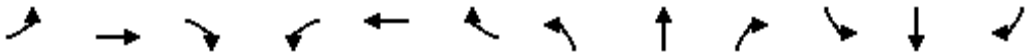


Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	0	795	1290	630	420	195
Future Volume (vph)	0	795	1290	630	420	195
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.4	5.4	5.9	5.2	5.2
Lane Util. Factor		0.95	0.95	0.88	0.97	1.00
Frpb, ped/bikes		1.00	1.00	1.00	1.00	1.00
Flpb, ped/bikes		1.00	1.00	1.00	1.00	1.00
Frt		1.00	1.00	0.85	1.00	0.85
Flt Protected		1.00	1.00	1.00	0.95	1.00
Satd. Flow (prot)		3539	3539	2787	3433	1583
Flt Permitted		1.00	1.00	1.00	0.95	1.00
Satd. Flow (perm)		3539	3539	2787	3433	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	864	1402	685	457	212
RTOR Reduction (vph)	0	0	0	277	0	170
Lane Group Flow (vph)	0	864	1402	408	457	42
Confl. Peds. (#/hr)				8	8	
Turn Type		NA	NA	custom	Prot	Perm
Protected Phases		2	2	8	1	
Permitted Phases						1
Actuated Green, G (s)		31.7	31.7	27.1	12.1	12.1
Effective Green, g (s)		31.7	31.7	26.6	12.1	12.1
Actuated g/C Ratio		0.52	0.52	0.44	0.20	0.20
Clearance Time (s)		5.4	5.4	5.4	5.2	5.2
Vehicle Extension (s)		2.9	2.9	3.0	2.5	2.5
Lane Grp Cap (vph)		1851	1851	1223	685	316
v/s Ratio Prot		0.24	c0.40	0.15	c0.13	
v/s Ratio Perm						0.03
v/c Ratio		0.47	0.76	0.33	0.67	0.13
Uniform Delay, d1		9.1	11.4	11.2	22.4	19.9
Progression Factor		1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2		0.2	1.8	0.2	2.2	0.1
Delay (s)		9.3	13.2	11.3	24.6	20.1
Level of Service		A	B	B	C	C
Approach Delay (s)		9.3	12.6		23.2	
Approach LOS		A	B		C	

Intersection Summary			
HCM 2000 Control Delay	13.8	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.74		
Actuated Cycle Length (s)	60.6	Sum of lost time (s)	17.1
Intersection Capacity Utilization	56.6%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

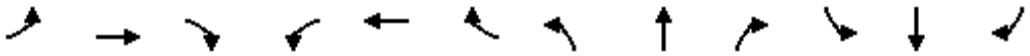
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	25	40	435	60	110	680
Future Volume (vph)	25	40	435	60	110	680
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.9	4.0	4.9		4.4	4.9
Lane Util. Factor	1.00	1.00	0.91		1.00	0.91
Frpb, ped/bikes	1.00	0.98	1.00		1.00	1.00
Flpb, ped/bikes	1.00	1.00	1.00		1.00	1.00
Frt	1.00	0.85	0.98		1.00	1.00
Flt Protected	0.95	1.00	1.00		0.95	1.00
Satd. Flow (prot)	1770	1550	4980		1770	5085
Flt Permitted	0.95	1.00	1.00		0.95	1.00
Satd. Flow (perm)	1770	1550	4980		1770	5085
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	27	43	473	65	120	739
RTOR Reduction (vph)	0	38	8	0	0	0
Lane Group Flow (vph)	27	5	530	0	120	739
Confl. Peds. (#/hr)	4	11		9	9	
Turn Type	Prot	Perm	NA		Prot	NA
Protected Phases	4		6		5	2
Permitted Phases		4				
Actuated Green, G (s)	11.7	11.7	72.3		11.8	88.5
Effective Green, g (s)	11.7	12.6	72.3		11.8	88.5
Actuated g/C Ratio	0.11	0.11	0.66		0.11	0.80
Clearance Time (s)	4.9	4.9	4.9		4.4	4.9
Vehicle Extension (s)	2.0	2.0	5.0		2.0	3.2
Lane Grp Cap (vph)	188	177	3273		189	4091
v/s Ratio Prot	c0.02		0.11		c0.07	c0.15
v/s Ratio Perm		0.00				
v/c Ratio	0.14	0.03	0.16		0.63	0.18
Uniform Delay, d1	44.6	43.3	7.2		47.0	2.5
Progression Factor	1.00	1.00	2.15		1.00	1.00
Incremental Delay, d2	0.1	0.0	0.1		5.0	0.1
Delay (s)	44.7	43.3	15.6		52.1	2.6
Level of Service	D	D	B		D	A
Approach Delay (s)	43.8		15.6			9.5
Approach LOS	D		B			A

Intersection Summary			
HCM 2000 Control Delay	13.4	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.24		
Actuated Cycle Length (s)	110.0	Sum of lost time (s)	14.2
Intersection Capacity Utilization	55.5%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			



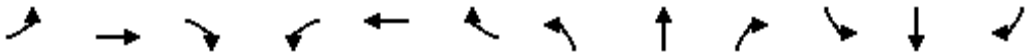
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	70	45	100	155	130	110	205	420	85	70	535	120
Future Volume (vph)	70	45	100	155	130	110	205	420	85	70	535	120
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.5	4.0	
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	0.91		0.97	0.95	
Frpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	0.97		1.00	1.00	
Flpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Frt	1.00	0.90		1.00	0.93		1.00	0.97		1.00	0.97	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1770	1670		1770	1734		1770	4807		3433	3442	
Flt Permitted	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (perm)	1770	1670		1770	1734		1770	4807		3433	3442	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	76	49	109	168	141	120	223	457	92	76	582	130
RTOR Reduction (vph)	0	88	0	0	27	0	0	23	0	0	14	0
Lane Group Flow (vph)	76	70	0	168	234	0	223	526	0	76	698	0
Confl. Peds. (#/hr)									120			
Turn Type	Split	NA		Split	NA		Prot	NA		Prot	NA	
Protected Phases	7	7		8	8		1	6		5	2	
Permitted Phases												
Actuated Green, G (s)	13.5	13.5		17.4	17.4		17.2	35.4		24.1	42.8	
Effective Green, g (s)	14.4	14.4		18.3	18.3		17.6	36.3		24.5	43.7	
Actuated g/C Ratio	0.13	0.13		0.17	0.17		0.16	0.33		0.22	0.40	
Clearance Time (s)	4.9	4.9		4.9	4.9		4.4	4.9		4.9	4.9	
Vehicle Extension (s)	3.0	3.0		2.0	2.0		2.0	3.9		3.9	3.9	
Lane Grp Cap (vph)	231	218		294	288		283	1586		764	1367	
v/s Ratio Prot	c0.04	0.04		0.09	c0.14		c0.13	0.11		0.02	c0.20	
v/s Ratio Perm												
v/c Ratio	0.33	0.32		0.57	0.81		0.79	0.33		0.10	0.51	
Uniform Delay, d1	43.4	43.4		42.2	44.2		44.4	27.7		34.0	25.1	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		0.94	0.96	
Incremental Delay, d2	0.8	0.9		1.7	15.2		12.5	0.6		0.1	1.4	
Delay (s)	44.3	44.2		43.9	59.4		56.9	28.3		32.2	25.4	
Level of Service	D	D		D	E		E	C		C	C	
Approach Delay (s)		44.2			53.3			36.6			26.0	
Approach LOS		D			D			D			C	

Intersection Summary			
HCM 2000 Control Delay	36.9	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.60		
Actuated Cycle Length (s)	110.0	Sum of lost time (s)	16.5
Intersection Capacity Utilization	62.7%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	30	10	10	30	5	45	25	625	30	75	685	65
Future Volume (vph)	30	10	10	30	5	45	25	625	30	75	685	65
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.9		4.9	4.9		4.4	4.9		4.9	4.9	
Lane Util. Factor		1.00		1.00	1.00		1.00	0.91		0.97	0.95	
Frpb, ped/bikes		1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Flpb, ped/bikes		1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Frt		0.97		1.00	0.86		1.00	0.99		1.00	0.99	
Flt Protected		0.97		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1754		1770	1609		1770	5044		3433	3483	
Flt Permitted		0.97		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (perm)		1754		1770	1609		1770	5044		3433	3483	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	33	11	11	33	5	49	27	679	33	82	745	71
RTOR Reduction (vph)	0	8	0	0	45	0	0	3	0	0	4	0
Lane Group Flow (vph)	0	47	0	33	9	0	27	709	0	82	812	0
Confl. Peds. (#/hr)			7	7			9		4	4		9
Turn Type	Split	NA		Split	NA		Prot	NA		Prot	NA	
Protected Phases	8	8		7	7		1	6		5	2	
Permitted Phases												
Actuated Green, G (s)		6.7		5.3	5.3		2.0	19.4		13.4	31.3	
Effective Green, g (s)		6.7		5.3	5.3		2.0	19.4		13.4	31.3	
Actuated g/C Ratio		0.10		0.08	0.08		0.03	0.30		0.21	0.49	
Clearance Time (s)		4.9		4.9	4.9		4.4	4.9		4.9	4.9	
Vehicle Extension (s)		2.0		2.0	2.0		2.0	2.0		2.0	2.0	
Lane Grp Cap (vph)		182		145	132		54	1519		714	1692	
v/s Ratio Prot		c0.03		c0.02	0.01		c0.02	0.14		0.02	c0.23	
v/s Ratio Perm												
v/c Ratio		0.26		0.23	0.07		0.50	0.47		0.11	0.48	
Uniform Delay, d1		26.6		27.6	27.3		30.7	18.3		20.7	11.1	
Progression Factor		1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2		0.3		0.3	0.1		2.6	0.1		0.0	0.1	
Delay (s)		26.8		27.9	27.4		33.3	18.4		20.7	11.2	
Level of Service		C		C	C		C	B		C	B	
Approach Delay (s)		26.8			27.6			18.9			12.0	
Approach LOS		C			C			B			B	

Intersection Summary			
HCM 2000 Control Delay	16.1	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.42		
Actuated Cycle Length (s)	64.4	Sum of lost time (s)	19.6
Intersection Capacity Utilization	50.1%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	20	10	40	20	100	160	45	610	40	35	715	30
Future Volume (vph)	20	10	40	20	100	160	45	610	40	35	715	30
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0	4.0		4.9	4.0	4.0	4.0		4.0	4.0	
Lane Util. Factor		1.00	1.00		1.00	1.00	1.00	0.91		1.00	0.91	
Frt		1.00	0.85		1.00	0.85	1.00	0.99		1.00	0.99	
Flt Protected		0.97	1.00		0.99	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1803	1583		1847	1583	1770	5039		1770	5054	
Flt Permitted		0.79	1.00		0.95	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (perm)		1474	1583		1761	1583	1770	5039		1770	5054	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	22	11	43	22	109	174	49	663	43	38	777	33
RTOR Reduction (vph)	0	0	35	0	0	142	0	10	0	0	6	0
Lane Group Flow (vph)	0	33	8	0	131	32	49	696	0	38	804	0
Turn Type	Perm	NA	Perm	Perm	NA	Perm	Prot	NA		Prot	NA	
Protected Phases		8			8		1	6		5	2	
Permitted Phases	8		8	8		8						
Actuated Green, G (s)		10.1	10.1		10.1	10.1	2.4	30.4		2.5	30.5	
Effective Green, g (s)		10.1	10.1		9.2	10.1	2.4	30.4		2.5	30.5	
Actuated g/C Ratio		0.18	0.18		0.17	0.18	0.04	0.55		0.05	0.55	
Clearance Time (s)		4.0	4.0		4.0	4.0	4.0	4.0		4.0	4.0	
Vehicle Extension (s)		3.0	3.0		3.0	3.0	3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)		270	290		294	290	77	2785		80	2802	
v/s Ratio Prot							c0.03	0.14		c0.02	c0.16	
v/s Ratio Perm		0.02	0.00		c0.07	0.02						
v/c Ratio		0.12	0.03		0.45	0.11	0.64	0.25		0.47	0.29	
Uniform Delay, d1		18.7	18.4		20.6	18.7	25.9	6.4		25.6	6.5	
Progression Factor		1.00	1.00		1.00	1.00	0.81	0.63		1.00	1.00	
Incremental Delay, d2		0.2	0.0		1.1	0.2	14.1	0.2		4.4	0.3	
Delay (s)		19.0	18.5		21.7	18.9	35.0	4.2		30.0	6.7	
Level of Service		B	B		C	B	C	A		C	A	
Approach Delay (s)		18.7			20.1			6.2			7.8	
Approach LOS		B			C			A			A	

Intersection Summary			
HCM 2000 Control Delay	9.5	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.34		
Actuated Cycle Length (s)	55.0	Sum of lost time (s)	12.9
Intersection Capacity Utilization	41.6%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

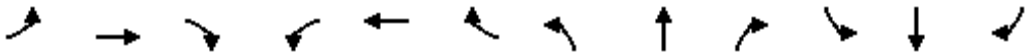
Movement	EBL	EBT	EBR	EBR2	WBT	WBR	NBR2	SBL2	SBL	SBT	SBR	NWL
Lane Configurations												
Traffic Volume (vph)	200	1465	135	100	2140	330	100	270	180	100	75	170
Future Volume (vph)	200	1465	135	100	2140	330	100	270	180	100	75	170
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	2.6	4.0		6.1	4.0	7.8	5.9	5.9	5.9	5.9	5.9	5.9
Lane Util. Factor	0.97	0.86		0.86	0.91	1.00	1.00	0.95	0.91	0.91	1.00	1.00
Frpb, ped/bikes	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.88	1.00
Flpb, ped/bikes	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.99		0.85	1.00	0.85	0.86	1.00	1.00	1.00	0.85	1.00
Flt Protected	0.95	1.00		1.00	1.00	1.00	1.00	0.95	0.95	0.98	1.00	0.95
Satd. Flow (prot)	3433	4741		1362	5085	1583	1611	1681	1610	1655	1398	1770
Flt Permitted	0.95	1.00		1.00	1.00	1.00	1.00	0.95	0.95	0.98	1.00	0.95
Satd. Flow (perm)	3433	4741		1362	5085	1583	1611	1681	1610	1655	1398	1770
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	217	1592	147	109	2326	359	109	293	196	109	82	185
RTOR Reduction (vph)	0	0	0	42	0	36	75	0	0	0	70	0
Lane Group Flow (vph)	217	1750	0	56	2326	323	34	179	206	213	12	185
Confl. Peds. (#/hr)								9			45	18
Confl. Bikes (#/hr)											10	
Turn Type	Prot	NA		Perm	NA	pm+ov	Perm	Split	Split	NA	Perm	Prot
Protected Phases	5	2			6	4		4	4	4		3
Permitted Phases				2		6	8				4	
Actuated Green, G (s)	8.2	63.3		63.3	51.3	67.1	34.7	15.8	15.8	15.8	15.8	13.0
Effective Green, g (s)	9.6	65.4		63.3	53.2	63.3	34.7	15.8	15.8	15.8	15.8	13.0
Actuated g/C Ratio	0.09	0.59		0.58	0.48	0.58	0.32	0.14	0.14	0.14	0.14	0.12
Clearance Time (s)	4.0	6.1		6.1	5.9	5.9	5.9	5.9	5.9	5.9	5.9	5.9
Vehicle Extension (s)	3.0	2.8		2.8	3.2	2.9	4.1	2.9	2.9	2.9	2.9	2.9
Lane Grp Cap (vph)	299	2818		783	2459	910	508	241	231	237	200	209
v/s Ratio Prot	c0.06	0.37			c0.46	0.04		0.11	0.13	c0.13		c0.10
v/s Ratio Perm				0.04		0.16	0.02				0.01	
v/c Ratio	0.73	0.62		0.07	0.95	0.36	0.07	0.74	0.89	0.90	0.06	0.89
Uniform Delay, d1	48.9	14.3		10.3	27.0	12.5	26.3	45.2	46.3	46.3	40.7	47.8
Progression Factor	1.00	1.00		1.00	1.00	1.00	1.00	0.85	0.86	0.86	3.49	1.00
Incremental Delay, d2	8.5	1.0		0.2	9.3	0.2	0.1	11.3	31.5	32.0	0.1	32.8
Delay (s)	57.4	15.4		10.5	36.3	12.7	26.4	49.9	71.4	72.0	142.1	80.6
Level of Service	E	B		B	D	B	C	D	E	E	F	F
Approach Delay (s)		19.6			33.1					74.5		61.3
Approach LOS		B			C					E		E

Intersection Summary			
HCM 2000 Control Delay	34.9	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.92		
Actuated Cycle Length (s)	110.0	Sum of lost time (s)	20.3
Intersection Capacity Utilization	83.0%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group

Movement	NWR	NWR2
Lane Configurations		
Traffic Volume (vph)	170	30
Future Volume (vph)	170	30
Ideal Flow (vphpl)	1900	1900
Total Lost time (s)	5.9	
Lane Util. Factor	0.88	
Frpb, ped/bikes	1.00	
Flpb, ped/bikes	1.00	
Frt	0.85	
Flt Protected	1.00	
Satd. Flow (prot)	2787	
Flt Permitted	1.00	
Satd. Flow (perm)	2787	
Peak-hour factor, PHF	0.92	0.92
Adj. Flow (vph)	185	33
RTOR Reduction (vph)	114	0
Lane Group Flow (vph)	104	0
Confl. Peds. (#/hr)		9
Confl. Bikes (#/hr)		1
Turn Type	Prot	
Protected Phases	3	
Permitted Phases		
Actuated Green, G (s)	13.0	
Effective Green, g (s)	13.0	
Actuated g/C Ratio	0.12	
Clearance Time (s)	5.9	
Vehicle Extension (s)	2.9	
Lane Grp Cap (vph)	329	
v/s Ratio Prot	0.04	
v/s Ratio Perm		
v/c Ratio	0.32	
Uniform Delay, d1	44.4	
Progression Factor	1.00	
Incremental Delay, d2	0.5	
Delay (s)	45.0	
Level of Service	D	
Approach Delay (s)		
Approach LOS		

Intersection Summary



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	40	90	90	80	70	70	60	40	80	10	20	20
Future Volume (vph)	40	90	90	80	70	70	60	40	80	10	20	20
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.5			4.5			4.5			4.0	
Lane Util. Factor		1.00			1.00			1.00			1.00	
Frt		0.94			0.96			0.94			0.95	
Flt Protected		0.99			0.98			0.98			0.99	
Satd. Flow (prot)		1744			1751			1722			1745	
Flt Permitted		0.92			0.77			0.91			0.96	
Satd. Flow (perm)		1614			1372			1586			1683	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	43	98	98	87	76	76	65	43	87	11	22	22
RTOR Reduction (vph)	0	53	0	0	36	0	0	32	0	0	9	0
Lane Group Flow (vph)	0	186	0	0	203	0	0	163	0	0	46	0
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)		11.6			11.6			27.0			27.5	
Effective Green, g (s)		11.6			11.6			27.0			27.5	
Actuated g/C Ratio		0.24			0.24			0.57			0.58	
Clearance Time (s)		4.5			4.5			4.5			4.0	
Vehicle Extension (s)		3.0			3.0			3.0			3.0	
Lane Grp Cap (vph)		393			334			899			972	
v/s Ratio Prot												
v/s Ratio Perm		0.12			c0.15			c0.10			0.03	
v/c Ratio		0.47			0.61			0.18			0.05	
Uniform Delay, d1		15.4			16.0			5.0			4.4	
Progression Factor		1.00			1.00			1.00			1.00	
Incremental Delay, d2		0.9			3.1			0.4			0.0	
Delay (s)		16.3			19.1			5.4			4.4	
Level of Service		B			B			A			A	
Approach Delay (s)		16.3			19.1			5.4			4.4	
Approach LOS		B			B			A			A	

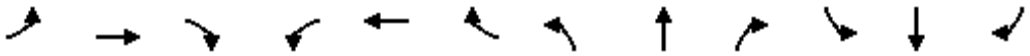
Intersection Summary			
HCM 2000 Control Delay	13.4	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.31		
Actuated Cycle Length (s)	47.6	Sum of lost time (s)	9.0
Intersection Capacity Utilization	47.3%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Movement	NBL	NBT	SBT	SBR	SEL	SER
Lane Configurations						
Traffic Volume (vph)	290	600	585	55	200	190
Future Volume (vph)	290	600	585	55	200	190
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0		4.0	4.0
Lane Util. Factor	1.00	0.91	0.91		1.00	1.00
Frt	1.00	1.00	0.99		1.00	0.85
Flt Protected	0.95	1.00	1.00		0.95	1.00
Satd. Flow (prot)	1770	5085	5020		1770	1583
Flt Permitted	0.95	1.00	1.00		0.95	1.00
Satd. Flow (perm)	1770	5085	5020		1770	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	315	652	636	60	217	207
RTOR Reduction (vph)	0	0	6	0	0	172
Lane Group Flow (vph)	315	652	690	0	217	35
Turn Type	Prot	NA	NA		Prot	Perm
Protected Phases	7	4	8		5	
Permitted Phases						5
Actuated Green, G (s)	26.8	91.7	60.9		20.3	20.3
Effective Green, g (s)	26.8	91.7	60.9		20.3	20.3
Actuated g/C Ratio	0.22	0.76	0.51		0.17	0.17
Clearance Time (s)	4.0	4.0	4.0		4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0		3.0	3.0
Lane Grp Cap (vph)	395	3885	2547		299	267
v/s Ratio Prot	c0.18	0.13	c0.14		c0.12	
v/s Ratio Perm						0.02
v/c Ratio	0.80	0.17	0.27		0.73	0.13
Uniform Delay, d1	44.0	3.8	16.9		47.2	42.4
Progression Factor	1.16	0.16	1.26		1.00	1.00
Incremental Delay, d2	10.6	0.1	0.3		8.5	0.2
Delay (s)	61.6	0.7	21.5		55.7	42.6
Level of Service	E	A	C		E	D
Approach Delay (s)		20.5	21.5		49.3	
Approach LOS		C	C		D	

Intersection Summary			
HCM 2000 Control Delay	26.7	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.49		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	49.7%	ICU Level of Service	A
Analysis Period (min)	15		

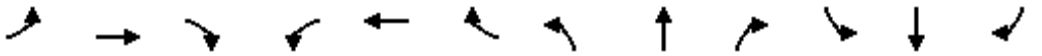
c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	20	0	90	300	295	90	0	0	0	0	60	80
Future Volume (vph)	20	0	90	300	295	90	0	0	0	0	60	80
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0		4.0	4.0	4.0						4.0	
Lane Util. Factor	1.00		1.00	1.00	1.00						1.00	
Frt	1.00		0.85	1.00	0.96						0.92	
Flt Protected	0.95		1.00	0.95	1.00						1.00	
Satd. Flow (prot)	1770		1583	1770	1797						1719	
Flt Permitted	0.85		1.00	0.95	1.00						1.00	
Satd. Flow (perm)	1585		1583	1770	1797						1719	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	22	0	98	326	321	98	0	0	0	0	65	87
RTOR Reduction (vph)	0	0	87	200	15	0	0	0	0	0	70	0
Lane Group Flow (vph)	22	0	11	126	404	0	0	0	0	0	82	0
Turn Type	Perm		Perm	Split	NA						NA	
Protected Phases				8	8						6	
Permitted Phases	4		4									
Actuated Green, G (s)	4.7		4.7	15.6	15.6						8.0	
Effective Green, g (s)	4.7		4.7	15.6	15.6						8.0	
Actuated g/C Ratio	0.12		0.12	0.39	0.39						0.20	
Clearance Time (s)	4.0		4.0	4.0	4.0						4.0	
Vehicle Extension (s)	3.0		3.0	3.0	3.0						3.0	
Lane Grp Cap (vph)	184		184	685	695						341	
v/s Ratio Prot				0.07	c0.22						c0.05	
v/s Ratio Perm	c0.01		0.01									
v/c Ratio	0.12		0.06	0.18	0.58						0.24	
Uniform Delay, d1	15.9		15.8	8.2	9.8						13.6	
Progression Factor	1.00		1.00	1.00	1.00						1.00	
Incremental Delay, d2	0.3		0.1	0.1	1.2						0.4	
Delay (s)	16.2		16.0	8.3	11.0						14.0	
Level of Service	B		B	A	B						B	
Approach Delay (s)		16.0			9.8			0.0			14.0	
Approach LOS		B			A			A			B	

Intersection Summary			
HCM 2000 Control Delay	11.2	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.41		
Actuated Cycle Length (s)	40.3	Sum of lost time (s)	12.0
Intersection Capacity Utilization	40.3%	ICU Level of Service	A
Analysis Period (min)	15		

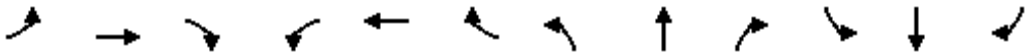
c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	1765	0	330	2355	0	0	0	0	355	190	115
Future Volume (vph)	0	1765	0	330	2355	0	0	0	0	355	190	115
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0		4.0	4.0					4.0	4.0	4.0
Lane Util. Factor		0.91		1.00	0.86					0.95	0.95	1.00
Frt		1.00		1.00	1.00					1.00	1.00	0.85
Flt Protected		1.00		0.95	1.00					0.95	0.99	1.00
Satd. Flow (prot)		5085		1770	6408					1681	1748	1583
Flt Permitted		1.00		0.95	1.00					0.95	0.99	1.00
Satd. Flow (perm)		5085		1770	6408					1681	1748	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	1918	0	359	2560	0	0	0	0	386	207	125
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	40
Lane Group Flow (vph)	0	1918	0	359	2560	0	0	0	0	320	273	85
Turn Type		NA		Prot	NA					Perm	NA	Perm
Protected Phases		2		1	6						4	
Permitted Phases										4		4
Actuated Green, G (s)		55.3		32.8	92.8					32.4	32.4	32.4
Effective Green, g (s)		56.5		33.2	93.7					33.3	33.3	33.3
Actuated g/C Ratio		0.42		0.25	0.69					0.25	0.25	0.25
Clearance Time (s)		5.2		4.4	4.9					4.9	4.9	4.9
Vehicle Extension (s)		3.8		2.0	4.6					2.0	2.0	2.0
Lane Grp Cap (vph)		2128		435	4447					414	431	390
v/s Ratio Prot		c0.38		c0.20	0.40							
v/s Ratio Perm										c0.19	0.16	0.05
v/c Ratio		0.90		0.83	0.58					0.77	0.63	0.22
Uniform Delay, d1		36.6		48.2	10.5					47.3	45.4	40.5
Progression Factor		1.00		1.10	0.07					1.00	1.00	1.00
Incremental Delay, d2		6.7		1.2	0.0					8.0	2.2	0.1
Delay (s)		43.4		54.1	0.8					55.3	47.6	40.6
Level of Service		D		D	A					E	D	D
Approach Delay (s)		43.4			7.4			0.0			49.8	
Approach LOS		D			A			A			D	

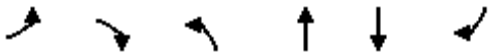
Intersection Summary			
HCM 2000 Control Delay	25.3	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.85		
Actuated Cycle Length (s)	135.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	80.1%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group



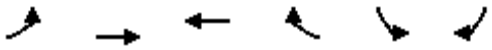
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	320	95	125	255	0	105	0	145	115	180	10
Future Volume (vph)	0	320	95	125	255	0	105	0	145	115	180	10
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0		4.0	4.0		4.0		4.0	4.0	4.0	
Lane Util. Factor		0.95		1.00	0.95		1.00		1.00	1.00	1.00	
Frpb, ped/bikes		0.98		1.00	1.00		1.00		0.98	1.00	1.00	
Flpb, ped/bikes		1.00		0.99	1.00		1.00		1.00	1.00	1.00	
Frt		0.97		1.00	1.00		1.00		0.85	1.00	0.99	
Flt Protected		1.00		0.95	1.00		0.95		1.00	0.95	1.00	
Satd. Flow (prot)		3333		1746	3539		1770		1548	1770	1846	
Flt Permitted		1.00		0.43	1.00		0.95		1.00	0.95	1.00	
Satd. Flow (perm)		3333		790	3539		1770		1548	1770	1846	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	348	103	136	277	0	114	0	158	125	196	11
RTOR Reduction (vph)	0	13	0	0	0	0	0	0	73	0	2	0
Lane Group Flow (vph)	0	438	0	136	277	0	114	0	85	125	205	0
Confl. Peds. (#/hr)			21	21		47	2		4			2
Turn Type		NA		pm+pt	NA		Prot		Perm	Split	NA	
Protected Phases		2		1	6		3			4	4	
Permitted Phases				6					2			
Actuated Green, G (s)		68.8		81.9	81.9		13.7		68.8	20.2	20.2	
Effective Green, g (s)		69.7		82.3	82.8		14.1		69.7	21.1	21.1	
Actuated g/C Ratio		0.54		0.63	0.64		0.11		0.54	0.16	0.16	
Clearance Time (s)		4.9		4.4	4.9		4.4		4.9	4.9	4.9	
Vehicle Extension (s)		6.7		2.0	6.7		3.0		6.7	3.0	3.0	
Lane Grp Cap (vph)		1787		567	2254		191		829	287	299	
v/s Ratio Prot		0.13		c0.02	0.08		c0.06			0.07	c0.11	
v/s Ratio Perm				c0.14					0.05			
v/c Ratio		0.24		0.24	0.12		0.60		0.10	0.44	0.69	
Uniform Delay, d1		16.1		9.9	9.3		55.2		14.8	49.1	51.3	
Progression Factor		1.00		1.00	1.00		1.00		1.00	1.00	1.00	
Incremental Delay, d2		0.3		0.1	0.1		4.9		0.2	1.1	6.4	
Delay (s)		16.4		10.0	9.4		60.2		15.0	50.1	57.7	
Level of Service		B		A	A		E		B	D	E	
Approach Delay (s)		16.4			9.6			34.0			54.9	
Approach LOS		B			A			C			D	

Intersection Summary			
HCM 2000 Control Delay	26.4	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.37		
Actuated Cycle Length (s)	130.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	49.1%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	70	180	335	465	460	150
Future Volume (vph)	70	180	335	465	460	150
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0		4.4	4.0	4.9	
Lane Util. Factor	1.00		1.00	0.91	0.91	
Frpb, ped/bikes	0.99		1.00	1.00	1.00	
Flpb, ped/bikes	1.00		1.00	1.00	1.00	
Frt	0.90		1.00	1.00	0.96	
Flt Protected	0.99		0.95	1.00	1.00	
Satd. Flow (prot)	1639		1770	5085	4898	
Flt Permitted	0.99		0.95	1.00	1.00	
Satd. Flow (perm)	1639		1770	5085	4898	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	76	196	364	505	500	163
RTOR Reduction (vph)	91	0	0	0	31	0
Lane Group Flow (vph)	181	0	364	505	632	0
Confl. Peds. (#/hr)		2				
Turn Type	Prot		Prot	NA	NA	
Protected Phases	2		3	8	4	
Permitted Phases						
Actuated Green, G (s)	18.2		31.1	93.8	58.7	
Effective Green, g (s)	18.2		30.7	93.8	57.8	
Actuated g/C Ratio	0.15		0.26	0.78	0.48	
Clearance Time (s)	4.0		4.0	4.0	4.0	
Vehicle Extension (s)	3.0		3.0	3.0	3.0	
Lane Grp Cap (vph)	248		452	3974	2359	
v/s Ratio Prot	c0.11		c0.21	0.10	c0.13	
v/s Ratio Perm						
v/c Ratio	0.73		0.81	0.13	0.27	
Uniform Delay, d1	48.6		41.8	3.2	18.5	
Progression Factor	1.00		0.91	1.48	1.00	
Incremental Delay, d2	10.5		9.9	0.1	0.3	
Delay (s)	59.1		48.0	4.8	18.8	
Level of Service	E		D	A	B	
Approach Delay (s)	59.1			22.8	18.8	
Approach LOS	E			C	B	

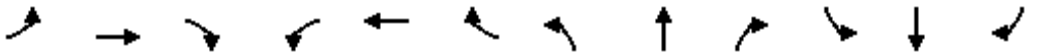
Intersection Summary			
HCM 2000 Control Delay	26.8	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.50		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	13.3
Intersection Capacity Utilization	56.7%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	50	130	70	35	20	30
Future Volume (Veh/h)	50	130	70	35	20	30
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	54	141	76	38	22	33
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type		None	None			
Median storage veh)						
Upstream signal (ft)		1157	644			
pX, platoon unblocked						
vC, conflicting volume	114				344	95
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	114				344	95
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	96				96	97
cM capacity (veh/h)	1475				629	962

Direction, Lane #	EB 1	EB 2	WB 1	SB 1
Volume Total	54	141	114	55
Volume Left	54	0	0	22
Volume Right	0	0	38	33
cSH	1475	1700	1700	793
Volume to Capacity	0.04	0.08	0.07	0.07
Queue Length 95th (ft)	3	0	0	6
Control Delay (s)	7.5	0.0	0.0	9.9
Lane LOS	A			A
Approach Delay (s)	2.1		0.0	9.9
Approach LOS				A

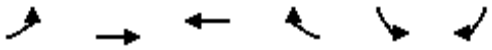
Intersection Summary			
Average Delay	2.6		
Intersection Capacity Utilization	19.4%	ICU Level of Service	A
Analysis Period (min)	15		



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	110	2010	0	0	2610	595	75	310	90	0	0	0
Future Volume (vph)	110	2010	0	0	2610	595	75	310	90	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0			4.0	4.0		4.0				
Lane Util. Factor	1.00	0.91			0.91	1.00		0.95				
Frt	1.00	1.00			1.00	0.85		0.97				
Flt Protected	0.95	1.00			1.00	1.00		0.99				
Satd. Flow (prot)	1770	5085			5085	1583		3412				
Flt Permitted	0.95	1.00			1.00	1.00		0.99				
Satd. Flow (perm)	1770	5085			5085	1583		3412				
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	120	2185	0	0	2837	647	82	337	98	0	0	0
RTOR Reduction (vph)	0	0	0	0	0	128	0	6	0	0	0	0
Lane Group Flow (vph)	120	2185	0	0	2837	519	0	511	0	0	0	0
Turn Type	Prot	NA			NA	Perm	Split	NA				
Protected Phases	5	2			6		4	4				
Permitted Phases						6						
Actuated Green, G (s)	13.6	90.6			72.6	72.6		34.6				
Effective Green, g (s)	14.0	91.5			73.5	73.5		35.5				
Actuated g/C Ratio	0.10	0.68			0.54	0.54		0.26				
Clearance Time (s)	4.4	4.9			4.9	4.9		4.9				
Vehicle Extension (s)	2.0	3.8			4.6	4.6		2.0				
Lane Grp Cap (vph)	183	3446			2768	861		897				
v/s Ratio Prot	0.07	c0.43			c0.56			c0.15				
v/s Ratio Perm						0.33						
v/c Ratio	0.66	0.63			1.02	0.60		0.57				
Uniform Delay, d1	58.2	12.3			30.8	20.9		43.1				
Progression Factor	0.80	0.94			1.00	1.00		1.00				
Incremental Delay, d2	3.2	0.5			23.8	3.1		0.5				
Delay (s)	50.0	12.0			54.6	24.0		43.6				
Level of Service	D	B			D	C		D				
Approach Delay (s)		14.0			48.9			43.6			0.0	
Approach LOS		B			D			D			A	

Intersection Summary			
HCM 2000 Control Delay	35.7	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.86		
Actuated Cycle Length (s)	135.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	80.1%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	0	580	380	290	0	0
Future Volume (Veh/h)	0	580	380	290	0	0
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	630	413	315	0	0
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type		None	None			
Median storage veh)						
Upstream signal (ft)		480	811			
pX, platoon unblocked	0.95				0.98	0.95
vC, conflicting volume	728				886	364
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	616				627	234
tC, single (s)	4.1				6.8	6.9
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	100				100	100
cM capacity (veh/h)	915				406	732

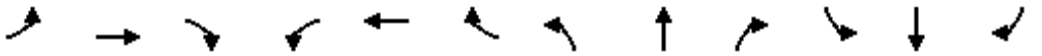
Direction, Lane #	EB 1	EB 2	EB 3	WB 1	WB 2
Volume Total	0	315	315	275	453
Volume Left	0	0	0	0	0
Volume Right	0	0	0	0	315
cSH	1700	1700	1700	1700	1700
Volume to Capacity	0.00	0.19	0.19	0.16	0.27
Queue Length 95th (ft)	0	0	0	0	0
Control Delay (s)	0.0	0.0	0.0	0.0	0.0
Lane LOS					
Approach Delay (s)	0.0			0.0	
Approach LOS					

Intersection Summary			
Average Delay	0.0		
Intersection Capacity Utilization	23.1%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Sign Control	Stop		Stop			Stop
Traffic Volume (vph)	160	0	0	125	305	565
Future Volume (vph)	160	0	0	125	305	565
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	174	0	0	136	332	614

Direction, Lane #	WB 1	NB 1	SB 1	SB 2
Volume Total (vph)	174	136	332	614
Volume Left (vph)	174	0	332	0
Volume Right (vph)	0	136	0	0
Hadj (s)	0.23	-0.57	0.53	0.03
Departure Headway (s)	6.1	4.9	5.8	5.3
Degree Utilization, x	0.30	0.19	0.53	0.90
Capacity (veh/h)	568	707	616	680
Control Delay (s)	11.7	9.0	13.9	35.2
Approach Delay (s)	11.7	9.0	27.7	
Approach LOS	B	A	D	

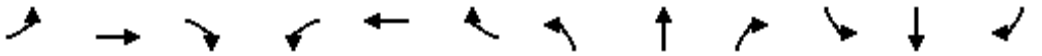
Intersection Summary			
Delay	23.5		
Level of Service	C		
Intersection Capacity Utilization	45.7%	ICU Level of Service	A
Analysis Period (min)	15		



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Traffic Volume (vph)	90	20	60	30	5	10	15	25	5	10	225	480
Future Volume (vph)	90	20	60	30	5	10	15	25	5	10	225	480
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	98	22	65	33	5	11	16	27	5	11	245	522

Direction, Lane #	EB 1	EB 2	WB 1	NB 1	SB 1	SB 2
Volume Total (vph)	109	76	49	48	256	522
Volume Left (vph)	98	0	33	16	11	0
Volume Right (vph)	0	65	11	5	0	522
Hadj (s)	0.48	-0.56	0.03	0.04	0.06	-0.67
Departure Headway (s)	6.9	5.8	6.5	6.1	5.4	4.6
Degree Utilization, x	0.21	0.12	0.09	0.08	0.38	0.67
Capacity (veh/h)	489	570	507	561	653	764
Control Delay (s)	10.5	8.4	10.2	9.6	10.4	15.4
Approach Delay (s)	9.6		10.2	9.6	13.8	
Approach LOS	A		B	A	B	

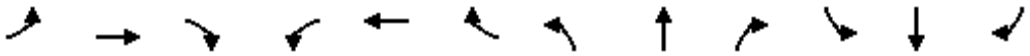
Intersection Summary				
Delay	12.7			
Level of Service	B			
Intersection Capacity Utilization	46.4%	ICU Level of Service		A
Analysis Period (min)	15			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	335	175	540	515	0	0	0	0	245	320	350
Future Volume (vph)	0	335	175	540	515	0	0	0	0	245	320	350
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0	4.0	4.0	4.0					4.0	4.0	4.0
Lane Util. Factor		0.95	1.00	0.97	0.95					0.91	0.91	1.00
Frt		1.00	0.85	1.00	1.00					1.00	1.00	0.85
Flt Protected		1.00	1.00	0.95	1.00					0.95	0.99	1.00
Satd. Flow (prot)		3539	1583	3433	3539					1610	3359	1583
Flt Permitted		1.00	1.00	0.95	1.00					0.95	0.99	1.00
Satd. Flow (perm)		3539	1583	3433	3539					1610	3359	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	364	190	587	560	0	0	0	0	266	348	380
RTOR Reduction (vph)	0	0	105	0	0	0	0	0	0	0	0	234
Lane Group Flow (vph)	0	364	85	587	560	0	0	0	0	186	428	146
Turn Type		NA	Perm	Prot	NA					Perm	NA	Perm
Protected Phases		2		1	6						4	
Permitted Phases			2							4		4
Actuated Green, G (s)		31.3	31.3	16.1	51.8					18.4	18.4	18.4
Effective Green, g (s)		32.2	32.2	16.5	52.7					19.3	19.3	19.3
Actuated g/C Ratio		0.40	0.40	0.21	0.66					0.24	0.24	0.24
Clearance Time (s)		4.9	4.9	4.4	4.9					4.9	4.9	4.9
Vehicle Extension (s)		3.8	3.8	2.0	4.2					2.0	2.0	2.0
Lane Grp Cap (vph)		1424	637	708	2331					388	810	381
v/s Ratio Prot		c0.10		c0.17	0.16							
v/s Ratio Perm			0.05							0.12	0.13	0.09
v/c Ratio		0.26	0.13	0.83	0.24					0.48	0.53	0.38
Uniform Delay, d1		15.9	15.1	30.4	5.5					26.0	26.4	25.4
Progression Factor		1.00	1.00	1.00	1.00					1.00	1.00	1.00
Incremental Delay, d2		0.4	0.4	7.6	0.2					0.3	0.3	0.2
Delay (s)		16.4	15.5	38.0	5.8					26.4	26.7	25.6
Level of Service		B	B	D	A					C	C	C
Approach Delay (s)		16.1			22.3			0.0			26.2	
Approach LOS		B			C			A			C	

Intersection Summary			
HCM 2000 Control Delay	22.4	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.47		
Actuated Cycle Length (s)	80.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	46.9%	ICU Level of Service	A
Analysis Period (min)	15		

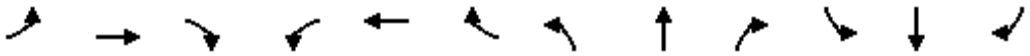
c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	0	25	35	0	0	0	0	0	0	1510	70
Future Volume (Veh/h)	0	0	25	35	0	0	0	0	0	0	1510	70
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	0	27	38	0	0	0	0	0	0	1641	76
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)								1066				
pX, platoon unblocked												
vC, conflicting volume	1679	1679	585	574	1717	0	1717			0		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	1679	1679	585	574	1717	0	1717			0		
tC, single (s)	7.5	6.5	6.9	7.5	6.5	6.9	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	100	100	94	90	100	100	100			100		
cM capacity (veh/h)	62	94	454	378	89	1084	365			1622		

Direction, Lane #	EB 1	WB 1	SB 1	SB 2	SB 3
Volume Total	27	38	656	656	404
Volume Left	0	38	0	0	0
Volume Right	27	0	0	0	76
cSH	454	378	1700	1700	1700
Volume to Capacity	0.06	0.10	0.39	0.39	0.24
Queue Length 95th (ft)	5	8	0	0	0
Control Delay (s)	13.4	15.6	0.0	0.0	0.0
Lane LOS	B	C			
Approach Delay (s)	13.4	15.6	0.0		
Approach LOS	B	C			

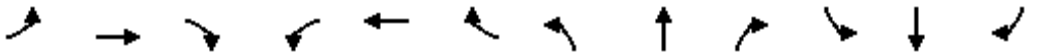
Intersection Summary				
Average Delay	0.5			
Intersection Capacity Utilization	49.2%	ICU Level of Service	A	
Analysis Period (min)	15			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	170	135	165	340	0	0	0	0	430	1235	345
Future Volume (vph)	0	170	135	165	340	0	0	0	0	430	1235	345
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0	4.0		4.0					4.0	4.0	
Lane Util. Factor		1.00	1.00		0.95					1.00	0.91	
Frt		1.00	0.85		1.00					1.00	0.97	
Flt Protected		1.00	1.00		0.98					0.95	1.00	
Satd. Flow (prot)		1863	1583		3482					1770	4919	
Flt Permitted		1.00	1.00		0.78					0.95	1.00	
Satd. Flow (perm)		1863	1583		2749					1770	4919	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	185	147	179	370	0	0	0	0	467	1342	375
RTOR Reduction (vph)	0	0	35	0	0	0	0	0	0	0	77	0
Lane Group Flow (vph)	0	185	112	0	549	0	0	0	0	467	1640	0
Turn Type		NA	Perm	Perm	NA					Perm	NA	
Protected Phases		4			8						6	
Permitted Phases			4	8						6		
Actuated Green, G (s)		21.3	21.3		21.3					30.7	30.7	
Effective Green, g (s)		24.0	24.0		24.0					33.0	33.0	
Actuated g/C Ratio		0.37	0.37		0.37					0.51	0.51	
Clearance Time (s)		6.7	6.7		6.7					6.3	6.3	
Vehicle Extension (s)		2.0	2.0		2.5					4.6	4.6	
Lane Grp Cap (vph)		687	584		1015					898	2497	
v/s Ratio Prot		0.10									c0.33	
v/s Ratio Perm			0.07		c0.20					0.26		
v/c Ratio		0.27	0.19		0.54					0.52	0.66	
Uniform Delay, d1		14.4	13.9		16.2					10.7	11.8	
Progression Factor		1.00	1.00		1.00					1.00	1.00	
Incremental Delay, d2		1.0	0.7		2.1					2.2	1.4	
Delay (s)		15.3	14.7		18.2					12.9	13.2	
Level of Service		B	B		B					B	B	
Approach Delay (s)		15.0			18.2			0.0			13.1	
Approach LOS		B			B			A			B	

Intersection Summary			
HCM 2000 Control Delay	14.2	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.61		
Actuated Cycle Length (s)	65.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	64.7%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

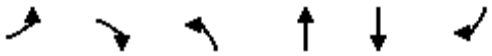


Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	645	90	35	490	0	0	0	0	540	330	505
Future Volume (vph)	0	645	90	35	490	0	0	0	0	540	330	505
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		6.7		4.0	6.7						6.3	4.0
Lane Util. Factor		0.95		1.00	0.95						0.86	0.86
Frt		0.98		1.00	1.00						1.00	0.85
Flt Protected		1.00		0.95	1.00						0.97	1.00
Satd. Flow (prot)		3474		1770	3539						4661	1362
Flt Permitted		1.00		0.95	1.00						0.97	1.00
Satd. Flow (perm)		3474		1770	3539						4661	1362
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	701	98	38	533	0	0	0	0	587	359	549
RTOR Reduction (vph)	0	16	0	0	0	0	0	0	0	0	0	127
Lane Group Flow (vph)	0	783	0	38	533	0	0	0	0	0	946	422
Turn Type		NA		Prot	NA					Perm	NA	Perm
Protected Phases		2		1	6						4	
Permitted Phases										4		4
Actuated Green, G (s)		23.4		1.8	27.9						25.1	25.1
Effective Green, g (s)		21.6		2.2	27.8						24.2	26.5
Actuated g/C Ratio		0.33		0.03	0.43						0.37	0.41
Clearance Time (s)		4.9		4.4	6.6						5.4	5.4
Vehicle Extension (s)		1.0		2.0	1.0						1.0	1.0
Lane Grp Cap (vph)		1154		59	1513						1735	555
v/s Ratio Prot		c0.23		c0.02	0.15							
v/s Ratio Perm											0.20	c0.31
v/c Ratio		0.68		0.64	0.35						0.94dl	0.76
Uniform Delay, d1		18.7		31.0	12.5						16.1	16.5
Progression Factor		1.00		1.33	0.86						1.00	1.00
Incremental Delay, d2		3.2		15.4	0.6						0.2	5.3
Delay (s)		21.9		56.7	11.4						16.3	21.8
Level of Service		C		E	B						B	C
Approach Delay (s)		21.9			14.4			0.0			18.3	
Approach LOS		C			B			A			B	

Intersection Summary			
HCM 2000 Control Delay	18.5	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.75		
Actuated Cycle Length (s)	65.0	Sum of lost time (s)	17.0
Intersection Capacity Utilization	78.5%	ICU Level of Service	D
Analysis Period (min)	15		

dl Defacto Left Lane. Recode with 1 though lane as a left lane.

c Critical Lane Group



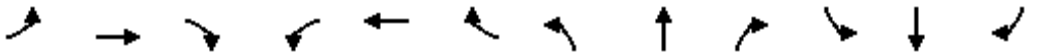
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	110	1090	1790	780	655	120
Future Volume (vph)	110	1090	1790	780	655	120
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	0.88	0.97	0.91	0.91	1.00
Frpb, ped/bikes	1.00	0.99	1.00	1.00	1.00	1.00
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected	0.95	1.00	0.95	1.00	1.00	1.00
Satd. Flow (prot)	1770	2767	3433	5085	5085	1583
Flt Permitted	0.95	1.00	0.95	1.00	1.00	1.00
Satd. Flow (perm)	1770	2767	3433	5085	5085	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	120	1185	1946	848	712	130
RTOR Reduction (vph)	0	19	0	0	0	1
Lane Group Flow (vph)	120	1166	1946	848	712	129
Confl. Peds. (#/hr)	129	61	34			
Turn Type	Prot	pm+ov	Prot	NA	NA	pm+ov
Protected Phases	5	7	7	4	8	5
Permitted Phases		5				8
Actuated Green, G (s)	13.4	76.0	62.6	98.6	32.0	45.4
Effective Green, g (s)	13.4	76.0	62.6	98.6	32.0	45.4
Actuated g/C Ratio	0.11	0.63	0.52	0.82	0.27	0.38
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	197	1844	1790	4178	1356	651
v/s Ratio Prot	0.07	c0.33	c0.57	0.17	c0.14	0.02
v/s Ratio Perm		0.09				0.06
v/c Ratio	0.61	0.63	1.09	0.20	0.53	0.20
Uniform Delay, d1	50.8	13.5	28.7	2.3	37.5	25.1
Progression Factor	1.00	1.00	0.40	0.55	0.81	0.94
Incremental Delay, d2	5.3	0.7	43.4	0.0	1.4	0.1
Delay (s)	56.1	14.2	54.7	1.3	31.9	23.8
Level of Service	E	B	D	A	C	C
Approach Delay (s)	18.0			38.5	30.7	
Approach LOS	B			D	C	

Intersection Summary			
HCM 2000 Control Delay	31.8	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.87		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	79.8%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	SEL	SET	SER	NWL	NWT	NWR
Lane Configurations												
Traffic Volume (vph)	95	270	0	0	540	315	60	0	60	250	20	180
Future Volume (vph)	95	270	0	0	540	315	60	0	60	250	20	180
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0			4.0	4.0		4.0		4.0	4.0	4.0
Lane Util. Factor	1.00	0.95			0.95	1.00		1.00		0.95	0.95	1.00
Frt	1.00	1.00			1.00	0.85		0.93		1.00	1.00	0.85
Flt Protected	0.95	1.00			1.00	1.00		0.98		0.95	0.96	1.00
Satd. Flow (prot)	1770	3539			3539	1583		1695		1681	1697	1583
Flt Permitted	0.95	1.00			1.00	1.00		0.76		0.50	0.54	1.00
Satd. Flow (perm)	1770	3539			3539	1583		1326		893	964	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	103	293	0	0	587	342	65	0	65	272	22	196
RTOR Reduction (vph)	0	0	0	0	0	228	0	118	0	0	0	151
Lane Group Flow (vph)	103	293	0	0	587	114	0	12	0	147	147	45
Turn Type	Prot	NA			NA	Perm	Perm	NA		Perm	NA	Perm
Protected Phases	5	2			6			8			7	
Permitted Phases						6	8			7		7
Actuated Green, G (s)	4.6	28.4			19.8	19.8		5.4		13.7	13.7	13.7
Effective Green, g (s)	4.6	28.4			19.8	19.8		5.4		13.7	13.7	13.7
Actuated g/C Ratio	0.08	0.48			0.33	0.33		0.09		0.23	0.23	0.23
Clearance Time (s)	4.0	4.0			4.0	4.0		4.0		4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0			3.0	3.0		3.0		3.0	3.0	3.0
Lane Grp Cap (vph)	136	1689			1177	526		120		205	221	364
v/s Ratio Prot	c0.06	0.08			c0.17							
v/s Ratio Perm						0.07		c0.01		c0.16	0.15	0.03
v/c Ratio	0.76	0.17			0.50	0.22		0.10		0.72	0.67	0.12
Uniform Delay, d1	26.9	8.9			15.9	14.3		24.8		21.1	20.8	18.1
Progression Factor	1.00	1.00			1.00	1.00		1.00		1.00	1.00	1.00
Incremental Delay, d2	21.1	0.2			1.5	0.9		0.4		11.3	7.3	0.2
Delay (s)	48.0	9.1			17.4	15.2		25.2		32.4	28.2	18.3
Level of Service	D	A			B	B		C		C	C	B
Approach Delay (s)		19.2			16.6			25.2			25.5	
Approach LOS		B			B			C			C	

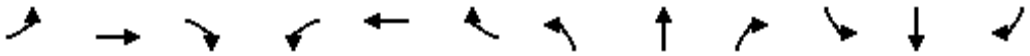
Intersection Summary			
HCM 2000 Control Delay	19.9	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.54		
Actuated Cycle Length (s)	59.5	Sum of lost time (s)	16.0
Intersection Capacity Utilization	43.9%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group



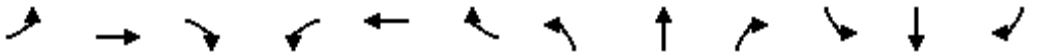
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	210	50	270	600	0	0	0	0	165	20	225
Future Volume (vph)	0	210	50	270	600	0	0	0	0	165	20	225
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0		5.9	5.9					1.8	1.8	1.8
Lane Util. Factor		0.95		1.00	1.00					0.95	0.95	1.00
Frpb, ped/bikes		1.00		1.00	1.00					1.00	1.00	1.00
Flpb, ped/bikes		1.00		1.00	1.00					1.00	1.00	1.00
Frt		0.97		1.00	1.00					1.00	1.00	0.85
Flt Protected		1.00		0.95	1.00					0.95	0.96	1.00
Satd. Flow (prot)		3426		1763	1863					1681	1702	1583
Flt Permitted		1.00		0.58	1.00					0.95	0.96	1.00
Satd. Flow (perm)		3426		1074	1863					1681	1702	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	228	54	293	652	0	0	0	0	179	22	245
RTOR Reduction (vph)	0	26	0	0	0	0	0	0	0	0	0	80
Lane Group Flow (vph)	0	256	0	293	652	0	0	0	0	97	104	165
Confl. Peds. (#/hr)	5		5	5		10						
Turn Type		NA		Perm	NA					Perm	NA	custom
Protected Phases		7			8						6	7
Permitted Phases				8						6		6
Actuated Green, G (s)		11.0		25.4	25.4					9.5	9.5	20.5
Effective Green, g (s)		11.0		25.7	25.7					11.7	11.7	24.9
Actuated g/C Ratio		0.18		0.43	0.43					0.19	0.19	0.41
Clearance Time (s)		4.0		6.2	6.2					4.0	4.0	4.0
Vehicle Extension (s)		3.0		2.0	2.0					3.0	3.0	3.0
Lane Grp Cap (vph)		627		459	796					327	331	703
v/s Ratio Prot		c0.07			c0.35							0.05
v/s Ratio Perm				0.27						0.06	0.06	0.05
v/c Ratio		0.41		0.64	0.82					0.30	0.31	0.24
Uniform Delay, d1		21.7		13.5	15.2					20.7	20.8	11.4
Progression Factor		1.00		1.00	1.00					1.00	1.00	1.00
Incremental Delay, d2		0.4		2.1	6.3					0.5	0.5	0.2
Delay (s)		22.1		15.7	21.4					21.2	21.3	11.6
Level of Service		C		B	C					C	C	B
Approach Delay (s)		22.1			19.6			0.0			15.9	
Approach LOS		C			B			A			B	

Intersection Summary			
HCM 2000 Control Delay	19.1	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.60		
Actuated Cycle Length (s)	60.1	Sum of lost time (s)	11.7
Intersection Capacity Utilization	53.8%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



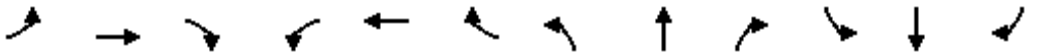
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	5	20	20	420	95	170	30	1290	160	125	715	120
Future Volume (vph)	5	20	20	420	95	170	30	1290	160	125	715	120
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.3	4.3		4.0	4.0		4.0	4.0	
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	0.91		1.00	0.91	
Frpb, ped/bikes	1.00	0.99		1.00	1.00		1.00	1.00		1.00	1.00	
Flpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Frt	1.00	0.93		1.00	0.90		1.00	0.98		1.00	0.98	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1770	1710		1764	1683		1770	5001		1770	4960	
Flt Permitted	0.47	1.00		0.73	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (perm)	870	1710		1352	1683		1770	5001		1770	4960	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	5	22	22	457	103	185	33	1402	174	136	777	130
RTOR Reduction (vph)	0	14	0	0	75	0	0	16	0	0	24	0
Lane Group Flow (vph)	5	30	0	457	213	0	33	1560	0	136	883	0
Confl. Peds. (#/hr)			4	4			1					1
Turn Type	Perm	NA		Perm	NA		Prot	NA		Prot	NA	
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4			8								
Actuated Green, G (s)	32.6	32.6		31.9	31.9		3.5	33.4		9.1	38.8	
Effective Green, g (s)	32.6	32.6		32.3	32.3		3.5	34.8		9.6	40.9	
Actuated g/C Ratio	0.37	0.37		0.36	0.36		0.04	0.39		0.11	0.46	
Clearance Time (s)	4.0	4.0		4.7	4.7		4.0	5.4		4.5	6.1	
Vehicle Extension (s)	2.0	2.0		3.0	3.0		2.0	4.8		3.0	3.7	
Lane Grp Cap (vph)	318	626		490	610		69	1955		190	2279	
v/s Ratio Prot		0.02			0.13		0.02	c0.31		c0.08	0.18	
v/s Ratio Perm	0.01			c0.34								
v/c Ratio	0.02	0.05		0.93	0.35		0.48	0.80		0.72	0.39	
Uniform Delay, d1	18.0	18.2		27.3	20.7		41.9	24.0		38.4	15.8	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	0.0	0.0		24.8	0.3		1.9	3.5		12.1	0.5	
Delay (s)	18.0	18.2		52.1	21.0		43.8	27.5		50.5	16.3	
Level of Service	B	B		D	C		D	C		D	B	
Approach Delay (s)		18.2			40.1			27.8			20.8	
Approach LOS		B			D			C			C	

Intersection Summary			
HCM 2000 Control Delay	28.2	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.84		
Actuated Cycle Length (s)	89.0	Sum of lost time (s)	12.3
Intersection Capacity Utilization	75.6%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	645	565	145	140	715	140	290	670	95	75	670	215
Future Volume (vph)	645	565	145	140	715	140	290	670	95	75	670	215
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	4.0
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00	0.91		1.00	0.91	1.00
Frpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	0.99
Flpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	1.00
Frt	1.00	0.97		1.00	0.98		1.00	0.98		1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1770	3431		1770	3443		1770	4982		1770	5085	1571
Flt Permitted	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)	1770	3431		1770	3443		1770	4982		1770	5085	1571
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	701	614	158	152	777	152	315	728	103	82	728	234
RTOR Reduction (vph)	0	17	0	0	13	0	0	14	0	0	0	51
Lane Group Flow (vph)	701	755	0	152	916	0	315	817	0	82	728	183
Confl. Peds. (#/hr)	4					4	5		1	1		5
Turn Type	Prot	NA		Prot	NA		Prot	NA		Prot	NA	pm+ov
Protected Phases	7	4		3	8		5	2		1	6	7
Permitted Phases												6
Actuated Green, G (s)	40.6	57.2		15.0	31.0		18.6	30.4		8.5	20.2	60.8
Effective Green, g (s)	41.0	58.4		15.4	32.8		19.0	31.3		8.9	21.2	61.6
Actuated g/C Ratio	0.32	0.45		0.12	0.25		0.15	0.24		0.07	0.16	0.47
Clearance Time (s)	4.4	5.2		4.4	5.8		4.4	4.9		4.4	5.0	4.4
Vehicle Extension (s)	2.0	3.9		2.0	2.7		2.0	3.3		2.0	4.1	2.0
Lane Grp Cap (vph)	558	1541		209	868		258	1199		121	829	744
v/s Ratio Prot	c0.40	0.22		0.09	c0.27		c0.18	0.16		0.05	c0.14	0.08
v/s Ratio Perm												0.04
v/c Ratio	1.26	0.49		0.73	1.06		1.22	0.68		0.68	0.88	0.25
Uniform Delay, d1	44.5	25.3		55.3	48.6		55.5	44.8		59.1	53.1	20.4
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	129.4	0.3		10.2	46.3		129.1	3.1		11.2	12.7	0.1
Delay (s)	173.9	25.6		65.5	94.9		184.6	48.0		70.4	65.8	20.4
Level of Service	F	C		E	F		F	D		E	E	C
Approach Delay (s)		96.2			90.8			85.5			56.0	
Approach LOS		F			F			F			E	

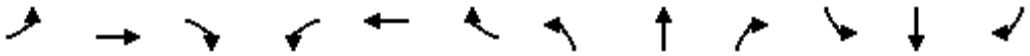
Intersection Summary			
HCM 2000 Control Delay	83.5	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.12		
Actuated Cycle Length (s)	130.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	104.6%	ICU Level of Service	G
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	105	335	140	320	350	95	225	110	200	70	150	95
Future Volume (vph)	105	335	140	320	350	95	225	110	200	70	150	95
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	5.5	5.5	4.0	5.4	5.4
Lane Util. Factor	1.00	0.95	0.88	0.97	0.95	1.00	0.97	1.00	1.00	1.00	0.91	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1770	3539	2787	3433	3539	1583	3433	1863	1583	1770	5085	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1770	3539	2787	3433	3539	1583	3433	1863	1583	1770	5085	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	114	364	152	348	380	103	245	120	217	76	163	103
RTOR Reduction (vph)	0	0	81	0	0	62	0	0	148	0	0	82
Lane Group Flow (vph)	114	364	71	348	380	41	245	120	69	76	163	21
Turn Type	Prot	NA	pm+ov	Prot	NA	Perm	Prot	NA	pm+ov	Prot	NA	Perm
Protected Phases	5	2	3	1	6		3	8	1	7	4	
Permitted Phases			2			6			8			4
Actuated Green, G (s)	9.0	32.9	40.6	10.9	34.8	34.8	7.7	19.8	30.7	6.9	19.0	19.0
Effective Green, g (s)	9.4	33.8	41.4	11.3	35.7	35.7	8.1	19.2	28.5	7.3	18.5	18.5
Actuated g/C Ratio	0.11	0.38	0.46	0.13	0.40	0.40	0.09	0.22	0.32	0.08	0.21	0.21
Clearance Time (s)	4.4	4.9	4.4	4.4	4.9	4.9	4.4	4.9	4.4	4.4	4.9	4.9
Vehicle Extension (s)	2.0	2.1	2.0	2.0	2.3	2.3	2.0	4.5	2.0	2.0	4.5	4.5
Lane Grp Cap (vph)	186	1342	1294	435	1417	634	312	401	506	145	1055	328
v/s Ratio Prot	0.06	0.10	0.00	c0.10	c0.11		c0.07	c0.06	0.02	0.04	0.03	
v/s Ratio Perm			0.02			0.03			0.03			0.01
v/c Ratio	0.61	0.27	0.05	0.80	0.27	0.07	0.79	0.30	0.14	0.52	0.15	0.07
Uniform Delay, d1	38.1	19.1	13.1	37.8	17.9	16.4	39.6	29.3	21.6	39.2	28.9	28.4
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	4.2	0.5	0.0	9.6	0.5	0.2	11.3	0.7	0.0	1.6	0.1	0.1
Delay (s)	42.3	19.6	13.1	47.4	18.4	16.6	51.0	30.0	21.6	40.8	29.0	28.5
Level of Service	D	B	B	D	B	B	D	C	C	D	C	C
Approach Delay (s)		22.2			30.3			35.7			31.5	
Approach LOS		C			C			D			C	

Intersection Summary			
HCM 2000 Control Delay	29.6	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.43		
Actuated Cycle Length (s)	89.1	Sum of lost time (s)	19.0
Intersection Capacity Utilization	45.1%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group



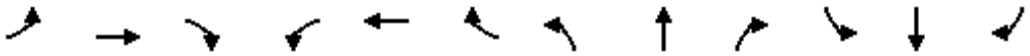
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	135	225	60	15	140	210	40	165	240	5	5	20
Future Volume (vph)	135	225	60	15	140	210	40	165	240	5	5	20
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0			4.0			4.0			4.0	
Lane Util. Factor		1.00			1.00			1.00			1.00	
Frpb, ped/bikes		1.00			1.00			0.98			1.00	
Flpb, ped/bikes		1.00			1.00			1.00			1.00	
Frt		0.98			0.92			0.93			0.91	
Flt Protected		0.98			1.00			1.00			0.99	
Satd. Flow (prot)		1791			1714			1686			1676	
Flt Permitted		0.78			0.98			0.97			0.95	
Satd. Flow (perm)		1418			1682			1647			1600	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	147	245	65	16	152	228	43	179	261	5	5	22
RTOR Reduction (vph)	0	8	0	0	41	0	0	62	0	0	16	0
Lane Group Flow (vph)	0	449	0	0	355	0	0	421	0	0	16	0
Confl. Peds. (#/hr)			3	3					8	8		
Turn Type	pm+pt	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases	5	2			6			8			4	
Permitted Phases	2			6			8			4		
Actuated Green, G (s)		39.2			39.2			19.1			19.1	
Effective Green, g (s)		40.1			40.1			20.0			20.0	
Actuated g/C Ratio		0.59			0.59			0.29			0.29	
Clearance Time (s)		4.9			4.9			4.9			4.9	
Vehicle Extension (s)		2.0			2.0			2.0			2.0	
Lane Grp Cap (vph)		834			990			483			469	
v/s Ratio Prot												
v/s Ratio Perm		c0.32			0.21			c0.26			0.01	
v/c Ratio		0.54			0.36			0.87			0.04	
Uniform Delay, d1		8.4			7.3			22.8			17.2	
Progression Factor		1.00			1.00			1.00			1.00	
Incremental Delay, d2		0.3			1.0			15.3			0.0	
Delay (s)		8.8			8.3			38.1			17.2	
Level of Service		A			A			D			B	
Approach Delay (s)		8.8			8.3			38.1			17.2	
Approach LOS		A			A			D			B	

Intersection Summary			
HCM 2000 Control Delay	19.2	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.69		
Actuated Cycle Length (s)	68.1	Sum of lost time (s)	12.0
Intersection Capacity Utilization	84.3%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	460	145	215	620	145	145
Future Volume (vph)	460	145	215	620	145	145
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0		4.0	4.9	4.0	4.0
Lane Util. Factor	0.91		1.00	0.95	1.00	1.00
Frpb, ped/bikes	0.99		1.00	1.00	1.00	1.00
Flpb, ped/bikes	1.00		1.00	1.00	1.00	1.00
Frt	0.96		1.00	1.00	1.00	0.85
Flt Protected	1.00		0.95	1.00	0.95	1.00
Satd. Flow (prot)	4867		1770	3539	1770	1583
Flt Permitted	1.00		0.95	1.00	0.95	1.00
Satd. Flow (perm)	4867		1770	3539	1770	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	500	158	234	674	158	158
RTOR Reduction (vph)	73	0	0	0	0	121
Lane Group Flow (vph)	585	0	234	674	158	37
Confl. Peds. (#/hr)		7	7		30	15
Turn Type	NA		Prot	NA	Prot	Prot
Protected Phases	2		1	6	8	8
Permitted Phases						
Actuated Green, G (s)	22.1		10.3	36.8	13.3	13.3
Effective Green, g (s)	24.0		10.7	36.8	14.2	14.2
Actuated g/C Ratio	0.40		0.18	0.61	0.24	0.24
Clearance Time (s)	4.9		4.4	4.9	4.9	4.9
Vehicle Extension (s)	2.9		2.0	2.0	2.0	2.0
Lane Grp Cap (vph)	1950		316	2174	419	375
v/s Ratio Prot	0.12		c0.13	c0.19	c0.09	0.02
v/s Ratio Perm						
v/c Ratio	0.30		0.74	0.31	0.38	0.10
Uniform Delay, d1	12.2		23.3	5.5	19.1	17.9
Progression Factor	1.00		1.00	1.00	1.00	1.00
Incremental Delay, d2	0.4		7.9	0.4	0.2	0.0
Delay (s)	12.6		31.2	5.9	19.4	17.9
Level of Service	B		C	A	B	B
Approach Delay (s)	12.6			12.4	18.6	
Approach LOS	B			B	B	

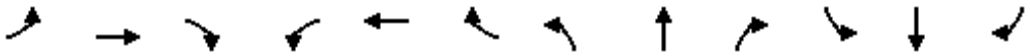
Intersection Summary			
HCM 2000 Control Delay	13.5	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.43		
Actuated Cycle Length (s)	59.9	Sum of lost time (s)	11.0
Intersection Capacity Utilization	47.4%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Traffic Volume (vph)	5	10	5	30	10	30	25	150	25	45	170	40
Future Volume (vph)	5	10	5	30	10	30	25	150	25	45	170	40
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	5	11	5	33	11	33	27	163	27	49	185	43

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total (vph)	21	77	217	277
Volume Left (vph)	5	33	27	49
Volume Right (vph)	5	33	27	43
Hadj (s)	-0.06	-0.14	-0.02	-0.02
Departure Headway (s)	5.1	4.9	4.4	4.4
Degree Utilization, x	0.03	0.10	0.27	0.34
Capacity (veh/h)	631	661	782	794
Control Delay (s)	8.2	8.5	9.0	9.6
Approach Delay (s)	8.2	8.5	9.0	9.6
Approach LOS	A	A	A	A

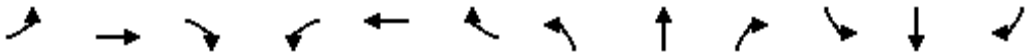
Intersection Summary				
Delay	9.2			
Level of Service	A			
Intersection Capacity Utilization	35.5%	ICU Level of Service	A	
Analysis Period (min)	15			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Traffic Volume (vph)	20	5	10	15	20	10	25	135	25	40	110	60
Future Volume (vph)	20	5	10	15	20	10	25	135	25	40	110	60
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	22	5	11	16	22	11	27	147	27	43	120	65

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total (vph)	38	49	201	228
Volume Left (vph)	22	16	27	43
Volume Right (vph)	11	11	27	65
Hadj (s)	-0.02	-0.04	-0.02	-0.10
Departure Headway (s)	4.9	4.9	4.3	4.2
Degree Utilization, x	0.05	0.07	0.24	0.27
Capacity (veh/h)	664	669	802	818
Control Delay (s)	8.2	8.2	8.7	8.8
Approach Delay (s)	8.2	8.2	8.7	8.8
Approach LOS	A	A	A	A

Intersection Summary				
Delay	8.7			
Level of Service	A			
Intersection Capacity Utilization	28.8%	ICU Level of Service	A	
Analysis Period (min)	15			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Traffic Volume (vph)	5	15	15	95	10	10	20	250	300	10	90	5
Future Volume (vph)	5	15	15	95	10	10	20	250	300	10	90	5
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	5	16	16	103	11	11	22	272	326	11	98	5

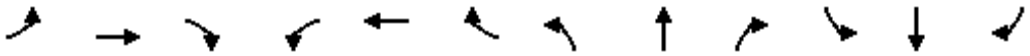
Direction, Lane #	EB 1	WB 1	NB 1	NB 2	SB 1
Volume Total (vph)	37	125	294	326	114
Volume Left (vph)	5	103	22	0	11
Volume Right (vph)	16	11	0	326	5
Hadj (s)	-0.20	0.15	0.07	-0.67	0.03
Departure Headway (s)	5.4	5.6	5.2	4.4	5.1
Degree Utilization, x	0.06	0.19	0.42	0.40	0.16
Capacity (veh/h)	596	594	683	795	669
Control Delay (s)	8.7	16.0	10.7	9.1	9.1
Approach Delay (s)	8.7	16.0	9.9		9.1
Approach LOS	A	C	A		A

Intersection Summary				
Delay	15.2			
Level of Service	C			
Intersection Capacity Utilization	52.9%	ICU Level of Service	A	
Analysis Period (min)	15			

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Sign Control	Stop			Stop	Stop	
Traffic Volume (vph)	25	15	35	35	40	145
Future Volume (vph)	25	15	35	35	40	145
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	27	16	38	38	43	158

Direction, Lane #	EB 1	WB 1	NB 1
Volume Total (vph)	43	76	201
Volume Left (vph)	0	38	43
Volume Right (vph)	16	0	158
Hadj (s)	-0.19	0.13	-0.39
Departure Headway (s)	4.2	4.5	3.8
Degree Utilization, x	0.05	0.09	0.21
Capacity (veh/h)	810	756	921
Control Delay (s)	7.4	8.0	7.8
Approach Delay (s)	7.4	8.0	7.8
Approach LOS	A	A	A

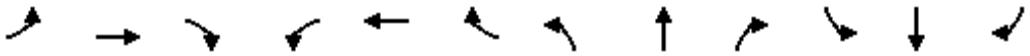
Intersection Summary			
Delay	7.8		
Level of Service	A		
Intersection Capacity Utilization	35.3%	ICU Level of Service	A
Analysis Period (min)	15		



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Traffic Volume (vph)	10	10	5	40	20	15	10	135	90	10	35	15
Future Volume (vph)	10	10	5	40	20	15	10	135	90	10	35	15
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	11	11	5	43	22	16	11	147	98	11	38	16

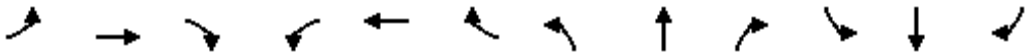
Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total (vph)	27	81	256	65
Volume Left (vph)	11	43	11	11
Volume Right (vph)	5	16	98	16
Hadj (s)	0.00	0.02	-0.19	-0.08
Departure Headway (s)	4.7	4.6	4.0	4.3
Degree Utilization, x	0.04	0.10	0.29	0.08
Capacity (veh/h)	701	716	863	786
Control Delay (s)	7.9	8.2	8.7	7.7
Approach Delay (s)	7.9	8.2	8.7	7.7
Approach LOS	A	A	A	A

Intersection Summary				
Delay	8.4			
Level of Service	A			
Intersection Capacity Utilization	36.2%	ICU Level of Service	A	
Analysis Period (min)	15			



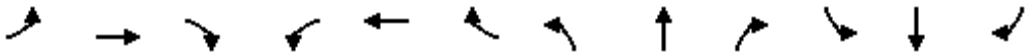
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	295	105	85	10	25	5	250	260	35	20	50	70
Future Volume (vph)	295	105	85	10	25	5	250	260	35	20	50	70
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0			4.0		4.0	4.0		4.0	4.0	
Lane Util. Factor		1.00			1.00		1.00	1.00		1.00	1.00	
Frpb, ped/bikes		1.00			1.00		1.00	1.00		1.00	0.99	
Flpb, ped/bikes		1.00			1.00		1.00	1.00		1.00	1.00	
Frt		0.98			0.98		1.00	0.98		1.00	0.91	
Flt Protected		0.97			0.99		0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1761			1807		1763	1824		1764	1675	
Flt Permitted		0.79			0.89		0.67	1.00		0.50	1.00	
Satd. Flow (perm)		1431			1633		1250	1824		930	1675	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	321	114	92	11	27	5	272	283	38	22	54	76
RTOR Reduction (vph)	0	14	0	0	3	0	0	7	0	0	43	0
Lane Group Flow (vph)	0	513	0	0	40	0	272	314	0	22	87	0
Confl. Peds. (#/hr)	5					5	3		4	4		3
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		8			4			2			6	
Permitted Phases	8			4			2			6		
Actuated Green, G (s)		23.4			23.4		24.4	24.4		24.4	24.4	
Effective Green, g (s)		23.4			23.4		24.4	24.4		24.4	24.4	
Actuated g/C Ratio		0.42			0.42		0.44	0.44		0.44	0.44	
Clearance Time (s)		4.0			4.0		4.0	4.0		4.0	4.0	
Vehicle Extension (s)		2.0			2.0		4.4	4.4		2.1	2.1	
Lane Grp Cap (vph)		600			684		546	797		406	732	
v/s Ratio Prot								0.17			0.05	
v/s Ratio Perm		c0.36			0.02		c0.22			0.02		
v/c Ratio		0.86			0.06		0.50	0.39		0.05	0.12	
Uniform Delay, d1		14.7			9.6		11.3	10.7		9.0	9.3	
Progression Factor		1.00			1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2		11.1			0.0		3.2	1.5		0.3	0.3	
Delay (s)		25.7			9.7		14.5	12.1		9.3	9.7	
Level of Service		C			A		B	B		A	A	
Approach Delay (s)		25.7			9.7			13.2			9.6	
Approach LOS		C			A			B			A	

Intersection Summary			
HCM 2000 Control Delay	17.7	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.67		
Actuated Cycle Length (s)	55.8	Sum of lost time (s)	8.0
Intersection Capacity Utilization	60.9%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	35	420	150	215	705	80	110	5	270	5	20	20
Future Volume (vph)	35	420	150	215	705	80	110	5	270	5	20	20
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0			4.0			4.0	
Lane Util. Factor	1.00	0.91		1.00	0.95			1.00			1.00	
Frpb, ped/bikes	1.00	1.00		1.00	1.00			0.99			1.00	
Flpb, ped/bikes	1.00	1.00		1.00	1.00			1.00			1.00	
Frt	1.00	0.96		1.00	0.98			0.91			0.94	
Flt Protected	0.95	1.00		0.95	1.00			0.99			0.99	
Satd. Flow (prot)	1769	4885		1770	3477			1638			1740	
Flt Permitted	0.33	1.00		0.32	1.00			0.89			0.96	
Satd. Flow (perm)	617	4885		602	3477			1472			1685	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	38	457	163	234	766	87	120	5	293	5	22	22
RTOR Reduction (vph)	0	77	0	0	10	0	0	148	0	0	16	0
Lane Group Flow (vph)	38	543	0	234	843	0	0	270	0	0	33	0
Confl. Peds. (#/hr)	2					2			13	13		
Turn Type	pm+pt	NA		pm+pt	NA		Perm	NA		Perm	NA	
Protected Phases	5	2		1	6			8			4	
Permitted Phases	2			6			8			4		
Actuated Green, G (s)	22.1	20.7		33.3	27.5			14.2			14.2	
Effective Green, g (s)	22.9	21.7		33.7	28.4			15.1			15.1	
Actuated g/C Ratio	0.40	0.38		0.59	0.50			0.26			0.26	
Clearance Time (s)	4.4	5.0		4.4	4.9			4.9			4.9	
Vehicle Extension (s)	2.0	3.3		2.0	3.3			2.0			2.0	
Lane Grp Cap (vph)	282	1849		527	1723			387			444	
v/s Ratio Prot	0.00	0.11		c0.07	c0.24							
v/s Ratio Perm	0.05			0.20				c0.18			0.02	
v/c Ratio	0.13	0.29		0.44	0.49			0.70			0.07	
Uniform Delay, d1	10.6	12.4		5.9	9.6			19.0			15.8	
Progression Factor	1.00	1.00		1.00	1.00			1.00			1.00	
Incremental Delay, d2	0.1	0.4		0.2	1.0			4.4			0.0	
Delay (s)	10.6	12.8		6.2	10.6			23.4			15.9	
Level of Service	B	B		A	B			C			B	
Approach Delay (s)		12.7			9.7			23.4			15.9	
Approach LOS		B			A			C			B	

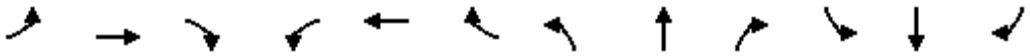
Intersection Summary			
HCM 2000 Control Delay	13.3	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.58		
Actuated Cycle Length (s)	57.3	Sum of lost time (s)	12.0
Intersection Capacity Utilization	66.0%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Traffic Volume (vph)	60	10	10	5	5	5	10	155	35	60	115	55
Future Volume (vph)	60	10	10	5	5	5	10	155	35	60	115	55
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	65	11	11	5	5	5	11	168	38	65	125	60

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total (vph)	87	15	217	250
Volume Left (vph)	65	5	11	65
Volume Right (vph)	11	5	38	60
Hadj (s)	0.11	-0.10	-0.06	-0.06
Departure Headway (s)	5.1	5.0	4.4	4.3
Degree Utilization, x	0.12	0.02	0.26	0.30
Capacity (veh/h)	646	642	792	796
Control Delay (s)	8.8	8.1	8.9	9.2
Approach Delay (s)	8.8	8.1	8.9	9.2
Approach LOS	A	A	A	A

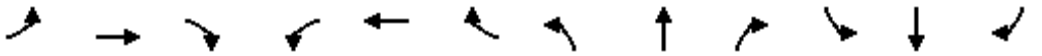
Intersection Summary				
Delay	9.0			
Level of Service	A			
Intersection Capacity Utilization	43.7%	ICU Level of Service	A	
Analysis Period (min)	15			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Traffic Volume (vph)	30	10	30	10	10	10	50	150	10	15	85	40
Future Volume (vph)	30	10	30	10	10	10	50	150	10	15	85	40
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	33	11	33	11	11	11	54	163	11	16	92	43

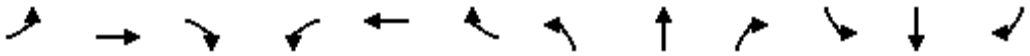
Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total (vph)	77	33	228	151
Volume Left (vph)	33	11	54	16
Volume Right (vph)	33	11	11	43
Hadj (s)	-0.14	-0.10	0.05	-0.12
Departure Headway (s)	4.7	4.8	4.4	4.3
Degree Utilization, x	0.10	0.04	0.28	0.18
Capacity (veh/h)	707	686	794	798
Control Delay (s)	8.2	8.0	9.1	8.2
Approach Delay (s)	8.2	8.0	9.1	8.2
Approach LOS	A	A	A	A

Intersection Summary				
Delay	8.6			
Level of Service	A			
Intersection Capacity Utilization	33.9%	ICU Level of Service	A	
Analysis Period (min)	15			



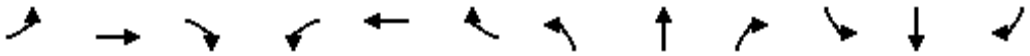
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	400	270	25	10	650	255	0	0	5	190	145	315
Future Volume (vph)	400	270	25	10	650	255	0	0	5	190	145	315
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0				4.0	4.0	4.0	4.0
Lane Util. Factor	0.97	0.95		1.00	0.95				1.00	0.95	0.95	1.00
Frpb, ped/bikes	1.00	1.00		1.00	1.00				0.99	1.00	1.00	1.00
Flpb, ped/bikes	1.00	1.00		1.00	1.00				1.00	1.00	1.00	1.00
Frt	1.00	0.99		1.00	0.96				0.86	1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00				1.00	0.95	0.98	1.00
Satd. Flow (prot)	3433	3488		1770	3390				1590	1681	1736	1583
Flt Permitted	0.95	1.00		0.95	1.00				1.00	0.95	0.98	1.00
Satd. Flow (perm)	3433	3488		1770	3390				1590	1681	1736	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	435	293	27	11	707	277	0	0	5	207	158	342
RTOR Reduction (vph)	0	6	0	0	45	0	0	0	0	0	0	215
Lane Group Flow (vph)	435	314	0	11	939	0	0	0	5	108	257	127
Confl. Peds. (#/hr)			1	1					4	4		
Turn Type	Prot	NA		Prot	NA				Free	Split	NA	Perm
Protected Phases	5	2		1	6					4	4	
Permitted Phases									Free			4
Actuated Green, G (s)	11.2	38.3		0.7	27.8				70.9	17.3	17.3	17.3
Effective Green, g (s)	11.6	39.2		1.1	28.7				70.9	18.6	18.6	18.6
Actuated g/C Ratio	0.16	0.55		0.02	0.40				1.00	0.26	0.26	0.26
Clearance Time (s)	4.4	4.9		4.4	4.9					5.3	5.3	5.3
Vehicle Extension (s)	2.0	3.3		2.0	3.8					4.4	4.4	4.4
Lane Grp Cap (vph)	561	1928		27	1372				1590	440	455	415
v/s Ratio Prot	c0.13	0.09		0.01	c0.28					0.06	c0.15	
v/s Ratio Perm									0.00			0.08
v/c Ratio	0.78	0.16		0.41	0.68				0.00	0.25	0.56	0.31
Uniform Delay, d1	28.4	7.8		34.6	17.4				0.0	20.6	22.6	21.0
Progression Factor	1.00	1.00		1.00	1.00				1.00	1.00	1.00	1.00
Incremental Delay, d2	6.1	0.2		3.6	2.8				0.0	0.5	2.2	0.7
Delay (s)	34.5	8.0		38.2	20.2				0.0	21.1	24.9	21.7
Level of Service	C	A		D	C				A	C	C	C
Approach Delay (s)		23.2			20.4			0.0			22.7	
Approach LOS		C			C			A			C	

Intersection Summary			
HCM 2000 Control Delay	21.9	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.66		
Actuated Cycle Length (s)	70.9	Sum of lost time (s)	12.0
Intersection Capacity Utilization	63.3%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	30	700	85	70	1415	55	230	30	70	60	35	15
Future Volume (vph)	30	700	85	70	1415	55	230	30	70	60	35	15
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0		4.0	4.0			4.0	
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00	1.00			1.00	
Frpb, ped/bikes	1.00	0.99		1.00	1.00		1.00	0.98			1.00	
Flpb, ped/bikes	1.00	1.00		1.00	1.00		0.99	1.00			0.99	
Frt	1.00	0.98		1.00	0.99		1.00	0.90			0.98	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00			0.97	
Satd. Flow (prot)	1678	3368		1671	3413		1633	1527			1667	
Flt Permitted	0.95	1.00		0.95	1.00		0.66	1.00			0.80	
Satd. Flow (perm)	1678	3368		1671	3413		1139	1527			1362	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	33	761	92	76	1538	60	250	33	76	65	38	16
RTOR Reduction (vph)	0	7	0	0	2	0	0	57	0	0	5	0
Lane Group Flow (vph)	33	846	0	76	1596	0	250	52	0	0	114	0
Confl. Peds. (#/hr)	14		16	16		14	13		13	13		13
Confl. Bikes (#/hr)			3			3			1			
Bus Blockages (#/hr)	13	13	13	14	14	14	16	16	16	13	13	13
Turn Type	Prot	NA		Prot	NA		Perm	NA		Perm	NA	
Protected Phases	5	2		1	6			4			4	
Permitted Phases							4			4		
Actuated Green, G (s)	3.4	67.9		8.3	72.8		29.6	29.6			29.6	
Effective Green, g (s)	3.8	68.8		8.7	73.7		30.5	30.5			30.5	
Actuated g/C Ratio	0.03	0.57		0.07	0.61		0.25	0.25			0.25	
Clearance Time (s)	4.4	4.9		4.4	4.9		4.9	4.9			4.9	
Vehicle Extension (s)	2.0	2.1		2.0	2.1		2.0	2.0			2.0	
Lane Grp Cap (vph)	53	1930		121	2096		289	388			346	
v/s Ratio Prot	0.02	0.25		c0.05	c0.47			0.03				
v/s Ratio Perm							c0.22				0.08	
v/c Ratio	0.62	0.44		0.63	0.76		0.87	0.13			0.33	
Uniform Delay, d1	57.4	14.6		54.1	16.8		42.8	34.6			36.4	
Progression Factor	1.00	1.00		0.85	1.52		1.00	1.00			1.00	
Incremental Delay, d2	15.2	0.7		2.0	0.8		21.9	0.1			0.2	
Delay (s)	72.6	15.3		48.1	26.2		64.7	34.6			36.6	
Level of Service	E	B		D	C		E	C			D	
Approach Delay (s)		17.5			27.2			55.6			36.6	
Approach LOS		B			C			E			D	

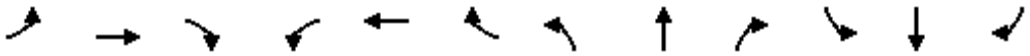
Intersection Summary			
HCM 2000 Control Delay	28.1	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.80		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	74.2%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	180	655	85	165	1240	65	60	125	100	255	375	245
Future Volume (vph)	180	655	85	165	1240	65	60	125	100	255	375	245
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0		4.0	4.0	4.0	4.0	4.0	
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00	0.95	1.00	1.00	0.95	
Frpb, ped/bikes	1.00	0.99		1.00	1.00		1.00	1.00	0.98	1.00	0.98	
Flpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	
Frt	1.00	0.98		1.00	0.99		1.00	1.00	0.85	1.00	0.94	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)	1770	3458		1770	3503		1770	3539	1550	1770	3269	
Flt Permitted	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (perm)	1770	3458		1770	3503		1770	3539	1550	1770	3269	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	196	712	92	179	1348	71	65	136	109	277	408	266
RTOR Reduction (vph)	0	8	0	0	3	0	0	0	45	0	90	0
Lane Group Flow (vph)	196	796	0	179	1416	0	65	136	64	277	584	0
Confl. Peds. (#/hr)	23		24	24		23	19		14	14		19
Confl. Bikes (#/hr)			9			5			12			6
Turn Type	Prot	NA		Prot	NA		Prot	NA	pm+ov	Prot	NA	
Protected Phases	5	2		1	6		3	8	1	7	4	
Permitted Phases									8			
Actuated Green, G (s)	14.5	41.8		16.1	42.9		7.0	21.4	37.5	22.0	36.5	
Effective Green, g (s)	14.9	42.7		16.5	44.3		7.4	22.4	38.3	22.4	37.4	
Actuated g/C Ratio	0.12	0.36		0.14	0.37		0.06	0.19	0.32	0.19	0.31	
Clearance Time (s)	4.4	4.9		4.4	5.4		4.4	5.0	4.4	4.4	4.9	
Vehicle Extension (s)	2.0	4.2		2.0	3.0		2.0	4.0	2.0	2.0	2.6	
Lane Grp Cap (vph)	219	1230		243	1293		109	660	494	330	1018	
v/s Ratio Prot	c0.11	0.23		0.10	c0.40		c0.04	0.04	0.02	c0.16	c0.18	
v/s Ratio Perm									0.02			
v/c Ratio	0.89	0.65		0.74	1.10		0.60	0.21	0.13	0.84	0.57	
Uniform Delay, d1	51.8	32.3		49.7	37.9		54.8	41.3	29.0	47.1	34.6	
Progression Factor	1.17	0.79		0.99	0.86		1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	31.8	2.5		8.1	53.5		5.7	0.2	0.0	16.2	0.7	
Delay (s)	92.4	28.2		57.5	86.1		60.6	41.5	29.1	63.2	35.3	
Level of Service	F	C		E	F		E	D	C	E	D	
Approach Delay (s)		40.7			82.9			41.1			43.4	
Approach LOS		D			F			D			D	

Intersection Summary			
HCM 2000 Control Delay	58.9	HCM 2000 Level of Service	E
HCM 2000 Volume to Capacity ratio	0.89		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	88.1%	ICU Level of Service	E
Analysis Period (min)	15		

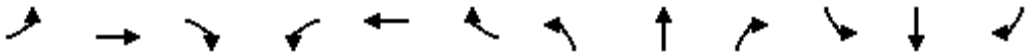
c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	985	75	305	1380	65	65	15	140	60	5	10
Future Volume (vph)	0	985	75	305	1380	65	65	15	140	60	5	10
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0		4.0	4.0			4.0	4.0		4.0	
Lane Util. Factor		0.91		1.00	0.95			1.00	1.00		1.00	
Frpb, ped/bikes		1.00		1.00	1.00			1.00	0.98		1.00	
Flpb, ped/bikes		1.00		1.00	1.00			1.00	1.00		1.00	
Frt		0.99		1.00	0.99			1.00	0.85		0.98	
Flt Protected		1.00		0.95	1.00			0.96	1.00		0.96	
Satd. Flow (prot)		5018		1770	3511			1788	1552		1750	
Flt Permitted		1.00		0.95	1.00			0.75	1.00		0.71	
Satd. Flow (perm)		5018		1770	3511			1390	1552		1298	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	1071	82	332	1500	71	71	16	152	65	5	11
RTOR Reduction (vph)	0	6	0	0	2	0	0	0	126	0	5	0
Lane Group Flow (vph)	0	1148	0	332	1569	0	0	87	26	0	76	0
Confl. Peds. (#/hr)	1		1	1		1	1		1	1		1
Confl. Bikes (#/hr)			17			4			5			12
Turn Type	Prot	NA		Prot	NA		Perm	NA	Perm	Perm	NA	
Protected Phases	5	2		1	6			8			4	
Permitted Phases							8		8	4		
Actuated Green, G (s)		58.7		27.2	90.3			19.5	19.5		19.5	
Effective Green, g (s)		60.0		27.6	91.6			20.4	20.4		20.4	
Actuated g/C Ratio		0.50		0.23	0.76			0.17	0.17		0.17	
Clearance Time (s)		5.3		4.4	5.3			4.9	4.9		4.9	
Vehicle Extension (s)		4.4		2.0	4.4			2.0	2.0		2.0	
Lane Grp Cap (vph)		2509		407	2680			236	263		220	
v/s Ratio Prot		0.23		c0.19	c0.45							
v/s Ratio Perm								c0.06	0.02		0.06	
v/c Ratio		0.46		0.82	0.59			0.37	0.10		0.35	
Uniform Delay, d1		19.4		43.8	6.1			44.1	42.0		43.9	
Progression Factor		1.52		1.00	1.00			1.00	1.00		1.00	
Incremental Delay, d2		0.5		11.3	0.9			0.4	0.1		0.3	
Delay (s)		29.9		55.1	7.0			44.5	42.1		44.3	
Level of Service		C		E	A			D	D		D	
Approach Delay (s)		29.9			15.4			43.0			44.3	
Approach LOS		C			B			D			D	

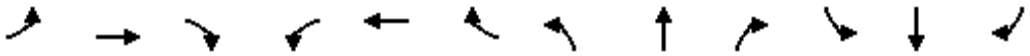
Intersection Summary			
HCM 2000 Control Delay	23.0	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.62		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	64.8%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group



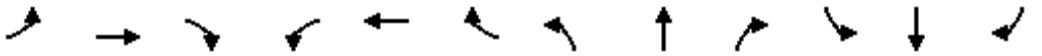
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	0	0	275	3120	0	0	0	0	0	150	155
Future Volume (vph)	0	0	0	275	3120	0	0	0	0	0	150	155
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)					4.0						4.0	
Lane Util. Factor					0.91						0.91	
Frpb, ped/bikes					1.00						0.99	
Flpb, ped/bikes					1.00						1.00	
Frt					1.00						0.92	
Flt Protected					1.00						1.00	
Satd. Flow (prot)					5061						4645	
Flt Permitted					1.00						1.00	
Satd. Flow (perm)					5061						4645	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	299	3391	0	0	0	0	0	163	168
RTOR Reduction (vph)	0	0	0	0	9	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	0	0	0	3681	0	0	0	0	0	331	0
Confl. Peds. (#/hr)				6								7
Turn Type				Perm	NA						NA	
Protected Phases					6						4	
Permitted Phases				6								
Actuated Green, G (s)					61.8						18.0	
Effective Green, g (s)					63.1						18.9	
Actuated g/C Ratio					0.70						0.21	
Clearance Time (s)					5.3						4.9	
Vehicle Extension (s)					0.2						0.2	
Lane Grp Cap (vph)					3548						975	
v/s Ratio Prot											c0.07	
v/s Ratio Perm					0.73							
v/c Ratio					1.04						0.34	
Uniform Delay, d1					13.4						30.2	
Progression Factor					1.00						1.00	
Incremental Delay, d2					26.0						0.1	
Delay (s)					39.4						30.3	
Level of Service					D						C	
Approach Delay (s)		0.0			39.4			0.0			30.3	
Approach LOS		A			D			A			C	

Intersection Summary			
HCM 2000 Control Delay	38.7	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.88		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	87.5%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			



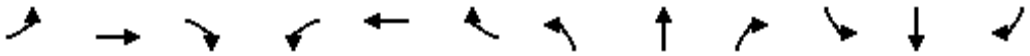
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	890	105	0	0	0	0	0	0	165	340	0
Future Volume (vph)	0	890	105	0	0	0	0	0	0	165	340	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0									4.0	
Lane Util. Factor		0.91									0.91	
Frpb, ped/bikes		1.00									1.00	
Flpb, ped/bikes		1.00									0.99	
Frt		0.98									1.00	
Flt Protected		1.00									0.98	
Satd. Flow (prot)		4993									4977	
Flt Permitted		1.00									0.98	
Satd. Flow (perm)		4993									4977	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	967	114	0	0	0	0	0	0	179	370	0
RTOR Reduction (vph)	0	16	0	0	0	0	0	0	0	0	73	0
Lane Group Flow (vph)	0	1065	0	0	0	0	0	0	0	0	476	0
Confl. Peds. (#/hr)			9							14		
Turn Type		NA								Perm	NA	
Protected Phases		2									4	
Permitted Phases										4		
Actuated Green, G (s)		47.0									19.0	
Effective Green, g (s)		47.0									20.0	
Actuated g/C Ratio		0.63									0.27	
Clearance Time (s)		4.0									5.0	
Vehicle Extension (s)		3.0									3.0	
Lane Grp Cap (vph)		3128									1327	
v/s Ratio Prot		c0.21										
v/s Ratio Perm											0.10	
v/c Ratio		0.34									0.36	
Uniform Delay, d1		6.6									22.3	
Progression Factor		0.57									1.00	
Incremental Delay, d2		0.3									0.2	
Delay (s)		4.1									22.5	
Level of Service		A									C	
Approach Delay (s)		4.1			0.0			0.0			22.5	
Approach LOS		A			A			A			C	

Intersection Summary			
HCM 2000 Control Delay	10.3	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.35		
Actuated Cycle Length (s)	75.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	43.3%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	230	1080	40	115	780	185	45	40	85	75	75	210
Future Volume (vph)	230	1080	40	115	780	185	45	40	85	75	75	210
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.97	0.95		1.00	0.95	1.00	1.00	1.00	1.00	0.97	1.00	1.00
Frpb, ped/bikes	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.99
Flpb, ped/bikes	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.99		1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	3520		1770	3539	1583	1770	1863	1583	3433	1863	1562
Flt Permitted	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	3520		1770	3539	1583	1770	1863	1583	3433	1863	1562
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	250	1174	43	125	848	201	49	43	92	82	82	228
RTOR Reduction (vph)	0	3	0	0	0	186	0	0	79	0	0	188
Lane Group Flow (vph)	250	1214	0	125	848	15	49	43	13	82	82	40
Confl. Peds. (#/hr)	2											2
Turn Type	Prot	NA		Prot	NA	custom	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases						7			8			4
Actuated Green, G (s)	8.5	34.2		7.1	32.9	5.5	2.8	8.8	8.8	5.5	12.4	12.4
Effective Green, g (s)	8.5	35.7		7.1	34.3	5.5	2.8	10.6	10.6	5.5	13.3	13.3
Actuated g/C Ratio	0.11	0.48		0.09	0.46	0.07	0.04	0.14	0.14	0.07	0.18	0.18
Clearance Time (s)	4.0	5.5		4.0	5.4	4.0	4.0	5.8	5.8	4.0	4.9	4.9
Vehicle Extension (s)	2.0	3.7		2.0	4.0	2.0	2.0	2.0	2.0	2.0	3.0	3.0
Lane Grp Cap (vph)	389	1677		167	1620	116	66	263	224	252	330	277
v/s Ratio Prot	c0.07	c0.34		0.07	0.24		c0.03	0.02		0.02	c0.04	
v/s Ratio Perm						0.01			0.01			0.03
v/c Ratio	0.64	0.72		0.75	0.52	0.13	0.74	0.16	0.06	0.33	0.25	0.15
Uniform Delay, d1	31.7	15.7		33.0	14.5	32.5	35.7	28.3	27.8	32.9	26.5	26.0
Progression Factor	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	2.7	2.8		14.8	1.2	0.2	32.0	0.1	0.0	0.3	0.4	0.2
Delay (s)	34.5	18.4		47.8	15.7	32.6	67.7	28.4	27.9	33.2	26.9	26.3
Level of Service	C	B		D	B	C	E	C	C	C	C	C
Approach Delay (s)		21.2			22.0			38.6			27.8	
Approach LOS		C			C			D			C	

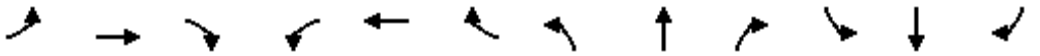
Intersection Summary			
HCM 2000 Control Delay	23.3	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.62		
Actuated Cycle Length (s)	74.9	Sum of lost time (s)	16.0
Intersection Capacity Utilization	57.1%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	0	0	540	2585	150	295	290	0	0	205	80
Future Volume (vph)	0	0	0	540	2585	150	295	290	0	0	205	80
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)					4.9		4.4	4.9			5.4	
Lane Util. Factor					0.86		1.00	0.95			0.95	
Frpb, ped/bikes					1.00		1.00	1.00			1.00	
Flpb, ped/bikes					1.00		1.00	1.00			1.00	
Frt					0.99		1.00	1.00			0.96	
Flt Protected					0.99		0.95	1.00			1.00	
Satd. Flow (prot)					6280		1770	3539			3374	
Flt Permitted					0.99		0.95	1.00			1.00	
Satd. Flow (perm)					6280		1770	3539			3374	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	0	0	0	568	2721	158	311	305	0	0	216	84
RTOR Reduction (vph)	0	0	0	0	6	0	0	0	0	0	28	0
Lane Group Flow (vph)	0	0	0	0	3441	0	311	305	0	0	272	0
Confl. Peds. (#/hr)	4		13	13		4	2		2	2		2
Confl. Bikes (#/hr)												1
Turn Type				Perm	NA		Prot	NA			NA	
Protected Phases					6		3	8			4	
Permitted Phases				6								
Actuated Green, G (s)					62.8		20.5	37.4			12.0	
Effective Green, g (s)					62.8		20.5	37.4			12.0	
Actuated g/C Ratio					0.57		0.19	0.34			0.11	
Clearance Time (s)					4.9		4.4	4.9			5.4	
Vehicle Extension (s)					2.4		3.0	3.3			2.4	
Lane Grp Cap (vph)					3585		329	1203			368	
v/s Ratio Prot							c0.18	0.09			c0.08	
v/s Ratio Perm					0.55							
v/c Ratio					0.96		0.95	0.25			0.74	
Uniform Delay, d1					22.4		44.2	26.2			47.5	
Progression Factor					1.00		1.00	1.00			1.00	
Incremental Delay, d2					8.2		35.2	0.1			7.3	
Delay (s)					30.6		79.4	26.3			54.8	
Level of Service					C		E	C			D	
Approach Delay (s)		0.0			30.6			53.1			54.8	
Approach LOS		A			C			D			D	

Intersection Summary			
HCM 2000 Control Delay	35.5	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.93		
Actuated Cycle Length (s)	110.0	Sum of lost time (s)	14.7
Intersection Capacity Utilization	85.5%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group

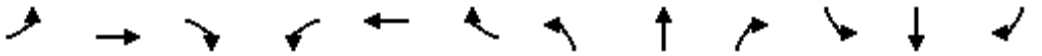


Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	85	700	65	0	0	0	0	505	230	65	680	0
Future Volume (vph)	85	700	65	0	0	0	0	505	230	65	680	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0	4.0					4.9		4.0	4.9	
Lane Util. Factor		0.91	1.00					0.91		1.00	0.91	
Frpb, ped/bikes		1.00	0.98					0.99		1.00	1.00	
Flpb, ped/bikes		1.00	1.00					1.00		1.00	1.00	
Frt		1.00	0.85					0.95		1.00	1.00	
Flt Protected		0.99	1.00					1.00		0.95	1.00	
Satd. Flow (prot)		5056	1551					4807		1770	5085	
Flt Permitted		0.99	1.00					1.00		0.95	1.00	
Satd. Flow (perm)		5056	1551					4807		1770	5085	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	92	761	71	0	0	0	0	549	250	71	739	0
RTOR Reduction (vph)	0	0	40	0	0	0	0	110	0	0	0	0
Lane Group Flow (vph)	0	853	31	0	0	0	0	689	0	71	739	0
Confl. Peds. (#/hr)	4		12				6		12	12		6
Turn Type	Perm	NA	Perm					NA		Prot	NA	
Protected Phases		2						8		7	4	
Permitted Phases	2		2									
Actuated Green, G (s)		32.2	32.2					22.0		6.6	33.0	
Effective Green, g (s)		33.1	33.1					22.0		7.0	33.0	
Actuated g/C Ratio		0.44	0.44					0.29		0.09	0.44	
Clearance Time (s)		4.9	4.9					4.9		4.4	4.9	
Vehicle Extension (s)		4.4	4.4					3.3		2.0	3.3	
Lane Grp Cap (vph)		2231	684					1410		165	2237	
v/s Ratio Prot								c0.14		c0.04	0.15	
v/s Ratio Perm		0.17	0.02									
v/c Ratio		0.38	0.05					0.49		0.43	0.33	
Uniform Delay, d1		14.1	11.9					21.9		32.1	13.8	
Progression Factor		1.00	1.00					1.00		1.00	1.00	
Incremental Delay, d2		0.5	0.1					1.2		8.0	0.4	
Delay (s)		14.6	12.1					23.1		40.1	14.2	
Level of Service		B	B					C		D	B	
Approach Delay (s)		14.4			0.0			23.1			16.4	
Approach LOS		B			A			C			B	

Intersection Summary			
HCM 2000 Control Delay	17.8	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.43		
Actuated Cycle Length (s)	75.0	Sum of lost time (s)	12.9
Intersection Capacity Utilization	85.5%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	1170	520	270	890	305	195
Future Volume (vph)	1170	520	270	890	305	195
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.5	4.0	4.0	4.0
Lane Util. Factor	0.95	1.00	0.97	0.95	0.97	0.91
Frpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	0.99
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.85	1.00	1.00	0.98	0.85
Flt Protected	1.00	1.00	0.95	1.00	0.96	1.00
Satd. Flow (prot)	3539	1583	3433	3539	3377	1421
Flt Permitted	1.00	1.00	0.95	1.00	0.96	1.00
Satd. Flow (perm)	3539	1583	3433	3539	3377	1421
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	1272	565	293	967	332	212
RTOR Reduction (vph)	0	5	0	0	24	113
Lane Group Flow (vph)	1272	560	293	967	372	35
Confl. Peds. (#/hr)						2
Turn Type	NA	pm+ov	Prot	NA	Prot	Perm
Protected Phases	2	8	1	6	8	
Permitted Phases		2				8
Actuated Green, G (s)	28.6	42.2	8.0	41.8	13.6	13.6
Effective Green, g (s)	30.8	46.6	7.9	43.2	15.8	15.8
Actuated g/C Ratio	0.46	0.70	0.12	0.64	0.24	0.24
Clearance Time (s)	6.2	6.2	4.4	5.4	6.2	6.2
Vehicle Extension (s)	4.0	2.0	2.0	5.2	2.0	2.0
Lane Grp Cap (vph)	1626	1195	404	2281	796	335
v/s Ratio Prot	c0.36	c0.11	c0.09	0.27	0.11	
v/s Ratio Perm		0.24				0.02
v/c Ratio	0.78	0.47	0.73	0.42	0.47	0.10
Uniform Delay, d1	15.3	4.6	28.5	5.8	22.0	20.1
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	3.8	0.1	5.4	0.6	0.2	0.0
Delay (s)	19.1	4.7	33.9	6.4	22.1	20.1
Level of Service	B	A	C	A	C	C
Approach Delay (s)	14.7			12.8	21.6	
Approach LOS	B			B	C	

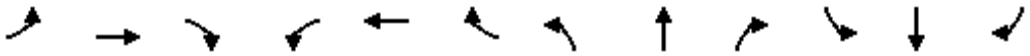
Intersection Summary			
HCM 2000 Control Delay	15.1	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.70		
Actuated Cycle Length (s)	67.0	Sum of lost time (s)	12.5
Intersection Capacity Utilization	62.0%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	1055	140	380	330	0	0	0	0	340	0	665
Future Volume (vph)	0	1055	140	380	330	0	0	0	0	340	0	665
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0	4.0	4.0	4.0					4.0		3.4
Lane Util. Factor		0.95	1.00	0.97	0.95					1.00		1.00
Frpb, ped/bikes		1.00	0.99	1.00	1.00					1.00		1.00
Flpb, ped/bikes		1.00	1.00	1.00	1.00					1.00		1.00
Frt		1.00	0.85	1.00	1.00					1.00		0.85
Flt Protected		1.00	1.00	0.95	1.00					0.95		1.00
Satd. Flow (prot)		3539	1561	3433	3539					1770		1583
Flt Permitted		1.00	1.00	0.95	1.00					0.95		1.00
Satd. Flow (perm)		3539	1561	3433	3539					1770		1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	1147	152	413	359	0	0	0	0	370	0	723
RTOR Reduction (vph)	0	0	87	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	1147	65	413	359	0	0	0	0	370	0	723
Confl. Peds. (#/hr)			2	2								
Turn Type		NA	Perm	Prot	NA					Prot		Free
Protected Phases		2		1	6					4		
Permitted Phases			2									Free
Actuated Green, G (s)		25.9	25.9	9.0	39.1					14.5		63.2
Effective Green, g (s)		26.9	26.9	9.2	40.1					15.1		63.2
Actuated g/C Ratio		0.43	0.43	0.15	0.63					0.24		1.00
Clearance Time (s)		5.0	5.0	4.2	5.0					4.6		
Vehicle Extension (s)		0.2	0.2	0.2	0.2					0.2		
Lane Grp Cap (vph)		1506	664	499	2245					422		1583
v/s Ratio Prot		c0.32		c0.12	0.10					c0.21		
v/s Ratio Perm			0.04									0.46
v/c Ratio		0.76	0.10	0.83	0.16					0.88		0.46
Uniform Delay, d1		15.4	10.9	26.2	4.7					23.2		0.0
Progression Factor		1.00	1.00	1.00	1.00					1.00		1.00
Incremental Delay, d2		3.7	0.3	10.3	0.2					17.6		1.0
Delay (s)		19.1	11.2	36.6	4.9					40.8		1.0
Level of Service		B	B	D	A					D		A
Approach Delay (s)		18.2			21.8			0.0			14.4	
Approach LOS		B			C			A			B	

Intersection Summary			
HCM 2000 Control Delay	17.8	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.81		
Actuated Cycle Length (s)	63.2	Sum of lost time (s)	12.0
Intersection Capacity Utilization	82.8%	ICU Level of Service	E
Analysis Period (min)	15		

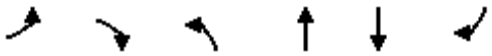
c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	885	645	0	0	615	590	185	10	295	0	0	0
Future Volume (vph)	885	645	0	0	615	590	185	10	295	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	5.0			5.0			4.0	4.0			
Lane Util. Factor	0.97	0.95			0.95			1.00	1.00			
Frt	1.00	1.00			0.93			1.00	0.85			
Flt Protected	0.95	1.00			1.00			0.95	1.00			
Satd. Flow (prot)	3433	3539			3279			1778	1583			
Flt Permitted	0.95	1.00			1.00			0.95	1.00			
Satd. Flow (perm)	3433	3539			3279			1778	1583			
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	962	701	0	0	668	641	201	11	321	0	0	0
RTOR Reduction (vph)	0	0	0	0	183	0	0	0	278	0	0	0
Lane Group Flow (vph)	962	701	0	0	1126	0	0	212	43	0	0	0
Turn Type	Prot	NA			NA		Split	NA	Perm			
Protected Phases	5	2			6		4	4				
Permitted Phases									4			
Actuated Green, G (s)	23.6	59.4			31.6			10.1	10.1			
Effective Green, g (s)	23.8	59.9			32.1			10.7	10.7			
Actuated g/C Ratio	0.30	0.75			0.40			0.13	0.13			
Clearance Time (s)	4.2	5.5			5.5			4.6	4.6			
Vehicle Extension (s)	0.2	0.2			0.2			0.2	0.2			
Lane Grp Cap (vph)	1026	2663			1322			239	212			
v/s Ratio Prot	c0.28	0.20			c0.34			c0.12				
v/s Ratio Perm									0.03			
v/c Ratio	0.94	0.26			0.85			0.89	0.20			
Uniform Delay, d1	27.2	3.0			21.6			33.9	30.7			
Progression Factor	1.00	1.00			1.00			1.00	1.00			
Incremental Delay, d2	15.0	0.2			7.1			29.4	0.2			
Delay (s)	42.2	3.3			28.7			63.2	30.8			
Level of Service	D	A			C			E	C			
Approach Delay (s)		25.8			28.7			43.7			0.0	
Approach LOS		C			C			D			A	

Intersection Summary			
HCM 2000 Control Delay	29.6	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.89		
Actuated Cycle Length (s)	79.6	Sum of lost time (s)	13.0
Intersection Capacity Utilization	82.8%	ICU Level of Service	E
Analysis Period (min)	15		

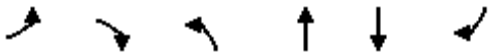
c Critical Lane Group



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	210	210	110	500	700	110
Future Volume (vph)	210	210	110	500	700	110
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0		4.0	4.0	4.0	
Lane Util. Factor	1.00		1.00	0.95	0.95	
Frt	0.93		1.00	1.00	0.98	
Flt Protected	0.98		0.95	1.00	1.00	
Satd. Flow (prot)	1695		1770	3539	3467	
Flt Permitted	0.98		0.95	1.00	1.00	
Satd. Flow (perm)	1695		1770	3539	3467	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	228	228	120	543	761	120
RTOR Reduction (vph)	35	0	0	0	9	0
Lane Group Flow (vph)	421	0	120	543	872	0
Turn Type	Prot		Prot	NA	NA	
Protected Phases	7		1	6	2	
Permitted Phases						
Actuated Green, G (s)	35.5		13.1	76.5	59.4	
Effective Green, g (s)	35.5		13.1	76.5	59.4	
Actuated g/C Ratio	0.30		0.11	0.64	0.49	
Clearance Time (s)	4.0		4.0	4.0	4.0	
Vehicle Extension (s)	3.0		3.0	3.0	3.0	
Lane Grp Cap (vph)	501		193	2256	1716	
v/s Ratio Prot	c0.25		c0.07	0.15	c0.25	
v/s Ratio Perm						
v/c Ratio	0.84		0.62	0.24	0.51	
Uniform Delay, d1	39.6		51.1	9.3	20.4	
Progression Factor	1.00		1.02	0.91	1.00	
Incremental Delay, d2	11.8		6.0	0.2	1.1	
Delay (s)	51.4		57.9	8.8	21.5	
Level of Service	D		E	A	C	
Approach Delay (s)	51.4			17.7	21.5	
Approach LOS	D			B	C	

Intersection Summary			
HCM 2000 Control Delay	27.1	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.63		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	63.5%	ICU Level of Service	B
Analysis Period (min)	15		

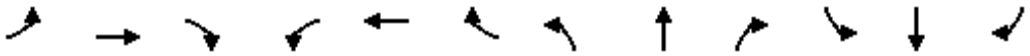
c Critical Lane Group



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	0	180	0	0	160	30
Future Volume (Veh/h)	0	180	0	0	160	30
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	196	0	0	174	33
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage veh)						
Upstream signal (ft)				973	1298	
pX, platoon unblocked						
vC, conflicting volume	190	104	207			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	190	104	207			
tC, single (s)	6.8	6.9	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	100	79	100			
cM capacity (veh/h)	781	931	1361			

Direction, Lane #	EB 1	SB 1	SB 2
Volume Total	196	116	91
Volume Left	0	0	0
Volume Right	196	0	33
cSH	931	1700	1700
Volume to Capacity	0.21	0.07	0.05
Queue Length 95th (ft)	20	0	0
Control Delay (s)	9.9	0.0	0.0
Lane LOS	A		
Approach Delay (s)	9.9	0.0	
Approach LOS	A		

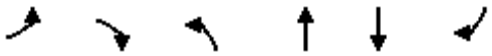
Intersection Summary			
Average Delay	4.8		
Intersection Capacity Utilization	23.2%	ICU Level of Service	A
Analysis Period (min)	15		



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	20	100	60	90	0	0	0	0	40	220	10
Future Volume (vph)	0	20	100	60	90	0	0	0	0	40	220	10
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.5			4.5						4.5	
Lane Util. Factor		1.00			1.00						0.95	
Frt		0.89			1.00						0.99	
Flt Protected		1.00			0.98						0.99	
Satd. Flow (prot)		1654			1826						3494	
Flt Permitted		1.00			0.86						0.99	
Satd. Flow (perm)		1654			1598						3494	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	22	109	65	98	0	0	0	0	43	239	11
RTOR Reduction (vph)	0	56	0	0	0	0	0	0	0	0	4	0
Lane Group Flow (vph)	0	75	0	0	163	0	0	0	0	0	289	0
Turn Type		NA		Perm	NA					Perm	NA	
Protected Phases		2			6						4	
Permitted Phases				6						4		
Actuated Green, G (s)		31.5			31.5						24.5	
Effective Green, g (s)		31.5			31.5						24.5	
Actuated g/C Ratio		0.48			0.48						0.38	
Clearance Time (s)		4.5			4.5						4.5	
Vehicle Extension (s)		3.0			3.0						3.0	
Lane Grp Cap (vph)		801			774						1316	
v/s Ratio Prot		0.05										
v/s Ratio Perm					c0.10						0.08	
v/c Ratio		0.09			0.21						0.22	
Uniform Delay, d1		9.0			9.6						13.8	
Progression Factor		1.00			1.00						1.00	
Incremental Delay, d2		0.1			0.6						0.4	
Delay (s)		9.1			10.2						14.1	
Level of Service		A			B						B	
Approach Delay (s)		9.1			10.2			0.0			14.1	
Approach LOS		A			B			A			B	

Intersection Summary			
HCM 2000 Control Delay	11.9	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.21		
Actuated Cycle Length (s)	65.0	Sum of lost time (s)	9.0
Intersection Capacity Utilization	29.8%	ICU Level of Service	A
Analysis Period (min)	15		

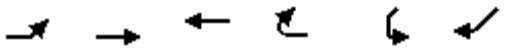
c Critical Lane Group



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	50	150	140	330	310	30
Future Volume (vph)	50	150	140	330	310	30
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0			4.0	4.0	
Lane Util. Factor	1.00			1.00	1.00	
Frt	0.90			1.00	0.99	
Flt Protected	0.99			0.99	1.00	
Satd. Flow (prot)	1653			1835	1840	
Flt Permitted	0.99			0.80	1.00	
Satd. Flow (perm)	1653			1481	1840	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	54	163	152	359	337	33
RTOR Reduction (vph)	141	0	0	0	4	0
Lane Group Flow (vph)	76	0	0	511	366	0
Turn Type	Prot		Perm	NA	NA	
Protected Phases	4			2	6	
Permitted Phases			2			
Actuated Green, G (s)	8.3			45.5	45.5	
Effective Green, g (s)	8.3			45.5	45.5	
Actuated g/C Ratio	0.13			0.74	0.74	
Clearance Time (s)	4.0			4.0	4.0	
Vehicle Extension (s)	3.0			3.0	3.0	
Lane Grp Cap (vph)	222			1090	1354	
v/s Ratio Prot	c0.05				0.20	
v/s Ratio Perm				c0.35		
v/c Ratio	0.34			0.47	0.27	
Uniform Delay, d1	24.3			3.3	2.7	
Progression Factor	1.00			1.00	1.00	
Incremental Delay, d2	0.9			1.4	0.5	
Delay (s)	25.2			4.7	3.2	
Level of Service	C			A	A	
Approach Delay (s)	25.2			4.7	3.2	
Approach LOS	C			A	A	

Intersection Summary			
HCM 2000 Control Delay	8.3	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.45		
Actuated Cycle Length (s)	61.8	Sum of lost time (s)	8.0
Intersection Capacity Utilization	65.3%	ICU Level of Service	C
Analysis Period (min)	15		

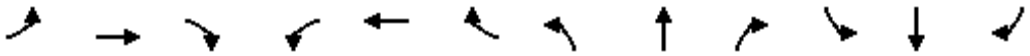
c Critical Lane Group



Movement	EBL	EBT	WBT	WBR	SWL	SWR
Lane Configurations						
Traffic Volume (vph)	50	670	1420	40	150	250
Future Volume (vph)	50	670	1420	40	150	250
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.5	4.5	4.5		4.5	
Lane Util. Factor	1.00	0.95	0.95		1.00	
Frt	1.00	1.00	1.00		0.92	
Flt Protected	0.95	1.00	1.00		0.98	
Satd. Flow (prot)	1770	3539	3525		1674	
Flt Permitted	0.95	1.00	1.00		0.98	
Satd. Flow (perm)	1770	3539	3525		1674	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	54	728	1543	43	163	272
RTOR Reduction (vph)	0	0	3	0	74	0
Lane Group Flow (vph)	54	728	1583	0	361	0
Turn Type	Prot	NA	NA		Prot	
Protected Phases	7	4	8		6	
Permitted Phases						
Actuated Green, G (s)	3.5	46.0	38.0		23.6	
Effective Green, g (s)	3.5	46.0	38.0		23.6	
Actuated g/C Ratio	0.04	0.59	0.48		0.30	
Clearance Time (s)	4.5	4.5	4.5		4.5	
Vehicle Extension (s)	3.0	3.0	3.0		3.0	
Lane Grp Cap (vph)	78	2071	1704		502	
v/s Ratio Prot	c0.03	0.21	c0.45		c0.22	
v/s Ratio Perm						
v/c Ratio	0.69	0.35	0.93		0.72	
Uniform Delay, d1	37.0	8.5	19.0		24.5	
Progression Factor	1.00	1.00	1.00		1.00	
Incremental Delay, d2	23.3	0.1	9.4		8.6	
Delay (s)	60.3	8.6	28.4		33.1	
Level of Service	E	A	C		C	
Approach Delay (s)		12.2	28.4		33.1	
Approach LOS		B	C		C	

Intersection Summary			
HCM 2000 Control Delay	24.6	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.84		
Actuated Cycle Length (s)	78.6	Sum of lost time (s)	13.5
Intersection Capacity Utilization	72.7%	ICU Level of Service	C
Analysis Period (min)	15		

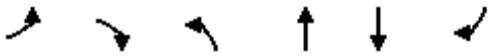
c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	60	10	30	40	100	240	150	390	130	220	450	150
Future Volume (vph)	60	10	30	40	100	240	150	390	130	220	450	150
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.5			4.5		4.5	4.5		4.5	4.5	
Lane Util. Factor		1.00			1.00		1.00	0.95		1.00	0.95	
Frt		0.96			0.91		1.00	0.96		1.00	0.96	
Flt Protected		0.97			0.99		0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1735			1695		1770	3407		1770	3406	
Flt Permitted		0.97			0.99		0.95	1.00		0.95	1.00	
Satd. Flow (perm)		1735			1695		1770	3407		1770	3406	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	65	11	33	43	109	261	163	424	141	239	489	163
RTOR Reduction (vph)	0	20	0	0	67	0	0	35	0	0	35	0
Lane Group Flow (vph)	0	89	0	0	346	0	163	530	0	239	617	0
Turn Type	Split	NA		Split	NA		Prot	NA		Prot	NA	
Protected Phases	2	2		6	6		3	8		7	4	
Permitted Phases												
Actuated Green, G (s)		7.6			19.3		10.8	15.5		14.1	18.8	
Effective Green, g (s)		7.6			19.3		10.8	15.5		14.1	18.8	
Actuated g/C Ratio		0.10			0.26		0.14	0.21		0.19	0.25	
Clearance Time (s)		4.5			4.5		4.5	4.5		4.5	4.5	
Vehicle Extension (s)		3.0			3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)		176			439		256	708		334	859	
v/s Ratio Prot		c0.05			c0.20		0.09	0.16		c0.14	c0.18	
v/s Ratio Perm												
v/c Ratio		0.51			0.79		0.64	0.75		0.72	0.72	
Uniform Delay, d1		31.7			25.7		30.0	27.7		28.3	25.4	
Progression Factor		1.00			1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2		2.3			9.1		5.1	4.3		7.1	2.9	
Delay (s)		34.0			34.8		35.1	32.0		35.4	28.3	
Level of Service		C			C		D	C		D	C	
Approach Delay (s)		34.0			34.8			32.7			30.2	
Approach LOS		C			C			C			C	

Intersection Summary			
HCM 2000 Control Delay	32.2	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.74		
Actuated Cycle Length (s)	74.5	Sum of lost time (s)	18.0
Intersection Capacity Utilization	60.4%	ICU Level of Service	B
Analysis Period (min)	15		

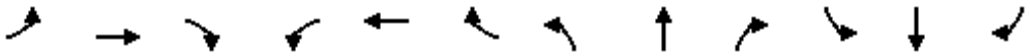
c Critical Lane Group



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	30	200	340	190	190	40
Future Volume (vph)	30	200	340	190	190	40
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.5			4.5	4.5	
Lane Util. Factor	1.00			1.00	1.00	
Frt	0.88			1.00	0.98	
Flt Protected	0.99			0.97	1.00	
Satd. Flow (prot)	1634			1805	1819	
Flt Permitted	0.99			0.66	1.00	
Satd. Flow (perm)	1634			1237	1819	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	33	217	370	207	207	43
RTOR Reduction (vph)	188	0	0	0	8	0
Lane Group Flow (vph)	62	0	0	577	242	0
Turn Type	Prot		Perm	NA	NA	
Protected Phases	4			2	6	
Permitted Phases			2			
Actuated Green, G (s)	8.1			43.5	43.5	
Effective Green, g (s)	8.1			43.5	43.5	
Actuated g/C Ratio	0.13			0.72	0.72	
Clearance Time (s)	4.5			4.5	4.5	
Vehicle Extension (s)	3.0			3.0	3.0	
Lane Grp Cap (vph)	218			887	1305	
v/s Ratio Prot	c0.04				0.13	
v/s Ratio Perm				c0.47		
v/c Ratio	0.28			0.65	0.19	
Uniform Delay, d1	23.6			4.5	2.8	
Progression Factor	1.00			1.00	1.00	
Incremental Delay, d2	0.7			3.7	0.3	
Delay (s)	24.4			8.2	3.1	
Level of Service	C			A	A	
Approach Delay (s)	24.4			8.2	3.1	
Approach LOS	C			A	A	

Intersection Summary			
HCM 2000 Control Delay	10.8	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.59		
Actuated Cycle Length (s)	60.6	Sum of lost time (s)	9.0
Intersection Capacity Utilization	66.5%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	90	1680	560	120	1170	355	460	345	180	300	255	35
Future Volume (vph)	90	1680	560	120	1170	355	460	345	180	300	255	35
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	
Lane Util. Factor	1.00	0.91	1.00	0.97	0.95	1.00	0.97	1.00	1.00	1.00	1.00	
Frpb, ped/bikes	1.00	1.00	0.99	1.00	1.00	0.95	1.00	1.00	0.98	1.00	1.00	
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.98	
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)	1770	5085	1561	3433	3539	1506	3433	1863	1552	1770	1826	
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (perm)	1770	5085	1561	3433	3539	1506	3433	1863	1552	1770	1826	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	98	1826	609	130	1272	386	500	375	196	326	277	38
RTOR Reduction (vph)	0	0	237	0	0	156	0	0	96	0	3	0
Lane Group Flow (vph)	98	1826	372	130	1272	230	500	375	100	326	312	0
Confl. Peds. (#/hr)	6		1	1		6			6	6		
Confl. Bikes (#/hr)			1			5						3
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases			2			6			8			
Actuated Green, G (s)	8.7	59.9	59.9	10.0	61.1	61.1	22.9	32.6	32.6	30.0	37.9	
Effective Green, g (s)	9.1	61.2	61.2	10.4	62.5	62.5	23.3	33.4	33.4	29.0	39.1	
Actuated g/C Ratio	0.06	0.41	0.41	0.07	0.42	0.42	0.16	0.22	0.22	0.19	0.26	
Clearance Time (s)	4.4	5.3	5.3	4.4	5.4	5.4	4.4	4.8	4.8	3.0	5.2	
Vehicle Extension (s)	2.0	4.4	4.4	2.0	4.4	4.4	2.0	3.8	3.8	2.0	2.0	
Lane Grp Cap (vph)	107	2074	636	238	1474	627	533	414	345	342	475	
v/s Ratio Prot	c0.06	0.36		0.04	c0.36		0.15	c0.20		c0.18	0.17	
v/s Ratio Perm			0.24			0.15			0.06			
v/c Ratio	0.92	0.88	0.58	0.55	0.86	0.37	0.94	0.91	0.29	0.95	0.66	
Uniform Delay, d1	70.1	41.0	34.5	67.5	39.8	30.1	62.6	56.8	48.5	59.8	49.5	
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	59.6	5.8	3.9	1.4	6.9	1.6	24.0	23.2	0.6	36.0	2.5	
Delay (s)	129.7	46.8	38.4	68.9	46.8	31.8	86.7	80.0	49.1	95.8	52.0	
Level of Service	F	D	D	E	D	C	F	E	D	F	D	
Approach Delay (s)		48.0			45.1			77.4			74.3	
Approach LOS		D			D			E			E	

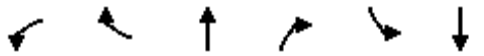
Intersection Summary			
HCM 2000 Control Delay	55.2	HCM 2000 Level of Service	E
HCM 2000 Volume to Capacity ratio	0.90		
Actuated Cycle Length (s)	150.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	87.3%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	830	1800	925	0	0	880
Future Volume (vph)	830	1800	925	0	0	880
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	7.0	7.0	7.0			7.0
Lane Util. Factor	0.97	0.88	0.95			0.95
Frt	1.00	0.85	1.00			1.00
Flt Protected	0.95	1.00	1.00			1.00
Satd. Flow (prot)	3433	2787	3539			3539
Flt Permitted	0.95	1.00	1.00			1.00
Satd. Flow (perm)	3433	2787	3539			3539
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	902	1957	1005	0	0	957
RTOR Reduction (vph)	0	5	0	0	0	0
Lane Group Flow (vph)	902	1952	1005	0	0	957
Turn Type	Prot	Perm	NA			NA
Protected Phases	4		2			6
Permitted Phases		4				
Actuated Green, G (s)	94.0	94.0	42.0			42.0
Effective Green, g (s)	94.0	94.0	42.0			42.0
Actuated g/C Ratio	0.63	0.63	0.28			0.28
Clearance Time (s)	7.0	7.0	7.0			7.0
Vehicle Extension (s)	0.2	0.2	0.2			0.2
Lane Grp Cap (vph)	2151	1746	990			990
v/s Ratio Prot	0.26		c0.28			0.27
v/s Ratio Perm		c0.70				
v/c Ratio	0.42	1.12	1.02			0.97
Uniform Delay, d1	14.2	28.0	54.0			53.3
Progression Factor	1.00	1.00	1.00			1.00
Incremental Delay, d2	0.0	61.6	32.4			20.6
Delay (s)	14.2	89.6	86.4			73.9
Level of Service	B	F	F			E
Approach Delay (s)	65.8		86.4			73.9
Approach LOS	E		F			E

Intersection Summary			
HCM 2000 Control Delay	71.7	HCM 2000 Level of Service	E
HCM 2000 Volume to Capacity ratio	1.09		
Actuated Cycle Length (s)	150.0	Sum of lost time (s)	14.0
Intersection Capacity Utilization	100.2%	ICU Level of Service	G
Analysis Period (min)	15		

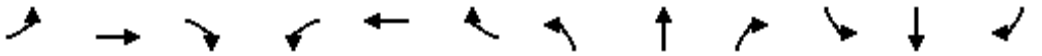
c Critical Lane Group



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	0	305	1470	120	0	1530
Future Volume (Veh/h)	0	305	1470	120	0	1530
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	332	1598	130	0	1663
Pedestrians						3
Lane Width (ft)						12.0
Walking Speed (ft/s)						4.0
Percent Blockage						0
Right turn flare (veh)						
Median type			None			None
Median storage veh)						
Upstream signal (ft)			810			779
pX, platoon unblocked	0.82					
vC, conflicting volume	2217	601			1728	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1709	601			1728	
tC, single (s)	6.8	6.9			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	100	25			100	
cM capacity (veh/h)	67	443			361	

Direction, Lane #	WB 1	NB 1	NB 2	NB 3	SB 1	SB 2	SB 3
Volume Total	332	639	639	450	554	554	554
Volume Left	0	0	0	0	0	0	0
Volume Right	332	0	0	130	0	0	0
cSH	443	1700	1700	1700	1700	1700	1700
Volume to Capacity	0.75	0.38	0.38	0.26	0.33	0.33	0.33
Queue Length 95th (ft)	155	0	0	0	0	0	0
Control Delay (s)	33.8	0.0	0.0	0.0	0.0	0.0	0.0
Lane LOS	D						
Approach Delay (s)	33.8	0.0			0.0		
Approach LOS	D						

Intersection Summary			
Average Delay	3.0		
Intersection Capacity Utilization	57.0%	ICU Level of Service	B
Analysis Period (min)	15		

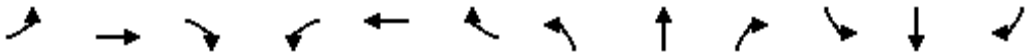


Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	385	335	320	80	540	695	420	510	80	410	715	405
Future Volume (vph)	385	335	320	80	540	695	420	510	80	410	715	405
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.9	4.0	4.0		4.0	4.0	4.9
Lane Util. Factor	1.00	1.00	1.00	1.00	0.95	1.00	1.00	0.95		1.00	0.95	1.00
Frpb, ped/bikes	1.00	1.00	0.99	1.00	1.00	0.99	1.00	1.00		1.00	1.00	0.99
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.98		1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1770	1863	1568	1770	3539	1568	1770	3467		1770	3539	1566
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)	1770	1863	1568	1770	3539	1568	1770	3467		1770	3539	1566
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	418	364	348	87	587	755	457	554	87	446	777	440
RTOR Reduction (vph)	0	0	31	0	0	31	0	9	0	0	0	50
Lane Group Flow (vph)	418	364	317	87	587	724	457	632	0	446	777	390
Confl. Peds. (#/hr)	6		3	3		6	6					6
Turn Type	Prot	NA	pm+ov	Prot	NA	pm+ov	Prot	NA		Prot	NA	pm+ov
Protected Phases	5	2	3	1	6	7	3	8		7	4	5
Permitted Phases			2			6						4
Actuated Green, G (s)	29.1	50.2	84.3	11.0	32.1	69.6	34.1	31.6		37.5	35.0	64.1
Effective Green, g (s)	30.0	51.1	86.1	12.0	33.1	69.6	35.0	32.5		38.4	35.9	64.1
Actuated g/C Ratio	0.20	0.34	0.57	0.08	0.22	0.46	0.23	0.22		0.26	0.24	0.43
Clearance Time (s)	4.9	4.9	4.9	5.0	5.0	4.9	4.9	4.9		4.9	4.9	4.9
Vehicle Extension (s)	0.2	0.2	3.1	8.0	8.0	5.5	3.1	3.1		5.5	5.5	0.2
Lane Grp Cap (vph)	354	634	941	141	780	778	413	751		453	847	669
v/s Ratio Prot	c0.24	0.20	0.08	0.05	0.17	c0.23	c0.26	0.18		c0.25	0.22	0.11
v/s Ratio Perm			0.12			0.23						0.14
v/c Ratio	1.18	0.57	0.34	0.62	0.75	0.93	1.11	0.84		0.98	0.92	0.58
Uniform Delay, d1	60.0	40.5	16.9	66.8	54.6	37.9	57.5	56.3		55.5	55.6	32.8
Progression Factor	1.00	1.00	1.00	1.10	0.60	1.13	1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	106.7	3.8	0.2	16.6	6.3	17.8	76.4	8.5		38.3	15.5	0.8
Delay (s)	166.7	44.3	17.1	90.2	38.8	60.6	133.9	64.8		93.8	71.1	33.6
Level of Service	F	D	B	F	D	E	F	E		F	E	C
Approach Delay (s)		81.2			53.4			93.6			67.2	
Approach LOS		F			D			F			E	

Intersection Summary			
HCM 2000 Control Delay	71.9	HCM 2000 Level of Service	E
HCM 2000 Volume to Capacity ratio	1.08		
Actuated Cycle Length (s)	150.0	Sum of lost time (s)	17.8
Intersection Capacity Utilization	105.2%	ICU Level of Service	G
Analysis Period (min)	15		
c Critical Lane Group			

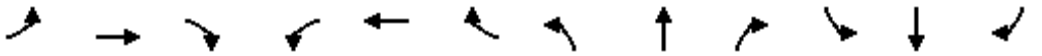
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	200	135	170	60	150	85	230	625	65	150	725	170
Future Volume (vph)	200	135	170	60	150	85	230	625	65	150	725	170
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0
Lane Util. Factor	0.95	0.95	1.00	1.00	1.00	1.00	0.97	0.95		1.00	0.95	1.00
Frpb, ped/bikes	1.00	1.00	0.98	1.00	1.00	0.98	1.00	1.00		1.00	1.00	0.97
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.99		1.00	1.00	0.85
Flt Protected	0.95	0.99	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1681	1750	1557	1770	1863	1547	3433	3479		1770	3539	1531
Flt Permitted	0.95	0.99	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)	1681	1750	1557	1770	1863	1547	3433	3479		1770	3539	1531
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	217	147	185	65	163	92	250	679	71	163	788	185
RTOR Reduction (vph)	0	0	133	0	0	76	0	5	0	0	0	105
Lane Group Flow (vph)	174	190	52	65	163	16	250	745	0	163	788	80
Confl. Peds. (#/hr)	10		12	12		10	15		12	12		15
Turn Type	Split	NA	pm+ov	Split	NA	Perm	Prot	NA		Prot	NA	Perm
Protected Phases	8	8	1	7	7		1	6		5	2	
Permitted Phases			8			7						2
Actuated Green, G (s)	23.8	23.8	35.7	21.9	21.9	21.9	11.9	50.8		14.4	53.3	53.3
Effective Green, g (s)	24.7	24.7	36.5	22.8	22.8	22.8	12.3	51.7		14.8	54.2	54.2
Actuated g/C Ratio	0.19	0.19	0.28	0.18	0.18	0.18	0.09	0.40		0.11	0.42	0.42
Clearance Time (s)	4.9	4.9	4.4	4.9	4.9	4.9	4.4	4.9		4.4	4.9	4.9
Vehicle Extension (s)	3.0	3.0	2.0	3.0	3.0	3.0	2.0	4.5		2.0	4.6	4.6
Lane Grp Cap (vph)	319	332	437	310	326	271	324	1383		201	1475	638
v/s Ratio Prot	0.10	c0.11	0.01	0.04	c0.09		0.07	0.21		c0.09	c0.22	
v/s Ratio Perm			0.02			0.01						0.05
v/c Ratio	0.55	0.57	0.12	0.21	0.50	0.06	0.77	0.54		0.81	0.53	0.13
Uniform Delay, d1	47.6	47.8	34.8	45.9	48.4	44.7	57.5	30.0		56.2	28.4	23.3
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.42	0.66	0.40
Incremental Delay, d2	1.9	2.4	0.0	0.3	1.2	0.1	9.9	1.5		14.8	1.0	0.3
Delay (s)	49.5	50.2	34.8	46.2	49.7	44.8	67.4	31.5		94.4	19.6	9.7
Level of Service	D	D	C	D	D	D	E	C		F	B	A
Approach Delay (s)		44.8			47.6			40.5			28.7	
Approach LOS		D			D			D			C	

Intersection Summary			
HCM 2000 Control Delay	37.6	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.58		
Actuated Cycle Length (s)	130.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	71.8%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			



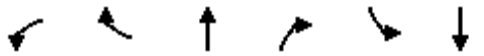
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	40	20	45	75	10	60	80	1045	200	50	945	20
Future Volume (vph)	40	20	45	75	10	60	80	1045	200	50	945	20
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0			4.0		4.0	4.0		4.0	4.0	
Lane Util. Factor		1.00			1.00		1.00	0.95		1.00	0.95	
Frpb, ped/bikes		1.00			0.97		1.00	0.99		1.00	1.00	
Flpb, ped/bikes		0.99			1.00		1.00	1.00		1.00	1.00	
Frt		0.94			0.94		1.00	0.98		1.00	1.00	
Flt Protected		0.98			0.97		0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1697			1655		1770	3434		1770	3528	
Flt Permitted		0.79			0.69		0.23	1.00		0.16	1.00	
Satd. Flow (perm)		1374			1174		437	3434		306	3528	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	43	22	49	82	11	65	87	1136	217	54	1027	22
RTOR Reduction (vph)	0	20	0	0	19	0	0	7	0	0	1	0
Lane Group Flow (vph)	0	94	0	0	139	0	87	1346	0	54	1048	0
Confl. Peds. (#/hr)	33					33			3	3		
Turn Type	Perm	NA		Perm	NA		pm+pt	NA		pm+pt	NA	
Protected Phases		8			4		1	6		5	2	
Permitted Phases	8			4			6			2		
Actuated Green, G (s)		21.1			21.1		116.3	110.1		113.1	108.5	
Effective Green, g (s)		22.0			22.0		117.1	111.0		113.9	109.4	
Actuated g/C Ratio		0.15			0.15		0.78	0.74		0.76	0.73	
Clearance Time (s)		4.9			4.9		4.4	4.9		4.4	4.9	
Vehicle Extension (s)		2.0			2.0		2.0	2.9		2.0	2.9	
Lane Grp Cap (vph)		201			172		399	2541		281	2573	
v/s Ratio Prot							c0.01	c0.39		0.01	0.30	
v/s Ratio Perm		0.07			c0.12		0.16			0.14		
v/c Ratio		0.47			0.81		0.22	0.53		0.19	0.41	
Uniform Delay, d1		58.6			62.0		4.8	8.3		6.0	7.8	
Progression Factor		1.00			1.35		1.00	1.00		1.00	1.00	
Incremental Delay, d2		0.6			21.3		0.1	0.8		0.1	0.5	
Delay (s)		59.2			104.8		4.9	9.1		6.1	8.3	
Level of Service		E			F		A	A		A	A	
Approach Delay (s)		59.2			104.8			8.9			8.2	
Approach LOS		E			F			A			A	

Intersection Summary			
HCM 2000 Control Delay	16.0	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.57		
Actuated Cycle Length (s)	150.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	64.3%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	375	1700	200	510	1395	385	230	645	410	345	530	285
Future Volume (vph)	375	1700	200	510	1395	385	230	645	410	345	530	285
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0	4.4	4.0	4.0	3.5	4.0	4.0	3.5
Lane Util. Factor	0.97	0.91		0.97	0.91	1.00	1.00	0.95	1.00	0.97	0.95	1.00
Frpb, ped/bikes	1.00	0.99		1.00	1.00	0.92	1.00	1.00	0.96	1.00	1.00	0.96
Flpb, ped/bikes	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.98		1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	4943		3433	5085	1463	1770	3539	1521	3433	3539	1516
Flt Permitted	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	4943		3433	5085	1463	1770	3539	1521	3433	3539	1516
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	408	1848	217	554	1516	418	250	701	446	375	576	310
RTOR Reduction (vph)	0	10	0	0	0	39	0	0	55	0	0	55
Lane Group Flow (vph)	408	2055	0	554	1516	379	250	701	391	375	576	255
Confl. Peds. (#/hr)	48		65	65		48	42		40	40		42
Turn Type	Prot	NA		Prot	NA	pm+ov	Prot	NA	pm+ov	Prot	NA	pm+ov
Protected Phases	5	2		1	6	7	3	8	1	7	4	5
Permitted Phases						6			8			4
Actuated Green, G (s)	19.6	58.8		19.9	59.2	75.9	16.2	30.8	50.7	16.7	31.3	50.9
Effective Green, g (s)	20.0	59.9		20.3	60.2	75.9	16.6	31.7	52.5	17.1	32.2	52.7
Actuated g/C Ratio	0.14	0.41		0.14	0.42	0.52	0.11	0.22	0.36	0.12	0.22	0.36
Clearance Time (s)	4.4	5.1		4.4	5.0	4.4	4.4	4.9	4.4	4.4	4.9	4.4
Vehicle Extension (s)	2.0	3.5		2.0	3.7	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lane Grp Cap (vph)	473	2041		480	2111	765	202	773	587	404	785	550
v/s Ratio Prot	0.12	c0.42		c0.16	0.30	0.06	c0.14	c0.20	0.10	c0.11	0.16	0.07
v/s Ratio Perm						0.20			0.16			0.10
v/c Ratio	0.86	1.01		1.15	0.72	0.50	1.24	0.91	0.67	0.93	0.73	0.46
Uniform Delay, d1	61.2	42.5		62.4	35.3	22.2	64.2	55.2	38.9	63.3	52.4	35.3
Progression Factor	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	14.5	21.6		90.8	1.3	0.2	141.9	13.9	2.2	26.9	3.1	0.2
Delay (s)	75.6	64.1		153.2	36.6	22.4	206.1	69.2	41.1	90.2	55.5	35.5
Level of Service	E	E		F	D	C	F	E	D	F	E	D
Approach Delay (s)		66.0			60.2			84.7			60.9	
Approach LOS		E			E			F			E	

Intersection Summary			
HCM 2000 Control Delay	66.7	HCM 2000 Level of Service	E
HCM 2000 Volume to Capacity ratio	1.03		
Actuated Cycle Length (s)	145.0	Sum of lost time (s)	16.4
Intersection Capacity Utilization	101.5%	ICU Level of Service	G
Analysis Period (min)	15		
c Critical Lane Group			



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	110	240	700	110	390	1445
Future Volume (vph)	110	240	700	110	390	1445
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.5		4.5		4.5	4.5
Lane Util. Factor	1.00		0.95		1.00	0.95
Frt	0.91		0.98		1.00	1.00
Flt Protected	0.98		1.00		0.95	1.00
Satd. Flow (prot)	1664		3467		1770	3539
Flt Permitted	0.98		1.00		0.95	1.00
Satd. Flow (perm)	1664		3467		1770	3539
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	120	261	761	120	424	1571
RTOR Reduction (vph)	116	0	18	0	0	0
Lane Group Flow (vph)	265	0	863	0	424	1571
Turn Type	Prot		NA		Prot	NA
Protected Phases	8		2		1	6
Permitted Phases						
Actuated Green, G (s)	13.8		22.0		18.6	45.1
Effective Green, g (s)	13.8		22.0		18.6	45.1
Actuated g/C Ratio	0.20		0.32		0.27	0.66
Clearance Time (s)	4.5		4.5		4.5	4.5
Vehicle Extension (s)	3.0		3.0		3.0	3.0
Lane Grp Cap (vph)	338		1123		484	2350
v/s Ratio Prot	c0.16		c0.25		c0.24	0.44
v/s Ratio Perm						
v/c Ratio	0.79		0.77		0.88	0.67
Uniform Delay, d1	25.6		20.7		23.5	6.9
Progression Factor	1.00		1.00		1.00	1.00
Incremental Delay, d2	11.4		5.1		16.1	1.5
Delay (s)	37.0		25.7		39.7	8.4
Level of Service	D		C		D	A
Approach Delay (s)	37.0		25.7			15.1
Approach LOS	D		C			B

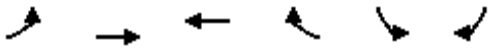
Intersection Summary			
HCM 2000 Control Delay	20.5	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.81		
Actuated Cycle Length (s)	67.9	Sum of lost time (s)	13.5
Intersection Capacity Utilization	76.6%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	0	355	740	210	0	650
Future Volume (Veh/h)	0	355	740	210	0	650
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	386	804	228	0	707
Pedestrians	2					3
Lane Width (ft)	12.0					12.0
Walking Speed (ft/s)	4.0					4.0
Percent Blockage	0					0
Right turn flare (veh)						
Median type			None			None
Median storage veh)						
Upstream signal (ft)			215			407
pX, platoon unblocked	0.86					
vC, conflicting volume	1274	521			1034	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	994	521			1034	
tC, single (s)	6.8	6.9			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	100	23			100	
cM capacity (veh/h)	208	498			667	

Direction, Lane #	WB 1	NB 1	NB 2	SB 1	SB 2
Volume Total	386	536	496	354	354
Volume Left	0	0	0	0	0
Volume Right	386	0	228	0	0
cSH	498	1700	1700	1700	1700
Volume to Capacity	0.77	0.32	0.29	0.21	0.21
Queue Length 95th (ft)	173	0	0	0	0
Control Delay (s)	32.9	0.0	0.0	0.0	0.0
Lane LOS	D				
Approach Delay (s)	32.9	0.0		0.0	
Approach LOS	D				

Intersection Summary			
Average Delay	6.0		
Intersection Capacity Utilization	56.2%	ICU Level of Service	B
Analysis Period (min)	15		



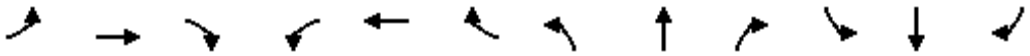
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	0	1230	965	865	355	345
Future Volume (vph)	0	1230	965	865	355	345
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.4	5.4	5.9	5.2	5.2
Lane Util. Factor		0.95	0.95	0.88	0.97	1.00
Frpb, ped/bikes		1.00	1.00	1.00	1.00	1.00
Flpb, ped/bikes		1.00	1.00	1.00	1.00	1.00
Frt		1.00	1.00	0.85	1.00	0.85
Flt Protected		1.00	1.00	1.00	0.95	1.00
Satd. Flow (prot)		3539	3539	2787	3433	1583
Flt Permitted		1.00	1.00	1.00	0.95	1.00
Satd. Flow (perm)		3539	3539	2787	3433	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	1337	1049	940	386	375
RTOR Reduction (vph)	0	0	0	433	0	307
Lane Group Flow (vph)	0	1337	1049	507	386	68
Confl. Peds. (#/hr)				6	3	
Turn Type		NA	NA	custom	Prot	Perm
Protected Phases		2	2	2	1	
Permitted Phases				8		1
Actuated Green, G (s)		33.8	33.8	33.8	11.2	11.2
Effective Green, g (s)		33.8	33.8	33.3	11.2	11.2
Actuated g/C Ratio		0.55	0.55	0.54	0.18	0.18
Clearance Time (s)		5.4	5.4	5.4	5.2	5.2
Vehicle Extension (s)		2.9	2.9	2.9	2.5	2.5
Lane Grp Cap (vph)		1935	1935	1501	622	286
v/s Ratio Prot		c0.38	0.30	0.18	c0.11	
v/s Ratio Perm						0.04
v/c Ratio		0.69	0.54	0.34	0.62	0.24
Uniform Delay, d1		10.2	9.0	8.0	23.3	21.6
Progression Factor		1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2		1.1	0.3	0.1	1.7	0.3
Delay (s)		11.3	9.3	8.2	25.0	22.0
Level of Service		B	A	A	C	C
Approach Delay (s)		11.3	8.8		23.5	
Approach LOS		B	A		C	

Intersection Summary			
HCM 2000 Control Delay	12.3	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.67		
Actuated Cycle Length (s)	61.8	Sum of lost time (s)	16.6
Intersection Capacity Utilization	56.9%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	70	200	1135	70	95	1000
Future Volume (vph)	70	200	1135	70	95	1000
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	3.1	4.9		4.4	4.9
Lane Util. Factor	1.00	1.00	0.91		1.00	0.91
Frpb, ped/bikes	1.00	0.94	1.00		1.00	1.00
Flpb, ped/bikes	1.00	1.00	1.00		1.00	1.00
Frt	1.00	0.85	0.99		1.00	1.00
Flt Protected	0.95	1.00	1.00		0.95	1.00
Satd. Flow (prot)	1770	1495	5030		1770	5085
Flt Permitted	0.95	1.00	1.00		0.95	1.00
Satd. Flow (perm)	1770	1495	5030		1770	5085
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	76	217	1234	76	103	1087
RTOR Reduction (vph)	0	199	2	0	0	0
Lane Group Flow (vph)	76	18	1308	0	103	1087
Confl. Peds. (#/hr)	11	16		18	18	
Turn Type	Prot	Perm	NA		Prot	NA
Protected Phases	4		6		5	2
Permitted Phases		4				
Actuated Green, G (s)	11.8	11.8	111.8		13.1	129.3
Effective Green, g (s)	11.8	12.7	111.8		13.1	129.3
Actuated g/C Ratio	0.08	0.08	0.75		0.09	0.86
Clearance Time (s)	4.0	4.0	4.9		4.4	4.9
Vehicle Extension (s)	3.0	3.0	5.0		2.0	3.2
Lane Grp Cap (vph)	139	126	3749		154	4383
v/s Ratio Prot	c0.04		c0.26		c0.06	0.21
v/s Ratio Perm		0.01				
v/c Ratio	0.55	0.15	0.35		0.67	0.25
Uniform Delay, d1	66.5	63.6	6.6		66.3	1.8
Progression Factor	1.00	1.00	1.64		1.18	1.18
Incremental Delay, d2	4.3	0.5	0.2		6.7	0.1
Delay (s)	70.9	64.2	11.0		85.1	2.3
Level of Service	E	E	B		F	A
Approach Delay (s)	65.9		11.0			9.4
Approach LOS	E		B			A

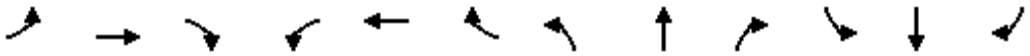
Intersection Summary			
HCM 2000 Control Delay	16.1	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.40		
Actuated Cycle Length (s)	150.0	Sum of lost time (s)	13.3
Intersection Capacity Utilization	49.1%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group



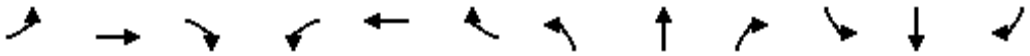
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	60	115	145	115	30	110	235	1125	110	140	885	85
Future Volume (vph)	60	115	145	115	30	110	235	1125	110	140	885	85
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	0.91		0.97	0.95	
Frpb, ped/bikes	1.00	0.99		1.00	0.98		1.00	1.00		1.00	1.00	
Flpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Frt	1.00	0.92		1.00	0.88		1.00	0.99		1.00	0.99	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1770	1683		1770	1617		1770	5000		3433	3481	
Flt Permitted	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (perm)	1770	1683		1770	1617		1770	5000		3433	3481	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	65	125	158	125	33	120	255	1223	120	152	962	92
RTOR Reduction (vph)	0	32	0	0	89	0	0	7	0	0	4	0
Lane Group Flow (vph)	65	251	0	125	64	0	255	1336	0	152	1050	0
Confl. Peds. (#/hr)	3		9	9		3	14		14	14		14
Turn Type	Split	NA		Split	NA		Prot	NA		Prot	NA	
Protected Phases	7	7		8	8		1	6		5	2	
Permitted Phases												
Actuated Green, G (s)	26.7	26.7		14.2	14.2		24.5	70.3		19.7	65.5	
Effective Green, g (s)	27.6	27.6		15.1	15.1		24.9	71.2		20.1	66.4	
Actuated g/C Ratio	0.18	0.18		0.10	0.10		0.17	0.47		0.13	0.44	
Clearance Time (s)	4.9	4.9		4.9	4.9		4.4	4.9		4.4	4.9	
Vehicle Extension (s)	3.0	3.0		2.0	2.0		2.0	3.9		2.0	3.9	
Lane Grp Cap (vph)	325	309		178	162		293	2373		460	1540	
v/s Ratio Prot	0.04	c0.15		c0.07	0.04		c0.14	0.27		0.04	c0.30	
v/s Ratio Perm												
v/c Ratio	0.20	0.81		0.70	0.39		0.87	0.56		0.33	0.68	
Uniform Delay, d1	51.8	58.7		65.3	63.2		61.0	28.2		58.9	33.4	
Progression Factor	1.00	1.00		1.00	1.00		1.06	0.53		0.87	1.30	
Incremental Delay, d2	0.3	15.0		9.8	0.6		20.6	0.9		0.2	2.4	
Delay (s)	52.2	73.7		75.1	63.7		85.0	15.7		51.4	45.9	
Level of Service	D	E		E	E		F	B		D	D	
Approach Delay (s)		69.7			68.8			26.8			46.6	
Approach LOS		E			E			C			D	

Intersection Summary			
HCM 2000 Control Delay	41.5	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.75		
Actuated Cycle Length (s)	150.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	77.9%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	60	15	60	145	15	135	35	1270	55	105	1100	65
Future Volume (vph)	60	15	60	145	15	135	35	1270	55	105	1100	65
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.9		4.9	4.9		4.4	4.9		4.4	4.9	
Lane Util. Factor		1.00		1.00	1.00		1.00	0.91		0.97	0.95	
Frpb, ped/bikes		0.99		1.00	1.00		1.00	1.00		1.00	1.00	
Flpb, ped/bikes		1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Frt		0.94		1.00	0.86		1.00	0.99		1.00	0.99	
Flt Protected		0.98		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1698		1770	1611		1770	5037		3433	3501	
Flt Permitted		0.98		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (perm)		1698		1770	1611		1770	5037		3433	3501	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	65	16	65	158	16	147	38	1380	60	114	1196	71
RTOR Reduction (vph)	0	22	0	0	130	0	0	2	0	0	2	0
Lane Group Flow (vph)	0	124	0	158	33	0	38	1438	0	114	1265	0
Confl. Peds. (#/hr)			6	6			7		18	18		7
Turn Type	Split	NA		Split	NA		Prot	NA		Prot	NA	
Protected Phases	8	8		7	7		1	6		5	2	
Permitted Phases												
Actuated Green, G (s)		18.1		17.3	17.3		6.3	82.3		13.2	89.2	
Effective Green, g (s)		18.1		17.3	17.3		6.3	82.3		13.2	89.2	
Actuated g/C Ratio		0.12		0.12	0.12		0.04	0.55		0.09	0.59	
Clearance Time (s)		4.9		4.9	4.9		4.4	4.9		4.4	4.9	
Vehicle Extension (s)		2.0		2.0	2.0		2.0	2.0		2.0	2.0	
Lane Grp Cap (vph)		204		204	185		74	2763		302	2081	
v/s Ratio Prot		c0.07		c0.09	0.02		0.02	c0.29		0.03	c0.36	
v/s Ratio Perm												
v/c Ratio		0.61		0.77	0.18		0.51	0.52		0.38	0.61	
Uniform Delay, d1		62.6		64.5	59.9		70.3	21.4		64.5	19.3	
Progression Factor		1.00		1.00	1.00		1.08	0.82		0.67	0.42	
Incremental Delay, d2		3.5		15.3	0.2		2.4	0.7		0.2	1.1	
Delay (s)		66.1		79.7	60.1		78.6	18.3		43.4	9.2	
Level of Service		E		E	E		E	B		D	A	
Approach Delay (s)		66.1			69.8			19.9			12.0	
Approach LOS		E			E			B			B	

Intersection Summary			
HCM 2000 Control Delay	23.4	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.63		
Actuated Cycle Length (s)	150.0	Sum of lost time (s)	19.1
Intersection Capacity Utilization	72.9%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	30	10	60	20	100	160	125	1105	15	25	1155	115
Future Volume (vph)	30	10	60	20	100	160	125	1105	15	25	1155	115
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.9	4.9		5.8	4.0	4.4	4.9		4.4	4.9	
Lane Util. Factor		1.00	1.00		1.00	1.00	1.00	0.91		1.00	0.91	
Frpb, ped/bikes		1.00	0.99		1.00	1.00	1.00	1.00		1.00	0.99	
Flpb, ped/bikes		1.00	1.00		1.00	1.00	1.00	1.00		1.00	1.00	
Frt		1.00	0.85		1.00	0.85	1.00	1.00		1.00	0.99	
Flt Protected		0.96	1.00		0.99	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1795	1562		1847	1583	1770	5070		1770	4972	
Flt Permitted		0.56	1.00		0.94	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (perm)		1041	1562		1747	1583	1770	5070		1770	4972	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	33	11	65	22	109	174	136	1201	16	27	1255	125
RTOR Reduction (vph)	0	0	58	0	0	0	0	0	0	0	6	0
Lane Group Flow (vph)	0	44	7	0	131	174	136	1217	0	27	1374	0
Confl. Peds. (#/hr)			1	1			19		19	19		19
Turn Type	Perm	NA	Perm	Perm	NA	Free	Prot	NA		Prot	NA	
Protected Phases		8			8		1	6		5	2	
Permitted Phases	8		8	8		Free						
Actuated Green, G (s)		16.8	16.8		16.8	150.0	32.4	114.2		4.8	86.6	
Effective Green, g (s)		16.8	16.8		15.9	150.0	32.4	114.2		4.8	86.6	
Actuated g/C Ratio		0.11	0.11		0.11	1.00	0.22	0.76		0.03	0.58	
Clearance Time (s)		4.9	4.9		4.9		4.4	4.9		4.4	4.9	
Vehicle Extension (s)		2.0	2.0		2.0		2.0	2.9		2.0	3.9	
Lane Grp Cap (vph)		116	174		185	1583	382	3859		56	2870	
v/s Ratio Prot							c0.08	0.24		0.02	c0.28	
v/s Ratio Perm		0.04	0.00		c0.07	0.11						
v/c Ratio		0.38	0.04		0.71	0.11	0.36	0.32		0.48	0.48	
Uniform Delay, d1		61.8	59.4		64.8	0.0	49.9	5.6		71.4	18.5	
Progression Factor		1.29	3.20		1.00	1.00	1.00	1.00		0.94	1.37	
Incremental Delay, d2		0.7	0.0		9.7	0.1	0.2	0.2		1.9	0.5	
Delay (s)		80.2	190.3		74.5	0.1	50.1	5.8		68.9	25.9	
Level of Service		F	F		E	A	D	A		E	C	
Approach Delay (s)		145.9			32.1			10.3			26.7	
Approach LOS		F			C			B			C	

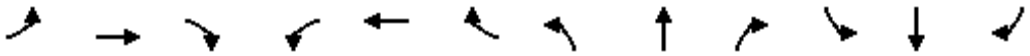
Intersection Summary			
HCM 2000 Control Delay	24.3	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.48		
Actuated Cycle Length (s)	150.0	Sum of lost time (s)	15.1
Intersection Capacity Utilization	57.6%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	EBR2	WBT	WBR	NBR2	SBL2	SBL	SBT	SBR	NWL
Lane Configurations												
Traffic Volume (vph)	310	1640	465	100	1875	620	100	350	395	100	215	200
Future Volume (vph)	310	1640	465	100	1875	620	100	350	395	100	215	200
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	2.6	4.0		6.1	4.0	5.9	5.9	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.97	0.86		0.86	0.91	1.00	1.00	0.95	0.91	0.91	1.00	1.00
Frpb, ped/bikes	1.00	0.99		1.00	1.00	0.96	1.00	1.00	1.00	1.00	0.89	1.00
Flpb, ped/bikes	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.97		0.85	1.00	0.85	0.86	1.00	1.00	1.00	0.85	1.00
Flt Protected	0.95	1.00		1.00	1.00	1.00	1.00	0.95	0.95	0.97	1.00	0.95
Satd. Flow (prot)	3433	4606		1362	5085	1528	1611	1681	1610	1639	1409	1770
Flt Permitted	0.95	1.00		1.00	1.00	1.00	1.00	0.95	0.95	0.97	1.00	0.95
Satd. Flow (perm)	3433	4606		1362	5085	1528	1611	1681	1610	1639	1409	1770
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	337	1783	505	109	2038	674	109	380	429	109	234	217
RTOR Reduction (vph)	0	0	0	51	0	29	68	0	0	0	140	0
Lane Group Flow (vph)	337	2299	0	47	2038	645	41	243	334	341	94	217
Confl. Peds. (#/hr)	29		31			29		10			63	63
Turn Type	Prot	NA		Perm	NA	pm+ov	Perm	Split	Split	NA	Perm	Prot
Protected Phases	5	2			6	4		4	4	4		3
Permitted Phases				2		6	8				4	
Actuated Green, G (s)	7.0	41.0		41.0	30.2	50.1	32.0	19.9	19.9	19.9	19.9	10.0
Effective Green, g (s)	8.4	43.1		41.0	32.1	46.3	32.0	19.9	19.9	19.9	19.9	10.0
Actuated g/C Ratio	0.10	0.51		0.48	0.38	0.54	0.38	0.23	0.23	0.23	0.23	0.12
Clearance Time (s)	4.0	6.1		6.1	5.9	4.0	5.9	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	2.8		2.8	3.2	3.0	4.1	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	339	2335		656	1920	832	606	393	376	383	329	208
v/s Ratio Prot	0.10	c0.50			c0.40	0.16		0.14	0.21	c0.21		c0.12
v/s Ratio Perm				0.03		0.26	0.03				0.07	
v/c Ratio	0.99	0.98		0.07	1.06	0.78	0.07	0.62	0.89	0.89	0.29	1.04
Uniform Delay, d1	38.3	20.6		11.8	26.4	15.2	17.0	29.1	31.5	31.5	26.7	37.5
Progression Factor	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	47.0	15.3		0.2	39.1	4.6	0.1	2.9	21.5	21.8	0.5	74.2
Delay (s)	85.3	35.9		12.0	65.6	19.8	17.0	32.0	53.0	53.3	27.2	111.7
Level of Service	F	D		B	E	B	B	C	D	D	C	F
Approach Delay (s)		41.1			54.2					43.4		91.2
Approach LOS		D			D					D		F

Intersection Summary			
HCM 2000 Control Delay	50.6	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	1.03		
Actuated Cycle Length (s)	85.0	Sum of lost time (s)	16.5
Intersection Capacity Utilization	89.0%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			

Movement	NWR	NWR2
Lane Configurations		
Traffic Volume (vph)	340	90
Future Volume (vph)	340	90
Ideal Flow (vphpl)	1900	1900
Total Lost time (s)	4.0	
Lane Util. Factor	0.88	
Frpb, ped/bikes	1.00	
Flpb, ped/bikes	1.00	
Frt	0.85	
Flt Protected	1.00	
Satd. Flow (prot)	2787	
Flt Permitted	1.00	
Satd. Flow (perm)	2787	
Peak-hour factor, PHF	0.92	0.92
Adj. Flow (vph)	370	98
RTOR Reduction (vph)	147	0
Lane Group Flow (vph)	321	0
Confl. Peds. (#/hr)		31
Turn Type	Prot	
Protected Phases	3	
Permitted Phases		
Actuated Green, G (s)	10.0	
Effective Green, g (s)	10.0	
Actuated g/C Ratio	0.12	
Clearance Time (s)	4.0	
Vehicle Extension (s)	3.0	
Lane Grp Cap (vph)	327	
v/s Ratio Prot	0.12	
v/s Ratio Perm		
v/c Ratio	0.98	
Uniform Delay, d1	37.4	
Progression Factor	1.00	
Incremental Delay, d2	44.3	
Delay (s)	81.7	
Level of Service	F	
Approach Delay (s)		
Approach LOS		

Intersection Summary



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	70	110	290	90	190	40	60	60	110	40	30	40
Future Volume (vph)	70	110	290	90	190	40	60	60	110	40	30	40
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.5			4.5			4.5			4.0	
Lane Util. Factor		1.00			1.00			1.00			1.00	
Frt		0.92			0.98			0.94			0.95	
Flt Protected		0.99			0.99			0.99			0.98	
Satd. Flow (prot)		1695			1806			1720			1740	
Flt Permitted		0.91			0.72			0.90			0.86	
Satd. Flow (perm)		1547			1312			1576			1524	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	76	120	315	98	207	43	65	65	120	43	33	43
RTOR Reduction (vph)	0	123	0	0	11	0	0	41	0	0	23	0
Lane Group Flow (vph)	0	388	0	0	337	0	0	209	0	0	96	0
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)		16.8			16.8			21.9			22.4	
Effective Green, g (s)		16.8			16.8			21.9			22.4	
Actuated g/C Ratio		0.35			0.35			0.46			0.47	
Clearance Time (s)		4.5			4.5			4.5			4.0	
Vehicle Extension (s)		3.0			3.0			3.0			3.0	
Lane Grp Cap (vph)		544			462			723			715	
v/s Ratio Prot												
v/s Ratio Perm		0.25			c0.26			c0.13			0.06	
v/c Ratio		0.71			0.73			0.29			0.13	
Uniform Delay, d1		13.4			13.5			8.0			7.2	
Progression Factor		1.00			1.00			1.00			1.00	
Incremental Delay, d2		4.4			5.7			1.0			0.1	
Delay (s)		17.8			19.2			9.1			7.2	
Level of Service		B			B			A			A	
Approach Delay (s)		17.8			19.2			9.1			7.2	
Approach LOS		B			B			A			A	

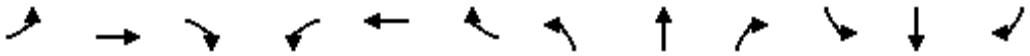
Intersection Summary			
HCM 2000 Control Delay	15.0	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.48		
Actuated Cycle Length (s)	47.7	Sum of lost time (s)	9.0
Intersection Capacity Utilization	54.3%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Movement	NBL	NBT	SBT	SBR	SEL	SER
Lane Configurations						
Traffic Volume (vph)	280	1440	845	25	50	450
Future Volume (vph)	280	1440	845	25	50	450
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0		4.0	4.0
Lane Util. Factor	1.00	0.91	0.91		1.00	1.00
Frt	1.00	1.00	1.00		1.00	0.85
Flt Protected	0.95	1.00	1.00		0.95	1.00
Satd. Flow (prot)	1770	5085	5063		1770	1583
Flt Permitted	0.95	1.00	1.00		0.95	1.00
Satd. Flow (perm)	1770	5085	5063		1770	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	304	1565	918	27	54	489
RTOR Reduction (vph)	0	0	2	0	0	441
Lane Group Flow (vph)	304	1565	943	0	54	48
Turn Type	Prot	NA	NA		Prot	Perm
Protected Phases	7	4	8		5	
Permitted Phases						5
Actuated Green, G (s)	25.9	100.2	70.3		11.8	11.8
Effective Green, g (s)	25.9	100.2	70.3		11.8	11.8
Actuated g/C Ratio	0.22	0.84	0.59		0.10	0.10
Clearance Time (s)	4.0	4.0	4.0		4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0		3.0	3.0
Lane Grp Cap (vph)	382	4245	2966		174	155
v/s Ratio Prot	c0.17	c0.31	0.19		c0.03	
v/s Ratio Perm						0.03
v/c Ratio	0.80	0.37	0.32		0.31	0.31
Uniform Delay, d1	44.5	2.4	12.6		50.3	50.3
Progression Factor	1.00	1.00	0.62		1.00	1.00
Incremental Delay, d2	10.9	0.2	0.2		1.0	1.1
Delay (s)	55.5	2.6	8.1		51.3	51.5
Level of Service	E	A	A		D	D
Approach Delay (s)		11.2	8.1		51.4	
Approach LOS		B	A		D	

Intersection Summary			
HCM 2000 Control Delay	16.8	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.47		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	51.4%	ICU Level of Service	A
Analysis Period (min)	15		

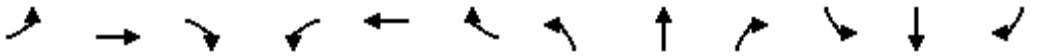
c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	90	0	130	400	190	140	0	0	0	0	60	80
Future Volume (vph)	90	0	130	400	190	140	0	0	0	0	60	80
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0		4.0	4.0	4.0						4.0	
Lane Util. Factor	1.00		1.00	1.00	1.00						1.00	
Frt	1.00		0.85	1.00	0.94						0.92	
Flt Protected	0.95		1.00	0.95	1.00						1.00	
Satd. Flow (prot)	1770		1583	1770	1744						1719	
Flt Permitted	0.95		1.00	0.95	1.00						1.00	
Satd. Flow (perm)	1770		1583	1770	1744						1719	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	98	0	141	435	207	152	0	0	0	0	65	87
RTOR Reduction (vph)	0	0	124	279	38	0	0	0	0	0	69	0
Lane Group Flow (vph)	98	0	17	156	321	0	0	0	0	0	83	0
Turn Type	Prot		Perm	Split	NA						NA	
Protected Phases	2!			8	8						6!	
Permitted Phases			4									
Actuated Green, G (s)	8.2		4.8	14.0	14.0						8.2	
Effective Green, g (s)	8.2		4.8	14.0	14.0						8.2	
Actuated g/C Ratio	0.21		0.12	0.36	0.36						0.21	
Clearance Time (s)	4.0		4.0	4.0	4.0						4.0	
Vehicle Extension (s)	3.0		3.0	3.0	3.0						3.0	
Lane Grp Cap (vph)	372		194	635	626						361	
v/s Ratio Prot	c0.06			0.09	c0.18						0.05	
v/s Ratio Perm			c0.01									
v/c Ratio	0.26		0.09	0.25	0.51						0.23	
Uniform Delay, d1	12.9		15.2	8.8	9.8						12.8	
Progression Factor	1.00		1.00	1.00	1.00						1.00	
Incremental Delay, d2	0.4		0.2	0.2	0.7						0.3	
Delay (s)	13.3		15.4	9.0	10.5						13.1	
Level of Service	B		B	A	B						B	
Approach Delay (s)		14.5			9.7			0.0			13.1	
Approach LOS		B			A			A			B	

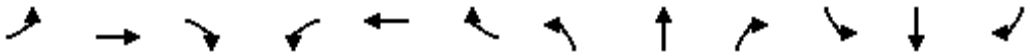
Intersection Summary			
HCM 2000 Control Delay	11.1	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.36		
Actuated Cycle Length (s)	39.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	48.3%	ICU Level of Service	A
Analysis Period (min)	15		

! Phase conflict between lane groups.
c Critical Lane Group



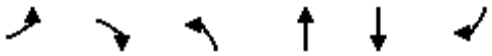
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	1925	95	150	2395	0	0	0	0	580	200	100
Future Volume (vph)	0	1925	95	150	2395	0	0	0	0	580	200	100
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0		4.0	4.0					4.0	4.0	4.0
Lane Util. Factor		0.91		1.00	0.86					0.95	0.95	1.00
Frpb, ped/bikes		1.00		1.00	1.00					1.00	1.00	0.99
Flpb, ped/bikes		1.00		1.00	1.00					0.99	1.00	1.00
Frt		0.99		1.00	1.00					1.00	1.00	0.85
Flt Protected		1.00		0.95	1.00					0.95	0.98	1.00
Satd. Flow (prot)		5050		1770	6408					1662	1727	1561
Flt Permitted		1.00		0.95	1.00					0.95	0.98	1.00
Satd. Flow (perm)		5050		1770	6408					1662	1727	1561
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	2092	103	163	2603	0	0	0	0	630	217	109
RTOR Reduction (vph)	0	4	0	0	0	0	0	0	0	0	0	42
Lane Group Flow (vph)	0	2191	0	163	2603	0	0	0	0	485	362	67
Confl. Peds. (#/hr)				13						14		3
Turn Type		NA		Prot	NA					Perm	NA	Perm
Protected Phases		2		1	6						4	
Permitted Phases										4		4
Actuated Green, G (s)		50.5		12.7	67.9					37.3	37.3	37.3
Effective Green, g (s)		51.7		13.1	68.8					38.2	38.2	38.2
Actuated g/C Ratio		0.45		0.11	0.60					0.33	0.33	0.33
Clearance Time (s)		5.2		4.4	4.9					4.9	4.9	4.9
Vehicle Extension (s)		3.8		2.0	4.6					2.0	2.0	2.0
Lane Grp Cap (vph)		2270		201	3833					552	573	518
v/s Ratio Prot		c0.43		c0.09	0.41							
v/s Ratio Perm										c0.29	0.21	0.04
v/c Ratio		0.97		0.81	0.68					0.88	0.63	0.13
Uniform Delay, d1		30.8		49.7	15.6					36.2	32.5	26.8
Progression Factor		1.00		1.00	1.00					1.00	1.00	1.00
Incremental Delay, d2		12.3		20.4	1.0					14.3	1.7	0.0
Delay (s)		43.1		70.1	16.6					50.5	34.1	26.8
Level of Service		D		E	B					D	C	C
Approach Delay (s)		43.1			19.8			0.0			41.6	
Approach LOS		D			B			A			D	

Intersection Summary			
HCM 2000 Control Delay	31.9	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.91		
Actuated Cycle Length (s)	115.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	80.2%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			



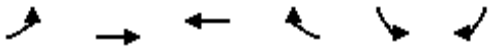
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	740	220	135	460	0	170	0	290	290	300	0
Future Volume (vph)	0	740	220	135	460	0	170	0	290	290	300	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0		4.0	4.0		4.0		4.0	4.0	4.0	
Lane Util. Factor		0.95		1.00	0.95		1.00		1.00	1.00	1.00	
Frpb, ped/bikes		0.97		1.00	1.00		1.00		0.98	1.00	1.00	
Flpb, ped/bikes		1.00		1.00	1.00		1.00		1.00	1.00	1.00	
Frt		0.97		1.00	1.00		1.00		0.85	1.00	1.00	
Flt Protected		1.00		0.95	1.00		0.95		1.00	0.95	1.00	
Satd. Flow (prot)		3303		1770	3539		1770		1556	1770	1863	
Flt Permitted		1.00		0.10	1.00		0.95		1.00	0.95	1.00	
Satd. Flow (perm)		3303		194	3539		1770		1556	1770	1863	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	804	239	147	500	0	185	0	315	315	326	0
RTOR Reduction (vph)	0	30	0	0	0	0	0	0	193	0	0	0
Lane Group Flow (vph)	0	1013	0	147	500	0	185	0	122	315	326	0
Confl. Peds. (#/hr)			43	43		51	17		3	3		17
Turn Type		NA		pm+pt	NA		Prot		Perm	Split	NA	
Protected Phases		2		1	6		3			4	4	
Permitted Phases				6					2			
Actuated Green, G (s)		34.0		44.6	44.6		11.9		34.0	19.3	19.3	
Effective Green, g (s)		34.9		45.0	45.5		12.3		34.9	20.2	20.2	
Actuated g/C Ratio		0.39		0.50	0.51		0.14		0.39	0.22	0.22	
Clearance Time (s)		4.9		4.4	4.9		4.4		4.9	4.9	4.9	
Vehicle Extension (s)		6.7		2.0	6.7		3.0		6.7	3.0	3.0	
Lane Grp Cap (vph)		1280		212	1789		241		603	397	418	
v/s Ratio Prot		c0.31		c0.05	0.14		c0.10			c0.18	0.18	
v/s Ratio Perm				0.29					0.08			
v/c Ratio		0.79		0.69	0.28		0.77		0.20	0.79	0.78	
Uniform Delay, d1		24.3		16.8	12.8		37.5		18.3	32.9	32.8	
Progression Factor		1.00		1.00	1.00		1.00		1.00	1.00	1.00	
Incremental Delay, d2		5.1		7.7	0.4		13.6		0.8	10.4	8.9	
Delay (s)		29.4		24.5	13.2		51.1		19.1	43.4	41.7	
Level of Service		C		C	B		D		B	D	D	
Approach Delay (s)		29.4			15.8			30.9			42.5	
Approach LOS		C			B			C			D	

Intersection Summary			
HCM 2000 Control Delay	29.5	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.78		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	75.1%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	220	430	465	865	430	100
Future Volume (vph)	220	430	465	865	430	100
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0		4.4	4.0	4.9	
Lane Util. Factor	1.00		1.00	0.91	0.91	
Frpb, ped/bikes	1.00		1.00	1.00	0.99	
Flpb, ped/bikes	1.00		1.00	1.00	1.00	
Frt	0.91		1.00	1.00	0.97	
Flt Protected	0.98		0.95	1.00	1.00	
Satd. Flow (prot)	1668		1770	5085	4915	
Flt Permitted	0.98		0.95	1.00	1.00	
Satd. Flow (perm)	1668		1770	5085	4915	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	239	467	505	940	467	109
RTOR Reduction (vph)	59	0	0	0	32	0
Lane Group Flow (vph)	647	0	505	940	544	0
Confl. Peds. (#/hr)			2			2
Turn Type	Prot		Prot	NA	NA	
Protected Phases	2		3	8	4	
Permitted Phases						
Actuated Green, G (s)	48.0		36.2	64.0	23.8	
Effective Green, g (s)	48.0		35.8	64.0	22.9	
Actuated g/C Ratio	0.40		0.30	0.53	0.19	
Clearance Time (s)	4.0		4.0	4.0	4.0	
Vehicle Extension (s)	3.0		3.0	3.0	3.0	
Lane Grp Cap (vph)	667		528	2712	937	
v/s Ratio Prot	c0.39		c0.29	0.18	c0.11	
v/s Ratio Perm						
v/c Ratio	0.97		0.96	0.35	0.58	
Uniform Delay, d1	35.3		41.3	16.0	44.2	
Progression Factor	1.00		1.03	1.23	1.00	
Incremental Delay, d2	27.0		27.3	0.3	2.6	
Delay (s)	62.3		70.0	20.0	46.8	
Level of Service	E		E	C	D	
Approach Delay (s)	62.3			37.5	46.8	
Approach LOS	E			D	D	

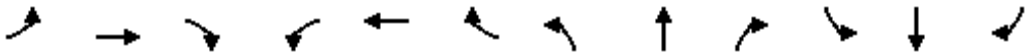
Intersection Summary			
HCM 2000 Control Delay	45.9	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.88		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	13.3
Intersection Capacity Utilization	88.5%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	65	75	160	80	65	125
Future Volume (Veh/h)	65	75	160	80	65	125
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	71	82	174	87	71	136
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type		None	None			
Median storage veh)						
Upstream signal (ft)		1226	738			
pX, platoon unblocked						
vC, conflicting volume	261				442	218
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	261				442	218
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	95				87	83
cM capacity (veh/h)	1303				542	822

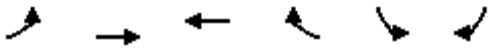
Direction, Lane #	EB 1	EB 2	WB 1	SB 1
Volume Total	71	82	261	207
Volume Left	71	0	0	71
Volume Right	0	0	87	136
cSH	1303	1700	1700	698
Volume to Capacity	0.05	0.05	0.15	0.30
Queue Length 95th (ft)	4	0	0	31
Control Delay (s)	7.9	0.0	0.0	12.3
Lane LOS	A			B
Approach Delay (s)	3.7		0.0	12.3
Approach LOS				B

Intersection Summary			
Average Delay	5.0		
Intersection Capacity Utilization	38.2%	ICU Level of Service	A
Analysis Period (min)	15		



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	105	2290	110	0	2350	560	120	240	230	0	0	0
Future Volume (vph)	105	2290	110	0	2350	560	120	240	230	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0			4.0	4.0		4.0				
Lane Util. Factor	1.00	0.91			0.91	1.00		0.95				
Frpb, ped/bikes	1.00	1.00			1.00	0.96		0.99				
Flpb, ped/bikes	1.00	1.00			1.00	1.00		1.00				
Frt	1.00	0.99			1.00	0.85		0.94				
Flt Protected	0.95	1.00			1.00	1.00		0.99				
Satd. Flow (prot)	1770	5044			5085	1519		3257				
Flt Permitted	0.95	1.00			1.00	1.00		0.99				
Satd. Flow (perm)	1770	5044			5085	1519		3257				
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	114	2489	120	0	2554	609	130	261	250	0	0	0
RTOR Reduction (vph)	0	3	0	0	0	150	0	4	0	0	0	0
Lane Group Flow (vph)	114	2606	0	0	2554	459	0	637	0	0	0	0
Confl. Peds. (#/hr)	15		2			15	1		20			
Turn Type	Prot	NA			NA	Perm	Split	NA				
Protected Phases	5	2			6		4	4				
Permitted Phases						6						
Actuated Green, G (s)	19.8	102.2			78.0	78.0		38.0				
Effective Green, g (s)	20.2	103.1			78.9	78.9		38.9				
Actuated g/C Ratio	0.13	0.69			0.53	0.53		0.26				
Clearance Time (s)	4.4	4.9			4.9	4.9		4.9				
Vehicle Extension (s)	2.0	3.8			4.6	4.6		2.0				
Lane Grp Cap (vph)	238	3466			2674	798		844				
v/s Ratio Prot	0.06	c0.52			c0.50			c0.20				
v/s Ratio Perm						0.30						
v/c Ratio	0.48	0.75			0.96	0.58		0.76				
Uniform Delay, d1	60.0	15.2			33.9	24.2		51.2				
Progression Factor	1.00	1.00			1.00	1.00		1.00				
Incremental Delay, d2	0.6	1.6			9.7	3.0		3.4				
Delay (s)	60.6	16.7			43.5	27.2		54.6				
Level of Service	E	B			D	C		D				
Approach Delay (s)		18.6			40.4			54.6			0.0	
Approach LOS		B			D			D			A	

Intersection Summary			
HCM 2000 Control Delay	32.7	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.88		
Actuated Cycle Length (s)	150.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	88.4%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	120	1200	595	110	0	0
Future Volume (Veh/h)	120	1200	595	110	0	0
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	130	1304	647	120	0	0
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type		None	None			
Median storage veh)						
Upstream signal (ft)		345	945			
pX, platoon unblocked	0.94				0.79	0.94
vC, conflicting volume	767				1619	384
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	635				930	228
tC, single (s)	4.1				6.8	6.9
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	85				100	100
cM capacity (veh/h)	892				179	731

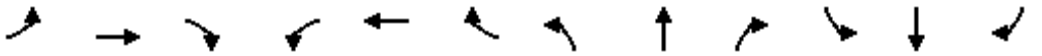
Direction, Lane #	EB 1	EB 2	EB 3	WB 1	WB 2
Volume Total	130	652	652	431	336
Volume Left	130	0	0	0	0
Volume Right	0	0	0	0	120
cSH	892	1700	1700	1700	1700
Volume to Capacity	0.15	0.38	0.38	0.25	0.20
Queue Length 95th (ft)	13	0	0	0	0
Control Delay (s)	9.7	0.0	0.0	0.0	0.0
Lane LOS	A				
Approach Delay (s)	0.9			0.0	
Approach LOS					

Intersection Summary			
Average Delay	0.6		
Intersection Capacity Utilization	36.5%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Sign Control	Stop		Stop			Stop
Traffic Volume (vph)	160	0	0	590	355	280
Future Volume (vph)	160	0	0	590	355	280
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	174	0	0	641	386	304

Direction, Lane #	WB 1	NB 1	SB 1	SB 2
Volume Total (vph)	174	641	386	304
Volume Left (vph)	174	0	386	0
Volume Right (vph)	0	641	0	0
Hadj (s)	0.23	-0.57	0.53	0.03
Departure Headway (s)	6.9	4.9	6.4	5.9
Degree Utilization, x	0.34	0.87	0.68	0.50
Capacity (veh/h)	500	728	549	603
Control Delay (s)	13.4	31.4	20.8	13.3
Approach Delay (s)	13.4	31.4	17.5	
Approach LOS	B	D	C	

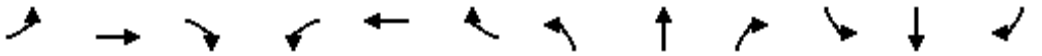
Intersection Summary			
Delay	22.9		
Level of Service	C		
Intersection Capacity Utilization	62.9%	ICU Level of Service	B
Analysis Period (min)	15		



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Traffic Volume (vph)	435	40	150	20	5	10	50	120	20	10	195	180
Future Volume (vph)	435	40	150	20	5	10	50	120	20	10	195	180
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	473	43	163	22	5	11	54	130	22	11	212	196

Direction, Lane #	EB 1	EB 2	WB 1	NB 1	SB 1	SB 2
Volume Total (vph)	495	185	38	206	223	196
Volume Left (vph)	473	0	22	54	11	0
Volume Right (vph)	0	163	11	22	0	196
Hadj (s)	0.51	-0.58	-0.02	0.02	0.06	-0.67
Departure Headway (s)	7.0	5.9	7.8	7.3	7.2	6.5
Degree Utilization, x	0.97	0.30	0.08	0.42	0.45	0.35
Capacity (veh/h)	501	594	433	486	491	546
Control Delay (s)	57.6	10.3	11.5	15.6	14.7	11.8
Approach Delay (s)	44.8		11.5	15.6	13.4	
Approach LOS	E		B	C	B	

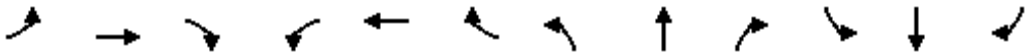
Intersection Summary				
Delay	29.5			
Level of Service	D			
Intersection Capacity Utilization	62.4%	ICU Level of Service		B
Analysis Period (min)	15			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	710	285	425	490	0	0	0	0	330	470	1055
Future Volume (vph)	0	710	285	425	490	0	0	0	0	330	470	1055
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0	4.0	4.0	4.0					4.0	4.0	4.0
Lane Util. Factor		0.95	1.00	0.97	0.95					0.91	0.91	1.00
Frt		1.00	0.85	1.00	1.00					1.00	1.00	0.85
Flt Protected		1.00	1.00	0.95	1.00					0.95	1.00	1.00
Satd. Flow (prot)		3539	1583	3433	3539					1610	3390	1583
Flt Permitted		1.00	1.00	0.95	1.00					0.95	1.00	1.00
Satd. Flow (perm)		3539	1583	3433	3539					1610	3390	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	772	310	462	533	0	0	0	0	359	511	1147
RTOR Reduction (vph)	0	0	216	0	0	0	0	0	0	0	0	75
Lane Group Flow (vph)	0	772	94	462	533	0	0	0	0	359	511	1072
Turn Type		NA	Perm	Prot	NA					Perm	NA	Perm
Protected Phases		2		1	6						4	
Permitted Phases			2							4		4
Actuated Green, G (s)		28.1	28.1	15.6	48.1					72.1	72.1	72.1
Effective Green, g (s)		29.0	29.0	16.0	49.0					73.0	73.0	73.0
Actuated g/C Ratio		0.22	0.22	0.12	0.38					0.56	0.56	0.56
Clearance Time (s)		4.9	4.9	4.4	4.9					4.9	4.9	4.9
Vehicle Extension (s)		3.8	3.8	2.0	4.2					2.0	2.0	2.0
Lane Grp Cap (vph)		789	353	422	1333					904	1903	888
v/s Ratio Prot		c0.22		c0.13	0.15							
v/s Ratio Perm			0.06							0.22	0.15	c0.68
v/c Ratio		0.98	0.27	1.09	0.40					0.40	0.27	1.21
Uniform Delay, d1		50.2	41.7	57.0	29.7					16.1	14.7	28.5
Progression Factor		1.00	1.00	1.00	1.00					1.00	1.00	1.00
Incremental Delay, d2		27.2	1.8	71.9	0.9					0.1	0.0	104.1
Delay (s)		77.4	43.6	128.9	30.6					16.2	14.7	132.6
Level of Service		E	D	F	C					B	B	F
Approach Delay (s)		67.7			76.2			0.0			82.0	
Approach LOS		E			E			A			F	

Intersection Summary			
HCM 2000 Control Delay	76.8	HCM 2000 Level of Service	E
HCM 2000 Volume to Capacity ratio	1.13		
Actuated Cycle Length (s)	130.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	85.5%	ICU Level of Service	E
Analysis Period (min)	15		

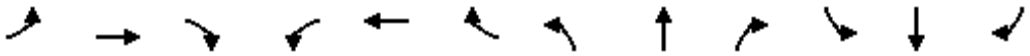
c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	0	40	40	0	0	0	0	0	0	1660	25
Future Volume (Veh/h)	0	0	40	40	0	0	0	0	0	0	1660	25
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	0	43	43	0	0	0	0	0	0	1804	27
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)								1066				
pX, platoon unblocked												
vC, conflicting volume	1818	1818	615	644	1831	0	1831			0		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	1818	1818	615	644	1831	0	1831			0		
tC, single (s)	7.5	6.5	6.9	7.5	6.5	6.9	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	100	100	90	87	100	100	100			100		
cM capacity (veh/h)	49	77	434	322	76	1084	329			1622		

Direction, Lane #	EB 1	WB 1	SB 1	SB 2	SB 3
Volume Total	43	43	722	722	388
Volume Left	0	43	0	0	0
Volume Right	43	0	0	0	27
cSH	434	322	1700	1700	1700
Volume to Capacity	0.10	0.13	0.42	0.42	0.23
Queue Length 95th (ft)	8	11	0	0	0
Control Delay (s)	14.2	17.9	0.0	0.0	0.0
Lane LOS	B	C			
Approach Delay (s)	14.2	17.9	0.0		
Approach LOS	B	C			

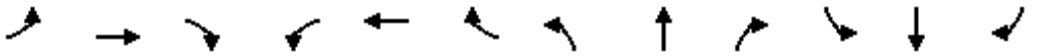
Intersection Summary				
Average Delay	0.7			
Intersection Capacity Utilization	51.1%	ICU Level of Service	A	
Analysis Period (min)	15			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	455	245	95	155	0	0	0	0	380	830	495
Future Volume (vph)	0	455	245	95	155	0	0	0	0	380	830	495
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0	4.0		4.0					4.0	4.0	
Lane Util. Factor		1.00	1.00		0.95					1.00	0.91	
Frt		1.00	0.85		1.00					1.00	0.94	
Flt Protected		1.00	1.00		0.98					0.95	1.00	
Satd. Flow (prot)		1863	1583		3473					1770	4800	
Flt Permitted		1.00	1.00		0.63					0.95	1.00	
Satd. Flow (perm)		1863	1583		2227					1770	4800	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	495	266	103	168	0	0	0	0	413	902	538
RTOR Reduction (vph)	0	0	42	0	0	0	0	0	0	0	166	0
Lane Group Flow (vph)	0	495	224	0	271	0	0	0	0	413	1274	0
Turn Type		NA	Perm	Perm	NA					Perm	NA	
Protected Phases		4			8						6	
Permitted Phases			4	8						6		
Actuated Green, G (s)		25.3	25.3		25.3					26.7	26.7	
Effective Green, g (s)		28.0	28.0		28.0					29.0	29.0	
Actuated g/C Ratio		0.43	0.43		0.43					0.45	0.45	
Clearance Time (s)		6.7	6.7		6.7					6.3	6.3	
Vehicle Extension (s)		2.0	2.0		2.5					4.6	4.6	
Lane Grp Cap (vph)		802	681		959					789	2141	
v/s Ratio Prot		c0.27									c0.27	
v/s Ratio Perm			0.14		0.12					0.23		
v/c Ratio		0.62	0.33		0.28					0.52	0.60	
Uniform Delay, d1		14.3	12.3		12.0					13.0	13.6	
Progression Factor		1.00	1.00		1.00					1.00	1.00	
Incremental Delay, d2		3.5	1.3		0.7					2.5	1.2	
Delay (s)		17.9	13.6		12.7					15.5	14.8	
Level of Service		B	B		B					B	B	
Approach Delay (s)		16.4			12.7			0.0			15.0	
Approach LOS		B			B			A			B	

Intersection Summary			
HCM 2000 Control Delay	15.1	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.61		
Actuated Cycle Length (s)	65.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	68.1%	ICU Level of Service	C
Analysis Period (min)	15		

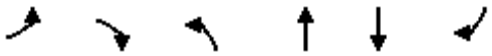
c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	1125	350	65	685	0	0	0	0	740	1125	665
Future Volume (vph)	0	1125	350	65	685	0	0	0	0	740	1125	665
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		6.7		4.0	6.7						6.3	4.0
Lane Util. Factor		0.95		1.00	0.95						0.86	0.86
Frt		0.96		1.00	1.00						1.00	0.85
Flt Protected		1.00		0.95	1.00						0.98	1.00
Satd. Flow (prot)		3413		1770	3539						4712	1362
Flt Permitted		1.00		0.95	1.00						0.98	1.00
Satd. Flow (perm)		3413		1770	3539						4712	1362
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	1223	380	71	745	0	0	0	0	804	1223	723
RTOR Reduction (vph)	0	13	0	0	0	0	0	0	0	0	0	86
Lane Group Flow (vph)	0	1590	0	71	745	0	0	0	0	0	2027	637
Turn Type		NA		Prot	NA					Perm	NA	Perm
Protected Phases		2		1	6						4	
Permitted Phases										4		4
Actuated Green, G (s)		62.1		4.6	69.4						58.6	58.6
Effective Green, g (s)		60.3		5.0	69.3						57.7	60.0
Actuated g/C Ratio		0.43		0.04	0.49						0.41	0.43
Clearance Time (s)		4.9		4.4	6.6						5.4	5.4
Vehicle Extension (s)		1.0		2.0	1.0						1.0	1.0
Lane Grp Cap (vph)		1470		63	1751						1942	583
v/s Ratio Prot		c0.47		c0.04	0.21							
v/s Ratio Perm											0.43	c0.47
v/c Ratio		1.08		1.13	0.43						1.16dl	1.09
Uniform Delay, d1		39.9		67.5	22.6						41.1	40.0
Progression Factor		1.00		1.00	1.00						1.00	1.00
Incremental Delay, d2		48.9		152.3	0.8						32.9	65.2
Delay (s)		88.7		219.8	23.4						74.1	105.2
Level of Service		F		F	C						E	F
Approach Delay (s)		88.7			40.5			0.0			82.3	
Approach LOS		F			D			A			F	

Intersection Summary			
HCM 2000 Control Delay	77.7	HCM 2000 Level of Service	E
HCM 2000 Volume to Capacity ratio	1.11		
Actuated Cycle Length (s)	140.0	Sum of lost time (s)	17.0
Intersection Capacity Utilization	101.8%	ICU Level of Service	G
Analysis Period (min)	15		

dl Defacto Left Lane. Recode with 1 though lane as a left lane.
c Critical Lane Group



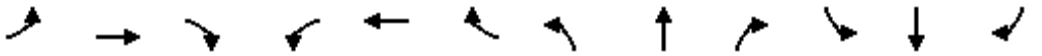
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	160	1260	1590	1240	1140	50
Future Volume (vph)	160	1260	1590	1240	1140	50
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	0.88	0.97	0.91	0.91	1.00
Frpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	0.99
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected	0.95	1.00	0.95	1.00	1.00	1.00
Satd. Flow (prot)	1770	2787	3433	5085	5085	1564
Flt Permitted	0.95	1.00	0.95	1.00	1.00	1.00
Satd. Flow (perm)	1770	2787	3433	5085	5085	1564
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	174	1370	1728	1348	1239	54
RTOR Reduction (vph)	0	0	0	0	0	6
Lane Group Flow (vph)	174	1370	1728	1348	1239	48
Confl. Peds. (#/hr)			3			3
Turn Type	Prot	pm+ov	Prot	NA	NA	pm+ov
Protected Phases	5	7	7	4	8	5
Permitted Phases		5				8
Actuated Green, G (s)	17.7	88.0	70.3	104.3	30.0	47.7
Effective Green, g (s)	17.7	88.0	70.3	104.3	30.0	47.7
Actuated g/C Ratio	0.14	0.68	0.54	0.80	0.23	0.37
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	240	1972	1856	4079	1173	621
v/s Ratio Prot	0.10	c0.38	c0.50	0.27	c0.24	0.01
v/s Ratio Perm		0.12				0.02
v/c Ratio	0.72	0.69	0.93	0.33	1.06	0.08
Uniform Delay, d1	53.8	12.8	27.6	3.5	50.0	26.8
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	10.4	1.1	9.0	0.2	42.5	0.1
Delay (s)	64.2	13.9	36.6	3.7	92.5	26.9
Level of Service	E	B	D	A	F	C
Approach Delay (s)	19.6			22.2	89.7	
Approach LOS	B			C	F	

Intersection Summary			
HCM 2000 Control Delay	36.3	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.94		
Actuated Cycle Length (s)	130.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	86.3%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	SEL	SET	SER	NWL	NWT	NWR
Lane Configurations												
Traffic Volume (vph)	280	535	0	0	885	660	40	0	120	250	30	420
Future Volume (vph)	280	535	0	0	885	660	40	0	120	250	30	420
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.5	4.0			4.4	4.4		6.4		4.0	4.0	
Lane Util. Factor	1.00	0.95			0.95	1.00		1.00		0.91	0.91	
Frt	1.00	1.00			1.00	0.85		0.90		1.00	0.87	
Flt Protected	0.95	1.00			1.00	1.00		0.99		0.95	1.00	
Satd. Flow (prot)	1770	3539			3539	1583		1653		1610	2933	
Flt Permitted	0.95	1.00			1.00	1.00		0.99		0.95	1.00	
Satd. Flow (perm)	1770	3539			3539	1583		1653		1610	2933	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	304	582	0	0	962	717	43	0	130	272	33	457
RTOR Reduction (vph)	0	0	0	0	0	470	0	113	0	0	382	0
Lane Group Flow (vph)	304	582	0	0	962	247	0	60	0	245	135	0
Turn Type	Prot	NA			NA	Perm	Split	NA		Split	NA	
Protected Phases	5	2			6		8	8		7	7	
Permitted Phases						6						
Actuated Green, G (s)	16.7	55.2			33.6	33.6		12.7		15.2	15.2	
Effective Green, g (s)	16.7	55.2			33.6	33.6		12.7		15.2	15.2	
Actuated g/C Ratio	0.17	0.57			0.34	0.34		0.13		0.16	0.16	
Clearance Time (s)	4.5	4.0			4.4	4.4		6.4		4.0	4.0	
Vehicle Extension (s)	3.5	2.0			3.5	3.5		2.0		2.0	2.0	
Lane Grp Cap (vph)	303	2003			1219	545		215		250	457	
v/s Ratio Prot	c0.17	0.16			c0.27			c0.04		c0.15	0.05	
v/s Ratio Perm						0.16						
v/c Ratio	1.00	0.29			0.79	0.45		0.28		0.98	0.30	
Uniform Delay, d1	40.4	11.0			28.8	24.8		38.3		41.0	36.4	
Progression Factor	1.00	1.00			1.00	1.00		1.00		1.00	1.00	
Incremental Delay, d2	52.5	0.4			5.2	2.7		0.3		50.5	0.1	
Delay (s)	92.9	11.4			34.0	27.5		38.5		91.5	36.6	
Level of Service	F	B			C	C		D		F	D	
Approach Delay (s)		39.3			31.2			38.5			54.2	
Approach LOS		D			C			D			D	

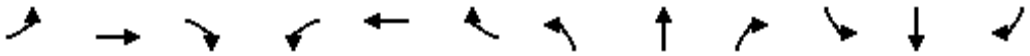
Intersection Summary			
HCM 2000 Control Delay	38.7	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.79		
Actuated Cycle Length (s)	97.5	Sum of lost time (s)	19.3
Intersection Capacity Utilization	81.1%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group



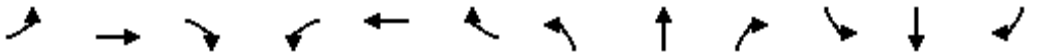
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	410	100	595	660	0	0	0	0	405	10	710
Future Volume (vph)	0	410	100	595	660	0	0	0	0	405	10	710
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0		5.9	5.9					1.8	1.8	1.8
Lane Util. Factor		0.95		1.00	1.00					0.95	0.95	1.00
Frpb, ped/bikes		1.00		1.00	1.00					1.00	1.00	1.00
Flpb, ped/bikes		1.00		1.00	1.00					1.00	1.00	1.00
Frt		0.97		1.00	1.00					1.00	1.00	0.85
Flt Protected		1.00		0.95	1.00					0.95	0.95	1.00
Satd. Flow (prot)		3423		1770	1863					1681	1689	1583
Flt Permitted		1.00		0.95	1.00					0.95	0.95	1.00
Satd. Flow (perm)		3423		1770	1863					1681	1689	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	446	109	647	717	0	0	0	0	440	11	772
RTOR Reduction (vph)	0	31	0	0	0	0	0	0	0	0	0	59
Lane Group Flow (vph)	0	524	0	647	717	0	0	0	0	233	218	713
Confl. Peds. (#/hr)	5		5	5		10						
Turn Type		NA		Split	NA					Split	NA	custom
Protected Phases		7		8	8					6	6	6
Permitted Phases												7
Actuated Green, G (s)		14.3		27.4	27.4					10.9	10.9	25.2
Effective Green, g (s)		14.3		27.7	27.7					13.1	13.1	29.6
Actuated g/C Ratio		0.21		0.41	0.41					0.20	0.20	0.44
Clearance Time (s)		4.0		6.2	6.2					4.0	4.0	4.0
Vehicle Extension (s)		3.0		2.0	2.0					3.0	3.0	3.0
Lane Grp Cap (vph)		732		733	772					329	331	744
v/s Ratio Prot		0.15		0.37	c0.38					0.14	0.13	c0.19
v/s Ratio Perm												0.26
v/c Ratio		0.72		0.88	0.93					0.71	0.66	0.96
Uniform Delay, d1		24.4		18.0	18.6					25.1	24.8	18.0
Progression Factor		1.00		1.00	1.00					1.00	1.00	1.00
Incremental Delay, d2		3.3		11.8	17.0					6.8	4.7	23.0
Delay (s)		27.7		29.9	35.6					31.9	29.5	41.0
Level of Service		C		C	D					C	C	D
Approach Delay (s)		27.7			32.9			0.0			37.2	
Approach LOS		C			C			A			D	

Intersection Summary			
HCM 2000 Control Delay	33.7	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	1.00		
Actuated Cycle Length (s)	66.8	Sum of lost time (s)	11.7
Intersection Capacity Utilization	86.9%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			



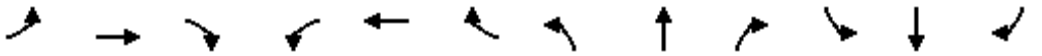
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	50	170	40	365	50	235	10	1530	250	280	565	20
Future Volume (vph)	50	170	40	365	50	235	10	1530	250	280	565	20
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.3	4.3		4.0	4.0		6.2	4.0	
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	0.91		1.00	0.91	
Frpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Flpb, ped/bikes	1.00	1.00		0.99	1.00		1.00	1.00		1.00	1.00	
Frt	1.00	0.97		1.00	0.88		1.00	0.98		1.00	0.99	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1770	1802		1757	1632		1765	4978		1770	5054	
Flt Permitted	0.42	1.00		0.52	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (perm)	783	1802		953	1632		1765	4978		1770	5054	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	54	185	43	397	54	255	11	1663	272	304	614	22
RTOR Reduction (vph)	0	7	0	0	144	0	0	18	0	0	3	0
Lane Group Flow (vph)	54	221	0	397	165	0	11	1917	0	304	633	0
Confl. Peds. (#/hr)			9	9			2					2
Turn Type	Perm	NA		Perm	NA		Prot	NA		Prot	NA	
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4			8								
Actuated Green, G (s)	45.0	45.0		44.3	44.3		0.8	45.8		19.0	63.3	
Effective Green, g (s)	45.0	45.0		44.7	44.7		0.8	47.2		16.8	65.4	
Actuated g/C Ratio	0.37	0.37		0.36	0.36		0.01	0.38		0.14	0.53	
Clearance Time (s)	4.0	4.0		4.7	4.7		4.0	5.4		4.0	6.1	
Vehicle Extension (s)	2.0	2.0		3.0	3.0		2.0	4.8		2.0	3.7	
Lane Grp Cap (vph)	285	658		345	592		11	1907		241	2682	
v/s Ratio Prot		0.12			0.10		0.01	c0.39		c0.17	0.13	
v/s Ratio Perm	0.07			c0.42								
v/c Ratio	0.19	0.34		1.15	0.28		1.00	1.01		1.26	0.24	
Uniform Delay, d1	26.7	28.3		39.2	27.8		61.2	38.0		53.2	15.5	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	0.1	0.1		96.0	0.3		271.4	21.9		146.6	0.2	
Delay (s)	26.8	28.4		135.2	28.1		332.6	59.9		199.8	15.7	
Level of Service	C	C		F	C		F	E		F	B	
Approach Delay (s)		28.1			88.3			61.4			75.2	
Approach LOS		C			F			E			E	

Intersection Summary			
HCM 2000 Control Delay	67.3	HCM 2000 Level of Service	E
HCM 2000 Volume to Capacity ratio	1.10		
Actuated Cycle Length (s)	123.2	Sum of lost time (s)	14.5
Intersection Capacity Utilization	99.7%	ICU Level of Service	F
Analysis Period (min)	15		
c Critical Lane Group			



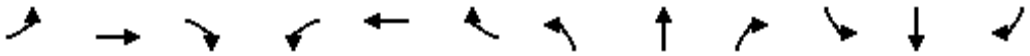
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	625	1090	450	255	960	135	465	1025	225	160	640	275
Future Volume (vph)	625	1090	450	255	960	135	465	1025	225	160	640	275
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	4.0
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00	0.91		1.00	0.91	1.00
Frpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	0.99
Flpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	1.00
Frt	1.00	0.96		1.00	0.98		1.00	0.97		1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1770	3384		1770	3466		1770	4935		1770	5085	1569
Flt Permitted	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)	1770	3384		1770	3466		1770	4935		1770	5085	1569
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	679	1185	489	277	1043	147	505	1114	245	174	696	299
RTOR Reduction (vph)	0	30	0	0	7	0	0	23	0	0	0	50
Lane Group Flow (vph)	679	1644	0	277	1183	0	505	1336	0	174	696	249
Confl. Peds. (#/hr)	4					4	5		1	1		5
Turn Type	Prot	NA		Prot	NA		Prot	NA		Prot	NA	pm+ov
Protected Phases	7	4		3	8		5	2		1	6	7
Permitted Phases												6
Actuated Green, G (s)	38.6	62.8		16.6	40.2		29.6	41.1		10.6	22.0	60.6
Effective Green, g (s)	39.0	64.0		17.0	42.0		30.0	42.0		11.0	23.0	61.4
Actuated g/C Ratio	0.26	0.43		0.11	0.28		0.20	0.28		0.07	0.15	0.41
Clearance Time (s)	4.4	5.2		4.4	5.8		4.4	4.9		4.4	5.0	4.4
Vehicle Extension (s)	2.0	3.9		2.0	2.7		2.0	3.3		2.0	4.1	2.0
Lane Grp Cap (vph)	460	1443		200	970		354	1381		129	779	642
v/s Ratio Prot	c0.38	0.49		0.16	c0.34		c0.29	c0.27		0.10	0.14	0.10
v/s Ratio Perm												0.06
v/c Ratio	1.48	1.14		1.39	1.22		1.43	0.97		1.35	0.89	0.39
Uniform Delay, d1	55.5	43.0		66.5	54.0		60.0	53.3		69.5	62.3	31.1
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	225.8	71.7		201.1	108.1		207.7	17.6		199.4	14.8	0.1
Delay (s)	281.3	114.7		267.6	162.1		267.7	70.9		268.9	77.1	31.3
Level of Service	F	F		F	F		F	E		F	E	C
Approach Delay (s)		162.7			182.1			124.2			93.9	
Approach LOS		F			F			F			F	

Intersection Summary			
HCM 2000 Control Delay	144.7	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.31		
Actuated Cycle Length (s)	150.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	119.6%	ICU Level of Service	H
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	155	785	220	215	360	90	255	250	640	85	110	70
Future Volume (vph)	155	785	220	215	360	90	255	250	640	85	110	70
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	5.5	5.5	4.0	5.4	5.4
Lane Util. Factor	1.00	0.95	0.88	0.97	0.95	1.00	0.97	1.00	1.00	1.00	0.91	1.00
Frpb, ped/bikes	1.00	1.00	0.97	1.00	1.00	0.65	1.00	1.00	0.99	1.00	1.00	0.97
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1770	3539	2700	3433	3539	1033	3433	1863	1560	1770	5085	1530
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1770	3539	2700	3433	3539	1033	3433	1863	1560	1770	5085	1530
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	168	853	239	234	391	98	277	272	696	92	120	76
RTOR Reduction (vph)	0	0	141	0	0	59	0	0	48	0	0	59
Lane Group Flow (vph)	168	853	98	234	391	39	277	272	648	92	120	17
Confl. Peds. (#/hr)			27	27		170	23		15	15		23
Turn Type	Prot	NA	pm+ov	Prot	NA	Perm	Prot	NA	pm+ov	Prot	NA	Perm
Protected Phases	5	2	3	1	6		3	8	1	7	4	
Permitted Phases			2			6			8			4
Actuated Green, G (s)	15.2	34.1	43.9	25.5	44.4	44.4	9.8	26.8	52.3	9.1	26.1	26.1
Effective Green, g (s)	15.6	35.0	44.7	25.9	45.3	45.3	10.2	26.2	50.1	9.5	25.6	25.6
Actuated g/C Ratio	0.14	0.31	0.39	0.23	0.40	0.40	0.09	0.23	0.44	0.08	0.22	0.22
Clearance Time (s)	4.4	4.9	4.4	4.4	4.9	4.9	4.4	4.9	4.4	4.4	4.9	4.9
Vehicle Extension (s)	2.0	2.1	2.0	2.0	2.3	2.3	2.0	4.5	2.0	2.0	4.5	4.5
Lane Grp Cap (vph)	241	1085	1057	779	1405	410	306	427	684	147	1140	343
v/s Ratio Prot	0.09	c0.24	0.01	0.07	0.11		c0.08	0.15	c0.20	0.05	0.02	
v/s Ratio Perm			0.03			0.04			0.21			0.01
v/c Ratio	0.70	0.79	0.09	0.30	0.28	0.09	0.91	0.64	0.95	0.63	0.11	0.05
Uniform Delay, d1	47.0	36.1	21.9	36.6	23.3	21.6	51.5	39.7	30.7	50.6	35.2	34.7
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	6.9	5.8	0.0	0.1	0.5	0.5	27.9	3.9	21.9	5.9	0.1	0.1
Delay (s)	53.9	41.9	21.9	36.7	23.8	22.0	79.3	43.5	52.6	56.4	35.2	34.8
Level of Service	D	D	C	D	C	C	E	D	D	E	D	C
Approach Delay (s)		39.7			27.7			56.6			41.9	
Approach LOS		D			C			E			D	

Intersection Summary			
HCM 2000 Control Delay	43.4	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.88		
Actuated Cycle Length (s)	114.1	Sum of lost time (s)	19.0
Intersection Capacity Utilization	83.8%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			

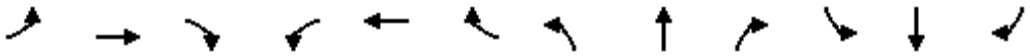


Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	595	350	70	10	190	170	125	55	105	10	10	20
Future Volume (vph)	595	350	70	10	190	170	125	55	105	10	10	20
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0			4.0			4.0			4.0	
Lane Util. Factor		1.00			1.00			1.00			1.00	
Frpb, ped/bikes		1.00			0.99			0.99			0.99	
Flpb, ped/bikes		1.00			1.00			1.00			1.00	
Frt		0.99			0.94			0.95			0.93	
Flt Protected		0.97			1.00			0.98			0.99	
Satd. Flow (prot)		1787			1728			1708			1696	
Flt Permitted		0.61			0.97			0.86			0.87	
Satd. Flow (perm)		1124			1674			1496			1502	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	647	380	76	11	207	185	136	60	114	11	11	22
RTOR Reduction (vph)	0	2	0	0	15	0	0	17	0	0	18	0
Lane Group Flow (vph)	0	1101	0	0	388	0	0	293	0	0	26	0
Confl. Peds. (#/hr)	1		3	3		1	1		4	4		1
Turn Type	pm+pt	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases	5	2			6			8			4	
Permitted Phases	2			6			8			4		
Actuated Green, G (s)		89.2			89.2			21.0			21.0	
Effective Green, g (s)		90.1			90.1			21.9			21.9	
Actuated g/C Ratio		0.75			0.75			0.18			0.18	
Clearance Time (s)		4.9			4.9			4.9			4.9	
Vehicle Extension (s)		2.0			2.0			2.0			2.0	
Lane Grp Cap (vph)		843			1256			273			274	
v/s Ratio Prot												
v/s Ratio Perm		c0.98			0.23			c0.20			0.02	
v/c Ratio		1.31			0.31			1.07			0.09	
Uniform Delay, d1		15.0			4.8			49.0			40.8	
Progression Factor		1.00			1.00			1.00			1.00	
Incremental Delay, d2		146.2			0.6			75.1			0.1	
Delay (s)		161.1			5.5			124.1			40.9	
Level of Service		F			A			F			D	
Approach Delay (s)		161.1			5.5			124.1			40.9	
Approach LOS		F			A			F			D	

Intersection Summary			
HCM 2000 Control Delay	118.4	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.31		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	109.7%	ICU Level of Service	H
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	1075	435	230	495	170	255
Future Volume (vph)	1075	435	230	495	170	255
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0		4.0	4.9	4.0	4.0
Lane Util. Factor	0.91		1.00	0.95	1.00	1.00
Frpb, ped/bikes	0.97		1.00	1.00	1.00	1.00
Flpb, ped/bikes	1.00		1.00	1.00	1.00	1.00
Frt	0.96		1.00	1.00	1.00	0.85
Flt Protected	1.00		0.95	1.00	0.95	1.00
Satd. Flow (prot)	4714		1770	3539	1770	1583
Flt Permitted	1.00		0.95	1.00	0.95	1.00
Satd. Flow (perm)	4714		1770	3539	1770	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	1168	473	250	538	185	277
RTOR Reduction (vph)	81	0	0	0	0	217
Lane Group Flow (vph)	1560	0	250	538	185	60
Confl. Peds. (#/hr)		53	53		46	81
Turn Type	NA		Prot	NA	Prot	Prot
Protected Phases	2		1	6	8	8
Permitted Phases						
Actuated Green, G (s)	29.7		12.5	46.6	14.5	14.5
Effective Green, g (s)	31.6		12.9	46.6	15.4	15.4
Actuated g/C Ratio	0.45		0.18	0.66	0.22	0.22
Clearance Time (s)	4.9		4.4	4.9	4.9	4.9
Vehicle Extension (s)	2.9		2.0	2.0	2.0	2.0
Lane Grp Cap (vph)	2101		322	2326	384	343
v/s Ratio Prot	c0.33		c0.14	0.15	c0.10	0.04
v/s Ratio Perm						
v/c Ratio	0.74		0.78	0.23	0.48	0.18
Uniform Delay, d1	16.3		27.6	4.9	24.3	22.6
Progression Factor	1.00		1.00	1.00	1.00	1.00
Incremental Delay, d2	2.4		10.2	0.2	0.3	0.1
Delay (s)	18.7		37.8	5.1	24.6	22.7
Level of Service	B		D	A	C	C
Approach Delay (s)	18.7			15.5	23.4	
Approach LOS	B			B	C	

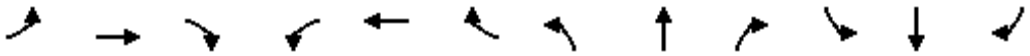
Intersection Summary			
HCM 2000 Control Delay	18.6	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.68		
Actuated Cycle Length (s)	70.9	Sum of lost time (s)	11.0
Intersection Capacity Utilization	63.8%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Traffic Volume (vph)	10	5	5	10	10	85	20	150	40	165	170	95
Future Volume (vph)	10	5	5	10	10	85	20	150	40	165	170	95
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	11	5	5	11	11	92	22	163	43	179	185	103

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total (vph)	21	114	228	467
Volume Left (vph)	11	11	22	179
Volume Right (vph)	5	92	43	103
Hadj (s)	0.00	-0.43	-0.06	-0.02
Departure Headway (s)	5.7	5.1	4.7	4.5
Degree Utilization, x	0.03	0.16	0.30	0.59
Capacity (veh/h)	537	622	725	774
Control Delay (s)	8.9	9.1	9.8	13.7
Approach Delay (s)	8.9	9.1	9.8	13.7
Approach LOS	A	A	A	B

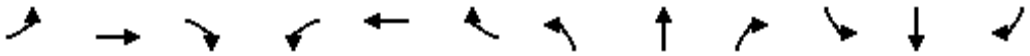
Intersection Summary				
Delay	11.9			
Level of Service	B			
Intersection Capacity Utilization	60.1%	ICU Level of Service	B	
Analysis Period (min)	15			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Traffic Volume (vph)	60	20	20	10	25	25	5	170	20	70	140	65
Future Volume (vph)	60	20	20	10	25	25	5	170	20	70	140	65
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	65	22	22	11	27	27	5	185	22	76	152	71

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total (vph)	109	65	212	299
Volume Left (vph)	65	11	5	76
Volume Right (vph)	22	27	22	71
Hadj (s)	0.03	-0.18	-0.02	-0.06
Departure Headway (s)	5.2	5.1	4.7	4.6
Degree Utilization, x	0.16	0.09	0.28	0.38
Capacity (veh/h)	620	624	728	752
Control Delay (s)	9.2	8.6	9.5	10.3
Approach Delay (s)	9.2	8.6	9.5	10.3
Approach LOS	A	A	A	B

Intersection Summary				
Delay	9.7			
Level of Service	A			
Intersection Capacity Utilization	50.0%	ICU Level of Service	A	
Analysis Period (min)	15			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Traffic Volume (vph)	10	10	10	75	20	25	20	220	410	10	235	5
Future Volume (vph)	10	10	10	75	20	25	20	220	410	10	235	5
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	11	11	11	82	22	27	22	239	446	11	255	5

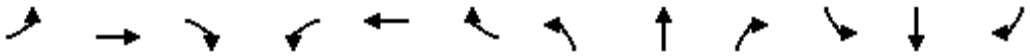
Direction, Lane #	EB 1	WB 1	NB 1	NB 2	SB 1
Volume Total (vph)	33	131	261	446	271
Volume Left (vph)	11	82	22	0	11
Volume Right (vph)	11	27	0	446	5
Hadj (s)	-0.10	0.04	0.08	-0.67	0.03
Departure Headway (s)	6.1	6.0	5.4	4.6	5.2
Degree Utilization, x	0.06	0.22	0.39	0.58	0.40
Capacity (veh/h)	511	545	655	761	661
Control Delay (s)	9.5	10.6	17.0	12.5	11.6
Approach Delay (s)	9.5	10.6	17.0		11.6
Approach LOS	A	B	C		B

Intersection Summary				
Delay	16.8			
Level of Service	C			
Intersection Capacity Utilization	56.9%	ICU Level of Service	A	
Analysis Period (min)	15			

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Sign Control	Stop			Stop	Stop	
Traffic Volume (vph)	35	20	90	30	10	120
Future Volume (vph)	35	20	90	30	10	120
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	38	22	98	33	11	130

Direction, Lane #	EB 1	WB 1	NB 1
Volume Total (vph)	60	131	141
Volume Left (vph)	0	98	11
Volume Right (vph)	22	0	130
Hadj (s)	-0.19	0.18	-0.50
Departure Headway (s)	4.2	4.4	3.8
Degree Utilization, x	0.07	0.16	0.15
Capacity (veh/h)	831	775	893
Control Delay (s)	7.5	8.3	7.5
Approach Delay (s)	7.5	8.3	7.5
Approach LOS	A	A	A

Intersection Summary			
Delay	7.8		
Level of Service	A		
Intersection Capacity Utilization	34.7%	ICU Level of Service	A
Analysis Period (min)	15		



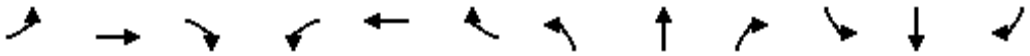
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Traffic Volume (vph)	10	10	10	10	10	10	5	150	100	5	90	15
Future Volume (vph)	10	10	10	10	10	10	5	150	100	5	90	15
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	11	11	11	11	11	11	5	163	109	5	98	16

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total (vph)	33	33	277	119
Volume Left (vph)	11	11	5	5
Volume Right (vph)	11	11	109	16
Hadj (s)	-0.10	-0.10	-0.20	-0.04
Departure Headway (s)	4.7	4.7	4.0	4.3
Degree Utilization, x	0.04	0.04	0.31	0.14
Capacity (veh/h)	698	698	881	805
Control Delay (s)	7.9	7.9	8.7	8.0
Approach Delay (s)	7.9	7.9	8.7	8.0
Approach LOS	A	A	A	A

Intersection Summary				
Delay	8.4			
Level of Service	A			
Intersection Capacity Utilization	38.3%	ICU Level of Service	A	
Analysis Period (min)	15			

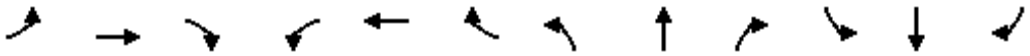
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	295	60	110	20	90	50	120	320	10	10	50	160
Future Volume (vph)	295	60	110	20	90	50	120	320	10	10	50	160
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0			4.0		4.0	4.0		4.0	4.0	
Lane Util. Factor		1.00			1.00		1.00	1.00		1.00	1.00	
Frpb, ped/bikes		1.00			1.00		1.00	1.00		1.00	0.98	
Flpb, ped/bikes		1.00			1.00		1.00	1.00		1.00	1.00	
Frt		0.97			0.96		1.00	1.00		1.00	0.89	
Flt Protected		0.97			0.99		0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1744			1765		1765	1853		1764	1620	
Flt Permitted		0.74			0.93		0.60	1.00		0.46	1.00	
Satd. Flow (perm)		1327			1644		1122	1853		851	1620	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	321	65	120	22	98	54	130	348	11	11	54	174
RTOR Reduction (vph)	0	21	0	0	31	0	0	2	0	0	100	0
Lane Group Flow (vph)	0	485	0	0	143	0	130	357	0	11	128	0
Confl. Peds. (#/hr)	5					5	3		4	4		3
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		8			4			6			2	
Permitted Phases	8			4			6			2		
Actuated Green, G (s)		22.7			22.7		22.5	22.5		22.5	22.5	
Effective Green, g (s)		22.7			22.7		22.5	22.5		22.5	22.5	
Actuated g/C Ratio		0.43			0.43		0.42	0.42		0.42	0.42	
Clearance Time (s)		4.0			4.0		4.0	4.0		4.0	4.0	
Vehicle Extension (s)		2.0			2.0		2.1	2.1		2.1	2.1	
Lane Grp Cap (vph)		566			701		474	783		359	685	
v/s Ratio Prot								c0.19			0.08	
v/s Ratio Perm		c0.37			0.09		0.12			0.01		
v/c Ratio		0.86			0.20		0.27	0.46		0.03	0.19	
Uniform Delay, d1		13.8			9.6		10.0	11.0		9.0	9.6	
Progression Factor		1.00			1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2		11.7			0.1		1.4	1.9		0.2	0.6	
Delay (s)		25.5			9.6		11.4	12.9		9.1	10.2	
Level of Service		C			A		B	B		A	B	
Approach Delay (s)		25.5			9.6			12.5			10.2	
Approach LOS		C			A			B			B	

Intersection Summary			
HCM 2000 Control Delay	16.2	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.66		
Actuated Cycle Length (s)	53.2	Sum of lost time (s)	8.0
Intersection Capacity Utilization	73.9%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	85	1050	210	285	590	10	115	20	250	30	20	20
Future Volume (vph)	85	1050	210	285	590	10	115	20	250	30	20	20
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0			4.0			4.0	
Lane Util. Factor	1.00	0.91		1.00	0.95			1.00			1.00	
Frpb, ped/bikes	1.00	0.99		1.00	1.00			0.99			1.00	
Flpb, ped/bikes	1.00	1.00		1.00	1.00			1.00			1.00	
Frt	1.00	0.98		1.00	1.00			0.91			0.96	
Flt Protected	0.95	1.00		0.95	1.00			0.99			0.98	
Satd. Flow (prot)	1765	4922		1769	3528			1658			1745	
Flt Permitted	0.40	1.00		0.15	1.00			0.88			0.74	
Satd. Flow (perm)	751	4922		278	3528			1484			1319	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	92	1141	228	310	641	11	125	22	272	33	22	22
RTOR Reduction (vph)	0	38	0	0	2	0	0	108	0	0	16	0
Lane Group Flow (vph)	92	1331	0	310	650	0	0	311	0	0	61	0
Confl. Peds. (#/hr)	13		12	12		13	6		2	2		6
Turn Type	pm+pt	NA		pm+pt	NA		Perm	NA		Perm	NA	
Protected Phases	5	2		1	6			8			4	
Permitted Phases	2			6			8			4		
Actuated Green, G (s)	26.4	22.3		36.5	28.0			15.8			15.8	
Effective Green, g (s)	27.2	23.3		36.9	28.9			16.7			16.7	
Actuated g/C Ratio	0.44	0.38		0.59	0.47			0.27			0.27	
Clearance Time (s)	4.4	5.0		4.4	4.9			4.9			4.9	
Vehicle Extension (s)	2.0	3.3		2.0	3.3			2.0			2.0	
Lane Grp Cap (vph)	402	1846		407	1641			399			354	
v/s Ratio Prot	0.02	0.27		c0.12	0.18							
v/s Ratio Perm	0.08			c0.33				c0.21			0.05	
v/c Ratio	0.23	0.72		0.76	0.40			0.78			0.17	
Uniform Delay, d1	10.3	16.6		11.1	10.9			21.0			17.4	
Progression Factor	1.00	1.00		1.00	1.00			1.00			1.00	
Incremental Delay, d2	0.1	2.5		7.4	0.7			8.5			0.1	
Delay (s)	10.5	19.1		18.5	11.6			29.5			17.5	
Level of Service	B	B		B	B			C			B	
Approach Delay (s)		18.5			13.8			29.5			17.5	
Approach LOS		B			B			C			B	

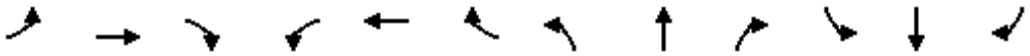
Intersection Summary			
HCM 2000 Control Delay	18.6	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.80		
Actuated Cycle Length (s)	62.1	Sum of lost time (s)	12.0
Intersection Capacity Utilization	77.4%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Traffic Volume (vph)	90	20	25	10	10	10	15	210	25	30	155	80
Future Volume (vph)	90	20	25	10	10	10	15	210	25	30	155	80
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	98	22	27	11	11	11	16	228	27	33	168	87

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total (vph)	147	33	271	288
Volume Left (vph)	98	11	16	33
Volume Right (vph)	27	11	27	87
Hadj (s)	0.06	-0.10	-0.01	-0.12
Departure Headway (s)	5.3	5.4	4.7	4.6
Degree Utilization, x	0.22	0.05	0.36	0.37
Capacity (veh/h)	612	578	727	743
Control Delay (s)	9.8	8.7	10.3	10.3
Approach Delay (s)	9.8	8.7	10.3	10.3
Approach LOS	A	A	B	B

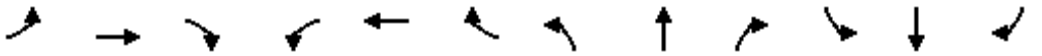
Intersection Summary				
Delay	10.1			
Level of Service	B			
Intersection Capacity Utilization	44.9%	ICU Level of Service	A	
Analysis Period (min)	15			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Traffic Volume (vph)	20	20	20	10	10	10	10	65	10	10	190	80
Future Volume (vph)	20	20	20	10	10	10	10	65	10	10	190	80
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	22	22	22	11	11	11	11	71	11	11	207	87

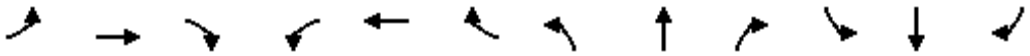
Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total (vph)	66	33	93	305
Volume Left (vph)	22	11	11	11
Volume Right (vph)	22	11	11	87
Hadj (s)	-0.10	-0.10	-0.01	-0.13
Departure Headway (s)	4.7	4.8	4.4	4.1
Degree Utilization, x	0.09	0.04	0.11	0.35
Capacity (veh/h)	697	685	774	845
Control Delay (s)	8.2	8.0	8.0	9.3
Approach Delay (s)	8.2	8.0	8.0	9.3
Approach LOS	A	A	A	A

Intersection Summary				
Delay	8.8			
Level of Service	A			
Intersection Capacity Utilization	30.9%	ICU Level of Service	A	
Analysis Period (min)	15			



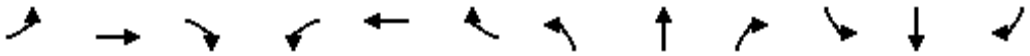
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	640	910	65	30	535	85	0	0	30	120	90	305
Future Volume (vph)	640	910	65	30	535	85	0	0	30	120	90	305
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0				4.0	4.0	4.0	4.0
Lane Util. Factor	0.97	0.95		1.00	0.95				1.00	0.95	0.95	1.00
Frpb, ped/bikes	1.00	1.00		1.00	1.00				1.00	1.00	1.00	0.99
Flpb, ped/bikes	1.00	1.00		1.00	1.00				1.00	1.00	1.00	1.00
Frt	1.00	0.99		1.00	0.98				0.86	1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00				1.00	0.95	0.98	1.00
Satd. Flow (prot)	3433	3497		1770	3459				1611	1681	1736	1561
Flt Permitted	0.95	1.00		0.95	1.00				1.00	0.95	0.98	1.00
Satd. Flow (perm)	3433	3497		1770	3459				1611	1681	1736	1561
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	696	989	71	33	582	92	0	0	33	130	98	332
RTOR Reduction (vph)	0	5	0	0	12	0	0	0	0	0	0	259
Lane Group Flow (vph)	696	1055	0	33	662	0	0	0	33	69	159	73
Confl. Peds. (#/hr)	5		4	4		5						3
Turn Type	Prot	NA		Prot	NA				Free	Split	NA	Perm
Protected Phases	5	2		1	6					4	4	
Permitted Phases									Free			4
Actuated Green, G (s)	17.9	42.6		1.9	26.6				74.1	15.0	15.0	15.0
Effective Green, g (s)	18.3	43.5		2.3	27.5				74.1	16.3	16.3	16.3
Actuated g/C Ratio	0.25	0.59		0.03	0.37				1.00	0.22	0.22	0.22
Clearance Time (s)	4.4	4.9		4.4	4.9					5.3	5.3	5.3
Vehicle Extension (s)	2.0	3.3		2.0	3.8					4.4	4.4	4.4
Lane Grp Cap (vph)	847	2052		54	1283				1611	369	381	343
v/s Ratio Prot	c0.20	c0.30		0.02	0.19					0.04	c0.09	
v/s Ratio Perm									0.02			0.05
v/c Ratio	0.82	0.51		0.61	0.52				0.02	0.19	0.42	0.21
Uniform Delay, d1	26.4	9.1		35.5	18.1				0.0	23.5	24.8	23.7
Progression Factor	1.00	1.00		1.00	1.00				1.00	1.00	1.00	1.00
Incremental Delay, d2	6.2	0.9		13.5	1.5				0.0	0.4	1.2	0.5
Delay (s)	32.5	10.0		49.0	19.6				0.0	23.9	26.0	24.2
Level of Service	C	A		D	B				A	C	C	C
Approach Delay (s)		18.9			21.0			0.0			24.7	
Approach LOS		B			C			A			C	

Intersection Summary			
HCM 2000 Control Delay	20.2	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.60		
Actuated Cycle Length (s)	74.1	Sum of lost time (s)	12.0
Intersection Capacity Utilization	54.2%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	125	960	120	0	750	70	140	200	55	20	150	10
Future Volume (vph)	125	960	120	0	750	70	140	200	55	20	150	10
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0			4.0		4.0	4.0			4.0	
Lane Util. Factor	1.00	0.95			0.95		1.00	1.00			1.00	
Frpb, ped/bikes	1.00	1.00			1.00		1.00	0.99			1.00	
Flpb, ped/bikes	1.00	1.00			1.00		0.99	1.00			1.00	
Frt	1.00	0.98			0.99		1.00	0.97			0.99	
Flt Protected	0.95	1.00			1.00		0.95	1.00			0.99	
Satd. Flow (prot)	1678	3378			3386		1647	1678			1740	
Flt Permitted	0.95	1.00			1.00		0.42	1.00			0.71	
Satd. Flow (perm)	1678	3378			3386		731	1678			1243	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	136	1043	130	0	815	76	152	217	60	22	163	11
RTOR Reduction (vph)	0	4	0	0	6	0	0	7	0	0	2	0
Lane Group Flow (vph)	136	1169	0	0	885	0	152	270	0	0	194	0
Confl. Peds. (#/hr)	4		3	3		4	6		5	5		6
Confl. Bikes (#/hr)			3			2			4			
Bus Blockages (#/hr)	13	13	13	14	14	14	16	16	16	13	13	13
Turn Type	Prot	NA		Prot	NA		Perm	NA		Perm	NA	
Protected Phases	5	2		1	6			4			4	
Permitted Phases							4			4		
Actuated Green, G (s)	25.1	105.8			76.3		29.4	29.4			29.4	
Effective Green, g (s)	25.5	106.7			77.2		30.3	30.3			30.3	
Actuated g/C Ratio	0.18	0.74			0.53		0.21	0.21			0.21	
Clearance Time (s)	4.4	4.9			4.9		4.9	4.9			4.9	
Vehicle Extension (s)	2.0	2.1			2.1		2.0	2.0			2.0	
Lane Grp Cap (vph)	295	2485			1802		152	350			259	
v/s Ratio Prot	0.08	c0.35			c0.26			0.16				
v/s Ratio Perm							c0.21				0.16	
v/c Ratio	0.46	0.47			0.49		1.00	0.77			0.75	
Uniform Delay, d1	53.6	7.7			21.5		57.4	54.1			53.8	
Progression Factor	1.00	1.00			1.84		1.00	1.00			1.00	
Incremental Delay, d2	0.4	0.6			0.3		73.0	9.2			10.3	
Delay (s)	54.0	8.4			39.8		130.3	63.3			64.1	
Level of Service	D	A			D		F	E			E	
Approach Delay (s)		13.1			39.8			87.1			64.1	
Approach LOS		B			D			F			E	

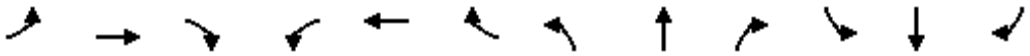
Intersection Summary			
HCM 2000 Control Delay	32.6	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.59		
Actuated Cycle Length (s)	145.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	71.8%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	445	1445	155	215	845	215	95	420	235	315	245	175
Future Volume (vph)	445	1445	155	215	845	215	95	420	235	315	245	175
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0		4.0	4.0	4.0	4.0	4.0	
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00	0.95	1.00	1.00	0.95	
Frpb, ped/bikes	1.00	0.99		1.00	0.99		1.00	1.00	0.96	1.00	0.96	
Flpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	
Frt	1.00	0.99		1.00	0.97		1.00	1.00	0.85	1.00	0.94	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)	1770	3468		1770	3383		1770	3539	1526	1770	3184	
Flt Permitted	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (perm)	1770	3468		1770	3383		1770	3539	1526	1770	3184	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	484	1571	168	234	918	234	103	457	255	342	266	190
RTOR Reduction (vph)	0	6	0	0	15	0	0	0	62	0	87	0
Lane Group Flow (vph)	484	1733	0	234	1137	0	103	457	193	342	369	0
Confl. Peds. (#/hr)	26		26	26		26	41		25	25		41
Confl. Bikes (#/hr)			8			2			13			8
Turn Type	Prot	NA		Prot	NA		Prot	NA	pm+ov	Prot	NA	
Protected Phases	5	2		1	6		3	8	1	7	4	
Permitted Phases									8			
Actuated Green, G (s)	31.6	59.1		15.6	42.6		12.3	25.8	41.4	25.8	39.4	
Effective Green, g (s)	32.0	60.0		16.0	44.0		12.7	26.8	42.2	26.2	40.3	
Actuated g/C Ratio	0.22	0.41		0.11	0.30		0.09	0.18	0.29	0.18	0.28	
Clearance Time (s)	4.4	4.9		4.4	5.4		4.4	5.0	4.4	4.4	4.9	
Vehicle Extension (s)	2.0	4.2		2.0	3.0		2.0	4.0	2.0	2.0	2.6	
Lane Grp Cap (vph)	390	1435		195	1026		155	654	444	319	884	
v/s Ratio Prot	c0.27	c0.50		0.13	0.34		0.06	c0.13	0.05	c0.19	0.12	
v/s Ratio Perm									0.08			
v/c Ratio	1.24	1.21		1.20	1.11		0.66	0.70	0.43	1.07	0.42	
Uniform Delay, d1	56.5	42.5		64.5	50.5		64.1	55.3	41.7	59.4	42.8	
Progression Factor	0.96	0.95		1.00	1.00		1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	128.2	100.2		128.7	62.5		8.0	3.5	0.2	70.9	0.3	
Delay (s)	182.4	140.5		193.2	113.0		72.1	58.8	42.0	130.3	43.0	
Level of Service	F	F		F	F		E	E	D	F	D	
Approach Delay (s)		149.6			126.6			55.2			80.4	
Approach LOS		F			F			E			F	

Intersection Summary			
HCM 2000 Control Delay	118.0	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.11		
Actuated Cycle Length (s)	145.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	106.5%	ICU Level of Service	G
Analysis Period (min)	15		

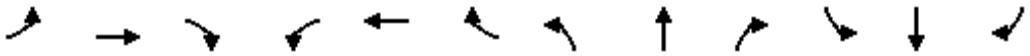
c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	10	1950	100	165	1290	105	105	35	230	65	25	25
Future Volume (vph)	10	1950	100	165	1290	105	105	35	230	65	25	25
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0			4.0	4.0		4.0	
Lane Util. Factor	1.00	0.91		1.00	0.95			1.00	1.00		1.00	
Frpb, ped/bikes	1.00	1.00		1.00	1.00			1.00	0.98		0.99	
Flpb, ped/bikes	1.00	1.00		1.00	1.00			1.00	1.00		1.00	
Frt	1.00	0.99		1.00	0.99			1.00	0.85		0.97	
Flt Protected	0.95	1.00		0.95	1.00			0.96	1.00		0.97	
Satd. Flow (prot)	1770	5040		1770	3494			1795	1556		1746	
Flt Permitted	0.95	1.00		0.95	1.00			0.70	1.00		0.69	
Satd. Flow (perm)	1770	5040		1770	3494			1305	1556		1245	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	11	2120	109	179	1402	114	114	38	250	71	27	27
RTOR Reduction (vph)	0	5	0	0	5	0	0	0	108	0	13	0
Lane Group Flow (vph)	11	2224	0	179	1511	0	0	152	142	0	112	0
Confl. Peds. (#/hr)			3	3								
Confl. Bikes (#/hr)			11			1			5			20
Turn Type	Prot	NA		Prot	NA		Perm	NA	Perm	Perm	NA	
Protected Phases	5	2		1	6			8			4	
Permitted Phases							8		8	4		
Actuated Green, G (s)	0.8	46.2		11.8	57.2			17.4	17.4		17.4	
Effective Green, g (s)	1.2	47.5		12.2	58.5			18.3	18.3		18.3	
Actuated g/C Ratio	0.01	0.53		0.14	0.65			0.20	0.20		0.20	
Clearance Time (s)	4.4	5.3		4.4	5.3			4.9	4.9		4.9	
Vehicle Extension (s)	2.0	4.4		2.0	4.4			2.0	2.0		2.0	
Lane Grp Cap (vph)	23	2660		239	2271			265	316		253	
v/s Ratio Prot	0.01	c0.44		c0.10	0.43							
v/s Ratio Perm								c0.12	0.09		0.09	
v/c Ratio	0.48	0.84		0.75	0.67			0.57	0.45		0.44	
Uniform Delay, d1	44.1	18.0		37.4	9.7			32.3	31.4		31.4	
Progression Factor	1.00	1.00		1.00	1.00			1.00	1.00		1.00	
Incremental Delay, d2	5.6	3.3		10.7	1.6			1.9	0.4		0.5	
Delay (s)	49.7	21.3		48.1	11.3			34.2	31.8		31.8	
Level of Service	D	C		D	B			C	C		C	
Approach Delay (s)		21.4			15.2			32.7			31.8	
Approach LOS		C			B			C			C	

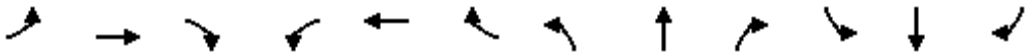
Intersection Summary			
HCM 2000 Control Delay	20.5	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.76		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	72.2%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group



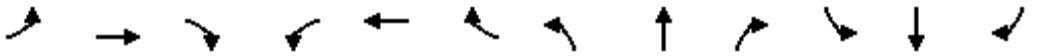
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	0	0	370	2395	0	0	0	0	0	450	160
Future Volume (vph)	0	0	0	370	2395	0	0	0	0	0	450	160
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)					4.0						4.0	
Lane Util. Factor					0.91						0.91	
Frpb, ped/bikes					1.00						0.99	
Flpb, ped/bikes					1.00						1.00	
Frt					1.00						0.96	
Flt Protected					0.99						1.00	
Satd. Flow (prot)					5045						4857	
Flt Permitted					0.99						1.00	
Satd. Flow (perm)					5045						4857	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	402	2603	0	0	0	0	0	489	174
RTOR Reduction (vph)	0	0	0	0	10	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	0	0	0	2995	0	0	0	0	0	663	0
Confl. Peds. (#/hr)				6								7
Turn Type				Perm	NA						NA	
Protected Phases					6						4	
Permitted Phases				6								
Actuated Green, G (s)					61.6						18.2	
Effective Green, g (s)					62.9						19.1	
Actuated g/C Ratio					0.70						0.21	
Clearance Time (s)					5.3						4.9	
Vehicle Extension (s)					0.2						0.2	
Lane Grp Cap (vph)					3525						1030	
v/s Ratio Prot											c0.14	
v/s Ratio Perm					0.59							
v/c Ratio					0.85						0.64	
Uniform Delay, d1					10.0						32.3	
Progression Factor					1.00						1.00	
Incremental Delay, d2					2.8						1.0	
Delay (s)					12.8						33.4	
Level of Service					B						C	
Approach Delay (s)		0.0			12.8			0.0			33.4	
Approach LOS		A			B			A			C	

Intersection Summary			
HCM 2000 Control Delay	16.5	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.80		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	75.5%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			



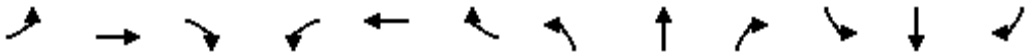
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	1650	235	0	0	0	0	0	0	355	465	0
Future Volume (vph)	0	1650	235	0	0	0	0	0	0	355	465	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0									4.0	
Lane Util. Factor		0.91									0.91	
Frpb, ped/bikes		1.00									1.00	
Flpb, ped/bikes		1.00									0.99	
Frt		0.98									1.00	
Flt Protected		1.00									0.98	
Satd. Flow (prot)		4978									4951	
Flt Permitted		1.00									0.98	
Satd. Flow (perm)		4978									4951	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	1793	255	0	0	0	0	0	0	386	505	0
RTOR Reduction (vph)	0	34	0	0	0	0	0	0	0	0	13	0
Lane Group Flow (vph)	0	2014	0	0	0	0	0	0	0	0	878	0
Confl. Peds. (#/hr)			9							14		
Turn Type		NA								Perm	NA	
Protected Phases		2									4	
Permitted Phases										4		
Actuated Green, G (s)		27.0									19.0	
Effective Green, g (s)		27.0									20.0	
Actuated g/C Ratio		0.49									0.36	
Clearance Time (s)		4.0									5.0	
Vehicle Extension (s)		3.0									3.0	
Lane Grp Cap (vph)		2443									1800	
v/s Ratio Prot		c0.40										
v/s Ratio Perm											0.18	
v/c Ratio		0.82									0.49	
Uniform Delay, d1		12.0									13.5	
Progression Factor		1.00									1.00	
Incremental Delay, d2		3.3									0.2	
Delay (s)		15.3									13.7	
Level of Service		B									B	
Approach Delay (s)		15.3			0.0			0.0			13.7	
Approach LOS		B			A			A			B	

Intersection Summary			
HCM 2000 Control Delay	14.8	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.68		
Actuated Cycle Length (s)	55.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	63.6%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	245	1285	155	155	1420	135	135	100	155	125	125	220
Future Volume (vph)	245	1285	155	155	1420	135	135	100	155	125	125	220
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.97	0.95		1.00	0.95	1.00	1.00	1.00	1.00	0.97	1.00	1.00
Frpb, ped/bikes	1.00	1.00		1.00	1.00	0.98	1.00	1.00	1.00	1.00	1.00	0.99
Flpb, ped/bikes	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.98		1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	3482		1770	3539	1558	1770	1863	1583	3433	1863	1562
Flt Permitted	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	3482		1770	3539	1558	1770	1863	1583	3433	1863	1562
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	266	1397	168	168	1543	147	147	109	168	136	136	239
RTOR Reduction (vph)	0	8	0	0	0	114	0	0	139	0	0	150
Lane Group Flow (vph)	266	1557	0	168	1543	33	147	109	29	136	136	89
Confl. Peds. (#/hr)	1					1	1					1
Turn Type	Prot	NA		Prot	NA	custom	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases						7			8			4
Actuated Green, G (s)	9.0	46.8		11.0	48.9	6.8	9.0	15.1	15.1	6.8	13.8	13.8
Effective Green, g (s)	9.0	48.3		11.0	50.3	6.8	9.0	16.9	16.9	6.8	14.7	14.7
Actuated g/C Ratio	0.09	0.49		0.11	0.51	0.07	0.09	0.17	0.17	0.07	0.15	0.15
Clearance Time (s)	4.0	5.5		4.0	5.4	4.0	4.0	5.8	5.8	4.0	4.9	4.9
Vehicle Extension (s)	2.0	3.7		2.0	4.0	2.0	2.0	2.0	2.0	2.0	3.0	3.0
Lane Grp Cap (vph)	312	1698		196	1798	107	160	318	270	235	276	231
v/s Ratio Prot	0.08	c0.45		c0.09	0.44		c0.08	0.06		0.04	c0.07	
v/s Ratio Perm						0.02			0.02			0.06
v/c Ratio	0.85	0.92		0.86	0.86	0.31	0.92	0.34	0.11	0.58	0.49	0.39
Uniform Delay, d1	44.3	23.5		43.2	21.2	43.9	44.6	36.2	34.7	44.7	38.7	38.1
Progression Factor	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	18.9	9.4		28.0	5.6	0.6	46.8	0.2	0.1	2.1	1.4	1.1
Delay (s)	63.3	32.9		71.2	26.8	44.5	91.4	36.4	34.7	46.9	40.1	39.1
Level of Service	E	C		E	C	D	F	D	C	D	D	D
Approach Delay (s)		37.3			32.2			54.8			41.5	
Approach LOS		D			C			D			D	

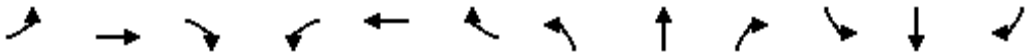
Intersection Summary			
HCM 2000 Control Delay	37.3	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.82		
Actuated Cycle Length (s)	99.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	76.9%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	0	0	265	1935	355	350	625	0	0	325	170
Future Volume (vph)	0	0	0	265	1935	355	350	625	0	0	325	170
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)					4.9		4.4	4.9			5.4	
Lane Util. Factor					0.86		1.00	0.95			0.95	
Frpb, ped/bikes					1.00		1.00	1.00			0.99	
Flpb, ped/bikes					1.00		1.00	1.00			1.00	
Frt					0.98		1.00	1.00			0.95	
Flt Protected					0.99		0.95	1.00			1.00	
Satd. Flow (prot)					6209		1770	3539			3337	
Flt Permitted					0.99		0.95	1.00			1.00	
Satd. Flow (perm)					6209		1770	3539			3337	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	0	0	0	279	2037	374	368	658	0	0	342	179
RTOR Reduction (vph)	0	0	0	0	25	0	0	0	0	0	54	0
Lane Group Flow (vph)	0	0	0	0	2665	0	368	658	0	0	467	0
Confl. Peds. (#/hr)	4		13	13		4	2		2	2		2
Confl. Bikes (#/hr)												1
Turn Type				Perm	NA		Prot	NA			NA	
Protected Phases					6		3	8			4	
Permitted Phases				6								
Actuated Green, G (s)					50.8		26.2	49.4			18.3	
Effective Green, g (s)					50.8		26.2	49.4			18.3	
Actuated g/C Ratio					0.46		0.24	0.45			0.17	
Clearance Time (s)					4.9		4.4	4.9			5.4	
Vehicle Extension (s)					2.4		3.0	3.3			2.4	
Lane Grp Cap (vph)					2867		421	1589			555	
v/s Ratio Prot							c0.21	0.19			c0.14	
v/s Ratio Perm					0.43							
v/c Ratio					0.93		0.87	0.41			0.84	
Uniform Delay, d1					27.9		40.3	20.5			44.4	
Progression Factor					1.00		1.00	1.00			1.00	
Incremental Delay, d2					6.8		17.9	0.2			10.9	
Delay (s)					34.7		58.2	20.7			55.3	
Level of Service					C		E	C			E	
Approach Delay (s)		0.0			34.7			34.1			55.3	
Approach LOS		A			C			C			E	

Intersection Summary			
HCM 2000 Control Delay	37.1	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.90		
Actuated Cycle Length (s)	110.0	Sum of lost time (s)	14.7
Intersection Capacity Utilization	84.2%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	120	1250	110	0	0	0	0	855	485	150	350	0
Future Volume (vph)	120	1250	110	0	0	0	0	855	485	150	350	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0	4.0					4.9		4.0	4.9	
Lane Util. Factor		0.91	1.00					0.91		1.00	0.91	
Frpb, ped/bikes		1.00	0.97					0.99		1.00	1.00	
Flpb, ped/bikes		1.00	1.00					1.00		1.00	1.00	
Frt		1.00	0.85					0.95		1.00	1.00	
Flt Protected		1.00	1.00					1.00		0.95	1.00	
Satd. Flow (prot)		5062	1535					4762		1770	5085	
Flt Permitted		1.00	1.00					1.00		0.95	1.00	
Satd. Flow (perm)		5062	1535					4762		1770	5085	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	130	1359	120	0	0	0	0	929	527	163	380	0
RTOR Reduction (vph)	0	0	69	0	0	0	0	27	0	0	0	0
Lane Group Flow (vph)	0	1489	51	0	0	0	0	1429	0	163	380	0
Confl. Peds. (#/hr)	5		25				6		12	12		6
Turn Type	Perm	NA	Perm					NA		Prot	NA	
Protected Phases		2						8		7	4	
Permitted Phases	2		2									
Actuated Green, G (s)		32.8	32.8					24.7		8.3	37.4	
Effective Green, g (s)		33.7	33.7					24.7		8.7	37.4	
Actuated g/C Ratio		0.42	0.42					0.31		0.11	0.47	
Clearance Time (s)		4.9	4.9					4.9		4.4	4.9	
Vehicle Extension (s)		4.4	4.4					3.3		2.0	3.3	
Lane Grp Cap (vph)		2132	646					1470		192	2377	
v/s Ratio Prot								c0.30		c0.09	0.07	
v/s Ratio Perm		0.29	0.03									
v/c Ratio		0.70	0.08					1.02dr		0.85	0.16	
Uniform Delay, d1		19.0	13.9					27.3		35.0	12.3	
Progression Factor		1.00	1.00					1.00		1.00	1.00	
Incremental Delay, d2		1.9	0.2					17.7		34.8	0.1	
Delay (s)		20.9	14.1					45.0		69.8	12.4	
Level of Service		C	B					D		E	B	
Approach Delay (s)		20.4			0.0			45.0			29.6	
Approach LOS		C			A			D			C	

Intersection Summary			
HCM 2000 Control Delay	31.7	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.82		
Actuated Cycle Length (s)	80.0	Sum of lost time (s)	12.9
Intersection Capacity Utilization	84.2%	ICU Level of Service	E
Analysis Period (min)	15		

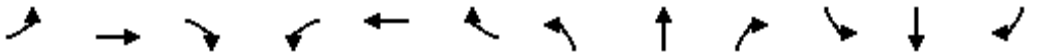
dr Defacto Right Lane. Recode with 1 though lane as a right lane.

c Critical Lane Group

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	1455	765	510	1465	475	275
Future Volume (vph)	1455	765	510	1465	475	275
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.5	4.0	4.0	4.0
Lane Util. Factor	0.95	1.00	0.97	0.95	0.97	0.91
Frpb, ped/bikes	1.00	0.99	1.00	1.00	1.00	0.98
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected	1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (prot)	3539	1568	3433	3539	3433	1418
Flt Permitted	1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (perm)	3539	1568	3433	3539	3433	1418
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	1582	832	554	1592	516	299
RTOR Reduction (vph)	0	3	0	0	0	231
Lane Group Flow (vph)	1582	829	554	1592	516	68
Confl. Peds. (#/hr)						1
Confl. Bikes (#/hr)		6				3
Turn Type	NA	pm+ov	Prot	NA	Prot	Perm
Protected Phases	2	8	1	6	8	
Permitted Phases		2				8
Actuated Green, G (s)	48.3	69.8	18.0	71.5	21.5	21.5
Effective Green, g (s)	50.5	74.2	17.9	72.9	23.7	23.7
Actuated g/C Ratio	0.48	0.71	0.17	0.70	0.23	0.23
Clearance Time (s)	6.2	6.2	4.4	5.4	6.2	6.2
Vehicle Extension (s)	4.0	2.0	2.0	5.2	2.0	2.0
Lane Grp Cap (vph)	1708	1172	587	2466	777	321
v/s Ratio Prot	c0.45	c0.16	c0.16	0.45	0.15	
v/s Ratio Perm		0.37				0.05
v/c Ratio	0.93	0.71	0.94	0.65	0.66	0.21
Uniform Delay, d1	25.3	8.9	42.9	8.7	36.8	32.9
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	10.1	1.6	23.7	1.3	1.7	0.1
Delay (s)	35.4	10.5	66.6	10.1	38.5	33.0
Level of Service	D	B	E	B	D	C
Approach Delay (s)	26.8			24.6	36.5	
Approach LOS	C			C	D	

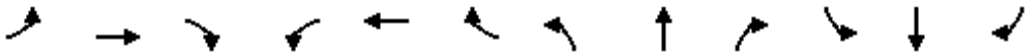
Intersection Summary			
HCM 2000 Control Delay	27.4	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.89		
Actuated Cycle Length (s)	104.6	Sum of lost time (s)	12.5
Intersection Capacity Utilization	81.8%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group



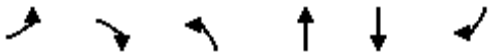
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	1095	345	375	395	0	0	0	0	395	0	1275
Future Volume (vph)	0	1095	345	375	395	0	0	0	0	395	0	1275
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0	4.0	4.0	4.0					4.0		3.4
Lane Util. Factor		0.95	1.00	0.97	0.95					1.00		1.00
Frpb, ped/bikes		1.00	0.99	1.00	1.00					1.00		1.00
Flpb, ped/bikes		1.00	1.00	1.00	1.00					1.00		1.00
Frt		1.00	0.85	1.00	1.00					1.00		0.85
Flt Protected		1.00	1.00	0.95	1.00					0.95		1.00
Satd. Flow (prot)		3539	1560	3433	3539					1770		1583
Flt Permitted		1.00	1.00	0.95	1.00					0.95		1.00
Satd. Flow (perm)		3539	1560	3433	3539					1770		1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	1190	375	408	429	0	0	0	0	429	0	1386
RTOR Reduction (vph)	0	0	213	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	1190	163	408	429	0	0	0	0	429	0	1386
Confl. Peds. (#/hr)			2	2								
Turn Type		NA	Perm	Prot	NA					Prot		Free
Protected Phases		2		1	6					4		
Permitted Phases			2									Free
Actuated Green, G (s)		31.5	31.5	10.2	45.9					19.5		75.0
Effective Green, g (s)		32.5	32.5	10.4	46.9					20.1		75.0
Actuated g/C Ratio		0.43	0.43	0.14	0.63					0.27		1.00
Clearance Time (s)		5.0	5.0	4.2	5.0					4.6		
Vehicle Extension (s)		0.2	0.2	0.2	0.2					0.2		
Lane Grp Cap (vph)		1533	676	476	2213					474		1583
v/s Ratio Prot		0.34		0.12	0.12					0.24		
v/s Ratio Perm			0.10									c0.88
v/c Ratio		0.78	0.24	0.86	0.19					0.91		0.88
Uniform Delay, d1		18.1	13.4	31.6	6.0					26.5		0.0
Progression Factor		1.00	1.00	0.68	2.10					1.00		1.00
Incremental Delay, d2		3.9	0.8	7.3	0.1					20.2		7.1
Delay (s)		22.1	14.3	28.9	12.7					46.7		7.1
Level of Service		C	B	C	B					D		A
Approach Delay (s)		20.2			20.6			0.0			16.5	
Approach LOS		C			C			A			B	

Intersection Summary			
HCM 2000 Control Delay	18.7	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	1.04		
Actuated Cycle Length (s)	75.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	80.6%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	890	720	0	0	590	500	195	20	465	0	0	0
Future Volume (vph)	890	720	0	0	590	500	195	20	465	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	5.0			5.0			4.0	4.0			
Lane Util. Factor	0.97	0.95			0.95			1.00	1.00			
Frpb, ped/bikes	1.00	1.00			0.99			1.00	1.00			
Flpb, ped/bikes	1.00	1.00			1.00			1.00	1.00			
Frt	1.00	1.00			0.93			1.00	0.85			
Flt Protected	0.95	1.00			1.00			0.96	1.00			
Satd. Flow (prot)	3433	3539			3272			1782	1583			
Flt Permitted	0.95	1.00			1.00			0.96	1.00			
Satd. Flow (perm)	3433	3539			3272			1782	1583			
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	967	783	0	0	641	543	212	22	505	0	0	0
RTOR Reduction (vph)	0	0	0	0	203	0	0	0	185	0	0	0
Lane Group Flow (vph)	967	783	0	0	981	0	0	234	320	0	0	0
Confl. Peds. (#/hr)	3		1	1		3						
Turn Type	Prot	NA			NA		Split	NA	Perm			
Protected Phases	5	2			6		4	4				
Permitted Phases									4			
Actuated Green, G (s)	21.5	49.7			24.0			15.2	15.2			
Effective Green, g (s)	21.7	50.2			24.5			15.8	15.8			
Actuated g/C Ratio	0.29	0.67			0.33			0.21	0.21			
Clearance Time (s)	4.2	5.5			5.5			4.6	4.6			
Vehicle Extension (s)	0.2	0.2			0.2			0.2	0.2			
Lane Grp Cap (vph)	993	2368			1068			375	333			
v/s Ratio Prot	c0.28	0.22			c0.30			0.13				
v/s Ratio Perm									c0.20			
v/c Ratio	0.97	0.33			0.92			0.62	0.96			
Uniform Delay, d1	26.4	5.3			24.3			26.9	29.3			
Progression Factor	1.36	0.73			1.00			1.00	1.00			
Incremental Delay, d2	17.2	0.2			13.8			2.3	38.8			
Delay (s)	53.0	4.1			38.1			29.2	68.1			
Level of Service	D	A			D			C	E			
Approach Delay (s)		31.1			38.1			55.8			0.0	
Approach LOS		C			D			E			A	

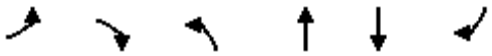
Intersection Summary			
HCM 2000 Control Delay	38.3	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.95		
Actuated Cycle Length (s)	75.0	Sum of lost time (s)	13.0
Intersection Capacity Utilization	80.6%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	230	200	150	870	890	180
Future Volume (vph)	230	200	150	870	890	180
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.5		4.5	4.5	4.5	
Lane Util. Factor	1.00		1.00	0.95	0.95	
Frt	0.94		1.00	1.00	0.97	
Flt Protected	0.97		0.95	1.00	1.00	
Satd. Flow (prot)	1700		1770	3539	3450	
Flt Permitted	0.97		0.95	1.00	1.00	
Satd. Flow (perm)	1700		1770	3539	3450	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	250	217	163	946	967	196
RTOR Reduction (vph)	26	0	0	0	11	0
Lane Group Flow (vph)	441	0	163	946	1152	0
Turn Type	Prot		Prot	NA	NA	
Protected Phases	7		1	6	2	
Permitted Phases						
Actuated Green, G (s)	37.9		16.0	83.1	62.6	
Effective Green, g (s)	37.9		16.0	83.1	62.6	
Actuated g/C Ratio	0.29		0.12	0.64	0.48	
Clearance Time (s)	4.5		4.5	4.5	4.5	
Vehicle Extension (s)	3.0		3.0	3.0	3.0	
Lane Grp Cap (vph)	495		217	2262	1661	
v/s Ratio Prot	c0.26		c0.09	0.27	c0.33	
v/s Ratio Perm						
v/c Ratio	0.89		0.75	0.42	0.69	
Uniform Delay, d1	44.1		55.1	11.5	26.2	
Progression Factor	1.00		1.04	1.24	1.00	
Incremental Delay, d2	18.0		12.7	0.5	2.4	
Delay (s)	62.1		69.9	14.9	28.6	
Level of Service	E		E	B	C	
Approach Delay (s)	62.1			23.0	28.6	
Approach LOS	E			C	C	

Intersection Summary			
HCM 2000 Control Delay	32.1	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.77		
Actuated Cycle Length (s)	130.0	Sum of lost time (s)	13.5
Intersection Capacity Utilization	74.9%	ICU Level of Service	D
Analysis Period (min)	15		

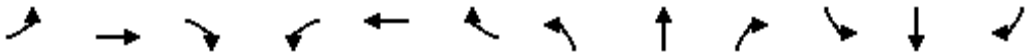
c Critical Lane Group



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	0	380	0	0	210	160
Future Volume (Veh/h)	0	380	0	0	210	160
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	413	0	0	228	174
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage veh)						
Upstream signal (ft)				897	1285	
pX, platoon unblocked						
vC, conflicting volume	315	201	402			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	315	201	402			
tC, single (s)	6.8	6.9	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	100	49	100			
cM capacity (veh/h)	653	806	1153			

Direction, Lane #	EB 1	SB 1	SB 2
Volume Total	413	152	250
Volume Left	0	0	0
Volume Right	413	0	174
cSH	806	1700	1700
Volume to Capacity	0.51	0.09	0.15
Queue Length 95th (ft)	74	0	0
Control Delay (s)	14.1	0.0	0.0
Lane LOS	B		
Approach Delay (s)	14.1	0.0	
Approach LOS	B		

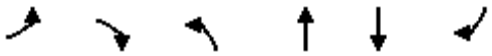
Intersection Summary			
Average Delay	7.1		
Intersection Capacity Utilization	41.1%	ICU Level of Service	A
Analysis Period (min)	15		



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	30	110	120	240	0	0	0	0	50	520	70
Future Volume (vph)	0	30	110	120	240	0	0	0	0	50	520	70
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0			4.0						4.0	
Lane Util. Factor		1.00			1.00						0.95	
Frt		0.89			1.00						0.98	
Flt Protected		1.00			0.98						1.00	
Satd. Flow (prot)		1666			1832						3468	
Flt Permitted		1.00			0.84						1.00	
Satd. Flow (perm)		1666			1563						3468	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	33	120	130	261	0	0	0	0	54	565	76
RTOR Reduction (vph)	0	79	0	0	0	0	0	0	0	0	12	0
Lane Group Flow (vph)	0	74	0	0	391	0	0	0	0	0	683	0
Turn Type		NA		Perm	NA					Perm	NA	
Protected Phases		4			8						6	
Permitted Phases				8						6		
Actuated Green, G (s)		17.5			17.5						25.3	
Effective Green, g (s)		17.5			17.5						25.3	
Actuated g/C Ratio		0.34			0.34						0.50	
Clearance Time (s)		4.0			4.0						4.0	
Vehicle Extension (s)		3.0			3.0						3.0	
Lane Grp Cap (vph)		573			538						1727	
v/s Ratio Prot		0.04										
v/s Ratio Perm					c0.25						0.20	
v/c Ratio		0.13			0.73						0.40	
Uniform Delay, d1		11.4			14.6						8.0	
Progression Factor		1.00			1.00						1.00	
Incremental Delay, d2		0.1			4.9						0.7	
Delay (s)		11.5			19.4						8.6	
Level of Service		B			B						A	
Approach Delay (s)		11.5			19.4			0.0			8.6	
Approach LOS		B			B			A			A	

Intersection Summary			
HCM 2000 Control Delay	12.4	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.53		
Actuated Cycle Length (s)	50.8	Sum of lost time (s)	8.0
Intersection Capacity Utilization	55.7%	ICU Level of Service	B
Analysis Period (min)	15		

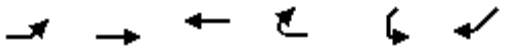
c Critical Lane Group



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	120	200	180	370	480	150
Future Volume (vph)	120	200	180	370	480	150
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0			4.0	4.0	
Lane Util. Factor	1.00			1.00	1.00	
Frt	0.92			1.00	0.97	
Flt Protected	0.98			0.98	1.00	
Satd. Flow (prot)	1674			1833	1803	
Flt Permitted	0.98			0.56	1.00	
Satd. Flow (perm)	1674			1044	1803	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	130	217	196	402	522	163
RTOR Reduction (vph)	89	0	0	0	15	0
Lane Group Flow (vph)	258	0	0	598	670	0
Turn Type	Prot		Perm	NA	NA	
Protected Phases	4			2	6	
Permitted Phases			2			
Actuated Green, G (s)	13.9			47.0	47.0	
Effective Green, g (s)	13.9			47.0	47.0	
Actuated g/C Ratio	0.20			0.68	0.68	
Clearance Time (s)	4.0			4.0	4.0	
Vehicle Extension (s)	3.0			3.0	3.0	
Lane Grp Cap (vph)	337			712	1229	
v/s Ratio Prot	c0.15				0.37	
v/s Ratio Perm				c0.57		
v/c Ratio	0.77			0.84	0.55	
Uniform Delay, d1	26.0			8.1	5.5	
Progression Factor	1.00			1.00	1.00	
Incremental Delay, d2	10.0			11.4	1.7	
Delay (s)	36.0			19.6	7.3	
Level of Service	D			B	A	
Approach Delay (s)	36.0			19.6	7.3	
Approach LOS	D			B	A	

Intersection Summary			
HCM 2000 Control Delay	17.9	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.82		
Actuated Cycle Length (s)	68.9	Sum of lost time (s)	8.0
Intersection Capacity Utilization	92.8%	ICU Level of Service	F
Analysis Period (min)	15		

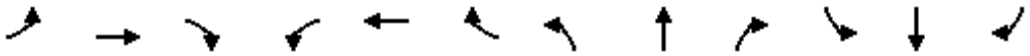
c Critical Lane Group



Movement	EBL	EBT	WBT	WBR	SWL	SWR
Lane Configurations						
Traffic Volume (vph)	60	1090	1200	40	160	240
Future Volume (vph)	60	1090	1200	40	160	240
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0		4.0	
Lane Util. Factor	1.00	0.95	0.95		1.00	
Frt	1.00	1.00	1.00		0.92	
Flt Protected	0.95	1.00	1.00		0.98	
Satd. Flow (prot)	1770	3539	3522		1678	
Flt Permitted	0.13	1.00	1.00		0.98	
Satd. Flow (perm)	240	3539	3522		1678	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	65	1185	1304	43	174	261
RTOR Reduction (vph)	0	0	4	0	27	0
Lane Group Flow (vph)	65	1185	1343	0	408	0
Turn Type	Perm	NA	NA		Prot	
Protected Phases		4	8		6	
Permitted Phases	4					
Actuated Green, G (s)	31.0	31.0	31.0		22.2	
Effective Green, g (s)	31.0	31.0	31.0		22.2	
Actuated g/C Ratio	0.51	0.51	0.51		0.36	
Clearance Time (s)	4.0	4.0	4.0		4.0	
Vehicle Extension (s)	3.0	3.0	3.0		3.0	
Lane Grp Cap (vph)	121	1792	1784		608	
v/s Ratio Prot		0.33	c0.38		c0.24	
v/s Ratio Perm	0.27					
v/c Ratio	0.54	0.66	0.75		0.67	
Uniform Delay, d1	10.2	11.2	12.0		16.4	
Progression Factor	1.00	1.00	1.00		1.00	
Incremental Delay, d2	4.5	0.9	1.8		5.8	
Delay (s)	14.8	12.1	13.9		22.2	
Level of Service	B	B	B		C	
Approach Delay (s)		12.3	13.9		22.2	
Approach LOS		B	B		C	

Intersection Summary			
HCM 2000 Control Delay	14.4	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.72		
Actuated Cycle Length (s)	61.2	Sum of lost time (s)	8.0
Intersection Capacity Utilization	71.4%	ICU Level of Service	C
Analysis Period (min)	15		

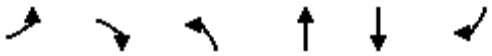
c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	70	20	40	50	120	260	160	500	370	200	490	70
Future Volume (vph)	70	20	40	50	120	260	160	500	370	200	490	70
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.5			4.5		4.5	4.5		4.5	4.5	
Lane Util. Factor		1.00			1.00		1.00	0.95		1.00	0.95	
Frt		0.96			0.92		1.00	0.94		1.00	0.98	
Flt Protected		0.97			0.99		0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1739			1701		1770	3313		1770	3473	
Flt Permitted		0.97			0.99		0.95	1.00		0.95	1.00	
Satd. Flow (perm)		1739			1701		1770	3313		1770	3473	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	76	22	43	54	130	283	174	543	402	217	533	76
RTOR Reduction (vph)	0	18	0	0	61	0	0	146	0	0	12	0
Lane Group Flow (vph)	0	123	0	0	406	0	174	799	0	217	597	0
Turn Type	Split	NA		Split	NA		Prot	NA		Prot	NA	
Protected Phases	8	8		4	4		5	2		1	6	
Permitted Phases												
Actuated Green, G (s)		11.1			21.5		11.6	22.7		11.9	23.0	
Effective Green, g (s)		11.1			21.5		11.6	22.7		11.9	23.0	
Actuated g/C Ratio		0.13			0.25		0.14	0.27		0.14	0.27	
Clearance Time (s)		4.5			4.5		4.5	4.5		4.5	4.5	
Vehicle Extension (s)		3.0			3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)		226			429		240	882		247	937	
v/s Ratio Prot		c0.07			c0.24		0.10	c0.24		c0.12	0.17	
v/s Ratio Perm												
v/c Ratio		0.54			0.95		0.72	0.91		0.88	0.64	
Uniform Delay, d1		34.7			31.3		35.3	30.2		35.9	27.4	
Progression Factor		1.00			1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2		2.7			30.1		10.4	12.7		27.7	1.4	
Delay (s)		37.3			61.4		45.6	42.9		63.6	28.9	
Level of Service		D			E		D	D		E	C	
Approach Delay (s)		37.3			61.4			43.3			38.0	
Approach LOS		D			E			D			D	

Intersection Summary			
HCM 2000 Control Delay	44.6	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.85		
Actuated Cycle Length (s)	85.2	Sum of lost time (s)	18.0
Intersection Capacity Utilization	73.1%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

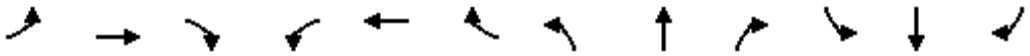


Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	160	260	200	140	240	250
Future Volume (vph)	160	260	200	140	240	250
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0			4.0	4.0	
Lane Util. Factor	1.00			1.00	1.00	
Frt	0.92			1.00	0.93	
Flt Protected	0.98			0.97	1.00	
Satd. Flow (prot)	1675			1810	1734	
Flt Permitted	0.98			0.49	1.00	
Satd. Flow (perm)	1675			921	1734	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	174	283	217	152	261	272
RTOR Reduction (vph)	94	0	0	0	54	0
Lane Group Flow (vph)	363	0	0	369	479	0
Turn Type	Prot		Perm	NA	NA	
Protected Phases	4			2	6	
Permitted Phases			2			
Actuated Green, G (s)	16.5			38.2	38.2	
Effective Green, g (s)	16.5			38.2	38.2	
Actuated g/C Ratio	0.26			0.61	0.61	
Clearance Time (s)	4.0			4.0	4.0	
Vehicle Extension (s)	3.0			3.0	3.0	
Lane Grp Cap (vph)	440			561	1056	
v/s Ratio Prot	c0.22				0.28	
v/s Ratio Perm				c0.40		
v/c Ratio	0.83			0.66	0.45	
Uniform Delay, d1	21.7			8.0	6.6	
Progression Factor	1.00			1.00	1.00	
Incremental Delay, d2	12.0			5.9	1.4	
Delay (s)	33.7			13.9	8.0	
Level of Service	C			B	A	
Approach Delay (s)	33.7			13.9	8.0	
Approach LOS	C			B	A	

Intersection Summary			
HCM 2000 Control Delay	18.3	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.71		
Actuated Cycle Length (s)	62.7	Sum of lost time (s)	8.0
Intersection Capacity Utilization	81.2%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

Peak Hour Intersection Calculation Worksheets - Mitigation



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	55	1145	400	160	1340	170	480	400	145	580	280	115
Future Volume (vph)	55	1145	400	160	1340	170	480	400	145	580	280	115
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	3.1	4.0	4.0	1.6	4.0	4.0	3.6	4.0	4.0	
Lane Util. Factor	1.00	0.91	1.00	0.97	0.91	1.00	0.97	1.00	1.00	0.97	1.00	
Frpb, ped/bikes	1.00	1.00	0.99	1.00	1.00	0.97	1.00	1.00	0.99	1.00	1.00	
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.96	
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)	1770	5085	1573	3433	5085	1544	3433	1863	1564	3433	1774	
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (perm)	1770	5085	1573	3433	5085	1544	3433	1863	1564	3433	1774	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	60	1245	435	174	1457	185	522	435	158	630	304	125
RTOR Reduction (vph)	0	0	162	0	0	87	0	0	47	0	16	0
Lane Group Flow (vph)	60	1245	273	174	1457	98	522	435	111	630	413	0
Confl. Peds. (#/hr)	8					8			3	3		
Confl. Bikes (#/hr)			1			5						3
Turn Type	Prot	NA	pm+ov	Prot	NA	pm+ov	Prot	NA	pm+ov	Prot	NA	
Protected Phases	5	2	3	1	6	7	3	8	1	7	4	
Permitted Phases			2			6			8			
Actuated Green, G (s)	3.2	25.7	47.1	5.8	28.2	50.4	21.4	28.8	34.6	22.2	27.8	
Effective Green, g (s)	3.6	27.0	49.7	6.2	29.6	53.2	21.8	29.6	36.2	21.2	29.0	
Actuated g/C Ratio	0.04	0.27	0.50	0.06	0.30	0.53	0.22	0.30	0.36	0.21	0.29	
Clearance Time (s)	4.4	5.3	4.4	4.4	5.4	3.0	4.4	4.8	4.4	3.0	5.2	
Vehicle Extension (s)	2.0	4.4	2.0	2.0	4.4	2.0	2.0	3.8	2.0	2.0	2.0	
Lane Grp Cap (vph)	63	1372	830	212	1505	846	748	551	622	727	514	
v/s Ratio Prot	0.03	0.24	0.07	c0.05	c0.29	0.03	0.15	c0.23	0.01	c0.18	0.23	
v/s Ratio Perm			0.10			0.04			0.06			
v/c Ratio	0.95	0.91	0.33	0.82	0.97	0.12	0.70	0.79	0.18	0.87	0.80	
Uniform Delay, d1	48.1	35.3	15.1	46.4	34.7	11.7	36.1	32.3	21.8	38.0	32.9	
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	95.4	10.3	0.1	20.9	16.8	0.0	2.3	7.7	0.1	10.3	8.3	
Delay (s)	143.5	45.6	15.2	67.2	51.5	11.7	38.4	40.1	21.8	48.3	41.2	
Level of Service	F	D	B	E	D	B	D	D	C	D	D	
Approach Delay (s)		41.4			48.9			36.7			45.4	
Approach LOS		D			D			D			D	

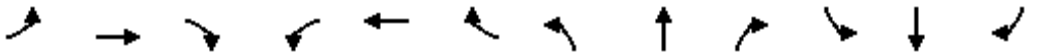
Intersection Summary			
HCM 2000 Control Delay	43.6	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.89		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	80.8%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	545	1200	370	0	0	660
Future Volume (vph)	545	1200	370	0	0	660
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	7.0	7.0	7.0			7.0
Lane Util. Factor	0.97	0.76	0.95			0.95
Frt	1.00	0.85	1.00			1.00
Flt Protected	0.95	1.00	1.00			1.00
Satd. Flow (prot)	3433	3610	3539			3539
Flt Permitted	0.95	1.00	1.00			1.00
Satd. Flow (perm)	3433	3610	3539			3539
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	592	1304	402	0	0	717
RTOR Reduction (vph)	0	546	0	0	0	0
Lane Group Flow (vph)	592	758	402	0	0	717
Turn Type	Prot	Perm	NA			NA
Protected Phases	4		2			6
Permitted Phases		4				
Actuated Green, G (s)	10.0	10.0	12.2			12.2
Effective Green, g (s)	10.0	10.0	12.2			12.2
Actuated g/C Ratio	0.28	0.28	0.34			0.34
Clearance Time (s)	7.0	7.0	7.0			7.0
Vehicle Extension (s)	0.2	0.2	0.2			0.2
Lane Grp Cap (vph)	948	997	1192			1192
v/s Ratio Prot	0.17		0.11			c0.20
v/s Ratio Perm		c0.21				
v/c Ratio	0.62	0.76	0.34			0.60
Uniform Delay, d1	11.5	12.0	9.0			10.0
Progression Factor	1.00	1.00	1.00			1.00
Incremental Delay, d2	0.9	3.1	0.1			0.6
Delay (s)	12.4	15.1	9.0			10.6
Level of Service	B	B	A			B
Approach Delay (s)	14.3		9.0			10.6
Approach LOS	B		A			B

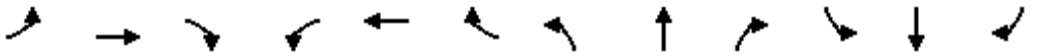
Intersection Summary			
HCM 2000 Control Delay	12.7	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.67		
Actuated Cycle Length (s)	36.2	Sum of lost time (s)	14.0
Intersection Capacity Utilization	49.9%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group



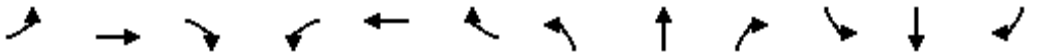
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	450	310	280	30	140	290	185	460	50	370	520	255
Future Volume (vph)	450	310	280	30	140	290	185	460	50	370	520	255
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.1	4.0	3.1	3.0	4.0	4.0	3.1	4.0		3.1	4.0	4.0
Lane Util. Factor	0.97	1.00	1.00	1.00	0.95	1.00	0.97	0.95		0.97	0.95	1.00
Frpb, ped/bikes	1.00	1.00	0.99	1.00	1.00	0.99	1.00	1.00		1.00	1.00	0.99
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.99		1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	3433	1863	1565	1770	3539	1568	3433	3482		3433	3539	1566
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)	3433	1863	1565	1770	3539	1568	3433	3482		3433	3539	1566
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	489	337	304	33	152	315	201	500	54	402	565	277
RTOR Reduction (vph)	0	0	94	0	0	86	0	9	0	0	0	160
Lane Group Flow (vph)	489	337	210	33	152	229	201	545	0	402	565	117
Confl. Peds. (#/hr)			4			3			5			8
Turn Type	Prot	NA	pm+ov	Prot	NA	pm+ov	Prot	NA		Prot	NA	pm+ov
Protected Phases	5	2	3	1	6	7	3	8		7	4	5
Permitted Phases			2			6						4
Actuated Green, G (s)	11.4	28.2	35.5	1.8	18.5	27.8	7.3	18.4		9.3	20.4	31.8
Effective Green, g (s)	12.3	29.1	37.3	2.8	19.5	27.8	8.2	19.3		10.2	21.3	31.8
Actuated g/C Ratio	0.16	0.39	0.49	0.04	0.26	0.37	0.11	0.26		0.14	0.28	0.42
Clearance Time (s)	4.0	4.9	4.0	4.0	5.0	4.0	4.0	4.9		4.0	4.9	4.0
Vehicle Extension (s)	3.0	0.2	3.0	3.0	8.0	3.0	3.0	3.1		3.0	5.5	3.0
Lane Grp Cap (vph)	559	718	773	65	914	577	372	890		463	998	659
v/s Ratio Prot	c0.14	c0.18	0.03	0.02	0.04	0.05	0.06	0.16		c0.12	c0.16	0.03
v/s Ratio Perm			0.10			0.10						0.05
v/c Ratio	0.87	0.47	0.27	0.51	0.17	0.40	0.54	0.61		0.87	0.57	0.18
Uniform Delay, d1	30.8	17.4	11.2	35.7	21.7	17.6	31.9	24.8		32.0	23.2	13.7
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	14.2	0.2	0.2	6.1	0.4	0.5	1.6	1.3		15.7	1.4	0.1
Delay (s)	45.1	17.6	11.4	41.8	22.1	18.1	33.5	26.1		47.7	24.5	13.8
Level of Service	D	B	B	D	C	B	C	C		D	C	B
Approach Delay (s)		27.8			20.9			28.0			29.6	
Approach LOS		C			C			C			C	

Intersection Summary			
HCM 2000 Control Delay	30.6	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.69		
Actuated Cycle Length (s)	75.5	Sum of lost time (s)	16.0
Intersection Capacity Utilization	61.4%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	220	1460	170	290	1795	300	115	330	215	225	280	175
Future Volume (vph)	220	1460	170	290	1795	300	115	330	215	225	280	175
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0	4.4	4.0	4.0	3.5	4.0	4.0	3.5
Lane Util. Factor	0.97	0.86		0.97	0.86	1.00	1.00	0.95	1.00	0.97	0.95	1.00
Frpb, ped/bikes	1.00	1.00		1.00	1.00	0.98	1.00	1.00	0.97	1.00	1.00	0.98
Flpb, ped/bikes	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.98		1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	6284		3433	6408	1553	1770	3539	1543	3433	3539	1556
Flt Permitted	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	6284		3433	6408	1553	1770	3539	1543	3433	3539	1556
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	239	1587	185	315	1951	326	125	359	234	245	304	190
RTOR Reduction (vph)	0	22	0	0	0	124	0	0	100	0	0	85
Lane Group Flow (vph)	239	1750	0	315	1951	202	125	359	134	245	304	105
Confl. Peds. (#/hr)	14		25	25		14	18		27	27		14
Turn Type	Prot	NA		Prot	NA	pm+ov	Prot	NA	pm+ov	Prot	NA	pm+ov
Protected Phases	5	2		1	6	7	3	8	1	7	4	5
Permitted Phases						6			8			4
Actuated Green, G (s)	8.5	31.0		5.1	27.7	38.1	4.0	19.7	24.8	10.4	26.1	34.6
Effective Green, g (s)	8.9	32.1		5.5	28.7	38.1	4.4	20.6	26.6	10.8	27.0	36.4
Actuated g/C Ratio	0.10	0.38		0.06	0.34	0.45	0.05	0.24	0.31	0.13	0.32	0.43
Clearance Time (s)	4.4	5.1		4.4	5.0	4.4	4.4	4.9	4.4	4.4	4.9	4.4
Vehicle Extension (s)	2.0	3.5		2.0	3.7	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lane Grp Cap (vph)	359	2373		222	2163	696	91	857	546	436	1124	666
v/s Ratio Prot	0.07	c0.28		c0.09	c0.30	0.04	c0.07	c0.10	0.02	c0.07	0.09	0.02
v/s Ratio Perm						0.09			0.07			0.05
v/c Ratio	0.67	0.74		1.42	0.90	0.29	1.37	0.42	0.24	0.56	0.27	0.16
Uniform Delay, d1	36.6	22.8		39.8	26.8	14.9	40.3	27.2	21.7	34.9	21.6	14.9
Progression Factor	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	3.6	2.1		212.8	6.7	0.1	223.0	0.1	0.1	1.0	0.0	0.0
Delay (s)	40.2	24.9		252.6	33.5	15.0	263.3	27.3	21.8	35.9	21.7	14.9
Level of Service	D	C		F	C	B	F	C	C	D	C	B
Approach Delay (s)		26.7			57.8			66.6			24.7	
Approach LOS		C			E			E			C	

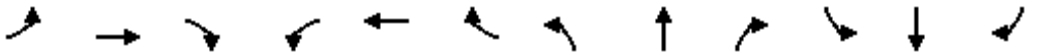
Intersection Summary			
HCM 2000 Control Delay	44.5	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.76		
Actuated Cycle Length (s)	85.0	Sum of lost time (s)	16.4
Intersection Capacity Utilization	71.8%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	335	175	540	515	0	0	0	0	245	320	350
Future Volume (vph)	0	335	175	540	515	0	0	0	0	245	320	350
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0	4.0	4.0	4.0					4.0	4.0	4.0
Lane Util. Factor		0.95	1.00	0.97	0.95					0.91	0.91	0.88
Frt		1.00	0.85	1.00	1.00					1.00	1.00	0.85
Flt Protected		1.00	1.00	0.95	1.00					0.95	0.99	1.00
Satd. Flow (prot)		3539	1583	3433	3539					1610	3359	2787
Flt Permitted		1.00	1.00	0.95	1.00					0.95	0.99	1.00
Satd. Flow (perm)		3539	1583	3433	3539					1610	3359	2787
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	364	190	587	560	0	0	0	0	266	348	380
RTOR Reduction (vph)	0	0	105	0	0	0	0	0	0	0	0	288
Lane Group Flow (vph)	0	364	85	587	560	0	0	0	0	186	428	92
Turn Type		NA	Perm	Prot	NA					Perm	NA	Perm
Protected Phases		2		1	6						4	
Permitted Phases			2							4		4
Actuated Green, G (s)		31.3	31.3	16.1	51.8					18.4	18.4	18.4
Effective Green, g (s)		32.2	32.2	16.5	52.7					19.3	19.3	19.3
Actuated g/C Ratio		0.40	0.40	0.21	0.66					0.24	0.24	0.24
Clearance Time (s)		4.9	4.9	4.4	4.9					4.9	4.9	4.9
Vehicle Extension (s)		3.8	3.8	2.0	4.2					2.0	2.0	2.0
Lane Grp Cap (vph)		1424	637	708	2331					388	810	672
v/s Ratio Prot		c0.10		c0.17	0.16							
v/s Ratio Perm			0.05							0.12	0.13	0.03
v/c Ratio		0.26	0.13	0.83	0.24					0.48	0.53	0.14
Uniform Delay, d1		15.9	15.1	30.4	5.5					26.0	26.4	23.8
Progression Factor		1.00	1.00	1.00	1.00					1.00	1.00	1.00
Incremental Delay, d2		0.4	0.4	7.6	0.2					0.3	0.3	0.0
Delay (s)		16.4	15.5	38.0	5.8					26.4	26.7	23.8
Level of Service		B	B	D	A					C	C	C
Approach Delay (s)		16.1			22.3			0.0			25.5	
Approach LOS		B			C			A			C	

Intersection Summary			
HCM 2000 Control Delay	22.2	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.47		
Actuated Cycle Length (s)	80.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	46.9%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

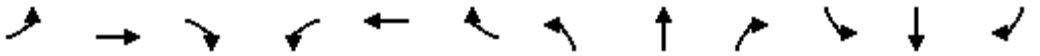


Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	645	90	35	490	0	0	0	0	540	330	505
Future Volume (vph)	0	645	90	35	490	0	0	0	0	540	330	505
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		6.7		4.0	6.7						6.3	4.0
Lane Util. Factor		0.91		1.00	0.95						0.86	0.86
Frt		0.98		1.00	1.00						1.00	0.85
Flt Protected		1.00		0.95	1.00						0.97	1.00
Satd. Flow (prot)		4992		1770	3539						4661	1362
Flt Permitted		1.00		0.95	1.00						0.97	1.00
Satd. Flow (perm)		4992		1770	3539						4661	1362
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	701	98	38	533	0	0	0	0	587	359	549
RTOR Reduction (vph)	0	26	0	0	0	0	0	0	0	0	0	122
Lane Group Flow (vph)	0	773	0	38	533	0	0	0	0	0	946	427
Turn Type		NA		Prot	NA					Perm	NA	Perm
Protected Phases		2		1	6						4	
Permitted Phases										4		4
Actuated Green, G (s)		23.1		1.6	27.4						25.6	25.6
Effective Green, g (s)		21.3		2.0	27.3						24.7	27.0
Actuated g/C Ratio		0.33		0.03	0.42						0.38	0.42
Clearance Time (s)		4.9		4.4	6.6						5.4	5.4
Vehicle Extension (s)		1.0		2.0	1.0						1.0	1.0
Lane Grp Cap (vph)		1635		54	1486						1771	565
v/s Ratio Prot		c0.15		c0.02	0.15							
v/s Ratio Perm											0.20	c0.31
v/c Ratio		0.47		0.70	0.36						0.92dl	0.76
Uniform Delay, d1		17.4		31.2	12.9						15.7	16.2
Progression Factor		1.00		1.33	0.85						1.00	1.00
Incremental Delay, d2		1.0		26.8	0.6						0.2	5.1
Delay (s)		18.4		68.2	11.6						15.8	21.3
Level of Service		B		E	B						B	C
Approach Delay (s)		18.4			15.4			0.0			17.8	
Approach LOS		B			B			A			B	

Intersection Summary			
HCM 2000 Control Delay	17.5	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.66		
Actuated Cycle Length (s)	65.0	Sum of lost time (s)	17.0
Intersection Capacity Utilization	74.4%	ICU Level of Service	D
Analysis Period (min)	15		

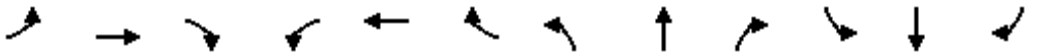
dl Defacto Left Lane. Recode with 1 though lane as a left lane.

c Critical Lane Group



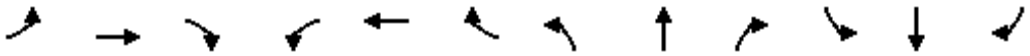
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	5	20	20	420	95	170	30	1290	160	125	715	120
Future Volume (vph)	5	20	20	420	95	170	30	1290	160	125	715	120
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.3	4.3		4.0	4.0		4.0	4.0	
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	0.91		0.97	0.91	
Frpb, ped/bikes	1.00	0.99		1.00	1.00		1.00	1.00		1.00	1.00	
Flpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Frt	1.00	0.93		1.00	0.90		1.00	0.98		1.00	0.98	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1770	1710		1765	1683		1770	5001		3433	4960	
Flt Permitted	0.50	1.00		0.73	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (perm)	926	1710		1353	1683		1770	5001		3433	4960	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	5	22	22	457	103	185	33	1402	174	136	777	130
RTOR Reduction (vph)	0	13	0	0	92	0	0	19	0	0	27	0
Lane Group Flow (vph)	5	31	0	457	196	0	33	1557	0	136	880	0
Confl. Peds. (#/hr)			4	4			1					1
Turn Type	Perm	NA		Perm	NA		Prot	NA		Prot	NA	
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4			8								
Actuated Green, G (s)	28.0	28.0		27.3	27.3		1.9	26.8		3.3	28.0	
Effective Green, g (s)	28.0	28.0		27.7	27.7		1.9	28.2		3.8	30.1	
Actuated g/C Ratio	0.39	0.39		0.38	0.38		0.03	0.39		0.05	0.42	
Clearance Time (s)	4.0	4.0		4.7	4.7		4.0	5.4		4.5	6.1	
Vehicle Extension (s)	2.0	2.0		3.0	3.0		2.0	4.8		3.0	3.7	
Lane Grp Cap (vph)	360	665		520	647		46	1958		181	2073	
v/s Ratio Prot		0.02			0.12		0.02	c0.31		c0.04	0.18	
v/s Ratio Perm	0.01			c0.34								
v/c Ratio	0.01	0.05		0.88	0.30		0.72	0.79		0.75	0.42	
Uniform Delay, d1	13.5	13.7		20.6	15.4		34.8	19.3		33.6	14.8	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	0.0	0.0		15.5	0.3		35.7	3.4		16.0	0.6	
Delay (s)	13.5	13.7		36.1	15.7		70.5	22.8		49.7	15.5	
Level of Service	B	B		D	B		E	C		D	B	
Approach Delay (s)		13.7			28.2			23.8			19.9	
Approach LOS		B			C			C			B	

Intersection Summary			
HCM 2000 Control Delay	23.4	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.83		
Actuated Cycle Length (s)	72.0	Sum of lost time (s)	12.3
Intersection Capacity Utilization	72.2%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			



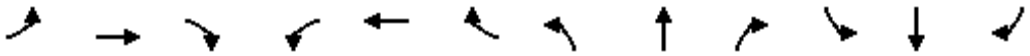
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	645	565	145	140	715	140	290	670	95	75	670	215
Future Volume (vph)	645	565	145	140	715	140	290	670	95	75	670	215
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	4.0
Lane Util. Factor	0.97	0.91		1.00	0.91		0.97	0.86		1.00	0.91	1.00
Frpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	0.99
Flpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	1.00
Frt	1.00	0.97		1.00	0.98		1.00	0.98		1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	3433	4929		1770	4948		3433	4709		1770	5085	1568
Flt Permitted	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)	3433	4929		1770	4948		3433	4709		1770	5085	1568
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	701	614	158	152	777	152	315	728	103	82	728	234
RTOR Reduction (vph)	0	46	0	0	31	0	0	16	0	0	0	44
Lane Group Flow (vph)	701	726	0	152	898	0	315	815	0	82	728	190
Confl. Peds. (#/hr)	4					4	5		1	1		5
Turn Type	Prot	NA		Prot	NA		Prot	NA	Perm	Prot	NA	pm+ov
Protected Phases	7	4		3	8		5	2		1	6	7
Permitted Phases									2			6
Actuated Green, G (s)	20.6	33.7		11.9	24.4		9.4	24.5		5.4	20.4	41.0
Effective Green, g (s)	21.0	34.9		12.3	26.2		9.8	25.4		5.8	21.4	41.8
Actuated g/C Ratio	0.22	0.37		0.13	0.28		0.10	0.27		0.06	0.23	0.44
Clearance Time (s)	4.4	5.2		4.4	5.8		4.4	4.9		4.4	5.0	4.4
Vehicle Extension (s)	2.0	3.9		2.0	2.7		2.0	3.3		2.0	4.1	2.0
Lane Grp Cap (vph)	763	1822		230	1373		356	1267		108	1152	694
v/s Ratio Prot	c0.20	0.15		0.09	c0.18		c0.09	c0.17		0.05	0.14	0.06
v/s Ratio Perm												0.06
v/c Ratio	0.92	0.40		0.66	0.65		0.88	0.64		0.76	0.63	0.27
Uniform Delay, d1	35.9	22.0		39.1	30.1		41.7	30.5		43.6	32.9	16.7
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	15.7	0.2		5.4	1.1		21.5	2.5		23.4	2.6	0.1
Delay (s)	51.5	22.2		44.5	31.2		63.3	33.0		67.0	35.6	16.8
Level of Service	D	C		D	C		E	C		E	D	B
Approach Delay (s)		36.1			33.0			41.3			33.8	
Approach LOS		D			C			D			C	

Intersection Summary			
HCM 2000 Control Delay	36.2	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.76		
Actuated Cycle Length (s)	94.4	Sum of lost time (s)	16.0
Intersection Capacity Utilization	73.1%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	135	225	60	15	140	210	40	165	240	5	5	20
Future Volume (vph)	135	225	60	15	140	210	40	165	240	5	5	20
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		3.1	4.0			4.0			4.0	
Lane Util. Factor	1.00	1.00		1.00	1.00			1.00			1.00	
Frpb, ped/bikes	1.00	0.99		1.00	1.00			0.98			1.00	
Flpb, ped/bikes	1.00	1.00		1.00	1.00			1.00			1.00	
Frt	1.00	0.97		1.00	0.91			0.93			0.91	
Flt Protected	0.95	1.00		0.95	1.00			1.00			0.99	
Satd. Flow (prot)	1770	1794		1770	1695			1685			1676	
Flt Permitted	0.95	1.00		0.95	1.00			0.97			0.95	
Satd. Flow (perm)	1770	1794		1770	1695			1646			1599	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	147	245	65	16	152	228	43	179	261	5	5	22
RTOR Reduction (vph)	0	11	0	0	64	0	0	60	0	0	16	0
Lane Group Flow (vph)	147	299	0	16	316	0	0	423	0	0	16	0
Confl. Peds. (#/hr)			3	3					8	8		
Turn Type	Prot	NA		Prot	NA		Perm	NA		Perm	NA	
Protected Phases	5	2		1	6			8			4	
Permitted Phases							8			4		
Actuated Green, G (s)	11.4	38.1		0.7	27.0			20.4			20.4	
Effective Green, g (s)	11.8	39.0		1.6	27.9			21.3			21.3	
Actuated g/C Ratio	0.16	0.53		0.02	0.38			0.29			0.29	
Clearance Time (s)	4.4	4.9		4.0	4.9			4.9			4.9	
Vehicle Extension (s)	1.0	2.0		3.0	2.0			2.0			2.0	
Lane Grp Cap (vph)	286	958		38	647			480			466	
v/s Ratio Prot	c0.08	0.17		0.01	c0.19							
v/s Ratio Perm								c0.26			0.01	
v/c Ratio	0.51	0.31		0.42	0.49			0.88			0.04	
Uniform Delay, d1	28.0	9.5		35.2	17.1			24.6			18.5	
Progression Factor	1.00	1.00		1.00	1.00			1.00			1.00	
Incremental Delay, d2	0.7	0.9		7.4	2.6			16.6			0.0	
Delay (s)	28.6	10.4		42.6	19.8			41.2			18.5	
Level of Service	C	B		D	B			D			B	
Approach Delay (s)		16.2			20.7			41.2			18.5	
Approach LOS		B			C			D			B	

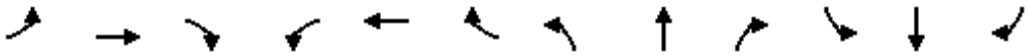
Intersection Summary			
HCM 2000 Control Delay	26.4	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.63		
Actuated Cycle Length (s)	73.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	72.9%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	180	655	85	165	1240	65	60	125	100	255	375	245
Future Volume (vph)	180	655	85	165	1240	65	60	125	100	255	375	245
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0		4.0	4.0	4.0	4.0	4.0	
Lane Util. Factor	0.97	0.91		1.00	0.91		1.00	0.95	1.00	0.97	0.95	
Frpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00	0.98	1.00	0.98	
Flpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	
Frt	1.00	0.98		1.00	0.99		1.00	1.00	0.85	1.00	0.94	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)	3433	4974		1770	5036		1770	3539	1555	3433	3280	
Flt Permitted	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (perm)	3433	4974		1770	5036		1770	3539	1555	3433	3280	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	196	712	92	179	1348	71	65	136	109	277	408	266
RTOR Reduction (vph)	0	20	0	0	6	0	0	0	59	0	141	0
Lane Group Flow (vph)	196	784	0	179	1413	0	65	136	50	277	533	0
Confl. Peds. (#/hr)	23		24	24		23	19		14	14		19
Confl. Bikes (#/hr)			9			5			12			6
Turn Type	Prot	NA		Prot	NA		Prot	NA	pm+ov	Prot	NA	
Protected Phases	5	2		1	6		3	8	1	7	4	
Permitted Phases									8			
Actuated Green, G (s)	7.9	24.4		13.1	29.1		6.1	17.6	30.7	11.2	22.8	
Effective Green, g (s)	8.3	25.3		13.5	30.5		6.5	18.6	31.5	11.6	23.7	
Actuated g/C Ratio	0.10	0.30		0.16	0.36		0.08	0.22	0.37	0.14	0.28	
Clearance Time (s)	4.4	4.9		4.4	5.4		4.4	5.0	4.4	4.4	4.9	
Vehicle Extension (s)	2.0	4.2		2.0	3.0		2.0	4.0	2.0	2.0	2.6	
Lane Grp Cap (vph)	335	1480		281	1807		135	774	576	468	914	
v/s Ratio Prot	0.06	0.16		c0.10	c0.28		c0.04	0.04	0.01	0.08	c0.16	
v/s Ratio Perm									0.02			
v/c Ratio	0.59	0.53		0.64	0.78		0.48	0.18	0.09	0.59	0.58	
Uniform Delay, d1	36.7	24.9		33.5	24.3		37.6	27.0	17.4	34.5	26.4	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	1.7	1.4		3.5	3.5		1.0	0.1	0.0	1.3	0.8	
Delay (s)	38.4	26.3		36.9	27.7		38.6	27.1	17.4	35.8	27.2	
Level of Service	D	C		D	C		D	C	B	D	C	
Approach Delay (s)		28.6			28.8			26.1			29.7	
Approach LOS		C			C			C			C	

Intersection Summary			
HCM 2000 Control Delay	28.8	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.69		
Actuated Cycle Length (s)	85.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	67.9%	ICU Level of Service	C
Analysis Period (min)	15		

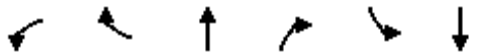
c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	90	1680	560	120	1170	355	460	345	180	300	255	35
Future Volume (vph)	90	1680	560	120	1170	355	460	345	180	300	255	35
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	3.1	4.0	4.0	1.6	4.0	4.0	3.6	4.0	4.0	
Lane Util. Factor	1.00	0.91	1.00	0.97	0.91	1.00	0.97	1.00	1.00	0.97	1.00	
Frpb, ped/bikes	1.00	1.00	0.99	1.00	1.00	0.97	1.00	1.00	0.99	1.00	1.00	
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.98	
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)	1770	5085	1568	3433	5085	1537	3433	1863	1560	3433	1826	
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (perm)	1770	5085	1568	3433	5085	1537	3433	1863	1560	3433	1826	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	98	1826	609	130	1272	386	500	375	196	326	277	38
RTOR Reduction (vph)	0	0	142	0	0	117	0	0	50	0	5	0
Lane Group Flow (vph)	98	1826	467	130	1272	269	500	375	146	326	310	0
Confl. Peds. (#/hr)	6		1	1		6			6	6		
Confl. Bikes (#/hr)			1			5						3
Turn Type	Prot	NA	pm+ov	Prot	NA	pm+ov	Prot	NA	pm+ov	Prot	NA	
Protected Phases	5	2	3	1	6	7	3	8	1	7	4	
Permitted Phases			2			6			8			
Actuated Green, G (s)	8.3	42.1	57.3	5.7	39.4	54.4	15.2	29.7	35.4	15.0	27.7	
Effective Green, g (s)	8.7	43.4	59.9	6.1	40.8	57.2	15.6	30.5	37.0	14.0	28.9	
Actuated g/C Ratio	0.08	0.39	0.54	0.06	0.37	0.52	0.14	0.28	0.34	0.13	0.26	
Clearance Time (s)	4.4	5.3	4.4	4.4	5.4	3.0	4.4	4.8	4.4	3.0	5.2	
Vehicle Extension (s)	2.0	4.4	2.0	2.0	4.4	2.0	2.0	3.8	2.0	2.0	2.0	
Lane Grp Cap (vph)	139	2006	853	190	1886	799	486	516	524	436	479	
v/s Ratio Prot	c0.06	c0.36	0.08	0.04	0.25	0.05	c0.15	c0.20	0.02	0.09	c0.17	
v/s Ratio Perm			0.22			0.12			0.08			
v/c Ratio	0.71	0.91	0.55	0.68	0.67	0.34	1.03	0.73	0.28	0.75	0.65	
Uniform Delay, d1	49.4	31.5	16.3	51.0	29.0	15.4	47.2	36.0	26.7	46.3	36.0	
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	12.5	7.7	0.4	7.9	2.0	0.1	48.4	5.3	0.1	6.0	2.3	
Delay (s)	61.8	39.1	16.6	58.9	31.0	15.5	95.6	41.3	26.8	52.3	38.3	
Level of Service	E	D	B	E	C	B	F	D	C	D	D	
Approach Delay (s)		34.6			29.7			64.0			45.4	
Approach LOS		C			C			E			D	

Intersection Summary			
HCM 2000 Control Delay	39.5	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.86		
Actuated Cycle Length (s)	110.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	77.9%	ICU Level of Service	D
Analysis Period (min)	15		

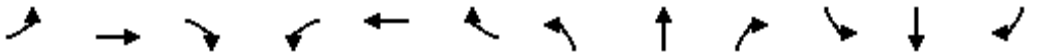
c Critical Lane Group



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	830	1800	925	0	0	880
Future Volume (vph)	830	1800	925	0	0	880
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	7.0	7.0	7.0			7.0
Lane Util. Factor	0.97	0.76	0.95			0.95
Frt	1.00	0.85	1.00			1.00
Flt Protected	0.95	1.00	1.00			1.00
Satd. Flow (prot)	3433	3610	3539			3539
Flt Permitted	0.95	1.00	1.00			1.00
Satd. Flow (perm)	3433	3610	3539			3539
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	902	1957	1005	0	0	957
RTOR Reduction (vph)	0	14	0	0	0	0
Lane Group Flow (vph)	902	1943	1005	0	0	957
Turn Type	Prot	Perm	NA			NA
Protected Phases	4		2			6
Permitted Phases		4				
Actuated Green, G (s)	48.0	48.0	26.4			26.4
Effective Green, g (s)	48.0	48.0	26.4			26.4
Actuated g/C Ratio	0.54	0.54	0.30			0.30
Clearance Time (s)	7.0	7.0	7.0			7.0
Vehicle Extension (s)	0.2	0.2	0.2			0.2
Lane Grp Cap (vph)	1864	1960	1056			1056
v/s Ratio Prot	0.26		c0.28			0.27
v/s Ratio Perm		c0.54				
v/c Ratio	0.48	0.99	0.95			0.91
Uniform Delay, d1	12.5	20.0	30.4			29.8
Progression Factor	1.00	1.00	1.00			1.00
Incremental Delay, d2	0.1	18.2	17.1			10.8
Delay (s)	12.6	38.2	47.5			40.6
Level of Service	B	D	D			D
Approach Delay (s)	30.1		47.5			40.6
Approach LOS	C		D			D

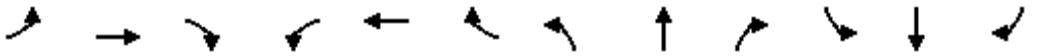
Intersection Summary			
HCM 2000 Control Delay	35.8	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.98		
Actuated Cycle Length (s)	88.4	Sum of lost time (s)	14.0
Intersection Capacity Utilization	79.2%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group



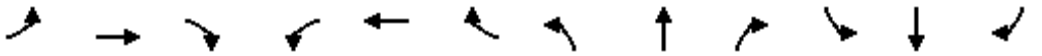
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	385	335	320	80	540	695	420	510	80	410	715	405
Future Volume (vph)	385	335	320	80	540	695	420	510	80	410	715	405
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.9	4.0	4.0		4.0	4.0	4.9
Lane Util. Factor	0.97	1.00	1.00	1.00	0.95	1.00	0.97	0.95		0.97	0.95	1.00
Frpb, ped/bikes	1.00	1.00	0.99	1.00	1.00	0.99	1.00	1.00		1.00	1.00	0.99
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.98		1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	3433	1863	1567	1770	3539	1568	3433	3467		3433	3539	1562
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)	3433	1863	1567	1770	3539	1568	3433	3467		3433	3539	1562
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	418	364	348	87	587	755	457	554	87	446	777	440
RTOR Reduction (vph)	0	0	57	0	0	54	0	11	0	0	0	62
Lane Group Flow (vph)	418	364	291	87	587	701	457	630	0	446	777	378
Confl. Peds. (#/hr)	6		3	3		6	6					6
Turn Type	Prot	NA	pm+ov	Prot	NA	pm+ov	Prot	NA		Prot	NA	pm+ov
Protected Phases	5	2	3	1	6	7	3	8		7	4	5
Permitted Phases			2			6						4
Actuated Green, G (s)	13.7	35.9	54.0	9.0	31.2	59.1	18.1	27.5		27.9	37.3	51.0
Effective Green, g (s)	14.6	36.8	55.8	10.0	32.2	59.1	19.0	28.4		28.8	38.2	51.0
Actuated g/C Ratio	0.12	0.31	0.46	0.08	0.27	0.49	0.16	0.24		0.24	0.32	0.42
Clearance Time (s)	4.9	4.9	4.9	5.0	5.0	4.9	4.9	4.9		4.9	4.9	4.9
Vehicle Extension (s)	0.2	0.2	3.1	8.0	8.0	5.5	3.1	3.1		5.5	5.5	0.2
Lane Grp Cap (vph)	417	571	780	147	949	836	543	820		823	1126	663
v/s Ratio Prot	c0.12	0.20	0.06	0.05	0.17	c0.20	c0.13	c0.18		0.13	0.22	0.06
v/s Ratio Perm			0.13			0.25						0.18
v/c Ratio	1.00	0.64	0.37	0.59	0.62	0.84	0.84	0.77		0.54	0.69	0.57
Uniform Delay, d1	52.7	35.9	20.8	53.0	38.5	26.3	49.0	42.7		39.8	35.7	26.2
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	44.7	5.4	0.3	15.1	3.0	8.4	11.4	4.4		1.5	2.5	0.7
Delay (s)	97.4	41.2	21.1	68.2	41.5	34.7	60.4	47.1		41.3	38.3	26.9
Level of Service	F	D	C	E	D	C	E	D		D	D	C
Approach Delay (s)		55.8			39.6			52.6			36.1	
Approach LOS		E			D			D			D	

Intersection Summary			
HCM 2000 Control Delay	44.6	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.88		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	17.8
Intersection Capacity Utilization	83.6%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	375	1700	200	510	1395	385	230	645	410	345	530	285
Future Volume (vph)	375	1700	200	510	1395	385	230	645	410	345	530	285
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0	4.4	4.0	4.0	3.5	4.0	4.0	3.5
Lane Util. Factor	0.97	0.86		0.97	0.86	1.00	1.00	0.95	1.00	0.97	0.95	1.00
Frpb, ped/bikes	1.00	0.99		1.00	1.00	0.93	1.00	1.00	0.96	1.00	1.00	0.96
Flpb, ped/bikes	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.98		1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	6233		3433	6408	1476	1770	3539	1527	3433	3539	1523
Flt Permitted	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	6233		3433	6408	1476	1770	3539	1527	3433	3539	1523
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	408	1848	217	554	1516	418	250	701	446	375	576	310
RTOR Reduction (vph)	0	15	0	0	0	44	0	0	55	0	0	59
Lane Group Flow (vph)	408	2050	0	554	1516	374	250	701	391	375	576	251
Confl. Peds. (#/hr)	48		65	65		48	42		40	40		42
Turn Type	Prot	NA		Prot	NA	pm+ov	Prot	NA	pm+ov	Prot	NA	pm+ov
Protected Phases	5	2		1	6	7	3	8	1	7	4	5
Permitted Phases						6			8			4
Actuated Green, G (s)	19.8	47.0		22.0	49.3	66.6	19.2	29.9	51.9	17.3	28.0	47.8
Effective Green, g (s)	20.2	48.1		22.4	50.3	66.6	19.6	30.8	53.7	17.7	28.9	49.6
Actuated g/C Ratio	0.15	0.36		0.17	0.37	0.49	0.15	0.23	0.40	0.13	0.21	0.37
Clearance Time (s)	4.4	5.1		4.4	5.0	4.4	4.4	4.9	4.4	4.4	4.9	4.4
Vehicle Extension (s)	2.0	3.5		2.0	3.7	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lane Grp Cap (vph)	513	2220		569	2387	728	256	807	646	450	757	559
v/s Ratio Prot	0.12	c0.33		c0.16	0.24	0.07	c0.14	c0.20	0.10	0.11	c0.16	0.07
v/s Ratio Perm						0.19			0.15			0.10
v/c Ratio	0.80	0.92		0.97	0.64	0.51	0.98	0.87	0.60	0.83	0.76	0.45
Uniform Delay, d1	55.4	41.7		56.0	34.8	23.2	57.5	50.2	32.2	57.2	49.8	32.4
Progression Factor	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	7.8	8.0		30.8	0.6	0.3	49.0	9.5	1.1	12.0	4.1	0.2
Delay (s)	63.2	49.6		86.8	35.4	23.5	106.5	59.7	33.3	69.2	53.9	32.6
Level of Service	E	D		F	D	C	F	E	C	E	D	C
Approach Delay (s)		51.9			44.8			59.6			53.2	
Approach LOS		D			D			E			D	

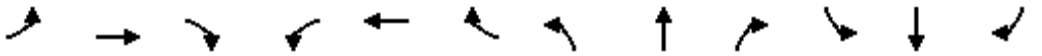
Intersection Summary			
HCM 2000 Control Delay	51.2	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.92		
Actuated Cycle Length (s)	135.0	Sum of lost time (s)	16.4
Intersection Capacity Utilization	92.2%	ICU Level of Service	F
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	710	285	425	490	0	0	0	0	330	470	1055
Future Volume (vph)	0	710	285	425	490	0	0	0	0	330	470	1055
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0	4.0	4.0	4.0					4.0	4.0	4.0
Lane Util. Factor		0.95	1.00	0.97	0.95					0.91	0.91	0.88
Frt		1.00	0.85	1.00	1.00					1.00	1.00	0.85
Flt Protected		1.00	1.00	0.95	1.00					0.95	1.00	1.00
Satd. Flow (prot)		3539	1583	3433	3539					1610	3390	2787
Flt Permitted		1.00	1.00	0.95	1.00					0.95	1.00	1.00
Satd. Flow (perm)		3539	1583	3433	3539					1610	3390	2787
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	772	310	462	533	0	0	0	0	359	511	1147
RTOR Reduction (vph)	0	0	78	0	0	0	0	0	0	0	0	359
Lane Group Flow (vph)	0	772	232	462	533	0	0	0	0	359	511	788
Turn Type		NA	Perm	Prot	NA					Perm	NA	Perm
Protected Phases		2		1	6						4	
Permitted Phases			2							4		4
Actuated Green, G (s)		26.2	26.2	13.1	43.7					26.5	26.5	26.5
Effective Green, g (s)		27.1	27.1	13.5	44.6					27.4	27.4	27.4
Actuated g/C Ratio		0.34	0.34	0.17	0.56					0.34	0.34	0.34
Clearance Time (s)		4.9	4.9	4.4	4.9					4.9	4.9	4.9
Vehicle Extension (s)		3.8	3.8	2.0	4.2					2.0	2.0	2.0
Lane Grp Cap (vph)		1198	536	579	1972					551	1161	954
v/s Ratio Prot		c0.22		c0.13	0.15							
v/s Ratio Perm			0.15							0.22	0.15	c0.28
v/c Ratio		0.64	0.43	0.80	0.27					0.65	0.44	0.83
Uniform Delay, d1		22.4	20.5	31.9	9.2					22.3	20.4	24.1
Progression Factor		1.00	1.00	1.00	1.00					1.00	1.00	1.00
Incremental Delay, d2		2.7	2.5	7.1	0.3					2.1	0.1	5.6
Delay (s)		25.1	23.0	39.0	9.6					24.4	20.5	29.8
Level of Service		C	C	D	A					C	C	C
Approach Delay (s)		24.5			23.2			0.0			26.4	
Approach LOS		C			C			A			C	

Intersection Summary			
HCM 2000 Control Delay	25.1	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.75		
Actuated Cycle Length (s)	80.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	57.1%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

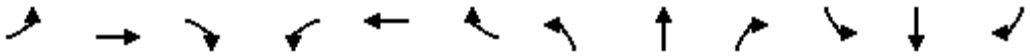


Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	1125	350	65	685	0	0	0	0	740	1125	665
Future Volume (vph)	0	1125	350	65	685	0	0	0	0	740	1125	665
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		6.7		4.0	6.7						6.3	4.0
Lane Util. Factor		0.91		1.00	0.95						0.86	0.86
Frt		0.96		1.00	1.00						1.00	0.85
Flt Protected		1.00		0.95	1.00						0.98	1.00
Satd. Flow (prot)		4904		1770	3539						4712	1362
Flt Permitted		1.00		0.95	1.00						0.98	1.00
Satd. Flow (perm)		4904		1770	3539						4712	1362
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	1223	380	71	745	0	0	0	0	804	1223	723
RTOR Reduction (vph)	0	30	0	0	0	0	0	0	0	0	0	50
Lane Group Flow (vph)	0	1573	0	71	745	0	0	0	0	0	2027	673
Turn Type		NA		Prot	NA					Perm	NA	Perm
Protected Phases		2		1	6						4	
Permitted Phases										4		4
Actuated Green, G (s)		37.6		5.1	45.4						52.6	52.6
Effective Green, g (s)		35.8		5.5	45.3						51.7	54.0
Actuated g/C Ratio		0.33		0.05	0.41						0.47	0.49
Clearance Time (s)		4.9		4.4	6.6						5.4	5.4
Vehicle Extension (s)		1.0		2.0	1.0						1.0	1.0
Lane Grp Cap (vph)		1596		88	1457						2214	668
v/s Ratio Prot		c0.32		c0.04	0.21							
v/s Ratio Perm											0.43	c0.49
v/c Ratio		0.99		0.81	0.51						1.02dl	1.01
Uniform Delay, d1		36.8		51.7	24.1						27.1	28.0
Progression Factor		1.00		1.00	1.00						1.00	1.00
Incremental Delay, d2		19.4		38.0	1.3						6.3	36.5
Delay (s)		56.2		89.8	25.4						33.4	64.5
Level of Service		E		F	C						C	E
Approach Delay (s)		56.2			31.0			0.0			41.6	
Approach LOS		E			C			A			D	

Intersection Summary			
HCM 2000 Control Delay	44.5	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	1.01		
Actuated Cycle Length (s)	110.0	Sum of lost time (s)	17.0
Intersection Capacity Utilization	89.0%	ICU Level of Service	E
Analysis Period (min)	15		

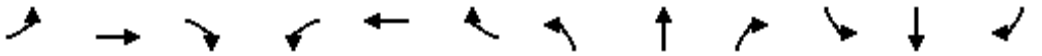
dl Defacto Left Lane. Recode with 1 though lane as a left lane.

c Critical Lane Group



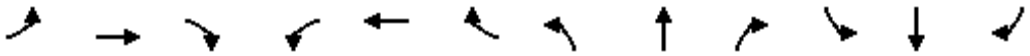
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	50	170	40	365	50	235	10	1530	250	280	565	20
Future Volume (vph)	50	170	40	365	50	235	10	1530	250	280	565	20
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.3	4.3		4.0	4.0		6.2	4.0	
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	0.91		0.97	0.91	
Frpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Flpb, ped/bikes	1.00	1.00		0.99	1.00		1.00	1.00		1.00	1.00	
Frt	1.00	0.97		1.00	0.88		1.00	0.98		1.00	0.99	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1770	1803		1758	1632		1765	4978		3433	5054	
Flt Permitted	0.44	1.00		0.53	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (perm)	816	1803		979	1632		1765	4978		3433	5054	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	54	185	43	397	54	255	11	1663	272	304	614	22
RTOR Reduction (vph)	0	8	0	0	113	0	0	20	0	0	3	0
Lane Group Flow (vph)	54	220	0	397	196	0	11	1915	0	304	633	0
Confl. Peds. (#/hr)			9	9			2					2
Turn Type	Perm	NA		Perm	NA		Prot	NA		Prot	NA	
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4			8								
Actuated Green, G (s)	43.5	43.5		42.8	42.8		0.8	44.3		12.0	54.8	
Effective Green, g (s)	43.5	43.5		43.2	43.2		0.8	45.7		9.8	56.9	
Actuated g/C Ratio	0.38	0.38		0.38	0.38		0.01	0.40		0.09	0.50	
Clearance Time (s)	4.0	4.0		4.7	4.7		4.0	5.4		4.0	6.1	
Vehicle Extension (s)	2.0	2.0		3.0	3.0		2.0	4.8		2.0	3.7	
Lane Grp Cap (vph)	313	692		373	622		12	2009		297	2540	
v/s Ratio Prot		0.12			0.12		0.01	c0.38		c0.09	0.13	
v/s Ratio Perm	0.07			c0.41								
v/c Ratio	0.17	0.32		1.06	0.31		0.92	0.95		1.02	0.25	
Uniform Delay, d1	23.0	24.4		35.0	24.6		56.2	32.7		51.7	16.0	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	0.1	0.1		64.7	0.3		209.7	11.7		58.4	0.2	
Delay (s)	23.1	24.5		99.7	24.9		265.9	44.5		110.1	16.2	
Level of Service	C	C		F	C		F	D		F	B	
Approach Delay (s)		24.3			66.9			45.7			46.6	
Approach LOS		C			E			D			D	

Intersection Summary			
HCM 2000 Control Delay	48.2	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	1.01		
Actuated Cycle Length (s)	113.2	Sum of lost time (s)	14.5
Intersection Capacity Utilization	94.0%	ICU Level of Service	F
Analysis Period (min)	15		
c Critical Lane Group			



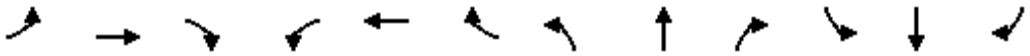
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	650	1090	340	255	960	135	465	1025	225	160	640	275
Future Volume (vph)	650	1090	340	255	960	135	465	1025	225	160	640	275
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0		4.0	4.0	4.9	4.0	4.0	4.0
Lane Util. Factor	0.97	0.91		1.00	0.91		0.97	0.91	1.00	1.00	0.91	1.00
Frpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00	0.99	1.00	1.00	0.99
Flpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.96		1.00	0.98		1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	4904		1770	4981		3433	5085	1562	1770	5085	1568
Flt Permitted	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	4904		1770	4981		3433	5085	1562	1770	5085	1568
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	707	1185	370	277	1043	147	505	1114	245	174	696	299
RTOR Reduction (vph)	0	51	0	0	17	0	0	0	189	0	0	69
Lane Group Flow (vph)	707	1504	0	277	1173	0	505	1114	56	174	696	230
Confl. Peds. (#/hr)	4					4	5		1	1		5
Turn Type	Prot	NA		Prot	NA		Prot	NA	Perm	Prot	NA	pm+ov
Protected Phases	7	4		3	8		5	2		1	6	7
Permitted Phases									2			6
Actuated Green, G (s)	23.2	36.1		17.8	30.1		16.8	24.8	24.8	11.4	19.3	42.5
Effective Green, g (s)	23.6	37.3		18.2	31.9		17.2	25.7	24.8	11.8	20.3	43.3
Actuated g/C Ratio	0.22	0.34		0.17	0.29		0.16	0.24	0.23	0.11	0.19	0.40
Clearance Time (s)	4.4	5.2		4.4	5.8		4.4	4.9	4.9	4.4	5.0	4.4
Vehicle Extension (s)	2.0	3.9		2.0	2.7		2.0	3.3	3.3	2.0	4.1	2.0
Lane Grp Cap (vph)	743	1678		295	1457		541	1198	355	191	947	622
v/s Ratio Prot	c0.21	c0.31		0.16	0.24		c0.15	c0.22		0.10	0.14	0.08
v/s Ratio Perm									0.04			0.07
v/c Ratio	0.95	0.90		0.94	0.81		0.93	0.93	0.16	0.91	0.73	0.37
Uniform Delay, d1	42.1	34.0		44.9	35.7		45.3	40.8	33.7	48.1	41.8	23.2
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	21.7	6.8		35.7	3.3		23.0	13.8	0.9	40.3	5.1	0.1
Delay (s)	63.8	40.8		80.5	39.0		68.4	54.6	34.7	88.4	46.9	23.3
Level of Service	E	D		F	D		E	D	C	F	D	C
Approach Delay (s)		48.0			46.8			55.7			47.0	
Approach LOS		D			D			E			D	

Intersection Summary			
HCM 2000 Control Delay	49.7	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.97		
Actuated Cycle Length (s)	109.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	84.8%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	595	350	70	10	190	170	125	55	105	10	10	20
Future Volume (vph)	595	350	70	10	190	170	125	55	105	10	10	20
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		3.1	4.0			4.0			4.0	
Lane Util. Factor	1.00	1.00		1.00	1.00			1.00			1.00	
Frpb, ped/bikes	1.00	1.00		1.00	0.99			0.99			0.99	
Flpb, ped/bikes	1.00	1.00		1.00	1.00			1.00			1.00	
Frt	1.00	0.97		1.00	0.93			0.95			0.93	
Flt Protected	0.95	1.00		0.95	1.00			0.98			0.99	
Satd. Flow (prot)	1770	1808		1770	1713			1711			1695	
Flt Permitted	0.95	1.00		0.95	1.00			0.84			0.90	
Satd. Flow (perm)	1770	1808		1770	1713			1470			1552	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	647	380	76	11	207	185	136	60	114	11	11	22
RTOR Reduction (vph)	0	7	0	0	34	0	0	24	0	0	17	0
Lane Group Flow (vph)	647	449	0	11	358	0	0	286	0	0	27	0
Confl. Peds. (#/hr)	1		3	3		1	1		4	4		1
Turn Type	Prot	NA		Prot	NA		Perm	NA		Perm	NA	
Protected Phases	5	2		1	6			8			4	
Permitted Phases							8			4		
Actuated Green, G (s)	32.8	56.2		0.8	23.8			18.8			18.8	
Effective Green, g (s)	33.2	57.1		1.7	24.7			19.7			19.7	
Actuated g/C Ratio	0.37	0.64		0.02	0.28			0.22			0.22	
Clearance Time (s)	4.4	4.9		4.0	4.9			4.9			4.9	
Vehicle Extension (s)	1.0	2.0		3.0	2.0			2.0			2.0	
Lane Grp Cap (vph)	655	1152		33	472			323			341	
v/s Ratio Prot	c0.37	0.25		0.01	c0.21							
v/s Ratio Perm								c0.19			0.02	
v/c Ratio	0.99	0.39		0.33	0.76			0.88			0.08	
Uniform Delay, d1	28.0	7.8		43.4	29.7			33.9			27.7	
Progression Factor	1.00	1.00		1.00	1.00			1.00			1.00	
Incremental Delay, d2	31.7	1.0		5.9	10.9			23.2			0.0	
Delay (s)	59.7	8.8		49.3	40.6			57.0			27.8	
Level of Service	E	A		D	D			E			C	
Approach Delay (s)		38.7			40.8			57.0			27.8	
Approach LOS		D			D			E			C	

Intersection Summary			
HCM 2000 Control Delay	41.9	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.89		
Actuated Cycle Length (s)	89.6	Sum of lost time (s)	12.0
Intersection Capacity Utilization	86.5%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	445	1445	155	215	845	215	95	420	235	315	245	175
Future Volume (vph)	445	1445	155	215	845	215	95	420	235	315	245	175
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0		4.0	4.0	4.0	4.0	4.0	
Lane Util. Factor	0.97	0.91		1.00	0.91		1.00	0.95	1.00	0.97	0.95	
Frpb, ped/bikes	1.00	1.00		1.00	0.99		1.00	1.00	0.97	1.00	0.97	
Flpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	
Frt	1.00	0.99		1.00	0.97		1.00	1.00	0.85	1.00	0.94	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)	3433	4987		1770	4873		1770	3539	1538	3433	3205	
Flt Permitted	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (perm)	3433	4987		1770	4873		1770	3539	1538	3433	3205	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	484	1571	168	234	918	234	103	457	255	342	266	190
RTOR Reduction (vph)	0	11	0	0	37	0	0	0	44	0	114	0
Lane Group Flow (vph)	484	1728	0	234	1115	0	103	457	211	342	342	0
Confl. Peds. (#/hr)	26		26	26		26	41		25	25		41
Confl. Bikes (#/hr)			8			2			13			8
Turn Type	Prot	NA		Prot	NA		Prot	NA	pm+ov	Prot	NA	
Protected Phases	5	2		1	6		3	8	1	7	4	
Permitted Phases									8			
Actuated Green, G (s)	18.6	42.3		16.7	39.9		10.4	24.4	41.1	12.9	27.0	
Effective Green, g (s)	19.0	43.2		17.1	41.3		10.8	25.4	41.9	13.3	27.9	
Actuated g/C Ratio	0.17	0.38		0.15	0.36		0.09	0.22	0.36	0.12	0.24	
Clearance Time (s)	4.4	4.9		4.4	5.4		4.4	5.0	4.4	4.4	4.9	
Vehicle Extension (s)	2.0	4.2		2.0	3.0		2.0	4.0	2.0	2.0	2.6	
Lane Grp Cap (vph)	567	1873		263	1750		166	781	560	397	777	
v/s Ratio Prot	c0.14	c0.35		0.13	0.23		0.06	c0.13	0.06	c0.10	0.11	
v/s Ratio Perm									0.08			
v/c Ratio	0.85	0.92		0.89	0.64		0.62	0.59	0.38	0.86	0.44	
Uniform Delay, d1	46.6	34.3		48.0	30.6		50.1	40.1	26.9	49.9	36.9	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	11.5	9.1		27.8	1.8		5.1	1.3	0.2	16.6	0.3	
Delay (s)	58.2	43.4		75.8	32.4		55.2	41.4	27.1	66.6	37.2	
Level of Service	E	D		E	C		E	D	C	E	D	
Approach Delay (s)		46.6			39.7			38.7			49.8	
Approach LOS		D			D			D			D	

Intersection Summary			
HCM 2000 Control Delay	44.0	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.83		
Actuated Cycle Length (s)	115.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	84.5%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group

Queuing Reports

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	60	1245	435	174	1457	185	522	435	158	630	429
v/c Ratio	1.02	0.83	0.60	0.55	1.16	0.31	0.65	1.01	0.35	1.30	0.88
Control Delay	190.2	54.6	10.9	72.7	124.6	14.7	57.3	101.4	16.1	194.1	69.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	190.2	54.6	10.9	72.7	124.6	14.7	57.3	101.4	16.1	194.1	69.1
Queue Length 50th (ft)	~62	415	47	85	~885	46	241	~434	30	~787	389
Queue Length 95th (ft)	#163	460	153	#141	#1026	110	#339	#663	96	#1029	493
Internal Link Dist (ft)		2325			484			648			1369
Turn Bay Length (ft)											
Base Capacity (vph)	59	1627	751	318	1255	603	807	432	452	483	585
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	1.02	0.77	0.58	0.55	1.16	0.31	0.65	1.01	0.35	1.30	0.73

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Lane Group	WBL	WBR	NBT	SBT
Lane Group Flow (vph)	592	1304	402	717
v/c Ratio	0.41	0.88	0.41	0.73
Control Delay	10.9	17.2	15.6	20.8
Queue Delay	0.0	0.0	0.0	0.0
Total Delay	10.9	17.2	15.6	20.8
Queue Length 50th (ft)	52	96	50	98
Queue Length 95th (ft)	104	#294	79	145
Internal Link Dist (ft)	810		406	1779
Turn Bay Length (ft)				
Base Capacity (vph)	1615	1586	1816	1816
Starvation Cap Reductn	0	0	0	0
Spillback Cap Reductn	0	0	0	0
Storage Cap Reductn	0	0	0	0
Reduced v/c Ratio	0.37	0.82	0.22	0.39

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT	SBR
Lane Group Flow (vph)	489	337	304	33	152	315	201	554	402	565	277
v/c Ratio	0.97	0.44	0.32	0.32	0.28	0.49	0.72	0.75	0.97	0.56	0.28
Control Delay	77.7	29.0	8.1	67.6	46.7	22.5	63.7	51.4	84.6	40.6	2.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	77.7	29.0	8.1	67.6	46.7	22.5	63.7	51.4	84.6	40.6	2.5
Queue Length 50th (ft)	360	193	65	24	54	129	144	204	299	190	0
Queue Length 95th (ft)	#769	315	124	68	94	236	265	307	#658	310	45
Internal Link Dist (ft)		611			563			507		730	
Turn Bay Length (ft)											
Base Capacity (vph)	503	921	1044	103	949	643	384	1085	414	1157	999
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.97	0.37	0.29	0.32	0.16	0.49	0.52	0.51	0.97	0.49	0.28

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT	SBR
Lane Group Flow (vph)	114	114	109	87	103	174	71	380	87	446	98
v/c Ratio	0.46	0.44	0.27	0.36	0.41	0.48	0.38	0.22	0.58	0.24	0.11
Control Delay	50.5	49.5	6.9	48.4	49.5	10.1	60.9	21.4	76.7	14.4	4.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	50.5	49.5	6.9	48.4	49.5	10.1	60.9	21.4	76.7	14.4	4.3
Queue Length 50th (ft)	89	88	0	64	77	0	27	74	72	38	0
Queue Length 95th (ft)	122	121	37	93	106	52	53	184	m#144	231	m72
Internal Link Dist (ft)		644			610			685		849	
Turn Bay Length (ft)											
Base Capacity (vph)	502	529	399	514	541	574	186	1737	151	1876	887
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.23	0.22	0.27	0.17	0.19	0.30	0.38	0.22	0.58	0.24	0.11

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.

Lane Group	EBT	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	49	49	65	810	22	603
v/c Ratio	0.13	0.11	0.09	0.30	0.04	0.23
Control Delay	9.4	7.9	5.1	6.2	5.5	7.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	9.4	7.9	5.1	6.2	5.5	7.3
Queue Length 50th (ft)	1	1	0	0	1	0
Queue Length 95th (ft)	25	22	27	171	13	124
Internal Link Dist (ft)	218	191		927		475
Turn Bay Length (ft)						
Base Capacity (vph)	976	978	685	2723	594	2682
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.05	0.05	0.09	0.30	0.04	0.22

Intersection Summary

Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	239	1772	315	1951	326	125	359	234	245	304	190
v/c Ratio	0.79	0.85	0.89	0.89	0.38	0.84	0.43	0.38	0.80	0.35	0.31
Control Delay	67.5	33.6	74.8	35.1	7.1	89.4	34.2	11.4	67.4	32.7	9.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	67.5	33.6	74.8	35.1	7.1	89.4	34.2	11.4	67.4	32.7	9.3
Queue Length 50th (ft)	83	423	110	~483	47	84	96	45	85	81	28
Queue Length 95th (ft)	#157	#541	#195	#602	93	#189	136	97	#160	117	74
Internal Link Dist (ft)		286		607			736			927	
Turn Bay Length (ft)											
Base Capacity (vph)	301	2092	353	2200	869	150	1108	616	307	1085	606
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.79	0.85	0.89	0.89	0.38	0.83	0.32	0.38	0.80	0.28	0.31

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Lane Group	WBL	NBT	SBL	SBT
Lane Group Flow (vph)	142	734	152	1207
v/c Ratio	0.48	0.40	0.51	0.46
Control Delay	25.3	12.5	28.6	5.3
Queue Delay	0.0	0.0	0.0	0.0
Total Delay	25.3	12.5	28.6	5.3
Queue Length 50th (ft)	41	88	48	83
Queue Length 95th (ft)	85	160	99	155
Internal Link Dist (ft)	266	258		736
Turn Bay Length (ft)				
Base Capacity (vph)	499	1851	378	2603
Starvation Cap Reductn	0	0	0	0
Spillback Cap Reductn	0	0	0	0
Storage Cap Reductn	0	0	0	0
Reduced v/c Ratio	0.28	0.40	0.40	0.46

Intersection Summary

Lane Group	EBT	WBT	WBR	SBL	SBR
Lane Group Flow (vph)	864	1402	685	457	212
v/c Ratio	0.47	0.76	0.43	0.62	0.42
Control Delay	11.0	16.2	5.5	28.4	7.8
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	11.0	16.2	5.5	28.4	7.8
Queue Length 50th (ft)	67	136	13	62	0
Queue Length 95th (ft)	238	#517	109	#224	60
Internal Link Dist (ft)	776	812		135	
Turn Bay Length (ft)					
Base Capacity (vph)	2411	2411	1583	740	507
Starvation Cap Reductn	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.36	0.58	0.43	0.62	0.42

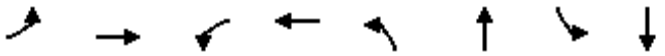
Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Lane Group	WBL	WBR	NBT	SBL	SBT
Lane Group Flow (vph)	27	43	538	120	739
v/c Ratio	0.13	0.19	0.16	0.63	0.18
Control Delay	39.2	11.1	21.5	61.2	4.4
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	39.2	11.1	21.5	61.2	4.4
Queue Length 50th (ft)	19	0	80	82	21
Queue Length 95th (ft)	31	24	m161	137	121
Internal Link Dist (ft)	700		918		563
Turn Bay Length (ft)					
Base Capacity (vph)	645	604	3326	331	4183
Starvation Cap Reductn	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.04	0.07	0.16	0.36	0.18

Intersection Summary

m Volume for 95th percentile queue is metered by upstream signal.



Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	76	158	168	261	223	549	76	712
v/c Ratio	0.33	0.51	0.57	0.83	0.79	0.34	0.10	0.52
Control Delay	44.3	21.9	51.7	62.0	64.2	28.0	32.2	26.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	44.3	21.9	51.7	62.0	64.2	28.0	32.2	26.4
Queue Length 50th (ft)	51	38	109	157	150	98	20	181
Queue Length 95th (ft)	78	83	#207	#335	#280	154	47	332
Internal Link Dist (ft)		610		1546		668		918
Turn Bay Length (ft)								
Base Capacity (vph)	497	542	294	315	298	1606	774	1380
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.15	0.29	0.57	0.83	0.75	0.34	0.10	0.52

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Lane Group	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	55	33	54	27	712	82	816
v/c Ratio	0.18	0.14	0.22	0.14	0.54	0.10	0.42
Control Delay	22.4	35.7	16.4	37.4	24.2	25.7	15.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	22.4	35.7	16.4	37.4	24.2	25.7	15.6
Queue Length 50th (ft)	14	10	1	8	75	11	81
Queue Length 95th (ft)	53	55	43	48	215	46	318
Internal Link Dist (ft)	465		807		727		668
Turn Bay Length (ft)							
Base Capacity (vph)	1219	1013	941	249	2929	1964	2942
Starvation Cap Reductn	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.05	0.03	0.06	0.11	0.24	0.04	0.28

Intersection Summary

Lane Group	EBT	EBR	WBT	WBR	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	33	43	131	174	49	706	38	810
v/c Ratio	0.12	0.10	0.44	0.40	0.26	0.23	0.20	0.27
Control Delay	17.6	0.5	24.1	6.0	21.2	4.3	25.0	7.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	17.6	0.5	24.1	6.0	21.2	4.3	25.0	7.4
Queue Length 50th (ft)	9	0	40	0	20	13	12	27
Queue Length 95th (ft)	24	0	70	34	m37	46	35	95
Internal Link Dist (ft)	286		160			994		727
Turn Bay Length (ft)								
Base Capacity (vph)	428	587	483	587	193	3014	194	3025
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.08	0.07	0.27	0.30	0.25	0.23	0.20	0.27

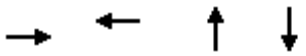
Intersection Summary

m Volume for 95th percentile queue is metered by upstream signal.

Lane Group	EBL	EBT	EBR2	WBT	WBR	NBR2	SBL2	SBL	SBT	SBR	NWL	NWR
Lane Group Flow (vph)	217	1750	98	2326	359	109	179	206	213	82	185	218
v/c Ratio	0.72	0.62	0.12	0.95	0.38	0.10	0.74	0.90	0.90	0.26	0.89	0.49
Control Delay	63.6	15.6	2.5	36.7	6.0	0.2	57.8	78.3	78.3	8.6	87.7	23.1
Queue Delay	0.0	0.0	0.0	44.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	63.6	15.6	2.5	81.1	6.0	0.2	57.8	78.3	78.3	8.6	87.7	23.1
Queue Length 50th (ft)	78	291	0	556	48	0	129	159	164	0	130	32
Queue Length 95th (ft)	#131	341	25	#689	78	0	#236	#308	#316	35	#260	74
Internal Link Dist (ft)		607		437					994		422	
Turn Bay Length (ft)												
Base Capacity (vph)	300	2820	825	2461	950	1055	246	235	242	315	210	445
Starvation Cap Reductn	0	0	0	406	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.72	0.62	0.12	1.13	0.38	0.10	0.73	0.88	0.88	0.26	0.88	0.49

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.



Lane Group	EBT	WBT	NBT	SBT
Lane Group Flow (vph)	239	239	195	55
v/c Ratio	0.54	0.65	0.21	0.06
Control Delay	15.3	21.3	4.7	4.3
Queue Delay	0.0	0.0	0.0	0.0
Total Delay	15.3	21.3	4.7	4.3
Queue Length 50th (ft)	39	46	13	3
Queue Length 95th (ft)	87	101	47	18
Internal Link Dist (ft)	271	339	940	771
Turn Bay Length (ft)				
Base Capacity (vph)	1031	872	931	981
Starvation Cap Reductn	0	0	0	0
Spillback Cap Reductn	0	0	0	0
Storage Cap Reductn	0	0	0	0
Reduced v/c Ratio	0.23	0.27	0.21	0.06

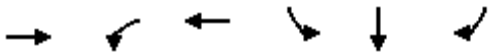
Intersection Summary

Lane Group	NBL	NBT	SBT	SEL	SER
Lane Group Flow (vph)	315	652	696	217	207
v/c Ratio	0.80	0.17	0.27	0.73	0.47
Control Delay	65.4	0.8	23.5	60.7	8.9
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	65.4	0.8	23.5	60.7	8.9
Queue Length 50th (ft)	203	5	144	161	0
Queue Length 95th (ft)	218	8	204	229	61
Internal Link Dist (ft)		764	913	479	
Turn Bay Length (ft)					
Base Capacity (vph)	575	3886	2555	545	631
Starvation Cap Reductn	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.55	0.17	0.27	0.40	0.33

Intersection Summary

Lane Group	EBL	EBR	WBL	WBT	SBT
Lane Group Flow (vph)	22	98	326	419	152
v/c Ratio	0.07	0.24	0.36	0.58	0.36
Control Delay	16.9	6.5	3.3	14.7	12.0
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	16.9	6.5	3.3	14.7	12.0
Queue Length 50th (ft)	5	0	0	73	14
Queue Length 95th (ft)	20	29	43	192	59
Internal Link Dist (ft)				363	564
Turn Bay Length (ft)					
Base Capacity (vph)	732	784	1119	998	936
Starvation Cap Reductn	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.03	0.13	0.29	0.42	0.16

Intersection Summary



Lane Group	EBT	WBL	WBT	SBL	SBT	SBR
Lane Group Flow (vph)	1918	359	2560	320	273	125
v/c Ratio	0.90	0.83	0.58	0.77	0.63	0.29
Control Delay	43.8	54.9	0.9	59.3	51.1	23.1
Queue Delay	46.1	10.4	1.0	0.1	0.0	0.0
Total Delay	89.9	65.3	1.9	59.4	51.1	23.1
Queue Length 50th (ft)	579	219	17	282	230	51
Queue Length 95th (ft)	652	m#333	m18	357	297	97
Internal Link Dist (ft)	437		346		833	
Turn Bay Length (ft)						
Base Capacity (vph)	2129	435	4448	535	556	540
Starvation Cap Reductn	429	57	1494	0	0	0
Spillback Cap Reductn	0	0	0	8	9	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	1.13	0.95	0.87	0.61	0.50	0.23

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.

Lane Group	EBT	WBL	WBT	NBL	NBR	SBL	SBT
Lane Group Flow (vph)	451	136	277	114	158	125	207
v/c Ratio	0.25	0.24	0.12	0.60	0.17	0.44	0.69
Control Delay	17.4	12.1	10.7	67.4	3.8	52.7	62.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	17.4	12.1	10.7	67.4	3.8	52.7	62.3
Queue Length 50th (ft)	96	43	46	93	0	95	164
Queue Length 95th (ft)	168	90	83	150	42	150	236
Internal Link Dist (ft)	422		400				360
Turn Bay Length (ft)							
Base Capacity (vph)	1801	646	2255	364	903	447	468
Starvation Cap Reductn	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.25	0.21	0.12	0.31	0.17	0.28	0.44

Intersection Summary

Lane Group	EBL	NBL	NBT	SBT
Lane Group Flow (vph)	272	364	505	663
v/c Ratio	0.80	0.81	0.13	0.28
Control Delay	46.3	51.3	5.6	19.5
Queue Delay	0.0	0.0	0.0	0.0
Total Delay	46.3	51.3	5.6	19.5
Queue Length 50th (ft)	126	260	45	98
Queue Length 95th (ft)	208	396	75	168
Internal Link Dist (ft)	648		913	1745
Turn Bay Length (ft)				
Base Capacity (vph)	528	775	3973	2389
Starvation Cap Reductn	0	0	0	0
Spillback Cap Reductn	0	0	0	0
Storage Cap Reductn	0	0	0	0
Reduced v/c Ratio	0.52	0.47	0.13	0.28

Intersection Summary

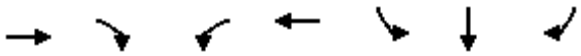
Lane Group	EBL	EBT	WBT	WBR	NBT
Lane Group Flow (vph)	120	2185	2837	647	517
v/c Ratio	0.66	0.63	1.03	0.65	0.57
Control Delay	56.3	13.8	55.0	16.9	43.9
Queue Delay	0.0	0.5	7.2	0.0	0.0
Total Delay	56.3	14.3	62.2	16.9	43.9
Queue Length 50th (ft)	89	279	~1086	260	184
Queue Length 95th (ft)	m112	334	#1168	417	238
Internal Link Dist (ft)		346	988		517
Turn Bay Length (ft)					
Base Capacity (vph)	183	3445	2767	989	1140
Starvation Cap Reductn	0	685	0	0	0
Spillback Cap Reductn	0	0	51	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.66	0.79	1.04	0.65	0.45

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

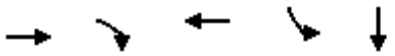
m Volume for 95th percentile queue is metered by upstream signal.



Lane Group	EBT	EBR	WBL	WBT	SBL	SBR
Lane Group Flow (vph)	364	190	587	560	186	428	380
v/c Ratio	0.26	0.26	0.83	0.24	0.48	0.53	0.62
Control Delay	18.1	5.2	42.4	6.8	28.8	27.8	9.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	18.1	5.2	42.4	6.8	28.8	27.8	9.9
Queue Length 50th (ft)	63	5	140	48	90	104	29
Queue Length 95th (ft)	106	49	#229	95	136	131	96
Internal Link Dist (ft)	269			774		2836	
Turn Bay Length (ft)							
Base Capacity (vph)	1426	742	722	2329	521	1087	721
Starvation Cap Reductn	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.26	0.26	0.81	0.24	0.36	0.39	0.53

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.



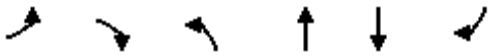
Lane Group	EBT	EBR	WBT	SBL	SBT
Lane Group Flow (vph)	185	147	549	467	1717
v/c Ratio	0.27	0.24	0.54	0.52	0.67
Control Delay	15.7	10.4	18.6	13.3	12.3
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	15.7	10.4	18.6	13.3	12.3
Queue Length 50th (ft)	50	24	87	115	155
Queue Length 95th (ft)	93	59	132	190	201
Internal Link Dist (ft)	458		806		986
Turn Bay Length (ft)					
Base Capacity (vph)	687	619	1015	898	2573
Starvation Cap Reductn	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.27	0.24	0.54	0.52	0.67

Intersection Summary

Lane Group	EBT	WBL	WBT	SBT	SBR
Lane Group Flow (vph)	799	38	533	946	549
v/c Ratio	0.61	0.28	0.35	0.94dl	0.80
Control Delay	19.9	42.8	11.6	17.5	21.6
Queue Delay	0.0	0.0	0.2	0.4	0.0
Total Delay	19.9	42.8	11.8	18.0	21.6
Queue Length 50th (ft)	115	17	55	110	127
Queue Length 95th (ft)	#210	m40	71	150	#340
Internal Link Dist (ft)	458		157	1023	
Turn Bay Length (ft)					
Base Capacity (vph)	1309	139	1519	1735	682
Starvation Cap Reductn	0	0	372	0	0
Spillback Cap Reductn	1	0	0	340	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.61	0.27	0.46	0.68	0.80

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.
dl Defacto Left Lane. Recode with 1 though lane as a left lane.



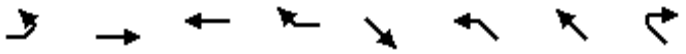
Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Group Flow (vph)	120	1185	1946	848	712	130
v/c Ratio	0.61	0.67	1.09	0.20	0.53	0.20
Control Delay	63.0	14.8	58.8	1.4	32.1	21.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	63.0	14.8	58.8	1.4	32.1	21.1
Queue Length 50th (ft)	90	262	~887	21	202	93
Queue Length 95th (ft)	147	334	m#1020	m50	250	141
Internal Link Dist (ft)	812			696	764	
Turn Bay Length (ft)						
Base Capacity (vph)	354	1771	1789	4176	1356	792
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.34	0.67	1.09	0.20	0.53	0.16

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

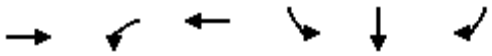
m Volume for 95th percentile queue is metered by upstream signal.



Lane Group	EBL	EBT	WBT	WBR	SET	NWL	NWT	NWR
Lane Group Flow (vph)	103	293	587	342	130	147	147	196
v/c Ratio	0.55	0.17	0.48	0.45	0.47	0.70	0.64	0.37
Control Delay	40.6	10.8	19.9	4.9	10.9	40.9	35.6	5.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	40.6	10.8	19.9	4.9	10.9	40.9	35.6	5.9
Queue Length 50th (ft)	36	32	96	0	0	48	47	0
Queue Length 95th (ft)	#102	61	158	56	37	#136	#128	43
Internal Link Dist (ft)		323	269		463		382	
Turn Bay Length (ft)								
Base Capacity (vph)	186	1686	1215	768	472	250	270	584
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.55	0.17	0.48	0.45	0.28	0.59	0.54	0.34

Intersection Summary

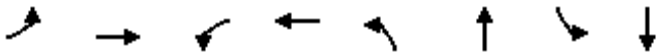
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.



Lane Group	EBT	WBL	WBT	SBL	SBT	SBR
Lane Group Flow (vph)	282	293	652	97	104	245
v/c Ratio	0.44	0.65	0.83	0.30	0.32	0.31
Control Delay	23.5	22.7	27.1	27.0	27.2	7.1
Queue Delay	0.0	0.0	0.3	0.0	0.0	0.0
Total Delay	23.5	22.7	27.3	27.0	27.2	7.1
Queue Length 50th (ft)	43	80	198	32	34	23
Queue Length 95th (ft)	90	193	#448	85	90	72
Internal Link Dist (ft)	435		323		512	
Turn Bay Length (ft)						
Base Capacity (vph)	972	634	1101	530	536	917
Starvation Cap Reductn	0	0	90	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.29	0.46	0.64	0.18	0.19	0.27

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.



Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	5	44	457	288	33	1576	136	907
v/c Ratio	0.02	0.07	0.92	0.41	0.30	0.82	0.70	0.39
Control Delay	17.2	10.9	51.7	13.6	47.2	29.2	58.8	16.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	17.2	10.9	51.7	13.6	47.2	29.2	58.8	16.2
Queue Length 50th (ft)	2	8	237	65	18	293	76	125
Queue Length 95th (ft)	9	29	#419	131	48	356	#159	160
Internal Link Dist (ft)		526		458		1888		582
Turn Bay Length (ft)								
Base Capacity (vph)	350	700	539	741	122	1912	203	2348
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.01	0.06	0.85	0.39	0.27	0.82	0.67	0.39

Intersection Summary

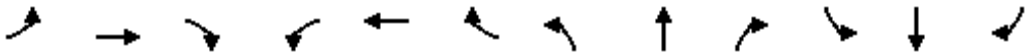
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT	SBR
Lane Group Flow (vph)	701	772	152	929	315	831	82	728	234
v/c Ratio	1.26	0.50	0.73	1.06	1.22	0.69	0.68	0.88	0.29
Control Delay	167.3	26.1	74.7	91.8	175.1	47.4	85.8	66.0	11.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	167.3	26.1	74.7	91.8	175.1	47.4	85.8	66.0	11.4
Queue Length 50th (ft)	~739	230	125	~444	~325	231	68	221	60
Queue Length 95th (ft)	#977	304	195	#580	#512	281	#138	#289	113
Internal Link Dist (ft)		403		458		623		529	
Turn Bay Length (ft)									
Base Capacity (vph)	558	1557	262	880	258	1212	130	829	802
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	1.26	0.50	0.58	1.06	1.22	0.69	0.63	0.88	0.29

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

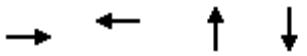
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	114	364	152	348	380	103	245	120	217	76	163	103
v/c Ratio	0.61	0.27	0.10	0.80	0.27	0.15	0.79	0.33	0.32	0.46	0.16	0.25
Control Delay	55.7	22.3	3.3	55.5	21.7	5.1	61.9	32.0	3.8	49.9	27.3	5.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	55.7	22.3	3.3	55.5	21.7	5.1	61.9	32.0	3.8	49.9	27.3	5.8
Queue Length 50th (ft)	55	62	0	89	64	0	63	57	0	37	27	0
Queue Length 95th (ft)	#142	137	20	#212	143	34	#163	107	41	95	43	32
Internal Link Dist (ft)		731			423			1745			245	
Turn Bay Length (ft)									100			
Base Capacity (vph)	224	1337	1505	434	1413	699	309	675	672	236	2060	707
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.51	0.27	0.10	0.80	0.27	0.15	0.79	0.18	0.32	0.32	0.08	0.15

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.



Lane Group	EBT	WBT	NBT	SBT
Lane Group Flow (vph)	457	396	483	32
v/c Ratio	0.54	0.38	0.89	0.07
Control Delay	11.6	7.1	39.2	10.0
Queue Delay	0.0	0.0	0.0	0.0
Total Delay	11.6	7.1	39.2	10.0
Queue Length 50th (ft)	106	60	158	3
Queue Length 95th (ft)	186	112	#321	20
Internal Link Dist (ft)	342	520	255	125
Turn Bay Length (ft)				
Base Capacity (vph)	843	1030	592	532
Starvation Cap Reductn	0	0	0	0
Spillback Cap Reductn	0	0	0	0
Storage Cap Reductn	0	0	0	0
Reduced v/c Ratio	0.54	0.38	0.82	0.06

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Lane Group	EBT	WBL	WBT	NBL	NBR
Lane Group Flow (vph)	658	234	674	158	158
v/c Ratio	0.33	0.74	0.31	0.38	0.32
Control Delay	12.1	42.9	7.6	20.6	5.0
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	12.1	42.9	7.6	20.6	5.0
Queue Length 50th (ft)	40	71	39	47	0
Queue Length 95th (ft)	92	#215	120	88	34
Internal Link Dist (ft)	423		279	871	
Turn Bay Length (ft)					
Base Capacity (vph)	2010	330	2166	750	761
Starvation Cap Reductn	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.33	0.71	0.31	0.21	0.21

Intersection Summary

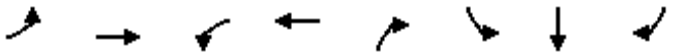
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Lane Group	EBT	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	527	43	272	321	22	130
v/c Ratio	0.86	0.06	0.50	0.40	0.05	0.17
Control Delay	29.0	8.1	17.8	14.3	12.9	7.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	29.0	8.1	17.8	14.3	12.9	7.1
Queue Length 50th (ft)	142	7	62	67	4	10
Queue Length 95th (ft)	256	21	158	156	19	45
Internal Link Dist (ft)	520	293		203		240
Turn Bay Length (ft)						
Base Capacity (vph)	867	981	545	803	406	773
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.61	0.04	0.50	0.40	0.05	0.17

Intersection Summary

Lane Group	EBL	EBT	WBL	WBT	NBT	SBT
Lane Group Flow (vph)	38	620	234	853	418	49
v/c Ratio	0.11	0.35	0.45	0.47	0.76	0.10
Control Delay	8.9	13.0	10.3	11.9	18.7	9.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	8.9	13.0	10.3	11.9	18.7	9.9
Queue Length 50th (ft)	5	40	31	66	57	6
Queue Length 95th (ft)	22	95	97	211	151	26
Internal Link Dist (ft)		279		609	1265	205
Turn Bay Length (ft)						
Base Capacity (vph)	360	1752	612	1817	869	897
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.11	0.35	0.38	0.47	0.48	0.05

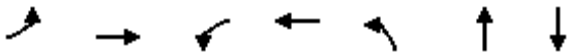
Intersection Summary



Lane Group	EBL	EBT	WBL	WBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	435	320	11	984	5	108	257	342
v/c Ratio	0.73	0.16	0.09	0.75	0.00	0.23	0.54	0.53
Control Delay	36.7	8.5	34.8	23.4	0.0	19.4	24.6	7.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	36.7	8.5	34.8	23.4	0.0	19.4	24.6	7.2
Queue Length 50th (ft)	85	23	4	163	0	35	94	15
Queue Length 95th (ft)	#186	79	21	#346	0	71	157	68
Internal Link Dist (ft)		609		486			881	
Turn Bay Length (ft)								
Base Capacity (vph)	618	2035	119	1304	1590	789	815	898
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.70	0.16	0.09	0.75	0.00	0.14	0.32	0.38

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.



Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBT
Lane Group Flow (vph)	33	853	76	1598	250	109	119
v/c Ratio	0.41	0.44	0.63	0.74	0.86	0.24	0.34
Control Delay	70.7	16.2	54.5	28.5	69.1	12.9	35.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	70.7	16.2	54.5	28.5	69.1	12.9	35.2
Queue Length 50th (ft)	25	199	61	545	183	19	70
Queue Length 95th (ft)	#72	262	m67	m363	270	61	115
Internal Link Dist (ft)		624		906		244	377
Turn Bay Length (ft)							
Base Capacity (vph)	81	1937	120	2147	361	535	436
Starvation Cap Reductn	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.41	0.44	0.63	0.74	0.69	0.20	0.27

Intersection Summary

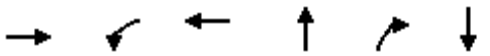
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	196	804	179	1419	65	136	109	277	674
v/c Ratio	0.89	0.64	0.74	1.08	0.51	0.21	0.20	0.87	0.61
Control Delay	96.4	28.7	64.3	78.4	67.7	39.7	6.3	75.8	30.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	96.4	28.7	64.3	78.4	67.7	39.7	6.3	75.8	30.6
Queue Length 50th (ft)	~172	288	114	~645	49	43	13	~236	185
Queue Length 95th (ft)	#344	380	184	#787	96	71	33	#409	250
Internal Link Dist (ft)		906		1436		1074			606
Turn Bay Length (ft)									
Base Capacity (vph)	220	1262	314	1318	146	884	608	318	1148
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.89	0.64	0.57	1.08	0.45	0.15	0.18	0.87	0.59

Intersection Summary

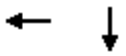
~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.



Lane Group	EBT	WBL	WBT	NBT	NBR	SBT
Lane Group Flow (vph)	1153	332	1571	87	152	81
v/c Ratio	0.46	0.82	0.59	0.37	0.39	0.36
Control Delay	34.0	59.4	8.4	45.8	8.9	42.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	34.0	59.4	8.4	45.8	8.9	42.3
Queue Length 50th (ft)	264	245	309	56	0	48
Queue Length 95th (ft)	327	322	373	104	54	94
Internal Link Dist (ft)	1436		2539	649		441
Turn Bay Length (ft)						
Base Capacity (vph)	2511	604	2681	324	479	307
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.46	0.55	0.59	0.27	0.32	0.26

Intersection Summary



Lane Group	WBT	SBT
Lane Group Flow (vph)	3690	331
v/c Ratio	1.04	0.34
Control Delay	40.9	31.4
Queue Delay	0.0	0.0
Total Delay	40.9	31.4
Queue Length 50th (ft)	~835	58
Queue Length 95th (ft)	#925	86
Internal Link Dist (ft)	692	1330
Turn Bay Length (ft)		
Base Capacity (vph)	3557	1362
Starvation Cap Reductn	0	0
Spillback Cap Reductn	0	0
Storage Cap Reductn	0	0
Reduced v/c Ratio	1.04	0.24

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Lane Group	EBT	SBT
Lane Group Flow (vph)	1081	549
v/c Ratio	0.34	0.39
Control Delay	4.0	19.2
Queue Delay	0.0	0.0
Total Delay	4.0	19.2
Queue Length 50th (ft)	41	61
Queue Length 95th (ft)	49	91
Internal Link Dist (ft)	496	288
Turn Bay Length (ft)		
Base Capacity (vph)	3144	1855
Starvation Cap Reductn	0	0
Spillback Cap Reductn	0	0
Storage Cap Reductn	0	0
Reduced v/c Ratio	0.34	0.30

Intersection Summary

Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	250	1217	125	848	201	49	43	92	82	82	228
v/c Ratio	0.63	0.71	0.73	0.51	0.66	0.41	0.15	0.26	0.32	0.24	0.49
Control Delay	40.9	19.8	61.7	17.1	18.3	47.4	27.2	4.0	39.4	27.8	7.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	40.9	19.8	61.7	17.1	18.3	47.4	27.2	4.0	39.4	27.8	7.6
Queue Length 50th (ft)	55	212	56	136	0	22	17	0	18	34	0
Queue Length 95th (ft)	#124	#460	#177	272	#92	#73	42	19	46	69	51
Internal Link Dist (ft)		445		606			613			390	
Turn Bay Length (ft)											
Base Capacity (vph)	427	1716	171	1655	303	122	690	666	255	690	721
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.59	0.71	0.73	0.51	0.66	0.40	0.06	0.14	0.32	0.12	0.32

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Lane Group	WBT	NBL	NBT	SBT
Lane Group Flow (vph)	3447	311	305	300
v/c Ratio	0.96	0.94	0.25	0.76
Control Delay	31.1	82.0	26.7	55.9
Queue Delay	42.9	1.3	0.0	0.0
Total Delay	74.0	83.3	26.7	55.9
Queue Length 50th (ft)	644	218	80	97
Queue Length 95th (ft)	#736	#388	115	#147
Internal Link Dist (ft)	485		269	645
Turn Bay Length (ft)				
Base Capacity (vph)	3591	331	1225	413
Starvation Cap Reductn	452	3	0	0
Spillback Cap Reductn	0	0	0	0
Storage Cap Reductn	0	0	0	0
Reduced v/c Ratio	1.10	0.95	0.25	0.73

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

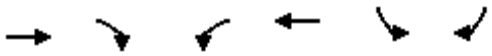
Lane Group	EBT	EBR	NBT	SBL	SBT
Lane Group Flow (vph)	853	71	799	71	739
v/c Ratio	0.38	0.10	0.53	0.43	0.33
Control Delay	14.7	2.4	19.0	40.8	14.3
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	14.7	2.4	19.0	40.8	14.3
Queue Length 50th (ft)	93	0	89	32	79
Queue Length 95th (ft)	123	15	126	71	106
Internal Link Dist (ft)	183		353		269
Turn Bay Length (ft)					
Base Capacity (vph)	2232	735	1519	165	2237
Starvation Cap Reductn	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.38	0.10	0.53	0.43	0.33

Intersection Summary

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Group Flow (vph)	1272	565	293	967	396	148
v/c Ratio	0.78	0.47	0.73	0.42	0.48	0.33
Control Delay	21.5	4.4	42.7	7.7	21.6	5.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	21.5	4.4	42.7	7.7	21.6	5.8
Queue Length 50th (ft)	208	60	59	80	65	0
Queue Length 95th (ft)	#458	97	#145	202	98	39
Internal Link Dist (ft)	216			273	735	
Turn Bay Length (ft)						
Base Capacity (vph)	1623	1498	402	2278	1501	707
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.78	0.38	0.73	0.42	0.26	0.21

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.



Lane Group	EBT	EBR	WBL	WBT	SBL	SBR
Lane Group Flow (vph)	1147	152	413	359	370	723
v/c Ratio	0.76	0.20	0.83	0.16	0.88	0.46
Control Delay	20.6	3.4	42.1	5.3	46.7	1.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	20.6	3.4	42.1	5.3	46.7	1.0
Queue Length 50th (ft)	205	0	82	27	136	0
Queue Length 95th (ft)	282	30	#144	43	#266	0
Internal Link Dist (ft)	139			450		
Turn Bay Length (ft)						
Base Capacity (vph)	1504	750	544	2244	476	1583
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.76	0.20	0.76	0.16	0.78	0.46

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

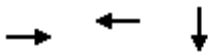
Lane Group	EBL	EBT	WBT	NBT	NBR
Lane Group Flow (vph)	962	701	1309	212	321
v/c Ratio	0.94	0.26	0.87	0.89	0.66
Control Delay	44.6	3.4	24.9	71.5	11.2
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	44.6	3.4	24.9	71.5	11.2
Queue Length 50th (ft)	234	45	251	105	0
Queue Length 95th (ft)	#347	62	#396	#223	72
Internal Link Dist (ft)		450	517	531	
Turn Bay Length (ft)					
Base Capacity (vph)	1079	2663	1506	251	498
Starvation Cap Reductn	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.89	0.26	0.87	0.84	0.64

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Lane Group	EBL	NBL	NBT	SBT
Lane Group Flow (vph)	456	120	543	881
v/c Ratio	0.85	0.62	0.24	0.51
Control Delay	49.9	65.2	9.8	23.5
Queue Delay	0.0	0.0	0.0	0.0
Total Delay	49.9	65.2	9.8	23.5
Queue Length 50th (ft)	299	97	71	233
Queue Length 95th (ft)	382	152	211	364
Internal Link Dist (ft)	72		849	507
Turn Bay Length (ft)				
Base Capacity (vph)	707	229	2255	1723
Starvation Cap Reductn	0	0	0	0
Spillback Cap Reductn	0	0	0	0
Storage Cap Reductn	0	0	0	0
Reduced v/c Ratio	0.64	0.52	0.24	0.51

Intersection Summary

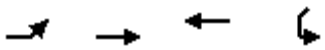


Lane Group	EBT	WBT	SBT
Lane Group Flow (vph)	131	163	293
v/c Ratio	0.15	0.21	0.22
Control Delay	3.5	10.5	14.0
Queue Delay	0.0	0.0	0.0
Total Delay	3.5	10.5	14.0
Queue Length 50th (ft)	4	35	39
Queue Length 95th (ft)	28	67	64
Internal Link Dist (ft)	272	260	893
Turn Bay Length (ft)			
Base Capacity (vph)	857	774	1320
Starvation Cap Reductn	0	0	0
Spillback Cap Reductn	0	0	0
Storage Cap Reductn	0	0	0
Reduced v/c Ratio	0.15	0.21	0.22

Intersection Summary

Lane Group	EBL	NBT	SBT
Lane Group Flow (vph)	217	511	370
v/c Ratio	0.60	0.47	0.27
Control Delay	14.5	5.7	3.7
Queue Delay	0.0	0.0	0.0
Total Delay	14.5	5.7	3.7
Queue Length 50th (ft)	17	52	29
Queue Length 95th (ft)	67	146	80
Internal Link Dist (ft)	339	648	504
Turn Bay Length (ft)			
Base Capacity (vph)	550	1089	1356
Starvation Cap Reductn	0	0	0
Spillback Cap Reductn	0	0	0
Storage Cap Reductn	0	0	0
Reduced v/c Ratio	0.39	0.47	0.27

Intersection Summary



Lane Group	EBL	EBT	WBT	SWL
Lane Group Flow (vph)	54	728	1586	435
v/c Ratio	0.52	0.36	0.92	0.75
Control Delay	56.7	9.1	29.2	28.4
Queue Delay	0.0	0.0	0.0	0.0
Total Delay	56.7	9.1	29.2	28.4
Queue Length 50th (ft)	27	88	372	150
Queue Length 95th (ft)	#76	121	#542	#292
Internal Link Dist (ft)		1988	776	623
Turn Bay Length (ft)				
Base Capacity (vph)	103	2175	1759	583
Starvation Cap Reductn	0	0	0	0
Spillback Cap Reductn	0	0	0	0
Storage Cap Reductn	0	0	0	0
Reduced v/c Ratio	0.52	0.33	0.90	0.75

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

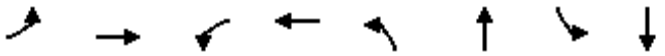
Lane Group	EBT	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	109	413	163	565	239	652
v/c Ratio	0.46	0.81	0.63	0.76	0.71	0.72
Control Delay	33.7	36.3	45.8	35.0	44.0	30.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	33.7	36.3	45.8	35.0	44.0	30.5
Queue Length 50th (ft)	42	153	79	132	114	147
Queue Length 95th (ft)	90	#323	#169	#220	#229	222
Internal Link Dist (ft)	623	665		411		690
Turn Bay Length (ft)						
Base Capacity (vph)	472	580	291	832	389	1020
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.23	0.71	0.56	0.68	0.61	0.64

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Lane Group	EBL	NBT	SBT
Lane Group Flow (vph)	250	577	250
v/c Ratio	0.62	0.65	0.19
Control Delay	12.5	10.1	3.3
Queue Delay	0.0	0.0	0.0
Total Delay	12.5	10.1	3.3
Queue Length 50th (ft)	10	73	17
Queue Length 95th (ft)	63	245	53
Internal Link Dist (ft)	665	479	940
Turn Bay Length (ft)			
Base Capacity (vph)	592	888	1315
Starvation Cap Reductn	0	0	0
Spillback Cap Reductn	0	0	0
Storage Cap Reductn	0	0	0
Reduced v/c Ratio	0.42	0.65	0.19

Intersection Summary



Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	54	76	207	337	76	2663	87	1809
v/c Ratio	0.46	0.16	0.94	0.42	0.54	0.97	0.74	0.65
Control Delay	66.1	19.1	98.6	25.0	67.2	38.0	74.7	20.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	66.1	19.1	98.6	25.0	67.2	38.0	74.7	20.0
Queue Length 50th (ft)	41	7	161	66	57	698	65	375
Queue Length 95th (ft)	84	31	#310	113	109	#851	m#125	418
Internal Link Dist (ft)		306		551		569		696
Turn Bay Length (ft)								
Base Capacity (vph)	132	468	221	803	162	2749	118	2768
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.41	0.16	0.94	0.42	0.47	0.97	0.74	0.65

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.

Lane Group	EBL	NBL	NBT
Lane Group Flow (vph)	120	217	761
v/c Ratio	0.17	0.31	0.54
Control Delay	8.6	9.7	10.9
Queue Delay	0.0	0.0	0.0
Total Delay	8.6	9.7	10.9
Queue Length 50th (ft)	16	31	63
Queue Length 95th (ft)	38	65	101
Internal Link Dist (ft)	260		609
Turn Bay Length (ft)			
Base Capacity (vph)	708	708	1415
Starvation Cap Reductn	0	0	0
Spillback Cap Reductn	0	0	0
Storage Cap Reductn	0	0	0
Reduced v/c Ratio	0.17	0.31	0.54

Intersection Summary

Lane Group	EBL	EBT	WBT	NBT	NBR
Lane Group Flow (vph)	446	842	625	380	22
v/c Ratio	0.59	0.68	0.45	0.61	0.06
Control Delay	25.9	11.0	12.9	28.5	0.3
Queue Delay	0.0	2.0	0.0	0.0	0.0
Total Delay	25.9	13.0	12.9	28.5	0.3
Queue Length 50th (ft)	93	170	68	74	0
Queue Length 95th (ft)	142	310	120	104	0
Internal Link Dist (ft)		157	779	808	
Turn Bay Length (ft)					
Base Capacity (vph)	761	1247	1374	1119	583
Starvation Cap Reductn	0	254	0	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.59	0.85	0.45	0.34	0.04

Intersection Summary

Queues
1: Barnett Ave/Lytton St & Rosecrans St

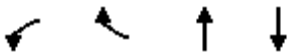
05/16/2017

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	98	1826	609	130	1272	386	500	375	196	326	315
v/c Ratio	0.92	0.88	0.70	0.55	0.86	0.49	0.94	0.90	0.44	0.96	0.66
Control Delay	135.7	47.0	16.3	76.1	46.8	11.0	88.1	82.1	21.9	97.6	56.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	135.7	47.0	16.3	76.1	46.8	11.0	88.1	82.1	21.9	97.6	56.4
Queue Length 50th (ft)	98	589	165	64	575	72	~267	356	58	~350	273
Queue Length 95th (ft)	#223	675	324	99	674	165	#384	#531	137	#551	383
Internal Link Dist (ft)		2325			484			648			1369
Turn Bay Length (ft)											
Base Capacity (vph)	107	2075	874	297	1526	801	533	432	454	341	482
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.92	0.88	0.70	0.44	0.83	0.48	0.94	0.87	0.43	0.96	0.65

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.



Lane Group	WBL	WBR	NBT	SBT
Lane Group Flow (vph)	902	1957	1005	957
v/c Ratio	0.42	1.12	1.02	0.97
Control Delay	14.9	89.2	85.2	74.6
Queue Delay	0.0	0.0	0.0	0.0
Total Delay	14.9	89.2	85.2	74.6
Queue Length 50th (ft)	219	~1246	~544	488
Queue Length 95th (ft)	263	#1393	#681	#629
Internal Link Dist (ft)	810		699	1779
Turn Bay Length (ft)				
Base Capacity (vph)	2151	1751	990	990
Starvation Cap Reductn	0	0	0	0
Spillback Cap Reductn	0	0	0	0
Storage Cap Reductn	0	0	0	0
Reduced v/c Ratio	0.42	1.12	1.02	0.97

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT	SBR
Lane Group Flow (vph)	418	364	348	87	587	755	457	641	446	777	440
v/c Ratio	1.18	0.57	0.37	0.62	0.75	0.99	1.11	0.84	0.98	0.92	0.61
Control Delay	157.2	44.9	13.1	91.8	39.1	68.9	128.1	66.1	93.6	71.9	17.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	157.2	44.9	13.1	91.8	39.1	68.9	128.1	66.1	93.6	71.9	17.2
Queue Length 50th (ft)	~489	292	128	64	201	~615	~508	312	~446	393	124
Queue Length 95th (ft)	#706	401	192	#148	226	#990	#729	379	#705	#511	180
Internal Link Dist (ft)		614			571			545		730	
Turn Bay Length (ft)											
Base Capacity (vph)	354	634	931	141	780	759	413	838	453	847	719
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	1.18	0.57	0.37	0.62	0.75	0.99	1.11	0.76	0.98	0.92	0.61

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT	SBR
Lane Group Flow (vph)	174	190	185	65	163	92	250	750	163	788	185
v/c Ratio	0.55	0.57	0.32	0.21	0.50	0.26	0.77	0.54	0.81	0.53	0.25
Control Delay	52.3	53.0	5.0	43.8	51.6	8.7	73.7	36.1	99.2	23.3	3.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	52.3	53.0	5.0	43.8	51.6	8.7	73.7	36.1	99.2	23.3	3.0
Queue Length 50th (ft)	147	161	0	50	132	0	105	226	147	86	0
Queue Length 95th (ft)	196	212	47	81	176	41	#178	#466	m#219	#443	m30
Internal Link Dist (ft)		644			610			685		811	
Turn Bay Length (ft)											
Base Capacity (vph)	464	483	576	475	500	484	328	1387	211	1475	743
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.38	0.39	0.32	0.14	0.33	0.19	0.76	0.54	0.77	0.53	0.25

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.

Lane Group	EBT	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	114	158	87	1353	54	1049
v/c Ratio	0.51	0.83	0.22	0.53	0.18	0.41
Control Delay	53.1	101.2	5.2	9.9	5.5	9.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	53.1	101.2	5.2	9.9	5.5	9.1
Queue Length 50th (ft)	83	134	15	264	9	183
Queue Length 95th (ft)	140	169	36	411	25	290
Internal Link Dist (ft)	218	191		926		474
Turn Bay Length (ft)						
Base Capacity (vph)	347	298	438	2566	360	2574
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.33	0.53	0.20	0.53	0.15	0.41

Intersection Summary

Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	408	2065	554	1516	418	250	701	446	375	576	310
v/c Ratio	0.86	1.01	1.15	0.72	0.52	1.24	0.91	0.73	0.93	0.73	0.51
Control Delay	79.4	63.0	144.3	37.9	12.1	192.8	71.5	37.7	92.8	58.8	26.4
Queue Delay	0.0	0.0	0.0	0.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	79.4	63.0	144.3	38.3	12.1	192.8	71.5	37.7	92.8	58.8	26.4
Queue Length 50th (ft)	195	~721	~317	439	108	~291	338	278	185	267	152
Queue Length 95th (ft)	#271	#837	#436	497	160	#472	#436	405	#294	337	240
Internal Link Dist (ft)		286		607			727			926	
Turn Bay Length (ft)											
Base Capacity (vph)	497	2053	480	2113	810	202	805	609	404	790	620
Starvation Cap Reductn	0	0	0	192	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.82	1.01	1.15	0.79	0.52	1.24	0.87	0.73	0.93	0.73	0.50

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Lane Group	WBL	NBT	SBL	SBT
Lane Group Flow (vph)	381	881	424	1571
v/c Ratio	0.84	0.77	0.88	0.67
Control Delay	34.0	26.9	45.5	9.1
Queue Delay	0.0	0.0	0.0	0.0
Total Delay	34.0	26.9	45.5	9.1
Queue Length 50th (ft)	94	179	172	196
Queue Length 95th (ft)	#226	#275	#324	265
Internal Link Dist (ft)	633	267		727
Turn Bay Length (ft)				
Base Capacity (vph)	503	1141	509	2349
Starvation Cap Reductn	0	0	0	0
Spillback Cap Reductn	0	0	0	0
Storage Cap Reductn	0	0	0	0
Reduced v/c Ratio	0.76	0.77	0.83	0.67

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Lane Group	EBT	WBT	WBR	SBL	SBR
Lane Group Flow (vph)	1337	1049	940	386	375
v/c Ratio	0.69	0.54	0.49	0.58	0.61
Control Delay	14.0	11.3	1.9	29.1	8.9
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	14.0	11.3	1.9	29.1	8.9
Queue Length 50th (ft)	121	84	0	57	0
Queue Length 95th (ft)	#446	302	36	#184	82
Internal Link Dist (ft)	621	812		135	
Turn Bay Length (ft)					
Base Capacity (vph)	2392	2392	2171	684	616
Starvation Cap Reductn	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.56	0.44	0.43	0.56	0.61

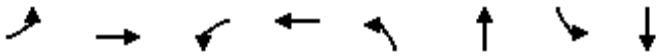
Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Lane Group	WBL	WBR	NBT	SBL	SBT
Lane Group Flow (vph)	76	217	1310	103	1087
v/c Ratio	0.55	0.67	0.35	0.67	0.25
Control Delay	80.2	18.0	11.9	94.4	2.4
Queue Delay	0.0	0.1	0.0	0.0	0.0
Total Delay	80.2	18.1	12.0	94.4	2.4
Queue Length 50th (ft)	73	0	413	102	24
Queue Length 95th (ft)	125	82	406	m141	m168
Internal Link Dist (ft)	835		918		571
Turn Bay Length (ft)					
Base Capacity (vph)	448	548	3748	325	4381
Starvation Cap Reductn	0	0	0	0	0
Spillback Cap Reductn	0	31	239	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.17	0.42	0.37	0.32	0.25

Intersection Summary

m Volume for 95th percentile queue is metered by upstream signal.



Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	65	283	125	153	255	1343	152	1054
v/c Ratio	0.20	0.83	0.70	0.61	0.87	0.56	0.33	0.68
Control Delay	51.4	70.6	85.7	34.6	88.9	16.3	53.5	49.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	51.4	70.6	85.7	34.6	88.9	16.3	53.5	49.1
Queue Length 50th (ft)	54	234	120	50	259	413	66	400
Queue Length 95th (ft)	96	331	191	127	#375	57	107	615
Internal Link Dist (ft)		610		1517		668		918
Turn Bay Length (ft)								
Base Capacity (vph)	401	411	212	281	330	2489	460	1546
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	17
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.16	0.69	0.59	0.54	0.77	0.54	0.33	0.69

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Lane Group	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	146	158	163	38	1440	114	1267
v/c Ratio	0.65	0.78	0.52	0.45	0.51	0.40	0.60
Control Delay	63.2	88.7	17.4	90.8	20.3	46.5	10.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.1
Total Delay	63.2	88.7	17.4	90.8	20.3	46.5	10.5
Queue Length 50th (ft)	117	152	14	39	207	55	182
Queue Length 95th (ft)	166	227	84	69	514	m74	378
Internal Link Dist (ft)	465		811		724		668
Turn Bay Length (ft)							
Base Capacity (vph)	427	260	362	102	2840	301	2106
Starvation Cap Reductn	0	0	0	0	0	0	106
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.34	0.61	0.45	0.37	0.51	0.38	0.63

Intersection Summary

m Volume for 95th percentile queue is metered by upstream signal.

Lane Group	EBT	EBR	WBT	WBR	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	44	65	131	174	136	1217	27	1380
v/c Ratio	0.38	0.26	0.71	0.11	0.38	0.31	0.34	0.47
Control Delay	84.7	22.8	83.9	0.1	55.1	6.5	73.5	25.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	84.7	22.8	83.9	0.1	55.1	6.5	73.5	25.3
Queue Length 50th (ft)	44	8	127	0	116	123	26	260
Queue Length 95th (ft)	m83	51	184	0	185	213	m47	465
Internal Link Dist (ft)	286		160			995		724
Turn Bay Length (ft)								
Base Capacity (vph)	250	437	409	1583	361	3920	160	2935
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.18	0.15	0.32	0.11	0.38	0.31	0.17	0.47

Intersection Summary

m Volume for 95th percentile queue is metered by upstream signal.

Lane Group	EBL	EBT	EBR2	WBT	WBR	NBR2	SBL2	SBL	SBT	SBR	NWL	NWR
Lane Group Flow (vph)	337	2299	98	2038	674	109	243	334	341	234	217	468
v/c Ratio	0.99	0.99	0.14	1.06	0.75	0.15	0.62	0.89	0.89	0.50	1.04	0.99
Control Delay	88.1	37.1	3.3	66.4	13.1	0.5	37.0	58.9	58.8	11.7	113.8	63.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	88.1	37.1	3.3	66.4	13.1	0.5	37.0	58.9	58.8	11.7	113.8	63.9
Queue Length 50th (ft)	94	443	0	~444	98	0	123	190	194	22	~127	93
Queue Length 95th (ft)	#180	#596	27	#539	166	0	204	#357	#362	86	#263	#203
Internal Link Dist (ft)		607		437					995		195	
Turn Bay Length (ft)												
Base Capacity (vph)	339	2334	707	1920	893	792	393	376	383	470	208	475
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.99	0.99	0.14	1.06	0.75	0.14	0.62	0.89	0.89	0.50	1.04	0.99

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Lane Group	EBT	WBT	NBT	SBT
Lane Group Flow (vph)	511	348	250	119
v/c Ratio	0.76	0.72	0.33	0.16
Control Delay	15.9	21.6	9.2	7.9
Queue Delay	0.0	0.0	0.0	0.0
Total Delay	15.9	21.6	9.2	7.9
Queue Length 50th (ft)	70	76	27	11
Queue Length 95th (ft)	154	144	96	48
Internal Link Dist (ft)	633	311	949	790
Turn Bay Length (ft)				
Base Capacity (vph)	1180	966	756	730
Starvation Cap Reductn	0	0	0	0
Spillback Cap Reductn	0	0	0	0
Storage Cap Reductn	0	0	0	0
Reduced v/c Ratio	0.43	0.36	0.33	0.16

Intersection Summary

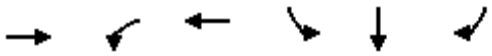
Lane Group	NBL	NBT	SBT	SEL	SER
Lane Group Flow (vph)	304	1565	945	54	489
v/c Ratio	0.80	0.37	0.32	0.31	0.82
Control Delay	59.5	3.1	9.2	52.2	16.2
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	59.5	3.1	9.2	52.2	16.2
Queue Length 50th (ft)	224	64	140	41	0
Queue Length 95th (ft)	302	168	m219	72	101
Internal Link Dist (ft)		763	913	452	
Turn Bay Length (ft)					
Base Capacity (vph)	531	4246	2969	575	844
Starvation Cap Reductn	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.57	0.37	0.32	0.09	0.58

Intersection Summary

m Volume for 95th percentile queue is metered by upstream signal.

Lane Group	EBL	EBR	WBL	WBT	SBT
Lane Group Flow (vph)	98	141	435	359	152
v/c Ratio	0.26	0.35	0.47	0.54	0.35
Control Delay	18.0	7.4	3.4	12.5	11.1
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	18.0	7.4	3.4	12.5	11.1
Queue Length 50th (ft)	19	0	0	48	12
Queue Length 95th (ft)	59	37	44	130	56
Internal Link Dist (ft)				439	658
Turn Bay Length (ft)					
Base Capacity (vph)	862	801	1199	1024	881
Starvation Cap Reductn	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.11	0.18	0.36	0.35	0.17

Intersection Summary



Lane Group	EBT	WBL	WBT	SBL	SBT	SBR
Lane Group Flow (vph)	2195	163	2603	485	362	109
v/c Ratio	0.97	0.81	0.68	0.88	0.63	0.19
Control Delay	44.3	79.1	17.5	53.7	37.1	12.4
Queue Delay	42.7	0.0	5.8	0.0	0.0	0.0
Total Delay	87.0	79.1	23.3	53.7	37.1	12.4
Queue Length 50th (ft)	~640	117	371	346	231	23
Queue Length 95th (ft)	#736	#253	444	474	322	61
Internal Link Dist (ft)	437		346		820	
Turn Bay Length (ft)						
Base Capacity (vph)	2272	202	3832	624	648	625
Starvation Cap Reductn	281	0	1178	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	1.10	0.81	0.98	0.78	0.56	0.17

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Lane Group	EBT	WBL	WBT	NBL	NBR	SBL	SBT
Lane Group Flow (vph)	1043	147	500	185	315	315	326
v/c Ratio	0.79	0.69	0.28	0.77	0.40	0.79	0.78
Control Delay	29.4	32.6	13.8	59.6	4.0	48.3	46.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	29.4	32.6	13.8	59.6	4.0	48.3	46.4
Queue Length 50th (ft)	268	45	86	102	0	165	170
Queue Length 95th (ft)	353	#122	120	#203	52	#280	#273
Internal Link Dist (ft)	152		265				360
Turn Bay Length (ft)							
Base Capacity (vph)	1312	213	1789	250	796	430	453
Starvation Cap Reductn	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.79	0.69	0.28	0.74	0.40	0.73	0.72

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Lane Group	EBL	NBL	NBT	SBT
Lane Group Flow (vph)	706	505	940	576
v/c Ratio	0.97	0.96	0.35	0.59
Control Delay	58.3	72.3	20.3	44.6
Queue Delay	0.0	0.0	0.0	0.0
Total Delay	58.3	72.3	20.3	44.6
Queue Length 50th (ft)	468	394	143	143
Queue Length 95th (ft)	#730	#605	271	185
Internal Link Dist (ft)	585		913	1745
Turn Bay Length (ft)				
Base Capacity (vph)	739	539	2713	972
Starvation Cap Reductn	0	0	0	0
Spillback Cap Reductn	0	0	0	0
Storage Cap Reductn	0	0	0	0
Reduced v/c Ratio	0.96	0.94	0.35	0.59

Intersection Summary

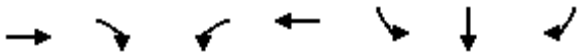
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Lane Group	EBL	EBT	WBT	WBR	NBT
Lane Group Flow (vph)	114	2609	2554	609	641
v/c Ratio	0.48	0.75	0.95	0.64	0.76
Control Delay	67.5	18.0	44.0	15.7	56.4
Queue Delay	0.0	42.3	0.0	0.0	0.0
Total Delay	67.5	60.3	44.0	15.7	56.4
Queue Length 50th (ft)	105	642	~979	220	286
Queue Length 95th (ft)	172	701	#1061	364	357
Internal Link Dist (ft)		346	988		236
Turn Bay Length (ft)					
Base Capacity (vph)	238	3470	2676	949	978
Starvation Cap Reductn	0	1075	0	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.48	1.09	0.95	0.64	0.66

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

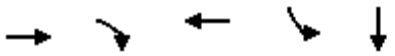


Lane Group	EBT	EBR	WBL	WBT	SBL	SBR
Lane Group Flow (vph)	772	310	462	533	359	511	1147
v/c Ratio	0.98	0.54	1.09	0.40	0.40	0.27	1.19
Control Delay	77.4	11.1	124.0	30.8	17.7	15.2	121.0
Queue Delay	39.2	0.1	0.0	0.0	0.0	0.0	0.0
Total Delay	116.5	11.2	124.0	30.8	17.7	15.2	121.0
Queue Length 50th (ft)	343	22	~226	172	180	117	~1102
Queue Length 95th (ft)	#476	108	#335	222	259	152	#1367
Internal Link Dist (ft)	321			774		2836	
Turn Bay Length (ft)							
Base Capacity (vph)	789	569	422	1333	904	1903	963
Starvation Cap Reductn	96	15	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	1.11	0.56	1.09	0.40	0.40	0.27	1.19

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.



Lane Group	EBT	EBR	WBT	SBL	SBT
Lane Group Flow (vph)	495	266	271	413	1440
v/c Ratio	0.62	0.37	0.28	0.52	0.62
Control Delay	18.5	10.6	13.0	16.0	12.1
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	18.5	10.6	13.0	16.0	12.1
Queue Length 50th (ft)	145	47	35	112	118
Queue Length 95th (ft)	236	97	59	187	161
Internal Link Dist (ft)	451		806		986
Turn Bay Length (ft)					
Base Capacity (vph)	802	724	958	789	2307
Starvation Cap Reductn	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.62	0.37	0.28	0.52	0.62

Intersection Summary

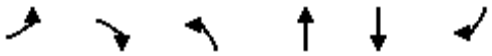
Lane Group	EBT	WBL	WBT	SBT	SBR
Lane Group Flow (vph)	1603	71	745	2027	723
v/c Ratio	1.08	1.13	0.43	1.16dl	1.08
Control Delay	86.5	210.1	23.6	72.8	89.3
Queue Delay	8.4	0.0	0.0	0.0	0.0
Total Delay	94.9	210.1	23.6	72.8	89.3
Queue Length 50th (ft)	~852	~74	223	~772	~758
Queue Length 95th (ft)	#993	#180	275	#872	#1045
Internal Link Dist (ft)	458		38	1023	
Turn Bay Length (ft)					
Base Capacity (vph)	1482	63	1751	1943	669
Starvation Cap Reductn	274	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	1.33	1.13	0.43	1.04	1.08

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

dl Defacto Left Lane. Recode with 1 though lane as a left lane.



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Group Flow (vph)	174	1370	1728	1348	1239	54
v/c Ratio	0.72	0.69	0.93	0.33	1.06	0.09
Control Delay	70.3	13.3	38.5	4.0	90.2	19.9
Queue Delay	0.0	0.0	16.3	0.0	0.0	0.0
Total Delay	70.3	13.3	54.8	4.0	90.2	19.9
Queue Length 50th (ft)	142	340	672	93	~418	23
Queue Length 95th (ft)	213	422	#921	135	#515	48
Internal Link Dist (ft)	812			667	763	
Turn Bay Length (ft)						
Base Capacity (vph)	313	1972	1855	4079	1173	643
Starvation Cap Reductn	0	0	173	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.56	0.69	1.03	0.33	1.06	0.08

Intersection Summary

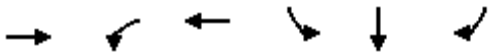
~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Lane Group	EBL	EBT	WBT	WBR	SET	NWL	NWT
Lane Group Flow (vph)	304	582	962	717	173	245	517
v/c Ratio	1.01	0.29	0.79	0.71	0.53	0.98	0.62
Control Delay	96.7	13.0	36.2	6.7	17.0	96.8	10.6
Queue Delay	0.0	0.7	9.0	0.3	0.0	0.0	0.0
Total Delay	96.7	13.7	45.2	7.1	17.0	96.8	10.6
Queue Length 50th (ft)	175	77	250	0	24	153	17
Queue Length 95th (ft)	#425	165	#461	104	82	#393	76
Internal Link Dist (ft)		269	321		401		767
Turn Bay Length (ft)							
Base Capacity (vph)	302	2000	1216	1014	540	249	836
Starvation Cap Reductn	0	1031	228	50	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	1.01	0.60	0.97	0.74	0.32	0.98	0.62

Intersection Summary

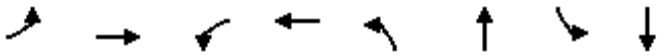
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.



Lane Group	EBT	WBL	WBT	SBL	SBT	SBR
Lane Group Flow (vph)	555	647	717	233	218	772
v/c Ratio	0.73	0.88	0.93	0.71	0.66	0.97
Control Delay	29.1	34.7	40.2	40.6	37.8	42.5
Queue Delay	0.0	16.5	37.4	0.0	0.0	0.0
Total Delay	29.1	51.2	77.6	40.6	37.8	42.5
Queue Length 50th (ft)	106	246	281	101	93	272
Queue Length 95th (ft)	158	#442	#496	#208	#189	#518
Internal Link Dist (ft)	435		269		2903	
Turn Bay Length (ft)						
Base Capacity (vph)	854	780	821	329	330	799
Starvation Cap Reductn	0	134	152	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.65	1.00	1.07	0.71	0.66	0.97

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.



Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	54	228	397	309	11	1935	304	636
v/c Ratio	0.18	0.33	1.12	0.41	0.19	1.05	1.23	0.23
Control Delay	27.4	27.1	120.9	9.5	63.7	72.0	177.2	14.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	27.4	27.1	120.9	9.5	63.7	72.0	177.2	14.7
Queue Length 50th (ft)	28	118	~354	42	8	~593	~290	86
Queue Length 95th (ft)	60	185	#550	113	29	#691	#469	127
Internal Link Dist (ft)		480		451		1866		540
Turn Bay Length (ft)								
Base Capacity (vph)	293	683	354	749	59	1844	247	2758
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.18	0.33	1.12	0.41	0.19	1.05	1.23	0.23

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

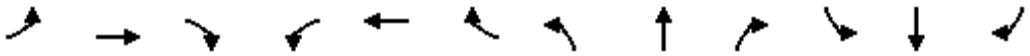
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT	SBR
Lane Group Flow (vph)	679	1674	277	1190	505	1359	174	696	299
v/c Ratio	1.48	1.14	1.39	1.22	1.43	0.97	1.35	0.89	0.43
Control Delay	264.3	108.7	247.6	152.3	249.7	69.3	248.7	77.0	22.3
Queue Delay	0.0	0.0	0.0	0.4	0.0	0.0	0.0	0.0	0.0
Total Delay	264.3	108.7	247.6	152.7	249.7	69.3	248.7	77.0	22.3
Queue Length 50th (ft)	~911	~987	~358	~747	~665	474	~221	248	139
Queue Length 95th (ft)	#1156	#1127	#547	#890	#893	#577	#380	#318	219
Internal Link Dist (ft)		403		458		623		529	
Turn Bay Length (ft)									
Base Capacity (vph)	460	1473	200	977	354	1404	129	779	697
Starvation Cap Reductn	0	0	0	67	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	1.48	1.14	1.39	1.31	1.43	0.97	1.35	0.89	0.43

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	168	853	239	234	391	98	277	272	696	92	120	76
v/c Ratio	0.70	0.79	0.20	0.30	0.28	0.23	0.91	0.64	0.95	0.63	0.11	0.17
Control Delay	64.5	45.0	4.3	39.0	27.0	7.1	86.1	47.6	46.5	73.7	35.1	2.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	64.5	45.0	4.3	39.0	27.0	7.1	86.1	47.6	46.5	73.7	35.1	2.1
Queue Length 50th (ft)	124	316	1	82	116	0	110	172	400	68	24	0
Queue Length 95th (ft)	212	#521	33	118	173	40	#233	304	560	#154	47	9
Internal Link Dist (ft)		865			423			1745			245	
Turn Bay Length (ft)									100			
Base Capacity (vph)	514	1082	1202	1163	1399	430	306	573	904	171	1609	565
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.33	0.79	0.20	0.20	0.28	0.23	0.91	0.47	0.77	0.54	0.07	0.13

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
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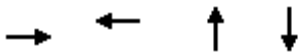

Lane Group	EBT	WBT	NBT	SBT
Lane Group Flow (vph)	1103	403	310	44
v/c Ratio	1.30	0.32	1.07	0.15
Control Delay	164.7	4.8	116.1	26.2
Queue Delay	0.0	0.0	0.0	0.0
Total Delay	164.7	4.8	116.1	26.2
Queue Length 50th (ft)	~1100	71	~252	14
Queue Length 95th (ft)	#1361	109	#436	48
Internal Link Dist (ft)	342	520	255	125
Turn Bay Length (ft)				
Base Capacity (vph)	846	1271	290	291
Starvation Cap Reductn	0	0	0	0
Spillback Cap Reductn	0	0	0	0
Storage Cap Reductn	0	0	0	0
Reduced v/c Ratio	1.30	0.32	1.07	0.15

Intersection Summary

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95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Lane Group	EBT	WBL	WBT	NBL	NBR
Lane Group Flow (vph)	1641	250	538	185	277
v/c Ratio	0.76	0.78	0.23	0.48	0.49
Control Delay	19.7	47.4	6.4	27.7	6.2
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	19.7	47.4	6.4	27.7	6.2
Queue Length 50th (ft)	178	95	35	70	0
Queue Length 95th (ft)	#328	#240	91	124	51
Internal Link Dist (ft)	423		279	871	
Turn Bay Length (ft)					
Base Capacity (vph)	2168	352	2322	629	741
Starvation Cap Reductn	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.76	0.71	0.23	0.29	0.37

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

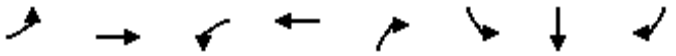
Lane Group	EBT	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	506	174	130	359	11	228
v/c Ratio	0.85	0.24	0.28	0.46	0.03	0.29
Control Delay	27.2	6.9	15.7	16.2	13.6	5.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	27.2	6.9	15.7	16.2	13.6	5.8
Queue Length 50th (ft)	124	22	26	78	2	10
Queue Length 95th (ft)	234	49	80	191	13	58
Internal Link Dist (ft)	520	293		203		240
Turn Bay Length (ft)						
Base Capacity (vph)	890	1108	465	773	351	776
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.57	0.16	0.28	0.46	0.03	0.29

Intersection Summary

Lane Group	EBL	EBT	WBL	WBT	NBT	SBT
Lane Group Flow (vph)	92	1369	310	652	419	77
v/c Ratio	0.21	0.76	0.75	0.39	0.81	0.20
Control Delay	9.2	21.9	25.2	13.6	26.4	13.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	9.2	21.9	25.2	13.6	26.4	13.8
Queue Length 50th (ft)	13	160	58	85	94	16
Queue Length 95th (ft)	39	#284	#196	152	191	43
Internal Link Dist (ft)		279		609	1265	205
Turn Bay Length (ft)						
Base Capacity (vph)	439	1810	461	1660	700	560
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.21	0.76	0.67	0.39	0.60	0.14

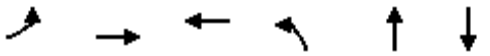
Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.



Lane Group	EBL	EBT	WBL	WBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	696	1060	33	674	33	69	159	332
v/c Ratio	0.79	0.50	0.24	0.56	0.02	0.18	0.40	0.54
Control Delay	33.0	11.2	39.5	22.8	0.0	23.2	26.6	6.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	33.0	11.2	39.5	22.8	0.0	23.2	26.6	6.4
Queue Length 50th (ft)	138	90	13	115	0	25	62	0
Queue Length 95th (ft)	255	307	48	242	0	58	117	55
Internal Link Dist (ft)		609		486			881	
Turn Bay Length (ft)								
Base Capacity (vph)	1128	2133	149	1199	1611	752	776	881
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.62	0.50	0.22	0.56	0.02	0.09	0.20	0.38

Intersection Summary



Lane Group	EBL	EBT	WBT	NBL	NBT	SBT
Lane Group Flow (vph)	136	1173	891	152	277	196
v/c Ratio	0.46	0.48	0.51	0.85	0.71	0.62
Control Delay	61.0	10.8	40.2	89.1	58.4	56.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	61.0	10.8	40.2	89.1	58.4	56.7
Queue Length 50th (ft)	120	234	365	138	233	165
Queue Length 95th (ft)	193	366	m191	209	302	227
Internal Link Dist (ft)		624	906		244	377
Turn Bay Length (ft)						
Base Capacity (vph)	295	2419	2105	207	453	366
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.46	0.48	0.42	0.73	0.61	0.54

Intersection Summary

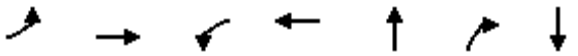
m Volume for 95th percentile queue is metered by upstream signal.

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	484	1739	234	1152	103	457	255	342	456
v/c Ratio	1.24	1.21	1.20	1.11	0.67	0.70	0.50	1.07	0.47
Control Delay	173.1	135.2	181.4	106.9	84.2	61.1	18.4	124.5	33.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	173.1	135.2	181.4	106.9	84.2	61.1	18.4	124.5	33.8
Queue Length 50th (ft)	~568	~1052	~267	~643	96	208	81	~395	138
Queue Length 95th (ft)	#783	#1193	#441	#784	158	270	138	#597	200
Internal Link Dist (ft)		906		1436		1074			606
Turn Bay Length (ft)									
Base Capacity (vph)	390	1441	195	1042	194	732	512	320	971
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	1.24	1.21	1.20	1.11	0.53	0.62	0.50	1.07	0.47

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

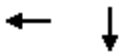
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.



Lane Group	EBL	EBT	WBL	WBT	NBT	NBR	SBT
Lane Group Flow (vph)	11	2229	179	1516	152	250	125
v/c Ratio	0.12	0.84	0.75	0.63	0.57	0.58	0.46
Control Delay	43.6	23.9	59.5	11.9	38.5	18.8	30.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	43.6	23.9	59.5	11.9	38.5	18.8	30.4
Queue Length 50th (ft)	6	374	95	168	82	59	57
Queue Length 95th (ft)	23	#581	#222	476	122	114	94
Internal Link Dist (ft)		1436		2539	649		441
Turn Bay Length (ft)							
Base Capacity (vph)	95	2654	239	2402	406	578	401
Starvation Cap Reductn	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.12	0.84	0.75	0.63	0.37	0.43	0.31

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.



Lane Group	WBT	SBT
Lane Group Flow (vph)	3005	663
v/c Ratio	0.85	0.64
Control Delay	13.1	35.7
Queue Delay	0.0	0.0
Total Delay	13.1	35.7
Queue Length 50th (ft)	390	127
Queue Length 95th (ft)	487	165
Internal Link Dist (ft)	692	1330
Turn Bay Length (ft)		
Base Capacity (vph)	3535	2936
Starvation Cap Reductn	0	0
Spillback Cap Reductn	0	0
Storage Cap Reductn	0	0
Reduced v/c Ratio	0.85	0.23

Intersection Summary

Lane Group	EBT	SBT
Lane Group Flow (vph)	2048	891
v/c Ratio	0.83	0.49
Control Delay	15.4	14.4
Queue Delay	0.0	0.0
Total Delay	15.4	14.4
Queue Length 50th (ft)	187	78
Queue Length 95th (ft)	247	109
Internal Link Dist (ft)	496	288
Turn Bay Length (ft)		
Base Capacity (vph)	2476	1813
Starvation Cap Reductn	0	0
Spillback Cap Reductn	0	0
Storage Cap Reductn	0	0
Reduced v/c Ratio	0.83	0.49

Intersection Summary

Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	266	1565	168	1543	147	147	109	168	136	136	239
v/c Ratio	0.85	0.92	0.85	0.86	0.67	0.91	0.34	0.41	0.58	0.49	0.63
Control Delay	70.2	34.2	80.4	28.4	28.7	98.6	38.7	8.5	56.4	44.5	19.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	70.2	34.2	80.4	28.4	28.7	98.6	38.7	8.5	56.4	44.5	19.2
Queue Length 50th (ft)	85	444	104	412	15	92	61	0	42	80	36
Queue Length 95th (ft)	#179	#757	#254	#710	#102	#240	109	52	#82	136	109
Internal Link Dist (ft)		445		509			613			390	
Turn Bay Length (ft)											
Base Capacity (vph)	313	1705	197	1796	224	161	526	567	243	488	539
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.85	0.92	0.85	0.86	0.66	0.91	0.21	0.30	0.56	0.28	0.44

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Lane Group	WBT	NBL	NBT	SBT
Lane Group Flow (vph)	2690	368	658	521
v/c Ratio	0.93	0.87	0.41	0.85
Control Delay	35.5	62.0	20.9	53.2
Queue Delay	1.6	28.1	1.7	0.0
Total Delay	37.1	90.1	22.6	53.2
Queue Length 50th (ft)	~537	244	150	164
Queue Length 95th (ft)	#645	#389	195	#241
Internal Link Dist (ft)	485		269	645
Turn Bay Length (ft)				
Base Capacity (vph)	2890	460	1708	648
Starvation Cap Reductn	92	101	840	0
Spillback Cap Reductn	0	0	0	0
Storage Cap Reductn	0	0	0	0
Reduced v/c Ratio	0.96	1.03	0.76	0.80

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Lane Group	EBT	EBR	NBT	SBL	SBT
Lane Group Flow (vph)	1489	120	1456	163	380
v/c Ratio	0.70	0.17	1.02dr	0.85	0.16
Control Delay	21.2	3.6	45.4	72.8	12.5
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	21.2	3.6	45.4	72.8	12.5
Queue Length 50th (ft)	216	0	254	81	38
Queue Length 95th (ft)	268	29	#360	#188	55
Internal Link Dist (ft)	183		353		269
Turn Bay Length (ft)					
Base Capacity (vph)	2132	716	1497	192	2377
Starvation Cap Reductn	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.70	0.17	0.97	0.85	0.16

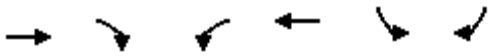
Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
dr Defacto Right Lane. Recode with 1 though lane as a right lane.

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Group Flow (vph)	1582	832	554	1592	516	299
v/c Ratio	0.93	0.75	0.94	0.65	0.66	0.54
Control Delay	36.8	12.2	69.4	10.8	41.2	7.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	36.8	12.2	69.4	10.8	41.2	7.8
Queue Length 50th (ft)	504	245	190	273	162	0
Queue Length 95th (ft)	#735	373	#318	404	217	74
Internal Link Dist (ft)	216			273	735	
Turn Bay Length (ft)						
Base Capacity (vph)	1708	1198	588	2467	959	612
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.93	0.69	0.94	0.65	0.54	0.49

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.



Lane Group	EBT	EBR	WBL	WBT	SBL	SBR
Lane Group Flow (vph)	1190	375	408	429	429	1386
v/c Ratio	0.78	0.42	0.86	0.19	0.91	0.88
Control Delay	23.5	3.5	33.0	13.6	51.1	8.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	23.5	3.5	33.0	13.6	51.1	8.3
Queue Length 50th (ft)	255	0	85	76	185	0
Queue Length 95th (ft)	#344	49	m107	m91	#335	#45
Internal Link Dist (ft)	222			450		
Turn Bay Length (ft)						
Base Capacity (vph)	1535	889	503	2214	519	1583
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.78	0.42	0.81	0.19	0.83	0.88

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.

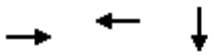
Lane Group	EBL	EBT	WBT	NBT	NBR
Lane Group Flow (vph)	967	783	1184	234	505
v/c Ratio	0.97	0.33	0.93	0.63	0.98
Control Delay	54.8	4.2	32.7	35.2	52.8
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	54.8	4.2	32.7	35.2	52.8
Queue Length 50th (ft)	243	56	214	99	132
Queue Length 95th (ft)	m#355	m68	#353	170	#327
Internal Link Dist (ft)		450	517	531	
Turn Bay Length (ft)					
Base Capacity (vph)	993	2370	1273	380	521
Starvation Cap Reductn	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.97	0.33	0.93	0.62	0.97

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.

Lane Group	EBL	NBL	NBT	SBT
Lane Group Flow (vph)	467	163	946	1163
v/c Ratio	0.90	0.75	0.42	0.70
Control Delay	60.9	76.6	15.9	30.1
Queue Delay	0.0	0.0	0.0	0.9
Total Delay	60.9	76.6	15.9	31.0
Queue Length 50th (ft)	347	118	91	402
Queue Length 95th (ft)	471	205	316	528
Internal Link Dist (ft)	112		811	545
Turn Bay Length (ft)				
Base Capacity (vph)	592	251	2261	1672
Starvation Cap Reductn	0	0	0	245
Spillback Cap Reductn	0	0	0	0
Storage Cap Reductn	0	0	0	0
Reduced v/c Ratio	0.79	0.65	0.42	0.81

Intersection Summary



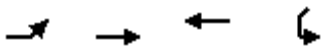
Lane Group	EBT	WBT	SBT
Lane Group Flow (vph)	153	391	695
v/c Ratio	0.24	0.73	0.40
Control Delay	4.7	22.8	9.7
Queue Delay	0.0	0.0	0.0
Total Delay	4.7	22.8	9.7
Queue Length 50th (ft)	6	98	57
Queue Length 95th (ft)	33	173	130
Internal Link Dist (ft)	276	303	817
Turn Bay Length (ft)			
Base Capacity (vph)	1102	994	1735
Starvation Cap Reductn	0	0	0
Spillback Cap Reductn	0	0	0
Storage Cap Reductn	0	0	0
Reduced v/c Ratio	0.14	0.39	0.40

Intersection Summary

Lane Group	EBL	NBT	SBT
Lane Group Flow (vph)	347	598	685
v/c Ratio	0.82	0.84	0.55
Control Delay	34.2	23.1	7.6
Queue Delay	0.0	0.0	0.0
Total Delay	34.2	23.1	7.6
Queue Length 50th (ft)	93	175	126
Queue Length 95th (ft)	#212	#416	207
Internal Link Dist (ft)	311	585	567
Turn Bay Length (ft)			
Base Capacity (vph)	474	712	1245
Starvation Cap Reductn	0	0	0
Spillback Cap Reductn	0	0	0
Storage Cap Reductn	0	0	0
Reduced v/c Ratio	0.73	0.84	0.55

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.



Lane Group	EBL	EBT	WBT	SWL
Lane Group Flow (vph)	65	1185	1347	435
v/c Ratio	0.54	0.66	0.75	0.69
Control Delay	30.1	13.1	15.0	23.2
Queue Delay	0.0	0.0	0.0	0.0
Total Delay	30.1	13.1	15.0	23.2
Queue Length 50th (ft)	15	156	190	132
Queue Length 95th (ft)	#71	214	260	#262
Internal Link Dist (ft)		2143	621	511
Turn Bay Length (ft)				
Base Capacity (vph)	138	2039	2033	634
Starvation Cap Reductn	0	0	0	0
Spillback Cap Reductn	0	0	0	0
Storage Cap Reductn	0	0	0	0
Reduced v/c Ratio	0.47	0.58	0.66	0.69

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Lane Group	EBT	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	141	467	174	945	217	609
v/c Ratio	0.58	0.95	0.72	0.92	0.88	0.64
Control Delay	38.9	59.2	54.2	40.0	71.8	31.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	38.9	59.2	54.2	40.0	71.8	31.3
Queue Length 50th (ft)	61	209	90	210	116	150
Queue Length 95th (ft)	118	#431	#188	#361	#258	222
Internal Link Dist (ft)	511	686		327		774
Turn Bay Length (ft)						
Base Capacity (vph)	344	490	259	1026	247	946
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.41	0.95	0.67	0.92	0.88	0.64

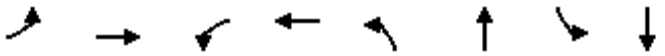
Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Lane Group	EBL	NBT	SBT
Lane Group Flow (vph)	457	369	533
v/c Ratio	0.86	0.66	0.48
Control Delay	33.0	16.4	7.0
Queue Delay	0.0	0.0	0.0
Total Delay	33.0	16.4	7.0
Queue Length 50th (ft)	119	90	75
Queue Length 95th (ft)	#264	#200	141
Internal Link Dist (ft)	686	452	949
Turn Bay Length (ft)			
Base Capacity (vph)	597	559	1109
Starvation Cap Reductn	0	0	0
Spillback Cap Reductn	0	0	0
Storage Cap Reductn	0	0	0
Reduced v/c Ratio	0.77	0.66	0.48

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.



Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	109	326	87	196	109	3511	217	2413
v/c Ratio	1.03	0.82	0.82	0.46	0.73	1.10	1.32	0.74
Control Delay	161.5	72.9	117.3	38.3	93.0	78.2	227.9	20.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.3
Total Delay	161.5	72.9	117.3	38.3	93.0	78.2	227.9	22.6
Queue Length 50th (ft)	~113	144	86	52	105	~1424	~273	572
Queue Length 95th (ft)	#245	#218	#188	95	#185	#1483	#445	628
Internal Link Dist (ft)		253		576		2903		667
Turn Bay Length (ft)								
Base Capacity (vph)	106	399	106	429	165	3191	165	3255
Starvation Cap Reductn	0	0	0	0	0	0	0	673
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	1.03	0.82	0.82	0.46	0.66	1.10	1.32	0.93

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Lane Group	EBL	NBL	NBT
Lane Group Flow (vph)	109	402	533
v/c Ratio	0.15	0.57	0.38
Control Delay	8.4	13.2	9.5
Queue Delay	0.0	0.0	0.0
Total Delay	8.4	13.2	9.5
Queue Length 50th (ft)	15	65	41
Queue Length 95th (ft)	36	127	68
Internal Link Dist (ft)	303		541
Turn Bay Length (ft)			
Base Capacity (vph)	708	708	1415
Starvation Cap Reductn	0	0	0
Spillback Cap Reductn	0	0	0
Storage Cap Reductn	0	0	0
Reduced v/c Ratio	0.15	0.57	0.38

Intersection Summary

Appendix F
PEQE Calculation Worksheets

Roadway	To	From	Horizontal Buffer North/East	Lighting	Clear Zone	Posted Speed Limit	Score		Horizontal Buffer	Lighting	Clear Zone South/West	Posted Speed Limit	Score		Horizontal Buffer	Lighting	Clear Zone	Posted Speed Limit	Horizontal Buffer	Lighting	Clear Zone	Posted Speed Limit
Midway/Pacific Highway Corridor																						
Lytton Street/ Barnett Avenue	Rosecrans St	Midway Dr	0	Standard	No Obstructions	40	4	Fair	0	Standard	No Obstructions	40	4	Fair	0	1	2	1	0	1	2	1
	Midway Dr	Pacific Hwy	15	Exceed Standard	No Obstructions	40	7	Good	15	Exceed Standard	No Obstructions	40	7	Good	2	2	2	1	2	2	2	1
W. Mission Bay Dr	I-8 WB Ramps	I-8 EB Ramps	0	Standard	No Obstructions	35	4	Fair	0	Standard	No Obstructions	35	4	Fair	0	1	2	1	0	1	2	1
Midway Dr	W. Point Loma Blvd/Sports Arena Blvd	Kemper St	15	Exceed Standard	No Obstructions	35	7	Good	15	Exceed Standard	No Obstructions	35	7	Good	2	2	2	1	2	2	2	1
	Kemper St	East Dr	15	Exceed Standard	No Obstructions	35	7	Good	15	Exceed Standard	No Obstructions	35	7	Good	2	2	2	1	2	2	2	1
	East Dr	Rosecrans St	15	Exceed Standard	No Obstructions	35	7	Good	15	Exceed Standard	No Obstructions	35	7	Good	2	2	2	1	2	2	2	1
	Rosecrans St	Barnett Ave	15	Exceed Standard	No Obstructions	35	7	Good	15	Exceed Standard	No Obstructions	35	7	Good	2	2	2	1	2	2	2	1
Sports Arena Blvd	I-8 EB Ramps	W. Point Loma Blvd/Sports Arena Blvd	15	Standard	No Obstructions	35	6	Fair	15	Exceed Standard	No Obstructions	35	7	Good	2	1	2	1	2	2	2	1
	W. Point Loma Blvd/Midway	Kemper St	8	Standard	No Obstructions	35	5	Fair	8	Standard	No Obstructions	35	5	Fair	1	1	2	1	1	1	2	1
	Kemper St	East Dr	7	Standard	No Obstructions	35	5	Fair	7	Standard	No Obstructions	35	5	Fair	1	1	2	1	1	1	2	1
	East Dr	Rosecrans St	7	Standard	No Obstructions	35	5	Fair	7	Standard	No Obstructions	35	5	Fair	1	1	2	1	1	1	2	1
	Rosecrans St	Pacific Hwy	13	Exceed Standard	No Obstructions	35	6	Fair	13	Standard	No Obstructions	35	5	Fair	1	2	2	1	1	1	2	1
Kurtz St	Hancock St	Rosecrans St	8	Standard	No Obstructions	30	6	Fair	8	Standard	No Obstructions	30	6	Fair	1	1	2	2	1	1	2	2
	Rosecrans St	Pacific Hwy	0	Standard	No Obstructions	30	4	Fair	0	Standard	No Obstructions	30	4	Fair	0	0	2	2	0	0	2	2
Hancock St	Sports Arena Blvd	Kurtz St	0	Standard	Obstructed	30	3	Poor	8	Standard	No Obstructions	30	6	Fair	0	1	0	2	1	1	2	2
	Kurtz St	Camino Del Rio West	8	Standard	Obstructed	30	4	Fair	8	Standard	No Obstructions	30	6	Fair	1	1	0	2	1	1	2	2
	Camino Del Rio West	Rosecrans St	0	Standard	No Obstructions	30	5	Fair	0	Standard	No Obstructions	30	5	Fair	0	1	2	2	0	1	2	2
	Old Town Ave	Witherby St	0	Standard	Obstructed	30	2	Poor	0	Standard	Obstructed	30	2	Poor	0	0	0	2	0	0	0	2
	Witherby St	Washington St	8	Standard	No Obstructions	30	6	Fair	16	Standard	No Obstructions	30	7	Good	1	1	2	2	2	1	2	2
Kettner Blvd	Washington St	Vine St	0	Exceed Standard	Obstructed	40	3	Poor	0	Exceed Standard	No Obstructions	40	5	Fair	0	2	0	1	0	2	2	1
	Vine St	Sassafras St	0	Standard	Obstructed	40	1	Poor	8	Standard	No Obstructions	40	5	Fair	0	0	0	1	1	1	2	1
	Sassafras St	Laurel St	8	Standard	No Obstructions	40	5	Fair	8	Standard	No Obstructions	40	5	Fair	1	1	2	1	1	1	2	1
Pacific Hwy	Sea World Dr	Taylor St	17	Standard	No Obstructions	45	5	Fair	17	Standard	No Obstructions	45	5	Fair	2	1	2	0	2	1	2	0
	Taylor St	Kurtz St	17	Exceed Standard	No Obstructions	45	6	Standard	17	Exceed Standard	No Obstructions	45	6	Fair	2	2	2	0	2	2	2	0
	Kurtz St	Sports Arena Blvd	17	Exceed Standard	No Obstructions	45	6	Standard	17	Exceed Standard	No Obstructions	45	6	Fair	2	2	2	0	2	2	2	0
	Sports Arena Blvd	Barnett Ave	17	Exceed Standard	No Obstructions	45	6	Standard	17	Exceed Standard	No Obstructions	45	6	Fair	2	2	2	0	2	2	2	0
	Barnett Ave	Harney Washington St	17	Exceed Standard	No Obstructions	55	6	Standard	17	Exceed Standard	No Obstructions	55	6	Fair	2	2	2	0	2	2	2	0
	Washington St	Sassafras St	17	Exceed Standard	No Obstructions	45	6	Standard	17	Exceed Standard	No Obstructions	45	6	Fair	2	2	2	0	2	2	2	0
	Sassafras St	Laurel St	17	Exceed Standard	No Obstructions	45	6	Standard	17	Exceed Standard	No Obstructions	45	6	Fair	2	2	2	0	2	2	2	0
Old Town								Poor						Poor								
Congress St	Taylor St	Twiggs St	8	Standard	No Obstructions	25	6	Fair	8	Standard	No Obstructions	25	6	Fair	1	1	2	2	1	1	2	2
	Twiggs St	Harney St	8	Standard	No Obstructions	25	6	Fair	8	Standard	No Obstructions	25	6	Fair	1	1	2	2	1	1	2	2
	Harney St	San Diego Ave/ Ampudia St	8	Standard	No Obstructions	25	6	Fair	8	Standard	No Obstructions	25	6	Fair	1	1	2	2	1	1	2	2
San Diego Ave	Twiggs St	Harney St	8	Standard	No Obstructions	25	6	Fair	8	Standard	No Obstructions	25	6	Fair	1	1	2	2	1	1	2	2
	Harney St	Ampudia St	8	Standard	No Obstructions	25	6	Fair	8	Standard	No Obstructions	25	6	Fair	1	1	2	2	1	1	2	2
	Ampudia St	Old Town Ave	8	Standard	No Obstructions	25	6	Fair	8	Standard	No Obstructions	25	6	Fair	1	1	2	2	1	1	2	2
	Old Town Ave	Hortensia St	13	Standard	No Obstructions	25	6	Fair	13	Standard	No Obstructions	25	6	Fair	1	1	2	2	1	1	2	2
Juan St	Taylor St	Twiggs St	8	Standard	No Obstructions	30	6	Fair	8	Standard	No Obstructions	30	6	Fair	1	1	2	2	1	1	2	2
	Twiggs St	Harney St	8	Standard	No Obstructions	30	6	Fair	8	Standard	No Obstructions	30	6	Fair	1	1	2	2	1	1	2	2
	Harney St	San Juan Rd	8	Standard	No Obstructions	30	6	Fair	8	Standard	No Obstructions	30	6	Fair	1	1	2	2	1	1	2	2
East-West								Poor						Poor								
Midway/Pacific Highway Corridor								Poor						Poor								
Channel Wy	W. Mission Bay Dr	Hancock St	8	Standard	No Obstructions	25	6	Fair	8	Standard	No Obstructions	25	6	Fair	1	1	2	2	1	1	2	2
Kemper St	Kenyon St	Midway Dr	8	Below Standard	No Obstructions	25	5	Fair	0	Standard	No Obstructions	25	5	Fair	1	0	2	2	0	1	2	2
	Midway Dr	Sports Arena Blvd	8	Standard	No Obstructions	25	6	Fair	8	Standard	No Obstructions	25	6	Fair	1	1	2	2	1	1	2	2
Camino Del Rio West	Rosecrans St	I-5/I-8 Ramps	0	Standard	No Obstructions	35	4	Fair	0	Standard	No Obstructions	35	4	Fair	0	1	2	1	0	1	2	1
Rosecrans St	Lytton St	Midway Dr	9	Exceed Standard	No Obstructions	35	6	Fair	10	Exceed Standard	No Obstructions	35	6	Fair	1	2	2	1	1	2	2	1
	Midway Dr	Sports Arena Blvd	15	Exceed Standard	No Obstructions	35	7	Good	15	Exceed Standard	No Obstructions	35	7	Good	2	2	2	1	2	2	2	1
	Sports Arena Blvd	Pacific Hwy/Taylor St	15	Exceed Standard	No Obstructions	35	7	Good	15	Exceed Standard	No Obstructions	35	7	Good	2	2	2	1	2	2	2	1
Washington St	Frontage Rd	Pacific St	0	Standard	No Obstructions	25	5	Fair	0	Standard	No Obstructions	25	5	Fair	0	1	2	2	0	1	2	2
	Pacific St	Hancock St	8	Standard	No Obstructions	25	6	Fair	0	Standard	No Obstructions	25	5	Fair	1	1	2	2	0	1	2	2
Vine St	California St	Kettner Blvd	16	Standard	No Obstructions	25	7	Good	0	Standard	No Obstructions	25	5	Fair	2	1	2	2	0	1	2	2
Sassafras St	Pacific Hwy	Kettner Blvd	0	Standard	No Obstructions	25	5	Fair	0	Standard	No Obstructions	25	5	Fair	0	1	2	2	0	1	2	2
Laurel St	Pacific Hwy	Kettner Blvd	0	Standard	No Obstructions	25	5	Fair	0	Standard	No Obstructions	25	5	Fair	0	1	2	2	0	1	2	2
Old Town								Poor						Poor								
Taylor St	Pacific Hwy/ Rosecrans St	Congress St	0	Standard	No Obstructions	35	4	Fair	0	Standard	No Obstructions	35	4	Fair	0	1	2	1	0	1	2	1
	Congress St	Juan St	0	Standard	No Obstructions	35	4	Fair	0	Standard	No Obstructions	35	4	Fair	0	1	2	1	0	1	2	1
	Juan St	Morena Blvd	0	Standard	No Obstructions	35	4	Fair	0	Standard	No Obstructions	35	4	Fair	0	1	2	1	0	1	2	1
	Morena Blvd	I-8 EB Ramps	0	Below Standard	Obstructed	35	1	Poor	0	Below Standard	Obstructed	35	1	Poor	0	0	0	1	0	0	0	1
Twiggs St	Congress St	San Diego Ave	0	Standard	No Obstructions	25	5	Fair	0	Standard	No Obstructions	25	5	Fair	0	1	2	2	0	1	2	2
	San Diego Ave	Juan St	8	Standard	No Obstructions	25	6	Fair	8	Standard	No Obstructions	25	6	Fair	1	1	2	2	1	1	2	2
Harney St	Congress St	San Diego Ave	8	Standard	No Obstructions	25	6	Fair	8	Standard	No Obstructions	25	6	Fair	1	1	2	2	1	1	2	2
	San Diego Ave	Juan St	8	Standard	No Obstructions	25	6	Fair	0	Standard	No Obstructions	25	5	Fair	1	1	2	2	0	1	2	2
Old Town Ave	Hancock St	Moore St	0	Standard	No Obstructions	25	5	Fair	0	Standard	No Obstructions	25	5	Fair	0	1	2	2	0	1	2	2
	Moore St	San Diego Ave	0	Standard	No Obstructions	25	5	Fair	0	Standard	No Obstructions	25	5	Fair	0	1	2	2	0	1	2	2

Features		3.1	7.1
Grade		3.1	6.1

	Intersection	Control	Physical	Ops	ADA	Legs	Score	Grade	Control	Physical	Ops	ADA	Control	Physical	Ops	ADA	Legs	Score	Grade	Control	Physical	Ops	ADA
1	1: Barnett Ave/Lytton St & Rosecrans St.	Signal	0	0	No	4	2	Poor	2	0	0	0	Signal	8		Yes	4	6	Fair	2	2	0	2
2	2: Midway Dr/W Mission Bay Dr & I-8 WB Off Ramp	Signal	0	0	Yes	3	4	Fair	2	0	0	2	Signal	6		Yes	3	6	Fair	2	2	0	2
3	3: W Mission Bay Dr & Channel Way	SSSC	0	0	No	3	1	Poor	1	0	0	0	SSSC	6		Yes	3	5	Fair	1	2	0	2
4	4: Midway Dr/W Mission Bay Dr & Sports Arena	Signal	0	0	No	4	2	Poor	2	0	0	0	Signal	8		Yes	4	6	Fair	2	2	0	2
	Midway Dr & Duke Street	Signal	0	0	No	3	2	Poor	2	0	0	0	Signal	6		Yes	3	6	Fair	2	2	0	2
5	5: Midway Dr & Kemper St/Kemper Street	Signal	3	0	No	4	2	Poor	2	0	0	0	Signal	8		Yes	4	6	Fair	2	2	0	2
	Midway Dr & Fodam Street	Signal	0	0	No	4	2	Poor	2	0	0	0	Signal	8		Yes	4	6	Fair	2	2	0	2
	Midway Dr & Wing Street	Signal	0	0	No	3	2	Poor	2	0	0	0	Signal	6		Yes	3	6	Fair	2	2	0	2
6	6: Midway Dr & East Drive	Signal	0	0	No	3	2	Poor	2	0	0	0	Signal	6		Yes	3	6	Fair	2	2	0	2
	Midway Drive & Riely Street	SSSC	0	0	No	3	1	Poor	1	0	0	0	SSSC	6		Yes	3	5	Fair	1	2	0	2
	Midway Drive & Gaines Street	SSSC	0	0	No	3	1	Poor	1	0	0	0	SSSC	6		Yes	3	5	Fair	1	2	0	2
7	7: Midway Dr & Rosecrans St.	Signal	0	0	No	4	2	Poor	2	0	0	0	Signal	8		Yes	4	6	Fair	2	2	0	2
8	8: Midway Dr & Charles Lindbergh Parkway	Signal	N/A				4	Fair	2	2	0	0	Signal	8		Yes	4	6	Fair	2	2	0	2
9	9: Midway Dr & Enterprise St	SSSC	0	0	No	3	1	Poor	1	0	0	0	SSSC	8		Yes	3	5	Fair	1	2	0	2
10	10: Barnett Ave & Midway Dr	Signal	3	0	No	3	3	Poor	2	1	0	0	Signal	8		Yes	3	6	Fair	2	2	0	2
11	11: Sports Arena & Hancock Street	Signal	2	0	Yes	3	4	Fair	2	0	0	2	Signal	8		Yes	3	6	Fair	2	2	0	2
12	12: Sports Arena & Kemper Street	Signal	0	0	No	4	2	Poor	2	0	0	0	Signal	8		Yes	4	6	Fair	2	2	0	2
13	13: Sports Arena & Ralphs Driveway/Frontier Street	Signal	1	0	No	4	2	Poor	2	0	0	0	Signal	8		Yes	4	6	Fair	2	2	0	2
#VALUE!	Sports Arena Drive / Target Driveway	SSSC	0	0	No	3	1	Poor	1	0	0	0	SSSC	6		Yes	3	5	Fair	1	2	0	2
14	14: Sports Arena & East Drive/Greenwood Street	Signal	0	0	No	3	2	Poor	2	0	0	0	Signal	6		Yes	3	6	Fair	2	2	0	2
15	15: Rosecrans St/Sports Arena & Rosecrans St./Camino Del Rio W	Signal	0	0	No	5	2	Poor	2	0	0	0	Signal	10		Yes	5	6	Fair	2	2	0	2
16	16: Sports Arena Bl & Charles Lindbergh Parkway	Signal	N/A				4	Fair	2	2	0	0	Signal	8		Yes	4	6	Fair	2	2	0	2
17	17: Pacific Highway & Sports Arena Bl	Signal	N/A				4	Fair	2	2	0	0	Signal	8		Yes	4	6	Fair	2	2	0	2
18	18: Kemper Street & Kurtz St & Hancock/Hancock St	SSSC	0	0	No	3	1	Poor	1	0	0	0	SSSC	6		Yes	3	5	Fair	1	2	0	2
#VALUE!	Kurtz Street / Sherman Street	AWSC	0	0	No	3	1	Poor	1	0	0	0	AWSC	6		Yes	3	5	Fair	1	2	0	2
#VALUE!	Kurtz Street / Greenwood Street	SSSC	0	0	No	3	1	Poor	1	0	0	0	SSSC	6		Yes	3	5	Fair	1	2	0	2
#VALUE!	Kurtz Street / Riely Street	SSSC	0	0	No	3	1	Poor	1	0	0	0	SSSC	6		Yes	3	5	Fair	1	2	0	2
19	19: Kurtz/Kurtz St & Camino Del Rio W	Signal	0	0	No	4	2	Poor	2	0	0	0	Signal	8		Yes	4	6	Fair	2	2	0	2
20	20: Kurtz St/Kurtz & Rosecrans St	Signal	2	0	No	4	2	Poor	2	0	0	0	Signal	8		Yes	4	6	Fair	2	2	0	2
#VALUE!	Kurtz Street / Smith Street	SSSC	0	0	No	3	1	Poor	1	0	0	0	SSSC	6		Yes	3	5	Fair	1	2	0	2
21	21: Pacific Highway & Kurtz St	SSSC	0	0	Yes	3	3	Poor	1	0	0	2	Signal	6		Yes	3	6	Fair	2	2	0	2
22	22: Hancock & Channel Way	SSSC	0	0	No	3	1	Poor	1	0	0	0	SSSC	6		Yes	3	5	Fair	1	2	0	2
#VALUE!	Hancock Street / Hicock Street	SSSC	0	0	No	3	1	Poor	1	0	0	0	SSSC	6		Yes	3	5	Fair	1	2	0	2
#VALUE!	Hancock Street / Sherman Street	AWSC	0	0	No	4	1	Poor	1	0	0	0	AWSC	6		Yes	4	4	Poor	1	1	0	2
#VALUE!	Hancock Street / Greenwood Street	SSSC	1	0	Yes	4	3	Poor	1	0	0	2	SSSC	8		Yes	4	5	Fair	1	2	0	2
23	23: Hancock St & Camino Del Rio W	Signal	0	0	No	5	2	Poor	2	0	0	0	Signal	10		Yes	5	6	Fair	2	2	0	2
#VALUE!	Hancock Street & Gains Street	SSSC	0	0	No	4	1	Poor	1	0	0	0	SSSC	8		Yes	4	5	Fair	1	2	0	2
24	24: Rosecrans St & Hanccok Street	SSSC	0	0	No	3	1	Poor	1	0	0	0	SSSC	6		Yes	3	5	Fair	1	2	0	2
25	25: Hancock St & Old Town St	AWSC	0	0	No	3	1	Poor	1	0	0	0	AWSC	6		Yes	3	5	Fair	1	2	0	2
26	26: Hancock St & Witherby St	AWSC	0	0	No	3	1	Poor	1	0	0	0	AWSC	6		Yes	3	5	Fair	1	2	0	2
#VALUE!	Hancock Street & Noell Street	AWSC	0	0	No	4	1	Poor	1	0	0	0	AWSC	8		Yes	4	5	Fair	1	2	0	2
#VALUE!	Hancock Street & I-5 SB Ramp	SSSC	0	0	No	3	1	Poor	1	0	0	0	SSSC	6		Yes	3	5	Fair	1	2	0	2
27	27: Hancock St & Washington St	Signal	0	0	No	4	2	Poor	2	0	0	0	Signal	8		Yes	4	6	Fair	2	2	0	2
#VALUE!	Hancock Street & Emory Street	SSSC	0	0	Yes	3	3	Poor	1	0	0	2	SSSC	6		Yes	3	5	Fair	1	2	0	2
#VALUE!	Hancock Street & California Street	SSSC	0	0	Yes	3	3	Poor	1	0	0	2	SSSC	6		Yes	3	5	Fair	1	2	0	2
#VALUE!	Hancock Street & Chalmers Street	SSSC	0	0	Yes	3	3	Poor	1	0	0	2	SSSC	6		Yes	3	5	Fair	1	2	0	2
#VALUE!	Hancock Street & Walnut Avenue	SSSC	0	0	No	3	1	Poor	1	0	0	0	SSSC	6		Yes	3	5	Fair	1	2	0	2
28	28: Kettner Bl/Hancock St & Vine St	SSSC	0	0	No	3	1	Poor	1	0	0	0	SSSC	6		Yes	3	5	Fair	1	2	0	2
29	29: Kettner Blvd/Kettner Bl & Sassafras St	Signal	0	0	No	4	2	Poor	2	0	0	0	Signal	8		Yes	4	6	Fair	2	2	0	2
#VALUE!	Kettner Boulevard / Redwood Street	SSSC	0	0	No	3	1	Poor	1	0	0	0	SSSC	6		Yes	3	5	Fair	1	2	0	2
#VALUE!	Kettner Boulevard / Palm Street	SSSC	0	0	No	3	1	Poor	1	0	0	0	SSSC	6		Yes	3	5	Fair	1	2	0	2
#VALUE!	Kettner Boulevard / Olive Street	SSSC	0	0	No	4	1	Poor	1	0	0	0	SSSC	8		Yes	4	5	Fair	1	2	0	2
#VALUE!	Kettner Boulevard / Maple Street	SSSC	0	0	No	3	1	Poor	1	0	0	0	SSSC	6		Yes	3	5	Fair	1	2	0	2
30	30: Kettner Blvd & W Laurel St	Signal	0	0	No	4	2	Poor	2	0	0	0	Signal	8		Yes	4	6	Fair	2	2	0	2
31	31: Pacific Highway & Barnett Ave	Signal	N/A				4	Fair	2	2	0	0	Signal	6		Yes	3	6	Fair	2	2	0	2
#VALUE!	Pacific Highway & Witherby Street	SSSC	0	0	No	4	1	Poor	1	0	0	0	SSSC	8		Yes	4	5	Fair	1	2	0	2
32	32: Pacific Highway NB Frontage Road & Washington St	Signal	0	0	No	4	2	Poor	2	0	0	0	Signal	8		Yes	4	6	Fair	2	2	0	2
33	33: Washington St & Pacific Highway SB	Signal	0	0	No	4	2	Poor	2	0	0	0	Signal	8		Yes	4	6	Fair	2	2	0	2
34	34: Pacific Highway & Sassafras St	Signal	1	0	No	4	2	Poor	2	0	0	0	Signal	8		Yes	4	6	Fair	2	2	0	2
#VALUE!	Pacific Highway & Palm Street	Signal	0	0	No	4	2	Poor	2	0	0	0	Signal	8		Yes	4	6	Fair	2	2	0	2
35	35: Pacific Highway & W Laurel St	Signal	0	1	Yes	4	4	Fair	2	0	0	2	Signal	8		Yes	4	6	Fair	2	2	0	2
36	36: Pacific Highway & Rosecrans St/Taylor St	Signal	0	0	Yes	4	4	Fair	2	0	0	2	Signal	8		Yes	4	6	Fair	2	2	0	2
37	37: Moore St & Old Town St	Signal	0	0	No	4	2	Poor	2	0	0	0	Signal	8		Yes	4	6	Fair	2	2	0	2
38	38: Congress St & Taylor St	Signal	0	0	Yes	3	4	Fair	2	0	0	2	Signal	6		Yes	3	6	Fair	2	2	0	2
#VALUE!	Congress Street & Old Town Station Entrance	SSSC	0	0	No	3	1	Poor	1	0	0	0	SSSC	6		Yes	3	5	Fair	1	2	0	2
#VALUE!	Congress Street & Old Town Station Exit	Signal	1	0	No	3	2	Poor	2	0	0	0	Signal	8		Yes	3	6	Fair	2	2	0	2
#VALUE!	Congress Street & Mason Street	SSSC	0	0	No	3	1	Poor	1	0	0	0	SSSC	6		Yes	3	5	Fair	1	2	0	2
39	39: Congress St & Twiggs St	AWSC	0	0	No	4	1	Poor	1	0	0	0	AWSC	8		Yes	4	5	Fair	1	2	0	2
40	40: Congress St & Harney St	AWSC	0	0	No	4	1	Poor	1	0	0	0	AWSC	8		Yes	4	5	Fair	1	2	0	2
#VALUE!	Congress Street & Conde Street	SSSC	5	0	No	4	2	Poor	1	1	0	0	SSSC	8		Yes	4	5	Fair	1	2	0	2
#VALUE!	Congress Street & Arista Street	SSSC	0	0	No	3	1	Poor	1	0	0	0	SSSC	6		Yes	3	5	Fair	1	2	0	2
41	41: San Diego Ave & Congress St	SSSC	0	0	No	5	1	Poor	1	0	0	0	SSSC	10		Yes	5	5	Fair	1	2	0	2
#VALUE!	San Diego Avenue & Arista	SSSC	1	0	No	3	1	Poor	1	0	0	0	SSSC	8		Yes	3	5	Fair	1	2	0	2
#VALUE!	San Diego Avenue & Linwood Street	SSSC	0	0	No	3	1	Poor	1	0	0	0	SSSC	6		Yes	3	5	Fair	1	2	0	2
#VALUE!	San Diego Avenue & Conde Street	AWSC	0	0	No	4	1	Poor	1	0	0	0	AWSC	8		Yes	4	5	Fair	1	2	0	2
42	42: San Diego Ave & Twiggs St	AWSC	0	0	No	3	1	Poor	1	0	0	0	AWSC	6		Yes	3	5	Fair	1	2	0	2
43	43: San Diego Ave & Harney St	AWSC	1	0	No	4	1	Poor	1	0	0	0	AWSC	9		Yes	4	5	Fair	1	2	0	2
44	44: San Diego Ave & Old Town St	Signal	0	0	No	4	2	Poor	2	0	0	0	Signal	8		Yes	4	6	Fair	2	2	0	2
45	45: Juan St & Taylor St	Signal	1	0	Yes	3	4	Fair	2	0	0	2	Signal			Yes	3	4	Poor	2	0	0	2
46	46: Juan St & Twiggs St	AWSC	0	0	No	4	1	Poor	1	0	0	0	AWSC	8		Yes	4	5	Fair	1	2	0	2

47	47: Juan St & Harney St	AWSC	1	0 No	4	1 Poor	1	0	0	0	AWSC	8	Yes	4	5 Fair	1	2	0	2
48		Signal	1	0 Yes	3	4 Fair	2	0	0	2	Signal	8	Yes	3	6 Fair	2	2	0	2
61	61: Kurtz St & Frontier Street	SSSC	0		4	1 Poor	1	0	0	0	SSSC	8	Yes	4	5 Fair	1	2	0	2
63	63: Kurtz St & Charles Lindbergh Parkway	Signal	0		4	2 Poor	2	0	0	0	Signal	8	Yes	4	6 Fair	2	2	0	2
64	64: Barnett Ave & Dutch Flats Parkway	Signal	0		4	2 Poor	2	0	0	0	Signal	8	Yes	4	6 Fair	2	2	0	2
65	65: Midway Dr & Dutch Flats Parkway	Signal	0		4	2 Poor	2	0	0	0	Signal	8	Yes	4	6 Fair	2	2	0	2
66	66: Dutch Flats Parkway & Sports Arena Bl	Signal	0		4	2 Poor	2	0	0	0	Signal	8	Yes	4	6 Fair	2	2	0	2

Appendix G
Peak Hour Arterial Analysis Worksheets

Arterial Level of Service: EB Camino Del Rio West

Cross Street	Arterial Class	Flow Speed	Running Time	Signal Delay	Travel Time (s)	Dist (mi)	Arterial Speed	Arterial LOS
Kurtz	IV	35	16.2	43.8	60.0	0.10	5.9	F
Hancock St	IV	35	13.3	13.8	27.1	0.08	10.7	D
Total	IV		29.5	57.6	87.1	0.18	7.4	E

Arterial Level of Service: WB Camino Del Rio West

Cross Street	Arterial Class	Flow Speed	Running Time	Signal Delay	Travel Time (s)	Dist (mi)	Arterial Speed	Arterial LOS
Hancock St	III	35	24.3	55.0	79.3	0.20	9.2	F
Kurtz St	III	35	10.9	0.9	11.8	0.08	24.6	B
Sports Arena Blvd	III	35	13.2	36.7	49.9	0.10	7.1	F
Total	III		48.4	92.6	141.0	0.38	9.7	F

Arterial Level of Service: NB Midway Drive

Cross Street	Arterial Class	Flow Speed	Running Time	Signal Delay	Travel Time (s)	Dist (mi)	Arterial Speed	Arterial LOS
Dutch Flats Parkway	III	35	17.1	35.0	52.1	0.13	9.2	F
Charles Lindbergh Pa	III	35	25.2	12.5	37.7	0.21	20.0	C
Rosecrans St	III	35	19.8	34.2	54.0	0.15	10.3	E
East Drive	III	35	22.9	6.2	29.1	0.19	23.6	C
Kemper Street	III	35	39.9	21.4	61.3	0.33	19.5	C
Duke Street	III	35	21.1	9.8	30.9	0.18	20.5	C
Sports Arena Blvd	III	35	15.0	51.4	66.4	0.11	6.0	F
Total	III		161.0	170.5	331.5	1.31	14.2	D

Arterial Level of Service: SB Midway Drive

Cross Street	Arterial Class	Flow Speed	Running Time	Signal Delay	Travel Time (s)	Dist (mi)	Arterial Speed	Arterial LOS
Duke Street	III	35	15.0	23.5	38.5	0.11	10.4	E
Kemper St	III	35	21.1	14.4	35.5	0.18	17.8	D
East Drive	III	35	39.9	7.3	47.2	0.33	25.4	B
Rosecrans St	III	35	22.9	32.7	55.6	0.19	12.3	E
Charles Lindbergh Pa	III	35	19.8	5.3	25.1	0.15	22.2	C
Dutch Flats Parkway	III	35	25.2	30.5	55.7	0.21	13.6	E
Barnett Ave	III	35	17.1	28.4	45.5	0.13	10.6	E
Total	III		161.0	142.1	303.1	1.31	15.5	D

Arterial Level of Service: NB Pacific Highway

Cross Street	Arterial Class	Flow Speed	Running Time	Signal Delay	Travel Time (s)	Dist (mi)	Arterial Speed	Arterial LOS
Grape St	II	30	11.6	19.0	30.6	0.08	9.6	F
Hawthorne St	II	30	10.2	26.7	36.9	0.07	6.4	F
W Laurel St	II	32	34.3	47.4	81.7	0.27	11.9	F
Sassafras St	II	45	43.0	29.2	72.2	0.49	24.3	C
Witherby St	II	47	43.1	38.0	81.1	0.56	24.9	C
Barnett Ave	II	55	14.3	1.4	15.7	0.15	33.7	B
Sports Arena Blvd	II	45	17.4	0.8	18.2	0.16	31.6	B
Kurtz St	II	45	20.5	5.6	26.1	0.19	25.9	C
Taylor St	II	45	33.2	32.0	65.2	0.35	19.1	D
Total	II		227.6	200.1	427.7	2.31	19.4	D

Arterial Level of Service: SB Pacific Highway

Cross Street	Arterial Class	Flow Speed	Running Time	Signal Delay	Travel Time (s)	Dist (mi)	Arterial Speed	Arterial LOS
Rosecrans St	II	45	38.8	27.3	66.1	0.41	22.5	C
Kurtz St	II	45	33.2	19.5	52.7	0.35	23.6	C
Sports Arena Blvd	II	45	20.5	23.5	44.0	0.19	15.4	E
Barnett Ave	II	45	17.4	32.1	49.5	0.16	11.6	F
Witherby St	II	55	14.3	20.0	34.3	0.15	15.4	E
Washington St	II	49	41.4	27.2	68.6	0.56	29.4	B
Sassafras St	II	43	40.6	16.2	56.8	0.45	28.3	B
W Laurel St	II	45	43.0	66.0	109.0	0.49	16.1	E
Hawthorne St	II	32	34.3	55.9	90.2	0.27	10.8	F
Grape St	II	30	10.2	14.3	24.5	0.07	9.7	F
Total	II		293.7	302.0	595.7	3.09	18.6	D

Arterial Level of Service: EB Rosecrans St

Cross Street	Arterial Class	Flow Speed	Running Time	Signal Delay	Travel Time (s)	Dist (mi)	Arterial Speed	Arterial LOS
Hugo St	II	35	16.7	16.0	32.7	0.13	14.7	E
Nimitz Blvd	II	35	23.3	29.1	52.4	0.19	12.8	F
Laning Rd	II	40	29.3	34.1	63.4	0.29	16.3	E
Barnett Ave	II	40	85.6	54.6	140.2	0.95	24.4	C
Midway Drive	II	40	45.5	33.6	79.1	0.49	22.3	C
Sports Arena Blvd	II	40	15.0	0.0	15.0	0.13	31.2	B
Kurtz St	II	35	11.9	17.4	29.3	0.10	11.7	F
Pacific Highway	II	35	29.1	22.3	51.4	0.24	17.1	D
Total	II		256.4	207.1	463.5	2.52	19.6	D

Arterial Level of Service: WB Rosecrans St

Cross Street	Arterial Class	Flow Speed	Running Time	Signal Delay	Travel Time (s)	Dist (mi)	Arterial Speed	Arterial LOS
Kurtz	II	35	29.1	10.7	39.8	0.24	22.1	C
Camino Del Rio West	II	35	11.9	87.7	99.6	0.10	3.4	F
Midway Drive	II	40	15.0	35.1	50.1	0.13	9.3	F
Lytton St	II	40	45.5	124.6	170.1	0.49	10.4	F
Laning Rd	II	40	85.6	8.4	94.0	0.95	36.4	A
Lowell St	II	40	29.3	78.4	107.7	0.29	9.6	F
Hugo St	II	35	23.3	28.0	51.3	0.19	13.1	E
Total	II		239.7	372.9	612.6	2.38	14.0	E

Arterial Level of Service: NB Sports Arena Blvd

Cross Street	Arterial Class	Flow Speed	Running Time	Signal Delay	Travel Time (s)	Dist (mi)	Arterial Speed	Arterial LOS
Dutch Flats Parkway	III	25	23.3	10.1	33.4	0.11	11.4	E
Charles Lindbergh Pa	III	25	31.9	4.7	36.6	0.19	19.0	C
Greenwood Street	III	35	24.4	4.3	28.7	0.20	25.5	B
Frontier Street	III	35	19.6	24.2	43.8	0.15	12.6	E
Kemper Street	III	35	18.1	28.0	46.1	0.14	11.1	E
Hancock Street	III	35	22.7	21.5	44.2	0.19	15.4	D
Sports Arena Blvd	III	35	16.4	22.5	38.9	0.12	11.3	E
I-8 WB Off Ramp	III	35	36.1	15.6	51.7	0.30	21.0	C
Total	III		192.5	130.9	323.4	1.41	15.7	D

Arterial Level of Service: SB Sports Arena Blvd

Cross Street	Arterial Class	Flow Speed	Running Time	Signal Delay	Travel Time (s)	Dist (mi)	Arterial Speed	Arterial LOS
Sports Arena	III	35	36.1	84.6	120.7	0.30	9.0	F
Hancock Street	III	35	16.4	4.4	20.8	0.12	21.1	C
Kemper Street	III	35	22.7	26.4	49.1	0.19	13.9	E
Ralphs Driveway	III	35	18.1	15.6	33.7	0.14	15.1	D
East Drive	III	35	19.6	7.4	27.0	0.15	20.4	C
Rosecrans St	III	35	24.4	78.3	102.7	0.20	7.1	F
Charles Lindbergh Pa	III	25	29.0	4.3	33.3	0.16	17.4	D
Dutch Flats Parkway	III	25	31.9	3.3	35.2	0.19	19.8	C
Pacific Highway	III	25	23.3	60.7	84.0	0.11	4.5	F
Total	III		221.5	285.0	506.5	1.57	11.2	E

Arterial Level of Service: EB Taylor St

Cross Street	Arterial Class	Flow Speed	Running Time	Signal Delay	Travel Time (s)	Dist (mi)	Arterial Speed	Arterial LOS
Congress St	IV	35	15.7	12.1	27.8	0.10	12.3	D
Juan St	IV	35	11.2	12.9	24.1	0.07	10.2	D
	IV	35	18.3	8.5	26.8	0.13	17.5	C
Total	IV		45.2	33.5	78.7	0.29	13.4	C

Arterial Level of Service: WB Taylor St

Cross Street	Arterial Class	Flow Speed	Running Time	Signal Delay	Travel Time (s)	Dist (mi)	Arterial Speed	Arterial LOS
Morena Blvd	IV	35	17.7	23.4	41.1	0.11	9.4	D
	IV	35	18.3	11.8	30.1	0.13	15.6	C
Congress St	IV	35	11.2	7.6	18.8	0.07	13.0	C
Pacific Highway	IV	35	15.7	21.7	37.4	0.10	9.2	D
Total	IV		62.9	64.5	127.4	0.40	11.3	D

Arterial Level of Service: EB Camino Del Rio West

Cross Street	Arterial Class	Flow Speed	Running Time	Signal Delay	Travel Time (s)	Dist (mi)	Arterial Speed	Arterial LOS
Kurtz	IV	35	16.2	44.3	60.5	0.10	5.8	F
Hancock St	IV	35	13.3	18.0	31.3	0.08	9.3	D
Total	IV		29.5	62.3	91.8	0.18	7.0	E

Arterial Level of Service: WB Camino Del Rio West

Cross Street	Arterial Class	Flow Speed	Running Time	Signal Delay	Travel Time (s)	Dist (mi)	Arterial Speed	Arterial LOS
Hancock St	III	35	24.3	44.0	68.3	0.20	10.7	E
Kurtz St	III	35	10.9	17.5	28.4	0.08	10.2	E
Sport Arena Blvd	III	35	13.2	66.4	79.6	0.10	4.4	F
Total	III		48.4	127.9	176.3	0.38	7.8	F

Arterial Level of Service: NB Midway Drive

Cross Street	Arterial Class	Flow Speed	Running Time	Signal Delay	Travel Time (s)	Dist (mi)	Arterial Speed	Arterial LOS
Dutch Flats Parkway	III	35	15.9	40.0	55.9	0.12	7.6	F
Charles Lindbergh Pa	III	35	27.3	26.9	54.2	0.23	15.1	D
Rosecrans St	III	35	19.6	71.5	91.1	0.15	6.0	F
East Drive	III	35	22.9	9.9	32.8	0.19	20.9	C
Kemper Street	III	35	39.9	36.1	76.0	0.33	15.7	D
	III	35	21.6	15.9	37.5	0.17	16.2	D
Sport Arena Blvd	III	35	16.0	66.1	82.1	0.12	5.2	F
Total	III		163.2	266.4	429.6	1.31	11.0	E

Arterial Level of Service: SB Midway Drive

Cross Street	Arterial Class	Flow Speed	Running Time	Signal Delay	Travel Time (s)	Dist (mi)	Arterial Speed	Arterial LOS
	III	35	16.0	30.1	46.1	0.12	9.2	F
Kemper St	III	35	21.6	23.3	44.9	0.17	13.5	E
East Drive	III	35	39.9	9.1	49.0	0.33	24.4	B
Rosecrans St	III	35	22.9	58.8	81.7	0.19	8.4	F
Charles Lindbergh Pa	III	35	19.6	9.1	28.7	0.15	19.2	C
Dutch Flats Parkway	III	35	27.3	31.3	58.6	0.23	14.0	E
Barnett Ave	III	35	15.9	29.1	45.0	0.12	9.4	F
Total	III		163.2	190.8	354.0	1.31	13.3	E

Arterial Level of Service: NB Pacific Highway

Cross Street	Arterial Class	Flow Speed	Running Time	Signal Delay	Travel Time (s)	Dist (mi)	Arterial Speed	Arterial LOS
Grape St	II	30	11.6	45.4	57.0	0.08	5.2	F
Hawthorne St	II	30	10.2	20.9	31.1	0.07	7.7	F
W Laurel St	II	30	34.3	69.3	103.6	0.27	9.4	F
Sassafras St	II	45	42.6	72.0	114.6	0.48	15.2	E
Witherby St.	II	55	37.0	78.2	115.2	0.56	17.7	D
Barnett Ave	II	55	13.7	4.0	17.7	0.14	28.8	B
Sport Arena Blvd	II	45	17.4	3.1	20.5	0.16	28.0	B
Kurtz St	II	45	20.5	20.3	40.8	0.19	16.6	E
Taylor St	II	45	33.2	47.6	80.8	0.35	15.4	E
Total	II		220.5	360.8	581.3	2.30	14.3	E

Arterial Level of Service: SB Pacific Highway

Cross Street	Arterial Class	Flow Speed	Running Time	Signal Delay	Travel Time (s)	Dist (mi)	Arterial Speed	Arterial LOS
Rosecrans St	II	45	38.8	35.1	73.9	0.41	20.1	D
Kurtz St	II	45	33.2	44.6	77.8	0.35	16.0	E
Sport Arena Blvd	II	45	20.5	9.2	29.7	0.19	22.8	C
Barnett Ave	II	45	17.4	90.2	107.6	0.16	5.3	F
Witherby St.	II	55	13.7	20.3	34.0	0.14	15.0	E
Washington St	II	55	37.0	37.8	74.8	0.56	27.2	C
Sassafras St	II	45	39.7	14.7	54.4	0.44	28.9	B
W Laurel St	II	45	42.6	77.0	119.6	0.48	14.6	E
Hawthorne St	II	30	34.3	53.2	87.5	0.27	11.1	F
Grape St	II	30	10.2	12.5	22.7	0.07	10.5	F
Total	II		287.4	394.6	682.0	3.07	16.2	E

Arterial Level of Service: EB Rosecrans St

Cross Street	Arterial Class	Flow Speed	Running Time	Signal Delay	Travel Time (s)	Dist (mi)	Arterial Speed	Arterial LOS
Hugo St	II	35	16.7	9.3	26.0	0.13	18.5	D
Nimitz Blvd	II	35	23.3	135.7	159.0	0.19	4.2	F
Laning Rd	II	40	29.3	23.6	52.9	0.29	19.5	D
Barnett Ave	II	40	85.6	47.0	132.6	0.95	25.8	C
Midway Drive	II	40	45.5	63.0	108.5	0.49	16.3	E
Sport Arena Blvd	II	40	15.0	0.0	15.0	0.13	31.2	B
Kurtz St	II	35	12.0	29.4	41.4	0.10	8.3	F
Pacific Highway	II	35	29.1	45.0	74.1	0.24	11.9	F
Total	II		256.5	353.0	609.5	2.52	14.9	E

Arterial Level of Service: WB Rosecrans St

Cross Street	Arterial Class	Flow Speed	Running Time	Signal Delay	Travel Time (s)	Dist (mi)	Arterial Speed	Arterial LOS
Kurtz	II	35	29.1	13.8	42.9	0.24	20.5	D
Camino Del Rio West	II	35	12.0	113.8	125.8	0.10	2.7	F
Midway Drive	II	40	15.0	37.9	52.9	0.13	8.9	F
Lytton St	II	40	45.5	46.8	92.3	0.49	19.1	D
Laning Rd	II	40	85.6	11.8	97.4	0.95	35.2	A
Lowell St	II	40	29.3	106.9	136.2	0.29	7.6	F
Hugo St	II	35	23.3	40.8	64.1	0.19	10.5	F
Total	II		239.8	371.8	611.6	2.39	14.0	E

Arterial Level of Service: NB Sport Arena Blvd

Cross Street	Arterial Class	Flow Speed	Running Time	Signal Delay	Travel Time (s)	Dist (mi)	Arterial Speed	Arterial LOS
Dutch Flats Parkway	III	25	22.2	16.4	38.6	0.10	9.4	F
Charles Lindbergh Pa	III	25	32.2	8.9	41.1	0.19	17.1	D
Greenwood Street	III	35	24.4	6.5	30.9	0.20	23.7	C
Frontier Drive	III	35	19.5	20.3	39.8	0.15	13.8	E
Kemper Street	III	35	18.1	16.3	34.4	0.14	14.8	D
Hancock St.	III	35	22.7	11.9	34.6	0.19	19.7	C
Sport Arena Blvd	III	35	16.6	68.9	85.5	0.12	5.2	F
I-8 WB Off Ramp	III	35	36.1	85.2	121.3	0.30	8.9	F
Total	III		191.8	234.4	426.2	1.41	11.9	E

Arterial Level of Service: SB Sport Arena Blvd

Cross Street	Arterial Class	Flow Speed	Running Time	Signal Delay	Travel Time (s)	Dist (mi)	Arterial Speed	Arterial LOS
W Point Loma Blvd	III	35	36.1	93.6	129.7	0.30	8.4	F
Hancock St.	III	35	16.6	2.4	19.0	0.12	23.4	C
Kemper Street	III	35	22.7	49.1	71.8	0.19	9.5	F
Frontier Drive	III	35	18.1	10.4	28.5	0.14	17.9	D
East Drive	III	35	19.5	25.3	44.8	0.15	12.2	E
Rosecrans St	III	35	24.4	58.8	83.2	0.20	8.8	F
Charles Lindbergh Pa	III	25	29.7	7.7	37.4	0.16	15.9	D
Dutch Flats Parkway	III	25	32.2	7.0	39.2	0.19	17.9	D
Pacific Highway	III	25	22.2	52.2	74.4	0.10	4.9	F
Total	III		221.5	306.5	528.0	1.57	10.7	E

Arterial Level of Service: EB Taylor St

Cross Street	Arterial Class	Flow Speed	Running Time	Signal Delay	Travel Time (s)	Dist (mi)	Arterial Speed	Arterial LOS
Congress St	IV	35	15.7	19.7	35.4	0.10	9.7	D
Juan St	IV	35	11.2	21.8	33.0	0.07	7.4	E
	IV	35	18.3	11.2	29.5	0.13	15.9	C
Total	IV		45.2	52.7	97.9	0.29	10.8	D

Arterial Level of Service: WB Taylor St

Cross Street	Arterial Class	Flow Speed	Running Time	Signal Delay	Travel Time (s)	Dist (mi)	Arterial Speed	Arterial LOS
Morena Blvd	IV	35	17.7	22.8	40.5	0.11	9.5	D
	IV	35	18.3	13.5	31.8	0.13	14.8	C
Congress St	IV	35	11.2	6.4	17.6	0.07	13.9	C
Pacific Highway	IV	35	15.7	27.0	42.7	0.10	8.0	E
Total	IV		62.9	69.7	132.6	0.40	10.9	D

Mobility Report

Midway-Pacific Highway and Old Town Communities

May 2017

Prepared for:
City of San Diego

Prepared by:

CHEN RYAN
3900 Fifth Avenue, Suite 210
San Diego, CA 92103

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1.0 Introduction

1.1 Study Background and Purpose

This Mobility Report summarizes the physical and operational conditions of the Midway-Pacific Highway and Old Town communities' mobility systems as part of the City of San Diego's community plan update process. The evaluation culminates with an analysis of all travel modes under the horizon year 2035 Preferred Plan conditions. The report also describes key terms and methodologies utilized for conducting the analyses presented.

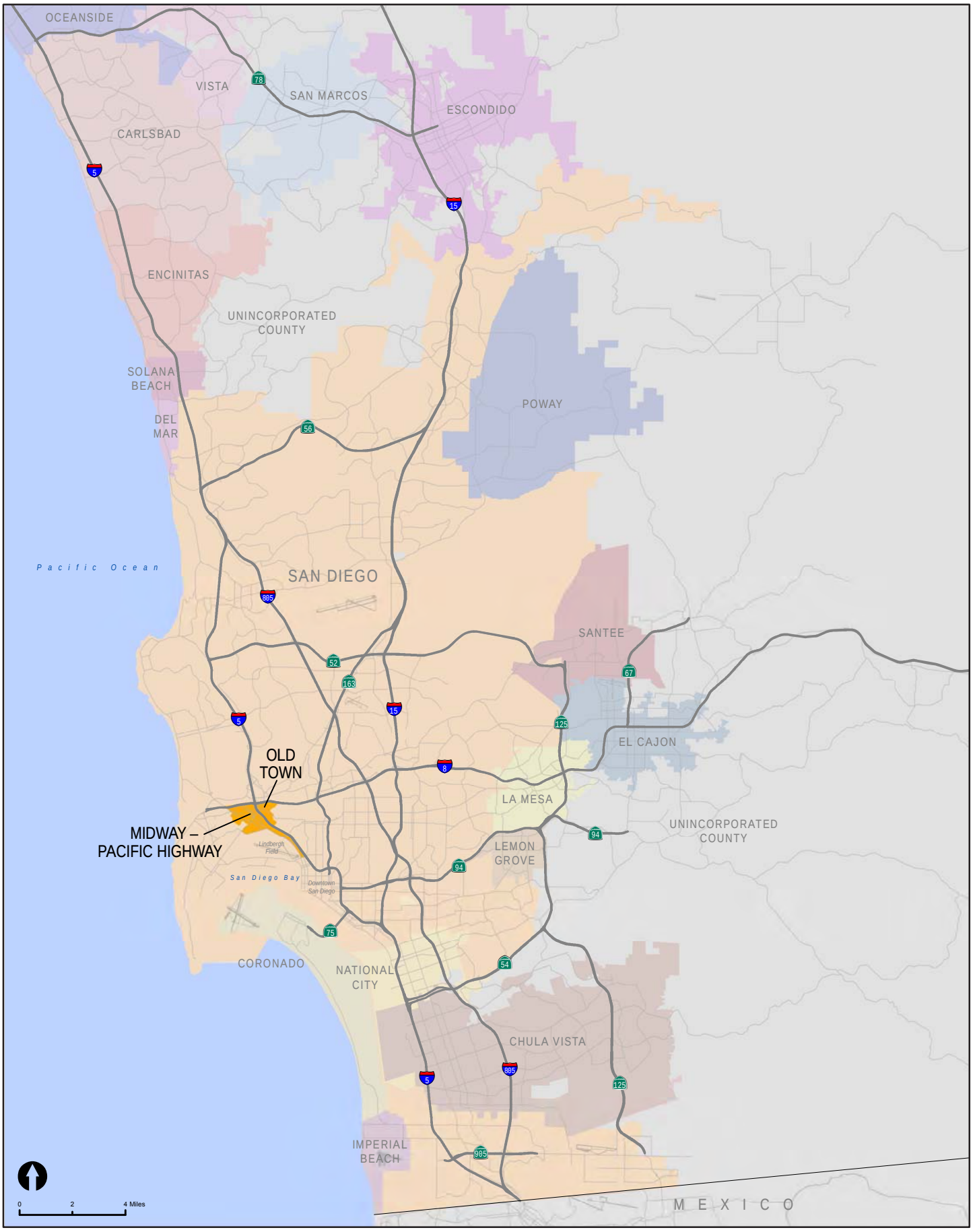
This Mobility Report is an update to the Midway-Pacific Highway Corridor Community Plan and Local Coastal Program Land Use Plan which was adopted by City Council in 1991, and the Old Town San Diego Community Plan, adopted in 1987.

The Preferred Plan is a strategy to address existing and forecast deficiencies related to mobility systems within the Midway-Pacific Highway and Old Town communities. The mobility networks are comprised of roadway and freeway systems, pedestrian and bicycle infrastructure, and public transit. Each of these transportation modes is discussed in the following chapters.

1.2 Study Location

The Midway-Pacific Highway and Old Town communities are located north of Downtown San Diego. The communities are both bound by Interstate 8 along the northern edge. Interstate 5 divides the communities, forming a north-south running boundary for each community. The Midway-Pacific Highway Community is bound by the Peninsula community and Barnett Avenue to west; and the Marine Corps Recruit Depot San Diego, the San Diego International Airport, and Laurel Street to the south. The Old Town Community is bound by Uptown and Mission Hills to the south and east.

Figure 1-1 displays the Midway-Pacific Highway and Old Town communities within the region.



Midway-Pacific Highway and Old Town Community Plan Update

CHEN RYAN

Figure 1-1
Midway-Pacific Highway and Old Town within the Region

Midway-Pacific Highway Community

The Midway-Pacific Highway community is situated north of Downtown San Diego and between the Old Town and Peninsula communities. The community encompasses approximately 800 acres of mostly flatland and is comprised of two basic elements: the central Midway area and the narrow, linear-shaped Pacific Highway Corridor.

Central Midway has an urbanized commercial core containing numerous shopping centers and institutional facilities which cater to the commercial needs of nearby residential and visitor populations. The area is characterized by wide streets, flat topography, and a varied mixture of flat-roofed large and small commercial buildings. The Pacific Highway Corridor, between Interstate 5 and Lindbergh Field, contains some of the City's oldest industrial areas. The corridor is defined by large scale buildings and unscreened commercial parking lots in the southern portion, and a group of smaller scale, low lying industrial buildings located between Witherby Street and Washington Street in the northern portion.

There are a few multifamily residential complexes located in the western portion of the community, adjacent to the Point Loma area. The planning area is generally characterized by a variety of commercial retail activities, and wide, multi-directional traffic intersections.

Since the 1960s, the Midway area has experienced an irregular development pattern, resulting in a lack of clear visual form both in terms of orientation and community legibility. The resulting diversity in development patterns, architectural styles, setbacks, and other development criteria has contributed to a disjointed and sporadic community image, where few buildings have compatibility or any functional relationship to each other and the surrounding neighborhood. Due to the area's low land valuations, high traffic utilization and inadequate zoning and development regulation, many auto-oriented commercial uses have located throughout the industrially zoned portions of the community. Much of the commercial development, including retail oriented auto sales and services, adult entertainment, and drive-thru restaurants, now exhibit a general lack of adequate parking, landscaping, and other commercial development amenities.

Old Town

The Old Town community covers 230 acres and is bound on the north by Interstate 8 and Mission Valley, on the west by Interstate 5 and Midway, and on the south and east by the Uptown/ Mission Hills hillsides.

Old Town San Diego, considered the "birthplace" of California, is the site of the first permanent Spanish Mission and settlement in California. The first Spanish Mission and Presidio were built on a hillside overlooking what is currently known as Old Town San Diego. At the base of the hill in the 1820's, a small Mexican community of adobe buildings was formed and by 1835 had attained the status of El Pueblo de San Diego.

In 1968, the State of California Department of Parks and Recreation established Old Town State Historic Park to preserve the rich heritage that characterized San Diego during the 1821 to 1872 period. The park includes a main plaza, exhibits, museums and living history demonstrations. Due to the historical nature and attractions within the community, Old Town San Diego is currently one of the region's largest tourist attractions. Within the community's central core (San Diego Avenue & Congress Street, between Twiggs Street and Ampudia Street) there are currently more than 150 shops, several restaurants, 17 museums, and historical sites.

There is a small number of residential neighborhoods located along the eastern, western and southern boundaries of the community.

1.3 Organization of the Report

The remainder of this Mobility Report is organized into the following chapters:

- *Chapter 2* describes the methodologies used to determine the study area and assess the pedestrian, transit, bicycle and vehicular systems.
- *Chapter 3* presents the Preferred Plan for the Midway-Pacific Highway community, including the development process, identification of existing community needs, and recommended improvements.
- *Chapter 4* presents the Preferred Plan for the Old Town community, including the development process, identification of existing community needs, and recommended improvements.
- *Chapter 5* provides an overview of the Transportation Demand Model Forecasting process utilized to project future travel patters under implementation of the Preferred Plan.
- *Chapter 6* concludes this document with the Preferred Plan analysis results for each mode. Additionally, Intelligent Transportation Systems (ITS), Transportation Demand Management (TDM) Systems, and Parking Management are described in this chapter.

2.0 Analysis Methodology

This chapter describes the methodologies used to determine the study area and assess the pedestrian, transit, bicycle and vehicular systems within the Midway-Pacific Highway and Old Town communities.

2.1 Selection of the Study Area

This section describes the process used to identify roadway segments and intersections for analysis.

2.1.1 Roadway Segments

Roadway segments were evaluated if one or more of the following circumstances applied:

- The roadway segment is an existing or planned circulation element roadway as identified in the Midway-Pacific Highway Corridor Community Plan and Local Coastal Program Land Use Plan (1991), or the Old Town San Diego Community Plan (1987).
- The roadway segment provides freeway access to/from the Midway-Pacific Highway or Old Town communities.
- The roadway segment is located outside of either study community, however, it may influence or impact the flow of transportation within either of the communities.

Based on the criteria listed above, Table 2.1 displays the roadway segments selected for analysis.

Table 2.1 Study Area Roadway Segments

ID	Roadway	From	To
North-South			
Midway Pacific Highway			
1	Lytton Street / Barnett Ave	Rosecrans St	Midway Dr
2	Midway Dr	W. Point Loma Blvd/Sports Arena Blvd	Kemper St
3		Kemper St	East Dr
4		East Dr	Rosecrans St
5		Rosecrans St	Barnett Ave
6	Sports Arena Blvd	I-8 WB Ramps	I-8 EB Ramps
7		I-8 EB Ramps	W. Point Loma Blvd
8		W. Point Loma Blvd/Midway Dr	Kemper St
9		Kemper St	East Dr
10		East Dr	Rosecrans St
11		Rosecrans St	Pacific Hwy
12	Kurtz St	Hancock St	Rosecrans St

Table 2.1 Study Area Roadway Segments

ID	Roadway	From	To
13	Kurtz St	Rosecrans St	Pacific Hwy
14	Hancock St	Sports Arena Blvd	Kurtz St
15		Kurtz St	Camino Del Rio West
16		Camino Del Rio West	Rosecrans St
17		Old Town Ave	Witherby St
18		Witherby St	Washington St
19	Kettner Blvd	Washington St	Vine St
20		Vine St	Sassafras St
21		Sassafras St	Laurel St
22	Pacific Hwy	Interstate-8	Taylor St
23		Taylor St	Kurtz St
24		Kurtz St	Sports Arena Blvd
25		Sports Arena Blvd	Barnett Ave
26		Barnett Ave	Washington St
27		Washington St	Sassafras St
28		Sassafras St	Laurel St
Old Town			
29	Congress St	Taylor St	Twiggs St
30		Twiggs St	Harney St
31		Harney St	San Diego Ave/ Ampudia St
32	San Diego Ave	Twiggs St	Conde St
33		Conde St	Ampudia St
34		Ampudia St	Old Town Ave
35		Old Town Ave	Hortensia St
36	Juan St	Taylor St	Twiggs St
37		Twiggs St	Harney St
38		Harney St	San Juan Rd
East-West			
Midway Pacific Highway			
39	Channel Wy	W. Mission Bay Dr	Hancock St
40	Kemper St	Kenyon St	Midway Dr
41		Midway Dr	Sports Arena Blvd
42		Sports Arena Blvd	Hancock St
43	Frontier Dr	Sports Arena Blvd	Kurtz St
44	Greenwood St	Sports Arena Blvd	Kurtz St
45	Camino Del Rio West	Rosecrans St	I-5/I-8 Ramps
46	Rosecrans St	Lytton St	Midway Dr
47		Midway Dr	Sports Arena Blvd
48	Rosecrans St	Sports Arena Blvd	Pacific Hwy/Taylor St

Table 2.1 Study Area Roadway Segments

ID	Roadway	From	To
49	Charles Lindbergh Pkwy	Midway Dr	Sports Arena Blvd
50		Sports Arena Blvd	Kurtz Street
51	Dutch Flats Pkwy	Barnett Avenue	Midway Dr
52		Midway Dr	Sports Arena Blvd
53	Barnett Ave	Midway Dr	Pacific Hwy
54	Washington St	Frontage Rd	Pacific St
55		Pacific St	Hancock St
56	Vine St	California St	Kettner Blvd
57	Sassafras St	Pacific Hwy	Kettner Blvd
58	Laurel St	Pacific Hwy	Kettner Blvd
Old Town			
59	Taylor St	Pacific Hwy/ Rosecrans St	Congress St
60		Congress St	Juan St
61		Juan St	Morena Blvd
62		Morena Blvd	I-8 EB Ramps
63	Twiggs St	Congress St	San Diego Ave
64		San Diego Ave	Juan St
65	Harney St	Congress St	San Diego Ave
66		San Diego Ave	Juan St
67	Old Town Ave	Hancock St	Moore St
68		Moore St	San Diego Ave

Source: Chen Ryan Associates (2016)

2.1.2 Intersections

Intersections were evaluated if one or more of the following circumstances applied:

- The intersection is comprised of a circulation element roadway intersecting with another circulation element roadway. This includes existing and future/planned circulation element roadways as identified in the Midway-Pacific Highway Corridor Community Plan and Local Coastal Program Land Use Plan (1991), or the Old Town San Diego Community Plan (1987).
- The intersection is at a freeway ramp interchange located within the Midway-Pacific Highway or Old Town communities or is a major gateway to either community.
- The intersection is a major intersection located outside of either community, however, it may influence or impact the flow of transportation within the communities.
- The intersection meets criteria used in previous studies, whereby both streets meet one of the following:
    - 4 lanes or greater

- 3 lanes and carries over 15,000 ADT
- 2 lanes and carries over 10,000 ADT

- Intersections at freeway access ramps.
- Significant intersections where travel time analysis is performed.

A total of 59 intersections were identified based on the criteria listed above, which include 11 intersections located outside the study communities. These intersections were added to the study area because of their proximity to the communities, and the likelihood that changes within the communities could directly affect traffic in/out of the communities. The 59 intersections include the following:

Midway-Pacific Highway

1. Lytton Street and Rosecrans Street
2. W. Mission Bay Drive and I-8 WB Off-Ramp
3. Sports Arena Boulevard and Channel Way
4. Midway Drive and Sports Arena/W. Point Loma Boulevard
5. Midway Drive and Kemper Street
6. Midway Drive and East Drive
7. Midway Drive and Rosecrans Street
8. Midway Drive and Charles Lindbergh Parkway
9. Midway Drive and Enterprise Street
10. Midway Drive and Barnett Avenue
11. Sports Arena Boulevard and Hancock Street
12. Sports Arena Boulevard and Kemper Street
13. Sports Arena Boulevard and Sports Arena Driveway
14. Sports Arena Boulevard and East Drive
15. Sports Arena Boulevard and Rosecrans Street
16. Sports Arena Boulevard and Charles Lindbergh Parkway
17. Sports Arena Boulevard and Pacific Highway
18. Kurtz Street and Hancock Street
19. Kurtz Street and Camino Del Rio West
20. Kurtz Street and Rosecrans Street
21. Kurtz Street and Pacific Highway
22. Hancock Street and Channel Way
23. Hancock Street and Camino Del Rio West
24. Hancock Street and Rosecrans Street
25. Hancock Street and Old Town Avenue
26. Hancock Street and Witherby Street
27. Hancock Street and Washington Street
28. Kettner Boulevard and Vine Street
29. Kettner Boulevard and Sassafras Street

30. Kettner Boulevard and West Laurel Street
31. Pacific Highway and Barnett Avenue
32. Pacific Highway and Washington Street @ Frontage Road
33. Pacific Highway and Washington Street
34. Pacific Highway and Sassafras Street
35. Pacific Highway and West Laurel Street

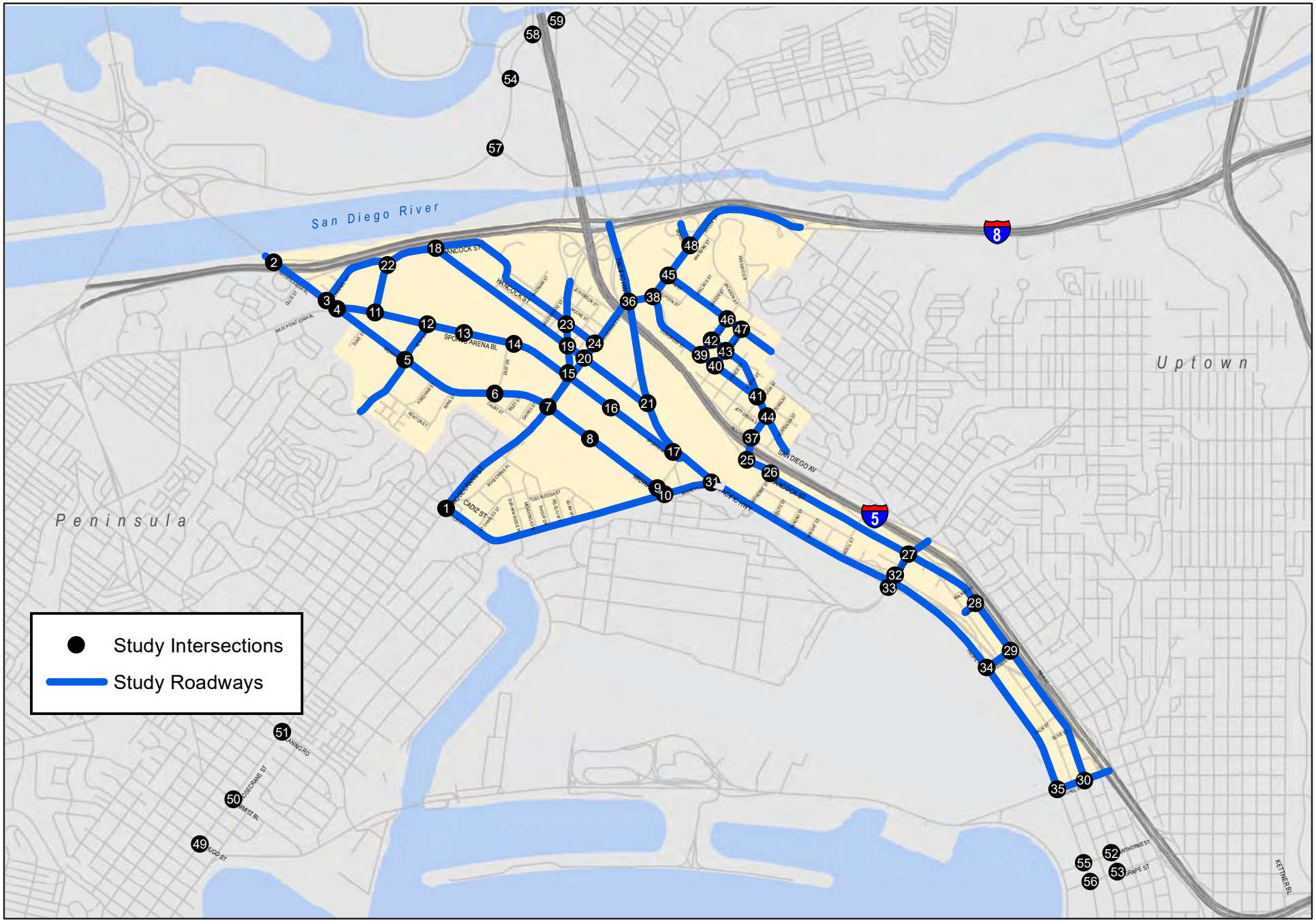
Old Town

36. Pacific Highway and Taylor Street
37. Moore Street and Old Town Avenue
38. Congress Street and Taylor Street
39. Congress Street and Twiggs Street
40. Congress Street and Harney Street
41. Congress Street and San Diego Avenue/Ampudia Street
42. San Diego Avenue and Twiggs Street
43. San Diego Avenue and Harney Street
44. San Diego Avenue and Old Town Avenue
45. Juan Street and Taylor Street
46. Juan Street and Twiggs Street
47. Juan Street and Harney Street
48. Morena Boulevard and Taylor Street

Intersections Outside of Study Communities

49. Hugo Street/N Harbor Drive and Rosecrans Street
50. Lowell Street/Nimitz Boulevard and Rosecrans Street
51. Kettner Boulevard and W Hawthorn Street
52. Kettner Boulevard and W Grape Street
53. Laning Road and Rosecrans Street
54. Pacific Highway and Sea World Drive
55. Pacific Highway and W Hawthorn Street
56. Pacific Highway and W Grape Street
57. Friars Road and Sea World Drive
58. I-5 SB Ramps and Sea World Drive
59. I-5 NB Ramps and Sea World Drive

Figure 2-1 displays the location of the 59 study intersections. As shown, this includes the 11 intersections located outside of the study communities.



Midway-Pacific Highway and
Old Town Community Plan Update

CHEN RYAN

Figure 2-1
Project Study Area

2.2 Vehicular Analysis

Analysis of the vehicular systems – roadways, intersections, and freeways – were prepared for this report in accordance with the City of San Diego and SANTEC/ITE Guidelines. Vehicular level of service (LOS) is a quantitative measure that represents the quality of service – or how well a transportation facility operates – as experienced by vehicular drivers. These conditions are generally described in terms of factors such as speed, travel time, freedom to maneuver, comfort, convenience, and safety. LOS A represents the best operating conditions from a driver's perspective, while LOS F represents the worst. Table 2.2 describes generalized definitions of vehicular LOS A through F as identified by the Highway Capacity Manual (2000).

Table 2.2 Vehicular Level of Service Definitions

LOS	Definition
A	Primarily free-flow operation. Vehicles are completely unimpeded in their ability to maneuver within the traffic stream. Controlled delay at the boundary intersections is minimal. The travel speed exceeds 85% of the base free-flow speed.
B	Reasonably unimpeded operation. The ability to maneuver within the traffic stream is only slightly restricted and control delay at the boundary intersections is not significant. The travel speed is between 67% and 85% of the base free-flow speed.
C	Stable operation. The ability to maneuver and change lanes at mid-segment locations may be more restricted than at LOS B. Longer queues at the boundary intersections may contribute to lower travel speeds. The travel speed is between 50% and 67% of the base free-flow speed.
D	Less stable condition in which small increases in flow may cause substantial increases in delay and decreases in travel speed. This operation may be due to adverse signal progression, high volume, or inappropriate signal timing at the boundary intersections. The travel speed is between 40% and 50% of the base free-flow speed.
E	Unstable operation and significant delay. Such operations may be due to some combination of adverse signal progression, high volume, and inappropriate signal timing at the boundary intersections. The travel speed is between 30% and 40% of the base free-flow speed.
F	Flow at extremely low speed. Congestion is likely occurring at the boundary intersections, as indicated by high delay and extensive queuing. The travel speed is 30% or less of the base free-flow speed. Also, LOS F is assigned to the subject direction of travel if the through movement at one or more boundary intersections have a volume-to-capacity ratio greater than 1.0.

Source: Highway Capacity Manual (2000)

2.2.1 Roadway Segment

Roadway segment level of service standards and thresholds provided the basis for analysis of arterial roadway segment performance. The analysis of roadway segment level of service is based on the functional classification of the roadway, the maximum capacity, roadway geometrics, and existing or forecast Average Daily Traffic (ADT) volumes.

Table 2.3 presents the roadway segment capacity and LOS standards utilized to analyze roadways evaluated in this report. These standards are generally used as long-range planning guidelines to determine the functional classification of roadways. The actual capacity of a roadway varies according to its physical and operational attributes. LOS D is considered acceptable for Mobility Element roadway segments in the City of San Diego. Often, a roadway segment operating at LOS

E or F based on theoretical capacity is found to operate acceptably in practice. In such cases, HCM arterial analysis may be conducted and utilized (or intersection analysis, if arterial analysis is not applicable) to provide a more accurate indication of LOS.

Table 2.3 City of San Diego Roadway Segment Daily Capacity and Level of Service Standards

Roadway Functional Classification	Level of Service				
	A	B	C	D	E
Expressway (6-lane)	< 30,000	< 42,000	< 60,000	< 70,000	< 80,000
Prime Arterial (6-lane)	< 25,000	< 35,000	< 50,000	< 55,000	< 60,000
Major Arterial (6-lane, divided)	< 20,000	< 28,000	< 40,000	< 45,000	< 50,000
Major Arterial (4-lane, divided)	< 15,000	< 21,000	< 30,000	< 35,000	< 40,000
Collector (4-lane w/ center left-turn lane)	< 10,000	< 14,000	< 20,000	< 25,000	< 30,000
Collector (3-lane w/ center left-turn lane)	< 7,500	< 10,500	< 15,000	< 19,000	< 22,500
Collector (4-lane w/o center lane)	< 5,000	< 7,000	< 10,000	< 13,000	< 15,000
Collector (2-lane w/ center left-turn lane)					
Collector (2-lane no fronting property)	< 4,000	< 5,500	< 7,500	< 9,000	< 10,000
Collector (2-lane w/ commercial fronting)	< 2,500	< 3,500	< 5,000	< 6,500	< 8,000
Collector (2-lane multi-family fronting)					
Sub-Collector (2-lane single-family)	-	-	< 2,200	-	-

Source: City of San Diego Traffic Impact Study Manual (1998)

Note: Bold numbers indicate the ADT thresholds for acceptable LOS.

2.2.2 Peak Hour Intersection

This section presents the methodologies used to perform peak hour intersection capacity analysis, for both signalized and unsignalized intersections. The following assumptions were utilized in conducting all intersection level of service analyses:

- Pedestrian Calls per Hour: Based on existing pedestrian counts.
- Heavy Vehicle Factor: A 2% heavy vehicle factor was assumed for all intersections within the study area.
- Peak Hour Factor: Based on existing peak hour counts.
- Signal Timing: Based on existing signal timing plans (as of November 2012).

Signalized Intersection Analysis

The signalized intersection analysis utilized in this study conforms to the operational analysis methodology outlined in 2000 Highway Capacity Manual (HCM), Transportation Research Board Special Report 209. This method defines LOS in terms of delay, or more specifically, average control delay per vehicle (sec/veh). The 2000 HCM methodology sets 1,900 passenger-cars per hour per lane (pcphpl) as the ideal saturation flow rate at signalized intersections based upon the minimum headway that can be sustained between departing vehicles at a signalized intersection. The service saturation flow rate, which reflects the saturation flow rate specific to the study facility, is determined by adjusting the ideal saturation flow rate for lane width, on-street parking, bus stops, pedestrian volume, traffic composition (or percentage of heavy vehicles), and shared

lane movements (e.g. through and right-turn movements sharing the same lane). The level of service criteria used for this technique are described in Table 2.4. The computerized analysis of intersection operations was performed utilizing the Synchro 8.0 (2000 HCM methodology) traffic analysis software (by Trafficware, 2011).

Table 2.4 Signalized intersection LOS – HCM Operational Analysis Method

Average Control Delay Per Vehicle (seconds)	Level of Service (LOS) Characteristics
≤10.0	*LOS A* occurs when the volume-to-capacity ratio is low and either progression is exceptionally favorable or the cycle length is very short. If it is due to favorable progression, most vehicles arrive during the green indication and travel through the intersection without stopping.
10.1 – 20.0	*LOS B* occurs when the volume-to-capacity ratio is low and either progression is highly favorable or the cycle length is short. More vehicles stop than with LOS A.
20.1 – 35.0	*LOS C* occurs when progression is favorable or the cycle length is moderate. The number of vehicles stopping is significant, although many vehicles still pass through the intersection without stopping.
35.1 – 55.0	*LOS D* occurs when the volume-to-capacity ratio is high and either progression is ineffective or the cycle length is long. Many vehicles stop and individual cycle failures are noticeable.
55.1 – 80.0	*LOS E* occurs when the volume-to-capacity ratio is high, progression is unfavorable, and the cycle length is long. Individual cycle failures are frequent.
>80.0	*LOS F* occurs when the volume-to-capacity ratio is very high, progression is very poor, and the cycle length is long. Most cycles fail to clear the queue.

Source: Highway Capacity Manual, Transportation Research Board Special Report 209 (2000)

Unsignalized Intersection Analysis

Unsignalized intersections, including two-way and all-way stop controlled intersections were analyzed using the *2000 HCM* unsignalized intersection analysis methodology. The Synchro 8.0 software supports this methodology and was utilized to produce LOS results. The LOS for a two-way stop controlled (TWSC) intersection is determined by the computed or measured control delay and is defined for each minor movement. The LOS for an all-way stop controlled (AWSC) intersection is determined by the computed or measured average control delay of all movements. Table 2.5 summarizes the level of service criteria for unsignalized intersections.

Table 2.5 Level of Service Criteria for Stop Controlled Unsignalized Intersections

Average Control Delay (sec/veh)	Level of Service
≤10.0	A
10.1 – 15.0	B
15.1 – 25.0	C
25.1 – 35.0	D
35.1 – 50.0	E
>50.0	F

Source: Highway Capacity Manual (2000)

The City of San Diego considers LOS D or better during the AM and PM peak hours to be an acceptable intersection level of service.

2.2.3 Freeway

The freeway level of service analysis followed procedures developed by Caltrans District 11. The procedure involves estimating a peak hour volume to capacity ratio (V/C). Peak hour volumes are estimated from the application of design hour ("K"), directional ("D"), and truck ("T") factors to average daily traffic (ADT) volumes). The base capacities were assumed to be 2,350 passenger-cars per hour per main lane (pc/h/ln) and 1,410 pc/h/ln for auxiliary lane. A 0.95 peak hour factor (PHF) was utilized for this analysis. The resulting V/C ratio was then compared to acceptable ranges of V/C values corresponding to the various levels of service for each facility classification, as shown in Table 2.6. The corresponding level of service represents an approximation of anticipated future freeway operating conditions in the peak direction of travel during the peak hour. LOS D or better was used in this study as the threshold for acceptable freeway operations based upon Caltrans and the SANDAG Regional Growth Management Strategy (RGMS) requirements.

Table 2.6 Caltrans District 11 Freeway Segment Level of Service Definitions

LOS	V/C	Congestion/Delay	Traffic Description
Used for freeways, expressways and conventional highways			
"A"	<0.41	None	Free flow.
"B"	0.42-0.62	None	Free to stable flow, light to moderate volumes.
"C"	0.63-0.79	None to minimal	Stable flow, moderate volumes, freedom to maneuver noticeably restricted.
"D"	0.80-0.92	Minimal to substantial	Approaches unstable flow, heavy volumes, very limited freedom to maneuver.
"E"	0.93-1.00	Significant	Extremely unstable flow, maneuverability and psychological comfort extremely poor.
Used for conventional highways			
"F"	>1.00	Considerable	Forced or breakdown flow. Delay measured in average travel speed (MPH). Signalized segments experience delays >60.0 seconds/vehicle.
Used for freeways and expressways			
"F0"	1.01–1.25	Considerable (0-1 hour delay)	Forced flow, heavy congestion, long queues form behind breakdown points, stop and go.
"F1"	1.26-1.35	Severe (1-2 hour delay)	Very heavy congestion, very long queues.
"F2"	1.36-1.45	Very severe (2-3 hour delay)	Extremely heavy congestion, longer queues, more numerous breakdown points, longer stop periods.
"F3"	>1.46	Extremely severe (3+ hours of delay)	Gridlock.

Source: SANTEC/ITE Guidelines for TIS in the San Diego Region

2.2.4 Ramp Metering Analysis

Ramp metering is a means of controlling the volume of traffic entering the freeway with the goal of improving freeway main lane traffic operations and flow. Freeway ramp meter analyses estimate peak hour queues and delays at freeway ramps by comparing existing volumes to the meter rate at the given location.

Meter rates, which represent the amount of vehicles permitted through the signal, onto the ramp and freeway, were obtained from Caltrans for use in the analysis. Ramp metering analyses to calculate delays at study area freeway ramps were conducted following the procedures outlined in the *City of San Diego Traffic Impact Study Manual (1998)*.

2.3 Multimodal Analysis

Recent planning efforts and legislative actions have redefined the way community transportation planning is carried out. An important unifying theme is to achieve a more balanced, multimodal transportation system that allows people of varying physical and economic conditions to accomplish daily activities without making a single-occupant vehicle trip. A balanced system will address many complex transportation issues such as traffic congestion, greenhouse gas emissions, community health, and economic vitality of a community.

Multimodal analyses are gaining attention among local and regional jurisdictions as one method of supporting progress toward these issues. This section describes the pedestrian, bicycle, and transit analysis methodologies used in this report.

2.3.1 Pedestrian Assessment

Three analyses were utilized to assess overall pedestrian mobility: 1) network connectivity; 2) facility quality; and 3) combined network connectivity and quality.

Pedestrian Connectivity Ratio

A pedestrian travelshed analysis was used to assess the level of connectivity provided from each Traffic Analysis Zone (TAZ) with pedestrian friendly land uses (residential, commercial, office or recreational). A 0.5 mile pedestrian network buffer was drawn around each TAZ within the community containing pedestrian friendly land uses. That area was then compared to the area of a 0.5 mile as-the-crow-flies buffer (502.7 acres) to develop a Pedestrian Connectivity Ratio for the intersection. The higher the Pedestrian Connectivity Ratio, the better the overall walking connectivity from the TAZ.

Pedestrian Environment Quality Evaluation (PEQE)

The quality of all roadway segments, intersections, and mid-block crossings within the Midway-Pacific Highway and Old Town communities were evaluated under Preferred Plan conditions using the Pedestrian Environmental Quality Evaluation (PEQE) tool. Table 2.7 outlines the evaluation system used to develop the PEQE scoring metric.

Table 2.7 Pedestrian Environment Quality Ranking System

Facility Type	Measure	Description/Feature	Scoring
Segment *(between two intersections)*	Horizontal Buffer	Between the edge of auto travel way and the edge of clear pedestrian zone	0 point: < 6 feet 1 point: 6 – 14 feet 2 points: > 14 feet
	Lighting	--	0 point: below standard/requirement 1 point: meet standard/requirement 2 points: exceed standard/requirement
	Clear Pedestrian Zone	5' minimum	0 point: has obstructions 2 points: no obstructions
	Posted Speed Limit	--	0 point: > 40 mph 1 point: 30 – 40 mph 2 points: < 30 mph
		Maximum Points	8 points
Intersection	Physical Feature	• Enhanced/High Visibility Crosswalk • Raised Crosswalk/Speed Table • Advanced Stop Bar • Bulb out/Curb Extension	0 point: < 1 feature per ped crossing 1 point: 1 – 2 features per ped crossing 2 points: > 2 features per ped crossing
	Operational Feature	• Pedestrian Countdown Signal • Pedestrian Lead Interval • No-Turn On Red Sign/Signal • Additional Pedestrian Signage	0 point: < 1 feature per ped crossing 1 point: 1 – 2 features per ped crossing 2 points: > 2 features per ped crossing
Intersection (Continued)	ADA Curb Ramp	--	0 point: below standard/requirement 2 points: meet standard/requirement
	Traffic Control	--	0 point: No control 1 point: Stop sign controlled 2 points: Signal/Roundabout/Traffic Circle
		Maximum Points	8 points
Mid-block Crossing	Visibility	--	0 point: w/o high visibility crosswalk 2 points: with high visibility crosswalk
	Crossing Distance	--	0 point: no treatment 2 points: with bulb out or pedestrian refuge
	ADA Curb Ramp	--	0 point: below standard/requirement 2 points: meet standard/requirement
	Traffic Control	--	0 point: No control 1 point: Flashing Beacon 2 points: Signal/Pedestrian Hybrid Beacon
		Maximum Points	8 points
Final PEQE Scoring:			
Low: < 4 points Medium: 4-6 points High: > 7 points			

Combined Pedestrian Network Connectivity and Quality Assessment

This evaluation involves assessing the connectivity and quality of the walking environment within each community. Pedestrian network connectivity and quality is assessed using a combination of the pedestrian travelshed and quality assessment previously described. The following steps outline the evaluation process used:

a. *Total Walking Distance* – a 0.5 mile pedestrian network buffer is drawn around each study intersection, regardless of PEQE score.

b. *Quality Walking Distance* – a 0.5 mile pedestrian network buffer is drawn around each study intersection, using only pedestrian facilities with a PEQE ranking of Medium or High (including roadway links and intersections, and not including mid-block crossings). PEQE scores on each side of the roadway segment are added together and assigned a quality rating using the following scale (Low: 0-7, Medium: 8-12, High: 13+), to get a single quality measure for the roadway segment. Segments with a "High" rating are considered quality segments.

c. *Quality Walk Ratio* – The ratio of high quality connectivity to overall connectivity along all pedestrian facilities is determined using the following equation:

$$\text{Quality Walk Ratio} = \frac{\textit{Quality Walking Distance}}{\textit{Total Walking Distance (Existing Conditions)}}$$

2.3.2 Bicycle Assessment

Three analyses were utilized to assess overall bicycle mobility: 1) network connectivity; 2) facility quality; and 3) combined network connectivity and quality.

Bicycle Connectivity Ratio – Travelshed Analysis

A bicycle travelshed analysis was used to assess the level of connectivity provided from each study intersection. A 1.0 mile bicycle network buffer (using all bikeable roadways plus multi-use paths) is drawn around each intersection. That area is then compared to the area of a 1.0 mile as-the-crow-flies buffer (2,010.6 acres) to develop a Bicycle Connectivity Ratio for the intersection. The higher the Connectivity Ratio, the better the overall connectivity from the intersection.

Bicycle Facility Quality

The bicycle environment is assessed using the Bicycle Level of Traffic Stress (LTS) methodology, as developed by Mekuria, et al. (2012) of the Mineta Transportation Institute and reported in *Low-Stress Bicycle and Network Connectivity*. LTS classifies the street network into categories according to the level of stress it causes cyclists, taking into consideration a cyclist's physical separation from vehicular traffic, vehicular traffic speeds along the roadway segment, number of travel lanes, and factors related to intersection approaches with right-turn lanes and unsignalized crossings. LTS scores range from 1 (lowest stress) to 4 (highest stress).

Table 2.8 displays the four LTS categories with descriptions of traffic stress experienced by the cyclist and the cycling conditions associated with each category.

Combined Bicycle Network Connectivity and Quality Assessment

This assessment quantifies the connectivity of low stress bicycle facilities (LTS score 1 or 2) between TAZs within the study communities. This measure results in each TAZ being assigned a percentage reflecting the number of total TAZ reachable via low stress bicycle facilities within the study area.

Table 2.8 Level of Traffic Stress Classifications and Descriptions

LTS Category	LTS Description	Cycling Conditions Fitting LTS Category
LTS 1	Presenting little traffic stress and demanding little attention from cyclists; suitable for almost all cyclists, including children trained to safely cross intersections	• Facility that is physically separated from traffic or an exclusive cycling zone next to a slow traffic stream with no more than one lane per direction • A shared roadway where cyclists only interact with the occasional motor vehicle with a low speed differential • Ample space for cyclist when alongside a parking lane • Intersections are easy to approach and cross
LTS 2	Presenting little traffic stress but demanding more attention than might be expected from children	• Facility that is physically separated from traffic or an exclusive cycling zone next to a well-connected traffic stream with adequate clearance from parking lanes • A shared roadway where cyclists only interact with the occasional motor vehicle (as opposed to a stream of traffic) with a low speed differential • Unambiguous priority to the cyclist where cars must cross bike lanes (e.g. at dedicated right-turn lanes); design speed for right-turn lanes comparable to bicycling speeds • Crossings not difficult for most adults
LTS 3	Presenting enough traffic stress to deter riders not comfortable with sharing the roadway with traffic	• An exclusive cycling zone (lane) next to moderate-speed vehicular traffic • A shared roadway that is not multilane and has moderately low automobile travel speeds • Crossings may be longer or across higher-speed roadways than allowed by LTS 2, but area still considered acceptably safe to most adult pedestrians
LTS 4	Presenting enough traffic stress to deter all but the Strong & Fearless cycling demographic (estimated at <1% of the population)	• An exclusive cycling zone (lane) next to high-speed and multi-lane vehicular traffic • A shared roadway with multiple lanes per direction with high traffic speeds • Cyclist must maneuver through dedicated right-turn lanes containing no dedicated bicycling space and designed for turning speeds faster than bicycling speeds

Source: Mekuria, et al. (2012)

2.3.3 Transit Assessment

Two performance measures were used to analyze transit conditions, including station quality and arterial speed.

Station Quality – Presence of Amenities

Each transit station/stop was reviewed for the presence of the following amenities:

- Shelters
- Benches
- Trash Receptacles
- Station Signs
- Maps/Wayfinding
- Lighting
- ADA Compliancy

Table 2.9 displays the standard amenities that should be provided at transit stops/stations based on daily passenger boardings (across all routes).

Table 2.9 Transit Amenity Standards by Ridership Levels

Amenity	Daily Passenger Boardings by Stop/Station				
	< 50	50 – 100	101 – 200	201 – 500	> 500
Sign and Pole	X	X	X	X	
Built-in Sign					X
Expanded Sidewalk			X	X	X
Bench		X	X	X	X
Shelter			X	X	X
Route Designations	X	X	X	X	X
Time Table				X	X
Route Map			X	X	X
System Map					X
Trash Receptacle				X	X
Lighting			X	X	X
ADA Compliant	X	X	X	X	X

Source: MTS Design for Transit (1993)

Arterial Speed

On-time bus performance can be directly impacted by vehicular traffic congestion along roadways servicing bus routes. An HCM roadway arterial speed analysis was used to identify locations in which on-time performance is currently or may be impacted under future conditions by vehicular traffic congestion.

Arterial Level of Service (LOS) is based on the average peak hour travel speeds along a roadway segment. The average travel speed is computed from the running time on the arterial segment(s) and the intersection approach delay. Average speed is strongly influenced by the number of signals per mile and the average intersection delay. On a given facility, factors such as

inappropriate signal timing, poor progression, and increasing traffic flow can substantially degrade the arterial LOS.

Table 2.10 displays the LOS thresholds used for the arterial analysis. Arterial speed analyses should be performed utilizing the methodologies in the version of the Highway Capacity Manual (HCM) that is currently accepted by the City of San Diego

Table 2.10 Arterial Analysis Level of Service Thresholds

Arterial Class	I	II	III
Range of Free Flow Speed (mph)	45 to 35	35 to 30	30 to 25
Typical Free Flow Speed (mph)	40 mph	33 mph	27 mph
Level of Service Analysis	**Average Travel Speed**		
A	35	30	25
B	28	24	19
C	22	18	13
D	17	14	9
E	13	10	7
F	< 13	< 10	< 7

Source: Highway Capacity Manual (TRB 1997)

3.0 Midway-Pacific Highway Preferred Plan

This section documents the mobility related issues and needs of the Midway-Pacific Highway community and the process used to identify those issues. This section also outlines the mobility improvements recommended under buildout of Preferred Plan conditions and the process used to develop these improvements.

3.1 Development of the Preferred Plan

3.1.1 Identification of Issues and Needs

Existing mobility related issues and needs within the Midway-Pacific Highway community were identified in the *Community of Midway/Pacific Highway Corridor and Old Town Mobility Existing Conditions Report; September 2012 (Existing Conditions Report)*. The issues and needs identified in the Existing Conditions Report were used, in conjunction with the other planning efforts and the overall community vision, to develop the recommended mobility improvements incorporated into the Preferred Plan.

3.1.2 Development of Preferred Plan Improvements

Preferred Plan improvements were developed by first cross checking the mobility issues and needs, identified in the Existing Conditions Report, against the mobility issues and needs identified in several other on-going or recent planning efforts, including:

- Midway/Pacific Highway Urban Greening Plan (December 2016)
- I-8 Corridor Study (August 2016)
- San Diego Forward, The Regional Plan (October 2015)
- City of San Diego Bicycle Master Plan (December 2013)
- City of San Diego Pedestrian Master Plan – Phase 4 (December 2013)
- Rosecrans Corridor Mobility Study (February 2010)
- Destination Lindbergh Technical Report: San Diego International Airport (November 2008)
- San Diego International Airport Master Plan (November 2008)

Where possible, the Preferred Plan carried forward or maintained the relevant improvements from on-going or previous planning efforts which have been adopted or vetted by the community. New improvement strategies were then developed for the issues and needs, identified in the Existing Conditions Report, which were not addressed in other planning efforts. Additional mobility improvements were also developed to accommodate the anticipated future growth within the community. The following sections outline the mobility issues and needs identified in the Existing Conditions Report and the associated improvements recommended under the Preferred Plan to alleviate them.

3.2 Street and Freeway System

3.2.1 Identified Street and Freeway Needs

There is constrained regional access to/from the Midway-Pacific Highway Community and to adjacent communities. A significant amount of regional traffic traverses the local roadway system within the community since there are limited regional access points, missing freeway-to-freeway connectors between I-8 and I-5, as well as major employment centers and trip generators within and adjacent to the community. Figure 3-1 displays regional access issues in the Midway-Pacific Highway community.

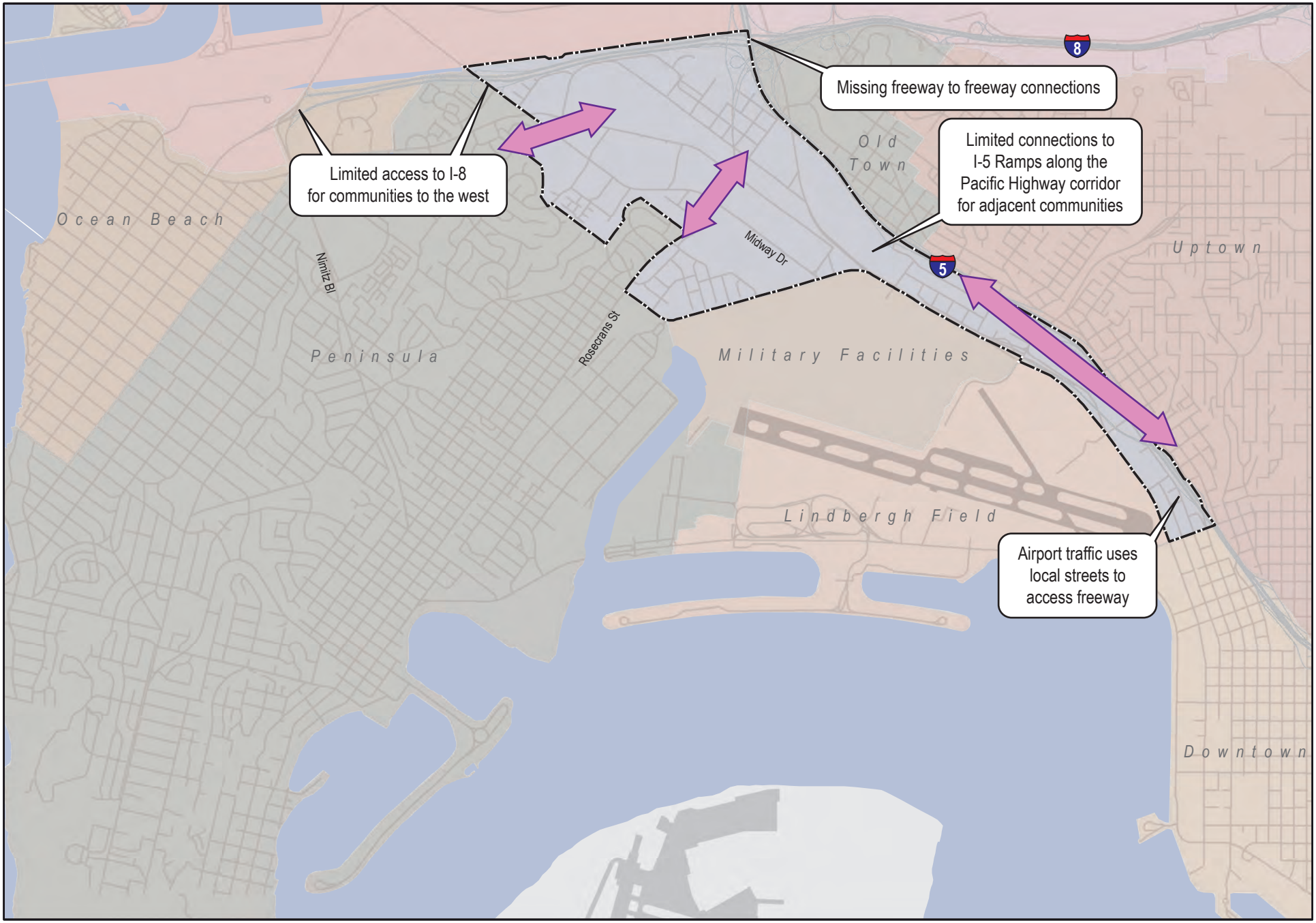
Constrained regional access, large trip generators, and limited circulation created by large blocks within and adjacent to the community, result in highly concentrated traffic volumes along study roadways providing freeway access. This concentration of traffic volumes creates congestion, low traffic speeds and delays on both the Rosecrans Street and Camino Del Rio West. Figure 3-2 displays the location of identified issues/needs within the Midway-Pacific Highway community.

3.2.2 Street and Freeway Improvements

A list of Preferred Plan proposed roadway improvements, new roadways, intersection improvements, new intersections, and freeway improvements are presented throughout this section. These improvements are predominantly based on the future year traffic volumes that are projected under buildout of the Preferred Plan, as displayed in Figure 5-1. Full analysis of all Preferred Plan roadways is provided in Chapter 6.

Roadways

- *Lytton Street/Barnett Avenue, between Rosecrans Street and Midway Drive* – Construct a raised median along these portions of Lytton Street / Barnett Avenue. This will improve Lytton Street to a four-lane major configuration.
- *Sports Arena Boulevard, between Interstate 8 and Rosecrans Street* – Improve this section of Sports Arena Boulevard to a six-lane major arterial. *(Note: Conceptual drawings of the improvements along Sports Arena Boulevard are provided in Figures 3-8 and 3-10).*
- *Sports Arena Boulevard, between Rosecrans Street and Pacific Highway* – Improve this section of Sports Arena Boulevard from a sub-collector to a two-lane collector with a continuous left-turn lane.
- *Kurtz Street, between Rosecrans Street and Pacific Highway* – Restripe this section of Kurtz Street from a two-lane collector to a two-lane collector with center left turn lane.
- *Rosecrans Street, between Lytton Street and Sports Arena Boulevard* – Improve this section of Rosecrans Street from a six-lane major to a six-lane prime arterial, which would require limiting driveway access. *(Note: A conceptual drawing of the improvements along Rosecrans Street are provided as Figure 3-6).*



Midway-Pacific Highway and
Old Town Community Plan Update

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Figure 3-1
Regional Access -
Midway-Pacific Highway Community

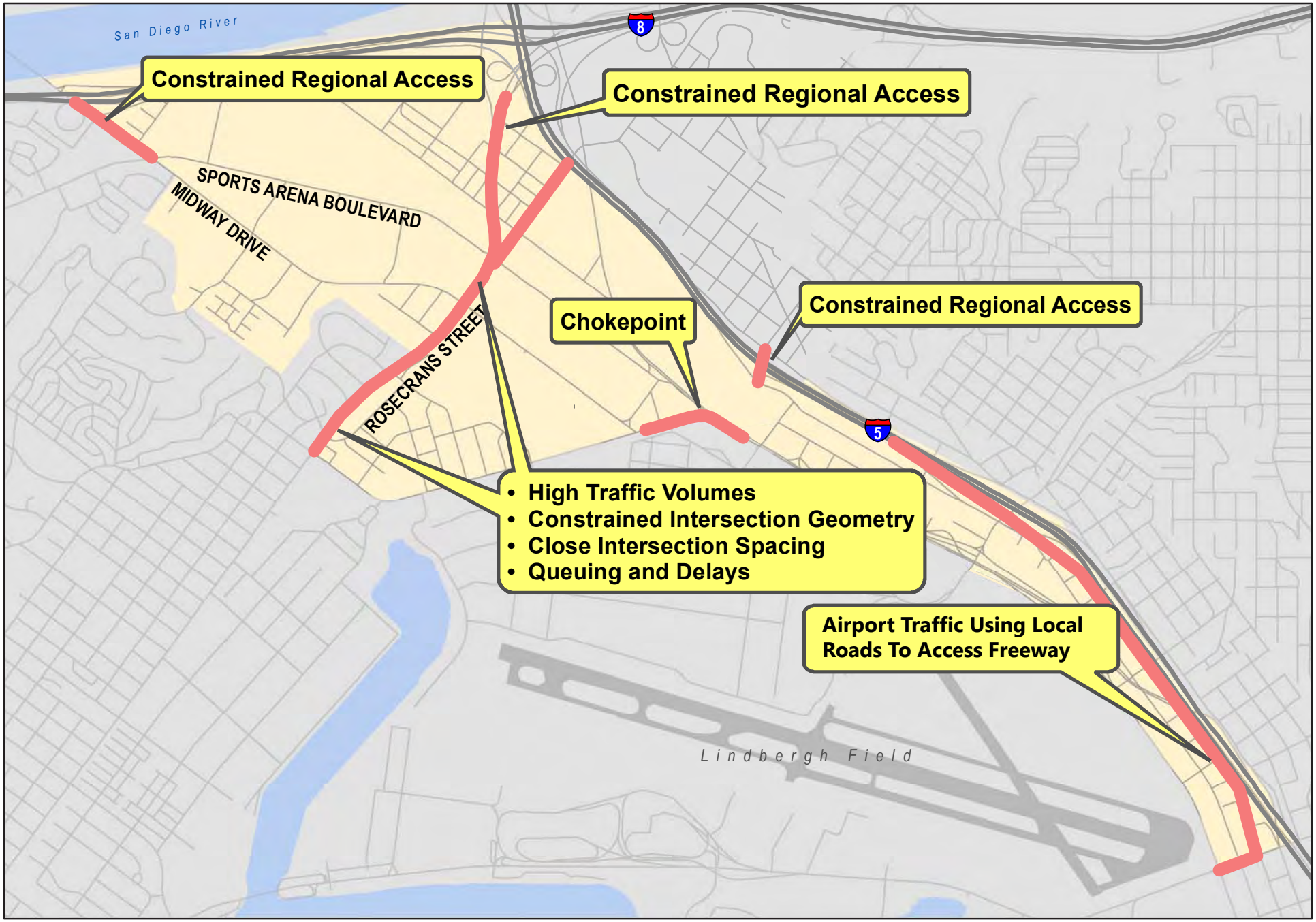


Figure 3-2
Identified Vehicular Issues and Needs -
Midway-Pacific Highway Community

Roadways (continued)

- *Rosecrans Street, between Sports Arena Boulevard and Taylor Street* – Construct a landscaped median along this section of Rosecrans Street. This will improve this section of Rosecrans Street to a four-lane major configuration. *(Note: A conceptual drawing of the improvements along this segment of Rosecrans Street is provided as Figure 3-7)*.
- *Hancock Street, between Kurtz Street and Rosecrans Street* – Widen this section of Hancock Street from a two-lane collector (one-way) to a three-lane major (one-way).
- *Hancock Street, between Old Town Avenue and Witherby Street* – Widen this section of Hancock Street from a two-lane collector to a four-lane collector.
- *Barnett Avenue, between Midway Drive and Pacific Highway* – Widen this section of Barnett Avenue from a four-lane major to a six-lane prime arterial.
- *W. Mission Bay Drive, between I-8 WB Ramps and I-8 EB Ramps* – Widen this section of W. Mission Bay Drive from a five-lane prime arterial to a six-lane prime arterial.
- *Camino Del Rio, Moore Street/Greenwood Street* – Extend the existing median to close the southbound left turn pocket along Camino Del Rio W at the intersection of Moore Street / Greenwood Street to reduce vehicular conflicts.

New Roadways

To provide better east/west connectivity throughout the Midway-Pacific Highway community and provide additional access to potential new developments within the existing "super blocks," the Preferred Plan proposes the following new roadways segments:

1. *Kemper Street Extension* – Kemper Street will be extended between Sports Arena Boulevard and Kurtz Street, connecting as the southwest leg of the Kurtz Street / Hancock Street intersection. The Kemper Street extension will be constructed as a two-lane collector with a continuous left-turn lane.
2. *Frontier Drive* – Frontier Drive will be a new roadway connecting between Sports Arena Boulevard and Kurtz Street. Frontier Drive will be located between the new Kemper Street extension and the Greenwood Street extension. Frontier Drive will be constructed as a two-lane collector with a continuous left-turn lane.
3. *Greenwood Street Extension* – Greenwood Street will be extended between Kurtz Street and Sports Arena Boulevard. Greenwood Street between Sports Arena Boulevard and Midway Drive will follow the alignment of the existing East Drive private street. Greenwood Street will be constructed as a two-lane collector.
4. *Charles Lindbergh Parkway* – Charles Lindbergh Parkway will be a new street connecting between Kurtz Street and Midway Drive. Charles Lindbergh Parkway will be located halfway between Rosecrans Street and the new Dutch Flats Parkway. Charles Lindbergh Parkway will be constructed as a two-lane collector with a continuous left-turn lane.
5. *Dutch Flats Parkway* – Dutch Flats Parkway will be a new roadway connecting between Sports Arena Boulevard and Barnett Avenue. Dutch Flats Parkway will be located between

the new Charles Lindbergh Parkway and Enterprise Street. Dutch Flats Parkway will be constructed as a two-lane collector with a continuous left-turn lane.

It should be noted that implementation of these new roadway segments would necessitate additional right-of-way and most likely require the redevelopment of adjacent properties. All roadways will be designed in accordance with the *City of San Diego Street Design Manual* and their corresponding classification. A summary of the roadway improvements in the Midway-Pacific Highway community is presented in Table 3.1.

Table 3.1 Summary of Roadway Improvements

Roadway	Segment	Existing Configuration	Recommended Classification
Segment Modifications			
Lytton St / Barnett Ave	Rosecrans St and Midway Dr	4-Lane Collector W/ CLTL	4-Lane Major
Sports Arena Blvd	Interstate 8 and Rosecrans St	5-Lane Major	6-Lane Major
Sports Arena Blvd	Rosecrans St and Pacific Hwy	Sub-Collector	2-Lane Collector W/ CLTL
Kurtz St	Rosecrans St and Pacific Hwy	2-Lane Collector	2-Lane Collector W/ CLTL
Rosecrans St	Lytton St and Sports Arena Blvd	6-Lane Major	6-Lane Prime
Rosecrans St	Sports Arena Blvd and Taylor St	4-Lane Collector W/ CLTL	4-Lane Major
Hancock St	Kurtz St and Rosecrans St	2-Lane Collector (One-Way)	3-Lane Major (One-Way)
Hancock St	Old Town Ave and Witherby St	2-Lane Collector	4-Lane Collector
Barnett Ave	Midway Dr and Pacific Hwy	4-Lane Major	6-Lane Prime
W. Mission Bay Dr	I-8 WB Ramps and I-8 EB Ramps	5-Lane Prime	6-Lane Prime
New Roadways			
Kemper St	Sports Arena Blvd and Kurtz St	Does Not Exist	2-Lane Collector W/CLTL
Frontier Dr	Sports Arena Blvd and Kurtz St	Does Not Exist	2-Lane Collector W/ CLTL
Greenwood St	Kurtz St and Sports Arena Blvd	Does Not Exist	2-Lane Collector
Charles Lindbergh Pkwy	Kurtz St and Midway Dr	Does Not Exist	2-Lane Collector W/ CLTL
Dutch Flats Pkwy	Sports Arena Blvd and Barnett Ave	Does Not Exist	2-Lane Collector W/ CLTL

Source: Chen Ryan Associates (June 2016)

Intersections

Rosecrans Street / Sports Arena Boulevard / Camino Del Rio West:

- Remove the southbound free right-turn movement from Camino Del Rio West onto Sports Arena Boulevard and replace it with an exclusive right-turn lane.
- Allow southbound movements to continue on Sports Arena Boulevard through the intersection. It should be noted that vehicles would still not be able to access the southern leg of Sports Arena Boulevard from westbound Rosecrans Street or southwest bound Camino del Rio West.

Additional improvement concepts were also considered for the Rosecrans Street / Sports Arena Boulevard / Camino Del Rio West intersection, but ultimately not selected. These alternative concepts include the following:

Alternative 1: This alternative would allow full access to the southern leg of Sports Area Boulevard from all approaches of the intersection and remove the eastbound (Rosecrans Street) to northbound (Sports Arena Boulevard) left-turn movements. The eastbound left-turn movement was removed to limit the number of signal phases at the intersection and provide for more efficient signal timing patterns. The removal of the eastbound left-turn movement is consistent with the recommendations provided in the *Rosecrans Corridor Mobility Study (February 2010).*

With the implementation of this concept the Rosecrans Street / Sports Arena Boulevard / Camino Del Rio West intersection was projected to perform at acceptable levels (AM: LOS C / PM: LOS D) with minor queuing impacts. However, the community does not support the removal of the eastbound left-turn movement and therefore this alterative was removed.

Alternative 2: This alternative would allow full access to the southern leg of Sports Area Boulevard from all approaches, and keep the eastbound left-turn movement intact. Due to the additional intersection phases and cycle length required to allow full access to the southern leg of Sports Arena Boulevard, the intersection performed poorly under this alternative (AM: LOS D / PM: LOS E) with excessive queuing issues on both Rosecrans Street and Camino del Rio West. Due to the poor intersection performance and queuing issues this alternative was not selected.

Alternative 3: This alternative would remove traffic from the westbound approach of Rosecrans Street and reroute the traffic up Kurtz Street and then to Camino del Rio West. To accommodate this improvement Kurtz Street would be reconfigured from a one-way southbound roadway to a one-way northbound roadway, between Hancock Street and Rosecrans Street. Conversely, Hancock Street would need to be reconfigured as a one-way southbound roadway along the same section to complete the couplet. While this configuration does allow the Rosecrans Street / Sports Arena Boulevard / Camino Del Rio West intersection to operate at acceptable levels (AM: LOS C / PM: LOS D), it is projected to result in substantial queuing issues along the short segment of Kurtz Street between Camino del Rio West and Rosecrans Street (260 feet). This excessive queuing is projected to negatively impact the operations at the Kurtz Street / Camino del Rio West intersection as well as the Kurtz Street / Rosecrans Street intersection and cause significant congestion at these intersections. Due to these queuing issues this alterative was not selected.

Sports Arena Boulevard / Pacific Highway:

- Move intersection approximately 500 feet to the north.
- Re-align Sports Arena Boulevard to create a right-angle with Pacific Highway.
- Signalize the intersection.

- Provide an exclusive eastbound left-turn lane from Sports Arena Boulevard onto Pacific Highway.
- Provide an exclusive northbound left-turn lane from Pacific Highway onto Sports Arena Boulevard.

The proposed relocation of the Sports Arena Boulevard / Pacific Highway intersection meets the 500 feet minimum spacing requirements for intersections. An additional focus during the design phase needs to ensure the curved radii resulting from the intersection realignment will adhere to design standards.

Sports Arena Boulevard / West Point Loma Boulevard / Midway Drive

- Square up and control the westbound free right-turn movement from Sports Arena Boulevard onto Sports Arena Boulevard with the intersection.
- Remove the northbound free right-turn movement from Midway Drive onto Sports Arena Boulevard. The right-of-way will be used to extend the curb and create a curb bulb-out to reduce the pedestrian crossing distance. Right-turn movements will be permitted from the outside through lane.

Camino Del Rio and Moore Street / Greenwood Street

- Extend the existing median to close the southbound left turn pocket along Camino Del Rio W at the intersection of Moore Street / Greenwood Street to reduce vehicular conflicts. (This improvement is also noted in the "Roadway" subheading above.)

<u>Pacific Highway Corridor – Barnett Avenue /Witherby Street / Washington Street</u>

As part of this mobility study, downgrading the section between Barnett Avenue and Washington Street of Pacific Highway from an expressway to a 6-lane major arterial was discussed. The purpose of this downgrade would be to improve safety for vehicles, pedestrians, and cyclists, create a community gateway along Pacific Highway, and enhance the multimodal connections between the community and Downtown San Diego. Ultimately, the recommendation for the Preferred Plan is to carry forward the expressway classification between Barnett Avenue and Washington Street, and the other sections of Pacific Highway in this community, to remain or be developed as a 5-lane or 6-lane major arterial roadway.

One of the main challenges associated with downgrading the expressway is bringing the Barnett Avenue and Witherby Street intersections to grade in order to meet the standards of a 6-lane major arterial roadway. The at-grade approach was not considered as part of the Mobility Study analysis; however, to fully understand the feasibility of these improvements, from both an engineering and constructability standpoint, an Engineering Feasibility Study is recommended. The Engineering Feasibility Study should analyze and address the following:

- The feasibility of bringing both interchanges to grade

- Multi-modal facility alternatives that do not require at-grade intersections (pedestrian and bicycle bridges, alternative multi-use urban path alignments, etc.)
- Addressing the existing flooding issues at both interchanges

Since it is unknown at this time if these improvements are feasible, they were not included in the technical analysis of the Preferred Plan. It is recommended that the feasibility of these improvements be further assessed and incorporated into a future plan. The Preferred Plan identifies Witherby Street as a 2-lane collector with continuous left-turn lane, however, the additional feasibility analysis may determine a need to widen Witherby Street to a 4-lane collector. A potential concept of what these improvements could look like is displayed in Figure 3-3. Additionally, the feasibility analysis may determine a need for additional improvements at Pacific Highway at West Washington Street that are not identified in this mobility study.

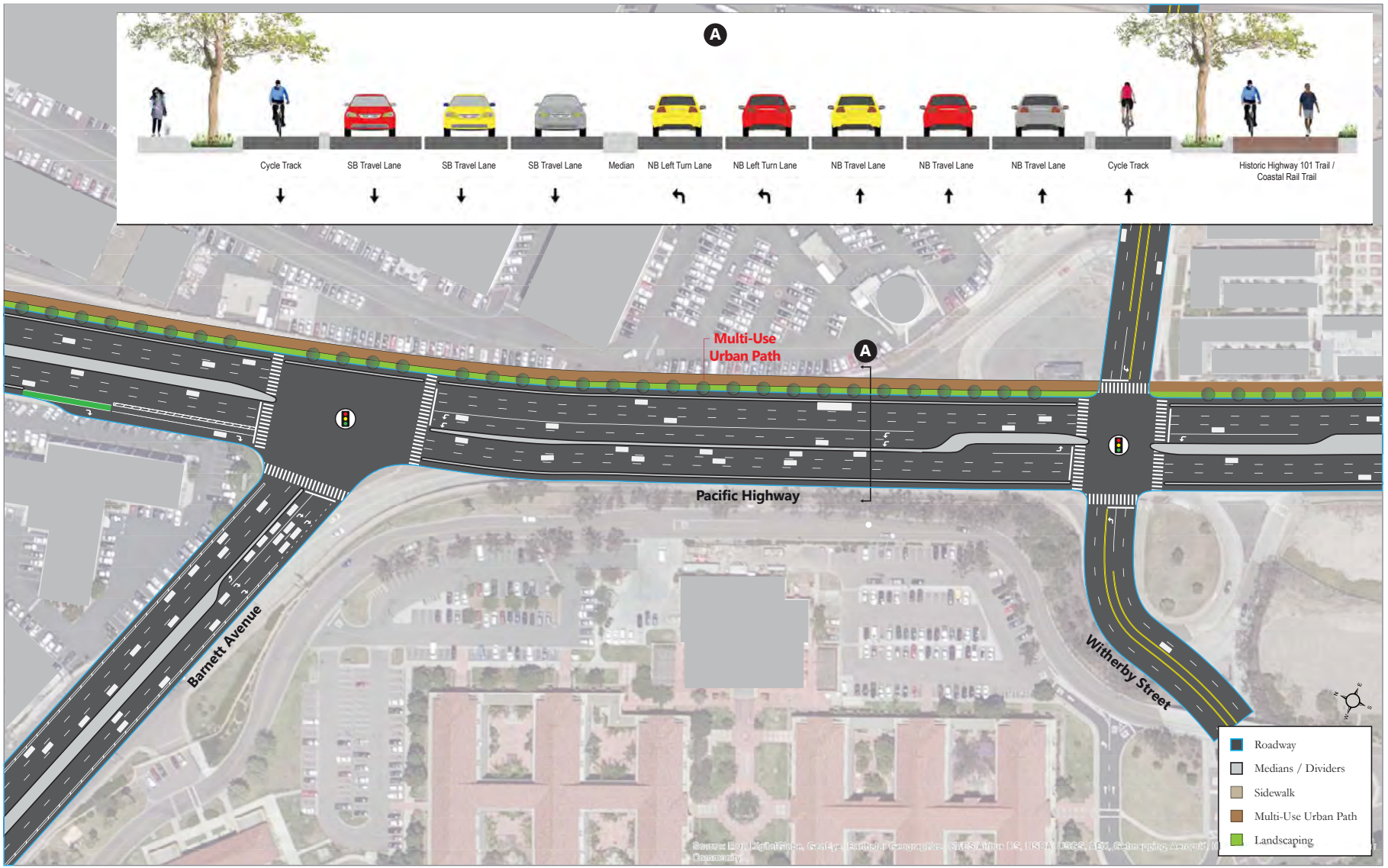
Based on the assumptions displayed in the Figure 3-3, the at-grade intersections would be anticipated to operate as follows:

- Barnett Avenue / Pacific Highway – AM: Delay 35.3 seconds, LOS D | PM: Delay 53.2 seconds, LOS D
- Witherby Street / Pacific Highway – AM: Delay 36.7 seconds, LOS D | PM: Delay 52.0 seconds, LOS D

Intersection Operations

Seven new intersections are recommended for the Midway-Pacific Highway community. Additionally, the roadway network was evaluated to identify intersection locations, both existing and new intersections, that would benefit from the implementation of a roundabout or signalization. A summary of recommended intersection improvements is displayed in Table 3.2. It is not known at this time if the implementation of a roundabout will be feasible at any or all intersections. A roundabout feasibility analysis will need to be performed once the new intersections and roadways are designed. Therefore, to be conservative, the analysis assumed that all new intersections would be signalized, unless otherwise noted. However, it is recommended that a roundabout be implemented in lieu of a signal at all new intersections, where feasible.

Traffic signal warrants were conducted at the intersections where signalization is recommended. Figure 4C-103 (CA) of the California Manual on Uniform Traffic Control Devices (MUTCD) 2012 Edition was utilized and all intersections would meet the warrants. Signal warrants worksheets are included in Appendix C.



This graphic is for conceptual purposes only. Further engineering study would be required at the project level prior to implementation.

Figure 3-3
Barnett Avenue and Witherby Street / Pacific Highway at-Grade Intersection Concepts

Table 3.2 Summary of Intersection Improvements

No.	Intersection	Improvement	Preferred Plan Control
8	Midway Drive / Charles Lindbergh Parkway	New intersection	Roundabout/Signalized
12	Kemper Street / Sports Arena Boulevard	Add north leg	Signalized
13	Sports Arena Boulevard / Frontier Drive	Add north leg	Signalized
14	Sports Arena Boulevard / Greenwood Street	Add north leg	Signalized
16	Sports Arena Boulevard / Charles Lindbergh Parkway	New intersection	Roundabout/Signalized
17	Sports Arena Boulevard / Pacific Highway	Relocate intersection and signalize	Signalized
18	Kurtz Street / Hancock Street / Kemper Street	Add south leg and signalize	Signalized
21	Kurtz Street / Pacific Highway	Signalize	Signalized
61	Kurtz Street / Frontier Drive	New intersection	Roundabout/SSSC
62	Kurtz Street / Greenwood Street	Add south leg and signalize	Signalized
63	Kurtz Street / Charles Lindbergh Parkway	New intersection	Roundabout/Signalized
64	Barnett Avenue / Dutch Flats Parkway	New intersection	Roundabout/Signalized
65	Midway Drive / Dutch Flats Parkway	New intersection	Roundabout/Signalized
66	Sports Arena Boulevard / Dutch Flats Parkway	New intersection	Roundabout/Signalized
N/A	Hancock Street / Greenwood Street	Signalize	Signalized

Source: Chen Ryan Associates (June 2016)

Freeway Improvements

There are no freeway improvements included in the Revenue Constrained alternative of *SANDAG's San Diego Forward, The Regional Plan (Adopted October 2015)* within the vicinity of the Midway-Pacific Highway community to be completed before this plan's horizon year (Year 2035).

I-8 / I-5 Ramp Connection – It should be noted that the missing I-8 East to I-5 North, and I-5 South to I-8 West ramps are included in the Unconstrained Revenue scenario of the Regional Transportation Plan (RTP); therefore, there is currently no funding mechanism for these ramps and they are not included in the Preferred Plan assessment. However, these ramps are needed to enhance the regional access for the community. A policy statement should be included in the Mobility Element recommending that the City of San Diego work with SANDAG and Caltrans to implement these ramps.

I-5 to Pacific Highway Ramps – Ramps connecting Interstate 5 to Pacific Highway are included in the RTP; however, since there is currently no funding mechanism for these ramps they are not included in the Preferred Plan assessment. These ramps are needed to enhance the regional access for the community. A policy should be included in the Mobility Element recommending that the City of San Diego work with SANDAG and Caltrans to implement these ramps.

3.3 Pedestrian Environment

3.3.1 Identified Pedestrian Needs

The Existing Conditions Report identified the following pedestrian issues/needs in the Midway-Pacific Highway community, as displayed in Figure 3-4:

Midway Drive / Sports Arena Boulevard / West Point Loma Boulevard Intersection – This is a major vehicular junction point within the community in which two major roadways (Sports Arena Boulevard and Midway Drive) intersect with two major regional access points (West Point Loma Boulevard connecting to both the Peninsula and Ocean Beach communities to the west, and West Mission Bay Drive and I-8 ramps). To accommodate the high intersecting traffic volumes there is currently a yield control northbound right-turn movement, a stop controlled southbound right-turn movement and a free westbound right-turn movement. The high traffic volumes and uncontrolled right-turn movements create an intimidating environment for pedestrians to cross.

East/West Connectivity – Due to the large block sizes within the community, there are currently few pedestrian corridors directly connecting the east and west sides of the community. Rosecrans Street is the only east/west corridor that currently spans the entire community from east to west.

Walkability Issues along Rosecrans Street and Camino Del Rio West – As mentioned above, Rosecrans Street is the only east/west pedestrian corridor that spans the entire length of the community and is the only corridor that connects to the Old Town Transit Center, located to the east. The retail and institutional uses along both Rosecrans Street and Camino Del Rio West are also major pedestrian attractions within the corridors. Currently both corridors have 5 - 7 foot sidewalks with no parkways or on-street parking to buffer pedestrians from vehicular traffic. The narrow sidewalks with a lack of buffer create an unfriendly pedestrian environment.

Rosecrans Street / I-5 Underpass – This is the only connection point for pedestrians between the Old Town Transit Center and the Midway-Pacific Highway community. The 200-foot wide underpass is poorly lit and has narrow sidewalks, with no parkways or on-street parking to buffer pedestrians from vehicular traffic, creating an unfriendly pedestrian environment.

Missing Sidewalk Facilities – There are currently no sidewalks provided along Sports Arena Boulevard from Rosecrans Street to Pacific Highway, with the exception of a small portion on its south side near the intersection of Rosecrans Street. This area currently predominantly serves industrial uses and attracts little pedestrian traffic; however, it is one of the few major north/south corridors that span the entire community.

Figure 3-4
Identified Pedestrian Issues and Needs -
Midway-Pacific Highway Community

Barnett Avenue / Pacific Highway – There is currently no pedestrian access to Pacific Highway from Barnett Avenue for pedestrians on the north side of Barnett Avenue. Pedestrians on the north side of the roadway heading east on Barnett Avenue hit a dead end and are forced to head north along Pacific Highway.

At-Grade Rail Crossings – Pedestrians accessing both the Washington Street and Middletown Trolley stations from Pacific Highway currently have to cross the rail right-of-way to access both stations. During gate down times, pedestrians may be delayed from accessing the station by on- coming trolleys or trains.

3.3.2 Pedestrian Improvements

Multi-Use Urban Paths

The Preferred Plan includes the implementation of several multi-use urban paths along key roadways, cumulatively creating an Urban Path system throughout the Midway-Pacific Highway community, which is consistent with recommendations in the Midway/Pacific Highway Urban Greening Plan. The individual multi-use urban paths are described below:

La Playa Trail – The La Playa Trail multi-use urban path will run along the south side of Rosecrans Street between Lytton Street and Pacific Highway. The path will be approximately 12 feet wide and replace the sidewalks on the southern side of the roadway. The ultimate right-of-way required along Rosecrans Street to implement this facility would be as follows:

- 127 feet between Lytton Street and Midway Drive.
- 116 feet between Midway Drive and Sports Arena Boulevard.
- 100 feet between Sports Arena Boulevard and Taylor Street.

It is recommended that pedestrian scale lighting be installed along the entire length of the path. The implementation of these improvements may necessitate acquiring additional right-of-way along the corridor.

Bay-to-Bay – The Bay-to-Bay multi-use urban path will be constructed along Sports Arena Boulevard, Lytton Street / Barnett Avenue, Kemper Street, and a connecting segment along the proposed Dutch Flats Parkway to mimic the previous Community Plan's Bay-to-Bay proposed canal alignment. The path will run along the southeast side of the Kemper Street extension between Kurtz Street and Sports Arena Boulevard, along the northeast side of Sports Arena Boulevard between Midway Drive and Dutch Flats Parkway, on the southern side of Dutch Flats Parkway between Barnett Avenue and Sports Arena Boulevard, and on the south side of Lytton Street / Barnett Avenue between Rosecrans Street and Pacific Highway. The segment of path on Sports Arena Boulevard between West Point Loma Boulevard and the I-8 should be further evaluated regarding its placement, whether on the southwest, or northeast side of the roadway. The path will be 12 feet wide and replace the sidewalks on the appropriate side of the roadway in each segment, as described.

The ultimate right-of-way required along each roadway segment to implement this facility is as follows:

- Kemper Street, between Kurtz Street and Sports Arena Boulevard: 90 feet
- Sports Arena Boulevard, between I-8 and Rosecrans Street: 117 feet
- Sports Arena Boulevard, between Rosecrans Street and Dutch Flats Parkway: 78 feet
- Lytton Street / Barnett Avenue, between Rosecrans Street and Pacific Highway: 90 feet
- Dutch Flats Parkway, between Barnett Avenue and Sports Arena Boulevard: 78 feet. An additional 30' of right-of-way will be required to provide for a linear park adjacent to Dutch Flats Parkway. This 30' may need to be obtained as public right-of-way or as an easement on privately held land.

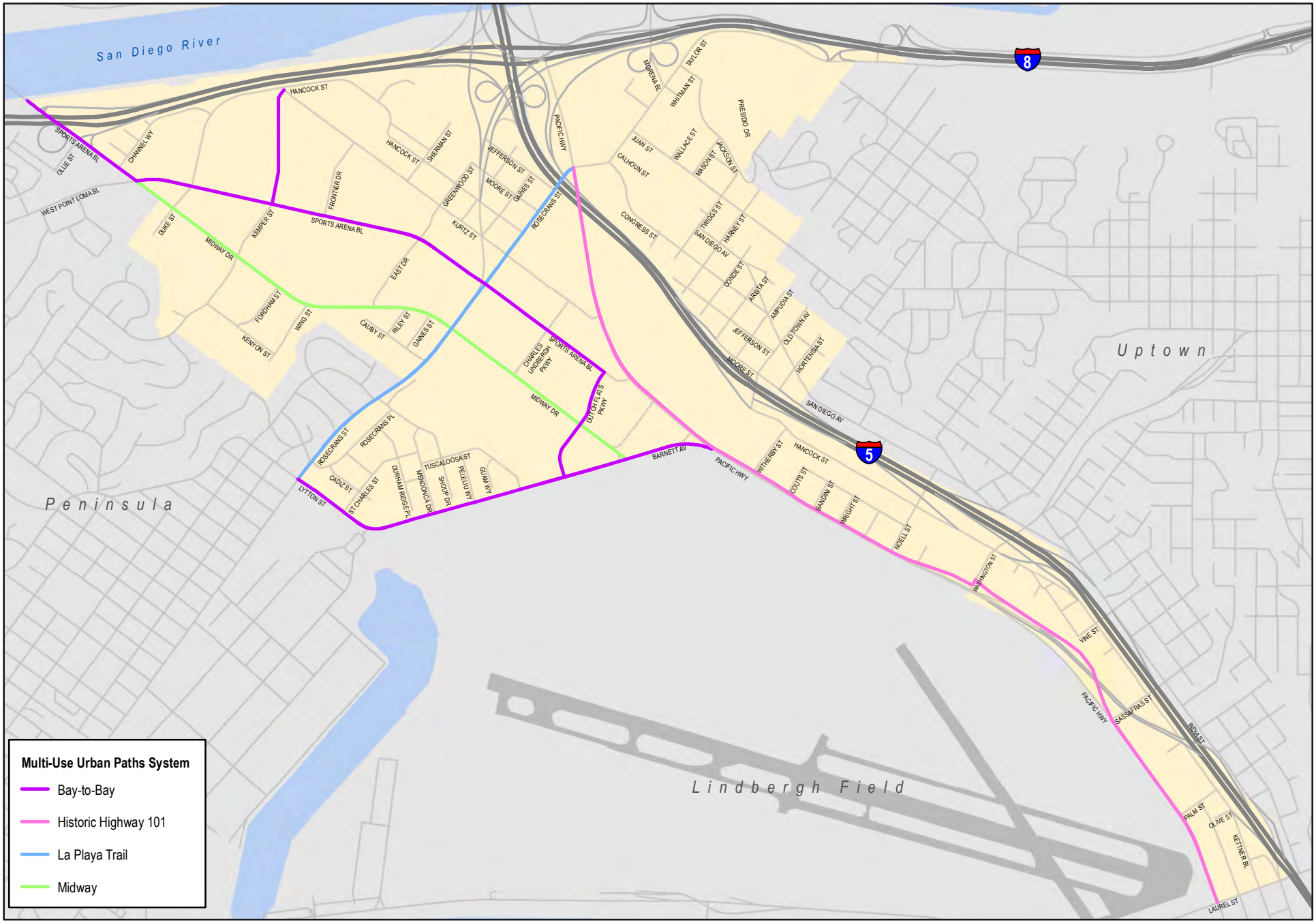
It is recommended that pedestrian scale lighting be installed along the entire length of the path. The implementation of these improvements may necessitate acquiring additional right-of-way along the corridor. *(Note: Figure 3-8 and Figure 3-10 provide conceptual drawings of the proposed Bay-to-Bay Path configuration along Sports Arena Boulevard)*.

Midway – The Midway multi-use urban path will run along the southwest side of Midway Drive between Sports Arena Boulevard and Barnett Avenue. The path will be approximately 12 feet and will replace the existing southwest sidewalk. The ultimate right-of-way required along Midway Drive to implement this facility would be 81 feet. It is recommended that pedestrian scale lighting be installed along the entire length of the path. The implementation of these improvements may necessitate acquiring additional right-of-way along the corridor.

Historic Highway 101 – The Historic Highway 101 multi-use urban path will run along the east side of Pacific Highway between Taylor Street and Laurel Street. The multi-use urban path will be 12 feet wide and will replace the existing sidewalk on the east side of the roadway. The ultimate right-of-way required along Pacific Highway to implement this facility would be 131 feet. It is recommended that pedestrian scale lighting be installed along the entire length of the path. The implementation of these improvements may necessitate acquiring additional right-of-way along the corridor.

Hancock Street Extension – Hancock Street will be extended between Midway Drive and Sports Arena Boulevard as a pedestrian and bicycle connection. This segment will not be open to vehicular traffic. *(Note: This pedestrian and bicycle connection, which is located just southeast of the W. Point Loma Boulevard / Sports Arena Boulevard / Midway Drive intersection, is illustrated in Figure 3-8 and Figure 3-10).*

The complete Multi-Use Urban Path system is displayed in Figure 3-5. Figure 3-6 and 3-7 provide concept drawings of the proposed La Playa Trail configuration along Rosecrans Street. Figure 3-8 displays a concept drawing of the Bay-to-Bay Path along Sports Arena Boulevard, north of Rosecrans Street. Figure 3-9 provides a concept drawing of the proposed Midway Path configuration along Midway Drive.



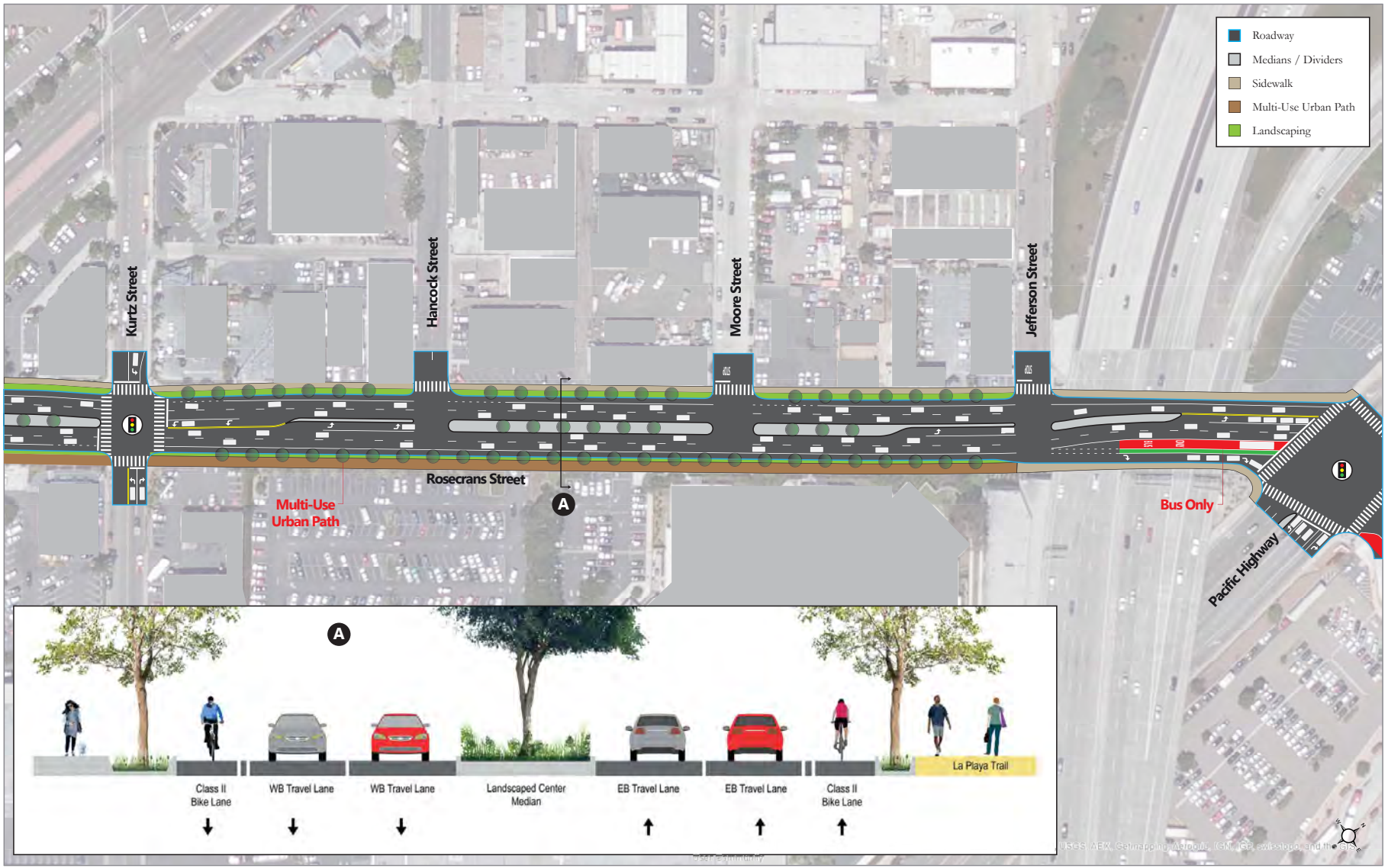
Midway-Pacific Highway and
Old Town Community Plan Update

CHEN RYAN

Figure 3-5
Multi-Use Urban Paths System

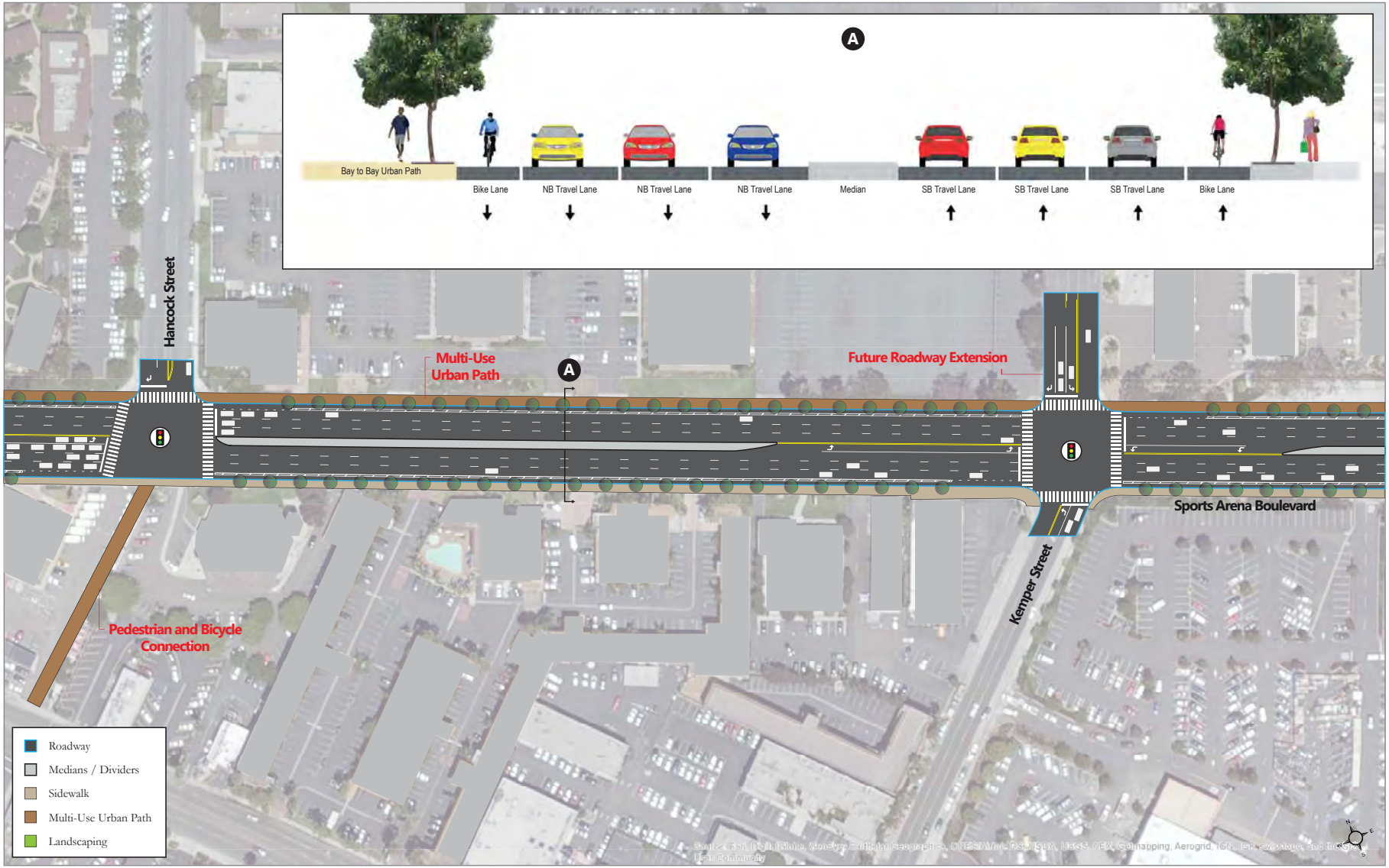
This graphic is for conceptual purposes only. Further engineering study would be required at the project level prior to implementation.

Figure 3-6
Rosecrans Street with La Playa Trail - West of Midway Drive



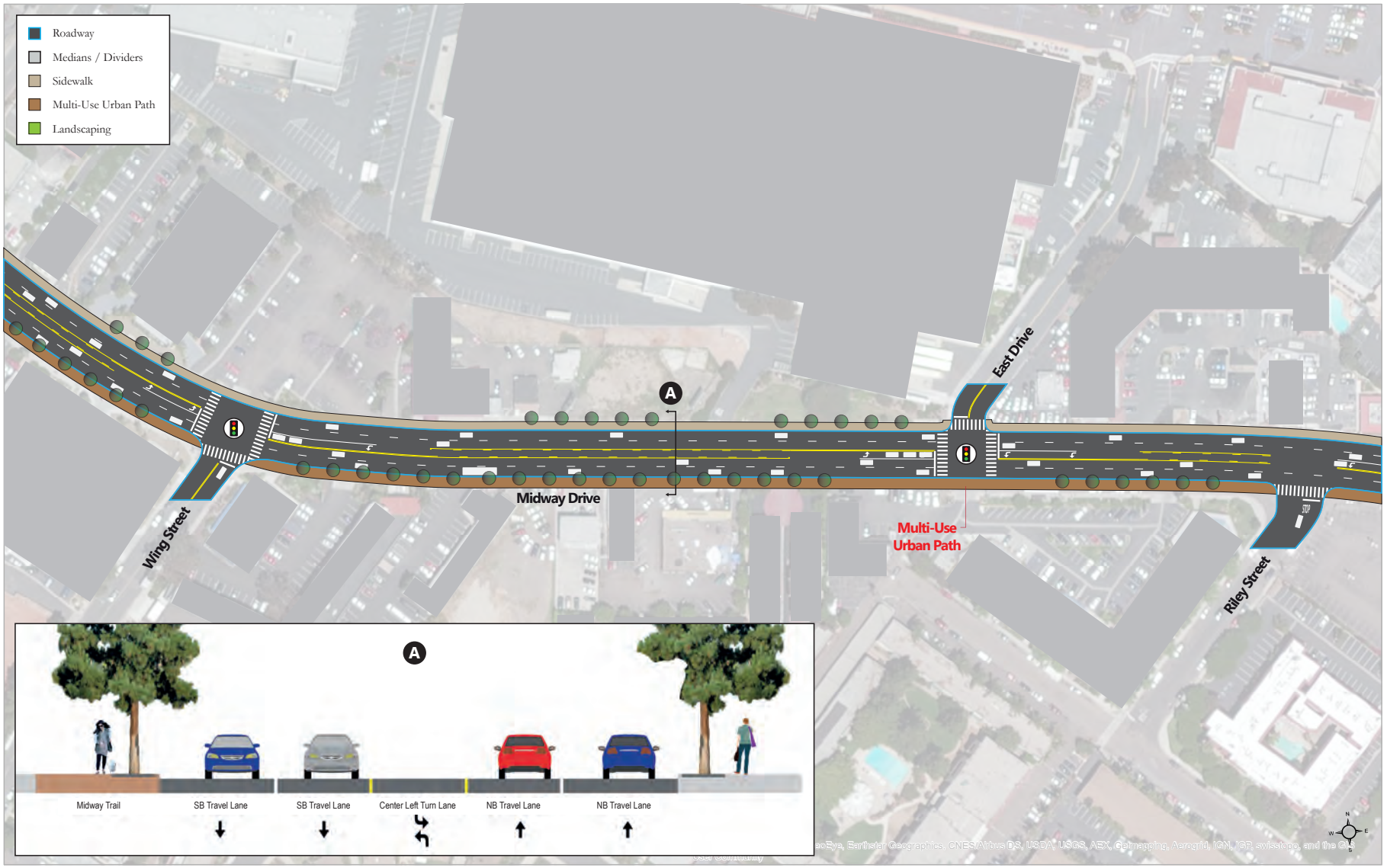
This graphic is for conceptual purposes only. Further engineering study would be required at the project level prior to implementation.

Figure 3-7
Rosecrans Street with La Playa Trail - East of Sports Arena Boulevard



This graphic is for conceptual purposes only. Further engineering study would be required at the project level prior to implementation.

Figure 3-8
Sports Arena Boulevard with Bay to Bay Trail - North of Rosecrans Street



This graphic is for conceptual purposes only. Further engineering study would be required at the project level prior to implementation.

Figure 3-9
Midway Drive with Midway Trail -
North of Rosecrans Street

Street Trees

The Preferred Plan includes the implementation of street trees along the following roadway corridors, which is consistent with the Midway/Pacific Highway Urban Greening Plan:

- Barnett Avenue, between Rosecrans Street and Pacific Highway
- Midway Drive, between Sports Arena Boulevard and Barnett Avenue
- Sports Arena Boulevard, between West Mission Bay Drive and Rosecrans Street
- Pacific Highway, between Taylor Street and Laurel Street
- Rosecrans Street, between Midway Drive and Taylor Street

Intersections

All crossing points at intersections should be upgraded to include the following:

- ADA compliant pedestrian ramps
- High visibility continental cross-walks
- Advanced stop bar placement
- Pedestrian count down signals

New Sidewalks

Sidewalk facilities will be implemented along the following roadways:

- Midway Drive, between Bogley Drive and Barnett Avenue
- Jessop Lane, between Enterprise Street and Barnett Avenue
- St. Charles Street, between Lytton Street and Cadiz Street
- Kemper Street, Kenyon Street to Midway Drive (south side)
- Sports Arena Boulevard, between Rosecrans Street and Pacific Highway (southwest side)
- Kurtz Street, between Rosecrans Street and Pacific Highway
- Pacific Highway, between Couts Street and Washington Street (southwest side)
- Witherby Street, between Hancock Street and Pacific Highway
- Hancock Street, between Witherby Street to 465 ft south of Witherby Street (south side)

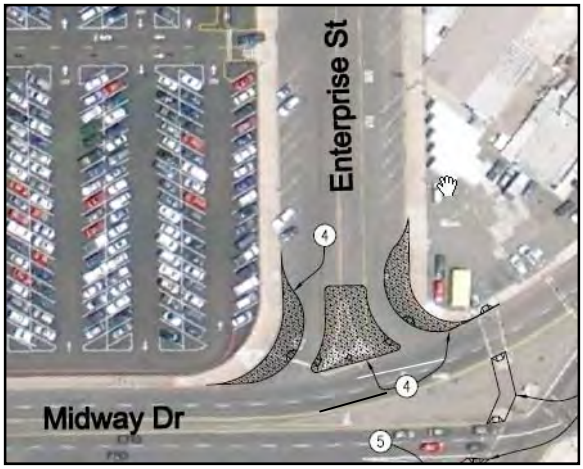
Specific Pedestrian-Related Intersection Improvements:

Midway Drive / Enterprise Street (Shown to the Right):

- Install bulb-outs and a pedestrian refuge island on the northeast leg of the intersection.

West Palm Street / Kettner Boulevard (intersection adjacent to the I-5 pedestrian bridge)

- Install bulb-outs on north leg of the intersection.
- Install continental cross-walk on the north leg of the intersection.
- Install a Pedestrian Hybrid Beacon on the north leg of the intersection (if warrants are met).



Conceptual Drawing from Phase IV of the City of San Diego Pedestrian Master Plan

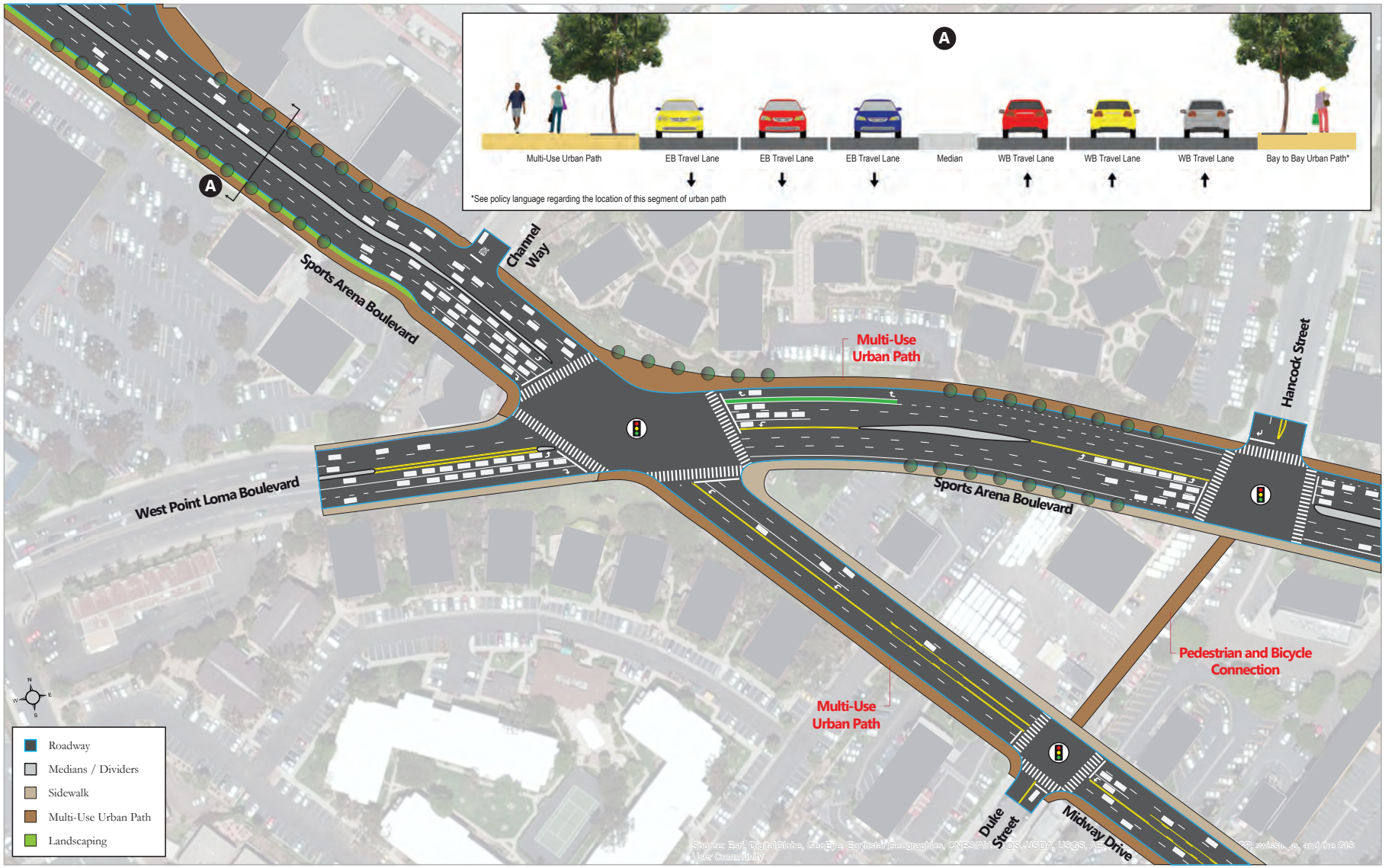
Sports Area Boulevard / West Point Loma Drive / Midway Drive

- Remove all free-right turn movements, which will decrease pedestrian crossing-distances.
- Improve the right-of-way with landscaping to improve the pedestrian environment.

Figure 3-10 displays a concept drawing of the proposed intersection improvements.

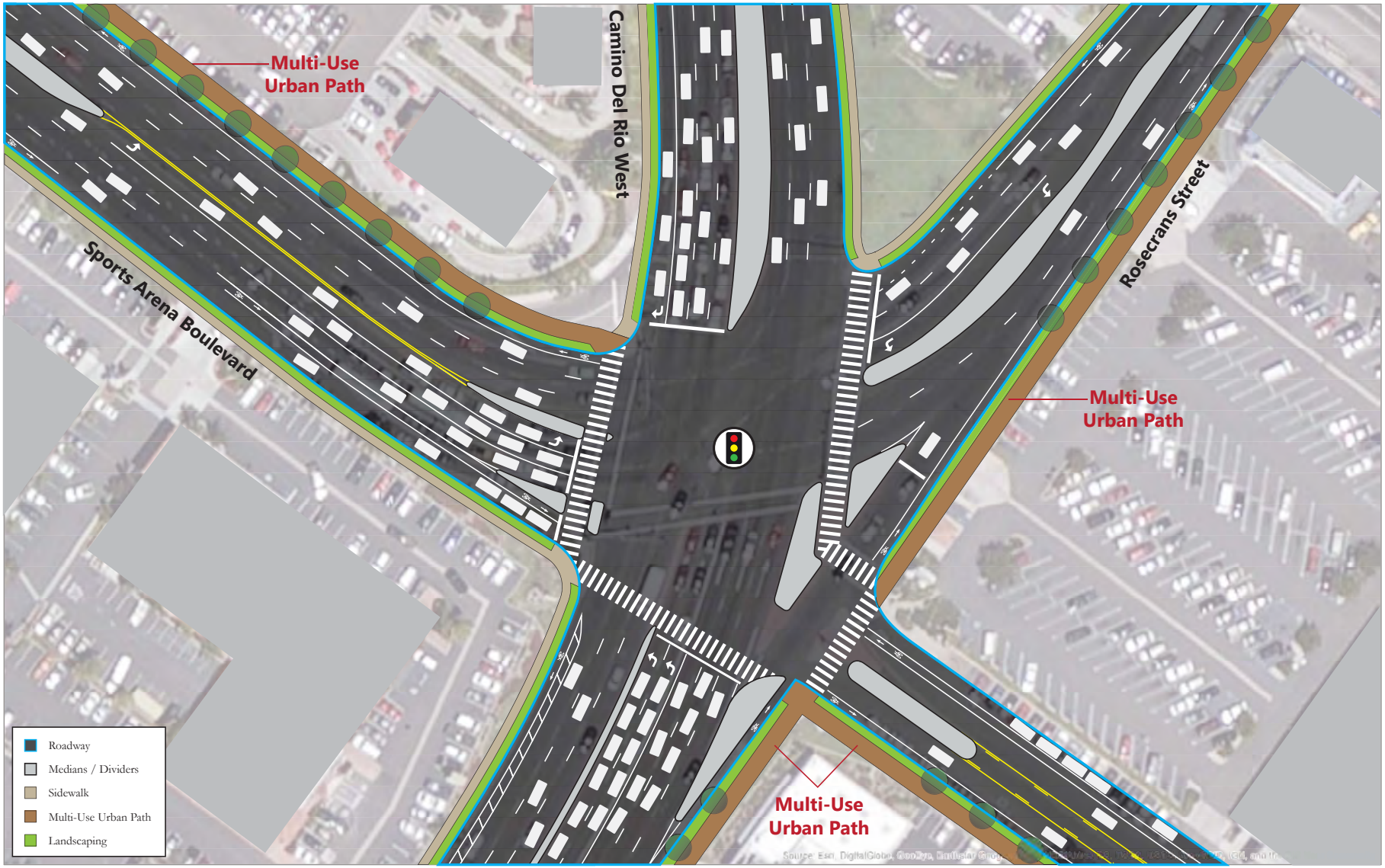
Sports Arena Boulevard / Rosecrans Street / Camino Del Rio West

- Remove the southbound free right-turn movement from Camino Del Rio West onto Sports Arena Boulevard and replace it with an exclusive right-turn lane, which will improve pedestrian safety while crossing the intersection. Figure 3-11 displays a concept drawing of the proposed intersection improvements.



This graphic is for conceptual purposes only. Further engineering study would be required at the project level prior to implementation.

Figure 3-10
Sports Arena Boulevard / West Point Loma Boulevard / Midway Drive - Proposed Pedestrian Improvements



This graphic is for conceptual purposes only. Further engineering study would be required at the project level prior to implementation.

Figure 3-11
Sports Arena Boulevard / Rosecrans Street / Camino Del Rio West - Proposed Pedestrian Improvements

3.4 Cycling Environment

3.4.1 Identified Bicycle Needs

The Midway-Pacific Highway Community is located at a junction point for several regional bicycle facilities including both the Coastal Rail Trail (along Pacific Highway) and the Ocean Beach Bike Path (along the San Diego River). Local bicycle connections to the surrounding neighborhoods are also provided, such as Class II Bike Lanes between Midway-Pacific Highway and the Peninsula communities along Rosecrans Street. A Class III Bike Route is provided along West Mission Bay Drive and terminates at its intersection with W. Point Loma Boulevard / Sports Arena Boulevard. These regional and local connections, along with strong transit service and high intensity commercial and institutional land uses, create high cycling demands within this community.

However, as shown in Figure 3-12 there are currently no bicycle facilities along the major corridors traversing the Midway-Pacific Highway Community (Midway Drive, Sports Arena Boulevard and Rosecrans Street) to accommodate the high bicycle demand. These corridors also have high vehicular traffic volumes and speeds as well as numerous conflict points (intersections, driveways, and alleyways) between motorists and cyclists, creating an uncomfortable environment for cyclists. Figure 3-5 displays the locations of issues/need, mainly defined as high cycling demand corridors that lack bicycle facilities and have high vehicular traffic volumes and speed.

3.4.2 Bicycle Improvements

The Bicycle Network under the Preferred Plan Conditions is shown in Figure 6-10 in this report. The recommended bicycle facilities proposed in this plan are consistent with and improve upon the recommendations outlined in The City of San Diego Bicycle Master Plan. The Preferred Plan proposes to implement the following bicycle facilities within the Midway-Pacific Highway Community:

<u>In Road Facilities</u>

- Class II Buffered Bike Lanes in both directions along Lytton Street / Barnett Avenue between Rosecrans Street and Pacific Highway.
- Class IV One-Way Cycle Tracks in both directions along Pacific Highway between Taylor Street and Laurel Street. This cycle track continues through the Old Town community, north to Sea World Drive.
- Class II Buffered Bike Lanes in both directions along Rosecrans Street between Lytton Street and Pacific Highway.
- Class II Buffered Bike Lanes in both directions along Sports Arena Boulevard between W. Point Loma Boulevard and Pacific Highway.
- Class II Bike Lanes in both directions along Hancock Street between Old Town Avenue and Noell Street.
- Class II Bike Lanes along the south side of Hancock Street/Kettner Boulevard between Noell Street and Laurel Street.

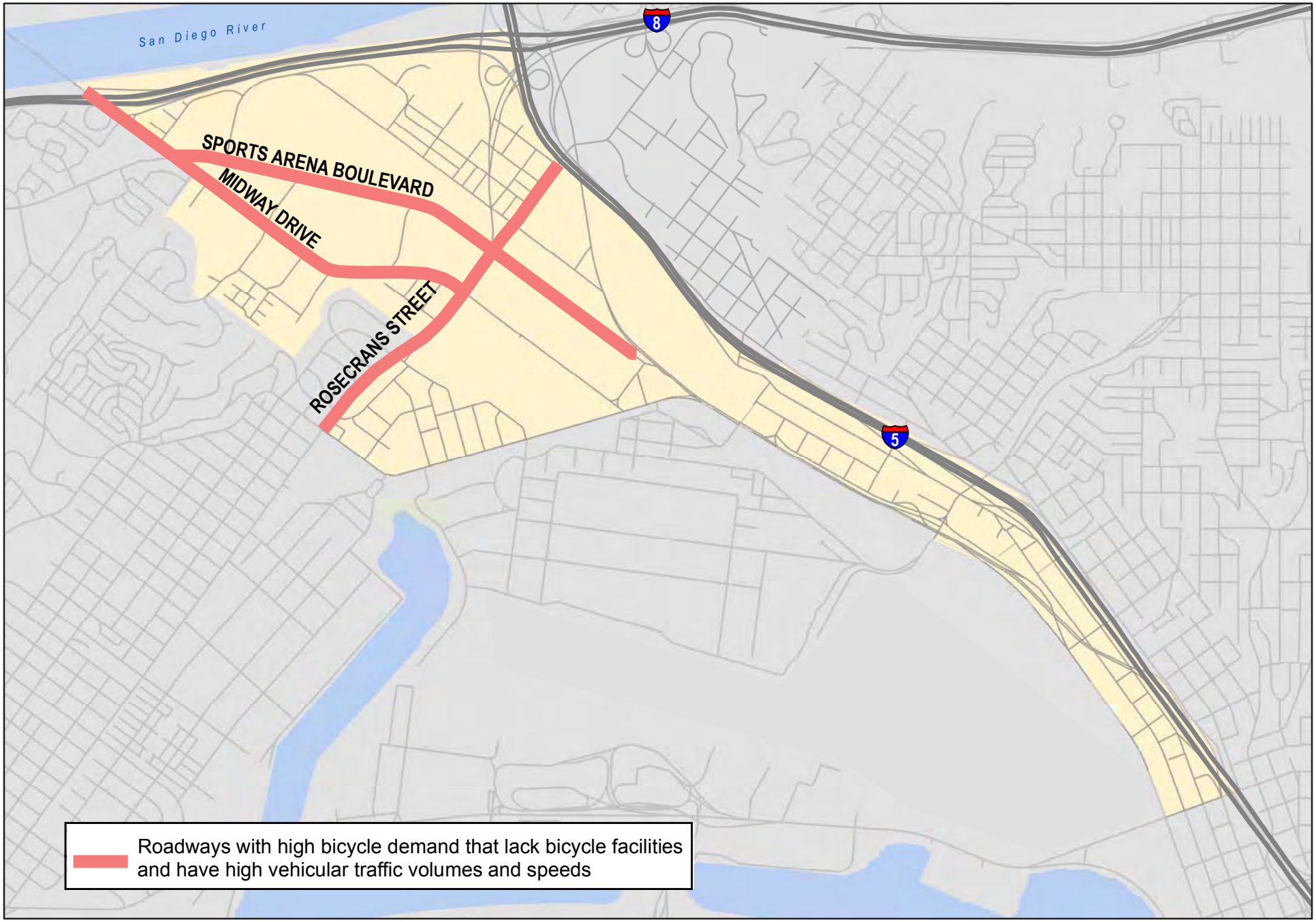


Figure 3-12
Bicycle Network Issues and Needs -
Midway-Pacific Highway Community

In Road Facilities (continued)

- Class II Buffered Bike Lanes in both directions along Kemper Street between Kenyon Street and Kurtz Street.
- Class IV Cycle Track on the north side of Washington Street between Pacific Highway and Interstate 5.
- Class II Bike Lanes in both directions along Old Town Avenue between Hancock Street and San Diego Avenue.
- Class II Buffered Bike lanes in both directions along Frontier Drive between Sports Arena Boulevard and Kurtz Street.
- Class II Buffered Bike lanes in both directions along Charles Lindbergh Parkway between Midway Drive and Kurtz Street.
- Class III Bicycle Route on Kurtz Street between Hancock Street and Rosecrans Street.
- Class III Bicycle Route on Noell Street between Pacific Highway and Hancock Street.
- Class III Bicycle Route on Hancock Street between Sports Arena Boulevard and Rosecrans Street.
- Class II Bike Lanes in both directions along Witherby Street between Pacific Highway and Hancock Street (The inclusion of bike lanes along this street would be determined by the available road width for these facilities; see section 3.2.2 for a discussion of a feasibility analysis to determine a need to widen Witherby Street)
- Class II Bike Lanes in both directions along Sassafras Street between Pacific Highway and Interstate 5.

Multi-Use Urban Paths

- Class I Multi-Use Urban Path connection, as an extension of Hancock Street between Sports Arena Boulevard and Midway Drive.
- Class I Multi-Use Urban Path along the south side of Rosecrans Street between Lytton Street and Pacific Highway.
- Class I Multi-Use Urban Path along the south side of Lytton Street / Barnett Avenue between Rosecrans Street and Pacific Highway.
- Class I Multi-Use Urban Path along the west side of Midway Drive between Sports Area Boulevard and Barnett Avenue.
- Class I Multi-Use Urban Path along the southwest or northeast side of Sports Arena Boulevard between I-8 and Midway Drive (to be determined by further study upon implementation), and on the northeast side of Sports Arena Boulevard between Midway Drive and Dutch Flats Parkway.
- Class I Multi-Use Urban Path along the south side of Dutch Flats Parkway between Barnett Avenue and Sports Arena Boulevard.
- Class I Multi-Use Urban Path along the east side of Pacific Highway between Taylor Street and Laurel Street.
- Class I Multi-Use Urban Path along the southeast side of Kemper Street between Sports Arena Boulevard and Kurtz Street.

3.5 Public Transit Service and Facilities

3.5.1 Identified Transit Needs

Underserved Areas – As shown in Figure 3-13, the following areas within the Midway-Pacific Highway Community are located beyond a quarter mile of a bus stop or transit station, indicating potentially poor levels of transit access:

- Barnett Avenue, between Truxtun Road and Midway Drive
- The northeast portion of the community (east of Kurtz Street and north of Sherman Street)
- Pacific Highway, between Wright Street and Noell Street
- Pacific Highway, between Vine Street and Sassafras Street

3.5.2 Transit Improvements

SANDAG's San Diego Forward, The Regional Plan (Adopted October 2015) indicates that a number of transit improvements are planned for the Midway-Pacific Highway Community, prior to this plan's Year 2035 horizon year, including:

Local Bus Service – Increase local bus service in key corridors to 10 minute headways programmed and scheduled for Year 2035.

Rapid Bus Route 28 – By the Year 2035, a new rapid bus route will be implemented providing service between Point Loma and Kearny Mesa via the Old Town Transit Center.

San Diego International Airport Intermodal Transit Center (ITC) – The ITC will act as an important hub connecting all modes of transportation accessing and departing from Lindbergh Field. The ITC is planned to be located on the north end of the airport, just south of Interstate 5 between Washington Street and Sassafras Street. The ITC is being planned as a major transit hub connecting all three existing trolley lines (Blue, Green and Orange), the COASTER, Amtrak, new MTS Express Bus routes directly serving the airport, several local MTS bus routes and the planned California High Speed Rail system. In addition to the transit connections, the ITC is planned to provide the following:

- 360 new parking spaces
- 126,000 SF of new retail uses
- Direct access to I-5 / via the Pacific Highway on/off-ramps
- Grade separation of the Washington Street and Sassafras at-grade rail crossings
- New grade separated crossing at Vine Street
- Raised bicycle lanes and cycle tracks on the street surrounding the ITC
- Wider sidewalks around both the ITC and new retail uses
- Curb extensions and planting/parking strips as well as provide new opportunities to employ green street strategies on impacted/new roadways.

The ITC is anticipated to be constructed and operational by the Year 2035.

Midway-Pacific Highway and
Old Town Community Plan Update

CHEN RYAN

Figure 3-13
Transit Coverage -
Midway-Pacific Highway Community

Transit Priority Improvements

Pacific Highway - Pacific Highway serves several express bus routes that link multiple communities. It is recommended that, as Pacific Highway is redeveloped, transit priority measures such as queue jumper lanes and transit priority signals be implemented at all signalized intersections along Pacific Highway between Taylor Street and Laurel Street.

Rosecrans Street – Rosecrans Street east of Camino Del Rio West currently serves four MTS bus Routes (8, 9, 28 and 35). A queue jumper lane and transit signal have already been implemented on the eastbound approach at the Taylor Street / Rosecrans Street and Pacific Highway intersection. Similar transit priority improvements should also be examined for feasibility at the Rosecrans Street / Camino Del Rio West / Sports Arena Boulevard intersection to allow westbound buses (Routes 8, 9 and 35) to turn right onto Sports Arena Boulevard and avoid congestion.

New Roadway Connections – The proposed new roadway connections can serve as alternative east/west routes for busses traveling through the community. Rerouting to these new facilities, if possible, may help avoid the congestion on Rosecrans Street. It is recommended that after the construction of any of the new roadways, the City of San Diego coordinate with MTS to examine opportunities for bus rerouting.

3.6 Currently Planned Improvements

The following section outlines the mobility improvements that are currently planned within the Midway-Pacific Highway community. Some improvements were too minor to incorporate at the community plan level, while others are mitigation measures from projects within the area and are not the responsibility of the community plan. Additionally, the pending improvements contained within the existing community Public Facilities Financing Plan are outlined and identified whether they are consistent with the Preferred Plan.

3.6.1 Auto

West Mission Bay Drive Bridge over San Diego River, CIP Project S00871 – the proposed City project will replace the existing bridge with a 6-lane bridge having a northbound and southbound Class I bicycle facility and pedestrian sidewalks. The project is in the final design phase and construction is estimated to start in July 2017. Improvements from this project were analyzed and its design was considered to develop recommendations in this study.

Midway/Pacific Highway Corridor Public Facilities Financing Plan, 2004 – this document contains several roadway improvements that have not yet been completed. It should be noted that all of these improvements are unfunded and currently not scheduled for implementation.

Signal Modifications:

- Barnett Avenue / Midway Drive (Project T7) – *Improvement has been completed and is consistent with the Preferred Plan.*

- Pacific Highway / West Washington Street (Project T29) – *Improvement is consistent the Preferred Plan.*

Extensions/New Streets:

- Extension of Barnett Avenue from Pacific Highway to Old Town Avenue (Project T8) – *Improvement is no longer recommended under the Preferred Plan.*
- Extension of Kemper Street as a four-lane collector from Sports Arena Boulevard to Hancock Street (Project T14) – *Improvement changed under the Preferred Plan.*
- New four-lane collector street connecting Sports Arena Boulevard and Midway Drive (Project T13) – *Improvement changed under the Preferred Plan.*

Street Widening:

- Improve Kurtz Street to a four-lane major between Rosecrans Street and Pacific Highway (Project T15) – *Improvement changed under the Preferred Plan.*
- Improve Sports Arena Boulevard to a four-lane collector between Rosecrans Street and Pacific Highway (Project T16) – *Improvement changed under the Preferred Plan.*
- *Add Project T23 and state whether improvement has changed under the Preferred Plan (we did not assumed it has in our cost estimating).*

Intersection Improvements

- Midway Drive / Sports Arena Boulevard (Project T17) – *Improvement changed under the Preferred Plan.*

Several roadway facility projects have been identified by the City of San Diego and are included on their Unfunded Transportation Needs List (8/5/2014). A list of the roadway related improvements located in the Midway-Pacific Highway Community is included in Appendix B. It should be noted that this list is updated on a regular basis and Appendix B only reflects a snapshot of the needs and planned improvements throughout the community at the time when this report was prepared.

3.6.2 Pedestrian

Public Facilities Financing Plans

The adopted Public Facilities Financing Plan for the Midway-Pacific Highway community currently contains planned pedestrian improvements that have not yet been completed, as follows:

- Install / upgrade 169 curb ramps to meet ADA standards (T25) – These improvements are currently not scheduled or funded. *Improvement is consistent with the Preferred Plan.*

Several pedestrian facility projects have been identified by the City of San Diego and are included on their Unfunded Transportation Needs List (8/5/2014). A list of the pedestrian improvements located in the Midway-Pacific Highway Community is included in Appendix B. It should be noted that this list is updated on a regular basis and Appendix B only reflects a snapshot of the needs and planned improvements throughout the community at the time when this report was prepared.

3.6.3 Bicycle

The City of San Diego's Transportation and Stormwater Department is currently resurfacing Barnett Avenue between Midway Drive and Pacific Coast Highway. The resurfaced pavement will include striping for a new Class II bicycle lane along the north side of Barnett Avenue between Pacific Highway and Midway Drive and green paint in areas of potential conflict zones between vehicular and bicycle traffic. The resurfacing project maintains the existing Class II bicycle facilities in this area on both sides of Barnett Avenue and enhances each facility with a 2' buffer on both sides of the roadway.

3.6.4 Transit

As noted in section 3.5.2 the Preferred Plan in consistent with *SANDAG's San Diego Forward, The Regional Plan* (Adopted October 2015).

4.0 Old Town Community Preferred Plan

4.1 Development of the Preferred Plan

4.1.1 Identification of Issues and Needs

Existing mobility related issues and needs within the Old Town Community were identified in the *Community of Midway/Pacific Highway Corridor and Old Town Mobility Existing Conditions Report; September 2012 (Existing Conditions Report)*. The issues and needs identified in the Existing Conditions Report were used, in conjunction with the other planning efforts and the overall community vision, to develop the recommended mobility improvements presented in the Preferred Plan.

4.1.2 Development of Preferred Plan Improvements

Preferred Plan improvements were developed by first cross checking the mobility issues and needs identified in the Existing Conditions Report against the mobility issues and needs identified in several other on-going or recent planning efforts, including:

- I-8 Corridor Study (August 2016)
- San Diego Forward, The Regional Plan (October 2015)
- Riding to 2050, The San Diego Regional Bike Plan (2010)
- City of San Diego Bicycle Master Plan (December 2013)
- Phase II Visitor Oriented Parking Facilities Study of the Old Town Community (May 2002)
- City of San Diego Pedestrian Master Plan - Phase 4 (Dec 2013)
- Mid-Coast Corridor Transit Project, Transportation Impacts and Mitigation Report (Sept 2014)

Where possible, the Preferred Plan carried forward or maintained the relevant improvements from on-going or previous planning efforts which have been adopted or vetted by the community. New improvement strategies were then developed to address the existing issues and needs, as identified in the Existing Conditions Report, which have not been addressed in other planning efforts. Additional mobility improvements were also developed to accommodate the anticipated future growth within the community. The following sections outline the mobility issues and needs identified in the Existing Conditions Report and the associated improvements recommended under the Preferred Plan to alleviate them.

4.2 Street and Freeway System

4.2.1 Identified Street and Freeway Issues and Needs

Taylor Street – Taylor Street provides connections to three major regional roadway facilities. To the east, Taylor Street provides a connection to I-8 and the regional freeway system. To the west, Taylor Street connects with both Rosecrans Street (which connects to communities to the west), and to Pacific Highway (which connects to communities to the north and the south). Taylor Street

accommodates a high volume of both regional and local traffic. There are currently two identified roadway related issues along Taylor Street, as described below:

At-Grade Rail Crossing – Currently the BNSF and MTS trolley right-of-way crosses Taylor Street at-grade between Pacific Highway and Congress Street. Gate down times at this crossing typically last between 30 seconds to 3 minutes, depending on the number of vehicles and train cars. During these gate down times, all other modes of transportation must stop, causing impacts to traffic operations at the adjacent intersections. Train crossings at this location typically cause additional intersection delay, queuing and congestion.

Taylor Street between Presidio Drive and I-8 Ramps – Taylor Street east of Presidio Drive reduces from four-lanes to two, with narrow lane widths (10 feet). Traffic volumes along this segment are high (13,140 ADT) since it leads to an I-8 interchange, and far exceeds the roadway LOS D maximum capacity of 9,000 ADT. The narrow lane widths and high traffic volumes result in congestion along this segment in the eastbound direction accessing the freeway ramps during the PM peak hour.

San Diego Avenue between Ampudia Street and Old Town Avenue – This segment of San Diego Avenue connects the commercial uses along both Congress Street and San Diego Avenue to the I-5 interchange located at Old Town Avenue. This segment of San Diego Avenue is currently a two-lane roadway with an average daily traffic volume of 10,160, which far exceeds the roadway LOS D maximum capacity of 6,500 ADT. This results in reduced speeds and congestion in the northbound direction during both the AM and PM peak hours.

*Old Town Avenue between Moore Street and San Diego Aven*ue – Old Town Avenue provides a regional connection point between the community and I-5. This segment of Old Town Avenue is currently two-lanes with an ADT of 11,750, which far exceeds the roadway LOS D maximum capacity of 6,500 ADT. This results in reduced speeds and congestion in the northbound direction during the PM peak hour.

The identified roadway issues and needs within the Old Town Community are displayed in Figure 4-1.

4.2.2 Street and Freeway Improvements

Due to the historic nature of the community, the Preferred Plan does not propose any roadway widenings or significant roadway capacity improvements.

Intersections

Congress Street / San Diego Avenue / Ampudia Street:

- Convert intersection to all-way stop control
- Implement bulb-outs on all legs of the intersection
- Widen the sidewalks along the north side of San Diego Avenue

Figure 4-2 displays a concept drawing of the proposed intersection improvements.

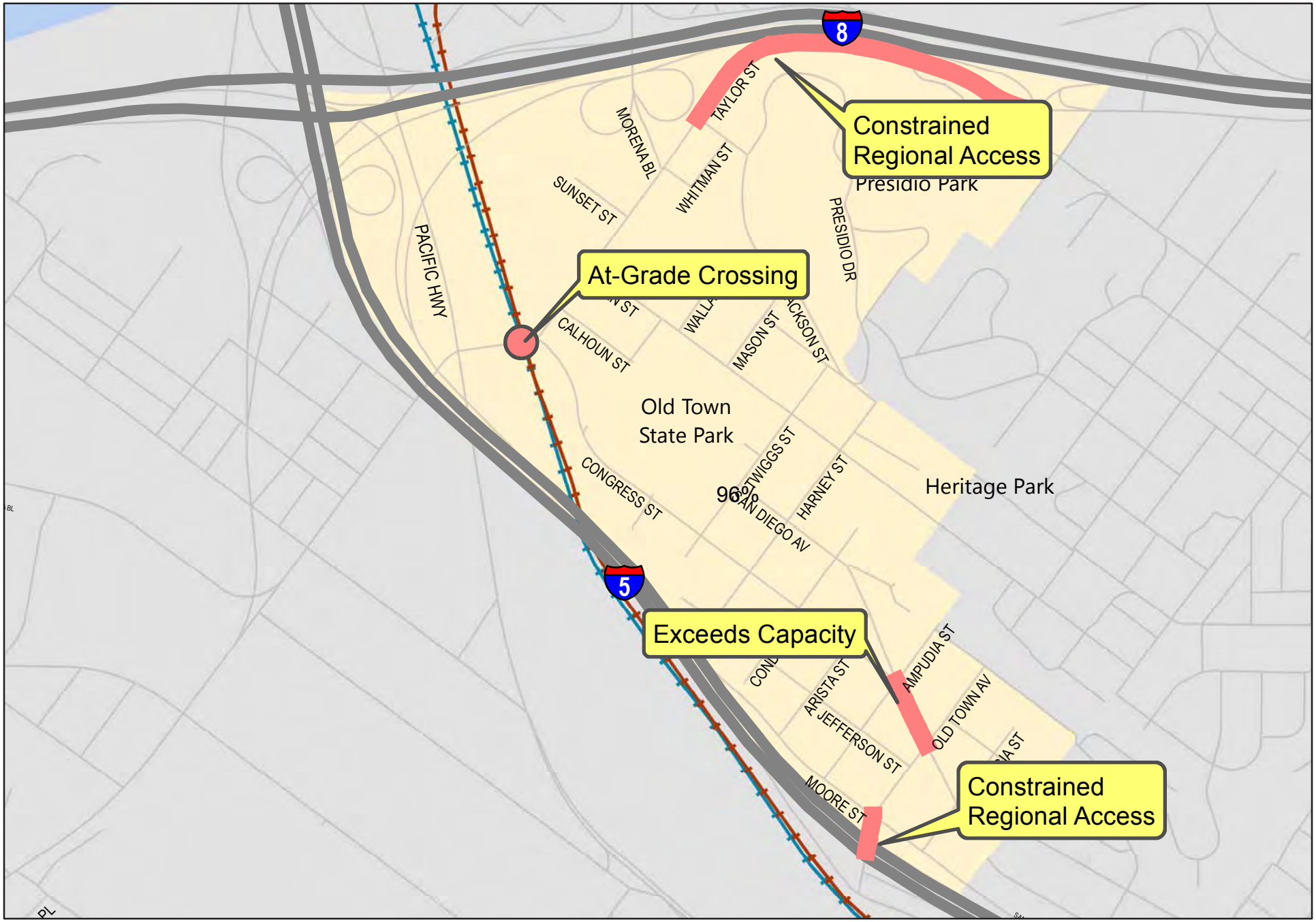


Figure 4-1
Identified Street and Freeway Related Issues and Needs - Old Town Community

This graphic is for conceptual purposes only. Further engineering study would be required at the project level prior to implementation.

Figure 4-2
Proposed Improvements - Congress Street / San Diego Avenue / Ampudia Street

Note: Converting the intersection control to a roundabout is also an option for this intersection. However, due to the tight spacing of the adjacent buildings there may not be enough right-of-way to accommodate a roundabout. Additional engineering study should be conducted to see if a roundabout is feasible at this intersection. If it is determined that a roundabout is feasible then it would become the preferred improvement.

Parking

San Diego Avenue between Twiggs Street and Conde Street has a large curb-to-curb width (50 feet) for a standard two-lane collector roadway (typically 40 feet wide). Therefore, in order to better utilize the curb-to-curb right-of-way, it is recommended that the parallel parking on the east side of the roadway be converted to angled parking, as shown in the figure below. The recommended improvement will not affect the capacity of the roadway and will increase the already constrained parking capacity within the Old Town community. Figure 4-3 displays a concept drawing of this improvement.

Freeway

There are no freeway improvements included in the Revenue Constrained alternative of *SANDAG's San Diego Forward, The Regional Plan (Adopted October 2015)* to be completed before this plan's Horizon Year (Year 2035). SANDAG prepared the Draft I-8 Corridor Study as a high level planning resource for potential improvements between Ocean Beach and Mission Valley. One of the identified improvements calls for the removal of all free movements from I-8 onto Morena Boulevard and "squaring up" each intersection. Since the plan has not yet been adopted and the improvements are not anticipated to be implemented until Year 2050, no improvements were assumed under Preferred Plan conditions.

This graphic is for conceptual purposes only. Further engineering study would be required at the project level prior to implementation.

Figure 4-3
Proposed San Diego Avenue Improvements between Twiggs Street and Conde Street

4.3 Pedestrian Environment

4.3.1 Identified Pedestrian Issues and Needs

The following pedestrian related issues and needs were identified in the Existing Conditions Report:

Taylor Street At-Grade Rail Crossing – Pedestrians accessing the Old Town Community or the Old Town Transit Center from Pacific Highway or Rosecrans Street currently have to cross the shared BNSF and MTS Trolley rail right-of-way. The Taylor Street at-grade rail crossing is over 100 feet wide, gate to gate, and pedestrians have to cross over four sets of rail tracks. During peak hours there are approximately 13 train crossing events lasting between 30 seconds and 3 minutes. During these times pedestrians are forced to wait until the train clears the crossing, causing excessive delays.

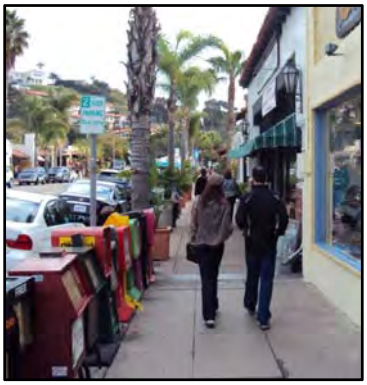
Old Town Transit Center Wayfinding – There is currently limited signage at the Old Town Transit Center directing pedestrians who are unfamiliar with the area, such as tourists, to the many restaurant, shops, historical monuments and structures, and parks in the community. Currently there is only a single map (identical to the map depicted in the picture below, which is located on San Diego Avenue) directing patrons to these various community features.

The Old Town San Diego Chamber of Commerce is implementing a wayfinding signage program that will install various signage types throughout the community to better inform patrons about how to access the various community features and help brand the community as a whole.

Missing Sidewalks – There are currently no sidewalks on Taylor Street, east of Presidio Drive and on the east side of San Diego Avenue, just north of Ampudia Street.

Connectivity between Community Features and Parks – There is currently no direct, convenient or identifiable path connecting the Old Town Transit Center, Old Town State Park and Presidio Park. Both parks are major community features attracting tourists and out of town guests who may not be familiar with the community or its amenities. The development of a clear, concise and well signed path connecting these three community assets would significantly improve pedestrian circulation within the community.

Sidewalk Capacity Issues – The retail and restaurant establishments along San Diego Avenue attract significant pedestrian traffic particularly during evenings and weekends. The sidewalks along San Diego Avenue are currently 7 to 8 feet wide with a limited parkway featuring street trees and planters. Retail shops and other merchants also take up part of the sidewalk with displays, racks and other attractions, as displayed in the photos to the right. During peak times, typical weekend evenings, pedestrian traffic along San Diego Avenue exceeds sidewalk capacity creating a congested pedestrian environment.



San Diego Avenue / Congress Street / Ampudia Street Intersection – This is currently a five legged intersection in which three of the approaches are stop-controlled (SB San Diego Avenue and EB & WB Ampudia Street) and the other two (NB San Diego Avenue and SB Congress Street) are free movements. There are also high vehicular traffic volumes crossing through the intersection along San Diego Avenue and Congress Street, which have no crosswalk facilities. This intersection is confusing and intimidating for pedestrians to cross due to the lack of traffic controls, high traffic volumes and missing crosswalk facilities.

The pedestrian related issues/needs within the Old Town Community, identified above, are displayed in Figure 4-4.

4.3.2 Pedestrian Improvements

Sidewalks

- Complete the sidewalks on the east side of San Diego Avenue, north of Ampudia Street.
- Complete sidewalks on Taylor Street, east of Presidio Drive.
- Implement sidewalks on the north side of Whitman Street.
- Complete sidewalks on Twiggs Street west of Congress Street.
- Implement sidewalks on Sunset Street between Juan Street and Mason Street.
- Implement a sidewalk on the west side of Mason Street between Juan Street and Jackson Street.
- Implement a sidewalk on the west side of Jackson Street between Presidio Drive and Mason Street

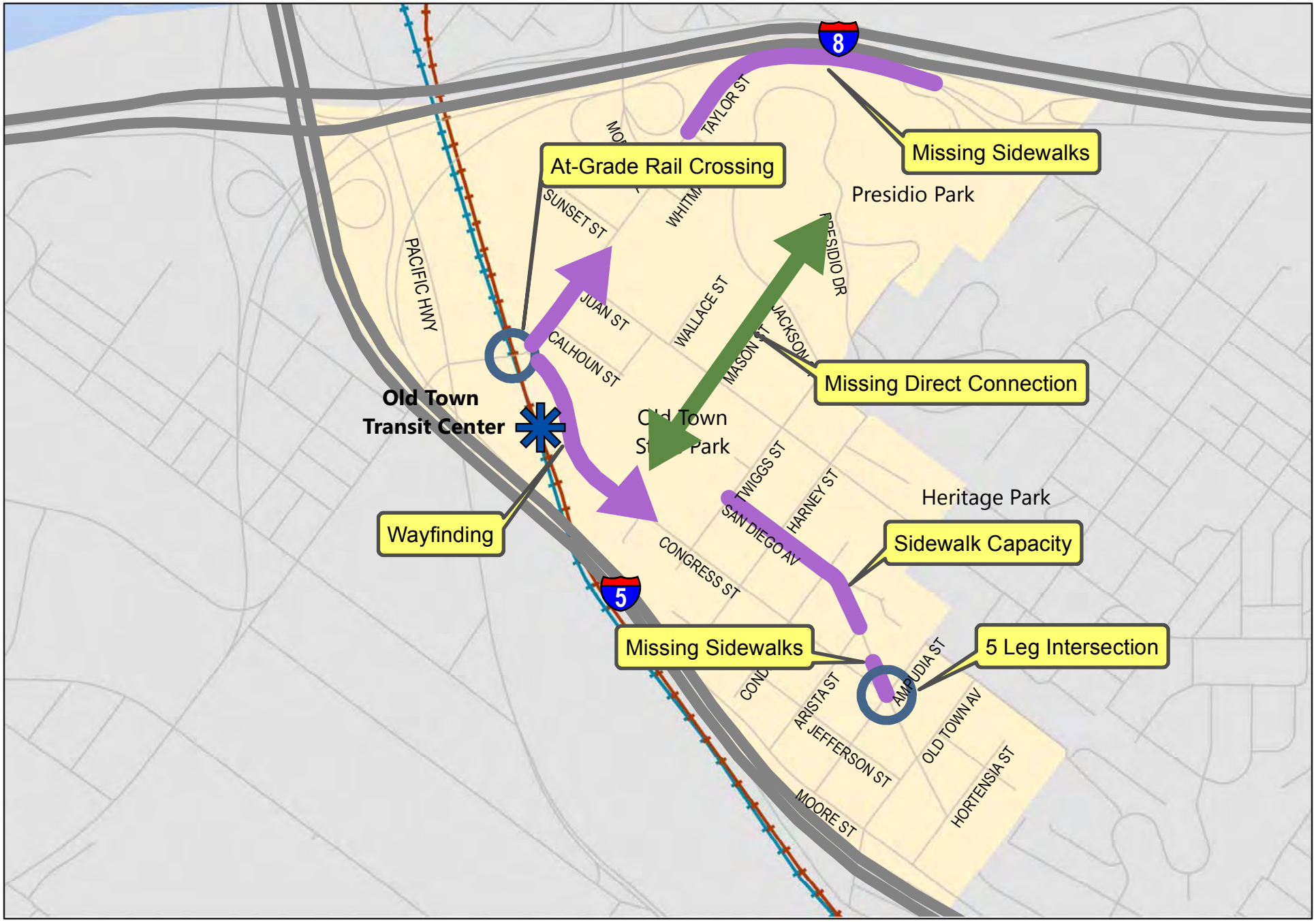
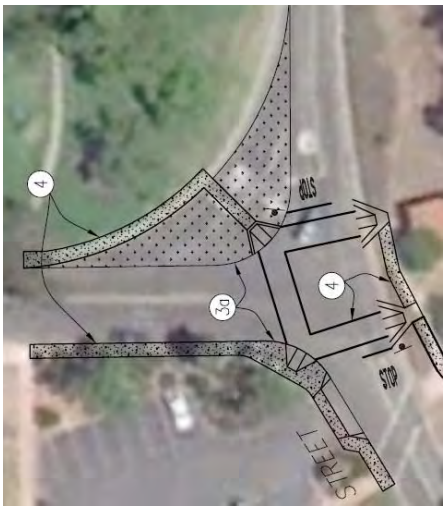


Figure 4-4
Identified Pedestrian Issues and Needs -
Old Town Community

Intersections

All crossing points at intersections should be upgraded to include the following:

- ADA compliant pedestrian ramps
- High visibility continental crosswalks
- Advanced stop bar placement
- Pedestrian count down signals



Proposed Improvements to Presidio Drive / Jackson Street intersection

Specific Intersection Improvements:

Presidio Drive / Jackson Street (Shown to the right):

- Implement bulb-outs on the west leg of the intersection
- Complete sidewalks on all sides of the intersection
- Square up intersection and remove southbound yielded right-turn movements
- Provide cross-walks across all legs of the intersection

Congress Street / Twiggs Street:

- Implement bulb-outs across all legs of the intersection

San Diego Avenue / Twiggs Street:

- Implement pavers or other high visible material in the center of the intersection to slow down and alert drivers to the heavy pedestrian presence, see example to the right.

Example of using bricks/pavers to create a highly visible intersection

Linwood Street / San Diego Avenue:

- Implement Pedestrian refuge island on the southern (Linwood Street) leg of the intersection.

Congress Street / San Diego Avenue / Ampudia Street (See figure 4-2):

- Convert intersection to all-way stop control
- Implement bulb-outs on all legs of the intersection
- Widen the sidewalks along the north side of San Diego Avenue

Note: As stated above, converting the intersection control to a roundabout is also an option for this intersection. However, due to the tight spacing of the adjacent buildings there may not be enough right-of-way to accommodate a roundabout. Additional engineering study should be conducted to see if a roundabout is feasible at this intersection. If it is determined that a roundabout is feasible then it would become the preferred improvement.

4.4 Cycling Environment

4.4.1 Identified Bicycle Issues and Needs

The following cycling related issues and needs were identified in the Existing Conditions Report:

Taylor Street – As mentioned previously, the Taylor Street corridor provides a significant regional east/west connection for vehicles as well as for cyclists. Taylor Street is currently classified as a Class III Bike Route within the Old Town Community; however, east of Presidio Drive, Taylor Street narrows to a two-lane roadway with narrow lane widths (10 feet) and no shoulders. Taylor Street is also a regional vehicular access point for the Old Town Community connecting the I-8 / Taylor Street interchange and Pacific Highway. The narrow lane widths, high vehicular traffic volumes and speeds along Taylor Street, east of Presidio Drive, create an uncomfortable environment for cyclists.

Congress Street / San Diego Avenue – Congress Street and San Diego Avenue (south of Ampudia Street) provide one of the few north/south connections for cyclists within the Old Town Community. Congress Street and San Diego Avenue (south of Ampudia Street) is currently classified as a Class III Bike Route designated by sharrow markings. Congress Street's proximity to the Old Town Transit Center and retail and restaurant uses make it a highly attractive route for cyclists. Both corridors currently have high traffic volumes, and on-street parking on both sides of the roadway which create an uncomfortable environment for cyclists.

The bicycle related issues/needs within the Old Town Community, identified above, are displayed in Figure 4-5.

4.4.2 Bicycle Improvements

The Preferred Plan proposes implementing the following bicycle facilities within the Old Town Community:

- Complete the Class II Bike Lanes in both directions along Taylor Street between Pacific Highway and the community boundary and bicycle boxes at appropriate intersections, as identified in the I-8 Corridor Study.
- Class III Bike Route in both directions along Juan Street between Taylor Street and community boundary.
- Class II Bike Lanes in both directions along Old Town Avenue between Hancock Street and San Diego Avenue.
- Class II Bike Lanes in both directions along Morena Boulevard between Taylor Street and the community boundary.

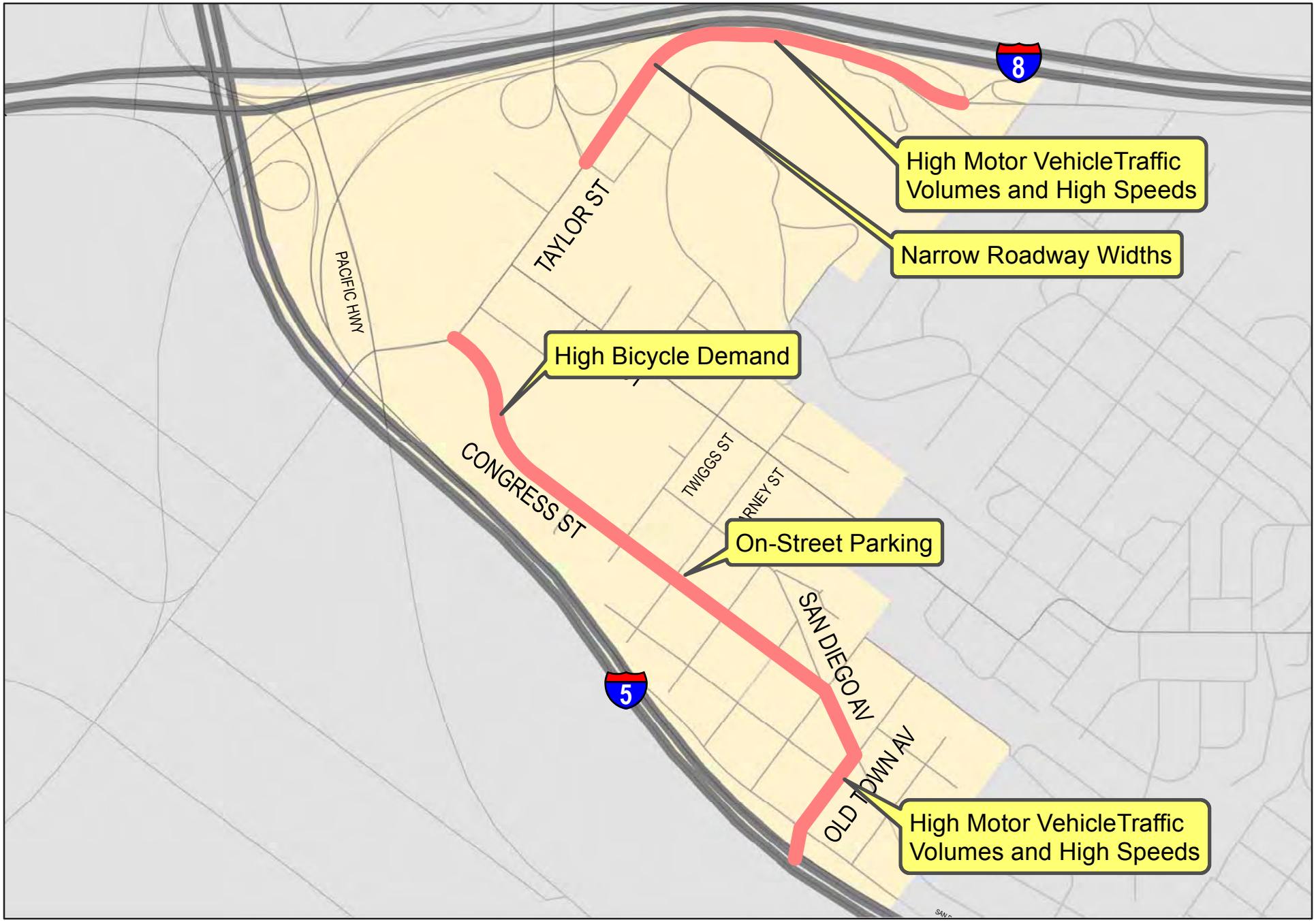


Figure 4-5
Bicycle Network Issues and Needs -
Old Town Community

A bicycle connection is currently lacking along Morena Boulevard between Taylor Street and Linda Vista Road. This is a critical connection that would link the Old Town and Linda Vista communities, as well as provide a connection to the Ocean Beach Bike Path. Unfortunately, the bridge along this segment of the roadway has a constrained right-of-way, and the current configuration of the I-8 Morena Boulevard ramps position four high-speed free-right turn movements on/off the bridge.

Due to these constraints there is not feasible bicycle facility that can be implemented along this segment without both widening the bridge and reconfiguring the I-8 / Morena Boulevard Ramps. However, it is recommended that the City work with both Caltrans and SANDAG to look for opportunities to implement bicycle facilities and better pedestrian facilities along this segment should any improvements be done to this segment. The I-8 Corridor Study identifies Class II bike lanes along Morena Boulevard, between W. Morena Boulevard and Taylor Street, as a high priority project. As described in section 4.2.2, the Corridor Study also proposes removing all free movements from I-8 onto Morena Boulevard and "squaring up" each intersection. Since the plan has not yet been adopted and the improvements are not anticipated to be implemented until Year 2050, no improvements were assumed under Preferred Plan conditions.

4.5 Public Transit Service and Facilities

4.5.1 Identified Transit Issues and Needs

The Old Town Community is served by 10 bus routes, a trolley line, a commuter rail service (The COASTER) and a regional rail line (Amtrak Surfliner), which all serve the Old Town Transit Center. Figure 4-6 displays the community's streets served by bus routes as well as the existing Trolley Lines.

This figure also shows the area within ½ mile of the Old Town Transit Center, which is considered a reasonable walking distance to a major transit center (as compared to a ¼ mile for bus stops). As depicted in this figure, nearly all of the commercial and recreational uses are within ½ mile of transit service.

Figure 4-6
Transit Coverage -
Old Town Community

4.5.2 Transit Improvements

SANDAG's *San Diego Forward, The Regional Plan* (Adopted October 2015), indicates that a number of transit improvements are planned for the Old Town Community, prior to this plan's Year 2035 Horizon Year, as described below.

COASTER – By the Year 2020, the frequency of the COASTER will be increased to every 20 minutes during peak periods and every 120 minutes during off-peak periods. The COASTER provides a commuter rail connection between the Old Town Transit Center and North County communities including Solana Beach, Encinitas and Oceanside.

COASTER – by the Year 2020, the COASTER line will be extended to the south and include stations at both Petco Park and the Convention Center.

Mid-Coast Trolley Line – The Mid-Coast Trolley will extend service from Santa Fe Depot in Downtown San Diego to the University City community, serving major activity centers such as Old Town, the University of California, San Diego (UCSD), and Westfield UTC. Construction of the Mid-Coast Trolley line is anticipated to be completed by the Year 2021.

Local Bus Service – Increase local bus service in key corridors to 10 minute headways programmed and scheduled for Year 2035.

Rapid Bus Route 28 – By the Year 2035, a new rapid bus route will be implemented providing service between Point Loma and Kearny Mesa via the Old Town Transit Center.

Rapid Bus Route 30 – By the Year 2035, a new rapid bus route will be implemented providing service between the Old Town Transit Center and Sorrento Mesa via Pacific Beach, La Jolla and UTC.

Rapid Bus Routes 640A – By the Year 2035, a new rapid bus route will be implemented providing service along I-5 between San Ysidro and the Old Town Transit Center, via City College downtown.

Transit Priority Treatments

Taylor Street serves several regional bus routes connecting multiple communities. Therefore, it is recommended that transit priority treatments be implemented along Taylor Street to help increase transit performance. It is recommended to implement queue jumper lanes and transit priority signals in either direction at both the Taylor Street / Juan Street and Taylor Street / Morena Boulevard intersections.

4.6 Currently Planned Improvements

The following section outlines the mobility improvements that are currently planned within the Old Town community. Some improvements were too minor to incorporate at the community plan level, while others are mitigation measures from projects within the area and are not the responsibility of the community plan. Additionally, the pending improvements contained within

the existing community Public Facilities Financing Plan are also outlined and identified if they are consistent with the Preferred Plan.

4.6.1 Auto

Mid-Coast Corridor Transit Project – The Mid-Coast Corridor and Transit Project Transportation Impacts and Mitigation Report; September 2014, identifies the following project related improvements at the Taylor Street / Rosecrans Street and Pacific Highway intersection:

- Provide second northbound right-turn lane
- Provide third eastbound through lane
- Provide second southbound left-turn lane

These improvements are designed to handle excess queuing at the intersection during gate down times. These improvements do not conflict with any improvements recommended by the Preferred Plan and have been incorporated into the future year analysis. However, since these improvements are mitigation measures for the Mid-Coast Corridor Transit Project they are not considered to be part of the Preferred Plan and should not be included in the IFS.

Old Town Public Facilities Financing Plan, 2004 – This plan identifies the widening of Presidio Drive to allow for a right-turn lane on Taylor Street (Project T10). This improvement is unfunded and is not currently scheduled for implementation. – *The Preferred Plan does not include this improvement as a recommendation.*

4.6.2 Pedestrian

Old Town Public Facilities Financing Plan, 2004 – Contains the following planned pedestrian improvements that have not yet been completed.

- Install / upgrade 20 curb ramps to meet ADA standards (Project T12) – These improvements are currently not scheduled or funded. – *Improvement is consistent with the Preferred Plan.*

Several pedestrian facility projects have been identified by the City of San Diego and are included on their Unfunded Transportation Needs List (8/5/2014). A list of the pedestrian improvements located in the Old Town Community are included in Appendix B. It should be noted that this list is updated on a regular basis and Appendix B only reflects a snapshot of the needs and planned improvements throughout the community at the time when this report was prepared.

SANDAG Uptown Bikeways Project – Phase 4 of the Uptown Bikeways project will include treatments to improve pedestrian safety (e.g., high visibility crosswalks, dual pedestrian ramps, bulb-outs). The project is located along Congress Street (from Taylor Street to San Diego Avenue) and San Diego Avenue (from Congress Street to south of Hortensia Avenue). The project is entering final design and is funded through construction. Since these improvements are funded through the Uptown Bikeways project, they should not be included in the IFS. *– Improvements are consistent with the Preferred Plan.*

Wayfinding Signage Program

The Old Town Chamber of Commerce is currently developing a wayfinding signage program in the Old Town Community. The wayfinding signage program will standardize and brand the various wayfinding signs currently within the community and highlight paths and links for pedestrians to access the various parks and attractions within the community.

4.6.3 Bicycle

SANDAG Uptown Bikeways Project – Phase 4 of the Uptown Bikeways project will include a mix of buffered bike lanes and shared lane markings along Congress Street (from Taylor Street to Mason Street) and shared lane markings, where not already marked (from Mason Street to San Diego Avenue). The project is currently in the design phase with specifications still being determined, therefore, it was not included as a recommendation in the Preferred Plan. Congress Street is currently designated as a Class III bicycle route, identifiable by vertical signage and shared lane markings. The Preferred Plan does not propose any modifications to the existing bicycle facility, nor does it include any recommendations that would prevent the Uptown Bikeways project from being implemented.

4.6.4 Transit

As noted in section 4.5.2 the Preferred Plan in consistent with *SANDAG's San Diego Forward, The Regional Plan (Adopted October 2015).*

5.0 Modeling and Forecasting

This chapter summarizes the future year travel demand model forecasting process utilized to project the future travel patterns within the Midway-Pacific Highway and Old Town communities, under buildout conditions. Future year traffic volumes were derived from a SANDAG Series 12 Transportation Forecast model run, which was verified per the City of San Diego's Small Study Area Traffic Modeling Process (April 2012) and calibrated for the Midway-Pacific Highway and Old Town communities.

5.1 Base Year (2012) Model Calibration

The base year model calibration process included verification and validation of base year model inputs (land uses and roadway network), as well as additional adjustments to the base year model (roadway speeds, centroid loadings, etc.) to calibrate the model to better represent existing travel patterns within the Midway-Pacific Highway and Old Town communities. Detailed descriptions of each validation step are provided in the following sections.

5.1.1 Base Year Land Use Verification/Validation

Existing land use data, as listed below, was collected for the Midway-Pacific Highway and Old Town communities and verified/adjusted in the Base Year model to correctly match actual conditions:

- Descriptions (land use type and code)
- Proper measurement unit types (square feet, units, acres)
- Quantity
- Vehicular trip generation rates

Land use types, descriptions and quantities were crosschecked with ground conditions using Google Earth imagery, as well as field verification, as necessary. Trip generation rates for individual land uses were coded based on the driveway rates provided in the *City of San Diego Land Development Code – Trip Generation Manual* (May 2003). Base year land use inputs for the project study area are provided in Appendix D.

5.1.2 Base Year Roadway Network Verification/Validation

The SANDAG Series 12 Base Year roadway network was compared to actual conditions to ensure an accurate model network. The following variables were compared and adjusted to match actual conditions:

- TAZ loading points
- Number of lanes for roadways
- Traffic controls
- Signalized intersection geometrics
- Street classification
- Roadway speed limits

5.1.3 Base Year Ground Count Validation & Adjustment

Historical ADT volumes over the past 11 years were compiled from the City of San Diego's Traffic Count Database and other recent studies for major roadway segments throughout the Midway-Pacific Highway and Old Town communities. The most recent historic counts along with counts from the past five (5) years were selected to establish a Base Year ground count database. This database included multiple counts from the same location on numerous segments, as well as the counts already included in the model. The final count was selected based upon nearby trip generators and traffic patterns along each roadway segment. Abnormally high or low traffic volumes were assumed to be outliers, and thus were not selected as model inputs.

5.1.4 Model Sensitivity Adjustment

Model calibration was performed by running a Base Year model estimate and comparing the results to the selected ground counts discussed above. Roadway segments that did not meet the model calibration targets established by the City of San Diego were identified for additional adjustments. These adjustments included the relocation of TAZ connectors and centroids, TAZ splitting, adjustments of roadway speed (to represent congestion), and in rare cases, ground count adjustments using historic counts older than three years.

5.2 Future Year Traffic Forecast Volume

The Future Year model was developed by inputting the future year land uses and roadway network into the calibrated Base Year model, described in the previous sections, with the following adjustments/assumptions:

- Implementation of the Preferred Plan land uses within the project study area (land use assumptions are provided in Appendix D).
- Existing roadway network within the study area with the following improvement projects:
    - Extension of Kemper Street between Sports Arena Boulevard and Kurtz Street
    - Implementation of Frontier Drive between Sports Arena Boulevard and Kurtz Street
    - Extension of Greenwood Street between Kurtz Street and Sports Arena Boulevard
    - Implementation of Charles Lindbergh Parkway between Sports Arena Boulevard and Midway Drive
    - Implementation of Dutch Flats Parkway between Sports Arena Boulevard and Barnett Avenue
- Year 2035 land uses outside of the study area
- Year 2035 roadway/transit network outside of the study area
- Year 2035 transit network both inside and outside of the study area

The model inputs described above were reviewed and approved by City staff prior to running the model forecasts.

Final SANDAG Series 12 Future Year Forecast Model results are provided in Appendix D. Figure 5-1 shows the final projected average daily traffic volumes that were used to develop and analyze the Preferred Plan mobility network, as described in the next chapter.

5.2.1 Vehicle Miles Traveled

The vehicle miles traveled (VMT) generated within the community was estimated using the SANDAG Series 12 Preferred Plan Future Year 2035 and Base Year models. VMT is the total number of miles driven by all vehicle trips within the Midway-Pacific Highway and Old Town communities, including trips to, from, and within the community. Table 5.1A and 5.1B display the total VMT generated within each community and the average trip length under both the Preferred Plan and Base Year conditions. VMT calculations are provided in Appendix D.

Table 5.1A Vehicle Miles Traveled (VMT) Comparison – Midway-Pacific Highway Community

Measure	Community Planning Area				San Diego Region			
	Base Year	Preferred Plan	Δ in Value	Δ in %	Base Year	Year 2035	Δ in Value	Δ in %
Total VMT (miles)	730,121	880,518	150,397	20.6%	85,331,631	108,974,617	23,642,986	27.7%
Total # of Auto Trips	294,796	324,655	29,859	10.1%	16,458,692	20,183,171	3,724,479	22.6%
Average Trip Length[1] (miles)	2.5	2.7	0.2	9.5%	5.2	5.4	0.2	3.7%
Population	4,670	22,695	18,025	386.0%	3,130,717	4,035,834	905,117	28.9%
Daily VMT by Population (miles)	156	39	-118	-75.2%	27	27	0	-1.5%

Source: Chen Ryan Associates (March 2017)

Note:

1. Average trip length is estimated by dividing the total VMT by the total # of auto trips.

As shown, under implementation of the Preferred Plan the number of new auto trips and total VMT generated within the Midway-Pacific Highway community is only anticipated to experience minimal growth (based on the regional averages). With the implementation of the Preferred Plan infrastructure and land uses, the average vehicular trip length is anticipated to increase by 9.5%. However, with the significant population increase anticipated within the community, the daily VMT by population is anticipated to drop dramatically (-75.2%).

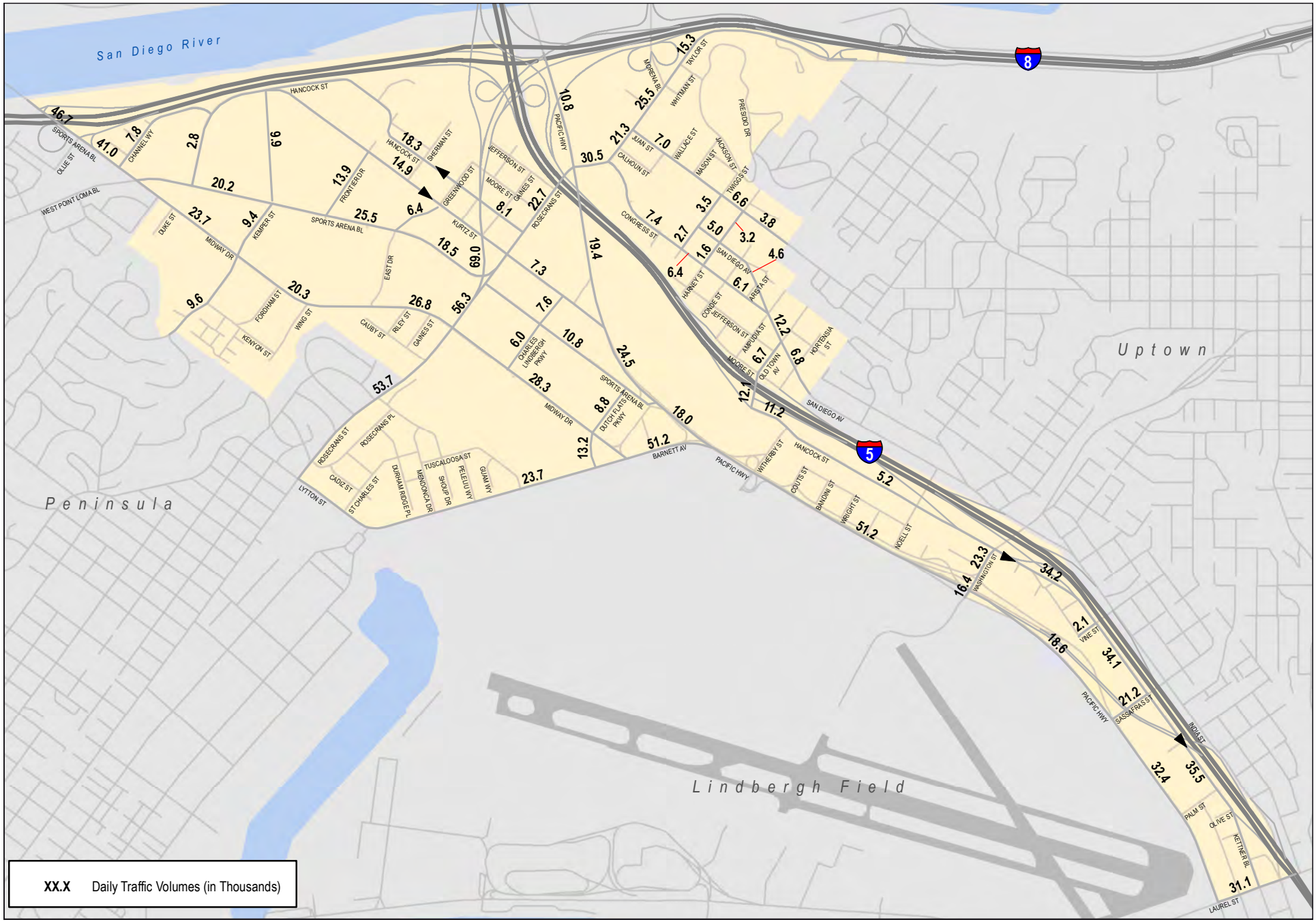


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Figure 5-1
Daily Roadway Segment Traffic Volumes -
Preferred Plan Conditions

Table 5.1B Vehicle Miles Traveled (VMT) Comparison – Old Town Community

Measure	Community Planning Area				San Diego Region			
	Base Year	Preferred Plan	Δ in Value	Δ in %	Base Year	Year 2035	Δ in Value	Δ in %
Total VMT (miles)	151,300	171,581	20,281	13.4%	85,331,631	108,974,617	23,642,986	27.7%
Total # of Auto Trips	57,989	59,792	1,803	3.1%	16,458,692	20,183,171	3,724,479	22.6%
Average Trip Length[1] (miles)	2.6	2.9	0.3	10.0%	5.2	5.4	0.2	3.7%
Population	830	1,600	770	92.8%	3,130,717	4,035,834	905,117	28.9%
Daily VMT by Population (miles)	182	107	-75	-41.2%	27	27	0	-1.5%

Source: Chen Ryan Associates (May 2017)

Note:
1. Average trip length is estimated by dividing the total VMT by the total # of auto trips.

As shown, under implementation of the Preferred Plan the number of new auto trips and total VMT generated within the Old Town community is only anticipated to experience average growth (based on the region. With the implementation of the Preferred Plan infrastructure and land uses the average vehicular trip length is anticipated to increase by 10.0%. However, the anticipated population increase within the community results in an overall decrease in the daily VMT by population (-41.2%).

5.2.2 Community Mode Choice

The Mode Choice Model used in the SANDAG Series 12 Transportation Forecast is not sensitive to changes in bicycle and pedestrian facilities. In other words, the model does not accurately adjust travel behaviors in response to implementation of multimodal facilities, such as bicycle lanes or separated multi-use paths, or reflect land use changes that create more mixed use environments. Due to these constraints, the SANDAG Series 12 Model was not utilized to project the demands of future year non-motorized travel.

SANDAG is currently in the process of developing Series 13, an Activity Based Model (ABM) which will more accurately account for shifts in transportation modes based on the implementation of pedestrian and bicycle facilities. However, SANDAG modeling staff has indicated that this model is currently under development and will not be ready for public release until later in 2016.

Since the ABM model is not ready for use at this time, a subsequent mode choice analysis will be prepared by the City as a separate document. The mode choice analysis will use the methods outlined in both the California Air Pollution Control Officers Association (CAPCOA) Quantifying Green House Gas Measures manual, as well as the Urban Land Institute's (ULI) Growing Cooler to post process the Series 12 model results and develop a more accurate mode split for each community.

6.0 Preferred Plan Analysis

6.1 Street and Freeway System Assessment and Results

The following section provides a summary of vehicular analysis results along key study roadways, including the projected daily roadway LOS, and the peak hour intersection LOS analysis under implementation of the Preferred Plan.

6.1.1 Roadway Segment Analysis

This analysis assumes implementation of the roadway segment-related improvements outlined in Sections 3.2.2 and 4.2.2 under the Preferred Plan. The associated roadway classifications under implementation of the Preferred Plan, within both communities, is displayed in Figure 6-1.

Table 6.1 and Figure 6-2 display the projected ADT volume and associated roadway LOS under implementation of the Preferred Plan. Section 5.2 describes the process used to develop projected ADT volume estimations.

As shown, all Mobility Element roadways are projected to operate at LOS D or better under Preferred Plan conditions, with the exception of the following:

Midway-Pacific Highway Community

- Midway Drive, between East Drive and Rosecrans Street (LOS E)
- Midway Drive, between Rosecrans Street and Barnett Avenue (LOS E)
- Kurtz Street, between Hancock Street and Rosecrans Street (LOS E)
- Kettner Boulevard, between Washington Street and Vine Street (LOS F)
- Kettner Boulevard, between Vine Street and Sassafras Street (LOS F)
- Kettner Boulevard, between Sassafras Street and Laurel Street (LOS F)
- Frontier Street, between Sports Arena Boulevard and Kurtz Street (LOS E)
- Camino Del Rio West, between Rosecrans Street and the I-5/I-8 Ramps (LOS F)
- Rosecrans Street, between Midway Drive and Sports Arena Boulevard (LOS E)
- Dutch Flats Parkway, between Barnett Avenue and Midway Drive (LOS E)
- Sassafras Street, between Pacific Highway and Kettner Boulevard (LOS F)

Old Town Community

- Congress Street between Taylor Street and Twiggs Street (LOS E)
- San Diego Avenue, between Ampudia St and Old Town Avenue (LOS F)
- San Diego Avenue, between Old Town Avenue and Hortensia Street (LOS E)
- Juan Street, between Taylor Street and Twiggs Street (LOS E)
- Juan Street, between Twiggs Street and Harney Street (LOS E)
- Taylor Street, between Morena Boulevard and I-8 Ramps (LOS F)
- Old Town Avenue, between Hancock Street and Moore Street (LOS F)
- Old Town Avenue, between Moore Street and San Diego Avenue (LOS E)

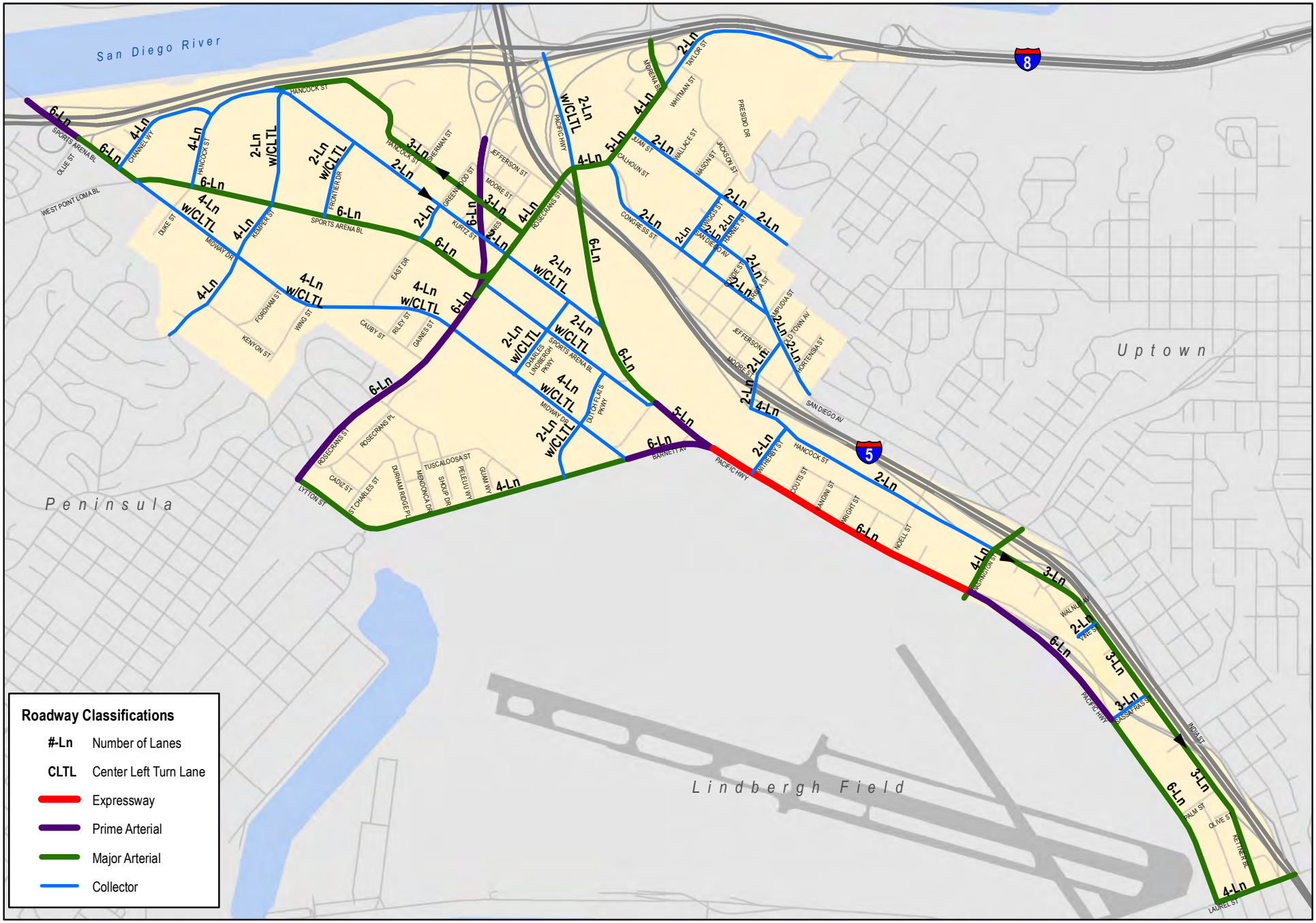

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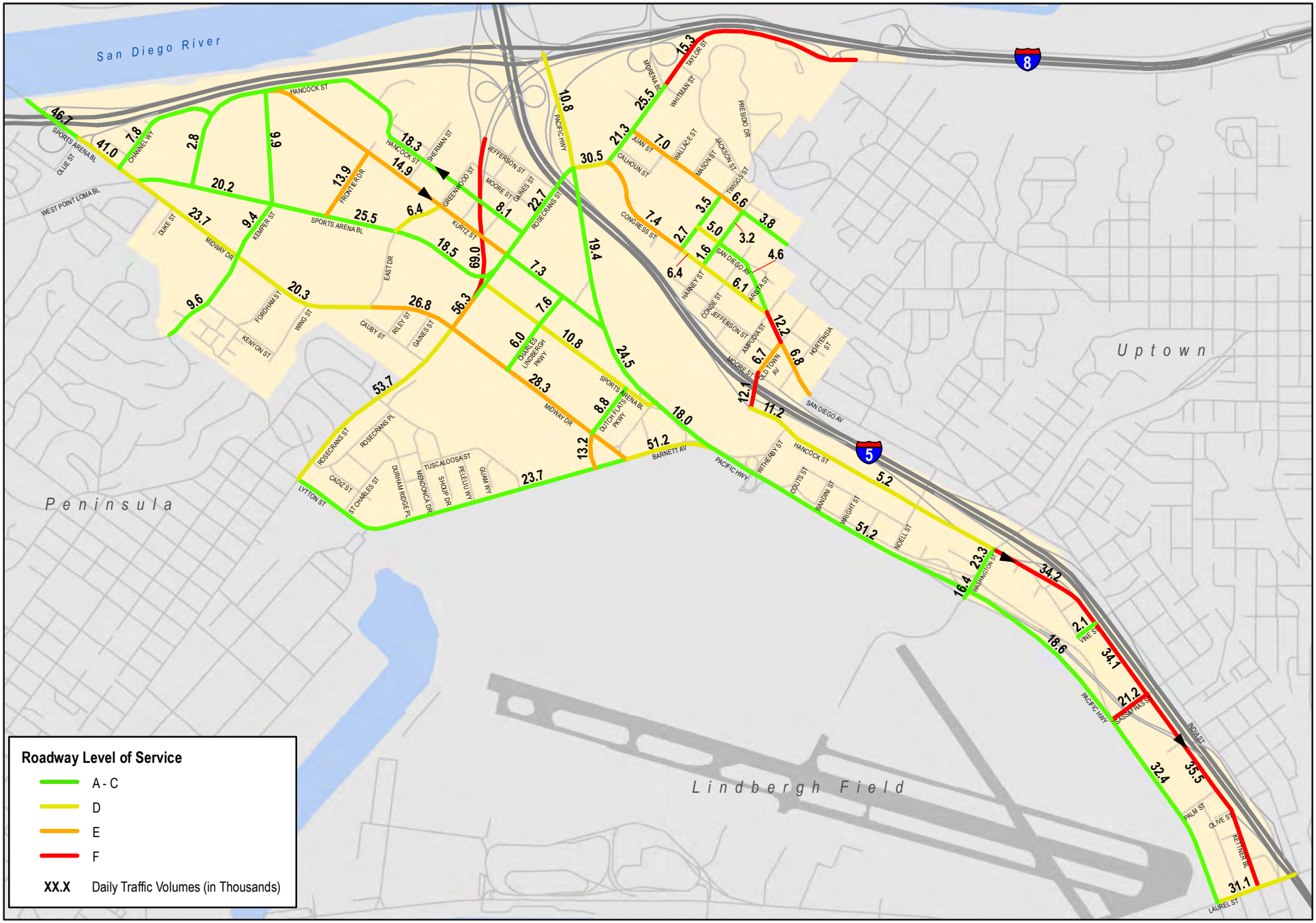
Figure 6-1
Roadway Classifications -
Preferred Plan Conditions



Midway-Pacific Highway and Old Town Community Plan Update

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Figure 6-2
Daily Roadway Segment Traffic Volumes and LOS - Preferred Plan Conditions

Table 6.1 Daily Roadway Segment Analysis - Preferred Plan Conditions

Roadway	From	To	Classification	Maximum Capacity at LOS E	ADT	V/C	LOS
North-South							
Midway Pacific Highway							
Lytton Street/ Barnett Ave	Rosecrans St	Midway Dr	4-Lane Major Arterial	40,000	23,700	0.59	C
Midway Dr	W. Point Loma Blvd/ Sports Arena Blvd	Kemper St	4-Lane Collector (CLTL)	30,000	23,700	0.79	D
	Kemper St	East Dr	4-Lane Collector (CLTL)	30,000	20,300	0.68	D
	East Dr	Rosecrans St	4-Lane Collector (CLTL)	30,000	26,800	0.89	E
	Rosecrans St	Barnett Ave	4-Lane Collector (CLTL)	30,000	28,300	0.94	E
Sports Arena Blvd	I-8 WB Ramps	I-8 EB Ramps	6-Lane Prime Arterial	60,000	46,700	0.78	C
	I-8 EB Ramps	W. Point Loma Blvd	6-Lane Major Arterial	50,000	41,000	0.82	D
	W. Point Loma Blvd/Midway Dr	Kemper St	6-Lane Major Arterial	50,000	20,200	0.4	B
	Kemper St	East Dr	6-Lane Major Arterial	50,000	25,500	0.51	B
	East Dr	Rosecrans St	6-Lane Major Arterial	50,000	18,500	0.37	A
	Rosecrans St	Pacific Hwy	2-Lane Collector (CLTL)	15,000	10,800	0.72	D
Kurtz St	Hancock St	Rosecrans St	2-Lane Collector (One-Way)	15,000	14,900	0.99	E
	Rosecrans St	Pacific Hwy	2-Lane Collector (CLTL)	15,000	7,300	0.49	C
Hancock St	Sports Arena Blvd	Kurtz St	4-Lane Collector	15,000	2,800	0.19	A
	Kurtz St	Camino Del Rio West	3-Lane Major (One-Way)	30,000	18,300	0.61	C
	Camino Del Rio West	Rosecrans St	3-Lane Major (One-Way)	30,000	8,100	0.27	A
	Old Town Ave	Witherby St	4-Lane Collector	15,000	11,200	0.75	D
	Witherby St	Washington St	2-Lane Collector	8,000	5,200	0.65	D
Kettner Blvd	Washington St	Vine St	3-Lane Major (One-Way)	30,000	34,200	1.14	F
	Vine St	Sassafras St	3-Lane Major (One-Way)	30,000	34,100	1.14	F
	Sassafras St	Laurel St	3-Lane Major (One-Way)	30,000	35,500	1.18	F
Pacific Hwy	Sea World Dr	Taylor St	2-Lane Collector (CLTL)	15,000	10,800	0.72	D

Table 6.1 Daily Roadway Segment Analysis - Preferred Plan Conditions

Roadway	From	To	Classification	Maximum Capacity at LOS E	ADT	V/C	LOS
Pacific Hwy	Taylor St	Kurtz St	6-Lane Major Arterial	50,000	19,400	0.39	A
	Kurtz St	Sports Arena Blvd	6-Lane Major Arterial	50,000	24,500	0.49	B
	Sports Arena Blvd	Barnett Ave	5-Lane Major Arterial	50,000	18,000	0.36	A
	Barnett Ave	Washington St	Expressway	80,000	51,200	0.64	C
	Washington St	Sassafras St	6-Lane Prime Arterial	60,000	18,600	0.37	A
	Sassafras St	Laurel St	6-Lane Major Arterial	50,000	32,400	0.65	C
Old Town							
Congress St[1]	Taylor St	Twiggs St	2-Lane Collector	8,000	7,400	0.93	E
	Twiggs St	Harney St	2-Lane Collector	8,000	6,400	0.8	D
	Harney St	San Diego Ave/ Ampudia St	2-Lane Collector	8,000	6,100	0.76	D
San Diego Ave[1]	Twiggs St	Harney St	2-Lane Collector	8,000	5,000	0.63	D
	Conde St	Arista Ave	2-Lane Collector	8,000	4,600	0.58	C
	Ampudia St	Old Town Ave	2-Lane Collector	8,000	12,200	1.53	F
	Old Town Ave	Hortensia St	2-Lane Collector	8,000	6,800	0.85	E
Juan St[1]	Taylor St	Twiggs St	2-Lane Collector	8,000	7,000	0.88	E
	Twiggs St	Harney St	2-Lane Collector	8,000	6,600	0.83	E
	Harney St	San Juan Rd	2-Lane Collector	8,000	3,800	0.48	C
East-West							
Midway Pacific Highway							
Channel Wy	W. Mission Bay Dr	Hancock St	4-Lane Collector	15,000	7,800	0.52	C
Kemper St	Kenyon St	Midway Dr	4-Lane Collector	15,000	9,600	0.64	C
	Midway Dr	Sports Arena Blvd	4-Lane Collector	15,000	9,400	0.63	C
	Sports Arena Blvd	Hancock St	2-Lane Collector (CLTL)	15,000	9,900	0.66	C
Frontier St	Sports Arena Blvd	Kurtz St	2-Lane Collector (CLTL)	15,000	13,900	0.93	E

Table 6.1 Daily Roadway Segment Analysis - Preferred Plan Conditions

Roadway	From	To	Classification	Maximum Capacity at LOS E	ADT	V/C	LOS
Greenwood St	Sports Arena Blvd	Kurtz St	2-Lane Collector	8,000	6,400	0.8	D
Camino Del Rio West	Rosecrans St	I-5/I-8 Ramps	6-Lane Prime Arterial	60,000	69,000	1.15	F
Rosecrans St	Lytton St	Midway Dr	6-Lane Prime Arterial	60,000	53,700	0.9	D
	Midway Dr	Sports Arena Blvd	6-Lane Prime Arterial	60,000	56,300	0.94	E
	Sports Arena Blvd	Pacific Hwy/Taylor St	4- Lane Major Arterial	40,000	22,700	0.57	C
Charles Lindbergh Pkwy	Midway Dr	Sports Arena Blvd	2-Lane Collector (CLTL)	15,000	6,000	0.4	B
	Sports Arena Blvd	Kurtz Street	2-Lane Collector (CLTL)	15,000	7,600	0.51	C
Dutch Flats Pkwy	Barnett Avenue	Midway Dr	2-Lane Collector (CLTL)	15,000	13,200	0.88	E
	Midway Dr	Sports Arena Blvd	2-Lane Collector (CLTL)	15,000	8,800	0.59	C
Barnett Ave	Midway Dr	Pacific Hwy	6-Lane Prime Arterial	60,000	51,200	0.85	D
Washington St	Frontage Rd	Pacific St	4- Lane Major Arterial	40,000	16,400	0.41	B
	Pacific St	Hancock St	4- Lane Major Arterial	40,000	23,300	0.58	C
Vine St	California St	Kettner Blvd	2-Lane Collector	8,000	2,100	0.26	A
Sassafras St	Pacific Hwy	Kettner Blvd	3-Lane Collector	11,500	21,200	1.84	F
Laurel St	Pacific Hwy	Kettner Blvd	4- Lane Major Arterial	40,000	31,100	0.78	D
Old Town							
Taylor St[1]	Pacific Hwy/ Rosecrans St	Congress St	4- Lane Major Arterial	40,000	30,500	0.76	D
	Congress St	Juan St	5-Lane Major Arterial	45,000	21,300	0.47	B
	Juan St	Morena Blvd	4- Lane Major Arterial	40,000	25,500	0.64	C
	Morena Blvd	I-8 EB Ramps	2-Lane Collector	8,000	15,300	1.91	F
Twiggs St[1]	Congress St	San Diego Ave	2-Lane Collector	8,000	2,700	0.34	B
	San Diego Ave	Juan St	2-Lane Collector	8,000	3,500	0.44	C
Harney St[1]	Congress St	San Diego Ave	2-Lane Collector	8,000	1,600	0.2	A
	San Diego Ave	Juan St	2-Lane Collector	8,000	3,200	0.4	B

Table 6.1 Daily Roadway Segment Analysis - Preferred Plan Conditions

Roadway	From	To	Classification	Maximum Capacity at LOS E	ADT	V/C	LOS
Old Town Ave[1]	Hancock St	Moore St	2-Lane Collector	8,000	12,100	1.51	**F**
	Moore St	San Diego Ave	2-Lane Collector	8,000	6,700	0.84	**E**

Source: Chen Ryan Associates (May 2017)

Note: **Bold** letter indicates LOS E or F

The following mitigation measures were identified for the two communities:

Midway-Pacific Highway Community

Midway Drive, between Rosecrans Street and Barnett Avenue (LOS E) – Improving the roadway way from a 4-Lane Collector with Center Left-Turn Lane to a 4-Lane Major Arterial would improve the operations to LOS C. The identified significant traffic related impact to this roadway segment would be fully mitigated with the implementation of this mitigation measure.

Kurtz Street, between Hancock Street and Rosecrans Street (LOS E) – Widening the roadway from a 2-Lane Collector (One-Way) Arterial to a 3-Lane - Lane Major (One-Way) Arterial would improve the operations to LOS B. The identified significant traffic related impact to this roadway segment would be fully mitigated with the implementation of this improvement.

Kettner Boulevard, between Washington Street and Vine Street (LOS F) – Widening the roadway from a 3-Lane Major (One-Way) Arterial to a 4-Lane - Lane Major (One-Way) Arterial would improve the operations to LOS D. The identified significant traffic related impact to this roadway segment would be fully mitigated with the implementation of this mitigation measure.

Kettner Boulevard, between Vine Street and Sassafras Street (LOS F) – Widening the roadway from a 3-Lane Major (One-Way) Arterial to a 4-Lane - Lane Major (One-Way) Arterial would improve the operations to LOS D. The identified significant traffic related impact to this roadway segment would be fully mitigated with the implementation of this mitigation measure.

Kettner Boulevard, between Sassafras Street and Laurel Street (LOS F) – Widening the roadway from a 3-Lane Major (One-Way) Arterial to a 4-Lane - Lane Major (One-Way) Arterial would improve the operations to LOS D. The identified significant traffic related impact to this roadway segment would be fully mitigated with the implementation of this mitigation measure.

Frontier Drive, between Sports Arena Boulevard and Kurtz Street (LOS E) – Improving from a 2-Lane Collector with a Center Left Turn-Lane to a 4-Lane Collector with a Center Left Turn-Lane would improve the operations to LOS B. The identified significant traffic related impact to this roadway segment would be fully mitigated with the implementation of this mitigation measure. However, due to the neighborhood character and potential impacts to both bicycle and pedestrian travel, it is recommended that Frontier Drive be built as a 2-Lane Collector with a Center Left Turn-Lane.

Camino Del Rio West, between Rosecrans Street and the I-5/I-8 Ramps (LOS F) – Improving this roadway from a 6-Lane Prime Arterial to a 6-Lane Expressway would improve the operations to LOS D. The identified significant traffic related impact to this roadway segment would be fully mitigated with the implementation of this improvement.

Dutch Flats Parkway, between Barnett Avenue and Midway Drive (LOS E) – Improving from a 2-Lane Collector with a Center Left Turn-Lane to a 4-Lane Collector with a Center Left Turn-Lane would improve the operations to LOS B. The identified significant traffic related impact to this roadway segment would be fully mitigated with the implementation of this improvement. However, due to the neighborhood character and potential impacts to both bicycle and pedestrian travel, it is recommended that Dutch Flats Parkway be built as a 2-Lane Collector with a Center Left Turn-Lane.

Sassafras Street, between Pacific Highway and Kettner Boulevard (LOS F) - Widening the roadway from a 3-Lane Collector to a 4-Lane Collector with Center Left-Turn Lane would improve the operations to LOS D. The identified significant traffic related impact to this roadway segment would be fully mitigated with the implementation of this improvement.

Old Town Community

Congress Street between Taylor Street and Twiggs Street (LOS E) - Widening the roadway from a 2-Lane Collector to a 2-Lane Collector with Center Left-Turn Lane would improve the operations to LOS C. The identified significant traffic related impact to this roadway segment would be fully mitigated with the implementation of this improvement.

San Diego Avenue, between Ampudia St and Old Town Avenue (LOS F) - Widening the roadway from a 2-Lane Collector to a 2-Lane Collector with Center Left-Turn Lane would improve the operations to LOS D. The identified significant traffic related impact to this roadway segment would be fully mitigated with the implementation of this improvement.

San Diego Avenue, between Old Town Avenue and Hortensia Street (LOS E) - Widening the roadway from a 2-Lane Collector to a 2-Lane Collector with Center Left-Turn Lane would improve the operations to LOS B. The identified significant traffic related impact to this roadway segment would be fully mitigated with the implementation of this improvement.

Juan Street, between Taylor Street and Twiggs Street (LOS E) - Widening the roadway from a 2-Lane Collector to a 2-Lane Collector with Center Left-Turn Lane would improve the operations to LOS B. The identified significant traffic related impact to this roadway segment would be fully mitigated with the implementation of this mitigation measure.

Juan Street, between Twiggs Street and Harney Street (LOS E) - Widening the roadway from a 2-Lane Collector to a 2-Lane Collector with Center Left-Turn Lane would improve the operations to LOS B. The identified significant traffic related impact to this roadway segment would be fully mitigated with the implementation of this improvement.

Taylor Street, between Morena Boulevard and I-8 Ramps (LOS F) - Widening the roadway from a 2-Lane Collector to a 4-Lane Collector with Center Left-Turn Lane would improve the operations to LOS C. The identified significant traffic related impact to this roadway segment would be fully mitigated with the implementation of this improvement.

Old Town Avenue, between Hancock Street and Moore Street (LOS F) - Widening the roadway from a 2-Lane Collector to a 2-Lane Collector with Center Left-Turn Lane would improve the operations to LOS D. The identified significant traffic related impact to this roadway segment would be fully mitigated with the implementation of this mitigation measure.

Old Town Avenue, between Moore Street and San Diego Avenue (LOS E) - Widening the roadway from a 2-Lane Collector to a 2-Lane Collector with Center Left-Turn Lane would improve the operations to LOS B. The identified significant traffic related impact to this roadway segment would be fully mitigated with the implementation of this mitigation measure.

6.1.2 Intersection Geometry and LOS Analysis

AM and PM peak hour intersection LOS analyses were conducted for Preferred Plan conditions. It was assumed under implementation of the Preferred Plan that the proposed intersection improvements outlined in Sections 3.2.2 and 4.2.2 would be in place. Figure 6-3 and Figure 6-4 display the proposed intersection geometrics and forecast AM and PM peak hour turning movements under implementation of the Preferred Plan, respectively.

Table 6.2 and Figure 6-5 display the LOS results for the key study intersections located within both communities under Preferred Plan conditions. LOS analyses were conducted using the methodologies described in Chapter 2.0. Intersection LOS calculation worksheets are provided in Appendix E. Signal timing were assumed to be optimized under implementation of Preferred Plan conditions, therefore some signal operations may be projected to operate better than under existing conditions.

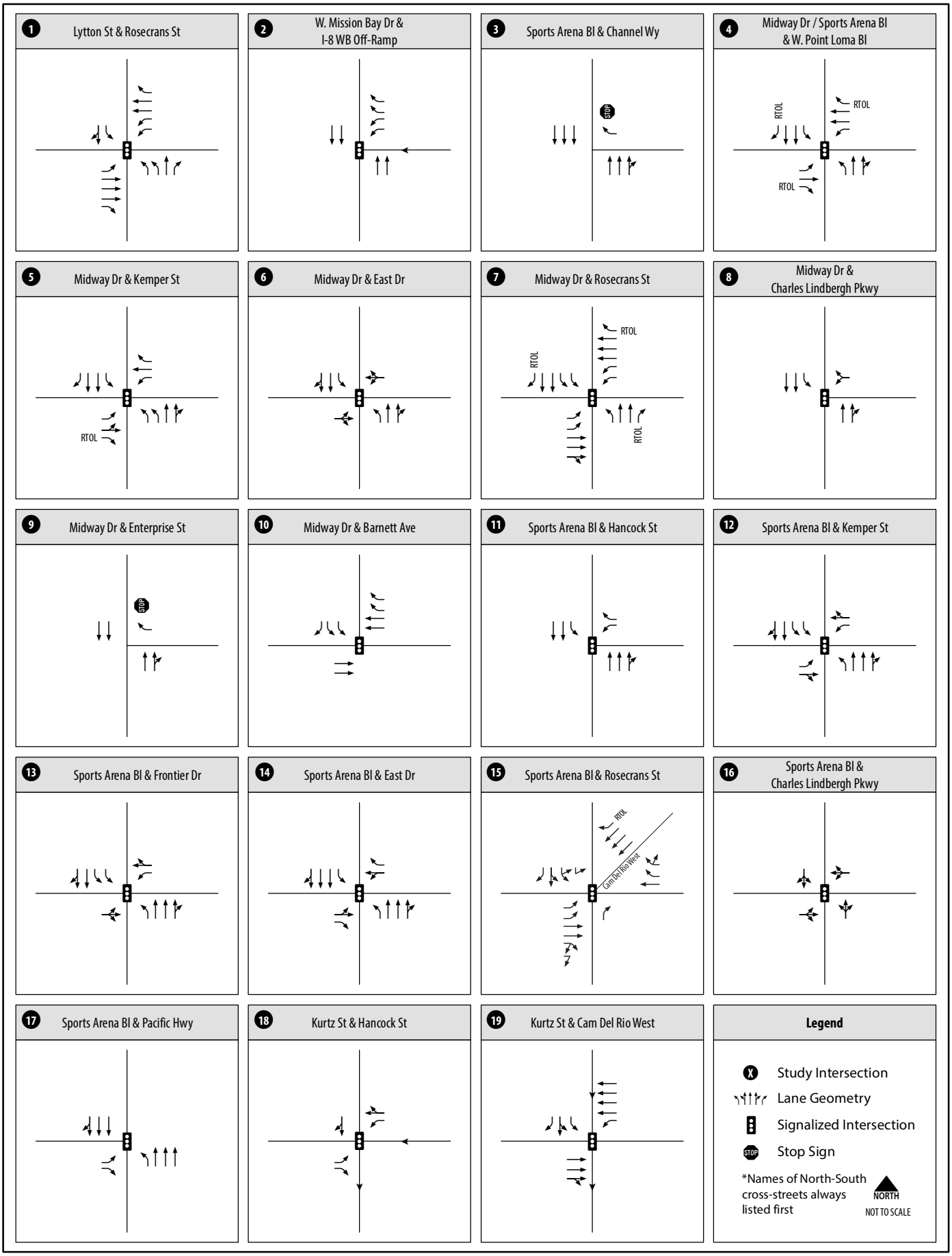

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Figure 6-3
Intersection Geometrics - Preferred Plan (Intersections 1-19)

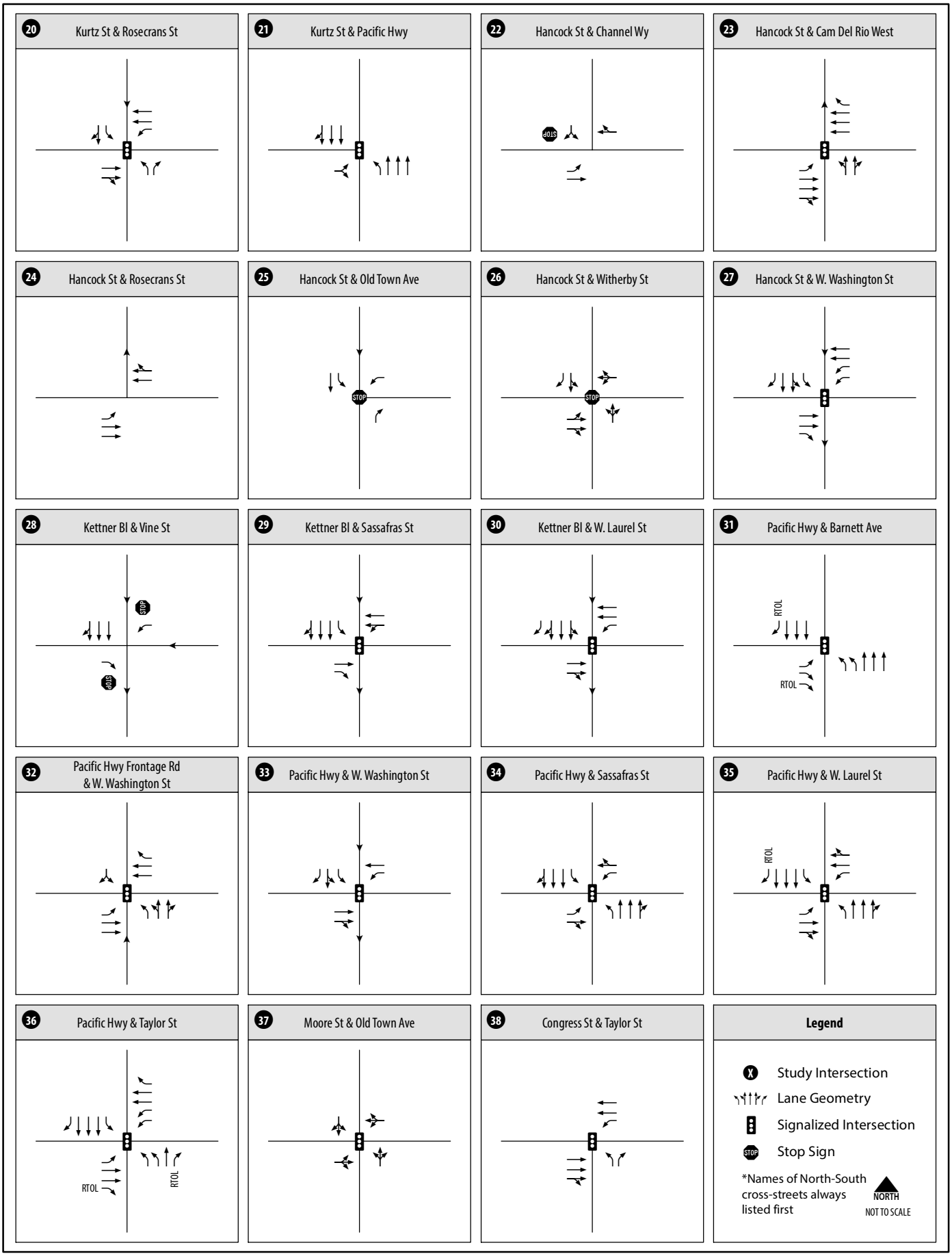

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Figure 6-3
Intersection Geometrics - Preferred Plan (Intersections 20-38)

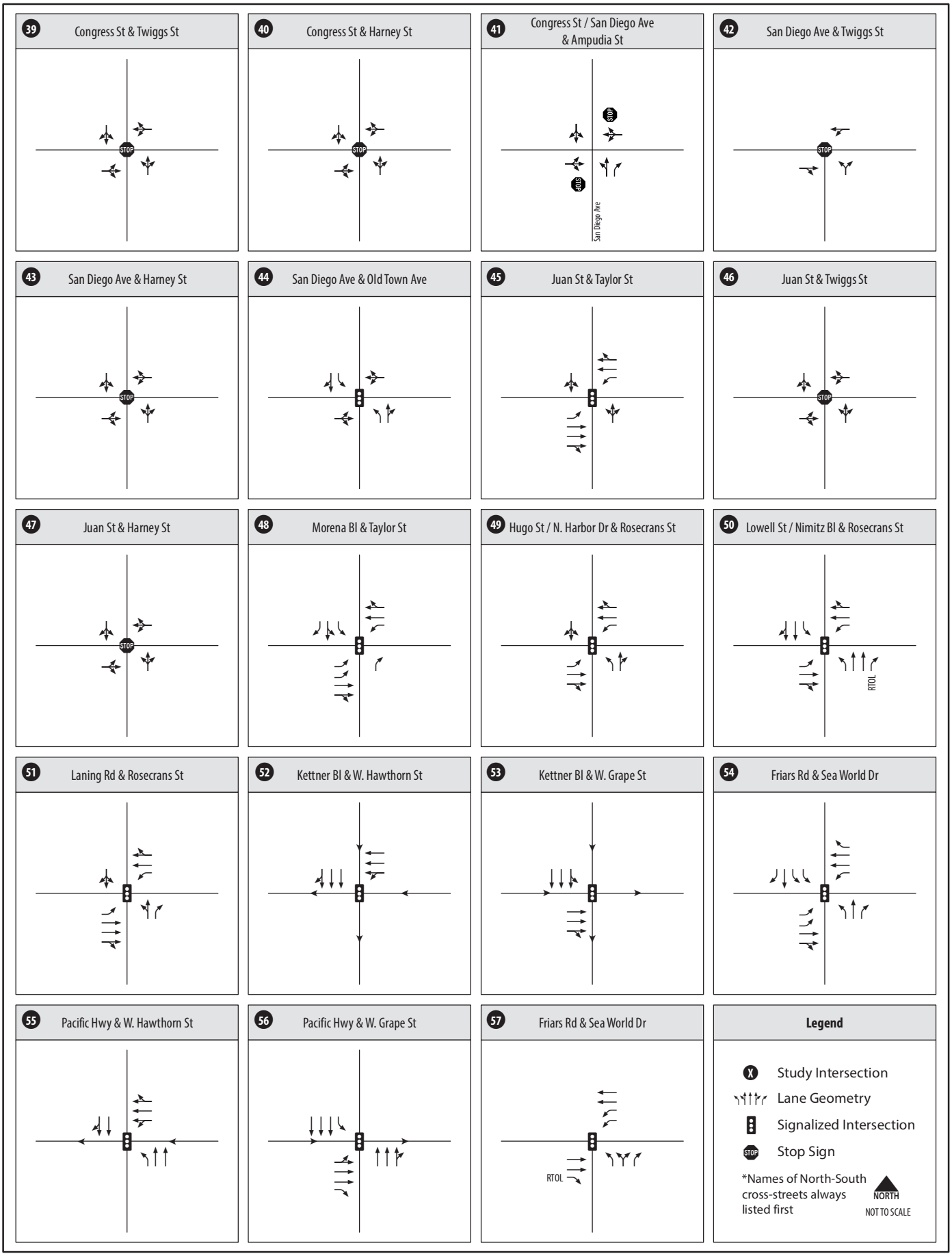

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Figure 6-3
Intersection Geometrics - Preferred Plan (Intersections 39-57)

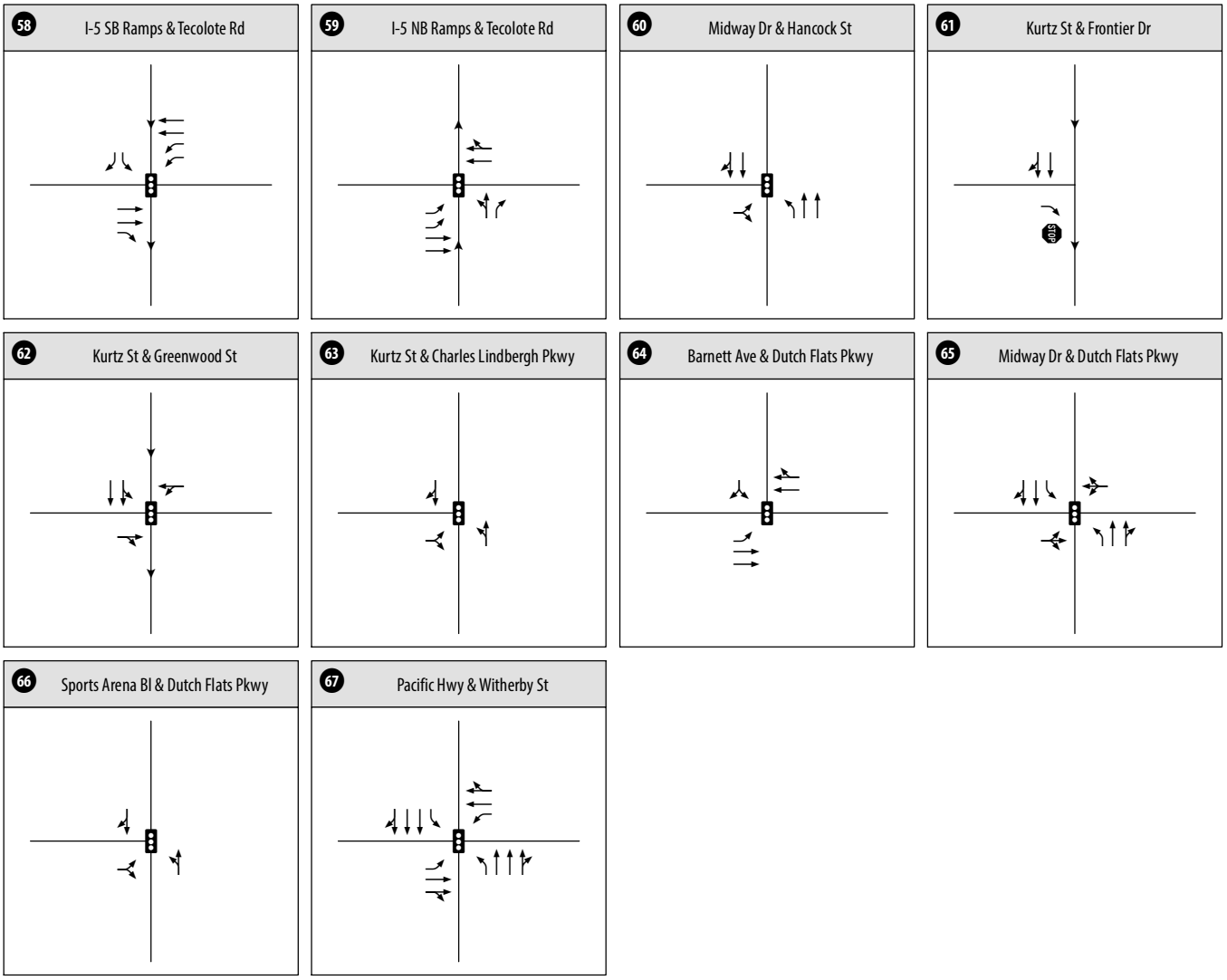

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Figure 6-3
Intersection Geometrics - Preferred Plan (Intersections 58-67)

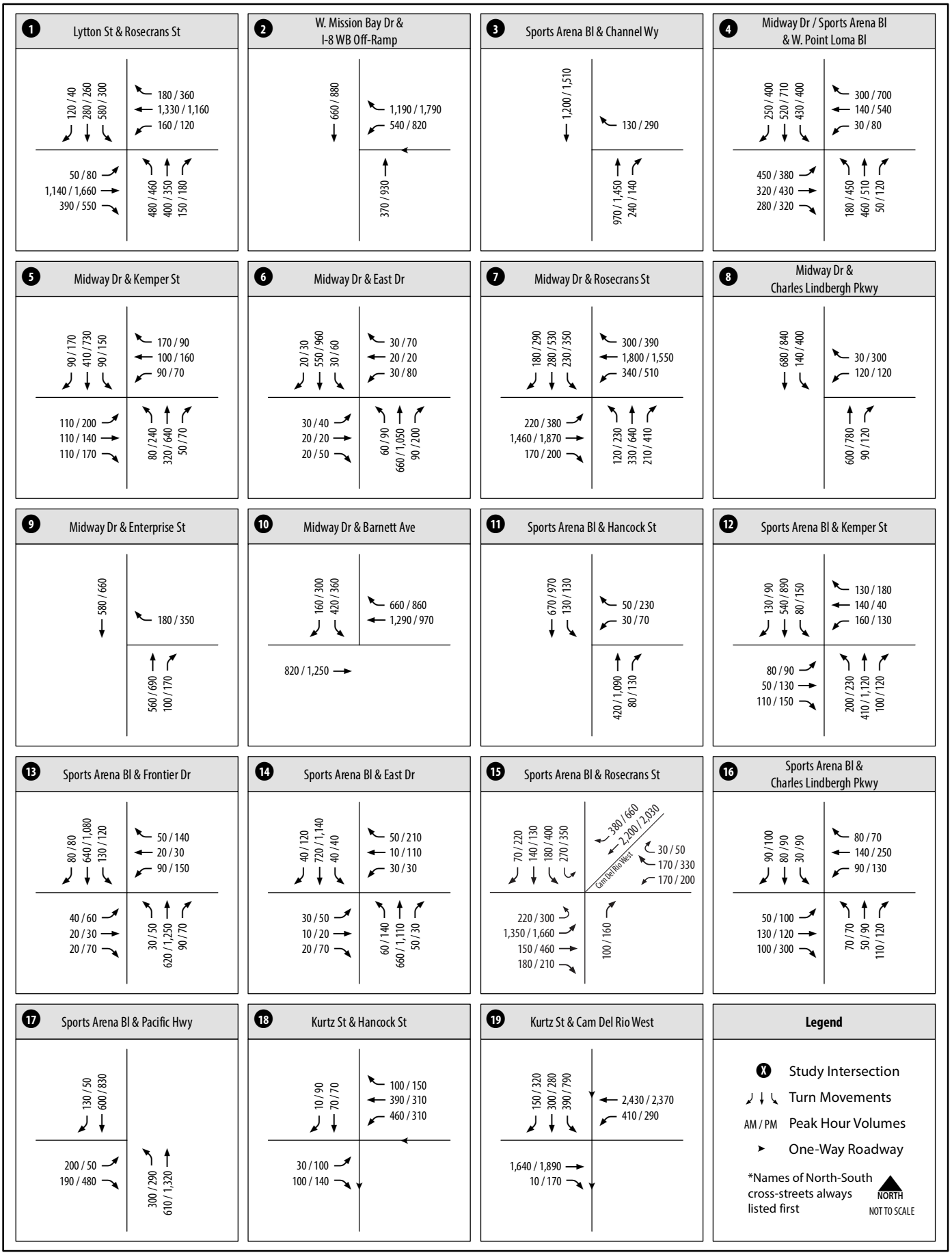

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Figure 6-4

Peak Hour Turning Movement Volumes - Preferred Plan Conditions (Intersections 1-19)

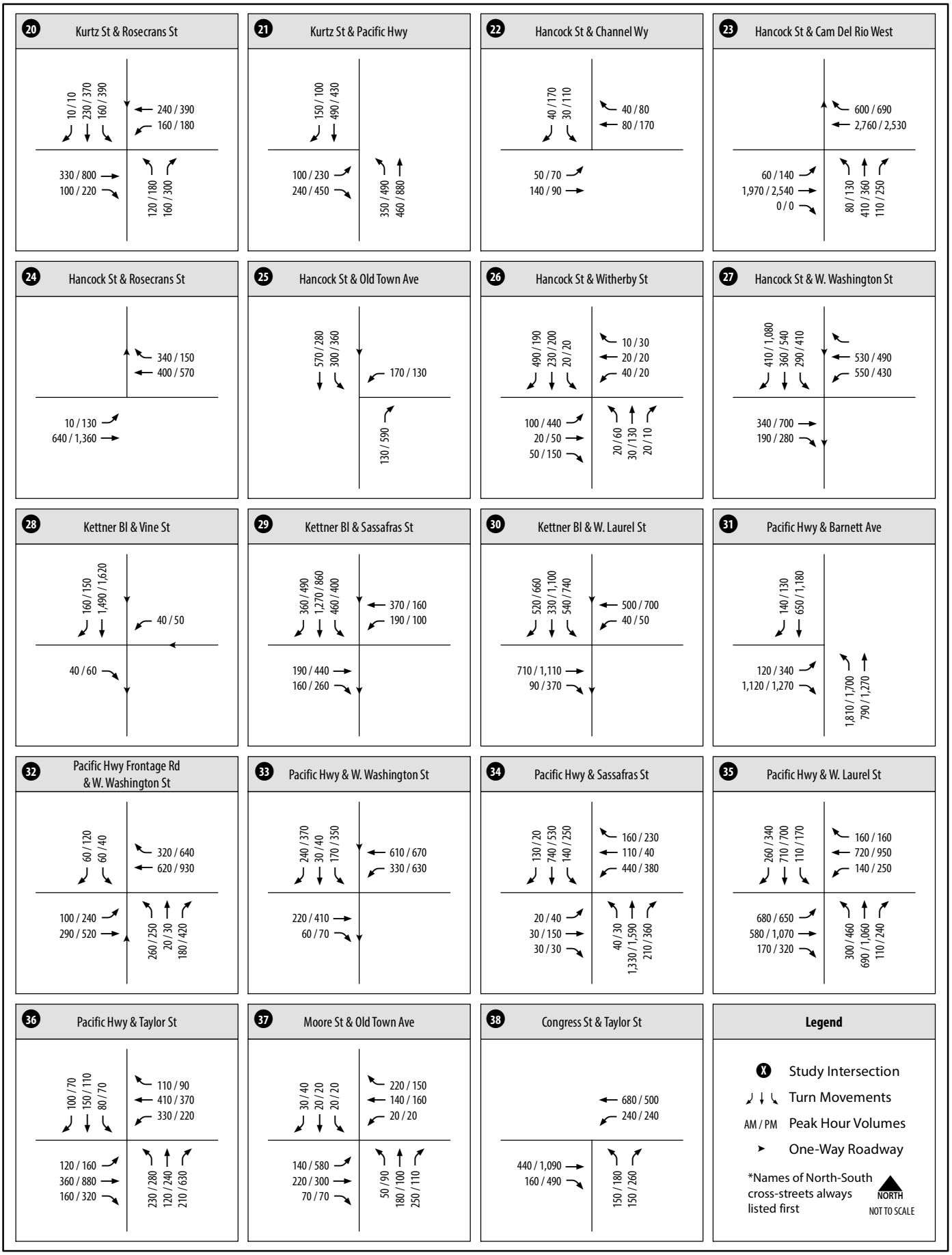

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Figure 6-4
Peak Hour Turning Movement Volumes - Preferred Plan Conditions (Intersections 20-38)

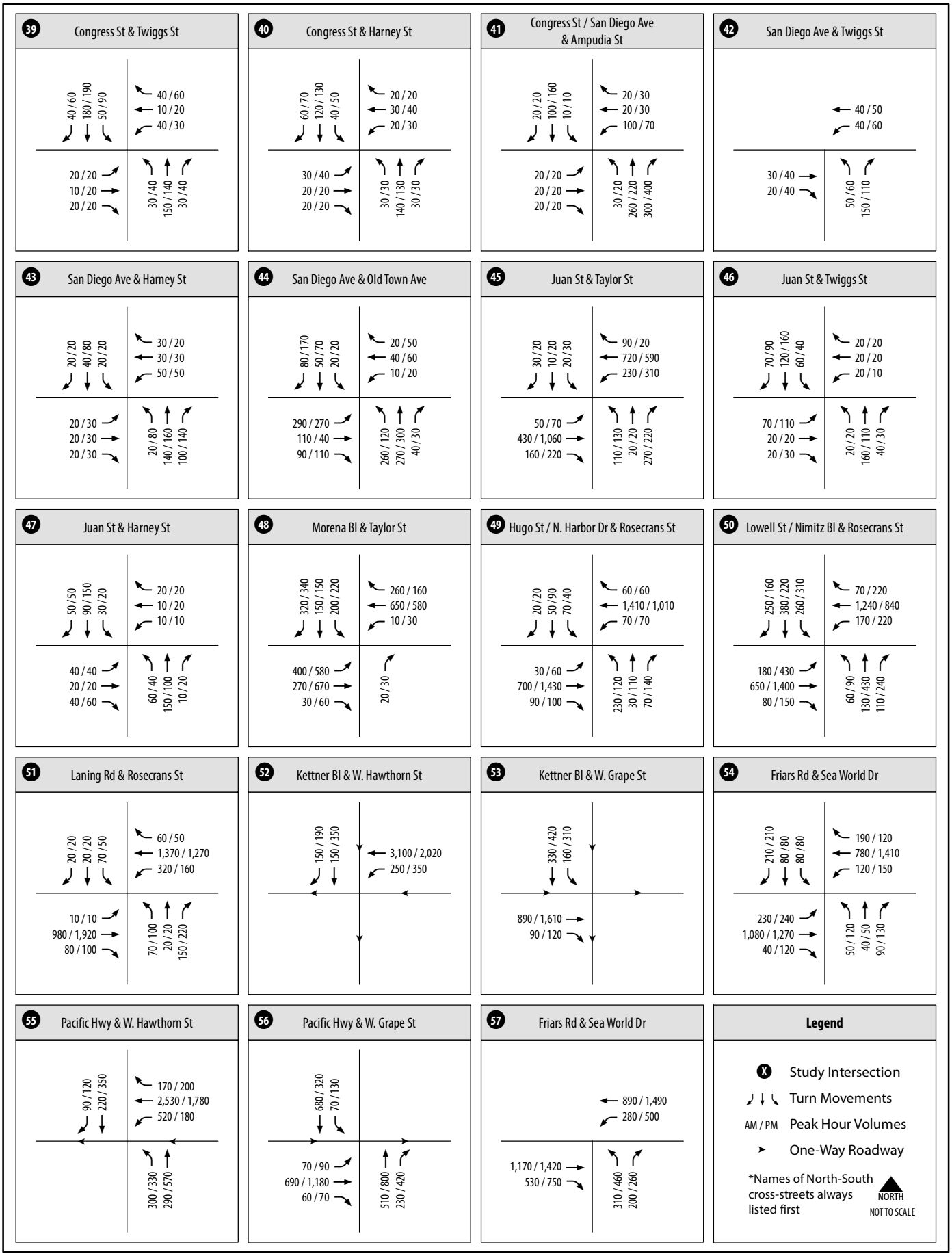

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Figure 6-4

Peak Hour Turning Movement Volumes - Preferred Plan Conditions (Intersections 39-57)

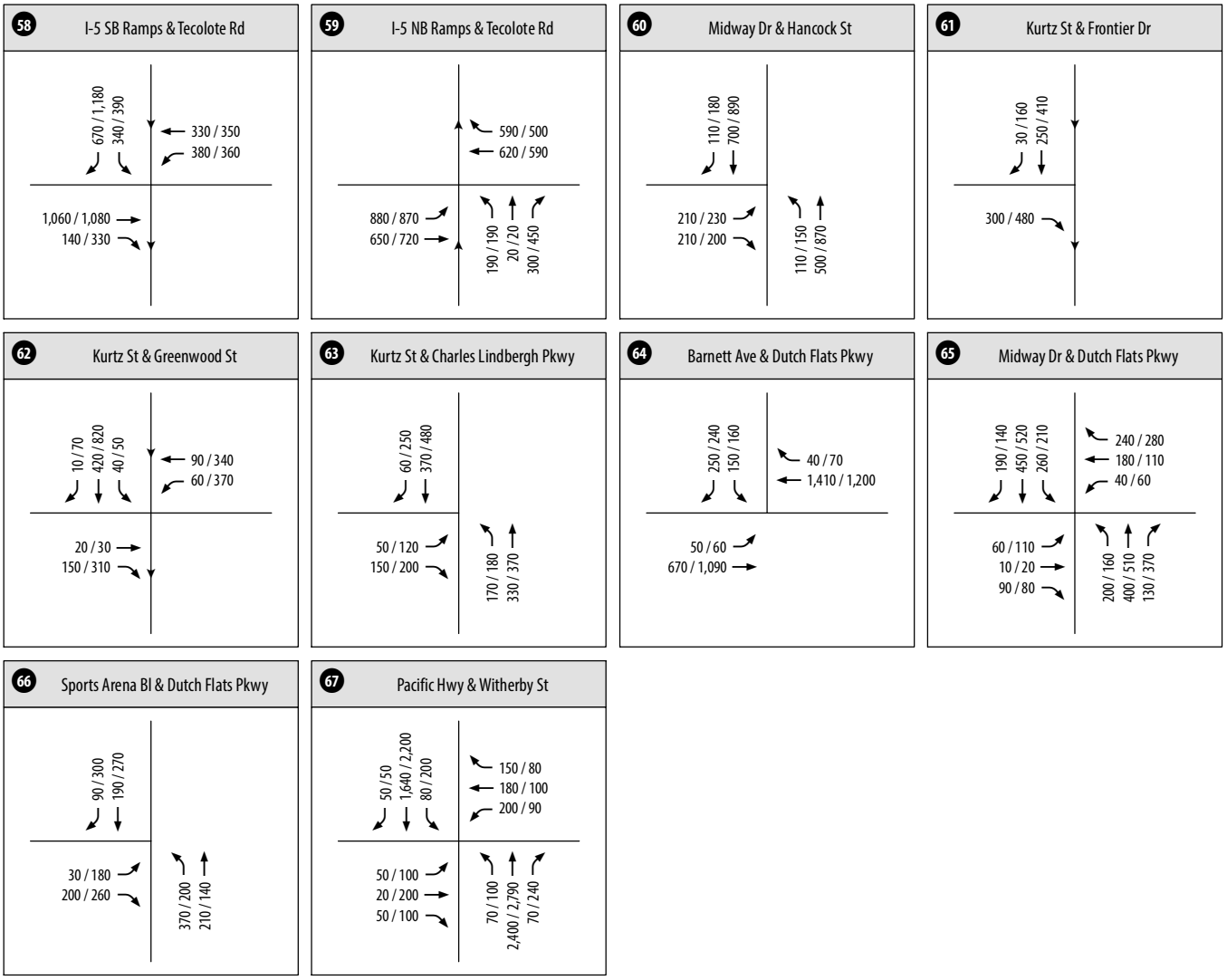
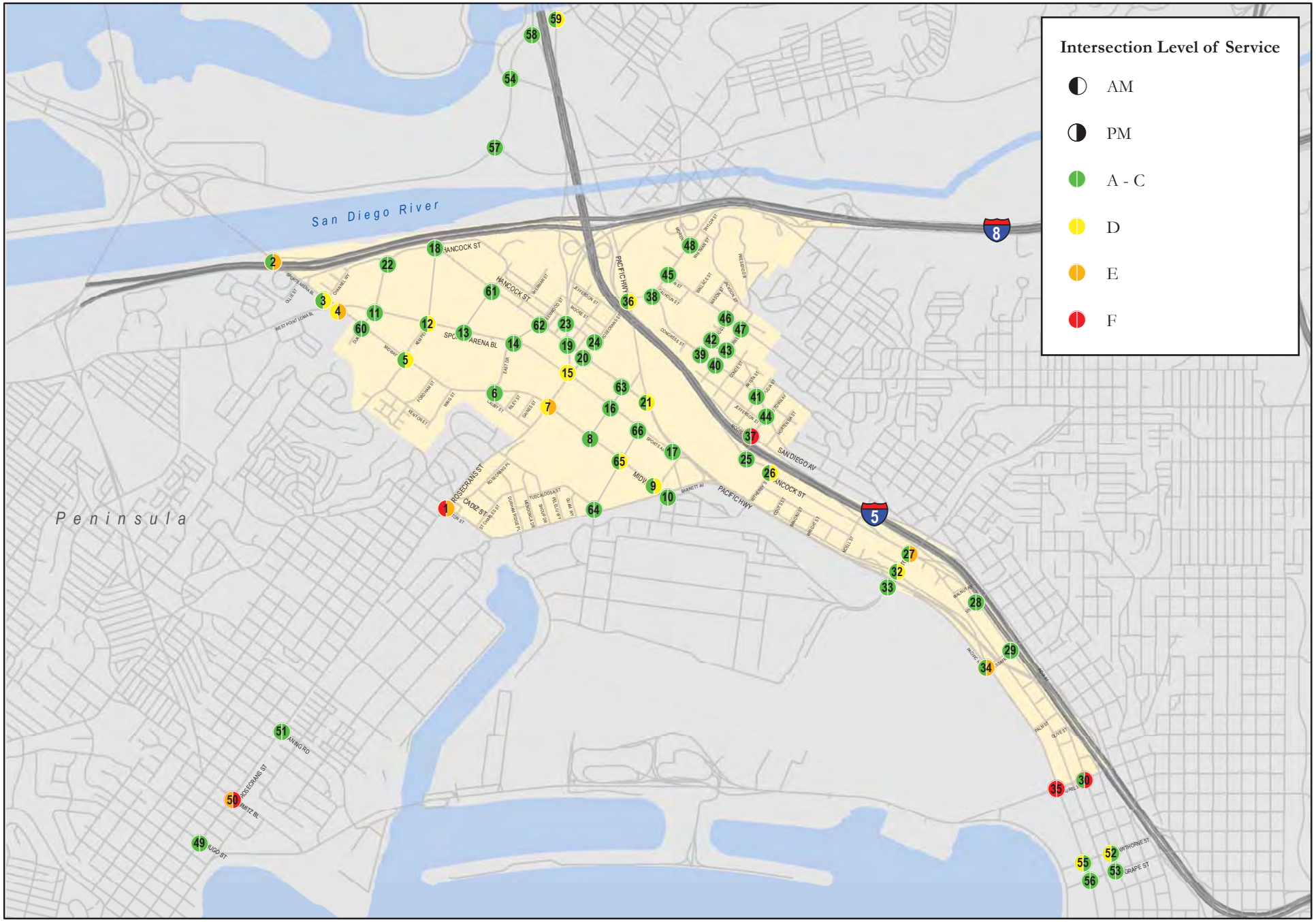


Figure 6-4
Peak Hour Turning Movement Volumes - Preferred Plan Conditions (Intersections 58-67)



Midway-Pacific Highway and
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Figure 6-5
Peak Hour Intersection LOS
Preferred Plan Conditions

Table 6.2 Peak Hour Intersection LOS and Delay Results – Preferred Plan Conditions

No.	Intersection	Control	AM Delay (Sec)	AM LOS	AM Existing LOS	PM Delay (Sec)	PM LOS	PM Existing LOS
Midway-Pacific Highway								
1	Lytton St and Rosecrans St	Signal	97.0	F	E	54.6	D	D
2	W Mission Bay Dr and I-8 WB Off-Ramp	Signal	15.5	B	B	71.1	E	E
3	Sports Arena Blvd and Channel Way	SSSC	12.3	B	B	31.2	D	B
4	Midway Dr and Sports Arena/W Point Loma Blvd	Signal	52.5	D	D	76.2	E	D
5	Midway Dr and Kemper St	Signal	31.7	C	C	38.1	D	D
6	Midway Dr and East Dr	Signal	6.8	A	A	17.6	B	B
7	Midway Dr and Rosecrans St	Signal	39.3	D	C	75.2	E	D
8	Midway Dr and Charles Lindbergh Pkwy	Signal	10.9	B	(1)	28.8	C	(1)
9	Midway Dr and Enterprise St	SSSC	13.3	B	B	26.5	D	C
10	Midway Dr and Barnett Ave	Signal	13.7	B	B	12.3	B	B
11	Sports Arena Blvd and Hancock St	Signal	14.7	B	A	18.9	B	B
12	Sports Arena Blvd and Kemper St	Signal	38.3	D	B	44.5	D	B
13	Sports Arena Blvd and Sports Arena Driveway	Signal	20.6	C	B	27.0	C	C
14	Sports Arena Blvd and East Dr	Signal	7.6	A	C	25.7	C	B
15	Sports Arena Blvd and Rosecrans St	Signal	39.3	D	D	52.6	D	D
16	Sports Arena Blvd and Charles Lindbergh Pkwy	Signal	14.1	B	(1)	18.9	B	(1)
17	Sports Arena Blvd and Pacific Hwy	Signal	25.1	C	B	17.8	B	B
18	Kurtz St and Hancock St	Signal	12.7	B	(2)	12.5	B	(2)
19	Kurtz St and Camino Del Rio West	Signal	28.4	C	A	54.8	D	C
20	Kurtz St and Rosecrans St	Signal	30.0	C	B	41.9	D	C
21	Kurtz St and Pacific Hwy	Signal	32.4	C	B	50.3	D	B
22	Hancock St and Channel Wy	SSSC	10.2	B	A	15.0	C	B
23	Hancock St and Camino Del Rio West	Signal	44.8	D	C	45.2	D	C
24	Hancock St and Rosecrans St	*No Conflicting Movements*						
25	Hancock St and Old Town Ave	AWSC	24.8	C	C	20.9	C	B
26	Hancock St and Witherby St	AWSC	13.9	B	C	34.9	D	C
27	Hancock St and Washington St	Signal	23.1	C	C	77.8	E	C
28	Kettner Blvd and Vine St	SSSC	16.5	C	B	19.9	C	C
29	Kettner Blvd and Sassafras St	Signal	14.9	B	B	15.2	B	B
30	Kettner Blvd and West Laurel St	Signal	19.9	B	B	96.5	F	C
31	Pacific Hwy and Barnett Ave	*No Conflicting Movements*						
32	Pacific Hwy and Washington St @ Frontage Rd	Signal	20.7	C	B	45.4	D	D
33	Pacific Hwy and Washington St	Signal	21.4	C	B	26.5	C	C

Table 6.2 Peak Hour Intersection LOS and Delay Results – Preferred Plan Conditions

No.	Intersection	Control	AM			PM		
			Delay (Sec)	LOS	Existing LOS	Delay (Sec)	LOS	Existing LOS
34	Pacific Hwy and Sassafras St	Signal	31.8	C	B	75.4	E	C
35	Pacific Hwy and West Laurel St	Signal	92.8	F	D	145.2	F	D
Old Town								
36	Pacific Hwy and Taylor St	Signal	31.0	C	E	51.7	D	C
37	Moore St and Old Town Ave	Signal	23.1	C	B	96.5	F	B
38	Congress St and Taylor St	Signal	14.2	B	B	19.8	B	C
39	Congress St and Twiggs St	AWSC	9.7	A	A	10.8	B	A
40	Congress St and Harney St	AWSC	9.1	A	A	9.5	A	A
41	Congress St and San Diego Ave/Ampudia St	SSSC	17.5	C	B	16.1	C	B
42	San Diego Ave and Twiggs St	AWSC	8.0	A	A	8.1	A	A
43	San Diego Ave and Harney St	AWSC	9.0	A	A	10.8	B	A
44	San Diego Ave and Old Town Ave	Signal	18.0	B	B	13.7	B	B
45	Juan St and Taylor St	Signal	14.6	B	B	19.7	B	B
46	Juan St and Twiggs St	AWSC	9.7	A	A	10.1	B	A
47	Juan St and Harney St	AWSC	9.0	A	A	9.0	A	A
48	Morena Blvd and Taylor St	Signal	21.9	C	C	24.4	C	B
Intersections Outside of Study Communities								
49	Hugo St/N. Harbor Dr and Rosecrans St	Signal	29.1	C	B	31.6	C	C
50	Lowell St/Nimitz Blvd and Rosecrans St	Signal	59.9	E	D	110.4	F	E
51	Laning Rd and Rosecrans St	Signal	25.5	C	B	23.2	C	B
52	Kettner Blvd and West Hawthorn St	Signal	34.7	C	B	13.3	B	B
53	Kettner Blvd and West Grape St	Signal	10.2	B	A	9.4	A	A
54	Pacific Hwy and Sea World Dr	Signal	23.9	C	B	34.1	C	C
55	Pacific Hwy and West Hawthorn St	Signal	35.2	D	D	31.7	C	C
56	Pacific Hwy and West Grape St	Signal	17.9	B	B	31.4	C	C
57	Friars Rd and Sea World Dr	Signal	15.3	B	B	26	C	B
58	I-5 SB Ramps and Sea World Dr	Signal	17.8	B	B	20	C	E
59	I-5 NB Ramps and Sea World Dr	Signal	29	C	C	43.3	D	C
New Intersections (Midway-Pacific Highway Community)								
60	Midway Dr & Duke Street / Hancock St	Signal	27.0	C	(1)	32.1	C	(1)
61	Kurtz St & Frontier Dr	SSSC	11.6	B	(1)	25.0	C	(1)
62	Kurtz St & Greenwood St	Signal	13.2	B	(1)	21.4	C	(1)
63	Kurtz St & Charles Lindbergh Pkwy	Signal	8.3	A	(1)	25.6	C	(1)
64	Barnett Ave & Dutch Flats Pkwy	Signal	24.4	C	(1)	14.5	B	(1)

Table 6.2 Peak Hour Intersection LOS and Delay Results – Preferred Plan Conditions

No.	Intersection	Control	AM Delay (Sec)	AM LOS	AM Existing LOS	PM Delay (Sec)	PM LOS	PM Existing LOS
65	Midway Dr & Dutch Flats Pkwy	Signal	47.5	D	(1)	53.7	D	(1)
66	Dutch Flats Pkwy & Sports Arena Bl	Signal	11.8	B	(1)	21.7	C	(1)

Source: Chen Ryan Associates (May 2017)

Notes:
(1) Intersection does not currently exist.
(2) Intersection experienced no control delay under existing conditions.
Bold letters indicate LOS E or F.

The following mitigation measures were identified for the two communities:

Midway-Pacific Highway Community

1. *Lytton Street and Rosecrans Street (LOS F: AM Peak Hour and LOS E PM Peak Hour)* – The westbound through movement, as well as the southbound left-turn and through movements are projected to be over capacity, under implementation of the Preferred Plan. Implementing the following improvements would allow the intersection to operate at LOS D or better during both peak hours.

    - Add a second southbound left-turn lane
    - Add an additional westbound through movement lane on Rosecrans Street (three total)
    - Implement right-turn overlap (RTOL) phases at all legs of the intersection

    The identified significant traffic related impact to this intersection would be fully mitigated with the implementation of this improvement.

    Partial Mitigation: If the second southbound left-turn and RTOL phase are implemented (feasible improvements) the overall intersection delay would be reduced to the following:

    AM: LOS E
    PM: LOS D

    Implementation of this improvement will partially mitigate the traffic related impact at the intersection.

2. *Sports Arena Boulevard / West Mission Bay and I-8 WB Off-Ramp (LOS E: PM Peak Hour)* – The westbound right-turn movement at this intersection is projected to be over capacity during the PM peak hour, under the implementation of the Preferred Plan. Providing a third exclusive westbound right-turn lane or converting the movement to free-right-turn movement would improve the intersection operations to LOS D. The identified significant traffic related impact to this intersection would be fully mitigated with the implementation of this improvement.

Partial Mitigation: None recommended.

4. *Midway Drive / West Point Loma Drive and Sports Arena Boulevard (LOS E: PM Peak Hour)* – All four left-turn movements at this intersection are projected to be over capacity during the PM Peak Hour. Providing dual-left turn lanes in the northbound, southbound and eastbound directions would improve intersection operations to LOS D during the PM peak hour. The identified significant traffic related impact to this intersection would be fully mitigated with the implementation of this improvement.

   Partial Mitigation: None recommended.

7. *Midway Drive and Rosecrans Street* (LOS E: PM Peak Hour) – Rosecrans Street is projected to operate at LOS E during the PM peak hours, under implementation of the Preferred Plan. Widening the eastbound and westbound approaches of the intersection to include a fourth through lane would improve the intersection operations to LOS D. The identified significant traffic related impact to this intersection would be fully mitigated with the implementation of this improvement.

   Partial Mitigation: None recommended, limited to no right-of-way is anticipated to be available with proposed Multi-Use Urban Path improvements.

27. *Hancock Street and Washington Street (LOS E: PM Peak Hour)* – The southbound right-turn movement of the intersection is projected to be over capacity during the PM peak hour, under the implementation of the Preferred Plan. Restriping the southbound approach to include a second southbound right-turn lane would allow the intersection to operate at LOS C during the PM Peak Hour. This improvement is feasible but may require additional engineering study. The identified significant traffic related impact to this intersection would be fully mitigated with the implementation of this improvement.

    Partial Mitigation: None recommended.

30. *Kettner Boulevard and Laurel Street (LOS F: PM Peak Hour)* – The eastbound through movement at the intersection is projected to be over capacity during the PM peak hour, under implementation of the Preferred Plan. Widening the eastbound approach of the intersection to include a third through lane would improve the intersection operations to LOS D. The identified significant traffic related impact to this intersection would be fully mitigated with the implementation of this improvement.

    Partial Mitigation: None recommended.

34. *Pacific Highway and Sassafras Street (LOS E: PM Peak Hour)* – The southbound left-turn movement of the intersection is projected to be over capacity during the PM peak hour, under the implementation of the Preferred Plan. Adding a second southbound left-turn lane would allow the intersection to operate at LOS D during the PM peak hour. The

identified significant traffic related impact to this intersection would be fully mitigated with the implementation of this improvement.

Partial Mitigation: None recommended.

35. *Pacific Highway and Laurel Street (LOS F: AM and PM Peak Hours)* – Laurel Street is projected to be over capacity during both peak hours, under implementation of the Preferred Plan. Widening the eastbound, westbound and northbound approaches of the intersection to include a third through lane and a second eastbound left-turn lane, as well as a second northbound left-turn lane and exclusive right-turn lane would improve the intersection operations to LOS D. The identified significant traffic related impact to this intersection would be fully mitigated with the implementation of this improvement.

    Partial Mitigation: None recommended.

Old Town Community

37. *Moore Street and Old Town Street (LOS F: PM Peak Hour)* – The eastbound and westbound movements of the intersection are projected to be over capacity during the PM peak hour, under implementation of the Preferred Plan. Implementation of the following improvements would allow the intersection to operate at LOS D during the PM peak hour.

    - Implement exclusive eastbound and westbound left-turn lanes.
    - Convert the eastbound/westbound signal phasing from permitted to protected phasing.

    The identified significant traffic related impact to this intersection would be fully mitigated with the implementation of this improvement.

    Partial Mitigation: None recommended.

Outside of the Community

50. *Nimitz Boulevard / Lowell Street and Rosecrans Street (LOS E: AM Peak Hour and LOS F: PM Peak Hour*) – Both the southbound through movement and eastbound left-turn movement are anticipated to be over capacity during both peak hours, under implementation of Preferred Plan. Widening the northbound and southbound approaches of the intersection to include a third through lane and a second southbound left-turn lane would improve the intersection operations to LOS D or better during both the AM and PM peak hours. Implementation of the following improvements would allow the intersection to operate at LOS D or better during both the AM and PM peak hours.

    The identified significant traffic related impact to this intersection would be fully mitigated with the implementation of this improvement.

    Partial Mitigation: None recommended.

6.1.3 Intersection Queuing Analysis

A queuing analysis was conducted under Preferred Plan conditions, at each of the study intersections to assess potential overflowing issues at exclusive turn-lanes and closely spaced intersections. Closely spaced intersections include all ramp intersections and intersections within close proximity (less than 500 feet) to one another. The limitations in turn-lane storage capacity could result in turning vehicles overflow into adjacent lanes, while excessive queuing (queue length exceeds distance to upstream intersection) at closely spaced intersection could negatively affect the operations of the upstream intersection. When either situation occurs, traffic operations could deteriorate, resulting in additional levels of congestion.

Table 6.3 displays the average (50th percentile) and maximum (95th percentile) queue lengths at closely spaced intersections (500 feet apart), for relevant movements. Synchro intersection queuing reports are provided in Appendix E following the intersection LOS worksheets.

Table 6.3 Queue Lengths at Closely Spaced Intersections – Preferred Plan Conditions

#	Impacted Intersection	Peak Hour	Upstream Intersection	Spacing (Feet)	Turning Movement	95th% Queue Length (Feet)	50th% Queue Length (Feet)
7	Midway Dr and Rosecrans St	AM	15. Sports Arena Blvd and Rosecrans St	665	EBT	312	265
		PM				817	737
15	Sports Arena Blvd and Rosecrans St	AM	19. Kurtz St and Camino Del Rio West	380	EBT	590	521
		PM				963	875
19	Kurtz St and Camino Del Rio West	AM	23. Hancock St and Camino Del Rio West	315	NBT	341	256
		PM				289	312
20	Kurtz St and Rosecrans St	AM	15. Sports Arena Blvd and Rosecrans St	310	WBT	723	585
		PM				913	829
N/A	I-5 SB Off-Ramp and Camino Del Rio West	AM	23. Hancock St and Camino Del Rio West	490	SWT	1,274	1,195
		PM				1,204	1,125

Source: Chen Ryan Associates (May 2017)

Midway-Pacific Highway Community

As shown, the maximum (95th percentile) and average (50th percentile) queue lengths at all closely spaced intersections, with the exception of the average queue length at Kurtz Street and Camino Del Rio West, are anticipated to exceed the spacing between intersections under implementation of Preferred Plan conditions. Queuing spillovers could degrade traffic operations at the upstream intersections.

Old Town

There are no signalized intersections within 500 feet of each other within the Old Town Community.

Table 6.4 displays the average (50th percentile) and maximum (95th percentile) queue lengths for intersection movements where the maximum peak hour queue length is projected to exceed the current storage length under Preferred Plan conditions. Synchro intersection queuing reports are provided in Appendix E following the intersection LOS worksheets.

Table 6.4 Queue Lengths at Closely Spaced Intersections – Preferred Plan Conditions

No.	Intersection	Movement	Peak	95th % Queue Length (Feet)	50th % Queue Length (Feet)	Pocket Length (Feet)	Excess 95th % Queue (Feet)	Excess 50th % Queue (feet)
Midway-Pacific Highway								
1	Lytton St and Rosecrans St	EBL	AM	137	48	105	32	0
			PM	194	86	105	89	0
		NBL	AM	309	215	230	79	0
			PM	384	267	230	154	37
		SBL	AM	967	741	185	782	556
			PM	551	350	185	366	165
4	Midway Dr and Sports Arena/W Point Loma Blvd	EBL	AM	793	375	380	413	0
			PM	694	479	380	314	99
		NBL	AM	259	140	230	29	0
			PM	798	573	230	568	343
5	Midway Dr and Kemper St	EBL	AM	127	93	100	27	0
			PM	196	146	100	96	46
7	Midway Dr and Rosecrans St	WBL	AM	241	146	340	0	0
			PM	436	317	340	96	0
		SBL	AM	164	87	90	74	0
			PM	299	189	90	209	99
		NBL	AM	198	88	190	8	0
			PM	472	291	190	282	101
		NBR	AM	93	42	190	0	0
			PM	405	278	190	215	88
12	Sports Arena Blvd and Kemper Street	EBL	AM	88	59	50	38	9
			PM	134	82	50	84	32
		NBL	AM	269	146	160	109	0
			PM	359	252	160	199	92
14	Sports Arena Blvd and East Drive	NBL	AM	47	27	130	0	0
			PM	170	131	130	40	1
15	Sports Arena Blvd and Rosecrans St	EBL	AM	151	87	220	0	0
			PM	236	163	220	16	0
		NBL	AM	260	130	130	130	0
			PM	385	215	130	255	85

Table 6.4 Queue Lengths at Closely Spaced Intersections – Preferred Plan Conditions

No.	Intersection	Movement	Peak	95th % Queue Length (Feet)	50th % Queue Length (Feet)	Pocket Length (Feet)	Excess 95th % Queue (Feet)	Excess 50th % Queue (feet)
19	Kurtz St and Camino Del Rio West	SBL	AM	397	300	210	187	90
			PM	1054	798	210	844	588
		WBL	AM	464	429	110	354	319
			PM	314	344	110	204	234
20	Kurtz St and Rosecrans St	NBL	AM	167	106	60	107	46
			PM	220	109	60	160	49
		WBL	AM	126	61	85	41	0
			PM	193	62	85	108	0
23	Hancock St and Camino Del Rio West	WBR	AM	447	284	140	307	144
			PM	824	531	140	684	391
		EBL	AM	58	44	110	0	0
			PM	122	132	110	12	22
27	Hancock St and Washington St	WBL	AM	236	142	140	96	2
			PM	312	205	140	172	65
		SBR	AM	151	61	270	0	0
			PM	1334	1070	270	1064	800
29	Kettner Blvd and Sassafras Street	SBL	AM	208	126	80	128	46
			PM	199	120	80	119	40
34	Pacific Highway and Sassafras Street	WBL	AM	453	256	100	353	156
			PM	570	372	100	470	272
		SBL	AM	184	85	250	0	0
			PM	411	239	250	161	0
35	Pacific Hwy and West Laurel St	EBL	AM	1047	805	375	672	430
			PM	1215	967	375	840	592
		WBL	AM	195	125	70	125	55
			PM	470	281	70	400	211
		NBL	AM	533	344	90	443	254
			PM	894	667	90	804	577
		SBL	AM	225	102	250	0	0
			PM	432	268	250	182	18
Old Town								
36	Pacific Hwy and Taylor St	EBL	AM	172	64	150	22	0
			PM	245	95	150	95	0
		WBL	AM	221	93	160	61	0
			PM	130	65	160	0	0

Table 6.4 Queue Lengths at Closely Spaced Intersections – Preferred Plan Conditions

No.	Intersection	Movement	Peak	95th % Queue Length (Feet)	50th % Queue Length (Feet)	Pocket Length (Feet)	Excess 95th % Queue (Feet)	Excess 50th % Queue (feet)
36	Pacific Hwy and Taylor St	NBL	AM	168	65	100	68	0
			PM	210	88	100	110	0
		NBR	AM	42	0	200	0	0
			PM	577	356	200	377	156
38	Congress St and Taylor St	WBL	AM	246	81	100	146	0
			PM	254	101	100	154	1
44	San Diego Avenue and Old Town Street	NBL	AM	166	72	75	91	0
			PM	81	23	75	6	0
45	Juan Street and Taylor Street	WBL	AM	105	37	95	10	0
			PM	216	70	95	121	0
48	Morena Blvd and Taylor St	EBL	AM	186	86	180	6	0
			PM	282	129	180	102	0
Intersections Outside of Study Communities								
49	Hugo St and Rosecrans St	NBL	AM	294	183	115	179	68
			PM	188	119	115	73	4
50	Nimitz Blvd and Rosecrans St	EBL	AM	345	173	300	45	0
			PM	767	524	300	467	224
		WBL	AM	193	118	300	0	0
			PM	464	278	300	164	0
		NBL	AM	96	49	75	21	0
			PM	152	91	75	77	16
		SBL	AM	421	246	285	136	0
			PM	583	385	285	298	100
54	Pacific Highway and Seaworld Drive	WBL	AM	185	58	170	15	0
			PM	241	87	170	71	0
		NBL	AM	81	24	150	0	0
			PM	210	70	150	60	0
56	Pacific Highway and Grape St	SBL	AM	75	34	130	0	0
			PM	131	72	130	1	0
57	Friars Road and Seaworld Dr	EBR	AM	101	62	180	0	0
			PM	328	209	180	148	29
		WBL	AM	151	61	205	0	0
			PM	293	162	205	88	0
		NBL	AM	101	66	150	0	0
			PM	185	135	150	35	0

Table 6.4 Queue Lengths at Closely Spaced Intersections – Preferred Plan Conditions

No.	Intersection	Movement	Peak	95th % Queue Length (Feet)	50th % Queue Length (Feet)	Pocket Length (Feet)	Excess 95th % Queue (Feet)	Excess 50th % Queue (feet)
58	I-5 SB Ramps and Tecolote Road	WBL	AM	144	82	120	24	0
			PM	133	89	120	13	0
59	I-5 NB Ramps and Tecolote Road	EBL	AM	343	232	170	173	62
			PM	301	219	170	131	49

Source: Chen Ryan Associates (May 2017)

Midway-Pacific Highway Community

As shown, under implementation of the Preferred Plan, 30 different movements within the Midway-Pacific Highway Community are projected to have queue lengths exceeding their storage capacity at the most congested point of the peak hour (95th Percentile). The spillovers could degrade traffic operations within the intersection or adjacent closely spaced, upstream intersections for approximately one to two cycles during the peak hour. However, only 26 movements are anticipated to have queues that exceed their storage capacity on an average during either peak hour (50th Percentile).

Old Town

As shown, under implementation of the Preferred Plan, 8 different movements within the Old Town Community are projected to have queue lengths exceeding their storage capacity at the most congested point of the peak hour (95th Percentile). The spillovers could degrade traffic operations within the intersection or adjacent closely spaced, upstream intersections for approximately one to two cycles during the peak hour. However, only 2 movements are anticipated to have queues that exceed their storage capacity on an average during either peak hour (50th Percentile).

Other Communities

As shown, under implementation of the Preferred Plan, 13 different movements within other communities are projected to have queue lengths that exceed their storage capacity at the most congested point of the peak hour (95th Percentile). The spillovers could degrade traffic operations within the intersection or adjacent closely spaced, upstream intersections for approximately one to two cycles during the peak hour. However, only 6 movements are anticipated to have queues that exceed their storage capacity on an average during either peak hour (50th Percentile).

6.1.4 Freeway Segments and LOS Analysis

Neither the Revenue Constrained Alternative of SANDAG's *San Diego Forward Plan* (October 2015) nor the Preferred Plan include freeway improvements, as noted in Sections 3.2.2 and 4.2.2. Table 6.5 displays the freeway segment LOS in the vicinity of the Midway-Pacific Highway and Old Town communities. Forecast freeway volumes were obtained from the modeling process described in Section 5.0.

Table 6.5 Freeway Segment LOS Results – Preferred Plan Conditions

								AM					PM				
Freeway	To	From	Dir	Daily Volume	HVF	Lanes	Aux	K	D	Peak Volume	V/C	LOS	K	D	Peak Volume	V/C	LOS
I-8	Beginning of Freeway	Sports Arena Boulevard	EB	61,200	1.2%	2	0	6.3%	61%	2,600	0.55	B	8.6%	71%	3,100	0.66	C
			WB			2	0		39%	1,700	0.36	A		29%	2,800	0.60	B
	Sports Arena Boulevard	I-5	EB	122,600	2.8%	3	1	6.4%	61%	5,400	0.64	C	7.8%	62%	5,500	0.65	C
			WB			3	1		39%	3,500	0.41	B		38%	5,400	0.64	C
	I-5	Morena Boulevard	EB	183,400	2.8%	4	1	6.4%	42%	5,500	0.51	B	7.2%	50%	6,600	0.61	B
			WB			5	0		58%	7,700	0.66	C		50%	8,300	0.71	C
	Morena Boulevard	Hotel Circle	EB	217,000	2.8%	4	1	6.5%	47%	7,600	0.70	C	8.2%	55%	11,000	1.02	F
			WB			5	0		53%	8,400	0.71	C		45%	9,000	0.77	C
I-5	Clairemont Drive	Sea World Drive	NB	241,300	4.5%	5	0	6.4%	61%	11,000	0.94	E	8.3%	51%	11,700	1.00	E
			SB			5	0		39%	6,900	0.59	B		49%	11,300	0.96	E
	Sea World Drive	I-8	NB	231,400	4.5%	4	1	6.4%	62%	10,500	0.97	E	8.4%	52%	11,600	1.07	F
			SB			4	2		38%	6,400	0.52	B		48%	10,700	0.88	D
	I-8	Old Town Avenue	NB	242,000	4.1%	4	1	6.9%	49%	9,400	0.87	D	8.2%	39%	8,900	0.82	D
			SB			5	0		51%	9,700	0.83	D		61%	13,800	1.17	F
	Old Town Avenue	Washington Avenue	NB	226,400	4.1%	4	0	7.0%	49%	8,800	0.94	E	8.0%	51%	10,600	1.13	F
			SB			5	0		51%	9,300	0.79	D		49%	10,200	0.87	D
	Washington Avenue	Pacific Highway	NB	171,300	4.1%	4	0	6.9%	53%	7,100	0.76	C	8.1%	36%	5,700	0.61	B
			SB			4	0		47%	6,400	0.68	C		64%	10,200	1.09	F
	Pacific Highway	Laurel Street	NB	216,400	4.1%	4	1	6.8%	57%	9,600	0.89	D	7.1%	50%	8,400	0.78	C
			SB			4	1		43%	7,200	0.67	C		50%	9,300	0.86	D
	Laurel Street	Hawthorne Avenue	NB	225,000	4.1%	4	1	6.8%	57%	9,900	0.92	D	7.2%	47%	8,300	0.77	C
			SB			4	1		43%	7,600	0.70	C		53%	10,400	0.96	E

Source: Chen Ryan Associates (May 2017)

Note:
Bold letter indicates LOS E or F

As shown, all mainline freeway segments are projected to operate at LOS D or better under Preferred Plan conditions, with the exception of the following:

- I-8 EB, between Morena Boulevard and Hotel Circle Drive (LOS F: PM Peak Hour)
- I-5 NB, between Clairemont Drive and Sea World Drive (LOS E: AM & PM Peak Hours)
- I-5 SB, between Clairemont Drive and Sea World Drive (LOS E: PM Peak Hour)
- I-5 NB, between Sea World Drive and I-8 (LOS E: AM Peak Hour, LOS F PM Peak Hour)
- I-5 SB, between I-8 and Old Town Avenue (LOS F: PM Peak Hour)
- I-5 NB, between Old Town Avenue and Washington Avenue (LOS E: AM Peak Hour and LOS F: PM Peak Hour)
- I-5 SB, between Washington Avenue and Pacific Highway (LOS F: PM Peak Hour)
- I-5 SB, between Laurel Street and Hawthorne Avenue (LOS E: PM Peak Hour)

6.1.5 Meter Analysis

Table 6.6 summarizes the freeway ramp metering analysis results under implementation of the Preferred Plan for all ramp meter locations within both study communities. The volumes were derived using the outputs for the modeling described in Section 5.0. Existing ramp meter flow rates were assumed under Preferred Plan conditions.

Table 6.6 Freeway Ramp Metering Analysis – Preferred Plan Conditions

Ramp	Peak	Lanes SOV	Lanes HOV	Flow Rate	Volume	Excess Demand	Delay (Minutes)	Queue (Feet)
I-8 EB / Sports Arena Boulevard	PM	2	1	641	930	289	27.1	8,381
I-5 SB / Sea World Drive	AM	1	1	444	520	76	10.3	2,204
	PM	1	1	444	690	246	33.2	7,134
I-5 NB / Sea World Drive	AM	2	0	1,555	1,470	0	0.0	0
	PM	2	0	1,656	1,370	0	0.0	0
I-5 SB / Old Town Avenue	PM	1	0	461	410	0	0.0	0
I-5 NB / Old Town Avenue	AM	2	0	905	370	0	0.0	0
	PM	2	0	888	690	0	0.0	0

Source: Chen Ryan Associates (May 2017)

Notes:
SOV = Single Occupancy Vehicle; HOV = High Occupancy Vehicle.
[1] Demand is the peak hour demand expected to use the on-ramp.
[2] Meter Rate is the peak hour capacity expected to be processed through the ramp meter. This value was obtained from Caltrans.
[3] Excess Demand = (Demand) – (Meter Rate) or zero, whichever is greater.
[4] Delay = (Excess Demand / Meter Rate) X 60 min/hr.
[5] Queue = (Excess Demand) X 29 ft/veh.

As shown in the table, the anticipated peak hour demand is not anticipated to exceed the anticipated meter rate at any of the study ramp meter locations creating a delay of 15 minutes[1], with the exception of the following:

- I-8 EB / Sports Arena Boulevard during the PM peak hour (27.1 minutes)
- I-5 SB / Sea World Drive during the PM peak hour (33.2 minutes)

6.2 Intelligent Transportation Systems (ITS)

The implementation of Intelligent Transportation Systems (ITS) can provide many benefits to the local roadway network, including improving roadway traffic operations, improving transit operations, relaying valuable traffic-related information and providing guidance to drivers (e.g. locations of available parking, traffic congestion points, and the location of accidents). Coordinated traffic signals and transit signal priority treatments are examples of ITS programs that can help improve both transit and roadway operations.

The City of San Diego should investigate the feasibility of the following ITS improvements within the Midway-Pacific Highway and Old Town communities:

- Expand signal coordination along major roadway corridors including Rosecrans Street, Taylor Street, Midway Drive, Sports Arena Boulevard, Pacific Highway, Kettner Street and San Diego Avenue.
- Regularly update the timing of traffic signals to reflect shifting travel patterns
- Use traffic responsive or adaptive traffic control in areas with variable traffic patterns
- Implement transit signal priority treatments at signalized intersections serving rapid bus routes
- Use variable message signs to direct motorists to available parking and to alert them of street closures.

The recommendations identified above are consistent with the goals of the future traffic signal communications network elements identified in the City of San Diego *Traffic Signal Communication Master Plan* (2014).

6.3 Transportation Demand Management (TDM) Strategies

The goal of the City's Transportation Demand Management (TDM) program is to improve mobility, reduce congestion and air pollution, and provide options for employees and residents to commute to/ from work. Typical TDM strategies include promoting the following:

- Teleworking
- Alternative Work Schedules
- Transit
- Mixed-Use Development

[1] The City of San Diego Traffic Impact Study Manual (July 1998) defines ramp meters with more than 15 minutes of delay as having a significant impact.

- Walking
- Bicycling
- Carpooling
- Vanpooling
- Shared Mobility Services (e.g., bikeshare, carshare, and on-demand ridesharing services)
- Other Transportation Options

TDM measures improve the efficiency of the transportation system by helping to reduce vehicle trips during peak periods of demand. The San Diego Association of Governments (SANDAG) has an established program (iCommute) that serves as the administrator for TDM programs throughout the region. iCommute provides the following services:

Ridematching Services – the iCommute TripPlanner tool allows users to compare multiple transportation choices in addition to finding vanpool and carpool matches.

Subsidized Vanpool Program – Through the SANDAG vanpool program, each qualified vanpool receives a $400 monthly subsidy when leased through SANDAG preferred vendors, Enterprise Rideshare and vRide. Vanpools range from 7 to 15 passenger vehicles where commuters share the ride to work and split the cost thereby saving money, wear and tear on their personal vehicles, as well as reducing Greenhouse Gas emissions.

Employer Services - The SANDAG iCommute program provides assistance and tools to help local San Diego organizations design and implement customized commuter programs that assist and support employees commute using alternative modes of transportation. The iCommute Diamond Awards recognizes employers with exemplary commute programs and mode-share.

Walk, Ride, and Roll to School – Part of the Safe Routes to School program, this service supports active transportation to and from K-12 schools including biking, walking, skating, skateboarding, or riding a scooter to help promote physical activity and healthier lifestyles for students.

Telework - Teleworking is a convenient solution that enables employees to work from home or a remote location one or more days per week. Telework has proven benefits to employees and employers such as reducing commute costs, lowering parking demand, and helping the environment.

Transit Information – Provides information about San Diego regional transit agencies in addition to Compass Card information.

Bike Parking Program– Provides secure bike parking spaces at more than sixty transit stops and some Park & Ride lots throughout San Diego County in addition to a Regional Bike Map, which has been updated to show bike paths, lanes and routes.

Guaranteed Ride Home – A free service that allows registered iCommute users getting to work by alternative modes to receive free emergency rides home in the cases of illness or unscheduled overtime. Commuters can use the service up to three times per year.

In addition to the iCommute program, Caltrans owns and/or maintains several Park & Ride lots throughout the region that are used to promote carpool and vanpool activity.

The City of San Diego's Land Development Code (LDC) requires new development to provide sufficient bicycle parking stalls, carpool parking, and motorcycle facilities to encourage the use of alternative modes of transportation. The City is early in the process of developing recommendations to amend the LDC requirements for pedestrian, bicycle, carpool, and commuter information facilities. The City's municipal code now allows for on-street carshare operations. Pricing strategies are also used to reduce demand on the transportation system.

6.4 Pedestrian Assessment and Results

This section presents an assessment of the pedestrian network under implementation of the Preferred Plan, which assumes the implementation of the pedestrian related improvements outlined in Sections 3.3.2 and 4.3.2. The City of San Diego Pedestrian Master Plan Phase I identifies the following six Pedestrian Route Typologies and the purpose they serve:

District Sidewalks – Sidewalks along roads that support heavy pedestrian levels in mixed-use concentrated urban areas.

Corridor Sidewalks – Sidewalks along roads that support moderate density business and shopping districts with moderate pedestrian level.

Connector Sidewalks – Sidewalks along roads that support institutional, industrial or business complexes with limited lateral access and low pedestrian levels.

Neighborhood Sidewalks – Sidewalks along roads that support low to moderate density housing with low to moderate pedestrian levels.

Ancillary pedestrian facilities – Facilities away or crossing over streets such as plazas, paseos, promenades, courtyards or pedestrian bridges and stairways.

Path – Walkways and paved paths that are not adjacent to roads that support recreational and transportation purposes.

The assumed Pedestrian Route Typologies within both communities is displayed in Figure 6-6.

The proposed pedestrian network under Preferred Plan conditions was assessed using the methodologies described in Section 2.3.1. The pedestrian network connectivity, quality and overall adequacy (combining both quality and connectivity) are discussed below.

6.4.1 Pedestrian Network Connectivity

Figure 6-7 displays the pedestrian network connectivity to/from pedestrian attracting land uses (residential, commercial, office and recreational uses) throughout both communities. This analysis calculates the percent of area accessible to pedestrians within a half mile walking distance from the respective land uses (connectivity ratio). A connectivity ratio of 50% or better is considered to be ideal.

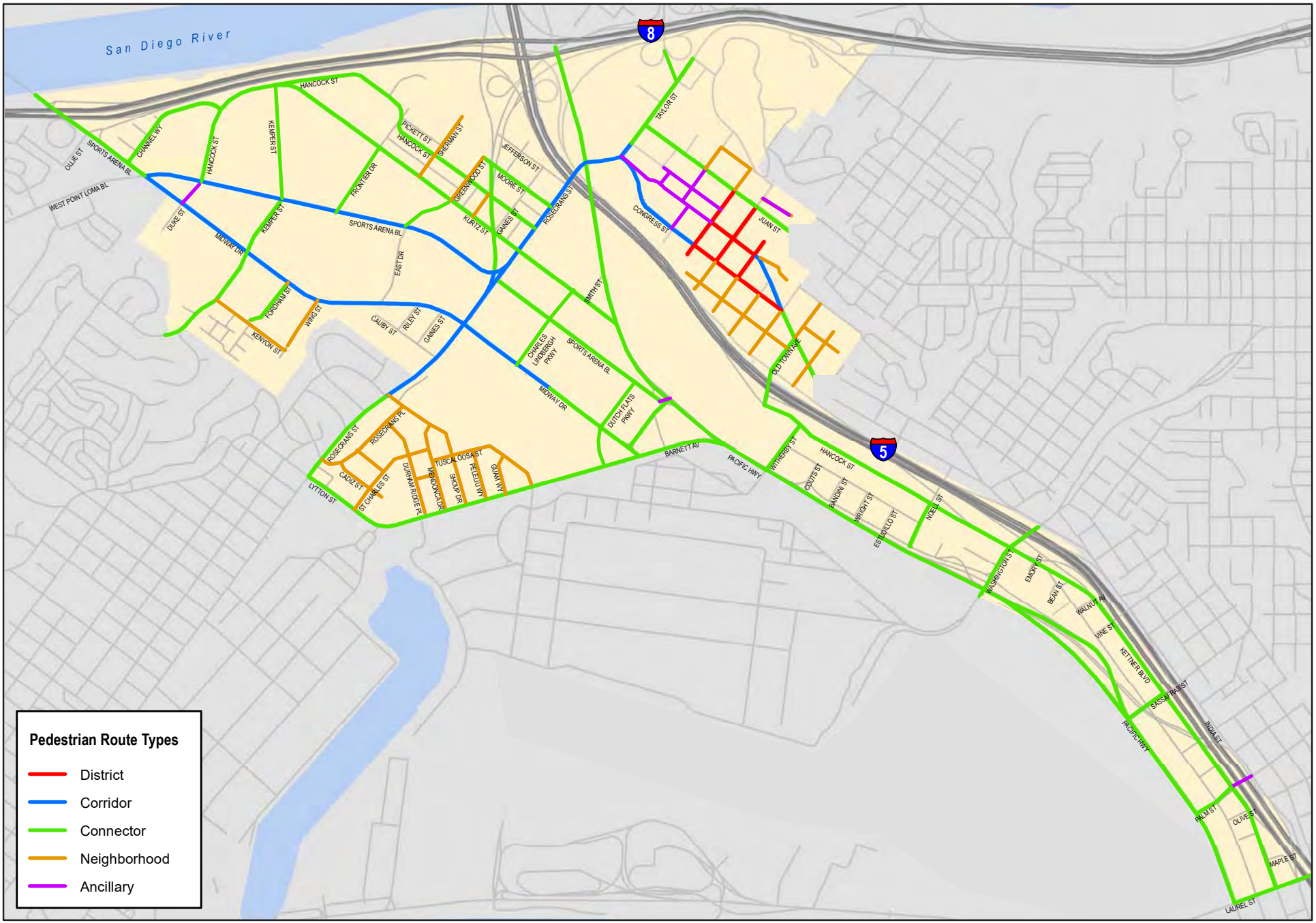


Figure 6-6
Pedestrian Route Typologies -
Preferred Plan Conditions

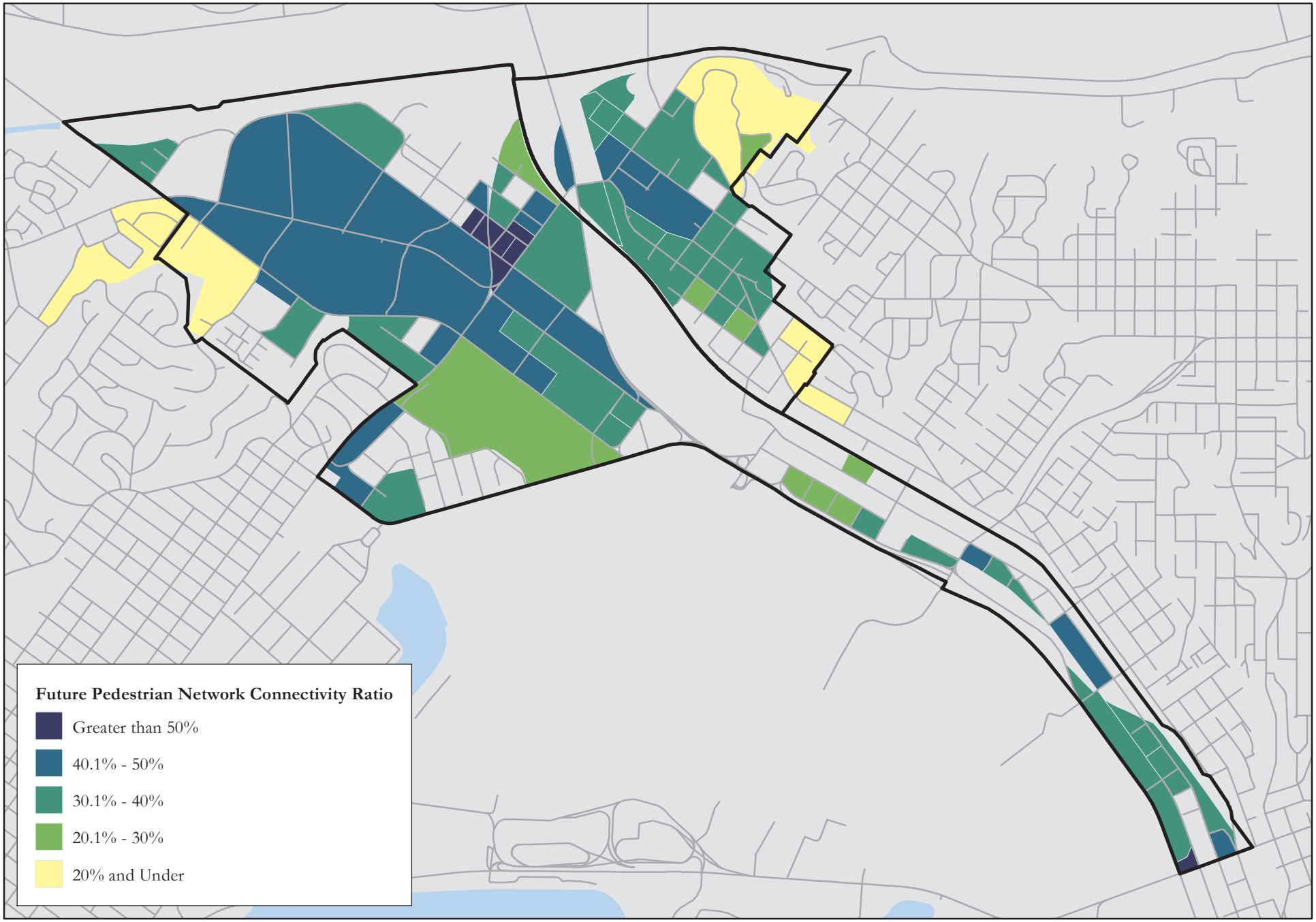


Figure 6-7
Pedestrian Network Connectivity -
Preferred Plan Conditions

Midway-Pacific Highway Community

As shown in the figure, pedestrian connectivity is at ideal levels (50%+ connectivity ratio) within the center of the community (in the area to the northeast of the intersection of Kurtz Street and Rosecrans Street, on either side of Camino Del Rio West. This is primarily due to the dense grid network present in this area. The lower connectivity ratio areas include the northwest area of the community west of Midway Drive and in the area west of Midway Drive and south of Rosecrans Street. The lower ratio is due to large, disconnected parking lots, superblocks, and private property with primary access points along Midway Drive.

Old Town Community

As shown in the figure, the Old Town Community generally has a good connectivity ratio between 40-50%, which is highest in the tourist areas around the Historic State Park and Transit Center Area, and gets lower toward the outskirts of the community. The lower connectivity ratio on the outskirts of the community is primarily due to the barriers created by the I-5 and I-8 freeways where pedestrian crossings are constrained.

6.4.2 Pedestrian Network Quality

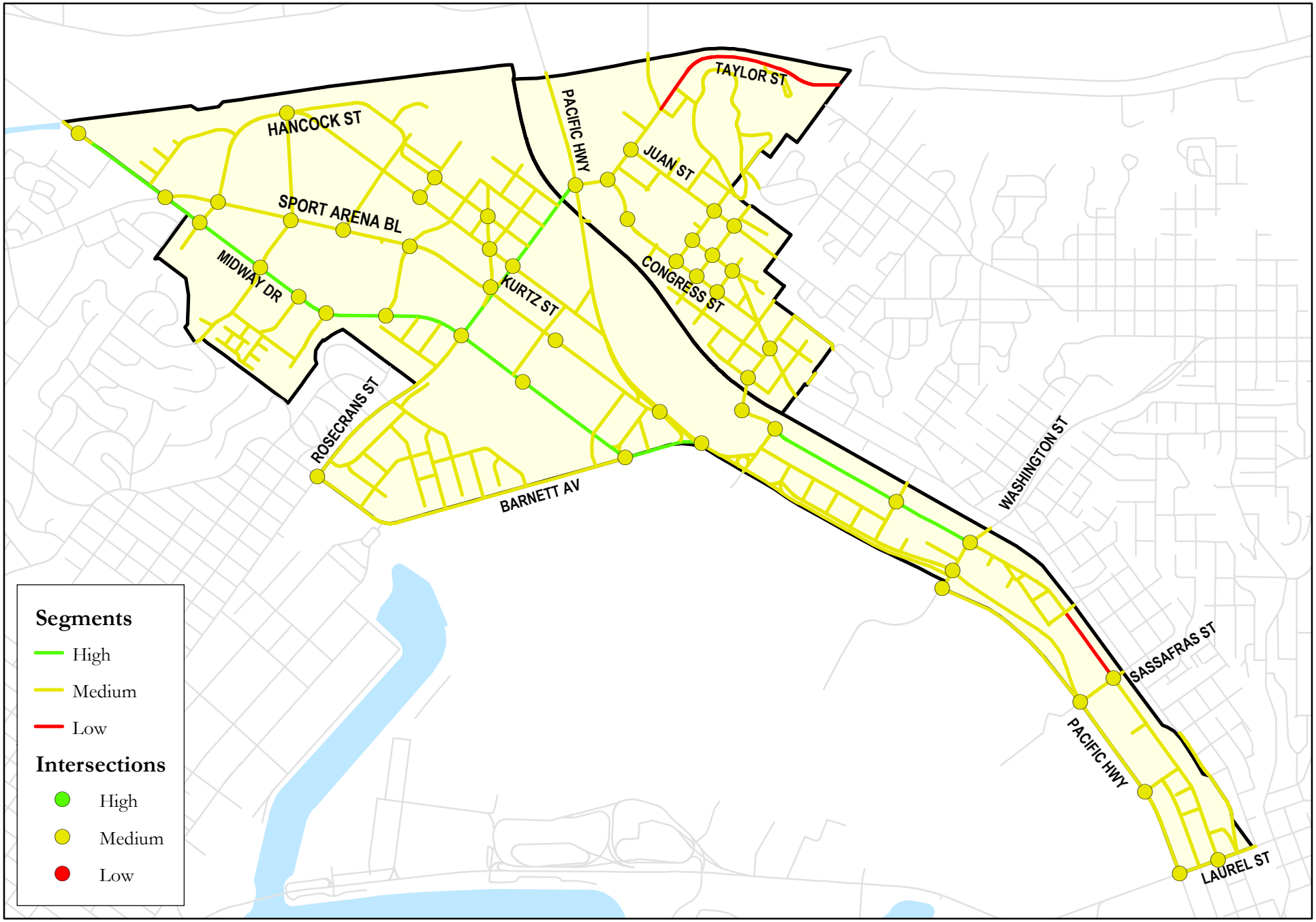
Figure 6-8 and Tables 6.7A and 6.7B display the PEQE analysis results for roadways segments and intersections, along the major pedestrian corridors within the community. PEQE calculation worksheets are provided in Appendix F. As shown in the table, with the implementation of the proposed improvements, the pedestrian facilities along all major roadways within both communities have a Medium or High grade under implementation of the Preferred Plan with the exception of the following:

Midway-Pacific Highway Community

Kettner Boulevard between Vine Street and Sassafras Street – This segment has a score of Low due to the lack of pedestrian facilities on the west side of the roadway (where there are no fronting land uses) and high posted speed limit (40 mph). It should be noted that the east side of the roadway, where the fronting land uses are located, has a grade of Medium. Based on the results of the PEQE analysis, the pedestrian improvements proposed under the Preferred Plan would significantly improve the walkability and safety within Midway-Pacific Highway community from their current conditions.

Old Town Community

Taylor Street between Morena Boulevard and I-8 Ramps – This segment has a grade of Low due to the lack of pedestrian facilities. However, it should be noted that there are no fronting land uses on either side of this segment, nor does this segment connect to any activity centers to the east of the community. While the Old Town community is very walkable today, the improvements proposed under the Preferred Plan provide both access and safety upgrades throughout the community. Improvements such as ADA ramps, continental cross-walks and bulb outs (at key intersections) upgrade many of the intersections within the community from Low to Medium conditions.



Midway-Pacific Highway and
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Figure 6-8
PEQE Scoring
Preferred Plan Conditions

Table 6.7A PEQE Results: Roadway Segments – Preferred Plan Conditions

Roadway	To	From	Northside/ Eastside		Southside/ Westside		Total	
			Score	Grade	Score	Grade	Score	Grade
North-South								
Midway/Pacific Highway Corridor								
Lytton Street/ Barnett Avenue	Rosecrans St	Midway Dr	4	Medium	4	Medium	8	Medium
	Midway Dr	Pacific Hwy	7	High	7	High	14	High
W. Mission Bay Dr	I-8 WB Ramps	I-8 EB Ramps	4	Medium	4	Medium	8	Medium
Midway Dr	W. Point Loma Blvd/Sports Arena Blvd	Kemper St	7	High	7	High	14	High
	Kemper St	East Dr	7	High	7	High	14	High
	East Dr	Rosecrans St	7	High	7	High	14	High
	Rosecrans St	Barnett Ave	7	High	7	High	14	High
Sports Arena Blvd	I-8 EB Ramps	W. Point Loma Blvd/Sports Arena Blvd	6	Medium	7	High	13	High
	W. Point Loma Blvd/Midway Dr	Kemper St	5	Medium	5	Medium	10	Medium
	Kemper St	East Dr	5	Medium	5	Medium	10	Medium
	East Dr	Rosecrans St	5	Medium	5	Medium	10	Medium
	Rosecrans St	Pacific Hwy	6	Medium	5	Medium	11	Medium
Kurtz St	Hancock St	Rosecrans St	6	Medium	6	Medium	12	Medium
	Rosecrans St	Pacific Hwy	4	Medium	4	Medium	8	Medium
Hancock St	Sports Arena Blvd	Kurtz St	3	Low	6	Medium	9	Medium
	Kurtz St	Camino Del Rio West	4	Medium	6	Medium	10	Medium
	Camino Del Rio West	Rosecrans St	5	Medium	5	Medium	10	Medium
	Old Town Ave	Witherby St	4	Medium	4	Medium	8	Medium
	Witherby St	Washington St	6	Medium	7	High	13	High
Kettner Blvd	Washington St	Vine St	3	Low	5	Medium	8	Medium
	Vine St	Sassafras St	4	Medium	2	Low	6	Medium
	Sassafras St	Laurel St	5	Medium	5	Medium	10	Medium
Pacific Hwy	Sea World Dr	Taylor St	5	Medium	5	Medium	10	Medium
	Taylor St	Kurtz St	6	Medium	6	Medium	12	Medium
	Kurtz St	Sports Arena Blvd	6	Medium	6	Medium	12	Medium
	Sports Arena Blvd	Barnett Ave	6	Medium	6	Medium	12	Medium
	Barnett Ave	Harney Washington St	6	Medium	6	Medium	12	Medium
	Washington St	Sassafras St	6	Medium	6	Medium	12	Medium
	Sassafras St	Laurel St	6	Medium	6	Medium	12	Medium
Old Town								
Congress St	Taylor St	Twiggs St	6	Medium	6	Medium	12	Medium
	Twiggs St	Harney St	6	Medium	6	Medium	12	Medium
	Harney St	San Diego Ave/Ampudia St	6	Medium	6	Medium	12	Medium
San Diego Ave	Twiggs St	Harney St	6	Medium	6	Medium	12	Medium
	Harney St	Ampudia St	6	Medium	6	Medium	12	Medium

Table 6.7A PEQE Results: Roadway Segments – Preferred Plan Conditions

Roadway	To	From	Northside/ Eastside		Southside/ Westside		Total	
			Score	Grade	Score	Grade	Score	Grade
San Diego Ave	Ampudia St	Old Town Ave	6	Medium	6	Medium	12	Medium
	Old Town Ave	Hortensia St	6	Medium	6	Medium	12	Medium
Juan St	Taylor St	Twiggs St	6	Medium	6	Medium	12	Medium
	Twiggs St	Harney St	6	Medium	6	Medium	12	Medium
	Harney St	San Juan Rd	6	Medium	6	Medium	12	Medium
East-West								
Midway/Pacific Highway Corridor								
Channel Wy	W. Mission Bay Dr	Hancock St	6	Medium	6	Medium	12	Medium
Kemper St	Kenyon St	Midway Dr	6	Medium	5	Medium	11	Medium
	Midway Dr	Sports Arena Blvd	6	Medium	6	Medium	12	Medium
Camino Del Rio West	Rosecrans St	I-5/I-8 Ramps	4	Medium	4	Medium	8	Medium
Rosecrans St	Lytton St	Midway Dr	6	Medium	6	Medium	12	Medium
	Midway Dr	Sports Arena Blvd	7	High	7	High	14	High
	Sports Arena Blvd	Pacific Hwy/Taylor St	7	High	7	High	14	High
Washington St	Frontage Rd	Pacific St	5	Medium	5	Medium	10	Medium
	Pacific St	Hancock St	6	Medium	5	Medium	11	Medium
Vine St	California St	Kettner Blvd	7	High	5	Medium	12	Medium
Sassafras St	Pacific Hwy	Kettner Blvd	5	Medium	5	Medium	10	Medium
Laurel St	Pacific Hwy	Kettner Blvd	5	Medium	5	Medium	10	Medium
Old Town								
Taylor St	Pacific Hwy/ Rosecrans St	Congress St	4	Medium	4	Medium	8	Medium
	Congress St	Juan St	4	Medium	4	Medium	8	Medium
	Juan St	Morena Blvd	4	Medium	4	Medium	8	Medium
	Morena Blvd	I-8 EB Ramps	1	Low	1	Low	2	Low
Twiggs St	Congress St	San Diego Ave	5	Medium	5	Medium	10	Medium
	San Diego Ave	Juan St	6	Medium	6	Medium	12	Medium
Harney St	Congress St	San Diego Ave	6	Medium	6	Medium	12	Medium
	San Diego Ave	Juan St	6	Medium	5	Medium	11	Medium
Old Town Ave	Hancock St	Moore St	5	Medium	5	Medium	10	Medium
	Moore St	San Diego Ave	5	Medium	5	Medium	10	Medium

Source: Chen Ryan Associates (June 2016)

Table 6.7B PEQE Results: Intersections – Preferred Plan Conditions

#	Intersection	Score	Grade
Midway-Pacific Highway			
1	Lytton St and Rosecrans St	6	Medium
2	W Mission Bay Dr and I-8 WB Off-Ramp	6	Medium
3	W Mission Bay Dr and Channel Way	5	Medium
4	Midway Dr and Sports Arena/W Point Loma Blvd	6	Medium
5	Midway Dr and Kemper St	6	Medium
6	Midway Dr and East Dr	6	Medium
7	Midway Dr and Rosecrans St	6	Medium
8	Midway Dr and Charles Lindbergh Pkwy	6	Medium
9	Midway Dr and Enterprise St	5	Medium
10	Midway Dr and Barnett Ave	6	Medium
11	Sports Arena Blvd and Hancock St	6	Medium
12	Sports Arena Blvd and Kemper St	6	Medium
13	Sports Arena Blvd and Sports Arena Driveway	6	Medium
14	Sports Arena Blvd and East Dr	6	Medium
15	Sports Arena Blvd and Rosecrans St	6	Medium
16	Sports Arena Blvd and Charles Lindbergh Pkwy	6	Medium
17	Sports Arena Blvd and Pacific Hwy	6	Medium
18	Kurtz St and Hancock St	5	Medium
19	Kurtz St and Camino Del Rio West	6	Medium
20	Kurtz St and Rosecrans St	6	Medium
21	Kurtz St and Pacific Hwy	6	Medium
22	Hancock St and Channel Wy	5	Medium
23	Hancock St and Camino Del Rio West	6	Medium
24	Hancock St and Rosecrans St	5	Medium
25	Hancock St and Old Town Ave	5	Medium
26	Hancock St and Witherby St	5	Medium
27	Hancock St and Washington St	6	Medium
28	Kettner Blvd and Vine St	5	Medium
29	Kettner Blvd and Sassafras St	6	Medium
30	Kettner Blvd and West Laurel St	6	Medium
31	Pacific Hwy and Barnett Ave	6	Medium
32	Pacific Hwy and Washington St @ Frontage Rd	6	Medium
33	Pacific Hwy and Washington St @ Pacific St	6	Medium
34	Pacific Hwy and Sassafras St	6	Medium
35	Pacific Hwy and West Laurel St	6	Medium
Old Town			
36	Pacific Hwy and Taylor St	6	Medium
37	Moore St and Old Town Ave	6	Medium
38	Congress St and Taylor St	6	Medium

Table 6.7B PEQE Results: Intersections – Preferred Plan Conditions

#	Intersection	Score	Grade
39	Congress St and Twiggs St	5	Medium
40	Congress St and Harney St	5	Medium
41	Congress St and San Diego Ave/Ampudia St	5	Medium
42	San Diego Ave and Twiggs St	5	Medium
43	San Diego Ave and Harney St	5	Medium
44	San Diego Ave and Old Town Ave	6	Medium
45	Juan St and Taylor St	6	Medium
46	Juan St and Twiggs St	5	Medium
47	Juan St and Harney St	5	Medium
48	Morena Blvd and Taylor St	6	Medium
New Intersections			
61	Kurtz St & Frontier Dr	5	Medium
63	Kurtz St & Charles Lindbergh Pkwy	6	Medium
64	Barnett Ave & Dutch Flats Pkwy	6	Medium
65	Midway Dr & Dutch Flats Pkwy	6	Medium
66	Dutch Flats Pkwy & Sports Arena Bl	6	Medium

Source: Chen Ryan Associates (June 2016)

As shown, all study intersections within both communities are projected to have a Medium grade under implementation of the Preferred Plan.

6.4.3 Pedestrian Quality Network Coverage

Figure 6-9 displays the Pedestrian Quality Network Coverage at all study intersections across both communities. This analysis calculates the ratio of the length of quality pedestrian network facilities (PEQE score Medium or High) within a half-mile walk from an intersection, compared to the total network available (based on existing conditions).

Midway-Pacific Highway Community

As shown in the figure, under implementation of the Preferred Plan, the Pedestrian Quality Network Coverage increases to over 75% at all study intersections within the community. The significant increase in coverage is primarily due to the new roadway links proposed under Preferred Plan conditions, including multi-use urban path improvements.

Old Town Community

As shown in the figure, under implementation of the Preferred Plan, the Pedestrian Quality Network Coverage increases to over 75% at all study intersections within the community. The significant increase in coverage is primarily due to the overall improvement to the intersections within the community by implementing minor improvements such as ADA ramps and Continental Crosswalks.

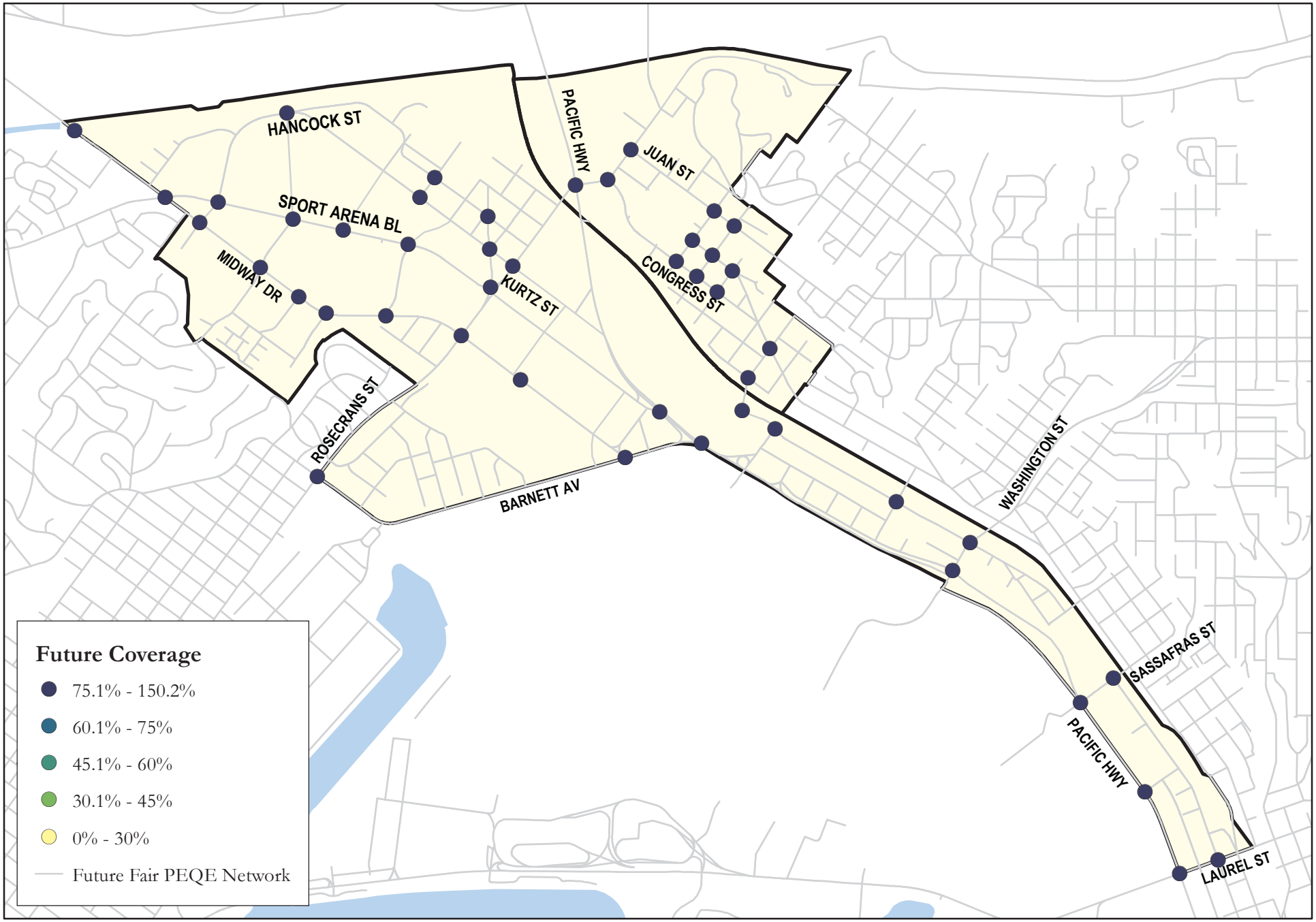


Figure 6-9
Pedestrian Quality Network Coverage -
Preferred Plan Conditions

6.5 Cycling Environment Assessment and Results

This section presents an assessment of the cycling environment under implementation of the Preferred Plan conditions, which assumes implementation of the cycling-related improvements outlined in Sections 3.4.2 and 4.4.2. Figure 6-10 displays the proposed bicycle network in both communities under implementation of the Preferred Plan.

The cycling environment under Preferred Plan conditions was assessed using the methodologies presented in Section 2.3.2. Cycling network connectivity, quality and overall adequacy (combining both quality and connectivity) are assessed below.

6.5.1 Bicycle Network Connectivity

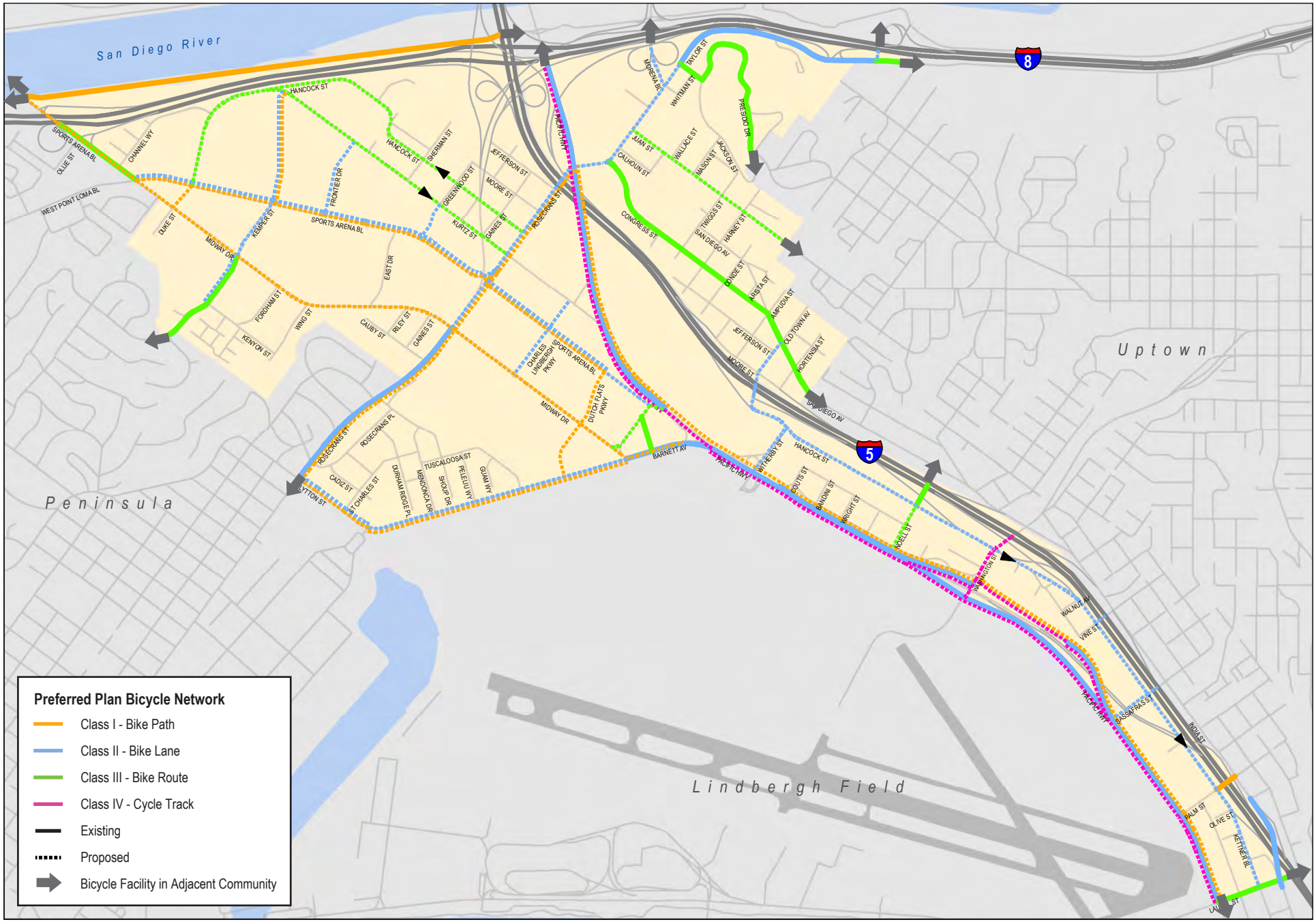
Figure 6-11 displays bicycle network connectivity to/from the study area intersections across both communities. This analysis calculates the percent of area that a cyclist can access within a one mile ride from the respective intersection (connectivity ratio). A connectivity ratio of 50% or better is considered to be ideal.

Midway-Pacific Highway Community

As shown in the figure, the bicycle connectivity is at good levels (40%+ connectivity ratio) in the center of the community around the block bound by Rosecrans Street, Midway Drive, Sports Arena Boulevard and East Drive. This improvement in connectivity is predominantly due to the new roadway connections between Midway and Sports Arena Boulevard.

Old Town Community

As shown in the figure, the Old Town community generally has a good connectivity ratio of 35+%, with the highest connectivity along Taylor Street, where regional connections are available from Taylor Street (Coastal Rail Trail and Ocean Beach Bike Path).



Midway-Pacific Highway and
Old Town Community Plan Update

CHEN RYAN

Figure 6-10
Bicycle Network -
Preferred Plan Conditions

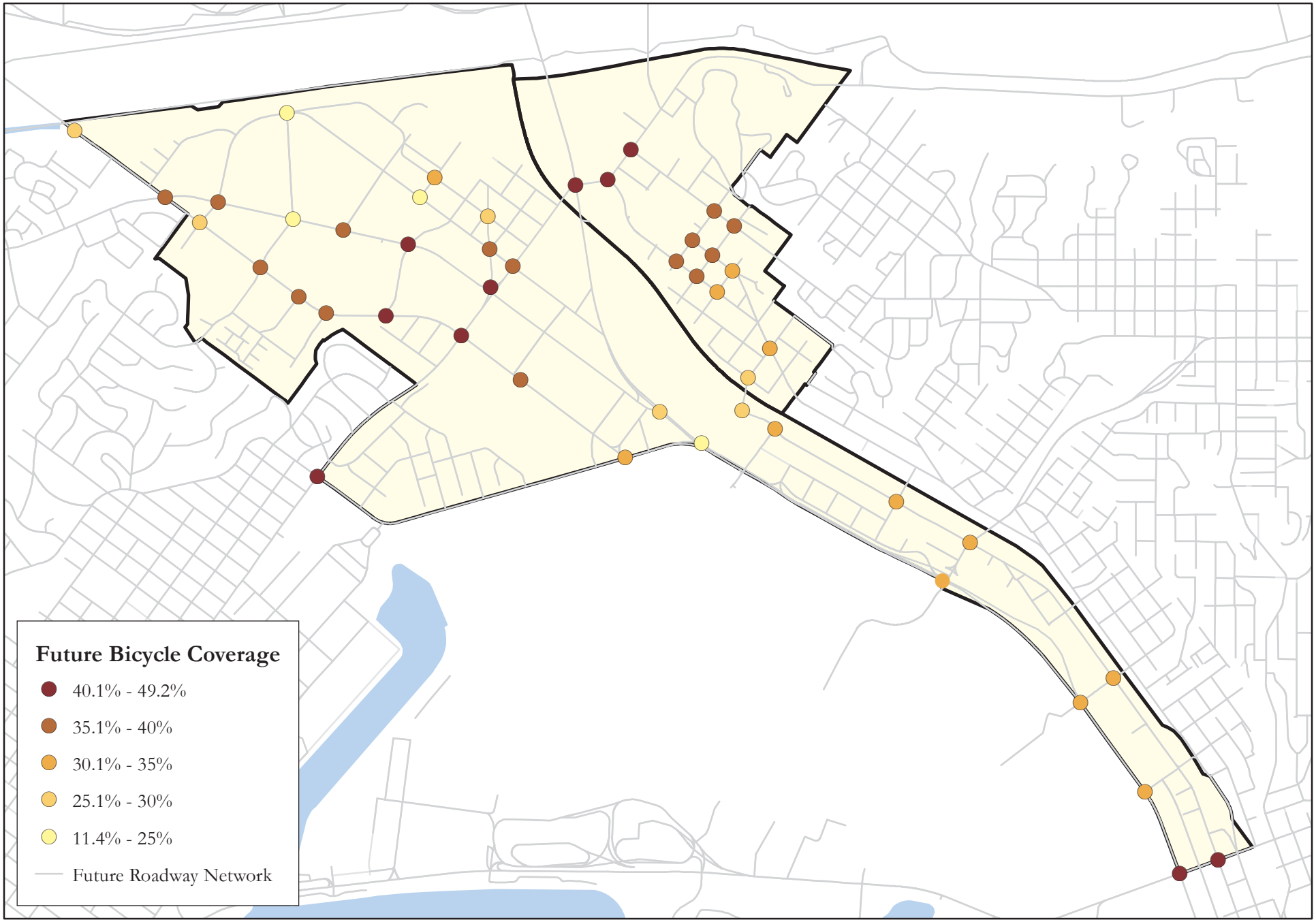


Figure 6-11
Bicycle Network Connectivity
Preferred Plan Conditions

6.5.2 Bicycle Network Quality

Figure 6-12 display the LTS analysis results for roadways segments and intersections along all Mobility Element roadways within the community.

Midway-Pacific Highway Community

As shown in the figure, the new multi-use urban paths proposed as part of the Midway/Pacific Highway Urban Greening Plan (La Playa Trail, Bay-to-Bay Path, the Historic Highway 101 Path, and the Midway Path), and the Preferred Plan, provide a slower low stress environment for cyclists (all paths have a score of LTS 1). Additionally, the proposed Class IV One-Way Cycle Tracks proposed along Pacific Highway provide a safe cycling environment for higher speed cyclists entering the community from either the north or south. These facilities have an LTS 1 score. Finally, the Enhanced Class II Buffered Bikes Lanes proposed along Sport Area Boulevard and Rosecrans Street provide more confident and higher speed cyclists a safe in-road alternative along these routes. Both facilities have a score of LTS 1.

Hancock Street between Kurtz Street and Rosecrans Street, and Hancock Street/Kettner Boulevard between Noel Street and Laurel Street were identified as providing LTS 4 environments under Preferred Plan conditions. The LTS 4 designation is largely due to the one-way directional travel. When calculating LTS scores for one-way streets the number of vehicular travel lanes is doubled, and the street is treated as though it has a median. This results in Hancock Street and Hancock Street/Kettner Boulevard as providing conditions equivalent to a 6-lane roadway, from the cyclist's perception. Hancock Street, between Kurtz Street and Rosecrans Street, does not have a bicycle facility, resulting in the LTS 4 score. Hancock Street/Kettner Boulevard, between Noel Street and Laurel Street, does have a Class II bike lane under Preferred Plan conditions, however, the posted speed limit of 40 MPH results in the LTS 4 score.

Based on the results of the LTS analysis, the bicycle facilities proposed under the Preferred Plan would significantly improve the connectivity and safety for cyclists within Midway-Pacific Highway community from their current conditions.

Old Town Community

As shown in the figure all roadways, with the exception of Taylor Street and Morena Boulevard, are projected to be low stress cycling environments (LTS 1 or 2). This is due to the low speed nature of the roadways within the Old Town Community. However, even with Class II Bike Lanes proposed along Taylor Street, the roadway is still projected to have an LTS score of 3. This is due to the high vehicular travel speed along Taylor Street and lack of a horizontal or vertical buffer between cyclists and motorists.

As noted in section 4.4.2, the connection along Morena Boulevard between Taylor Street and Linda Vista Road is critical. A connection here would link the Old Town and Linda Vista communities, as well as provide a connection to the Ocean Beach Bike Path.

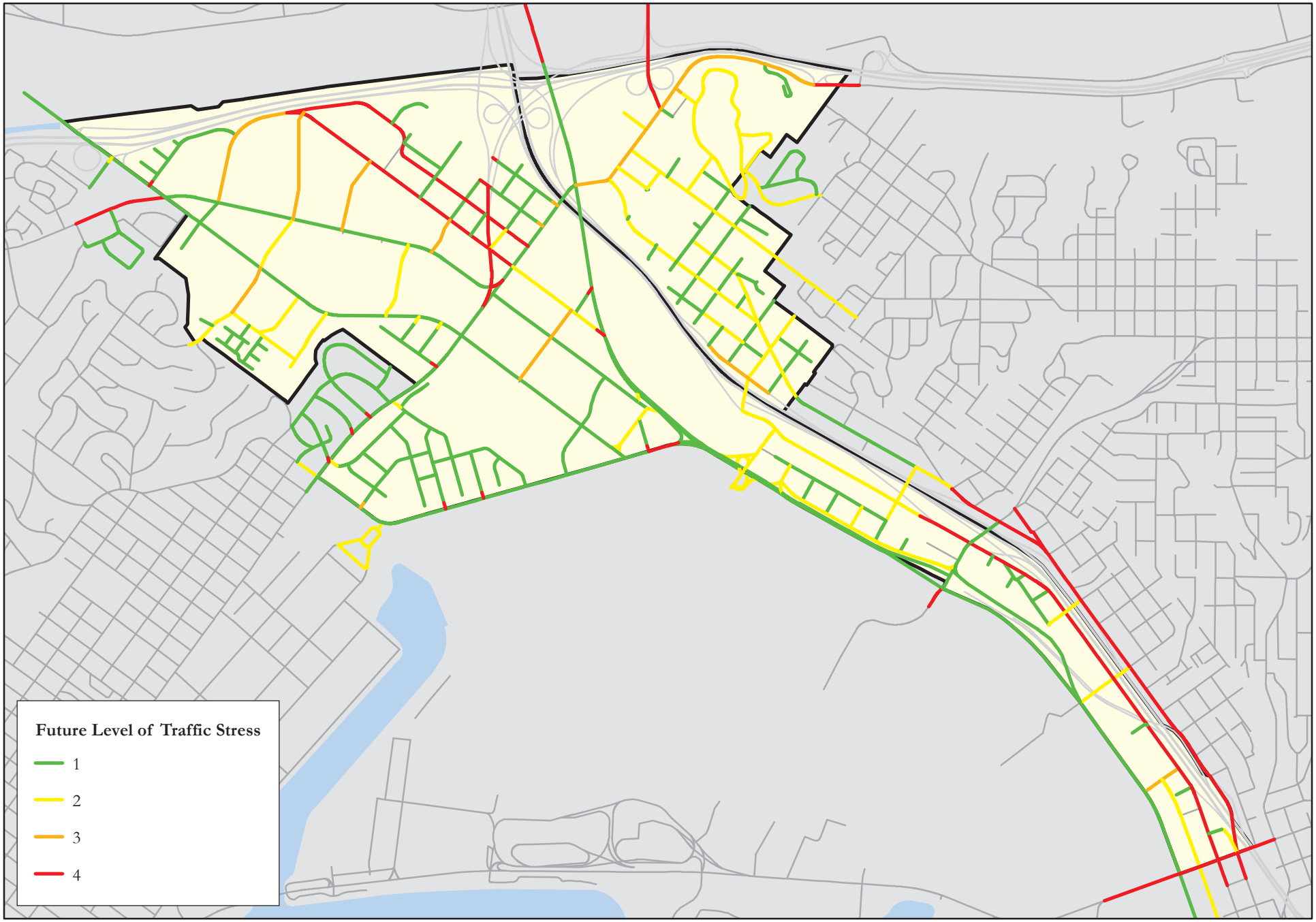


Figure 6-12
Bicycle LTS Score - Preferred Plan Conditions

Unfortunately, the bridge along this segment of the roadway has a constrained right-of-way, and the current configuration of the I-8 Morena Boulevard ramps position four high-speed free-right turn movements on/off the bridge. Due to these constraints there is not feasible bicycle facility that can be implemented along this segment without both widening the bridge and reconfiguring the I-8 / Morena Boulevard Ramps. However, it is recommended that the City work with both Caltrans and SANDAG to look for opportunities to implement bicycle facilities and better pedestrian facilities along this segment should any improvements be done to this segment.

6.5.3 Combined Bicycle Network Connectivity and Quality Assessment

Figure 6-13 displays the combined Bicycle Network Connectivity and Quality Assessment for all bicycle accessible land uses (residential, commercial, office, recreational and instructional land uses) throughout both communities. This analysis calculates the percent of TAZs with bicycle accessible land uses that a cyclist can reach using only LTS 1 and 2 facilities.

Midway-Pacific Highway Community

As shown in the figure, the proposed bicycle improvements enhance the level of connectivity to/from the residential land uses located on the western side of the community. In this area, cyclists can connect to 40+% of the bicycle accessible land uses within the community using only LTS 1 or 2 facilities. The proposed commercial areas within the community (north of Rosecrans Street) can typically connect to 30-40% of the bicycle accessible land uses within the community using only LTS 1 or 2 facilities. The only areas that have low connectivity (0-10%) are the more industrial areas located in the north and northeast portions of the community. However, these areas have very few bicycle accessible land uses.

Old Town Community

As shown in the figure, the community as a whole has generally moderate connectivity levels between 20% and 40%. The main barrier limiting the overall quality connectivity within the community is Taylor Street, which has an LTS score of 3. If the LTS score along Taylor Street can be improved to an LTS 1 or 2, the overall quality connectivity within the Old Town Community will increase significantly. However, based on the roadway's current configuration, enhanced bicycle facilities such as Buffered Class II Bike Lanes or a Class IV Cycle Track is not currently feasible along Taylor Street. Therefore, a policy should be included in the Mobility Element that if Taylor Street is ever widened beyond its current right-of-way, enhanced bicycle facilities such as Class II Buffered Bike Lanes or a Class IV Cycle Track should be implemented as well.

6.6 Public Transit Services and Facilities Assessment and Results

This section assesses the proposed transit network under implementation of the Preferred Plan conditions, which assumes implementation of the transit-related improvements outlined in Sections 3.5.2 and 4.5.2. The proposed Transit network under Preferred Plan conditions was assessed using the methodologies contained in Section 2.3.3. Transit stop/station ridership and amenities are assessed below as well as the roadway arterial speed along roadways continuing transit routes.

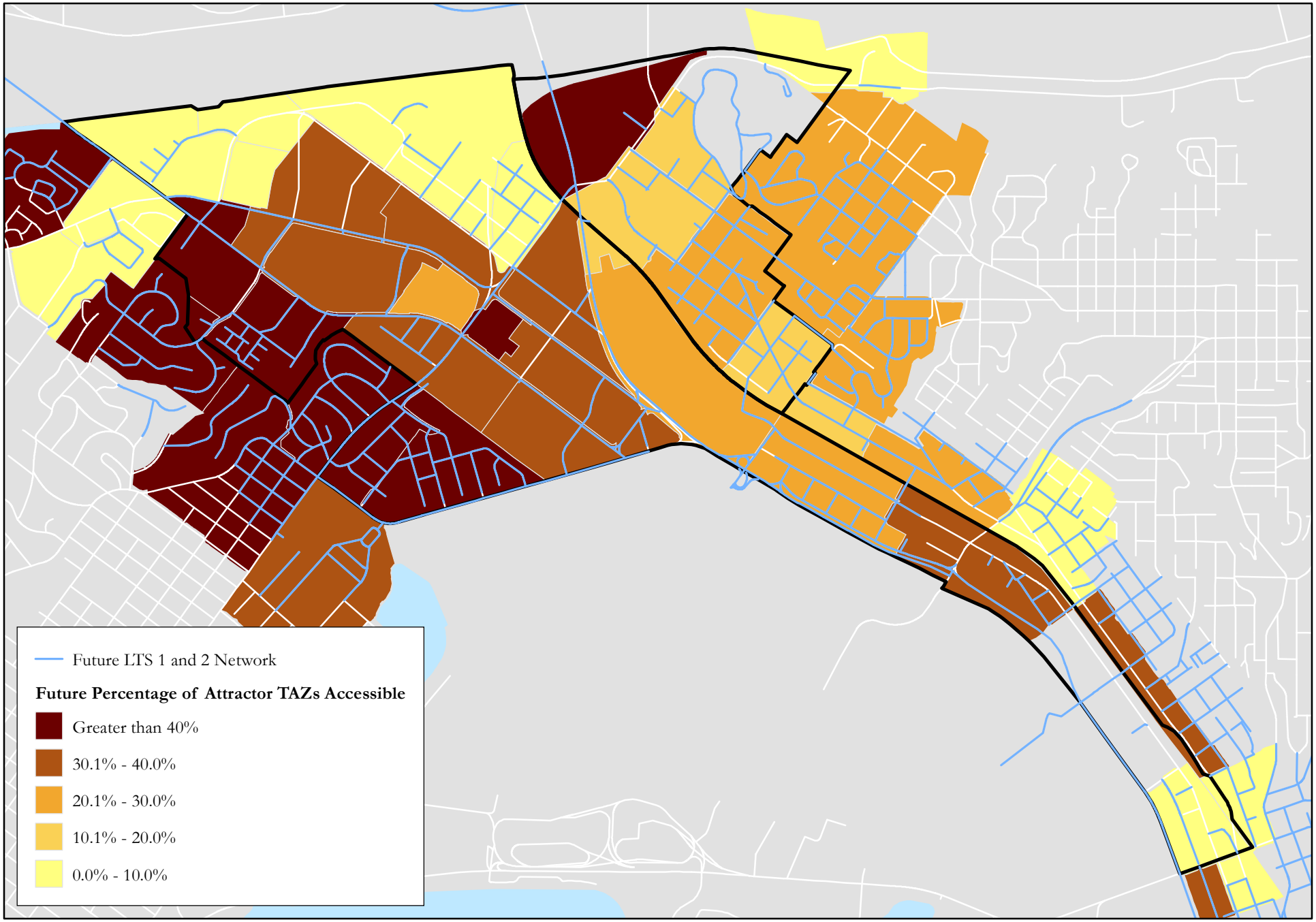


Figure 6-13
Combined Bicycle Network Connectivity and Quality Assessment
Preferred Plan Conditions

6.6.1 Transit Stop/Station Amenities and Average Daily Boardings and Alightings

While projecting increases in multimodal trips requires some level of judgment and is dependent on numerous factors, quantitative methods are available to assist in this process. A community-wide transit ridership growth factor was derived based on future growth estimates in SANDAG Series 12 Transportation Forecast Model, as documented in Section 5.0. Based on the SANDAG model results, a 1.75 growth factor was applied to existing transit ridership volumes, which is consistent with the projection of regional growth. Due to the methodology, projected ridership is only presented for existing locations and does not include the future Blue Line extension.

Table 6.8 displays the projected transit boarding and alightings by route and by stop within both communities under Preferred Plan conditions.

Table 6.8 Average Daily Transit Boardings and Alightings by Route and Station – Preferred Plan Conditions

Route # and Location	Boardings	Alightings	Total Trips
Bus Route 8 Clockwise			
Sports Arena Blvd and Midway Dr	30	30	60
Sports Arena Blvd and Midway Dr	150	50	200
Sports Arena Blvd Between Hancock and Kemper	60	20	70
Sports Arena Blvd Between Kemper and Sports Arena Driveway	70	50	160
Sports Arena Blvd and East Dr	120	50	170
Rosecrans St and Pacific Highway	40	40	70
Old Town Transit Center	20	1,090	1,110
Bus Route 9 Counter Clockwise			
Old Town Transit Center	1,110	20	1,120
Rosecrans St and Moore St	30	20	40
Rosecrans St and Kurtz St	20	40	50
Sports Arena Blvd and Camino Del Rio West	20	60	70
Sports Arena Blvd and East Dr	20	90	110
Sports Arena Blvd and Sports Arena Driveway	50	130	170
Sports Arena Blvd and Hancock St	60	180	230
Bus Route 10 East			
Old Town Transit Center	1,770	30	1,790
Pacific Highway and Sports Arena Blvd	50	30	70
Pacific Highway and Witherby St	100	170	260
Washington St and Pacific Highway	90	70	160
Washington St and Hancock St	40	10	50
Washington St and India St	90	30	120
Bus Route 10 West			
Washington St and India St	20	90	100

Table 6.8 Average Daily Transit Boardings and Alightings by Route and Station – Preferred Plan Conditions

Route # and Location	Boardings	Alightings	Total Trips
Washington St and Hancock St	10	20	30
Washington St and The Trolley Tracks	30	150	170
Pacific Highway and Washington St	30	30	60
Pacific Highway and Witherby St	90	110	200
Pacific Highway and Enterprise St	20	60	80
Pacific Highway and Kurtz St	10	10	10
Old Town Transit Center	30	1,450	1,470
Bus Route 28 East			
Rosecrans St and Lytton St	30	20	40
Rosecrans St and North Evergreen St	30	30	60
Rosecrans St and Loma Square	80	60	140
Rosecrans St and Sports Arena Blvd	60	60	110
Rosecrans St and Pacific Highway	30	10	30
Old Town Transit Center	N/A	1,090	1,090
Bus Route 28 West			
Old Town Transit Center	930	N/A	930
Rosecrans St and Moore St	20	N/A	20
Rosecrans St and Kurtz St	20	20	30
Rosecrans St and Midway Drive	50	50	90
Rosecrans St and Midway Drive	80	90	160
Rosecrans St and North Evergreen St	30	40	60
Rosecrans St and Lytton St	10	20	30
Bus Route 30 North			
Pacific Highway and Witherby St	90	80	170
Pacific Highway and Enterprise St	20	40	50
Pacific Highway and Kurtz St	10	10	10
Old Town Transit Center	1,110	610	1,710
Bus Route 30 South			
Old Town Transit Center	590	1,090	1,680
Pacific Highway and Sports Arena Blvd	20	590	60
Bus Route 35 East			
Midway Drive and Duke St	100	60	160
Midway Drive and Kemper St	70	40	110
Midway Drive and Fordham St	110	40	140
Midway Drive and East Drive	70	70	140
Rosecrans St and Sports Arena Blvd	100	30	130
Rosecrans St and Pacific Highway	20	20	30

Table 6.8 Average Daily Transit Boardings and Alightings by Route and Station – Preferred Plan Conditions

Route # and Location	Boardings	Alightings	Total Trips
Old Town Transit Center	N/A	990	990
Bus Route 35 West			
Old Town Transit Center	1,010	N/A	1,010
Rosecrans St and Moore St	40	10	50
Rosecrans St and Kurtz St	20	30	40
Rosecrans St and Midway Drive	50	70	110
Midway Drive and East Drive	80	60	140
Midway Drive and Fordham St	40	110	140
Midway Drive and Kemper St	50	110	150
Midway Drive and Duke St	40	130	160
Bus Route 44 North			
Old Town Transit Center	1,820	10	1,830
Taylor St and Juan St	20	10	20
Bus Route 44 South			
Taylor St and Sunset St	10	10	20
Old Town Transit Center	50	1,570	1,610
Bus Route 88 East			
Old Town Transit Center	240	20	250
Taylor St and Juan St	10	10	10
Taylor St and Presidio Drive	10	10	10
Taylor St and I-8 East	10	10	10
Bus Route 88 West			
Taylor St and I-8 East	10	10	10
Taylor St and Presidio Drive	10	10	10
Taylor St and Sunset St	10	10	10
Old Town Transit Center	10	140	150
Bus Route 105 North			
Old Town Transit Center	770	10	780
Taylor St and Juan St	10	10	10
Bus Route 105 South			
Taylor St and Juan St	10	10	10
Old Town Transit Center	10	570	570
Bus Route 150 North			
Pacific Highway and Witherby St	50	20	70
Pacific Highway and Enterprise St	10	20	20
Pacific Highway and Kurtz St	10	10	10
Old Town Transit Center	470	140	610

Table 6.8 Average Daily Transit Boardings and Alightings by Route and Station – Preferred Plan Conditions

Route # and Location	Boardings	Alightings	Total Trips
Bus Route 150 South			
Old Town Transit Center	120	660	80
Pacific Highway and Sports Arena Blvd	20	10	20
Green Line Trolley East			
Old Town Transit Center	8,280	390	8,670
Washington Street Station	280	660	930
Middletown Station	10	11,110	11,110
Green Line Trolley West			
Old Town Transit Center	10,600	7,680	18,270
Washington Street Station	690	220	910
Middletown Station	330	190	510

Source: Chen Ryan Associates (March 2017)

Table 6.9 displays the projected transit boardings and alightings at each transit stop/station within both communities under implementation of the Preferred Plan. The table also shows the required stop/station amenities, as shown in Table 2.2, based on the future ridership projects.

Table 6.9 Transit Station/Stop Locations, Amenities and Average Daily Boardings and Alightings – Preferred Plan Conditions

				Amenities at the Stops			
Station	Boardings	Alightings	Total	Signs	Shelter	Bench	Trash Can
Sports Arena Blvd and Midway Dr (Clockwise)	180	80	260	✓	✓	✓	✓
Sports Arena Blvd Between Hancock and Kemper (Clockwise)	60	20	70	✓	□	○	□
Sports Arena Blvd Between Kemper and Sports Arena Driveway (Clockwise)	70	50	160	✓	□	✓	□
Sports Arena Blvd and East Dr (Clockwise)	120	50	170	✓	○	✓	□
Rosecrans St and Pacific Highway (Clockwise)	40	40	70	✓	✓	✓	✓
Old Town Transit Center (Clockwise)	20	1,090	1,110	✓	✓	✓	✓
Old Town Transit Center (Counter Clockwise)	1,110	20	1,120	✓	✓	✓	✓
Rosecrans St and Moore St (Counter Clockwise)	30	20	40	✓	□	✓	✓
Rosecrans St and Kurtz St (Counter Clockwise)	20	40	50	✓	□	✓	□
Sports Arena Blvd and Camino Del Rio West (Counter Clockwise)	20	60	70	✓	□	✓	□
Sports Arena Blvd and East Dr (Counter Clockwise)	20	90	110	✓	□	✓	✓

Table 6.9 Transit Station/Stop Locations, Amenities and Average Daily Boardings and Alightings – Preferred Plan Conditions

Station	Boardings	Alightings	Total	Amenities at the Stops			
				Signs	Shelter	Bench	Trash Can
Sports Arena Blvd and Sports Arena Driveway (Counter Clockwise)	50	130	170	✓		✓	
Sports Arena Blvd and Hancock St (Counter Clockwise)	60	180	230	✓		✓	
Old Town Transit Center (Eastbound)	2,010	2,130	4,120	✓	✓	✓	✓
Pacific Highway and Sports Arena Blvd (Eastbound)	50	30	70	✓			
Pacific Highway and Witherby St (Eastbound)	100	170	260	✓		✓	✓
Washington St and Pacific Highway (Eastbound)	90	70	160	✓		✓	
Washington St and Hancock St (Eastbound)	40	10	50	✓		✓	✓
Washington St and India St (Eastbound)	90	30	120	✓		✓	✓
Washington St and India St (Westbound)	20	90	100	✓			✓
Washington St and Hancock St (Westbound)	10	20	30	✓		✓	✓
Washington St and The Trolley Tracks (Westbound)	30	150	170	✓			
Pacific Highway and Washington St (Westbound)	30	30	60	✓		✓	
Pacific Highway and Witherby St (Westbound)	90	110	200	✓	✓	✓	✓
Pacific Highway and Enterprise St (Westbound)	20	60	80	✓			
Pacific Highway and Kurtz St (Westbound)	10	10	10	✓			
Old Town Transit Center (Westbound)	1,980	1,590	3,560	✓	✓	✓	✓
Rosecrans St and Lytton St (Eastbound)	30	20	40	✓	✓	✓	✓
Rosecrans St and North Evergreen St (Eastbound)	30	30	60	✓		✓	✓
Rosecrans St and Loma Square (Eastbound)	80	60	140	✓	✓	✓	✓
Rosecrans St and Sports Arena Blvd (Eastbound)	160	90	240	✓	✓	✓	✓
Rosecrans St and Pacific Highway (Eastbound)	50	30	60	✓	✓	✓	✓
Rosecrans St and Moore St (Westbound)	60	10	70	✓		✓	✓
Rosecrans St and Kurtz St (Westbound)	40	50	70	✓		✓	
Rosecrans St and Midway Drive (Westbound)	180	210	360	✓	○	✓	✓
Rosecrans St and North Evergreen St (Westbound)	30	40	60	✓			
Rosecrans St and Lytton St (Westbound)	10	20	30	✓			

Table 6.9 Transit Station/Stop Locations, Amenities and Average Daily Boardings and Alightings – Preferred Plan Conditions

Station	Boardings	Alightings	Total	Amenities at the Stops			
				Signs	Shelter	Bench	Trash Can
Pacific Highway and Witherby St (Northbound)	140	100	240	✓	✓	✓	✓
Pacific Highway and Enterprise St (Northbound)	30	60	70	✓			
Pacific Highway and Kurtz St (Northbound)	20	20	20	✓			
Old Town Transit Center (Northbound)	4,170	770	4,930	✓	✓	✓	✓
Old Town Transit Center (Southbound)	770	3,890	3,940	✓	✓	✓	✓
Pacific Highway and Sports Arena Blvd (Southbound)	40	600	80	✓			
Midway Drive and Duke St (Eastbound)	100	60	160	✓	✓	✓	✓
Midway Drive and Fordham St (Eastbound)	110	40	140	✓	✓	✓	✓
Midway Drive and East Drive (Eastbound)	70	70	140	✓	✓	✓	✓
Midway Drive and East Drive (Westbound)	80	60	140	✓		✓	
Midway Drive and Fordham St (Westbound)	40	110	140	✓		✓	
Midway Drive and Kemper St (Westbound)	50	110	150	✓		✓	
Midway Drive and Duke St (Westbound)	40	130	160	✓		✓	
Taylor St and Juan St (Northbound)	30	20	30	✓		✓	
Taylor St and Sunset St (Southbound)	10	10	20	✓		✓	
Taylor St and Juan St (Eastbound)	10	10	10	✓		✓	
Taylor St and Presidio Drive (Eastbound)	10	10	10	✓		✓	
Taylor St and I-8 East (Eastbound)	10	10	10	✓			
Taylor St and I-8 East (Westbound)	10	10	10	✓		✓	
Taylor St and Presidio Drive (Westbound)	10	10	10	✓		✓	
Taylor St and Sunset St (Westbound)	10	10	10	✓		✓	
Taylor St and Juan St (Southbound)	10	10	10	✓		✓	
Old Town Transit Center	8,280	390	8,670	✓	✓	✓	✓
Washington Street Station	280	660	930	✓	✓	✓	✓
Middletown Station	10	11,110	11,110	✓	✓	✓	✓

Source: Chen Ryan Associates (March 2017)

Notes:
✓: Existing Amenity
O: Needed Amenity

As shown, the majority of the existing stops/stations already provide adequate amenities to accommodate the projected future ridership. However, additional amenities will be needed at the following stations as ridership increased:

Midway-Pacific Highway Community

- Sports Arena Boulevard, between Hancock Street and Kemper Street (Clockwise) – Bench
- Sports Arena Boulevard and East Drive (Clockwise) – Shelter
- Rosecrans Street and Midway Drive (Westbound) – Shelter

Old Town

- None

6.6.2 Arterial Speed Analysis Along Roadways Serving Transit Routes

An HCM peak hour arterial speed analysis was conducted along all roadway corridors where transit routes are projected to operate in order to identify future roadway congestion that could potentially impact transit route travel times and on-time performance. Transit priority measures such as queue jumper lanes and transit priority signal timing should be implemented in locations where future roadway congestion is anticipated.

Table 6.10 displays peak hour arterial speed analyses for all roadway facilities where a transit route operates under implementation of the Preferred Plan. Peak hour arterial analysis worksheets are provided in Appendix G.

Table 6.10 Arterial Speed Analysis Along Transit Corridors – Preferred Plan Conditions

Roadway	Segment	Posted Speed (MPH)	AM				PM			
			EB/NB		WB/SB		EB/NB		WB/SB	
			Speed	LOS	Speed	LOS	Speed	LOS	Speed	LOS
Midway-Pacific Highway Community										
Camino Del Rio West	Sports Arena Blvd to Kurtz Street	35	5.8	F	6.4	F	3.6	F	5.1	F
	Kurtz Street to Hancock Street	35	10.8	D	24.2	B	12.1	D	24	B
Rosecrans Street	Barnett Avenue to Midway Drive	35	22.2	C	9.5	F	12.9	F	19.3	D
	Midway Drive to Sports Arena Blvd	35	31.2	B	9.3	F	31.2	B	8.3	F
	Sports Arena Blvd to Kurtz Street	35	10.2	F	3.4	F	7.2	F	2.7	F
	Kurtz Street to Pacific Highway	35	17	E	20.9	D	14.7	E	20.4	D
Midway Drive	Sports Arena Blvd to Duke Street/Hancock Street	35	6	F	10.4	E	5.1	F	9.2	F
	Duke Street/Hancock Street to Kemper Street	35	20.5	C	17.7	D	16.1	D	13.4	E
	Kemper Street to East Drive	35	19.1	C	24.9	B	15.6	D	23.7	C
	East Drive to Rosecrans Street	35	23	C	12.3	E	20	C	8.4	F
Sports Arena Boulevard	I-8 WB Off-Ramp to W Point Loma Blvd	35	21.1	C	7.9	F	8.8	F	8.2	F
	W Point Loma Blvd to Hancock Street	35	11.5	E	21.1	C	4.8	F	23.2	C
	Hancock Street to Kemper Street	35	15.3	D	13.6	E	18	C	9.4	F
	Kemper Street to Frontier Drive	35	10.9	E	13.8	E	14.4	D	17.6	D
	Frontier Drive to Greenwood Street	35	11.5	E	20.6	C	12.3	E	11.8	E
	Greenwood Street to Rosecrans Street	35	26.2	B	6.5	F	23.6	C	6.3	F
Pacific Highway	Taylor Street to Kurtz Street	45	24.4	C	21.3	D	22.7	C	15.6	E
	Kurtz Street to Sports Arena Blvd	45	23	C	17.2	D	13.2	E	22.6	C

Table 6.10 Arterial Speed Analysis Along Transit Corridors – Preferred Plan Conditions

Roadway	Segment	Posted Speed (MPH)	AM				PM			
			EB/NB		WB/SB		EB/NB		WB/SB	
			Speed	LOS	Speed	LOS	Speed	LOS	Speed	LOS
Pacific Highway	Sports Arena Blvd to Barnett Avenue	45	11.7	F	11.9	F	9.2	F	5.3	F
	Washington Street to Sassafras Street	45	9.6	F	28	B	5.5	F	28.1	B
	Sassafras Street to W Laurel Street	45	31.6	B	15.3	E	27.8	C	13.2	E
Old Town Community										
Taylor Street	Pacific Highway to Congress Street	35	12.5	D	9	E	9.3	D	8.6	E
	Congress Street to Juan Street	35	9.8	D	12.9	D	6.7	F	13.8	C
	Juan Street to Whitman Street	35	17.5	C	14.6	C	15.5	C	15.2	C

Source: Chen Ryan Associates (March 2017)

Note:
Bold letter indicates LOS E or F

As shown, several segments within both communities are projected to operate at LOS E or F during both the AM and PM Peak hours:

Midway-Pacific Highway

- Camino del Rio West, between Sports Arena Boulevard and Kurtz Street
  - LOS F: AM & PM peak hours, westbound & eastbound directions
- Rosecrans Street, between Barnett Avenue and Midway Drive
  - LOS F: AM peak hour, westbound direction
  - LOS F: PM peak hour, eastbound direction
- Rosecrans Street, between Midway Drive and Sports Arena Boulevard
  - LOS F: AM & PM peak hours, westbound direction
- Rosecrans Street, between Sports Arena Boulevard and Kurtz Street
  - LOS F: AM & PM peak hours, westbound & eastbound directions
- Rosecrans Street, between Kurtz Street and Pacific Highway
  - LOS E: AM & PM peak hours, eastbound direction
- Midway Drive, between Sports Arena Boulevard and Hancock Street
  - LOS F: AM & PM peak hours, northbound direction
  - LOS E: AM peak hour, southbound direction
  - LOS F: PM peak hour, southbound direction
- Midway Driveway, between Hancock Street and Kemper Street
  - LOS E: PM peak hour, southbound direction
- Midway Drive, between East Drive and Rosecrans Street
  - LOS E: AM peak hour southbound direction
  - LOS F: PM peak hour southbound direction
- Sports Arena Boulevard, between I-8 Westbound Ramps and West Point Loma Boulevard
  - LOS F: AM peak hour, southbound direction
  - LOS F: PM peak hour, northbound & southbound directions
- Sports Arena Boulevard, between West Point Loma Boulevard and Hancock Street
  - LOS E: AM peak hour, northbound direction

    - LOS F: PM peak hour, northbound direction
- Sports Arena Boulevard, between Hancock Street and Kemper Street
    - LOS E: AM peak hour, southbound direction
    - LOS F: PM peak hour, southbound direction
- Sports Arena Boulevard, between Kemper Street and Frontier Drive
    - LOS E: AM peak hour, northbound & southbound directions
- Sports Arena Boulevard, between Frontier Drive and Greenwood Street
    - LOS E: AM peak hour, northbound direction
    - LOS E: PM peak hour, northbound & southbound directions
- Sports Arena Boulevard, between Greenwood Street and Rosecrans Street
    - LOS F: AM & PM peak hours, southbound direction
- Pacific Highway, between Taylor Street to Kurtz Street
    - LOS E: PM peak hour, southbound direction
- Pacific Highway, between Kurtz Street and Sports Arena Boulevard
    - LOS E: PM peak hour, northbound direction
- Pacific Highway, between Sports Arena Boulevard and Barnett Avenue
    - LOS F: AM & PM peak hours, northbound & southbound directions
- Pacific Highway, between Washington Avenue and Sassafras Street
    - LOS F: AM & PM peak hours, northbound direction
- Pacific Highway, between Sassafras Street and Laurel Street
    - LOS E: AM & PM peak hours, southbound direction

As noted in Section 3.5.2, the following transit priority treatments are recommended to help on-time performance for bus routes within the Midway-Pacific Highway community:

Pacific Highway - Pacific Highway serves several regional bus routes that connect multiple communities. The projected low travel speeds along several segments of Pacific Highway could impact the efficiency and on-time performance of these regional routes. Therefore, it is recommended that, transit priority measures such as queue jumper lanes and transit priority signals are implemented at all signalized intersections along Pacific Highway between Taylor Street and Laurel Street.

Rosecrans Street – Rosecrans Street east of Camino Del Rio West currently serves four MTS bus Routes (8, 9, 28 and 35). A queue jumper lane and transit signal have already been implemented on the eastbound approach at the Taylor Street / Rosecrans Street and Pacific Highway intersection. Similar transit priority improvements should also be looked at the Rosecrans Street Camino Del Rio West and Sports Arena Boulevard intersection to allow westbound buses (Routes 8, 9 and 35) to turn right onto Sports Arena Boulevard and avoid congestion.

New Roadway Connections – The proposed new roadway connections can serve as alternative east/west routes for busses traveling through the community. Rerouting to these new facilities, if possible, may help avoid the congestion on Rosecrans Street. It is recommended that after the construction of any of the new roadways, the City of San Diego coordinate with MTS to look at bus rerouting opportunities.

Old Town

- Taylor Street, between Pacific Highway and Congress Street
  - LOS E: AM & PM peak hours, southbound direction
- Taylor Street, between Congress Street and Juan Street
  - LOS F: PM peak hour, northbound direction

Taylor Street serves several regional bus routes connecting multiple communities. Therefore, it is recommended that transit priority treatments be implemented along Taylor Street to help increase transit performance. It is recommended to implement queue jumper lanes and transit priority signals in either direction at both the Taylor Street / Juan Street and Taylor Street / Morena Boulevard intersections.

6.7 Parking Management

It is anticipated that any additional parking demand associated with future developments will be accommodated on-site. It is assumed that all on-street public parking spaces will be maintained under Preferred Plan implementation, with the exception of the following:

Midway-Pacific Highway

Rosecrans Street, between Sports Arena Boulevard / Camino Del Rio West and Pacific Highway – To implement the multi-use urban path improvements proposed as part of the Preferred Plan, parking along both sides of Rosecrans Street will need to be removed. Approximately 65 on-street parking spaces will be removed along this segment. Since there is abundant off-street parking within the community and these spaces are not heavily utilized, the removal of these spaces should not negatively impact the community.

Sports Arena Boulevard, between West Point Loma Boulevard and Rosecrans Street – To implement the multi-use urban path improvements proposed as part of the Preferred Plan, parking along the southwest side of Sports Arena Boulevard will need to be removed. Approximately 24 on-street parking spaces will be removed along this segment. Since there is abundant off-street parking within the community and these spaces are not heavily utilized, removal of these spaces should not negatively impact the community.

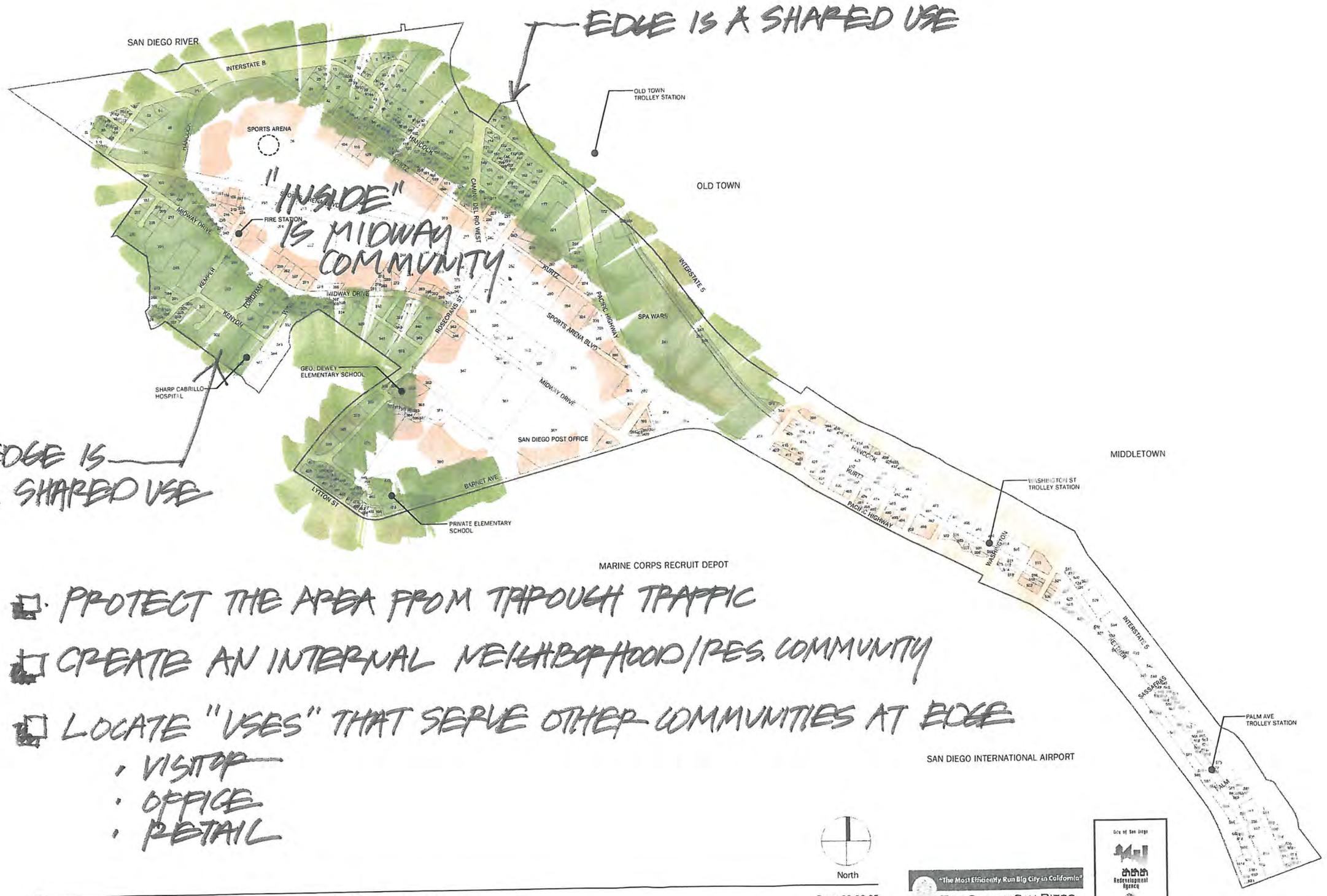
Old Town

There is not anticipated to be any loss of on-street parking within the Old Town Community. However, as noted in Section 4.2.2 it is proposed that the parking along the east side of San Diego Avenue, between Twiggs Street and Conde Street, be converted from parallel to diagonal parking. This improvement could potentially result in up to 20 additional on-street parking spaces along San Diego Avenue.

The community is not currently in favor of metering parking within Old Town as a means to create parking turnover, therefore, use of the existing parking supply should be maximized to help meet

parking demands. The Caltrans parking lot, located north of the Congress Street and Taylor Street intersection, provides approximately 800 parking spaces that are open to the public on nights and weekends and is frequently under capacity. Increased utilization of these spaces may help alleviate some of the parking demand experienced throughout the Old Town community. Additional wayfinding signage may be beneficial to help direct community visitors and employees to the lot.

Appendix A
Midway/Pacific Highway Urban Greening Plan
Cross-Sections and Concept Plans



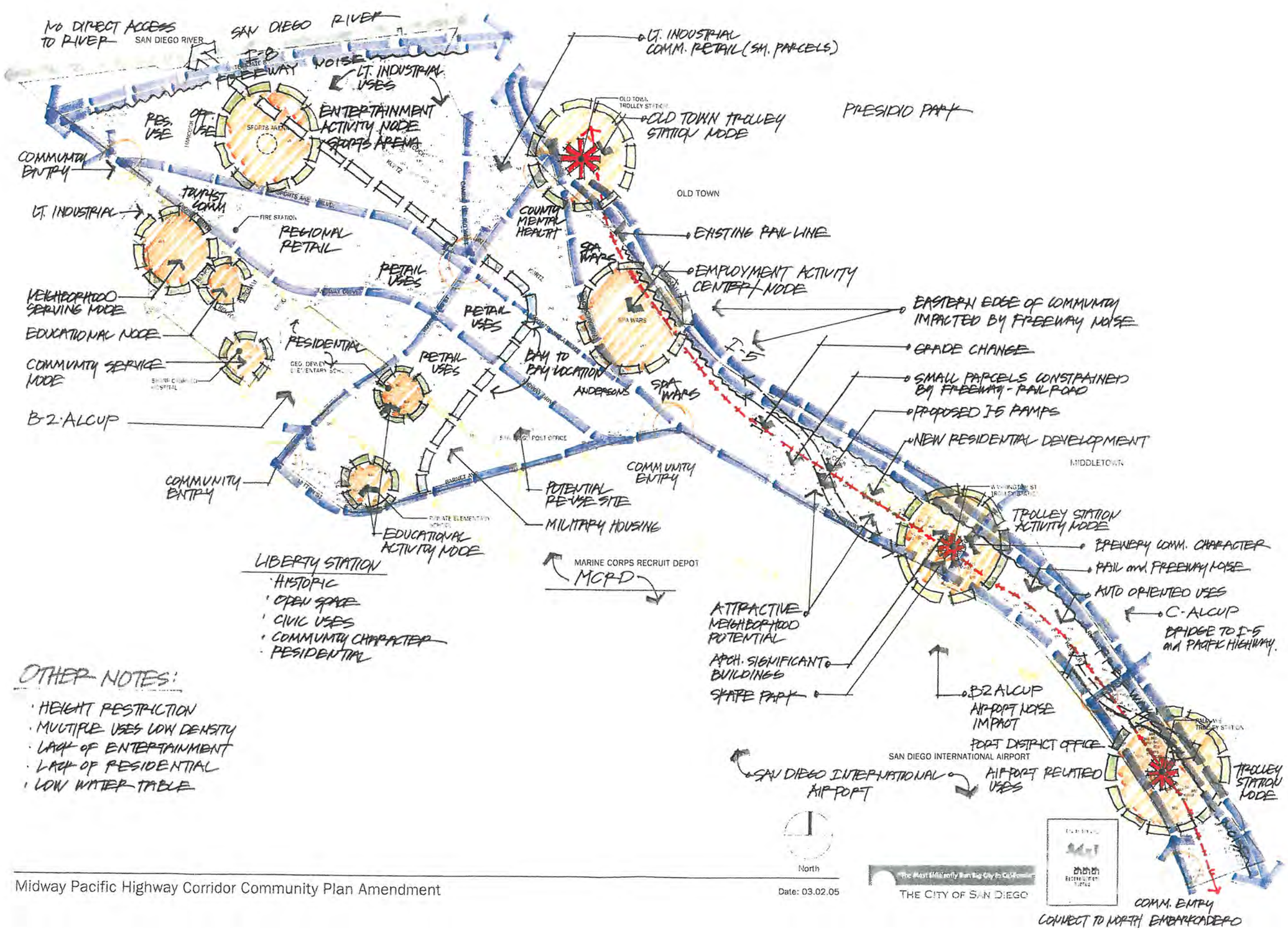
- PROTECT THE AREA FROM THROUGH TRAFFIC
- CREATE AN INTERNAL NEIGHBORHOOD/RES. COMMUNITY
- LOCATE "USES" THAT SERVE OTHER COMMUNITIES AT EDGE
  - VISITOR
  - OFFICE
  - RETAIL

North

"The Most Efficiently Run Big City in California"

THE CITY OF SAN DIEGO

City of San Diego Redevelopment Agency


NO DIRECT ACCESS TO RIVER
SAN DIEGO RIVER
SAN DIEGO RIVER
I-8 FREEWAY
NOISE
LT. INDUSTRIAL USES
RES. USE
OFF. USE
ENTERTAINMENT ACTIVITY NODE
SPORTS ARENA
COMMUNITY ENTRY
LT. INDUSTRIAL
TOURIST COMM.
FIRE STATION
REGIONAL RETAIL
NEIGHBORHOOD SERVING NODE
EDUCATIONAL NODE
COMMUNITY SERVICE NODE
B-2-ALCUP
RESIDENTIAL
RETAIL USES
RETAIL USES
RETAIL USES
BAY TO BAY CONNECTION
ANDERSONS
SPA WARS
LT. INDUSTRIAL COMM. RETAIL (SM. PARCELS)
OLD TOWN TROLLEY STATION
OLD TOWN TROLLEY STATION NODE
PRESIDIO PARK
OLD TOWN
COUNTY MENTAL HEALTH
SPA WARS
EXISTING RAIL LINE
EMPLOYMENT ACTIVITY CENTER/NODE
EASTERN EDGE OF COMMUNITY IMPACTED BY FREEWAY NOISE
I-5
GRADE CHANGE
SMALL PARCELS CONSTRAINED BY FREEWAY - RAILROAD
PROPOSED I-5 RAMPS
NEW RESIDENTIAL DEVELOPMENT
MIDDLETOWN
SAN DIEGO POST OFFICE
COMMUNITY ENTRY
POTENTIAL RE-USE SITE
MILITARY HOUSING
EDUCATIONAL ACTIVITY NODE
COMMUNITY ENTRY
LIBERTY STATION
· HISTORIC
· OPEN SPACE
· CIVIC USES
· COMMUNITY CHARACTER
· RESIDENTIAL
MARINE CORPS RECRUIT DEPOT
MCRD
ATTRACTIVE NEIGHBORHOOD POTENTIAL
ARCH. SIGNIFICANT BUILDINGS
SKATE PARK
B2 ALCUP
AIRPORT NOISE IMPACT
PORT DISTRICT OFFICE
SAN DIEGO INTERNATIONAL AIRPORT
SAN DIEGO INTERNATIONAL AIRPORT
AIRPORT RELATED USES
TROLLEY STATION NODE
TROLLEY STATION ACTIVITY NODE
BREWERY COMM. CHARACTER
RAIL and FREEWAY NOISE
AUTO ORIENTED USES
C-ALCUP
BRIDGE TO I-5 and PACIFIC HIGHWAY.
COMM. ENTRY
CONNECT TO NORTH EMBARCADERO
OTHER NOTES:
· HEIGHT RESTRICTION
· MULTIPLE USES LOW DENSITY
· LACK OF ENTERTAINMENT
· LACK OF RESIDENTIAL
· LOW WATER TABLE
North
THE CITY OF SAN DIEGO

Appendix B
City of San Diego Unfunded Transportation Needs List (8/5/14)

ID	Title	Prioritization_Score	Description	Status	Community	CD	CIP_NO	PFFP_NO	Estimate	Funding_Identified_in_Financing_Plan	Grant_Funding_Source	Comments	High_Accident	TR_Number	Mapped_By	Item Type	Path
2491	Market St @ Pitta St	0	Re-evaluated in August 2012 and no longer meets warrants.	No longer meets warrants	Encanto Neighborhoods, Southeastern	4							0	320405		Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
2503	Cardiff St @ San Vicente St	0	Re-evaluated March 2012 and no longer meets warrants.	No longer meets warrants	Encanto Neighborhoods, Southeastern	4							0	320397		Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
2767	58th St @ Skyline Dr/Trinidad Wy	0	Re-evaluated in Oct. 2012 and no longer meets warrants.	No longer meets warrants	Encanto Neighborhoods, Southeastern	4							0	326167		Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
3517	Sampson Street southwest of 28th Street 156', northwest side Street Light	0		No longer meets warrants	Southeastern San Diego, Southeastern	8			2000				0	329954	Hughes, Duncan	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
827	30th Street & Market Street Traffic Signal Upgrade	0	Install left-turn phasing for EB/WB traffic on Market Street	No longer meets warrants	Southeastern San Diego, Southeastern	8			13785			LT phasing installed by Streets Div. on 5/15/12.	0	305875	Pornan, Donald	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
751	Southcrest Redevelopment Project Area Street Lights	1	This project will install up to 73 street lights in the Southcrest Redevelopment Area.	PITS	Southeastern San Diego, Southeastern	4;#8	52-293.0		655600	Redevelopment			Yes		Pornan, Donald	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
530	60th St. from Upland St. to Weaver St.-Install New Guardrail	17	This project will install 1,230' of guardrail.	TEO Funded	Encanto Neighborhoods,	4			78000				No		Nascimento, Claudio	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
531	60th St. from Broadway to Radio Dr.-Install New Guardrail	20	This project will install 272' of guardrail along the west side of 60th St within the specified limits.	TEO Funded	Encanto Neighborhoods, Southeastern	4						In Design, estimate to be provided by consultant.	No	283409	Nascimento, Claudio	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
4109	Medio St and Pocatello St - Install New Guardrail	21	This project will install approximately 375' of new guardrail along the west side of Pocatello St and Medio St between Eleanor Dr and Bishop St.	TEO Unfunded	Southeastern San Diego, Southeastern	4			45000			Cost Estimate Complete.	No		Alo, Leo	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
491	Wunderlin Ave from 63rd Street to 900' east(North Side) - Install New Sidewalk	25	This project will provide PCC sidewalk on the north side of Wunderlin Avenue.	TEO Unfunded	Encanto Neighborhoods, Southeastern	4			115000	Other	CDBG;#Safe Route to School	Conflicts: Landscaping, Utility Poles, Trees	Yes	318208	Pornan, Donald	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
814	19th Street & Market Street Traffic Signal Upgrade	25	Install pedestrian heads for all crossings	TEO Unfunded	Southeastern San Diego, Southeastern	8			12500				0		Pornan, Donald	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
934	25th Street & Imperial Avenue Traffic Signal Upgrade	25	Install PPB (2010).	TEO Unfunded	Southeastern San Diego, Southeastern	8			6000				0		Pornan, Donald	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
935	25th Street & Market Street Traffic Signal Upgrade	25	Change out left turn signal; head from PV to regular signal heads with arrows .	TEO Unfunded	Southeastern San Diego, Southeastern	8			16100				0		Pornan, Donald	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
938	30th Street (S) & Ocean View Boulevard Traffic Signal Upgrade	25	Install pedestrian indications on the NWC and NEC	TEO Unfunded	Southeastern San Diego, Southeastern	8			9500				0		Pornan, Donald	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
449	Pocatello St from Eleanor Dr to Medio St, Medio St from Pocatello St to Bishop Dr, Bishop Dr from Medio St to Eleanor Dr - Improve to residential local street	27	This project will provide for a low volume, residential local street along Pocatello, Medio and Bishop per Street Design Manual Standards. It will require excavation, new AC street section,curb, gutter and sidewalk, street lights, retaining walls, and encroachment removal.	TEO Unfunded	Southeastern San Diego, Southeastern	4				Other			0		Pornan, Donald	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
498	Skyline Dr. at Woodman St.-Install New Guardrail	28	This project will install approximately 80' of guardrail at the southeast corner of this intersection.	TEO Unfunded	Encanto Neighborhoods, Southeastern;#Skyli	4			30000				No	308921	Nascimento, Claudio	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
551	Imperial Ave from I-5 to 32nd St - Widen to 4-lane major	28	This project provides for the widening of Imperial Avenue to a four-lane major street.	TEO Unfunded	Southeastern San Diego, Southeastern	4;#8		SESD-T9	2800000				0		Pornan, Donald	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
947	32nd St & Market St Traffic Signal Upgrade	28	Add pedestrian signal heads and push buttons	TEO Unfunded	Southeastern San Diego, Southeastern	8			14600				0		Pornan, Donald	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
984	Euclid Av & Logan Av/Olvera Av Traffic Signal Upgrade	28	Relocate PPB 180 degrees at NWC of Logan and Euclid (south leg of Logan, PPB on median); relocate PPB 180 degrees at SEC of Olvera & Euclid (2002)	TEO Unfunded	Encanto Neighborhoods, Southeastern	4			600				0		Pornan, Donald	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
1077	32nd St & Imperial Ave Traffic Signal Upgrade	28	Install new limit line loops to improve bicycle detection for all approaches (Mod. Type E)	TEO Unfunded	Southeastern San Diego, Southeastern	4			20000				0	314,613	Pornan, Donald	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
251	60th St from Imperial to Federal - Widen to 2-lane collector	29	This project provides for the widening of 60th Street to a two-lane collector.	TEO Unfunded	Southeastern San Diego, Southeastern	4;#8		SESD-17	7000000	Other			0		Pornan, Donald	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
267	Guymon St from 1000' w/o Euclid Ave to 1400' w/o Euclid Ave - Widen road	29	Widen road to standard 40' c/c	TEO Unfunded	Southeastern San Diego, Southeastern	8				Other		Conflicts: Environmental, No C&G, Drainage	0	313469	Pornan, Donald	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
3481	36th St & National Av APS Traffic Signal Upgrade	29	Install Polara push buttons Upgrade curb ramps Install ped countdown timers	TEO Unfunded	Southeastern San Diego, Southeastern	9			30000				0	329545		Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
3791	25th St & J St Traffic Signal Upgrade	29	Install ped countdown timers (8) Upgrade ped push buttons (7)	TEO Unfunded	Southeastern San Diego, Southeastern	8			2600				0	331,264		Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
474	35th St from Durant St to Webster Ave(West Side)-Install New Sidewalk	30	This project will provide approximately 100 linear feet of new PCC sidewalk on the west side of 35th Street. It will require excavation.	TEO Unfunded	Southeastern San Diego, Southeastern	9			27000	Other	CDBG	Conflicts: None Observed IMCAT Conflicts as of	0	308882	Nascimento, Claudio	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
4115	Merlin Drive north of Brooklyn Avenue 395', west side	30		TEO Unfunded	Encanto Neighborhoods,	4			2000		Smart Growth;#CDBG			TR334870	Semaan, Jerry	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
4116	Merlin Drive north of Brooklyn Avenue 575', west side	30		TEO Unfunded	Encanto Neighborhoods,	4			2000		Smart Growth;#CDBG			TR334870	Semaan, Jerry	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
4117	Merlin Drive north of Brooklyn Avenue 915', west side	30		TEO Unfunded	Encanto Neighborhoods,	4			2000		Smart Growth;#CDBG			TR334870		Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
3014	Skyline Dr & Sychar Rd Traffic Signal Upgrade	30	Upgrade curb ramps Install ped countdown timers	TEO Unfunded	Encanto Neighborhoods,	4			40000				0	328,180	Morabe, Lindsay	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
3015	Meadowbrook Dr & Skyline Dr Traffic Signal Upgrade	30	Upgrade curb ramps Install ped countdown timers	TEO Unfunded	Encanto Neighborhoods,	4			40000				0	328,179	Morabe, Lindsay	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List

3017	Skyline Dr & Woodman St Traffic Signal Upgrade	30	Install new loops for phases 2 & 5 Upgrade curb ramps Upgrade ped push buttons Install ped countdown timers	TEO Unfunded	Encanto Neighborhoods, Southeastern	4			55000				0	328,183	Morabe, Lindsay	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
116	Bancroft St from Island Ave to J St(West Side)- Install New Sidewalk	31	This project will provide approximately 291 linear feet of sidewalk, relocate three (3) street lights, 18 linear feet of driveway, and add five (5) pedestrian ramps.	TEO Unfunded	Southeastern San Diego, Southeastern	8			192000	Other	CDBG;#Safe Route to School	Conflicts: Utility Poles, Utility Boxes, Landscaping	0	308866	Tawfiq, Kharman	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
323	Geneva Ave from Winston Dr to Beverly St(South Side)- Install New Sidewalk	31	This project will install PCC sidewalk on the South Side of Geneva Ave.	TEO Unfunded	Encanto Neighborhoods, Southeastern	4				Other		Conflicts: Slope, Utility Poles, Mailboxes, Landscaping IMCAT Conflicts as of	0	309002	Pornan, Donald	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
353	58th St from South of Atla Vista Ave to End of 58th St(West Side)- Install New Sidewalk	31	This project will install PCC sidewalk on the west side of 58th Street.	TEO Unfunded	Encanto Neighborhoods, Southeastern	4				Other	CDBG	Conflicts: Drainage, Possible ROW Encroachment	0	318210	Pornan, Donald	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
493	Santa Isabel Dr from Bonita Dr to Olvera Ave(West Side)- Install New Sidewalk	31	This project will install PCC sidewalk on the west side of Santa Isabel Drive.	TEO Unfunded	Encanto Neighborhoods, Southeastern	4				Other	CDBG	Conflicts: Utility Poles, Landscaping, Driveway Clearance, Trees, Slop	Yes	309079	Pornan, Donald	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
3018	Skyline Dr & Valencia Traffic Signal Upgrade	31	Upgrade ped push buttons Install ped countdown timers	TEO Unfunded	Encanto Neighborhoods,	4			8000				0	328,186	Morabe, Lindsay	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
352	54th St from Imperial Ave to Santa Margarita St(East Side)- Install New Sidewalk	32	This project will install PCC sidewalk on the East Side of 54th Street.	TEO Unfunded	Encanto Neighborhoods, Southeastern	4					CDBG	Conflicts: No C&G, Drainage Concerns, Utility Poles IMCAT Conflicts as of	0	303500	Pornan, Donald	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
370	53rd St from Santa Margarita St to Imperial Ave(East Side)- Install New Sidewalk	32	This project will install PCC sidewalk on the east side of 53rd Street.	TEO Unfunded	Encanto Neighborhoods, Southeastern	4				Other	CDBG	Conflicts: None Oserved	0	306252	Pornan, Donald	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
1263	Roswell St from Swaner St to Old Memory Lane (North Side) -Install New Sidewalk	32	This project will install a missing sidewalk segment on the North Side of Roswell St.	TEO Unfunded	Encanto Neighborhoods, Southeastern	4						Conflicts: No C&G, Drainage Concerns	0		Pornan, Donald	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
1242	Citywide Streetlights FY 2011	32	Installation of street lights at various locations: Enterprise Street at Jessop Lane, north side Pershing Avenue at Upas Street, southeast corner Bancroft Street at Greely Avenue, southeast corner Houston Street at Kurtz Street, southwest corner Central Avenue at Dwight Street, northeast corner 62nd Street at Akins Avenue, southeast corner 31st Street at Juniper Street, northeast corner 32nd Street at Juniper Street, northeast corner 33rd Street at Juniper Street, northeast corner Bancroft Street at Juniper Street, northeast corner Dale Street at Juniper Street, northeast corner	TEO Funded	Encanto Neighborhoods, Southeastern;#Greater North Park;#Mid-City:City Heights;#Midway-Pacific Highway;#Southeastern San Diego, Southeastern	2;#3;#4;#8	B1114 7		96000				Yes		Pornan, Donald	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
3016	O'Meara St & Skyline Dr Traffic Signal Upgrade	32	Install ped countdown timers	TEO Unfunded	Encanto	4			2000				0	328,184	Morabe,	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
298	Brooklyn Ave from Merlin St to 63rd St(North Side)- Install New Sidewalk	33	This project will provide approximately 377 linear feet of sidewalk, six driveways, and two pedestrian ramps.	TEO Unfunded	Encanto Neighborhoods, Southeastern	4			116000	Other	CDBG;#Safe Route to School	Conflicts: Utility Box, Utility Poles, Decorative Pavement IMCAT Conflicts as of	0	309098A	Pornan, Donald	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
328	54th St from Imperial Ave to Naranja St(East Side)- Install New Sidewalk	33	This project will install PCC sidewalk on the East Side of 54th Street.	TEO Unfunded	Encanto Neighborhoods, Southeastern	4					CDBG	Conflicts: No C&G, Drainage Concerns	0	303499	Pornan, Donald	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
332	G St from 22nd St to 24th St(North Side)- Install New Sidewalk	33	This project will provide approximately 410 Linear feet of new PCC sidewalk and curb ramps on the north side of G Street. It will require clearing and grubbing, sign relocation, fence relocation, and Caltrans Encroachment Permit.	TEO Unfunded	Southeastern San Diego, Southeastern	8			148000	Other	CDBG;#Safe Route to School	Conflicts: Guardrail, Fence, ROW space, Utility Boxes IMCAT Conflicts as of 1/3/13: Overlay FY14	0	308999	Nascimento, Claudio	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
381	Groveland Dr from Euclid Ave to 53rd St(North Side)- Install New Sidewalk	33	This project will provide approximately 407 linear feet of sidewalk, 84 linear feet of driveway, 491 linear feet of curb and gutter, two pedestrian ramps, and relocate one fire hydrant.	TEO Unfunded	Encanto Neighborhoods, Southeastern	4			261000		CDBG	Conflicts: Utility Poles, Utility Boxes IMCAT Conflicts as of 12/28/12: None	0	309225	Pornan, Donald	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
463	Leghorn Ave from 66th St to Varney Dr(West Side)- Install New Sidewalk	33	This project will provide approximately 921 linear feet of guardrail, five driveways, 295 feet of curb, gutter, 141 linear feet of retaining wall, and 141 feet of guardrail.	TEO Unfunded	Encanto Neighborhoods, Southeastern	4			321000	Other		Conflicts: Mailboxes, Street Light, Utility Boxes, Guardrail, Storm Drain, Substandard Segment needs widening	0	309025	Nascimento, Claudio	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
470	Santa Margarita St from San Jacinto Dr to 55th St(South Side)- Install New Sidewalk	33	This project will install PCC sidewalk on the south side of Santa Margarita Street.	TEO Unfunded	Encanto Neighborhoods, Southeastern	4				Other	CDBG;#Safe Route to School	Conflicts: Utility Poles, Slopes, Landscaping, Trees, Draina IMCAT Conflicts as of	0	309080	Pornan, Donald	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List

665	Brooklyn Ave from 63rd St to Otay St(South Side)- Install New Sidewalk	33	This project will provide approximately 702 linear feet of sidewalk, 85 linear feet of driveway, three pedestrian ramps, and relocate two fire hydrants.	TEO Unfunded	Encanto Neighborhoods, Southeastern	4			201000		CDBG;#Safe Route to School	Conflicts: Utility Poles, Fire Hydrant, Fence IMCAT Conflicts as of	0	309097B	Pornan, Donald	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
666	Brooklyn Ave from Merlin St to 63rd St(South Side)- Install New Sidewalk	33	This project will install PCC sidewalk on the South Side of Brooklyn Avenue.	TEO Unfunded	Encanto Neighborhoods, Southeastern	4					CDBG;#Safe Route to School	Conflicts: Utility Box, Utility Poles, Decorative Pavement IMCAT Conflicts as of	0	309098B	Pornan, Donald	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
693	Benson Ave from Roth Ct to Jojo Ct (South Side) - Install New Sidewalk	33	This project will install PCC sidewalk on the south side of Benson Ave.	TEO Unfunded	Encanto Neighborhoods, Southeastern	4					CDBG;#Safe Route to School	Conflicts: Widening needed, Slope IMCAT Conflicts as of	0	309085	Pornan, Donald	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
785	29th St from Imperial Ave to Commercial St (East Side)- Install New Sidewalk	33	This project will provide approx. 330 LF of sidewalk, trees w/ grates, AC pavement, curb ramps, driveway apron, Type B inlet, and traffic striping. It will require sidewalk removal, pavement removal, inlet removal, sign relocation, meter box adjustment, and fire hydrant relocation.	TEO Unfunded	Southeastern San Diego, Southeastern	8			486000		CDBG	Conflicts: No Curb & Gutter, Drainage IMCAT Conflicts as of 1/3/13: Overlay FY15 (Start Cnst: 11/14 End Cnst: 7/15)	0	311510	Pornan, Donald	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
555	Akins Ave from 62nd St to 65th St Channel Improvements	33	This project provides for approximately 1400 feet of six foot high vinyl coated chain link fence with one gate. Remove existing fence.	PITS	Southeastern San Diego, Southeastern	4	527780		75000	Other			0			Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
813	19th Street & Imperial Avenue Traffic Signal Upgrade	33	Install signal poles and mast arms; upgrade to 12" signal heads; install detection; replace controller	TEO Unfunded	Southeastern San Diego, Southeastern	8			96000				0		Pornan, Donald	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
250	47th St from Market St to Imperial Ave - Widen to 4-lane major	34	This project provides for the widening of 47th Street to a four-lane Major.	TEO Unfunded	Southeastern San Diego, Southeastern	8		SESD-T18	5100000	Other			0		Pornan, Donald	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
263	Imperial Ave from I-15 to 40th St - Widen to 4-lane collector	34	This project provides for the widening of Imperial Avenue to a four-lane collector. Cost includes property acquisition and demolition of businesses and homes on southside.	TEO Unfunded	Southeastern San Diego, Southeastern	4;#8		SESD-T10		Other			0	315962	Pornan, Donald	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
266	Woodman St from Imperial Ave to Skyline Dr - Widen to 2-lane collector	34	This project provided for the improvement of Woodman Street to a two-lane collector.	PITS	Southeastern San Diego, Southeastern	4;#8		SESD-T14	1300000	Other			0		Pornan, Donald	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
283	33rd St from Imperial Ave to 75' N/O Imperial Ave(West Side)- Install New Sidewalk	34	This project will install PCC sidewalk on the west side of 33rd Street.	TEO Unfunded	Southeastern San Diego, Southeastern	8				Other	CDBG	Conflicts: Utility Boxes IMCAT Conflicts as of	0	318209	Pornan, Donald	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
334	Mallard St from Federal Blvd to 69th St (South Side)- Install New Sidewalk	34	This project will install PCC sidewak on the South Side of Mallard Street.	TEO Unfunded	Encanto Neighborhoods, Southeastern	4				Other		Conflicts: Utility POles, Mailboxes, Landscaping, Slopes, Fire Hydrant, Trees, Shrubs, Vegetation, Guardrail	0	309030	Pornan, Donald	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
469	Castana St from Euclid Ave to San Jacinto Dr(South Side) Install New Sidewalk	34	Install a sidewalk along the south side of Castana Street.	TEO Unfunded	Encanto Neighborhoods, Southeastern	4				Other	CDBG	Conflicts: Fire Hydrant, Utility Box, Utility Pole	0	309100	Pornan, Donald	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
1222	S 45th St from T Street to Logan Ave (East Side)- Install New Sidewalk	34	This project will install PCC sidewalk on the East Side of S 45th Street.	TEO Unfunded	Southeastern San Diego, Southeastern	4					CDBG	Conflicts: No C&G, Tree, Drainage, Business Access IMCAT Conflicts as of	0		Pornan, Donald	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
1234	Manzanares Wy from Euclid Ave to San Jacinto (South Side)- Install New Sidewalk	34	This project will install PCC sidewalk on the South Side of Manzanares Wy.	TEO Unfunded	Encanto Neighborhoods, Southeastern	4					CDBG	Conflicts: Utility Poles, Trees, Landscaping, Fire Hydrants, Fences	0		Pornan, Donald	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
441	Woodman St from Imperial Ave to Skyline Dr(West Side) - Install New Sidewalk	35	This project will install PCC sidewalk on the west side of Woodman Street.	TEO Unfunded	Encanto Neighborhoods, Southeastern	4			600000		CDBG	Water Group Job (Pipe Rehab) started 2/12 and Underground Utilities improvements will	No	317233, 325410, 333706	Pornan, Donald	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
3988	Radio Drive east of Paradise Street 850', south side street light	35		TEO Unfunded	Encanto Neighborhoods,	4			2000		CDBG		0	TR332999	Avila-Zepeda , Felipe R	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
264	Market St from Euclid Ave to 32nd St - Widen to 4-lane major	36	This project provides for the widening of Market Street to a four-lane major street with Class II bicycle lanes. The cost for property acquisition and building demolition are included in this estimate.	TEO Unfunded	Southeastern San Diego, Southeastern	4;#8		SESD-T11	6000000	Other			0		Pornan, Donald	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
363	Bluebird St from Mallard St to Mulberry St(West Side)- Install New Sidewalk	36	This project will install PCC sidewalk on the west side of Bluebird St.	TEO Unfunded	Encanto Neighborhoods, Southeastern	4				Other		Conflicts: Landscaping, No C&G, Mailboxes, Vegetation, Drainage, Utility Poles	0	309096B	Pornan, Donald	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
664	Bluebird St from Mallard St to Mulberry St(East Side)- Install New Sidewalk	36	This project will install PCC sidewalk on the East Side of Bluebird Street.	TEO Unfunded	Encanto Neighborhoods, Southeastern	4						Conflicts: Landscaping, No C&G, Mailboxes, Vegetation, Drainage, Utility Poles	0	309096A, 308872	Pornan, Donald	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
783	45th St from Benfield Ct to Imperial Ave (East Side)- Install New Sidewalk	36	This project will install PCC sidewalk on the east side of 45th Street.	TEO Unfunded	Southeastern San Diego, Southeastern	4			185000		CDBG	Conflicts: Needs Widening, Drainage, AC Curb, Utility Poles, Drain Inlet, Mailboxes, Outility Boxes	0	313467	Pornan, Donald	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List

112	Bittern St from Klauber Ave to Madera St(West Side)- Install New Sidewalk	37	This project will provide approximately 675 Linear Feet of sidewalk on the west side of Bittern Street. It will require excavation, sign relocation, mailbox relocation, meter box adjustment, and fire hydrant relocation. It will include new PCC sidewalk, curb ramps, and driveway aprons. .	TEO Unfunded	Encanto Neighborhoods, Southeastern	4			150000	Other		Conflicts: Landscaping, Mailboxes, Slope, Retaining Wall Fire Hydrants, Utility Poles IMCAT Conflicts as of	0	309095B	Nascimento, Claudio	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
262	Holly Dr from Willie James Jones Ave to Euclid Ave - Widen for CG&S	37	1000' widen road and CG&S & Drainage	PITS	Southeastern San Diego, Southeastern	4			1400000	Other			0		Pornan, Donald	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
270	Benson St from 61st St to Jenna St (South Side) - Install New Sidewalk	37	Widen, CG&S, Pvmt, Fill	TEO Unfunded	Southeastern San Diego, Southeastern	8			396000	Other		Conflicts: Needs Widening, Drainage, Utility Poles, Utility Boxes	0		Pornan, Donald	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
280	Beta St from 43rd St to End (North Side)- Install New Sidewalk	37	This project will provide approximately 601 linear feet of sidewalk. It will include curb and gutter, 13 driveways, and pavement.	TEO Unfunded	Southeastern San Diego, Southeastern	9			417000	Other	CDBG	Conflicts: Substandard Street, No C&G, Drainage, Trees, ROW Aquistion/Encroachm	0	309094B	Pornan, Donald	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
318	Coban St from Bonita Dr to Reynolds St(North Side)- Install New Sidewalk	37	This project will provide approximately 505 linear feet of sidewalk, five driveways, two pedestrian ramps, and 209 linear feet of curb and gutter.	TEO Unfunded	Encanto Neighborhoods, Southeastern	4			200000	Other	CDBG	Conflicts: Fire Hydrant, Utility Pole, No C&G, Wall, Tree, Landscaping	0	309103A	Pornan, Donald	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
466	Swan St from Springfield St to Tooley (West Side)- Install New Sidewalk	37	This project will install PCC sidewalk on the west side of Swan Street.	TEO Unfunded	Encanto Neighborhoods, Southeastern	4				Other		Conflicts: No C&G, Substandard Street Potentially, Landscaping,	0	309130	Pornan, Donald	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
662	Beta St from 43rd St to End (South Side)- Install New Sidewalk	37	This project will provide approximately 383 linear feet of sidewalk. It will include curb, gutter, 9 driveways, and pavement.	TEO Unfunded	Southeastern San Diego, Southeastern	9			310000		CDBG	Conflicts: Substandard Street, No C&G, Drainage, Trees, ROW Aquistion/Encroachm	0	309094A	Pornan, Donald	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
663	Bittern St from Klauber Ave to Madera St(East Side)- Install New Sidewalk	37	This project will provide approximately 1190 Linear Feet of sidewalk on the east side of ittern Street. It will require excavation, sign relocation, and mailbox relocation. It will include new PCC sidewalk, curb ramps, driveway aprons and a 130 LF 3" high retaining wall.	TEO Unfunded	Encanto Neighborhoods, Southeastern	4			243000			Conflicts: Landscaping, Mailboxes, Slope IMCAT Conflicts as of 12/28/12: None	0	309095A	Pornan, Donald	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
671	Coban St from Bonita Dr to Reynolds St(South Side)- Install New Sidewalk	37	This project will provide approximately 565 linear feet of sidewalk, 120 linear feet of curb and gutter, one driveway, and for pedestrian ramps.	TEO Unfunded	Encanto Neighborhoods, Southeastern	4			155000		CDBG	Conflicts: Fire Hydrant, Utility Pole, No C&G, Wall, Tree, Landscaping	0	309103B	Pornan, Donald	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
688	Swan St from Springfield St to Tooley (East Side)- Install New Sidewalk	37	This project will install PCC sidewalk on the East Side of Swan Street.	TEO Unfunded	Encanto Neighborhoods, Southeastern	4						Conflicts: No C&G, Substandard Street Potentially, Landscaping,	0	309130B	Pornan, Donald	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
265	Oceanview Blvd from 40th St to 32nd St - Widen to 4-lane major	38	This project provides for the widening of Oceanview Boulevard to a modified four-lane major street. No additional right of way is anticipated.	TEO Unfunded	Southeastern San Diego, Southeastern	4;#8		SESD-T12	96000000	Other			0		Pornan, Donald	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
394	Webster Avenue from 36th St to Western End of Webster (Both Sides) - Install New Sidewalk	38	This project will install PCC sidewalk on both side of Webster Avenue.	TEO Unfunded	Southeastern San Diego, Southeastern	9				Other	CDBG	Conflicts: Utility Poles, Drainage, Trees, Utility Boxes IMCAT Conflicts as of	0	309033	Pornan, Donald	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
533	Logan Ave from S47th St to 100' East (North Side)- Install New Sidewalk	38	This project will provide approximately 71 LF of sidewalk, and 71 feet of curb and gutter.	PITS	Encanto Neighborhoods,	4			41000		CDBG;#Safe Route to School	Funded by Brock Jones of Disability	0	308153	Pornan, Donald	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
3676	Nogal Street - 75' East of 47th Street (north side) - Install Driveway	38	Install missing (removed by previous owner) driveway	TEO Unfunded	Encanto Neighborhoods, Southeastern	4						Conflict Check: Undergrounding Utilities (start con:	0	330569	Turner, Scott	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
115	Cervantes Ave from Euclid Ave to Bonita Dr(North Side)- Install New Sidewalk	39	This project will provide approximately 2070 LF of CG&S, curb ramps, and driveway aprons. It will require AC curb removal, sign relocation, fence relocation, excavation, clearing and grubbing, and ROW acquisition.	TEO Unfunded	Encanto Neighborhoods, Southeastern	4			414000	Other	CDBG	Conflicts: Fire Hydrants, Fences, Landscaping, Utility Poles, Slope, Utility Boxes, Mailboxes	0	308880	Nascimento, Claudio	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
119	Alta Vista Ave from Cervantes Ave to 58th St(South Side)- Install New Sidewalk	39	This project will provide approximately install 1259 linear feet of sidewalk, 243 linear feet of driveway, with respective curb and gutter, four pedestrian ramps, 273 linear feet of retaining wall, relocate 12 mail boxes, and three signs on the south side of Alta Vista Avenue.	TEO Unfunded	Encanto Neighborhoods, Southeastern	4			492000	Other	CDBG	Conflicts: No C&G, Drainage, Mailboxes, Landscaping, Slope, Trees, Walls, Fences IMCAT Conflicts as of 12/28/12: None	0	306235	Tawfiq, Kharman	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
252	61st St from Akins St to Brooklyn St(East Side)- Install New Sidewalk	39	This project will provide approximately 701 linear feet of sidewalk, 432 linear feet of driveway, 1146 linear feet of curb and gutter, one pedestrian ramp, replace 3 fire hydrants, and replace one street sign.	TEO Unfunded	Encanto Neighborhoods, Southeastern	4			442000		CDBG	Conflicts: Utility Pole, Fire Hydrant, Trees IMCAT Conflicts as of 12/28/12: Overlay	0	306237	Tawfiq, Kharman	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
390	Radio Dr from 60th St to Springfield Dr(North Side)- Sidewalk Improvement	39	This project will install PCC sidewalk on the north side of Radio Drive.	TEO Unfunded	Encanto Neighborhoods, Southeastern	4			24150000	Other		Conflicts: Substandard Roadways- needs many improvements IMCAT Conflicts as of	0	284464	Nascimento, Claudio	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
465	Castana St from San Jacinto Dr to Groveland Dr(North Side)- Install New Sidewalk	39	This project will provide approximately 470 linear feet of sidewalk, and 31 feet of driveway.	TEO Unfunded	Encanto Neighborhoods, Southeastern	4			57000	Other	CDBG	Conflicts: None observed	0	309100A, 306233	Nascimento, Claudio	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List

518	Radio Dr from 60th St to Springfield Dr(South Side)- Sidewalk Improvement	39	This project will install PCC sidewalk on the South Side of Radio Drive.	TEO Unfunded	Encanto Neighborhoods, Southeastern	4			24150000			Conflicts: Substandard Roadways- needs many improvements IMCAT Conflicts as of	0	284464	Pornan, Donald	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
668	Castana St from San Jacinto Dr to Groveland Dr(South Side)- Install New Sidewalk	39	This project will provide approximately 377 linear feet of sidewalk, and 104 linear feet of driveway. It will be neccessary to relocate one fire hydrant and one traffic sign.	TEO Unfunded	Encanto Neighborhoods, Southeastern	4			84000		CDBG	Conflicts: None observed IMCAT Conflicts as of	0	309100B	Pornan, Donald	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
670	Cervantes Ave from Euclid Ave to Bonita Dr(South Side)- Install New Sidewalk	39	This project will provide approximately 2070 LF of sidewalk on the south side of Cervantes Avenue. It will require AC curb removal, sign relocation, fence relocation, excavation, clearing and grubbing, and ROW acquisition. It will include new CG&S, curb ramps, and driveway aprons.	TEO Unfunded	Encanto Neighborhoods, Southeastern	4			414000		CDBG	Conflicts: Fire Hydrants, Fences, Landscaping, Utility Poles, Slope, Utility Boxes, Mailboxes IMCAT Conflicts as of	0	308880	Pornan, Donald	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
701	Cervantes Ave from Bonita Dr to Alta Vista Ave(North Side)- Install New Sidewalk	39	This project will provide approximately 541 linear feet of sidewalk, six driveways, and six pedestrian ramps.	TEO Unfunded	Encanto Neighborhoods, Southeastern	4			240000		CDBG	Conflicts: ROW Encroachments, Fences, Landscaping, Utility Poles, Slope,	0	309229	Pornan, Donald	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
702	Cervantes Ave from Bonita Dr to Alta Vista Ave(South Side)- Install New Sidewalk	39	This project will provide approximatley 1032 linear feet of sidewalk, two driveways, nine pedesrtian ramps, and 132 linear feet of retaining wall.	TEO Unfunded	Encanto Neighborhoods, Southeastern	4			375000		CDBG	Conflicts: ROW Encroachments, Fences, Landscaping, Utility Poles, Slope,	0	309228	Pornan, Donald	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
703	Coban St from Euclid Ave to Reynolds St(North Side)- Install New Sidewalk	39	This project will install PCC sidewalk on the North Side of Coban Street.	TEO Unfunded	Encanto Neighborhoods, Southeastern	4					CDBG	Conflicts: Fire Hydrant, Utility Pole, Decorative Pavement, Trees, Landscaping	0	309227	Pornan, Donald	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
704	Coban St from Euclid Ave to Reynolds St(South Side)- Install New Sidewalk	39	This project will provide approximately 913 linear feet of sidewalk, 17 driveways, and two pedestrian ramps.	TEO Unfunded	Encanto Neighborhoods, Southeastern	4			276000		CDBG	Conflicts: Fire Hydrant, Utility Pole, Decorative Pavement, Trees, Landscaping	0	309226	Pornan, Donald	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
705	Groveland Dr from 53rd St to 54th St(North Side)- Install New Sidewalk	39	This project will provide approximately 407 linear feet of sidewalk, 84 linear feet of driveway, 491 linear feet of curb and gutter, two pedestrian ramps, and relocate one fire hydrant.	TEO Unfunded	Encanto Neighborhoods, Southeastern	4			261000		CDBG	Conflicts: Substandard Street, Drainage, No C&G, Utility Poles IMCAT Conflicts as of	0	309225	Pornan, Donald	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
706	Groveland Dr from 53rd St to 54th St(South Side)- Install New Sidewalk	39	This project will install PCC sidewalk on the South Side of Groveland Drive.	TEO Unfunded	Encanto Neighborhoods, Southeastern	4					CDBG	Conflicts: Substandard Street, Drainage, No C&G, Utility Poles	0	309224	Pornan, Donald	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
1154	Iona Dr from Kenwood St to Brooklyn Ave (Both Sides)- Install New Sidewalk	39	This location is missing sidewalk on both sides of Iona Drive.	TEO Unfunded	Encanto Neighborhoods, Southeastern	4					CDBG	Conflicts: Fire Hydrants, Landscaping	0	317012	Pornan, Donald	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
2776	47th St from Logan Ave to Division St (West Side)- Install New Sidewalk	39	This project will install PCC sidewalk on the west side of 47th St within the specified limits.	TEO Unfunded	Encanto Neighborhoods, Southeastern	4					CDBG		0			Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
308	60th St from Old Memory Lane to Broadway St - Widen to 2-lane collector	40	Widen to 2-lane collector (both sides)	TEO Unfunded	Encanto Neighborhoods, Southeastern	4		SESD-T17			Other	Road Widening PFFP SESD-T17 Project originally for east side only - estimated as $700,000 on 2/5/09. West side improvements added per CPC request. Cost estimate needs updating to include west side. Conflicts:ROW encroachment, Utility	No	306249	Tawfiq, Kharman	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
253	Akins Ave from Iona Dr to 69th St - Widen to install CG&S	40	3,120 linear feet of CG&S	No longer meets warrants	Southeastern San Diego, Southeastern	8					Other		***This location has sidewalk***	0	313015	Pornan, Donald	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
315	Fergus St from Brooklyn St to Akins St(East Side)- Install New Sidewalk	40	This project will provide approximately 611 linear feet of sidewalk, 242 linear feet of driveway, two pedestrian ramps, relocate one fire hydrant and one traffic sign.	TEO Unfunded	Encanto Neighborhoods, Southeastern	4			203000	Other	CDBG	Conflicts: ROW encroachment, Utility Poles	0	306243	Tawfiq, Kharman	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
333	West Street from south of Imerial Ave to End of West St (East Side) - Install New Sidewalk	40	This project will provide approximately 513 linear feet of sidewalk, 141 linear feet of driveways, 36 linear feet of curb and gutter, replace one street sign, and six mail boxes.	TEO Unfunded	Southeastern San Diego, Southeastern	4			104000	Other	CDBG	Conflicts: ROW encroachment, utility poles IMCAT conflicts as of 10/8/12: Sewer &	0	306240	Tawfiq, Kharman	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
694	Benson Ave from Pagel Pl to Aviation Dr (South Side) - Install New Sidewalk	40	This project will install new PCC sidewalk on the south side of Benson Ave.	TEO Unfunded	Encanto Neighborhoods, Southeastern	4			400000		CDBG	Conflicts: Trees, Utility Poles, Drainage, No C&G, Possible Property Aquisition Required, Mailboxes,	0	309084	Pornan, Donald	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
1223	Broadway from Scimitar Dr to 65th St (North Side)- Install New Sidewalk	40	This project will install CG&S on the North Side of Broadway from approx. 40' West of Scimitar Dr to 65th St.	TEO Unfunded	Encanto Neighborhoods, Southeastern	4					CDBG;#Safe Route to School	Conflicts: Utility Pole, Tree, Mailbox, Landscaping, Slope IMCAT Conflicts as of 12/28/12: Overlay	0	320593	Pornan, Donald	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List

1239	Euclid Frontage Rd from Trinidad Way to Manzaranres Way (East Side)- Install New Sidewalk	40	This project will install PCC sidewalk on the East side of S Euclid Frontage Road.	TEO Unfunded	Encanto Neighborhoods, Southeastern	4					CDBG;#Safe Route to School	Conflicts: Landscaping, Utility Boxes, Fire Hydrant, Walls	0	321112	Pornan, Donald	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
3382	69th Street north of Wunderlin Avenue 120', west side, streetlight	40		TEO Unfunded	Encanto Neighborhoods,	4			15000				0	TR327235		Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
3383	69th Street north of Brooklyn Avenue 265', est side, streetlight	40		TEO Unfunded	Encanto Neighborhoods,	4			2000				0	TR327235		Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
3384	69th Street north of Brooklyn Avenue 105', west side, streetlight	40		TEO Unfunded	Encanto Neighborhoods,	4							Yes	TR327235		Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
3727	Central Avenue south of Monroe Avenue 175', east side-streetlight	40	Priority 3a	TEO Unfunded	Encanto Neighborhoods,	9			8000		CDBG		0	TR316281	Semaan, Jerry	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
3808	Julian Avenue east of Dewey Street 295', north side streetlight	40		TEO Unfunded	Southeastern San Diego, Southeastern	8			15000				0	TR 331,383	Hughes, Duncan	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
3809	Julian Avenue east of Dewey Street 160', south side streetlight	40		TEO Unfunded	Southeastern San Diego, Southeastern	8			15000				0	TR 331.383	Hughes, Duncan	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
3810	Julian Avenue west of Evans Steet (S) 155', south side streetlight	40		TEO Unfunded	Southeastern San Diego, Southeastern	8			15000				0	TR 331,383	Hughes, Duncan	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
3927	Boston Avenue east of S 43th Street 170', north side street light	40		TEO Funded	Southeastern San Diego, Southeastern	9			8000		CDBG	B-14107	Yes	TR332941	Avila-Zepeda , Felipe R	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
3928	Boston Avenue east of S 44th Street 90', south side street light	40		TEO Funded	Southeastern San Diego, Southeastern	9			2000		CDBG	B-14107	Yes	TR332938	Avila-Zepeda , Felipe R	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
4020	S Evans Street south of Julian Avenue 180', west side, at alley	40		TEO Unfunded	Southeastern San Diego, Southeastern	8			2000		CDBG		0	TR333309	Semaan, Jerry	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
4031	60th Street north of Kenwood Street 110', west side	40		TEO Unfunded	Encanto Neighborhoods,	4			2000		CDBG		0	TR333433	Semaan, Jerry	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
4110	Merlin Drive south of Market Street 130', east side	40		TEO Unfunded	Encanto Neighborhoods,	4			2000		Smart Growth;#CDBG			TR334870	Semaan, Jerry	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
4111	Merlin Drive north of Market Street 110', west side	40		TEO Unfunded	Encanto Neighborhoods,	4			2000		Smart Growth;#CDBG			TR334870		Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
4112	Merlin Drive north of Market Street 260', west side	40		TEO Unfunded	Encanto Neighborhoods,	4			2000		Smart Growth;#CDBG			TR334870	Semaan, Jerry	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
4113	Merlin Drive south of Brooklyn Avenue 565', west side	40		TEO Unfunded	Encanto Neighborhoods,	4			2000		Smart Growth;#CDBG			TR334870	Semaan, Jerry	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
4114	Merlin Drive south of Brooklyn Avenue 240', west side	40		TEO Unfunded	Encanto Neighborhoods,	4			2000		Smart Growth;#CDBG			TR334870	Semaan, Jerry	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
2452	40th St and Alpha St Pop-Outs	40	This project will provide approximately 3886 square feet of pop out, 324 feet of curb and gutter, 192 linear feet of RCP for storm drain, three clean outs, four storm drain inlets, and eight pedestrian ramps.	PITS	Southeastern San Diego, Southeastern	8			430000				0		Pornan, Donald	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
248	43rd St from Imperial Ave to Logan Ave - Widen to 4-lane collector	41	This project provides for the construction of 43rd Street to a four-lane collector. This project is recommended for deletion. See comments.	TEO Unfunded	Southeastern San Diego, Southeastern	4;#8		SESD-T16	7400000	Other			No		Pornan, Donald	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
552	Valencia Pkwy from Imperial Ave to Market St - Widen to 4-lane major	41	This project provides for the extension of Valencia Parkway as a four-lane major street.	TEO Unfunded	Southeastern San Diego, Southeastern	4;#8		SESD-T13	5500000				No		Pornan, Donald	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
1235	San Alberto Wy from Santa Rosalia to Trinidad Wy (Both Sides)- Install New Sidewalk	41	This project will provide approximately 2015 LF of sidewalk within the project limits. It will require clearing and grubbing, inlet removal, sign relocation, tree removal, fence relocation, meter box adjustments, and fire hydrant relocations. It will include new CG&S, AC pavement, driveway aprons, curb ramps, and Type B inlets with 18" storm pipe.	TEO Unfunded	Encanto Neighborhoods, Southeastern	4			285000		CDBG	Conflicts: Drain Inlet on Corner, ROW encroachment (Trees, Landscaping, fences, bushes, walls), Utility Poles, Driveways IMCAT conflicts as of 10/8/12: FY10 Overlay Group 3 Start:	0	320991	Pornan, Donald	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
1236	Agua Vista Wy from Trinidad Wy to Northern Terminus (Both Sides)- Install New Sidewalk	41	This project will provide approximately 1700 LF of Sidewalk within the project limits. It will require excavation, clearing & grubbing, sign relocation, meter box adjustments, and fire hyrant relocation. It will include new PCC sidewalk, driveway aprons, and curb ramps.	TEO Unfunded	Encanto Neighborhoods, Southeastern	4			192000		CDBG	Conflicts: Utility Poles, ROW encroachment (Landscaping, Bushes, Fences), IMCAT conflicts as of 10/8/12: FY10 Overlay	0	321052	Pornan, Donald	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
1237	Santa Rosalia Dr from Manzanares Wy to Southern Terminus (Both Sides)- Install New Sidewalk	41	This project will install PCC sidewalk on both side of Santa Rosalia Dr.	TEO Unfunded	Encanto Neighborhoods, Southeastern	4					CDBG	Conflicts: ROW encroachment (Landscaping, Walls, Bushes), Utility Poles, Drainage Inlet	0	320992	Pornan, Donald	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
1238	Trinidad Wy from Santa Maria Terr to Euclid Ave (Both Sides)- Install New Sidewalk	41	This project will install PCC sidewalk on both side of Trinidad Way.	TEO Unfunded	Encanto Neighborhoods, Southeastern	4					CDBG;#Safe Route to School	Conflicts: Drainage, Utility Boxes/Poles, ROW encroachment (Landscaping, Trees, Walls, Bushes, Fences),	0	321051	Pornan, Donald	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
2524	S. Boundary St from Ocean View Bl to T St (Both Sides) - Install New Sidewalk	41	This project will install PCC sidewalk on both sides of South Boundary St	TEO Unfunded	Southeastern San Diego, Southeastern	9			55000			Conflicts: Phone, Cox, SDGE, Water, Large Trees, Shrubs IMCAT Conflicts as of 11/21/12: Water	0	326984		Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List

4108	56th Street from Glen Road (south) to northern cul-de-sac end - Install new sidewalk (west side)	41	This project installs new sidewalk, curb and gutter along west side of 56th Street. The project has several meter boxes, clean-outs and existing vaults that will need to be adjusted to grade. Many conflicts with transformer boxes, trees, tree roots, stairs, decorative paving, masonary blocks, and signs also exist. Will require minor earthwork.	TEO Unfunded	Encanto Neighborhoods, Southeastern	4								333726	Turner, Scott	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
254	Klauber Ave from Bittern St to 69th St - Widen to 2-lane collector	42	4000' Widen CG&S, Rwall, Drainage Major Road Proj	TEO Unfunded	Southeastern San Diego, Southeastern	8				Other		Conflicts: Substandard Road, Slopes, ROW Encroachments/Aquisition, Utility Poles, Mailboxes, Drainage, No C&G, Landscaping,	No	313021	Pornan, Donald	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
110	53rd St from Imperial Ave to Groveland St(Both Sides)- Install New Sidewalk	42	This project will provide approximately 400 linear feet of sidewalk, one pedestrian ramp, relocate three signs and two fire hydrants.	TEO Unfunded	Encanto Neighborhoods, Southeastern	4			72000	Other	CDBG	Conflicts: Utility Poles/Boxes IMCAT conflicts as of	0	323284	Tawfiq, Kharman	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
383	La Paz Dr from Euclid Ave to San Bernardo(North Side)- Install New Sidewalk	42	This project will provide approximately 1445 linear feet of sidewalk, 339 linear feet of driveways, four pedestrian ramps, and relocate six signs on the north side of the street.	TEO Funded	Encanto Neighborhoods, Southeastern	4	B-13085		228000	Other	CDBG		0	323283	Nascimento, Claudio	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
483	Solola Ave from Euclid Ave to Palin St(Both Sides)- Install New Sidewalk	42	This project will provide approximately 460 linear feet of sidewalk, 108 linear feet of driveway, seven pedestrian ramps, and 11 linear feet of retaining wall. It will include sidewalk and median modification at existing bus stop to comply with ADA standards.	TEO Unfunded	Encanto Neighborhoods, Southeastern	4			163000	Other	CDBG	Poles/Boxes IMCAT conflicts as of 10/8/12: None observed	0	323294	Nascimento, Claudio	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
268	Madera St from 66th St to 69th St - Widen for CG&S	43	CG&S 3200'	TEO Unfunded	Encanto Neighborhoods, Southeastern	4				Other		Conflicts: SLopes, Landscaping Utility Poles, Mailboxes, Drainage, Missing	0	313022	Pornan, Donald	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
2782	56th St from North of Roswell St to South of Roswell St (west Side)- Install New Sidewalk	43	This project will install PCC sidewalk on the west side of 56th Street within the limits.	TEO Unfunded	Encanto Neighborhoods,	4							0			Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
3596	Cielo Drive - Woodman St to 65th St - Install new sidewalk	43	Install new sidewalk, curb and gutter - south side of Cielo Dr from Woodman St to 61st St; north side of Cielo Dr from Woodman St to Pagel Pl. 7 curb ramps, driveway replacement and retaining wall	TEO Unfunded	Encanto Neighborhoods, Southeastern	4			525000			ADA project OS-13-02-0015	0	TR328222		Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
3854	51st Street from Hilltop Ave to approx. 340 ft. north (west side) - Install new sidewalk	43	This project will construct approx. 340 LF of sidewalk, a curb return and two ped ramps. Earthwork and a retaining wall are required. Also, removal of several cactus, bushes and a tree is necessary. Curb and gutter are in.	TEO Unfunded	Encanto Neighborhoods, Southeastern	4							No	333667	Turner, Scott	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
3909	Mariposa Street (Both sides) and Mariposa Place from Mariposa St to Shell Ave (North Side) - Install New Sidewalk	43	Mariposa St: Install curb, gutter, sidewalk and driveway entrances (both sides). Mariposa Place: Install curb, gutter, sidewalk and driveway entrances (north side only), may require power pole, blowoff/AV&AR, and fire hydrant relocation.	TEO Unfunded	Encanto Neighborhoods, Southeastern	4							0	331976	Turner, Scott	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
4072	Ocean View Blvd from Willie James Jones W to Willie James Jones E - Widening	43	This project will widen Ocean View Blvd from Willie James Jones W Ave to Willie James Jones E Ave and provide 265' of curb, gutter, and sidewalk.	TEO Unfunded	Encanto Neighborhoods, Southeastern	4						IMCAT Conflicts (4/7/2014): Water Main Replacement DESIGN: (9/6/2013 - 1/23/2014) CONST: (8/21/2014 - 7/21/2015)		334044		Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
794	Kelton Rd at Kelton Pl Electronic Speed Sign	43	This project will one Electronic V-Calm sign on Kelton Rd by Kelton Pl facing southbound traffic	TEO Funded	Encanto Neighborhoods, Southeastern	4			8000		TransNet	Funded by "Old Transnet" funding	Yes		Pornan, Donald	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
255	Cesar Chavez Pkwy from Commercial St to I-5 - Widen to 4-lane collector	44	This project will provide for the widening of Cesar Chavez Pkwy to a four-lane Collector.	TEO Unfunded	Southeastern San Diego, Southeastern	8		SESD-T20	1900000	Other			No		Pornan, Donald	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
261	Division St from Lorenz Ave to 61st St - Widen to 4-lane collector	44	This project will provide for the widening of Division Street to a modified four lane Collector.	TEO Unfunded	Southeastern San Diego, Southeastern	8		SESD-T19	1300000	Other			No		Pornan, Donald	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
269	Brooklyn Ave from 65th St to 66th St - Improve road	44	Fully improve to 40' c/c, Rwalls, Grade adjustment	TEO Unfunded	Southeastern San Diego, Southeastern	8				Other		TR request submitted	No	311608	Pornan, Donald	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
2777	63rd St from Broadway to Imperial Ave (Both Sides)- Install New Sidewalk	44	This project will provide approximately 2320 LF of sidewalk within the project limits. It will require clearing and grubbing, sign relocation, meter box adjustment, and fire hydrant relocation. It will new PCC sidewalk. driveway aprons, curb ramps, and 125 LF of 3' retaining walls.	TEO Funded	Encanto Neighborhoods, Southeastern	4	B1403 9		307000			Project was sent to Street Division for review for construction.	0			Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
4032	26th St & Market St New Traffic Signal	45	Install new traffic signal	PITS	Southeastern San Diego, Southeastern	8			275000		TransNet	Design to be provided by Fehr & Peers.	0			Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
271	69th St from Madera St to Mallard St - Widen for CG&S	45	CG&S, Pavement, Drainage, Road widening	TEO Unfunded	Encanto Neighborhoods, Southeastern	4				Other		CONFLICTS: Utility poles, Trees, bushes, fence	0	313016	Pornan, Donald	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List

2762	Madrone Ave from 63rd St to Shaules Ave (Both Sides)- Install New Sidewalk	45	This project will install sidewalk on both sides of Madrone Ave.	TEO Unfunded	Encanto Neighborhoods, Southeastern	4						Conflicts: Slopes both sides, nonstandard width roadway, guardrails, utility poles, water valves, drainage issues, no c&g, fire hydrants, ROW encroachments:	0			Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
2811	Olvera Ave from Gwen St to Santa Isabel Dr (South Side) Install New Sidewalk	45	This project will install PCC sidewalk on the south sides of Olver Ave within the specified limits. Conflicts include fire hydrants and a small masonary wall. Will also require relocation of an existing driveway entrance at curb return. Some adjustments to grade for existing meter boxes. Some earthwork also needed. Curb and gutter in.	TEO Unfunded	Encanto Neighborhoods, Southeastern	4						IMCAT Conflicts as of 2/20/14: Street segment SS-020537, Project ID FY10-S3 Slurry moratorium Start 3/6/2012 End 3/6/2015	No		Turner, Scott	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
2812	Olvera Ave from San Onofre Ter. to Las Flores (South Side)- Install New Sidewalk	45	This project will install PCC sidewalk on the south side of Olvera Ave within the specified limits. Conflicts include fire hydrants, masonary walls, decorative rock, utility poles, vegitation and shrubs. Some adjustments to grade to clean outs and meter boxes will be needed. Curb is in, but in deteriorated condition and may need repair/replacement.	TEO Unfunded	Encanto Neighborhoods, Southeastern	4						IMCAT Conflicts as of 2/20/14: Street segment SS-020533, project ID FY10-S3 Slurry Overlay Moratorium start 3/6/2012 end 3/6/2015	No	333730	Turner, Scott	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
3956	Pitta St from Market St to Kenwood St (Both Sides) - Install New Sidewalk	45	This project will provide curb/gutter and sidewalk on both sides of Pitta Street north of Market Street.	TEO Unfunded	Encanto Neighborhoods, Southeastern	4						ROW width of street is 40 feet with curb to curb of 25 feet. IMCAT Conflicts: Pipeline Rehabilitation Design: 1/2014 to 4/2014 Construction: 8/2014	0	332534		Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
2823	Egret Street north of Weaver Street 300', east side streetlight	45	Priority 2b	TEO Funded	Encanto Neighborhoods,	4			2000				Yes	TR246076		Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
3001	31st St @ Imperial Ave New Traffic Signal	46	Install a new traffic signal	PITS	Southeastern San	8			275000				0	306689	Hughes,	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
2779	Scimitar Dr from Broadway to Kluaber Ave (Both Sides)- Install New Sidewalk	46	This project will install PCC sidewalk on both sides of Scimitar Dr, also to include road widening.	TEO Unfunded	Encanto Neighborhoods, Southeastern	4							0			Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
2453	40th St at National Ave	46		PITS	Southeastern San	4			502000				0		Pornan,	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
1230	41st St @ National Ave New Traffic Signal	47	Install a new traffic signal	PITS	Southeastern San	4;#8			275000				0	318737	Pornan,	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
2809	Eider St from Scimitar Dr to Klauber Ave (Both Sides)- Install New Sidewalk	47	This project will install sidewalk,curb and gutter on both sides of Eider St within the specified limits. Drainage will become an issue. Extensive earthwork, shoring and retaining walls necessary for project. Right of Way acquisition may be necessary due to limited street widths and room for sidewalk. Numerous conflicts with trees, slopes, utilities, poles, walls. Street also in poor condition and needs overlay.	TEO Unfunded	Encanto Neighborhoods, Southeastern	4						IMCAT conflicts as of 6/3/14: No conflicts	No			Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
2810	Wren St from Scimitar Dr to Klauber Ave (Both Sides)- Install New Sidewalk	48	This project will install PCC sidewalk and curb returns on Wren St within the specified limits. Will require earthwork and retaining walls. Conflicts include several utility poles, mail boxes, several medium to tall trees, shrubs, and ground vegitation. Curb and gutter are mostly in.	TEO Unfunded	Encanto Neighborhoods, Southeastern	4						IMCAT conflicts as of 6/3/14: None	No	333986	Turner, Scott	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
3853	Elwood Ave from Lenox Dr to Geneva Ave (West Side) - Install new sidewalk	48	This project will provide sidewalk and install/upgrade curb return ped ramps. Will require utility pole relocation, meter box adjustment to grade and minor vegitation removal. One masonary wall conflicts w/ proposed 4' wide path of travel.	TEO Unfunded	Encanto Neighborhoods, Southeastern	4							No	333668	Turner, Scott	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
770	31st St @ National Ave New Traffic Signal	49	Install a new traffic signal	TEO Unfunded	Southeastern San Diego, Southeastern	8			275000				0	308,848	Nascimento, Claudio	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
1316	31st St @ Ocean View Bl New Traffic Signal	49	Install a new traffic signal.	PITS	Southeastern San	4			275000				0	321035	Pornan,	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
543	S 38th St at Alpha St- Pop-Outs(4)	49	This project will provide approximately 2980 square feet of pop out, 249 feet of curb and gutter, four pedestrian ramps, relocate one fire hydrant, one manhole, and two storm drain inlets. Assume: grades flat, subsurface drainage proposed.	TEO Unfunded	Southeastern San Diego, Southeastern	8			294000		CDBG;#Safe Route to School	FY 14: $75,000 Prelim Fy 15: $100,000 Design FY 16: $119,000 Construction	0	308053	Nascimento, Claudio	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
440	Market St from Euclid Ave to 54th St. - Widening	50	This project provides for the widening of Market St to a four lane major street.	TEO Unfunded	Encanto Neighborhoods,	4			1300000	Other			No		Pornan, Donald	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
468	Creston Dr from Selma Pl to Roswell St(Both Sides)- Install New Sidewalk	50	This project will provide approximately 544 linear feet of PCC sidewalk, 156 linear feet of driveway, one pedestrian ramp, and relocate two signs.	TEO Unfunded	Encanto Neighborhoods, Southeastern	4			114000			Conflicts: Fire Hydrant, Landscaping, Utility Pole, Trees IMCAT Conflicts as of 12/28/12: Pipeline	Yes	306231, 333725	Nascimento, Claudio	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
2778	65th St from Imperial Ave to Madrone (Both Sides)- Install New Sidewalk	50	This project will install PCC sidewalk on 65th St within the specified limits. It will also include road widening.	TEO Unfunded	Encanto Neighborhoods, Southeastern	4					CDBG		0			Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List

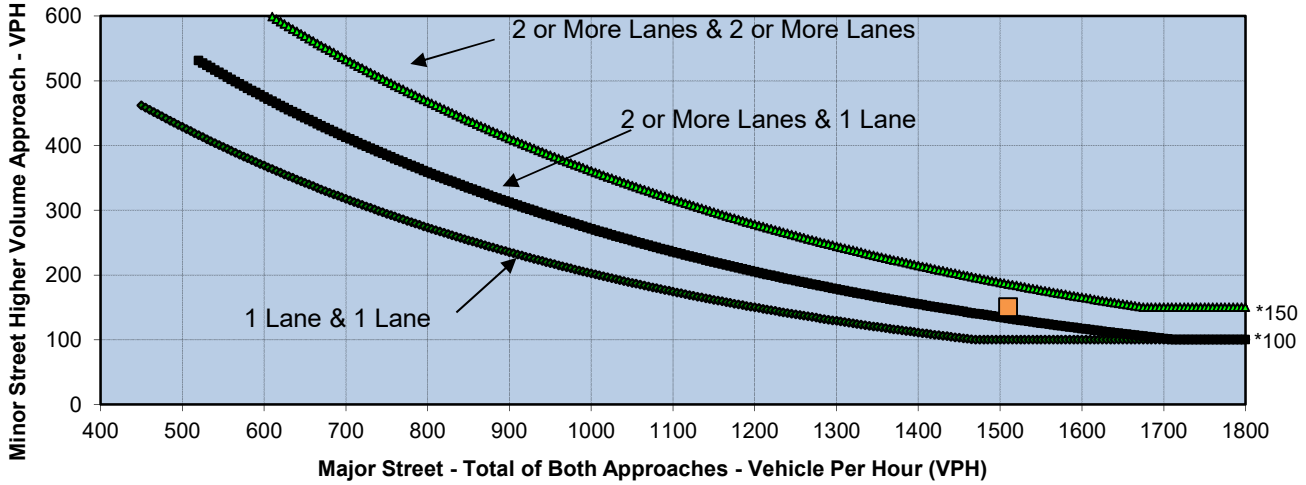
3851	Lenox Drive from Winston Dr to Beverly St (Both Sides) - Install new sidewalk	50	This project will install sidewalk and ped ramps, earthwork and retaining walls required. Conflicts include utility poles, mail boxes, masonary walls, fire hydrants, a large tree stump, shrubs and ground vegitation, and decorative paving/rocks. Several meter boxes require adjustment to grade. Curb and gutter are in.	TEO Unfunded	Encanto Neighborhoods, Southeastern	4						IMCAT conflits as of 6/3/14: Pipeline Rehab - Phase G-2 (laterals) start 1/22/2015 end 8/24/2016	No	333727	Turner, Scott	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
3852	Winston Drive from Lenox Dr to Hilltop Dr (Both Sides) - Install new sidewalk	50	This project will provide sidewalk on both the east and west side of Winston Drive. Will require earthwork and retaining walls. Conflicts include large palm trees, smaller trees, shrubs and ground vegitation. Will require adjustment to grade of meter boxes. Curb and gutter are in, but are deteriorated and damaged. May require replacement/repair.	TEO Unfunded	Encanto Neighborhoods, Southeastern	4						IMCAT conflicts as of 2/21/14: Street segment SS-029003, project ID FY10-O2 Asphalt overlay moratorium Stert 9/20/2011 end 9/20/2016	No	333723	Turner, Scott	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
3073	Raven Street south of Hilltop Drive 137', east side streetlight	50		TEO Unfunded	Southeastern San Diego, Southeastern	9			8000				Yes	TR256791		Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
3078	Southlook Avenue south of Gilmore Street 165', west side streetlight	50		TEO Unfunded	Southeastern San Diego, Southeastern	9			8000				Yes	TR258639A		Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
3079	Southlook Avenue south of Imperial Avenue 110', west side streetlight	50		TEO Unfunded	Southeastern San Diego, Southeastern	9			8000				Yes	TR258639A		Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
3081	Ada Street north of Franklin Avenue 155', west side streetlight	50		TEO Unfunded	Southeastern San Diego, Southeastern	9			8000				Yes	TR258944		Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
3082	Ada Street south of Imperial Avenue 150', west side streetlight	50		TEO Unfunded	Southeastern San Diego, Southeastern	9			8000				Yes	TR258944		Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
3083	Ada Street south of Imperial Avenue 346', west side streetlight	50		TEO Unfunded	Southeastern San Diego, Southeastern	9			8000				Yes	TR258944		Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
3087	Bancroft Street south of Greely Avenue 100', west side streetlight	50		TEO Unfunded	Southeastern San Diego, Southeastern	8			8000				Yes	TR260576		Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
3089	Solola Avenue west of Palin Street 132', south side streetlight	50		TEO Unfunded	Encanto Neighborhoods,	4			2000				Yes	TR261798A		Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
3097	K Street east of 26th Street 312', south side streetlight	50		TEO Unfunded	Southeastern San Diego, Southeastern	8			8000				Yes	TR264211		Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
3177	39TH (S) Street north of Superior Street at alley 120', west side streetlight	50		TEO Unfunded	Southeastern San Diego, Southeastern	9			2000				Yes	TR314106		Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
3178	39TH (S) Street south of Imperial Avenue at alley 120', west side streetlight	50		TEO Unfunded	Southeastern San Diego, Southeastern	9			2000				Yes	TR314106		Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
3209	Acacia Street west of South 35th Street 140', north side streetlight	50		TEO Unfunded	Southeastern San Diego, Southeastern	9			8000				Yes	TR320603		Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
3210	Boston Avenue east of South 35th Street 175', north side streetlight	50		TEO Unfunded	Southeastern San Diego, Southeastern	9			8000				Yes	TR320603		Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
3220	35th Street (South) south of Martin Avenue 275', west side streetlight	50		TEO Unfunded	Southeastern San Diego, Southeastern	9			2000				Yes	TR322078		Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
3228	33rd Street north of Imperial Avenue 130', west side at alley streetlight	50	Priority 2a	TEO Funded	Southeastern San Diego, Southeastern	8			2000				Yes	TR324036		Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
3259	Bonita Drive north of Cervantes Avenue 180', west side streetlight	50		TEO Unfunded	Encanto Neighborhoods,	4			8000				Yes	TR326417		Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
3269	42nd Street south of Broadway 145' at alley, southwest corner streetlight	50		TEO Unfunded	Southeastern San Diego, Southeastern	9			2000				Yes	TR326746		Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
3274	Superba Street east of 38th Street 160', south side streetlight	50		TEO Unfunded	Southeastern San Diego, Southeastern	9			8000				Yes	TR219413		Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
3278	Valle Avenue west of South 35th Street 220', north side streetlight	50		TEO Unfunded	Southeastern San Diego, Southeastern	9			8000				Yes	TR228103		Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
3284	Ada Street south of Imperial Avenue 630', west side streetlight	50		TEO Unfunded	Southeastern San Diego, Southeastern	9			8000				Yes	TR229556		Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
3287	Jewell Drive south of T Street 164', east side streetlight	50		TEO Unfunded	Southeastern San Diego, Southeastern	9			8000				Yes	TR231558		Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
3377	Franklin Avenue east of 40th Street 145', south side at alley streetlight	50		TEO Unfunded	Southeastern San Diego, Southeastern	9			5000				Yes	TR244871		Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
3688	Alta Vista Avenue east of Paradise Road 590', north side street lights	50		TEO Unfunded	Encanto Neighborhoods,	4			2000		CDBG		0	TR329548	Avila-Zepeda , Felipe R	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
3691	NWC of S 47th Street and Franklin Avenue street lights	50		TEO Unfunded	Encanto Neighborhoods,	4			15000		CDBG		0	TR330817	Avila-Zepeda , Felipe R	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
3692	NEC of S 47th Street and Franklin Avenue street lights	50		TEO Unfunded	Encanto Neighborhoods,	4			15000		CDBG		0	TR330817	Avila-Zepeda , Felipe R	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
3693	S 47th Street north of T street 175', east side street lights	50		TEO Unfunded	Encanto Neighborhoods,	4			15000		CDBG		0	TR330817	Avila-Zepeda , Felipe R	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
3694	S 47th Street south of T street 190', east side street lights	50		TEO Unfunded	Encanto Neighborhoods,	4			15000		CDBG		0	TR330817	Avila-Zepeda , Felipe R	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
3817	Dodson Street south of Market Street 135', west side streetlight	50	Priority 2a	TEO Funded	Southeastern San Diego, Southeastern	8			2000		Smart Growth	Smart Growth Area SD SE-3	Yes	TR 331,935	Hughes, Duncan	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
3874	Franklin Avenue west of S 30th Street 175', north side street light	50		TEO Unfunded	Southeastern San Diego, Southeastern	8			15000		CDBG		0	TR332395	Avila-Zepeda , Felipe R	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
3926	Boston Avenue east of S 38th Street 130', north side street light	50		TEO Unfunded	Southeastern San Diego, Southeastern	9			8000		CDBG		0	TR332926	Avila-Zepeda , Felipe R	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
3929	Boston Avenue west of S 38th Street 260', north side street light	50		TEO Funded	Southeastern San Diego, Southeastern	9			8000		CDBG	B-14107	Yes	TR332936	Avila-Zepeda , Felipe R	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
3930	Boston Avenue west of S 36th Street 106', north side street light	50		TEO Unfunded	Southeastern San Diego, Southeastern	9			15000		CDBG		0	TR332937	Avila-Zepeda , Felipe R	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
3931	Boston Avenue west of S 40th Street 165', north side street light	50		TEO Unfunded	Southeastern San Diego, Southeastern	9			15000		CDBG		0	TR332935	Avila-Zepeda , Felipe R	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
3954	Boston Avenue east of S 39th Street 150', north side street light	50		TEO Unfunded	Southeastern San Diego, Southeastern	9			15000		CDBG		0	TR332925	Avila-Zepeda , Felipe R	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
3957	33rd Street north of Imperial Avenue 135', west side, at alley	50	Priority 2a	TEO Funded	Southeastern San Diego, Southeastern	8			2000		CDBG	DUPLICATE - SEE GIS_ID 3228	Yes	TR332756	Semaan, Jerry	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List

3958	33rd Street north of L Street 150', west side, at alley	50	Priority 2a	TEO Funded	Southeastern San Diego, Southeastern	8			2000		CDBG		Yes	TR332756	Semaan, Jerry	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
4064	San Jacinto Dr south of Groveland Dr 182', west side	50		TEO Unfunded	Southeastern San Diego, Southeastern	4			2000			Install pole attachment between 264 & 274 San Jacinto				Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
4089	S 28th Street south of Imperial Avenue 160' at alley, west side	50	Priority 2a	TEO Funded	Southeastern San Diego, Southeastern	8			2000		Smart Growth;#CDBG	Duplicate: See TUNL ID 3020		TR334489	Semaan, Jerry	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
4090	S 29th Street south of Imperial Avenue 175' at alley, southwest corner	50	Priority 2a	TEO Funded	Southeastern San Diego, Southeastern	8			2000		Smart Growth;#CDBG			TR334489		Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
4124	S 33rd Street north of Webster Avenue 85, west side	50		TEO Unfunded	Southeastern San Diego, Southeastern	8			2000		CDBG			TR335463B	Semaan, Jerry	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
1179	SR-94 / Euclid Ave Interchange	51	Provides a PRS for improvements to the interchange.	TEO Unfunded	Encanto Neighborhoods,	4	S-11046		1000000		TransNet		No		Pornan, Donald	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
2780	Market St from Euclid Ave to Pita St (Both Sides)- Install New Sidewalk	51	This project will install PCC sidewalk on both sides of Maket St witin the limits, also to include road widening.	TEO Unfunded	Encanto Neighborhoods, Southeastern	4						IMCAT: FY-15 Object ID#7717 Strt: 11/15/2014 End:	0			Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
1216	Division St @ Valencia Pkwy New Traffic Signal	52	Install a new traffic signal	TEO Unfunded	Encanto	4			275000				0	315440	Pornan,	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
3850	Beverly St from Roswell St to Lenox Dr (Both Sides) - Install new sidewalk	52	This project will provide 3 curb returns, 16 driveways and sidewalk along both sides of Beverly. Many utility boxes need adjustment to grade. Curb and gutter are in.	TEO Unfunded	Encanto Neighborhoods, Southeastern	4			287000				No	333649	Turner, Scott	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
2841	Egret Street north of Weaver Street 800', north side at cul de sac streetlight	62	Priority 1e	TEO Funded	Encanto Neighborhoods,	4			8000			DUPLICATE LOCATION	Yes	TR246076		Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
3680	Radio Drive north of Market Street 170', west side street lights	62		TEO Unfunded	Encanto Neighborhoods,	4			2000		Smart Growth		0	TR330816	Avila-Zepeda , Felipe R	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
2824	Egret Street north of Weaver Street 300', east side streetlight	64		No longer meets warrants	Encanto Neighborhoods, Southeastern	4			2000			DUPLICATE: REFER TO GIS_ID 2823	Yes	TR246076		Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
2828	Kelton Road north of Kelton Place 250', west side streetlight	64	Priority 1d	TEO Funded	Encanto Neighborhoods,	4			15000		TransNet		Yes	TR239339		Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
2829	Kelton Road north of Kelton Place 500', west side streetlight	64	Priority 1d	TEO Funded	Encanto Neighborhoods,	4			15000		TransNet		Yes	TR239339		Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
2891	Market Street east of 45th Street 170', north side	66	FY15 budget $1.4M	TEO Funded	Encanto	4			15000			Priority 1c	Yes	TR258616		Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
2910	National Avenue east of S 32nd Street 155', south side streetlight	66	Priority 1c	TEO Funded	Southeastern San Diego, Southeastern	8			2000				Yes	TR322359		Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
2988	Market Street east of 45th Street 450', north side streetlight	66	FY15 budget $1.4M	TEO Funded	Encanto Neighborhoods,	4			15000			Priority 1c	Yes	TR258616		Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
2876	6308 63rd Street at Shaules Avenue, northeast corner streetlight	70	Priority 1a	TEO Funded	Encanto Neighborhoods,	4			2000		TransNet	B-14106 FY 2014	Yes	TR312615		Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
2885	Ginna Place at Logan Avenue, southeast corner streetlight	70	Priority 1a	TEO Funded	Encanto Neighborhoods,	4			2000		TransNet	Duplicate: See TUNL ID 3961	Yes	TR304278		Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
2941	Brooklyn Ave & Madera St streetlight	70	Priority 1a	TEO Funded	Encanto Neighborhoods,	4			2000		TransNet	B-14106 FY 2013	Yes	TR310491		Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
3682	Sicard Street southwest of S 28th Street 185', west side street light	70	Priority 2a	TEO Funded	Southeastern San Diego, Southeastern	8			2000			FY 2014	Yes	330,687	Hughes, Duncan	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
3925	S 44th Street and Boston Avenue southwest street light	70		TEO Funded	Southeastern San Diego, Southeastern	9			2000		CDBG	B-14107	Yes		Avila-Zepeda , Felipe R	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
3961	Ginna Place at Logan Avenue, south side street light	70	Priority 1a	TEO Funded	Encanto Neighborhoods,	4			2000		CDBG	B-14106 FY 2014	Yes	TR333000	Avila-Zepeda , Felipe R	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
3987	37th Street (S) and Logan Avenue, northeast corner	70	FY15 budget $1.4M	TEO Funded	Southeastern San Diego, Southeastern	9			8000		CDBG	Priority 1a	Yes	TR332842	Avila-Zepeda , Felipe R	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
3997	Clay Avenue at Sampson Street, at alley, northwest corner street ;ight	70	Priority 1a	TEO Funded	Southeastern San Diego, Southeastern	8			2000		CDBG;#TransNet		Yes	TR275743	Avila-Zepeda , Felipe R	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
3856	Hilltop Drive from Winston Dr to Roswell St (Both Sides) - Install new sidewalk		This project will provide sidewalk on both sides of Hilltop Drive. Project requires earthwork and retaining walls. Conflict includes very large, medium and small palm trees (will probably require removal) and utility poles. Several metar boxes will need to be adjusted to grade. Curb and gutter are in.	TEO Unfunded	Encanto Neighborhoods, Southeastern	4						IMCAT conflicts as of 2/21/14: PROJECT ID B11074 Sewer pipeline rehabilitation start6/11/2012 end 5/8/2014 Street segment SS-	No		Turner, Scott	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
3858	Pitta St from Market St to end of street [south] (both sides) - Install new sidewalk			TEO Unfunded	Encanto Neighborhoods,	4							0		Turner, Scott	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
3859	Castana Street from 47th St to Escuela St (both sides) - Install new sidewalk			TEO Unfunded	Encanto Neighborhoods,	4							0		Turner, Scott	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
4085	San Jacinto from Groveland to Imperial (west side) - Sidewalk		This project will install approximately 640 LF of sidewalk within the project limits.	TEO Unfunded	Encanto Neighborhoods,	4			95000					335596		Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
3624	61st Street at Flipper Flashing Beacon		Installation of a flashing beacon at the school crosswalk	TEO Unfunded	Encanto Neighborhoods,	4					TransNet		0			Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
3720	Market Street Electronic Speed Signs		Installation of two electronic speed signs on Market Street near 26th street	TEO Funded	Southeastern San Diego, Southeastern	8			16000		TransNet	Funded with "Old Transnet" funding	0			Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List

Appendix C
Signal Warrant Worksheets

Sheet No 1 of 2

Figure 4C-3
Warrant 3, Peak Hour



* Note: 150 VPH APPLIES AS THE LOWER THRESHOLD VOLUME FOR A MINOR STREET APPROACH WITH TWO OR MORE LANES AND 100 VPH APPLIES AS THE LOWER THRESHOLD VOLUME FOR A MINOR STREET APPROACHING WITH ONE LANE.

Source: *California Manual on Uniform Traffic Control Devices*, Caltrans, 2006

#8

Major Street	Midway Drive
Minor Street	Charles Lindbergh Parkway

Project	Midway & Old Town CPU
Scenario	2A
Peak Hour	AM

Turn Movement Volumes

	NB	SB	EB	WB
Left	0	140	0	120
Through	600	680	0	0
Right	90	0	0	30
Total	690	820	0	150

Major Street Direction

X	North/South
	East/West

	Major Street	Minor Street	Warrant Met
	Midway Drive	Charles Lindbergh Parkway	
Number of Approach Lanes	**2**	**1**	**YES**
Traffic Volume (VPH) *	**1,510**	**150**	

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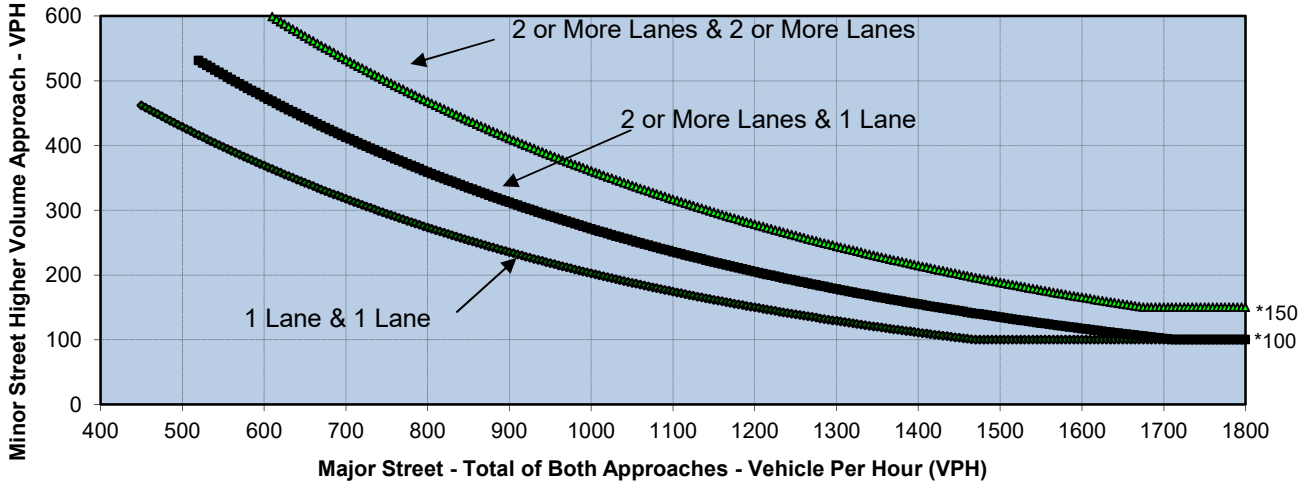
Figure 4C-3
Warrant 3, Peak Hour



* Note: 150 VPH APPLIES AS THE LOWER THRESHOLD VOLUME FOR A MINOR STREET APPROACH WITH TWO OR MORE LANES AND 100 VPH APPLIES AS THE LOWER THRESHOLD VOLUME FOR A MINOR STREET APPROACHING WITH ONE LANE.

Source: *California Manual on Uniform Traffic Control Devices*, Caltrans, 2006

#8

Major Street	Midway Drive
Minor Street	Charles Lindbergh Parkway

Project	Midway & Old Town CPU
Scenario	2A
Peak Hour	PM

Turn Movement Volumes

	NB	SB	EB	WB
Left	0	400	0	120
Through	780	840	0	0
Right	120	0	0	300
Total	900	1,240	0	420

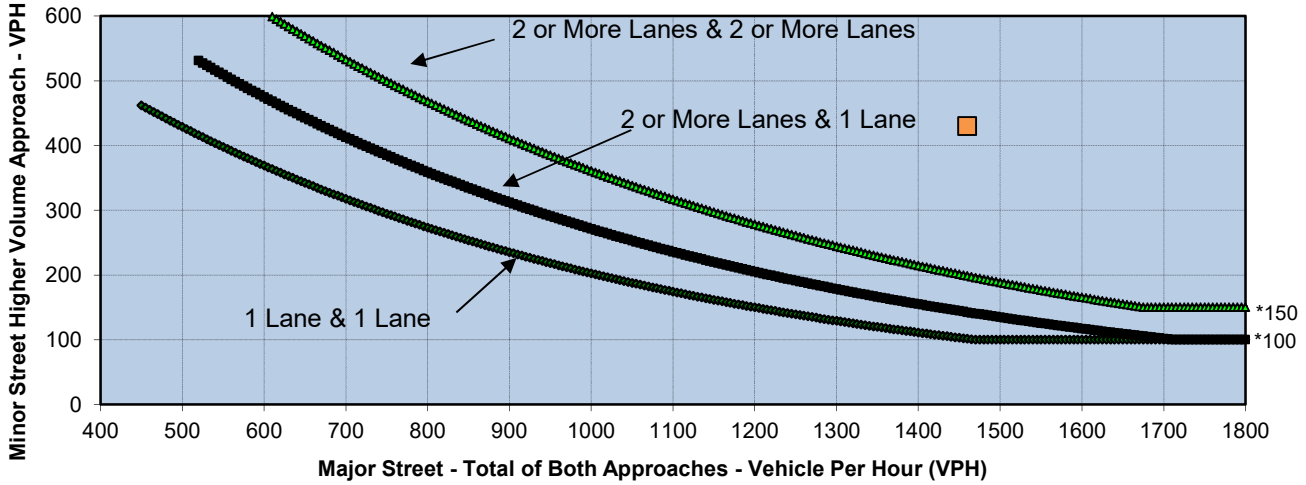
Major Street Direction

X	North/South
	East/West

	Major Street	Minor Street	Warrant Met
	Midway Drive	Charles Lindbergh Parkway	
Number of Approach Lanes	2	1	YES
Traffic Volume (VPH) *	2,140	420	

Sheet No 1 of 2

Figure 4C-3
Warrant 3, Peak Hour



* Note: 150 VPH APPLIES AS THE LOWER THRESHOLD VOLUME FOR A MINOR STREET APPROACH WITH TWO OR MORE LANES AND 100 VPH APPLIES AS THE LOWER THRESHOLD VOLUME FOR A MINOR STREET APPROACHING WITH ONE LANE.

Source: *California Manual on Uniform Traffic Control Devices*, Caltrans, 2006

#12

Major Street	Sports Arean Boulevard
Minor Street	Kemper Street

Project	Midway & Old Town CPU
Scenario	2A
Peak Hour	AM

Turn Movement Volumes

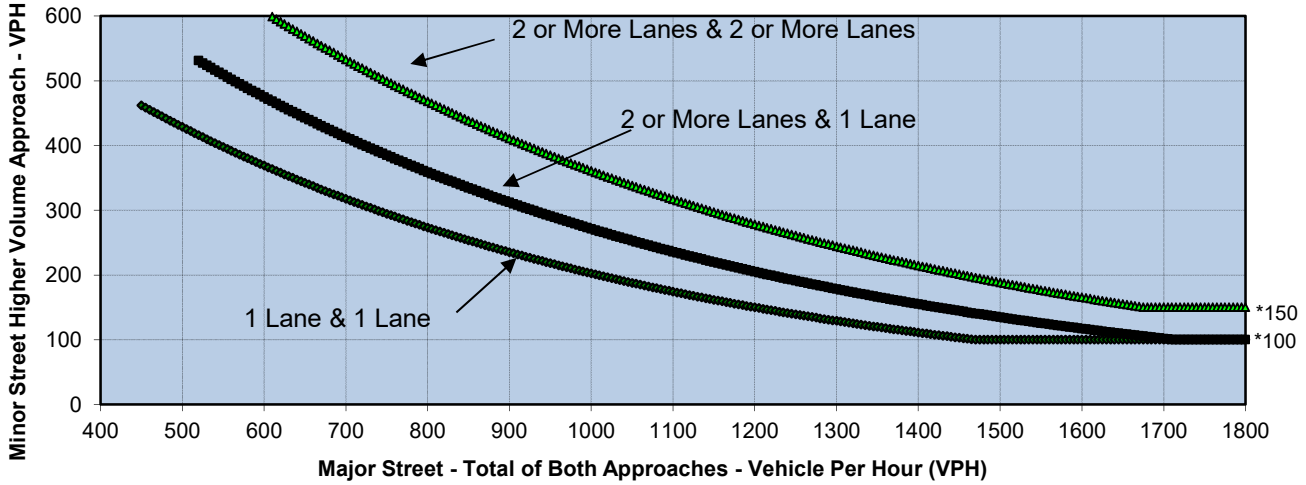
	NB	SB	EB	WB
Left	200	80	80	160
Through	410	540	50	140
Right	100	130	110	130
Total	710	750	240	430

Major Street Direction

X	North/South
	East/West

	Major Street	Minor Street	Warrant Met
	Sports Arean Boulevard	Kemper Street	
Number of Approach Lanes	**3**	**1**	**YES**
Traffic Volume (VPH) *	**1,460**	**430**	

Figure 4C-3
Warrant 3, Peak Hour



* Note: 150 VPH APPLIES AS THE LOWER THRESHOLD VOLUME FOR A MINOR STREET APPROACH WITH TWO OR MORE LANES AND 100 VPH APPLIES AS THE LOWER THRESHOLD VOLUME FOR A MINOR STREET APPROACHING WITH ONE LANE.

Source: *California Manual on Uniform Traffic Control Devices*, Caltrans, 2006

#12

Major Street	Sports Arean Boulevard
Minor Street	Kemper Street

Project	Midway & Old Town CPU
Scenario	2A
Peak Hour	PM

Turn Movement Volumes

	NB	SB	EB	WB
Left	230	150	90	130
Through	1,120	890	130	40
Right	120	90	150	180
Total	1,470	1,130	370	350

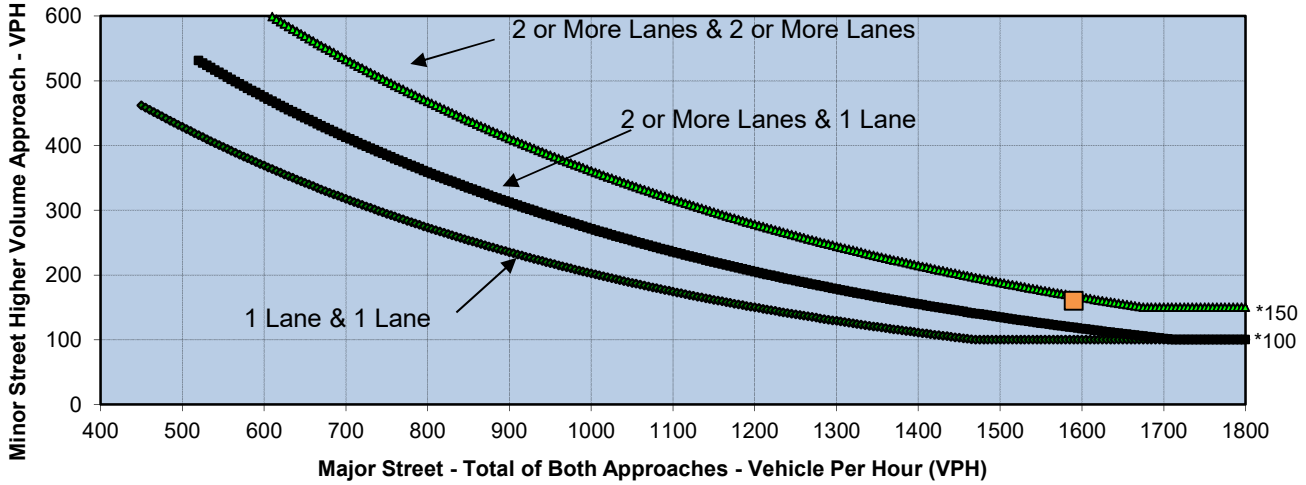
Major Street Direction

X	North/South
	East/West

	Major Street	Minor Street	Warrant Met
	Sports Arean Boulevard	Kemper Street	
Number of Approach Lanes	3	1	YES
Traffic Volume (VPH) *	2,600	370	

Sheet No 1 of 2

Figure 4C-3
Warrant 3, Peak Hour



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Source: *California Manual on Uniform Traffic Control Devices*, Caltrans, 2006

#13

Major Street	Sports Arean Boulevard
Minor Street	Frontier Street

Project	Midway & Old Town CPU
Scenario	2A
Peak Hour	AM

Turn Movement Volumes

	NB	SB	EB	WB
Left	30	130	40	90
Through	620	640	20	20
Right	90	80	20	50
Total	740	850	80	160

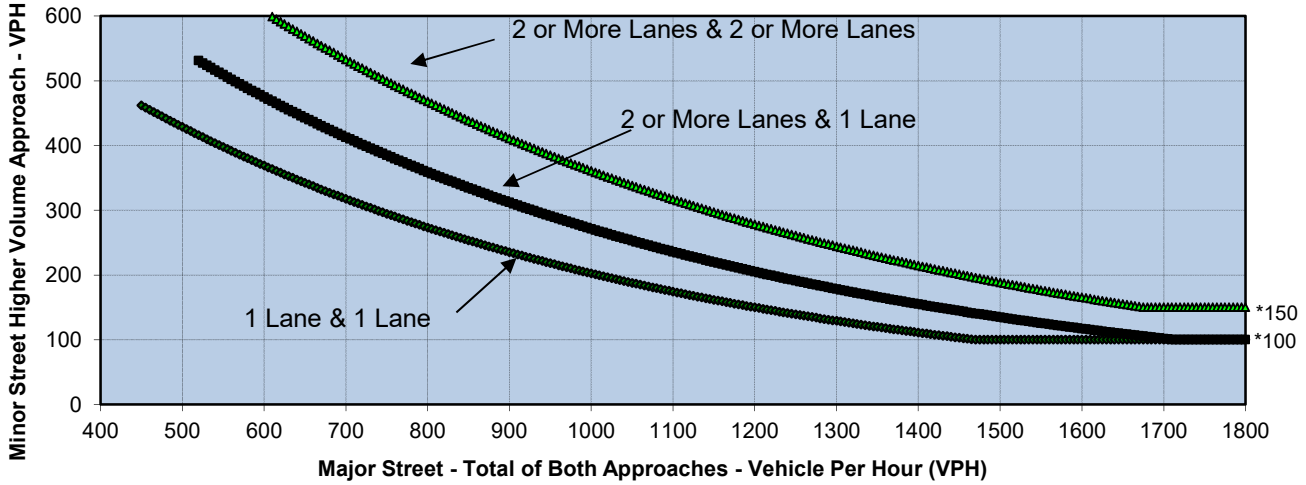
Major Street Direction

X	North/South
	East/West

	Major Street	Minor Street	Warrant Met
	Sports Arean Boulevard	Frontier Street	
Number of Approach Lanes	**3**	**1**	**YES**
Traffic Volume (VPH) *	**1,590**	**160**	

Sheet No 2 of 2

Figure 4C-3
Warrant 3, Peak Hour



* Note: 150 VPH APPLIES AS THE LOWER THRESHOLD VOLUME FOR A MINOR STREET APPROACH WITH TWO OR MORE LANES AND 100 VPH APPLIES AS THE LOWER THRESHOLD VOLUME FOR A MINOR STREET APPROACHING WITH ONE LANE.

Source: *California Manual on Uniform Traffic Control Devices*, Caltrans, 2006

#13

Major Street	Sports Arean Boulevard
Minor Street	Frontier Street

Project	Midway & Old Town CPU
Scenario	2A
Peak Hour	PM

Turn Movement Volumes

	NB	SB	EB	WB
Left	50	120	60	150
Through	1,250	1,080	30	30
Right	70	80	70	140
Total	1,370	1,280	160	320

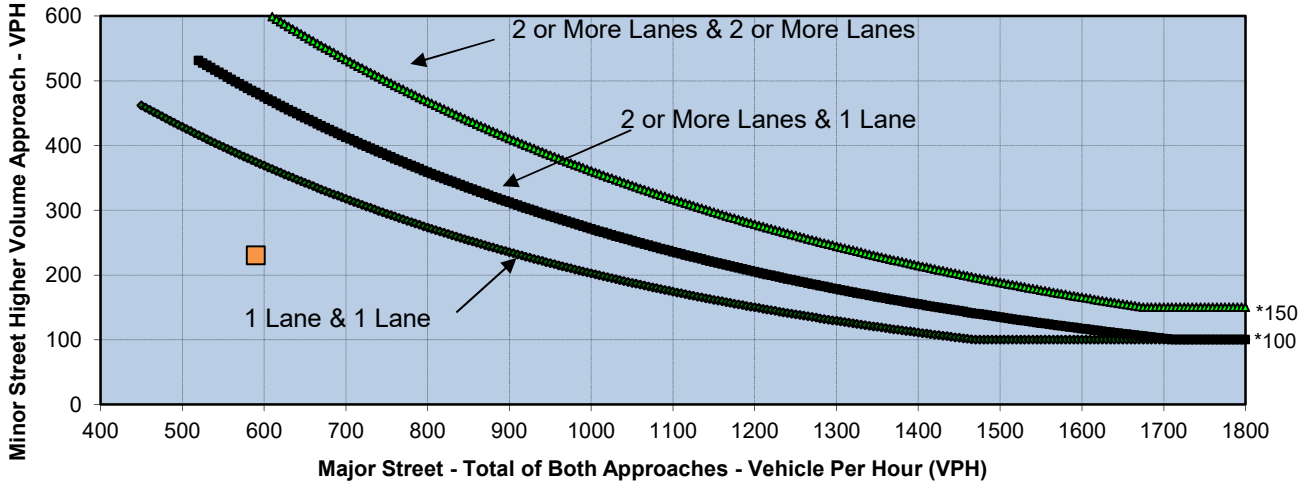
Major Street Direction

X	North/South
	East/West

	Major Street	Minor Street	Warrant Met
	Sports Arean Boulevard	Frontier Street	
Number of Approach Lanes	3	1	YES
Traffic Volume (VPH) *	2,650	320	

Sheet No 1 of 2

Figure 4C-3
Warrant 3, Peak Hour



* Note: 150 VPH APPLIES AS THE LOWER THRESHOLD VOLUME FOR A MINOR STREET APPROACH WITH TWO OR MORE LANES AND 100 VPH APPLIES AS THE LOWER THRESHOLD VOLUME FOR A MINOR STREET APPROACHING WITH ONE LANE.

Source: *California Manual on Uniform Traffic Control Devices*, Caltrans, 2006

#16

Major Street	Sports Arean Boulevard
Minor Street	Charles Lindbergh Parkway

Project	Midway & Old Town CPU
Scenario	2A
Peak Hour	AM

Turn Movement Volumes

	NB	SB	EB	WB
Left	70	30	50	90
Through	50	80	130	140
Right	110	90	100	80
Total	230	200	280	310

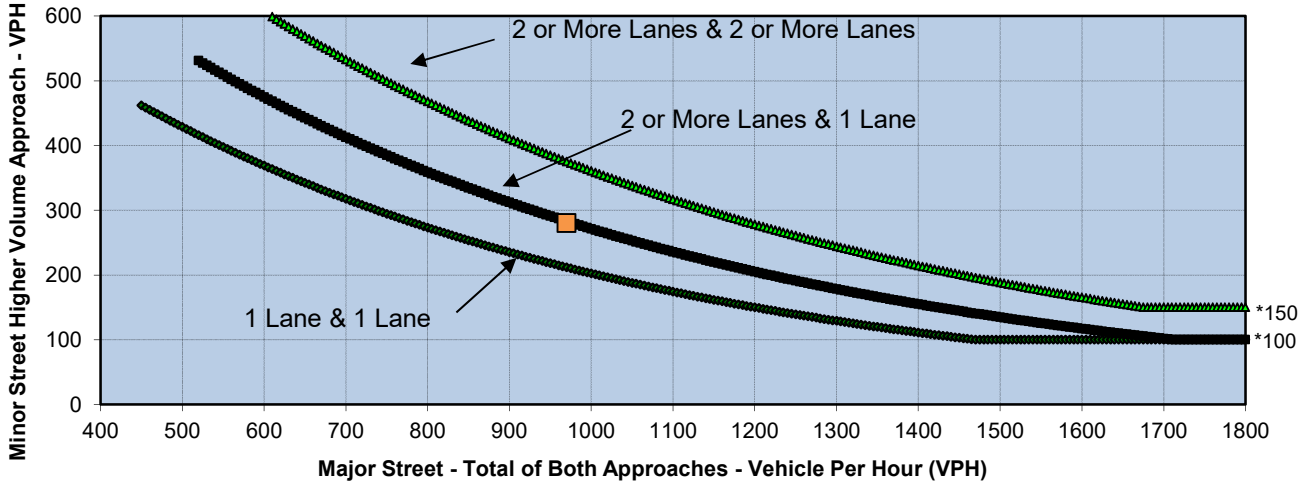
Major Street Direction

	North/South
X	East/West

	Major Street	Minor Street	Warrant Met
	Sports Arean Boulevard	Charles Lindbergh Parkway	
Number of Approach Lanes	**1**	**1**	**NO**
Traffic Volume (VPH) *	**590**	**230**	

Sheet No 2 of 2

Figure 4C-3
Warrant 3, Peak Hour



* Note: 150 VPH APPLIES AS THE LOWER THRESHOLD VOLUME FOR A MINOR STREET APPROACH WITH TWO OR MORE LANES AND 100 VPH APPLIES AS THE LOWER THRESHOLD VOLUME FOR A MINOR STREET APPROACHING WITH ONE LANE.

Source: *California Manual on Uniform Traffic Control Devices*, Caltrans, 2006

#16

Major Street	Sports Arean Boulevard
Minor Street	Charles Lindbergh Parkway

Project	Midway & Old Town CPU
Scenario	2A
Peak Hour	PM

Turn Movement Volumes

	NB	SB	EB	WB
Left	70	90	100	130
Through	90	90	120	250
Right	120	100	300	70
Total	280	280	520	450

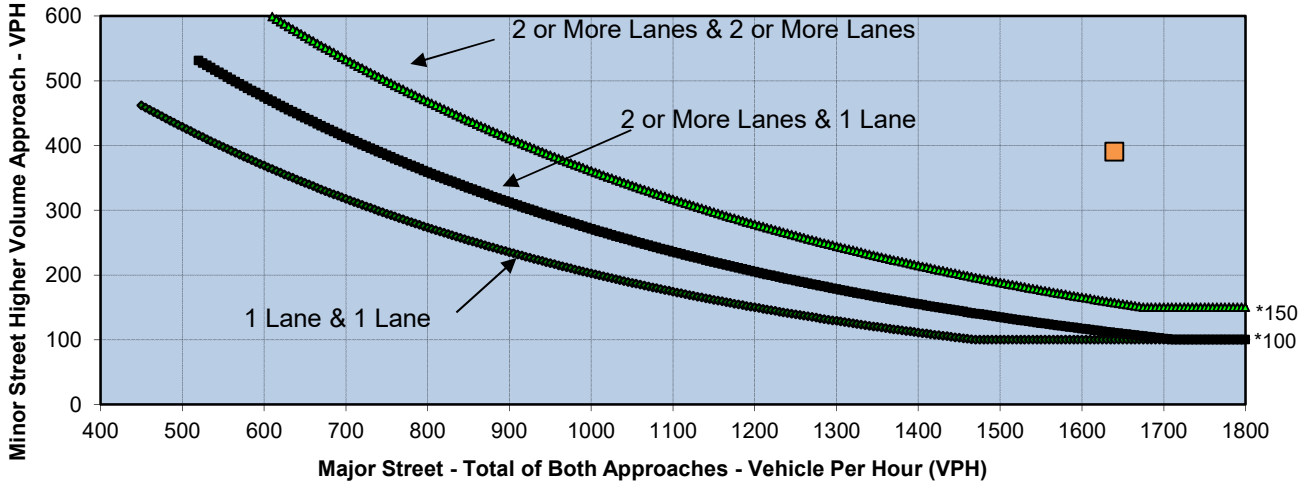
Major Street Direction

	North/South
X	East/West

	Major Street	Minor Street	Warrant Met
	Sports Arean Boulevard	Charles Lindbergh Parkway	
Number of Approach Lanes	1	1	YES
Traffic Volume (VPH) *	970	280	

Sheet No 1 of 2

Figure 4C-3
Warrant 3, Peak Hour



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Source: *California Manual on Uniform Traffic Control Devices*, Caltrans, 2006

#17		Project	Midway & Old Town CPU
Major Street	Pacific Highway	Scenario	2A
Minor Street	Sports Arena Blvd	Peak Hour	AM

Turn Movement Volumes

	NB	SB	EB	WB
Left	300	0	200	0
Through	610	600	0	0
Right	0	130	190	0
Total	910	730	390	0

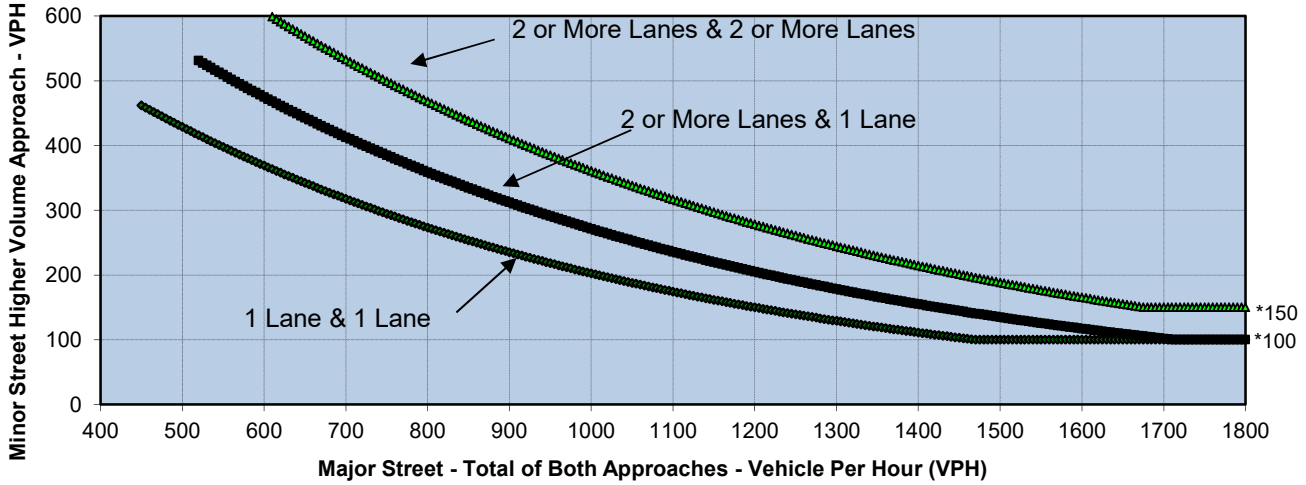
Major Street Direction

X	North/South
	East/West

	Major Street	Minor Street	Warrant Met
	Pacific Highway	Sports Arena Blvd	
Number of Approach Lanes	**3**	**1**	**YES**
Traffic Volume (VPH) *	**1,640**	**390**	

Sheet No 2 of 2

Figure 4C-3
Warrant 3, Peak Hour



* Note: 150 VPH APPLIES AS THE LOWER THRESHOLD VOLUME FOR A MINOR STREET APPROACH WITH TWO OR MORE LANES AND 100 VPH APPLIES AS THE LOWER THRESHOLD VOLUME FOR A MINOR STREET APPROACHING WITH ONE LANE.

Source: *California Manual on Uniform Traffic Control Devices*, Caltrans, 2006

#17

Major Street	Pacific Highway
Minor Street	Sports Arena Blvd

Project	Midway & Old Town CPU
Scenario	2A
Peak Hour	PM

Turn Movement Volumes

	NB	SB	EB	WB
Left	290	0	50	0
Through	1,320	830	0	0
Right	0	50	480	0
Total	1,610	880	530	0

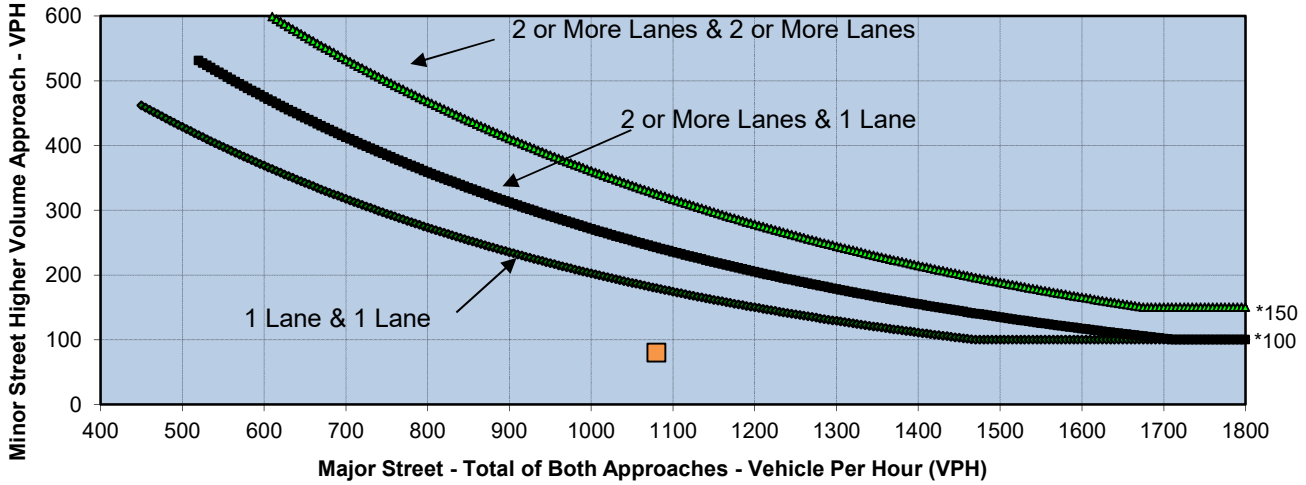
Major Street Direction

X	North/South
	East/West

	Major Street	Minor Street	Warrant Met
	Pacific Highway	Sports Arena Blvd	
Number of Approach Lanes	3	1	YES
Traffic Volume (VPH) *	2,490	530	

Sheet No 1 of 2

Figure 4C-3
Warrant 3, Peak Hour



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Source: *California Manual on Uniform Traffic Control Devices*, Caltrans, 2006

#18		Project	Midway & Old Town CPU
Major Street	Kurtz Street	Scenario	2A
Minor Street	Hancock Street	Peak Hour	AM

Turn Movement Volumes

	NB	SB	EB	WB
Left	0	0	30	460
Through	0	70	0	390
Right	0	10	100	100
Total	0	80	130	950

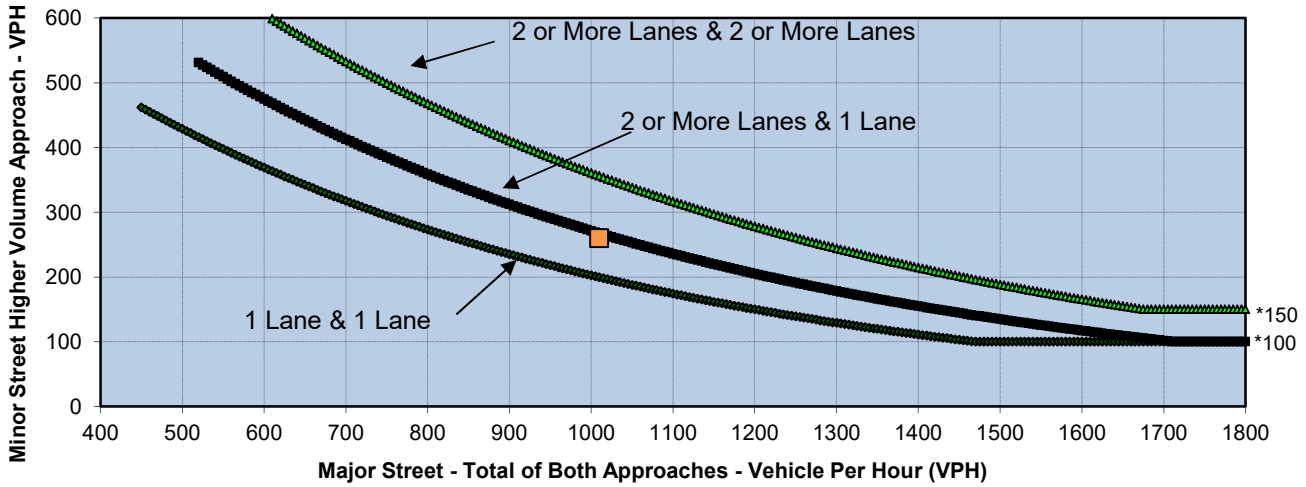
Major Street Direction

	North/South
X	East/West

	Major Street	Minor Street	Warrant Met
	Kurtz Street	Hancock Street	
Number of Approach Lanes	**1**	**1**	**NO**
Traffic Volume (VPH) *	**1,080**	**80**	

Sheet No 2 of 2

Figure 4C-3
Warrant 3, Peak Hour



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Source: *California Manual on Uniform Traffic Control Devices*, Caltrans, 2006

#18		Project	Midway & Old Town CPU
Major Street	Kurtz Street	Scenario	2A
Minor Street	Hancock Street	Peak Hour	PM

Turn Movement Volumes

	NB	SB	EB	WB
Left	0	0	100	310
Through	0	170	0	310
Right	0	90	140	150
Total	0	260	240	770

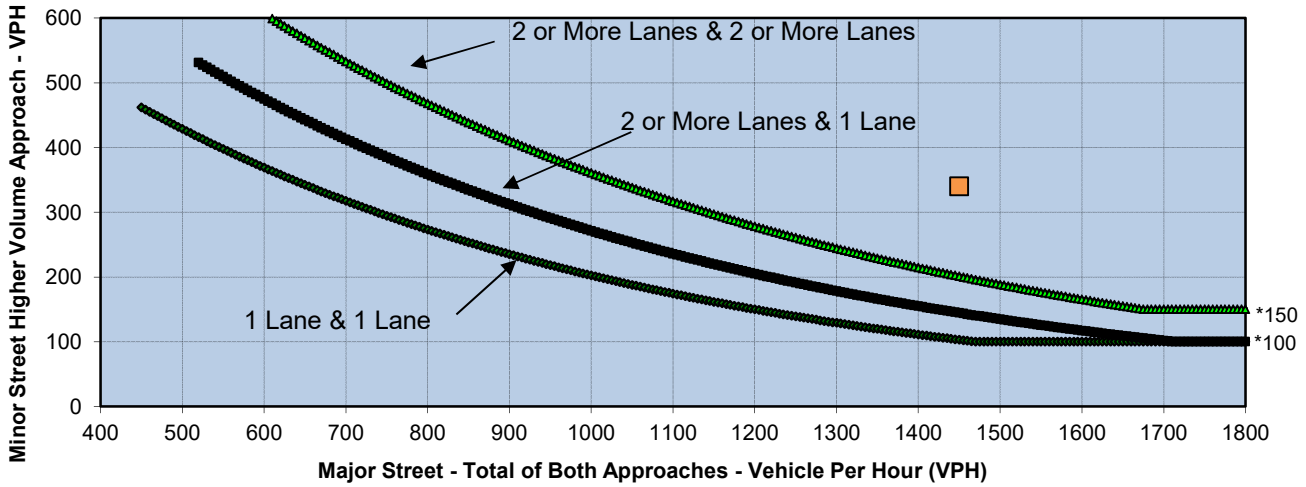
Major Street Direction

	North/South
X	East/West

	Major Street	Minor Street	Warrant Met
	Kurtz Street	Hancock Street	
Number of Approach Lanes	1	1	YES
Traffic Volume (VPH) *	1,010	260	

Sheet No 1 of 2

Figure 4C-3
Warrant 3, Peak Hour



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Source: *California Manual on Uniform Traffic Control Devices*, Caltrans, 2006

#21

Major Street	Pacific Highway
Minor Street	Kurtz Street

Project	Midway & Old Town CPU
Scenario	2A
Peak Hour	AM

Turn Movement Volumes

	NB	SB	EB	WB
Left	350	0	100	0
Through	460	490	0	0
Right	0	150	240	0
Total	810	640	340	0

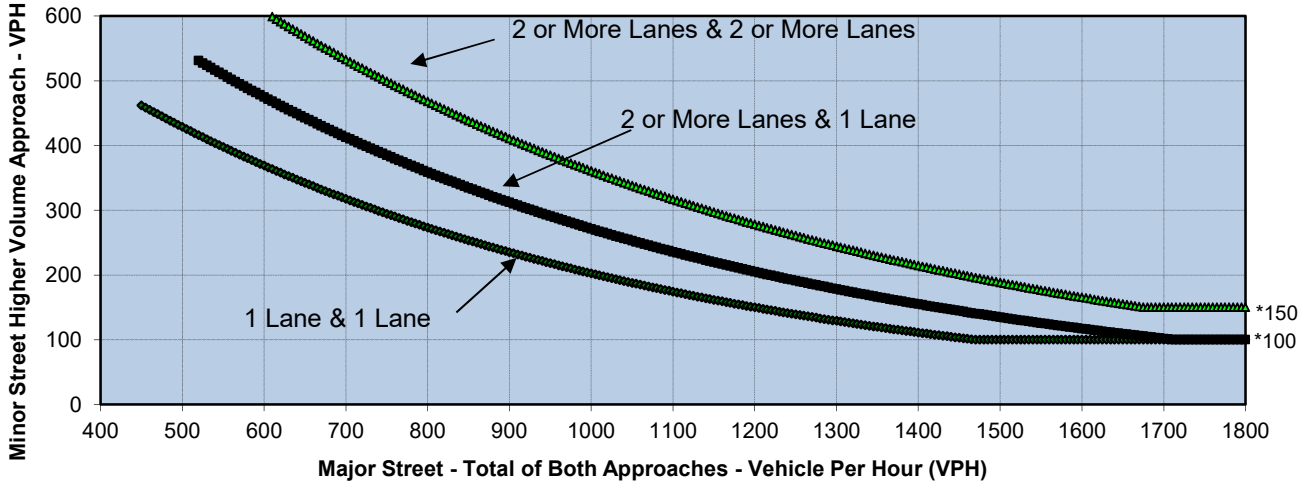
Major Street Direction

X	North/South
	East/West

	Major Street	Minor Street	Warrant Met
	Pacific Highway	Kurtz Street	
Number of Approach Lanes	**3**	**1**	**YES**
Traffic Volume (VPH) *	**1,450**	**340**	

Sheet No 2 of 2

Figure 4C-3
Warrant 3, Peak Hour



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Source: *California Manual on Uniform Traffic Control Devices*, Caltrans, 2006

#21

Major Street	Pacific Highway
Minor Street	Kurtz Street

Project	Midway & Old Town CPU
Scenario	2A
Peak Hour	PM

Turn Movement Volumes

	NB	SB	EB	WB
Left	490	0	230	0
Through	880	430	0	0
Right	0	100	450	0
Total	1,370	530	680	0

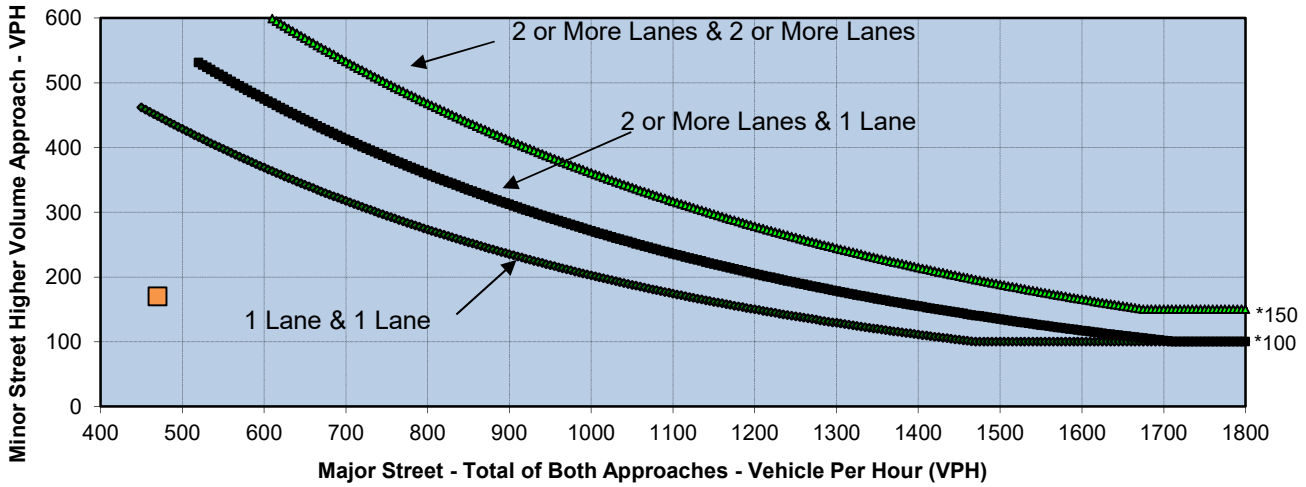
Major Street Direction

X	North/South
	East/West

	Major Street	Minor Street	Warrant Met
	Pacific Highway	Kurtz Street	
Number of Approach Lanes	3	1	YES
Traffic Volume (VPH) *	1,900	680	

Sheet No 1 of 2

Figure 4C-3
Warrant 3, Peak Hour



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Source: *California Manual on Uniform Traffic Control Devices*, Caltrans, 2006

#62		Project	Midway & Old Town CPU
Major Street	Kurtz Street	Scenario	2A
Minor Street	Greenwood Street	Peak Hour	AM

Turn Movement Volumes

	NB	SB	EB	WB
Left	0	40	0	60
Through	0	420	20	90
Right	0	10	150	0
Total	0	470	170	150

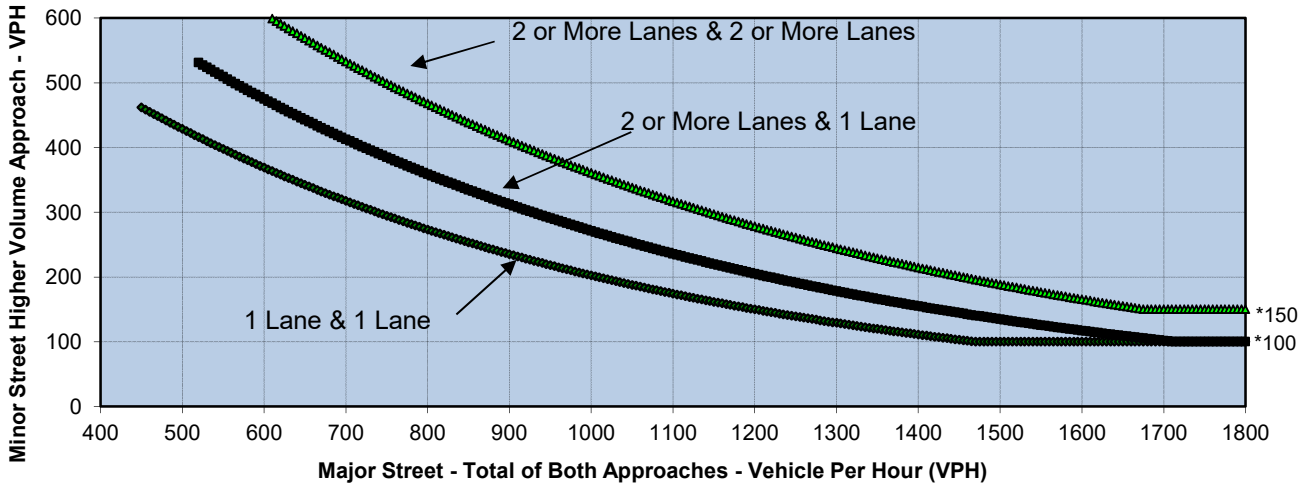
Major Street Direction

X	North/South
	East/West

	Major Street	Minor Street	Warrant Met
	Kurtz Street	Greenwood Street	
Number of Approach Lanes	**2**	**1**	**NO**
Traffic Volume (VPH) *	**470**	**170**	

Sheet No 2 of 2

Figure 4C-3
Warrant 3, Peak Hour



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Source: *California Manual on Uniform Traffic Control Devices*, Caltrans, 2006

#62

Major Street	Kurtz Street	Project	Midway & Old Town CPU
Minor Street	Greenwood Street	Scenario	2A
		Peak Hour	PM

Turn Movement Volumes

	NB	SB	EB	WB
Left	0	50	0	370
Through	0	820	30	340
Right	0	70	310	0
Total	0	940	340	710

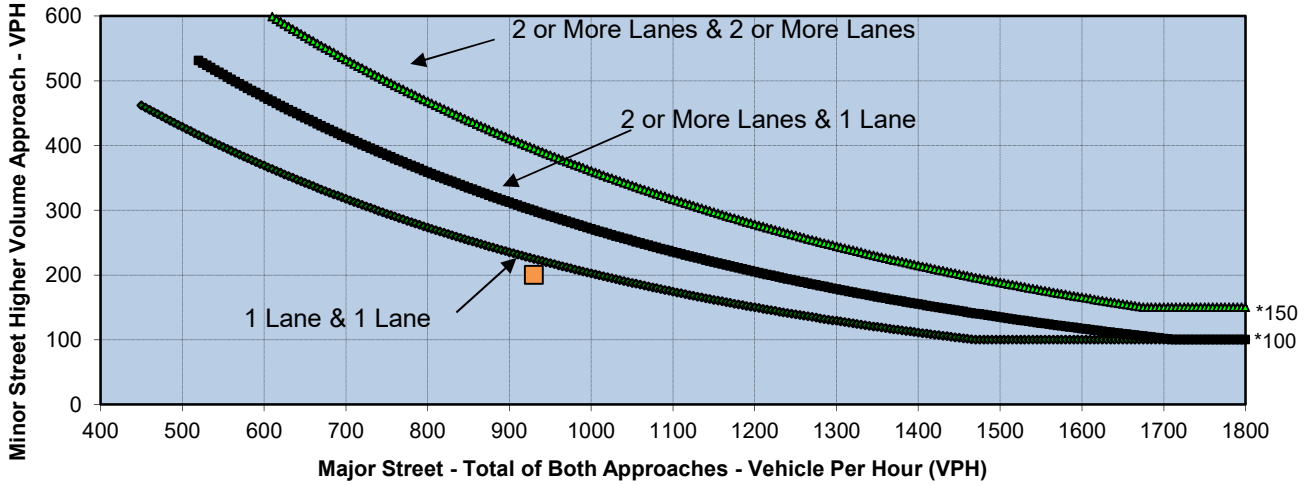
Major Street Direction

X	North/South
	East/West

	Major Street	Minor Street	Warrant Met
	Kurtz Street	Greenwood Street	
Number of Approach Lanes	2	1	YES
Traffic Volume (VPH) *	940	710	

Sheet No 1 of 2

Figure 4C-3
Warrant 3, Peak Hour



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Source: *California Manual on Uniform Traffic Control Devices*, Caltrans, 2006

#63		Project	Midway & Old Town CPU
Major Street	Kurtz Street	Scenario	2A
Minor Street	Charles Lindbergh Parkway	Peak Hour	AM

Turn Movement Volumes

	NB	SB	EB	WB
Left	170	0	50	0
Through	330	370	0	0
Right	0	60	150	0
Total	500	430	200	0

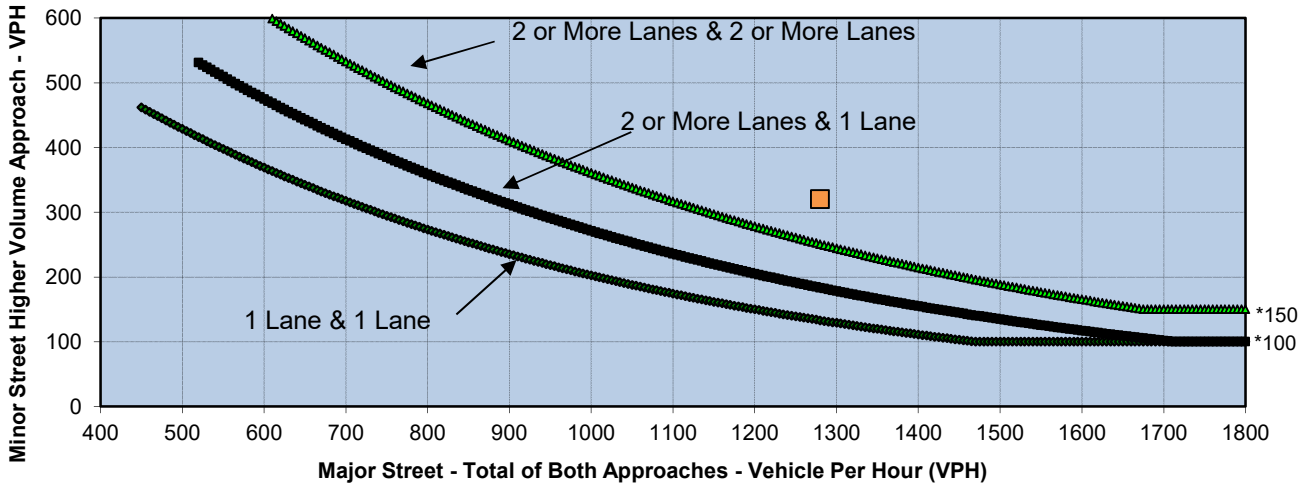
Major Street Direction

X	North/South
	East/West

	Major Street	Minor Street	Warrant Met
	Kurtz Street	Charles Lindbergh Parkway	
Number of Approach Lanes	**2**	**1**	**NO**
Traffic Volume (VPH) *	**930**	**200**	

Sheet No 2 of 2

Figure 4C-3
Warrant 3, Peak Hour



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Source: *California Manual on Uniform Traffic Control Devices*, Caltrans, 2006

#63		Project	Midway & Old Town CPU
Major Street	Kurtz Street	Scenario	2A
Minor Street	Charles Lindbergh Parkway	Peak Hour	PM

Turn Movement Volumes

	NB	SB	EB	WB
Left	180	0	120	0
Through	370	480	0	0
Right	0	250	200	0
Total	550	730	320	0

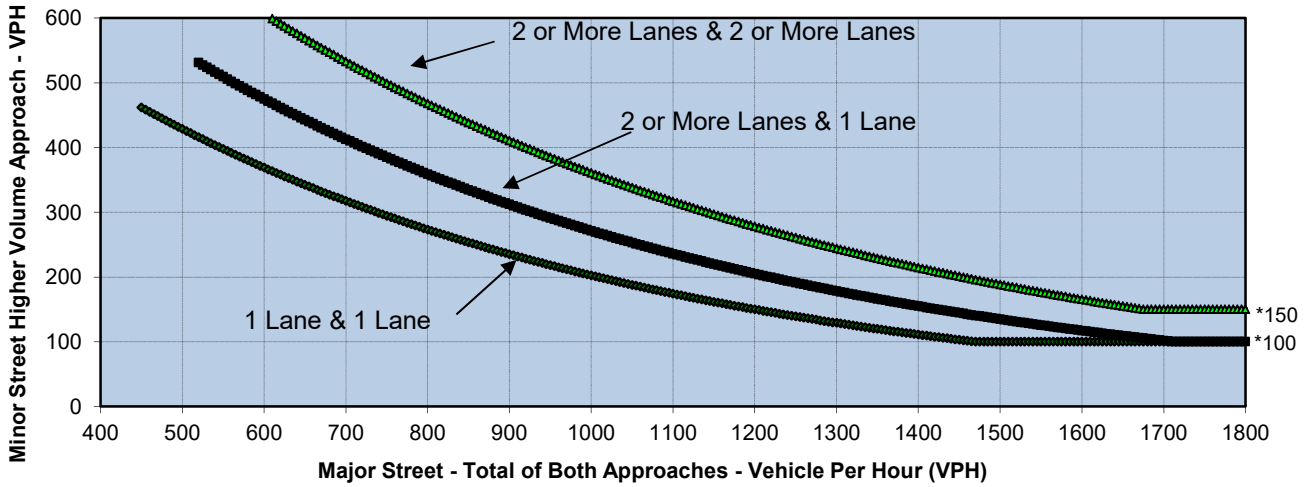
Major Street Direction

X	North/South
	East/West

	Major Street	Minor Street	Warrant Met
	Kurtz Street	Charles Lindbergh Parkway	
Number of Approach Lanes	2	1	YES
Traffic Volume (VPH) *	1,280	320	

Sheet No 1 of 2

Figure 4C-3
Warrant 3, Peak Hour



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Source: *California Manual on Uniform Traffic Control Devices*, Caltrans, 2006

#64		Project	Midway & Old Town CPU
Major Street	Barnett Avenue	Scenario	2A
Minor Street	Dutch Flats Parkway	Peak Hour	AM

Turn Movement Volumes

	NB	SB	EB	WB
Left	0	0	50	0
Through	0	150	670	1,410
Right	0	250	0	40
Total	0	400	720	1,450

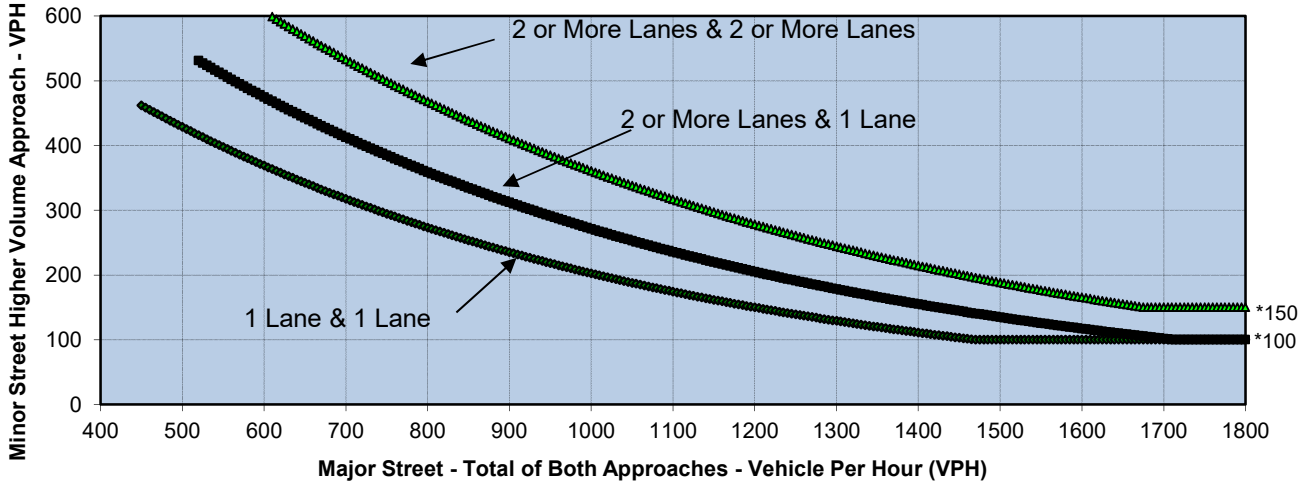
Major Street Direction

	North/South
X	East/West

	Major Street	Minor Street	Warrant Met
	Barnett Avenue	Dutch Flats Parkway	
Number of Approach Lanes	**2**	**1**	**YES**
Traffic Volume (VPH) *	**2,170**	**400**	

Sheet No 2 of 2

Figure 4C-3
Warrant 3, Peak Hour



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Source: *California Manual on Uniform Traffic Control Devices*, Caltrans, 2006

#64		Project	Midway & Old Town CPU
Major Street	Barnett Avenue	Scenario	2A
Minor Street	Dutch Flats Parkway	Peak Hour	PM

Turn Movement Volumes

	NB	SB	EB	WB
Left	0	0	60	0
Through	0	160	1,090	1,200
Right	0	240	0	70
Total	0	400	1,150	1,270

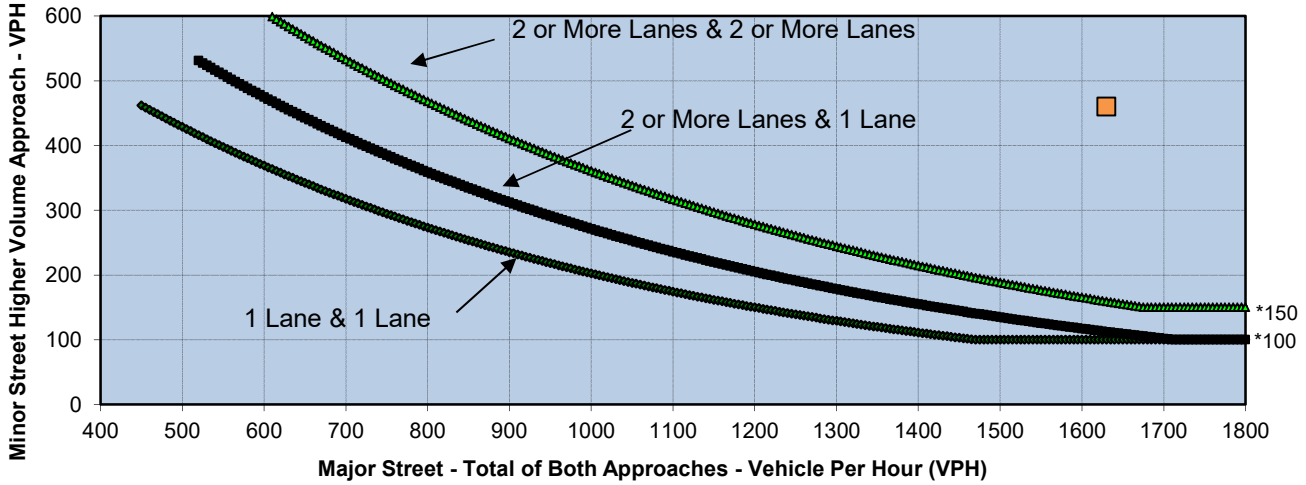
Major Street Direction

	North/South
X	East/West

	Major Street	Minor Street	Warrant Met
	Barnett Avenue	Dutch Flats Parkway	
Number of Approach Lanes	2	1	YES
Traffic Volume (VPH) *	2,420	400	

Sheet No 1 of 2

Figure 4C-3
Warrant 3, Peak Hour



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Source: *California Manual on Uniform Traffic Control Devices*, Caltrans, 2006

#65		Project	Midway & Old Town CPU
Major Street	Midway Drive	Scenario	2A
Minor Street	Dutch Flats Parkway	Peak Hour	AM

Turn Movement Volumes

	NB	SB	EB	WB
Left	200	260	60	40
Through	400	450	10	180
Right	130	190	90	240
Total	730	900	160	460

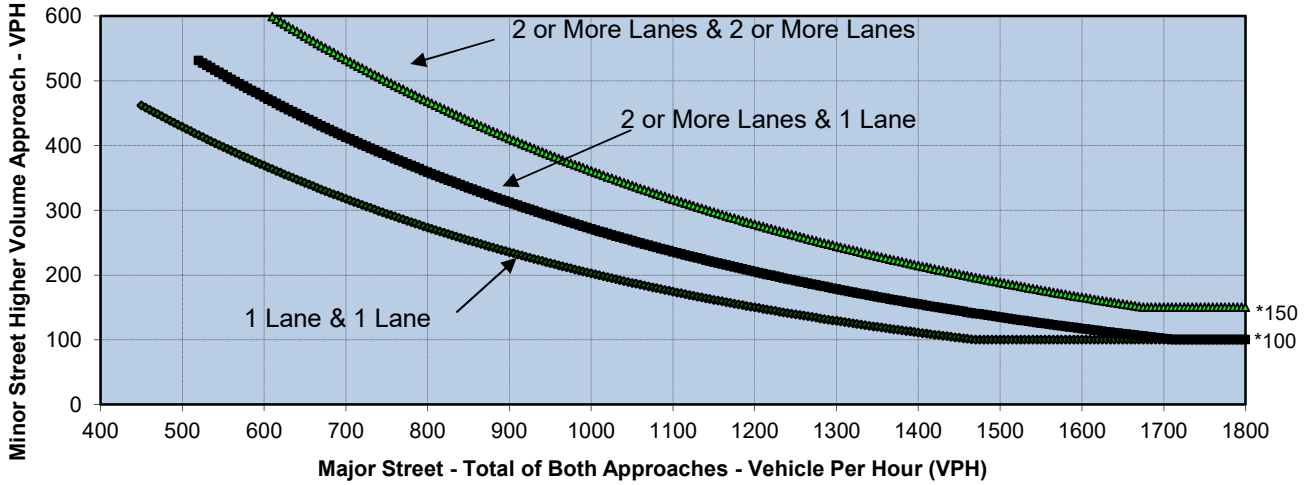
Major Street Direction

X	North/South
	East/West

	Major Street	Minor Street	Warrant Met
	Midway Drive	Dutch Flats Parkway	
Number of Approach Lanes	**2**	**1**	**YES**
Traffic Volume (VPH) *	**1,630**	**460**	

Sheet No 2 of 2

Figure 4C-3
Warrant 3, Peak Hour



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Source: *California Manual on Uniform Traffic Control Devices*, Caltrans, 2006

#65		Project	Midway & Old Town CPU
Major Street	Midway Drive	Scenario	2A
Minor Street	Dutch Flats Parkway	Peak Hour	PM

Turn Movement Volumes

	NB	SB	EB	WB
Left	160	210	110	60
Through	510	520	20	110
Right	370	140	80	280
Total	1,040	870	210	450

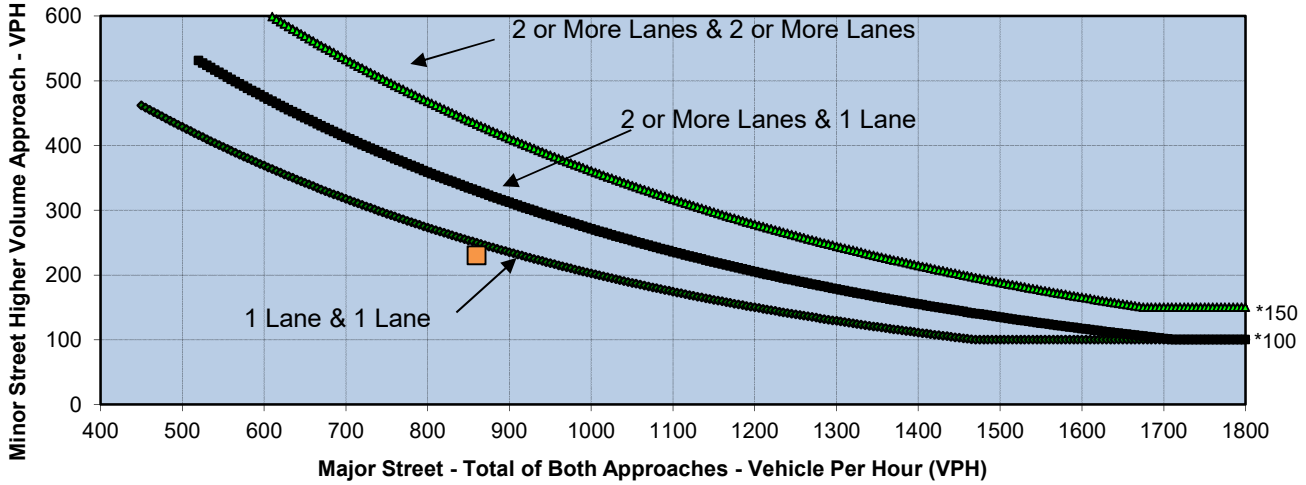
Major Street Direction

X	North/South
	East/West

	Major Street	Minor Street	Warrant Met
	Midway Drive	Dutch Flats Parkway	
Number of Approach Lanes	**2**	**1**	**YES**
Traffic Volume (VPH) *	**1,910**	**450**	

Sheet No 1 of 2

Figure 4C-3
Warrant 3, Peak Hour



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Source: *California Manual on Uniform Traffic Control Devices*, Caltrans, 2006

#66

Major Street	Sports Arena Boulevard
Minor Street	Dutch Flats Parkway

Project	Midway & Old Town CPU
Scenario	2A
Peak Hour	AM

Turn Movement Volumes

	NB	SB	EB	WB
Left	370	0	30	0
Through	210	190	0	0
Right	0	90	200	0
Total	580	280	230	0

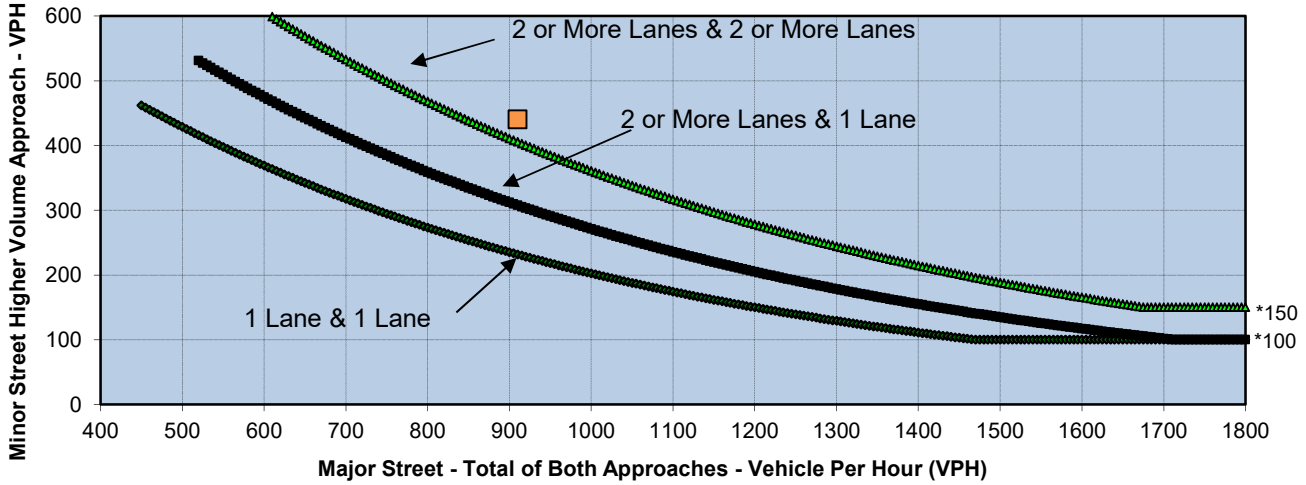
Major Street Direction

X	North/South
	East/West

	Major Street	Minor Street	Warrant Met
	Sports Arena Boulevard	Dutch Flats Parkway	
Number of Approach Lanes	**1**	**1**	**NO**
Traffic Volume (VPH) *	**860**	**230**	

Sheet No 2 of 2

Figure 4C-3
Warrant 3, Peak Hour



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Source: *California Manual on Uniform Traffic Control Devices*, Caltrans, 2006

#66

Major Street	Sports Arena Boulevard
Minor Street	Dutch Flats Parkway

Project	Midway & Old Town CPU
Scenario	2A
Peak Hour	PM

Turn Movement Volumes

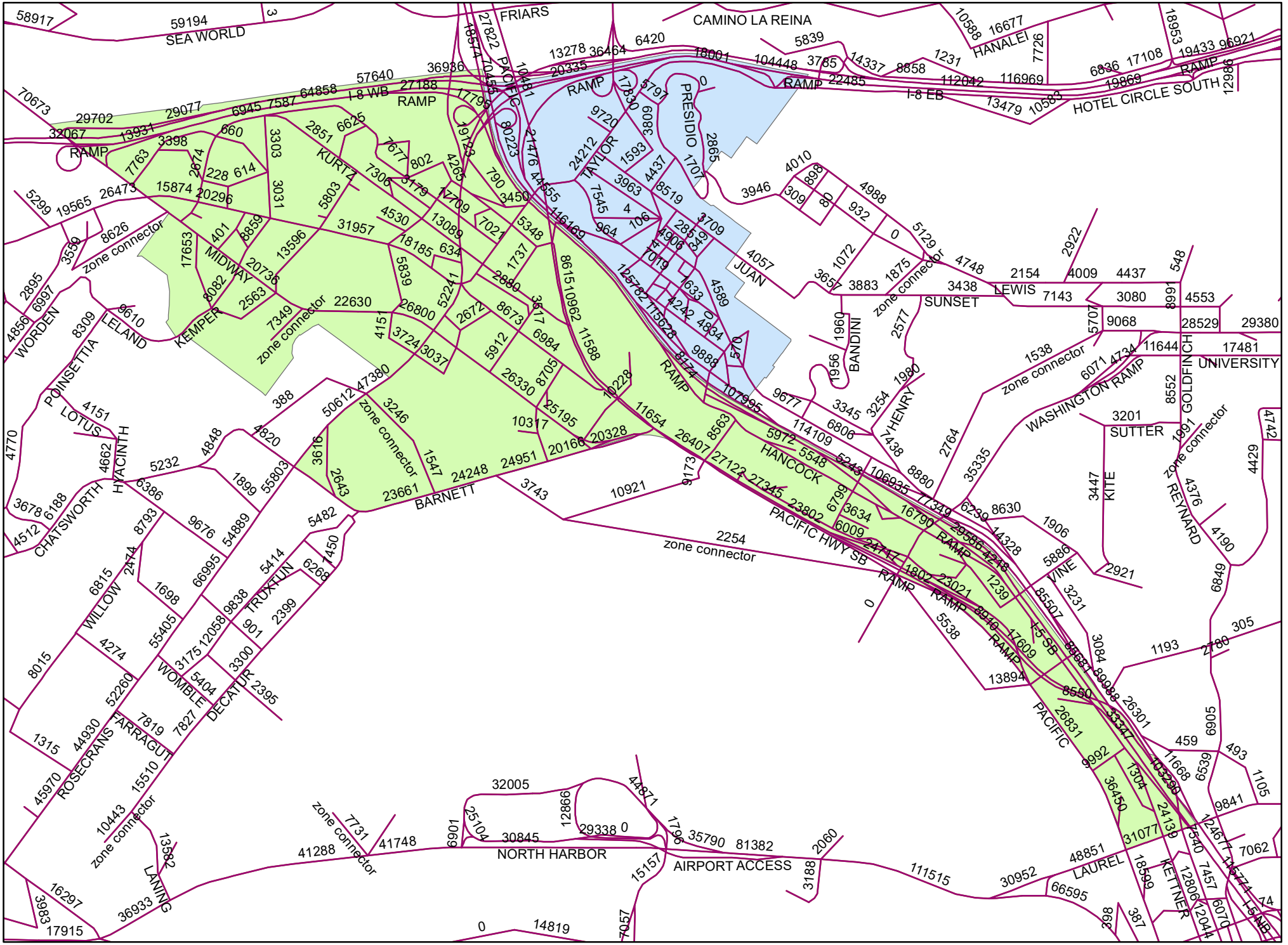
	NB	SB	EB	WB
Left	200	0	180	0
Through	140	270	0	0
Right	0	300	260	0
Total	340	570	440	0

Major Street Direction

X	North/South
	East/West

	Major Street	Minor Street	Warrant Met
	Sports Arena Boulevard	Dutch Flats Parkway	
Number of Approach Lanes	1	1	YES
Traffic Volume (VPH) *	910	440	

Appendix D
SANDAG Series 12 Model Outputs, Documentation and VMT Analysis



Midway-Pacific Highway and Old Town Community Plan

Scenario 2A

VMT Analysis

	Base Year 2008										
	SF (1)			MF			Mobile Homes				Estimated
	VR(2)	PPH(3)	SFDU	VR(2)	PPH(3)	MFDU	VR(2)	PPH(3)	MHDU	TOTAL DU	Populatio
Midway	2.00%	1.78	1,274	3.10%	1.78	484	0.00%	1.78		1,758	3,057
Old Town	6.90%	1.62	229	7.10%	1.62	25	0.00%	1.62	-	254	383

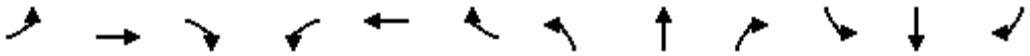
	Preferred CPU - Buildout for Communities, Year 2035 for Region										
	SF (1)			MF			Mobile Homes				Estimated
	VR(4)	PPH(5)	SFDU	VR(4)	PPH(5)	MFDU	VR(4)	PPH(5)	MHDU	TOTAL DU	Populatio
Midway	1.70%	1.82	-	2.40%	1.82	11,415	0.00%	1.82		11,415	20,277
Old Town	0.00%	1.66	79	5.10%	1.66	1,253	0.00%	1.66	-	1,332	2,105

	Delta (CPU Buildout for SESD & Encanto, Year 2035 for Region) - Base Year (2008)						
	DELTAS				Percent increase	Estimated Population Increase	Percent Increase
	SFDU	MFDU	MHDU	Total DU			
Midway	-1274	10931	0	9657	5.493174	17219.5143	5.632486
Old Town	-150	1228	0	1078	4.244094	1722.03414	4.496092

(1) Single family includes detached single family and multi-unit single family
(2) Vacancy Rate data for 2010 per SANDAG Community Profiles
(3) Persons Per Household data for 2010 per SANDAG Community Profiles
(4) Vacancy Rate data for 2050 per SANDAG Community Profiles
(5) Persons Per Household data for 2050 per SANDAG Community Profiles

Appendix E
Peak Hour Intersection Calculation Worksheets and Queuing Reports

Peak Hour Intersection Calculation Worksheets



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	50	1140	390	160	1330	180	480	400	150	580	280	120
Future Volume (vph)	50	1140	390	160	1330	180	480	400	150	580	280	120
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	
Lane Util. Factor	1.00	0.91	1.00	0.97	0.95	1.00	0.97	1.00	1.00	1.00	1.00	
Frpb, ped/bikes	1.00	1.00	0.99	1.00	1.00	0.95	1.00	1.00	0.98	1.00	1.00	
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.96	
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)	1770	5085	1563	3433	3539	1497	3433	1863	1559	1770	1771	
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (perm)	1770	5085	1563	3433	3539	1497	3433	1863	1559	1770	1771	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	54	1239	424	174	1446	196	522	435	163	630	304	130
RTOR Reduction (vph)	0	0	279	0	0	85	0	0	99	0	12	0
Lane Group Flow (vph)	54	1239	145	174	1446	111	522	435	64	630	422	0
Confl. Peds. (#/hr)	8					8			3	3		
Confl. Bikes (#/hr)			1			5						3
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases			2			6			8			
Actuated Green, G (s)	4.0	37.7	37.7	10.8	44.4	44.4	31.4	33.2	33.2	35.8	35.8	
Effective Green, g (s)	4.4	39.0	39.0	11.2	45.8	45.8	31.8	34.0	34.0	34.8	37.0	
Actuated g/C Ratio	0.03	0.29	0.29	0.08	0.34	0.34	0.24	0.25	0.25	0.26	0.27	
Clearance Time (s)	4.4	5.3	5.3	4.4	5.4	5.4	4.4	4.8	4.8	3.0	5.2	
Vehicle Extension (s)	2.0	4.4	4.4	2.0	4.4	4.4	2.0	3.8	3.8	2.0	2.0	
Lane Grp Cap (vph)	57	1469	451	284	1200	507	808	469	392	456	485	
v/s Ratio Prot	0.03	0.24		c0.05	c0.41		0.15	c0.23		c0.36	0.24	
v/s Ratio Perm			0.09			0.07			0.04			
v/c Ratio	0.95	0.84	0.32	0.61	1.21	0.22	0.65	0.93	0.16	1.38	0.87	
Uniform Delay, d1	65.2	45.1	37.6	59.8	44.6	31.8	46.5	49.3	39.4	50.1	46.7	
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	98.4	6.1	1.9	2.7	100.4	1.0	1.3	24.8	0.3	185.0	14.8	
Delay (s)	163.6	51.2	39.5	62.5	145.0	32.8	47.9	74.1	39.7	235.1	61.5	
Level of Service	F	D	D	E	F	C	D	E	D	F	E	
Approach Delay (s)		51.9			125.0			56.9			164.3	
Approach LOS		D			F			E			F	

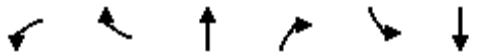
Intersection Summary			
HCM 2000 Control Delay	97.0	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.17		
Actuated Cycle Length (s)	135.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	107.3%	ICU Level of Service	G
Analysis Period (min)	15		

c Critical Lane Group

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	540	1190	370	0	0	660
Future Volume (vph)	540	1190	370	0	0	660
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	7.0	7.0	7.0			7.0
Lane Util. Factor	0.97	0.88	0.95			0.95
Frt	1.00	0.85	1.00			1.00
Flt Protected	0.95	1.00	1.00			1.00
Satd. Flow (prot)	3433	2787	3539			3539
Flt Permitted	0.95	1.00	1.00			1.00
Satd. Flow (perm)	3433	2787	3539			3539
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	587	1293	402	0	0	717
RTOR Reduction (vph)	0	301	0	0	0	0
Lane Group Flow (vph)	587	992	402	0	0	717
Turn Type	Prot	Perm	NA			NA
Protected Phases	4		2			6
Permitted Phases		4				
Actuated Green, G (s)	19.7	19.7	13.1			13.1
Effective Green, g (s)	19.7	19.7	13.1			13.1
Actuated g/C Ratio	0.42	0.42	0.28			0.28
Clearance Time (s)	7.0	7.0	7.0			7.0
Vehicle Extension (s)	0.2	0.2	0.2			0.2
Lane Grp Cap (vph)	1445	1173	990			990
v/s Ratio Prot	0.17		0.11			c0.20
v/s Ratio Perm		c0.36				
v/c Ratio	0.41	0.85	0.41			0.72
Uniform Delay, d1	9.5	12.2	13.7			15.2
Progression Factor	1.00	1.00	1.00			1.00
Incremental Delay, d2	0.1	5.5	0.1			2.3
Delay (s)	9.5	17.7	13.8			17.5
Level of Service	A	B	B			B
Approach Delay (s)	15.2		13.8			17.5
Approach LOS	B		B			B

Intersection Summary			
HCM 2000 Control Delay	15.5	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.80		
Actuated Cycle Length (s)	46.8	Sum of lost time (s)	14.0
Intersection Capacity Utilization	63.5%	ICU Level of Service	B
Analysis Period (min)	15		

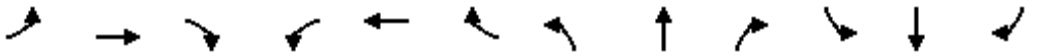
c Critical Lane Group



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	0	130	970	240	0	1200
Future Volume (Veh/h)	0	130	970	240	0	1200
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	141	1054	261	0	1304
Pedestrians						3
Lane Width (ft)						12.0
Walking Speed (ft/s)						4.0
Percent Blockage						0
Right turn flare (veh)						
Median type			None			None
Median storage veh)						
Upstream signal (ft)			810			780
pX, platoon unblocked	0.97	0.97			0.97	
vC, conflicting volume	1619	485			1315	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1482	340			1200	
tC, single (s)	6.8	6.9			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	100	78			100	
cM capacity (veh/h)	112	631			557	

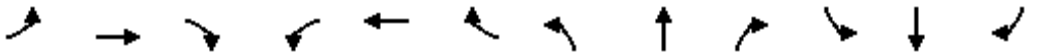
Direction, Lane #	WB 1	NB 1	NB 2	NB 3	SB 1	SB 2	SB 3
Volume Total	141	422	422	472	435	435	435
Volume Left	0	0	0	0	0	0	0
Volume Right	141	0	0	261	0	0	0
cSH	631	1700	1700	1700	1700	1700	1700
Volume to Capacity	0.22	0.25	0.25	0.28	0.26	0.26	0.26
Queue Length 95th (ft)	21	0	0	0	0	0	0
Control Delay (s)	12.3	0.0	0.0	0.0	0.0	0.0	0.0
Lane LOS	B						
Approach Delay (s)	12.3	0.0			0.0		
Approach LOS	B						

Intersection Summary			
Average Delay	0.6		
Intersection Capacity Utilization	39.6%	ICU Level of Service	A
Analysis Period (min)	15		



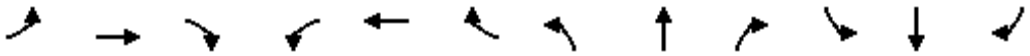
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	450	320	280	30	140	300	180	460	50	430	520	250
Future Volume (vph)	450	320	280	30	140	300	180	460	50	430	520	250
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.1	4.0	3.1	3.0	4.0	4.0	3.1	4.0		3.1	4.0	4.0
Lane Util. Factor	1.00	1.00	1.00	1.00	0.95	1.00	1.00	0.95		1.00	0.95	1.00
Frpb, ped/bikes	1.00	1.00	0.99	1.00	1.00	0.99	1.00	1.00		1.00	1.00	0.99
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.99		1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1770	1863	1564	1770	3539	1574	1770	3482		1770	3539	1566
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)	1770	1863	1564	1770	3539	1574	1770	3482		1770	3539	1566
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	489	348	304	33	152	326	196	500	54	467	565	272
RTOR Reduction (vph)	0	0	56	0	0	45	0	6	0	0	0	123
Lane Group Flow (vph)	489	348	248	33	152	281	196	548	0	467	565	149
Confl. Peds. (#/hr)			4			3			5			8
Turn Type	Prot	NA	pm+ov	Prot	NA	pm+ov	Prot	NA		Prot	NA	pm+ov
Protected Phases	5	2	3	1	6	7	3	8		7	4	5
Permitted Phases			2			6						4
Actuated Green, G (s)	31.3	47.1	65.2	3.4	19.1	48.4	18.1	24.4		29.3	35.6	66.9
Effective Green, g (s)	32.2	48.0	67.0	4.4	20.1	48.4	19.0	25.3		30.2	36.5	66.9
Actuated g/C Ratio	0.26	0.39	0.55	0.04	0.16	0.40	0.16	0.21		0.25	0.30	0.55
Clearance Time (s)	4.0	4.9	4.0	4.0	5.0	4.0	4.0	4.9		4.0	4.9	4.0
Vehicle Extension (s)	3.0	0.2	3.0	3.0	8.0	3.0	3.0	3.1		3.0	5.5	3.0
Lane Grp Cap (vph)	467	732	858	63	583	624	275	722		438	1058	858
v/s Ratio Prot	c0.28	c0.19	0.04	0.02	0.04	0.11	0.11	c0.16		c0.26	0.16	0.04
v/s Ratio Perm			0.11			0.07						0.05
v/c Ratio	1.05	0.48	0.29	0.52	0.26	0.45	0.71	0.76		1.07	0.53	0.17
Uniform Delay, d1	44.9	27.6	14.7	57.8	44.5	27.0	48.9	45.5		45.9	35.7	13.8
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	54.5	0.2	0.2	7.6	1.0	0.5	8.4	4.6		61.7	1.1	0.1
Delay (s)	99.4	27.8	14.9	65.4	45.5	27.6	57.4	50.1		107.6	36.8	13.9
Level of Service	F	C	B	E	D	C	E	D		F	D	B
Approach Delay (s)		55.1			35.3			52.0			57.4	
Approach LOS		E			D			D			E	

Intersection Summary			
HCM 2000 Control Delay	52.5	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.90		
Actuated Cycle Length (s)	122.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	85.7%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			



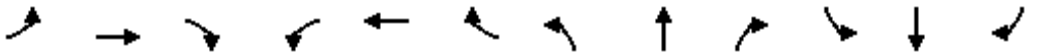
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	110	110	110	90	100	170	80	320	50	90	410	90
Future Volume (vph)	110	110	110	90	100	170	80	320	50	90	410	90
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0
Lane Util. Factor	0.95	0.95	1.00	1.00	1.00	1.00	0.97	0.95		1.00	0.95	1.00
Frpb, ped/bikes	1.00	1.00	0.98	1.00	1.00	0.98	1.00	1.00		1.00	1.00	1.00
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.98		1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1681	1770	1556	1770	1863	1551	3433	3459		1770	3539	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)	1681	1770	1556	1770	1863	1551	3433	3459		1770	3539	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	120	120	120	98	109	185	87	348	54	98	446	98
RTOR Reduction (vph)	0	0	96	0	0	159	0	7	0	0	0	47
Lane Group Flow (vph)	120	120	25	98	109	26	87	395	0	98	446	51
Confl. Peds. (#/hr)			12			8			5			
Turn Type	Split	NA	pm+ov	Split	NA	Perm	Prot	NA		Prot	NA	Perm
Protected Phases	8	8	1	7	7		1	6		5	2	
Permitted Phases			8			7						2
Actuated Green, G (s)	17.0	17.0	23.7	16.0	16.0	16.0	6.7	55.6		12.3	61.2	61.2
Effective Green, g (s)	17.9	17.9	24.5	16.9	16.9	16.9	7.1	56.5		12.7	62.1	62.1
Actuated g/C Ratio	0.15	0.15	0.20	0.14	0.14	0.14	0.06	0.47		0.11	0.52	0.52
Clearance Time (s)	4.9	4.9	4.4	4.9	4.9	4.9	4.4	4.9		4.4	4.9	4.9
Vehicle Extension (s)	3.0	3.0	2.0	3.0	3.0	3.0	2.0	4.5		2.0	4.6	4.6
Lane Grp Cap (vph)	250	264	317	249	262	218	203	1628		187	1831	819
v/s Ratio Prot	c0.07	0.07	0.00	0.06	c0.06		0.03	0.11		c0.06	c0.13	
v/s Ratio Perm			0.01			0.02						0.03
v/c Ratio	0.48	0.45	0.08	0.39	0.42	0.12	0.43	0.24		0.52	0.24	0.06
Uniform Delay, d1	46.8	46.6	38.6	46.9	47.0	45.0	54.5	19.0		50.8	16.0	14.4
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.27	0.71	0.71
Incremental Delay, d2	1.5	1.2	0.0	1.0	1.1	0.2	0.5	0.4		1.0	0.3	0.1
Delay (s)	48.2	47.8	38.6	47.9	48.1	45.3	55.0	19.3		65.8	11.6	10.4
Level of Service	D	D	D	D	D	D	E	B		E	B	B
Approach Delay (s)		44.9			46.7			25.7			19.7	
Approach LOS		D			D			C			B	

Intersection Summary			
HCM 2000 Control Delay	31.7	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.35		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	58.9%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			



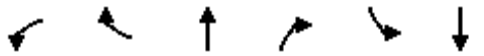
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	30	20	20	30	20	30	60	660	90	30	550	20
Future Volume (vph)	30	20	20	30	20	30	60	660	90	30	550	20
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0			4.0		4.0	4.0		4.0	4.0	
Lane Util. Factor		1.00			1.00		1.00	0.95		1.00	0.95	
Frpb, ped/bikes		1.00			0.99		1.00	1.00		1.00	1.00	
Flpb, ped/bikes		1.00			1.00		1.00	1.00		1.00	1.00	
Frt		0.96			0.95		1.00	0.98		1.00	0.99	
Flt Protected		0.98			0.98		0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1746			1724		1770	3475		1770	3517	
Flt Permitted		0.84			0.84		0.39	1.00		0.33	1.00	
Satd. Flow (perm)		1506			1482		730	3475		609	3517	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	33	22	22	33	22	33	65	717	98	33	598	22
RTOR Reduction (vph)	0	19	0	0	28	0	0	13	0	0	3	0
Lane Group Flow (vph)	0	58	0	0	60	0	65	802	0	33	617	0
Confl. Peds. (#/hr)			1			10						3
Turn Type	Perm	NA		Perm	NA		pm+pt	NA		pm+pt	NA	
Protected Phases		8			4		1	6		5	2	
Permitted Phases	8			4			6			2		
Actuated Green, G (s)		5.2			5.2		22.6	21.2		20.8	20.3	
Effective Green, g (s)		6.1			6.1		23.4	22.1		21.6	21.2	
Actuated g/C Ratio		0.15			0.15		0.57	0.54		0.53	0.52	
Clearance Time (s)		4.9			4.9		4.4	4.9		4.4	4.9	
Vehicle Extension (s)		2.0			2.0		2.0	2.9		2.0	2.9	
Lane Grp Cap (vph)		223			219		461	1868		345	1814	
v/s Ratio Prot							c0.01	c0.23		0.00	0.18	
v/s Ratio Perm		0.04			c0.04		0.07			0.05		
v/c Ratio		0.26			0.27		0.14	0.43		0.10	0.34	
Uniform Delay, d1		15.5			15.5		4.0	5.7		4.7	5.8	
Progression Factor		1.00			1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2		0.2			0.2		0.1	0.2		0.0	0.1	
Delay (s)		15.7			15.8		4.0	5.9		4.8	5.9	
Level of Service		B			B		A	A		A	A	
Approach Delay (s)		15.7			15.8			5.7			5.9	
Approach LOS		B			B			A			A	

Intersection Summary			
HCM 2000 Control Delay	6.8	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.39		
Actuated Cycle Length (s)	41.1	Sum of lost time (s)	12.0
Intersection Capacity Utilization	43.4%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	220	1460	170	340	1800	300	120	330	210	230	280	180
Future Volume (vph)	220	1460	170	340	1800	300	120	330	210	230	280	180
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0	4.4	4.0	4.0	3.5	4.0	4.0	3.5
Lane Util. Factor	0.97	0.91		0.97	0.91	1.00	1.00	0.95	1.00	0.97	0.95	1.00
Frpb, ped/bikes	1.00	1.00		1.00	1.00	0.98	1.00	1.00	0.97	1.00	1.00	0.98
Flpb, ped/bikes	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.98		1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	4984		3433	5085	1544	1770	3539	1542	3433	3539	1554
Flt Permitted	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	4984		3433	5085	1544	1770	3539	1542	3433	3539	1554
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	239	1587	185	370	1957	326	130	359	228	250	304	196
RTOR Reduction (vph)	0	12	0	0	0	76	0	0	77	0	0	79
Lane Group Flow (vph)	239	1760	0	370	1957	250	130	359	151	250	304	117
Confl. Peds. (#/hr)	14		25	25		14	18		27	27		14
Turn Type	Prot	NA		Prot	NA	pm+ov	Prot	NA	pm+ov	Prot	NA	pm+ov
Protected Phases	5	2		1	6	7	3	8	1	7	4	5
Permitted Phases						6			8			4
Actuated Green, G (s)	8.8	42.6		10.4	44.3	53.5	8.5	24.0	34.4	9.2	24.7	33.5
Effective Green, g (s)	9.2	43.7		10.8	45.3	53.5	8.9	24.9	36.2	9.6	25.6	35.3
Actuated g/C Ratio	0.09	0.42		0.10	0.43	0.51	0.08	0.24	0.34	0.09	0.24	0.34
Clearance Time (s)	4.4	5.1		4.4	5.0	4.4	4.4	4.9	4.4	4.4	4.9	4.4
Vehicle Extension (s)	2.0	3.5		2.0	3.7	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lane Grp Cap (vph)	300	2074		353	2193	786	150	839	583	313	862	522
v/s Ratio Prot	0.07	c0.35		0.11	c0.38	0.03	c0.07	c0.10	0.03	c0.07	0.09	0.02
v/s Ratio Perm						0.13			0.07			0.05
v/c Ratio	0.80	0.85		1.05	0.89	0.32	0.87	0.43	0.26	0.80	0.35	0.22
Uniform Delay, d1	47.0	27.7		47.1	27.6	15.1	47.5	34.0	24.7	46.8	32.8	25.0
Progression Factor	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	12.8	4.6		61.1	6.1	0.1	36.3	0.1	0.1	12.4	0.1	0.1
Delay (s)	59.8	32.2		108.2	33.6	15.2	83.8	34.1	24.8	59.2	32.9	25.1
Level of Service	E	C		F	C	B	F	C	C	E	C	C
Approach Delay (s)		35.5			41.8			40.2			39.6	
Approach LOS		D			D			D			D	

Intersection Summary			
HCM 2000 Control Delay	39.3	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.80		
Actuated Cycle Length (s)	105.0	Sum of lost time (s)	16.4
Intersection Capacity Utilization	81.4%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	120	30	600	90	140	680
Future Volume (vph)	120	30	600	90	140	680
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.5		4.5		4.5	4.5
Lane Util. Factor	1.00		0.95		1.00	0.95
Frt	0.97		0.98		1.00	1.00
Flt Protected	0.96		1.00		0.95	1.00
Satd. Flow (prot)	1742		3470		1770	3539
Flt Permitted	0.96		1.00		0.95	1.00
Satd. Flow (perm)	1742		3470		1770	3539
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	130	33	652	98	152	739
RTOR Reduction (vph)	16	0	14	0	0	0
Lane Group Flow (vph)	147	0	736	0	152	739
Turn Type	Prot		NA		Prot	NA
Protected Phases	8		2		1	6
Permitted Phases						
Actuated Green, G (s)	8.9		30.4		8.6	43.5
Effective Green, g (s)	8.9		30.4		8.6	43.5
Actuated g/C Ratio	0.14		0.50		0.14	0.71
Clearance Time (s)	4.5		4.5		4.5	4.5
Vehicle Extension (s)	3.0		3.0		3.0	3.0
Lane Grp Cap (vph)	252		1718		247	2507
v/s Ratio Prot	c0.08		c0.21		c0.09	0.21
v/s Ratio Perm						
v/c Ratio	0.58		0.43		0.62	0.29
Uniform Delay, d1	24.5		9.9		24.8	3.3
Progression Factor	1.00		1.00		1.00	1.00
Incremental Delay, d2	3.4		0.8		4.5	0.3
Delay (s)	27.9		10.7		29.3	3.6
Level of Service	C		B		C	A
Approach Delay (s)	27.9		10.7			8.0
Approach LOS	C		B			A

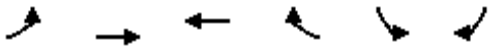
Intersection Summary			
HCM 2000 Control Delay	10.9	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.49		
Actuated Cycle Length (s)	61.4	Sum of lost time (s)	13.5
Intersection Capacity Utilization	46.9%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	0	180	560	100	0	580
Future Volume (Veh/h)	0	180	560	100	0	580
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	196	609	109	0	630
Pedestrians	2					3
Lane Width (ft)	12.0					12.0
Walking Speed (ft/s)	4.0					4.0
Percent Blockage	0					0
Right turn flare (veh)						
Median type			None			None
Median storage veh)						
Upstream signal (ft)			215			491
pX, platoon unblocked	0.86					
vC, conflicting volume	980	364			720	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	658	364			720	
tC, single (s)	6.8	6.9			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	100	69			100	
cM capacity (veh/h)	342	630			876	

Direction, Lane #	WB 1	NB 1	NB 2	SB 1	SB 2
Volume Total	196	406	312	315	315
Volume Left	0	0	0	0	0
Volume Right	196	0	109	0	0
cSH	630	1700	1700	1700	1700
Volume to Capacity	0.31	0.24	0.18	0.19	0.19
Queue Length 95th (ft)	33	0	0	0	0
Control Delay (s)	13.3	0.0	0.0	0.0	0.0
Lane LOS	B				
Approach Delay (s)	13.3	0.0		0.0	
Approach LOS	B				

Intersection Summary			
Average Delay	1.7		
Intersection Capacity Utilization	37.0%	ICU Level of Service	A
Analysis Period (min)	15		

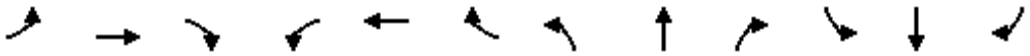


Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	0	820	1290	660	420	160
Future Volume (vph)	0	820	1290	660	420	160
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.4	5.4	5.9	5.2	5.2
Lane Util. Factor		0.95	0.95	0.88	0.97	1.00
Frpb, ped/bikes		1.00	1.00	1.00	1.00	1.00
Flpb, ped/bikes		1.00	1.00	1.00	1.00	1.00
Frt		1.00	1.00	0.85	1.00	0.85
Flt Protected		1.00	1.00	1.00	0.95	1.00
Satd. Flow (prot)		3539	3539	2787	3433	1583
Flt Permitted		1.00	1.00	1.00	0.95	1.00
Satd. Flow (perm)		3539	3539	2787	3433	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	891	1402	717	457	174
RTOR Reduction (vph)	0	0	0	289	0	139
Lane Group Flow (vph)	0	891	1402	428	457	35
Confl. Peds. (#/hr)				8	8	
Turn Type		NA	NA	custom	Prot	Perm
Protected Phases		2	2	8	1	
Permitted Phases						1
Actuated Green, G (s)		31.9	31.9	27.3	12.1	12.1
Effective Green, g (s)		31.9	31.9	26.8	12.1	12.1
Actuated g/C Ratio		0.52	0.52	0.44	0.20	0.20
Clearance Time (s)		5.4	5.4	5.4	5.2	5.2
Vehicle Extension (s)		2.9	2.9	3.0	2.5	2.5
Lane Grp Cap (vph)		1856	1856	1228	683	315
v/s Ratio Prot		0.25	c0.40	0.15	c0.13	
v/s Ratio Perm						0.02
v/c Ratio		0.48	0.76	0.35	0.67	0.11
Uniform Delay, d1		9.2	11.4	11.2	22.5	19.9
Progression Factor		1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2		0.2	1.8	0.2	2.2	0.1
Delay (s)		9.4	13.2	11.4	24.7	20.1
Level of Service		A	B	B	C	C
Approach Delay (s)		9.4	12.6		23.5	
Approach LOS		A	B		C	

Intersection Summary			
HCM 2000 Control Delay	13.7	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.74		
Actuated Cycle Length (s)	60.8	Sum of lost time (s)	17.1
Intersection Capacity Utilization	56.5%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

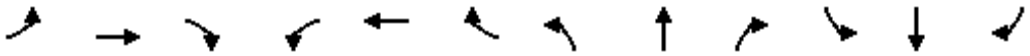
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	30	50	420	80	130	670
Future Volume (vph)	30	50	420	80	130	670
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.9	4.0	4.9		4.4	4.9
Lane Util. Factor	1.00	1.00	0.91		1.00	0.91
Frpb, ped/bikes	1.00	0.98	1.00		1.00	1.00
Flpb, ped/bikes	1.00	1.00	1.00		1.00	1.00
Frt	1.00	0.85	0.98		1.00	1.00
Flt Protected	0.95	1.00	1.00		0.95	1.00
Satd. Flow (prot)	1770	1550	4946		1770	5085
Flt Permitted	0.95	1.00	1.00		0.95	1.00
Satd. Flow (perm)	1770	1550	4946		1770	5085
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	33	54	457	87	141	728
RTOR Reduction (vph)	0	48	13	0	0	0
Lane Group Flow (vph)	33	6	531	0	141	728
Confl. Peds. (#/hr)	4	11		9	9	
Turn Type	Prot	Perm	NA		Prot	NA
Protected Phases	4		6		5	2
Permitted Phases		4				
Actuated Green, G (s)	11.9	11.9	70.8		13.1	88.3
Effective Green, g (s)	11.9	12.8	70.8		13.1	88.3
Actuated g/C Ratio	0.11	0.12	0.64		0.12	0.80
Clearance Time (s)	4.9	4.9	4.9		4.4	4.9
Vehicle Extension (s)	2.0	2.0	5.0		2.0	3.2
Lane Grp Cap (vph)	191	180	3183		210	4081
v/s Ratio Prot	c0.02		0.11		c0.08	c0.14
v/s Ratio Perm		0.00				
v/c Ratio	0.17	0.03	0.17		0.67	0.18
Uniform Delay, d1	44.6	43.1	7.8		46.4	2.5
Progression Factor	1.00	1.00	2.09		1.00	1.00
Incremental Delay, d2	0.2	0.0	0.1		6.5	0.1
Delay (s)	44.7	43.1	16.5		52.9	2.6
Level of Service	D	D	B		D	A
Approach Delay (s)	43.8		16.5			10.8
Approach LOS	D		B			B

Intersection Summary			
HCM 2000 Control Delay	14.7	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.25		
Actuated Cycle Length (s)	110.0	Sum of lost time (s)	14.2
Intersection Capacity Utilization	56.6%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	80	50	110	160	140	130	200	410	100	80	540	130
Future Volume (vph)	80	50	110	160	140	130	200	410	100	80	540	130
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.5	4.0	
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	0.91		0.97	0.95	
Frpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	0.96		1.00	1.00	
Flpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Frt	1.00	0.90		1.00	0.93		1.00	0.97		1.00	0.97	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1770	1670		1770	1728		1770	4760		3433	3436	
Flt Permitted	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (perm)	1770	1670		1770	1728		1770	4760		3433	3436	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	87	54	120	174	152	141	217	446	109	87	587	141
RTOR Reduction (vph)	0	87	0	0	29	0	0	34	0	0	17	0
Lane Group Flow (vph)	87	87	0	174	264	0	217	521	0	87	711	0
Confl. Peds. (#/hr)									120			
Turn Type	Split	NA		Split	NA		Prot	NA		Prot	NA	
Protected Phases	7	7		8	8		1	6		5	2	
Permitted Phases												
Actuated Green, G (s)	14.0	14.0		18.9	18.9		16.8	33.0		24.5	41.2	
Effective Green, g (s)	14.9	14.9		19.8	19.8		17.2	33.9		24.9	42.1	
Actuated g/C Ratio	0.14	0.14		0.18	0.18		0.16	0.31		0.23	0.38	
Clearance Time (s)	4.9	4.9		4.9	4.9		4.4	4.9		4.9	4.9	
Vehicle Extension (s)	3.0	3.0		2.0	2.0		2.0	3.9		3.9	3.9	
Lane Grp Cap (vph)	239	226		318	311		276	1466		777	1315	
v/s Ratio Prot	0.05	c0.05		0.10	c0.15		c0.12	0.11		0.03	c0.21	
v/s Ratio Perm												
v/c Ratio	0.36	0.38		0.55	0.85		0.79	0.36		0.11	0.54	
Uniform Delay, d1	43.2	43.4		41.0	43.7		44.6	29.6		33.8	26.4	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		0.94	0.95	
Incremental Delay, d2	0.9	1.1		1.0	18.3		12.7	0.7		0.1	1.6	
Delay (s)	44.2	44.4		42.1	62.0		57.3	30.2		31.9	26.8	
Level of Service	D	D		D	E		E	C		C	C	
Approach Delay (s)		44.4			54.6			37.9			27.4	
Approach LOS		D			D			D			C	

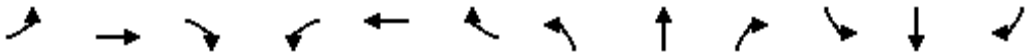
Intersection Summary			
HCM 2000 Control Delay	38.3	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.63		
Actuated Cycle Length (s)	110.0	Sum of lost time (s)	16.5
Intersection Capacity Utilization	64.6%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	40	20	20	90	20	50	30	620	90	130	640	80
Future Volume (vph)	40	20	20	90	20	50	30	620	90	130	640	80
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.9		4.9	4.9		4.4	4.9		4.9	4.9	
Lane Util. Factor		1.00		1.00	1.00		1.00	0.91		0.97	0.95	
Frpb, ped/bikes		1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Flpb, ped/bikes		1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Frt		0.97		1.00	0.89		1.00	0.98		1.00	0.98	
Flt Protected		0.98		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1749		1770	1664		1770	4972		3433	3467	
Flt Permitted		0.98		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (perm)		1749		1770	1664		1770	4972		3433	3467	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	43	22	22	98	22	54	33	674	98	141	696	87
RTOR Reduction (vph)	0	10	0	0	47	0	0	12	0	0	6	0
Lane Group Flow (vph)	0	77	0	98	29	0	33	760	0	141	777	0
Confl. Peds. (#/hr)			7	7			9		4	4		9
Turn Type	Split	NA		Split	NA		Prot	NA		Prot	NA	
Protected Phases	8	8		7	7		1	6		5	2	
Permitted Phases												
Actuated Green, G (s)		9.3		9.6	9.6		2.2	20.1		12.8	31.2	
Effective Green, g (s)		9.3		9.6	9.6		2.2	20.1		12.8	31.2	
Actuated g/C Ratio		0.13		0.13	0.13		0.03	0.28		0.18	0.44	
Clearance Time (s)		4.9		4.9	4.9		4.4	4.9		4.9	4.9	
Vehicle Extension (s)		2.0		2.0	2.0		2.0	2.0		2.0	2.0	
Lane Grp Cap (vph)		227		237	223		54	1399		615	1514	
v/s Ratio Prot		c0.04		c0.06	0.02		c0.02	0.15		0.04	c0.22	
v/s Ratio Perm												
v/c Ratio		0.34		0.41	0.13		0.61	0.54		0.23	0.51	
Uniform Delay, d1		28.2		28.3	27.2		34.2	21.8		25.1	14.6	
Progression Factor		1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2		0.3		0.4	0.1		13.5	0.2		0.1	0.1	
Delay (s)		28.6		28.7	27.3		47.7	22.0		25.1	14.7	
Level of Service		C		C	C		D	C		C	B	
Approach Delay (s)		28.6			28.1			23.0			16.3	
Approach LOS		C			C			C			B	

Intersection Summary			
HCM 2000 Control Delay	20.6	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.47		
Actuated Cycle Length (s)	71.4	Sum of lost time (s)	19.6
Intersection Capacity Utilization	50.7%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	30	10	20	30	10	50	60	660	50	40	720	40
Future Volume (vph)	30	10	20	30	10	50	60	660	50	40	720	40
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0	4.0		4.9	4.0	4.0	4.0		4.0	4.0	
Lane Util. Factor		1.00	1.00		1.00	1.00	1.00	0.91		1.00	0.91	
Frt		1.00	0.85		1.00	0.85	1.00	0.99		1.00	0.99	
Flt Protected		0.96	1.00		0.96	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1795	1583		1795	1583	1770	5032		1770	5046	
Flt Permitted		0.76	1.00		0.75	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (perm)		1414	1583		1399	1583	1770	5032		1770	5046	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	33	11	22	33	11	54	65	717	54	43	783	43
RTOR Reduction (vph)	0	0	19	0	0	47	0	10	0	0	8	0
Lane Group Flow (vph)	0	44	3	0	44	7	65	761	0	43	818	0
Turn Type	Perm	NA	Perm	Perm	NA	Perm	Prot	NA		Prot	NA	
Protected Phases		8			8		1	6		5	2	
Permitted Phases	8		8	8		8						
Actuated Green, G (s)		7.4	7.4		7.4	7.4	4.4	33.1		2.5	31.2	
Effective Green, g (s)		7.4	7.4		6.5	7.4	4.4	33.1		2.5	31.2	
Actuated g/C Ratio		0.13	0.13		0.12	0.13	0.08	0.60		0.05	0.57	
Clearance Time (s)		4.0	4.0		4.0	4.0	4.0	4.0		4.0	4.0	
Vehicle Extension (s)		3.0	3.0		3.0	3.0	3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)		190	212		165	212	141	3028		80	2862	
v/s Ratio Prot							c0.04	0.15		c0.02	c0.16	
v/s Ratio Perm		0.03	0.00		c0.03	0.00						
v/c Ratio		0.23	0.01		0.27	0.03	0.46	0.25		0.54	0.29	
Uniform Delay, d1		21.3	20.6		22.1	20.7	24.2	5.1		25.7	6.1	
Progression Factor		1.00	1.00		1.00	1.00	0.81	0.62		1.00	1.00	
Incremental Delay, d2		0.6	0.0		0.9	0.1	2.0	0.2		6.8	0.3	
Delay (s)		21.9	20.7		23.0	20.8	21.6	3.3		32.5	6.4	
Level of Service		C	C		C	C	C	A		C	A	
Approach Delay (s)		21.5			21.7			4.8			7.7	
Approach LOS		C			C			A			A	

Intersection Summary			
HCM 2000 Control Delay	7.6	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.31		
Actuated Cycle Length (s)	55.0	Sum of lost time (s)	12.9
Intersection Capacity Utilization	37.7%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

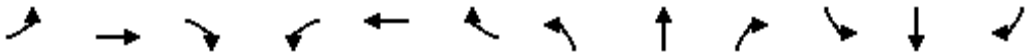
Movement	EBL	EBT	EBR	EBR2	WBT	WBR	NBR2	SBL2	SBL	SBT	SBR	NWL
Lane Configurations												
Traffic Volume (vph)	220	1350	150	180	2200	380	100	270	180	140	70	170
Future Volume (vph)	220	1350	150	180	2200	380	100	270	180	140	70	170
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	2.6	4.0		6.1	4.0	7.8	5.9	5.9	5.9	5.9	5.9	5.9
Lane Util. Factor	0.97	0.86		0.86	0.91	1.00	1.00	0.95	0.91	0.91	1.00	1.00
Frpb, ped/bikes	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.89	1.00
Flpb, ped/bikes	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.98		0.85	1.00	0.85	0.86	1.00	1.00	1.00	0.85	1.00
Flt Protected	0.95	1.00		1.00	1.00	1.00	1.00	0.95	0.95	0.98	1.00	0.95
Satd. Flow (prot)	3433	4726		1362	5085	1583	1611	1681	1610	1666	1402	1770
Flt Permitted	0.95	1.00		1.00	1.00	1.00	1.00	0.95	0.95	0.98	1.00	0.95
Satd. Flow (perm)	3433	4726		1362	5085	1583	1611	1681	1610	1666	1402	1770
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	239	1467	163	196	2391	413	109	293	196	152	76	185
RTOR Reduction (vph)	0	1	0	75	0	34	74	0	0	0	65	0
Lane Group Flow (vph)	239	1649	0	101	2391	379	35	179	228	234	11	185
Confl. Peds. (#/hr)								9			45	18
Confl. Bikes (#/hr)											10	
Turn Type	Prot	NA		Perm	NA	pm+ov	Perm	Split	Split	NA	Perm	Prot
Protected Phases	5	2			6	4		4	4	4		3
Permitted Phases				2		6	8				4	
Actuated Green, G (s)	8.0	62.9		62.9	51.1	67.3	35.1	16.2	16.2	16.2	16.2	13.0
Effective Green, g (s)	9.4	65.0		62.9	53.0	63.5	35.1	16.2	16.2	16.2	16.2	13.0
Actuated g/C Ratio	0.09	0.59		0.57	0.48	0.58	0.32	0.15	0.15	0.15	0.15	0.12
Clearance Time (s)	4.0	6.1		6.1	5.9	5.9	5.9	5.9	5.9	5.9	5.9	5.9
Vehicle Extension (s)	3.0	2.8		2.8	3.2	2.9	4.1	2.9	2.9	2.9	2.9	2.9
Lane Grp Cap (vph)	293	2792		778	2450	913	514	247	237	245	206	209
v/s Ratio Prot	c0.07	0.35			c0.47	0.05		0.11	c0.14	0.14		c0.10
v/s Ratio Perm				0.07		0.19	0.02				0.01	
v/c Ratio	0.82	0.59		0.13	0.98	0.42	0.07	0.72	0.96	0.96	0.05	0.89
Uniform Delay, d1	49.4	14.1		10.9	27.9	12.9	26.1	44.8	46.6	46.5	40.3	47.8
Progression Factor	1.00	1.00		1.00	1.00	1.00	1.00	0.86	0.87	0.87	5.54	1.00
Incremental Delay, d2	15.9	0.9		0.3	13.3	0.3	0.1	9.8	47.1	44.3	0.1	32.8
Delay (s)	65.3	15.1		11.2	41.2	13.2	26.1	48.2	87.7	84.8	223.5	80.6
Level of Service	E	B		B	D	B	C	D	F	F	F	F
Approach Delay (s)		20.6			37.1					91.3		61.3
Approach LOS		C			D					F		E

Intersection Summary			
HCM 2000 Control Delay	39.3	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.96		
Actuated Cycle Length (s)	110.0	Sum of lost time (s)	20.3
Intersection Capacity Utilization	85.5%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group

Movement	NWR	NWR2
Lane Configurations		
Traffic Volume (vph)	170	30
Future Volume (vph)	170	30
Ideal Flow (vphpl)	1900	1900
Total Lost time (s)	5.9	
Lane Util. Factor	0.88	
Frpb, ped/bikes	1.00	
Flpb, ped/bikes	1.00	
Frt	0.85	
Flt Protected	1.00	
Satd. Flow (prot)	2787	
Flt Permitted	1.00	
Satd. Flow (perm)	2787	
Peak-hour factor, PHF	0.92	0.92
Adj. Flow (vph)	185	33
RTOR Reduction (vph)	114	0
Lane Group Flow (vph)	104	0
Confl. Peds. (#/hr)		9
Confl. Bikes (#/hr)		1
Turn Type	Prot	
Protected Phases	3	
Permitted Phases		
Actuated Green, G (s)	13.0	
Effective Green, g (s)	13.0	
Actuated g/C Ratio	0.12	
Clearance Time (s)	5.9	
Vehicle Extension (s)	2.9	
Lane Grp Cap (vph)	329	
v/s Ratio Prot	0.04	
v/s Ratio Perm		
v/c Ratio	0.32	
Uniform Delay, d1	44.4	
Progression Factor	1.00	
Incremental Delay, d2	0.5	
Delay (s)	45.0	
Level of Service	D	
Approach Delay (s)		
Approach LOS		

Intersection Summary



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	50	130	100	90	140	80	70	50	110	30	80	90
Future Volume (vph)	50	130	100	90	140	80	70	50	110	30	80	90
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.5			4.5			4.5			4.0	
Lane Util. Factor		1.00			1.00			1.00			1.00	
Frt		0.95			0.97			0.94			0.94	
Flt Protected		0.99			0.99			0.99			0.99	
Satd. Flow (prot)		1757			1772			1716			1737	
Flt Permitted		0.90			0.79			0.86			0.94	
Satd. Flow (perm)		1587			1426			1500			1645	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	54	141	109	98	152	87	76	54	120	33	87	98
RTOR Reduction (vph)	0	40	0	0	24	0	0	41	0	0	36	0
Lane Group Flow (vph)	0	264	0	0	313	0	0	209	0	0	182	0
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)		15.7			15.7			26.8			27.3	
Effective Green, g (s)		15.7			15.7			26.8			27.3	
Actuated g/C Ratio		0.30			0.30			0.52			0.53	
Clearance Time (s)		4.5			4.5			4.5			4.0	
Vehicle Extension (s)		3.0			3.0			3.0			3.0	
Lane Grp Cap (vph)		483			434			780			872	
v/s Ratio Prot												
v/s Ratio Perm		0.17			c0.22			c0.14			0.11	
v/c Ratio		0.55			0.72			0.27			0.21	
Uniform Delay, d1		14.9			15.9			6.9			6.4	
Progression Factor		1.00			1.00			1.00			1.00	
Incremental Delay, d2		1.3			5.8			0.8			0.1	
Delay (s)		16.2			21.7			7.7			6.5	
Level of Service		B			C			A			A	
Approach Delay (s)		16.2			21.7			7.7			6.5	
Approach LOS		B			C			A			A	

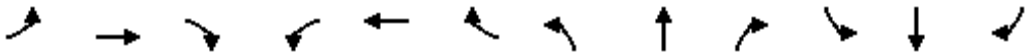
Intersection Summary			
HCM 2000 Control Delay	14.1	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.43		
Actuated Cycle Length (s)	51.5	Sum of lost time (s)	9.0
Intersection Capacity Utilization	59.8%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

Movement	NBL	NBT	SBT	SBR	SEL	SER
Lane Configurations						
Traffic Volume (vph)	300	610	600	130	200	190
Future Volume (vph)	300	610	600	130	200	190
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0		4.0	4.0
Lane Util. Factor	1.00	0.91	0.91		1.00	1.00
Frt	1.00	1.00	0.97		1.00	0.85
Flt Protected	0.95	1.00	1.00		0.95	1.00
Satd. Flow (prot)	1770	5085	4950		1770	1583
Flt Permitted	0.95	1.00	1.00		0.95	1.00
Satd. Flow (perm)	1770	5085	4950		1770	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	326	663	652	141	217	207
RTOR Reduction (vph)	0	0	19	0	0	172
Lane Group Flow (vph)	326	663	774	0	217	35
Turn Type	Prot	NA	NA		Prot	Perm
Protected Phases	7	4	8		5	
Permitted Phases						5
Actuated Green, G (s)	27.5	91.7	60.2		20.3	20.3
Effective Green, g (s)	27.5	91.7	60.2		20.3	20.3
Actuated g/C Ratio	0.23	0.76	0.50		0.17	0.17
Clearance Time (s)	4.0	4.0	4.0		4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0		3.0	3.0
Lane Grp Cap (vph)	405	3885	2483		299	267
v/s Ratio Prot	c0.18	0.13	c0.16		c0.12	
v/s Ratio Perm						0.02
v/c Ratio	0.80	0.17	0.31		0.73	0.13
Uniform Delay, d1	43.7	3.8	17.7		47.2	42.4
Progression Factor	1.14	0.17	1.00		1.00	1.00
Incremental Delay, d2	10.9	0.1	0.3		8.5	0.2
Delay (s)	60.8	0.7	17.9		55.7	42.6
Level of Service	E	A	B		E	D
Approach Delay (s)		20.5	17.9		49.3	
Approach LOS		C	B		D	

Intersection Summary			
HCM 2000 Control Delay	25.1	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.51		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	52.2%	ICU Level of Service	A
Analysis Period (min)	15		

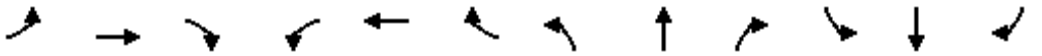
c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	30	0	100	460	390	100	0	0	0	0	70	10
Future Volume (vph)	30	0	100	460	390	100	0	0	0	0	70	10
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0		4.0	4.0	4.0						4.0	
Lane Util. Factor	1.00		1.00	1.00	1.00						1.00	
Frt	1.00		0.85	1.00	0.97						0.98	
Flt Protected	0.95		1.00	0.95	1.00						1.00	
Satd. Flow (prot)	1770		1583	1770	1806						1831	
Flt Permitted	0.53		1.00	0.95	1.00						1.00	
Satd. Flow (perm)	993		1583	1770	1806						1831	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	33	0	109	500	424	109	0	0	0	0	76	11
RTOR Reduction (vph)	0	0	92	292	12	0	0	0	0	0	9	0
Lane Group Flow (vph)	33	0	17	208	521	0	0	0	0	0	78	0
Turn Type	Perm		Perm	Split	NA						NA	
Protected Phases				8	8						6	
Permitted Phases	4		4									
Actuated Green, G (s)	7.5		7.5	19.5	19.5						7.9	
Effective Green, g (s)	7.5		7.5	19.5	19.5						7.9	
Actuated g/C Ratio	0.16		0.16	0.42	0.42						0.17	
Clearance Time (s)	4.0		4.0	4.0	4.0						4.0	
Vehicle Extension (s)	3.0		3.0	3.0	3.0						3.0	
Lane Grp Cap (vph)	158		253	735	750						308	
v/s Ratio Prot				0.12	c0.29						c0.04	
v/s Ratio Perm	c0.03		0.01									
v/c Ratio	0.21		0.07	0.28	0.69						0.25	
Uniform Delay, d1	17.1		16.7	9.1	11.3						16.9	
Progression Factor	1.00		1.00	1.00	1.00						1.00	
Incremental Delay, d2	0.7		0.1	0.2	2.8						0.4	
Delay (s)	17.8		16.8	9.3	14.1						17.4	
Level of Service	B		B	A	B						B	
Approach Delay (s)		17.1			11.7			0.0			17.4	
Approach LOS		B			B			A			B	

Intersection Summary			
HCM 2000 Control Delay	12.7	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.49		
Actuated Cycle Length (s)	46.9	Sum of lost time (s)	12.0
Intersection Capacity Utilization	46.0%	ICU Level of Service	A
Analysis Period (min)	15		

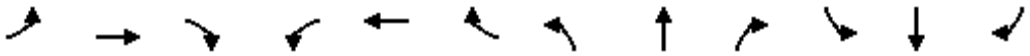
c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	1640	10	410	2430	0	0	0	0	390	300	150
Future Volume (vph)	0	1640	10	410	2430	0	0	0	0	390	300	150
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0		4.0	4.0					4.0	4.0	4.0
Lane Util. Factor		0.91		1.00	0.86					0.95	0.95	1.00
Frt		1.00		1.00	1.00					1.00	1.00	0.85
Flt Protected		1.00		0.95	1.00					0.95	0.99	1.00
Satd. Flow (prot)		5081		1770	6408					1681	1754	1583
Flt Permitted		1.00		0.95	1.00					0.95	0.99	1.00
Satd. Flow (perm)		5081		1770	6408					1681	1754	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	1783	11	446	2641	0	0	0	0	424	326	163
RTOR Reduction (vph)	0	1	0	0	0	0	0	0	0	0	0	39
Lane Group Flow (vph)	0	1793	0	446	2641	0	0	0	0	352	398	124
Turn Type		NA		Prot	NA					Perm	NA	Perm
Protected Phases		2		1	6						4	
Permitted Phases										4		4
Actuated Green, G (s)		52.0		33.2	89.9					35.3	35.3	35.3
Effective Green, g (s)		53.2		33.6	90.8					36.2	36.2	36.2
Actuated g/C Ratio		0.39		0.25	0.67					0.27	0.27	0.27
Clearance Time (s)		5.2		4.4	4.9					4.9	4.9	4.9
Vehicle Extension (s)		3.8		2.0	4.6					2.0	2.0	2.0
Lane Grp Cap (vph)		2002		440	4309					450	470	424
v/s Ratio Prot		c0.35		c0.25	0.41							
v/s Ratio Perm										0.21	0.23	0.08
v/c Ratio		0.90		1.01	0.61					0.78	0.85	0.29
Uniform Delay, d1		38.3		50.7	12.3					45.7	46.8	39.2
Progression Factor		1.00		1.09	0.08					1.00	1.00	1.00
Incremental Delay, d2		6.8		16.4	0.1					8.0	12.7	0.1
Delay (s)		45.1		71.8	1.0					53.7	59.5	39.4
Level of Service		D		E	A					D	E	D
Approach Delay (s)		45.1			11.2			0.0			53.7	
Approach LOS		D			B			A			D	

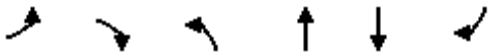
Intersection Summary			
HCM 2000 Control Delay	28.4	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.91		
Actuated Cycle Length (s)	135.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	83.8%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group



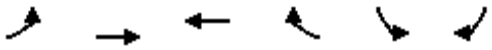
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	330	100	160	240	0	120	0	160	160	230	10
Future Volume (vph)	0	330	100	160	240	0	120	0	160	160	230	10
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0		4.0	4.0		4.0		4.0	4.0	4.0	
Lane Util. Factor		0.95		1.00	0.95		1.00		1.00	1.00	1.00	
Frpb, ped/bikes		0.97		1.00	1.00		1.00		0.98	1.00	1.00	
Flpb, ped/bikes		1.00		0.99	1.00		1.00		1.00	1.00	1.00	
Frt		0.97		1.00	1.00		1.00		0.85	1.00	0.99	
Flt Protected		1.00		0.95	1.00		0.95		1.00	0.95	1.00	
Satd. Flow (prot)		3329		1749	3539		1770		1548	1770	1850	
Flt Permitted		1.00		0.41	1.00		0.95		1.00	0.95	1.00	
Satd. Flow (perm)		3329		748	3539		1770		1548	1770	1850	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	359	109	174	261	0	130	0	174	174	250	11
RTOR Reduction (vph)	0	15	0	0	0	0	0	0	90	0	2	0
Lane Group Flow (vph)	0	453	0	174	261	0	130	0	84	174	259	0
Confl. Peds. (#/hr)			21	21		47	2		4			2
Turn Type		NA		pm+pt	NA		Prot		Perm	Split	NA	
Protected Phases		2		1	6		3			4	4	
Permitted Phases				6					2			
Actuated Green, G (s)		62.1		77.1	77.1		14.9		62.1	23.8	23.8	
Effective Green, g (s)		63.0		77.5	78.0		15.3		63.0	24.7	24.7	
Actuated g/C Ratio		0.48		0.60	0.60		0.12		0.48	0.19	0.19	
Clearance Time (s)		4.9		4.4	4.9		4.4		4.9	4.9	4.9	
Vehicle Extension (s)		6.7		2.0	6.7		3.0		6.7	3.0	3.0	
Lane Grp Cap (vph)		1613		530	2123		208		750	336	351	
v/s Ratio Prot		0.14		c0.03	0.07		c0.07			0.10	c0.14	
v/s Ratio Perm				c0.17					0.05			
v/c Ratio		0.28		0.33	0.12		0.62		0.11	0.52	0.74	
Uniform Delay, d1		20.0		12.3	11.2		54.6		18.3	47.3	49.6	
Progression Factor		1.00		1.00	1.00		1.00		1.00	1.00	1.00	
Incremental Delay, d2		0.4		0.1	0.1		5.7		0.3	1.3	7.9	
Delay (s)		20.4		12.4	11.3		60.4		18.6	48.7	57.5	
Level of Service		C		B	B		E		B	D	E	
Approach Delay (s)		20.4			11.8			36.4			54.0	
Approach LOS		C			B			D			D	

Intersection Summary			
HCM 2000 Control Delay	30.0	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.46		
Actuated Cycle Length (s)	130.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	54.7%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	100	240	350	460	490	150
Future Volume (vph)	100	240	350	460	490	150
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0		4.4	4.0	4.9	
Lane Util. Factor	1.00		1.00	0.91	0.91	
Frpb, ped/bikes	0.99		1.00	1.00	1.00	
Flpb, ped/bikes	1.00		1.00	1.00	1.00	
Frt	0.90		1.00	1.00	0.96	
Flt Protected	0.99		0.95	1.00	1.00	
Satd. Flow (prot)	1642		1770	5085	4907	
Flt Permitted	0.99		0.95	1.00	1.00	
Satd. Flow (perm)	1642		1770	5085	4907	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	109	261	380	500	533	163
RTOR Reduction (vph)	78	0	0	0	33	0
Lane Group Flow (vph)	292	0	380	500	663	0
Confl. Peds. (#/hr)		2				
Turn Type	Prot		Prot	NA	NA	
Protected Phases	2		3	8	4	
Permitted Phases						
Actuated Green, G (s)	25.5		32.2	86.5	50.3	
Effective Green, g (s)	25.5		31.8	86.5	49.4	
Actuated g/C Ratio	0.21		0.27	0.72	0.41	
Clearance Time (s)	4.0		4.0	4.0	4.0	
Vehicle Extension (s)	3.0		3.0	3.0	3.0	
Lane Grp Cap (vph)	348		469	3665	2020	
v/s Ratio Prot	c0.18		c0.21	0.10	c0.14	
v/s Ratio Perm						
v/c Ratio	0.84		0.81	0.14	0.33	
Uniform Delay, d1	45.3		41.3	5.2	24.0	
Progression Factor	1.00		1.01	1.44	1.00	
Incremental Delay, d2	16.1		10.1	0.1	0.4	
Delay (s)	61.4		51.7	7.5	24.4	
Level of Service	E		D	A	C	
Approach Delay (s)	61.4			26.6	24.4	
Approach LOS	E			C	C	

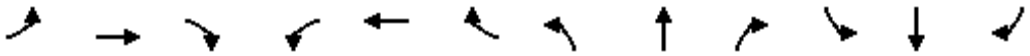
Intersection Summary			
HCM 2000 Control Delay	32.4	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.59		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	13.3
Intersection Capacity Utilization	63.4%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	50	140	80	40	30	40
Future Volume (Veh/h)	50	140	80	40	30	40
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	54	152	87	43	33	43
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type		None	None			
Median storage veh)						
Upstream signal (ft)		1157	644			
pX, platoon unblocked						
vC, conflicting volume	130				368	108
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	130				368	108
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	96				95	95
cM capacity (veh/h)	1455				608	945

Direction, Lane #	EB 1	EB 2	WB 1	SB 1
Volume Total	54	152	130	76
Volume Left	54	0	0	33
Volume Right	0	0	43	43
cSH	1455	1700	1700	762
Volume to Capacity	0.04	0.09	0.08	0.10
Queue Length 95th (ft)	3	0	0	8
Control Delay (s)	7.6	0.0	0.0	10.2
Lane LOS	A			B
Approach Delay (s)	2.0		0.0	10.2
Approach LOS				B

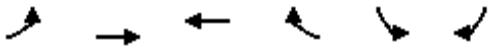
Intersection Summary			
Average Delay	2.9		
Intersection Capacity Utilization	20.2%	ICU Level of Service	A
Analysis Period (min)	15		



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	60	1970	0	0	2760	600	80	410	110	0	0	0
Future Volume (vph)	60	1970	0	0	2760	600	80	410	110	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0			4.0	4.0		4.0				
Lane Util. Factor	1.00	0.91			0.91	1.00		0.95				
Frt	1.00	1.00			1.00	0.85		0.97				
Flt Protected	0.95	1.00			1.00	1.00		0.99				
Satd. Flow (prot)	1770	5085			5085	1583		3419				
Flt Permitted	0.95	1.00			1.00	1.00		0.99				
Satd. Flow (perm)	1770	5085			5085	1583		3419				
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	65	2141	0	0	3000	652	87	446	120	0	0	0
RTOR Reduction (vph)	0	0	0	0	0	116	0	6	0	0	0	0
Lane Group Flow (vph)	65	2141	0	0	3000	536	0	647	0	0	0	0
Turn Type	Prot	NA			NA	Perm	Split	NA				
Protected Phases	5	2			6		4	4				
Permitted Phases						6						
Actuated Green, G (s)	10.9	88.4			73.1	73.1		36.8				
Effective Green, g (s)	11.3	89.3			74.0	74.0		37.7				
Actuated g/C Ratio	0.08	0.66			0.55	0.55		0.28				
Clearance Time (s)	4.4	4.9			4.9	4.9		4.9				
Vehicle Extension (s)	2.0	3.8			4.6	4.6		2.0				
Lane Grp Cap (vph)	148	3363			2787	867		954				
v/s Ratio Prot	0.04	c0.42			c0.59			c0.19				
v/s Ratio Perm						0.34						
v/c Ratio	0.44	0.64			1.08	0.62		0.68				
Uniform Delay, d1	58.8	13.4			30.5	20.8		43.2				
Progression Factor	0.80	0.88			1.00	1.00		1.00				
Incremental Delay, d2	0.4	0.5			41.9	3.3		1.5				
Delay (s)	47.4	12.3			72.4	24.1		44.8				
Level of Service	D	B			E	C		D				
Approach Delay (s)		13.3			63.8			44.8			0.0	
Approach LOS		B			E			D			A	

Intersection Summary			
HCM 2000 Control Delay	44.8	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.93		
Actuated Cycle Length (s)	135.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	83.8%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	10	640	400	340	0	0
Future Volume (Veh/h)	10	640	400	340	0	0
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	11	696	435	370	0	0
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type		None	None			
Median storage veh)						
Upstream signal (ft)		480	811			
pX, platoon unblocked	0.93				0.96	0.93
vC, conflicting volume	805				990	402
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	640				645	208
tC, single (s)	4.1				6.8	6.9
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	99				100	100
cM capacity (veh/h)	874				382	743

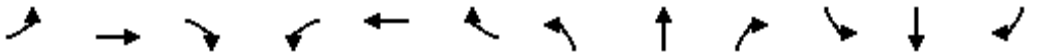
Direction, Lane #	EB 1	EB 2	EB 3	WB 1	WB 2
Volume Total	11	348	348	290	515
Volume Left	11	0	0	0	0
Volume Right	0	0	0	0	370
cSH	874	1700	1700	1700	1700
Volume to Capacity	0.01	0.20	0.20	0.17	0.30
Queue Length 95th (ft)	1	0	0	0	0
Control Delay (s)	9.2	0.0	0.0	0.0	0.0
Lane LOS	A				
Approach Delay (s)	0.1			0.0	
Approach LOS					

Intersection Summary			
Average Delay	0.1		
Intersection Capacity Utilization	25.3%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Sign Control	Stop		Stop			Stop
Traffic Volume (vph)	170	0	0	130	300	570
Future Volume (vph)	170	0	0	130	300	570
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	185	0	0	141	326	620

Direction, Lane #	WB 1	NB 1	SB 1	SB 2
Volume Total (vph)	185	141	326	620
Volume Left (vph)	185	0	326	0
Volume Right (vph)	0	141	0	0
Hadj (s)	0.23	-0.57	0.53	0.03
Departure Headway (s)	6.2	5.0	5.8	5.3
Degree Utilization, x	0.32	0.19	0.53	0.91
Capacity (veh/h)	567	702	611	675
Control Delay (s)	12.0	9.1	13.8	38.0
Approach Delay (s)	12.0	9.1	29.7	
Approach LOS	B	A	D	

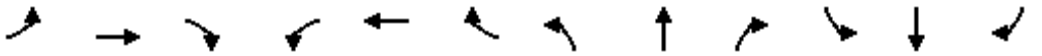
Intersection Summary			
Delay	24.8		
Level of Service	C		
Intersection Capacity Utilization	46.5%	ICU Level of Service	A
Analysis Period (min)	15		



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Traffic Volume (vph)	100	20	50	40	20	10	20	30	20	20	230	490
Future Volume (vph)	100	20	50	40	20	10	20	30	20	20	230	490
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	109	22	54	43	22	11	22	33	22	22	250	533

Direction, Lane #	EB 1	EB 2	WB 1	NB 1	SB 1	SB 2
Volume Total (vph)	120	65	76	77	272	533
Volume Left (vph)	109	0	43	22	22	0
Volume Right (vph)	0	54	11	22	0	533
Hadj (s)	0.49	-0.55	0.06	-0.08	0.07	-0.67
Departure Headway (s)	7.1	6.1	6.7	6.1	5.5	4.8
Degree Utilization, x	0.24	0.11	0.14	0.13	0.42	0.71
Capacity (veh/h)	473	547	493	553	632	729
Control Delay (s)	11.1	8.6	10.9	10.1	11.3	17.5
Approach Delay (s)	10.2		10.9	10.1	15.4	
Approach LOS	B		B	B	C	

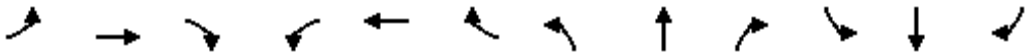
Intersection Summary				
Delay	13.9			
Level of Service	B			
Intersection Capacity Utilization	48.1%	ICU Level of Service	A	
Analysis Period (min)	15			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	340	190	550	530	0	0	0	0	290	360	410
Future Volume (vph)	0	340	190	550	530	0	0	0	0	290	360	410
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0	4.0	4.0	4.0					4.0	4.0	4.0
Lane Util. Factor		0.95	1.00	0.97	0.95					0.91	0.91	1.00
Frt		1.00	0.85	1.00	1.00					1.00	1.00	0.85
Flt Protected		1.00	1.00	0.95	1.00					0.95	0.99	1.00
Satd. Flow (prot)		3539	1583	3433	3539					1610	3357	1583
Flt Permitted		1.00	1.00	0.95	1.00					0.95	0.99	1.00
Satd. Flow (perm)		3539	1583	3433	3539					1610	3357	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	370	207	598	576	0	0	0	0	315	391	446
RTOR Reduction (vph)	0	0	90	0	0	0	0	0	0	0	0	222
Lane Group Flow (vph)	0	370	117	598	576	0	0	0	0	220	486	224
Turn Type		NA	Perm	Prot	NA					Perm	NA	Perm
Protected Phases		2		1	6						4	
Permitted Phases			2							4		4
Actuated Green, G (s)		30.0	30.0	16.3	50.7					19.5	19.5	19.5
Effective Green, g (s)		30.9	30.9	16.7	51.6					20.4	20.4	20.4
Actuated g/C Ratio		0.39	0.39	0.21	0.65					0.25	0.25	0.25
Clearance Time (s)		4.9	4.9	4.4	4.9					4.9	4.9	4.9
Vehicle Extension (s)		3.8	3.8	2.0	4.2					2.0	2.0	2.0
Lane Grp Cap (vph)		1366	611	716	2282					410	856	403
v/s Ratio Prot		c0.10		c0.17	0.16							
v/s Ratio Perm			0.07							0.14	0.14	0.14
v/c Ratio		0.27	0.19	0.84	0.25					0.54	0.57	0.56
Uniform Delay, d1		16.8	16.3	30.3	6.0					25.7	26.0	25.9
Progression Factor		1.00	1.00	1.00	1.00					1.00	1.00	1.00
Incremental Delay, d2		0.5	0.7	8.0	0.3					0.7	0.5	0.9
Delay (s)		17.3	17.0	38.3	6.3					26.4	26.5	26.8
Level of Service		B	B	D	A					C	C	C
Approach Delay (s)		17.2			22.6			0.0			26.6	
Approach LOS		B			C			A			C	

Intersection Summary			
HCM 2000 Control Delay	23.1	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.50		
Actuated Cycle Length (s)	80.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	49.7%	ICU Level of Service	A
Analysis Period (min)	15		

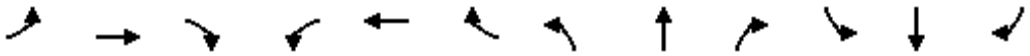
c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	0	40	40	0	0	0	0	0	0	1490	160
Future Volume (Veh/h)	0	0	40	40	0	0	0	0	0	0	1490	160
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	0	43	43	0	0	0	0	0	0	1620	174
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)								1066				
pX, platoon unblocked												
vC, conflicting volume	1707	1707	627	583	1794	0	1794			0		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	1707	1707	627	583	1794	0	1794			0		
tC, single (s)	7.5	6.5	6.9	7.5	6.5	6.9	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	100	100	90	88	100	100	100			100		
cM capacity (veh/h)	59	90	426	356	80	1084	341			1622		

Direction, Lane #	EB 1	WB 1	SB 1	SB 2	SB 3
Volume Total	43	43	648	648	498
Volume Left	0	43	0	0	0
Volume Right	43	0	0	0	174
cSH	426	356	1700	1700	1700
Volume to Capacity	0.10	0.12	0.38	0.38	0.29
Queue Length 95th (ft)	8	10	0	0	0
Control Delay (s)	14.4	16.5	0.0	0.0	0.0
Lane LOS	B	C			
Approach Delay (s)	14.4	16.5	0.0		
Approach LOS	B	C			

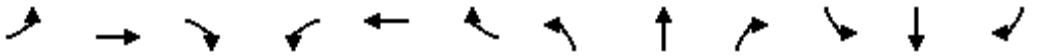
Intersection Summary				
Average Delay	0.7			
Intersection Capacity Utilization	50.9%	ICU Level of Service	A	
Analysis Period (min)	15			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	190	160	190	370	0	0	0	0	460	1270	360
Future Volume (vph)	0	190	160	190	370	0	0	0	0	460	1270	360
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0	4.0		4.0					4.0	4.0	
Lane Util. Factor		1.00	1.00		0.95					1.00	0.91	
Frt		1.00	0.85		1.00					1.00	0.97	
Flt Protected		1.00	1.00		0.98					0.95	1.00	
Satd. Flow (prot)		1863	1583		3480					1770	4917	
Flt Permitted		1.00	1.00		0.76					0.95	1.00	
Satd. Flow (perm)		1863	1583		2673					1770	4917	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	207	174	207	402	0	0	0	0	500	1380	391
RTOR Reduction (vph)	0	0	35	0	0	0	0	0	0	0	78	0
Lane Group Flow (vph)	0	207	139	0	609	0	0	0	0	500	1693	0
Turn Type		NA	Perm	Perm	NA					Perm	NA	
Protected Phases		4			8						6	
Permitted Phases			4	8						6		
Actuated Green, G (s)		21.3	21.3		21.3					30.7	30.7	
Effective Green, g (s)		24.0	24.0		24.0					33.0	33.0	
Actuated g/C Ratio		0.37	0.37		0.37					0.51	0.51	
Clearance Time (s)		6.7	6.7		6.7					6.3	6.3	
Vehicle Extension (s)		2.0	2.0		2.5					4.6	4.6	
Lane Grp Cap (vph)		687	584		986					898	2496	
v/s Ratio Prot		0.11									c0.34	
v/s Ratio Perm			0.09		c0.23					0.28		
v/c Ratio		0.30	0.24		0.62					0.56	0.68	
Uniform Delay, d1		14.5	14.2		16.8					11.0	12.0	
Progression Factor		1.00	1.00		1.00					1.00	1.00	
Incremental Delay, d2		1.1	1.0		2.9					2.5	1.5	
Delay (s)		15.7	15.1		19.7					13.5	13.5	
Level of Service		B	B		B					B	B	
Approach Delay (s)		15.4			19.7			0.0			13.5	
Approach LOS		B			B			A			B	

Intersection Summary			
HCM 2000 Control Delay	14.9	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.65		
Actuated Cycle Length (s)	65.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	68.3%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

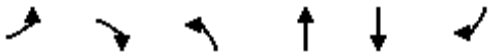


Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	710	90	40	500	0	0	0	0	540	330	520
Future Volume (vph)	0	710	90	40	500	0	0	0	0	540	330	520
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		6.7		4.0	6.7						6.3	4.0
Lane Util. Factor		0.95		1.00	0.95						0.86	0.86
Frt		0.98		1.00	1.00						1.00	0.85
Flt Protected		1.00		0.95	1.00						0.97	1.00
Satd. Flow (prot)		3479		1770	3539						4661	1362
Flt Permitted		1.00		0.95	1.00						0.97	1.00
Satd. Flow (perm)		3479		1770	3539						4661	1362
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	772	98	43	543	0	0	0	0	587	359	565
RTOR Reduction (vph)	0	14	0	0	0	0	0	0	0	0	0	124
Lane Group Flow (vph)	0	856	0	43	543	0	0	0	0	0	946	441
Turn Type		NA		Prot	NA					Perm	NA	Perm
Protected Phases		2		1	6						4	
Permitted Phases										4		4
Actuated Green, G (s)		22.5		2.8	28.0						25.0	25.0
Effective Green, g (s)		20.7		3.2	27.9						24.1	26.4
Actuated g/C Ratio		0.32		0.05	0.43						0.37	0.41
Clearance Time (s)		4.9		4.4	6.6						5.4	5.4
Vehicle Extension (s)		1.0		2.0	1.0						1.0	1.0
Lane Grp Cap (vph)		1107		87	1519						1728	553
v/s Ratio Prot		c0.25		0.02	c0.15							
v/s Ratio Perm											0.20	c0.32
v/c Ratio		0.77		0.49	0.36						0.94dl	0.80
Uniform Delay, d1		20.0		30.1	12.5						16.1	16.9
Progression Factor		1.00		1.34	0.84						1.00	1.00
Incremental Delay, d2		5.3		1.5	0.6						0.2	7.3
Delay (s)		25.3		42.0	11.1						16.3	24.3
Level of Service		C		D	B						B	C
Approach Delay (s)		25.3			13.3			0.0			19.3	
Approach LOS		C			B			A			B	

Intersection Summary			
HCM 2000 Control Delay	19.9	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.81		
Actuated Cycle Length (s)	65.0	Sum of lost time (s)	17.0
Intersection Capacity Utilization	80.8%	ICU Level of Service	D
Analysis Period (min)	15		

dl Defacto Left Lane. Recode with 1 though lane as a left lane.

c Critical Lane Group



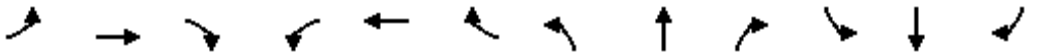
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	120	1120	1810	790	650	140
Future Volume (vph)	120	1120	1810	790	650	140
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	0.88	0.97	0.91	0.91	1.00
Frpb, ped/bikes	1.00	0.99	1.00	1.00	1.00	1.00
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected	0.95	1.00	0.95	1.00	1.00	1.00
Satd. Flow (prot)	1770	2766	3433	5085	5085	1583
Flt Permitted	0.95	1.00	0.95	1.00	1.00	1.00
Satd. Flow (perm)	1770	2766	3433	5085	5085	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	130	1217	1967	859	707	152
RTOR Reduction (vph)	0	19	0	0	0	1
Lane Group Flow (vph)	130	1198	1967	859	707	151
Confl. Peds. (#/hr)	129	61	34			
Turn Type	Prot	pm+ov	Prot	NA	NA	pm+ov
Protected Phases	5	7	7	4	8	5
Permitted Phases		5				8
Actuated Green, G (s)	14.1	76.0	61.9	97.9	32.0	46.1
Effective Green, g (s)	14.1	76.0	61.9	97.9	32.0	46.1
Actuated g/C Ratio	0.12	0.63	0.52	0.82	0.27	0.38
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	207	1844	1770	4148	1356	660
v/s Ratio Prot	0.07	c0.34	c0.57	0.17	c0.14	0.03
v/s Ratio Perm		0.10				0.07
v/c Ratio	0.63	0.65	1.11	0.21	0.52	0.23
Uniform Delay, d1	50.5	13.7	29.1	2.4	37.5	24.9
Progression Factor	1.00	1.00	0.41	0.57	0.78	0.90
Incremental Delay, d2	5.8	0.8	53.4	0.0	1.4	0.2
Delay (s)	56.3	14.5	65.3	1.4	30.6	22.6
Level of Service	E	B	E	A	C	C
Approach Delay (s)	18.5			45.9	29.2	
Approach LOS	B			D	C	

Intersection Summary			
HCM 2000 Control Delay	35.7	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.88		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	80.8%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	SEL	SET	SER	NWL	NWT	NWR
Lane Configurations												
Traffic Volume (vph)	100	290	0	0	620	320	60	0	60	260	20	180
Future Volume (vph)	100	290	0	0	620	320	60	0	60	260	20	180
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0			4.0	4.0		4.0		4.0	4.0	4.0
Lane Util. Factor	1.00	0.95			0.95	1.00		1.00		0.95	0.95	1.00
Frt	1.00	1.00			1.00	0.85		0.93		1.00	1.00	0.85
Flt Protected	0.95	1.00			1.00	1.00		0.98		0.95	0.96	1.00
Satd. Flow (prot)	1770	3539			3539	1583		1695		1681	1697	1583
Flt Permitted	0.95	1.00			1.00	1.00		0.76		0.50	0.54	1.00
Satd. Flow (perm)	1770	3539			3539	1583		1321		892	961	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	109	315	0	0	674	348	65	0	65	283	22	196
RTOR Reduction (vph)	0	0	0	0	0	233	0	118	0	0	0	150
Lane Group Flow (vph)	109	315	0	0	674	115	0	12	0	153	152	46
Turn Type	Prot	NA			NA	Perm	Perm	NA		Perm	NA	Perm
Protected Phases	5	2			6			8			7	
Permitted Phases						6	8			7		7
Actuated Green, G (s)	4.6	28.2			19.6	19.6		5.3		14.0	14.0	14.0
Effective Green, g (s)	4.6	28.2			19.6	19.6		5.3		14.0	14.0	14.0
Actuated g/C Ratio	0.08	0.47			0.33	0.33		0.09		0.24	0.24	0.24
Clearance Time (s)	4.0	4.0			4.0	4.0		4.0		4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0			3.0	3.0		3.0		3.0	3.0	3.0
Lane Grp Cap (vph)	136	1677			1165	521		117		209	226	372
v/s Ratio Prot	c0.06	0.09			c0.19							
v/s Ratio Perm						0.07		c0.01		c0.17	0.16	0.03
v/c Ratio	0.80	0.19			0.58	0.22		0.10		0.73	0.67	0.12
Uniform Delay, d1	27.0	9.0			16.5	14.4		24.9		21.0	20.7	17.9
Progression Factor	1.00	1.00			1.00	1.00		1.00		1.00	1.00	1.00
Incremental Delay, d2	27.7	0.2			2.1	1.0		0.4		12.4	7.7	0.2
Delay (s)	54.7	9.3			18.6	15.4		25.3		33.4	28.3	18.1
Level of Service	D	A			B	B		C		C	C	B
Approach Delay (s)		21.0			17.5			25.3			25.9	
Approach LOS		C			B			C			C	

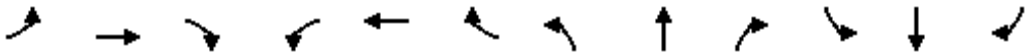
Intersection Summary			
HCM 2000 Control Delay	20.7	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.59		
Actuated Cycle Length (s)	59.5	Sum of lost time (s)	16.0
Intersection Capacity Utilization	46.3%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group



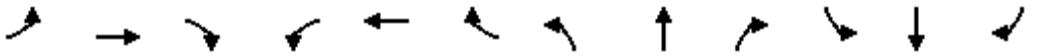
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	220	60	330	610	0	0	0	0	170	30	240
Future Volume (vph)	0	220	60	330	610	0	0	0	0	170	30	240
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0		5.9	5.9					1.8	1.8	1.8
Lane Util. Factor		0.95		1.00	1.00					0.95	0.95	1.00
Frpb, ped/bikes		1.00		1.00	1.00					1.00	1.00	1.00
Flpb, ped/bikes		1.00		1.00	1.00					1.00	1.00	1.00
Frt		0.97		1.00	1.00					1.00	1.00	0.85
Flt Protected		1.00		0.95	1.00					0.95	0.97	1.00
Satd. Flow (prot)		3413		1763	1863					1681	1708	1583
Flt Permitted		1.00		0.57	1.00					0.95	0.97	1.00
Satd. Flow (perm)		3413		1051	1863					1681	1708	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	239	65	359	663	0	0	0	0	185	33	261
RTOR Reduction (vph)	0	31	0	0	0	0	0	0	0	0	0	76
Lane Group Flow (vph)	0	273	0	359	663	0	0	0	0	100	118	185
Confl. Peds. (#/hr)	5		5	5		10						
Turn Type		NA		Perm	NA					Perm	NA	custom
Protected Phases		7			8						6	7
Permitted Phases				8						6		6
Actuated Green, G (s)		11.4		26.2	26.2					10.0	10.0	21.4
Effective Green, g (s)		11.4		26.5	26.5					12.2	12.2	25.8
Actuated g/C Ratio		0.18		0.43	0.43					0.20	0.20	0.42
Clearance Time (s)		4.0		6.2	6.2					4.0	4.0	4.0
Vehicle Extension (s)		3.0		2.0	2.0					3.0	3.0	3.0
Lane Grp Cap (vph)		629		450	798					331	337	706
v/s Ratio Prot		c0.08			c0.36							0.06
v/s Ratio Perm				0.34						0.06	0.07	0.06
v/c Ratio		0.43		0.80	0.83					0.30	0.35	0.26
Uniform Delay, d1		22.3		15.3	15.7					21.2	21.4	11.8
Progression Factor		1.00		1.00	1.00					1.00	1.00	1.00
Incremental Delay, d2		0.5		8.9	7.0					0.5	0.6	0.2
Delay (s)		22.8		24.2	22.7					21.7	22.0	12.0
Level of Service		C		C	C					C	C	B
Approach Delay (s)		22.8			23.2			0.0			16.5	
Approach LOS		C			C			A			B	

Intersection Summary			
HCM 2000 Control Delay	21.4	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.62		
Actuated Cycle Length (s)	61.8	Sum of lost time (s)	11.7
Intersection Capacity Utilization	55.2%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			



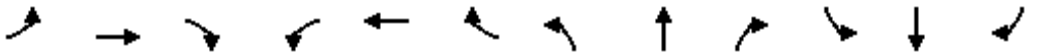
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	20	30	30	440	110	160	40	1330	210	140	740	130
Future Volume (vph)	20	30	30	440	110	160	40	1330	210	140	740	130
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.3	4.3		4.0	4.0		4.0	4.0	
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	0.91		1.00	0.91	
Frpb, ped/bikes	1.00	0.99		1.00	1.00		1.00	1.00		1.00	1.00	
Flpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Frt	1.00	0.93		1.00	0.91		1.00	0.98		1.00	0.98	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1770	1710		1764	1697		1770	4981		1770	4955	
Flt Permitted	0.46	1.00		0.71	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (perm)	864	1710		1326	1697		1770	4981		1770	4955	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	22	33	33	478	120	174	43	1446	228	152	804	141
RTOR Reduction (vph)	0	21	0	0	59	0	0	23	0	0	26	0
Lane Group Flow (vph)	22	45	0	478	235	0	43	1651	0	152	919	0
Confl. Peds. (#/hr)			4	4			1					1
Turn Type	Perm	NA		Perm	NA		Prot	NA		Prot	NA	
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4			8								
Actuated Green, G (s)	33.9	33.9		33.2	33.2		3.6	33.3		9.3	38.8	
Effective Green, g (s)	33.9	33.9		33.6	33.6		3.6	34.7		9.8	40.9	
Actuated g/C Ratio	0.37	0.37		0.37	0.37		0.04	0.38		0.11	0.45	
Clearance Time (s)	4.0	4.0		4.7	4.7		4.0	5.4		4.5	6.1	
Vehicle Extension (s)	2.0	2.0		3.0	3.0		2.0	4.8		3.0	3.7	
Lane Grp Cap (vph)	324	641		492	630		70	1911		191	2241	
v/s Ratio Prot		0.03			0.14		0.02	c0.33		c0.09	0.19	
v/s Ratio Perm	0.03			c0.36								
v/c Ratio	0.07	0.07		0.97	0.37		0.61	0.86		0.80	0.41	
Uniform Delay, d1	18.1	18.1		27.9	20.7		42.7	25.7		39.3	16.6	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	0.0	0.0		33.1	0.4		10.7	5.5		20.1	0.6	
Delay (s)	18.1	18.2		61.1	21.1		53.4	31.2		59.4	17.2	
Level of Service	B	B		E	C		D	C		E	B	
Approach Delay (s)		18.2			45.8			31.7			23.0	
Approach LOS		B			D			C			C	

Intersection Summary			
HCM 2000 Control Delay	31.8	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.90		
Actuated Cycle Length (s)	90.4	Sum of lost time (s)	12.3
Intersection Capacity Utilization	79.4%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	680	580	170	140	720	160	300	690	110	110	710	260
Future Volume (vph)	680	580	170	140	720	160	300	690	110	110	710	260
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	4.0
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00	0.91		1.00	0.91	1.00
Frpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	0.99
Flpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	1.00
Frt	1.00	0.97		1.00	0.97		1.00	0.98		1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1770	3419		1770	3432		1770	4971		1770	5085	1571
Flt Permitted	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)	1770	3419		1770	3432		1770	4971		1770	5085	1571
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	739	630	185	152	783	174	326	750	120	120	772	283
RTOR Reduction (vph)	0	20	0	0	15	0	0	17	0	0	0	51
Lane Group Flow (vph)	739	795	0	152	942	0	326	853	0	120	772	232
Confl. Peds. (#/hr)	4					4	5		1	1		5
Turn Type	Prot	NA		Prot	NA		Prot	NA		Prot	NA	pm+ov
Protected Phases	7	4		3	8		5	2		1	6	7
Permitted Phases												6
Actuated Green, G (s)	40.6	57.2		15.0	31.0		18.6	29.7		9.2	20.2	60.8
Effective Green, g (s)	41.0	58.4		15.4	32.8		19.0	30.6		9.6	21.2	61.6
Actuated g/C Ratio	0.32	0.45		0.12	0.25		0.15	0.24		0.07	0.16	0.47
Clearance Time (s)	4.4	5.2		4.4	5.8		4.4	4.9		4.4	5.0	4.4
Vehicle Extension (s)	2.0	3.9		2.0	2.7		2.0	3.3		2.0	4.1	2.0
Lane Grp Cap (vph)	558	1535		209	865		258	1170		130	829	744
v/s Ratio Prot	c0.42	0.23		0.09	c0.27		c0.18	0.17		0.07	c0.15	0.10
v/s Ratio Perm												0.05
v/c Ratio	1.32	0.52		0.73	1.09		1.26	0.73		0.92	0.93	0.31
Uniform Delay, d1	44.5	25.7		55.3	48.6		55.5	45.9		59.8	53.7	21.1
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	158.1	0.4		10.2	57.7		145.8	4.0		55.0	18.4	0.1
Delay (s)	202.6	26.1		65.5	106.3		201.3	49.9		114.8	72.1	21.2
Level of Service	F	C		E	F		F	D		F	E	C
Approach Delay (s)		110.0			100.7			91.2			64.2	
Approach LOS		F			F			F			E	

Intersection Summary			
HCM 2000 Control Delay	92.8	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.17		
Actuated Cycle Length (s)	130.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	107.8%	ICU Level of Service	G
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	120	360	160	330	410	110	230	120	210	80	150	100
Future Volume (vph)	120	360	160	330	410	110	230	120	210	80	150	100
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	5.5	5.5	4.0	5.4	5.4
Lane Util. Factor	1.00	0.95	0.88	0.97	0.95	1.00	0.97	1.00	1.00	1.00	0.91	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1770	3539	2787	3433	3539	1583	3433	1863	1583	1770	5085	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1770	3539	2787	3433	3539	1583	3433	1863	1583	1770	5085	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	130	391	174	359	446	120	250	130	228	87	163	109
RTOR Reduction (vph)	0	0	95	0	0	74	0	0	154	0	0	85
Lane Group Flow (vph)	130	391	79	359	446	46	250	130	74	87	163	24
Turn Type	Prot	NA	pm+ov	Prot	NA	Perm	Prot	NA	pm+ov	Prot	NA	Perm
Protected Phases	5	2	3	1	6		3	8	1	7	4	
Permitted Phases			2			6			8			4
Actuated Green, G (s)	9.6	32.8	40.4	10.9	34.1	34.1	7.6	20.8	31.7	7.3	20.5	20.5
Effective Green, g (s)	10.0	33.7	41.2	11.3	35.0	35.0	8.0	20.2	29.5	7.7	20.0	20.0
Actuated g/C Ratio	0.11	0.37	0.46	0.12	0.39	0.39	0.09	0.22	0.33	0.09	0.22	0.22
Clearance Time (s)	4.4	4.9	4.4	4.4	4.9	4.9	4.4	4.9	4.4	4.4	4.9	4.9
Vehicle Extension (s)	2.0	2.1	2.0	2.0	2.3	2.3	2.0	4.5	2.0	2.0	4.5	4.5
Lane Grp Cap (vph)	195	1319	1270	429	1370	612	303	416	516	150	1125	350
v/s Ratio Prot	0.07	0.11	0.01	c0.10	c0.13		c0.07	c0.07	0.02	0.05	0.03	
v/s Ratio Perm			0.02			0.03			0.03			0.02
v/c Ratio	0.67	0.30	0.06	0.84	0.33	0.08	0.83	0.31	0.14	0.58	0.14	0.07
Uniform Delay, d1	38.6	20.0	13.8	38.6	19.4	17.5	40.5	29.3	21.5	39.8	28.3	27.8
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	6.5	0.6	0.0	12.7	0.6	0.2	15.8	0.7	0.0	3.4	0.1	0.1
Delay (s)	45.1	20.6	13.8	51.4	20.1	17.7	56.3	30.0	21.6	43.1	28.4	28.0
Level of Service	D	C	B	D	C	B	E	C	C	D	C	C
Approach Delay (s)		23.5			31.9			37.7			31.9	
Approach LOS		C			C			D			C	

Intersection Summary			
HCM 2000 Control Delay	31.0	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.47		
Actuated Cycle Length (s)	90.4	Sum of lost time (s)	19.0
Intersection Capacity Utilization	46.3%	ICU Level of Service	A
Analysis Period (min)	15		

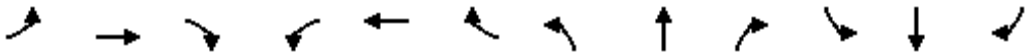
c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	140	220	70	20	140	220	50	180	250	20	20	30
Future Volume (vph)	140	220	70	20	140	220	50	180	250	20	20	30
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0			4.0			4.0			4.0	
Lane Util. Factor		1.00			1.00			1.00			1.00	
Frpb, ped/bikes		1.00			1.00			0.98			1.00	
Flpb, ped/bikes		1.00			1.00			1.00			1.00	
Frt		0.98			0.92			0.93			0.94	
Flt Protected		0.98			1.00			0.99			0.99	
Satd. Flow (prot)		1785			1712			1691			1728	
Flt Permitted		0.77			0.97			0.96			0.80	
Satd. Flow (perm)		1395			1664			1634			1398	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	152	239	76	22	152	239	54	196	272	22	22	33
RTOR Reduction (vph)	0	10	0	0	42	0	0	57	0	0	23	0
Lane Group Flow (vph)	0	457	0	0	371	0	0	465	0	0	54	0
Confl. Peds. (#/hr)			3	3					8	8		
Turn Type	pm+pt	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases	5	2			6			8			4	
Permitted Phases	2			6			8			4		
Actuated Green, G (s)		39.1			39.1			20.3			20.3	
Effective Green, g (s)		40.0			40.0			21.2			21.2	
Actuated g/C Ratio		0.58			0.58			0.31			0.31	
Clearance Time (s)		4.9			4.9			4.9			4.9	
Vehicle Extension (s)		2.0			2.0			2.0			2.0	
Lane Grp Cap (vph)		806			961			500			428	
v/s Ratio Prot												
v/s Ratio Perm		c0.33			0.22			c0.28			0.04	
v/c Ratio		0.57			0.39			0.93			0.13	
Uniform Delay, d1		9.2			7.9			23.3			17.3	
Progression Factor		1.00			1.00			1.00			1.00	
Incremental Delay, d2		0.5			1.2			23.8			0.0	
Delay (s)		9.7			9.1			47.1			17.4	
Level of Service		A			A			D			B	
Approach Delay (s)		9.7			9.1			47.1			17.4	
Approach LOS		A			A			D			B	

Intersection Summary			
HCM 2000 Control Delay	23.1	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.74		
Actuated Cycle Length (s)	69.2	Sum of lost time (s)	12.0
Intersection Capacity Utilization	85.9%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	440	160	240	680	150	150
Future Volume (vph)	440	160	240	680	150	150
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0		4.0	4.9	4.0	4.0
Lane Util. Factor	0.91		1.00	0.95	1.00	1.00
Frpb, ped/bikes	0.99		1.00	1.00	1.00	1.00
Flpb, ped/bikes	1.00		1.00	1.00	1.00	1.00
Frt	0.96		1.00	1.00	1.00	0.85
Flt Protected	1.00		0.95	1.00	0.95	1.00
Satd. Flow (prot)	4843		1770	3539	1770	1583
Flt Permitted	1.00		0.95	1.00	0.95	1.00
Satd. Flow (perm)	4843		1770	3539	1770	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	478	174	261	739	163	163
RTOR Reduction (vph)	85	0	0	0	0	124
Lane Group Flow (vph)	567	0	261	739	163	39
Confl. Peds. (#/hr)		7	7		30	15
Turn Type	NA		Prot	NA	Prot	Prot
Protected Phases	2		1	6	8	8
Permitted Phases						
Actuated Green, G (s)	21.5		10.8	36.7	13.4	13.4
Effective Green, g (s)	23.4		11.2	36.7	14.3	14.3
Actuated g/C Ratio	0.39		0.19	0.61	0.24	0.24
Clearance Time (s)	4.9		4.4	4.9	4.9	4.9
Vehicle Extension (s)	2.9		2.0	2.0	2.0	2.0
Lane Grp Cap (vph)	1891		330	2168	422	377
v/s Ratio Prot	0.12		c0.15	c0.21	c0.09	0.02
v/s Ratio Perm						
v/c Ratio	0.30		0.79	0.34	0.39	0.10
Uniform Delay, d1	12.6		23.2	5.7	19.1	17.8
Progression Factor	1.00		1.00	1.00	1.00	1.00
Incremental Delay, d2	0.4		11.4	0.4	0.2	0.0
Delay (s)	13.0		34.6	6.1	19.3	17.8
Level of Service	B		C	A	B	B
Approach Delay (s)	13.0			13.6	18.6	
Approach LOS	B			B	B	

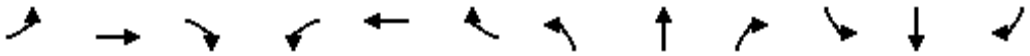
Intersection Summary			
HCM 2000 Control Delay	14.2	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.46		
Actuated Cycle Length (s)	59.9	Sum of lost time (s)	11.0
Intersection Capacity Utilization	49.1%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Traffic Volume (vph)	20	10	20	40	10	40	30	150	30	50	180	40
Future Volume (vph)	20	10	20	40	10	40	30	150	30	50	180	40
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	22	11	22	43	11	43	33	163	33	54	196	43

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total (vph)	55	97	229	293
Volume Left (vph)	22	43	33	54
Volume Right (vph)	22	43	33	43
Hadj (s)	-0.13	-0.14	-0.02	-0.02
Departure Headway (s)	5.1	5.1	4.6	4.6
Degree Utilization, x	0.08	0.14	0.29	0.37
Capacity (veh/h)	619	637	744	756
Control Delay (s)	8.6	8.9	9.5	10.2
Approach Delay (s)	8.6	8.9	9.5	10.2
Approach LOS	A	A	A	B

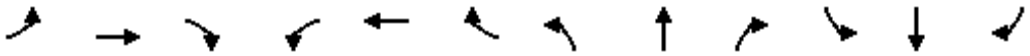
Intersection Summary			
Delay	9.7		
Level of Service	A		
Intersection Capacity Utilization	36.3%	ICU Level of Service	A
Analysis Period (min)	15		



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Traffic Volume (vph)	30	20	20	20	30	20	30	140	30	40	120	60
Future Volume (vph)	30	20	20	20	30	20	30	140	30	40	120	60
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	33	22	22	22	33	22	33	152	33	43	130	65

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total (vph)	77	77	218	238
Volume Left (vph)	33	22	33	43
Volume Right (vph)	22	22	33	65
Hadj (s)	-0.05	-0.08	-0.03	-0.09
Departure Headway (s)	5.0	5.0	4.5	4.5
Degree Utilization, x	0.11	0.11	0.28	0.30
Capacity (veh/h)	646	649	757	768
Control Delay (s)	8.6	8.6	9.3	9.3
Approach Delay (s)	8.6	8.6	9.3	9.3
Approach LOS	A	A	A	A

Intersection Summary			
Delay	9.1		
Level of Service	A		
Intersection Capacity Utilization	31.3%	ICU Level of Service	A
Analysis Period (min)	15		



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Traffic Volume (vph)	20	20	20	100	20	20	30	260	300	10	100	20
Future Volume (vph)	20	20	20	100	20	20	30	260	300	10	100	20
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	22	22	22	109	22	22	33	283	326	11	109	22

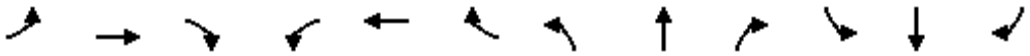
Direction, Lane #	EB 1	WB 1	NB 1	NB 2	SB 1
Volume Total (vph)	66	153	316	326	142
Volume Left (vph)	22	109	33	0	11
Volume Right (vph)	22	22	0	326	22
Hadj (s)	-0.10	0.09	0.09	-0.67	-0.04
Departure Headway (s)	5.8	5.7	5.4	4.7	5.3
Degree Utilization, x	0.11	0.24	0.48	0.42	0.21
Capacity (veh/h)	562	577	651	754	639
Control Delay (s)	9.4	10.6	17.6	9.8	9.7
Approach Delay (s)	9.4	10.6	17.6		9.7
Approach LOS	A	B	C		A

Intersection Summary				
Delay	17.5			
Level of Service	C			
Intersection Capacity Utilization	55.1%	ICU Level of Service	A	
Analysis Period (min)	15			

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Sign Control	Stop			Stop	Stop	
Traffic Volume (vph)	30	20	40	40	50	150
Future Volume (vph)	30	20	40	40	50	150
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	33	22	43	43	54	163

Direction, Lane #	EB 1	WB 1	NB 1
Volume Total (vph)	55	86	217
Volume Left (vph)	0	43	54
Volume Right (vph)	22	0	163
Hadj (s)	-0.21	0.13	-0.37
Departure Headway (s)	4.2	4.5	3.9
Degree Utilization, x	0.06	0.11	0.23
Capacity (veh/h)	800	744	900
Control Delay (s)	7.5	8.1	8.0
Approach Delay (s)	7.5	8.1	8.0
Approach LOS	A	A	A

Intersection Summary			
Delay	8.0		
Level of Service	A		
Intersection Capacity Utilization	36.0%	ICU Level of Service	A
Analysis Period (min)	15		



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Traffic Volume (vph)	20	20	20	50	30	30	20	140	100	20	40	20
Future Volume (vph)	20	20	20	50	30	30	20	140	100	20	40	20
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	22	22	22	54	33	33	22	152	109	22	43	22

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total (vph)	66	120	283	87
Volume Left (vph)	22	54	22	22
Volume Right (vph)	22	33	109	22
Hadj (s)	-0.10	-0.04	-0.18	-0.07
Departure Headway (s)	4.8	4.8	4.3	4.6
Degree Utilization, x	0.09	0.16	0.34	0.11
Capacity (veh/h)	679	691	806	728
Control Delay (s)	8.3	8.7	9.5	8.2
Approach Delay (s)	8.3	8.7	9.5	8.2
Approach LOS	A	A	A	A

Intersection Summary				
Delay	9.0			
Level of Service	A			
Intersection Capacity Utilization	38.2%	ICU Level of Service	A	
Analysis Period (min)	15			

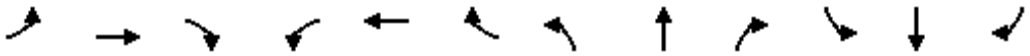
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	290	110	90	10	40	20	260	270	40	20	50	80
Future Volume (vph)	290	110	90	10	40	20	260	270	40	20	50	80
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0			4.0		4.0	4.0		4.0	4.0	
Lane Util. Factor		1.00			1.00		1.00	1.00		1.00	1.00	
Frpb, ped/bikes		1.00			1.00		1.00	1.00		1.00	0.98	
Flpb, ped/bikes		1.00			1.00		1.00	1.00		1.00	1.00	
Frt		0.98			0.96		1.00	0.98		1.00	0.91	
Flt Protected		0.97			0.99		0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1760			1769		1763	1821		1764	1665	
Flt Permitted		0.77			0.93		0.67	1.00		0.48	1.00	
Satd. Flow (perm)		1404			1660		1238	1821		890	1665	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	315	120	98	11	43	22	283	293	43	22	54	87
RTOR Reduction (vph)	0	14	0	0	13	0	0	7	0	0	50	0
Lane Group Flow (vph)	0	519	0	0	63	0	283	329	0	22	91	0
Confl. Peds. (#/hr)	5					5	3		4	4		3
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		8			4			2			6	
Permitted Phases	8			4			2			6		
Actuated Green, G (s)		24.5			24.5		24.4	24.4		24.4	24.4	
Effective Green, g (s)		24.5			24.5		24.4	24.4		24.4	24.4	
Actuated g/C Ratio		0.43			0.43		0.43	0.43		0.43	0.43	
Clearance Time (s)		4.0			4.0		4.0	4.0		4.0	4.0	
Vehicle Extension (s)		2.0			2.0		4.4	4.4		2.1	2.1	
Lane Grp Cap (vph)		604			714		530	780		381	713	
v/s Ratio Prot								0.18			0.05	
v/s Ratio Perm		c0.37			0.04		c0.23			0.02		
v/c Ratio		0.86			0.09		0.53	0.42		0.06	0.13	
Uniform Delay, d1		14.6			9.6		12.0	11.3		9.5	9.8	
Progression Factor		1.00			1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2		11.2			0.0		3.8	1.7		0.3	0.4	
Delay (s)		25.9			9.6		15.9	13.0		9.8	10.2	
Level of Service		C			A		B	B		A	B	
Approach Delay (s)		25.9			9.6			14.3			10.1	
Approach LOS		C			A			B			B	

Intersection Summary			
HCM 2000 Control Delay	18.0	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.70		
Actuated Cycle Length (s)	56.9	Sum of lost time (s)	8.0
Intersection Capacity Utilization	74.2%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	50	430	160	230	720	90	110	20	270	20	10	30
Future Volume (vph)	50	430	160	230	720	90	110	20	270	20	10	30
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0			4.0			4.0	
Lane Util. Factor	1.00	0.91		1.00	0.95			1.00			1.00	
Frpb, ped/bikes	1.00	1.00		1.00	1.00			0.99			1.00	
Flpb, ped/bikes	1.00	1.00		1.00	1.00			1.00			1.00	
Frt	1.00	0.96		1.00	0.98			0.91			0.93	
Flt Protected	0.95	1.00		0.95	1.00			0.99			0.98	
Satd. Flow (prot)	1769	4878		1770	3471			1646			1706	
Flt Permitted	0.32	1.00		0.31	1.00			0.89			0.82	
Satd. Flow (perm)	587	4878		573	3471			1478			1424	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	54	467	174	250	783	98	120	22	293	22	11	33
RTOR Reduction (vph)	0	82	0	0	12	0	0	127	0	0	24	0
Lane Group Flow (vph)	54	559	0	250	869	0	0	308	0	0	42	0
Confl. Peds. (#/hr)	2					2			13	13		
Turn Type	pm+pt	NA		pm+pt	NA		Perm	NA		Perm	NA	
Protected Phases	5	2		1	6			8			4	
Permitted Phases	2			6			8			4		
Actuated Green, G (s)	22.5	20.3		33.3	26.7			15.5			15.5	
Effective Green, g (s)	23.3	21.3		33.7	27.6			16.4			16.4	
Actuated g/C Ratio	0.40	0.36		0.58	0.47			0.28			0.28	
Clearance Time (s)	4.4	5.0		4.4	4.9			4.9			4.9	
Vehicle Extension (s)	2.0	3.3		2.0	3.3			2.0			2.0	
Lane Grp Cap (vph)	285	1773		511	1634			413			398	
v/s Ratio Prot	0.01	0.11		c0.07	c0.25							
v/s Ratio Perm	0.07			0.21				c0.21			0.03	
v/c Ratio	0.19	0.32		0.49	0.53			0.74			0.11	
Uniform Delay, d1	11.0	13.4		6.6	10.9			19.2			15.7	
Progression Factor	1.00	1.00		1.00	1.00			1.00			1.00	
Incremental Delay, d2	0.1	0.5		0.3	1.2			6.3			0.0	
Delay (s)	11.1	13.9		6.8	12.2			25.5			15.7	
Level of Service	B	B		A	B			C			B	
Approach Delay (s)		13.7			11.0			25.5			15.7	
Approach LOS		B			B			C			B	

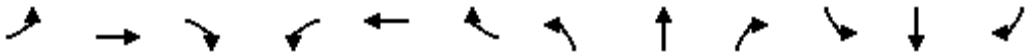
Intersection Summary			
HCM 2000 Control Delay	14.6	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.63		
Actuated Cycle Length (s)	58.6	Sum of lost time (s)	12.0
Intersection Capacity Utilization	66.4%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Traffic Volume (vph)	70	20	20	20	20	20	20	160	40	60	120	70
Future Volume (vph)	70	20	20	20	20	20	20	160	40	60	120	70
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	76	22	22	22	22	22	22	174	43	65	130	76

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total (vph)	120	66	239	271
Volume Left (vph)	76	22	22	65
Volume Right (vph)	22	22	43	76
Hadj (s)	0.05	-0.10	-0.06	-0.09
Departure Headway (s)	5.3	5.2	4.7	4.6
Degree Utilization, x	0.18	0.10	0.31	0.35
Capacity (veh/h)	618	611	732	741
Control Delay (s)	9.4	8.7	9.8	10.1
Approach Delay (s)	9.4	8.7	9.8	10.1
Approach LOS	A	A	A	B

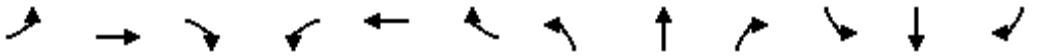
Intersection Summary			
Delay	9.7		
Level of Service	A		
Intersection Capacity Utilization	45.8%	ICU Level of Service	A
Analysis Period (min)	15		



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Traffic Volume (vph)	40	20	40	10	10	20	60	150	10	30	90	50
Future Volume (vph)	40	20	40	10	10	20	60	150	10	30	90	50
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	43	22	43	11	11	22	65	163	11	33	98	54

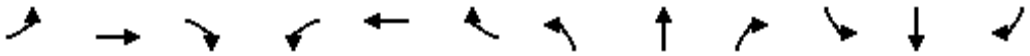
Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total (vph)	108	44	239	185
Volume Left (vph)	43	11	65	33
Volume Right (vph)	43	22	11	54
Hadj (s)	-0.13	-0.22	0.06	-0.11
Departure Headway (s)	4.8	4.8	4.6	4.5
Degree Utilization, x	0.14	0.06	0.30	0.23
Capacity (veh/h)	680	667	759	766
Control Delay (s)	8.6	8.1	9.5	8.8
Approach Delay (s)	8.6	8.1	9.5	8.8
Approach LOS	A	A	A	A

Intersection Summary				
Delay	9.0			
Level of Service	A			
Intersection Capacity Utilization	35.2%	ICU Level of Service	A	
Analysis Period (min)	15			



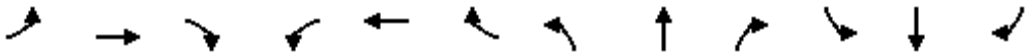
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	400	270	30	10	650	260	0	0	20	200	150	320
Future Volume (vph)	400	270	30	10	650	260	0	0	20	200	150	320
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0				4.0	4.0	4.0	4.0
Lane Util. Factor	0.97	0.95		1.00	0.95				1.00	0.95	0.95	1.00
Frpb, ped/bikes	1.00	1.00		1.00	1.00				0.99	1.00	1.00	1.00
Flpb, ped/bikes	1.00	1.00		1.00	1.00				1.00	1.00	1.00	1.00
Frt	1.00	0.98		1.00	0.96				0.86	1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00				1.00	0.95	0.98	1.00
Satd. Flow (prot)	3433	3478		1770	3387				1590	1681	1736	1583
Flt Permitted	0.95	1.00		0.95	1.00				1.00	0.95	0.98	1.00
Satd. Flow (perm)	3433	3478		1770	3387				1590	1681	1736	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	435	293	33	11	707	283	0	0	22	217	163	348
RTOR Reduction (vph)	0	8	0	0	46	0	0	0	0	0	0	214
Lane Group Flow (vph)	435	318	0	11	944	0	0	0	22	113	267	134
Confl. Peds. (#/hr)			1	1					4	4		
Turn Type	Prot	NA		Prot	NA				Free	Split	NA	Perm
Protected Phases	5	2		1	6					4	4	
Permitted Phases									Free			4
Actuated Green, G (s)	11.2	38.3		0.7	27.8				71.2	17.6	17.6	17.6
Effective Green, g (s)	11.6	39.2		1.1	28.7				71.2	18.9	18.9	18.9
Actuated g/C Ratio	0.16	0.55		0.02	0.40				1.00	0.27	0.27	0.27
Clearance Time (s)	4.4	4.9		4.4	4.9					5.3	5.3	5.3
Vehicle Extension (s)	2.0	3.3		2.0	3.8					4.4	4.4	4.4
Lane Grp Cap (vph)	559	1914		27	1365				1590	446	460	420
v/s Ratio Prot	c0.13	0.09		0.01	c0.28					0.07	c0.15	
v/s Ratio Perm									0.01			0.08
v/c Ratio	0.78	0.17		0.41	0.69				0.01	0.25	0.58	0.32
Uniform Delay, d1	28.6	7.9		34.7	17.6				0.0	20.6	22.7	21.0
Progression Factor	1.00	1.00		1.00	1.00				1.00	1.00	1.00	1.00
Incremental Delay, d2	6.2	0.2		3.6	2.9				0.0	0.5	2.5	0.7
Delay (s)	34.7	8.1		38.3	20.5				0.0	21.1	25.2	21.7
Level of Service	C	A		D	C				A	C	C	C
Approach Delay (s)		23.3			20.7			0.0			22.9	
Approach LOS		C			C			A			C	

Intersection Summary			
HCM 2000 Control Delay	21.9	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.67		
Actuated Cycle Length (s)	71.2	Sum of lost time (s)	12.0
Intersection Capacity Utilization	63.8%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	30	700	90	70	1410	60	230	30	70	70	50	20
Future Volume (vph)	30	700	90	70	1410	60	230	30	70	70	50	20
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0		4.0	4.0			4.0	
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00	1.00			1.00	
Frpb, ped/bikes	1.00	0.99		1.00	1.00		1.00	0.98			1.00	
Flpb, ped/bikes	1.00	1.00		1.00	1.00		0.99	1.00			0.99	
Frt	1.00	0.98		1.00	0.99		1.00	0.90			0.98	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00			0.98	
Satd. Flow (prot)	1678	3363		1671	3411		1635	1527			1669	
Flt Permitted	0.95	1.00		0.95	1.00		0.63	1.00			0.80	
Satd. Flow (perm)	1678	3363		1671	3411		1078	1527			1374	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	33	761	98	76	1533	65	250	33	76	76	54	22
RTOR Reduction (vph)	0	7	0	0	2	0	0	56	0	0	5	0
Lane Group Flow (vph)	33	852	0	76	1596	0	250	53	0	0	147	0
Confl. Peds. (#/hr)	14		16	16		14	13		13	13		13
Confl. Bikes (#/hr)			3			3			1			
Bus Blockages (#/hr)	13	13	13	14	14	14	16	16	16	13	13	13
Turn Type	Prot	NA		Prot	NA		Perm	NA		Perm	NA	
Protected Phases	5	2		1	6			4			4	
Permitted Phases							4			4		
Actuated Green, G (s)	3.1	67.0		8.0	71.9		30.8	30.8			30.8	
Effective Green, g (s)	3.5	67.9		8.4	72.8		31.7	31.7			31.7	
Actuated g/C Ratio	0.03	0.57		0.07	0.61		0.26	0.26			0.26	
Clearance Time (s)	4.4	4.9		4.4	4.9		4.9	4.9			4.9	
Vehicle Extension (s)	2.0	2.1		2.0	2.1		2.0	2.0			2.0	
Lane Grp Cap (vph)	48	1902		116	2069		284	403			362	
v/s Ratio Prot	0.02	0.25		c0.05	c0.47			0.03				
v/s Ratio Perm							c0.23				0.11	
v/c Ratio	0.69	0.45		0.66	0.77		0.88	0.13			0.41	
Uniform Delay, d1	57.7	15.1		54.4	17.4		42.3	33.7			36.4	
Progression Factor	1.00	1.00		0.84	1.51		1.00	1.00			1.00	
Incremental Delay, d2	27.8	0.8		2.8	0.8		25.0	0.1			0.3	
Delay (s)	85.5	15.9		48.7	27.1		67.3	33.7			36.7	
Level of Service	F	B		D	C		E	C			D	
Approach Delay (s)		18.5			28.1			57.1			36.7	
Approach LOS		B			C			E			D	

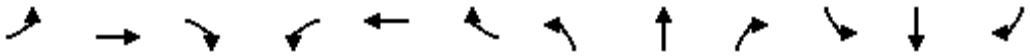
Intersection Summary			
HCM 2000 Control Delay	29.1	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.81		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	74.2%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	180	650	80	170	1240	70	60	130	110	260	380	250
Future Volume (vph)	180	650	80	170	1240	70	60	130	110	260	380	250
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0		4.0	4.0	4.0	4.0	4.0	
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00	0.95	1.00	1.00	0.95	
Frpb, ped/bikes	1.00	0.99		1.00	1.00		1.00	1.00	0.98	1.00	0.98	
Flpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	
Frt	1.00	0.98		1.00	0.99		1.00	1.00	0.85	1.00	0.94	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)	1770	3461		1770	3501		1770	3539	1550	1770	3267	
Flt Permitted	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (perm)	1770	3461		1770	3501		1770	3539	1550	1770	3267	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	196	707	87	185	1348	76	65	141	120	283	413	272
RTOR Reduction (vph)	0	7	0	0	3	0	0	0	45	0	92	0
Lane Group Flow (vph)	196	787	0	185	1421	0	65	141	75	283	593	0
Confl. Peds. (#/hr)	23		24	24		23	19		14	14		19
Confl. Bikes (#/hr)			9			5			12			6
Turn Type	Prot	NA		Prot	NA		Prot	NA	pm+ov	Prot	NA	
Protected Phases	5	2		1	6		3	8	1	7	4	
Permitted Phases									8			
Actuated Green, G (s)	13.9	41.0		16.3	42.9		7.0	21.4	37.7	22.6	37.1	
Effective Green, g (s)	14.3	41.9		16.7	44.3		7.4	22.4	38.5	23.0	38.0	
Actuated g/C Ratio	0.12	0.35		0.14	0.37		0.06	0.19	0.32	0.19	0.32	
Clearance Time (s)	4.4	4.9		4.4	5.4		4.4	5.0	4.4	4.4	4.9	
Vehicle Extension (s)	2.0	4.2		2.0	3.0		2.0	4.0	2.0	2.0	2.6	
Lane Grp Cap (vph)	210	1208		246	1292		109	660	497	339	1034	
v/s Ratio Prot	c0.11	0.23		0.10	c0.41		c0.04	0.04	0.02	c0.16	c0.18	
v/s Ratio Perm									0.03			
v/c Ratio	0.93	0.65		0.75	1.10		0.60	0.21	0.15	0.83	0.57	
Uniform Delay, d1	52.4	32.9		49.7	37.9		54.8	41.3	29.1	46.7	34.2	
Progression Factor	1.20	0.78		1.04	0.85		1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	41.4	2.6		9.2	55.2		5.7	0.2	0.1	15.4	0.7	
Delay (s)	104.2	28.3		61.0	87.3		60.6	41.6	29.1	62.1	34.9	
Level of Service	F	C		E	F		E	D	C	E	C	
Approach Delay (s)		43.3			84.3			40.8			42.9	
Approach LOS		D			F			D			D	

Intersection Summary			
HCM 2000 Control Delay	59.9	HCM 2000 Level of Service	E
HCM 2000 Volume to Capacity ratio	0.89		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	88.6%	ICU Level of Service	E
Analysis Period (min)	15		

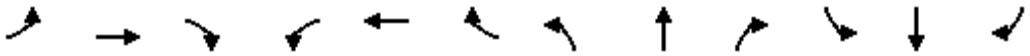
c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	10	980	80	320	1370	60	70	20	150	70	20	20
Future Volume (vph)	10	980	80	320	1370	60	70	20	150	70	20	20
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0			4.0	4.0		4.0	
Lane Util. Factor	1.00	0.91		1.00	0.95			1.00	1.00		1.00	
Frpb, ped/bikes	1.00	1.00		1.00	1.00			1.00	0.98		0.99	
Flpb, ped/bikes	1.00	1.00		1.00	1.00			1.00	1.00		1.00	
Frt	1.00	0.99		1.00	0.99			1.00	0.85		0.98	
Flt Protected	0.95	1.00		0.95	1.00			0.96	1.00		0.97	
Satd. Flow (prot)	1770	5014		1770	3513			1792	1552		1750	
Flt Permitted	0.95	1.00		0.95	1.00			0.70	1.00		0.70	
Satd. Flow (perm)	1770	5014		1770	3513			1309	1552		1267	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	11	1065	87	348	1489	65	76	22	163	76	22	22
RTOR Reduction (vph)	0	6	0	0	2	0	0	0	135	0	7	0
Lane Group Flow (vph)	11	1146	0	348	1552	0	0	98	28	0	113	0
Confl. Peds. (#/hr)	1		1	1		1	1		1	1		1
Confl. Bikes (#/hr)			17			4			5			12
Turn Type	Prot	NA		Prot	NA		Perm	NA	Perm	Perm	NA	
Protected Phases	5	2		1	6			8			4	
Permitted Phases							8		8	4		
Actuated Green, G (s)	0.8	57.1		28.3	84.6			20.0	20.0		20.0	
Effective Green, g (s)	1.2	58.4		28.7	85.9			20.9	20.9		20.9	
Actuated g/C Ratio	0.01	0.49		0.24	0.72			0.17	0.17		0.17	
Clearance Time (s)	4.4	5.3		4.4	5.3			4.9	4.9		4.9	
Vehicle Extension (s)	2.0	4.4		2.0	4.4			2.0	2.0		2.0	
Lane Grp Cap (vph)	17	2440		423	2514			227	270		220	
v/s Ratio Prot	0.01	0.23		c0.20	c0.44							
v/s Ratio Perm								0.07	0.02		c0.09	
v/c Ratio	0.65	0.47		0.82	0.62			0.43	0.11		0.51	
Uniform Delay, d1	59.2	20.5		43.2	8.7			44.2	41.7		44.9	
Progression Factor	0.81	1.50		1.00	1.00			1.00	1.00		1.00	
Incremental Delay, d2	40.3	0.5		11.6	1.1			0.5	0.1		0.8	
Delay (s)	88.4	31.3		54.9	9.8			44.7	41.7		45.8	
Level of Service	F	C		D	A			D	D		D	
Approach Delay (s)		31.8			18.1			42.9			45.8	
Approach LOS		C			B			D			D	

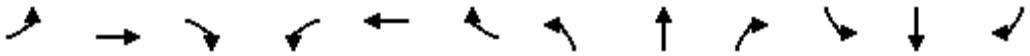
Intersection Summary			
HCM 2000 Control Delay	25.5	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.67		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	66.3%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group



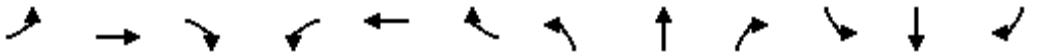
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	0	0	250	3100	0	0	0	0	0	150	150
Future Volume (vph)	0	0	0	250	3100	0	0	0	0	0	150	150
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)					4.0						4.0	
Lane Util. Factor					0.91						0.91	
Frpb, ped/bikes					1.00						0.99	
Flpb, ped/bikes					1.00						1.00	
Frt					1.00						0.93	
Flt Protected					1.00						1.00	
Satd. Flow (prot)					5063						4651	
Flt Permitted					1.00						1.00	
Satd. Flow (perm)					5063						4651	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	272	3370	0	0	0	0	0	163	163
RTOR Reduction (vph)	0	0	0	0	8	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	0	0	0	3634	0	0	0	0	0	326	0
Confl. Peds. (#/hr)				6								7
Turn Type				Perm	NA						NA	
Protected Phases					6						4	
Permitted Phases				6								
Actuated Green, G (s)					61.8						18.0	
Effective Green, g (s)					63.1						18.9	
Actuated g/C Ratio					0.70						0.21	
Clearance Time (s)					5.3						4.9	
Vehicle Extension (s)					0.2						0.2	
Lane Grp Cap (vph)					3549						976	
v/s Ratio Prot											c0.07	
v/s Ratio Perm					0.72							
v/c Ratio					1.02						0.33	
Uniform Delay, d1					13.4						30.2	
Progression Factor					1.00						1.00	
Incremental Delay, d2					21.6						0.1	
Delay (s)					35.0						30.3	
Level of Service					D						C	
Approach Delay (s)		0.0			35.0			0.0			30.3	
Approach LOS		A			D			A			C	

Intersection Summary			
HCM 2000 Control Delay	34.7	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.86		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	86.6%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			



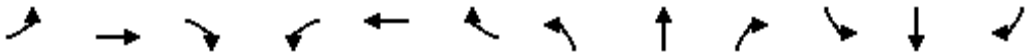
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	890	90	0	0	0	0	0	0	160	330	0
Future Volume (vph)	0	890	90	0	0	0	0	0	0	160	330	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0									4.0	
Lane Util. Factor		0.91									0.91	
Frpb, ped/bikes		1.00									1.00	
Flpb, ped/bikes		1.00									0.99	
Frt		0.99									1.00	
Flt Protected		1.00									0.98	
Satd. Flow (prot)		5004									4977	
Flt Permitted		1.00									0.98	
Satd. Flow (perm)		5004									4977	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	967	98	0	0	0	0	0	0	174	359	0
RTOR Reduction (vph)	0	13	0	0	0	0	0	0	0	0	73	0
Lane Group Flow (vph)	0	1052	0	0	0	0	0	0	0	0	460	0
Confl. Peds. (#/hr)			9							14		
Turn Type		NA								Perm	NA	
Protected Phases		2									4	
Permitted Phases										4		
Actuated Green, G (s)		47.0									19.0	
Effective Green, g (s)		47.0									20.0	
Actuated g/C Ratio		0.63									0.27	
Clearance Time (s)		4.0									5.0	
Vehicle Extension (s)		3.0									3.0	
Lane Grp Cap (vph)		3135									1327	
v/s Ratio Prot		c0.21										
v/s Ratio Perm											0.09	
v/c Ratio		0.34									0.35	
Uniform Delay, d1		6.6									22.2	
Progression Factor		0.58									1.00	
Incremental Delay, d2		0.3									0.2	
Delay (s)		4.1									22.4	
Level of Service		A									C	
Approach Delay (s)		4.1			0.0			0.0			22.4	
Approach LOS		A			A			A			C	

Intersection Summary			
HCM 2000 Control Delay	10.2	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.34		
Actuated Cycle Length (s)	75.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	43.3%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	230	1080	40	120	780	190	50	40	90	80	80	210
Future Volume (vph)	230	1080	40	120	780	190	50	40	90	80	80	210
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.97	0.95		1.00	0.95	1.00	1.00	1.00	1.00	0.97	1.00	1.00
Frpb, ped/bikes	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.99
Flpb, ped/bikes	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.99		1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	3520		1770	3539	1583	1770	1863	1583	3433	1863	1562
Flt Permitted	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	3520		1770	3539	1583	1770	1863	1583	3433	1863	1562
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	250	1174	43	130	848	207	54	43	98	87	87	228
RTOR Reduction (vph)	0	3	0	0	0	192	0	0	84	0	0	187
Lane Group Flow (vph)	250	1214	0	130	848	15	54	43	14	87	87	41
Confl. Peds. (#/hr)	2											2
Turn Type	Prot	NA		Prot	NA	custom	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases						7			8			4
Actuated Green, G (s)	8.5	34.2		7.1	32.9	5.5	2.8	8.9	8.9	5.5	12.5	12.5
Effective Green, g (s)	8.5	35.7		7.1	34.3	5.5	2.8	10.7	10.7	5.5	13.4	13.4
Actuated g/C Ratio	0.11	0.48		0.09	0.46	0.07	0.04	0.14	0.14	0.07	0.18	0.18
Clearance Time (s)	4.0	5.5		4.0	5.4	4.0	4.0	5.8	5.8	4.0	4.9	4.9
Vehicle Extension (s)	2.0	3.7		2.0	4.0	2.0	2.0	2.0	2.0	2.0	3.0	3.0
Lane Grp Cap (vph)	389	1675		167	1618	116	66	265	225	251	332	279
v/s Ratio Prot	0.07	c0.34		c0.07	0.24		c0.03	0.02		0.03	c0.05	
v/s Ratio Perm						0.01			0.01			0.03
v/c Ratio	0.64	0.73		0.78	0.52	0.13	0.82	0.16	0.06	0.35	0.26	0.15
Uniform Delay, d1	31.8	15.7		33.2	14.5	32.5	35.8	28.2	27.8	33.0	26.5	26.0
Progression Factor	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	2.7	2.8		18.5	1.2	0.2	50.1	0.1	0.0	0.3	0.4	0.2
Delay (s)	34.5	18.5		51.7	15.7	32.7	85.9	28.3	27.9	33.3	27.0	26.2
Level of Service	C	B		D	B	C	F	C	C	C	C	C
Approach Delay (s)		21.2			22.7			44.0			27.9	
Approach LOS		C			C			D			C	

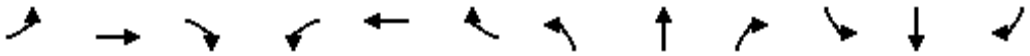
Intersection Summary			
HCM 2000 Control Delay	23.9	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.63		
Actuated Cycle Length (s)	75.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	57.5%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	0	0	520	2530	170	300	290	0	0	220	90
Future Volume (vph)	0	0	0	520	2530	170	300	290	0	0	220	90
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)					4.9		4.4	4.9			5.4	
Lane Util. Factor					0.86		1.00	0.95			0.95	
Frpb, ped/bikes					1.00		1.00	1.00			0.99	
Flpb, ped/bikes					1.00		1.00	1.00			1.00	
Frt					0.99		1.00	1.00			0.96	
Flt Protected					0.99		0.95	1.00			1.00	
Satd. Flow (prot)					6274		1770	3539			3367	
Flt Permitted					0.99		0.95	1.00			1.00	
Satd. Flow (perm)					6274		1770	3539			3367	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	0	0	0	547	2663	179	316	305	0	0	232	95
RTOR Reduction (vph)	0	0	0	0	7	0	0	0	0	0	27	0
Lane Group Flow (vph)	0	0	0	0	3382	0	316	305	0	0	300	0
Confl. Peds. (#/hr)	4		13	13		4	2		2	2		2
Confl. Bikes (#/hr)												1
Turn Type				Perm	NA		Prot	NA			NA	
Protected Phases					6		3	8			4	
Permitted Phases				6								
Actuated Green, G (s)					62.5		20.6	37.7			12.2	
Effective Green, g (s)					62.5		20.6	37.7			12.2	
Actuated g/C Ratio					0.57		0.19	0.34			0.11	
Clearance Time (s)					4.9		4.4	4.9			5.4	
Vehicle Extension (s)					2.4		3.0	3.3			2.4	
Lane Grp Cap (vph)					3564		331	1212			373	
v/s Ratio Prot							c0.18	0.09			c0.09	
v/s Ratio Perm					0.54							
v/c Ratio					0.95		0.95	0.25			0.81	
Uniform Delay, d1					22.3		44.2	26.0			47.7	
Progression Factor					1.00		1.00	1.00			1.00	
Incremental Delay, d2					7.1		37.3	0.1			11.6	
Delay (s)					29.4		81.5	26.1			59.3	
Level of Service					C		F	C			E	
Approach Delay (s)		0.0			29.4			54.3			59.3	
Approach LOS		A			C			D			E	

Intersection Summary			
HCM 2000 Control Delay	35.2	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.93		
Actuated Cycle Length (s)	110.0	Sum of lost time (s)	14.7
Intersection Capacity Utilization	85.7%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group

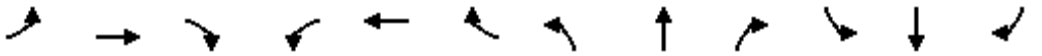


Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	70	690	60	0	0	0	0	510	230	70	680	0
Future Volume (vph)	70	690	60	0	0	0	0	510	230	70	680	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0	4.0					4.9		4.0	4.9	
Lane Util. Factor		0.91	1.00					0.91		1.00	0.91	
Frpb, ped/bikes		1.00	0.98					0.99		1.00	1.00	
Flpb, ped/bikes		1.00	1.00					1.00		1.00	1.00	
Frt		1.00	0.85					0.95		1.00	1.00	
Flt Protected		1.00	1.00					1.00		0.95	1.00	
Satd. Flow (prot)		5061	1551					4809		1770	5085	
Flt Permitted		1.00	1.00					1.00		0.95	1.00	
Satd. Flow (perm)		5061	1551					4809		1770	5085	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	76	750	65	0	0	0	0	554	250	76	739	0
RTOR Reduction (vph)	0	0	36	0	0	0	0	108	0	0	0	0
Lane Group Flow (vph)	0	826	29	0	0	0	0	696	0	76	739	0
Confl. Peds. (#/hr)	4		12				6		12	12		6
Turn Type	Perm	NA	Perm					NA		Prot	NA	
Protected Phases		2						8		7	4	
Permitted Phases	2		2									
Actuated Green, G (s)		32.2	32.2					22.0		6.6	33.0	
Effective Green, g (s)		33.1	33.1					22.0		7.0	33.0	
Actuated g/C Ratio		0.44	0.44					0.29		0.09	0.44	
Clearance Time (s)		4.9	4.9					4.9		4.4	4.9	
Vehicle Extension (s)		4.4	4.4					3.3		2.0	3.3	
Lane Grp Cap (vph)		2233	684					1410		165	2237	
v/s Ratio Prot								c0.14		c0.04	0.15	
v/s Ratio Perm		0.16	0.02									
v/c Ratio		0.37	0.04					0.49		0.46	0.33	
Uniform Delay, d1		14.0	11.9					21.9		32.2	13.8	
Progression Factor		1.00	1.00					1.00		1.00	1.00	
Incremental Delay, d2		0.5	0.1					1.2		9.0	0.4	
Delay (s)		14.5	12.0					23.1		41.2	14.2	
Level of Service		B	B					C		D	B	
Approach Delay (s)		14.3			0.0			23.1			16.7	
Approach LOS		B			A			C			B	

Intersection Summary			
HCM 2000 Control Delay	17.9	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.42		
Actuated Cycle Length (s)	75.0	Sum of lost time (s)	12.9
Intersection Capacity Utilization	85.7%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			

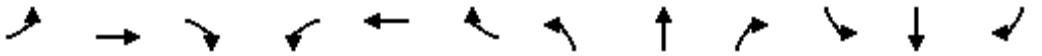
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	1170	530	280	890	310	200
Future Volume (vph)	1170	530	280	890	310	200
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.5	4.0	4.0	4.0
Lane Util. Factor	0.95	1.00	0.97	0.95	0.97	0.91
Frpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	0.99
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.85	1.00	1.00	0.98	0.85
Flt Protected	1.00	1.00	0.95	1.00	0.96	1.00
Satd. Flow (prot)	3539	1583	3433	3539	3377	1421
Flt Permitted	1.00	1.00	0.95	1.00	0.96	1.00
Satd. Flow (perm)	3539	1583	3433	3539	3377	1421
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	1272	576	304	967	337	217
RTOR Reduction (vph)	0	5	0	0	24	116
Lane Group Flow (vph)	1272	571	304	967	378	36
Confl. Peds. (#/hr)						2
Turn Type	NA	pm+ov	Prot	NA	Prot	Perm
Protected Phases	2	8	1	6	8	
Permitted Phases		2				8
Actuated Green, G (s)	28.6	42.3	8.0	41.8	13.7	13.7
Effective Green, g (s)	30.8	46.7	7.9	43.2	15.9	15.9
Actuated g/C Ratio	0.46	0.70	0.12	0.64	0.24	0.24
Clearance Time (s)	6.2	6.2	4.4	5.4	6.2	6.2
Vehicle Extension (s)	4.0	2.0	2.0	5.2	2.0	2.0
Lane Grp Cap (vph)	1624	1196	404	2278	800	336
v/s Ratio Prot	c0.36	c0.11	c0.09	0.27	0.11	
v/s Ratio Perm		0.25				0.03
v/c Ratio	0.78	0.48	0.75	0.42	0.47	0.11
Uniform Delay, d1	15.3	4.6	28.7	5.9	22.0	20.0
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	3.9	0.1	6.9	0.6	0.2	0.1
Delay (s)	19.2	4.8	35.5	6.4	22.2	20.1
Level of Service	B	A	D	A	C	C
Approach Delay (s)	14.7			13.4	21.6	
Approach LOS	B			B	C	

Intersection Summary			
HCM 2000 Control Delay	15.3	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.71		
Actuated Cycle Length (s)	67.1	Sum of lost time (s)	12.5
Intersection Capacity Utilization	62.5%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	1060	140	380	330	0	0	0	0	340	0	670
Future Volume (vph)	0	1060	140	380	330	0	0	0	0	340	0	670
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0	4.0	4.0	4.0					4.0		3.4
Lane Util. Factor		0.95	1.00	0.97	0.95					1.00		1.00
Frpb, ped/bikes		1.00	0.99	1.00	1.00					1.00		1.00
Flpb, ped/bikes		1.00	1.00	1.00	1.00					1.00		1.00
Frt		1.00	0.85	1.00	1.00					1.00		0.85
Flt Protected		1.00	1.00	0.95	1.00					0.95		1.00
Satd. Flow (prot)		3539	1561	3433	3539					1770		1583
Flt Permitted		1.00	1.00	0.95	1.00					0.95		1.00
Satd. Flow (perm)		3539	1561	3433	3539					1770		1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	1152	152	413	359	0	0	0	0	370	0	728
RTOR Reduction (vph)	0	0	87	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	1152	65	413	359	0	0	0	0	370	0	728
Confl. Peds. (#/hr)			2	2								
Turn Type		NA	Perm	Prot	NA					Prot		Free
Protected Phases		2		1	6					4		
Permitted Phases			2									Free
Actuated Green, G (s)		25.9	25.9	9.0	39.1					14.5		63.2
Effective Green, g (s)		26.9	26.9	9.2	40.1					15.1		63.2
Actuated g/C Ratio		0.43	0.43	0.15	0.63					0.24		1.00
Clearance Time (s)		5.0	5.0	4.2	5.0					4.6		
Vehicle Extension (s)		0.2	0.2	0.2	0.2					0.2		
Lane Grp Cap (vph)		1506	664	499	2245					422		1583
v/s Ratio Prot		c0.33		c0.12	0.10					c0.21		
v/s Ratio Perm			0.04									0.46
v/c Ratio		0.76	0.10	0.83	0.16					0.88		0.46
Uniform Delay, d1		15.5	10.9	26.2	4.7					23.2		0.0
Progression Factor		1.00	1.00	1.00	1.00					1.00		1.00
Incremental Delay, d2		3.8	0.3	10.3	0.2					17.6		1.0
Delay (s)		19.2	11.2	36.6	4.9					40.8		1.0
Level of Service		B	B	D	A					D		A
Approach Delay (s)		18.3			21.8			0.0			14.4	
Approach LOS		B			C			A			B	

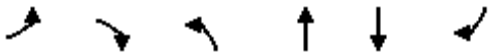
Intersection Summary			
HCM 2000 Control Delay	17.8	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.81		
Actuated Cycle Length (s)	63.2	Sum of lost time (s)	12.0
Intersection Capacity Utilization	82.6%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	880	650	0	0	620	590	190	0	300	0	0	0
Future Volume (vph)	880	650	0	0	620	590	190	0	300	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	5.0			5.0			4.0	4.0			
Lane Util. Factor	0.97	0.95			0.95			1.00	1.00			
Frt	1.00	1.00			0.93			1.00	0.85			
Flt Protected	0.95	1.00			1.00			0.95	1.00			
Satd. Flow (prot)	3433	3539			3280			1770	1583			
Flt Permitted	0.95	1.00			1.00			0.95	1.00			
Satd. Flow (perm)	3433	3539			3280			1770	1583			
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	957	707	0	0	674	641	207	0	326	0	0	0
RTOR Reduction (vph)	0	0	0	0	201	0	0	0	277	0	0	0
Lane Group Flow (vph)	957	707	0	0	1114	0	0	207	49	0	0	0
Turn Type	Prot	NA			NA		Split	NA	Perm			
Protected Phases	5	2			6		4	4				
Permitted Phases									4			
Actuated Green, G (s)	23.5	59.4			31.7			10.0	10.0			
Effective Green, g (s)	23.7	59.9			32.2			10.6	10.6			
Actuated g/C Ratio	0.30	0.75			0.41			0.13	0.13			
Clearance Time (s)	4.2	5.5			5.5			4.6	4.6			
Vehicle Extension (s)	0.2	0.2			0.2			0.2	0.2			
Lane Grp Cap (vph)	1023	2666			1328			236	211			
v/s Ratio Prot	c0.28	0.20			c0.34			c0.12				
v/s Ratio Perm									0.03			
v/c Ratio	0.94	0.27			0.84			0.88	0.23			
Uniform Delay, d1	27.2	3.0			21.3			33.8	30.8			
Progression Factor	1.00	1.00			1.00			1.00	1.00			
Incremental Delay, d2	14.8	0.2			6.5			27.8	0.2			
Delay (s)	41.9	3.3			27.8			61.6	31.0			
Level of Service	D	A			C			E	C			
Approach Delay (s)		25.5			27.8			42.9			0.0	
Approach LOS		C			C			D			A	

Intersection Summary			
HCM 2000 Control Delay	29.0	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.88		
Actuated Cycle Length (s)	79.5	Sum of lost time (s)	13.0
Intersection Capacity Utilization	82.6%	ICU Level of Service	E
Analysis Period (min)	15		

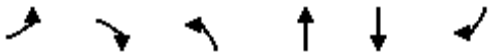
c Critical Lane Group



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	210	210	110	500	700	110
Future Volume (vph)	210	210	110	500	700	110
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0		4.0	4.0	4.0	
Lane Util. Factor	1.00		1.00	0.95	0.95	
Frt	0.93		1.00	1.00	0.98	
Flt Protected	0.98		0.95	1.00	1.00	
Satd. Flow (prot)	1695		1770	3539	3467	
Flt Permitted	0.98		0.95	1.00	1.00	
Satd. Flow (perm)	1695		1770	3539	3467	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	228	228	120	543	761	120
RTOR Reduction (vph)	35	0	0	0	9	0
Lane Group Flow (vph)	421	0	120	543	872	0
Turn Type	Prot		Prot	NA	NA	
Protected Phases	7		1	6	2	
Permitted Phases						
Actuated Green, G (s)	35.5		13.1	76.5	59.4	
Effective Green, g (s)	35.5		13.1	76.5	59.4	
Actuated g/C Ratio	0.30		0.11	0.64	0.49	
Clearance Time (s)	4.0		4.0	4.0	4.0	
Vehicle Extension (s)	3.0		3.0	3.0	3.0	
Lane Grp Cap (vph)	501		193	2256	1716	
v/s Ratio Prot	c0.25		c0.07	0.15	c0.25	
v/s Ratio Perm						
v/c Ratio	0.84		0.62	0.24	0.51	
Uniform Delay, d1	39.6		51.1	9.3	20.4	
Progression Factor	1.00		1.01	0.91	1.00	
Incremental Delay, d2	11.8		6.0	0.2	1.1	
Delay (s)	51.4		57.4	8.8	21.5	
Level of Service	D		E	A	C	
Approach Delay (s)	51.4			17.6	21.5	
Approach LOS	D			B	C	

Intersection Summary			
HCM 2000 Control Delay	27.0	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.63		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	63.5%	ICU Level of Service	B
Analysis Period (min)	15		

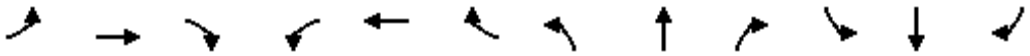
c Critical Lane Group



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	0	300	0	0	250	30
Future Volume (Veh/h)	0	300	0	0	250	30
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	326	0	0	272	33
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage veh)						
Upstream signal (ft)				973	1298	
pX, platoon unblocked						
vC, conflicting volume	288	152	305			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	288	152	305			
tC, single (s)	6.8	6.9	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	100	62	100			
cM capacity (veh/h)	678	866	1253			

Direction, Lane #	EB 1	SB 1	SB 2
Volume Total	326	181	124
Volume Left	0	0	0
Volume Right	326	0	33
cSH	866	1700	1700
Volume to Capacity	0.38	0.11	0.07
Queue Length 95th (ft)	44	0	0
Control Delay (s)	11.6	0.0	0.0
Lane LOS	B		
Approach Delay (s)	11.6	0.0	
Approach LOS	B		

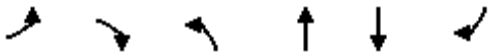
Intersection Summary			
Average Delay	6.0		
Intersection Capacity Utilization	33.1%	ICU Level of Service	A
Analysis Period (min)	15		



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	20	150	60	90	0	0	0	0	40	420	10
Future Volume (vph)	0	20	150	60	90	0	0	0	0	40	420	10
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.5			4.5						4.5	
Lane Util. Factor		1.00			1.00						0.95	
Frt		0.88			1.00						1.00	
Flt Protected		1.00			0.98						1.00	
Satd. Flow (prot)		1641			1826						3513	
Flt Permitted		1.00			0.84						1.00	
Satd. Flow (perm)		1641			1565						3513	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	22	163	65	98	0	0	0	0	43	457	11
RTOR Reduction (vph)	0	84	0	0	0	0	0	0	0	0	2	0
Lane Group Flow (vph)	0	101	0	0	163	0	0	0	0	0	509	0
Turn Type		NA		Perm	NA					Perm	NA	
Protected Phases		2			6						4	
Permitted Phases				6						4		
Actuated Green, G (s)		31.5			31.5						24.5	
Effective Green, g (s)		31.5			31.5						24.5	
Actuated g/C Ratio		0.48			0.48						0.38	
Clearance Time (s)		4.5			4.5						4.5	
Vehicle Extension (s)		3.0			3.0						3.0	
Lane Grp Cap (vph)		795			758						1324	
v/s Ratio Prot		0.06										
v/s Ratio Perm					c0.10						0.14	
v/c Ratio		0.13			0.22						0.38	
Uniform Delay, d1		9.2			9.6						14.8	
Progression Factor		1.00			1.00						1.00	
Incremental Delay, d2		0.1			0.6						0.8	
Delay (s)		9.3			10.3						15.6	
Level of Service		A			B						B	
Approach Delay (s)		9.3			10.3			0.0			15.6	
Approach LOS		A			B			A			B	

Intersection Summary			
HCM 2000 Control Delay	13.2	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.29		
Actuated Cycle Length (s)	65.0	Sum of lost time (s)	9.0
Intersection Capacity Utilization	42.7%	ICU Level of Service	A
Analysis Period (min)	15		

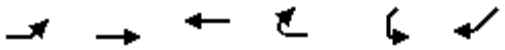
c Critical Lane Group



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	50	150	170	330	370	60
Future Volume (vph)	50	150	170	330	370	60
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0			4.0	4.0	
Lane Util. Factor	1.00			1.00	1.00	
Frt	0.90			1.00	0.98	
Flt Protected	0.99			0.98	1.00	
Satd. Flow (prot)	1653			1832	1828	
Flt Permitted	0.99			0.73	1.00	
Satd. Flow (perm)	1653			1359	1828	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	54	163	185	359	402	65
RTOR Reduction (vph)	141	0	0	0	6	0
Lane Group Flow (vph)	76	0	0	544	461	0
Turn Type	Prot		Perm	NA	NA	
Protected Phases	4			2	6	
Permitted Phases			2			
Actuated Green, G (s)	8.3			45.5	45.5	
Effective Green, g (s)	8.3			45.5	45.5	
Actuated g/C Ratio	0.13			0.74	0.74	
Clearance Time (s)	4.0			4.0	4.0	
Vehicle Extension (s)	3.0			3.0	3.0	
Lane Grp Cap (vph)	222			1000	1345	
v/s Ratio Prot	c0.05				0.25	
v/s Ratio Perm				c0.40		
v/c Ratio	0.34			0.54	0.34	
Uniform Delay, d1	24.3			3.6	2.9	
Progression Factor	1.00			1.00	1.00	
Incremental Delay, d2	0.9			2.1	0.7	
Delay (s)	25.2			5.7	3.6	
Level of Service	C			A	A	
Approach Delay (s)	25.2			5.7	3.6	
Approach LOS	C			A	A	

Intersection Summary			
HCM 2000 Control Delay	8.3	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.51		
Actuated Cycle Length (s)	61.8	Sum of lost time (s)	8.0
Intersection Capacity Utilization	71.9%	ICU Level of Service	C
Analysis Period (min)	15		

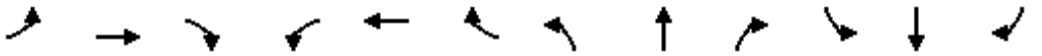
c Critical Lane Group



Movement	EBL	EBT	WBT	WBR	SWL	SWR
Lane Configurations						
Traffic Volume (vph)	50	670	1410	40	150	250
Future Volume (vph)	50	670	1410	40	150	250
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.5	4.5	4.5		4.5	
Lane Util. Factor	1.00	0.95	0.95		1.00	
Frt	1.00	1.00	1.00		0.92	
Flt Protected	0.95	1.00	1.00		0.98	
Satd. Flow (prot)	1770	3539	3525		1674	
Flt Permitted	0.95	1.00	1.00		0.98	
Satd. Flow (perm)	1770	3539	3525		1674	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	54	728	1533	43	163	272
RTOR Reduction (vph)	0	0	3	0	74	0
Lane Group Flow (vph)	54	728	1573	0	361	0
Turn Type	Prot	NA	NA		Prot	
Protected Phases	7	4	8		6	
Permitted Phases						
Actuated Green, G (s)	3.5	45.7	37.7		23.6	
Effective Green, g (s)	3.5	45.7	37.7		23.6	
Actuated g/C Ratio	0.04	0.58	0.48		0.30	
Clearance Time (s)	4.5	4.5	4.5		4.5	
Vehicle Extension (s)	3.0	3.0	3.0		3.0	
Lane Grp Cap (vph)	79	2065	1697		504	
v/s Ratio Prot	c0.03	0.21	c0.45		c0.22	
v/s Ratio Perm						
v/c Ratio	0.68	0.35	0.93		0.72	
Uniform Delay, d1	36.9	8.5	19.0		24.4	
Progression Factor	1.00	1.00	1.00		1.00	
Incremental Delay, d2	21.7	0.1	9.2		8.5	
Delay (s)	58.6	8.6	28.2		32.8	
Level of Service	E	A	C		C	
Approach Delay (s)		12.1	28.2		32.8	
Approach LOS		B	C		C	

Intersection Summary			
HCM 2000 Control Delay	24.4	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.84		
Actuated Cycle Length (s)	78.3	Sum of lost time (s)	13.5
Intersection Capacity Utilization	72.7%	ICU Level of Service	C
Analysis Period (min)	15		

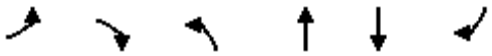
c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	60	10	90	40	180	240	200	400	130	260	450	190
Future Volume (vph)	60	10	90	40	180	240	200	400	130	260	450	190
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.5			4.5		4.5	4.5		4.5	4.5	
Lane Util. Factor		1.00			1.00		1.00	0.95		1.00	0.95	
Frt		0.92			0.93		1.00	0.96		1.00	0.96	
Flt Protected		0.98			1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1690			1724		1770	3409		1770	3381	
Flt Permitted		0.98			1.00		0.95	1.00		0.95	1.00	
Satd. Flow (perm)		1690			1724		1770	3409		1770	3381	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	65	11	98	43	196	261	217	435	141	283	489	207
RTOR Reduction (vph)	0	56	0	0	42	0	0	35	0	0	51	0
Lane Group Flow (vph)	0	118	0	0	458	0	217	541	0	283	645	0
Turn Type	Split	NA		Split	NA		Prot	NA		Prot	NA	
Protected Phases	2	2		6	6		3	8		7	4	
Permitted Phases												
Actuated Green, G (s)		10.7			21.6		11.6	15.9		15.4	19.7	
Effective Green, g (s)		10.7			21.6		11.6	15.9		15.4	19.7	
Actuated g/C Ratio		0.13			0.26		0.14	0.19		0.19	0.24	
Clearance Time (s)		4.5			4.5		4.5	4.5		4.5	4.5	
Vehicle Extension (s)		3.0			3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)		221			456		251	664		334	816	
v/s Ratio Prot		c0.07			c0.27		0.12	0.16		c0.16	c0.19	
v/s Ratio Perm												
v/c Ratio		0.53			1.00		0.86	0.82		0.85	0.79	
Uniform Delay, d1		33.1			30.0		34.2	31.4		32.0	29.0	
Progression Factor		1.00			1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2		2.5			43.3		25.1	7.6		17.7	5.3	
Delay (s)		35.6			73.3		59.4	39.1		49.7	34.3	
Level of Service		D			E		E	D		D	C	
Approach Delay (s)		35.6			73.3			44.6			38.7	
Approach LOS		D			E			D			D	

Intersection Summary			
HCM 2000 Control Delay	47.5	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.86		
Actuated Cycle Length (s)	81.6	Sum of lost time (s)	18.0
Intersection Capacity Utilization	68.1%	ICU Level of Service	C
Analysis Period (min)	15		

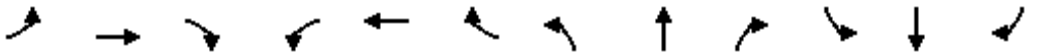
c Critical Lane Group



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	30	200	370	210	190	90
Future Volume (vph)	30	200	370	210	190	90
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.5			4.5	4.5	
Lane Util. Factor	1.00			1.00	1.00	
Frt	0.88			1.00	0.96	
Flt Protected	0.99			0.97	1.00	
Satd. Flow (prot)	1634			1805	1782	
Flt Permitted	0.99			0.64	1.00	
Satd. Flow (perm)	1634			1187	1782	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	33	217	402	228	207	98
RTOR Reduction (vph)	188	0	0	0	19	0
Lane Group Flow (vph)	62	0	0	630	286	0
Turn Type	Prot		Perm	NA	NA	
Protected Phases	4			2	6	
Permitted Phases			2			
Actuated Green, G (s)	8.1			43.5	43.5	
Effective Green, g (s)	8.1			43.5	43.5	
Actuated g/C Ratio	0.13			0.72	0.72	
Clearance Time (s)	4.5			4.5	4.5	
Vehicle Extension (s)	3.0			3.0	3.0	
Lane Grp Cap (vph)	218			852	1279	
v/s Ratio Prot	c0.04				0.16	
v/s Ratio Perm				c0.53		
v/c Ratio	0.28			0.74	0.22	
Uniform Delay, d1	23.6			5.1	2.9	
Progression Factor	1.00			1.00	1.00	
Incremental Delay, d2	0.7			5.7	0.4	
Delay (s)	24.4			10.9	3.3	
Level of Service	C			B	A	
Approach Delay (s)	24.4			10.9	3.3	
Approach LOS	C			B	A	

Intersection Summary			
HCM 2000 Control Delay	11.8	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.67		
Actuated Cycle Length (s)	60.6	Sum of lost time (s)	9.0
Intersection Capacity Utilization	72.3%	ICU Level of Service	C
Analysis Period (min)	15		

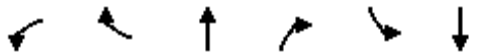
c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	80	1660	550	120	1160	360	460	350	180	300	260	40
Future Volume (vph)	80	1660	550	120	1160	360	460	350	180	300	260	40
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	
Lane Util. Factor	1.00	0.91	1.00	0.97	0.95	1.00	0.97	1.00	1.00	1.00	1.00	
Frpb, ped/bikes	1.00	1.00	0.99	1.00	1.00	0.95	1.00	1.00	0.98	1.00	1.00	
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.98	
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)	1770	5085	1561	3433	3539	1506	3433	1863	1552	1770	1822	
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (perm)	1770	5085	1561	3433	3539	1506	3433	1863	1552	1770	1822	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	87	1804	598	130	1261	391	500	380	196	326	283	43
RTOR Reduction (vph)	0	0	237	0	0	159	0	0	95	0	4	0
Lane Group Flow (vph)	87	1804	361	130	1261	232	500	380	101	326	322	0
Confl. Peds. (#/hr)	6		1	1		6			6	6		
Confl. Bikes (#/hr)			1			5						3
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases			2			6			8			
Actuated Green, G (s)	8.2	59.6	59.6	10.0	61.3	61.3	23.1	32.9	32.9	30.0	38.0	
Effective Green, g (s)	8.6	60.9	60.9	10.4	62.7	62.7	23.5	33.7	33.7	29.0	39.2	
Actuated g/C Ratio	0.06	0.41	0.41	0.07	0.42	0.42	0.16	0.22	0.22	0.19	0.26	
Clearance Time (s)	4.4	5.3	5.3	4.4	5.4	5.4	4.4	4.8	4.8	3.0	5.2	
Vehicle Extension (s)	2.0	4.4	4.4	2.0	4.4	4.4	2.0	3.8	3.8	2.0	2.0	
Lane Grp Cap (vph)	101	2064	633	238	1479	629	537	418	348	342	476	
v/s Ratio Prot	c0.05	0.35		0.04	c0.36		0.15	c0.20		c0.18	0.18	
v/s Ratio Perm			0.23			0.15			0.06			
v/c Ratio	0.86	0.87	0.57	0.55	0.85	0.37	0.93	0.91	0.29	0.95	0.68	
Uniform Delay, d1	70.1	41.0	34.4	67.5	39.5	30.0	62.5	56.7	48.2	59.8	49.7	
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	47.2	5.5	3.7	1.4	6.4	1.7	22.8	23.5	0.6	36.0	3.0	
Delay (s)	117.3	46.5	38.1	68.9	45.9	31.7	85.3	80.2	48.8	95.8	52.7	
Level of Service	F	D	D	E	D	C	F	F	D	F	D	
Approach Delay (s)		47.0			44.5			76.8			74.3	
Approach LOS		D			D			E			E	

Intersection Summary			
HCM 2000 Control Delay	54.6	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.89		
Actuated Cycle Length (s)	150.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	86.7%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	820	1790	930	0	0	880
Future Volume (vph)	820	1790	930	0	0	880
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	7.0	7.0	7.0			7.0
Lane Util. Factor	0.97	0.88	0.95			0.95
Frt	1.00	0.85	1.00			1.00
Flt Protected	0.95	1.00	1.00			1.00
Satd. Flow (prot)	3433	2787	3539			3539
Flt Permitted	0.95	1.00	1.00			1.00
Satd. Flow (perm)	3433	2787	3539			3539
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	891	1946	1011	0	0	957
RTOR Reduction (vph)	0	5	0	0	0	0
Lane Group Flow (vph)	891	1941	1011	0	0	957
Turn Type	Prot	Perm	NA			NA
Protected Phases	4		2			6
Permitted Phases		4				
Actuated Green, G (s)	94.0	94.0	42.0			42.0
Effective Green, g (s)	94.0	94.0	42.0			42.0
Actuated g/C Ratio	0.63	0.63	0.28			0.28
Clearance Time (s)	7.0	7.0	7.0			7.0
Vehicle Extension (s)	0.2	0.2	0.2			0.2
Lane Grp Cap (vph)	2151	1746	990			990
v/s Ratio Prot	0.26		c0.29			0.27
v/s Ratio Perm		c0.70				
v/c Ratio	0.41	1.11	1.02			0.97
Uniform Delay, d1	14.1	28.0	54.0			53.3
Progression Factor	1.00	1.00	1.00			1.00
Incremental Delay, d2	0.0	59.0	34.1			20.6
Delay (s)	14.2	87.0	88.1			73.9
Level of Service	B	F	F			E
Approach Delay (s)	64.1		88.1			73.9
Approach LOS	E		F			E

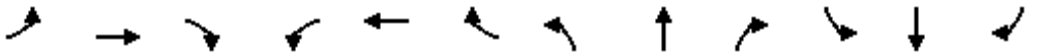
Intersection Summary			
HCM 2000 Control Delay	71.1	HCM 2000 Level of Service	E
HCM 2000 Volume to Capacity ratio	1.08		
Actuated Cycle Length (s)	150.0	Sum of lost time (s)	14.0
Intersection Capacity Utilization	100.0%	ICU Level of Service	F
Analysis Period (min)	15		

c Critical Lane Group

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	0	290	1450	140	0	1510
Future Volume (Veh/h)	0	290	1450	140	0	1510
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	315	1576	152	0	1641
Pedestrians						3
Lane Width (ft)						12.0
Walking Speed (ft/s)						4.0
Percent Blockage						0
Right turn flare (veh)						
Median type			None			None
Median storage veh)						
Upstream signal (ft)			810			779
pX, platoon unblocked	0.82					
vC, conflicting volume	2199	604			1728	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1702	604			1728	
tC, single (s)	6.8	6.9			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	100	28			100	
cM capacity (veh/h)	68	440			361	

Direction, Lane #	WB 1	NB 1	NB 2	NB 3	SB 1	SB 2	SB 3
Volume Total	315	630	630	467	547	547	547
Volume Left	0	0	0	0	0	0	0
Volume Right	315	0	0	152	0	0	0
cSH	440	1700	1700	1700	1700	1700	1700
Volume to Capacity	0.72	0.37	0.37	0.27	0.32	0.32	0.32
Queue Length 95th (ft)	139	0	0	0	0	0	0
Control Delay (s)	31.2	0.0	0.0	0.0	0.0	0.0	0.0
Lane LOS	D						
Approach Delay (s)	31.2	0.0			0.0		
Approach LOS	D						

Intersection Summary			
Average Delay	2.7		
Intersection Capacity Utilization	56.1%	ICU Level of Service	B
Analysis Period (min)	15		



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	380	430	320	80	540	700	450	510	120	400	710	400
Future Volume (vph)	380	430	320	80	540	700	450	510	120	400	710	400
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.9	4.0	4.0		4.0	4.0	4.9
Lane Util. Factor	1.00	1.00	1.00	1.00	0.95	1.00	1.00	0.95		1.00	0.95	1.00
Frpb, ped/bikes	1.00	1.00	0.99	1.00	1.00	0.99	1.00	1.00		1.00	1.00	0.99
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.97		1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1770	1863	1568	1770	3539	1568	1770	3438		1770	3539	1566
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)	1770	1863	1568	1770	3539	1568	1770	3438		1770	3539	1566
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	413	467	348	87	587	761	489	554	130	435	772	435
RTOR Reduction (vph)	0	0	31	0	0	32	0	14	0	0	0	50
Lane Group Flow (vph)	413	467	317	87	587	729	489	670	0	435	772	385
Confl. Peds. (#/hr)	6		3	3		6	6					6
Turn Type	Prot	NA	pm+ov	Prot	NA	pm+ov	Prot	NA		Prot	NA	pm+ov
Protected Phases	5	2	3	1	6	7	3	8		7	4	5
Permitted Phases			2			6						4
Actuated Green, G (s)	29.1	50.2	84.3	11.0	32.1	68.5	34.1	32.7		36.4	35.0	64.1
Effective Green, g (s)	30.0	51.1	86.1	12.0	33.1	68.5	35.0	33.6		37.3	35.9	64.1
Actuated g/C Ratio	0.20	0.34	0.57	0.08	0.22	0.46	0.23	0.22		0.25	0.24	0.43
Clearance Time (s)	4.9	4.9	4.9	5.0	5.0	4.9	4.9	4.9		4.9	4.9	4.9
Vehicle Extension (s)	0.2	0.2	3.1	8.0	8.0	5.5	3.1	3.1		5.5	5.5	0.2
Lane Grp Cap (vph)	354	634	941	141	780	767	413	770		440	847	669
v/s Ratio Prot	c0.23	0.25	0.08	0.05	0.17	c0.23	c0.28	0.19		0.25	0.22	0.11
v/s Ratio Perm			0.12			0.23						0.13
v/c Ratio	1.17	0.74	0.34	0.62	0.75	0.95	1.18	0.87		0.99	0.91	0.58
Uniform Delay, d1	60.0	43.5	16.9	66.8	54.6	39.1	57.5	56.1		56.1	55.5	32.6
Progression Factor	1.00	1.00	1.00	1.19	0.71	1.17	1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	101.3	7.5	0.2	16.5	6.3	21.1	104.9	10.6		39.8	14.8	0.7
Delay (s)	161.3	51.0	17.1	95.9	45.1	66.7	162.4	66.7		96.0	70.3	33.4
Level of Service	F	D	B	F	D	E	F	E		F	E	C
Approach Delay (s)		78.5			59.6			106.6			67.3	
Approach LOS		E			E			F			E	

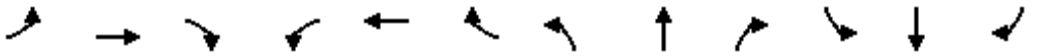
Intersection Summary			
HCM 2000 Control Delay	76.2	HCM 2000 Level of Service	E
HCM 2000 Volume to Capacity ratio	1.11		
Actuated Cycle Length (s)	150.0	Sum of lost time (s)	17.8
Intersection Capacity Utilization	106.5%	ICU Level of Service	G
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	200	140	170	70	160	90	240	640	70	150	730	170
Future Volume (vph)	200	140	170	70	160	90	240	640	70	150	730	170
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0
Lane Util. Factor	0.95	0.95	1.00	1.00	1.00	1.00	0.97	0.95		1.00	0.95	1.00
Frpb, ped/bikes	1.00	1.00	0.98	1.00	1.00	0.98	1.00	1.00		1.00	1.00	0.97
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.99		1.00	1.00	0.85
Flt Protected	0.95	0.99	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1681	1750	1557	1770	1863	1547	3433	3476		1770	3539	1531
Flt Permitted	0.95	0.99	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)	1681	1750	1557	1770	1863	1547	3433	3476		1770	3539	1531
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	217	152	185	76	174	98	261	696	76	163	793	185
RTOR Reduction (vph)	0	0	132	0	0	80	0	5	0	0	0	106
Lane Group Flow (vph)	174	195	53	76	174	18	261	767	0	163	793	79
Confl. Peds. (#/hr)	10		12	12		10	15		12	12		15
Turn Type	Split	NA	pm+ov	Split	NA	Perm	Prot	NA		Prot	NA	Perm
Protected Phases	8	8	1	7	7		1	6		5	2	
Permitted Phases			8			7						2
Actuated Green, G (s)	23.9	23.9	36.2	22.4	22.4	22.4	12.3	50.2		14.4	52.3	52.3
Effective Green, g (s)	24.8	24.8	37.0	23.3	23.3	23.3	12.7	51.1		14.8	53.2	53.2
Actuated g/C Ratio	0.19	0.19	0.28	0.18	0.18	0.18	0.10	0.39		0.11	0.41	0.41
Clearance Time (s)	4.9	4.9	4.4	4.9	4.9	4.9	4.4	4.9		4.4	4.9	4.9
Vehicle Extension (s)	3.0	3.0	2.0	3.0	3.0	3.0	2.0	4.5		2.0	4.6	4.6
Lane Grp Cap (vph)	320	333	443	317	333	277	335	1366		201	1448	626
v/s Ratio Prot	0.10	c0.11	0.01	0.04	c0.09		0.08	0.22		c0.09	c0.22	
v/s Ratio Perm			0.02			0.01						0.05
v/c Ratio	0.54	0.59	0.12	0.24	0.52	0.06	0.78	0.56		0.81	0.55	0.13
Uniform Delay, d1	47.5	47.9	34.4	45.8	48.3	44.3	57.3	30.7		56.2	29.2	23.9
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.41	0.66	0.41
Incremental Delay, d2	1.9	2.6	0.0	0.4	1.5	0.1	10.0	1.7		14.8	1.0	0.3
Delay (s)	49.4	50.5	34.5	46.1	49.8	44.4	67.3	32.4		93.9	20.3	10.1
Level of Service	D	D	C	D	D	D	E	C		F	C	B
Approach Delay (s)		44.8			47.5			41.2			29.1	
Approach LOS		D			D			D			C	

Intersection Summary			
HCM 2000 Control Delay	38.1	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.59		
Actuated Cycle Length (s)	130.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	72.5%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	40	20	50	80	20	70	90	1050	200	60	960	30
Future Volume (vph)	40	20	50	80	20	70	90	1050	200	60	960	30
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0			4.0		4.0	4.0		4.0	4.0	
Lane Util. Factor		1.00			1.00		1.00	0.95		1.00	0.95	
Frpb, ped/bikes		1.00			0.97		1.00	0.99		1.00	1.00	
Flpb, ped/bikes		0.99			1.00		1.00	1.00		1.00	1.00	
Frt		0.94			0.94		1.00	0.98		1.00	1.00	
Flt Protected		0.98			0.98		0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1696			1659		1770	3435		1770	3523	
Flt Permitted		0.78			0.71		0.22	1.00		0.16	1.00	
Satd. Flow (perm)		1351			1208		414	3435		296	3523	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	43	22	54	87	22	76	98	1141	217	65	1043	33
RTOR Reduction (vph)	0	22	0	0	18	0	0	7	0	0	1	0
Lane Group Flow (vph)	0	97	0	0	167	0	98	1351	0	65	1075	0
Confl. Peds. (#/hr)	33					33			3	3		
Turn Type	Perm	NA		Perm	NA		pm+pt	NA		pm+pt	NA	
Protected Phases		8			4		1	6		5	2	
Permitted Phases	8			4			6			2		
Actuated Green, G (s)		23.6			23.6		113.9	107.3		110.5	105.6	
Effective Green, g (s)		24.5			24.5		114.7	108.2		111.3	106.5	
Actuated g/C Ratio		0.16			0.16		0.76	0.72		0.74	0.71	
Clearance Time (s)		4.9			4.9		4.4	4.9		4.4	4.9	
Vehicle Extension (s)		2.0			2.0		2.0	2.9		2.0	2.9	
Lane Grp Cap (vph)		220			197		379	2477		271	2501	
v/s Ratio Prot							c0.01	c0.39		0.01	0.31	
v/s Ratio Perm		0.07			c0.14		0.19			0.17		
v/c Ratio		0.44			0.85		0.26	0.55		0.24	0.43	
Uniform Delay, d1		56.6			60.9		5.7	9.6		7.1	9.1	
Progression Factor		1.00			1.26		1.00	1.00		1.00	1.00	
Incremental Delay, d2		0.5			24.3		0.1	0.9		0.2	0.5	
Delay (s)		57.1			101.0		5.8	10.5		7.3	9.6	
Level of Service		E			F		A	B		A	A	
Approach Delay (s)		57.1			101.0			10.2			9.5	
Approach LOS		E			F			B			A	

Intersection Summary			
HCM 2000 Control Delay	17.6	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.59		
Actuated Cycle Length (s)	150.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	65.0%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	380	1870	200	510	1550	390	230	640	410	350	530	290
Future Volume (vph)	380	1870	200	510	1550	390	230	640	410	350	530	290
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0	4.4	4.0	4.0	3.5	4.0	4.0	3.5
Lane Util. Factor	0.97	0.91		0.97	0.91	1.00	1.00	0.95	1.00	0.97	0.95	1.00
Frpb, ped/bikes	1.00	0.99		1.00	1.00	0.92	1.00	1.00	0.96	1.00	1.00	0.96
Flpb, ped/bikes	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.99		1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	4954		3433	5085	1464	1770	3539	1521	3433	3539	1516
Flt Permitted	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	4954		3433	5085	1464	1770	3539	1521	3433	3539	1516
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	413	2033	217	554	1685	424	250	696	446	380	576	315
RTOR Reduction (vph)	0	9	0	0	0	39	0	0	55	0	0	55
Lane Group Flow (vph)	413	2241	0	554	1685	385	250	696	391	380	576	260
Confl. Peds. (#/hr)	48		65	65		48	42		40	40		42
Turn Type	Prot	NA		Prot	NA	pm+ov	Prot	NA	pm+ov	Prot	NA	pm+ov
Protected Phases	5	2		1	6	7	3	8	1	7	4	5
Permitted Phases						6			8			4
Actuated Green, G (s)	19.7	58.7		19.9	59.0	75.9	16.2	30.7	50.6	16.9	31.4	51.1
Effective Green, g (s)	20.1	59.8		20.3	60.0	75.9	16.6	31.6	52.4	17.3	32.3	52.9
Actuated g/C Ratio	0.14	0.41		0.14	0.41	0.52	0.11	0.22	0.36	0.12	0.22	0.36
Clearance Time (s)	4.4	5.1		4.4	5.0	4.4	4.4	4.9	4.4	4.4	4.9	4.4
Vehicle Extension (s)	2.0	3.5		2.0	3.7	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lane Grp Cap (vph)	475	2043		480	2104	766	202	771	586	409	788	553
v/s Ratio Prot	0.12	c0.45		c0.16	0.33	0.06	c0.14	c0.20	0.10	c0.11	0.16	0.07
v/s Ratio Perm						0.20			0.16			0.10
v/c Ratio	0.87	1.10		1.15	0.80	0.50	1.24	0.90	0.67	0.93	0.73	0.47
Uniform Delay, d1	61.2	42.6		62.4	37.3	22.4	64.2	55.2	39.0	63.2	52.3	35.3
Progression Factor	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	15.0	52.0		90.8	2.4	0.2	141.9	13.6	2.2	26.8	3.0	0.2
Delay (s)	76.2	94.6		153.2	39.6	22.5	206.1	68.8	41.2	90.1	55.3	35.5
Level of Service	E	F		F	D	C	F	E	D	F	E	D
Approach Delay (s)		91.8			60.5			84.6			60.8	
Approach LOS		F			E			F			E	

Intersection Summary			
HCM 2000 Control Delay	75.2	HCM 2000 Level of Service	E
HCM 2000 Volume to Capacity ratio	1.07		
Actuated Cycle Length (s)	145.0	Sum of lost time (s)	16.4
Intersection Capacity Utilization	104.7%	ICU Level of Service	G
Analysis Period (min)	15		
c Critical Lane Group			

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	120	300	780	120	400	840
Future Volume (vph)	120	300	780	120	400	840
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.5		4.5		4.5	4.5
Lane Util. Factor	1.00		0.95		1.00	0.95
Frt	0.90		0.98		1.00	1.00
Flt Protected	0.99		1.00		0.95	1.00
Satd. Flow (prot)	1659		3469		1770	3539
Flt Permitted	0.99		1.00		0.95	1.00
Satd. Flow (perm)	1659		3469		1770	3539
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	130	326	848	130	435	913
RTOR Reduction (vph)	130	0	17	0	0	0
Lane Group Flow (vph)	326	0	961	0	435	913
Turn Type	Prot		NA		Prot	NA
Protected Phases	8		2		1	6
Permitted Phases						
Actuated Green, G (s)	15.2		21.7		18.8	45.0
Effective Green, g (s)	15.2		21.7		18.8	45.0
Actuated g/C Ratio	0.22		0.31		0.27	0.65
Clearance Time (s)	4.5		4.5		4.5	4.5
Vehicle Extension (s)	3.0		3.0		3.0	3.0
Lane Grp Cap (vph)	364		1087		480	2301
v/s Ratio Prot	c0.20		c0.28		c0.25	0.26
v/s Ratio Perm						
v/c Ratio	0.89		0.88		0.91	0.40
Uniform Delay, d1	26.2		22.6		24.3	5.7
Progression Factor	1.00		1.00		1.00	1.00
Incremental Delay, d2	23.2		10.5		20.5	0.5
Delay (s)	49.5		33.1		44.8	6.2
Level of Service	D		C		D	A
Approach Delay (s)	49.5		33.1			18.7
Approach LOS	D		C			B

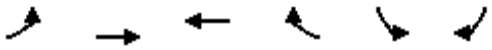
Intersection Summary			
HCM 2000 Control Delay	28.8	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.89		
Actuated Cycle Length (s)	69.2	Sum of lost time (s)	13.5
Intersection Capacity Utilization	83.9%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	0	350	690	170	0	660
Future Volume (Veh/h)	0	350	690	170	0	660
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	380	750	185	0	717
Pedestrians	2					3
Lane Width (ft)	12.0					12.0
Walking Speed (ft/s)	4.0					4.0
Percent Blockage	0					0
Right turn flare (veh)						
Median type			None			None
Median storage veh)						
Upstream signal (ft)			215			407
pX, platoon unblocked	0.83					
vC, conflicting volume	1203	472			937	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	844	472			937	
tC, single (s)	6.8	6.9			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	100	29			100	
cM capacity (veh/h)	251	536			726	

Direction, Lane #	WB 1	NB 1	NB 2	SB 1	SB 2
Volume Total	380	500	435	358	358
Volume Left	0	0	0	0	0
Volume Right	380	0	185	0	0
cSH	536	1700	1700	1700	1700
Volume to Capacity	0.71	0.29	0.26	0.21	0.21
Queue Length 95th (ft)	142	0	0	0	0
Control Delay (s)	26.5	0.0	0.0	0.0	0.0
Lane LOS	D				
Approach Delay (s)	26.5	0.0		0.0	
Approach LOS	D				

Intersection Summary				
Average Delay	4.9			
Intersection Capacity Utilization	53.2%	ICU Level of Service		A
Analysis Period (min)	15			



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	0	1250	970	860	360	300
Future Volume (vph)	0	1250	970	860	360	300
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.4	5.4	5.9	5.2	5.2
Lane Util. Factor		0.95	0.95	0.88	0.97	1.00
Frpb, ped/bikes		1.00	1.00	1.00	1.00	1.00
Flpb, ped/bikes		1.00	1.00	1.00	1.00	1.00
Frt		1.00	1.00	0.85	1.00	0.85
Flt Protected		1.00	1.00	1.00	0.95	1.00
Satd. Flow (prot)		3539	3539	2787	3433	1583
Flt Permitted		1.00	1.00	1.00	0.95	1.00
Satd. Flow (perm)		3539	3539	2787	3433	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	1359	1054	935	391	326
RTOR Reduction (vph)	0	0	0	429	0	267
Lane Group Flow (vph)	0	1359	1054	506	391	59
Confl. Peds. (#/hr)				6	3	
Turn Type		NA	NA	custom	Prot	Perm
Protected Phases		2	2	2	1	
Permitted Phases				8		1
Actuated Green, G (s)		34.2	34.2	34.2	11.2	11.2
Effective Green, g (s)		34.2	34.2	33.7	11.2	11.2
Actuated g/C Ratio		0.55	0.55	0.54	0.18	0.18
Clearance Time (s)		5.4	5.4	5.4	5.2	5.2
Vehicle Extension (s)		2.9	2.9	2.9	2.5	2.5
Lane Grp Cap (vph)		1942	1942	1507	617	284
v/s Ratio Prot		c0.38	0.30	0.18	c0.11	
v/s Ratio Perm						0.04
v/c Ratio		0.70	0.54	0.34	0.63	0.21
Uniform Delay, d1		10.3	9.0	8.0	23.7	21.8
Progression Factor		1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2		1.1	0.3	0.1	1.9	0.3
Delay (s)		11.4	9.3	8.1	25.5	22.0
Level of Service		B	A	A	C	C
Approach Delay (s)		11.4	8.8		23.9	
Approach LOS		B	A		C	

Intersection Summary			
HCM 2000 Control Delay	12.3	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.68		
Actuated Cycle Length (s)	62.3	Sum of lost time (s)	16.6
Intersection Capacity Utilization	54.2%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	70	230	1090	130	130	970
Future Volume (vph)	70	230	1090	130	130	970
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	3.1	4.9		4.4	4.9
Lane Util. Factor	1.00	1.00	0.91		1.00	0.91
Frpb, ped/bikes	1.00	0.94	1.00		1.00	1.00
Flpb, ped/bikes	1.00	1.00	1.00		1.00	1.00
Frt	1.00	0.85	0.98		1.00	1.00
Flt Protected	0.95	1.00	1.00		0.95	1.00
Satd. Flow (prot)	1770	1495	4984		1770	5085
Flt Permitted	0.95	1.00	1.00		0.95	1.00
Satd. Flow (perm)	1770	1495	4984		1770	5085
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	76	250	1185	141	141	1054
RTOR Reduction (vph)	0	229	5	0	0	0
Lane Group Flow (vph)	76	22	1321	0	141	1054
Confl. Peds. (#/hr)	11	16		18	18	
Turn Type	Prot	Perm	NA		Prot	NA
Protected Phases	4		6		5	2
Permitted Phases		4				
Actuated Green, G (s)	12.0	12.0	108.4		16.3	129.1
Effective Green, g (s)	12.0	12.9	108.4		16.3	129.1
Actuated g/C Ratio	0.08	0.09	0.72		0.11	0.86
Clearance Time (s)	4.0	4.0	4.9		4.4	4.9
Vehicle Extension (s)	3.0	3.0	5.0		2.0	3.2
Lane Grp Cap (vph)	141	128	3601		192	4376
v/s Ratio Prot	c0.04		c0.27		c0.08	0.21
v/s Ratio Perm		0.01				
v/c Ratio	0.54	0.17	0.37		0.73	0.24
Uniform Delay, d1	66.3	63.6	7.8		64.8	1.8
Progression Factor	1.00	1.00	1.74		1.13	1.23
Incremental Delay, d2	3.9	0.6	0.2		8.0	0.1
Delay (s)	70.3	64.2	13.9		81.3	2.4
Level of Service	E	E	B		F	A
Approach Delay (s)	65.6		13.9			11.7
Approach LOS	E		B			B

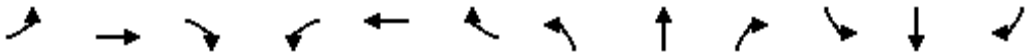
Intersection Summary			
HCM 2000 Control Delay	18.9	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.43		
Actuated Cycle Length (s)	150.0	Sum of lost time (s)	13.3
Intersection Capacity Utilization	51.1%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	90	130	150	130	40	180	230	1120	120	150	890	90
Future Volume (vph)	90	130	150	130	40	180	230	1120	120	150	890	90
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	0.91		0.97	0.95	
Frpb, ped/bikes	1.00	0.99		1.00	0.98		1.00	1.00		1.00	1.00	
Flpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Frt	1.00	0.92		1.00	0.88		1.00	0.99		1.00	0.99	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1770	1690		1770	1606		1770	4993		3433	3478	
Flt Permitted	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (perm)	1770	1690		1770	1606		1770	4993		3433	3478	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	98	141	163	141	43	196	250	1217	130	163	967	98
RTOR Reduction (vph)	0	29	0	0	111	0	0	9	0	0	5	0
Lane Group Flow (vph)	98	275	0	141	128	0	250	1338	0	163	1060	0
Confl. Peds. (#/hr)	3		9	9		3	14		14	14		14
Turn Type	Split	NA		Split	NA		Prot	NA		Prot	NA	
Protected Phases	7	7		8	8		1	6		5	2	
Permitted Phases												
Actuated Green, G (s)	28.2	28.2		15.0	15.0		24.3	68.1		19.6	63.4	
Effective Green, g (s)	29.1	29.1		15.9	15.9		24.7	69.0		20.0	64.3	
Actuated g/C Ratio	0.19	0.19		0.11	0.11		0.16	0.46		0.13	0.43	
Clearance Time (s)	4.9	4.9		4.9	4.9		4.4	4.9		4.4	4.9	
Vehicle Extension (s)	3.0	3.0		2.0	2.0		2.0	3.9		2.0	3.9	
Lane Grp Cap (vph)	343	327		187	170		291	2296		457	1490	
v/s Ratio Prot	0.06	c0.16		0.08	c0.08		c0.14	0.27		0.05	c0.30	
v/s Ratio Perm												
v/c Ratio	0.29	0.84		0.75	0.75		0.86	0.58		0.36	0.71	
Uniform Delay, d1	51.6	58.2		65.1	65.1		61.0	29.9		59.1	35.2	
Progression Factor	1.00	1.00		1.00	1.00		1.05	0.53		0.91	1.25	
Incremental Delay, d2	0.5	17.4		14.1	15.4		18.5	0.9		0.2	2.9	
Delay (s)	52.0	75.6		79.3	80.5		82.2	16.8		54.1	46.9	
Level of Service	D	E		E	F		F	B		D	D	
Approach Delay (s)		69.9			80.1			27.1			47.9	
Approach LOS		E			F			C			D	

Intersection Summary			
HCM 2000 Control Delay	44.5	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.77		
Actuated Cycle Length (s)	150.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	79.6%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	60	30	70	150	30	140	50	1250	70	120	1080	80
Future Volume (vph)	60	30	70	150	30	140	50	1250	70	120	1080	80
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.9		4.9	4.9		4.4	4.9		4.4	4.9	
Lane Util. Factor		1.00		1.00	1.00		1.00	0.91		0.97	0.95	
Frpb, ped/bikes		0.99		1.00	1.00		1.00	1.00		1.00	1.00	
Flpb, ped/bikes		1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Frt		0.94		1.00	0.88		1.00	0.99		1.00	0.99	
Flt Protected		0.98		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1706		1770	1633		1770	5024		3433	3492	
Flt Permitted		0.98		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (perm)		1706		1770	1633		1770	5024		3433	3492	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	65	33	76	163	33	152	54	1359	76	130	1174	87
RTOR Reduction (vph)	0	22	0	0	115	0	0	3	0	0	3	0
Lane Group Flow (vph)	0	152	0	163	70	0	54	1432	0	130	1258	0
Confl. Peds. (#/hr)			6	6			7		18	18		7
Turn Type	Split	NA		Split	NA		Prot	NA		Prot	NA	
Protected Phases	8	8		7	7		1	6		5	2	
Permitted Phases												
Actuated Green, G (s)		19.9		17.6	17.6		7.1	79.4		14.0	86.3	
Effective Green, g (s)		19.9		17.6	17.6		7.1	79.4		14.0	86.3	
Actuated g/C Ratio		0.13		0.12	0.12		0.05	0.53		0.09	0.58	
Clearance Time (s)		4.9		4.9	4.9		4.4	4.9		4.4	4.9	
Vehicle Extension (s)		2.0		2.0	2.0		2.0	2.0		2.0	2.0	
Lane Grp Cap (vph)		226		207	191		83	2659		320	2009	
v/s Ratio Prot		c0.09		c0.09	0.04		0.03	c0.28		0.04	c0.36	
v/s Ratio Perm												
v/c Ratio		0.67		0.79	0.37		0.65	0.54		0.41	0.63	
Uniform Delay, d1		62.0		64.4	61.1		70.2	23.2		64.1	21.1	
Progression Factor		1.00		1.00	1.00		1.08	0.96		0.65	0.41	
Incremental Delay, d2		6.1		16.5	0.4		12.7	0.8		0.2	1.1	
Delay (s)		68.1		80.9	61.5		88.6	23.0		42.2	9.8	
Level of Service		E		F	E		F	C		D	A	
Approach Delay (s)		68.1			70.6			25.4			12.8	
Approach LOS		E			E			C			B	

Intersection Summary			
HCM 2000 Control Delay	27.0	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.66		
Actuated Cycle Length (s)	150.0	Sum of lost time (s)	19.1
Intersection Capacity Utilization	75.1%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	50	20	70	30	110	210	140	1110	30	40	1140	120
Future Volume (vph)	50	20	70	30	110	210	140	1110	30	40	1140	120
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.9	4.9		5.8	4.0	4.4	4.9		4.4	4.9	
Lane Util. Factor		1.00	1.00		1.00	1.00	1.00	0.91		1.00	0.91	
Frpb, ped/bikes		1.00	0.99		1.00	1.00	1.00	1.00		1.00	0.99	
Flpb, ped/bikes		1.00	1.00		1.00	1.00	1.00	1.00		1.00	1.00	
Frt		1.00	0.85		1.00	0.85	1.00	1.00		1.00	0.99	
Flt Protected		0.97	1.00		0.99	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1799	1562		1842	1583	1770	5055		1770	4966	
Flt Permitted		0.45	1.00		0.90	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (perm)		840	1562		1669	1583	1770	5055		1770	4966	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	54	22	76	33	120	228	152	1207	33	43	1239	130
RTOR Reduction (vph)	0	0	67	0	0	0	0	1	0	0	7	0
Lane Group Flow (vph)	0	76	9	0	153	228	152	1239	0	43	1362	0
Confl. Peds. (#/hr)			1	1			19		19	19		19
Turn Type	Perm	NA	Perm	Perm	NA	Free	Prot	NA		Prot	NA	
Protected Phases		8			8		1	6		5	2	
Permitted Phases	8		8	8		Free						
Actuated Green, G (s)		18.5	18.5		18.5	150.0	31.5	110.2		7.1	85.8	
Effective Green, g (s)		18.5	18.5		17.6	150.0	31.5	110.2		7.1	85.8	
Actuated g/C Ratio		0.12	0.12		0.12	1.00	0.21	0.73		0.05	0.57	
Clearance Time (s)		4.9	4.9		4.9		4.4	4.9		4.4	4.9	
Vehicle Extension (s)		2.0	2.0		2.0		2.0	2.9		2.0	3.9	
Lane Grp Cap (vph)		103	192		195	1583	371	3713		83	2840	
v/s Ratio Prot							c0.09	0.25		0.02	c0.27	
v/s Ratio Perm		0.09	0.01		c0.09	0.14						
v/c Ratio		0.74	0.05		0.78	0.14	0.41	0.33		0.52	0.48	
Uniform Delay, d1		63.4	58.0		64.4	0.0	51.2	7.0		69.8	18.9	
Progression Factor		1.24	2.62		1.00	1.00	0.89	0.83		0.95	1.40	
Incremental Delay, d2		19.2	0.0		17.1	0.2	0.1	0.1		1.8	0.5	
Delay (s)		97.9	152.0		81.5	0.2	45.5	5.9		68.1	27.0	
Level of Service		F	F		F	A	D	A		E	C	
Approach Delay (s)		125.0			32.8			10.2			28.3	
Approach LOS		F			C			B			C	

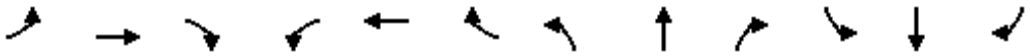
Intersection Summary			
HCM 2000 Control Delay	25.7	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.50		
Actuated Cycle Length (s)	150.0	Sum of lost time (s)	15.1
Intersection Capacity Utilization	59.3%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	EBR2	WBT	WBR	NBR2	SBL2	SBL	SBT	SBR	NWL
Lane Configurations												
Traffic Volume (vph)	300	1660	460	210	2030	660	160	350	400	130	220	200
Future Volume (vph)	300	1660	460	210	2030	660	160	350	400	130	220	200
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	2.6	4.0		6.1	4.0	5.9	5.9	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.97	0.86		0.86	0.91	1.00	1.00	0.95	0.91	0.91	1.00	1.00
Frpb, ped/bikes	1.00	0.99		1.00	1.00	0.94	1.00	1.00	1.00	1.00	0.81	1.00
Flpb, ped/bikes	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.97		0.85	1.00	0.85	0.86	1.00	1.00	1.00	0.85	1.00
Flt Protected	0.95	1.00		1.00	1.00	1.00	1.00	0.95	0.95	0.97	1.00	0.95
Satd. Flow (prot)	3433	4585		1362	5085	1486	1611	1681	1610	1645	1289	1770
Flt Permitted	0.95	1.00		1.00	1.00	1.00	1.00	0.95	0.95	0.97	1.00	0.95
Satd. Flow (perm)	3433	4585		1362	5085	1486	1611	1681	1610	1645	1289	1770
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	326	1804	500	228	2207	717	174	380	435	141	239	217
RTOR Reduction (vph)	0	0	0	62	0	14	111	0	0	0	155	0
Lane Group Flow (vph)	326	2327	0	143	2207	703	63	243	354	359	84	217
Confl. Peds. (#/hr)	29		31			29		10			63	63
Turn Type	Prot	NA		Perm	NA	pm+ov	Perm	Split	Split	NA	Perm	Prot
Protected Phases	5	2			6	4		4	4	4		3
Permitted Phases				2		6	8				4	
Actuated Green, G (s)	15.8	83.9		83.9	64.3	97.3	54.1	33.0	33.0	33.0	33.0	19.0
Effective Green, g (s)	17.2	86.0		83.9	66.2	93.5	54.1	33.0	33.0	33.0	33.0	19.0
Actuated g/C Ratio	0.11	0.57		0.56	0.44	0.62	0.36	0.22	0.22	0.22	0.22	0.13
Clearance Time (s)	4.0	6.1		6.1	5.9	4.0	5.9	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	2.8		2.8	3.2	3.0	4.1	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	393	2628		761	2244	926	581	369	354	361	283	224
v/s Ratio Prot	0.09	c0.51			c0.43	0.16		0.14	c0.22	0.22		c0.12
v/s Ratio Perm				0.11		0.32	0.04				0.06	
v/c Ratio	0.83	0.89		0.19	0.98	0.76	0.11	0.66	1.00	0.99	0.30	0.97
Uniform Delay, d1	65.0	27.7		16.3	41.4	20.2	31.9	53.4	58.5	58.4	48.8	65.2
Progression Factor	1.00	1.00		1.00	1.03	1.41	1.00	0.83	0.83	0.83	0.94	1.00
Incremental Delay, d2	13.5	4.8		0.5	12.9	2.7	0.1	3.8	45.5	43.3	0.5	50.7
Delay (s)	78.5	32.6		16.8	55.7	31.2	32.0	47.9	94.0	91.8	46.3	115.9
Level of Service	E	C		B	E	C	C	D	F	F	D	F
Approach Delay (s)		36.7			49.7					74.4		103.0
Approach LOS		D			D					E		F

Intersection Summary			
HCM 2000 Control Delay	52.6	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.99		
Actuated Cycle Length (s)	150.0	Sum of lost time (s)	16.5
Intersection Capacity Utilization	90.5%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			

Movement	NWR	NWR2
Lane Configurations		
Traffic Volume (vph)	330	50
Future Volume (vph)	330	50
Ideal Flow (vphpl)	1900	1900
Total Lost time (s)	4.0	
Lane Util. Factor	0.88	
Frpb, ped/bikes	1.00	
Flpb, ped/bikes	1.00	
Frt	0.85	
Flt Protected	1.00	
Satd. Flow (prot)	2787	
Flt Permitted	1.00	
Satd. Flow (perm)	2787	
Peak-hour factor, PHF	0.92	0.92
Adj. Flow (vph)	359	54
RTOR Reduction (vph)	83	0
Lane Group Flow (vph)	330	0
Confl. Peds. (#/hr)		31
Turn Type	Prot	
Protected Phases	3	
Permitted Phases		
Actuated Green, G (s)	19.0	
Effective Green, g (s)	19.0	
Actuated g/C Ratio	0.13	
Clearance Time (s)	4.0	
Vehicle Extension (s)	3.0	
Lane Grp Cap (vph)	353	
v/s Ratio Prot	0.12	
v/s Ratio Perm		
v/c Ratio	0.93	
Uniform Delay, d1	64.9	
Progression Factor	1.00	
Incremental Delay, d2	31.4	
Delay (s)	96.3	
Level of Service	F	
Approach Delay (s)		
Approach LOS		

Intersection Summary



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	100	120	300	130	250	70	70	90	120	90	90	100
Future Volume (vph)	100	120	300	130	250	70	70	90	120	90	90	100
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.5			4.5			4.5			4.0	
Lane Util. Factor		1.00			1.00			1.00			1.00	
Frt		0.92			0.98			0.94			0.95	
Flt Protected		0.99			0.99			0.99			0.98	
Satd. Flow (prot)		1701			1798			1734			1745	
Flt Permitted		0.83			0.70			0.87			0.83	
Satd. Flow (perm)		1431			1277			1520			1474	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	109	130	326	141	272	76	76	98	130	98	98	109
RTOR Reduction (vph)	0	91	0	0	12	0	0	37	0	0	28	0
Lane Group Flow (vph)	0	474	0	0	477	0	0	267	0	0	277	0
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)		23.8			23.8			21.9			22.4	
Effective Green, g (s)		23.8			23.8			21.9			22.4	
Actuated g/C Ratio		0.44			0.44			0.40			0.41	
Clearance Time (s)		4.5			4.5			4.5			4.0	
Vehicle Extension (s)		3.0			3.0			3.0			3.0	
Lane Grp Cap (vph)		622			555			608			603	
v/s Ratio Prot												
v/s Ratio Perm		0.33			c0.37			0.18			c0.19	
v/c Ratio		0.76			0.86			0.44			0.46	
Uniform Delay, d1		13.1			13.9			11.9			11.7	
Progression Factor		1.00			1.00			1.00			1.00	
Incremental Delay, d2		5.5			12.5			2.3			0.6	
Delay (s)		18.6			26.4			14.2			12.3	
Level of Service		B			C			B			B	
Approach Delay (s)		18.6			26.4			14.2			12.3	
Approach LOS		B			C			B			B	

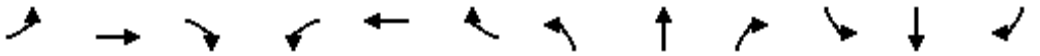
Intersection Summary			
HCM 2000 Control Delay	18.9	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.67		
Actuated Cycle Length (s)	54.7	Sum of lost time (s)	9.0
Intersection Capacity Utilization	69.2%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Movement	NBL	NBT	SBT	SBR	SEL	SER
Lane Configurations						
Traffic Volume (vph)	290	1320	830	50	50	480
Future Volume (vph)	290	1320	830	50	50	480
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0		4.0	4.0
Lane Util. Factor	1.00	0.91	0.91		1.00	1.00
Frt	1.00	1.00	0.99		1.00	0.85
Flt Protected	0.95	1.00	1.00		0.95	1.00
Satd. Flow (prot)	1770	5085	5042		1770	1583
Flt Permitted	0.95	1.00	1.00		0.95	1.00
Satd. Flow (perm)	1770	5085	5042		1770	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	315	1435	902	54	54	522
RTOR Reduction (vph)	0	0	3	0	0	468
Lane Group Flow (vph)	315	1435	953	0	54	54
Turn Type	Prot	NA	NA		Prot	Perm
Protected Phases	7	4	8		5	
Permitted Phases						5
Actuated Green, G (s)	26.6	99.6	69.0		12.4	12.4
Effective Green, g (s)	26.6	99.6	69.0		12.4	12.4
Actuated g/C Ratio	0.22	0.83	0.58		0.10	0.10
Clearance Time (s)	4.0	4.0	4.0		4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0		3.0	3.0
Lane Grp Cap (vph)	392	4220	2899		182	163
v/s Ratio Prot	c0.18	c0.28	0.19		0.03	
v/s Ratio Perm						c0.03
v/c Ratio	0.80	0.34	0.33		0.30	0.33
Uniform Delay, d1	44.2	2.4	13.4		49.8	49.9
Progression Factor	1.00	1.00	0.60		1.00	1.00
Incremental Delay, d2	11.3	0.2	0.2		0.9	1.2
Delay (s)	55.5	2.6	8.2		50.7	51.1
Level of Service	E	A	A		D	D
Approach Delay (s)		12.2	8.2		51.1	
Approach LOS		B	A		D	

Intersection Summary			
HCM 2000 Control Delay	17.8	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.46		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	53.5%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	100	0	140	310	310	150	0	0	0	0	70	90
Future Volume (vph)	100	0	140	310	310	150	0	0	0	0	70	90
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0		4.0	4.0	4.0						4.0	
Lane Util. Factor	1.00		1.00	1.00	1.00						1.00	
Frt	1.00		0.85	1.00	0.95						0.92	
Flt Protected	0.95		1.00	0.95	1.00						1.00	
Satd. Flow (prot)	1770		1583	1770	1772						1721	
Flt Permitted	0.95		1.00	0.95	1.00						1.00	
Satd. Flow (perm)	1770		1583	1770	1772						1721	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	109	0	152	337	337	163	0	0	0	0	76	98
RTOR Reduction (vph)	0	0	135	198	23	0	0	0	0	0	78	0
Lane Group Flow (vph)	109	0	17	139	477	0	0	0	0	0	96	0
Turn Type	Prot		Perm	Split	NA						NA	
Protected Phases	2!			8	8						6!	
Permitted Phases			4									
Actuated Green, G (s)	8.5		4.9	17.8	17.8						8.5	
Effective Green, g (s)	8.5		4.9	17.8	17.8						8.5	
Actuated g/C Ratio	0.20		0.11	0.41	0.41						0.20	
Clearance Time (s)	4.0		4.0	4.0	4.0						4.0	
Vehicle Extension (s)	3.0		3.0	3.0	3.0						3.0	
Lane Grp Cap (vph)	348		179	729	730						338	
v/s Ratio Prot	c0.06			0.08	c0.27						0.06	
v/s Ratio Perm			c0.01									
v/c Ratio	0.31		0.10	0.19	0.65						0.28	
Uniform Delay, d1	14.9		17.2	8.1	10.2						14.8	
Progression Factor	1.00		1.00	1.00	1.00						1.00	
Incremental Delay, d2	0.5		0.2	0.1	2.1						0.5	
Delay (s)	15.4		17.4	8.2	12.3						15.2	
Level of Service	B		B	A	B						B	
Approach Delay (s)		16.6			10.7			0.0			15.2	
Approach LOS		B			B			A			B	

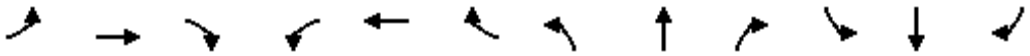
Intersection Summary			
HCM 2000 Control Delay	12.5	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.47		
Actuated Cycle Length (s)	43.2	Sum of lost time (s)	12.0
Intersection Capacity Utilization	50.2%	ICU Level of Service	A
Analysis Period (min)	15		

! Phase conflict between lane groups.

c Critical Lane Group

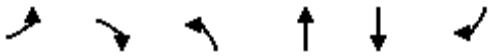
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	1890	170	290	2370	0	0	0	0	790	280	320
Future Volume (vph)	0	1890	170	290	2370	0	0	0	0	790	280	320
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0		4.0	4.0					4.0	4.0	4.0
Lane Util. Factor		0.91		1.00	0.86					0.95	0.95	1.00
Frpb, ped/bikes		1.00		1.00	1.00					1.00	1.00	0.98
Flpb, ped/bikes		1.00		1.00	1.00					0.98	0.99	1.00
Frt		0.99		1.00	1.00					1.00	1.00	0.85
Flt Protected		1.00		0.95	1.00					0.95	0.98	1.00
Satd. Flow (prot)		5022		1770	6408					1656	1725	1559
Flt Permitted		1.00		0.95	1.00					0.95	0.98	1.00
Satd. Flow (perm)		5022		1770	6408					1656	1725	1559
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	2054	185	315	2576	0	0	0	0	859	304	348
RTOR Reduction (vph)	0	7	0	0	0	0	0	0	0	0	0	31
Lane Group Flow (vph)	0	2232	0	315	2576	0	0	0	0	661	502	317
Confl. Peds. (#/hr)				13						14		3
Turn Type		NA		Prot	NA					Perm	NA	Perm
Protected Phases		2		1	6						4	
Permitted Phases										4		4
Actuated Green, G (s)		60.8		23.6	89.1					51.1	51.1	51.1
Effective Green, g (s)		62.0		24.0	90.0					52.0	52.0	52.0
Actuated g/C Ratio		0.41		0.16	0.60					0.35	0.35	0.35
Clearance Time (s)		5.2		4.4	4.9					4.9	4.9	4.9
Vehicle Extension (s)		3.8		2.0	4.6					2.0	2.0	2.0
Lane Grp Cap (vph)		2075		283	3844					574	598	540
v/s Ratio Prot		c0.44		c0.18	0.40							
v/s Ratio Perm										c0.40	0.29	0.20
v/c Ratio		1.08		1.11	0.67					1.15	0.84	0.59
Uniform Delay, d1		44.0		63.0	20.1					49.0	45.2	40.2
Progression Factor		1.00		1.30	0.05					1.00	1.00	1.00
Incremental Delay, d2		39.1		56.0	0.1					86.9	9.6	1.1
Delay (s)		83.1		137.8	1.2					135.9	54.8	41.2
Level of Service		F		F	A					F	D	D
Approach Delay (s)		83.1			16.0			0.0			87.2	
Approach LOS		F			B			A			F	

Intersection Summary			
HCM 2000 Control Delay	54.8	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	1.11		
Actuated Cycle Length (s)	150.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	96.2%	ICU Level of Service	F
Analysis Period (min)	15		
c Critical Lane Group			



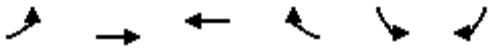
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	800	220	180	390	0	180	0	300	390	370	10
Future Volume (vph)	0	800	220	180	390	0	180	0	300	390	370	10
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0		4.0	4.0		4.0		4.0	4.0	4.0	
Lane Util. Factor		0.95		1.00	0.95		1.00		1.00	1.00	1.00	
Frpb, ped/bikes		0.97		1.00	1.00		1.00		0.98	1.00	1.00	
Flpb, ped/bikes		1.00		1.00	1.00		1.00		1.00	1.00	1.00	
Frt		0.97		1.00	1.00		1.00		0.85	1.00	1.00	
Flt Protected		1.00		0.95	1.00		0.95		1.00	0.95	1.00	
Satd. Flow (prot)		3317		1770	3539		1770		1556	1770	1854	
Flt Permitted		1.00		0.11	1.00		0.95		1.00	0.95	1.00	
Satd. Flow (perm)		3317		204	3539		1770		1556	1770	1854	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	870	239	196	424	0	196	0	326	424	402	11
RTOR Reduction (vph)	0	28	0	0	0	0	0	0	206	0	1	0
Lane Group Flow (vph)	0	1081	0	196	424	0	196	0	120	424	412	0
Confl. Peds. (#/hr)			43	43		51	17		3	3		17
Turn Type		NA		pm+pt	NA		Prot		Perm	Split	NA	
Protected Phases		2		1	6		3			4	4	
Permitted Phases				6					2			
Actuated Green, G (s)		32.2		42.9	42.9		11.9		32.2	21.0	21.0	
Effective Green, g (s)		33.1		43.3	43.8		12.3		33.1	21.9	21.9	
Actuated g/C Ratio		0.37		0.48	0.49		0.14		0.37	0.24	0.24	
Clearance Time (s)		4.9		4.4	4.9		4.4		4.9	4.9	4.9	
Vehicle Extension (s)		6.7		2.0	6.7		3.0		6.7	3.0	3.0	
Lane Grp Cap (vph)		1219		214	1722		241		572	430	451	
v/s Ratio Prot		0.33		c0.07	0.12		c0.11			c0.24	0.22	
v/s Ratio Perm				c0.37					0.08			
v/c Ratio		0.89		0.92	0.25		0.81		0.21	0.99	0.91	
Uniform Delay, d1		26.7		19.1	13.5		37.7		19.5	33.9	33.1	
Progression Factor		1.00		1.00	1.00		1.00		1.00	1.00	1.00	
Incremental Delay, d2		9.7		38.2	0.3		18.5		0.8	39.4	22.8	
Delay (s)		36.4		57.3	13.8		56.3		20.3	73.3	56.0	
Level of Service		D		E	B		E		C	E	E	
Approach Delay (s)		36.4			27.6			33.8			64.7	
Approach LOS		D			C			C			E	

Intersection Summary			
HCM 2000 Control Delay	41.9	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.94		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	83.3%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	230	450	490	880	430	100
Future Volume (vph)	230	450	490	880	430	100
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0		4.4	4.0	4.9	
Lane Util. Factor	1.00		1.00	0.91	0.91	
Frpb, ped/bikes	1.00		1.00	1.00	0.99	
Flpb, ped/bikes	1.00		1.00	1.00	1.00	
Frt	0.91		1.00	1.00	0.97	
Flt Protected	0.98		0.95	1.00	1.00	
Satd. Flow (prot)	1668		1770	5085	4915	
Flt Permitted	0.98		0.95	1.00	1.00	
Satd. Flow (perm)	1668		1770	5085	4915	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	250	489	533	957	467	109
RTOR Reduction (vph)	59	0	0	0	32	0
Lane Group Flow (vph)	680	0	533	957	544	0
Confl. Peds. (#/hr)			2			2
Turn Type	Prot		Prot	NA	NA	
Protected Phases	2		3	8	4	
Permitted Phases						
Actuated Green, G (s)	49.0		37.0	63.0	22.0	
Effective Green, g (s)	49.0		36.6	63.0	21.1	
Actuated g/C Ratio	0.41		0.31	0.52	0.18	
Clearance Time (s)	4.0		4.0	4.0	4.0	
Vehicle Extension (s)	3.0		3.0	3.0	3.0	
Lane Grp Cap (vph)	681		539	2669	864	
v/s Ratio Prot	c0.41		c0.30	0.19	c0.11	
v/s Ratio Perm						
v/c Ratio	1.00		0.99	0.36	0.63	
Uniform Delay, d1	35.5		41.5	16.7	45.8	
Progression Factor	1.00		1.05	1.21	1.00	
Incremental Delay, d2	34.0		34.7	0.4	3.5	
Delay (s)	69.5		78.1	20.5	49.3	
Level of Service	E		E	C	D	
Approach Delay (s)	69.5			41.1	49.3	
Approach LOS	E			D	D	

Intersection Summary			
HCM 2000 Control Delay	50.3	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.92		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	13.3
Intersection Capacity Utilization	91.6%	ICU Level of Service	F
Analysis Period (min)	15		
c Critical Lane Group			



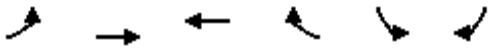
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	70	90	170	80	110	170
Future Volume (Veh/h)	70	90	170	80	110	170
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	76	98	185	87	120	185
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type		None	None			
Median storage veh)						
Upstream signal (ft)		1226	738			
pX, platoon unblocked						
vC, conflicting volume	272				478	228
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	272				478	228
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	94				77	77
cM capacity (veh/h)	1291				514	811

Direction, Lane #	EB 1	EB 2	WB 1	SB 1
Volume Total	76	98	272	305
Volume Left	76	0	0	120
Volume Right	0	0	87	185
cSH	1291	1700	1700	660
Volume to Capacity	0.06	0.06	0.16	0.46
Queue Length 95th (ft)	5	0	0	61
Control Delay (s)	8.0	0.0	0.0	15.0
Lane LOS	A			C
Approach Delay (s)	3.5		0.0	15.0
Approach LOS				C

Intersection Summary			
Average Delay	6.9		
Intersection Capacity Utilization	44.2%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	140	2540	0	0	2530	690	130	360	250	0	0	0
Future Volume (vph)	140	2540	0	0	2530	690	130	360	250	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0			4.0	4.0		4.0				
Lane Util. Factor	1.00	0.91			0.91	1.00		0.95				
Frpb, ped/bikes	1.00	1.00			1.00	0.96		0.99				
Flpb, ped/bikes	1.00	1.00			1.00	1.00		1.00				
Frt	1.00	1.00			1.00	0.85		0.95				
Flt Protected	0.95	1.00			1.00	1.00		0.99				
Satd. Flow (prot)	1770	5085			5085	1519		3294				
Flt Permitted	0.95	1.00			1.00	1.00		0.99				
Satd. Flow (perm)	1770	5085			5085	1519		3294				
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	152	2761	0	0	2750	750	141	391	272	0	0	0
RTOR Reduction (vph)	0	0	0	0	0	94	0	2	0	0	0	0
Lane Group Flow (vph)	152	2761	0	0	2750	656	0	802	0	0	0	0
Confl. Peds. (#/hr)	15		2			15	1		20			
Turn Type	Prot	NA			NA	Perm	Split	NA				
Protected Phases	5	2			6		4	4				
Permitted Phases						6						
Actuated Green, G (s)	19.8	99.3			75.1	75.1		40.9				
Effective Green, g (s)	20.2	100.2			76.0	76.0		41.8				
Actuated g/C Ratio	0.13	0.67			0.51	0.51		0.28				
Clearance Time (s)	4.4	4.9			4.9	4.9		4.9				
Vehicle Extension (s)	2.0	3.8			4.6	4.6		2.0				
Lane Grp Cap (vph)	238	3396			2576	769		917				
v/s Ratio Prot	0.09	c0.54			c0.54			c0.24				
v/s Ratio Perm						0.43						
v/c Ratio	0.64	0.81			1.07	0.85		0.87				
Uniform Delay, d1	61.4	18.1			37.0	32.2		51.6				
Progression Factor	0.74	0.56			1.00	1.00		1.00				
Incremental Delay, d2	0.4	0.2			39.0	11.6		9.0				
Delay (s)	45.8	10.3			76.0	43.7		60.6				
Level of Service	D	B			E	D		E				
Approach Delay (s)		12.2			69.1			60.6			0.0	
Approach LOS		B			E			E			A	

Intersection Summary			
HCM 2000 Control Delay	45.2	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.99		
Actuated Cycle Length (s)	150.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	96.2%	ICU Level of Service	F
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	130	1360	570	150	0	0
Future Volume (Veh/h)	130	1360	570	150	0	0
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	141	1478	620	163	0	0
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type		None	None			
Median storage veh)						
Upstream signal (ft)		345	945			
pX, platoon unblocked	0.94				0.75	0.94
vC, conflicting volume	783				1722	392
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	652				960	238
tC, single (s)	4.1				6.8	6.9
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	84				100	100
cM capacity (veh/h)	878				160	721

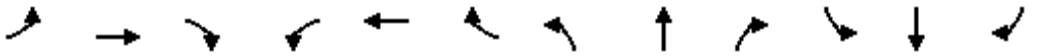
Direction, Lane #	EB 1	EB 2	EB 3	WB 1	WB 2
Volume Total	141	739	739	413	370
Volume Left	141	0	0	0	0
Volume Right	0	0	0	0	163
cSH	878	1700	1700	1700	1700
Volume to Capacity	0.16	0.43	0.43	0.24	0.22
Queue Length 95th (ft)	14	0	0	0	0
Control Delay (s)	9.9	0.0	0.0	0.0	0.0
Lane LOS	A				
Approach Delay (s)	0.9			0.0	
Approach LOS					

Intersection Summary			
Average Delay	0.6		
Intersection Capacity Utilization	40.9%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Sign Control	Stop		Stop			Stop
Traffic Volume (vph)	130	0	0	590	360	280
Future Volume (vph)	130	0	0	590	360	280
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	141	0	0	641	391	304

Direction, Lane #	WB 1	NB 1	SB 1	SB 2
Volume Total (vph)	141	641	391	304
Volume Left (vph)	141	0	391	0
Volume Right (vph)	0	641	0	0
Hadj (s)	0.23	-0.57	0.53	0.03
Departure Headway (s)	6.9	4.7	6.2	5.7
Degree Utilization, x	0.27	0.84	0.67	0.48
Capacity (veh/h)	499	751	565	624
Control Delay (s)	12.4	27.4	19.7	12.6
Approach Delay (s)	12.4	27.4	16.6	
Approach LOS	B	D	C	

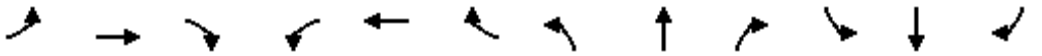
Intersection Summary			
Delay	20.9		
Level of Service	C		
Intersection Capacity Utilization	63.1%	ICU Level of Service	B
Analysis Period (min)	15		



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Traffic Volume (vph)	440	50	150	20	20	30	60	130	10	20	200	190
Future Volume (vph)	440	50	150	20	20	30	60	130	10	20	200	190
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	478	54	163	22	22	33	65	141	11	22	217	207

Direction, Lane #	EB 1	EB 2	WB 1	NB 1	SB 1	SB 2
Volume Total (vph)	505	190	77	217	239	207
Volume Left (vph)	478	0	22	65	22	0
Volume Right (vph)	0	163	33	11	0	207
Hadj (s)	0.51	-0.57	-0.17	0.06	0.08	-0.67
Departure Headway (s)	7.3	6.2	7.8	7.5	7.4	6.6
Degree Utilization, x	1.03	0.33	0.17	0.45	0.49	0.38
Capacity (veh/h)	485	567	432	457	478	531
Control Delay (s)	73.1	11.0	12.3	16.7	16.1	12.5
Approach Delay (s)	56.2		12.3	16.7	14.4	
Approach LOS	F		B	C	B	

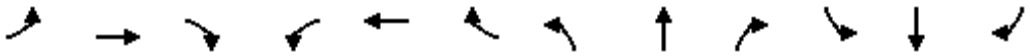
Intersection Summary				
Delay	34.9			
Level of Service	D			
Intersection Capacity Utilization	63.8%	ICU Level of Service	B	
Analysis Period (min)	15			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	700	280	430	490	0	0	0	0	410	540	1080
Future Volume (vph)	0	700	280	430	490	0	0	0	0	410	540	1080
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0	4.0	4.0	4.0					4.0	4.0	4.0
Lane Util. Factor		0.95	1.00	0.97	0.95					0.91	0.91	1.00
Frt		1.00	0.85	1.00	1.00					1.00	1.00	0.85
Flt Protected		1.00	1.00	0.95	1.00					0.95	1.00	1.00
Satd. Flow (prot)		3539	1583	3433	3539					1610	3390	1583
Flt Permitted		1.00	1.00	0.95	1.00					0.95	1.00	1.00
Satd. Flow (perm)		3539	1583	3433	3539					1610	3390	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	761	304	467	533	0	0	0	0	446	587	1174
RTOR Reduction (vph)	0	0	168	0	0	0	0	0	0	0	0	84
Lane Group Flow (vph)	0	761	136	467	533	0	0	0	0	446	587	1090
Turn Type		NA	Perm	Prot	NA					Perm	NA	Perm
Protected Phases		2		1	6						4	
Permitted Phases			2							4		4
Actuated Green, G (s)		26.7	26.7	15.0	46.1					64.1	64.1	64.1
Effective Green, g (s)		27.6	27.6	15.4	47.0					65.0	65.0	65.0
Actuated g/C Ratio		0.23	0.23	0.13	0.39					0.54	0.54	0.54
Clearance Time (s)		4.9	4.9	4.4	4.9					4.9	4.9	4.9
Vehicle Extension (s)		3.8	3.8	2.0	4.2					2.0	2.0	2.0
Lane Grp Cap (vph)		813	364	440	1386					872	1836	857
v/s Ratio Prot		c0.22		c0.14	0.15							
v/s Ratio Perm			0.09							0.28	0.17	c0.69
v/c Ratio		0.94	0.37	1.06	0.38					0.51	0.32	1.27
Uniform Delay, d1		45.3	38.9	52.3	26.1					17.4	15.2	27.5
Progression Factor		1.00	1.00	1.00	1.00					1.00	1.00	1.00
Incremental Delay, d2		19.4	2.9	60.1	0.8					0.2	0.0	131.6
Delay (s)		64.7	41.8	112.4	27.0					17.6	15.3	159.1
Level of Service		E	D	F	C					B	B	F
Approach Delay (s)		58.2			66.9			0.0			92.2	
Approach LOS		E			E			A			F	

Intersection Summary			
HCM 2000 Control Delay	77.8	HCM 2000 Level of Service	E
HCM 2000 Volume to Capacity ratio	1.16		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	87.1%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	0	60	50	0	0	0	0	0	0	1620	150
Future Volume (Veh/h)	0	0	60	50	0	0	0	0	0	0	1620	150
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	0	65	54	0	0	0	0	0	0	1761	163
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)								1066				
pX, platoon unblocked												
vC, conflicting volume	1842	1842	668	652	1924	0	1924			0		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	1842	1842	668	652	1924	0	1924			0		
tC, single (s)	7.5	6.5	6.9	7.5	6.5	6.9	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	100	100	84	82	100	100	100			100		
cM capacity (veh/h)	47	74	400	296	66	1084	303			1622		

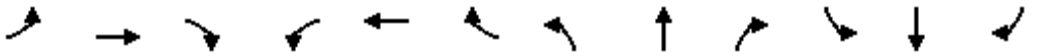
Direction, Lane #	EB 1	WB 1	SB 1	SB 2	SB 3
Volume Total	65	54	704	704	515
Volume Left	0	54	0	0	0
Volume Right	65	0	0	0	163
cSH	400	296	1700	1700	1700
Volume to Capacity	0.16	0.18	0.41	0.41	0.30
Queue Length 95th (ft)	14	16	0	0	0
Control Delay (s)	15.7	19.9	0.0	0.0	0.0
Lane LOS	C	C			
Approach Delay (s)	15.7	19.9	0.0		
Approach LOS	C	C			

Intersection Summary				
Average Delay	1.0			
Intersection Capacity Utilization	53.5%	ICU Level of Service	A	
Analysis Period (min)	15			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	440	260	100	160	0	0	0	0	400	860	490
Future Volume (vph)	0	440	260	100	160	0	0	0	0	400	860	490
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0	4.0		4.0					4.0	4.0	
Lane Util. Factor		1.00	1.00		0.95					1.00	0.91	
Frt		1.00	0.85		1.00					1.00	0.95	
Flt Protected		1.00	1.00		0.98					0.95	1.00	
Satd. Flow (prot)		1863	1583		3472					1770	4808	
Flt Permitted		1.00	1.00		0.63					0.95	1.00	
Satd. Flow (perm)		1863	1583		2228					1770	4808	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	478	283	109	174	0	0	0	0	435	935	533
RTOR Reduction (vph)	0	0	38	0	0	0	0	0	0	0	158	0
Lane Group Flow (vph)	0	478	245	0	283	0	0	0	0	435	1310	0
Turn Type		NA	Perm	Perm	NA					Perm	NA	
Protected Phases		4			8						6	
Permitted Phases			4	8						6		
Actuated Green, G (s)		25.3	25.3		25.3					26.7	26.7	
Effective Green, g (s)		28.0	28.0		28.0					29.0	29.0	
Actuated g/C Ratio		0.43	0.43		0.43					0.45	0.45	
Clearance Time (s)		6.7	6.7		6.7					6.3	6.3	
Vehicle Extension (s)		2.0	2.0		2.5					4.6	4.6	
Lane Grp Cap (vph)		802	681		959					789	2145	
v/s Ratio Prot		c0.26									c0.27	
v/s Ratio Perm			0.16		0.13					0.25		
v/c Ratio		0.60	0.36		0.30					0.55	0.61	
Uniform Delay, d1		14.2	12.5		12.1					13.2	13.7	
Progression Factor		1.00	1.00		1.00					1.00	1.00	
Incremental Delay, d2		3.3	1.5		0.8					2.8	1.3	
Delay (s)		17.4	13.9		12.8					16.0	15.0	
Level of Service		B	B		B					B	B	
Approach Delay (s)		16.1			12.8			0.0			15.2	
Approach LOS		B			B			A			B	

Intersection Summary			
HCM 2000 Control Delay	15.2	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.60		
Actuated Cycle Length (s)	65.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	68.1%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

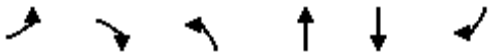


Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	1110	370	50	700	0	0	0	0	740	1100	660
Future Volume (vph)	0	1110	370	50	700	0	0	0	0	740	1100	660
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		6.7		4.0	6.7						6.3	4.0
Lane Util. Factor		0.95		1.00	0.95						0.86	0.86
Frt		0.96		1.00	1.00						1.00	0.85
Flt Protected		1.00		0.95	1.00						0.98	1.00
Satd. Flow (prot)		3407		1770	3539						4711	1362
Flt Permitted		1.00		0.95	1.00						0.98	1.00
Satd. Flow (perm)		3407		1770	3539						4711	1362
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	1207	402	54	761	0	0	0	0	804	1196	717
RTOR Reduction (vph)	0	34	0	0	0	0	0	0	0	0	0	52
Lane Group Flow (vph)	0	1576	0	54	761	0	0	0	0	0	2000	665
Turn Type		NA		Prot	NA					Perm	NA	Perm
Protected Phases		2		1	6						4	
Permitted Phases										4		4
Actuated Green, G (s)		31.5		3.4	37.6						40.4	40.4
Effective Green, g (s)		29.7		3.8	37.5						39.5	41.8
Actuated g/C Ratio		0.33		0.04	0.42						0.44	0.46
Clearance Time (s)		4.9		4.4	6.6						5.4	5.4
Vehicle Extension (s)		1.0		2.0	1.0						1.0	1.0
Lane Grp Cap (vph)		1124		74	1474						2067	632
v/s Ratio Prot		c0.46		c0.03	0.22							
v/s Ratio Perm											0.42	c0.49
v/c Ratio		1.40		0.73	0.52						1.09dl	1.05
Uniform Delay, d1		30.1		42.6	19.5						24.6	24.1
Progression Factor		1.00		1.00	1.00						1.00	1.00
Incremental Delay, d2		186.2		26.0	1.3						12.8	50.3
Delay (s)		216.3		68.6	20.8						37.5	74.4
Level of Service		F		E	C						D	E
Approach Delay (s)		216.3			24.0			0.0			47.2	
Approach LOS		F			C			A			D	

Intersection Summary			
HCM 2000 Control Delay	96.5	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.21		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	17.0
Intersection Capacity Utilization	94.5%	ICU Level of Service	F
Analysis Period (min)	15		

dl Defacto Left Lane. Recode with 1 though lane as a left lane.

c Critical Lane Group



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	340	1270	1700	1270	1180	130
Future Volume (vph)	340	1270	1700	1270	1180	130
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	0.88	0.97	0.91	0.91	1.00
Frpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	0.99
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected	0.95	1.00	0.95	1.00	1.00	1.00
Satd. Flow (prot)	1770	2787	3433	5085	5085	1566
Flt Permitted	0.95	1.00	0.95	1.00	1.00	1.00
Satd. Flow (perm)	1770	2787	3433	5085	5085	1566
Peak-hour factor, PHF	0.92	0.95	0.95	0.95	0.92	0.92
Adj. Flow (vph)	370	1337	1789	1337	1283	141
RTOR Reduction (vph)	0	0	0	0	0	4
Lane Group Flow (vph)	370	1337	1789	1337	1283	137
Confl. Peds. (#/hr)			3			3
Turn Type	Prot	pm+ov	Prot	NA	NA	pm+ov
Protected Phases	5	7	7	4	8	5
Permitted Phases		5				8
Actuated Green, G (s)	24.0	87.0	63.0	98.0	31.0	55.0
Effective Green, g (s)	24.0	87.0	63.0	98.0	31.0	55.0
Actuated g/C Ratio	0.18	0.67	0.48	0.75	0.24	0.42
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	326	1950	1663	3833	1212	710
v/s Ratio Prot	c0.21	0.33	c0.52	0.26	c0.25	0.04
v/s Ratio Perm		0.15				0.05
v/c Ratio	1.13	0.69	1.08	0.35	1.06	0.19
Uniform Delay, d1	53.0	13.1	33.5	5.3	49.5	23.6
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	91.5	1.0	45.6	0.3	42.9	0.1
Delay (s)	144.5	14.2	79.1	5.6	92.4	23.7
Level of Service	F	B	E	A	F	C
Approach Delay (s)	42.4			47.7	85.6	
Approach LOS	D			D	F	

Intersection Summary			
HCM 2000 Control Delay	54.9	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	1.08		
Actuated Cycle Length (s)	130.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	100.1%	ICU Level of Service	G
Analysis Period (min)	15		
c Critical Lane Group			

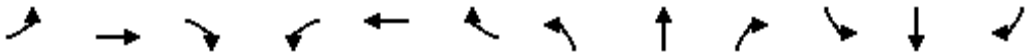
Movement	EBL	EBT	EBR	WBL	WBT	WBR	SEL	SET	SER	NWL	NWT	NWR
Lane Configurations												
Traffic Volume (vph)	240	520	0	0	930	640	40	0	120	250	30	420
Future Volume (vph)	240	520	0	0	930	640	40	0	120	250	30	420
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.5	4.0			4.4	4.4		6.4		4.0	4.0	
Lane Util. Factor	1.00	0.95			0.95	1.00		1.00		0.91	0.91	
Frt	1.00	1.00			1.00	0.85		0.90		1.00	0.87	
Flt Protected	0.95	1.00			1.00	1.00		0.99		0.95	1.00	
Satd. Flow (prot)	1770	3539			3539	1583		1653		1610	2933	
Flt Permitted	0.95	1.00			1.00	1.00		0.99		0.95	1.00	
Satd. Flow (perm)	1770	3539			3539	1583		1653		1610	2933	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	261	565	0	0	1011	696	43	0	130	272	33	457
RTOR Reduction (vph)	0	0	0	0	0	427	0	111	0	0	399	0
Lane Group Flow (vph)	261	565	0	0	1011	269	0	62	0	245	118	0
Turn Type	Prot	NA			NA	Perm	Split	NA		Split	NA	
Protected Phases	5	2			6		8	8		7	7	
Permitted Phases						6						
Actuated Green, G (s)	10.6	49.2			33.7	33.7		12.6		11.1	11.1	
Effective Green, g (s)	10.6	49.2			33.7	33.7		12.6		11.1	11.1	
Actuated g/C Ratio	0.12	0.56			0.39	0.39		0.14		0.13	0.13	
Clearance Time (s)	4.5	4.0			4.4	4.4		6.4		4.0	4.0	
Vehicle Extension (s)	3.5	2.0			3.5	3.5		2.0		2.0	2.0	
Lane Grp Cap (vph)	214	1994			1366	611		238		204	372	
v/s Ratio Prot	c0.15	0.16			c0.29			c0.04		c0.15	0.04	
v/s Ratio Perm						0.17						
v/c Ratio	1.22	0.28			0.74	0.44		0.26		1.20	0.32	
Uniform Delay, d1	38.4	9.9			23.0	19.8		33.2		38.1	34.7	
Progression Factor	1.00	1.00			1.00	1.00		1.00		1.00	1.00	
Incremental Delay, d2	133.4	0.4			3.6	2.3		0.2		127.8	0.2	
Delay (s)	171.8	10.3			26.7	22.1		33.4		165.9	34.8	
Level of Service	F	B			C	C		C		F	C	
Approach Delay (s)		61.3			24.8			33.4			77.0	
Approach LOS		E			C			C			E	

Intersection Summary			
HCM 2000 Control Delay	45.4	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.80		
Actuated Cycle Length (s)	87.3	Sum of lost time (s)	19.3
Intersection Capacity Utilization	79.1%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

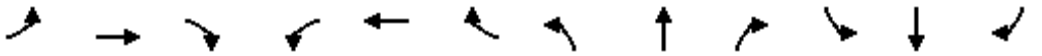
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	410	70	630	0	0	0	0	0	350	40	370
Future Volume (vph)	0	410	70	630	0	0	0	0	0	350	40	370
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0		5.9						1.8	1.8	1.8
Lane Util. Factor		0.95		1.00						0.95	0.95	1.00
Frpb, ped/bikes		1.00		1.00						1.00	1.00	1.00
Flpb, ped/bikes		1.00		1.00						1.00	1.00	1.00
Frt		0.98		1.00						1.00	1.00	0.85
Flt Protected		1.00		0.95						0.95	0.96	1.00
Satd. Flow (prot)		3453		1770						1681	1701	1583
Flt Permitted		1.00		0.95						0.95	0.96	1.00
Satd. Flow (perm)		3453		1770						1681	1701	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	446	76	685	0	0	0	0	0	380	43	402
RTOR Reduction (vph)	0	18	0	0	0	0	0	0	0	0	0	230
Lane Group Flow (vph)	0	504	0	685	0	0	0	0	0	201	222	172
Confl. Peds. (#/hr)	5		5	5		10						
Turn Type		NA		Split						Split	NA	custom
Protected Phases		7		8	8					6	6	6
Permitted Phases												7
Actuated Green, G (s)		14.2		29.2						10.6	10.6	24.8
Effective Green, g (s)		14.2		29.5						12.8	12.8	29.2
Actuated g/C Ratio		0.21		0.43						0.19	0.19	0.43
Clearance Time (s)		4.0		6.2						4.0	4.0	4.0
Vehicle Extension (s)		3.0		2.0						3.0	3.0	3.0
Lane Grp Cap (vph)		718		765						315	319	719
v/s Ratio Prot		c0.15		c0.39						0.12	c0.13	0.04
v/s Ratio Perm												0.06
v/c Ratio		0.70		0.90						0.64	0.70	0.24
Uniform Delay, d1		25.0		17.9						25.6	25.9	12.4
Progression Factor		1.00		1.00						1.00	1.00	1.00
Incremental Delay, d2		3.1		12.7						4.2	6.5	0.2
Delay (s)		28.1		30.6						29.8	32.3	12.6
Level of Service		C		C						C	C	B
Approach Delay (s)		28.1			30.6			0.0			22.1	
Approach LOS		C			C			A			C	

Intersection Summary			
HCM 2000 Control Delay	26.5	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.79		
Actuated Cycle Length (s)	68.2	Sum of lost time (s)	11.7
Intersection Capacity Utilization	70.9%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			



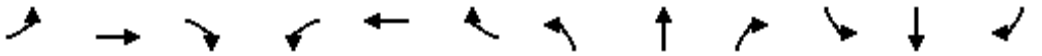
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	40	150	30	380	40	230	30	1590	360	250	530	20
Future Volume (vph)	40	150	30	380	40	230	30	1590	360	250	530	20
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.3	4.3		4.0	4.0		6.2	4.0	
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	0.91		1.00	0.91	
Frpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Flpb, ped/bikes	1.00	1.00		0.99	1.00		1.00	1.00		1.00	1.00	
Frt	1.00	0.97		1.00	0.87		1.00	0.97		1.00	0.99	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1770	1809		1757	1624		1770	4945		1770	5052	
Flt Permitted	0.43	1.00		0.55	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (perm)	805	1809		1020	1624		1770	4945		1770	5052	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	43	163	33	413	43	250	33	1728	391	272	576	22
RTOR Reduction (vph)	0	6	0	0	162	0	0	30	0	0	3	0
Lane Group Flow (vph)	43	190	0	413	131	0	33	2089	0	272	595	0
Confl. Peds. (#/hr)			9	9			2					2
Turn Type	Perm	NA		Perm	NA		Prot	NA		Prot	NA	
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4			8								
Actuated Green, G (s)	43.1	43.1		42.4	42.4		3.6	46.1		19.0	60.8	
Effective Green, g (s)	43.1	43.1		42.8	42.8		3.6	47.5		16.8	62.9	
Actuated g/C Ratio	0.35	0.35		0.35	0.35		0.03	0.39		0.14	0.52	
Clearance Time (s)	4.0	4.0		4.7	4.7		4.0	5.4		4.0	6.1	
Vehicle Extension (s)	2.0	2.0		3.0	3.0		2.0	4.8		2.0	3.7	
Lane Grp Cap (vph)	285	641		359	571		52	1931		244	2613	
v/s Ratio Prot		0.11			0.08		0.02	c0.42		c0.15	0.12	
v/s Ratio Perm	0.05			c0.40								
v/c Ratio	0.15	0.30		1.15	0.23		0.63	1.08		1.11	0.23	
Uniform Delay, d1	26.8	28.3		39.4	27.8		58.3	37.0		52.4	16.1	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	0.1	0.1		95.0	0.2		17.1	46.6		91.9	0.2	
Delay (s)	26.9	28.4		134.4	28.0		75.4	83.6		144.3	16.3	
Level of Service	C	C		F	C		E	F		F	B	
Approach Delay (s)		28.1			90.2			83.5			56.3	
Approach LOS		C			F			F			E	

Intersection Summary			
HCM 2000 Control Delay	75.4	HCM 2000 Level of Service	E
HCM 2000 Volume to Capacity ratio	1.11		
Actuated Cycle Length (s)	121.6	Sum of lost time (s)	14.5
Intersection Capacity Utilization	102.4%	ICU Level of Service	G
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	650	1070	320	250	950	160	460	1060	240	170	700	340
Future Volume (vph)	650	1070	320	250	950	160	460	1060	240	170	700	340
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	4.0
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00	0.91		1.00	0.91	1.00
Frpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	0.99
Flpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	1.00
Frt	1.00	0.97		1.00	0.98		1.00	0.97		1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1770	3417		1770	3454		1770	4931		1770	5085	1569
Flt Permitted	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)	1770	3417		1770	3454		1770	4931		1770	5085	1569
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	707	1163	348	272	1033	174	500	1152	261	185	761	370
RTOR Reduction (vph)	0	19	0	0	9	0	0	24	0	0	0	50
Lane Group Flow (vph)	707	1492	0	272	1198	0	500	1389	0	185	761	320
Confl. Peds. (#/hr)	4					4	5		1	1		5
Turn Type	Prot	NA		Prot	NA		Prot	NA		Prot	NA	pm+ov
Protected Phases	7	4		3	8		5	2		1	6	7
Permitted Phases												6
Actuated Green, G (s)	38.6	58.2		22.2	41.2		28.6	42.1		8.6	22.0	60.6
Effective Green, g (s)	39.0	59.4		22.6	43.0		29.0	43.0		9.0	23.0	61.4
Actuated g/C Ratio	0.26	0.40		0.15	0.29		0.19	0.29		0.06	0.15	0.41
Clearance Time (s)	4.4	5.2		4.4	5.8		4.4	4.9		4.4	5.0	4.4
Vehicle Extension (s)	2.0	3.9		2.0	2.7		2.0	3.3		2.0	4.1	2.0
Lane Grp Cap (vph)	460	1353		266	990		342	1413		106	779	642
v/s Ratio Prot	c0.40	0.44		0.15	c0.35		c0.28	c0.28		c0.10	0.15	0.13
v/s Ratio Perm												0.07
v/c Ratio	1.54	1.10		1.02	1.21		1.46	0.98		1.75	0.98	0.50
Uniform Delay, d1	55.5	45.3		63.7	53.5		60.5	53.1		70.5	63.2	32.9
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	252.4	57.8		61.1	103.9		223.4	20.2		371.3	27.1	0.2
Delay (s)	307.9	103.1		124.8	157.4		283.9	73.3		441.8	90.3	33.1
Level of Service	F	F		F	F		F	E		F	F	C
Approach Delay (s)		168.3			151.4			128.4			123.6	
Approach LOS		F			F			F			F	

Intersection Summary			
HCM 2000 Control Delay	145.2	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.34		
Actuated Cycle Length (s)	150.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	121.3%	ICU Level of Service	H
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	160	880	320	220	370	90	280	240	630	70	110	70
Future Volume (vph)	160	880	320	220	370	90	280	240	630	70	110	70
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	5.5	5.5	4.0	5.4	5.4
Lane Util. Factor	1.00	0.95	0.88	0.97	0.95	1.00	0.97	1.00	1.00	1.00	0.91	1.00
Frpb, ped/bikes	1.00	1.00	0.97	1.00	1.00	0.71	1.00	1.00	0.98	1.00	1.00	0.97
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1770	3539	2709	3433	3539	1131	3433	1863	1555	1770	5085	1537
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1770	3539	2709	3433	3539	1131	3433	1863	1555	1770	5085	1537
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	174	957	348	239	402	98	304	261	685	76	120	76
RTOR Reduction (vph)	0	0	190	0	0	63	0	0	58	0	0	58
Lane Group Flow (vph)	174	957	158	239	402	35	304	261	627	76	120	18
Confl. Peds. (#/hr)			27	27		170	23		15	15		23
Turn Type	Prot	NA	pm+ov	Prot	NA	Perm	Prot	NA	pm+ov	Prot	NA	Perm
Protected Phases	5	2	3	1	6		3	8	1	7	4	
Permitted Phases			2			6			8			4
Actuated Green, G (s)	11.0	33.2	41.1	10.1	32.3	32.3	7.9	24.0	34.1	6.6	22.7	22.7
Effective Green, g (s)	11.4	34.1	41.9	10.5	33.2	33.2	8.3	23.4	31.9	7.0	22.2	22.2
Actuated g/C Ratio	0.12	0.37	0.45	0.11	0.36	0.36	0.09	0.25	0.34	0.08	0.24	0.24
Clearance Time (s)	4.4	4.9	4.4	4.4	4.9	4.9	4.4	4.9	4.4	4.4	4.9	4.9
Vehicle Extension (s)	2.0	2.1	2.0	2.0	2.3	2.3	2.0	4.5	2.0	2.0	4.5	4.5
Lane Grp Cap (vph)	218	1304	1227	389	1270	405	308	471	536	133	1220	368
v/s Ratio Prot	0.10	c0.27	0.01	0.07	0.11		c0.09	0.14	c0.11	0.04	0.02	
v/s Ratio Perm			0.05			0.03			0.29			0.01
v/c Ratio	0.80	0.73	0.13	0.61	0.32	0.09	0.99	0.55	1.17	0.57	0.10	0.05
Uniform Delay, d1	39.4	25.3	14.7	39.1	21.4	19.6	42.0	30.0	30.3	41.3	27.4	27.0
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	17.0	3.7	0.0	2.0	0.7	0.4	47.2	2.1	94.8	3.6	0.1	0.1
Delay (s)	56.5	29.0	14.7	41.1	22.1	20.0	89.2	32.1	125.1	44.9	27.4	27.1
Level of Service	E	C	B	D	C	C	F	C	F	D	C	C
Approach Delay (s)		28.8			28.0			96.9			32.2	
Approach LOS		C			C			F			C	

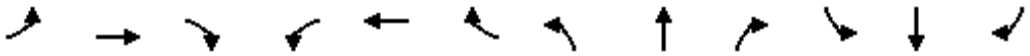
Intersection Summary			
HCM 2000 Control Delay	51.7	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.96		
Actuated Cycle Length (s)	92.5	Sum of lost time (s)	19.0
Intersection Capacity Utilization	82.3%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	580	300	70	20	160	150	90	100	110	20	20	40
Future Volume (vph)	580	300	70	20	160	150	90	100	110	20	20	40
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0			4.0			4.0			4.0	
Lane Util. Factor		1.00			1.00			1.00			1.00	
Frpb, ped/bikes		1.00			0.99			0.99			0.99	
Flpb, ped/bikes		1.00			1.00			1.00			1.00	
Frt		0.99			0.94			0.95			0.93	
Flt Protected		0.97			1.00			0.99			0.99	
Satd. Flow (prot)		1784			1727			1722			1698	
Flt Permitted		0.62			0.92			0.86			0.79	
Satd. Flow (perm)		1147			1592			1495			1365	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	630	326	76	22	174	163	98	109	120	22	22	43
RTOR Reduction (vph)	0	3	0	0	17	0	0	19	0	0	32	0
Lane Group Flow (vph)	0	1029	0	0	342	0	0	308	0	0	55	0
Confl. Peds. (#/hr)	1		3	3		1	1		4	4		1
Turn Type	pm+pt	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases	5	2			6			8			4	
Permitted Phases	2			6			8			4		
Actuated Green, G (s)		79.2			79.2			21.0			21.0	
Effective Green, g (s)		80.1			80.1			21.9			21.9	
Actuated g/C Ratio		0.73			0.73			0.20			0.20	
Clearance Time (s)		4.9			4.9			4.9			4.9	
Vehicle Extension (s)		2.0			2.0			2.0			2.0	
Lane Grp Cap (vph)		835			1159			297			271	
v/s Ratio Prot												
v/s Ratio Perm		c0.90			0.22			c0.21			0.04	
v/c Ratio		1.23			0.30			1.04			0.20	
Uniform Delay, d1		15.0			5.2			44.0			36.8	
Progression Factor		1.00			1.00			1.00			1.00	
Incremental Delay, d2		115.1			0.6			62.0			0.1	
Delay (s)		130.0			5.8			106.0			36.9	
Level of Service		F			A			F			D	
Approach Delay (s)		130.0			5.8			106.0			36.9	
Approach LOS		F			A			F			D	

Intersection Summary			
HCM 2000 Control Delay	96.5	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.24		
Actuated Cycle Length (s)	110.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	104.7%	ICU Level of Service	G
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	1090	490	240	500	180	260
Future Volume (vph)	1090	490	240	500	180	260
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0		4.0	4.9	4.0	4.0
Lane Util. Factor	0.91		1.00	0.95	1.00	1.00
Frpb, ped/bikes	0.97		1.00	1.00	1.00	1.00
Flpb, ped/bikes	1.00		1.00	1.00	1.00	1.00
Frt	0.95		1.00	1.00	1.00	0.85
Flt Protected	1.00		0.95	1.00	0.95	1.00
Satd. Flow (prot)	4686		1770	3539	1770	1583
Flt Permitted	1.00		0.95	1.00	0.95	1.00
Satd. Flow (perm)	4686		1770	3539	1770	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	1185	533	261	543	196	283
RTOR Reduction (vph)	91	0	0	0	0	221
Lane Group Flow (vph)	1627	0	261	543	196	62
Confl. Peds. (#/hr)		53	53		46	81
Turn Type	NA		Prot	NA	Prot	Prot
Protected Phases	2		1	6	8	8
Permitted Phases						
Actuated Green, G (s)	29.3		12.9	46.6	14.8	14.8
Effective Green, g (s)	31.2		13.3	46.6	15.7	15.7
Actuated g/C Ratio	0.44		0.19	0.65	0.22	0.22
Clearance Time (s)	4.9		4.4	4.9	4.9	4.9
Vehicle Extension (s)	2.9		2.0	2.0	2.0	2.0
Lane Grp Cap (vph)	2053		330	2316	390	349
v/s Ratio Prot	c0.35		c0.15	0.15	c0.11	0.04
v/s Ratio Perm						
v/c Ratio	0.79		0.79	0.23	0.50	0.18
Uniform Delay, d1	17.2		27.6	5.0	24.3	22.5
Progression Factor	1.00		1.00	1.00	1.00	1.00
Incremental Delay, d2	3.2		11.4	0.2	0.4	0.1
Delay (s)	20.5		39.0	5.3	24.7	22.6
Level of Service	C		D	A	C	C
Approach Delay (s)	20.5			16.2	23.5	
Approach LOS	C			B	C	

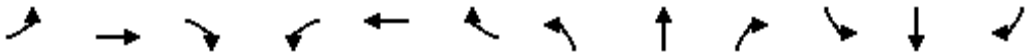
Intersection Summary			
HCM 2000 Control Delay	19.8	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.72		
Actuated Cycle Length (s)	71.2	Sum of lost time (s)	11.0
Intersection Capacity Utilization	66.6%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Traffic Volume (vph)	20	20	20	30	20	60	40	140	40	90	190	60
Future Volume (vph)	20	20	20	30	20	60	40	140	40	90	190	60
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	22	22	22	33	22	65	43	152	43	98	207	65

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total (vph)	66	120	238	370
Volume Left (vph)	22	33	43	98
Volume Right (vph)	22	65	43	65
Hadj (s)	-0.10	-0.24	-0.04	-0.02
Departure Headway (s)	5.5	5.2	4.8	4.7
Degree Utilization, x	0.10	0.17	0.32	0.48
Capacity (veh/h)	572	610	707	735
Control Delay (s)	9.1	9.3	10.1	12.0
Approach Delay (s)	9.1	9.3	10.1	12.0
Approach LOS	A	A	B	B

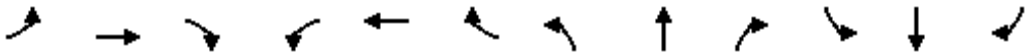
Intersection Summary				
Delay	10.8			
Level of Service	B			
Intersection Capacity Utilization	48.9%	ICU Level of Service	A	
Analysis Period (min)	15			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Traffic Volume (vph)	40	20	20	30	40	20	30	130	30	50	130	70
Future Volume (vph)	40	20	20	30	40	20	30	130	30	50	130	70
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	43	22	22	33	43	22	33	141	33	54	141	76

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total (vph)	87	98	207	271
Volume Left (vph)	43	33	33	54
Volume Right (vph)	22	22	33	76
Hadj (s)	-0.02	-0.03	-0.03	-0.09
Departure Headway (s)	5.2	5.1	4.7	4.6
Degree Utilization, x	0.12	0.14	0.27	0.34
Capacity (veh/h)	626	631	729	751
Control Delay (s)	8.9	9.0	9.4	9.9
Approach Delay (s)	8.9	9.0	9.4	9.9
Approach LOS	A	A	A	A

Intersection Summary				
Delay	9.5			
Level of Service	A			
Intersection Capacity Utilization	36.8%	ICU Level of Service	A	
Analysis Period (min)	15			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Traffic Volume (vph)	20	20	20	70	30	30	20	220	400	10	160	20
Future Volume (vph)	20	20	20	70	30	30	20	220	400	10	160	20
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	22	22	22	76	33	33	22	239	435	11	174	22

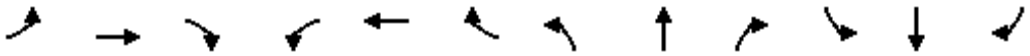
Direction, Lane #	EB 1	WB 1	NB 1	NB 2	SB 1
Volume Total (vph)	66	142	261	435	207
Volume Left (vph)	22	76	22	0	11
Volume Right (vph)	22	33	0	435	22
Hadj (s)	-0.10	0.00	0.08	-0.67	-0.02
Departure Headway (s)	6.0	5.9	5.5	4.7	5.4
Degree Utilization, x	0.11	0.23	0.40	0.57	0.31
Capacity (veh/h)	531	555	645	747	638
Control Delay (s)	9.7	10.7	16.2	12.6	10.7
Approach Delay (s)	9.7	10.7	16.3		10.7
Approach LOS	A	B	C		B

Intersection Summary				
Delay	16.1			
Level of Service	C			
Intersection Capacity Utilization	55.5%	ICU Level of Service		A
Analysis Period (min)	15			

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Sign Control	Stop			Stop	Stop	
Traffic Volume (vph)	40	40	60	50	60	110
Future Volume (vph)	40	40	60	50	60	110
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	43	43	65	54	65	120

Direction, Lane #	EB 1	WB 1	NB 1
Volume Total (vph)	86	119	185
Volume Left (vph)	0	65	65
Volume Right (vph)	43	0	120
Hadj (s)	-0.27	0.14	-0.28
Departure Headway (s)	4.2	4.5	4.1
Degree Utilization, x	0.10	0.15	0.21
Capacity (veh/h)	818	751	840
Control Delay (s)	7.6	8.3	8.2
Approach Delay (s)	7.6	8.3	8.2
Approach LOS	A	A	A

Intersection Summary			
Delay	8.1		
Level of Service	A		
Intersection Capacity Utilization	34.3%	ICU Level of Service	A
Analysis Period (min)	15		



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Traffic Volume (vph)	30	30	30	50	30	20	80	160	140	20	80	20
Future Volume (vph)	30	30	30	50	30	20	80	160	140	20	80	20
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	33	33	33	54	33	22	87	174	152	22	87	22

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total (vph)	99	109	413	131
Volume Left (vph)	33	54	87	22
Volume Right (vph)	33	22	152	22
Hadj (s)	-0.10	0.01	-0.14	-0.03
Departure Headway (s)	5.3	5.4	4.5	4.9
Degree Utilization, x	0.14	0.16	0.52	0.18
Capacity (veh/h)	607	600	773	676
Control Delay (s)	9.2	9.4	12.2	9.0
Approach Delay (s)	9.2	9.4	12.2	9.0
Approach LOS	A	A	B	A

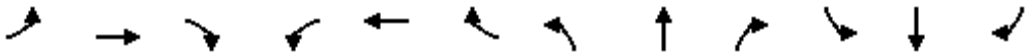
Intersection Summary				
Delay	10.8			
Level of Service	B			
Intersection Capacity Utilization	50.7%	ICU Level of Service	A	
Analysis Period (min)	15			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	270	40	110	20	60	50	120	300	30	20	70	170
Future Volume (vph)	270	40	110	20	60	50	120	300	30	20	70	170
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0			4.0		4.0	4.0		4.0	4.0	
Lane Util. Factor		1.00			1.00		1.00	1.00		1.00	1.00	
Frpb, ped/bikes		1.00			0.99		1.00	1.00		1.00	0.98	
Flpb, ped/bikes		1.00			1.00		1.00	1.00		1.00	1.00	
Frt		0.96			0.95		1.00	0.99		1.00	0.89	
Flt Protected		0.97			0.99		0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1737			1742		1765	1833		1764	1637	
Flt Permitted		0.76			0.92		0.57	1.00		0.47	1.00	
Satd. Flow (perm)		1357			1608		1068	1833		873	1637	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	293	43	120	22	65	54	130	326	33	22	76	185
RTOR Reduction (vph)	0	26	0	0	32	0	0	4	0	0	104	0
Lane Group Flow (vph)	0	430	0	0	109	0	130	355	0	22	157	0
Confl. Peds. (#/hr)	5					5	3		4	4		3
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		8			4			6			2	
Permitted Phases	8			4			6			2		
Actuated Green, G (s)		20.7			20.7		22.5	22.5		22.5	22.5	
Effective Green, g (s)		20.7			20.7		22.5	22.5		22.5	22.5	
Actuated g/C Ratio		0.40			0.40		0.44	0.44		0.44	0.44	
Clearance Time (s)		4.0			4.0		4.0	4.0		4.0	4.0	
Vehicle Extension (s)		2.0			2.0		2.1	2.1		2.1	2.1	
Lane Grp Cap (vph)		548			650		469	805		383	719	
v/s Ratio Prot								c0.19			0.10	
v/s Ratio Perm		c0.32			0.07		0.12			0.03		
v/c Ratio		0.79			0.17		0.28	0.44		0.06	0.22	
Uniform Delay, d1		13.3			9.7		9.2	10.0		8.3	8.9	
Progression Factor		1.00			1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2		6.7			0.0		1.5	1.7		0.3	0.7	
Delay (s)		20.1			9.8		10.6	11.7		8.5	9.6	
Level of Service		C			A		B	B		A	A	
Approach Delay (s)		20.1			9.8			11.4			9.5	
Approach LOS		C			A			B			A	

Intersection Summary			
HCM 2000 Control Delay	13.7	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.61		
Actuated Cycle Length (s)	51.2	Sum of lost time (s)	8.0
Intersection Capacity Utilization	64.6%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	70	1060	220	310	590	20	130	20	220	30	20	20
Future Volume (vph)	70	1060	220	310	590	20	130	20	220	30	20	20
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0			4.0			4.0	
Lane Util. Factor	1.00	0.91		1.00	0.95			1.00			1.00	
Frpb, ped/bikes	1.00	0.99		1.00	1.00			0.99			1.00	
Flpb, ped/bikes	1.00	1.00		1.00	1.00			1.00			1.00	
Frt	1.00	0.97		1.00	1.00			0.92			0.96	
Flt Protected	0.95	1.00		0.95	1.00			0.98			0.98	
Satd. Flow (prot)	1765	4916		1770	3517			1668			1744	
Flt Permitted	0.40	1.00		0.15	1.00			0.86			0.77	
Satd. Flow (perm)	743	4916		287	3517			1466			1371	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	76	1152	239	337	641	22	141	22	239	33	22	22
RTOR Reduction (vph)	0	41	0	0	3	0	0	85	0	0	16	0
Lane Group Flow (vph)	76	1351	0	337	660	0	0	318	0	0	61	0
Confl. Peds. (#/hr)	13		12	12		13	6		2	2		6
Turn Type	pm+pt	NA		pm+pt	NA		Perm	NA		Perm	NA	
Protected Phases	5	2		1	6			8			4	
Permitted Phases	2			6			8			4		
Actuated Green, G (s)	24.2	21.5		36.6	29.5			16.6			16.6	
Effective Green, g (s)	25.0	22.5		37.0	30.4			17.5			17.5	
Actuated g/C Ratio	0.40	0.36		0.59	0.48			0.28			0.28	
Clearance Time (s)	4.4	5.0		4.4	4.9			4.9			4.9	
Vehicle Extension (s)	2.0	3.3		2.0	3.3			2.0			2.0	
Lane Grp Cap (vph)	345	1755		427	1697			407			380	
v/s Ratio Prot	0.01	0.27		c0.14	0.19							
v/s Ratio Perm	0.08			c0.33				c0.22			0.04	
v/c Ratio	0.22	0.77		0.79	0.39			0.78			0.16	
Uniform Delay, d1	12.0	18.0		12.2	10.4			21.0			17.2	
Progression Factor	1.00	1.00		1.00	1.00			1.00			1.00	
Incremental Delay, d2	0.1	3.3		8.7	0.7			8.7			0.1	
Delay (s)	12.1	21.3		20.9	11.1			29.6			17.3	
Level of Service	B	C		C	B			C			B	
Approach Delay (s)		20.8			14.4			29.6			17.3	
Approach LOS		C			B			C			B	

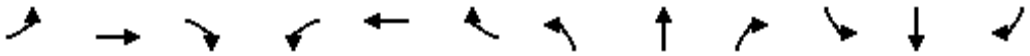
Intersection Summary			
HCM 2000 Control Delay	19.7	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.82		
Actuated Cycle Length (s)	63.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	79.0%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Traffic Volume (vph)	110	20	30	10	20	20	20	110	30	40	160	90
Future Volume (vph)	110	20	30	10	20	20	20	110	30	40	160	90
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	120	22	33	11	22	22	22	120	33	43	174	98

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total (vph)	175	55	175	315
Volume Left (vph)	120	11	22	43
Volume Right (vph)	33	22	33	98
Hadj (s)	0.06	-0.17	-0.05	-0.13
Departure Headway (s)	5.2	5.2	4.9	4.6
Degree Utilization, x	0.25	0.08	0.24	0.40
Capacity (veh/h)	631	608	692	739
Control Delay (s)	10.0	8.6	9.4	10.7
Approach Delay (s)	10.0	8.6	9.4	10.7
Approach LOS	A	A	A	B

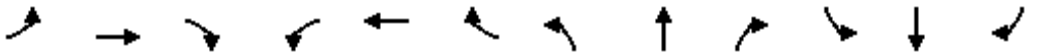
Intersection Summary			
Delay	10.1		
Level of Service	B		
Intersection Capacity Utilization	45.4%	ICU Level of Service	A
Analysis Period (min)	15		



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Traffic Volume (vph)	40	20	60	10	20	20	40	100	20	20	150	50
Future Volume (vph)	40	20	60	10	20	20	40	100	20	20	150	50
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	43	22	65	11	22	22	43	109	22	22	163	54

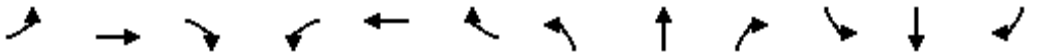
Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total (vph)	130	55	174	239
Volume Left (vph)	43	11	43	22
Volume Right (vph)	65	22	22	54
Hadj (s)	-0.20	-0.17	0.01	-0.08
Departure Headway (s)	4.7	4.9	4.7	4.5
Degree Utilization, x	0.17	0.07	0.22	0.30
Capacity (veh/h)	692	660	734	761
Control Delay (s)	8.7	8.3	9.0	9.4
Approach Delay (s)	8.7	8.3	9.0	9.4
Approach LOS	A	A	A	A

Intersection Summary				
Delay	9.0			
Level of Service	A			
Intersection Capacity Utilization	37.0%	ICU Level of Service	A	
Analysis Period (min)	15			



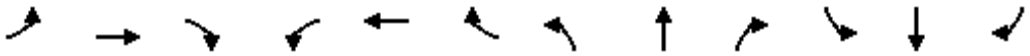
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	580	670	60	30	580	160	0	0	30	220	150	340
Future Volume (vph)	580	670	60	30	580	160	0	0	30	220	150	340
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0				4.0	4.0	4.0	4.0
Lane Util. Factor	0.97	0.95		1.00	0.95				1.00	0.95	0.95	1.00
Frpb, ped/bikes	1.00	1.00		1.00	1.00				1.00	1.00	1.00	0.99
Flpb, ped/bikes	1.00	1.00		1.00	1.00				1.00	1.00	1.00	1.00
Frt	1.00	0.99		1.00	0.97				0.86	1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00				1.00	0.95	0.98	1.00
Satd. Flow (prot)	3433	3487		1770	3412				1611	1681	1734	1561
Flt Permitted	0.95	1.00		0.95	1.00				1.00	0.95	0.98	1.00
Satd. Flow (perm)	3433	3487		1770	3412				1611	1681	1734	1561
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	630	728	65	33	630	174	0	0	33	239	163	370
RTOR Reduction (vph)	0	7	0	0	28	0	0	0	0	0	0	259
Lane Group Flow (vph)	630	786	0	33	776	0	0	0	33	127	275	111
Confl. Peds. (#/hr)	5		4	4		5						3
Turn Type	Prot	NA		Prot	NA				Free	Split	NA	Perm
Protected Phases	5	2		1	6					4	4	
Permitted Phases									Free			4
Actuated Green, G (s)	13.5	36.6		2.0	25.1				71.1	17.9	17.9	17.9
Effective Green, g (s)	13.9	37.5		2.4	26.0				71.1	19.2	19.2	19.2
Actuated g/C Ratio	0.20	0.53		0.03	0.37				1.00	0.27	0.27	0.27
Clearance Time (s)	4.4	4.9		4.4	4.9					5.3	5.3	5.3
Vehicle Extension (s)	2.0	3.3		2.0	3.8					4.4	4.4	4.4
Lane Grp Cap (vph)	671	1839		59	1247				1611	453	468	421
v/s Ratio Prot	c0.18	0.23		0.02	c0.23					0.08	c0.16	
v/s Ratio Perm									0.02			0.07
v/c Ratio	0.94	0.43		0.56	0.62				0.02	0.28	0.59	0.26
Uniform Delay, d1	28.2	10.3		33.8	18.5				0.0	20.5	22.5	20.4
Progression Factor	1.00	1.00		1.00	1.00				1.00	1.00	1.00	1.00
Incremental Delay, d2	20.6	0.7		6.4	2.3				0.0	0.6	2.5	0.6
Delay (s)	48.8	11.0		40.2	20.9				0.0	21.1	25.0	20.9
Level of Service	D	B		D	C				A	C	C	C
Approach Delay (s)		27.7			21.6			0.0			22.4	
Approach LOS		C			C			A			C	

Intersection Summary			
HCM 2000 Control Delay	24.4	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.69		
Actuated Cycle Length (s)	71.1	Sum of lost time (s)	12.0
Intersection Capacity Utilization	59.3%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	60	1430	100	70	1010	60	120	110	140	40	90	20
Future Volume (vph)	60	1430	100	70	1010	60	120	110	140	40	90	20
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0		4.0	4.0			4.0	
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00	1.00			1.00	
Frpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	0.99			1.00	
Flpb, ped/bikes	1.00	1.00		1.00	1.00		0.99	1.00			1.00	
Frt	1.00	0.99		1.00	0.99		1.00	0.92			0.98	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00			0.99	
Satd. Flow (prot)	1678	3406		1671	3405		1646	1575			1704	
Flt Permitted	0.95	1.00		0.95	1.00		0.49	1.00			0.44	
Satd. Flow (perm)	1678	3406		1671	3405		852	1575			764	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	65	1554	109	76	1098	65	130	120	152	43	98	22
RTOR Reduction (vph)	0	3	0	0	3	0	0	34	0	0	4	0
Lane Group Flow (vph)	65	1660	0	76	1160	0	130	238	0	0	159	0
Confl. Peds. (#/hr)	4		3	3		4	6		5	5		6
Confl. Bikes (#/hr)			3			2			4			
Bus Blockages (#/hr)	13	13	13	14	14	14	16	16	16	13	13	13
Turn Type	Prot	NA		Prot	NA		Perm	NA		Perm	NA	
Protected Phases	5	2		1	6			4			4	
Permitted Phases							4			4		
Actuated Green, G (s)	9.3	94.7		10.0	95.4		26.1	26.1			26.1	
Effective Green, g (s)	9.7	95.6		10.4	96.3		27.0	27.0			27.0	
Actuated g/C Ratio	0.07	0.66		0.07	0.66		0.19	0.19			0.19	
Clearance Time (s)	4.4	4.9		4.4	4.9		4.9	4.9			4.9	
Vehicle Extension (s)	2.0	2.1		2.0	2.1		2.0	2.0			2.0	
Lane Grp Cap (vph)	112	2245		119	2261		158	293			142	
v/s Ratio Prot	0.04	c0.49		c0.05	0.34			0.15				
v/s Ratio Perm							0.15				c0.21	
v/c Ratio	0.58	0.74		0.64	0.51		0.82	0.81			1.12	
Uniform Delay, d1	65.7	16.4		65.5	12.4		56.7	56.6			59.0	
Progression Factor	1.00	1.00		0.99	0.85		1.00	1.00			1.00	
Incremental Delay, d2	4.9	2.2		3.2	0.3		26.8	14.8			111.1	
Delay (s)	70.5	18.7		68.2	10.9		83.5	71.4			170.1	
Level of Service	E	B		E	B		F	E			F	
Approach Delay (s)		20.6			14.4			75.3			170.1	
Approach LOS		C			B			E			F	

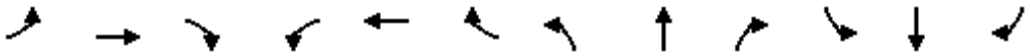
Intersection Summary			
HCM 2000 Control Delay	31.6	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.81		
Actuated Cycle Length (s)	145.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	86.1%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	430	1400	150	220	840	220	90	430	240	310	220	160
Future Volume (vph)	430	1400	150	220	840	220	90	430	240	310	220	160
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0		4.0	4.0	4.0	4.0	4.0	
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00	0.95	1.00	1.00	0.95	
Frpb, ped/bikes	1.00	0.99		1.00	0.99		1.00	1.00	0.96	1.00	0.96	
Flpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	
Frt	1.00	0.99		1.00	0.97		1.00	1.00	0.85	1.00	0.94	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)	1770	3468		1770	3380		1770	3539	1526	1770	3180	
Flt Permitted	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (perm)	1770	3468		1770	3380		1770	3539	1526	1770	3180	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	467	1522	163	239	913	239	98	467	261	337	239	174
RTOR Reduction (vph)	0	6	0	0	16	0	0	0	62	0	89	0
Lane Group Flow (vph)	467	1679	0	239	1136	0	98	467	199	337	324	0
Confl. Peds. (#/hr)	26		26	26		26	41		25	25		41
Confl. Bikes (#/hr)			8			2			13			8
Turn Type	Prot	NA		Prot	NA		Prot	NA	pm+ov	Prot	NA	
Protected Phases	5	2		1	6		3	8	1	7	4	
Permitted Phases									8			
Actuated Green, G (s)	31.6	59.1		15.6	42.6		11.9	25.9	41.5	25.7	39.8	
Effective Green, g (s)	32.0	60.0		16.0	44.0		12.3	26.9	42.3	26.1	40.7	
Actuated g/C Ratio	0.22	0.41		0.11	0.30		0.08	0.19	0.29	0.18	0.28	
Clearance Time (s)	4.4	4.9		4.4	5.4		4.4	5.0	4.4	4.4	4.9	
Vehicle Extension (s)	2.0	4.2		2.0	3.0		2.0	4.0	2.0	2.0	2.6	
Lane Grp Cap (vph)	390	1435		195	1025		150	656	445	318	892	
v/s Ratio Prot	c0.26	c0.48		0.14	0.34		0.06	c0.13	0.05	c0.19	0.10	
v/s Ratio Perm									0.08			
v/c Ratio	1.20	1.17		1.23	1.11		0.65	0.71	0.45	1.06	0.36	
Uniform Delay, d1	56.5	42.5		64.5	50.5		64.3	55.4	41.8	59.5	41.8	
Progression Factor	1.07	0.95		1.09	0.93		1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	107.5	83.0		134.1	61.0		7.5	3.9	0.3	67.1	0.2	
Delay (s)	168.0	123.4		204.7	107.9		71.8	59.3	42.1	126.6	42.0	
Level of Service	F	F		F	F		E	E	D	F	D	
Approach Delay (s)		133.0			124.5			55.4			80.0	
Approach LOS		F			F			E			E	

Intersection Summary			
HCM 2000 Control Delay	110.4	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.08		
Actuated Cycle Length (s)	145.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	105.2%	ICU Level of Service	G
Analysis Period (min)	15		

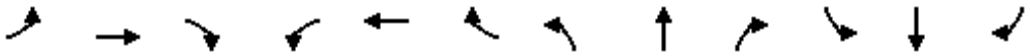
c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	10	1920	100	160	1270	50	100	20	220	50	20	20
Future Volume (vph)	10	1920	100	160	1270	50	100	20	220	50	20	20
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0			4.0	4.0		4.0	
Lane Util. Factor	1.00	0.91		1.00	0.95			1.00	1.00		1.00	
Frpb, ped/bikes	1.00	1.00		1.00	1.00			1.00	0.98		0.99	
Flpb, ped/bikes	1.00	1.00		1.00	1.00			1.00	1.00		1.00	
Frt	1.00	0.99		1.00	0.99			1.00	0.85		0.97	
Flt Protected	0.95	1.00		0.95	1.00			0.96	1.00		0.97	
Satd. Flow (prot)	1770	5038		1770	3517			1788	1553		1742	
Flt Permitted	0.95	1.00		0.95	1.00			0.67	1.00		0.63	
Satd. Flow (perm)	1770	5038		1770	3517			1248	1553		1126	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	11	2087	109	174	1380	54	109	22	239	54	22	22
RTOR Reduction (vph)	0	3	0	0	2	0	0	0	202	0	8	0
Lane Group Flow (vph)	11	2193	0	174	1432	0	0	131	37	0	90	0
Confl. Peds. (#/hr)			3	3								
Confl. Bikes (#/hr)			11			1			5			20
Turn Type	Prot	NA		Prot	NA		Perm	NA	Perm	Perm	NA	
Protected Phases	5	2		1	6			8			4	
Permitted Phases							8		8	4		
Actuated Green, G (s)	2.0	90.1		18.6	106.7			21.7	21.7		21.7	
Effective Green, g (s)	2.4	91.4		19.0	108.0			22.6	22.6		22.6	
Actuated g/C Ratio	0.02	0.63		0.13	0.74			0.16	0.16		0.16	
Clearance Time (s)	4.4	5.3		4.4	5.3			4.9	4.9		4.9	
Vehicle Extension (s)	2.0	4.4		2.0	4.4			2.0	2.0		2.0	
Lane Grp Cap (vph)	29	3175		231	2619			194	242		175	
v/s Ratio Prot	0.01	c0.44		c0.10	0.41							
v/s Ratio Perm								c0.10	0.02		0.08	
v/c Ratio	0.38	0.69		0.75	0.55			0.68	0.15		0.52	
Uniform Delay, d1	70.6	17.5		60.7	8.0			57.7	52.9		56.2	
Progression Factor	0.86	1.21		1.00	1.00			1.00	1.00		1.00	
Incremental Delay, d2	0.3	0.1		11.6	0.8			7.1	0.1		1.1	
Delay (s)	60.9	21.4		72.4	8.8			64.8	53.0		57.3	
Level of Service	E	C		E	A			E	D		E	
Approach Delay (s)		21.5			15.7			57.2			57.3	
Approach LOS		C			B			E			E	

Intersection Summary			
HCM 2000 Control Delay	23.2	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.70		
Actuated Cycle Length (s)	145.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	69.9%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	0	0	350	2020	0	0	0	0	0	350	190
Future Volume (vph)	0	0	0	350	2020	0	0	0	0	0	350	190
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)					4.0						4.0	
Lane Util. Factor					0.91						0.91	
Frpb, ped/bikes					1.00						0.99	
Flpb, ped/bikes					1.00						1.00	
Frt					1.00						0.95	
Flt Protected					0.99						1.00	
Satd. Flow (prot)					5041						4778	
Flt Permitted					0.99						1.00	
Satd. Flow (perm)					5041						4778	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	380	2196	0	0	0	0	0	380	207
RTOR Reduction (vph)	0	0	0	0	12	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	0	0	0	2564	0	0	0	0	0	587	0
Confl. Peds. (#/hr)				6								7
Turn Type				Perm	NA						NA	
Protected Phases					6						4	
Permitted Phases				6								
Actuated Green, G (s)					61.8						18.0	
Effective Green, g (s)					63.1						18.9	
Actuated g/C Ratio					0.70						0.21	
Clearance Time (s)					5.3						4.9	
Vehicle Extension (s)					0.2						0.2	
Lane Grp Cap (vph)					3534						1003	
v/s Ratio Prot											c0.12	
v/s Ratio Perm					0.51							
v/c Ratio					0.73						0.59	
Uniform Delay, d1					8.2						32.0	
Progression Factor					1.00						0.93	
Incremental Delay, d2					1.3						0.1	
Delay (s)					9.5						29.8	
Level of Service					A						C	
Approach Delay (s)		0.0			9.5			0.0			29.8	
Approach LOS		A			A			A			C	

Intersection Summary			
HCM 2000 Control Delay	13.3	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.69		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	67.8%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	1610	120	0	0	0	0	0	0	310	420	0
Future Volume (vph)	0	1610	120	0	0	0	0	0	0	310	420	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0									4.0	
Lane Util. Factor		0.91									0.91	
Frpb, ped/bikes		1.00									1.00	
Flpb, ped/bikes		1.00									0.99	
Frt		0.99									1.00	
Flt Protected		1.00									0.98	
Satd. Flow (prot)		5024									4938	
Flt Permitted		1.00									0.98	
Satd. Flow (perm)		5024									4938	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	1750	130	0	0	0	0	0	0	337	457	0
RTOR Reduction (vph)	0	8	0	0	0	0	0	0	0	0	16	0
Lane Group Flow (vph)	0	1872	0	0	0	0	0	0	0	0	778	0
Confl. Peds. (#/hr)			9							14		
Turn Type		NA								Perm	NA	
Protected Phases		2									4	
Permitted Phases										4		
Actuated Green, G (s)		59.1									21.9	
Effective Green, g (s)		59.1									22.9	
Actuated g/C Ratio		0.66									0.25	
Clearance Time (s)		4.0									5.0	
Vehicle Extension (s)		3.0									3.0	
Lane Grp Cap (vph)		3299									1256	
v/s Ratio Prot		c0.37										
v/s Ratio Perm											0.16	
v/c Ratio		0.57									0.62	
Uniform Delay, d1		8.5									29.7	
Progression Factor		0.38									0.74	
Incremental Delay, d2		0.5									0.8	
Delay (s)		3.7									22.9	
Level of Service		A									C	
Approach Delay (s)		3.7			0.0			0.0			22.9	
Approach LOS		A			A			A			C	

Intersection Summary			
HCM 2000 Control Delay	9.4	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.58		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	57.7%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

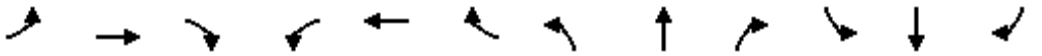
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	240	1270	120	150	1410	120	120	50	130	80	80	210
Future Volume (vph)	240	1270	120	150	1410	120	120	50	130	80	80	210
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.97	0.95		1.00	0.95	1.00	1.00	1.00	1.00	0.97	1.00	1.00
Frpb, ped/bikes	1.00	1.00		1.00	1.00	0.98	1.00	1.00	1.00	1.00	1.00	0.99
Flpb, ped/bikes	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.99		1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	3494		1770	3539	1557	1770	1863	1583	3433	1863	1563
Flt Permitted	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	3494		1770	3539	1557	1770	1863	1583	3433	1863	1563
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	261	1380	130	163	1533	130	130	54	141	87	87	228
RTOR Reduction (vph)	0	6	0	0	0	121	0	0	118	0	0	136
Lane Group Flow (vph)	261	1504	0	163	1533	9	130	54	23	87	87	92
Confl. Peds. (#/hr)	1					1	1					1
Turn Type	Prot	NA		Prot	NA	custom	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases						7			8			4
Actuated Green, G (s)	7.0	40.8		9.0	42.9	5.7	7.0	12.2	12.2	5.7	11.8	11.8
Effective Green, g (s)	7.0	42.3		9.0	44.3	5.7	7.0	14.0	14.0	5.7	12.7	12.7
Actuated g/C Ratio	0.08	0.49		0.10	0.51	0.07	0.08	0.16	0.16	0.07	0.15	0.15
Clearance Time (s)	4.0	5.5		4.0	5.4	4.0	4.0	5.8	5.8	4.0	4.9	4.9
Vehicle Extension (s)	2.0	3.7		2.0	4.0	2.0	2.0	2.0	2.0	2.0	3.0	3.0
Lane Grp Cap (vph)	276	1698		183	1802	102	142	299	254	224	271	228
v/s Ratio Prot	0.08	0.43		c0.09	c0.43		c0.07	0.03		0.03	0.05	
v/s Ratio Perm						0.01			0.01			c0.06
v/c Ratio	0.95	0.89		0.89	0.85	0.08	0.92	0.18	0.09	0.39	0.32	0.40
Uniform Delay, d1	39.8	20.2		38.5	18.5	38.2	39.7	31.5	31.1	39.0	33.3	33.7
Progression Factor	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	39.0	7.2		36.8	5.3	0.1	49.8	0.1	0.1	0.4	0.7	1.2
Delay (s)	78.8	27.4		75.3	23.8	38.3	89.5	31.6	31.1	39.4	34.0	34.9
Level of Service	E	C		E	C	D	F	C	C	D	C	C
Approach Delay (s)		35.0			29.4			54.6			35.7	
Approach LOS		C			C			D			D	

Intersection Summary			
HCM 2000 Control Delay	34.1	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.80		
Actuated Cycle Length (s)	87.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	70.6%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	0	0	180	1780	200	330	570	0	0	350	120
Future Volume (vph)	0	0	0	180	1780	200	330	570	0	0	350	120
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)					4.9		4.4	4.9			5.4	
Lane Util. Factor					0.86		1.00	0.95			0.95	
Frpb, ped/bikes					1.00		1.00	1.00			1.00	
Flpb, ped/bikes					1.00		1.00	1.00			1.00	
Frt					0.99		1.00	1.00			0.96	
Flt Protected					1.00		0.95	1.00			1.00	
Satd. Flow (prot)					6268		1770	3539			3389	
Flt Permitted					1.00		0.95	1.00			1.00	
Satd. Flow (perm)					6268		1770	3539			3389	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	0	0	0	189	1874	211	347	600	0	0	368	126
RTOR Reduction (vph)	0	0	0	0	14	0	0	0	0	0	31	0
Lane Group Flow (vph)	0	0	0	0	2260	0	347	600	0	0	463	0
Confl. Peds. (#/hr)	4		13	13		4	2		2	2		2
Confl. Bikes (#/hr)												1
Turn Type				Perm	NA		Prot	NA			NA	
Protected Phases					6		3	8			4	
Permitted Phases				6								
Actuated Green, G (s)					51.8		25.3	48.4			18.2	
Effective Green, g (s)					51.8		25.3	48.4			18.2	
Actuated g/C Ratio					0.47		0.23	0.44			0.17	
Clearance Time (s)					4.9		4.4	4.9			5.4	
Vehicle Extension (s)					2.4		3.0	3.3			2.4	
Lane Grp Cap (vph)					2951		407	1557			560	
v/s Ratio Prot							c0.20	0.17			c0.14	
v/s Ratio Perm					0.36							
v/c Ratio					0.77		0.85	0.39			0.83	
Uniform Delay, d1					24.1		40.6	20.8			44.4	
Progression Factor					1.00		1.00	1.00			1.00	
Incremental Delay, d2					2.0		15.7	0.2			9.5	
Delay (s)					26.0		56.3	20.9			53.9	
Level of Service					C		E	C			D	
Approach Delay (s)		0.0			26.0			33.9			53.9	
Approach LOS		A			C			C			D	

Intersection Summary			
HCM 2000 Control Delay	31.7	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.80		
Actuated Cycle Length (s)	110.0	Sum of lost time (s)	14.7
Intersection Capacity Utilization	76.1%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group



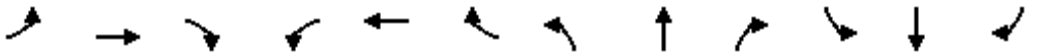
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	90	1180	70	0	0	0	0	800	420	130	320	0
Future Volume (vph)	90	1180	70	0	0	0	0	800	420	130	320	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0	4.0					4.9		4.0	4.9	
Lane Util. Factor		0.91	1.00					0.91		1.00	0.91	
Frpb, ped/bikes		1.00	0.97					0.99		1.00	1.00	
Flpb, ped/bikes		1.00	1.00					1.00		1.00	1.00	
Frt		1.00	0.85					0.95		1.00	1.00	
Flt Protected		1.00	1.00					1.00		0.95	1.00	
Satd. Flow (prot)		5066	1532					4775		1770	5085	
Flt Permitted		1.00	1.00					1.00		0.95	1.00	
Satd. Flow (perm)		5066	1532					4775		1770	5085	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	98	1283	76	0	0	0	0	870	457	141	348	0
RTOR Reduction (vph)	0	0	46	0	0	0	0	92	0	0	0	0
Lane Group Flow (vph)	0	1381	30	0	0	0	0	1235	0	141	348	0
Confl. Peds. (#/hr)	5		25				6		12	12		6
Turn Type	Perm	NA	Perm					NA		Prot	NA	
Protected Phases		2						8		7	4	
Permitted Phases	2		2									
Actuated Green, G (s)		35.1	35.1					25.1		15.6	45.1	
Effective Green, g (s)		36.0	36.0					25.1		16.0	45.1	
Actuated g/C Ratio		0.40	0.40					0.28		0.18	0.50	
Clearance Time (s)		4.9	4.9					4.9		4.4	4.9	
Vehicle Extension (s)		4.4	4.4					3.3		2.0	3.3	
Lane Grp Cap (vph)		2026	612					1331		314	2548	
v/s Ratio Prot								c0.26		c0.08	0.07	
v/s Ratio Perm		0.27	0.02									
v/c Ratio		0.68	0.05					0.93		0.45	0.14	
Uniform Delay, d1		22.3	16.5					31.6		33.1	12.0	
Progression Factor		1.00	1.00					1.00		1.00	1.00	
Incremental Delay, d2		1.9	0.2					12.5		4.6	0.1	
Delay (s)		24.2	16.7					44.1		37.6	12.1	
Level of Service		C	B					D		D	B	
Approach Delay (s)		23.8			0.0			44.1			19.5	
Approach LOS		C			A			D			B	

Intersection Summary			
HCM 2000 Control Delay	31.4	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.71		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	12.9
Intersection Capacity Utilization	76.1%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	1420	750	500	1490	460	260
Future Volume (vph)	1420	750	500	1490	460	260
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.5	4.0	4.0	4.0
Lane Util. Factor	0.95	1.00	0.97	0.95	0.97	0.91
Frpb, ped/bikes	1.00	0.99	1.00	1.00	1.00	0.98
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected	1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (prot)	3539	1569	3433	3539	3433	1418
Flt Permitted	1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (perm)	3539	1569	3433	3539	3433	1418
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	1543	815	543	1620	500	283
RTOR Reduction (vph)	0	3	0	0	0	217
Lane Group Flow (vph)	1543	812	543	1620	500	66
Confl. Peds. (#/hr)						1
Confl. Bikes (#/hr)		6				3
Turn Type	NA	pm+ov	Prot	NA	Prot	Perm
Protected Phases	2	8	1	6	8	
Permitted Phases		2				8
Actuated Green, G (s)	40.6	60.1	15.8	61.6	19.5	19.5
Effective Green, g (s)	42.8	64.5	15.7	63.0	21.7	21.7
Actuated g/C Ratio	0.46	0.70	0.17	0.68	0.23	0.23
Clearance Time (s)	6.2	6.2	4.4	5.4	6.2	6.2
Vehicle Extension (s)	4.0	2.0	2.0	5.2	2.0	2.0
Lane Grp Cap (vph)	1633	1159	581	2405	803	331
v/s Ratio Prot	c0.44	c0.16	c0.16	0.46	0.15	
v/s Ratio Perm		0.35				0.05
v/c Ratio	0.94	0.70	0.93	0.67	0.62	0.20
Uniform Delay, d1	23.8	8.4	38.0	8.8	31.8	28.5
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	12.5	1.6	22.1	1.5	1.1	0.1
Delay (s)	36.4	10.0	60.1	10.3	32.9	28.6
Level of Service	D	A	E	B	C	C
Approach Delay (s)	27.2			22.8	31.4	
Approach LOS	C			C	C	

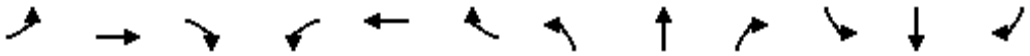
Intersection Summary			
HCM 2000 Control Delay	26.0	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.90		
Actuated Cycle Length (s)	92.7	Sum of lost time (s)	12.5
Intersection Capacity Utilization	80.0%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group



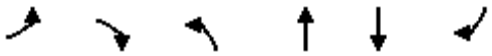
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	1080	330	360	350	0	0	0	0	390	0	1180
Future Volume (vph)	0	1080	330	360	350	0	0	0	0	390	0	1180
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0	4.0	4.0	4.0					4.0		3.4
Lane Util. Factor		0.95	1.00	0.97	0.95					1.00		1.00
Frpb, ped/bikes		1.00	0.99	1.00	1.00					1.00		1.00
Flpb, ped/bikes		1.00	1.00	1.00	1.00					1.00		1.00
Frt		1.00	0.85	1.00	1.00					1.00		0.85
Flt Protected		1.00	1.00	0.95	1.00					0.95		1.00
Satd. Flow (prot)		3539	1560	3433	3539					1770		1583
Flt Permitted		1.00	1.00	0.95	1.00					0.95		1.00
Satd. Flow (perm)		3539	1560	3433	3539					1770		1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	1174	359	391	380	0	0	0	0	424	0	1283
RTOR Reduction (vph)	0	0	229	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	1174	130	391	380	0	0	0	0	424	0	1283
Confl. Peds. (#/hr)			2	2								
Turn Type		NA	Perm	Prot	NA					Prot		Free
Protected Phases		2		1	6					4		
Permitted Phases			2									Free
Actuated Green, G (s)		26.2	26.2	13.6	44.0					21.4		75.0
Effective Green, g (s)		27.2	27.2	13.8	45.0					22.0		75.0
Actuated g/C Ratio		0.36	0.36	0.18	0.60					0.29		1.00
Clearance Time (s)		5.0	5.0	4.2	5.0					4.6		
Vehicle Extension (s)		0.2	0.2	0.2	0.2					0.2		
Lane Grp Cap (vph)		1283	565	631	2123					519		1583
v/s Ratio Prot		0.33		0.11	0.11					0.24		
v/s Ratio Perm			0.08									c0.81
v/c Ratio		0.92	0.23	0.62	0.18					0.82		0.81
Uniform Delay, d1		22.8	16.6	28.2	6.7					24.6		0.0
Progression Factor		1.00	1.00	0.87	1.39					1.00		1.00
Incremental Delay, d2		11.6	1.0	0.7	0.1					9.2		4.6
Delay (s)		34.4	17.6	25.1	9.4					33.8		4.6
Level of Service		C	B	C	A					C		A
Approach Delay (s)		30.5			17.4			0.0			11.9	
Approach LOS		C			B			A			B	

Intersection Summary			
HCM 2000 Control Delay	20.0	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.96		
Actuated Cycle Length (s)	75.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	79.7%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	870	720	0	0	590	500	190	20	450	0	0	0
Future Volume (vph)	870	720	0	0	590	500	190	20	450	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	5.0			5.0			4.0	4.0			
Lane Util. Factor	0.97	0.95			0.95			1.00	1.00			
Frpb, ped/bikes	1.00	1.00			0.99			1.00	1.00			
Flpb, ped/bikes	1.00	1.00			1.00			1.00	1.00			
Frt	1.00	1.00			0.93			1.00	0.85			
Flt Protected	0.95	1.00			1.00			0.96	1.00			
Satd. Flow (prot)	3433	3539			3272			1782	1583			
Flt Permitted	0.95	1.00			1.00			0.96	1.00			
Satd. Flow (perm)	3433	3539			3272			1782	1583			
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	946	783	0	0	641	543	207	22	489	0	0	0
RTOR Reduction (vph)	0	0	0	0	185	0	0	0	231	0	0	0
Lane Group Flow (vph)	946	783	0	0	999	0	0	229	258	0	0	0
Confl. Peds. (#/hr)	3		1	1		3						
Turn Type	Prot	NA			NA		Split	NA	Perm			
Protected Phases	5	2			6		4	4				
Permitted Phases									4			
Actuated Green, G (s)	20.8	54.5			29.5			10.4	10.4			
Effective Green, g (s)	21.0	55.0			30.0			11.0	11.0			
Actuated g/C Ratio	0.28	0.73			0.40			0.15	0.15			
Clearance Time (s)	4.2	5.5			5.5			4.6	4.6			
Vehicle Extension (s)	0.2	0.2			0.2			0.2	0.2			
Lane Grp Cap (vph)	961	2595			1308			261	232			
v/s Ratio Prot	c0.28	0.22			c0.31			0.13				
v/s Ratio Perm									c0.16			
v/c Ratio	0.98	0.30			0.76			0.88	1.11			
Uniform Delay, d1	26.8	3.4			19.4			31.3	32.0			
Progression Factor	1.39	0.64			1.00			1.00	1.00			
Incremental Delay, d2	19.2	0.2			4.3			25.8	92.1			
Delay (s)	56.4	2.4			23.7			57.1	124.1			
Level of Service	E	A			C			E	F			
Approach Delay (s)		32.0			23.7			102.7			0.0	
Approach LOS		C			C			F			A	

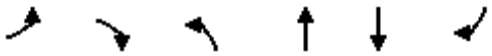
Intersection Summary			
HCM 2000 Control Delay	43.3	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.90		
Actuated Cycle Length (s)	75.0	Sum of lost time (s)	13.0
Intersection Capacity Utilization	79.7%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	230	200	150	870	890	180
Future Volume (vph)	230	200	150	870	890	180
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.5		4.5	4.5	4.5	
Lane Util. Factor	1.00		1.00	0.95	0.95	
Frt	0.94		1.00	1.00	0.97	
Flt Protected	0.97		0.95	1.00	1.00	
Satd. Flow (prot)	1700		1770	3539	3450	
Flt Permitted	0.97		0.95	1.00	1.00	
Satd. Flow (perm)	1700		1770	3539	3450	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	250	217	163	946	967	196
RTOR Reduction (vph)	26	0	0	0	11	0
Lane Group Flow (vph)	441	0	163	946	1152	0
Turn Type	Prot		Prot	NA	NA	
Protected Phases	7		1	6	2	
Permitted Phases						
Actuated Green, G (s)	37.9		16.0	83.1	62.6	
Effective Green, g (s)	37.9		16.0	83.1	62.6	
Actuated g/C Ratio	0.29		0.12	0.64	0.48	
Clearance Time (s)	4.5		4.5	4.5	4.5	
Vehicle Extension (s)	3.0		3.0	3.0	3.0	
Lane Grp Cap (vph)	495		217	2262	1661	
v/s Ratio Prot	c0.26		c0.09	0.27	c0.33	
v/s Ratio Perm						
v/c Ratio	0.89		0.75	0.42	0.69	
Uniform Delay, d1	44.1		55.1	11.5	26.2	
Progression Factor	1.00		1.04	1.26	1.00	
Incremental Delay, d2	18.0		12.5	0.5	2.4	
Delay (s)	62.1		69.6	15.0	28.6	
Level of Service	E		E	B	C	
Approach Delay (s)	62.1			23.0	28.6	
Approach LOS	E			C	C	

Intersection Summary			
HCM 2000 Control Delay	32.1	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.77		
Actuated Cycle Length (s)	130.0	Sum of lost time (s)	13.5
Intersection Capacity Utilization	74.9%	ICU Level of Service	D
Analysis Period (min)	15		

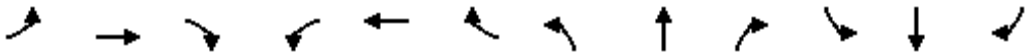
c Critical Lane Group



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	0	480	0	0	410	160
Future Volume (Veh/h)	0	480	0	0	410	160
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	522	0	0	446	174
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage veh)						
Upstream signal (ft)				897	1285	
pX, platoon unblocked						
vC, conflicting volume	533	310	620			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	533	310	620			
tC, single (s)	6.8	6.9	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	100	24	100			
cM capacity (veh/h)	477	686	956			

Direction, Lane #	EB 1	SB 1	SB 2
Volume Total	522	297	323
Volume Left	0	0	0
Volume Right	522	0	174
cSH	686	1700	1700
Volume to Capacity	0.76	0.17	0.19
Queue Length 95th (ft)	177	0	0
Control Delay (s)	25.0	0.0	0.0
Lane LOS	C		
Approach Delay (s)	25.0	0.0	
Approach LOS	C		

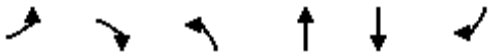
Intersection Summary			
Average Delay	11.4		
Intersection Capacity Utilization	52.8%	ICU Level of Service	A
Analysis Period (min)	15		



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	30	310	370	340	0	0	0	0	50	820	70
Future Volume (vph)	0	30	310	370	340	0	0	0	0	50	820	70
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0		4.0	4.0						4.0	
Lane Util. Factor		1.00		1.00	1.00						0.95	
Frt		0.88		1.00	1.00						0.99	
Flt Protected		1.00		0.95	1.00						1.00	
Satd. Flow (prot)		1634		1770	1863						3490	
Flt Permitted		1.00		0.47	1.00						1.00	
Satd. Flow (perm)		1634		873	1863						3490	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	33	337	402	370	0	0	0	0	54	891	76
RTOR Reduction (vph)	0	16	0	0	0	0	0	0	0	0	8	0
Lane Group Flow (vph)	0	354	0	402	370	0	0	0	0	0	1013	0
Turn Type		NA		Perm	NA					Perm	NA	
Protected Phases		4			8						6	
Permitted Phases				8						6		
Actuated Green, G (s)		32.4		32.4	32.4						24.3	
Effective Green, g (s)		32.4		32.4	32.4						24.3	
Actuated g/C Ratio		0.50		0.50	0.50						0.38	
Clearance Time (s)		4.0		4.0	4.0						4.0	
Vehicle Extension (s)		3.0		3.0	3.0						3.0	
Lane Grp Cap (vph)		818		437	932						1310	
v/s Ratio Prot		0.22			0.20							
v/s Ratio Perm				c0.46							0.29	
v/c Ratio		0.43		0.92	0.40						0.77	
Uniform Delay, d1		10.3		14.9	10.1						17.8	
Progression Factor		1.00		1.00	1.00						1.00	
Incremental Delay, d2		0.4		24.2	0.3						4.5	
Delay (s)		10.7		39.2	10.3						22.3	
Level of Service		B		D	B						C	
Approach Delay (s)		10.7			25.4			0.0			22.3	
Approach LOS		B			C			A			C	

Intersection Summary			
HCM 2000 Control Delay	21.4	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.86		
Actuated Cycle Length (s)	64.7	Sum of lost time (s)	8.0
Intersection Capacity Utilization	68.6%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	120	200	180	370	480	250
Future Volume (vph)	120	200	180	370	480	250
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0			4.0	4.0	
Lane Util. Factor	1.00			1.00	1.00	
Frt	0.92			1.00	0.95	
Flt Protected	0.98			0.98	1.00	
Satd. Flow (prot)	1674			1833	1777	
Flt Permitted	0.98			0.48	1.00	
Satd. Flow (perm)	1674			897	1777	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	130	217	196	402	522	272
RTOR Reduction (vph)	89	0	0	0	25	0
Lane Group Flow (vph)	258	0	0	598	769	0
Turn Type	Prot		Perm	NA	NA	
Protected Phases	4			2	6	
Permitted Phases			2			
Actuated Green, G (s)	13.9			47.0	47.0	
Effective Green, g (s)	13.9			47.0	47.0	
Actuated g/C Ratio	0.20			0.68	0.68	
Clearance Time (s)	4.0			4.0	4.0	
Vehicle Extension (s)	3.0			3.0	3.0	
Lane Grp Cap (vph)	337			611	1212	
v/s Ratio Prot	c0.15				0.43	
v/s Ratio Perm				c0.67		
v/c Ratio	0.77			0.98	0.63	
Uniform Delay, d1	26.0			10.5	6.1	
Progression Factor	1.00			1.00	1.00	
Incremental Delay, d2	10.0			31.6	2.5	
Delay (s)	36.0			42.0	8.7	
Level of Service	D			D	A	
Approach Delay (s)	36.0			42.0	8.7	
Approach LOS	D			D	A	

Intersection Summary			
HCM 2000 Control Delay	25.6	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.93		
Actuated Cycle Length (s)	68.9	Sum of lost time (s)	8.0
Intersection Capacity Utilization	98.9%	ICU Level of Service	F
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	WBT	WBR	SWL	SWR
Lane Configurations						
Traffic Volume (vph)	60	1090	1200	70	160	240
Future Volume (vph)	60	1090	1200	70	160	240
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0		4.0	
Lane Util. Factor	1.00	0.95	0.95		1.00	
Frt	1.00	1.00	0.99		0.92	
Flt Protected	0.95	1.00	1.00		0.98	
Satd. Flow (prot)	1770	3539	3510		1678	
Flt Permitted	0.13	1.00	1.00		0.98	
Satd. Flow (perm)	237	3539	3510		1678	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	65	1185	1304	76	174	261
RTOR Reduction (vph)	0	0	7	0	27	0
Lane Group Flow (vph)	65	1185	1373	0	408	0
Turn Type	Perm	NA	NA		Prot	
Protected Phases		4	8		6	
Permitted Phases	4					
Actuated Green, G (s)	31.5	31.5	31.5		22.1	
Effective Green, g (s)	31.5	31.5	31.5		22.1	
Actuated g/C Ratio	0.51	0.51	0.51		0.36	
Clearance Time (s)	4.0	4.0	4.0		4.0	
Vehicle Extension (s)	3.0	3.0	3.0		3.0	
Lane Grp Cap (vph)	121	1809	1794		602	
v/s Ratio Prot		0.33	c0.39		c0.24	
v/s Ratio Perm	0.27					
v/c Ratio	0.54	0.66	0.77		0.68	
Uniform Delay, d1	10.1	11.1	12.1		16.7	
Progression Factor	1.00	1.00	1.00		1.00	
Incremental Delay, d2	4.5	0.9	2.0		6.0	
Delay (s)	14.7	11.9	14.1		22.8	
Level of Service	B	B	B		C	
Approach Delay (s)		12.1	14.1		22.8	
Approach LOS		B	B		C	

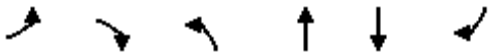
Intersection Summary			
HCM 2000 Control Delay	14.5	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.73		
Actuated Cycle Length (s)	61.6	Sum of lost time (s)	8.0
Intersection Capacity Utilization	72.3%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	110	20	80	60	110	280	160	510	370	210	520	140
Future Volume (vph)	110	20	80	60	110	280	160	510	370	210	520	140
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.5			4.5		4.5	4.5		4.5	4.5	
Lane Util. Factor		1.00			1.00		1.00	0.95		1.00	0.95	
Frt		0.95			0.92		1.00	0.94		1.00	0.97	
Flt Protected		0.97			0.99		0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1722			1695		1770	3316		1770	3427	
Flt Permitted		0.97			0.99		0.95	1.00		0.95	1.00	
Satd. Flow (perm)		1722			1695		1770	3316		1770	3427	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	120	22	87	65	120	304	174	554	402	228	565	152
RTOR Reduction (vph)	0	22	0	0	59	0	0	131	0	0	24	0
Lane Group Flow (vph)	0	207	0	0	430	0	174	825	0	228	693	0
Turn Type	Split	NA		Split	NA		Prot	NA		Prot	NA	
Protected Phases	8	8		4	4		5	2		1	6	
Permitted Phases												
Actuated Green, G (s)		14.7			25.5		12.8	26.4		13.9	27.5	
Effective Green, g (s)		14.7			25.5		12.8	26.4		13.9	27.5	
Actuated g/C Ratio		0.15			0.26		0.13	0.27		0.14	0.28	
Clearance Time (s)		4.5			4.5		4.5	4.5		4.5	4.5	
Vehicle Extension (s)		3.0			3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)		256			438		230	888		249	956	
v/s Ratio Prot		c0.12			c0.25		0.10	c0.25		c0.13	0.20	
v/s Ratio Perm												
v/c Ratio		0.81			0.98		0.76	0.93		0.92	0.73	
Uniform Delay, d1		40.5			36.3		41.3	35.1		41.7	32.1	
Progression Factor		1.00			1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2		16.8			38.2		13.2	15.6		35.0	2.8	
Delay (s)		57.4			74.5		54.6	50.7		76.7	34.8	
Level of Service		E			E		D	D		E	C	
Approach Delay (s)		57.4			74.5			51.3			44.9	
Approach LOS		E			E			D			D	

Intersection Summary			
HCM 2000 Control Delay	53.7	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.92		
Actuated Cycle Length (s)	98.5	Sum of lost time (s)	18.0
Intersection Capacity Utilization	83.2%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group

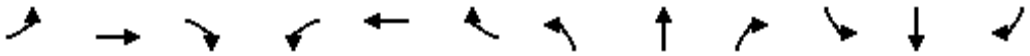


Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	180	260	200	140	270	300
Future Volume (vph)	180	260	200	140	270	300
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0			4.0	4.0	
Lane Util. Factor	1.00			1.00	1.00	
Frt	0.92			1.00	0.93	
Flt Protected	0.98			0.97	1.00	
Satd. Flow (prot)	1680			1810	1730	
Flt Permitted	0.98			0.42	1.00	
Satd. Flow (perm)	1680			785	1730	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	196	283	217	152	293	326
RTOR Reduction (vph)	82	0	0	0	59	0
Lane Group Flow (vph)	397	0	0	369	560	0
Turn Type	Prot		Perm	NA	NA	
Protected Phases	4			2	6	
Permitted Phases			2			
Actuated Green, G (s)	17.4			38.1	38.1	
Effective Green, g (s)	17.4			38.1	38.1	
Actuated g/C Ratio	0.27			0.60	0.60	
Clearance Time (s)	4.0			4.0	4.0	
Vehicle Extension (s)	3.0			3.0	3.0	
Lane Grp Cap (vph)	460			471	1038	
v/s Ratio Prot	c0.24				0.32	
v/s Ratio Perm				c0.47		
v/c Ratio	0.86			0.78	0.54	
Uniform Delay, d1	21.9			9.6	7.5	
Progression Factor	1.00			1.00	1.00	
Incremental Delay, d2	15.3			12.3	2.0	
Delay (s)	37.2			21.9	9.5	
Level of Service	D			C	A	
Approach Delay (s)	37.2			21.9	9.5	
Approach LOS	D			C	A	

Intersection Summary			
HCM 2000 Control Delay	21.7	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.81		
Actuated Cycle Length (s)	63.5	Sum of lost time (s)	8.0
Intersection Capacity Utilization	86.9%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group

Peak Hour Intersection Calculation Worksheets - Mitigation



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	50	1140	390	160	1330	180	480	400	150	580	280	120
Future Volume (vph)	50	1140	390	160	1330	180	480	400	150	580	280	120
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	3.1	4.0	4.0	1.6	4.0	4.0	3.6	4.0	4.0	
Lane Util. Factor	1.00	0.91	1.00	0.97	0.91	1.00	0.97	1.00	1.00	0.97	1.00	
Frpb, ped/bikes	1.00	1.00	0.99	1.00	1.00	0.97	1.00	1.00	0.99	1.00	1.00	
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.96	
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)	1770	5085	1571	3433	5085	1531	3433	1863	1565	3433	1771	
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (perm)	1770	5085	1571	3433	5085	1531	3433	1863	1565	3433	1771	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	54	1239	424	174	1446	196	522	435	163	630	304	130
RTOR Reduction (vph)	0	0	126	0	0	65	0	0	35	0	12	0
Lane Group Flow (vph)	54	1239	298	174	1446	131	522	435	128	630	422	0
Confl. Peds. (#/hr)	8					8			3	3		
Confl. Bikes (#/hr)			1			5						3
Turn Type	Prot	NA	pm+ov	Prot	NA	pm+ov	Prot	NA	pm+ov	Prot	NA	
Protected Phases	5	2	3	1	6	7	3	8	1	7	4	
Permitted Phases			2			6			8			
Actuated Green, G (s)	5.4	43.8	69.3	11.0	49.3	77.2	25.5	34.8	45.8	27.9	35.4	
Effective Green, g (s)	5.8	45.1	71.9	11.4	50.7	80.0	25.9	35.6	47.4	26.9	36.6	
Actuated g/C Ratio	0.04	0.33	0.53	0.08	0.38	0.59	0.19	0.26	0.35	0.20	0.27	
Clearance Time (s)	4.4	5.3	4.4	4.4	5.4	3.0	4.4	4.8	4.4	3.0	5.2	
Vehicle Extension (s)	2.0	4.4	2.0	2.0	4.4	2.0	2.0	3.8	2.0	2.0	2.0	
Lane Grp Cap (vph)	76	1698	872	289	1909	925	658	491	591	684	480	
v/s Ratio Prot	0.03	0.24	0.07	c0.05	c0.28	0.03	0.15	0.23	0.02	c0.18	c0.24	
v/s Ratio Perm			0.12			0.05			0.06			
v/c Ratio	0.71	0.73	0.34	0.60	0.76	0.14	0.79	0.89	0.22	0.92	0.88	
Uniform Delay, d1	63.8	39.6	18.0	59.6	36.8	12.2	52.0	47.7	30.8	53.0	47.1	
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	22.8	2.8	0.1	2.4	2.9	0.0	6.1	17.6	0.1	17.6	16.0	
Delay (s)	86.5	42.4	18.1	62.0	39.7	12.3	58.1	65.4	30.8	70.6	63.1	
Level of Service	F	D	B	E	D	B	E	E	C	E	E	
Approach Delay (s)		37.8			38.8			57.0			67.5	
Approach LOS		D			D			E			E	

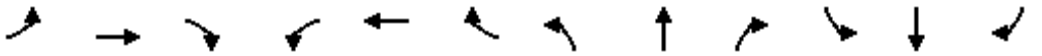
Intersection Summary			
HCM 2000 Control Delay	47.4	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.84		
Actuated Cycle Length (s)	135.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	80.7%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	540	1190	370	0	0	660
Future Volume (vph)	540	1190	370	0	0	660
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	7.0	7.0	7.0			7.0
Lane Util. Factor	0.97	0.76	0.95			0.95
Frt	1.00	0.85	1.00			1.00
Flt Protected	0.95	1.00	1.00			1.00
Satd. Flow (prot)	3433	3610	3539			3539
Flt Permitted	0.95	1.00	1.00			1.00
Satd. Flow (perm)	3433	3610	3539			3539
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	587	1293	402	0	0	717
RTOR Reduction (vph)	0	549	0	0	0	0
Lane Group Flow (vph)	587	744	402	0	0	717
Turn Type	Prot	Perm	NA			NA
Protected Phases	4		2			6
Permitted Phases		4				
Actuated Green, G (s)	9.8	9.8	12.2			12.2
Effective Green, g (s)	9.8	9.8	12.2			12.2
Actuated g/C Ratio	0.27	0.27	0.34			0.34
Clearance Time (s)	7.0	7.0	7.0			7.0
Vehicle Extension (s)	0.2	0.2	0.2			0.2
Lane Grp Cap (vph)	934	982	1199			1199
v/s Ratio Prot	0.17		0.11			c0.20
v/s Ratio Perm		c0.21				
v/c Ratio	0.63	0.76	0.34			0.60
Uniform Delay, d1	11.5	12.0	8.9			9.9
Progression Factor	1.00	1.00	1.00			1.00
Incremental Delay, d2	1.0	3.0	0.1			0.5
Delay (s)	12.5	15.0	8.9			10.4
Level of Service	B	B	A			B
Approach Delay (s)	14.2		8.9			10.4
Approach LOS	B		A			B

Intersection Summary			
HCM 2000 Control Delay	12.6	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.67		
Actuated Cycle Length (s)	36.0	Sum of lost time (s)	14.0
Intersection Capacity Utilization	49.6%	ICU Level of Service	A
Analysis Period (min)	15		

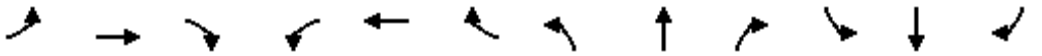
c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	450	320	280	30	140	300	180	460	50	430	520	250
Future Volume (vph)	450	320	280	30	140	300	180	460	50	430	520	250
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.1	4.0	3.1	3.0	4.0	4.0	3.1	4.0		3.1	4.0	4.0
Lane Util. Factor	0.97	1.00	1.00	1.00	0.95	1.00	0.97	0.95		0.97	0.95	1.00
Frpb, ped/bikes	1.00	1.00	0.99	1.00	1.00	0.99	1.00	1.00		1.00	1.00	0.99
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.99		1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	3433	1863	1565	1770	3539	1569	3433	3482		3433	3539	1565
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)	3433	1863	1565	1770	3539	1569	3433	3482		3433	3539	1565
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	489	348	304	33	152	326	196	500	54	467	565	272
RTOR Reduction (vph)	0	0	99	0	0	86	0	9	0	0	0	158
Lane Group Flow (vph)	489	348	205	33	152	240	196	545	0	467	565	114
Confl. Peds. (#/hr)			4			3			5			8
Turn Type	Prot	NA	pm+ov	Prot	NA	pm+ov	Prot	NA		Prot	NA	pm+ov
Protected Phases	5	2	3	1	6	7	3	8		7	4	5
Permitted Phases			2			6						4
Actuated Green, G (s)	10.4	27.2	34.5	1.8	18.5	28.9	7.3	18.1		10.4	21.2	31.6
Effective Green, g (s)	11.3	28.1	36.3	2.8	19.5	28.9	8.2	19.0		11.3	22.1	31.6
Actuated g/C Ratio	0.15	0.37	0.48	0.04	0.26	0.38	0.11	0.25		0.15	0.29	0.42
Clearance Time (s)	4.0	4.9	4.0	4.0	5.0	4.0	4.0	4.9		4.0	4.9	4.0
Vehicle Extension (s)	3.0	0.2	3.0	3.0	8.0	3.0	3.0	3.1		3.0	5.5	3.0
Lane Grp Cap (vph)	515	695	754	65	916	602	373	878		515	1038	656
v/s Ratio Prot	c0.14	c0.19	0.03	0.02	0.04	0.06	0.06	c0.16		c0.14	c0.16	0.02
v/s Ratio Perm			0.10			0.10						0.05
v/c Ratio	0.95	0.50	0.27	0.51	0.17	0.40	0.53	0.62		0.91	0.54	0.17
Uniform Delay, d1	31.7	18.2	11.6	35.6	21.6	16.9	31.7	25.0		31.5	22.4	13.7
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	27.1	0.2	0.2	6.1	0.4	0.4	1.3	1.4		19.5	1.2	0.1
Delay (s)	58.8	18.4	11.8	41.7	22.0	17.3	33.0	26.3		51.0	23.5	13.8
Level of Service	E	B	B	D	C	B	C	C		D	C	B
Approach Delay (s)		34.0			20.3			28.1			31.3	
Approach LOS		C			C			C			C	

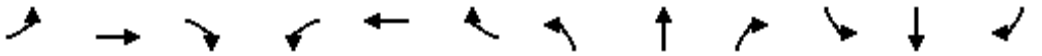
Intersection Summary			
HCM 2000 Control Delay	30.0	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.71		
Actuated Cycle Length (s)	75.3	Sum of lost time (s)	16.0
Intersection Capacity Utilization	63.5%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	220	1460	170	340	1800	300	120	330	210	230	280	180
Future Volume (vph)	220	1460	170	340	1800	300	120	330	210	230	280	180
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0	4.4	4.0	4.0	3.5	4.0	4.0	3.5
Lane Util. Factor	0.97	0.86		0.97	0.86	1.00	1.00	0.95	1.00	0.97	0.95	1.00
Frpb, ped/bikes	1.00	1.00		1.00	1.00	0.98	1.00	1.00	0.98	1.00	1.00	0.98
Flpb, ped/bikes	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.98		1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	6280		3433	6408	1544	1770	3539	1545	3433	3539	1554
Flt Permitted	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	6280		3433	6408	1544	1770	3539	1545	3433	3539	1554
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	239	1587	185	370	1957	326	130	359	228	250	304	196
RTOR Reduction (vph)	0	17	0	0	0	77	0	0	74	0	0	80
Lane Group Flow (vph)	239	1755	0	370	1957	249	130	359	154	250	304	116
Confl. Peds. (#/hr)	14		25	25		14	18		27	27		14
Turn Type	Prot	NA		Prot	NA	pm+ov	Prot	NA	pm+ov	Prot	NA	pm+ov
Protected Phases	5	2		1	6	7	3	8	1	7	4	5
Permitted Phases						6			8			4
Actuated Green, G (s)	8.8	39.3		13.4	44.0	53.5	9.5	24.0	37.4	9.5	24.0	32.8
Effective Green, g (s)	9.2	40.4		13.8	45.0	53.5	9.9	24.9	39.2	9.9	24.9	34.6
Actuated g/C Ratio	0.09	0.38		0.13	0.43	0.51	0.09	0.24	0.37	0.09	0.24	0.33
Clearance Time (s)	4.4	5.1		4.4	5.0	4.4	4.4	4.9	4.4	4.4	4.9	4.4
Vehicle Extension (s)	2.0	3.5		2.0	3.7	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lane Grp Cap (vph)	300	2416		451	2746	786	166	839	628	323	839	512
v/s Ratio Prot	0.07	c0.28		0.11	c0.31	0.03	c0.07	c0.10	0.03	c0.07	0.09	0.02
v/s Ratio Perm						0.13			0.07			0.05
v/c Ratio	0.80	0.73		0.82	0.71	0.32	0.78	0.43	0.25	0.77	0.36	0.23
Uniform Delay, d1	47.0	27.6		44.4	24.7	15.1	46.5	34.0	22.7	46.5	33.4	25.5
Progression Factor	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	12.8	1.9		10.9	1.6	0.1	19.6	0.1	0.1	10.1	0.1	0.1
Delay (s)	59.8	29.5		55.3	26.3	15.2	66.1	34.1	22.8	56.5	33.5	25.6
Level of Service	E	C		E	C	B	E	C	C	E	C	C
Approach Delay (s)		33.1			29.0			36.3			39.1	
Approach LOS		C			C			D			D	

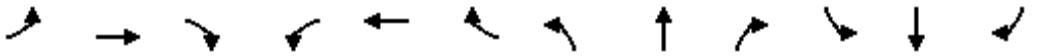
Intersection Summary			
HCM 2000 Control Delay	32.4	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.70		
Actuated Cycle Length (s)	105.0	Sum of lost time (s)	16.4
Intersection Capacity Utilization	73.4%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	340	190	550	530	0	0	0	0	290	360	410
Future Volume (vph)	0	340	190	550	530	0	0	0	0	290	360	410
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0	4.0	4.0	4.0					4.0	4.0	4.0
Lane Util. Factor		0.95	1.00	0.97	0.95					0.91	0.91	0.88
Frt		1.00	0.85	1.00	1.00					1.00	1.00	0.85
Flt Protected		1.00	1.00	0.95	1.00					0.95	0.99	1.00
Satd. Flow (prot)		3539	1583	3433	3539					1610	3357	2787
Flt Permitted		1.00	1.00	0.95	1.00					0.95	0.99	1.00
Satd. Flow (perm)		3539	1583	3433	3539					1610	3357	2787
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	370	207	598	576	0	0	0	0	315	391	446
RTOR Reduction (vph)	0	0	90	0	0	0	0	0	0	0	0	332
Lane Group Flow (vph)	0	370	117	598	576	0	0	0	0	220	486	114
Turn Type		NA	Perm	Prot	NA					Perm	NA	Perm
Protected Phases		2		1	6						4	
Permitted Phases			2							4		4
Actuated Green, G (s)		30.0	30.0	16.3	50.7					19.5	19.5	19.5
Effective Green, g (s)		30.9	30.9	16.7	51.6					20.4	20.4	20.4
Actuated g/C Ratio		0.39	0.39	0.21	0.65					0.25	0.25	0.25
Clearance Time (s)		4.9	4.9	4.4	4.9					4.9	4.9	4.9
Vehicle Extension (s)		3.8	3.8	2.0	4.2					2.0	2.0	2.0
Lane Grp Cap (vph)		1366	611	716	2282					410	856	710
v/s Ratio Prot		c0.10		c0.17	0.16							
v/s Ratio Perm			0.07							0.14	0.14	0.04
v/c Ratio		0.27	0.19	0.84	0.25					0.54	0.57	0.16
Uniform Delay, d1		16.8	16.3	30.3	6.0					25.7	26.0	23.1
Progression Factor		1.00	1.00	1.00	1.00					1.00	1.00	1.00
Incremental Delay, d2		0.5	0.7	8.0	0.3					0.7	0.5	0.0
Delay (s)		17.3	17.0	38.3	6.3					26.4	26.5	23.2
Level of Service		B	B	D	A					C	C	C
Approach Delay (s)		17.2			22.6			0.0			25.2	
Approach LOS		B			C			A			C	

Intersection Summary			
HCM 2000 Control Delay	22.6	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.50		
Actuated Cycle Length (s)	80.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	49.7%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

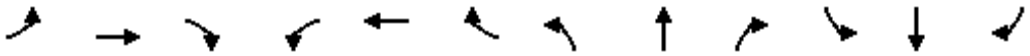


Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	710	90	40	500	0	0	0	0	540	330	520
Future Volume (vph)	0	710	90	40	500	0	0	0	0	540	330	520
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		6.7		4.0	6.7						6.3	4.0
Lane Util. Factor		0.91		1.00	0.95						0.86	0.86
Frt		0.98		1.00	1.00						1.00	0.85
Flt Protected		1.00		0.95	1.00						0.97	1.00
Satd. Flow (prot)		4999		1770	3539						4661	1362
Flt Permitted		1.00		0.95	1.00						0.97	1.00
Satd. Flow (perm)		4999		1770	3539						4661	1362
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	772	98	43	543	0	0	0	0	587	359	565
RTOR Reduction (vph)	0	23	0	0	0	0	0	0	0	0	0	114
Lane Group Flow (vph)	0	847	0	43	543	0	0	0	0	0	946	451
Turn Type		NA		Prot	NA					Perm	NA	Perm
Protected Phases		2		1	6						4	
Permitted Phases										4		4
Actuated Green, G (s)		22.1		2.4	27.2						25.8	25.8
Effective Green, g (s)		20.3		2.8	27.1						24.9	27.2
Actuated g/C Ratio		0.31		0.04	0.42						0.38	0.42
Clearance Time (s)		4.9		4.4	6.6						5.4	5.4
Vehicle Extension (s)		1.0		2.0	1.0						1.0	1.0
Lane Grp Cap (vph)		1561		76	1475						1785	569
v/s Ratio Prot		c0.17		0.02	c0.15							
v/s Ratio Perm											0.20	c0.33
v/c Ratio		0.54		0.57	0.37						0.91dl	0.79
Uniform Delay, d1		18.5		30.5	13.1						15.5	16.4
Progression Factor		1.00		1.35	0.83						1.00	1.00
Incremental Delay, d2		1.4		5.2	0.7						0.1	7.0
Delay (s)		19.9		46.4	11.4						15.7	23.4
Level of Service		B		D	B						B	C
Approach Delay (s)		19.9			14.0			0.0			18.6	
Approach LOS		B			B			A			B	

Intersection Summary			
HCM 2000 Control Delay	18.0	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.71		
Actuated Cycle Length (s)	65.0	Sum of lost time (s)	17.0
Intersection Capacity Utilization	75.0%	ICU Level of Service	D
Analysis Period (min)	15		

dl Defacto Left Lane. Recode with 1 though lane as a left lane.

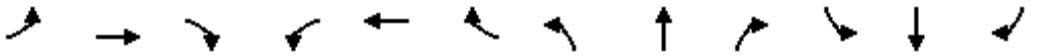
c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	20	30	30	440	110	160	40	1330	210	140	740	130
Future Volume (vph)	20	30	30	440	110	160	40	1330	210	140	740	130
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.3	4.3		4.0	4.0		4.0	4.0	
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	0.91		0.97	0.91	
Frpb, ped/bikes	1.00	0.99		1.00	1.00		1.00	1.00		1.00	1.00	
Flpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Frt	1.00	0.93		1.00	0.91		1.00	0.98		1.00	0.98	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1770	1710		1765	1697		1770	4981		3433	4955	
Flt Permitted	0.48	1.00		0.71	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (perm)	897	1710		1326	1697		1770	4981		3433	4955	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	22	33	33	478	120	174	43	1446	228	152	804	141
RTOR Reduction (vph)	0	20	0	0	68	0	0	26	0	0	29	0
Lane Group Flow (vph)	22	46	0	478	226	0	43	1648	0	152	916	0
Confl. Peds. (#/hr)			4	4			1					1
Turn Type	Perm	NA		Perm	NA		Prot	NA		Prot	NA	
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4			8								
Actuated Green, G (s)	31.0	31.0		30.3	30.3		3.5	30.3		4.5	31.1	
Effective Green, g (s)	31.0	31.0		30.7	30.7		3.5	31.7		5.0	33.2	
Actuated g/C Ratio	0.39	0.39		0.39	0.39		0.04	0.40		0.06	0.42	
Clearance Time (s)	4.0	4.0		4.7	4.7		4.0	5.4		4.5	6.1	
Vehicle Extension (s)	2.0	2.0		3.0	3.0		2.0	4.8		3.0	3.7	
Lane Grp Cap (vph)	348	665		510	653		77	1981		215	2064	
v/s Ratio Prot		0.03			0.13		0.02	c0.33		c0.04	0.18	
v/s Ratio Perm	0.02			c0.36								
v/c Ratio	0.06	0.07		0.94	0.35		0.56	0.83		0.71	0.44	
Uniform Delay, d1	15.3	15.3		23.6	17.4		37.3	21.6		36.6	16.6	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	0.0	0.0		24.9	0.3		4.9	4.3		10.1	0.7	
Delay (s)	15.3	15.3		48.5	17.7		42.2	25.9		46.8	17.3	
Level of Service	B	B		D	B		D	C		D	B	
Approach Delay (s)		15.3			36.7			26.3			21.4	
Approach LOS		B			D			C			C	

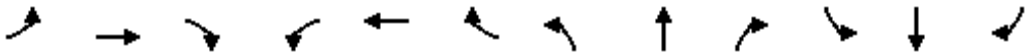
Intersection Summary			
HCM 2000 Control Delay	26.8	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.87		
Actuated Cycle Length (s)	79.7	Sum of lost time (s)	12.3
Intersection Capacity Utilization	75.7%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group



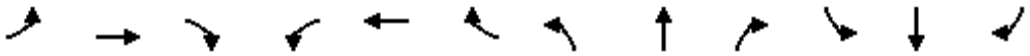
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	680	580	170	140	720	160	300	690	110	110	710	260
Future Volume (vph)	680	580	170	140	720	160	300	690	110	110	710	260
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0		4.0	4.0	4.9	4.0	4.0	4.0
Lane Util. Factor	0.94	0.91		0.97	0.91		0.97	0.91	1.00	1.00	0.91	1.00
Frpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00	0.99	1.00	1.00	0.99
Flpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.97		1.00	0.97		1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	4990	4912		3433	4933		3433	5085	1562	1770	5085	1566
Flt Permitted	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	4990	4912		3433	4933		3433	5085	1562	1770	5085	1566
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	739	630	185	152	783	174	326	750	120	120	772	283
RTOR Reduction (vph)	0	56	0	0	38	0	0	0	90	0	0	47
Lane Group Flow (vph)	739	759	0	152	919	0	326	750	30	120	772	236
Confl. Peds. (#/hr)	4					4	5		1	1		5
Turn Type	Prot	NA		Prot	NA		Prot	NA	Perm	Prot	NA	pm+ov
Protected Phases	7	4		3	8		5	2		1	6	7
Permitted Phases									2			6
Actuated Green, G (s)	16.4	33.8		7.6	24.4		11.3	22.6	22.6	8.8	20.0	36.4
Effective Green, g (s)	16.8	35.0		8.0	26.2		11.7	23.5	22.6	9.2	21.0	37.2
Actuated g/C Ratio	0.18	0.38		0.09	0.29		0.13	0.26	0.25	0.10	0.23	0.41
Clearance Time (s)	4.4	5.2		4.4	5.8		4.4	4.9	4.9	4.4	5.0	4.4
Vehicle Extension (s)	2.0	3.9		2.0	2.7		2.0	3.3	3.3	2.0	4.1	2.0
Lane Grp Cap (vph)	914	1874		299	1409		438	1303	384	177	1164	635
v/s Ratio Prot	c0.15	0.15		0.04	c0.19		c0.09	0.15		0.07	c0.15	0.07
v/s Ratio Perm									0.02			0.08
v/c Ratio	0.81	0.40		0.51	0.65		0.74	0.58	0.08	0.68	0.66	0.37
Uniform Delay, d1	35.9	20.7		40.0	28.8		38.6	29.7	26.5	39.8	32.1	19.1
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	5.0	0.2		0.5	1.0		5.9	1.9	0.4	7.8	3.0	0.1
Delay (s)	40.9	20.9		40.5	29.8		44.5	31.6	26.9	47.7	35.1	19.2
Level of Service	D	C		D	C		D	C	C	D	D	B
Approach Delay (s)		30.4			31.2			34.6			32.6	
Approach LOS		C			C			C			C	

Intersection Summary			
HCM 2000 Control Delay	32.1	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.69		
Actuated Cycle Length (s)	91.7	Sum of lost time (s)	16.0
Intersection Capacity Utilization	68.4%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	140	220	70	20	140	220	50	180	250	20	20	30
Future Volume (vph)	140	220	70	20	140	220	50	180	250	20	20	30
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0			4.0			4.0			4.0	
Lane Util. Factor		0.95			0.95			1.00			1.00	
Frpb, ped/bikes		1.00			1.00			0.98			1.00	
Flpb, ped/bikes		1.00			1.00			1.00			1.00	
Frt		0.98			0.91			0.93			0.94	
Flt Protected		0.98			1.00			0.99			0.99	
Satd. Flow (prot)		1695			1612			1691			1728	
Flt Permitted		0.68			0.97			0.96			0.85	
Satd. Flow (perm)		1173			1563			1637			1493	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	152	239	76	22	152	239	54	196	272	22	22	33
RTOR Reduction (vph)	0	6	0	0	33	0	0	51	0	0	22	0
Lane Group Flow (vph)	0	461	0	0	380	0	0	471	0	0	55	0
Confl. Peds. (#/hr)			3	3					8	8		
Turn Type	Prot	NA		Prot	NA		Perm	NA		Perm	NA	
Protected Phases	5	2		1	6			8			4	
Permitted Phases							8			4		
Actuated Green, G (s)		33.2			33.2			21.6			21.6	
Effective Green, g (s)		34.1			34.1			22.5			22.5	
Actuated g/C Ratio		0.53			0.53			0.35			0.35	
Clearance Time (s)		4.9			4.9			4.9			4.9	
Vehicle Extension (s)		2.0			2.0			2.0			2.0	
Lane Grp Cap (vph)		619			825			570			520	
v/s Ratio Prot												
v/s Ratio Perm		c0.39			0.24			c0.29			0.04	
v/c Ratio		0.75			0.46			0.83			0.11	
Uniform Delay, d1		11.9			9.5			19.3			14.2	
Progression Factor		1.00			1.00			1.00			1.00	
Incremental Delay, d2		4.3			0.4			9.1			0.0	
Delay (s)		16.1			9.9			28.4			14.3	
Level of Service		B			A			C			B	
Approach Delay (s)		16.1			9.9			28.4			14.3	
Approach LOS		B			A			C			B	

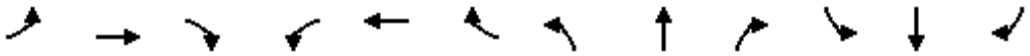
Intersection Summary			
HCM 2000 Control Delay	18.6	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.84		
Actuated Cycle Length (s)	64.6	Sum of lost time (s)	12.0
Intersection Capacity Utilization	65.4%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	180	650	80	170	1240	70	60	130	110	260	380	250
Future Volume (vph)	180	650	80	170	1240	70	60	130	110	260	380	250
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0		4.0	4.0	4.0	4.0	4.0	
Lane Util. Factor	0.97	0.91		1.00	0.91		1.00	0.95	1.00	0.97	0.95	
Frpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00	0.98	1.00	0.98	
Flpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	
Frt	1.00	0.98		1.00	0.99		1.00	1.00	0.85	1.00	0.94	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)	3433	4978		1770	5033		1770	3539	1555	3433	3278	
Flt Permitted	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (perm)	3433	4978		1770	5033		1770	3539	1555	3433	3278	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	196	707	87	185	1348	76	65	141	120	283	413	272
RTOR Reduction (vph)	0	18	0	0	6	0	0	0	59	0	143	0
Lane Group Flow (vph)	196	776	0	185	1418	0	65	141	61	283	542	0
Confl. Peds. (#/hr)	23		24	24		23	19		14	14		19
Confl. Bikes (#/hr)			9			5			12			6
Turn Type	Prot	NA		Prot	NA		Prot	NA	pm+ov	Prot	NA	
Protected Phases	5	2		1	6		3	8	1	7	4	
Permitted Phases									8			
Actuated Green, G (s)	7.9	24.3		13.0	28.9		6.1	17.6	30.6	11.4	23.0	
Effective Green, g (s)	8.3	25.2		13.4	30.3		6.5	18.6	31.4	11.8	23.9	
Actuated g/C Ratio	0.10	0.30		0.16	0.36		0.08	0.22	0.37	0.14	0.28	
Clearance Time (s)	4.4	4.9		4.4	5.4		4.4	5.0	4.4	4.4	4.9	
Vehicle Extension (s)	2.0	4.2		2.0	3.0		2.0	4.0	2.0	2.0	2.6	
Lane Grp Cap (vph)	335	1475		279	1794		135	774	574	476	921	
v/s Ratio Prot	0.06	0.16		c0.10	c0.28		c0.04	0.04	0.02	0.08	c0.17	
v/s Ratio Perm									0.02			
v/c Ratio	0.59	0.53		0.66	0.79		0.48	0.18	0.11	0.59	0.59	
Uniform Delay, d1	36.7	24.9		33.7	24.5		37.6	27.0	17.6	34.4	26.3	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	1.7	1.3		4.5	3.6		1.0	0.2	0.0	1.3	0.8	
Delay (s)	38.4	26.3		38.2	28.1		38.6	27.2	17.6	35.7	27.1	
Level of Service	D	C		D	C		D	C	B	D	C	
Approach Delay (s)		28.7			29.3			25.9			29.6	
Approach LOS		C			C			C			C	

Intersection Summary			
HCM 2000 Control Delay	28.9	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.69		
Actuated Cycle Length (s)	85.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	68.3%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	80	1660	550	120	1160	360	460	350	180	300	260	40
Future Volume (vph)	80	1660	550	120	1160	360	460	350	180	300	260	40
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	3.1	4.0	4.0	1.6	4.0	4.0	3.6	4.0	4.0	
Lane Util. Factor	1.00	0.91	1.00	0.97	0.91	1.00	0.97	1.00	1.00	0.97	1.00	
Frpb, ped/bikes	1.00	1.00	0.99	1.00	1.00	0.97	1.00	1.00	0.99	1.00	1.00	
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.98	
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)	1770	5085	1568	3433	5085	1537	3433	1863	1560	3433	1822	
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (perm)	1770	5085	1568	3433	5085	1537	3433	1863	1560	3433	1822	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	87	1804	598	130	1261	391	500	380	196	326	283	43
RTOR Reduction (vph)	0	0	139	0	0	117	0	0	50	0	5	0
Lane Group Flow (vph)	87	1804	459	130	1261	274	500	380	146	326	321	0
Confl. Peds. (#/hr)	6		1	1		6			6	6		
Confl. Bikes (#/hr)			1			5						3
Turn Type	Prot	NA	pm+ov	Prot	NA	pm+ov	Prot	NA	pm+ov	Prot	NA	
Protected Phases	5	2	3	1	6	7	3	8	1	7	4	
Permitted Phases			2			6			8			
Actuated Green, G (s)	7.7	41.6	57.2	5.7	39.5	54.8	15.6	29.9	35.6	15.3	27.8	
Effective Green, g (s)	8.1	42.9	59.8	6.1	40.9	57.6	16.0	30.7	37.2	14.3	29.0	
Actuated g/C Ratio	0.07	0.39	0.54	0.06	0.37	0.52	0.15	0.28	0.34	0.13	0.26	
Clearance Time (s)	4.4	5.3	4.4	4.4	5.4	3.0	4.4	4.8	4.4	3.0	5.2	
Vehicle Extension (s)	2.0	4.4	2.0	2.0	4.4	2.0	2.0	3.8	2.0	2.0	2.0	
Lane Grp Cap (vph)	130	1983	852	190	1890	804	499	519	527	446	480	
v/s Ratio Prot	c0.05	c0.35	0.08	0.04	0.25	0.05	c0.15	c0.20	0.02	0.09	c0.18	
v/s Ratio Perm			0.21			0.13			0.08			
v/c Ratio	0.67	0.91	0.54	0.68	0.67	0.34	1.00	0.73	0.28	0.73	0.67	
Uniform Delay, d1	49.6	31.7	16.2	51.0	28.9	15.2	47.0	35.9	26.6	46.0	36.2	
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	9.7	7.7	0.3	7.9	1.9	0.1	40.8	5.6	0.1	5.3	2.7	
Delay (s)	59.3	39.4	16.5	58.9	30.7	15.3	87.8	41.5	26.7	51.3	38.9	
Level of Service	E	D	B	E	C	B	F	D	C	D	D	
Approach Delay (s)		34.6			29.4			60.3			45.1	
Approach LOS		C			C			E			D	

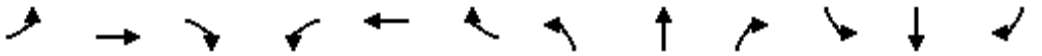
Intersection Summary			
HCM 2000 Control Delay	38.8	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.86		
Actuated Cycle Length (s)	110.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	78.1%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	820	1790	930	0	0	880
Future Volume (vph)	820	1790	930	0	0	880
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	7.0	7.0	7.0			7.0
Lane Util. Factor	0.97	0.76	0.95			0.95
Frt	1.00	0.85	1.00			1.00
Flt Protected	0.95	1.00	1.00			1.00
Satd. Flow (prot)	3433	3610	3539			3539
Flt Permitted	0.95	1.00	1.00			1.00
Satd. Flow (perm)	3433	3610	3539			3539
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	891	1946	1011	0	0	957
RTOR Reduction (vph)	0	13	0	0	0	0
Lane Group Flow (vph)	891	1933	1011	0	0	957
Turn Type	Prot	Perm	NA			NA
Protected Phases	4		2			6
Permitted Phases		4				
Actuated Green, G (s)	48.0	48.0	26.6			26.6
Effective Green, g (s)	48.0	48.0	26.6			26.6
Actuated g/C Ratio	0.54	0.54	0.30			0.30
Clearance Time (s)	7.0	7.0	7.0			7.0
Vehicle Extension (s)	0.2	0.2	0.2			0.2
Lane Grp Cap (vph)	1859	1955	1062			1062
v/s Ratio Prot	0.26		c0.29			0.27
v/s Ratio Perm		c0.54				
v/c Ratio	0.48	0.99	0.95			0.90
Uniform Delay, d1	12.6	20.0	30.4			29.7
Progression Factor	1.00	1.00	1.00			1.00
Incremental Delay, d2	0.1	17.5	17.1			10.3
Delay (s)	12.6	37.5	47.5			40.0
Level of Service	B	D	D			D
Approach Delay (s)	29.7		47.5			40.0
Approach LOS	C		D			D

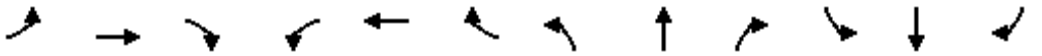
Intersection Summary			
HCM 2000 Control Delay	35.5	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.98		
Actuated Cycle Length (s)	88.6	Sum of lost time (s)	14.0
Intersection Capacity Utilization	79.1%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group



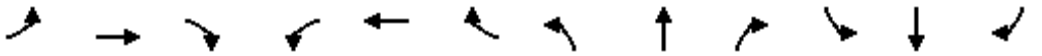
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	380	430	320	80	540	700	450	510	120	400	710	400
Future Volume (vph)	380	430	320	80	540	700	450	510	120	400	710	400
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.9	4.0	4.0		4.0	4.0	4.9
Lane Util. Factor	0.97	1.00	1.00	1.00	0.95	1.00	0.97	0.95		0.97	0.95	1.00
Frpb, ped/bikes	1.00	1.00	0.99	1.00	1.00	0.99	1.00	1.00		1.00	1.00	0.99
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.97		1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	3433	1863	1567	1770	3539	1569	3433	3438		3433	3539	1561
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)	3433	1863	1567	1770	3539	1569	3433	3438		3433	3539	1561
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	413	467	348	87	587	761	489	554	130	435	772	435
RTOR Reduction (vph)	0	0	44	0	0	41	0	14	0	0	0	46
Lane Group Flow (vph)	413	467	304	87	587	720	489	670	0	435	772	389
Confl. Peds. (#/hr)	6		3	3		6	6					6
Turn Type	Prot	NA	pm+ov	Prot	NA	pm+ov	Prot	NA		Prot	NA	pm+ov
Protected Phases	5	2	3	1	6	7	3	8		7	4	5
Permitted Phases			2			6						4
Actuated Green, G (s)	19.1	45.2	71.0	8.4	34.5	78.5	25.8	32.7		44.0	50.9	70.0
Effective Green, g (s)	20.0	46.1	72.8	9.4	35.5	78.5	26.7	33.6		44.9	51.8	70.0
Actuated g/C Ratio	0.13	0.31	0.49	0.06	0.24	0.52	0.18	0.22		0.30	0.35	0.47
Clearance Time (s)	4.9	4.9	4.9	5.0	5.0	4.9	4.9	4.9		4.9	4.9	4.9
Vehicle Extension (s)	0.2	0.2	3.1	8.0	8.0	5.5	3.1	3.1		5.5	5.5	0.2
Lane Grp Cap (vph)	457	572	802	110	837	872	611	770		1027	1222	728
v/s Ratio Prot	0.12	c0.25	0.07	0.05	0.17	c0.24	0.14	c0.19		0.13	0.22	0.07
v/s Ratio Perm			0.13			0.22						0.18
v/c Ratio	0.90	0.82	0.38	0.79	0.70	0.83	0.80	0.87		0.42	0.63	0.53
Uniform Delay, d1	64.1	48.0	24.3	69.3	52.4	30.0	59.1	56.1		42.2	41.1	28.4
Progression Factor	1.00	1.00	1.00	1.23	0.70	1.46	1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	20.6	12.2	0.3	38.0	4.6	7.0	7.5	10.6		0.7	1.6	0.4
Delay (s)	84.6	60.2	24.7	123.1	41.3	50.7	66.6	66.7		42.9	42.8	28.8
Level of Service	F	E	C	F	D	D	E	E		D	D	C
Approach Delay (s)		58.3			51.3			66.6			39.1	
Approach LOS		E			D			E			D	

Intersection Summary			
HCM 2000 Control Delay	52.5	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.88		
Actuated Cycle Length (s)	150.0	Sum of lost time (s)	17.8
Intersection Capacity Utilization	84.2%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	380	1870	200	510	1550	390	230	640	410	350	530	290
Future Volume (vph)	380	1870	200	510	1550	390	230	640	410	350	530	290
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0	4.4	4.0	4.0	3.5	4.0	4.0	3.5
Lane Util. Factor	0.97	0.86		0.97	0.86	1.00	1.00	0.95	1.00	0.97	0.95	1.00
Frpb, ped/bikes	1.00	0.99		1.00	1.00	0.93	1.00	1.00	0.96	1.00	1.00	0.96
Flpb, ped/bikes	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.99		1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	6247		3433	6408	1475	1770	3539	1526	3433	3539	1522
Flt Permitted	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	6247		3433	6408	1475	1770	3539	1526	3433	3539	1522
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	413	2033	217	554	1685	424	250	696	446	380	576	315
RTOR Reduction (vph)	0	13	0	0	0	44	0	0	56	0	0	59
Lane Group Flow (vph)	413	2237	0	554	1685	380	250	696	390	380	576	256
Confl. Peds. (#/hr)	48		65	65		48	42		40	40		42
Turn Type	Prot	NA		Prot	NA	pm+ov	Prot	NA	pm+ov	Prot	NA	pm+ov
Protected Phases	5	2		1	6	7	3	8	1	7	4	5
Permitted Phases						6			8			4
Actuated Green, G (s)	19.3	48.4		20.6	49.8	66.6	18.6	30.4	51.0	16.8	28.6	47.9
Effective Green, g (s)	19.7	49.5		21.0	50.8	66.6	19.0	31.3	52.8	17.2	29.5	49.7
Actuated g/C Ratio	0.15	0.37		0.16	0.38	0.49	0.14	0.23	0.39	0.13	0.22	0.37
Clearance Time (s)	4.4	5.1		4.4	5.0	4.4	4.4	4.9	4.4	4.4	4.9	4.4
Vehicle Extension (s)	2.0	3.5		2.0	3.7	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lane Grp Cap (vph)	500	2290		534	2411	727	249	820	636	437	773	560
v/s Ratio Prot	0.12	c0.36		c0.16	0.26	0.07	c0.14	c0.20	0.10	c0.11	0.16	0.07
v/s Ratio Perm						0.19			0.16			0.10
v/c Ratio	0.83	0.98		1.04	0.70	0.52	1.00	0.85	0.61	0.87	0.75	0.46
Uniform Delay, d1	56.0	42.2		57.0	35.6	23.4	58.0	49.6	32.9	57.8	49.2	32.4
Progression Factor	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	10.2	14.1		49.0	1.0	0.3	58.1	7.9	1.2	16.1	3.4	0.2
Delay (s)	66.2	56.3		106.0	36.6	23.7	116.1	57.5	34.2	73.9	52.7	32.6
Level of Service	E	E		F	D	C	F	E	C	E	D	C
Approach Delay (s)		57.8			49.0			60.5			54.1	
Approach LOS		E			D			E			D	

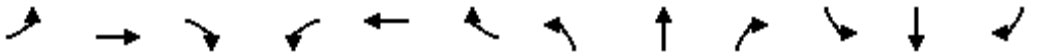
Intersection Summary			
HCM 2000 Control Delay	54.7	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.96		
Actuated Cycle Length (s)	135.0	Sum of lost time (s)	16.4
Intersection Capacity Utilization	94.6%	ICU Level of Service	F
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	700	280	430	490	0	0	0	0	410	540	1080
Future Volume (vph)	0	700	280	430	490	0	0	0	0	410	540	1080
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0	4.0	4.0	4.0					4.0	4.0	4.0
Lane Util. Factor		0.95	1.00	0.97	0.95					0.91	0.91	0.88
Frt		1.00	0.85	1.00	1.00					1.00	1.00	0.85
Flt Protected		1.00	1.00	0.95	1.00					0.95	1.00	1.00
Satd. Flow (prot)		3539	1583	3433	3539					1610	3390	2787
Flt Permitted		1.00	1.00	0.95	1.00					0.95	1.00	1.00
Satd. Flow (perm)		3539	1583	3433	3539					1610	3390	2787
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	761	304	467	533	0	0	0	0	446	587	1174
RTOR Reduction (vph)	0	0	67	0	0	0	0	0	0	0	0	355
Lane Group Flow (vph)	0	761	237	467	533	0	0	0	0	446	587	819
Turn Type		NA	Perm	Prot	NA					Perm	NA	Perm
Protected Phases		2		1	6						4	
Permitted Phases			2							4		4
Actuated Green, G (s)		23.7	23.7	12.1	40.2					25.0	25.0	25.0
Effective Green, g (s)		24.6	24.6	12.5	41.1					25.9	25.9	25.9
Actuated g/C Ratio		0.33	0.33	0.17	0.55					0.35	0.35	0.35
Clearance Time (s)		4.9	4.9	4.4	4.9					4.9	4.9	4.9
Vehicle Extension (s)		3.8	3.8	2.0	4.2					2.0	2.0	2.0
Lane Grp Cap (vph)		1160	519	572	1939					555	1170	962
v/s Ratio Prot		c0.22		c0.14	0.15							
v/s Ratio Perm			0.15							0.28	0.17	c0.29
v/c Ratio		0.66	0.46	0.82	0.27					0.80	0.50	0.85
Uniform Delay, d1		21.6	19.9	30.1	9.0					22.2	19.4	22.8
Progression Factor		1.00	1.00	1.00	1.00					1.00	1.00	1.00
Incremental Delay, d2		2.9	2.9	8.4	0.4					7.8	0.1	7.1
Delay (s)		24.5	22.8	38.5	9.4					30.0	19.6	29.8
Level of Service		C	C	D	A					C	B	C
Approach Delay (s)		24.0			23.0			0.0			27.1	
Approach LOS		C			C			A			C	

Intersection Summary			
HCM 2000 Control Delay	25.4	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.77		
Actuated Cycle Length (s)	75.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	59.5%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

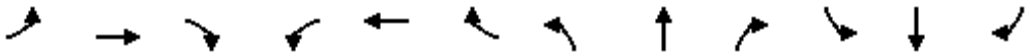


Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	1110	370	50	700	0	0	0	0	740	1100	660
Future Volume (vph)	0	1110	370	50	700	0	0	0	0	740	1100	660
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		6.7		4.0	6.7						6.3	4.0
Lane Util. Factor		0.91		1.00	0.95						0.86	0.86
Frt		0.96		1.00	1.00						1.00	0.85
Flt Protected		1.00		0.95	1.00						0.98	1.00
Satd. Flow (prot)		4895		1770	3539						4711	1362
Flt Permitted		1.00		0.95	1.00						0.98	1.00
Satd. Flow (perm)		4895		1770	3539						4711	1362
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	1207	402	54	761	0	0	0	0	804	1196	717
RTOR Reduction (vph)	0	32	0	0	0	0	0	0	0	0	0	47
Lane Group Flow (vph)	0	1577	0	54	761	0	0	0	0	0	2000	670
Turn Type		NA		Prot	NA					Perm	NA	Perm
Protected Phases		2		1	6						4	
Permitted Phases										4		4
Actuated Green, G (s)		38.5		3.4	44.6						53.4	53.4
Effective Green, g (s)		36.7		3.8	44.5						52.5	54.8
Actuated g/C Ratio		0.33		0.03	0.40						0.48	0.50
Clearance Time (s)		4.9		4.4	6.6						5.4	5.4
Vehicle Extension (s)		1.0		2.0	1.0						1.0	1.0
Lane Grp Cap (vph)		1633		61	1431						2248	678
v/s Ratio Prot		c0.32		c0.03	0.22							
v/s Ratio Perm											0.42	c0.49
v/c Ratio		0.97		0.89	0.53						1.00dl	0.99
Uniform Delay, d1		36.0		52.9	24.8						26.1	27.3
Progression Factor		1.00		1.00	1.00						1.00	1.00
Incremental Delay, d2		15.5		73.6	1.4						4.6	31.1
Delay (s)		51.5		126.5	26.3						30.7	58.4
Level of Service		D		F	C						C	E
Approach Delay (s)		51.5			32.9			0.0			38.0	
Approach LOS		D			C			A			D	

Intersection Summary			
HCM 2000 Control Delay	41.4	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	1.00		
Actuated Cycle Length (s)	110.0	Sum of lost time (s)	17.0
Intersection Capacity Utilization	88.4%	ICU Level of Service	E
Analysis Period (min)	15		

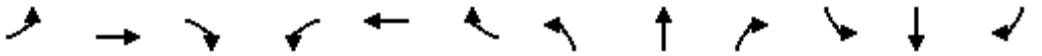
dl Defacto Left Lane. Recode with 1 though lane as a left lane.

c Critical Lane Group



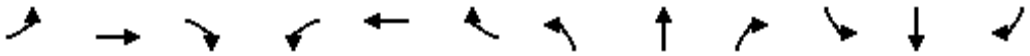
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	40	150	30	380	40	230	30	1590	360	250	530	20
Future Volume (vph)	40	150	30	380	40	230	30	1590	360	250	530	20
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.3	4.3		4.0	4.0		6.2	4.0	
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	0.91		0.97	0.91	
Frpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Flpb, ped/bikes	1.00	1.00		0.99	1.00		1.00	1.00		1.00	1.00	
Frt	1.00	0.97		1.00	0.87		1.00	0.97		1.00	0.99	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1770	1809		1758	1624		1770	4945		3433	5052	
Flt Permitted	0.45	1.00		0.57	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (perm)	841	1809		1051	1624		1770	4945		3433	5052	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	43	163	33	413	43	250	33	1728	391	272	576	22
RTOR Reduction (vph)	0	8	0	0	95	0	0	36	0	0	4	0
Lane Group Flow (vph)	43	188	0	413	198	0	33	2083	0	272	594	0
Confl. Peds. (#/hr)			9	9			2					2
Turn Type	Perm	NA		Perm	NA		Prot	NA		Prot	NA	
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4			8								
Actuated Green, G (s)	37.2	37.2		36.5	36.5		3.6	41.0		10.0	46.7	
Effective Green, g (s)	37.2	37.2		36.9	36.9		3.6	42.4		7.8	48.8	
Actuated g/C Ratio	0.37	0.37		0.36	0.36		0.04	0.42		0.08	0.48	
Clearance Time (s)	4.0	4.0		4.7	4.7		4.0	5.4		4.0	6.1	
Vehicle Extension (s)	2.0	2.0		3.0	3.0		2.0	4.8		2.0	3.7	
Lane Grp Cap (vph)	307	662		381	589		62	2063		263	2426	
v/s Ratio Prot		0.10			0.12		0.02	c0.42		c0.08	0.12	
v/s Ratio Perm	0.05			c0.39								
v/c Ratio	0.14	0.28		1.08	0.34		0.53	1.01		1.03	0.24	
Uniform Delay, d1	21.5	22.8		32.3	23.5		48.2	29.6		46.9	15.5	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	0.1	0.1		70.5	0.3		4.3	22.2		64.7	0.2	
Delay (s)	21.6	22.9		102.8	23.8		52.5	51.8		111.6	15.8	
Level of Service	C	C		F	C		D	D		F	B	
Approach Delay (s)		22.6			70.0			51.8			45.7	
Approach LOS		C			E			D			D	

Intersection Summary			
HCM 2000 Control Delay	52.0	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	1.04		
Actuated Cycle Length (s)	101.6	Sum of lost time (s)	14.5
Intersection Capacity Utilization	96.4%	ICU Level of Service	F
Analysis Period (min)	15		
c Critical Lane Group			



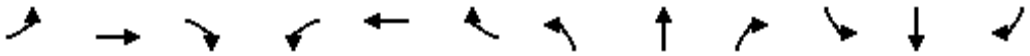
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	650	1070	320	250	950	160	460	1060	240	170	700	340
Future Volume (vph)	650	1070	320	250	950	160	460	1060	240	170	700	340
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0		4.0	4.0	4.9	4.0	4.0	4.0
Lane Util. Factor	0.97	0.91		1.00	0.91		0.97	0.91	1.00	1.00	0.91	1.00
Frpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00	0.99	1.00	1.00	0.99
Flpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.97		1.00	0.98		1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	4910		1770	4964		3433	5085	1562	1770	5085	1567
Flt Permitted	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	4910		1770	4964		3433	5085	1562	1770	5085	1567
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	707	1163	348	272	1033	174	500	1152	261	185	761	370
RTOR Reduction (vph)	0	50	0	0	21	0	0	0	200	0	0	42
Lane Group Flow (vph)	707	1461	0	272	1186	0	500	1152	61	185	761	328
Confl. Peds. (#/hr)	4					4	5		1	1		5
Turn Type	Prot	NA		Prot	NA		Prot	NA	Perm	Prot	NA	pm+ov
Protected Phases	7	4		3	8		5	2		1	6	7
Permitted Phases									2			6
Actuated Green, G (s)	22.6	35.6		17.6	30.0		15.8	25.3	25.3	11.6	21.0	43.6
Effective Green, g (s)	23.0	36.8		18.0	31.8		16.2	26.2	25.3	12.0	22.0	44.4
Actuated g/C Ratio	0.21	0.34		0.17	0.29		0.15	0.24	0.23	0.11	0.20	0.41
Clearance Time (s)	4.4	5.2		4.4	5.8		4.4	4.9	4.9	4.4	5.0	4.4
Vehicle Extension (s)	2.0	3.9		2.0	2.7		2.0	3.3	3.3	2.0	4.1	2.0
Lane Grp Cap (vph)	724	1657		292	1448		510	1222	362	194	1026	638
v/s Ratio Prot	c0.21	c0.30		0.15	0.24		c0.15	c0.23		0.10	0.15	0.11
v/s Ratio Perm									0.04			0.10
v/c Ratio	0.98	0.88		0.93	0.82		0.98	0.94	0.17	0.95	0.74	0.51
Uniform Delay, d1	42.7	34.1		44.9	35.9		46.2	40.7	33.4	48.2	40.8	24.2
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	27.3	6.1		34.5	3.7		34.6	15.2	1.0	50.7	4.8	0.3
Delay (s)	70.0	40.1		79.4	39.6		80.8	55.9	34.4	98.9	45.7	24.5
Level of Service	E	D		E	D		F	E	C	F	D	C
Approach Delay (s)		49.6			46.9			59.5			47.2	
Approach LOS		D			D			E			D	

Intersection Summary			
HCM 2000 Control Delay	51.3	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.99		
Actuated Cycle Length (s)	109.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	84.9%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	580	300	70	20	160	150	90	100	110	20	20	40
Future Volume (vph)	580	300	70	20	160	150	90	100	110	20	20	40
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		3.1	4.0			4.0			4.0	
Lane Util. Factor	1.00	1.00		1.00	1.00			1.00			1.00	
Frpb, ped/bikes	1.00	0.99		1.00	0.99			0.99			0.99	
Flpb, ped/bikes	1.00	1.00		1.00	1.00			1.00			1.00	
Frt	1.00	0.97		1.00	0.93			0.95			0.93	
Flt Protected	0.95	1.00		0.95	1.00			0.99			0.99	
Satd. Flow (prot)	1770	1800		1770	1709			1724			1696	
Flt Permitted	0.95	1.00		0.95	1.00			0.88			0.84	
Satd. Flow (perm)	1770	1800		1770	1709			1538			1437	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	630	326	76	22	174	163	98	109	120	22	22	43
RTOR Reduction (vph)	0	8	0	0	35	0	0	24	0	0	33	0
Lane Group Flow (vph)	630	394	0	22	302	0	0	303	0	0	54	0
Confl. Peds. (#/hr)	1		3	3		1	1		4	4		1
Turn Type	Prot	NA		Prot	NA		Perm	NA		Perm	NA	
Protected Phases	5	2		1	6			8			4	
Permitted Phases							8			4		
Actuated Green, G (s)	32.0	53.8		1.5	22.9			18.7			18.7	
Effective Green, g (s)	32.4	54.7		2.4	23.8			19.6			19.6	
Actuated g/C Ratio	0.37	0.62		0.03	0.27			0.22			0.22	
Clearance Time (s)	4.4	4.9		4.0	4.9			4.9			4.9	
Vehicle Extension (s)	1.0	2.0		3.0	2.0			2.0			2.0	
Lane Grp Cap (vph)	653	1121		48	463			343			320	
v/s Ratio Prot	c0.36	0.22		0.01	c0.18							
v/s Ratio Perm								c0.20			0.04	
v/c Ratio	0.96	0.35		0.46	0.65			0.88			0.17	
Uniform Delay, d1	27.1	8.0		42.1	28.3			33.0			27.5	
Progression Factor	1.00	1.00		1.00	1.00			1.00			1.00	
Incremental Delay, d2	26.3	0.9		6.8	7.0			21.9			0.1	
Delay (s)	53.5	8.9		48.9	35.3			54.9			27.6	
Level of Service	D	A		D	D			D			C	
Approach Delay (s)		36.1			36.1			54.9			27.6	
Approach LOS		D			D			D			C	

Intersection Summary			
HCM 2000 Control Delay	39.1	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.85		
Actuated Cycle Length (s)	87.8	Sum of lost time (s)	12.0
Intersection Capacity Utilization	83.6%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	430	1400	150	220	840	220	90	430	240	310	220	160
Future Volume (vph)	430	1400	150	220	840	220	90	430	240	310	220	160
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0		4.0	4.0	4.0	4.0	4.0	
Lane Util. Factor	0.97	0.91		1.00	0.91		1.00	0.95	1.00	0.97	0.95	
Frpb, ped/bikes	1.00	1.00		1.00	0.99		1.00	1.00	0.97	1.00	0.97	
Flpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	
Frt	1.00	0.99		1.00	0.97		1.00	1.00	0.85	1.00	0.94	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)	3433	4988		1770	4872		1770	3539	1540	3433	3210	
Flt Permitted	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (perm)	3433	4988		1770	4872		1770	3539	1540	3433	3210	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	467	1522	163	239	913	239	98	467	261	337	239	174
RTOR Reduction (vph)	0	12	0	0	43	0	0	0	47	0	124	0
Lane Group Flow (vph)	467	1673	0	239	1109	0	98	467	214	337	289	0
Confl. Peds. (#/hr)	26		26	26		26	41		25	25		41
Confl. Bikes (#/hr)			8			2			13			8
Turn Type	Prot	NA		Prot	NA		Prot	NA	pm+ov	Prot	NA	
Protected Phases	5	2		1	6		3	8	1	7	4	
Permitted Phases									8			
Actuated Green, G (s)	16.6	33.5		15.8	32.2		8.5	24.1	39.9	12.9	28.6	
Effective Green, g (s)	17.0	34.4		16.2	33.6		8.9	25.1	40.7	13.3	29.5	
Actuated g/C Ratio	0.16	0.33		0.15	0.32		0.08	0.24	0.39	0.13	0.28	
Clearance Time (s)	4.4	4.9		4.4	5.4		4.4	5.0	4.4	4.4	4.9	
Vehicle Extension (s)	2.0	4.2		2.0	3.0		2.0	4.0	2.0	2.0	2.6	
Lane Grp Cap (vph)	555	1634		273	1559		150	845	596	434	901	
v/s Ratio Prot	c0.14	c0.34		0.14	0.23		c0.06	c0.13	0.06	c0.10	0.09	
v/s Ratio Perm									0.08			
v/c Ratio	0.84	1.02		0.88	0.71		0.65	0.55	0.36	0.78	0.32	
Uniform Delay, d1	42.7	35.3		43.4	31.4		46.6	35.0	22.9	44.4	29.8	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	10.7	28.5		24.7	2.8		7.5	1.0	0.1	7.8	0.2	
Delay (s)	53.4	63.8		68.1	34.2		54.1	36.0	23.0	52.2	30.0	
Level of Service	D	E		E	C		D	D	C	D	C	
Approach Delay (s)		61.5			40.0			34.0			40.0	
Approach LOS		E			D			C			D	

Intersection Summary			
HCM 2000 Control Delay	48.1	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.83		
Actuated Cycle Length (s)	105.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	83.8%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group

Queuing Reports

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	54	1239	424	174	1446	196	522	435	163	630	434
v/c Ratio	0.95	0.84	0.58	0.61	1.21	0.33	0.65	0.93	0.33	1.38	0.87
Control Delay	168.6	51.2	8.4	70.2	139.5	13.5	52.1	76.4	12.2	223.4	63.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	168.6	51.2	8.4	70.2	139.5	13.5	52.1	76.4	12.2	223.4	63.0
Queue Length 50th (ft)	48	368	20	78	~810	41	215	371	21	~741	349
Queue Length 95th (ft)	#137	427	113	#127	#950	105	#309	#566	80	#976	455
Internal Link Dist (ft)		2325			484			648			1369
Turn Bay Length (ft)											
Base Capacity (vph)	57	1533	745	284	1200	592	808	480	499	456	589
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.95	0.81	0.57	0.61	1.21	0.33	0.65	0.91	0.33	1.38	0.74

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Lane Group	WBL	WBR	NBT	SBT
Lane Group Flow (vph)	587	1293	402	717
v/c Ratio	0.41	0.88	0.41	0.73
Control Delay	11.0	17.1	15.4	20.5
Queue Delay	0.0	0.0	0.0	0.0
Total Delay	11.0	17.1	15.4	20.5
Queue Length 50th (ft)	52	93	50	98
Queue Length 95th (ft)	103	#290	79	145
Internal Link Dist (ft)	810		406	1779
Turn Bay Length (ft)				
Base Capacity (vph)	1631	1597	1834	1834
Starvation Cap Reductn	0	0	0	0
Spillback Cap Reductn	0	0	0	0
Storage Cap Reductn	0	0	0	0
Reduced v/c Ratio	0.36	0.81	0.22	0.39

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT	SBR
Lane Group Flow (vph)	489	348	304	33	152	326	196	554	467	565	272
v/c Ratio	1.03	0.47	0.33	0.32	0.28	0.49	0.71	0.75	1.05	0.53	0.27
Control Delay	94.1	31.0	8.4	67.6	46.7	21.7	63.3	51.4	101.8	38.3	2.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	94.1	31.0	8.4	67.6	46.7	21.7	63.3	51.4	101.8	38.3	2.5
Queue Length 50th (ft)	~375	206	65	24	54	132	140	204	~376	185	0
Queue Length 95th (ft)	#793	334	125	68	94	241	259	307	#772	304	44
Internal Link Dist (ft)		611			563			507		730	
Turn Bay Length (ft)											
Base Capacity (vph)	473	890	1023	103	949	668	384	1085	443	1216	999
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	1.03	0.39	0.30	0.32	0.16	0.49	0.51	0.51	1.05	0.46	0.27

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT	SBR
Lane Group Flow (vph)	120	120	120	98	109	185	87	402	98	446	98
v/c Ratio	0.48	0.45	0.29	0.40	0.42	0.49	0.43	0.25	0.52	0.24	0.11
Control Delay	50.8	49.7	6.7	48.9	49.4	9.9	61.5	22.6	73.0	14.7	4.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	50.8	49.7	6.7	48.9	49.4	9.9	61.5	22.6	73.0	14.7	4.3
Queue Length 50th (ft)	93	93	0	73	81	0	34	83	81	38	0
Queue Length 95th (ft)	127	126	39	102	112	54	#63	193	m#178	231	m72
Internal Link Dist (ft)		644			610			685		849	
Turn Bay Length (ft)											
Base Capacity (vph)	502	529	419	514	541	582	201	1640	187	1837	870
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.24	0.23	0.29	0.19	0.20	0.32	0.43	0.25	0.52	0.24	0.11

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.

Lane Group	EBT	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	77	88	65	815	33	620
v/c Ratio	0.20	0.21	0.10	0.34	0.06	0.28
Control Delay	11.1	10.2	5.4	6.9	5.5	8.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	11.1	10.2	5.4	6.9	5.5	8.1
Queue Length 50th (ft)	6	6	4	33	2	24
Queue Length 95th (ft)	40	42	26	171	16	127
Internal Link Dist (ft)	218	191		927		475
Turn Bay Length (ft)						
Base Capacity (vph)	1017	1004	638	2807	559	2821
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.08	0.09	0.10	0.29	0.06	0.22

Intersection Summary

Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	239	1772	370	1957	326	130	359	228	250	304	196
v/c Ratio	0.79	0.85	1.05	0.89	0.38	0.87	0.43	0.37	0.80	0.35	0.32
Control Delay	67.5	33.8	108.6	35.5	7.1	93.7	34.2	11.0	67.5	32.7	9.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	67.5	33.8	108.6	35.5	7.1	93.7	34.2	11.0	67.5	32.7	9.7
Queue Length 50th (ft)	83	423	~146	~488	47	88	96	42	87	81	31
Queue Length 95th (ft)	#157	#541	#241	#605	93	#198	136	93	#164	117	77
Internal Link Dist (ft)		286		607			736			927	
Turn Bay Length (ft)											
Base Capacity (vph)	301	2087	352	2193	869	150	1108	616	312	1085	607
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.79	0.85	1.05	0.89	0.38	0.87	0.32	0.37	0.80	0.28	0.32

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Lane Group	WBL	NBT	SBL	SBT
Lane Group Flow (vph)	163	750	152	739
v/c Ratio	0.52	0.41	0.52	0.29
Control Delay	25.5	12.9	29.0	4.4
Queue Delay	0.0	0.0	0.0	0.0
Total Delay	25.5	12.9	29.0	4.4
Queue Length 50th (ft)	46	93	49	44
Queue Length 95th (ft)	95	168	101	86
Internal Link Dist (ft)	266	258		736
Turn Bay Length (ft)				
Base Capacity (vph)	497	1833	374	2581
Starvation Cap Reductn	0	0	0	0
Spillback Cap Reductn	0	0	0	0
Storage Cap Reductn	0	0	0	0
Reduced v/c Ratio	0.33	0.41	0.41	0.29

Intersection Summary

Lane Group	EBT	WBT	WBR	SBL	SBR
Lane Group Flow (vph)	891	1402	717	457	174
v/c Ratio	0.48	0.76	0.45	0.62	0.37
Control Delay	11.1	16.1	5.5	28.6	8.0
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	11.1	16.1	5.5	28.6	8.0
Queue Length 50th (ft)	70	136	14	62	0
Queue Length 95th (ft)	247	#517	114	#224	56
Internal Link Dist (ft)	776	812		135	
Turn Bay Length (ft)					
Base Capacity (vph)	2402	2402	1598	738	476
Starvation Cap Reductn	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.37	0.58	0.45	0.62	0.37

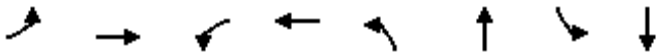
Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Lane Group	WBL	WBR	NBT	SBL	SBT
Lane Group Flow (vph)	33	54	544	141	728
v/c Ratio	0.16	0.23	0.17	0.67	0.17
Control Delay	39.8	10.5	21.9	61.3	4.4
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	39.8	10.5	21.9	61.3	4.4
Queue Length 50th (ft)	23	0	80	97	22
Queue Length 95th (ft)	36	26	m161	156	119
Internal Link Dist (ft)	700		918		563
Turn Bay Length (ft)					
Base Capacity (vph)	645	611	3241	331	4173
Starvation Cap Reductn	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.05	0.09	0.17	0.43	0.17

Intersection Summary

m Volume for 95th percentile queue is metered by upstream signal.



Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	87	174	174	293	217	555	87	728
v/c Ratio	0.36	0.56	0.55	0.86	0.79	0.37	0.11	0.55
Control Delay	44.8	24.6	50.3	65.0	64.9	28.6	32.1	27.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	44.8	24.6	50.3	65.0	64.9	28.6	32.1	27.2
Queue Length 50th (ft)	59	49	114	181	146	97	24	183
Queue Length 95th (ft)	88	96	#217	#387	#269	153	52	336
Internal Link Dist (ft)		610		1546		668		918
Turn Bay Length (ft)								
Base Capacity (vph)	497	542	318	339	294	1503	780	1333
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.18	0.32	0.55	0.86	0.74	0.37	0.11	0.55

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Lane Group	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	87	98	76	33	772	141	783
v/c Ratio	0.30	0.40	0.27	0.20	0.64	0.22	0.50
Control Delay	27.2	38.7	18.8	41.9	28.2	30.4	18.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	27.2	38.7	18.8	41.9	28.2	30.4	18.8
Queue Length 50th (ft)	25	33	7	11	90	23	90
Queue Length 95th (ft)	85	129	62	61	247	78	328
Internal Link Dist (ft)	465		807		727		668
Turn Bay Length (ft)							
Base Capacity (vph)	1085	818	798	201	2340	1588	2708
Starvation Cap Reductn	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.08	0.12	0.10	0.16	0.33	0.09	0.29

Intersection Summary

Lane Group	EBT	EBR	WBT	WBR	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	44	22	44	54	65	771	43	826
v/c Ratio	0.20	0.06	0.23	0.14	0.34	0.23	0.22	0.26
Control Delay	20.6	0.2	22.0	0.7	22.8	3.6	25.4	7.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	20.6	0.2	22.0	0.7	22.8	3.6	25.4	7.1
Queue Length 50th (ft)	13	0	14	0	27	11	13	46
Queue Length 95th (ft)	30	0	31	0	m47	52	38	96
Internal Link Dist (ft)	286		160			994		727
Turn Bay Length (ft)								
Base Capacity (vph)	411	587	384	587	193	3402	196	3237
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.11	0.04	0.11	0.09	0.34	0.23	0.22	0.26

Intersection Summary

m Volume for 95th percentile queue is metered by upstream signal.

Lane Group	EBL	EBT	EBR2	WBT	WBR	NBR2	SBL2	SBL	SBT	SBR	NWL	NWR
Lane Group Flow (vph)	239	1650	176	2391	413	109	179	228	234	76	185	218
v/c Ratio	0.82	0.59	0.21	0.98	0.44	0.11	0.72	0.96	0.96	0.24	0.89	0.49
Control Delay	71.6	15.2	2.2	41.7	6.8	0.2	55.9	91.7	89.1	8.2	87.7	23.1
Queue Delay	0.0	0.0	0.0	41.9	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	71.6	15.2	2.2	83.6	7.0	0.2	55.9	91.7	89.1	8.2	87.7	23.1
Queue Length 50th (ft)	87	265	0	585	61	0	129	179	183	0	130	32
Queue Length 95th (ft)	#151	312	33	#723	97	0	#236	#352	#357	32	#260	74
Internal Link Dist (ft)		607		437					994		422	
Turn Bay Length (ft)												
Base Capacity (vph)	293	2792	854	2450	948	1036	248	237	245	316	210	445
Starvation Cap Reductn	0	0	0	395	107	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.82	0.59	0.21	1.16	0.49	0.11	0.72	0.96	0.96	0.24	0.88	0.49

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Lane Group	EBT	WBT	NBT	SBT
Lane Group Flow (vph)	304	337	250	218
v/c Ratio	0.58	0.74	0.30	0.24
Control Delay	16.5	24.4	7.0	6.3
Queue Delay	0.0	0.0	0.0	0.0
Total Delay	16.5	24.4	7.0	6.3
Queue Length 50th (ft)	60	79	23	19
Queue Length 95th (ft)	118	151	80	66
Internal Link Dist (ft)	271	339	940	771
Turn Bay Length (ft)				
Base Capacity (vph)	941	839	820	906
Starvation Cap Reductn	0	0	0	0
Spillback Cap Reductn	0	0	0	0
Storage Cap Reductn	0	0	0	0
Reduced v/c Ratio	0.32	0.40	0.30	0.24

Intersection Summary

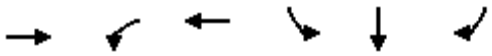
Lane Group	NBL	NBT	SBT	SEL	SER
Lane Group Flow (vph)	326	663	793	217	207
v/c Ratio	0.80	0.17	0.32	0.73	0.47
Control Delay	64.3	0.8	18.9	60.7	8.9
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	64.3	0.8	18.9	60.7	8.9
Queue Length 50th (ft)	209	6	150	161	0
Queue Length 95th (ft)	222	9	210	229	61
Internal Link Dist (ft)		764	913	479	
Turn Bay Length (ft)					
Base Capacity (vph)	575	3886	2502	545	631
Starvation Cap Reductn	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.57	0.17	0.32	0.40	0.33

Intersection Summary

Lane Group	EBL	EBR	WBL	WBT	SBT
Lane Group Flow (vph)	33	109	500	533	87
v/c Ratio	0.16	0.27	0.48	0.69	0.27
Control Delay	19.1	6.3	3.4	19.8	20.4
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	19.1	6.3	3.4	19.8	20.4
Queue Length 50th (ft)	8	0	0	110	20
Queue Length 95th (ft)	27	31	53	#322	57
Internal Link Dist (ft)				363	564
Turn Bay Length (ft)					
Base Capacity (vph)	372	661	1125	899	693
Starvation Cap Reductn	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.09	0.16	0.44	0.59	0.13

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.



Lane Group	EBT	WBL	WBT	SBL	SBT	SBR
Lane Group Flow (vph)	1794	446	2641	352	398	163
v/c Ratio	0.90	1.01	0.61	0.78	0.85	0.35
Control Delay	45.1	70.1	1.1	57.7	63.1	27.2
Queue Delay	46.8	19.1	2.2	0.3	0.4	0.0
Total Delay	91.8	89.2	3.3	58.0	63.5	27.2
Queue Length 50th (ft)	521	~429	18	300	346	76
Queue Length 95th (ft)	590	m#464	m18	397	451	132
Internal Link Dist (ft)	437		346		833	
Turn Bay Length (ft)						
Base Capacity (vph)	2070	440	4309	535	558	540
Starvation Cap Reductn	447	24	1474	0	0	0
Spillback Cap Reductn	0	0	0	19	20	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	1.11	1.07	0.93	0.68	0.74	0.30

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

Lane Group	EBT	WBL	WBT	NBL	NBR	SBL	SBT
Lane Group Flow (vph)	468	174	261	130	174	174	261
v/c Ratio	0.29	0.32	0.12	0.62	0.21	0.52	0.74
Control Delay	21.8	15.3	13.0	67.3	4.6	51.7	61.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.2
Total Delay	21.8	15.3	13.0	67.3	4.6	51.7	61.6
Queue Length 50th (ft)	111	61	46	106	0	134	209
Queue Length 95th (ft)	197	126	87	167	50	192	282
Internal Link Dist (ft)	422		400				360
Turn Bay Length (ft)							
Base Capacity (vph)	1628	606	2123	364	839	447	469
Starvation Cap Reductn	0	0	0	0	0	0	21
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.29	0.29	0.12	0.36	0.21	0.39	0.58

Intersection Summary

Lane Group	EBL	NBL	NBT	SBT
Lane Group Flow (vph)	370	380	500	696
v/c Ratio	0.87	0.81	0.14	0.34
Control Delay	52.9	54.7	8.4	25.1
Queue Delay	0.0	0.0	0.0	0.0
Total Delay	52.9	54.7	8.4	25.1
Queue Length 50th (ft)	208	296	56	123
Queue Length 95th (ft)	307	392	87	196
Internal Link Dist (ft)	648		913	1745
Turn Bay Length (ft)				
Base Capacity (vph)	523	775	3663	2052
Starvation Cap Reductn	0	0	0	0
Spillback Cap Reductn	0	0	0	0
Storage Cap Reductn	0	0	0	0
Reduced v/c Ratio	0.71	0.49	0.14	0.34

Intersection Summary

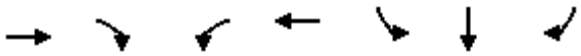
Lane Group	EBL	EBT	WBT	WBR	NBT
Lane Group Flow (vph)	65	2141	3000	652	653
v/c Ratio	0.40	0.64	1.06	0.66	0.68
Control Delay	49.7	13.5	67.4	18.1	45.7
Queue Delay	0.0	0.5	15.6	0.0	0.2
Total Delay	49.7	14.0	83.1	18.1	45.9
Queue Length 50th (ft)	44	256	~1195	284	244
Queue Length 95th (ft)	m58	341	#1274	447	308
Internal Link Dist (ft)		346	988		517
Turn Bay Length (ft)					
Base Capacity (vph)	183	3363	2821	992	1142
Starvation Cap Reductn	0	664	0	0	0
Spillback Cap Reductn	0	0	118	0	75
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.36	0.79	1.11	0.66	0.61

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

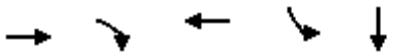
m Volume for 95th percentile queue is metered by upstream signal.



Lane Group	EBT	EBR	WBL	WBT	SBL	SBT	SBR
Lane Group Flow (vph)	370	207	598	576	220	486	446
v/c Ratio	0.27	0.30	0.84	0.25	0.54	0.57	0.71
Control Delay	18.9	8.0	42.4	7.1	29.6	27.9	15.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	18.9	8.0	42.4	7.1	29.6	27.9	15.2
Queue Length 50th (ft)	68	20	142	55	104	116	61
Queue Length 95th (ft)	108	69	#236	98	161	150	151
Internal Link Dist (ft)	269			774		2836	
Turn Bay Length (ft)							
Base Capacity (vph)	1367	701	729	2281	521	1086	714
Starvation Cap Reductn	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.27	0.30	0.82	0.25	0.42	0.45	0.62

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.



Lane Group	EBT	EBR	WBT	SBL	SBT
Lane Group Flow (vph)	207	174	609	500	1771
v/c Ratio	0.30	0.28	0.62	0.56	0.69
Control Delay	16.1	11.3	20.1	14.0	12.6
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	16.1	11.3	20.1	14.0	12.6
Queue Length 50th (ft)	57	31	101	126	163
Queue Length 95th (ft)	103	72	151	208	211
Internal Link Dist (ft)	458		806		986
Turn Bay Length (ft)					
Base Capacity (vph)	687	619	986	898	2574
Starvation Cap Reductn	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.30	0.28	0.62	0.56	0.69

Intersection Summary

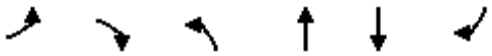
Lane Group	EBT	WBL	WBT	SBT	SBR
Lane Group Flow (vph)	870	43	543	946	565
v/c Ratio	0.72	0.31	0.36	0.94dl	0.83
Control Delay	23.9	44.2	11.3	17.6	24.2
Queue Delay	0.0	0.0	0.2	0.6	0.0
Total Delay	23.9	44.2	11.5	18.2	24.2
Queue Length 50th (ft)	166	19	54	110	141
Queue Length 95th (ft)	#263	m43	70	150	#362
Internal Link Dist (ft)	458		157	1023	
Turn Bay Length (ft)					
Base Capacity (vph)	1218	139	1519	1731	678
Starvation Cap Reductn	0	0	366	0	0
Spillback Cap Reductn	1	0	0	401	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.71	0.31	0.47	0.71	0.83

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

dl Defacto Left Lane. Recode with 1 though lane as a left lane.



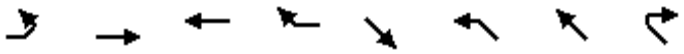
Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Group Flow (vph)	130	1217	1967	859	707	152
v/c Ratio	0.63	0.69	1.11	0.21	0.52	0.23
Control Delay	63.2	15.3	69.3	1.6	30.8	20.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	63.2	15.3	69.3	1.6	30.8	20.2
Queue Length 50th (ft)	97	275	~913	26	200	103
Queue Length 95th (ft)	157	349	m#1035	m55	237	149
Internal Link Dist (ft)	812			696	764	
Turn Bay Length (ft)						
Base Capacity (vph)	354	1771	1770	4148	1356	792
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.37	0.69	1.11	0.21	0.52	0.19

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

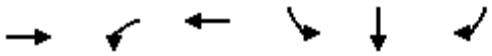
m Volume for 95th percentile queue is metered by upstream signal.



Lane Group	EBL	EBT	WBT	WBR	SET	NWL	NWT	NWR
Lane Group Flow (vph)	109	315	674	348	130	153	152	196
v/c Ratio	0.59	0.19	0.56	0.45	0.47	0.71	0.66	0.37
Control Delay	42.7	11.0	21.4	4.9	11.0	41.9	36.3	5.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	42.7	11.0	21.4	4.9	11.0	41.9	36.3	5.8
Queue Length 50th (ft)	38	34	114	0	0	50	49	0
Queue Length 95th (ft)	#110	65	#188	57	37	#144	#135	43
Internal Link Dist (ft)		323	269		463		382	
Turn Bay Length (ft)								
Base Capacity (vph)	185	1671	1202	767	470	249	269	583
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.59	0.19	0.56	0.45	0.28	0.61	0.57	0.34

Intersection Summary

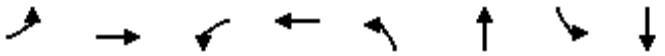
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.



Lane Group	EBT	WBL	WBT	SBL	SBT	SBR
Lane Group Flow (vph)	304	359	663	100	118	261
v/c Ratio	0.47	0.81	0.84	0.30	0.35	0.34
Control Delay	24.1	33.2	28.4	27.2	27.9	7.8
Queue Delay	0.0	0.0	0.5	0.0	0.0	0.0
Total Delay	24.1	33.2	28.9	27.2	27.9	7.8
Queue Length 50th (ft)	49	113	212	35	43	30
Queue Length 95th (ft)	96	#297	#469	87	100	81
Internal Link Dist (ft)	435		323		512	
Turn Bay Length (ft)						
Base Capacity (vph)	946	603	1069	514	522	906
Starvation Cap Reductn	0	0	115	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.32	0.60	0.69	0.19	0.23	0.29

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.



Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	22	66	478	294	43	1674	152	945
v/c Ratio	0.07	0.10	0.95	0.42	0.39	0.89	0.78	0.41
Control Delay	18.1	10.8	58.8	15.5	50.7	33.4	66.1	16.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	18.1	10.8	58.8	15.5	50.7	33.4	66.1	16.7
Queue Length 50th (ft)	8	12	256	78	24	319	85	131
Queue Length 95th (ft)	24	37	#453	146	57	#401	#184	168
Internal Link Dist (ft)		526		458		1888		582
Turn Bay Length (ft)								
Base Capacity (vph)	341	694	518	721	120	1876	199	2311
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.06	0.10	0.92	0.41	0.36	0.89	0.76	0.41

Intersection Summary

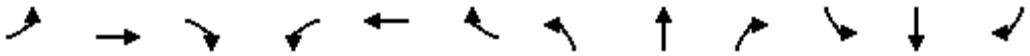
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT	SBR
Lane Group Flow (vph)	739	815	152	957	326	870	120	772	283
v/c Ratio	1.32	0.52	0.73	1.09	1.26	0.73	0.92	0.93	0.35
Control Delay	194.6	26.5	74.7	101.1	190.4	49.0	120.1	72.1	13.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	194.6	26.5	74.7	101.1	190.4	49.0	120.1	72.1	13.4
Queue Length 50th (ft)	~805	245	125	~470	~344	243	102	238	86
Queue Length 95th (ft)	#1047	323	195	#606	#533	295	#225	#319	148
Internal Link Dist (ft)		403		458		623		529	
Turn Bay Length (ft)									
Base Capacity (vph)	558	1556	262	881	258	1186	130	829	802
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	1.32	0.52	0.58	1.09	1.26	0.73	0.92	0.93	0.35

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

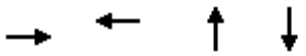
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	130	391	174	359	446	120	250	130	228	87	163	109
v/c Ratio	0.66	0.29	0.12	0.83	0.32	0.17	0.81	0.31	0.30	0.50	0.15	0.26
Control Delay	57.9	22.7	3.1	58.2	22.6	5.7	64.0	31.4	3.5	51.0	27.2	6.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	57.9	22.7	3.1	58.2	22.6	5.7	64.0	31.4	3.5	51.0	27.2	6.3
Queue Length 50th (ft)	64	69	0	93	80	0	65	63	0	43	27	0
Queue Length 95th (ft)	#172	147	21	#221	168	40	#168	114	42	106	43	36
Internal Link Dist (ft)		731			423			1745			245	
Turn Bay Length (ft)									100			
Base Capacity (vph)	223	1330	1509	432	1382	691	308	669	765	235	2050	704
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.58	0.29	0.12	0.83	0.32	0.17	0.81	0.19	0.30	0.37	0.08	0.15

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.



Lane Group	EBT	WBT	NBT	SBT
Lane Group Flow (vph)	467	413	522	77
v/c Ratio	0.57	0.41	0.94	0.17
Control Delay	12.4	7.6	47.2	12.5
Queue Delay	0.0	0.0	0.0	0.0
Total Delay	12.4	7.6	47.2	12.5
Queue Length 50th (ft)	110	64	184	13
Queue Length 95th (ft)	194	120	#369	42
Internal Link Dist (ft)	342	520	255	125
Turn Bay Length (ft)				
Base Capacity (vph)	816	1003	575	467
Starvation Cap Reductn	0	0	0	0
Spillback Cap Reductn	0	0	0	0
Storage Cap Reductn	0	0	0	0
Reduced v/c Ratio	0.57	0.41	0.91	0.16

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Lane Group	EBT	WBL	WBT	NBL	NBR
Lane Group Flow (vph)	652	261	739	163	163
v/c Ratio	0.33	0.79	0.34	0.39	0.33
Control Delay	11.8	47.0	7.8	20.7	5.0
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	11.8	47.0	7.8	20.7	5.0
Queue Length 50th (ft)	38	81	45	49	0
Queue Length 95th (ft)	88	#246	133	91	35
Internal Link Dist (ft)	423		279	871	
Turn Bay Length (ft)					
Base Capacity (vph)	1970	329	2163	749	764
Starvation Cap Reductn	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.33	0.79	0.34	0.22	0.21

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

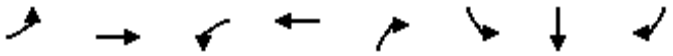
Lane Group	EBT	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	533	76	283	336	22	141
v/c Ratio	0.86	0.10	0.53	0.43	0.06	0.19
Control Delay	29.2	7.0	19.2	15.1	13.3	7.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	29.2	7.0	19.2	15.1	13.3	7.0
Queue Length 50th (ft)	146	10	72	77	4	11
Queue Length 95th (ft)	#275	28	166	164	19	46
Internal Link Dist (ft)	520	293		203		240
Turn Bay Length (ft)						
Base Capacity (vph)	836	985	529	786	380	761
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.64	0.08	0.53	0.43	0.06	0.19

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Lane Group	EBL	EBT	WBL	WBT	NBT	SBT
Lane Group Flow (vph)	54	641	250	881	435	66
v/c Ratio	0.16	0.37	0.49	0.52	0.79	0.15
Control Delay	9.7	13.7	11.4	13.9	21.7	9.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	9.7	13.7	11.4	13.9	21.7	9.5
Queue Length 50th (ft)	7	45	37	113	81	8
Queue Length 95th (ft)	29	99	105	223	174	31
Internal Link Dist (ft)		279		609	1265	205
Turn Bay Length (ft)						
Base Capacity (vph)	341	1730	589	1698	834	737
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.16	0.37	0.42	0.52	0.52	0.09

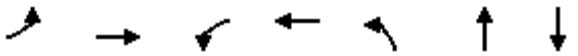
Intersection Summary



Lane Group	EBL	EBT	WBL	WBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	435	326	11	990	22	113	267	348
v/c Ratio	0.74	0.16	0.09	0.76	0.01	0.24	0.55	0.53
Control Delay	37.0	8.5	35.0	23.7	0.0	19.5	24.9	7.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	37.0	8.5	35.0	23.7	0.0	19.5	24.9	7.4
Queue Length 50th (ft)	86	24	4	166	0	37	98	17
Queue Length 95th (ft)	#186	80	21	#349	0	73	163	72
Internal Link Dist (ft)		609		486			881	
Turn Bay Length (ft)								
Base Capacity (vph)	615	2023	118	1298	1590	786	812	896
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.71	0.16	0.09	0.76	0.01	0.14	0.33	0.39

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.



Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBT
Lane Group Flow (vph)	33	859	76	1598	250	109	152
v/c Ratio	0.43	0.45	0.66	0.75	0.88	0.24	0.41
Control Delay	73.2	16.6	55.3	29.0	71.7	12.6	36.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	73.2	16.6	55.3	29.0	71.7	12.6	36.8
Queue Length 50th (ft)	25	207	61	522	183	19	91
Queue Length 95th (ft)	#72	264	m66	m363	#294	61	147
Internal Link Dist (ft)		624		906		244	377
Turn Bay Length (ft)							
Base Capacity (vph)	77	1912	116	2123	341	535	439
Starvation Cap Reductn	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.43	0.45	0.66	0.75	0.73	0.20	0.35

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

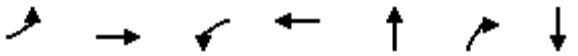
m Volume for 95th percentile queue is metered by upstream signal.

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	196	794	185	1424	65	141	120	283	685
v/c Ratio	0.93	0.64	0.75	1.08	0.51	0.21	0.22	0.87	0.61
Control Delay	105.3	28.7	67.1	79.2	67.7	39.9	6.9	74.3	30.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	105.3	28.7	67.1	79.2	67.7	39.9	6.9	74.3	30.4
Queue Length 50th (ft)	~173	286	118	~651	49	45	16	~246	188
Queue Length 95th (ft)	#345	375	193	#783	96	73	37	#421	255
Internal Link Dist (ft)		906		1436		1074			606
Turn Bay Length (ft)									
Base Capacity (vph)	211	1238	314	1318	146	884	608	327	1160
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.93	0.64	0.59	1.08	0.45	0.16	0.20	0.87	0.59

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

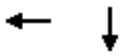
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.



Lane Group	EBL	EBT	WBL	WBT	NBT	NBR	SBT
Lane Group Flow (vph)	11	1152	348	1554	98	163	120
v/c Ratio	0.14	0.47	0.82	0.59	0.43	0.40	0.53
Control Delay	48.3	35.2	58.9	9.9	47.8	8.8	48.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	48.3	35.2	58.9	9.9	47.8	8.8	48.0
Queue Length 50th (ft)	9	273	257	303	63	0	73
Queue Length 95th (ft)	m16	325	335	469	115	55	133
Internal Link Dist (ft)		1436		2539	649		441
Turn Bay Length (ft)							
Base Capacity (vph)	77	2447	604	2620	305	487	302
Starvation Cap Reductn	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.14	0.47	0.58	0.59	0.32	0.33	0.40

Intersection Summary

m Volume for 95th percentile queue is metered by upstream signal.



Lane Group	WBT	SBT
Lane Group Flow (vph)	3642	326
v/c Ratio	1.02	0.33
Control Delay	36.4	31.3
Queue Delay	0.0	0.0
Total Delay	36.4	31.3
Queue Length 50th (ft)	~815	58
Queue Length 95th (ft)	#905	84
Internal Link Dist (ft)	692	1330
Turn Bay Length (ft)		
Base Capacity (vph)	3556	1364
Starvation Cap Reductn	0	0
Spillback Cap Reductn	0	0
Storage Cap Reductn	0	0
Reduced v/c Ratio	1.02	0.24

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Lane Group	EBT	SBT
Lane Group Flow (vph)	1065	533
v/c Ratio	0.34	0.38
Control Delay	4.0	19.0
Queue Delay	0.0	0.0
Total Delay	4.0	19.0
Queue Length 50th (ft)	41	59
Queue Length 95th (ft)	50	87
Internal Link Dist (ft)	496	288
Turn Bay Length (ft)		
Base Capacity (vph)	3148	1855
Starvation Cap Reductn	0	0
Spillback Cap Reductn	0	0
Storage Cap Reductn	0	0
Reduced v/c Ratio	0.34	0.29

Intersection Summary

Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	250	1217	130	848	207	54	43	98	87	87	228
v/c Ratio	0.63	0.71	0.76	0.51	0.67	0.45	0.15	0.28	0.34	0.26	0.48
Control Delay	40.9	19.9	65.0	17.2	18.4	49.6	27.1	4.8	39.8	28.0	7.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	40.9	19.9	65.0	17.2	18.4	49.6	27.1	4.8	39.8	28.0	7.6
Queue Length 50th (ft)	55	213	58	136	0	24	17	0	19	36	0
Queue Length 95th (ft)	#124	#460	#185	272	#93	#81	42	22	49	72	51
Internal Link Dist (ft)		445		606			613			390	
Turn Bay Length (ft)											
Base Capacity (vph)	426	1713	171	1651	309	122	688	665	255	688	720
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.59	0.71	0.76	0.51	0.67	0.44	0.06	0.15	0.34	0.13	0.32

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Lane Group	WBT	NBL	NBT	SBT
Lane Group Flow (vph)	3389	316	305	327
v/c Ratio	0.95	0.95	0.25	0.82
Control Delay	29.7	84.4	26.6	60.6
Queue Delay	39.6	1.6	0.0	0.0
Total Delay	69.3	86.0	26.6	60.6
Queue Length 50th (ft)	620	223	80	109
Queue Length 95th (ft)	685	#397	115	#176
Internal Link Dist (ft)	485		269	645
Turn Bay Length (ft)				
Base Capacity (vph)	3573	331	1225	412
Starvation Cap Reductn	461	3	0	0
Spillback Cap Reductn	0	0	0	0
Storage Cap Reductn	0	0	0	0
Reduced v/c Ratio	1.09	0.96	0.25	0.79

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

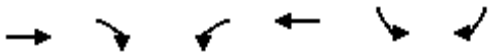
Lane Group	EBT	EBR	NBT	SBL	SBT
Lane Group Flow (vph)	826	65	804	76	739
v/c Ratio	0.37	0.09	0.53	0.46	0.33
Control Delay	14.6	1.9	19.2	41.9	14.3
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	14.6	1.9	19.2	41.9	14.3
Queue Length 50th (ft)	90	0	90	34	79
Queue Length 95th (ft)	119	13	127	75	106
Internal Link Dist (ft)	183		353		269
Turn Bay Length (ft)					
Base Capacity (vph)	2232	735	1518	165	2237
Starvation Cap Reductn	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.37	0.09	0.53	0.46	0.33

Intersection Summary

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Group Flow (vph)	1272	576	304	967	402	152
v/c Ratio	0.79	0.48	0.76	0.43	0.49	0.34
Control Delay	21.7	4.5	44.5	7.7	21.7	5.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	21.7	4.5	44.5	7.7	21.7	5.8
Queue Length 50th (ft)	210	62	61	80	66	0
Queue Length 95th (ft)	#458	101	#151	202	101	39
Internal Link Dist (ft)	216			273	735	
Turn Bay Length (ft)						
Base Capacity (vph)	1620	1496	401	2274	1498	708
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.79	0.39	0.76	0.43	0.27	0.21

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.



Lane Group	EBT	EBR	WBL	WBT	SBL	SBR
Lane Group Flow (vph)	1152	152	413	359	370	728
v/c Ratio	0.77	0.20	0.83	0.16	0.88	0.46
Control Delay	20.7	3.4	42.1	5.3	46.7	1.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	20.7	3.4	42.1	5.3	46.7	1.0
Queue Length 50th (ft)	206	0	82	27	136	0
Queue Length 95th (ft)	283	30	#144	43	#266	0
Internal Link Dist (ft)	139			450		
Turn Bay Length (ft)						
Base Capacity (vph)	1504	750	544	2244	476	1583
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.77	0.20	0.76	0.16	0.78	0.46

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Lane Group	EBL	EBT	WBT	NBT	NBR
Lane Group Flow (vph)	957	707	1315	207	326
v/c Ratio	0.94	0.27	0.86	0.88	0.67
Control Delay	44.4	3.4	23.7	70.1	11.9
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	44.4	3.4	23.7	70.1	11.9
Queue Length 50th (ft)	232	45	245	102	3
Queue Length 95th (ft)	#343	62	#390	#217	76
Internal Link Dist (ft)		450	517	531	
Turn Bay Length (ft)					
Base Capacity (vph)	1080	2665	1529	249	497
Starvation Cap Reductn	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.89	0.27	0.86	0.83	0.66

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Lane Group	EBL	NBL	NBT	SBT
Lane Group Flow (vph)	456	120	543	881
v/c Ratio	0.85	0.62	0.24	0.51
Control Delay	49.9	64.6	9.8	23.5
Queue Delay	0.0	0.0	0.0	0.0
Total Delay	49.9	64.6	9.8	23.5
Queue Length 50th (ft)	299	97	70	233
Queue Length 95th (ft)	382	151	211	364
Internal Link Dist (ft)	72		849	507
Turn Bay Length (ft)				
Base Capacity (vph)	707	229	2255	1723
Starvation Cap Reductn	0	0	0	0
Spillback Cap Reductn	0	0	0	0
Storage Cap Reductn	0	0	0	0
Reduced v/c Ratio	0.64	0.52	0.24	0.51

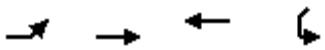
Intersection Summary

Lane Group	EBT	WBT	SBT
Lane Group Flow (vph)	185	163	511
v/c Ratio	0.21	0.22	0.39
Control Delay	3.1	10.6	15.7
Queue Delay	0.0	0.0	0.0
Total Delay	3.1	10.6	15.7
Queue Length 50th (ft)	4	35	74
Queue Length 95th (ft)	33	67	111
Internal Link Dist (ft)	272	260	893
Turn Bay Length (ft)			
Base Capacity (vph)	879	758	1327
Starvation Cap Reductn	0	0	0
Spillback Cap Reductn	0	0	0
Storage Cap Reductn	0	0	0
Reduced v/c Ratio	0.21	0.22	0.39

Intersection Summary

Lane Group	EBL	NBT	SBT
Lane Group Flow (vph)	217	544	467
v/c Ratio	0.60	0.54	0.35
Control Delay	14.5	6.9	4.1
Queue Delay	0.0	0.0	0.0
Total Delay	14.5	6.9	4.1
Queue Length 50th (ft)	17	60	39
Queue Length 95th (ft)	67	178	104
Internal Link Dist (ft)	339	648	504
Turn Bay Length (ft)			
Base Capacity (vph)	550	1000	1349
Starvation Cap Reductn	0	0	0
Spillback Cap Reductn	0	0	0
Storage Cap Reductn	0	0	0
Reduced v/c Ratio	0.39	0.54	0.35

Intersection Summary



Lane Group	EBL	EBT	WBT	SWL
Lane Group Flow (vph)	54	728	1576	435
v/c Ratio	0.52	0.36	0.92	0.74
Control Delay	56.5	9.1	29.0	28.2
Queue Delay	0.0	0.0	0.0	0.0
Total Delay	56.5	9.1	29.0	28.2
Queue Length 50th (ft)	27	88	368	150
Queue Length 95th (ft)	#76	121	#536	#292
Internal Link Dist (ft)		1988	776	623
Turn Bay Length (ft)				
Base Capacity (vph)	103	2186	1768	586
Starvation Cap Reductn	0	0	0	0
Spillback Cap Reductn	0	0	0	0
Storage Cap Reductn	0	0	0	0
Reduced v/c Ratio	0.52	0.33	0.89	0.74

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Lane Group	EBT	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	174	500	217	576	283	696
v/c Ratio	0.63	1.01	0.86	0.83	0.85	0.81
Control Delay	31.3	71.7	68.0	41.3	58.2	35.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	31.3	71.7	68.0	41.3	58.2	35.4
Queue Length 50th (ft)	53	~240	111	138	142	160
Queue Length 95th (ft)	115	#483	#256	#242	#303	#267
Internal Link Dist (ft)	623	665		411		690
Turn Bay Length (ft)						
Base Capacity (vph)	434	497	252	725	337	897
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.40	1.01	0.86	0.79	0.84	0.78

Intersection Summary

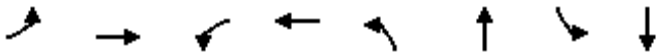
~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Lane Group	EBL	NBT	SBT
Lane Group Flow (vph)	250	630	305
v/c Ratio	0.62	0.74	0.23
Control Delay	12.5	14.0	3.2
Queue Delay	0.0	0.0	0.0
Total Delay	12.5	14.0	3.2
Queue Length 50th (ft)	10	91	19
Queue Length 95th (ft)	63	#378	59
Internal Link Dist (ft)	665	479	940
Turn Bay Length (ft)			
Base Capacity (vph)	592	852	1299
Starvation Cap Reductn	0	0	0
Spillback Cap Reductn	0	0	0
Storage Cap Reductn	0	0	0
Reduced v/c Ratio	0.42	0.74	0.23

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.



Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	54	76	217	359	76	2685	87	1837
v/c Ratio	0.46	0.16	0.98	0.45	0.54	0.98	0.74	0.66
Control Delay	66.1	19.1	108.8	26.1	67.2	39.6	74.4	20.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	66.1	19.1	108.8	26.1	67.2	39.6	74.4	20.0
Queue Length 50th (ft)	41	7	170	73	57	711	65	380
Queue Length 95th (ft)	84	31	#329	123	109	#864	m#122	420
Internal Link Dist (ft)		306		551		569		696
Turn Bay Length (ft)								
Base Capacity (vph)	132	468	221	806	162	2748	118	2768
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.41	0.16	0.98	0.45	0.47	0.98	0.74	0.66

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

Lane Group	EBL	NBL	NBT
Lane Group Flow (vph)	120	217	946
v/c Ratio	0.17	0.31	0.67
Control Delay	8.6	9.7	12.7
Queue Delay	0.0	0.0	0.0
Total Delay	8.6	9.7	12.7
Queue Length 50th (ft)	16	31	84
Queue Length 95th (ft)	38	65	132
Internal Link Dist (ft)	260		609
Turn Bay Length (ft)			
Base Capacity (vph)	708	708	1415
Starvation Cap Reductn	0	0	0
Spillback Cap Reductn	0	0	0
Storage Cap Reductn	0	0	0
Reduced v/c Ratio	0.17	0.31	0.67

Intersection Summary

Lane Group	EBL	EBT	WBT	NBT	NBR
Lane Group Flow (vph)	446	913	641	380	22
v/c Ratio	0.59	0.73	0.47	0.61	0.06
Control Delay	25.3	13.6	13.4	28.5	0.3
Queue Delay	0.0	50.2	0.0	0.0	0.0
Total Delay	25.3	63.8	13.4	28.5	0.3
Queue Length 50th (ft)	94	225	73	74	0
Queue Length 95th (ft)	m141	#357	126	104	0
Internal Link Dist (ft)		157	779	808	
Turn Bay Length (ft)					
Base Capacity (vph)	761	1247	1369	1119	583
Starvation Cap Reductn	0	425	0	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.59	1.11	0.47	0.34	0.04

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	87	1804	598	130	1261	391	500	380	196	326	326
v/c Ratio	0.86	0.87	0.69	0.55	0.85	0.50	0.93	0.91	0.44	0.96	0.68
Control Delay	125.5	46.7	15.7	76.1	46.0	11.0	87.1	82.6	21.9	97.9	57.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	125.5	46.7	15.7	76.1	46.0	11.0	87.1	82.6	21.9	97.9	57.2
Queue Length 50th (ft)	86	578	155	64	567	73	~267	362	58	~350	284
Queue Length 95th (ft)	#194	663	310	99	665	165	#384	#541	137	#551	398
Internal Link Dist (ft)		2325			484			648			1369
Turn Bay Length (ft)											
Base Capacity (vph)	101	2069	871	297	1526	804	536	432	454	341	482
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.86	0.87	0.69	0.44	0.83	0.49	0.93	0.88	0.43	0.96	0.68

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Lane Group	WBL	WBR	NBT	SBT
Lane Group Flow (vph)	891	1946	1011	957
v/c Ratio	0.41	1.11	1.02	0.97
Control Delay	14.8	86.7	86.5	74.6
Queue Delay	0.0	0.0	0.0	0.0
Total Delay	14.8	86.7	86.5	74.6
Queue Length 50th (ft)	215	~1233	~550	488
Queue Length 95th (ft)	259	#1380	#687	#629
Internal Link Dist (ft)	810		699	1779
Turn Bay Length (ft)				
Base Capacity (vph)	2151	1751	990	990
Starvation Cap Reductn	0	0	0	0
Spillback Cap Reductn	0	0	0	0
Storage Cap Reductn	0	0	0	0
Reduced v/c Ratio	0.41	1.11	1.02	0.97

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT	SBR
Lane Group Flow (vph)	413	467	348	87	587	761	489	684	435	772	435
v/c Ratio	1.17	0.74	0.37	0.62	0.75	1.02	1.18	0.87	0.99	0.91	0.61
Control Delay	152.4	51.7	13.1	97.6	45.3	75.8	153.6	67.4	95.5	71.2	17.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	152.4	51.7	13.1	97.6	45.3	75.8	153.6	67.4	95.5	71.2	17.0
Queue Length 50th (ft)	~479	402	128	66	146	~670	~573	330	~456	390	122
Queue Length 95th (ft)	#694	539	192	#155	271	#1010	#798	406	#683	#504	177
Internal Link Dist (ft)		614			571			545		730	
Turn Bay Length (ft)											
Base Capacity (vph)	354	634	931	141	780	748	413	836	440	847	719
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	1.17	0.74	0.37	0.62	0.75	1.02	1.18	0.82	0.99	0.91	0.61

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT	SBR
Lane Group Flow (vph)	174	195	185	76	174	98	261	772	163	793	185
v/c Ratio	0.54	0.58	0.32	0.24	0.52	0.27	0.78	0.56	0.81	0.55	0.25
Control Delay	52.0	53.4	5.0	44.3	52.1	8.8	73.6	36.7	98.7	23.9	3.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	52.0	53.4	5.0	44.3	52.1	8.8	73.6	36.7	98.7	23.9	3.1
Queue Length 50th (ft)	146	166	0	58	141	0	109	239	147	86	0
Queue Length 95th (ft)	196	218	47	91	186	44	#189	#489	m#219	#447	m30
Internal Link Dist (ft)		644			610			685		811	
Turn Bay Length (ft)											
Base Capacity (vph)	464	483	581	475	500	487	336	1370	211	1448	732
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.38	0.40	0.32	0.16	0.35	0.20	0.78	0.56	0.77	0.55	0.25

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.

Lane Group	EBT	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	119	185	98	1358	65	1076
v/c Ratio	0.49	0.86	0.26	0.54	0.23	0.43
Control Delay	49.5	97.5	6.3	11.4	6.7	10.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	49.5	97.5	6.3	11.4	6.7	10.6
Queue Length 50th (ft)	83	147	19	294	12	210
Queue Length 95th (ft)	140	180	44	453	32	328
Internal Link Dist (ft)	218	191		926		474
Turn Bay Length (ft)						
Base Capacity (vph)	344	306	413	2503	349	2501
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.35	0.60	0.24	0.54	0.19	0.43

Intersection Summary

Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	413	2250	554	1685	424	250	696	446	380	576	315
v/c Ratio	0.87	1.10	1.15	0.80	0.52	1.24	0.90	0.73	0.93	0.73	0.51
Control Delay	79.9	91.6	144.3	41.1	12.3	192.8	71.2	37.8	92.1	58.6	26.6
Queue Delay	0.0	0.0	0.0	0.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	79.9	91.6	144.3	42.0	12.3	192.8	71.2	37.8	92.1	58.6	26.6
Queue Length 50th (ft)	198	~878	~317	513	111	~291	335	278	~189	267	156
Queue Length 95th (ft)	#276	#968	#436	576	163	#472	#431	405	#299	337	245
Internal Link Dist (ft)		286		607			727			926	
Turn Bay Length (ft)											
Base Capacity (vph)	497	2052	480	2104	810	202	805	608	410	790	622
Starvation Cap Reductn	0	0	0	183	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.83	1.10	1.15	0.88	0.52	1.24	0.86	0.73	0.93	0.73	0.51

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Lane Group	WBL	NBT	SBL	SBT
Lane Group Flow (vph)	456	978	435	913
v/c Ratio	0.92	0.89	0.90	0.40
Control Delay	44.1	34.6	49.8	6.5
Queue Delay	0.0	0.0	0.0	0.0
Total Delay	44.1	34.6	49.8	6.5
Queue Length 50th (ft)	123	207	178	85
Queue Length 95th (ft)	#292	#327	#336	117
Internal Link Dist (ft)	633	267		727
Turn Bay Length (ft)				
Base Capacity (vph)	512	1103	499	2301
Starvation Cap Reductn	0	0	0	0
Spillback Cap Reductn	0	0	0	0
Storage Cap Reductn	0	0	0	0
Reduced v/c Ratio	0.89	0.89	0.87	0.40

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Lane Group	EBT	WBT	WBR	SBL	SBR
Lane Group Flow (vph)	1359	1054	935	391	326
v/c Ratio	0.70	0.54	0.48	0.59	0.57
Control Delay	14.1	11.3	1.9	29.6	8.7
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	14.1	11.3	1.9	29.6	8.7
Queue Length 50th (ft)	124	84	0	58	0
Queue Length 95th (ft)	#484	304	36	#188	76
Internal Link Dist (ft)	621	812		135	
Turn Bay Length (ft)					
Base Capacity (vph)	2372	2372	2159	679	574
Starvation Cap Reductn	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.57	0.44	0.43	0.58	0.57

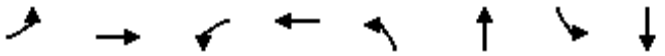
Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Lane Group	WBL	WBR	NBT	SBL	SBT
Lane Group Flow (vph)	76	250	1326	141	1054
v/c Ratio	0.54	0.70	0.37	0.73	0.24
Control Delay	79.4	18.0	15.0	87.6	2.5
Queue Delay	0.0	0.1	0.0	0.0	0.0
Total Delay	79.4	18.1	15.1	87.6	2.5
Queue Length 50th (ft)	73	0	428	139	30
Queue Length 95th (ft)	125	87	481	m167	m150
Internal Link Dist (ft)	835		918		571
Turn Bay Length (ft)					
Base Capacity (vph)	448	572	3606	325	4376
Starvation Cap Reductn	0	0	0	0	0
Spillback Cap Reductn	0	29	247	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.17	0.46	0.39	0.43	0.24

Intersection Summary

m Volume for 95th percentile queue is metered by upstream signal.



Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	98	304	141	239	250	1347	163	1065
v/c Ratio	0.29	0.85	0.75	0.85	0.86	0.58	0.36	0.71
Control Delay	52.5	72.8	89.3	57.4	87.6	17.3	56.5	49.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	52.5	72.8	89.3	57.4	87.6	17.3	56.5	49.6
Queue Length 50th (ft)	82	256	134	113	252	426	74	422
Queue Length 95th (ft)	134	364	#213	#246	#359	64	102	621
Internal Link Dist (ft)		610		1517		668		918
Turn Bay Length (ft)								
Base Capacity (vph)	401	411	212	302	330	2448	457	1498
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	16
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.24	0.74	0.67	0.79	0.76	0.55	0.36	0.72

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Lane Group	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	174	163	185	54	1435	130	1261
v/c Ratio	0.70	0.79	0.60	0.56	0.53	0.43	0.62
Control Delay	66.7	89.3	28.3	95.9	25.1	45.3	10.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.1
Total Delay	66.7	89.3	28.3	95.9	25.1	45.3	11.0
Queue Length 50th (ft)	144	157	50	55	251	57	188
Queue Length 95th (ft)	199	234	131	#95	469	m82	389
Internal Link Dist (ft)	465		811		724		668
Turn Bay Length (ft)							
Base Capacity (vph)	429	260	351	107	2734	318	2032
Starvation Cap Reductn	0	0	0	0	0	0	107
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.41	0.63	0.53	0.50	0.52	0.41	0.66

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.

Lane Group	EBT	EBR	WBT	WBR	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	76	76	153	228	152	1240	43	1369
v/c Ratio	0.74	0.29	0.78	0.14	0.42	0.33	0.45	0.48
Control Delay	111.7	26.8	89.5	0.2	48.6	6.6	76.7	27.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	111.7	26.8	89.5	0.2	48.6	6.6	76.7	27.1
Queue Length 50th (ft)	75	12	149	0	131	99	41	303
Queue Length 95th (ft)	127	63	214	0	m170	m224	m72	459
Internal Link Dist (ft)	286		160			995		724
Turn Bay Length (ft)								
Base Capacity (vph)	202	437	391	1583	361	3743	160	2878
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.38	0.17	0.39	0.14	0.42	0.33	0.27	0.48

Intersection Summary

m Volume for 95th percentile queue is metered by upstream signal.

Lane Group	EBL	EBT	EBR2	WBT	WBR	NBR2	SBL2	SBL	SBT	SBR	NWL	NWR
Lane Group Flow (vph)	326	2327	205	2207	717	174	243	354	359	239	217	413
v/c Ratio	0.83	0.89	0.25	0.98	0.75	0.22	0.66	1.00	0.99	0.55	0.97	0.95
Control Delay	82.8	33.0	6.2	55.5	17.5	0.6	52.8	94.2	91.6	14.6	116.6	81.5
Queue Delay	0.0	27.4	0.0	41.5	3.4	0.0	82.4	60.1	0.0	0.0	0.0	43.3
Total Delay	82.8	60.4	6.2	97.0	20.9	0.6	135.2	154.3	91.6	14.6	116.6	124.8
Queue Length 50th (ft)	163	737	33	829	446	0	171	~405	410	29	215	181
Queue Length 95th (ft)	#236	817	82	#913	536	0	212	#596	#600	101	#385	#298
Internal Link Dist (ft)		607		437					995		195	
Turn Bay Length (ft)												
Base Capacity (vph)	398	2628	823	2244	957	806	369	354	362	438	224	435
Starvation Cap Reductn	0	423	0	798	153	0	0	0	0	0	0	0
Spillback Cap Reductn	0	244	0	0	0	0	291	279	0	0	0	68
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.82	1.06	0.25	1.53	0.89	0.22	3.12	4.72	0.99	0.55	0.97	1.13

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Lane Group	EBT	WBT	NBT	SBT
Lane Group Flow (vph)	565	489	304	305
v/c Ratio	0.79	0.86	0.47	0.48
Control Delay	18.1	29.5	14.7	15.4
Queue Delay	0.0	0.0	0.0	0.0
Total Delay	18.1	29.5	14.7	15.4
Queue Length 50th (ft)	103	127	56	59
Queue Length 95th (ft)	210	241	148	155
Internal Link Dist (ft)	633	311	949	790
Turn Bay Length (ft)				
Base Capacity (vph)	974	825	643	629
Starvation Cap Reductn	0	2	0	0
Spillback Cap Reductn	0	0	0	0
Storage Cap Reductn	0	0	0	0
Reduced v/c Ratio	0.58	0.59	0.47	0.48

Intersection Summary

Lane Group	NBL	NBT	SBT	SEL	SER
Lane Group Flow (vph)	315	1435	956	54	522
v/c Ratio	0.80	0.34	0.33	0.30	0.83
Control Delay	59.4	3.3	9.4	50.7	15.8
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	59.4	3.3	9.4	50.7	15.8
Queue Length 50th (ft)	232	61	140	40	0
Queue Length 95th (ft)	311	161	m222	71	103
Internal Link Dist (ft)		763	913	452	
Turn Bay Length (ft)					
Base Capacity (vph)	531	4218	2901	575	866
Starvation Cap Reductn	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.59	0.34	0.33	0.09	0.60

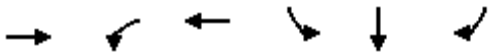
Intersection Summary

m Volume for 95th percentile queue is metered by upstream signal.

Lane Group	EBL	EBR	WBL	WBT	SBT
Lane Group Flow (vph)	109	152	337	500	174
v/c Ratio	0.31	0.40	0.36	0.66	0.42
Control Delay	19.7	8.0	2.9	16.3	12.3
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	19.7	8.0	2.9	16.3	12.3
Queue Length 50th (ft)	25	0	0	85	18
Queue Length 95th (ft)	64	39	41	#253	63
Internal Link Dist (ft)				439	658
Turn Bay Length (ft)					
Base Capacity (vph)	761	732	1062	916	796
Starvation Cap Reductn	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.14	0.21	0.32	0.55	0.22

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.



Lane Group	EBT	WBL	WBT	SBL	SBT	SBR
Lane Group Flow (vph)	2239	315	2576	661	502	348
v/c Ratio	1.07	1.11	0.67	1.15	0.84	0.61
Control Delay	80.4	125.7	1.2	130.5	59.1	40.0
Queue Delay	10.9	0.0	10.0	0.1	0.3	0.1
Total Delay	91.4	125.7	11.2	130.6	59.3	40.1
Queue Length 50th (ft)	~875	~344	35	~798	475	244
Queue Length 95th (ft)	m#963	m#314	m28	#1054	#674	356
Internal Link Dist (ft)	437		346		820	
Turn Bay Length (ft)						
Base Capacity (vph)	2083	283	3844	574	598	571
Starvation Cap Reductn	247	0	970	0	0	0
Spillback Cap Reductn	0	0	1274	5	5	9
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	1.22	1.11	1.00	1.16	0.85	0.62

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

Lane Group	EBT	WBL	WBT	NBL	NBR	SBL	SBT
Lane Group Flow (vph)	1109	196	424	196	326	424	413
v/c Ratio	0.89	0.91	0.25	0.82	0.42	0.99	0.92
Control Delay	36.1	61.5	14.0	64.5	4.2	76.0	60.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	36.1	61.5	14.0	64.5	4.2	76.0	60.6
Queue Length 50th (ft)	296	62	71	109	0	240	229
Queue Length 95th (ft)	#423	#193	101	#220	53	#429	#404
Internal Link Dist (ft)	152		265				360
Turn Bay Length (ft)							
Base Capacity (vph)	1248	216	1723	247	778	430	451
Starvation Cap Reductn	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.89	0.91	0.25	0.79	0.42	0.99	0.92

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Lane Group	EBL	NBL	NBT	SBT
Lane Group Flow (vph)	739	533	957	576
v/c Ratio	1.00	0.99	0.36	0.64
Control Delay	64.5	79.0	20.6	46.5
Queue Delay	0.0	0.0	0.0	0.0
Total Delay	64.5	79.0	20.6	46.5
Queue Length 50th (ft)	512	424	146	143
Queue Length 95th (ft)	#787	#654	276	185
Internal Link Dist (ft)	585		913	1745
Turn Bay Length (ft)				
Base Capacity (vph)	739	539	2669	896
Starvation Cap Reductn	0	0	0	0
Spillback Cap Reductn	0	0	0	0
Storage Cap Reductn	0	0	0	0
Reduced v/c Ratio	1.00	0.99	0.36	0.64

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

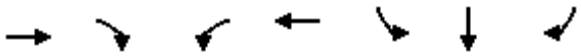
Lane Group	EBL	EBT	WBT	WBR	NBT
Lane Group Flow (vph)	152	2761	2750	750	804
v/c Ratio	0.64	0.81	1.07	0.87	0.87
Control Delay	47.1	10.8	74.7	36.8	62.7
Queue Delay	0.0	4.1	0.0	0.0	0.0
Total Delay	47.1	14.9	74.7	36.8	62.7
Queue Length 50th (ft)	132	312	~1125	531	384
Queue Length 95th (ft)	m122	m289	#1204	#824	467
Internal Link Dist (ft)		346	988		236
Turn Bay Length (ft)					
Base Capacity (vph)	238	3397	2577	863	987
Starvation Cap Reductn	0	557	0	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.64	0.97	1.07	0.87	0.81

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

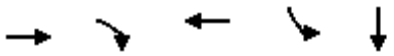


Lane Group	EBT	EBR	WBL	WBT	SBL	SBT	SBR
Lane Group Flow (vph)	761	304	467	533	446	587	1174
v/c Ratio	0.94	0.57	1.06	0.38	0.51	0.32	1.25
Control Delay	65.0	16.7	109.9	27.2	20.0	15.8	144.1
Queue Delay	17.7	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	82.8	16.8	109.9	27.2	20.0	15.8	144.1
Queue Length 50th (ft)	306	55	~205	153	230	132	~1070
Queue Length 95th (ft)	#425	148	#312	201	331	172	#1334
Internal Link Dist (ft)	321			774		2836	
Turn Bay Length (ft)							
Base Capacity (vph)	813	531	440	1386	872	1836	941
Starvation Cap Reductn	72	3	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	1.03	0.58	1.06	0.38	0.51	0.32	1.25

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.



Lane Group	EBT	EBR	WBT	SBL	SBT
Lane Group Flow (vph)	478	283	283	435	1468
v/c Ratio	0.60	0.39	0.30	0.55	0.64
Control Delay	18.0	11.5	13.1	16.5	12.5
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	18.0	11.5	13.1	16.5	12.5
Queue Length 50th (ft)	139	54	36	120	123
Queue Length 95th (ft)	226	108	62	199	167
Internal Link Dist (ft)	451		806		986
Turn Bay Length (ft)					
Base Capacity (vph)	802	719	958	789	2304
Starvation Cap Reductn	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.60	0.39	0.30	0.55	0.64

Intersection Summary

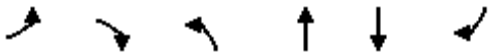
Lane Group	EBT	WBL	WBT	SBT	SBR
Lane Group Flow (vph)	1609	54	761	2000	717
v/c Ratio	1.35	0.60	0.52	1.09dl	1.05
Control Delay	190.2	69.9	21.1	39.0	70.6
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	190.2	69.9	21.1	39.0	70.6
Queue Length 50th (ft)	~653	31	164	416	~483
Queue Length 95th (ft)	#790	#86	218	#549	#738
Internal Link Dist (ft)	458		38	1023	
Turn Bay Length (ft)					
Base Capacity (vph)	1192	90	1474	2067	684
Starvation Cap Reductn	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	1.35	0.60	0.52	0.97	1.05

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

dl Defacto Left Lane. Recode with 1 though lane as a left lane.



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Group Flow (vph)	370	1337	1789	1337	1283	141
v/c Ratio	1.13	0.69	1.08	0.35	1.06	0.21
Control Delay	138.9	13.5	78.4	5.6	90.1	21.3
Queue Delay	0.0	0.0	10.3	0.0	0.0	0.0
Total Delay	138.9	13.5	88.8	5.6	90.1	21.3
Queue Length 50th (ft)	~362	334	~863	120	~434	66
Queue Length 95th (ft)	#560	416	#1000	139	#530	111
Internal Link Dist (ft)	812			667	763	
Turn Bay Length (ft)						
Base Capacity (vph)	326	1951	1663	3833	1212	666
Starvation Cap Reductn	0	0	101	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	1.13	0.69	1.15	0.35	1.06	0.21

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Lane Group	EBL	EBT	WBT	WBR	SET	NWL	NWT
Lane Group Flow (vph)	261	565	1011	696	173	245	517
v/c Ratio	1.22	0.28	0.74	0.67	0.50	1.20	0.67
Control Delay	168.8	12.0	29.2	5.8	14.8	163.1	11.5
Queue Delay	0.0	0.5	3.4	0.3	0.0	0.0	0.0
Total Delay	168.8	12.5	32.6	6.1	14.8	163.1	11.5
Queue Length 50th (ft)	~155	64	214	0	21	~158	14
Queue Length 95th (ft)	#380	150	#409	88	74	#396	72
Internal Link Dist (ft)		269	321		401		767
Turn Bay Length (ft)							
Base Capacity (vph)	214	1990	1359	1036	588	205	772
Starvation Cap Reductn	0	958	250	57	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	1.22	0.55	0.91	0.71	0.29	1.20	0.67

Intersection Summary

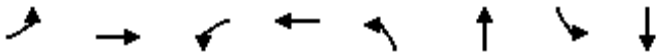
~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Lane Group	EBT	WBL	SBL	SBT	SBR
Lane Group Flow (vph)	522	685	201	222	402
v/c Ratio	0.71	0.90	0.64	0.69	0.43
Control Delay	31.1	35.3	38.7	41.7	3.1
Queue Delay	0.0	9.4	0.0	0.0	0.0
Total Delay	31.1	44.7	38.7	41.7	3.1
Queue Length 50th (ft)	113	271	92	104	0
Queue Length 95th (ft)	165	#476	#186	#211	46
Internal Link Dist (ft)	435			2903	
Turn Bay Length (ft)					
Base Capacity (vph)	840	898	330	334	938
Starvation Cap Reductn	0	185	0	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.62	0.96	0.61	0.66	0.43

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.



Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	43	196	413	293	33	2119	272	598
v/c Ratio	0.15	0.30	1.13	0.40	0.40	1.10	1.10	0.23
Control Delay	27.9	27.8	125.5	7.1	69.8	89.8	134.8	16.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	27.9	27.8	125.5	7.1	69.8	89.8	134.8	16.1
Queue Length 50th (ft)	22	103	~372	22	25	~676	~239	93
Queue Length 95th (ft)	51	164	#570	86	60	#773	#411	119
Internal Link Dist (ft)		480		451		1866		540
Turn Bay Length (ft)								
Base Capacity (vph)	289	655	364	740	88	1920	247	2650
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.15	0.30	1.13	0.40	0.38	1.10	1.10	0.23

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

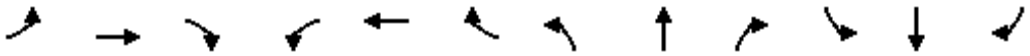
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT	SBR
Lane Group Flow (vph)	707	1511	272	1207	500	1413	185	761	370
v/c Ratio	1.54	1.10	1.02	1.21	1.46	0.98	1.75	0.98	0.53
Control Delay	289.5	98.6	122.2	147.9	264.6	71.5	409.1	89.7	26.3
Queue Delay	0.0	0.0	0.0	0.4	0.0	0.0	0.0	0.0	0.0
Total Delay	289.5	98.6	122.2	148.3	264.6	71.5	409.1	89.7	26.3
Queue Length 50th (ft)	~967	~873	~281	~753	~667	495	~268	275	198
Queue Length 95th (ft)	#1215	#1014	#470	#894	#894	#605	#432	#367	296
Internal Link Dist (ft)		403		458		623		529	
Turn Bay Length (ft)									
Base Capacity (vph)	460	1371	266	999	342	1437	106	779	697
Starvation Cap Reductn	0	0	0	79	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	1.54	1.10	1.02	1.31	1.46	0.98	1.75	0.98	0.53

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

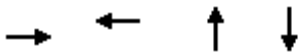


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	174	957	348	239	402	98	304	261	685	76	120	76
v/c Ratio	0.79	0.73	0.24	0.61	0.31	0.21	0.98	0.55	1.13	0.48	0.10	0.17
Control Delay	68.3	30.9	2.4	48.5	24.1	5.4	90.4	34.5	102.8	53.4	26.0	2.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	68.3	30.9	2.4	48.5	24.1	5.4	90.4	34.5	102.8	53.4	26.0	2.8
Queue Length 50th (ft)	95	233	0	65	82	0	88	135	~356	41	19	0
Queue Length 95th (ft)	#245	396	27	#130	153	31	#210	214	#577	97	34	15
Internal Link Dist (ft)		865			423			1745			245	
Turn Bay Length (ft)									100			
Base Capacity (vph)	223	1317	1437	391	1282	460	311	691	605	198	1999	669
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.78	0.73	0.24	0.61	0.31	0.21	0.98	0.38	1.13	0.38	0.06	0.11

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.



Lane Group	EBT	WBT	NBT	SBT
Lane Group Flow (vph)	1032	359	327	87
v/c Ratio	1.23	0.31	1.03	0.29
Control Delay	134.1	5.0	100.8	24.5
Queue Delay	0.0	0.0	0.0	0.0
Total Delay	134.1	5.0	100.8	24.5
Queue Length 50th (ft)	~906	61	~234	28
Queue Length 95th (ft)	#1160	97	#414	74
Internal Link Dist (ft)	342	520	255	125
Turn Bay Length (ft)				
Base Capacity (vph)	837	1175	316	303
Starvation Cap Reductn	0	0	0	0
Spillback Cap Reductn	0	0	0	0
Storage Cap Reductn	0	0	0	0
Reduced v/c Ratio	1.23	0.31	1.03	0.29

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Lane Group	EBT	WBL	WBT	NBL	NBR
Lane Group Flow (vph)	1718	261	543	196	283
v/c Ratio	0.81	0.79	0.23	0.50	0.50
Control Delay	21.3	48.6	6.5	28.2	6.2
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	21.3	48.6	6.5	28.2	6.2
Queue Length 50th (ft)	194	101	36	75	0
Queue Length 95th (ft)	#379	#254	92	131	52
Internal Link Dist (ft)	423		279	871	
Turn Bay Length (ft)					
Base Capacity (vph)	2132	351	2313	627	743
Starvation Cap Reductn	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.81	0.74	0.23	0.31	0.38

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

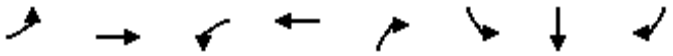
Lane Group	EBT	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	456	141	130	359	22	261
v/c Ratio	0.80	0.21	0.28	0.45	0.06	0.32
Control Delay	22.8	6.5	14.7	14.7	13.0	5.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	22.8	6.5	14.7	14.7	13.0	5.9
Queue Length 50th (ft)	101	15	23	66	3	12
Queue Length 95th (ft)	187	39	81	190	20	68
Internal Link Dist (ft)	520	293		203		240
Turn Bay Length (ft)						
Base Capacity (vph)	963	1142	466	805	381	819
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.47	0.12	0.28	0.45	0.06	0.32

Intersection Summary

Lane Group	EBL	EBT	WBL	WBT	NBT	SBT
Lane Group Flow (vph)	76	1391	337	663	402	77
v/c Ratio	0.19	0.82	0.78	0.38	0.80	0.19
Control Delay	9.4	25.5	27.0	12.7	26.9	13.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	9.4	25.5	27.0	12.7	26.9	13.4
Queue Length 50th (ft)	11	172	70	88	100	16
Queue Length 95th (ft)	33	#304	#216	152	196	43
Internal Link Dist (ft)		279		609	1265	205
Turn Bay Length (ft)						
Base Capacity (vph)	406	1687	487	1749	678	583
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.19	0.82	0.69	0.38	0.59	0.13

Intersection Summary

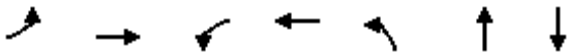
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.



Lane Group	EBL	EBT	WBL	WBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	630	793	33	804	33	127	275	370
v/c Ratio	0.90	0.41	0.23	0.68	0.02	0.27	0.56	0.53
Control Delay	46.8	12.1	36.2	23.2	0.0	19.8	25.3	5.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	46.8	12.1	36.2	23.2	0.0	19.8	25.3	5.7
Queue Length 50th (ft)	129	73	13	136	0	43	102	5
Queue Length 95th (ft)	#282	214	43	253	0	82	168	56
Internal Link Dist (ft)		609		486			881	
Turn Bay Length (ft)								
Base Capacity (vph)	699	1919	148	1182	1611	776	800	911
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.90	0.41	0.22	0.68	0.02	0.16	0.34	0.41

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.



Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBT
Lane Group Flow (vph)	65	1663	76	1163	130	272	163
v/c Ratio	0.58	0.74	0.63	0.51	0.82	0.83	1.12
Control Delay	85.0	20.5	74.2	11.7	91.7	68.1	160.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	85.0	20.5	74.2	11.7	91.7	68.1	160.1
Queue Length 50th (ft)	60	529	74	184	119	214	~172
Queue Length 95th (ft)	#152	723	m86	m77	188	300	#280
Internal Link Dist (ft)		624		906		244	377
Turn Bay Length (ft)							
Base Capacity (vph)	112	2247	129	2272	211	422	193
Starvation Cap Reductn	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.58	0.74	0.59	0.51	0.62	0.64	0.84

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

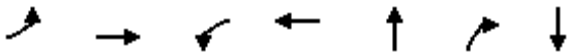
Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	467	1685	239	1152	98	467	261	337	413
v/c Ratio	1.20	1.17	1.23	1.11	0.65	0.71	0.51	1.06	0.42
Control Delay	157.6	119.7	189.5	102.8	83.9	61.5	18.8	122.4	31.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	157.6	119.7	189.5	102.8	83.9	61.5	18.8	122.4	31.2
Queue Length 50th (ft)	~524	~998	~278	~646	91	214	85	~385	116
Queue Length 95th (ft)	m#767	#1122	#464	#633	152	276	143	#583	173
Internal Link Dist (ft)		906		1436		1074			606
Turn Bay Length (ft)									
Base Capacity (vph)	390	1440	195	1041	189	732	513	318	981
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	1.20	1.17	1.23	1.11	0.52	0.64	0.51	1.06	0.42

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.



Lane Group	EBL	EBT	WBL	WBT	NBT	NBR	SBT
Lane Group Flow (vph)	11	2196	174	1434	131	239	98
v/c Ratio	0.17	0.69	0.75	0.53	0.68	0.54	0.54
Control Delay	59.0	23.8	79.9	9.1	73.6	10.5	60.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	59.0	23.8	79.9	9.1	73.6	10.5	60.3
Queue Length 50th (ft)	10	520	161	263	113	0	75
Queue Length 95th (ft)	m11	m330	233	402	186	75	136
Internal Link Dist (ft)		1436		2539	649		441
Turn Bay Length (ft)							
Base Capacity (vph)	64	3178	339	2689	244	496	228
Starvation Cap Reductn	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.17	0.69	0.51	0.53	0.54	0.48	0.43

Intersection Summary

m Volume for 95th percentile queue is metered by upstream signal.

Lane Group	WBT	SBT
Lane Group Flow (vph)	2576	587
v/c Ratio	0.73	0.59
Control Delay	9.6	30.2
Queue Delay	0.0	0.0
Total Delay	9.6	30.2
Queue Length 50th (ft)	274	129
Queue Length 95th (ft)	327	m124
Internal Link Dist (ft)	692	1330
Turn Bay Length (ft)		
Base Capacity (vph)	3547	2888
Starvation Cap Reductn	0	0
Spillback Cap Reductn	0	0
Storage Cap Reductn	0	0
Reduced v/c Ratio	0.73	0.20

Intersection Summary

m Volume for 95th percentile queue is metered by upstream signal.

Lane Group	EBT	SBT
Lane Group Flow (vph)	1880	794
v/c Ratio	0.57	0.62
Control Delay	3.8	23.4
Queue Delay	0.1	0.0
Total Delay	3.9	23.4
Queue Length 50th (ft)	72	89
Queue Length 95th (ft)	m106	107
Internal Link Dist (ft)	496	288
Turn Bay Length (ft)		
Base Capacity (vph)	3309	1496
Starvation Cap Reductn	214	0
Spillback Cap Reductn	0	0
Storage Cap Reductn	0	0
Reduced v/c Ratio	0.61	0.53

Intersection Summary

m Volume for 95th percentile queue is metered by upstream signal.

Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	261	1510	163	1533	130	130	54	141	87	87	228
v/c Ratio	0.94	0.89	0.89	0.85	0.57	0.92	0.18	0.38	0.39	0.32	0.63
Control Delay	84.2	29.3	84.7	25.8	18.3	99.4	32.0	8.5	46.0	35.5	19.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	84.2	29.3	84.7	25.8	18.3	99.4	32.0	8.5	46.0	35.5	19.5
Queue Length 50th (ft)	72	351	87	340	0	70	26	0	23	43	34
Queue Length 95th (ft)	#177	#678	#241	#664	55	#210	57	45	53	83	101
Internal Link Dist (ft)		445		509			613			390	
Turn Bay Length (ft)											
Base Capacity (vph)	277	1701	183	1799	232	142	577	588	237	556	578
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.94	0.89	0.89	0.85	0.56	0.92	0.09	0.24	0.37	0.16	0.39

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Lane Group	WBT	NBL	NBT	SBT
Lane Group Flow (vph)	2274	347	600	494
v/c Ratio	0.77	0.85	0.39	0.84
Control Delay	26.8	60.4	21.0	54.2
Queue Delay	0.2	10.7	1.1	0.0
Total Delay	27.1	71.1	22.1	54.2
Queue Length 50th (ft)	393	231	138	163
Queue Length 95th (ft)	456	#353	176	225
Internal Link Dist (ft)	485		269	645
Turn Bay Length (ft)				
Base Capacity (vph)	2967	460	1708	635
Starvation Cap Reductn	158	89	829	0
Spillback Cap Reductn	0	0	0	0
Storage Cap Reductn	0	0	0	0
Reduced v/c Ratio	0.81	0.94	0.68	0.78

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Lane Group	EBT	EBR	NBT	SBL	SBT
Lane Group Flow (vph)	1381	76	1327	141	348
v/c Ratio	0.68	0.12	0.93	0.45	0.14
Control Delay	24.4	4.8	41.7	38.3	12.2
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	24.4	4.8	41.7	38.3	12.2
Queue Length 50th (ft)	231	0	246	72	36
Queue Length 95th (ft)	283	26	#340	131	53
Internal Link Dist (ft)	183		353		269
Turn Bay Length (ft)					
Base Capacity (vph)	2025	658	1423	314	2548
Starvation Cap Reductn	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.68	0.12	0.93	0.45	0.14

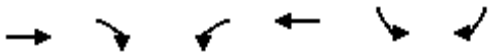
Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Group Flow (vph)	1543	815	543	1620	500	283
v/c Ratio	0.95	0.75	0.93	0.67	0.62	0.52
Control Delay	38.4	11.8	63.8	11.4	35.2	7.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	38.4	11.8	63.8	11.4	35.2	7.1
Queue Length 50th (ft)	437	209	162	257	135	0
Queue Length 95th (ft)	#691	328	#293	424	185	65
Internal Link Dist (ft)	216			273	735	
Turn Bay Length (ft)						
Base Capacity (vph)	1630	1221	582	2403	1084	641
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.95	0.67	0.93	0.67	0.46	0.44

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.



Lane Group	EBT	EBR	WBL	WBT	SBL	SBR
Lane Group Flow (vph)	1174	359	391	380	424	1283
v/c Ratio	0.92	0.45	0.62	0.18	0.82	0.81
Control Delay	37.5	4.5	29.9	11.1	37.0	4.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	37.5	4.5	29.9	11.1	37.0	4.8
Queue Length 50th (ft)	272	0	89	60	181	0
Queue Length 95th (ft)	#437	55	m#133	m87	243	0
Internal Link Dist (ft)	222			450		
Turn Bay Length (ft)						
Base Capacity (vph)	1280	793	632	2121	755	1583
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.92	0.45	0.62	0.18	0.56	0.81

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.

Lane Group	EBL	EBT	WBT	NBT	NBR
Lane Group Flow (vph)	946	783	1184	229	489
v/c Ratio	0.98	0.30	0.79	0.88	1.06
Control Delay	57.8	2.4	19.1	65.8	74.7
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	57.8	2.4	19.1	65.8	74.7
Queue Length 50th (ft)	219	32	184	106	~134
Queue Length 95th (ft)	m#301	m42	267	#227	#315
Internal Link Dist (ft)		450	517	531	
Turn Bay Length (ft)					
Base Capacity (vph)	961	2595	1493	261	463
Starvation Cap Reductn	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.98	0.30	0.79	0.88	1.06

Intersection Summary

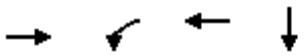
~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

Lane Group	EBL	NBL	NBT	SBT
Lane Group Flow (vph)	467	163	946	1163
v/c Ratio	0.90	0.75	0.42	0.70
Control Delay	60.9	76.2	16.1	30.1
Queue Delay	0.0	0.0	0.0	0.9
Total Delay	60.9	76.2	16.1	31.0
Queue Length 50th (ft)	347	119	90	402
Queue Length 95th (ft)	471	206	317	528
Internal Link Dist (ft)	112		811	545
Turn Bay Length (ft)				
Base Capacity (vph)	592	251	2261	1672
Starvation Cap Reductn	0	0	0	245
Spillback Cap Reductn	0	0	0	0
Storage Cap Reductn	0	0	0	0
Reduced v/c Ratio	0.79	0.65	0.42	0.81

Intersection Summary



Lane Group	EBT	WBL	WBT	SBT
Lane Group Flow (vph)	370	402	370	1021
v/c Ratio	0.44	0.92	0.40	0.77
Control Delay	10.9	45.1	11.1	24.4
Queue Delay	0.0	0.0	0.0	0.0
Total Delay	10.9	45.1	11.1	24.4
Queue Length 50th (ft)	77	135	83	207
Queue Length 95th (ft)	134	#310	136	#315
Internal Link Dist (ft)	276		303	817
Turn Bay Length (ft)				
Base Capacity (vph)	985	518	1107	1318
Starvation Cap Reductn	0	0	0	0
Spillback Cap Reductn	0	0	0	0
Storage Cap Reductn	0	0	0	0
Reduced v/c Ratio	0.38	0.78	0.33	0.77

Intersection Summary

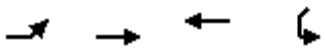
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Lane Group	EBL	NBT	SBT
Lane Group Flow (vph)	347	598	794
v/c Ratio	0.82	0.98	0.64
Control Delay	34.2	46.6	9.0
Queue Delay	0.0	0.0	0.0
Total Delay	34.2	46.6	9.0
Queue Length 50th (ft)	93	~233	156
Queue Length 95th (ft)	#212	#460	265
Internal Link Dist (ft)	311	585	567
Turn Bay Length (ft)			
Base Capacity (vph)	474	613	1237
Starvation Cap Reductn	0	0	0
Spillback Cap Reductn	0	0	0
Storage Cap Reductn	0	0	0
Reduced v/c Ratio	0.73	0.98	0.64

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.



Lane Group	EBL	EBT	WBT	SWL
Lane Group Flow (vph)	65	1185	1380	435
v/c Ratio	0.54	0.66	0.77	0.69
Control Delay	30.5	13.0	15.2	23.6
Queue Delay	0.0	0.0	0.0	0.0
Total Delay	30.5	13.0	15.2	23.6
Queue Length 50th (ft)	15	156	197	134
Queue Length 95th (ft)	#71	214	271	#262
Internal Link Dist (ft)		2143	621	511
Turn Bay Length (ft)				
Base Capacity (vph)	135	2018	2008	628
Starvation Cap Reductn	0	0	0	0
Spillback Cap Reductn	0	0	0	0
Storage Cap Reductn	0	0	0	0
Reduced v/c Ratio	0.48	0.59	0.69	0.69

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Lane Group	EBT	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	229	489	174	956	228	717
v/c Ratio	0.82	0.98	0.76	0.94	0.91	0.73
Control Delay	59.8	69.0	63.1	46.5	82.1	36.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	59.8	69.0	63.1	46.5	82.1	36.4
Queue Length 50th (ft)	126	270	108	263	146	212
Queue Length 95th (ft)	#241	#484	#203	#394	#288	281
Internal Link Dist (ft)	511	686		327		774
Turn Bay Length (ft)						
Base Capacity (vph)	301	497	248	1026	250	978
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.76	0.98	0.70	0.93	0.91	0.73

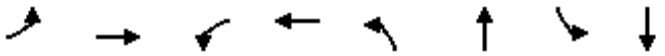
Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Lane Group	EBL	NBT	SBT
Lane Group Flow (vph)	479	369	619
v/c Ratio	0.88	0.79	0.57
Control Delay	37.2	25.9	8.4
Queue Delay	0.0	0.0	0.0
Total Delay	37.2	25.9	8.4
Queue Length 50th (ft)	136	102	98
Queue Length 95th (ft)	#295	#267	181
Internal Link Dist (ft)	686	452	949
Turn Bay Length (ft)			
Base Capacity (vph)	582	470	1095
Starvation Cap Reductn	0	0	0
Spillback Cap Reductn	0	0	0
Storage Cap Reductn	0	0	0
Reduced v/c Ratio	0.82	0.79	0.57

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.



Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	109	326	98	196	109	3294	217	2445
v/c Ratio	1.03	0.82	0.92	0.46	0.73	1.03	1.32	0.75
Control Delay	161.5	72.9	137.2	38.3	93.0	52.7	227.9	20.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.6
Total Delay	161.5	72.9	137.2	38.3	93.0	52.7	227.9	23.3
Queue Length 50th (ft)	~113	144	97	52	105	~1261	~273	588
Queue Length 95th (ft)	#245	#218	#217	95	#185	#1327	#445	643
Internal Link Dist (ft)		253		576		2903		667
Turn Bay Length (ft)								
Base Capacity (vph)	106	399	106	429	165	3188	165	3255
Starvation Cap Reductn	0	0	0	0	0	0	0	665
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	1.03	0.82	0.92	0.46	0.66	1.03	1.32	0.94

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Lane Group	EBL	NBL	NBT
Lane Group Flow (vph)	109	511	783
v/c Ratio	0.15	0.72	0.55
Control Delay	8.4	18.4	11.1
Queue Delay	0.0	0.0	0.0
Total Delay	8.4	18.4	11.1
Queue Length 50th (ft)	15	90	66
Queue Length 95th (ft)	36	#212	104
Internal Link Dist (ft)	303		541
Turn Bay Length (ft)			
Base Capacity (vph)	708	708	1415
Starvation Cap Reductn	0	0	0
Spillback Cap Reductn	0	0	0
Storage Cap Reductn	0	0	0
Reduced v/c Ratio	0.15	0.72	0.55

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Appendix F
PEQE Calculation Worksheets

Roadway	To	From	Horizontal Buffer North/East	Lighting	Clear Zone	Posted Speed Limit	Score		Horizontal Buffer	Lighting	Clear Zone South/West	Posted Speed Limit	Score		Horizontal Buffer	Lighting	Clear Zone	Posted Speed Limit	Horizontal Buffer	Lighting	Clear Zone	Posted Speed Limit
Midway/Pacific Highway Corridor																						
Lytton Street/ Barnett Avenue	Rosecrans St	Midway Dr	0	Standard	No Obstructions	40	4	Fair	0	Standard	No Obstructions	40	4	Fair	0	1	2	1	0	1	2	1
	Midway Dr	Pacific Hwy	15	Exceed Standard	No Obstructions	40	7	Good	15	Exceed Standard	No Obstructions	40	7	Good	2	2	2	1	2	2	2	1
W. Mission Bay Dr	I-8 WB Ramps	I-8 EB Ramps	0	Standard	No Obstructions	35	4	Fair	0	Standard	No Obstructions	35	4	Fair	0	1	2	1	0	1	2	1
Midway Dr	W. Point Loma Blvd/Sports Arena Blvd	Kemper St	15	Exceed Standard	No Obstructions	35	7	Good	15	Exceed Standard	No Obstructions	35	7	Good	2	2	2	1	2	2	2	1
	Kemper St	East Dr	15	Exceed Standard	No Obstructions	35	7	Good	15	Exceed Standard	No Obstructions	35	7	Good	2	2	2	1	2	2	2	1
	East Dr	Rosecrans St	15	Exceed Standard	No Obstructions	35	7	Good	15	Exceed Standard	No Obstructions	35	7	Good	2	2	2	1	2	2	2	1
	Rosecrans St	Barnett Ave	15	Exceed Standard	No Obstructions	35	7	Good	15	Exceed Standard	No Obstructions	35	7	Good	2	2	2	1	2	2	2	1
Sports Arena Blvd	I-8 EB Ramps	W. Point Loma Blvd/Sports Arena Blvd	15	Standard	No Obstructions	35	6	Fair	15	Exceed Standard	No Obstructions	35	7	Good	2	1	2	1	2	2	2	1
	W. Point Loma Blvd/Midway	Kemper St	8	Standard	No Obstructions	35	5	Fair	8	Standard	No Obstructions	35	5	Fair	1	1	2	1	1	1	2	1
	Kemper St	East Dr	7	Standard	No Obstructions	35	5	Fair	7	Standard	No Obstructions	35	5	Fair	1	1	2	1	1	1	2	1
	East Dr	Rosecrans St	7	Standard	No Obstructions	35	5	Fair	7	Standard	No Obstructions	35	5	Fair	1	1	2	1	1	1	2	1
	Rosecrans St	Pacific Hwy	13	Exceed Standard	No Obstructions	35	6	Fair	13	Standard	No Obstructions	35	5	Fair	1	2	2	1	1	1	2	1
Kurtz St	Hancock St	Rosecrans St	8	Standard	No Obstructions	30	6	Fair	8	Standard	No Obstructions	30	6	Fair	1	1	2	2	1	1	2	2
	Rosecrans St	Pacific Hwy	0	Standard	No Obstructions	30	4	Fair	0	Standard	No Obstructions	30	4	Fair	0	0	2	2	0	0	2	2
Hancock St	Sports Arena Blvd	Kurtz St	0	Standard	Obstructed	30	3	Poor	8	Standard	No Obstructions	30	6	Fair	0	1	0	2	1	1	2	2
	Kurtz St	Camino Del Rio West	8	Standard	Obstructed	30	4	Fair	8	Standard	No Obstructions	30	6	Fair	1	1	0	2	1	1	2	2
	Camino Del Rio West	Rosecrans St	0	Standard	No Obstructions	30	5	Fair	0	Standard	No Obstructions	30	5	Fair	0	1	2	2	0	1	2	2
	Old Town Ave	Witherby St	0	Standard	Obstructed	30	2	Poor	0	Standard	Obstructed	30	2	Poor	0	0	0	2	0	0	0	2
	Witherby St	Washington St	8	Standard	No Obstructions	30	6	Fair	16	Standard	No Obstructions	30	7	Good	1	1	2	2	2	1	2	2
Kettner Blvd	Washington St	Vine St	0	Exceed Standard	Obstructed	40	3	Poor	0	Exceed Standard	No Obstructions	40	5	Fair	0	2	0	1	0	2	2	1
	Vine St	Sassafras St	0	Standard	Obstructed	40	1	Poor	8	Standard	No Obstructions	40	5	Fair	0	0	0	1	1	1	2	1
	Sassafras St	Laurel St	8	Standard	No Obstructions	40	5	Fair	8	Standard	No Obstructions	40	5	Fair	1	1	2	1	1	1	2	1
Pacific Hwy	Sea World Dr	Taylor St	17	Standard	No Obstructions	45	5	Fair	17	Standard	No Obstructions	45	5	Fair	2	1	2	0	2	1	2	0
	Taylor St	Kurtz St	17	Exceed Standard	No Obstructions	45	6	Standard	17	Exceed Standard	No Obstructions	45	6	Fair	2	2	2	0	2	2	2	0
	Kurtz St	Sports Arena Blvd	17	Exceed Standard	No Obstructions	45	6	Standard	17	Exceed Standard	No Obstructions	45	6	Fair	2	2	2	0	2	2	2	0
	Sports Arena Blvd	Barnett Ave	17	Exceed Standard	No Obstructions	45	6	Standard	17	Exceed Standard	No Obstructions	45	6	Fair	2	2	2	0	2	2	2	0
	Barnett Ave	Harney Washington St	17	Exceed Standard	No Obstructions	55	6	Standard	17	Exceed Standard	No Obstructions	55	6	Fair	2	2	2	0	2	2	2	0
	Washington St	Sassafras St	17	Exceed Standard	No Obstructions	45	6	Standard	17	Exceed Standard	No Obstructions	45	6	Fair	2	2	2	0	2	2	2	0
	Sassafras St	Laurel St	17	Exceed Standard	No Obstructions	45	6	Standard	17	Exceed Standard	No Obstructions	45	6	Fair	2	2	2	0	2	2	2	0
Old Town								Poor						Poor								
Congress St	Taylor St	Twiggs St	8	Standard	No Obstructions	25	6	Fair	8	Standard	No Obstructions	25	6	Fair	1	1	2	2	1	1	2	2
	Twiggs St	Harney St	8	Standard	No Obstructions	25	6	Fair	8	Standard	No Obstructions	25	6	Fair	1	1	2	2	1	1	2	2
	Harney St	San Diego Ave/ Ampudia St	8	Standard	No Obstructions	25	6	Fair	8	Standard	No Obstructions	25	6	Fair	1	1	2	2	1	1	2	2
San Diego Ave	Twiggs St	Harney St	8	Standard	No Obstructions	25	6	Fair	8	Standard	No Obstructions	25	6	Fair	1	1	2	2	1	1	2	2
	Harney St	Ampudia St	8	Standard	No Obstructions	25	6	Fair	8	Standard	No Obstructions	25	6	Fair	1	1	2	2	1	1	2	2
	Ampudia St	Old Town Ave	8	Standard	No Obstructions	25	6	Fair	8	Standard	No Obstructions	25	6	Fair	1	1	2	2	1	1	2	2
	Old Town Ave	Hortensia St	13	Standard	No Obstructions	25	6	Fair	13	Standard	No Obstructions	25	6	Fair	1	1	2	2	1	1	2	2
Juan St	Taylor St	Twiggs St	8	Standard	No Obstructions	30	6	Fair	8	Standard	No Obstructions	30	6	Fair	1	1	2	2	1	1	2	2
	Twiggs St	Harney St	8	Standard	No Obstructions	30	6	Fair	8	Standard	No Obstructions	30	6	Fair	1	1	2	2	1	1	2	2
	Harney St	San Juan Rd	8	Standard	No Obstructions	30	6	Fair	8	Standard	No Obstructions	30	6	Fair	1	1	2	2	1	1	2	2
East-West								Poor						Poor								
Midway/Pacific Highway Corridor								Poor						Poor								
Channel Wy	W. Mission Bay Dr	Hancock St	8	Standard	No Obstructions	25	6	Fair	8	Standard	No Obstructions	25	6	Fair	1	1	2	2	1	1	2	2
Kemper St	Kenyon St	Midway Dr	8	Below Standard	No Obstructions	25	5	Fair	0	Standard	No Obstructions	25	5	Fair	1	0	2	2	0	1	2	2
	Midway Dr	Sports Arena Blvd	8	Standard	No Obstructions	25	6	Fair	8	Standard	No Obstructions	25	6	Fair	1	1	2	2	1	1	2	2
Camino Del Rio West	Rosecrans St	I-5/I-8 Ramps	0	Standard	No Obstructions	35	4	Fair	0	Standard	No Obstructions	35	4	Fair	0	1	2	1	0	1	2	1
Rosecrans St	Lytton St	Midway Dr	9	Exceed Standard	No Obstructions	35	6	Fair	10	Exceed Standard	No Obstructions	35	6	Fair	1	2	2	1	1	2	2	1
	Midway Dr	Sports Arena Blvd	15	Exceed Standard	No Obstructions	35	7	Good	15	Exceed Standard	No Obstructions	35	7	Good	2	2	2	1	2	2	2	1
	Sports Arena Blvd	Pacific Hwy/Taylor St	15	Exceed Standard	No Obstructions	35	7	Good	15	Exceed Standard	No Obstructions	35	7	Good	2	2	2	1	2	2	2	1
Washington St	Frontage Rd	Pacific St	0	Standard	No Obstructions	25	5	Fair	0	Standard	No Obstructions	25	5	Fair	0	1	2	2	0	1	2	2
	Pacific St	Hancock St	8	Standard	No Obstructions	25	6	Fair	0	Standard	No Obstructions	25	5	Fair	1	1	2	2	0	1	2	2
Vine St	California St	Kettner Blvd	16	Standard	No Obstructions	25	7	Good	0	Standard	No Obstructions	25	5	Fair	2	1	2	2	0	1	2	2
Sassafras St	Pacific Hwy	Kettner Blvd	0	Standard	No Obstructions	25	5	Fair	0	Standard	No Obstructions	25	5	Fair	0	1	2	2	0	1	2	2
Laurel St	Pacific Hwy	Kettner Blvd	0	Standard	No Obstructions	25	5	Fair	0	Standard	No Obstructions	25	5	Fair	0	1	2	2	0	1	2	2
Old Town								Poor						Poor								
Taylor St	Pacific Hwy/ Rosecrans St	Congress St	0	Standard	No Obstructions	35	4	Fair	0	Standard	No Obstructions	35	4	Fair	0	1	2	1	0	1	2	1
	Congress St	Juan St	0	Standard	No Obstructions	35	4	Fair	0	Standard	No Obstructions	35	4	Fair	0	1	2	1	0	1	2	1
	Juan St	Morena Blvd	0	Standard	No Obstructions	35	4	Fair	0	Standard	No Obstructions	35	4	Fair	0	1	2	1	0	1	2	1
	Morena Blvd	I-8 EB Ramps	0	Below Standard	Obstructed	35	1	Poor	0	Below Standard	Obstructed	35	1	Poor	0	0	0	1	0	0	0	1
Twiggs St	Congress St	San Diego Ave	0	Standard	No Obstructions	25	5	Fair	0	Standard	No Obstructions	25	5	Fair	0	1	2	2	0	1	2	2
	San Diego Ave	Juan St	8	Standard	No Obstructions	25	6	Fair	8	Standard	No Obstructions	25	6	Fair	1	1	2	2	1	1	2	2
Harney St	Congress St	San Diego Ave	8	Standard	No Obstructions	25	6	Fair	8	Standard	No Obstructions	25	6	Fair	1	1	2	2	1	1	2	2
	San Diego Ave	Juan St	8	Standard	No Obstructions	25	6	Fair	0	Standard	No Obstructions	25	5	Fair	1	1	2	2	0	1	2	2
Old Town Ave	Hancock St	Moore St	0	Standard	No Obstructions	25	5	Fair	0	Standard	No Obstructions	25	5	Fair	0	1	2	2	0	1	2	2
	Moore St	San Diego Ave	0	Standard	No Obstructions	25	5	Fair	0	Standard	No Obstructions	25	5	Fair	0	1	2	2	0	1	2	2

Features 3.1 7.1
Grade 3.1 6.1

Intersection

	Intersection	Control	Physical	Ops	ADA	Legs	Score	Grade	Control	Physical	Ops	ADA	Control	Physical	Ops	ADA	Legs	Score	Grade	Control	Physical	Ops	ADA
1	1: Barnett Ave/Lytton St & Rosecrans St.	Signal	0	0	No	4	2	Poor	2	0	0	0	Signal	8		Yes	4	6	Fair	2	2	0	2
2	2: Midway Dr/W Mission Bay Dr & I-8 WB Off Ramp	Signal	0	0	Yes	3	4	Fair	2	0	0	2	Signal	6		Yes	3	6	Fair	2	2	0	2
3	3: W Mission Bay Dr & Channel Way	SSSC	0	0	No	3	1	Poor	1	0	0	0	SSSC	6		Yes	3	5	Fair	1	2	0	2
4	4: Midway Dr/W Mission Bay Dr & Sports Arena	Signal	0	0	No	4	2	Poor	2	0	0	0	Signal	8		Yes	4	6	Fair	2	2	0	2
	Midway Dr & Duke Street	Signal	0	0	No	3	2	Poor	2	0	0	0	Signal	6		Yes	3	6	Fair	2	2	0	2
5	5: Midway Dr & Kemper St/Kemper Street	Signal	3	0	No	4	2	Poor	2	0	0	0	Signal	8		Yes	4	6	Fair	2	2	0	2
	Midway Dr & Fodam Street	Signal	0	0	No	4	2	Poor	2	0	0	0	Signal	8		Yes	4	6	Fair	2	2	0	2
	Midway Dr & Wing Street	Signal	0	0	No	3	2	Poor	2	0	0	0	Signal	6		Yes	3	6	Fair	2	2	0	2
6	6: Midway Dr & East Drive	Signal	0	0	No	3	2	Poor	2	0	0	0	Signal	6		Yes	3	6	Fair	2	2	0	2
	Midway Drive & Riely Street	SSSC	0	0	No	3	1	Poor	1	0	0	0	SSSC	6		Yes	3	5	Fair	1	2	0	2
	Midway Drive & Gaines Street	SSSC	0	0	No	3	1	Poor	1	0	0	0	SSSC	6		Yes	3	5	Fair	1	2	0	2
7	7: Midway Dr & Rosecrans St.	Signal	0	0	No	4	2	Poor	2	0	0	0	Signal	8		Yes	4	6	Fair	2	2	0	2
8	8: Midway Dr & Charles Lindbergh Parkway	Signal	N/A				4	Fair	2	2	0	0	Signal	8		Yes	4	6	Fair	2	2	0	2
9	9: Midway Dr & Enterprise St	SSSC	0	0	No	3	1	Poor	1	0	0	0	SSSC	8		Yes	3	5	Fair	1	2	0	2
10	10: Barnett Ave & Midway Dr	Signal	3	0	No	3	3	Poor	2	1	0	0	Signal	8		Yes	3	6	Fair	2	2	0	2
11	11: Sports Arena & Hancock Street	Signal	2	0	Yes	3	4	Fair	2	0	0	2	Signal	8		Yes	3	6	Fair	2	2	0	2
12	12: Sports Arena & Kemper Street	Signal	0	0	No	4	2	Poor	2	0	0	0	Signal	8		Yes	4	6	Fair	2	2	0	2
13	13: Sports Arena & Ralphs Driveway/Frontier Street	Signal	1	0	No	4	2	Poor	2	0	0	0	Signal	8		Yes	4	6	Fair	2	2	0	2
#VALUE!	Sports Arena Drive / Target Driveway	SSSC	0	0	No	3	1	Poor	1	0	0	0	SSSC	6		Yes	3	5	Fair	1	2	0	2
14	14: Sports Arena & East Drive/Greenwood Street	Signal	0	0	No	3	2	Poor	2	0	0	0	Signal	6		Yes	3	6	Fair	2	2	0	2
15	15: Rosecrans St/Sports Arena & Rosecrans St./Camino Del Rio W	Signal	0	0	No	5	2	Poor	2	0	0	0	Signal	10		Yes	5	6	Fair	2	2	0	2
16	16: Sports Arena Bl & Charles Lindbergh Parkway	Signal	N/A				4	Fair	2	2	0	0	Signal	8		Yes	4	6	Fair	2	2	0	2
17	17: Pacific Highway & Sports Arena Bl	Signal	N/A				4	Fair	2	2	0	0	Signal	8		Yes	4	6	Fair	2	2	0	2
18	18: Kemper Street & Kurtz St & Hancock/Hancock St	SSSC	0	0	No	3	1	Poor	1	0	0	0	SSSC	6		Yes	3	5	Fair	1	2	0	2
#VALUE!	Kurtz Street / Sherman Street	AWSC	0	0	No	3	1	Poor	1	0	0	0	AWSC	6		Yes	3	5	Fair	1	2	0	2
#VALUE!	Kurtz Street / Greenwood Street	SSSC	0	0	No	3	1	Poor	1	0	0	0	SSSC	6		Yes	3	5	Fair	1	2	0	2
#VALUE!	Kurtz Street / Riely Street	SSSC	0	0	No	3	1	Poor	1	0	0	0	SSSC	6		Yes	3	5	Fair	1	2	0	2
19	19: Kurtz/Kurtz St & Camino Del Rio W	Signal	0	0	No	4	2	Poor	2	0	0	0	Signal	8		Yes	4	6	Fair	2	2	0	2
20	20: Kurtz St/Kurtz & Rosecrans St	Signal	2	0	No	4	2	Poor	2	0	0	0	Signal	8		Yes	4	6	Fair	2	2	0	2
#VALUE!	Kurtz Street / Smith Street	SSSC	0	0	No	3	1	Poor	1	0	0	0	SSSC	6		Yes	3	5	Fair	1	2	0	2
21	21: Pacific Highway & Kurtz St	SSSC	0	0	Yes	3	3	Poor	1	0	0	2	Signal	6		Yes	3	6	Fair	2	2	0	2
22	22: Hancock & Channel Way	SSSC	0	0	No	3	1	Poor	1	0	0	0	SSSC	6		Yes	3	5	Fair	1	2	0	2
#VALUE!	Hancock Street / Hicock Street	SSSC	0	0	No	3	1	Poor	1	0	0	0	SSSC	6		Yes	3	5	Fair	1	2	0	2
#VALUE!	Hancock Street / Sherman Street	AWSC	0	0	No	4	1	Poor	1	0	0	0	AWSC	6		Yes	4	4	Poor	1	1	0	2
#VALUE!	Hancock Street / Greenwood Street	SSSC	1	0	Yes	4	3	Poor	1	0	0	2	SSSC	8		Yes	4	5	Fair	1	2	0	2
23	23: Hancock St & Camino Del Rio W	Signal	0	0	No	5	2	Poor	2	0	0	0	Signal	10		Yes	5	6	Fair	2	2	0	2
#VALUE!	Hancock Street & Gains Street	SSSC	0	0	No	4	1	Poor	1	0	0	0	SSSC	8		Yes	4	5	Fair	1	2	0	2
24	24: Rosecrans St & Hanccok Street	SSSC	0	0	No	3	1	Poor	1	0	0	0	SSSC	6		Yes	3	5	Fair	1	2	0	2
25	25: Hancock St & Old Town St	AWSC	0	0	No	3	1	Poor	1	0	0	0	AWSC	6		Yes	3	5	Fair	1	2	0	2
26	26: Hancock St & Witherby St	AWSC	0	0	No	3	1	Poor	1	0	0	0	AWSC	6		Yes	3	5	Fair	1	2	0	2
#VALUE!	Hancock Street & Noell Street	AWSC	0	0	No	4	1	Poor	1	0	0	0	AWSC	8		Yes	4	5	Fair	1	2	0	2
#VALUE!	Hancock Street & I-5 SB Ramp	SSSC	0	0	No	3	1	Poor	1	0	0	0	SSSC	6		Yes	3	5	Fair	1	2	0	2
27	27: Hancock St & Washington St	Signal	0	0	No	4	2	Poor	2	0	0	0	Signal	8		Yes	4	6	Fair	2	2	0	2
#VALUE!	Hancock Street & Emory Street	SSSC	0	0	Yes	3	3	Poor	1	0	0	2	SSSC	6		Yes	3	5	Fair	1	2	0	2
#VALUE!	Hancock Street & California Street	SSSC	0	0	Yes	3	3	Poor	1	0	0	2	SSSC	6		Yes	3	5	Fair	1	2	0	2
#VALUE!	Hancock Street & Chalmers Street	SSSC	0	0	Yes	3	3	Poor	1	0	0	2	SSSC	6		Yes	3	5	Fair	1	2	0	2
#VALUE!	Hancock Street & Walnut Avenue	SSSC	0	0	No	3	1	Poor	1	0	0	0	SSSC	6		Yes	3	5	Fair	1	2	0	2
28	28: Kettner Bl/Hancock St & Vine St	SSSC	0	0	No	3	1	Poor	1	0	0	0	SSSC	6		Yes	3	5	Fair	1	2	0	2
29	29: Kettner Blvd/Kettner Bl & Sassafras St	Signal	0	0	No	4	2	Poor	2	0	0	0	Signal	8		Yes	4	6	Fair	2	2	0	2
#VALUE!	Kettner Boulevard / Redwood Street	SSSC	0	0	No	3	1	Poor	1	0	0	0	SSSC	6		Yes	3	5	Fair	1	2	0	2
#VALUE!	Kettner Boulevard / Palm Street	SSSC	0	0	No	3	1	Poor	1	0	0	0	SSSC	6		Yes	3	5	Fair	1	2	0	2
#VALUE!	Kettner Boulevard / Olive Street	SSSC	0	0	No	4	1	Poor	1	0	0	0	SSSC	8		Yes	4	5	Fair	1	2	0	2
#VALUE!	Kettner Boulevard / Maple Street	SSSC	0	0	No	3	1	Poor	1	0	0	0	SSSC	6		Yes	3	5	Fair	1	2	0	2
30	30: Kettner Blvd & W Laurel St	Signal	0	0	No	4	2	Poor	2	0	0	0	Signal	8		Yes	4	6	Fair	2	2	0	2
31	31: Pacific Highway & Barnett Ave	Signal	N/A				4	Fair	2	2	0	0	Signal	6		Yes	3	6	Fair	2	2	0	2
#VALUE!	Pacific Highway & Witherby Street	SSSC	0	0	No	4	1	Poor	1	0	0	0	SSSC	8		Yes	4	5	Fair	1	2	0	2
32	32: Pacific Highway NB Frontage Road & Washington St	Signal	0	0	No	4	2	Poor	2	0	0	0	Signal	8		Yes	4	6	Fair	2	2	0	2
33	33: Washington St & Pacific Highway SB	Signal	0	0	No	4	2	Poor	2	0	0	0	Signal	8		Yes	4	6	Fair	2	2	0	2
34	34: Pacific Highway & Sassafras St	Signal	1	0	No	4	2	Poor	2	0	0	0	Signal	8		Yes	4	6	Fair	2	2	0	2
#VALUE!	Pacific Highway & Palm Street	Signal	0	0	No	4	2	Poor	2	0	0	0	Signal	8		Yes	4	6	Fair	2	2	0	2
35	35: Pacific Highway & W Laurel St	Signal	0	1	Yes	4	4	Fair	2	0	0	2	Signal	8		Yes	4	6	Fair	2	2	0	2
36	36: Pacific Highway & Rosecrans St/Taylor St	Signal	0	0	Yes	4	4	Fair	2	0	0	2	Signal	8		Yes	4	6	Fair	2	2	0	2
37	37: Moore St & Old Town St	Signal	0	0	No	4	2	Poor	2	0	0	0	Signal	8		Yes	4	6	Fair	2	2	0	2
38	38: Congress St & Taylor St	Signal	0	0	Yes	3	4	Fair	2	0	0	2	Signal	6		Yes	3	6	Fair	2	2	0	2
#VALUE!	Congress Street & Old Town Station Entrance	SSSC	0	0	No	3	1	Poor	1	0	0	0	SSSC	6		Yes	3	5	Fair	1	2	0	2
#VALUE!	Congress Street & Old Town Station Exit	Signal	1	0	No	3	2	Poor	2	0	0	0	Signal	8		Yes	3	6	Fair	2	2	0	2
#VALUE!	Congress Street & Mason Street	SSSC	0	0	No	3	1	Poor	1	0	0	0	SSSC	6		Yes	3	5	Fair	1	2	0	2
39	39: Congress St & Twiggs St	AWSC	0	0	No	4	1	Poor	1	0	0	0	AWSC	8		Yes	4	5	Fair	1	2	0	2
40	40: Congress St & Harney St	AWSC	0	0	No	4	1	Poor	1	0	0	0	AWSC	8		Yes	4	5	Fair	1	2	0	2
#VALUE!	Congress Street & Conde Street	SSSC	5	0	No	4	2	Poor	1	1	0	0	SSSC	8		Yes	4	5	Fair	1	2	0	2
#VALUE!	Congress Street & Arista Street	SSSC	0	0	No	3	1	Poor	1	0	0	0	SSSC	6		Yes	3	5	Fair	1	2	0	2
41	41: San Diego Ave & Congress St	SSSC	0	0	No	5	1	Poor	1	0	0	0	SSSC	10		Yes	5	5	Fair	1	2	0	2
#VALUE!	San Diego Avenue & Arista	SSSC	1	0	No	3	1	Poor	1	0	0	0	SSSC	8		Yes	3	5	Fair	1	2	0	2
#VALUE!	San Diego Avenue & Linwood Street	SSSC	0	0	No	3	1	Poor	1	0	0	0	SSSC	6		Yes	3	5	Fair	1	2	0	2
#VALUE!	San Diego Avenue & Conde Street	AWSC	0	0	No	4	1	Poor	1	0	0	0	AWSC	8		Yes	4	5	Fair	1	2	0	2
42	42: San Diego Ave & Twiggs St	AWSC	0	0	No	3	1	Poor	1	0	0	0	AWSC	6		Yes	3	5	Fair	1	2	0	2
43	43: San Diego Ave & Harney St	AWSC	1	0	No	4	1	Poor	1	0	0	0	AWSC	9		Yes	4	5	Fair	1	2	0	2
44	44: San Diego Ave & Old Town St	Signal	0	0	No	4	2	Poor	2	0	0	0	Signal	8		Yes	4	6	Fair	2	2	0	2
45	45: Juan St & Taylor St	Signal	1	0	Yes	3	4	Fair	2	0	0	2	Signal			Yes	3	4	Poor	2	0	0	2
46	46: Juan St & Twiggs St	AWSC	0	0	No	4	1	Poor	1	0	0	0	AWSC	8		Yes	4	5	Fair	1	2	0	2

47	47: Juan St & Harney St	AWSC	1	0 No	4	1 Poor	1	0	0	0	AWSC	8	Yes	4	5 Fair	1	2	0	2
48		Signal	1	0 Yes	3	4 Fair	2	0	0	2	Signal	8	Yes	3	6 Fair	2	2	0	2
61	61: Kurtz St & Frontier Street	SSSC	0		4	1 Poor	1	0	0	0	SSSC	8	Yes	4	5 Fair	1	2	0	2
63	63: Kurtz St & Charles Lindbergh Parkway	Signal	0		4	2 Poor	2	0	0	0	Signal	8	Yes	4	6 Fair	2	2	0	2
64	64: Barnett Ave & Dutch Flats Parkway	Signal	0		4	2 Poor	2	0	0	0	Signal	8	Yes	4	6 Fair	2	2	0	2
65	65: Midway Dr & Dutch Flats Parkway	Signal	0		4	2 Poor	2	0	0	0	Signal	8	Yes	4	6 Fair	2	2	0	2
66	66: Dutch Flats Parkway & Sports Arena Bl	Signal	0		4	2 Poor	2	0	0	0	Signal	8	Yes	4	6 Fair	2	2	0	2

Appendix G
Peak Hour Arterial Analysis Worksheets

Arterial Level of Service: EB Camino Del Rio West

Cross Street	Arterial Class	Flow Speed	Running Time	Signal Delay	Travel Time (s)	Dist (mi)	Arterial Speed	Arterial LOS
Kurtz	IV	35	16.2	45.1	61.3	0.10	5.8	F
Hancock St	IV	35	13.3	13.5	26.8	0.08	10.8	D
Total	IV		29.5	58.6	88.1	0.18	7.3	E

Arterial Level of Service: WB Camino Del Rio West

Cross Street	Arterial Class	Flow Speed	Running Time	Signal Delay	Travel Time (s)	Dist (mi)	Arterial Speed	Arterial LOS
Hancock St	III	35	24.3	67.4	91.7	0.20	7.9	F
Kurtz St	III	35	10.9	1.1	12.0	0.08	24.2	B
Sports Arena Blvd	III	35	13.2	41.7	54.9	0.10	6.4	F
Total	III		48.4	110.2	158.6	0.38	8.6	F

Arterial Level of Service: NB Midway Drive

Cross Street	Arterial Class	Flow Speed	Running Time	Signal Delay	Travel Time (s)	Dist (mi)	Arterial Speed	Arterial LOS
Dutch Flats Parkway	III	35	17.1	41.3	58.4	0.13	8.2	F
Charles Lindbergh Pa	III	35	25.2	12.9	38.1	0.21	19.8	C
Rosecrans St	III	35	19.8	34.2	54.0	0.15	10.3	E
East Drive	III	35	22.9	6.9	29.8	0.19	23.0	C
Kemper Street	III	35	39.9	22.6	62.5	0.33	19.1	C
Duke Street	III	35	21.1	9.8	30.9	0.18	20.5	C
Sports Arena Blvd	III	35	15.0	51.4	66.4	0.11	6.0	F
Total	III		161.0	179.1	340.1	1.31	13.8	E

Arterial Level of Service: SB Midway Drive

Cross Street	Arterial Class	Flow Speed	Running Time	Signal Delay	Travel Time (s)	Dist (mi)	Arterial Speed	Arterial LOS
Duke Street	III	35	15.0	23.5	38.5	0.11	10.4	E
Kemper St	III	35	21.1	14.7	35.8	0.18	17.7	D
East Drive	III	35	39.9	8.1	48.0	0.33	24.9	B
Rosecrans St	III	35	22.9	32.7	55.6	0.19	12.3	E
Charles Lindbergh Pa	III	35	19.8	4.4	24.2	0.15	23.0	C
Dutch Flats Parkway	III	35	25.2	35.4	60.6	0.21	12.5	E
Barnett Ave	III	35	17.1	28.6	45.7	0.13	10.5	E
Total	III		161.0	147.4	308.4	1.31	15.3	D

Arterial Level of Service: NB Pacific Highway

Cross Street	Arterial Class	Flow Speed	Running Time	Signal Delay	Travel Time (s)	Dist (mi)	Arterial Speed	Arterial LOS
Grape St	II	30	11.6	19.2	30.8	0.08	9.6	F
Hawthorne St	II	30	10.2	26.6	36.8	0.07	6.5	F
W Laurel St	II	32	34.3	49.0	83.3	0.27	11.7	F
Sassafras St	II	45	43.0	33.4	76.4	0.49	23.0	C
Witherby St	II	47	43.1	39.6	82.7	0.56	24.4	C
Barnett Ave	II	55	14.3	1.6	15.9	0.15	33.3	B
Sports Arena Blvd	II	45	17.4	0.8	18.2	0.16	31.6	B
Kurtz St	II	45	20.5	8.4	28.9	0.19	23.4	C
Taylor St	II	45	33.2	31.4	64.6	0.35	19.3	D
Total	II		227.6	210.0	437.6	2.31	19.0	D

Arterial Level of Service: SB Pacific Highway

Cross Street	Arterial Class	Flow Speed	Running Time	Signal Delay	Travel Time (s)	Dist (mi)	Arterial Speed	Arterial LOS
Rosecrans St	II	45	38.8	27.2	66.0	0.41	22.5	C
Kurtz St	II	45	33.2	25.1	58.3	0.35	21.3	D
Sports Arena Blvd	II	45	20.5	18.9	39.4	0.19	17.2	D
Barnett Ave	II	45	17.4	30.8	48.2	0.16	11.9	F
Witherby St	II	55	14.3	20.0	34.3	0.15	15.4	E
Washington St	II	49	41.4	27.9	69.3	0.56	29.1	B
Sassafras St	II	43	40.6	16.7	57.3	0.45	28.0	B
W Laurel St	II	45	43.0	72.1	115.1	0.49	15.3	E
Hawthorne St	II	32	34.3	60.6	94.9	0.27	10.3	F
Grape St	II	30	10.2	14.3	24.5	0.07	9.7	F
Total	II		293.7	313.6	607.3	3.09	18.3	D

Arterial Level of Service: EB Rosecrans St

Cross Street	Arterial Class	Flow Speed	Running Time	Signal Delay	Travel Time (s)	Dist (mi)	Arterial Speed	Arterial LOS
Hugo St	II	35	16.7	16.6	33.3	0.13	14.4	E
Nimitz Blvd	II	35	23.3	28.7	52.0	0.19	12.9	F
Laning Rd	II	40	29.3	35.2	64.5	0.29	16.0	E
Barnett Ave	II	40	85.6	51.2	136.8	0.95	25.0	C
Midway Drive	II	40	45.5	33.8	79.3	0.49	22.2	C
Sports Arena Blvd	II	40	15.0	0.0	15.0	0.13	31.2	B
Kurtz St	II	35	11.9	21.8	33.7	0.10	10.2	F
Pacific Highway	II	35	29.1	22.7	51.8	0.24	17.0	E
Total	II		256.4	210.0	466.4	2.52	19.4	D

Arterial Level of Service: WB Rosecrans St

Cross Street	Arterial Class	Flow Speed	Running Time	Signal Delay	Travel Time (s)	Dist (mi)	Arterial Speed	Arterial LOS
Kurtz	II	35	29.1	13.0	42.1	0.24	20.9	D
Camino Del Rio West	II	35	11.9	87.7	99.6	0.10	3.4	F
Midway Drive	II	40	15.0	35.5	50.5	0.13	9.3	F
Lytton St	II	40	45.5	139.5	185.0	0.49	9.5	F
Laning Rd	II	40	85.6	9.9	95.5	0.95	35.9	A
Lowell St	II	40	29.3	79.2	108.5	0.29	9.5	F
Hugo St	II	35	23.3	29.0	52.3	0.19	12.9	F
Total	II		239.7	393.8	633.5	2.38	13.6	E

Arterial Level of Service: NB Sports Arena Blvd

Cross Street	Arterial Class	Flow Speed	Running Time	Signal Delay	Travel Time (s)	Dist (mi)	Arterial Speed	Arterial LOS
Dutch Flats Parkway	III	25	23.3	14.0	37.3	0.11	10.2	E
Charles Lindbergh Pa	III	25	31.9	7.0	38.9	0.19	17.9	D
Greenwood Street	III	35	24.4	3.6	28.0	0.20	26.2	B
Frontier Street	III	35	19.6	28.2	47.8	0.15	11.5	E
Kemper Street	III	35	18.1	28.6	46.7	0.14	10.9	E
Hancock Street	III	35	22.7	21.9	44.6	0.19	15.3	D
Sports Arena Blvd	III	35	16.4	21.7	38.1	0.12	11.5	E
I-8 WB Off Ramp	III	35	36.1	15.4	51.5	0.30	21.1	C
Total	III		192.5	140.4	332.9	1.41	15.2	D

Arterial Level of Service: SB Sports Arena Blvd

Cross Street	Arterial Class	Flow Speed	Running Time	Signal Delay	Travel Time (s)	Dist (mi)	Arterial Speed	Arterial LOS
Sports Arena	III	35	36.1	101.8	137.9	0.30	7.9	F
Hancock Street	III	35	16.4	4.4	20.8	0.12	21.1	C
Kemper Street	III	35	22.7	27.2	49.9	0.19	13.6	E
Ralphs Driveway	III	35	18.1	18.8	36.9	0.14	13.8	E
East Drive	III	35	19.6	7.1	26.7	0.15	20.6	C
Rosecrans St	III	35	24.4	89.1	113.5	0.20	6.5	F
Charles Lindbergh Pa	III	25	29.0	6.3	35.3	0.16	16.4	D
Dutch Flats Parkway	III	25	31.9	3.2	35.1	0.19	19.8	C
Pacific Highway	III	25	23.3	60.7	84.0	0.11	4.5	F
Total	III		221.5	318.6	540.1	1.57	10.5	E

Arterial Level of Service: EB Taylor St

Cross Street	Arterial Class	Flow Speed	Running Time	Signal Delay	Travel Time (s)	Dist (mi)	Arterial Speed	Arterial LOS
Congress St	IV	35	15.7	11.8	27.5	0.10	12.5	D
Juan St	IV	35	11.2	13.7	24.9	0.07	9.8	D
	IV	35	18.3	8.5	26.8	0.13	17.5	C
Total	IV		45.2	34.0	79.2	0.29	13.4	C

Arterial Level of Service: WB Taylor St

Cross Street	Arterial Class	Flow Speed	Running Time	Signal Delay	Travel Time (s)	Dist (mi)	Arterial Speed	Arterial LOS
Morena Blvd	IV	35	17.7	23.7	41.4	0.11	9.3	D
	IV	35	18.3	13.9	32.2	0.13	14.6	C
Congress St	IV	35	11.2	7.8	19.0	0.07	12.9	D
Pacific Highway	IV	35	15.7	22.6	38.3	0.10	9.0	E
Total	IV		62.9	68.0	130.9	0.40	11.0	D

Arterial Level of Service: EB Camino Del Rio West

Cross Street	Arterial Class	Flow Speed	Running Time	Signal Delay	Travel Time (s)	Dist (mi)	Arterial Speed	Arterial LOS
Kurtz	IV	35	16.2	80.4	96.6	0.10	3.6	F
Hancock St	IV	35	13.3	10.8	24.1	0.08	12.1	D
Total	IV		29.5	91.2	120.7	0.18	5.3	F

Arterial Level of Service: WB Camino Del Rio West

Cross Street	Arterial Class	Flow Speed	Running Time	Signal Delay	Travel Time (s)	Dist (mi)	Arterial Speed	Arterial LOS
Hancock St	III	35	24.3	74.7	99.0	0.20	7.4	F
Kurtz St	III	35	10.9	1.2	12.1	0.08	24.0	B
Sports Arena Blvd	III	35	13.2	55.5	68.7	0.10	5.1	F
Total	III		48.4	131.4	179.8	0.38	7.6	F

Arterial Level of Service: NB Midway Drive

Cross Street	Arterial Class	Flow Speed	Running Time	Signal Delay	Travel Time (s)	Dist (mi)	Arterial Speed	Arterial LOS
Dutch Flats Parkway	III	35	15.9	46.5	62.4	0.12	6.8	F
Charles Lindbergh Pa	III	35	27.3	34.6	61.9	0.23	13.2	E
Rosecrans St	III	35	19.6	71.2	90.8	0.15	6.1	F
East Drive	III	35	22.9	11.4	34.3	0.19	20.0	C
Kemper Street	III	35	39.9	36.7	76.6	0.33	15.6	D
	III	35	21.6	16.1	37.7	0.17	16.1	D
Sports Arena Blvd	III	35	16.0	67.4	83.4	0.12	5.1	F
Total	III		163.2	283.9	447.1	1.31	10.5	E

Arterial Level of Service: SB Midway Drive

Cross Street	Arterial Class	Flow Speed	Running Time	Signal Delay	Travel Time (s)	Dist (mi)	Arterial Speed	Arterial LOS
	III	35	16.0	30.1	46.1	0.12	9.2	F
Kemper St	III	35	21.6	23.9	45.5	0.17	13.4	E
East Drive	III	35	39.9	10.6	50.5	0.33	23.7	C
Rosecrans St	III	35	22.9	58.6	81.5	0.19	8.4	F
Charles Lindbergh Pa	III	35	19.6	6.5	26.1	0.15	21.1	C
Dutch Flats Parkway	III	35	27.3	36.4	63.7	0.23	12.9	E
Barnett Ave	III	35	15.9	29.6	45.5	0.12	9.3	F
Total	III		163.2	195.7	358.9	1.31	13.1	E

Arterial Level of Service: NB Pacific Highway

Cross Street	Arterial Class	Flow Speed	Running Time	Signal Delay	Travel Time (s)	Dist (mi)	Arterial Speed	Arterial LOS
Grape St	II	30	11.6	41.7	53.3	0.08	5.5	F
Hawthorne St	II	30	10.2	21.0	31.2	0.07	7.6	F
W Laurel St	II	30	34.3	71.5	105.8	0.27	9.2	F
Sassafras St	II	45	42.6	89.8	132.4	0.48	13.2	E
Witherby St.	II	55	37.0	52.7	89.7	0.56	22.7	C
Barnett Ave	II	55	13.7	5.6	19.3	0.14	26.4	C
Sports Arena Blvd	II	45	17.4	3.3	20.7	0.16	27.8	C
Kurtz St	II	45	20.5	20.6	41.1	0.19	16.5	E
Taylor St	II	45	33.2	34.5	67.7	0.35	18.4	D
Total	II		220.5	340.7	561.2	2.30	14.8	E

Arterial Level of Service: SB Pacific Highway

Cross Street	Arterial Class	Flow Speed	Running Time	Signal Delay	Travel Time (s)	Dist (mi)	Arterial Speed	Arterial LOS
Rosecrans St	II	45	38.8	26.0	64.8	0.41	22.9	C
Kurtz St	II	45	33.2	46.5	79.7	0.35	15.6	E
Sports Arena Blvd	II	45	20.5	9.4	29.9	0.19	22.6	C
Barnett Ave	II	45	17.4	90.1	107.5	0.16	5.3	F
Witherby St.	II	55	13.7	20.6	34.3	0.14	14.8	E
Washington St	II	55	37.0	41.7	78.7	0.56	25.8	C
Sassafras St	II	45	39.7	16.1	55.8	0.44	28.1	B
W Laurel St	II	45	42.6	89.7	132.3	0.48	13.2	E
Hawthorne St	II	30	34.3	54.2	88.5	0.27	11.0	F
Grape St	II	30	10.2	12.2	22.4	0.07	10.6	F
Total	II		287.4	406.5	693.9	3.07	15.9	E

Arterial Level of Service: EB Rosecrans St

Cross Street	Arterial Class	Flow Speed	Running Time	Signal Delay	Travel Time (s)	Dist (mi)	Arterial Speed	Arterial LOS
Hugo St	II	35	16.7	20.5	37.2	0.13	12.9	F
Nimitz Blvd	II	35	23.3	119.7	143.0	0.19	4.7	F
Laning Rd	II	40	29.3	23.8	53.1	0.29	19.5	D
Barnett Ave	II	40	85.6	46.7	132.3	0.95	25.9	C
Midway Drive	II	40	45.5	91.6	137.1	0.49	12.9	F
Sports Arena Blvd	II	40	15.0	0.0	15.0	0.13	31.2	B
Kurtz St	II	35	12.0	36.1	48.1	0.10	7.2	F
Pacific Highway	II	35	29.1	30.9	60.0	0.24	14.7	E
Total	II		256.5	369.3	625.8	2.52	14.5	E

Arterial Level of Service: WB Rosecrans St

Cross Street	Arterial Class	Flow Speed	Running Time	Signal Delay	Travel Time (s)	Dist (mi)	Arterial Speed	Arterial LOS
Kurtz	II	35	29.1	14.0	43.1	0.24	20.4	D
Camino Del Rio West	II	35	12.0	116.6	128.6	0.10	2.7	F
Midway Drive	II	40	15.0	41.1	56.1	0.13	8.3	F
Lytton St	II	40	45.5	46.0	91.5	0.49	19.3	D
Laning Rd	II	40	85.6	9.1	94.7	0.95	36.2	A
Lowell St	II	40	29.3	102.8	132.1	0.29	7.8	F
Hugo St	II	35	23.3	11.7	35.0	0.19	19.2	D
Total	II		239.8	341.3	581.1	2.39	14.8	E

Arterial Level of Service: NB Sports Arena Blvd

Cross Street	Arterial Class	Flow Speed	Running Time	Signal Delay	Travel Time (s)	Dist (mi)	Arterial Speed	Arterial LOS
Dutch Flats Parkway	III	25	22.2	25.9	48.1	0.10	7.5	F
Charles Lindbergh Pa	III	25	32.2	14.7	46.9	0.19	15.0	D
Greenwood Street	III	35	24.4	6.6	31.0	0.20	23.6	C
Frontier Drive	III	35	19.5	25.1	44.6	0.15	12.3	E
Kemper Street	III	35	18.1	17.3	35.4	0.14	14.4	D
Hancock St.	III	35	22.7	15.0	37.7	0.19	18.0	C
Sports Arena Blvd	III	35	16.6	75.8	92.4	0.12	4.8	F
I-8 WB Off Ramp	III	35	36.1	86.5	122.6	0.30	8.8	F
Total	III		191.8	266.9	458.7	1.41	11.0	E

Arterial Level of Service: SB Sports Arena Blvd

Cross Street	Arterial Class	Flow Speed	Running Time	Signal Delay	Travel Time (s)	Dist (mi)	Arterial Speed	Arterial LOS
W Point Loma Blvd	III	35	36.1	95.6	131.7	0.30	8.2	F
Hancock St.	III	35	16.6	2.5	19.1	0.12	23.2	C
Kemper Street	III	35	22.7	49.6	72.3	0.19	9.4	F
Frontier Drive	III	35	18.1	10.9	29.0	0.14	17.6	D
East Drive	III	35	19.5	27.1	46.6	0.15	11.8	E
Rosecrans St	III	35	24.4	91.6	116.0	0.20	6.3	F
Charles Lindbergh Pa	III	25	29.7	15.4	45.1	0.16	13.2	E
Dutch Flats Parkway	III	25	32.2	8.4	40.6	0.19	17.3	D
Pacific Highway	III	25	22.2	50.7	72.9	0.10	5.0	F
Total	III		221.5	351.8	573.3	1.57	9.9	F

Arterial Level of Service: EB Taylor St

Cross Street	Arterial Class	Flow Speed	Running Time	Signal Delay	Travel Time (s)	Dist (mi)	Arterial Speed	Arterial LOS
Congress St	IV	35	15.7	21.3	37.0	0.10	9.3	D
Juan St	IV	35	11.2	25.5	36.7	0.07	6.7	F
	IV	35	18.3	12.1	30.4	0.13	15.5	C
Total	IV		45.2	58.9	104.1	0.29	10.2	D

Arterial Level of Service: WB Taylor St

Cross Street	Arterial Class	Flow Speed	Running Time	Signal Delay	Travel Time (s)	Dist (mi)	Arterial Speed	Arterial LOS
Morena Blvd	IV	35	17.7	23.2	40.9	0.11	9.4	D
	IV	35	18.3	12.7	31.0	0.13	15.2	C
Congress St	IV	35	11.2	6.5	17.7	0.07	13.8	C
Pacific Highway	IV	35	15.7	24.1	39.8	0.10	8.6	E
Total	IV		62.9	66.5	129.4	0.40	11.2	D

Mobility Report

Midway-Pacific Highway and Old Town Communities

May 2017

Prepared for:
City of San Diego

Prepared by:

CHEN RYAN
3900 Fifth Avenue, Suite 210
San Diego, CA 92103

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1.0 Introduction

1.1 Study Background and Purpose

This Mobility Report summarizes the physical and operational conditions of the Midway-Pacific Highway and Old Town communities' mobility systems as part of the City of San Diego's community plan update process. The evaluation culminates with an analysis of all travel modes under the horizon year 2035 Preferred Plan conditions. The report also describes key terms and methodologies utilized for conducting the analyses presented.

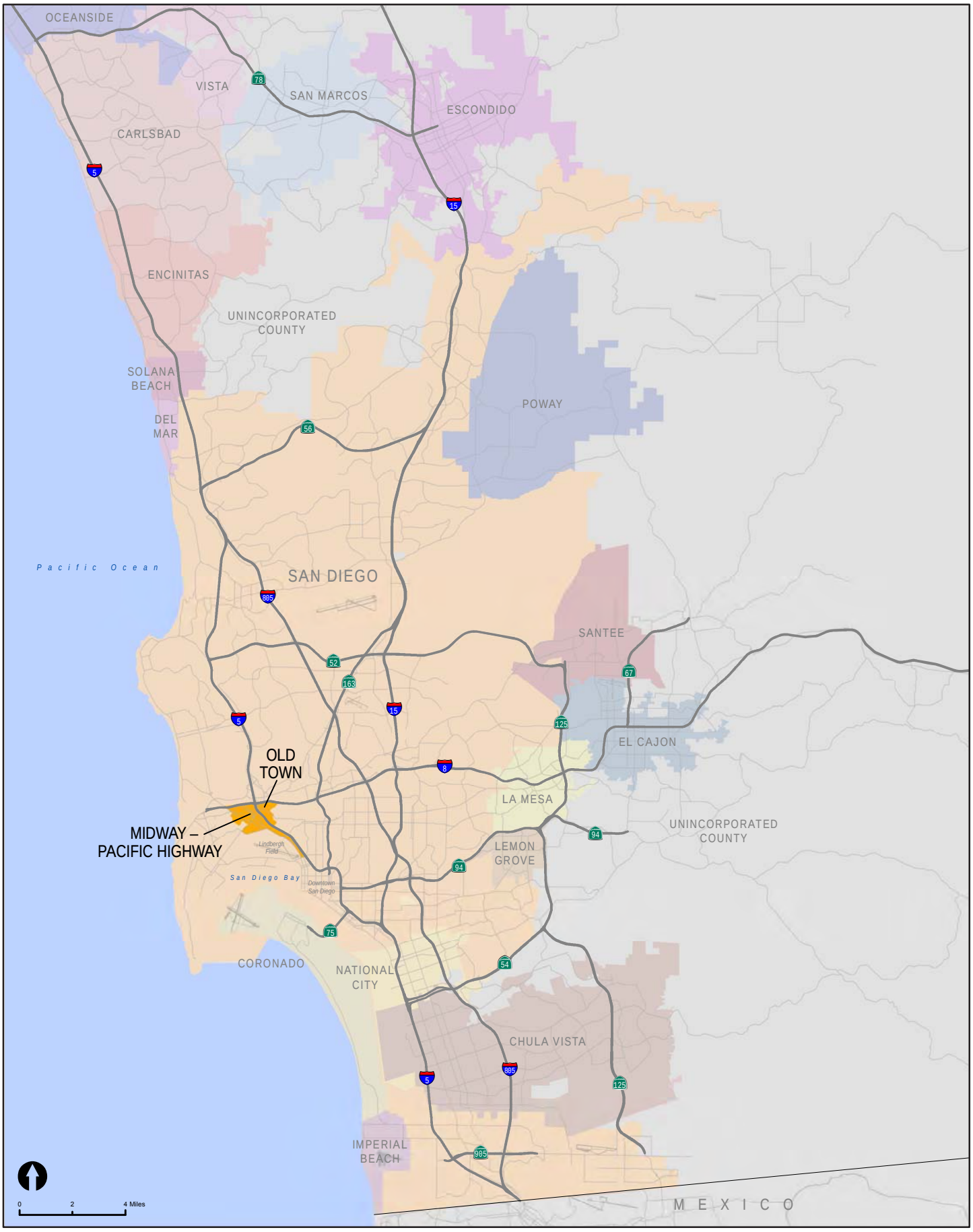
This Mobility Report is an update to the Midway-Pacific Highway Corridor Community Plan and Local Coastal Program Land Use Plan which was adopted by City Council in 1991, and the Old Town San Diego Community Plan, adopted in 1987.

The Preferred Plan is a strategy to address existing and forecast deficiencies related to mobility systems within the Midway-Pacific Highway and Old Town communities. The mobility networks are comprised of roadway and freeway systems, pedestrian and bicycle infrastructure, and public transit. Each of these transportation modes is discussed in the following chapters.

1.2 Study Location

The Midway-Pacific Highway and Old Town communities are located north of Downtown San Diego. The communities are both bound by Interstate 8 along the northern edge. Interstate 5 divides the communities, forming a north-south running boundary for each community. The Midway-Pacific Highway Community is bound by the Peninsula community and Barnett Avenue to west; and the Marine Corps Recruit Depot San Diego, the San Diego International Airport, and Laurel Street to the south. The Old Town Community is bound by Uptown and Mission Hills to the south and east.

Figure 1-1 displays the Midway-Pacific Highway and Old Town communities within the region.



Midway-Pacific Highway and Old Town Community Plan Update

CHEN RYAN

Figure 1-1
Midway-Pacific Highway and Old Town within the Region

Midway-Pacific Highway Community

The Midway-Pacific Highway community is situated north of Downtown San Diego and between the Old Town and Peninsula communities. The community encompasses approximately 800 acres of mostly flatland and is comprised of two basic elements: the central Midway area and the narrow, linear-shaped Pacific Highway Corridor.

Central Midway has an urbanized commercial core containing numerous shopping centers and institutional facilities which cater to the commercial needs of nearby residential and visitor populations. The area is characterized by wide streets, flat topography, and a varied mixture of flat-roofed large and small commercial buildings. The Pacific Highway Corridor, between Interstate 5 and Lindbergh Field, contains some of the City's oldest industrial areas. The corridor is defined by large scale buildings and unscreened commercial parking lots in the southern portion, and a group of smaller scale, low lying industrial buildings located between Witherby Street and Washington Street in the northern portion.

There are a few multifamily residential complexes located in the western portion of the community, adjacent to the Point Loma area. The planning area is generally characterized by a variety of commercial retail activities, and wide, multi-directional traffic intersections.

Since the 1960s, the Midway area has experienced an irregular development pattern, resulting in a lack of clear visual form both in terms of orientation and community legibility. The resulting diversity in development patterns, architectural styles, setbacks, and other development criteria has contributed to a disjointed and sporadic community image, where few buildings have compatibility or any functional relationship to each other and the surrounding neighborhood. Due to the area's low land valuations, high traffic utilization and inadequate zoning and development regulation, many auto-oriented commercial uses have located throughout the industrially zoned portions of the community. Much of the commercial development, including retail oriented auto sales and services, adult entertainment, and drive-thru restaurants, now exhibit a general lack of adequate parking, landscaping, and other commercial development amenities.

Old Town

The Old Town community covers 230 acres and is bound on the north by Interstate 8 and Mission Valley, on the west by Interstate 5 and Midway, and on the south and east by the Uptown/ Mission Hills hillsides.

Old Town San Diego, considered the "birthplace" of California, is the site of the first permanent Spanish Mission and settlement in California. The first Spanish Mission and Presidio were built on a hillside overlooking what is currently known as Old Town San Diego. At the base of the hill in the 1820's, a small Mexican community of adobe buildings was formed and by 1835 had attained the status of El Pueblo de San Diego.

In 1968, the State of California Department of Parks and Recreation established Old Town State Historic Park to preserve the rich heritage that characterized San Diego during the 1821 to 1872 period. The park includes a main plaza, exhibits, museums and living history demonstrations. Due to the historical nature and attractions within the community, Old Town San Diego is currently one of the region's largest tourist attractions. Within the community's central core (San Diego Avenue & Congress Street, between Twiggs Street and Ampudia Street) there are currently more than 150 shops, several restaurants, 17 museums, and historical sites.

There is a small number of residential neighborhoods located along the eastern, western and southern boundaries of the community.

1.3 Organization of the Report

The remainder of this Mobility Report is organized into the following chapters:

- *Chapter 2* describes the methodologies used to determine the study area and assess the pedestrian, transit, bicycle and vehicular systems.
- *Chapter 3* presents the Preferred Plan for the Midway-Pacific Highway community, including the development process, identification of existing community needs, and recommended improvements.
- *Chapter 4* presents the Preferred Plan for the Old Town community, including the development process, identification of existing community needs, and recommended improvements.
- *Chapter 5* provides an overview of the Transportation Demand Model Forecasting process utilized to project future travel patters under implementation of the Preferred Plan.
- *Chapter 6* concludes this document with the Preferred Plan analysis results for each mode. Additionally, Intelligent Transportation Systems (ITS), Transportation Demand Management (TDM) Systems, and Parking Management are described in this chapter.

2.0 Analysis Methodology

This chapter describes the methodologies used to determine the study area and assess the pedestrian, transit, bicycle and vehicular systems within the Midway-Pacific Highway and Old Town communities.

2.1 Selection of the Study Area

This section describes the process used to identify roadway segments and intersections for analysis.

2.1.1 Roadway Segments

Roadway segments were evaluated if one or more of the following circumstances applied:

- The roadway segment is an existing or planned circulation element roadway as identified in the Midway-Pacific Highway Corridor Community Plan and Local Coastal Program Land Use Plan (1991), or the Old Town San Diego Community Plan (1987).
- The roadway segment provides freeway access to/from the Midway-Pacific Highway or Old Town communities.
- The roadway segment is located outside of either study community, however, it may influence or impact the flow of transportation within either of the communities.

Based on the criteria listed above, Table 2.1 displays the roadway segments selected for analysis.

Table 2.1 Study Area Roadway Segments

ID	Roadway	From	To
North-South			
Midway Pacific Highway			
1	Lytton Street / Barnett Ave	Rosecrans St	Midway Dr
2	Midway Dr	W. Point Loma Blvd/Sports Arena Blvd	Kemper St
3		Kemper St	East Dr
4		East Dr	Rosecrans St
5		Rosecrans St	Barnett Ave
6	Sports Arena Blvd	I-8 WB Ramps	I-8 EB Ramps
7		I-8 EB Ramps	W. Point Loma Blvd
8		W. Point Loma Blvd/Midway Dr	Kemper St
9		Kemper St	East Dr
10		East Dr	Rosecrans St
11		Rosecrans St	Pacific Hwy
12	Kurtz St	Hancock St	Rosecrans St

Table 2.1 Study Area Roadway Segments

ID	Roadway	From	To
13	Kurtz St	Rosecrans St	Pacific Hwy
14	Hancock St	Sports Arena Blvd	Kurtz St
15		Kurtz St	Camino Del Rio West
16		Camino Del Rio West	Rosecrans St
17		Old Town Ave	Witherby St
18		Witherby St	Washington St
19	Kettner Blvd	Washington St	Vine St
20		Vine St	Sassafras St
21		Sassafras St	Laurel St
22	Pacific Hwy	Interstate-8	Taylor St
23		Taylor St	Kurtz St
24		Kurtz St	Sports Arena Blvd
25		Sports Arena Blvd	Barnett Ave
26		Barnett Ave	Washington St
27		Washington St	Sassafras St
28		Sassafras St	Laurel St
Old Town			
29	Congress St	Taylor St	Twiggs St
30		Twiggs St	Harney St
31		Harney St	San Diego Ave/ Ampudia St
32	San Diego Ave	Twiggs St	Conde St
33		Conde St	Ampudia St
34		Ampudia St	Old Town Ave
35		Old Town Ave	Hortensia St
36	Juan St	Taylor St	Twiggs St
37		Twiggs St	Harney St
38		Harney St	San Juan Rd
East-West			
Midway Pacific Highway			
39	Channel Wy	W. Mission Bay Dr	Hancock St
40	Kemper St	Kenyon St	Midway Dr
41		Midway Dr	Sports Arena Blvd
42		Sports Arena Blvd	Hancock St
43	Frontier Dr	Sports Arena Blvd	Kurtz St
44	Greenwood St	Sports Arena Blvd	Kurtz St
45	Camino Del Rio West	Rosecrans St	I-5/I-8 Ramps
46	Rosecrans St	Lytton St	Midway Dr
47		Midway Dr	Sports Arena Blvd
48	Rosecrans St	Sports Arena Blvd	Pacific Hwy/Taylor St

Table 2.1 Study Area Roadway Segments

ID	Roadway	From	To
49	Charles Lindbergh Pkwy	Midway Dr	Sports Arena Blvd
50		Sports Arena Blvd	Kurtz Street
51	Dutch Flats Pkwy	Barnett Avenue	Midway Dr
52		Midway Dr	Sports Arena Blvd
53	Barnett Ave	Midway Dr	Pacific Hwy
54	Washington St	Frontage Rd	Pacific St
55		Pacific St	Hancock St
56	Vine St	California St	Kettner Blvd
57	Sassafras St	Pacific Hwy	Kettner Blvd
58	Laurel St	Pacific Hwy	Kettner Blvd
Old Town			
59	Taylor St	Pacific Hwy/ Rosecrans St	Congress St
60		Congress St	Juan St
61		Juan St	Morena Blvd
62		Morena Blvd	I-8 EB Ramps
63	Twiggs St	Congress St	San Diego Ave
64		San Diego Ave	Juan St
65	Harney St	Congress St	San Diego Ave
66		San Diego Ave	Juan St
67	Old Town Ave	Hancock St	Moore St
68		Moore St	San Diego Ave

Source: Chen Ryan Associates (2016)

2.1.2 Intersections

Intersections were evaluated if one or more of the following circumstances applied:

- The intersection is comprised of a circulation element roadway intersecting with another circulation element roadway. This includes existing and future/planned circulation element roadways as identified in the Midway-Pacific Highway Corridor Community Plan and Local Coastal Program Land Use Plan (1991), or the Old Town San Diego Community Plan (1987).
- The intersection is at a freeway ramp interchange located within the Midway-Pacific Highway or Old Town communities or is a major gateway to either community.
- The intersection is a major intersection located outside of either community, however, it may influence or impact the flow of transportation within the communities.
- The intersection meets criteria used in previous studies, whereby both streets meet one of the following:
    - 4 lanes or greater

- 3 lanes and carries over 15,000 ADT
- 2 lanes and carries over 10,000 ADT

- Intersections at freeway access ramps.
- Significant intersections where travel time analysis is performed.

A total of 59 intersections were identified based on the criteria listed above, which include 11 intersections located outside the study communities. These intersections were added to the study area because of their proximity to the communities, and the likelihood that changes within the communities could directly affect traffic in/out of the communities. The 59 intersections include the following:

Midway-Pacific Highway

1. Lytton Street and Rosecrans Street
2. W. Mission Bay Drive and I-8 WB Off-Ramp
3. Sports Arena Boulevard and Channel Way
4. Midway Drive and Sports Arena/W. Point Loma Boulevard
5. Midway Drive and Kemper Street
6. Midway Drive and East Drive
7. Midway Drive and Rosecrans Street
8. Midway Drive and Charles Lindbergh Parkway
9. Midway Drive and Enterprise Street
10. Midway Drive and Barnett Avenue
11. Sports Arena Boulevard and Hancock Street
12. Sports Arena Boulevard and Kemper Street
13. Sports Arena Boulevard and Sports Arena Driveway
14. Sports Arena Boulevard and East Drive
15. Sports Arena Boulevard and Rosecrans Street
16. Sports Arena Boulevard and Charles Lindbergh Parkway
17. Sports Arena Boulevard and Pacific Highway
18. Kurtz Street and Hancock Street
19. Kurtz Street and Camino Del Rio West
20. Kurtz Street and Rosecrans Street
21. Kurtz Street and Pacific Highway
22. Hancock Street and Channel Way
23. Hancock Street and Camino Del Rio West
24. Hancock Street and Rosecrans Street
25. Hancock Street and Old Town Avenue
26. Hancock Street and Witherby Street
27. Hancock Street and Washington Street
28. Kettner Boulevard and Vine Street
29. Kettner Boulevard and Sassafras Street

30. Kettner Boulevard and West Laurel Street
31. Pacific Highway and Barnett Avenue
32. Pacific Highway and Washington Street @ Frontage Road
33. Pacific Highway and Washington Street
34. Pacific Highway and Sassafras Street
35. Pacific Highway and West Laurel Street

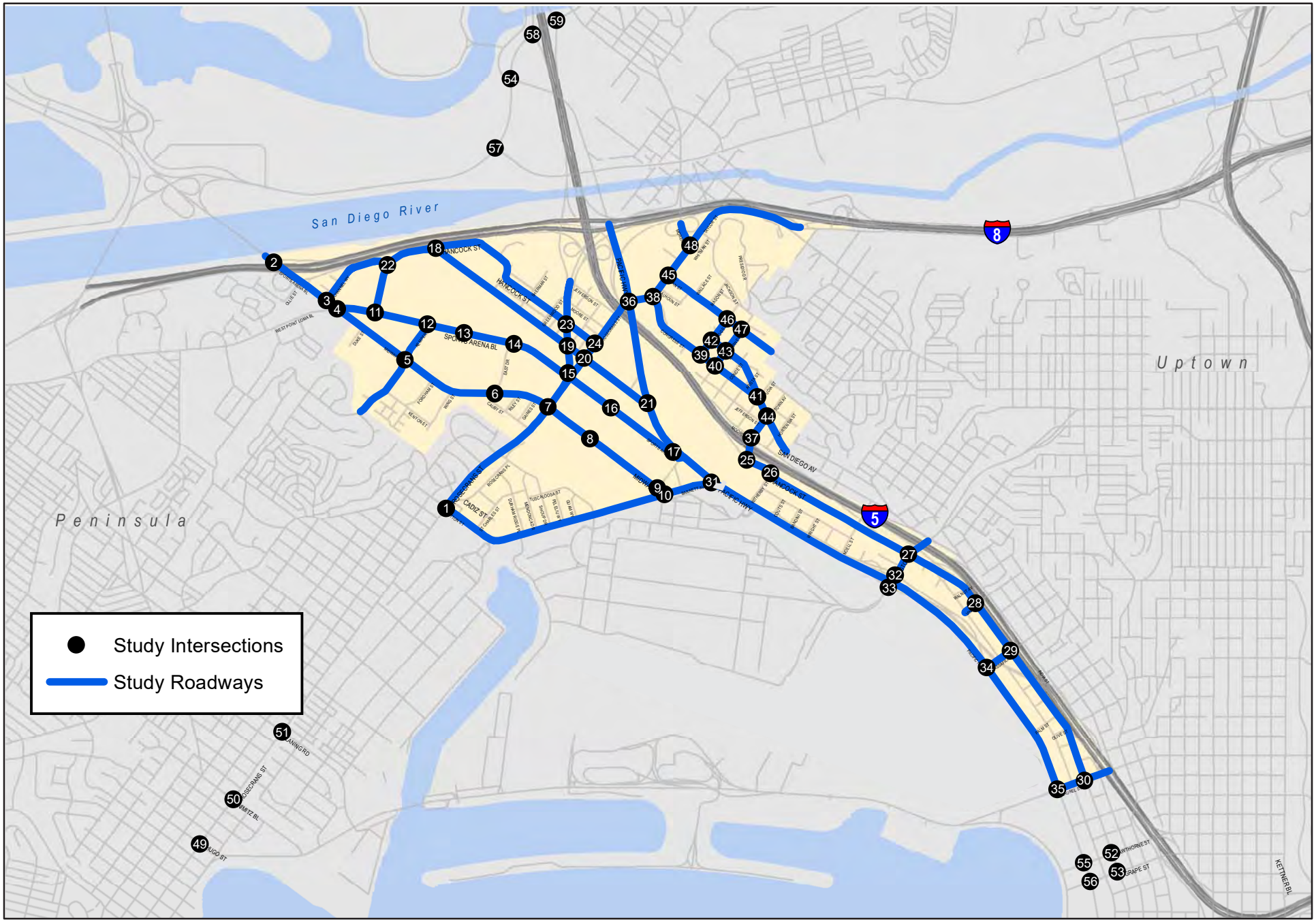
Old Town

36. Pacific Highway and Taylor Street
37. Moore Street and Old Town Avenue
38. Congress Street and Taylor Street
39. Congress Street and Twiggs Street
40. Congress Street and Harney Street
41. Congress Street and San Diego Avenue/Ampudia Street
42. San Diego Avenue and Twiggs Street
43. San Diego Avenue and Harney Street
44. San Diego Avenue and Old Town Avenue
45. Juan Street and Taylor Street
46. Juan Street and Twiggs Street
47. Juan Street and Harney Street
48. Morena Boulevard and Taylor Street

Intersections Outside of Study Communities

49. Hugo Street/N Harbor Drive and Rosecrans Street
50. Lowell Street/Nimitz Boulevard and Rosecrans Street
51. Kettner Boulevard and W Hawthorn Street
52. Kettner Boulevard and W Grape Street
53. Laning Road and Rosecrans Street
54. Pacific Highway and Sea World Drive
55. Pacific Highway and W Hawthorn Street
56. Pacific Highway and W Grape Street
57. Friars Road and Sea World Drive
58. I-5 SB Ramps and Sea World Drive
59. I-5 NB Ramps and Sea World Drive

Figure 2-1 displays the location of the 59 study intersections. As shown, this includes the 11 intersections located outside of the study communities.



Midway-Pacific Highway and
Old Town Community Plan Update

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Figure 2-1
Project Study Area

2.2 Vehicular Analysis

Analysis of the vehicular systems – roadways, intersections, and freeways – were prepared for this report in accordance with the City of San Diego and SANTEC/ITE Guidelines. Vehicular level of service (LOS) is a quantitative measure that represents the quality of service – or how well a transportation facility operates – as experienced by vehicular drivers. These conditions are generally described in terms of factors such as speed, travel time, freedom to maneuver, comfort, convenience, and safety. LOS A represents the best operating conditions from a driver's perspective, while LOS F represents the worst. Table 2.2 describes generalized definitions of vehicular LOS A through F as identified by the Highway Capacity Manual (2000).

Table 2.2 Vehicular Level of Service Definitions

LOS	Definition
A	Primarily free-flow operation. Vehicles are completely unimpeded in their ability to maneuver within the traffic stream. Controlled delay at the boundary intersections is minimal. The travel speed exceeds 85% of the base free-flow speed.
B	Reasonably unimpeded operation. The ability to maneuver within the traffic stream is only slightly restricted and control delay at the boundary intersections is not significant. The travel speed is between 67% and 85% of the base free-flow speed.
C	Stable operation. The ability to maneuver and change lanes at mid-segment locations may be more restricted than at LOS B. Longer queues at the boundary intersections may contribute to lower travel speeds. The travel speed is between 50% and 67% of the base free-flow speed.
D	Less stable condition in which small increases in flow may cause substantial increases in delay and decreases in travel speed. This operation may be due to adverse signal progression, high volume, or inappropriate signal timing at the boundary intersections. The travel speed is between 40% and 50% of the base free-flow speed.
E	Unstable operation and significant delay. Such operations may be due to some combination of adverse signal progression, high volume, and inappropriate signal timing at the boundary intersections. The travel speed is between 30% and 40% of the base free-flow speed.
F	Flow at extremely low speed. Congestion is likely occurring at the boundary intersections, as indicated by high delay and extensive queuing. The travel speed is 30% or less of the base free-flow speed. Also, LOS F is assigned to the subject direction of travel if the through movement at one or more boundary intersections have a volume-to-capacity ratio greater than 1.0.

Source: Highway Capacity Manual (2000)

2.2.1 Roadway Segment

Roadway segment level of service standards and thresholds provided the basis for analysis of arterial roadway segment performance. The analysis of roadway segment level of service is based on the functional classification of the roadway, the maximum capacity, roadway geometrics, and existing or forecast Average Daily Traffic (ADT) volumes.

Table 2.3 presents the roadway segment capacity and LOS standards utilized to analyze roadways evaluated in this report. These standards are generally used as long-range planning guidelines to determine the functional classification of roadways. The actual capacity of a roadway varies according to its physical and operational attributes. LOS D is considered acceptable for Mobility Element roadway segments in the City of San Diego. Often, a roadway segment operating at LOS

E or F based on theoretical capacity is found to operate acceptably in practice. In such cases, HCM arterial analysis may be conducted and utilized (or intersection analysis, if arterial analysis is not applicable) to provide a more accurate indication of LOS.

Table 2.3 City of San Diego Roadway Segment Daily Capacity and Level of Service Standards

Roadway Functional Classification	Level of Service				
	A	B	C	D	E
Expressway (6-lane)	< 30,000	< 42,000	< 60,000	< 70,000	< 80,000
Prime Arterial (6-lane)	< 25,000	< 35,000	< 50,000	< 55,000	< 60,000
Major Arterial (6-lane, divided)	< 20,000	< 28,000	< 40,000	< 45,000	< 50,000
Major Arterial (4-lane, divided)	< 15,000	< 21,000	< 30,000	< 35,000	< 40,000
Collector (4-lane w/ center left-turn lane)	< 10,000	< 14,000	< 20,000	< 25,000	< 30,000
Collector (3-lane w/ center left-turn lane)	< 7,500	< 10,500	< 15,000	< 19,000	< 22,500
Collector (4-lane w/o center lane)	< 5,000	< 7,000	< 10,000	< 13,000	< 15,000
Collector (2-lane w/ center left-turn lane)					
Collector (2-lane no fronting property)	< 4,000	< 5,500	< 7,500	< 9,000	< 10,000
Collector (2-lane w/ commercial fronting)	< 2,500	< 3,500	< 5,000	< 6,500	< 8,000
Collector (2-lane multi-family fronting)					
Sub-Collector (2-lane single-family)	-	-	< 2,200	-	-

Source: City of San Diego Traffic Impact Study Manual (1998)

Note: Bold numbers indicate the ADT thresholds for acceptable LOS.

2.2.2 Peak Hour Intersection

This section presents the methodologies used to perform peak hour intersection capacity analysis, for both signalized and unsignalized intersections. The following assumptions were utilized in conducting all intersection level of service analyses:

- Pedestrian Calls per Hour: Based on existing pedestrian counts.
- Heavy Vehicle Factor: A 2% heavy vehicle factor was assumed for all intersections within the study area.
- Peak Hour Factor: Based on existing peak hour counts.
- Signal Timing: Based on existing signal timing plans (as of November 2012).

Signalized Intersection Analysis

The signalized intersection analysis utilized in this study conforms to the operational analysis methodology outlined in 2000 Highway Capacity Manual (HCM), Transportation Research Board Special Report 209. This method defines LOS in terms of delay, or more specifically, average control delay per vehicle (sec/veh). The 2000 HCM methodology sets 1,900 passenger-cars per hour per lane (pcphpl) as the ideal saturation flow rate at signalized intersections based upon the minimum headway that can be sustained between departing vehicles at a signalized intersection. The service saturation flow rate, which reflects the saturation flow rate specific to the study facility, is determined by adjusting the ideal saturation flow rate for lane width, on-street parking, bus stops, pedestrian volume, traffic composition (or percentage of heavy vehicles), and shared

lane movements (e.g. through and right-turn movements sharing the same lane). The level of service criteria used for this technique are described in Table 2.4. The computerized analysis of intersection operations was performed utilizing the Synchro 8.0 (2000 HCM methodology) traffic analysis software (by Trafficware, 2011).

Table 2.4 Signalized intersection LOS – HCM Operational Analysis Method

Average Control Delay Per Vehicle (seconds)	Level of Service (LOS) Characteristics
≤10.0	*LOS A* occurs when the volume-to-capacity ratio is low and either progression is exceptionally favorable or the cycle length is very short. If it is due to favorable progression, most vehicles arrive during the green indication and travel through the intersection without stopping.
10.1 – 20.0	*LOS B* occurs when the volume-to-capacity ratio is low and either progression is highly favorable or the cycle length is short. More vehicles stop than with LOS A.
20.1 – 35.0	*LOS C* occurs when progression is favorable or the cycle length is moderate. The number of vehicles stopping is significant, although many vehicles still pass through the intersection without stopping.
35.1 – 55.0	*LOS D* occurs when the volume-to-capacity ratio is high and either progression is ineffective or the cycle length is long. Many vehicles stop and individual cycle failures are noticeable.
55.1 – 80.0	*LOS E* occurs when the volume-to-capacity ratio is high, progression is unfavorable, and the cycle length is long. Individual cycle failures are frequent.
>80.0	*LOS F* occurs when the volume-to-capacity ratio is very high, progression is very poor, and the cycle length is long. Most cycles fail to clear the queue.

Source: Highway Capacity Manual, Transportation Research Board Special Report 209 (2000)

Unsignalized Intersection Analysis

Unsignalized intersections, including two-way and all-way stop controlled intersections were analyzed using the *2000 HCM* unsignalized intersection analysis methodology. The Synchro 8.0 software supports this methodology and was utilized to produce LOS results. The LOS for a two-way stop controlled (TWSC) intersection is determined by the computed or measured control delay and is defined for each minor movement. The LOS for an all-way stop controlled (AWSC) intersection is determined by the computed or measured average control delay of all movements. Table 2.5 summarizes the level of service criteria for unsignalized intersections.

Table 2.5 Level of Service Criteria for Stop Controlled Unsignalized Intersections

Average Control Delay (sec/veh)	Level of Service
≤10.0	A
10.1 – 15.0	B
15.1 – 25.0	C
25.1 – 35.0	D
35.1 – 50.0	E
>50.0	F

Source: Highway Capacity Manual (2000)

The City of San Diego considers LOS D or better during the AM and PM peak hours to be an acceptable intersection level of service.

2.2.3 Freeway

The freeway level of service analysis followed procedures developed by Caltrans District 11. The procedure involves estimating a peak hour volume to capacity ratio (V/C). Peak hour volumes are estimated from the application of design hour ("K"), directional ("D"), and truck ("T") factors to average daily traffic (ADT) volumes). The base capacities were assumed to be 2,350 passenger-cars per hour per main lane (pc/h/ln) and 1,410 pc/h/ln for auxiliary lane. A 0.95 peak hour factor (PHF) was utilized for this analysis. The resulting V/C ratio was then compared to acceptable ranges of V/C values corresponding to the various levels of service for each facility classification, as shown in Table 2.6. The corresponding level of service represents an approximation of anticipated future freeway operating conditions in the peak direction of travel during the peak hour. LOS D or better was used in this study as the threshold for acceptable freeway operations based upon Caltrans and the SANDAG Regional Growth Management Strategy (RGMS) requirements.

Table 2.6 Caltrans District 11 Freeway Segment Level of Service Definitions

LOS	V/C	Congestion/Delay	Traffic Description
Used for freeways, expressways and conventional highways			
"A"	<0.41	None	Free flow.
"B"	0.42-0.62	None	Free to stable flow, light to moderate volumes.
"C"	0.63-0.79	None to minimal	Stable flow, moderate volumes, freedom to maneuver noticeably restricted.
"D"	0.80-0.92	Minimal to substantial	Approaches unstable flow, heavy volumes, very limited freedom to maneuver.
"E"	0.93-1.00	Significant	Extremely unstable flow, maneuverability and psychological comfort extremely poor.
Used for conventional highways			
"F"	>1.00	Considerable	Forced or breakdown flow. Delay measured in average travel speed (MPH). Signalized segments experience delays >60.0 seconds/vehicle.
Used for freeways and expressways			
"F0"	1.01–1.25	Considerable (0-1 hour delay)	Forced flow, heavy congestion, long queues form behind breakdown points, stop and go.
"F1"	1.26-1.35	Severe (1-2 hour delay)	Very heavy congestion, very long queues.
"F2"	1.36-1.45	Very severe (2-3 hour delay)	Extremely heavy congestion, longer queues, more numerous breakdown points, longer stop periods.
"F3"	>1.46	Extremely severe (3+ hours of delay)	Gridlock.

Source: SANTEC/ITE Guidelines for TIS in the San Diego Region

2.2.4 Ramp Metering Analysis

Ramp metering is a means of controlling the volume of traffic entering the freeway with the goal of improving freeway main lane traffic operations and flow. Freeway ramp meter analyses estimate peak hour queues and delays at freeway ramps by comparing existing volumes to the meter rate at the given location.

Meter rates, which represent the amount of vehicles permitted through the signal, onto the ramp and freeway, were obtained from Caltrans for use in the analysis. Ramp metering analyses to calculate delays at study area freeway ramps were conducted following the procedures outlined in the *City of San Diego Traffic Impact Study Manual (1998)*.

2.3 Multimodal Analysis

Recent planning efforts and legislative actions have redefined the way community transportation planning is carried out. An important unifying theme is to achieve a more balanced, multimodal transportation system that allows people of varying physical and economic conditions to accomplish daily activities without making a single-occupant vehicle trip. A balanced system will address many complex transportation issues such as traffic congestion, greenhouse gas emissions, community health, and economic vitality of a community.

Multimodal analyses are gaining attention among local and regional jurisdictions as one method of supporting progress toward these issues. This section describes the pedestrian, bicycle, and transit analysis methodologies used in this report.

2.3.1 Pedestrian Assessment

Three analyses were utilized to assess overall pedestrian mobility: 1) network connectivity; 2) facility quality; and 3) combined network connectivity and quality.

Pedestrian Connectivity Ratio

A pedestrian travelshed analysis was used to assess the level of connectivity provided from each Traffic Analysis Zone (TAZ) with pedestrian friendly land uses (residential, commercial, office or recreational). A 0.5 mile pedestrian network buffer was drawn around each TAZ within the community containing pedestrian friendly land uses. That area was then compared to the area of a 0.5 mile as-the-crow-flies buffer (502.7 acres) to develop a Pedestrian Connectivity Ratio for the intersection. The higher the Pedestrian Connectivity Ratio, the better the overall walking connectivity from the TAZ.

Pedestrian Environment Quality Evaluation (PEQE)

The quality of all roadway segments, intersections, and mid-block crossings within the Midway-Pacific Highway and Old Town communities were evaluated under Preferred Plan conditions using the Pedestrian Environmental Quality Evaluation (PEQE) tool. Table 2.7 outlines the evaluation system used to develop the PEQE scoring metric.

Table 2.7 Pedestrian Environment Quality Ranking System

Facility Type	Measure	Description/Feature	Scoring
Segment *(between two intersections)*	Horizontal Buffer	Between the edge of auto travel way and the edge of clear pedestrian zone	0 point: < 6 feet 1 point: 6 – 14 feet 2 points: > 14 feet
	Lighting	--	0 point: below standard/requirement 1 point: meet standard/requirement 2 points: exceed standard/requirement
	Clear Pedestrian Zone	5' minimum	0 point: has obstructions 2 points: no obstructions
	Posted Speed Limit	--	0 point: > 40 mph 1 point: 30 – 40 mph 2 points: < 30 mph
		Maximum Points	8 points
Intersection	Physical Feature	• Enhanced/High Visibility Crosswalk • Raised Crosswalk/Speed Table • Advanced Stop Bar • Bulb out/Curb Extension	0 point: < 1 feature per ped crossing 1 point: 1 – 2 features per ped crossing 2 points: > 2 features per ped crossing
	Operational Feature	• Pedestrian Countdown Signal • Pedestrian Lead Interval • No-Turn On Red Sign/Signal • Additional Pedestrian Signage	0 point: < 1 feature per ped crossing 1 point: 1 – 2 features per ped crossing 2 points: > 2 features per ped crossing
Intersection (Continued)	ADA Curb Ramp	--	0 point: below standard/requirement 2 points: meet standard/requirement
	Traffic Control	--	0 point: No control 1 point: Stop sign controlled 2 points: Signal/Roundabout/Traffic Circle
		Maximum Points	8 points
Mid-block Crossing	Visibility	--	0 point: w/o high visibility crosswalk 2 points: with high visibility crosswalk
	Crossing Distance	--	0 point: no treatment 2 points: with bulb out or pedestrian refuge
	ADA Curb Ramp	--	0 point: below standard/requirement 2 points: meet standard/requirement
	Traffic Control	--	0 point: No control 1 point: Flashing Beacon 2 points: Signal/Pedestrian Hybrid Beacon
		Maximum Points	8 points
Final PEQE Scoring:			
Low: < 4 points Medium: 4-6 points High: > 7 points			

Combined Pedestrian Network Connectivity and Quality Assessment

This evaluation involves assessing the connectivity and quality of the walking environment within each community. Pedestrian network connectivity and quality is assessed using a combination of the pedestrian travelshed and quality assessment previously described. The following steps outline the evaluation process used:

a. *Total Walking Distance* – a 0.5 mile pedestrian network buffer is drawn around each study intersection, regardless of PEQE score.

b. *Quality Walking Distance* – a 0.5 mile pedestrian network buffer is drawn around each study intersection, using only pedestrian facilities with a PEQE ranking of Medium or High (including roadway links and intersections, and not including mid-block crossings). PEQE scores on each side of the roadway segment are added together and assigned a quality rating using the following scale (Low: 0-7, Medium: 8-12, High: 13+), to get a single quality measure for the roadway segment. Segments with a "High" rating are considered quality segments.

c. *Quality Walk Ratio* – The ratio of high quality connectivity to overall connectivity along all pedestrian facilities is determined using the following equation:

$$\text{Quality Walk Ratio} = \frac{\textit{Quality Walking Distance}}{\textit{Total Walking Distance (Existing Conditions)}}$$

2.3.2 Bicycle Assessment

Three analyses were utilized to assess overall bicycle mobility: 1) network connectivity; 2) facility quality; and 3) combined network connectivity and quality.

Bicycle Connectivity Ratio – Travelshed Analysis

A bicycle travelshed analysis was used to assess the level of connectivity provided from each study intersection. A 1.0 mile bicycle network buffer (using all bikeable roadways plus multi-use paths) is drawn around each intersection. That area is then compared to the area of a 1.0 mile as-the-crow-flies buffer (2,010.6 acres) to develop a Bicycle Connectivity Ratio for the intersection. The higher the Connectivity Ratio, the better the overall connectivity from the intersection.

Bicycle Facility Quality

The bicycle environment is assessed using the Bicycle Level of Traffic Stress (LTS) methodology, as developed by Mekuria, et al. (2012) of the Mineta Transportation Institute and reported in *Low-Stress Bicycle and Network Connectivity*. LTS classifies the street network into categories according to the level of stress it causes cyclists, taking into consideration a cyclist's physical separation from vehicular traffic, vehicular traffic speeds along the roadway segment, number of travel lanes, and factors related to intersection approaches with right-turn lanes and unsignalized crossings. LTS scores range from 1 (lowest stress) to 4 (highest stress).

Table 2.8 displays the four LTS categories with descriptions of traffic stress experienced by the cyclist and the cycling conditions associated with each category.

Combined Bicycle Network Connectivity and Quality Assessment

This assessment quantifies the connectivity of low stress bicycle facilities (LTS score 1 or 2) between TAZs within the study communities. This measure results in each TAZ being assigned a percentage reflecting the number of total TAZ reachable via low stress bicycle facilities within the study area.

Table 2.8 Level of Traffic Stress Classifications and Descriptions

LTS Category	LTS Description	Cycling Conditions Fitting LTS Category
LTS 1	Presenting little traffic stress and demanding little attention from cyclists; suitable for almost all cyclists, including children trained to safely cross intersections	• Facility that is physically separated from traffic or an exclusive cycling zone next to a slow traffic stream with no more than one lane per direction • A shared roadway where cyclists only interact with the occasional motor vehicle with a low speed differential • Ample space for cyclist when alongside a parking lane • Intersections are easy to approach and cross
LTS 2	Presenting little traffic stress but demanding more attention than might be expected from children	• Facility that is physically separated from traffic or an exclusive cycling zone next to a well-connected traffic stream with adequate clearance from parking lanes • A shared roadway where cyclists only interact with the occasional motor vehicle (as opposed to a stream of traffic) with a low speed differential • Unambiguous priority to the cyclist where cars must cross bike lanes (e.g. at dedicated right-turn lanes); design speed for right-turn lanes comparable to bicycling speeds • Crossings not difficult for most adults
LTS 3	Presenting enough traffic stress to deter riders not comfortable with sharing the roadway with traffic	• An exclusive cycling zone (lane) next to moderate-speed vehicular traffic • A shared roadway that is not multilane and has moderately low automobile travel speeds • Crossings may be longer or across higher-speed roadways than allowed by LTS 2, but area still considered acceptably safe to most adult pedestrians
LTS 4	Presenting enough traffic stress to deter all but the Strong & Fearless cycling demographic (estimated at <1% of the population)	• An exclusive cycling zone (lane) next to high-speed and multi-lane vehicular traffic • A shared roadway with multiple lanes per direction with high traffic speeds • Cyclist must maneuver through dedicated right-turn lanes containing no dedicated bicycling space and designed for turning speeds faster than bicycling speeds

Source: Mekuria, et al. (2012)

2.3.3 Transit Assessment

Two performance measures were used to analyze transit conditions, including station quality and arterial speed.

Station Quality – Presence of Amenities

Each transit station/stop was reviewed for the presence of the following amenities:

- Shelters
- Benches
- Trash Receptacles
- Station Signs
- Maps/Wayfinding
- Lighting
- ADA Compliancy

Table 2.9 displays the standard amenities that should be provided at transit stops/stations based on daily passenger boardings (across all routes).

Table 2.9 Transit Amenity Standards by Ridership Levels

Amenity	Daily Passenger Boardings by Stop/Station				
	< 50	50 – 100	101 – 200	201 – 500	> 500
Sign and Pole	X	X	X	X	
Built-in Sign					X
Expanded Sidewalk			X	X	X
Bench		X	X	X	X
Shelter			X	X	X
Route Designations	X	X	X	X	X
Time Table				X	X
Route Map			X	X	X
System Map					X
Trash Receptacle				X	X
Lighting			X	X	X
ADA Compliant	X	X	X	X	X

Source: MTS Design for Transit (1993)

Arterial Speed

On-time bus performance can be directly impacted by vehicular traffic congestion along roadways servicing bus routes. An HCM roadway arterial speed analysis was used to identify locations in which on-time performance is currently or may be impacted under future conditions by vehicular traffic congestion.

Arterial Level of Service (LOS) is based on the average peak hour travel speeds along a roadway segment. The average travel speed is computed from the running time on the arterial segment(s) and the intersection approach delay. Average speed is strongly influenced by the number of signals per mile and the average intersection delay. On a given facility, factors such as

inappropriate signal timing, poor progression, and increasing traffic flow can substantially degrade the arterial LOS.

Table 2.10 displays the LOS thresholds used for the arterial analysis. Arterial speed analyses should be performed utilizing the methodologies in the version of the Highway Capacity Manual (HCM) that is currently accepted by the City of San Diego

Table 2.10 Arterial Analysis Level of Service Thresholds

Arterial Class	I	II	III
Range of Free Flow Speed (mph)	45 to 35	35 to 30	30 to 25
Typical Free Flow Speed (mph)	40 mph	33 mph	27 mph
Level of Service Analysis	**Average Travel Speed**		
A	35	30	25
B	28	24	19
C	22	18	13
D	17	14	9
E	13	10	7
F	< 13	< 10	< 7

Source: Highway Capacity Manual (TRB 1997)

3.0 Midway-Pacific Highway Preferred Plan

This section documents the mobility related issues and needs of the Midway-Pacific Highway community and the process used to identify those issues. This section also outlines the mobility improvements recommended under buildout of Preferred Plan conditions and the process used to develop these improvements.

3.1 Development of the Preferred Plan

3.1.1 Identification of Issues and Needs

Existing mobility related issues and needs within the Midway-Pacific Highway community were identified in the *Community of Midway/Pacific Highway Corridor and Old Town Mobility Existing Conditions Report; September 2012 (Existing Conditions Report)*. The issues and needs identified in the Existing Conditions Report were used, in conjunction with the other planning efforts and the overall community vision, to develop the recommended mobility improvements incorporated into the Preferred Plan.

3.1.2 Development of Preferred Plan Improvements

Preferred Plan improvements were developed by first cross checking the mobility issues and needs, identified in the Existing Conditions Report, against the mobility issues and needs identified in several other on-going or recent planning efforts, including:

- Midway/Pacific Highway Urban Greening Plan (December 2016)
- I-8 Corridor Study (August 2016)
- San Diego Forward, The Regional Plan (October 2015)
- City of San Diego Bicycle Master Plan (December 2013)
- City of San Diego Pedestrian Master Plan – Phase 4 (December 2013)
- Rosecrans Corridor Mobility Study (February 2010)
- Destination Lindbergh Technical Report: San Diego International Airport (November 2008)
- San Diego International Airport Master Plan (November 2008)

Where possible, the Preferred Plan carried forward or maintained the relevant improvements from on-going or previous planning efforts which have been adopted or vetted by the community. New improvement strategies were then developed for the issues and needs, identified in the Existing Conditions Report, which were not addressed in other planning efforts. Additional mobility improvements were also developed to accommodate the anticipated future growth within the community. The following sections outline the mobility issues and needs identified in the Existing Conditions Report and the associated improvements recommended under the Preferred Plan to alleviate them.

3.2 Street and Freeway System

3.2.1 Identified Street and Freeway Needs

There is constrained regional access to/from the Midway-Pacific Highway Community and to adjacent communities. A significant amount of regional traffic traverses the local roadway system within the community since there are limited regional access points, missing freeway-to-freeway connectors between I-8 and I-5, as well as major employment centers and trip generators within and adjacent to the community. Figure 3-1 displays regional access issues in the Midway-Pacific Highway community.

Constrained regional access, large trip generators, and limited circulation created by large blocks within and adjacent to the community, result in highly concentrated traffic volumes along study roadways providing freeway access. This concentration of traffic volumes creates congestion, low traffic speeds and delays on both the Rosecrans Street and Camino Del Rio West. Figure 3-2 displays the location of identified issues/needs within the Midway-Pacific Highway community.

3.2.2 Street and Freeway Improvements

A list of Preferred Plan proposed roadway improvements, new roadways, intersection improvements, new intersections, and freeway improvements are presented throughout this section. These improvements are predominantly based on the future year traffic volumes that are projected under buildout of the Preferred Plan, as displayed in Figure 5-1. Full analysis of all Preferred Plan roadways is provided in Chapter 6.

Roadways

- *Lytton Street/Barnett Avenue, between Rosecrans Street and Midway Drive* – Construct a raised median along these portions of Lytton Street / Barnett Avenue. This will improve Lytton Street to a four-lane major configuration.
- *Sports Arena Boulevard, between Interstate 8 and Rosecrans Street* – Improve this section of Sports Arena Boulevard to a six-lane major arterial. *(Note: Conceptual drawings of the improvements along Sports Arena Boulevard are provided in Figures 3-8 and 3-10).*
- *Sports Arena Boulevard, between Rosecrans Street and Pacific Highway* – Improve this section of Sports Arena Boulevard from a sub-collector to a two-lane collector with a continuous left-turn lane.
- *Kurtz Street, between Rosecrans Street and Pacific Highway* – Restripe this section of Kurtz Street from a two-lane collector to a two-lane collector with center left turn lane.
- *Rosecrans Street, between Lytton Street and Sports Arena Boulevard* – Improve this section of Rosecrans Street from a six-lane major to a six-lane prime arterial, which would require limiting driveway access. *(Note: A conceptual drawing of the improvements along Rosecrans Street are provided as Figure 3-6).*

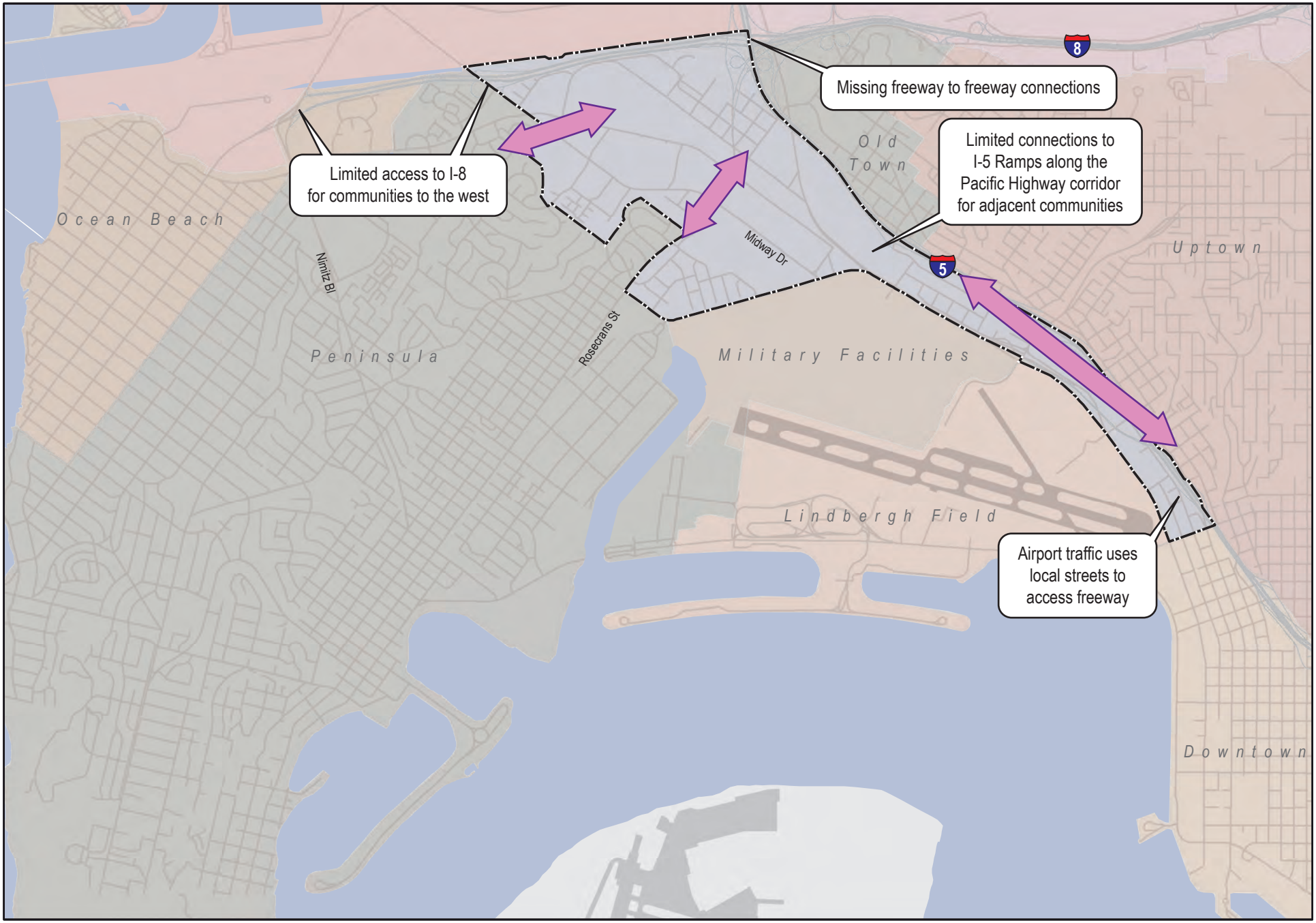

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Figure 3-1
Regional Access -
Midway-Pacific Highway Community

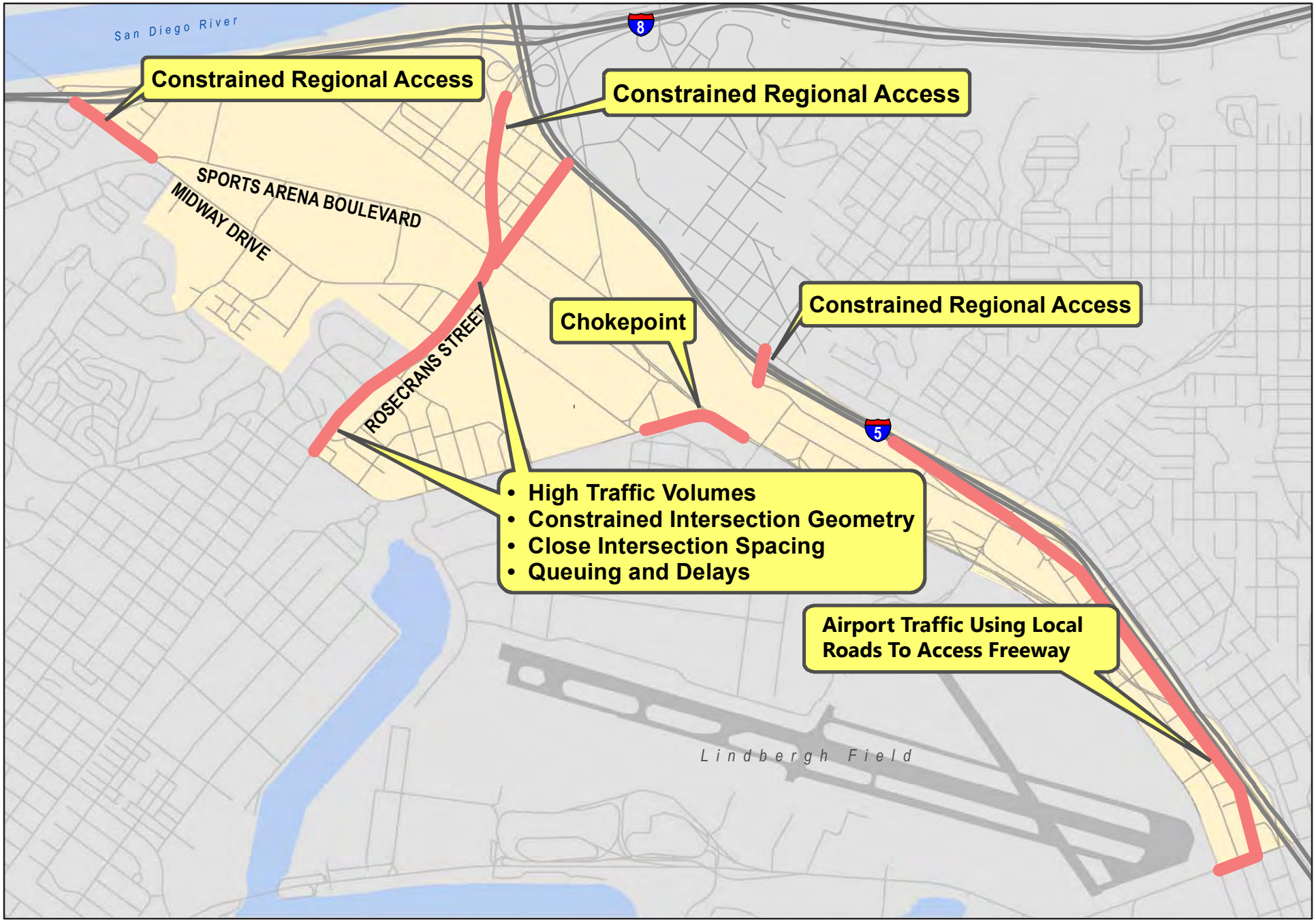


Figure 3-2
Identified Vehicular Issues and Needs -
Midway-Pacific Highway Community

Roadways (continued)

- *Rosecrans Street, between Sports Arena Boulevard and Taylor Street* – Construct a landscaped median along this section of Rosecrans Street. This will improve this section of Rosecrans Street to a four-lane major configuration. *(Note: A conceptual drawing of the improvements along this segment of Rosecrans Street is provided as Figure 3-7)*.
- *Hancock Street, between Kurtz Street and Rosecrans Street* – Widen this section of Hancock Street from a two-lane collector (one-way) to a three-lane major (one-way).
- *Hancock Street, between Old Town Avenue and Witherby Street* – Widen this section of Hancock Street from a two-lane collector to a four-lane collector.
- *Barnett Avenue, between Midway Drive and Pacific Highway* – Widen this section of Barnett Avenue from a four-lane major to a six-lane prime arterial.
- *W. Mission Bay Drive, between I-8 WB Ramps and I-8 EB Ramps* – Widen this section of W. Mission Bay Drive from a five-lane prime arterial to a six-lane prime arterial.
- *Camino Del Rio, Moore Street/Greenwood Street* – Extend the existing median to close the southbound left turn pocket along Camino Del Rio W at the intersection of Moore Street / Greenwood Street to reduce vehicular conflicts.

New Roadways

To provide better east/west connectivity throughout the Midway-Pacific Highway community and provide additional access to potential new developments within the existing "super blocks," the Preferred Plan proposes the following new roadways segments:

1. *Kemper Street Extension* – Kemper Street will be extended between Sports Arena Boulevard and Kurtz Street, connecting as the southwest leg of the Kurtz Street / Hancock Street intersection. The Kemper Street extension will be constructed as a two-lane collector with a continuous left-turn lane.
2. *Frontier Drive* – Frontier Drive will be a new roadway connecting between Sports Arena Boulevard and Kurtz Street. Frontier Drive will be located between the new Kemper Street extension and the Greenwood Street extension. Frontier Drive will be constructed as a two-lane collector with a continuous left-turn lane.
3. *Greenwood Street Extension* – Greenwood Street will be extended between Kurtz Street and Sports Arena Boulevard. Greenwood Street between Sports Arena Boulevard and Midway Drive will follow the alignment of the existing East Drive private street. Greenwood Street will be constructed as a two-lane collector.
4. *Charles Lindbergh Parkway* – Charles Lindbergh Parkway will be a new street connecting between Kurtz Street and Midway Drive. Charles Lindbergh Parkway will be located halfway between Rosecrans Street and the new Dutch Flats Parkway. Charles Lindbergh Parkway will be constructed as a two-lane collector with a continuous left-turn lane.
5. *Dutch Flats Parkway* – Dutch Flats Parkway will be a new roadway connecting between Sports Arena Boulevard and Barnett Avenue. Dutch Flats Parkway will be located between

the new Charles Lindbergh Parkway and Enterprise Street. Dutch Flats Parkway will be constructed as a two-lane collector with a continuous left-turn lane.

It should be noted that implementation of these new roadway segments would necessitate additional right-of-way and most likely require the redevelopment of adjacent properties. All roadways will be designed in accordance with the *City of San Diego Street Design Manual* and their corresponding classification. A summary of the roadway improvements in the Midway-Pacific Highway community is presented in Table 3.1.

Table 3.1 Summary of Roadway Improvements

Roadway	Segment	Existing Configuration	Recommended Classification
Segment Modifications			
Lytton St / Barnett Ave	Rosecrans St and Midway Dr	4-Lane Collector W/ CLTL	4-Lane Major
Sports Arena Blvd	Interstate 8 and Rosecrans St	5-Lane Major	6-Lane Major
Sports Arena Blvd	Rosecrans St and Pacific Hwy	Sub-Collector	2-Lane Collector W/ CLTL
Kurtz St	Rosecrans St and Pacific Hwy	2-Lane Collector	2-Lane Collector W/ CLTL
Rosecrans St	Lytton St and Sports Arena Blvd	6-Lane Major	6-Lane Prime
Rosecrans St	Sports Arena Blvd and Taylor St	4-Lane Collector W/ CLTL	4-Lane Major
Hancock St	Kurtz St and Rosecrans St	2-Lane Collector (One-Way)	3-Lane Major (One-Way)
Hancock St	Old Town Ave and Witherby St	2-Lane Collector	4-Lane Collector
Barnett Ave	Midway Dr and Pacific Hwy	4-Lane Major	6-Lane Prime
W. Mission Bay Dr	I-8 WB Ramps and I-8 EB Ramps	5-Lane Prime	6-Lane Prime
New Roadways			
Kemper St	Sports Arena Blvd and Kurtz St	Does Not Exist	2-Lane Collector W/CLTL
Frontier Dr	Sports Arena Blvd and Kurtz St	Does Not Exist	2-Lane Collector W/ CLTL
Greenwood St	Kurtz St and Sports Arena Blvd	Does Not Exist	2-Lane Collector
Charles Lindbergh Pkwy	Kurtz St and Midway Dr	Does Not Exist	2-Lane Collector W/ CLTL
Dutch Flats Pkwy	Sports Arena Blvd and Barnett Ave	Does Not Exist	2-Lane Collector W/ CLTL

Source: Chen Ryan Associates (June 2016)

Intersections

Rosecrans Street / Sports Arena Boulevard / Camino Del Rio West:

- Remove the southbound free right-turn movement from Camino Del Rio West onto Sports Arena Boulevard and replace it with an exclusive right-turn lane.
- Allow southbound movements to continue on Sports Arena Boulevard through the intersection. It should be noted that vehicles would still not be able to access the southern leg of Sports Arena Boulevard from westbound Rosecrans Street or southwest bound Camino del Rio West.

Additional improvement concepts were also considered for the Rosecrans Street / Sports Arena Boulevard / Camino Del Rio West intersection, but ultimately not selected. These alternative concepts include the following:

Alternative 1: This alternative would allow full access to the southern leg of Sports Area Boulevard from all approaches of the intersection and remove the eastbound (Rosecrans Street) to northbound (Sports Arena Boulevard) left-turn movements. The eastbound left-turn movement was removed to limit the number of signal phases at the intersection and provide for more efficient signal timing patterns. The removal of the eastbound left-turn movement is consistent with the recommendations provided in the *Rosecrans Corridor Mobility Study (February 2010).*

With the implementation of this concept the Rosecrans Street / Sports Arena Boulevard / Camino Del Rio West intersection was projected to perform at acceptable levels (AM: LOS C / PM: LOS D) with minor queuing impacts. However, the community does not support the removal of the eastbound left-turn movement and therefore this alterative was removed.

Alternative 2: This alternative would allow full access to the southern leg of Sports Area Boulevard from all approaches, and keep the eastbound left-turn movement intact. Due to the additional intersection phases and cycle length required to allow full access to the southern leg of Sports Arena Boulevard, the intersection performed poorly under this alternative (AM: LOS D / PM: LOS E) with excessive queuing issues on both Rosecrans Street and Camino del Rio West. Due to the poor intersection performance and queuing issues this alternative was not selected.

Alternative 3: This alternative would remove traffic from the westbound approach of Rosecrans Street and reroute the traffic up Kurtz Street and then to Camino del Rio West. To accommodate this improvement Kurtz Street would be reconfigured from a one-way southbound roadway to a one-way northbound roadway, between Hancock Street and Rosecrans Street. Conversely, Hancock Street would need to be reconfigured as a one-way southbound roadway along the same section to complete the couplet. While this configuration does allow the Rosecrans Street / Sports Arena Boulevard / Camino Del Rio West intersection to operate at acceptable levels (AM: LOS C / PM: LOS D), it is projected to result in substantial queuing issues along the short segment of Kurtz Street between Camino del Rio West and Rosecrans Street (260 feet). This excessive queuing is projected to negatively impact the operations at the Kurtz Street / Camino del Rio West intersection as well as the Kurtz Street / Rosecrans Street intersection and cause significant congestion at these intersections. Due to these queuing issues this alterative was not selected.

Sports Arena Boulevard / Pacific Highway:

- Move intersection approximately 500 feet to the north.
- Re-align Sports Arena Boulevard to create a right-angle with Pacific Highway.
- Signalize the intersection.

- Provide an exclusive eastbound left-turn lane from Sports Arena Boulevard onto Pacific Highway.
- Provide an exclusive northbound left-turn lane from Pacific Highway onto Sports Arena Boulevard.

The proposed relocation of the Sports Arena Boulevard / Pacific Highway intersection meets the 500 feet minimum spacing requirements for intersections. An additional focus during the design phase needs to ensure the curved radii resulting from the intersection realignment will adhere to design standards.

Sports Arena Boulevard / West Point Loma Boulevard / Midway Drive

- Square up and control the westbound free right-turn movement from Sports Arena Boulevard onto Sports Arena Boulevard with the intersection.
- Remove the northbound free right-turn movement from Midway Drive onto Sports Arena Boulevard. The right-of-way will be used to extend the curb and create a curb bulb-out to reduce the pedestrian crossing distance. Right-turn movements will be permitted from the outside through lane.

Camino Del Rio and Moore Street / Greenwood Street

- Extend the existing median to close the southbound left turn pocket along Camino Del Rio W at the intersection of Moore Street / Greenwood Street to reduce vehicular conflicts. (This improvement is also noted in the "Roadway" subheading above.)

<u>Pacific Highway Corridor – Barnett Avenue /Witherby Street / Washington Street</u>

As part of this mobility study, downgrading the section between Barnett Avenue and Washington Street of Pacific Highway from an expressway to a 6-lane major arterial was discussed. The purpose of this downgrade would be to improve safety for vehicles, pedestrians, and cyclists, create a community gateway along Pacific Highway, and enhance the multimodal connections between the community and Downtown San Diego. Ultimately, the recommendation for the Preferred Plan is to carry forward the expressway classification between Barnett Avenue and Washington Street, and the other sections of Pacific Highway in this community, to remain or be developed as a 5-lane or 6-lane major arterial roadway.

One of the main challenges associated with downgrading the expressway is bringing the Barnett Avenue and Witherby Street intersections to grade in order to meet the standards of a 6-lane major arterial roadway. The at-grade approach was not considered as part of the Mobility Study analysis; however, to fully understand the feasibility of these improvements, from both an engineering and constructability standpoint, an Engineering Feasibility Study is recommended. The Engineering Feasibility Study should analyze and address the following:

- The feasibility of bringing both interchanges to grade

- Multi-modal facility alternatives that do not require at-grade intersections (pedestrian and bicycle bridges, alternative multi-use urban path alignments, etc.)
- Addressing the existing flooding issues at both interchanges

Since it is unknown at this time if these improvements are feasible, they were not included in the technical analysis of the Preferred Plan. It is recommended that the feasibility of these improvements be further assessed and incorporated into a future plan. The Preferred Plan identifies Witherby Street as a 2-lane collector with continuous left-turn lane, however, the additional feasibility analysis may determine a need to widen Witherby Street to a 4-lane collector. A potential concept of what these improvements could look like is displayed in Figure 3-3. Additionally, the feasibility analysis may determine a need for additional improvements at Pacific Highway at West Washington Street that are not identified in this mobility study.

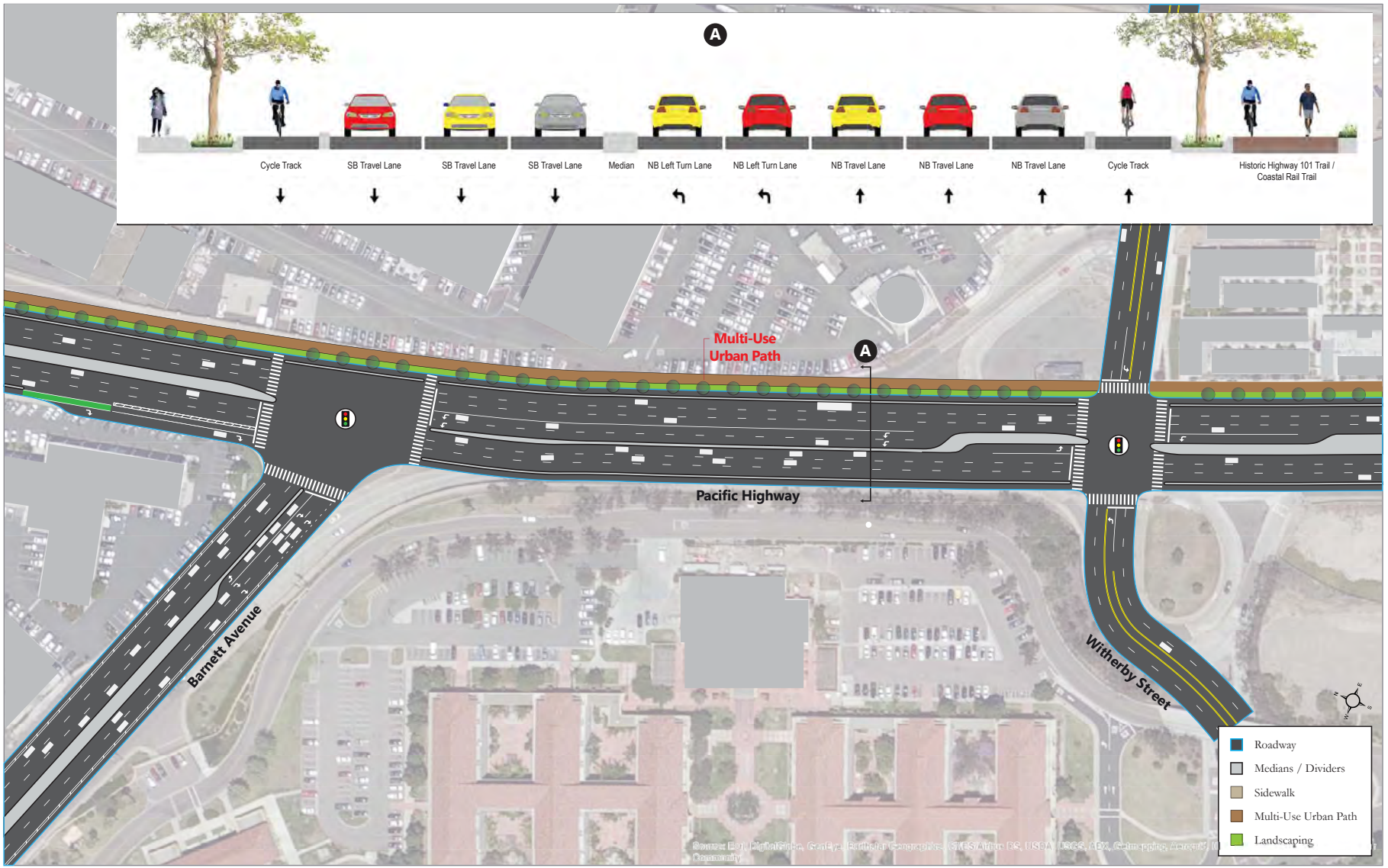
Based on the assumptions displayed in the Figure 3-3, the at-grade intersections would be anticipated to operate as follows:

- Barnett Avenue / Pacific Highway – AM: Delay 35.3 seconds, LOS D | PM: Delay 53.2 seconds, LOS D
- Witherby Street / Pacific Highway – AM: Delay 36.7 seconds, LOS D | PM: Delay 52.0 seconds, LOS D

Intersection Operations

Seven new intersections are recommended for the Midway-Pacific Highway community. Additionally, the roadway network was evaluated to identify intersection locations, both existing and new intersections, that would benefit from the implementation of a roundabout or signalization. A summary of recommended intersection improvements is displayed in Table 3.2. It is not known at this time if the implementation of a roundabout will be feasible at any or all intersections. A roundabout feasibility analysis will need to be performed once the new intersections and roadways are designed. Therefore, to be conservative, the analysis assumed that all new intersections would be signalized, unless otherwise noted. However, it is recommended that a roundabout be implemented in lieu of a signal at all new intersections, where feasible.

Traffic signal warrants were conducted at the intersections where signalization is recommended. Figure 4C-103 (CA) of the California Manual on Uniform Traffic Control Devices (MUTCD) 2012 Edition was utilized and all intersections would meet the warrants. Signal warrants worksheets are included in Appendix C.



This graphic is for conceptual purposes only. Further engineering study would be required at the project level prior to implementation.

Figure 3-3
Barnett Avenue and Witherby Street / Pacific Highway at-Grade Intersection Concepts

Table 3.2 Summary of Intersection Improvements

No.	Intersection	Improvement	Preferred Plan Control
8	Midway Drive / Charles Lindbergh Parkway	New intersection	Roundabout/Signalized
12	Kemper Street / Sports Arena Boulevard	Add north leg	Signalized
13	Sports Arena Boulevard / Frontier Drive	Add north leg	Signalized
14	Sports Arena Boulevard / Greenwood Street	Add north leg	Signalized
16	Sports Arena Boulevard / Charles Lindbergh Parkway	New intersection	Roundabout/Signalized
17	Sports Arena Boulevard / Pacific Highway	Relocate intersection and signalize	Signalized
18	Kurtz Street / Hancock Street / Kemper Street	Add south leg and signalize	Signalized
21	Kurtz Street / Pacific Highway	Signalize	Signalized
61	Kurtz Street / Frontier Drive	New intersection	Roundabout/SSSC
62	Kurtz Street / Greenwood Street	Add south leg and signalize	Signalized
63	Kurtz Street / Charles Lindbergh Parkway	New intersection	Roundabout/Signalized
64	Barnett Avenue / Dutch Flats Parkway	New intersection	Roundabout/Signalized
65	Midway Drive / Dutch Flats Parkway	New intersection	Roundabout/Signalized
66	Sports Arena Boulevard / Dutch Flats Parkway	New intersection	Roundabout/Signalized
N/A	Hancock Street / Greenwood Street	Signalize	Signalized

Source: Chen Ryan Associates (June 2016)

Freeway Improvements

There are no freeway improvements included in the Revenue Constrained alternative of *SANDAG's San Diego Forward, The Regional Plan (Adopted October 2015)* within the vicinity of the Midway-Pacific Highway community to be completed before this plan's horizon year (Year 2035).

I-8 / I-5 Ramp Connection – It should be noted that the missing I-8 East to I-5 North, and I-5 South to I-8 West ramps are included in the Unconstrained Revenue scenario of the Regional Transportation Plan (RTP); therefore, there is currently no funding mechanism for these ramps and they are not included in the Preferred Plan assessment. However, these ramps are needed to enhance the regional access for the community. A policy statement should be included in the Mobility Element recommending that the City of San Diego work with SANDAG and Caltrans to implement these ramps.

I-5 to Pacific Highway Ramps – Ramps connecting Interstate 5 to Pacific Highway are included in the RTP; however, since there is currently no funding mechanism for these ramps they are not included in the Preferred Plan assessment. These ramps are needed to enhance the regional access for the community. A policy should be included in the Mobility Element recommending that the City of San Diego work with SANDAG and Caltrans to implement these ramps.

3.3 Pedestrian Environment

3.3.1 Identified Pedestrian Needs

The Existing Conditions Report identified the following pedestrian issues/needs in the Midway-Pacific Highway community, as displayed in Figure 3-4:

Midway Drive / Sports Arena Boulevard / West Point Loma Boulevard Intersection – This is a major vehicular junction point within the community in which two major roadways (Sports Arena Boulevard and Midway Drive) intersect with two major regional access points (West Point Loma Boulevard connecting to both the Peninsula and Ocean Beach communities to the west, and West Mission Bay Drive and I-8 ramps). To accommodate the high intersecting traffic volumes there is currently a yield control northbound right-turn movement, a stop controlled southbound right-turn movement and a free westbound right-turn movement. The high traffic volumes and uncontrolled right-turn movements create an intimidating environment for pedestrians to cross.

East/West Connectivity – Due to the large block sizes within the community, there are currently few pedestrian corridors directly connecting the east and west sides of the community. Rosecrans Street is the only east/west corridor that currently spans the entire community from east to west.

Walkability Issues along Rosecrans Street and Camino Del Rio West – As mentioned above, Rosecrans Street is the only east/west pedestrian corridor that spans the entire length of the community and is the only corridor that connects to the Old Town Transit Center, located to the east. The retail and institutional uses along both Rosecrans Street and Camino Del Rio West are also major pedestrian attractions within the corridors. Currently both corridors have 5 - 7 foot sidewalks with no parkways or on-street parking to buffer pedestrians from vehicular traffic. The narrow sidewalks with a lack of buffer create an unfriendly pedestrian environment.

Rosecrans Street / I-5 Underpass – This is the only connection point for pedestrians between the Old Town Transit Center and the Midway-Pacific Highway community. The 200-foot wide underpass is poorly lit and has narrow sidewalks, with no parkways or on-street parking to buffer pedestrians from vehicular traffic, creating an unfriendly pedestrian environment.

Missing Sidewalk Facilities – There are currently no sidewalks provided along Sports Arena Boulevard from Rosecrans Street to Pacific Highway, with the exception of a small portion on its south side near the intersection of Rosecrans Street. This area currently predominantly serves industrial uses and attracts little pedestrian traffic; however, it is one of the few major north/south corridors that span the entire community.

Figure 3-4
Identified Pedestrian Issues and Needs -
Midway-Pacific Highway Community

Barnett Avenue / Pacific Highway – There is currently no pedestrian access to Pacific Highway from Barnett Avenue for pedestrians on the north side of Barnett Avenue. Pedestrians on the north side of the roadway heading east on Barnett Avenue hit a dead end and are forced to head north along Pacific Highway.

At-Grade Rail Crossings – Pedestrians accessing both the Washington Street and Middletown Trolley stations from Pacific Highway currently have to cross the rail right-of-way to access both stations. During gate down times, pedestrians may be delayed from accessing the station by on- coming trolleys or trains.

3.3.2 Pedestrian Improvements

Multi-Use Urban Paths

The Preferred Plan includes the implementation of several multi-use urban paths along key roadways, cumulatively creating an Urban Path system throughout the Midway-Pacific Highway community, which is consistent with recommendations in the Midway/Pacific Highway Urban Greening Plan. The individual multi-use urban paths are described below:

La Playa Trail – The La Playa Trail multi-use urban path will run along the south side of Rosecrans Street between Lytton Street and Pacific Highway. The path will be approximately 12 feet wide and replace the sidewalks on the southern side of the roadway. The ultimate right-of-way required along Rosecrans Street to implement this facility would be as follows:

- 127 feet between Lytton Street and Midway Drive.
- 116 feet between Midway Drive and Sports Arena Boulevard.
- 100 feet between Sports Arena Boulevard and Taylor Street.

It is recommended that pedestrian scale lighting be installed along the entire length of the path. The implementation of these improvements may necessitate acquiring additional right-of-way along the corridor.

Bay-to-Bay – The Bay-to-Bay multi-use urban path will be constructed along Sports Arena Boulevard, Lytton Street / Barnett Avenue, Kemper Street, and a connecting segment along the proposed Dutch Flats Parkway to mimic the previous Community Plan's Bay-to-Bay proposed canal alignment. The path will run along the southeast side of the Kemper Street extension between Kurtz Street and Sports Arena Boulevard, along the northeast side of Sports Arena Boulevard between Midway Drive and Dutch Flats Parkway, on the southern side of Dutch Flats Parkway between Barnett Avenue and Sports Arena Boulevard, and on the south side of Lytton Street / Barnett Avenue between Rosecrans Street and Pacific Highway. The segment of path on Sports Arena Boulevard between West Point Loma Boulevard and the I-8 should be further evaluated regarding its placement, whether on the southwest, or northeast side of the roadway. The path will be 12 feet wide and replace the sidewalks on the appropriate side of the roadway in each segment, as described.

The ultimate right-of-way required along each roadway segment to implement this facility is as follows:

- Kemper Street, between Kurtz Street and Sports Arena Boulevard: 90 feet
- Sports Arena Boulevard, between I-8 and Rosecrans Street: 117 feet
- Sports Arena Boulevard, between Rosecrans Street and Dutch Flats Parkway: 78 feet
- Lytton Street / Barnett Avenue, between Rosecrans Street and Pacific Highway: 90 feet
- Dutch Flats Parkway, between Barnett Avenue and Sports Arena Boulevard: 78 feet. An additional 30' of right-of-way will be required to provide for a linear park adjacent to Dutch Flats Parkway. This 30' may need to be obtained as public right-of-way or as an easement on privately held land.

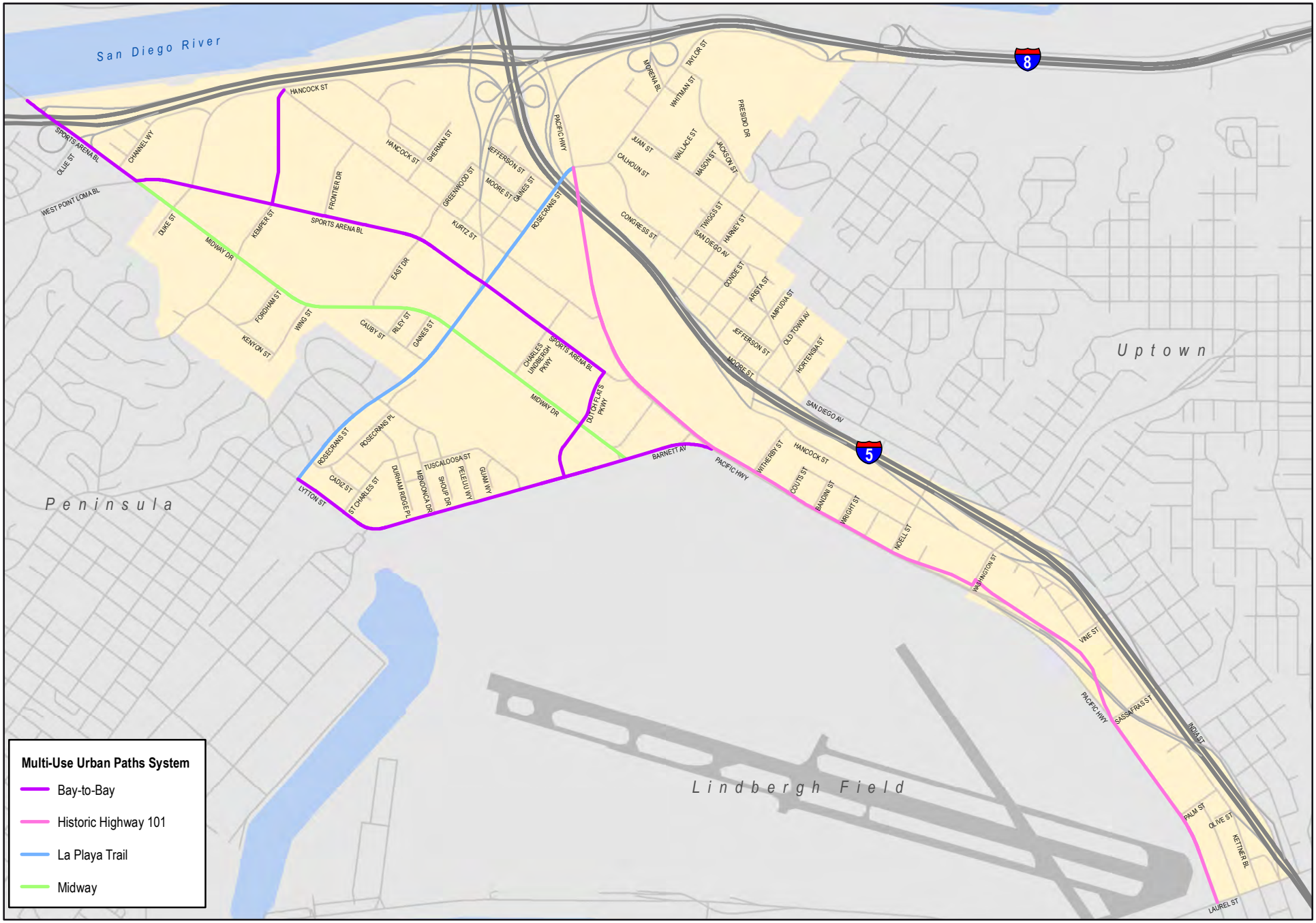
It is recommended that pedestrian scale lighting be installed along the entire length of the path. The implementation of these improvements may necessitate acquiring additional right-of-way along the corridor. *(Note: Figure 3-8 and Figure 3-10 provide conceptual drawings of the proposed Bay-to-Bay Path configuration along Sports Arena Boulevard)*.

Midway – The Midway multi-use urban path will run along the southwest side of Midway Drive between Sports Arena Boulevard and Barnett Avenue. The path will be approximately 12 feet and will replace the existing southwest sidewalk. The ultimate right-of-way required along Midway Drive to implement this facility would be 81 feet. It is recommended that pedestrian scale lighting be installed along the entire length of the path. The implementation of these improvements may necessitate acquiring additional right-of-way along the corridor.

Historic Highway 101 – The Historic Highway 101 multi-use urban path will run along the east side of Pacific Highway between Taylor Street and Laurel Street. The multi-use urban path will be 12 feet wide and will replace the existing sidewalk on the east side of the roadway. The ultimate right-of-way required along Pacific Highway to implement this facility would be 131 feet. It is recommended that pedestrian scale lighting be installed along the entire length of the path. The implementation of these improvements may necessitate acquiring additional right-of-way along the corridor.

Hancock Street Extension – Hancock Street will be extended between Midway Drive and Sports Arena Boulevard as a pedestrian and bicycle connection. This segment will not be open to vehicular traffic. *(Note: This pedestrian and bicycle connection, which is located just southeast of the W. Point Loma Boulevard / Sports Arena Boulevard / Midway Drive intersection, is illustrated in Figure 3-8 and Figure 3-10).*

The complete Multi-Use Urban Path system is displayed in Figure 3-5. Figure 3-6 and 3-7 provide concept drawings of the proposed La Playa Trail configuration along Rosecrans Street. Figure 3-8 displays a concept drawing of the Bay-to-Bay Path along Sports Arena Boulevard, north of Rosecrans Street. Figure 3-9 provides a concept drawing of the proposed Midway Path configuration along Midway Drive.



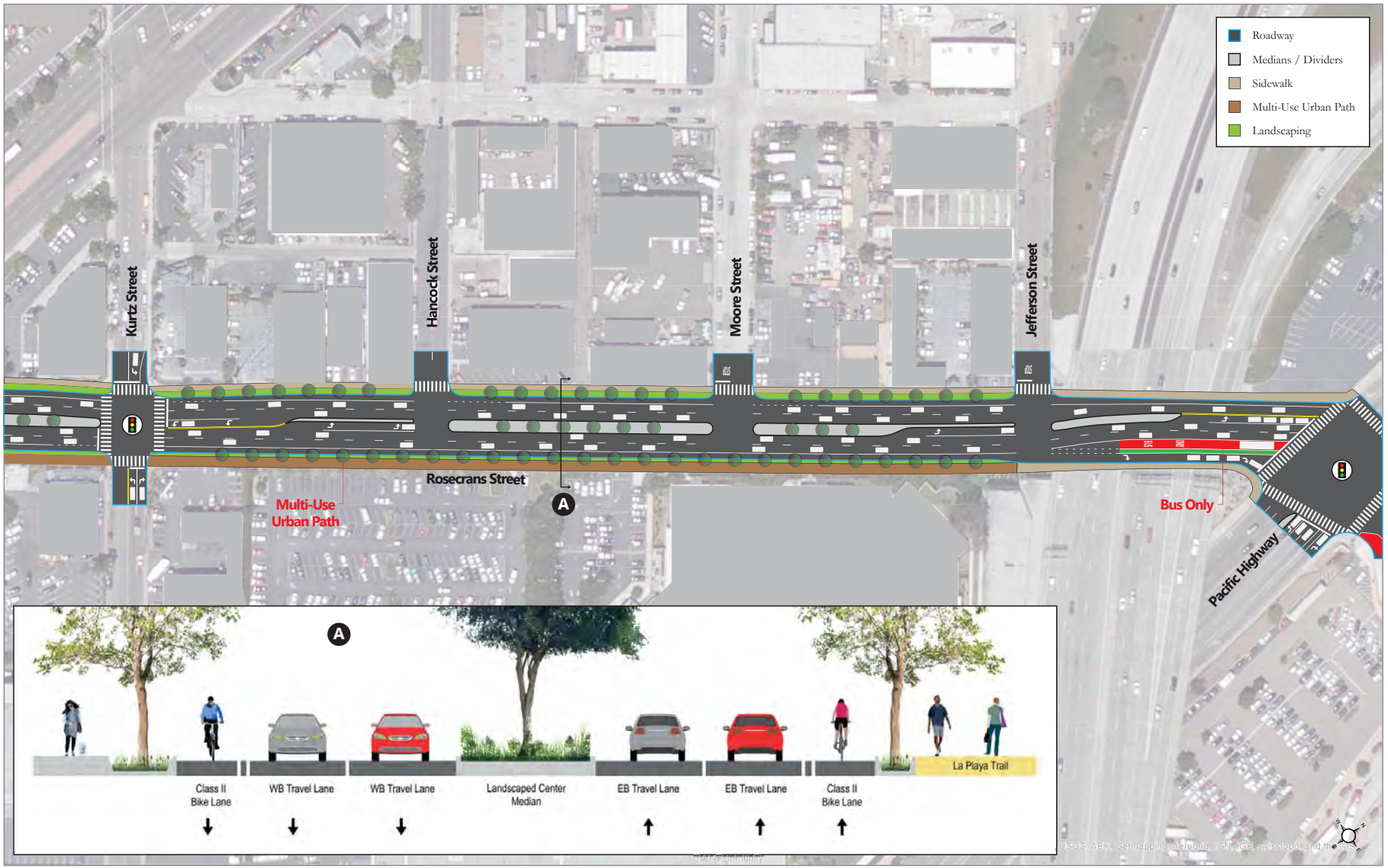
Midway-Pacific Highway and
Old Town Community Plan Update

CHEN RYAN

Figure 3-5
Multi-Use Urban Paths System

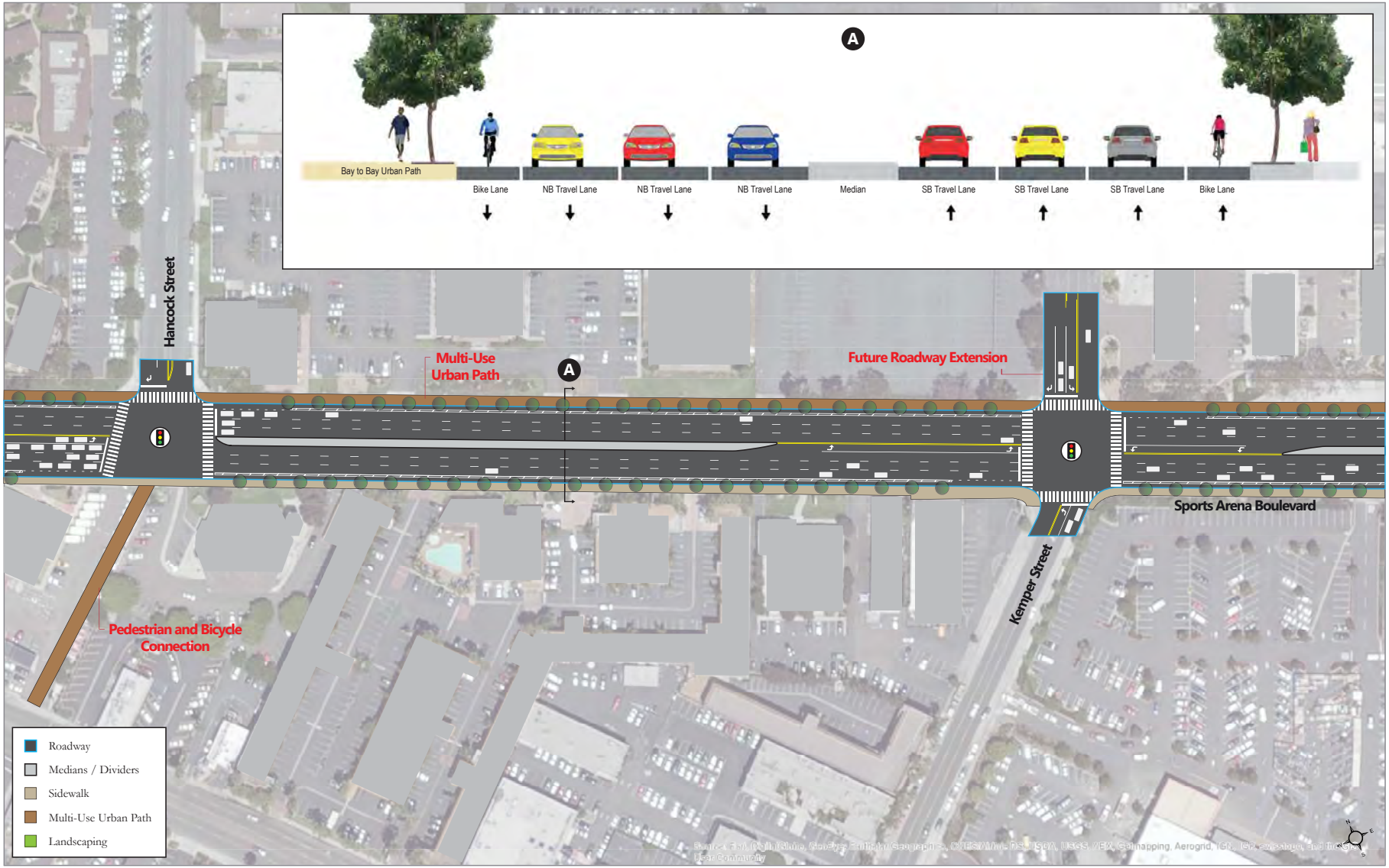
This graphic is for conceptual purposes only. Further engineering study would be required at the project level prior to implementation.

Figure 3-6
Rosecrans Street with La Playa Trail - West of Midway Drive



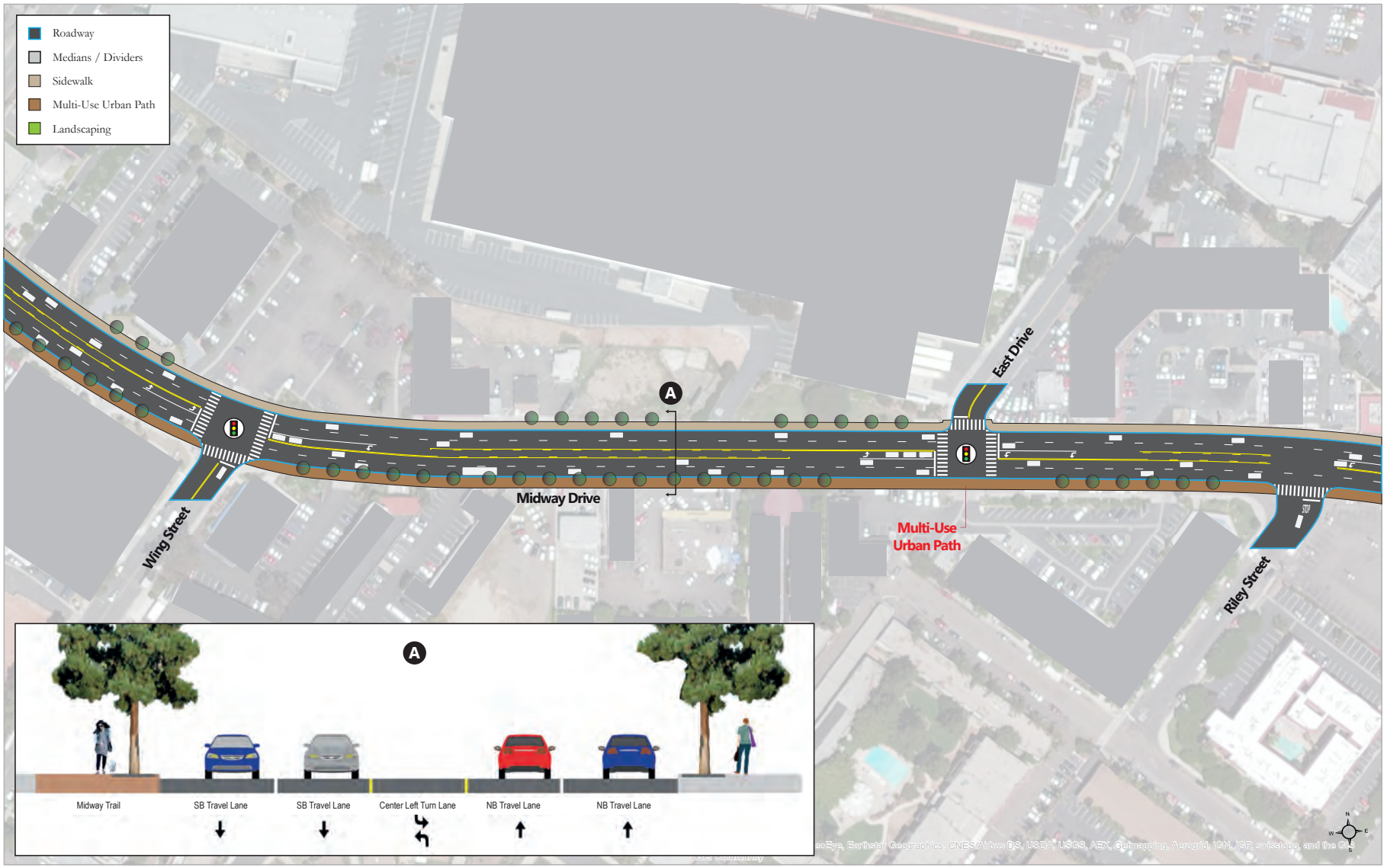
This graphic is for conceptual purposes only. Further engineering study would be required at the project level prior to implementation.

Figure 3-7
Rosecrans Street with La Playa Trail - East of Sports Arena Boulevard



This graphic is for conceptual purposes only. Further engineering study would be required at the project level prior to implementation.

Figure 3-8
Sports Arena Boulevard with Bay to Bay Trail - North of Rosecrans Street



This graphic is for conceptual purposes only. Further engineering study would be required at the project level prior to implementation.

Figure 3-9
Midway Drive with Midway Trail -
North of Rosecrans Street

Street Trees

The Preferred Plan includes the implementation of street trees along the following roadway corridors, which is consistent with the Midway/Pacific Highway Urban Greening Plan:

- Barnett Avenue, between Rosecrans Street and Pacific Highway
- Midway Drive, between Sports Arena Boulevard and Barnett Avenue
- Sports Arena Boulevard, between West Mission Bay Drive and Rosecrans Street
- Pacific Highway, between Taylor Street and Laurel Street
- Rosecrans Street, between Midway Drive and Taylor Street

Intersections

All crossing points at intersections should be upgraded to include the following:

- ADA compliant pedestrian ramps
- High visibility continental cross-walks
- Advanced stop bar placement
- Pedestrian count down signals

New Sidewalks

Sidewalk facilities will be implemented along the following roadways:

- Midway Drive, between Bogley Drive and Barnett Avenue
- Jessop Lane, between Enterprise Street and Barnett Avenue
- St. Charles Street, between Lytton Street and Cadiz Street
- Kemper Street, Kenyon Street to Midway Drive (south side)
- Sports Arena Boulevard, between Rosecrans Street and Pacific Highway (southwest side)
- Kurtz Street, between Rosecrans Street and Pacific Highway
- Pacific Highway, between Couts Street and Washington Street (southwest side)
- Witherby Street, between Hancock Street and Pacific Highway
- Hancock Street, between Witherby Street to 465 ft south of Witherby Street (south side)

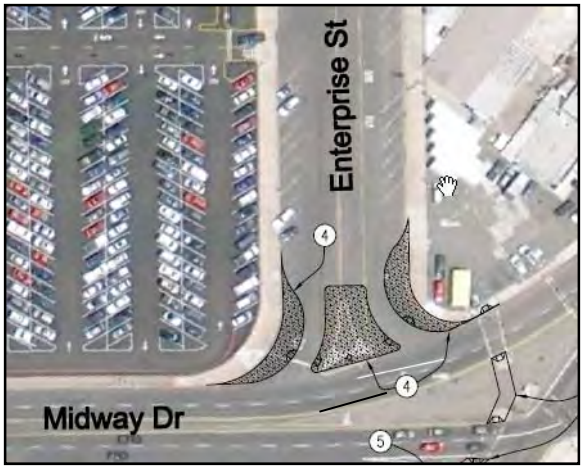
Specific Pedestrian-Related Intersection Improvements:

Midway Drive / Enterprise Street (Shown to the Right):

- Install bulb-outs and a pedestrian refuge island on the northeast leg of the intersection.

West Palm Street / Kettner Boulevard (intersection adjacent to the I-5 pedestrian bridge)

- Install bulb-outs on north leg of the intersection.
- Install continental cross-walk on the north leg of the intersection.
- Install a Pedestrian Hybrid Beacon on the north leg of the intersection (if warrants are met).



Conceptual Drawing from Phase IV of the City of San Diego Pedestrian Master Plan

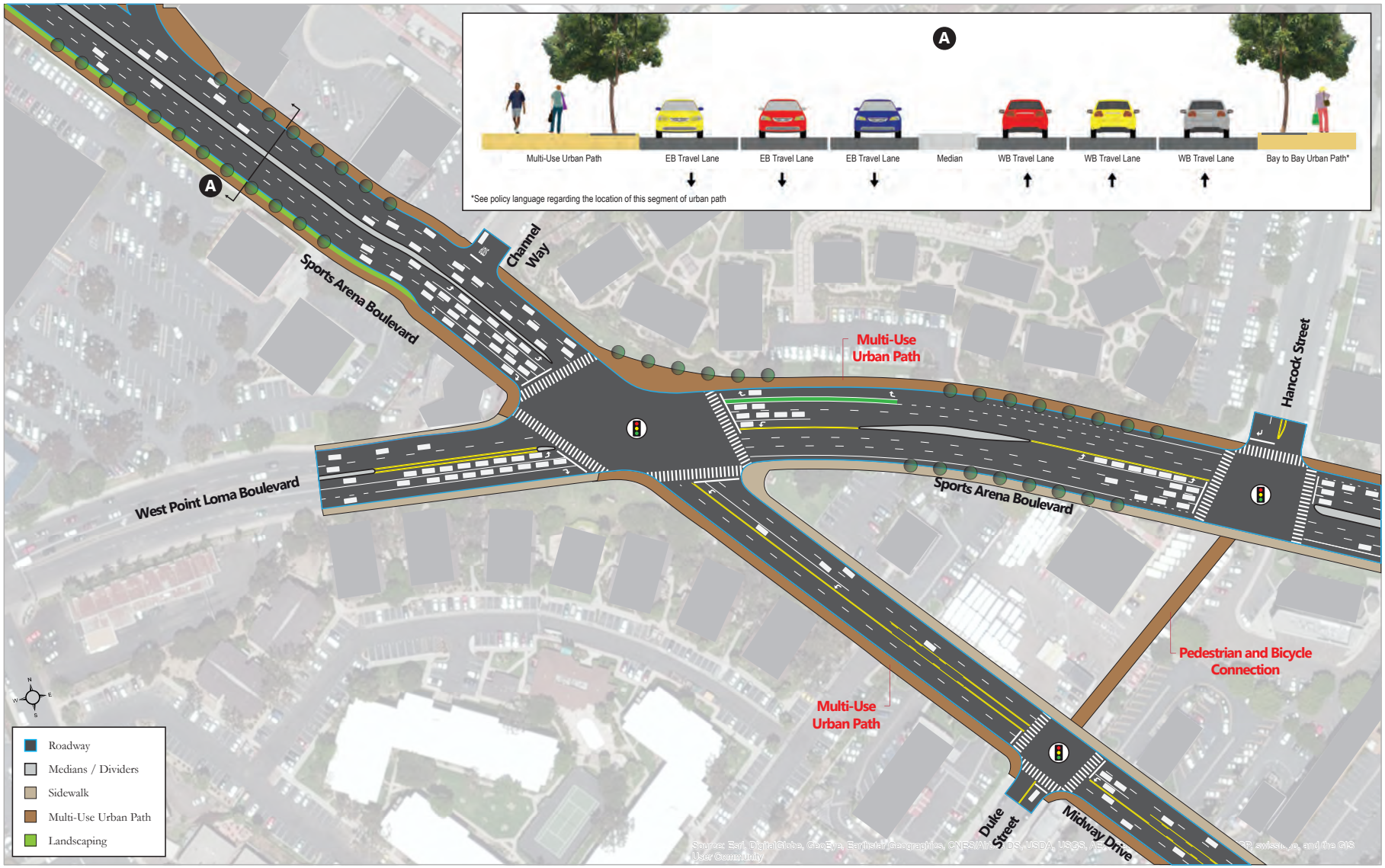
Sports Area Boulevard / West Point Loma Drive / Midway Drive

- Remove all free-right turn movements, which will decrease pedestrian crossing-distances.
- Improve the right-of-way with landscaping to improve the pedestrian environment.

Figure 3-10 displays a concept drawing of the proposed intersection improvements.

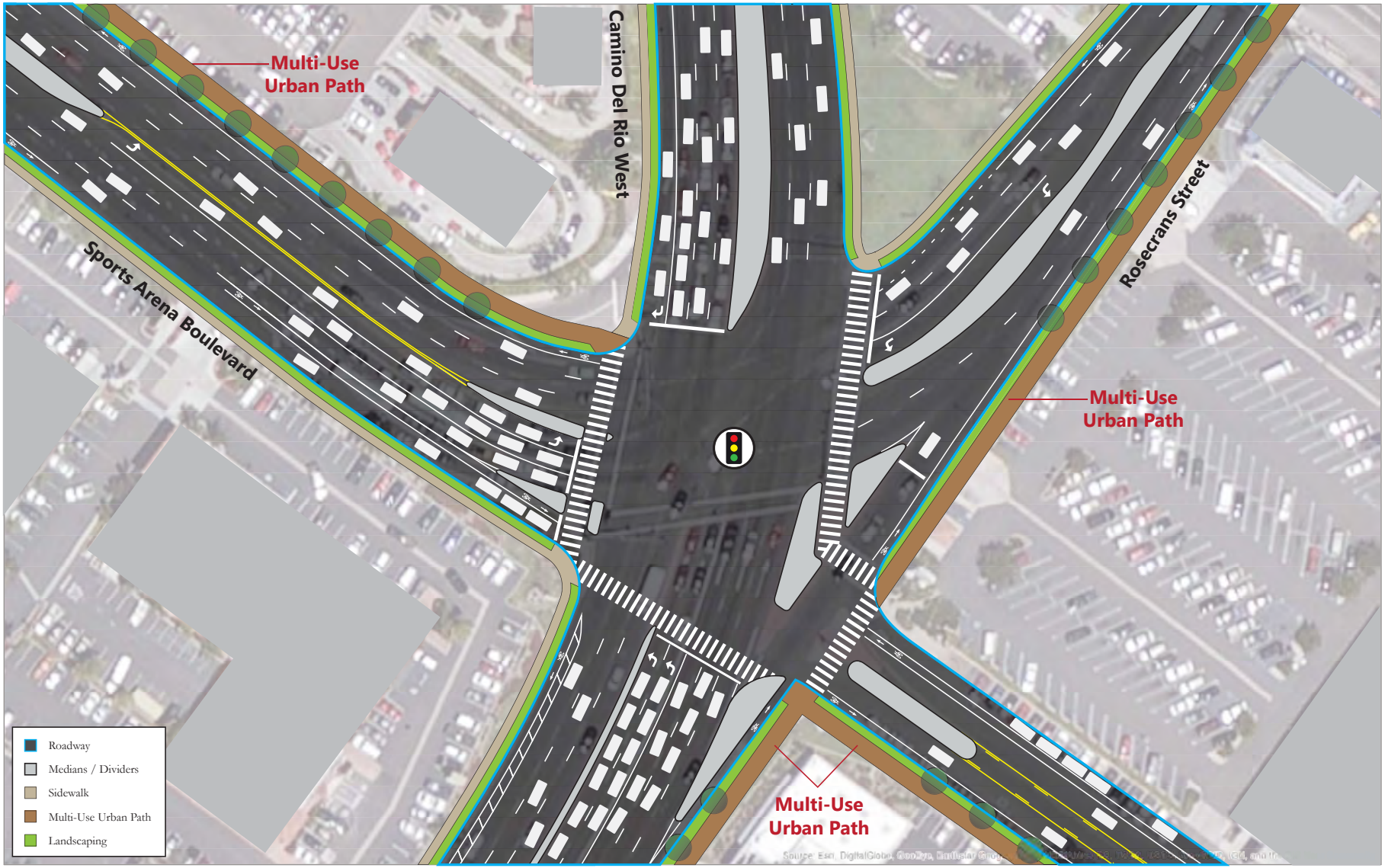
Sports Arena Boulevard / Rosecrans Street / Camino Del Rio West

- Remove the southbound free right-turn movement from Camino Del Rio West onto Sports Arena Boulevard and replace it with an exclusive right-turn lane, which will improve pedestrian safety while crossing the intersection. Figure 3-11 displays a concept drawing of the proposed intersection improvements.



This graphic is for conceptual purposes only. Further engineering study would be required at the project level prior to implementation.

Figure 3-10
Sports Arena Boulevard / West Point Loma Boulevard / Midway Drive - Proposed Pedestrian Improvements



This graphic is for conceptual purposes only. Further engineering study would be required at the project level prior to implementation.

Figure 3-11
Sports Arena Boulevard / Rosecrans Street / Camino Del Rio West - Proposed Pedestrian Improvements

3.4 Cycling Environment

3.4.1 Identified Bicycle Needs

The Midway-Pacific Highway Community is located at a junction point for several regional bicycle facilities including both the Coastal Rail Trail (along Pacific Highway) and the Ocean Beach Bike Path (along the San Diego River). Local bicycle connections to the surrounding neighborhoods are also provided, such as Class II Bike Lanes between Midway-Pacific Highway and the Peninsula communities along Rosecrans Street. A Class III Bike Route is provided along West Mission Bay Drive and terminates at its intersection with W. Point Loma Boulevard / Sports Arena Boulevard. These regional and local connections, along with strong transit service and high intensity commercial and institutional land uses, create high cycling demands within this community.

However, as shown in Figure 3-12 there are currently no bicycle facilities along the major corridors traversing the Midway-Pacific Highway Community (Midway Drive, Sports Arena Boulevard and Rosecrans Street) to accommodate the high bicycle demand. These corridors also have high vehicular traffic volumes and speeds as well as numerous conflict points (intersections, driveways, and alleyways) between motorists and cyclists, creating an uncomfortable environment for cyclists. Figure 3-5 displays the locations of issues/need, mainly defined as high cycling demand corridors that lack bicycle facilities and have high vehicular traffic volumes and speed.

3.4.2 Bicycle Improvements

The Bicycle Network under the Preferred Plan Conditions is shown in Figure 6-10 in this report. The recommended bicycle facilities proposed in this plan are consistent with and improve upon the recommendations outlined in The City of San Diego Bicycle Master Plan. The Preferred Plan proposes to implement the following bicycle facilities within the Midway-Pacific Highway Community:

<u>In Road Facilities</u>

- Class II Buffered Bike Lanes in both directions along Lytton Street / Barnett Avenue between Rosecrans Street and Pacific Highway.
- Class IV One-Way Cycle Tracks in both directions along Pacific Highway between Taylor Street and Laurel Street. This cycle track continues through the Old Town community, north to Sea World Drive.
- Class II Buffered Bike Lanes in both directions along Rosecrans Street between Lytton Street and Pacific Highway.
- Class II Buffered Bike Lanes in both directions along Sports Arena Boulevard between W. Point Loma Boulevard and Pacific Highway.
- Class II Bike Lanes in both directions along Hancock Street between Old Town Avenue and Noell Street.
- Class II Bike Lanes along the south side of Hancock Street/Kettner Boulevard between Noell Street and Laurel Street.

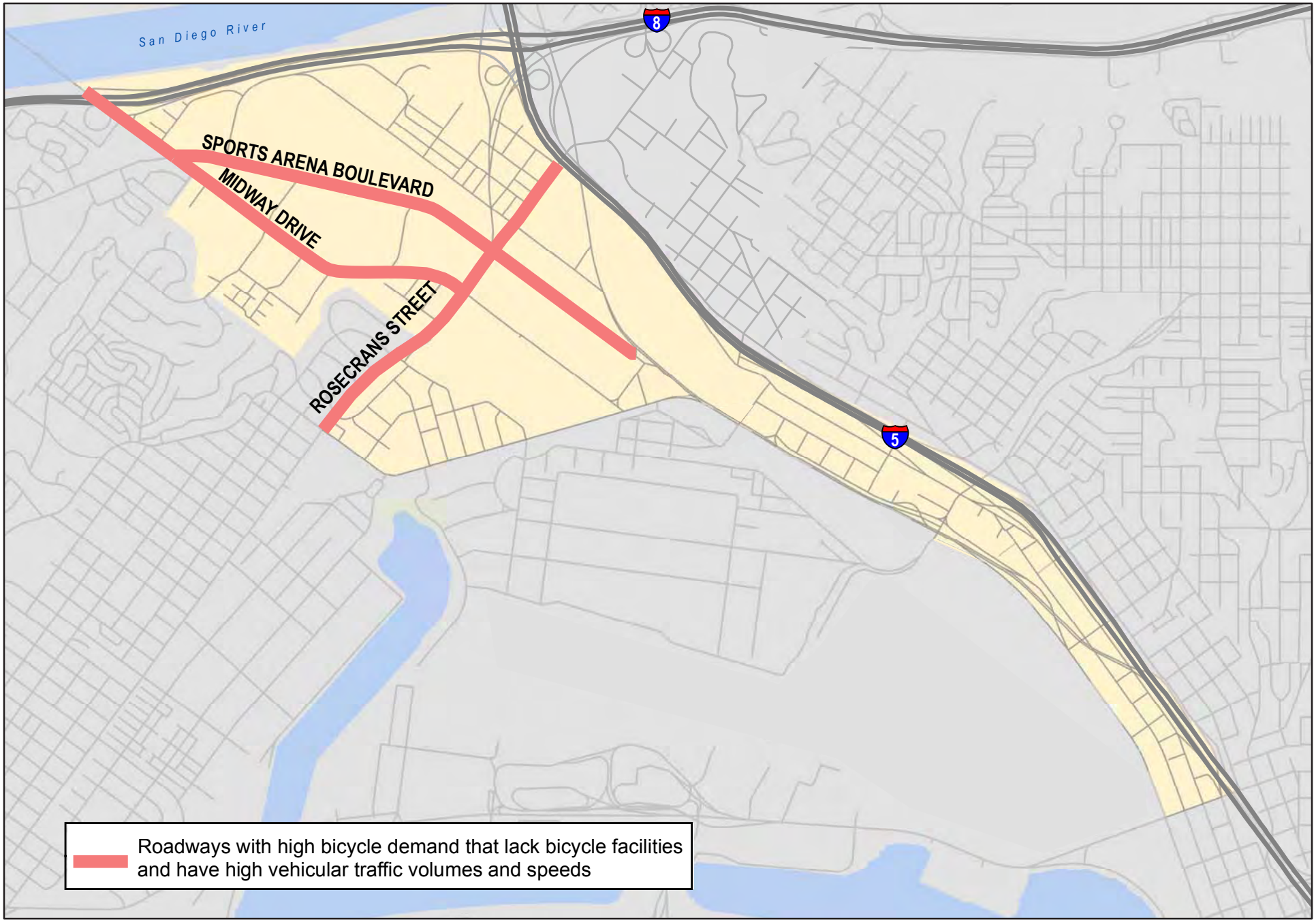


Figure 3-12
Bicycle Network Issues and Needs -
Midway-Pacific Highway Community

In Road Facilities (continued)

- Class II Buffered Bike Lanes in both directions along Kemper Street between Kenyon Street and Kurtz Street.
- Class IV Cycle Track on the north side of Washington Street between Pacific Highway and Interstate 5.
- Class II Bike Lanes in both directions along Old Town Avenue between Hancock Street and San Diego Avenue.
- Class II Buffered Bike lanes in both directions along Frontier Drive between Sports Arena Boulevard and Kurtz Street.
- Class II Buffered Bike lanes in both directions along Charles Lindbergh Parkway between Midway Drive and Kurtz Street.
- Class III Bicycle Route on Kurtz Street between Hancock Street and Rosecrans Street.
- Class III Bicycle Route on Noell Street between Pacific Highway and Hancock Street.
- Class III Bicycle Route on Hancock Street between Sports Arena Boulevard and Rosecrans Street.
- Class II Bike Lanes in both directions along Witherby Street between Pacific Highway and Hancock Street (The inclusion of bike lanes along this street would be determined by the available road width for these facilities; see section 3.2.2 for a discussion of a feasibility analysis to determine a need to widen Witherby Street)
- Class II Bike Lanes in both directions along Sassafras Street between Pacific Highway and Interstate 5.

Multi-Use Urban Paths

- Class I Multi-Use Urban Path connection, as an extension of Hancock Street between Sports Arena Boulevard and Midway Drive.
- Class I Multi-Use Urban Path along the south side of Rosecrans Street between Lytton Street and Pacific Highway.
- Class I Multi-Use Urban Path along the south side of Lytton Street / Barnett Avenue between Rosecrans Street and Pacific Highway.
- Class I Multi-Use Urban Path along the west side of Midway Drive between Sports Area Boulevard and Barnett Avenue.
- Class I Multi-Use Urban Path along the southwest or northeast side of Sports Arena Boulevard between I-8 and Midway Drive (to be determined by further study upon implementation), and on the northeast side of Sports Arena Boulevard between Midway Drive and Dutch Flats Parkway.
- Class I Multi-Use Urban Path along the south side of Dutch Flats Parkway between Barnett Avenue and Sports Arena Boulevard.
- Class I Multi-Use Urban Path along the east side of Pacific Highway between Taylor Street and Laurel Street.
- Class I Multi-Use Urban Path along the southeast side of Kemper Street between Sports Arena Boulevard and Kurtz Street.

3.5 Public Transit Service and Facilities

3.5.1 Identified Transit Needs

Underserved Areas – As shown in Figure 3-13, the following areas within the Midway-Pacific Highway Community are located beyond a quarter mile of a bus stop or transit station, indicating potentially poor levels of transit access:

- Barnett Avenue, between Truxtun Road and Midway Drive
- The northeast portion of the community (east of Kurtz Street and north of Sherman Street)
- Pacific Highway, between Wright Street and Noell Street
- Pacific Highway, between Vine Street and Sassafras Street

3.5.2 Transit Improvements

SANDAG's San Diego Forward, The Regional Plan (Adopted October 2015) indicates that a number of transit improvements are planned for the Midway-Pacific Highway Community, prior to this plan's Year 2035 horizon year, including:

Local Bus Service – Increase local bus service in key corridors to 10 minute headways programmed and scheduled for Year 2035.

Rapid Bus Route 28 – By the Year 2035, a new rapid bus route will be implemented providing service between Point Loma and Kearny Mesa via the Old Town Transit Center.

San Diego International Airport Intermodal Transit Center (ITC) – The ITC will act as an important hub connecting all modes of transportation accessing and departing from Lindbergh Field. The ITC is planned to be located on the north end of the airport, just south of Interstate 5 between Washington Street and Sassafras Street. The ITC is being planned as a major transit hub connecting all three existing trolley lines (Blue, Green and Orange), the COASTER, Amtrak, new MTS Express Bus routes directly serving the airport, several local MTS bus routes and the planned California High Speed Rail system. In addition to the transit connections, the ITC is planned to provide the following:

- 360 new parking spaces
- 126,000 SF of new retail uses
- Direct access to I-5 / via the Pacific Highway on/off-ramps
- Grade separation of the Washington Street and Sassafras at-grade rail crossings
- New grade separated crossing at Vine Street
- Raised bicycle lanes and cycle tracks on the street surrounding the ITC
- Wider sidewalks around both the ITC and new retail uses
- Curb extensions and planting/parking strips as well as provide new opportunities to employ green street strategies on impacted/new roadways.

The ITC is anticipated to be constructed and operational by the Year 2035.

Midway-Pacific Highway and
Old Town Community Plan Update

CHEN RYAN

Figure 3-13
Transit Coverage -
Midway-Pacific Highway Community

Transit Priority Improvements

Pacific Highway - Pacific Highway serves several express bus routes that link multiple communities. It is recommended that, as Pacific Highway is redeveloped, transit priority measures such as queue jumper lanes and transit priority signals be implemented at all signalized intersections along Pacific Highway between Taylor Street and Laurel Street.

Rosecrans Street – Rosecrans Street east of Camino Del Rio West currently serves four MTS bus Routes (8, 9, 28 and 35). A queue jumper lane and transit signal have already been implemented on the eastbound approach at the Taylor Street / Rosecrans Street and Pacific Highway intersection. Similar transit priority improvements should also be examined for feasibility at the Rosecrans Street / Camino Del Rio West / Sports Arena Boulevard intersection to allow westbound buses (Routes 8, 9 and 35) to turn right onto Sports Arena Boulevard and avoid congestion.

New Roadway Connections – The proposed new roadway connections can serve as alternative east/west routes for busses traveling through the community. Rerouting to these new facilities, if possible, may help avoid the congestion on Rosecrans Street. It is recommended that after the construction of any of the new roadways, the City of San Diego coordinate with MTS to examine opportunities for bus rerouting.

3.6 Currently Planned Improvements

The following section outlines the mobility improvements that are currently planned within the Midway-Pacific Highway community. Some improvements were too minor to incorporate at the community plan level, while others are mitigation measures from projects within the area and are not the responsibility of the community plan. Additionally, the pending improvements contained within the existing community Public Facilities Financing Plan are outlined and identified whether they are consistent with the Preferred Plan.

3.6.1 Auto

West Mission Bay Drive Bridge over San Diego River, CIP Project S00871 – the proposed City project will replace the existing bridge with a 6-lane bridge having a northbound and southbound Class I bicycle facility and pedestrian sidewalks. The project is in the final design phase and construction is estimated to start in July 2017. Improvements from this project were analyzed and its design was considered to develop recommendations in this study.

Midway/Pacific Highway Corridor Public Facilities Financing Plan, 2004 – this document contains several roadway improvements that have not yet been completed. It should be noted that all of these improvements are unfunded and currently not scheduled for implementation.

Signal Modifications:

- Barnett Avenue / Midway Drive (Project T7) – *Improvement has been completed and is consistent with the Preferred Plan.*

- Pacific Highway / West Washington Street (Project T29) – *Improvement is consistent the Preferred Plan.*

Extensions/New Streets:

- Extension of Barnett Avenue from Pacific Highway to Old Town Avenue (Project T8) – *Improvement is no longer recommended under the Preferred Plan.*
- Extension of Kemper Street as a four-lane collector from Sports Arena Boulevard to Hancock Street (Project T14) – *Improvement changed under the Preferred Plan.*
- New four-lane collector street connecting Sports Arena Boulevard and Midway Drive (Project T13) – *Improvement changed under the Preferred Plan.*

Street Widening:

- Improve Kurtz Street to a four-lane major between Rosecrans Street and Pacific Highway (Project T15) – *Improvement changed under the Preferred Plan.*
- Improve Sports Arena Boulevard to a four-lane collector between Rosecrans Street and Pacific Highway (Project T16) – *Improvement changed under the Preferred Plan.*
- *Add Project T23 and state whether improvement has changed under the Preferred Plan (we did not assumed it has in our cost estimating).*

Intersection Improvements

- Midway Drive / Sports Arena Boulevard (Project T17) – *Improvement changed under the Preferred Plan.*

Several roadway facility projects have been identified by the City of San Diego and are included on their Unfunded Transportation Needs List (8/5/2014). A list of the roadway related improvements located in the Midway-Pacific Highway Community is included in Appendix B. It should be noted that this list is updated on a regular basis and Appendix B only reflects a snapshot of the needs and planned improvements throughout the community at the time when this report was prepared.

3.6.2 Pedestrian

Public Facilities Financing Plans

The adopted Public Facilities Financing Plan for the Midway-Pacific Highway community currently contains planned pedestrian improvements that have not yet been completed, as follows:

- Install / upgrade 169 curb ramps to meet ADA standards (T25) – These improvements are currently not scheduled or funded. *Improvement is consistent with the Preferred Plan.*

Several pedestrian facility projects have been identified by the City of San Diego and are included on their Unfunded Transportation Needs List (8/5/2014). A list of the pedestrian improvements located in the Midway-Pacific Highway Community is included in Appendix B. It should be noted that this list is updated on a regular basis and Appendix B only reflects a snapshot of the needs and planned improvements throughout the community at the time when this report was prepared.

3.6.3 Bicycle

The City of San Diego's Transportation and Stormwater Department is currently resurfacing Barnett Avenue between Midway Drive and Pacific Coast Highway. The resurfaced pavement will include striping for a new Class II bicycle lane along the north side of Barnett Avenue between Pacific Highway and Midway Drive and green paint in areas of potential conflict zones between vehicular and bicycle traffic. The resurfacing project maintains the existing Class II bicycle facilities in this area on both sides of Barnett Avenue and enhances each facility with a 2' buffer on both sides of the roadway.

3.6.4 Transit

As noted in section 3.5.2 the Preferred Plan in consistent with *SANDAG's San Diego Forward, The Regional Plan* (Adopted October 2015).

4.0 Old Town Community Preferred Plan

4.1 Development of the Preferred Plan

4.1.1 Identification of Issues and Needs

Existing mobility related issues and needs within the Old Town Community were identified in the *Community of Midway/Pacific Highway Corridor and Old Town Mobility Existing Conditions Report; September 2012 (Existing Conditions Report)*. The issues and needs identified in the Existing Conditions Report were used, in conjunction with the other planning efforts and the overall community vision, to develop the recommended mobility improvements presented in the Preferred Plan.

4.1.2 Development of Preferred Plan Improvements

Preferred Plan improvements were developed by first cross checking the mobility issues and needs identified in the Existing Conditions Report against the mobility issues and needs identified in several other on-going or recent planning efforts, including:

- I-8 Corridor Study (August 2016)
- San Diego Forward, The Regional Plan (October 2015)
- Riding to 2050, The San Diego Regional Bike Plan (2010)
- City of San Diego Bicycle Master Plan (December 2013)
- Phase II Visitor Oriented Parking Facilities Study of the Old Town Community (May 2002)
- City of San Diego Pedestrian Master Plan - Phase 4 (Dec 2013)
- Mid-Coast Corridor Transit Project, Transportation Impacts and Mitigation Report (Sept 2014)

Where possible, the Preferred Plan carried forward or maintained the relevant improvements from on-going or previous planning efforts which have been adopted or vetted by the community. New improvement strategies were then developed to address the existing issues and needs, as identified in the Existing Conditions Report, which have not been addressed in other planning efforts. Additional mobility improvements were also developed to accommodate the anticipated future growth within the community. The following sections outline the mobility issues and needs identified in the Existing Conditions Report and the associated improvements recommended under the Preferred Plan to alleviate them.

4.2 Street and Freeway System

4.2.1 Identified Street and Freeway Issues and Needs

Taylor Street – Taylor Street provides connections to three major regional roadway facilities. To the east, Taylor Street provides a connection to I-8 and the regional freeway system. To the west, Taylor Street connects with both Rosecrans Street (which connects to communities to the west), and to Pacific Highway (which connects to communities to the north and the south). Taylor Street

accommodates a high volume of both regional and local traffic. There are currently two identified roadway related issues along Taylor Street, as described below:

At-Grade Rail Crossing – Currently the BNSF and MTS trolley right-of-way crosses Taylor Street at-grade between Pacific Highway and Congress Street. Gate down times at this crossing typically last between 30 seconds to 3 minutes, depending on the number of vehicles and train cars. During these gate down times, all other modes of transportation must stop, causing impacts to traffic operations at the adjacent intersections. Train crossings at this location typically cause additional intersection delay, queuing and congestion.

Taylor Street between Presidio Drive and I-8 Ramps – Taylor Street east of Presidio Drive reduces from four-lanes to two, with narrow lane widths (10 feet). Traffic volumes along this segment are high (13,140 ADT) since it leads to an I-8 interchange, and far exceeds the roadway LOS D maximum capacity of 9,000 ADT. The narrow lane widths and high traffic volumes result in congestion along this segment in the eastbound direction accessing the freeway ramps during the PM peak hour.

San Diego Avenue between Ampudia Street and Old Town Avenue – This segment of San Diego Avenue connects the commercial uses along both Congress Street and San Diego Avenue to the I-5 interchange located at Old Town Avenue. This segment of San Diego Avenue is currently a two-lane roadway with an average daily traffic volume of 10,160, which far exceeds the roadway LOS D maximum capacity of 6,500 ADT. This results in reduced speeds and congestion in the northbound direction during both the AM and PM peak hours.

*Old Town Avenue between Moore Street and San Diego Aven*ue – Old Town Avenue provides a regional connection point between the community and I-5. This segment of Old Town Avenue is currently two-lanes with an ADT of 11,750, which far exceeds the roadway LOS D maximum capacity of 6,500 ADT. This results in reduced speeds and congestion in the northbound direction during the PM peak hour.

The identified roadway issues and needs within the Old Town Community are displayed in Figure 4-1.

4.2.2 Street and Freeway Improvements

Due to the historic nature of the community, the Preferred Plan does not propose any roadway widenings or significant roadway capacity improvements.

Intersections

Congress Street / San Diego Avenue / Ampudia Street:

- Convert intersection to all-way stop control
- Implement bulb-outs on all legs of the intersection
- Widen the sidewalks along the north side of San Diego Avenue

Figure 4-2 displays a concept drawing of the proposed intersection improvements.

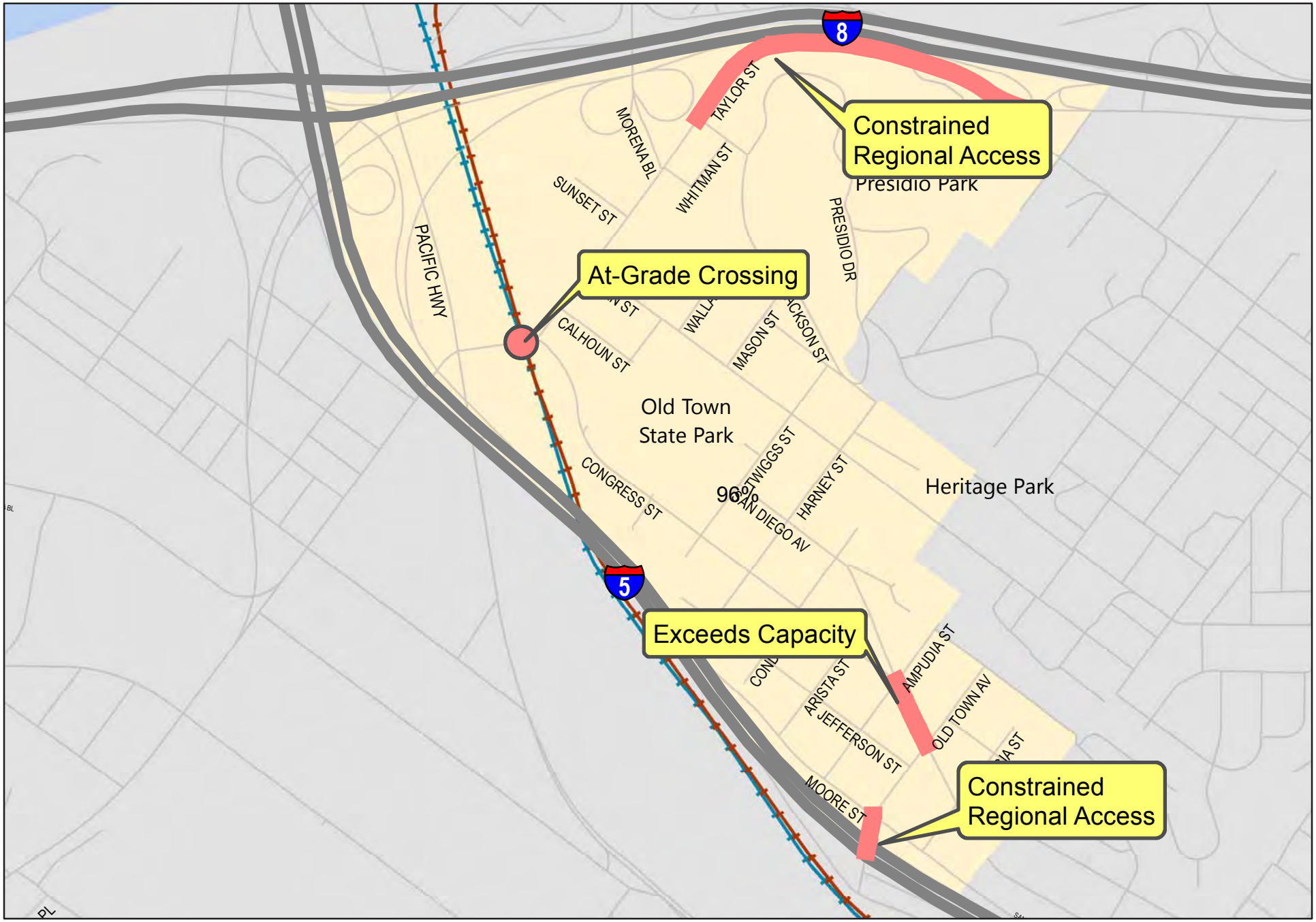


Figure 4-1
Identified Street and Freeway Related Issues and Needs - Old Town Community

This graphic is for conceptual purposes only. Further engineering study would be required at the project level prior to implementation.

Figure 4-2
Proposed Improvements - Congress Street / San Diego Avenue / Ampudia Street

Note: Converting the intersection control to a roundabout is also an option for this intersection. However, due to the tight spacing of the adjacent buildings there may not be enough right-of-way to accommodate a roundabout. Additional engineering study should be conducted to see if a roundabout is feasible at this intersection. If it is determined that a roundabout is feasible then it would become the preferred improvement.

Parking

San Diego Avenue between Twiggs Street and Conde Street has a large curb-to-curb width (50 feet) for a standard two-lane collector roadway (typically 40 feet wide). Therefore, in order to better utilize the curb-to-curb right-of-way, it is recommended that the parallel parking on the east side of the roadway be converted to angled parking, as shown in the figure below. The recommended improvement will not affect the capacity of the roadway and will increase the already constrained parking capacity within the Old Town community. Figure 4-3 displays a concept drawing of this improvement.

Freeway

There are no freeway improvements included in the Revenue Constrained alternative of *SANDAG's San Diego Forward, The Regional Plan (Adopted October 2015)* to be completed before this plan's Horizon Year (Year 2035). SANDAG prepared the Draft I-8 Corridor Study as a high level planning resource for potential improvements between Ocean Beach and Mission Valley. One of the identified improvements calls for the removal of all free movements from I-8 onto Morena Boulevard and "squaring up" each intersection. Since the plan has not yet been adopted and the improvements are not anticipated to be implemented until Year 2050, no improvements were assumed under Preferred Plan conditions.

This graphic is for conceptual purposes only. Further engineering study would be required at the project level prior to implementation.

Figure 4-3
Proposed San Diego Avenue Improvements between Twiggs Street and Conde Street

4.3 Pedestrian Environment

4.3.1 Identified Pedestrian Issues and Needs

The following pedestrian related issues and needs were identified in the Existing Conditions Report:

Taylor Street At-Grade Rail Crossing – Pedestrians accessing the Old Town Community or the Old Town Transit Center from Pacific Highway or Rosecrans Street currently have to cross the shared BNSF and MTS Trolley rail right-of-way. The Taylor Street at-grade rail crossing is over 100 feet wide, gate to gate, and pedestrians have to cross over four sets of rail tracks. During peak hours there are approximately 13 train crossing events lasting between 30 seconds and 3 minutes. During these times pedestrians are forced to wait until the train clears the crossing, causing excessive delays.

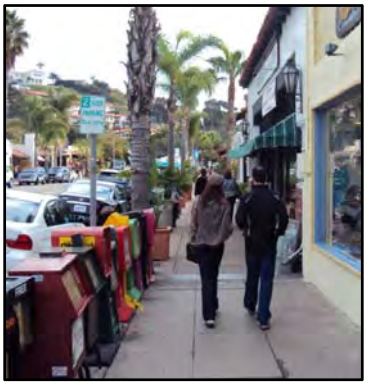
Old Town Transit Center Wayfinding – There is currently limited signage at the Old Town Transit Center directing pedestrians who are unfamiliar with the area, such as tourists, to the many restaurant, shops, historical monuments and structures, and parks in the community. Currently there is only a single map (identical to the map depicted in the picture below, which is located on San Diego Avenue) directing patrons to these various community features.

The Old Town San Diego Chamber of Commerce is implementing a wayfinding signage program that will install various signage types throughout the community to better inform patrons about how to access the various community features and help brand the community as a whole.

Missing Sidewalks – There are currently no sidewalks on Taylor Street, east of Presidio Drive and on the east side of San Diego Avenue, just north of Ampudia Street.

Connectivity between Community Features and Parks – There is currently no direct, convenient or identifiable path connecting the Old Town Transit Center, Old Town State Park and Presidio Park. Both parks are major community features attracting tourists and out of town guests who may not be familiar with the community or its amenities. The development of a clear, concise and well signed path connecting these three community assets would significantly improve pedestrian circulation within the community.

Sidewalk Capacity Issues – The retail and restaurant establishments along San Diego Avenue attract significant pedestrian traffic particularly during evenings and weekends. The sidewalks along San Diego Avenue are currently 7 to 8 feet wide with a limited parkway featuring street trees and planters. Retail shops and other merchants also take up part of the sidewalk with displays, racks and other attractions, as displayed in the photos to the right. During peak times, typical weekend evenings, pedestrian traffic along San Diego Avenue exceeds sidewalk capacity creating a congested pedestrian environment.



San Diego Avenue / Congress Street / Ampudia Street Intersection – This is currently a five legged intersection in which three of the approaches are stop-controlled (SB San Diego Avenue and EB & WB Ampudia Street) and the other two (NB San Diego Avenue and SB Congress Street) are free movements. There are also high vehicular traffic volumes crossing through the intersection along San Diego Avenue and Congress Street, which have no crosswalk facilities. This intersection is confusing and intimidating for pedestrians to cross due to the lack of traffic controls, high traffic volumes and missing crosswalk facilities.

The pedestrian related issues/needs within the Old Town Community, identified above, are displayed in Figure 4-4.

4.3.2 Pedestrian Improvements

Sidewalks

- Complete the sidewalks on the east side of San Diego Avenue, north of Ampudia Street.
- Complete sidewalks on Taylor Street, east of Presidio Drive.
- Implement sidewalks on the north side of Whitman Street.
- Complete sidewalks on Twiggs Street west of Congress Street.
- Implement sidewalks on Sunset Street between Juan Street and Mason Street.
- Implement a sidewalk on the west side of Mason Street between Juan Street and Jackson Street.
- Implement a sidewalk on the west side of Jackson Street between Presidio Drive and Mason Street

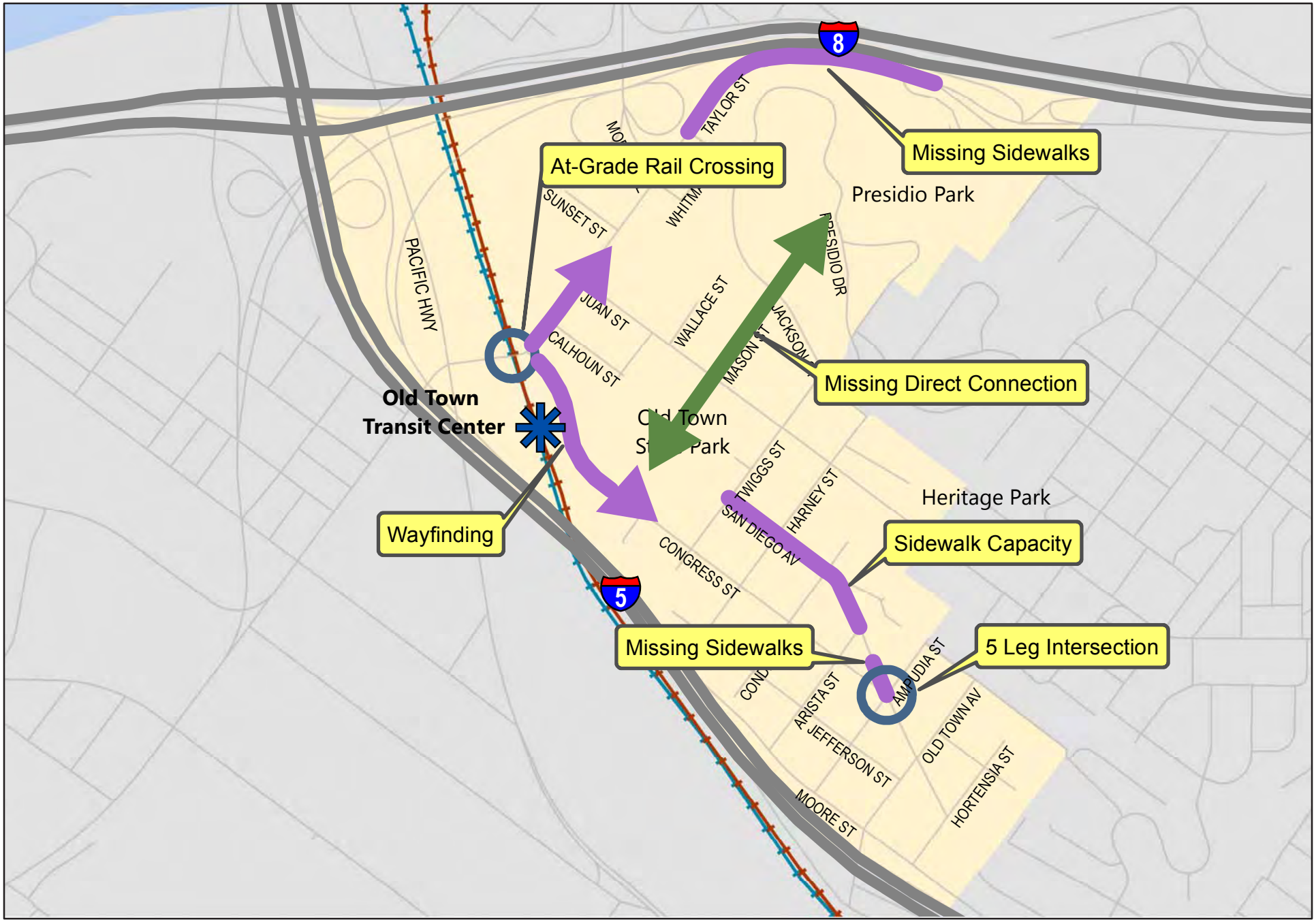
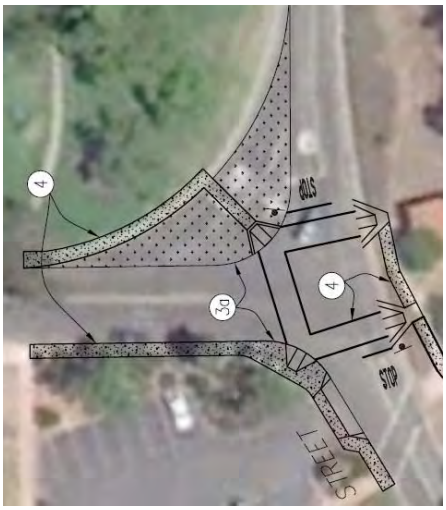


Figure 4-4
Identified Pedestrian Issues and Needs -
Old Town Community

Intersections

All crossing points at intersections should be upgraded to include the following:

- ADA compliant pedestrian ramps
- High visibility continental crosswalks
- Advanced stop bar placement
- Pedestrian count down signals



Proposed Improvements to Presidio Drive / Jackson Street intersection

Specific Intersection Improvements:

Presidio Drive / Jackson Street (Shown to the right):

- Implement bulb-outs on the west leg of the intersection
- Complete sidewalks on all sides of the intersection
- Square up intersection and remove southbound yielded right-turn movements
- Provide cross-walks across all legs of the intersection

Congress Street / Twiggs Street:

- Implement bulb-outs across all legs of the intersection

San Diego Avenue / Twiggs Street:

- Implement pavers or other high visible material in the center of the intersection to slow down and alert drivers to the heavy pedestrian presence, see example to the right.

Example of using bricks/pavers to create a highly visible intersection

Linwood Street / San Diego Avenue:

- Implement Pedestrian refuge island on the southern (Linwood Street) leg of the intersection.

Congress Street / San Diego Avenue / Ampudia Street (See figure 4-2):

- Convert intersection to all-way stop control
- Implement bulb-outs on all legs of the intersection
- Widen the sidewalks along the north side of San Diego Avenue

Note: As stated above, converting the intersection control to a roundabout is also an option for this intersection. However, due to the tight spacing of the adjacent buildings there may not be enough right-of-way to accommodate a roundabout. Additional engineering study should be conducted to see if a roundabout is feasible at this intersection. If it is determined that a roundabout is feasible then it would become the preferred improvement.

4.4 Cycling Environment

4.4.1 Identified Bicycle Issues and Needs

The following cycling related issues and needs were identified in the Existing Conditions Report:

Taylor Street – As mentioned previously, the Taylor Street corridor provides a significant regional east/west connection for vehicles as well as for cyclists. Taylor Street is currently classified as a Class III Bike Route within the Old Town Community; however, east of Presidio Drive, Taylor Street narrows to a two-lane roadway with narrow lane widths (10 feet) and no shoulders. Taylor Street is also a regional vehicular access point for the Old Town Community connecting the I-8 / Taylor Street interchange and Pacific Highway. The narrow lane widths, high vehicular traffic volumes and speeds along Taylor Street, east of Presidio Drive, create an uncomfortable environment for cyclists.

Congress Street / San Diego Avenue – Congress Street and San Diego Avenue (south of Ampudia Street) provide one of the few north/south connections for cyclists within the Old Town Community. Congress Street and San Diego Avenue (south of Ampudia Street) is currently classified as a Class III Bike Route designated by sharrow markings. Congress Street's proximity to the Old Town Transit Center and retail and restaurant uses make it a highly attractive route for cyclists. Both corridors currently have high traffic volumes, and on-street parking on both sides of the roadway which create an uncomfortable environment for cyclists.

The bicycle related issues/needs within the Old Town Community, identified above, are displayed in Figure 4-5.

4.4.2 Bicycle Improvements

The Preferred Plan proposes implementing the following bicycle facilities within the Old Town Community:

- Complete the Class II Bike Lanes in both directions along Taylor Street between Pacific Highway and the community boundary and bicycle boxes at appropriate intersections, as identified in the I-8 Corridor Study.
- Class III Bike Route in both directions along Juan Street between Taylor Street and community boundary.
- Class II Bike Lanes in both directions along Old Town Avenue between Hancock Street and San Diego Avenue.
- Class II Bike Lanes in both directions along Morena Boulevard between Taylor Street and the community boundary.

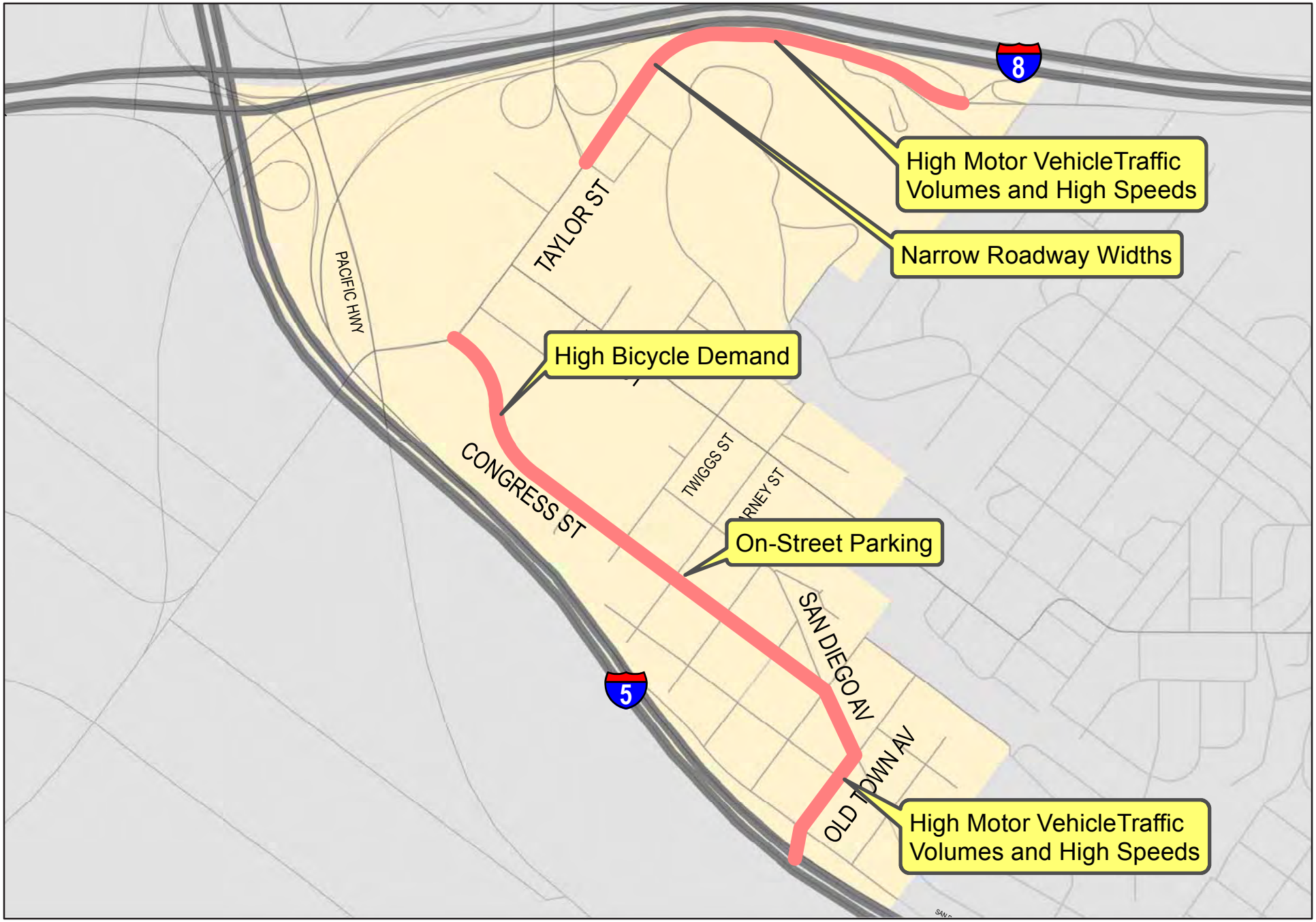


Figure 4-5
Bicycle Network Issues and Needs -
Old Town Community

A bicycle connection is currently lacking along Morena Boulevard between Taylor Street and Linda Vista Road. This is a critical connection that would link the Old Town and Linda Vista communities, as well as provide a connection to the Ocean Beach Bike Path. Unfortunately, the bridge along this segment of the roadway has a constrained right-of-way, and the current configuration of the I-8 Morena Boulevard ramps position four high-speed free-right turn movements on/off the bridge.

Due to these constraints there is not feasible bicycle facility that can be implemented along this segment without both widening the bridge and reconfiguring the I-8 / Morena Boulevard Ramps. However, it is recommended that the City work with both Caltrans and SANDAG to look for opportunities to implement bicycle facilities and better pedestrian facilities along this segment should any improvements be done to this segment. The I-8 Corridor Study identifies Class II bike lanes along Morena Boulevard, between W. Morena Boulevard and Taylor Street, as a high priority project. As described in section 4.2.2, the Corridor Study also proposes removing all free movements from I-8 onto Morena Boulevard and "squaring up" each intersection. Since the plan has not yet been adopted and the improvements are not anticipated to be implemented until Year 2050, no improvements were assumed under Preferred Plan conditions.

4.5 Public Transit Service and Facilities

4.5.1 Identified Transit Issues and Needs

The Old Town Community is served by 10 bus routes, a trolley line, a commuter rail service (The COASTER) and a regional rail line (Amtrak Surfliner), which all serve the Old Town Transit Center. Figure 4-6 displays the community's streets served by bus routes as well as the existing Trolley Lines.

This figure also shows the area within ½ mile of the Old Town Transit Center, which is considered a reasonable walking distance to a major transit center (as compared to a ¼ mile for bus stops). As depicted in this figure, nearly all of the commercial and recreational uses are within ½ mile of transit service.

Figure 4-6
Transit Coverage -
Old Town Community

4.5.2 Transit Improvements

SANDAG's *San Diego Forward, The Regional Plan* (Adopted October 2015), indicates that a number of transit improvements are planned for the Old Town Community, prior to this plan's Year 2035 Horizon Year, as described below.

COASTER – By the Year 2020, the frequency of the COASTER will be increased to every 20 minutes during peak periods and every 120 minutes during off-peak periods. The COASTER provides a commuter rail connection between the Old Town Transit Center and North County communities including Solana Beach, Encinitas and Oceanside.

COASTER – by the Year 2020, the COASTER line will be extended to the south and include stations at both Petco Park and the Convention Center.

Mid-Coast Trolley Line – The Mid-Coast Trolley will extend service from Santa Fe Depot in Downtown San Diego to the University City community, serving major activity centers such as Old Town, the University of California, San Diego (UCSD), and Westfield UTC. Construction of the Mid-Coast Trolley line is anticipated to be completed by the Year 2021.

Local Bus Service – Increase local bus service in key corridors to 10 minute headways programmed and scheduled for Year 2035.

Rapid Bus Route 28 – By the Year 2035, a new rapid bus route will be implemented providing service between Point Loma and Kearny Mesa via the Old Town Transit Center.

Rapid Bus Route 30 – By the Year 2035, a new rapid bus route will be implemented providing service between the Old Town Transit Center and Sorrento Mesa via Pacific Beach, La Jolla and UTC.

Rapid Bus Routes 640A – By the Year 2035, a new rapid bus route will be implemented providing service along I-5 between San Ysidro and the Old Town Transit Center, via City College downtown.

Transit Priority Treatments

Taylor Street serves several regional bus routes connecting multiple communities. Therefore, it is recommended that transit priority treatments be implemented along Taylor Street to help increase transit performance. It is recommended to implement queue jumper lanes and transit priority signals in either direction at both the Taylor Street / Juan Street and Taylor Street / Morena Boulevard intersections.

4.6 Currently Planned Improvements

The following section outlines the mobility improvements that are currently planned within the Old Town community. Some improvements were too minor to incorporate at the community plan level, while others are mitigation measures from projects within the area and are not the responsibility of the community plan. Additionally, the pending improvements contained within

the existing community Public Facilities Financing Plan are also outlined and identified if they are consistent with the Preferred Plan.

4.6.1 Auto

Mid-Coast Corridor Transit Project – The Mid-Coast Corridor and Transit Project Transportation Impacts and Mitigation Report; September 2014, identifies the following project related improvements at the Taylor Street / Rosecrans Street and Pacific Highway intersection:

- Provide second northbound right-turn lane
- Provide third eastbound through lane
- Provide second southbound left-turn lane

These improvements are designed to handle excess queuing at the intersection during gate down times. These improvements do not conflict with any improvements recommended by the Preferred Plan and have been incorporated into the future year analysis. However, since these improvements are mitigation measures for the Mid-Coast Corridor Transit Project they are not considered to be part of the Preferred Plan and should not be included in the IFS.

Old Town Public Facilities Financing Plan, 2004 – This plan identifies the widening of Presidio Drive to allow for a right-turn lane on Taylor Street (Project T10). This improvement is unfunded and is not currently scheduled for implementation. – *The Preferred Plan does not include this improvement as a recommendation.*

4.6.2 Pedestrian

Old Town Public Facilities Financing Plan, 2004 – Contains the following planned pedestrian improvements that have not yet been completed.

- Install / upgrade 20 curb ramps to meet ADA standards (Project T12) – These improvements are currently not scheduled or funded. – *Improvement is consistent with the Preferred Plan.*

Several pedestrian facility projects have been identified by the City of San Diego and are included on their Unfunded Transportation Needs List (8/5/2014). A list of the pedestrian improvements located in the Old Town Community are included in Appendix B. It should be noted that this list is updated on a regular basis and Appendix B only reflects a snapshot of the needs and planned improvements throughout the community at the time when this report was prepared.

SANDAG Uptown Bikeways Project – Phase 4 of the Uptown Bikeways project will include treatments to improve pedestrian safety (e.g., high visibility crosswalks, dual pedestrian ramps, bulb-outs). The project is located along Congress Street (from Taylor Street to San Diego Avenue) and San Diego Avenue (from Congress Street to south of Hortensia Avenue). The project is entering final design and is funded through construction. Since these improvements are funded through the Uptown Bikeways project, they should not be included in the IFS. *– Improvements are consistent with the Preferred Plan.*

Wayfinding Signage Program

The Old Town Chamber of Commerce is currently developing a wayfinding signage program in the Old Town Community. The wayfinding signage program will standardize and brand the various wayfinding signs currently within the community and highlight paths and links for pedestrians to access the various parks and attractions within the community.

4.6.3 Bicycle

SANDAG Uptown Bikeways Project – Phase 4 of the Uptown Bikeways project will include a mix of buffered bike lanes and shared lane markings along Congress Street (from Taylor Street to Mason Street) and shared lane markings, where not already marked (from Mason Street to San Diego Avenue). The project is currently in the design phase with specifications still being determined, therefore, it was not included as a recommendation in the Preferred Plan. Congress Street is currently designated as a Class III bicycle route, identifiable by vertical signage and shared lane markings. The Preferred Plan does not propose any modifications to the existing bicycle facility, nor does it include any recommendations that would prevent the Uptown Bikeways project from being implemented.

4.6.4 Transit

As noted in section 4.5.2 the Preferred Plan in consistent with *SANDAG's San Diego Forward, The Regional Plan (Adopted October 2015).*

5.0 Modeling and Forecasting

This chapter summarizes the future year travel demand model forecasting process utilized to project the future travel patterns within the Midway-Pacific Highway and Old Town communities, under buildout conditions. Future year traffic volumes were derived from a SANDAG Series 12 Transportation Forecast model run, which was verified per the City of San Diego's Small Study Area Traffic Modeling Process (April 2012) and calibrated for the Midway-Pacific Highway and Old Town communities.

5.1 Base Year (2012) Model Calibration

The base year model calibration process included verification and validation of base year model inputs (land uses and roadway network), as well as additional adjustments to the base year model (roadway speeds, centroid loadings, etc.) to calibrate the model to better represent existing travel patterns within the Midway-Pacific Highway and Old Town communities. Detailed descriptions of each validation step are provided in the following sections.

5.1.1 Base Year Land Use Verification/Validation

Existing land use data, as listed below, was collected for the Midway-Pacific Highway and Old Town communities and verified/adjusted in the Base Year model to correctly match actual conditions:

- Descriptions (land use type and code)
- Proper measurement unit types (square feet, units, acres)
- Quantity
- Vehicular trip generation rates

Land use types, descriptions and quantities were crosschecked with ground conditions using Google Earth imagery, as well as field verification, as necessary. Trip generation rates for individual land uses were coded based on the driveway rates provided in the *City of San Diego Land Development Code – Trip Generation Manual* (May 2003). Base year land use inputs for the project study area are provided in Appendix D.

5.1.2 Base Year Roadway Network Verification/Validation

The SANDAG Series 12 Base Year roadway network was compared to actual conditions to ensure an accurate model network. The following variables were compared and adjusted to match actual conditions:

- TAZ loading points
- Number of lanes for roadways
- Traffic controls
- Signalized intersection geometrics
- Street classification
- Roadway speed limits

5.1.3 Base Year Ground Count Validation & Adjustment

Historical ADT volumes over the past 11 years were compiled from the City of San Diego's Traffic Count Database and other recent studies for major roadway segments throughout the Midway-Pacific Highway and Old Town communities. The most recent historic counts along with counts from the past five (5) years were selected to establish a Base Year ground count database. This database included multiple counts from the same location on numerous segments, as well as the counts already included in the model. The final count was selected based upon nearby trip generators and traffic patterns along each roadway segment. Abnormally high or low traffic volumes were assumed to be outliers, and thus were not selected as model inputs.

5.1.4 Model Sensitivity Adjustment

Model calibration was performed by running a Base Year model estimate and comparing the results to the selected ground counts discussed above. Roadway segments that did not meet the model calibration targets established by the City of San Diego were identified for additional adjustments. These adjustments included the relocation of TAZ connectors and centroids, TAZ splitting, adjustments of roadway speed (to represent congestion), and in rare cases, ground count adjustments using historic counts older than three years.

5.2 Future Year Traffic Forecast Volume

The Future Year model was developed by inputting the future year land uses and roadway network into the calibrated Base Year model, described in the previous sections, with the following adjustments/assumptions:

- Implementation of the Preferred Plan land uses within the project study area (land use assumptions are provided in Appendix D).
- Existing roadway network within the study area with the following improvement projects:
    - Extension of Kemper Street between Sports Arena Boulevard and Kurtz Street
    - Implementation of Frontier Drive between Sports Arena Boulevard and Kurtz Street
    - Extension of Greenwood Street between Kurtz Street and Sports Arena Boulevard
    - Implementation of Charles Lindbergh Parkway between Sports Arena Boulevard and Midway Drive
    - Implementation of Dutch Flats Parkway between Sports Arena Boulevard and Barnett Avenue
- Year 2035 land uses outside of the study area
- Year 2035 roadway/transit network outside of the study area
- Year 2035 transit network both inside and outside of the study area

The model inputs described above were reviewed and approved by City staff prior to running the model forecasts.

Final SANDAG Series 12 Future Year Forecast Model results are provided in Appendix D. Figure 5-1 shows the final projected average daily traffic volumes that were used to develop and analyze the Preferred Plan mobility network, as described in the next chapter.

5.2.1 Vehicle Miles Traveled

The vehicle miles traveled (VMT) generated within the community was estimated using the SANDAG Series 12 Preferred Plan Future Year 2035 and Base Year models. VMT is the total number of miles driven by all vehicle trips within the Midway-Pacific Highway and Old Town communities, including trips to, from, and within the community. Tables 5.1A and 5.1B display the total VMT generated within each community and the average trip length under both the Preferred Plan and Base Year conditions. VMT calculations are provided in Appendix D.

Table 5.1A Vehicle Miles Traveled (VMT) Comparison – Midway-Pacific Highway Community

Measure	Community Planning Area				San Diego Region			
	Base Year	Preferred Plan	Δ in Value	Δ in %	Base Year	Year 2035	Δ in Value	Δ in %
Total VMT (miles)	730,121	881,487	151,366	20.7%	85,331,631	108,962,049	23,630,418	27.7%
Total # of Auto Trips	294,796	324,927	30,131	10.2%	16,458,692	20,183,171	3,724,479	22.6%
Average Trip Length[1] (miles)	2.5	2.7	0.2	9.5%	5.2	5.4	0.2	3.7%
Population	4,670	23,630	18,960	406.0%	3,130,717	4,035,834	905,117	28.9%
Daily VMT by Population (miles)	156	37	-119	-76.1%	27	27	0	-1.5%

Source: Chen Ryan Associates (March 2017)

Note:

1. Average trip length is estimated by dividing the total VMT by the total # of auto trips.

As shown, under implementation of the Preferred Plan the number of new auto trips and total VMT generated within the Midway-Pacific Highway community is only anticipated to experience minimal growth (based on the regional averages). With the implementation of the Preferred Plan infrastructure and land uses, the average vehicular trip length is anticipated to increase by 9.5%. However, with the significant population increase anticipated within the community, the daily VMT by population is anticipated to drop dramatically (-76.1%).

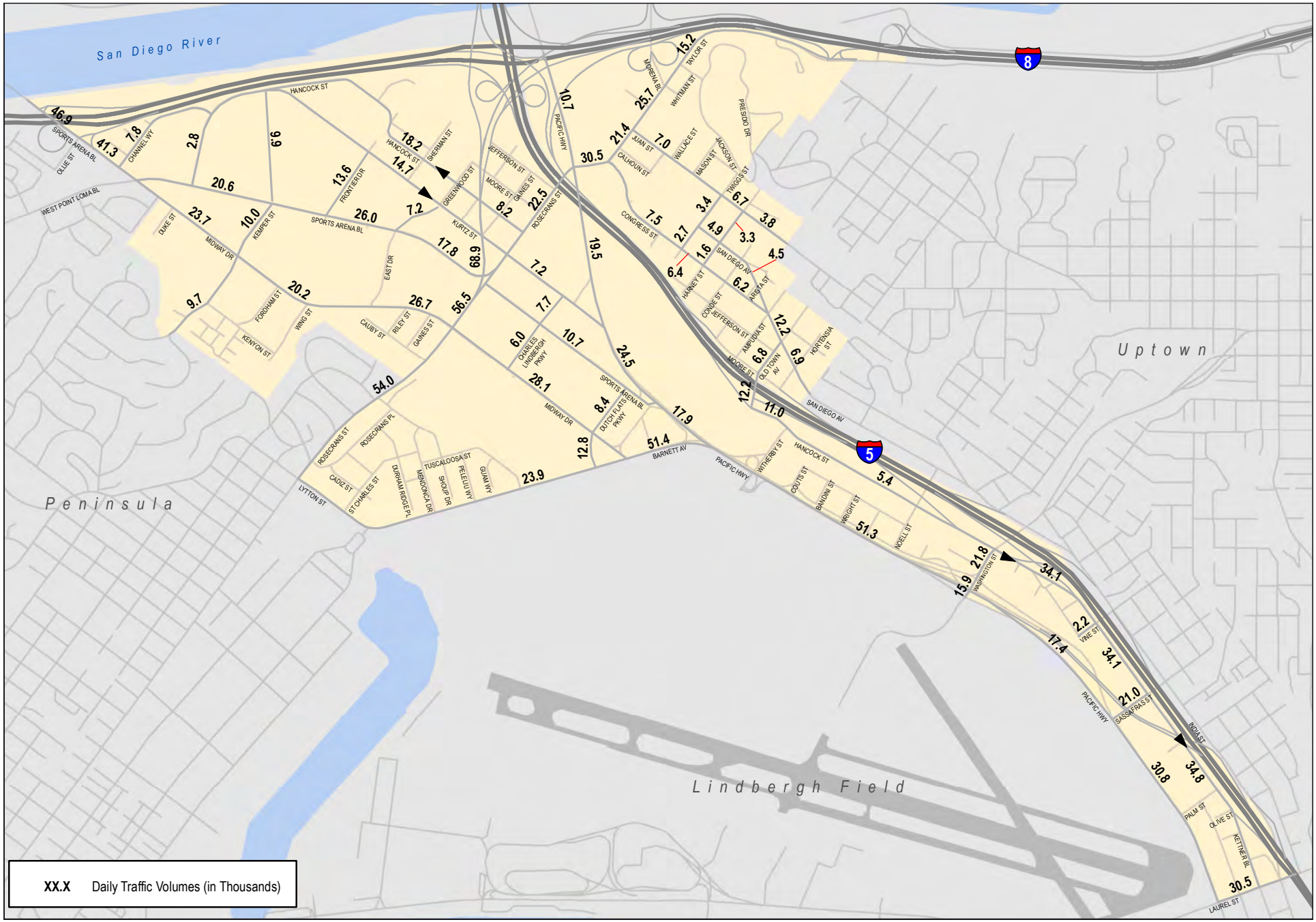


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Figure 5-1
Daily Roadway Segment Traffic Volumes - Preferred Plan Conditions

Table 5.1B Vehicle Miles Traveled (VMT) Comparison – Old Town Community

Measure	Community Planning Area				San Diego Region			
	Base Year	Preferred Plan	Δ in Value	Δ in %	Base Year	Year 2035	Δ in Value	Δ in %
Total VMT (miles)	151,300	171,492	20,192	13.3%	85,331,631	108,962,049	23,630,418	27.7%
Total # of Auto Trips	57,989	59,792	1,803	3.1%	16,458,692	20,183,171	3,724,479	22.6%
Average Trip Length[1] (miles)	2.6	2.9	0.3	9.9%	5.2	5.4	0.2	3.7%
Population	830	1,600	770	92.8%	3,130,717	4,035,834	905,117	28.9%
Daily VMT by Population (miles)	182	107	-75	-41.2%	27	27	0	-1.5%

Source: Chen Ryan Associates (March 2017)

Note:
1. Average trip length is estimated by dividing the total VMT by the total # of auto trips.

As shown, under implementation of the Preferred Plan the number of new auto trips and total VMT generated within the Old Town community is only anticipated to experience average growth (based on the region. With the implementation of the Preferred Plan infrastructure and land uses the average vehicular trip length is anticipated to increase by 9.9%. However, the anticipated population increase within the community results in an overall decrease in the daily VMT by population (-41.2%).

5.2.2 Community Mode Choice

The Mode Choice Model used in the SANDAG Series 12 Transportation Forecast is not sensitive to changes in bicycle and pedestrian facilities. In other words, the model does not accurately adjust travel behaviors in response to implementation of multimodal facilities, such as bicycle lanes or separated multi-use paths, or reflect land use changes that create more mixed use environments. Due to these constraints, the SANDAG Series 12 Model was not utilized to project the demands of future year non-motorized travel.

SANDAG is currently in the process of developing Series 13, an Activity Based Model (ABM) which will more accurately account for shifts in transportation modes based on the implementation of pedestrian and bicycle facilities. However, SANDAG modeling staff has indicated that this model is currently under development and will not be ready for public release until later in 2016.

Since the ABM model is not ready for use at this time, a subsequent mode choice analysis will be prepared by the City as a separate document. The mode choice analysis will use the methods outlined in both the California Air Pollution Control Officers Association (CAPCOA) Quantifying Green House Gas Measures manual, as well as the Urban Land Institute's (ULI) Growing Cooler to post process the Series 12 model results and develop a more accurate mode split for each community.

6.0 Preferred Plan Analysis

6.1 Street and Freeway System Assessment and Results

The following section provides a summary of vehicular analysis results along key study roadways, including the projected daily roadway LOS, and the peak hour intersection LOS analysis under implementation of the Preferred Plan.

6.1.1 Roadway Segment Analysis

This analysis assumes implementation of the roadway segment-related improvements outlined in Sections 3.2.2 and 4.2.2 under the Preferred Plan. The associated roadway classifications under implementation of the Preferred Plan, within both communities, is displayed in Figure 6-1.

Table 6.1 and Figure 6-2 display the projected ADT volume and associated roadway LOS under implementation of the Preferred Plan. Section 5.2 describes the process used to develop projected ADT volume estimations.

As shown, all Mobility Element roadways are projected to operate at LOS D or better under Preferred Plan conditions, with the exception of the following:

Midway-Pacific Highway Community

- Midway Drive, between East Drive and Rosecrans Street (LOS E)
- Midway Drive, between Rosecrans Street and Barnett Avenue (LOS E)
- Kurtz Street, between Hancock Street and Rosecrans Street (LOS E)
- Kettner Boulevard, between Washington Street and Vine Street (LOS F)
- Kettner Boulevard, between Vine Street and Sassafras Street (LOS F)
- Kettner Boulevard, between Sassafras Street and Laurel Street (LOS F)
- Frontier St, between Sports Arena Boulevard and Kurtz Street (LOS E)
- Greenwood Street, between Sports Arena Boulevard and Kurtz Street (LOS E)
- Camino Del Rio West, between Rosecrans Street and the I-5/I-8 Ramps (LOS F)
- Rosecrans Street, between Midway Drive and Sports Arena Boulevard (LOS E)
- Sassafras Street, between Pacific Highway and Kettner Boulevard (LOS F)

Old Town Community

- Congress Street between Taylor Street and Twiggs Street (LOS E)
- San Diego Avenue, between Ampudia St and Old Town Avenue (LOS F)
- San Diego Avenue, between Old Town Avenue and Hortensia Street (LOS E)
- Juan Street, between Taylor Street and Twiggs Street (LOS E)
- Juan Street, between Twiggs Street and Harney Street (LOS E)
- Taylor Street, between Morena Boulevard and I-8 Ramps (LOS F)
- Old Town Avenue, between Hancock Street and Moore Street (LOS F)
- Old Town Avenue, between Moore Street and San Diego Avenue (LOS E)

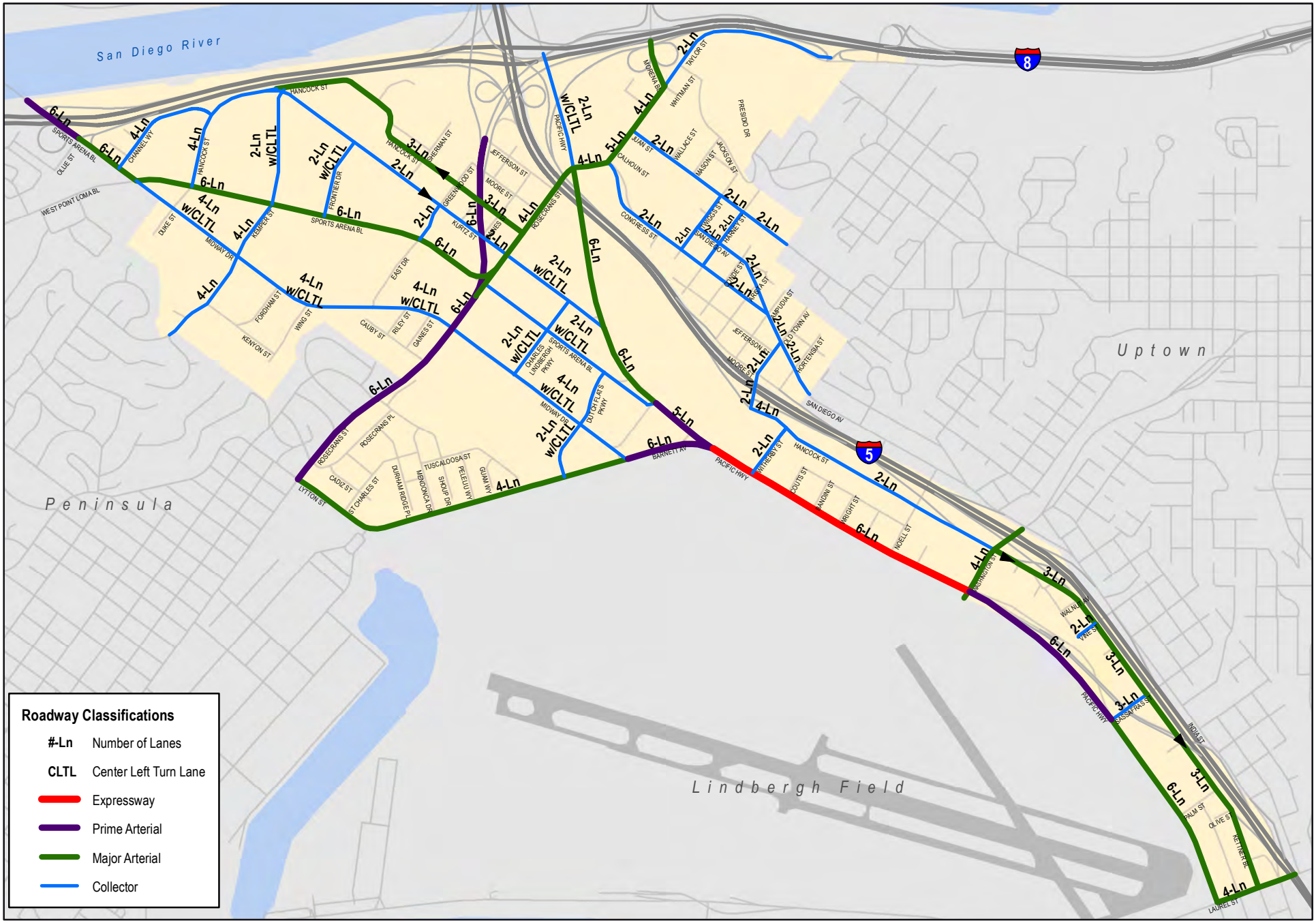

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Figure 6-1
Roadway Classifications -
Preferred Plan Conditions

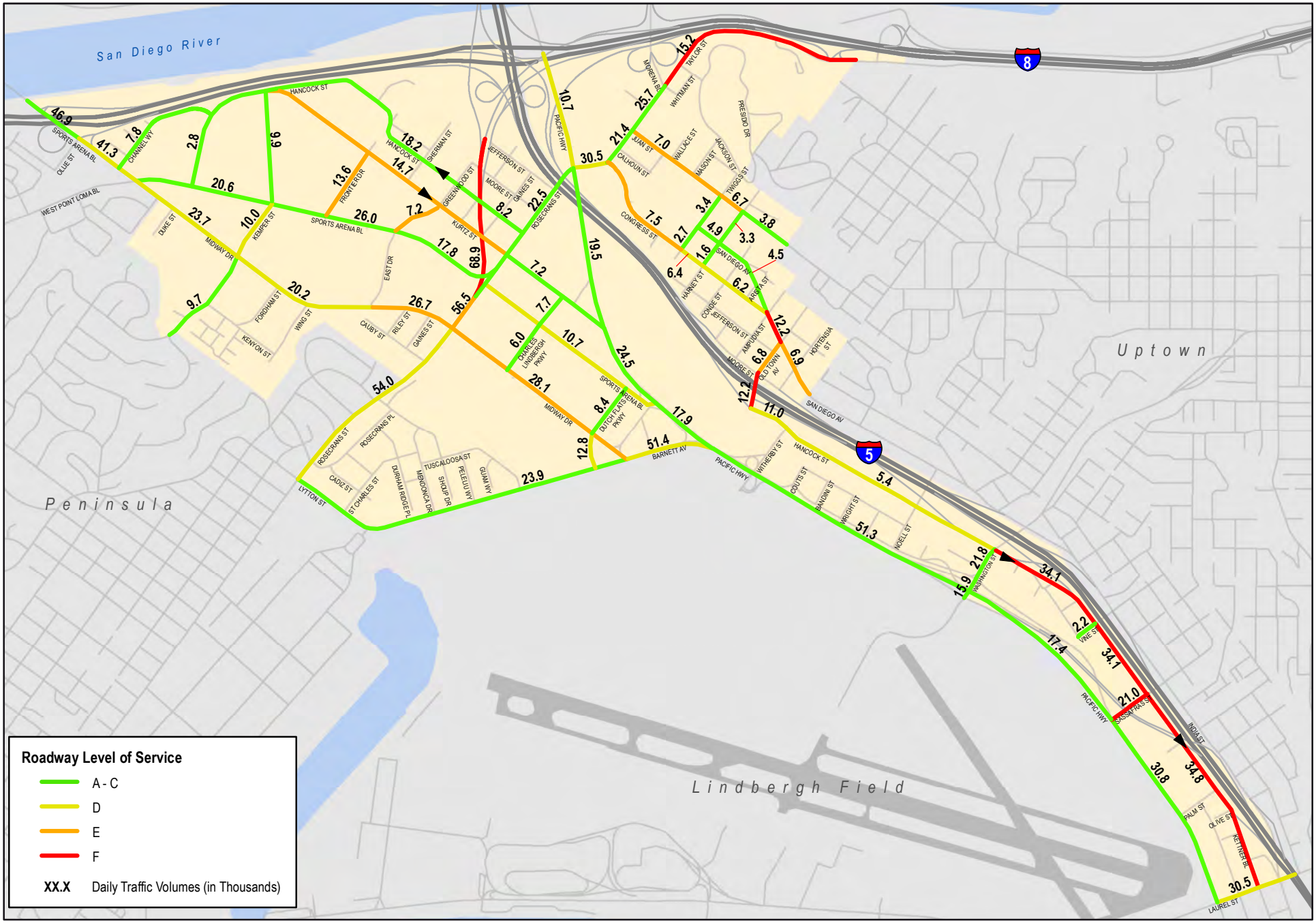

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Figure 6-2
Daily Roadway Segment Traffic Volumes and LOS - Preferred Plan Conditions

Table 6.1 Daily Roadway Segment Analysis - Preferred Plan Conditions

Roadway	From	To	Classification	Maximum Capacity at LOS E	ADT	V/C	LOS
North-South							
Midway Pacific Highway							
Lytton Street/ Barnett Ave	Rosecrans St	Midway Dr	4-Lane Major Arterial	40,000	23,900	0.60	C
Midway Dr	W. Point Loma Blvd/ Sports Arena Blvd	Kemper St	4-Lane Collector (CLTL)	30,000	23,700	0.79	D
	Kemper St	East Dr	4-Lane Collector (CLTL)	30,000	20,200	0.67	D
	East Dr	Rosecrans St	4-Lane Collector (CLTL)	30,000	26,700	0.89	E
	Rosecrans St	Barnett Ave	4-Lane Collector (CLTL)	30,000	28,100	0.94	E
Sports Arena Blvd	I-8 WB Ramps	I-8 EB Ramps	6-Lane Prime Arterial	60,000	46,900	0.78	C
	I-8 EB Ramps	W. Point Loma Blvd	6-Lane Major Arterial	50,000	41,300	0.83	D
	W. Point Loma Blvd/Midway Dr	Kemper St	6-Lane Major Arterial	50,000	20,600	0.41	B
	Kemper St	East Dr	6-Lane Major Arterial	50,000	26,000	0.52	B
	East Dr	Rosecrans St	6-Lane Major Arterial	50,000	17,800	0.36	A
	Rosecrans St	Pacific Hwy	2-Lane Collector (CLTL)	15,000	10,700	0.71	D
Kurtz St	Hancock St	Rosecrans St	2-Lane Collector (One-Way)	15,000	14,700	0.98	E
	Rosecrans St	Pacific Hwy	2-Lane Collector (CLTL)	15,000	7,200	0.48	C
Hancock St	Sports Arena Blvd	Kurtz St	4-Lane Collector	15,000	2,800	0.19	A
	Kurtz St	Camino Del Rio West	3-Lane Major (One-Way)	30,000	18,200	0.61	C
	Camino Del Rio West	Rosecrans St	3-Lane Major (One-Way)	30,000	8,200	0.27	A
	Old Town Ave	Witherby St	4-Lane Collector	15,000	11,000	0.73	D
	Witherby St	Washington St	2-Lane Collector	8,000	5,400	0.68	D
Kettner Blvd	Washington St	Vine St	3-Lane Major (One-Way)	30,000	34,100	1.14	F
	Vine St	Sassafras St	3-Lane Major (One-Way)	30,000	34,100	1.14	F
	Sassafras St	Laurel St	3-Lane Major (One-Way)	30,000	34,800	1.16	F
Pacific Hwy	Sea World Dr	Taylor St	2-Lane Collector (CLTL)	15,000	10,700	0.71	D

Table 6.1 Daily Roadway Segment Analysis - Preferred Plan Conditions

Roadway	From	To	Classification	Maximum Capacity at LOS E	ADT	V/C	LOS
Pacific Hwy	Taylor St	Kurtz St	6-Lane Major Arterial	50,000	19,500	0.39	A
	Kurtz St	Sports Arena Blvd	6-Lane Major Arterial	50,000	24,500	0.49	B
	Sports Arena Blvd	Barnett Ave	5-Lane Major Arterial	50,000	17,900	0.36	A
	Barnett Ave	Washington St	Expressway	80,000	51,300	0.64	C
	Washington St	Sassafras St	6-Lane Prime Arterial	60,000	17,400	0.35	A
	Sassafras St	Laurel St	6-Lane Major Arterial	50,000	30,800	0.62	C
Old Town							
Congress St[1]	Taylor St	Twiggs St	2-Lane Collector	8,000	7,500	0.94	E
	Twiggs St	Harney St	2-Lane Collector	8,000	6,400	0.80	D
	Harney St	San Diego Ave/ Ampudia St	2-Lane Collector	8,000	6,200	0.78	D
San Diego Ave[1]	Twiggs St	Harney St	2-Lane Collector	8,000	4,900	0.61	C
	Conde St	Arista Ave	2-Lane Collector	8,000	4,500	0.56	C
	Ampudia St	Old Town Ave	2-Lane Collector	8,000	12,200	1.53	F
	Old Town Ave	Hortensia St	2-Lane Collector	8,000	6,900	0.86	E
Juan St[1]	Taylor St	Twiggs St	2-Lane Collector	8,000	7,000	0.88	E
	Twiggs St	Harney St	2-Lane Collector	8,000	6,700	0.84	E
	Harney St	San Juan Rd	2-Lane Collector	8,000	3,800	0.48	C
East-West							
Midway Pacific Highway							
Channel Wy	W. Mission Bay Dr	Hancock St	4-Lane Collector	15,000	7,800	0.52	C
Kemper St	Kenyon St	Midway Dr	4-Lane Collector	15,000	9,700	0.65	C
	Midway Dr	Sports Arena Blvd	4-Lane Collector	15,000	10,000	0.67	D
	Sports Arena Blvd	Hancock St	2-Lane Collector (CLTL)	15,000	9,900	0.66	C
Frontier St	Sports Arena Blvd	Kurtz St	2-Lane Collector (CLTL)	15,000	13,600	0.91	E

Table 6.1 Daily Roadway Segment Analysis - Preferred Plan Conditions

Roadway	From	To	Classification	Maximum Capacity at LOS E	ADT	V/C	LOS
Greenwood St	Sports Arena Blvd	Kurtz St	2-Lane Collector	8,000	7,200	0.90	E
Camino Del Rio West	Rosecrans St	I-5/I-8 Ramps	6-Lane Prime Arterial	60,000	68,900	1.15	F
Rosecrans St	Lytton St	Midway Dr	6-Lane Prime Arterial	60,000	54,000	0.90	D
	Midway Dr	Sports Arena Blvd	6-Lane Prime Arterial	60,000	56,500	0.94	E
	Sports Arena Blvd	Pacific Hwy/Taylor St	4- Lane Major Arterial	40,000	22,500	0.56	C
Charles Lindbergh Pkwy	Midway Dr	Sports Arena Blvd	2-Lane Collector (CLTL)	15,000	6,000	0.40	B
	Sports Arena Blvd	Kurtz Street	2-Lane Collector (CLTL)	15,000	7,700	0.51	C
Dutch Flats Pkwy	Barnett Avenue	Midway Dr	2-Lane Collector (CLTL)	15,000	12,800	0.85	D
	Midway Dr	Sports Arena Blvd	2-Lane Collector (CLTL)	15,000	8,400	0.56	C
Barnett Ave	Midway Dr	Pacific Hwy	6-Lane Prime Arterial	60,000	51,400	0.86	D
Washington St	Frontage Rd	Pacific St	4- Lane Major Arterial	40,000	15,900	0.40	B
	Pacific St	Hancock St	4- Lane Major Arterial	40,000	21,800	0.55	C
Vine St	California St	Kettner Blvd	2-Lane Collector	8,000	2,200	0.28	A
Sassafras St	Pacific Hwy	Kettner Blvd	3-Lane Collector	11,500	21,000	1.83	F
Laurel St	Pacific Hwy	Kettner Blvd	4- Lane Major Arterial	40,000	30,500	0.76	D
Old Town							
Taylor St[1]	Pacific Hwy/ Rosecrans St	Congress St	4- Lane Major Arterial	40,000	30,500	0.76	D
	Congress St	Juan St	5-Lane Major Arterial	45,000	21,400	0.48	B
	Juan St	Morena Blvd	4- Lane Major Arterial	40,000	25,700	0.64	C
	Morena Blvd	I-8 EB Ramps	2-Lane Collector	8,000	15,200	1.90	F
Twiggs St[1]	Congress St	San Diego Ave	2-Lane Collector	8,000	2,700	0.34	B
	San Diego Ave	Juan St	2-Lane Collector	8,000	3,400	0.43	B
Harney St[1]	Congress St	San Diego Ave	2-Lane Collector	8,000	1,600	0.20	A
	San Diego Ave	Juan St	2-Lane Collector	8,000	3,300	0.41	B

Table 6.1 Daily Roadway Segment Analysis - Preferred Plan Conditions

Roadway	From	To	Classification	Maximum Capacity at LOS E	ADT	V/C	LOS
Old Town Ave[1]	Hancock St	Moore St	2-Lane Collector	8,000	12,100	1.51	**F**
	Moore St	San Diego Ave	2-Lane Collector	8,000	6,700	0.84	**E**

Source: Chen Ryan Associates (May 2017)

Note: **Bold** letter indicates LOS E or F

The following mitigation measures were identified for the two communities:

Midway-Pacific Highway Community

Midway Drive, between Rosecrans Street and Barnett Avenue (LOS E) – Improving the roadway way from a 4-Lane Collector with Center Left-Turn Lane to a 4-Lane Major Arterial would improve the operations to LOS C. The identified significant traffic related impact to this roadway segment would be fully mitigated with the implementation of this mitigation measure.

Kurtz Street, between Hancock Street and Rosecrans Street (LOS E) – Widening the roadway from a 2-Lane Collector (One-Way) Arterial to a 3-Lane - Lane Major (One-Way) Arterial would improve the operations to LOS B. The identified significant traffic related impact to this roadway segment would be fully mitigated with the implementation of this improvement.

Kettner Boulevard, between Washington Street and Vine Street (LOS F) – Widening the roadway from a 3-Lane Major (One-Way) Arterial to a 4-Lane - Lane Major (One-Way) Arterial would improve the operations to LOS D. The identified significant traffic related impact to this roadway segment would be fully mitigated with the implementation of this mitigation measure.

Kettner Boulevard, between Vine Street and Sassafras Street (LOS F) – Widening the roadway from a 3-Lane Major (One-Way) Arterial to a 4-Lane - Lane Major (One-Way) Arterial would improve the operations to LOS D. The identified significant traffic related impact to this roadway segment would be fully mitigated with the implementation of this mitigation measure.

Kettner Boulevard, between Sassafras Street and Laurel Street (LOS F) – Widening the roadway from a 3-Lane Major (One-Way) Arterial to a 4-Lane - Lane Major (One-Way) Arterial would improve the operations to LOS D. The identified significant traffic related impact to this roadway segment would be fully mitigated with the implementation of this mitigation measure.

Greenwood Street, between Sports Arena Boulevard and Kurtz Street (LOS E) – Improving from a 2-Lane Collector to a 2-Lane Collector with a Center Left Turn-Lane would improve the operations to LOS C. The identified significant traffic related impact to this roadway segment would be fully mitigated with the implementation of this mitigation measure. However, due to the neighborhood character and potential impacts to both bicycle and pedestrian travel, it is recommended that Greenwood Street be built as a 2-Lane Collector.

Frontier Drive, between Sports Arena Boulevard and Kurtz Street (LOS E) – Improving from a 2-Lane Collector with a Center Left Turn-Lane to a 4-Lane Collector with a Center Left Turn-Lane would improve the operations to LOS B. The identified significant traffic related impact to this roadway segment would be fully mitigated with the implementation of this mitigation measure. However, due to the neighborhood character and potential impacts to both bicycle and pedestrian travel, it is recommended that Frontier Drive be built as a 2-Lane Collector with a Center Left Turn-Lane.

Camino Del Rio West, between Rosecrans Street and the I-5/I-8 Ramps (LOS F) – Improving this roadway from a 6-Lane Prime Arterial to a 6-Lane Expressway would improve the operations to LOS D. The identified significant traffic related impact to this roadway segment would be fully mitigated with the implementation of this improvement.

Sassafras Street, between Pacific Highway and Kettner Boulevard (LOS F) - Widening the roadway from a 3-Lane Collector to a 4-Lane Collector with Center Left-Turn Lane would improve the operations to LOS D. The identified significant traffic related impact to this roadway segment would be fully mitigated with the implementation of this improvement.

Old Town Community

Congress Street between Taylor Street and Twiggs Street (LOS E) - Widening the roadway from a 2-Lane Collector to a 2-Lane Collector with Center Left-Turn Lane would improve the operations to LOS C. The identified significant traffic related impact to this roadway segment would be fully mitigated with the implementation of this improvement.

San Diego Avenue, between Ampudia St and Old Town Avenue (LOS F) - Widening the roadway from a 2-Lane Collector to a 2-Lane Collector with Center Left-Turn Lane would improve the operations to LOS D. The identified significant traffic related impact to this roadway segment would be fully mitigated with the implementation of this improvement.

San Diego Avenue, between Old Town Avenue and Hortensia Street (LOS E) - Widening the roadway from a 2-Lane Collector to a 2-Lane Collector with Center Left-Turn Lane would improve the operations to LOS B. The identified significant traffic related impact to this roadway segment would be fully mitigated with the implementation of this improvement.

Juan Street, between Taylor Street and Twiggs Street (LOS E) - Widening the roadway from a 2-Lane Collector to a 2-Lane Collector with Center Left-Turn Lane would improve the operations to LOS B. The identified significant traffic related impact to this roadway segment would be fully mitigated with the implementation of this mitigation measure.

Juan Street, between Twiggs Street and Harney Street (LOS E) - Widening the roadway from a 2-Lane Collector to a 2-Lane Collector with Center Left-Turn Lane would improve the operations to LOS B. The identified significant traffic related impact to this roadway segment would be fully mitigated with the implementation of this improvement.

Taylor Street, between Morena Boulevard and I-8 Ramps (LOS F) - Widening the roadway from a 2-Lane Collector to a 4-Lane Collector with Center Left-Turn Lane would improve the operations to LOS C. The identified significant traffic related impact to this roadway segment would be fully mitigated with the implementation of this improvement.

Old Town Avenue, between Hancock Street and Moore Street (LOS F) - Widening the roadway from a 2-Lane Collector to a 2-Lane Collector with Center Left-Turn Lane would improve the operations to LOS D. The identified significant traffic related impact to this roadway segment would be fully mitigated with the implementation of this mitigation measure.

Old Town Avenue, between Moore Street and San Diego Avenue (LOS E) - Widening the roadway from a 2-Lane Collector to a 2-Lane Collector with Center Left-Turn Lane would improve the operations to LOS B. The identified significant traffic related impact to this roadway segment would be fully mitigated with the implementation of this mitigation measure.

6.1.2 Intersection Geometry and LOS Analysis

AM and PM peak hour intersection LOS analyses were conducted for Preferred Plan conditions. It was assumed under implementation of the Preferred Plan that the proposed intersection improvements outlined in Sections 3.2.2 and 4.2.2 would be in place. Figure 6-3 and Figure 6-4 display the proposed intersection geometrics and forecast AM and PM peak hour turning movements under implementation of the Preferred Plan, respectively.

Table 6.2 and Figure 6-5 display the LOS results for the key study intersections located within both communities under Preferred Plan conditions. LOS analyses were conducted using the methodologies described in Chapter 2.0. Intersection LOS calculation worksheets are provided in Appendix E. Signal timing were assumed to be optimized under implementation of Preferred Plan conditions, therefore some signal operations may be projected to operate better than under existing conditions.

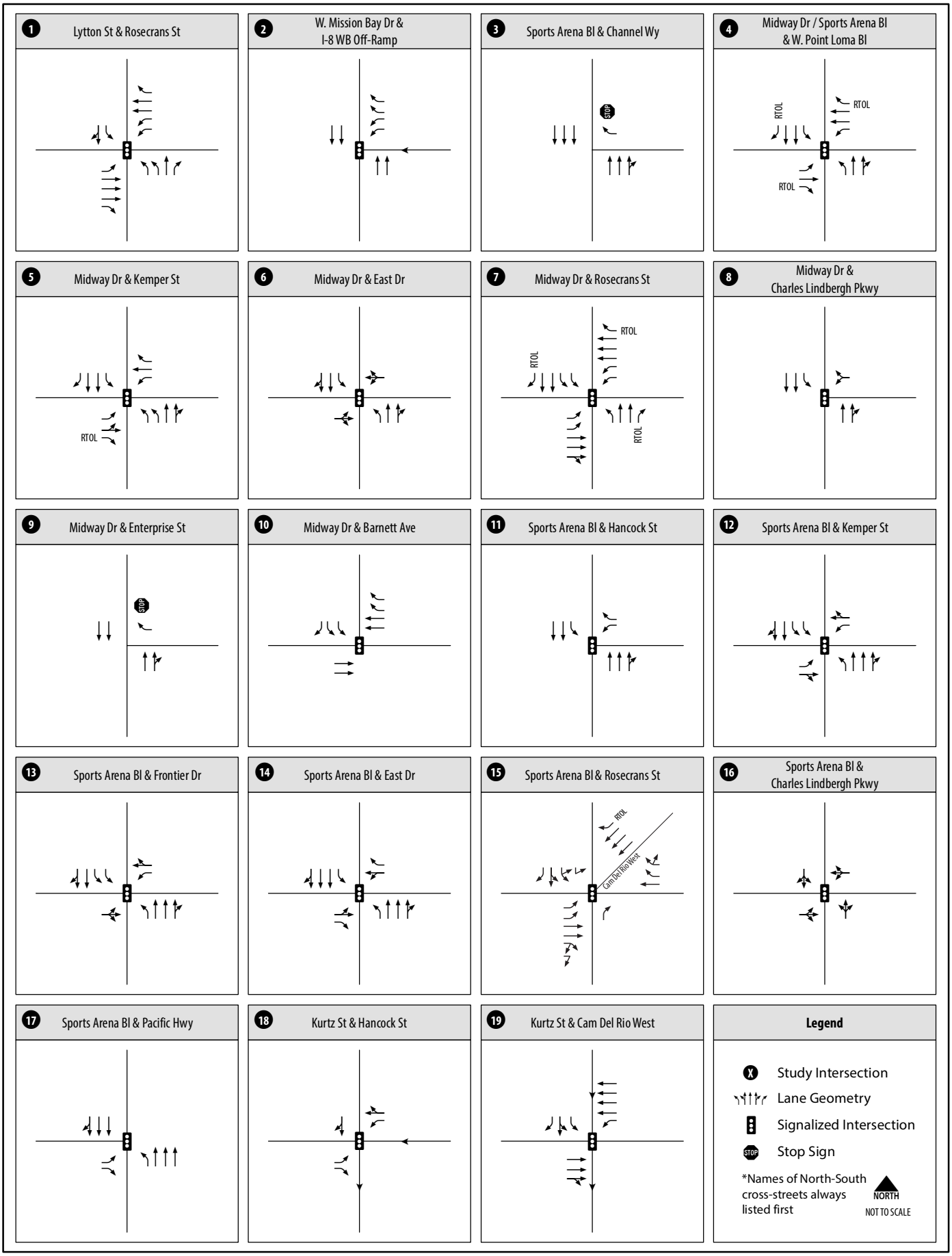

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Figure 6-3
Intersection Geometrics - Preferred Plan (Intersections 1-19)

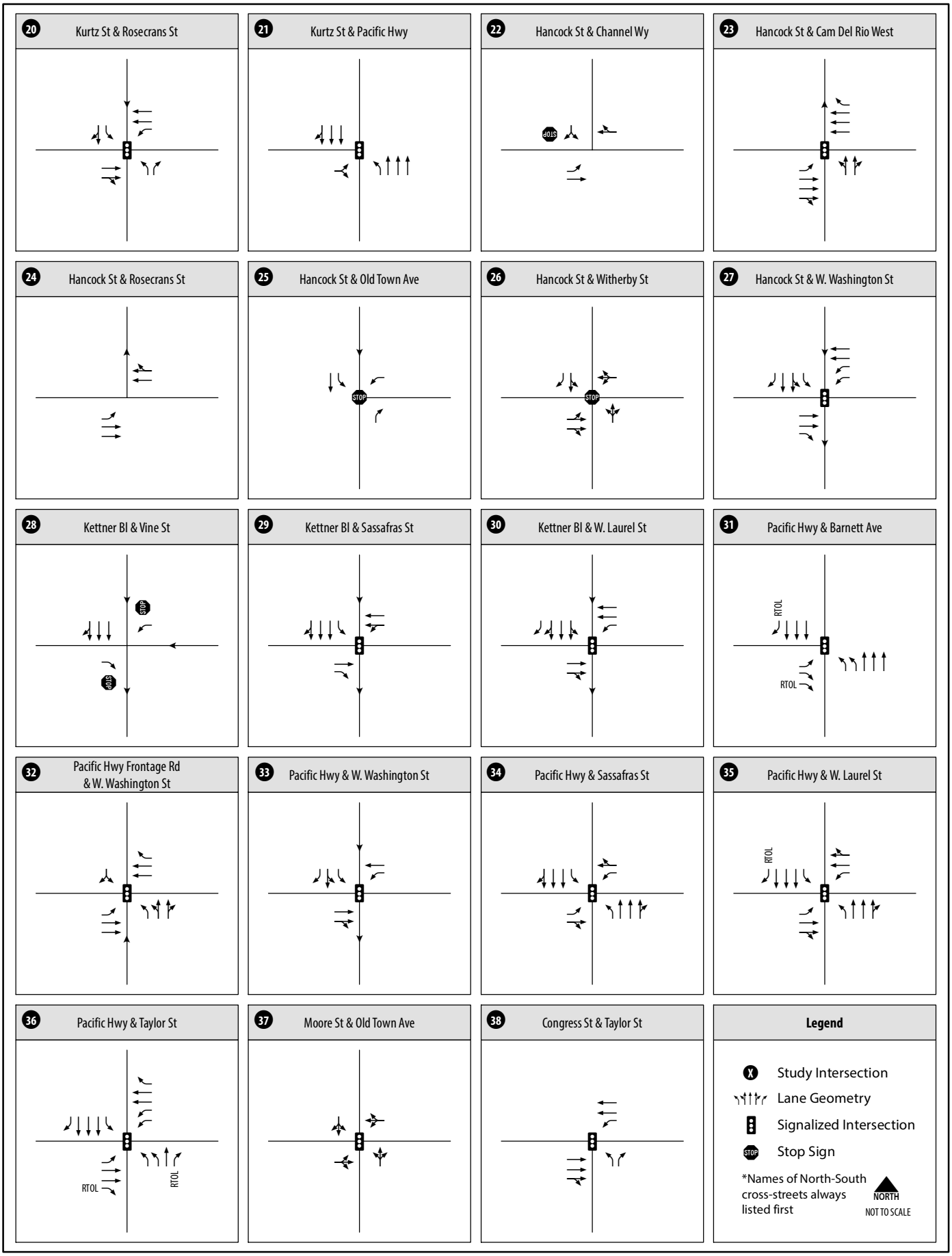

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Figure 6-3
Intersection Geometrics - Preferred Plan (Intersections 20-38)

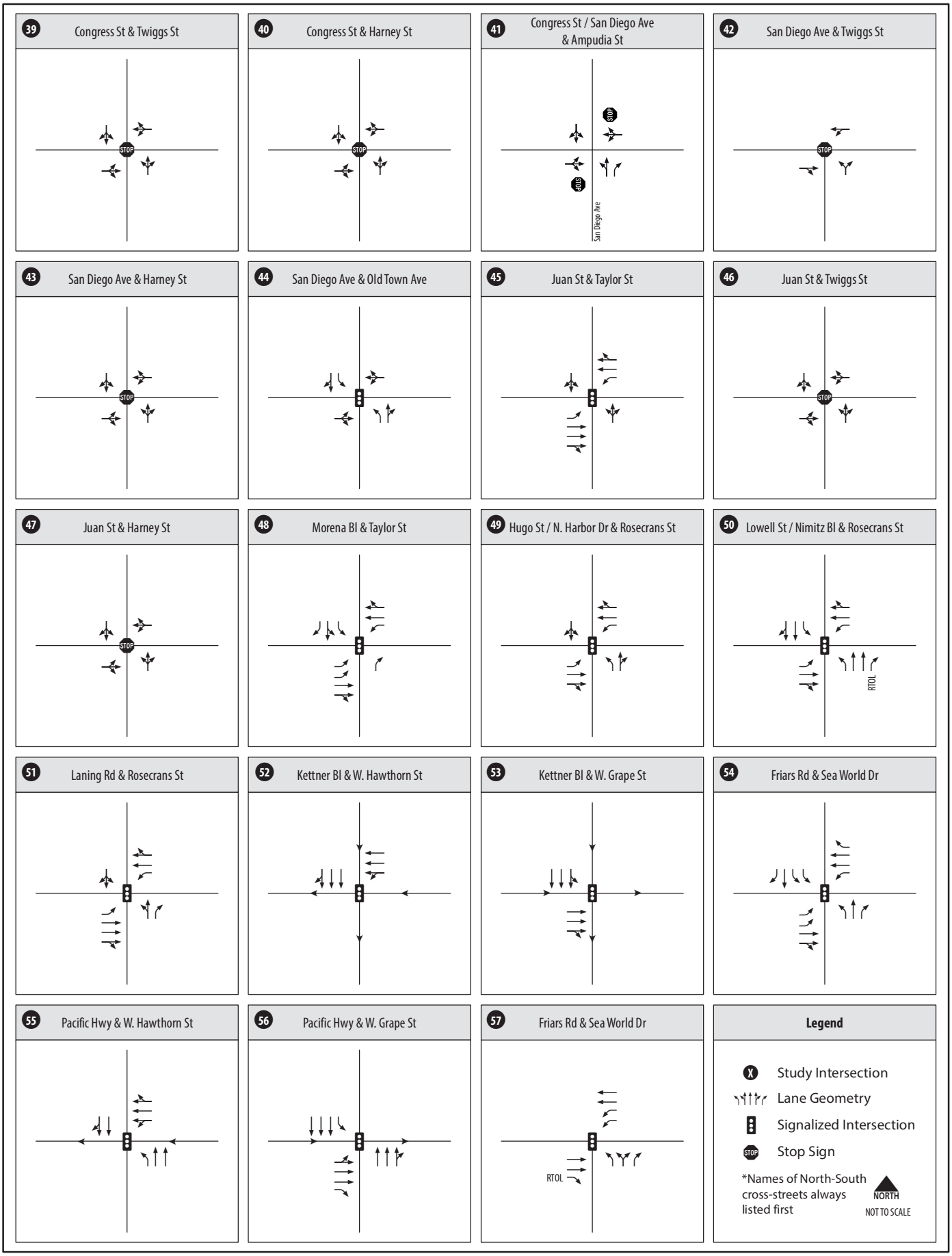

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Figure 6-3
Intersection Geometrics - Preferred Plan (Intersections 39-57)

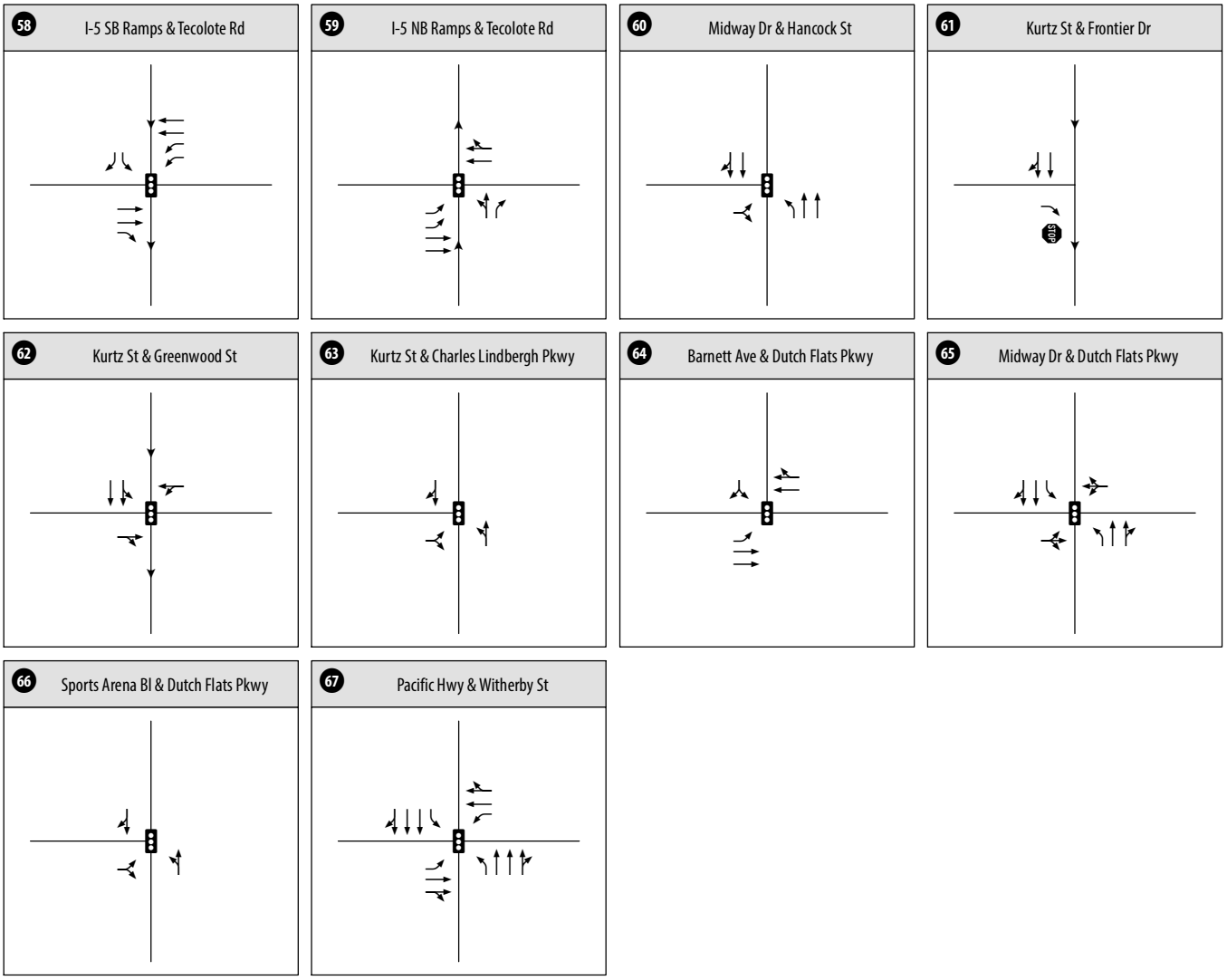

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Figure 6-3
Intersection Geometrics - Preferred Plan (Intersections 58-67)

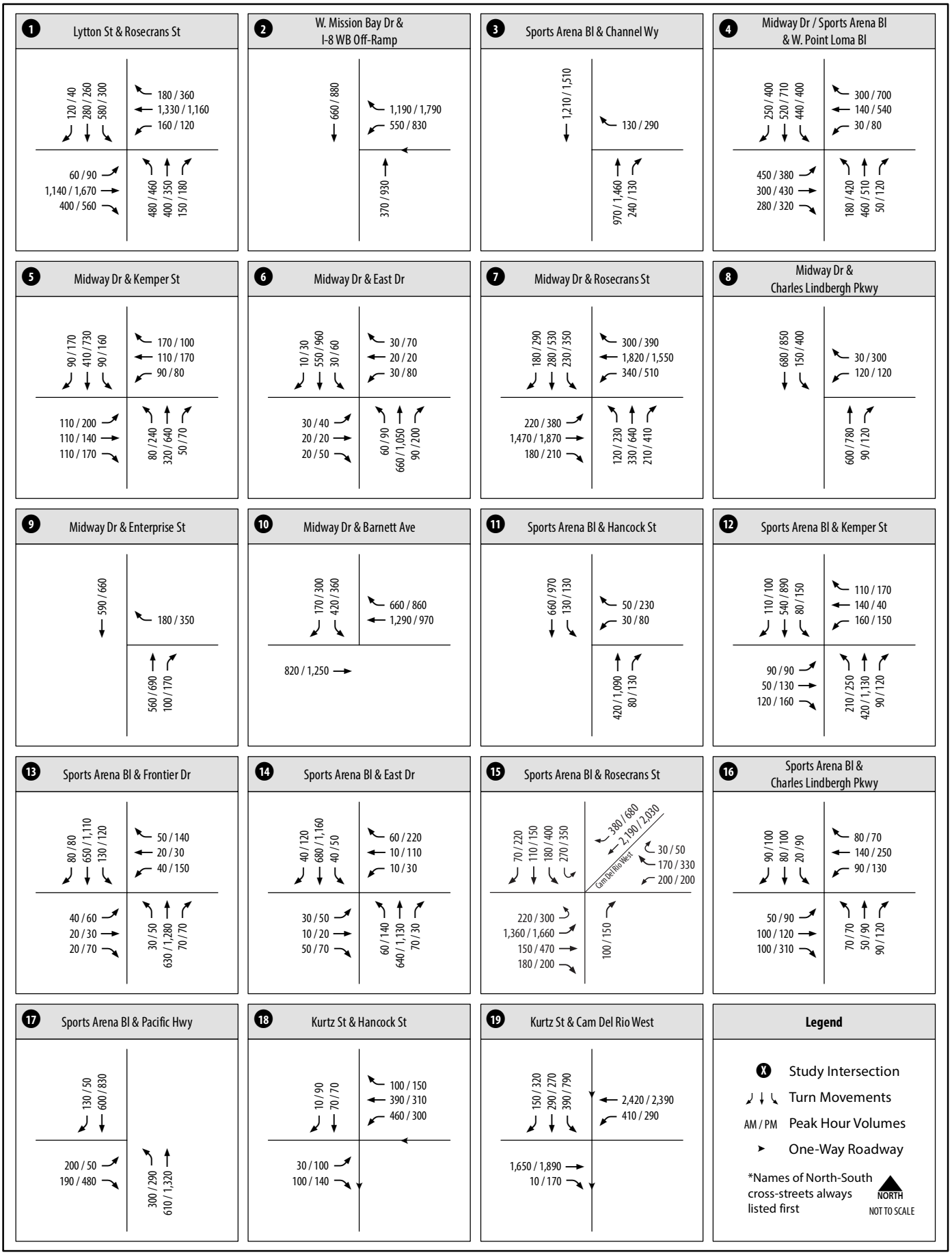

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Figure 6-4

Peak Hour Turning Movement Volumes - Preferred Plan Conditions (Intersections 1-19)

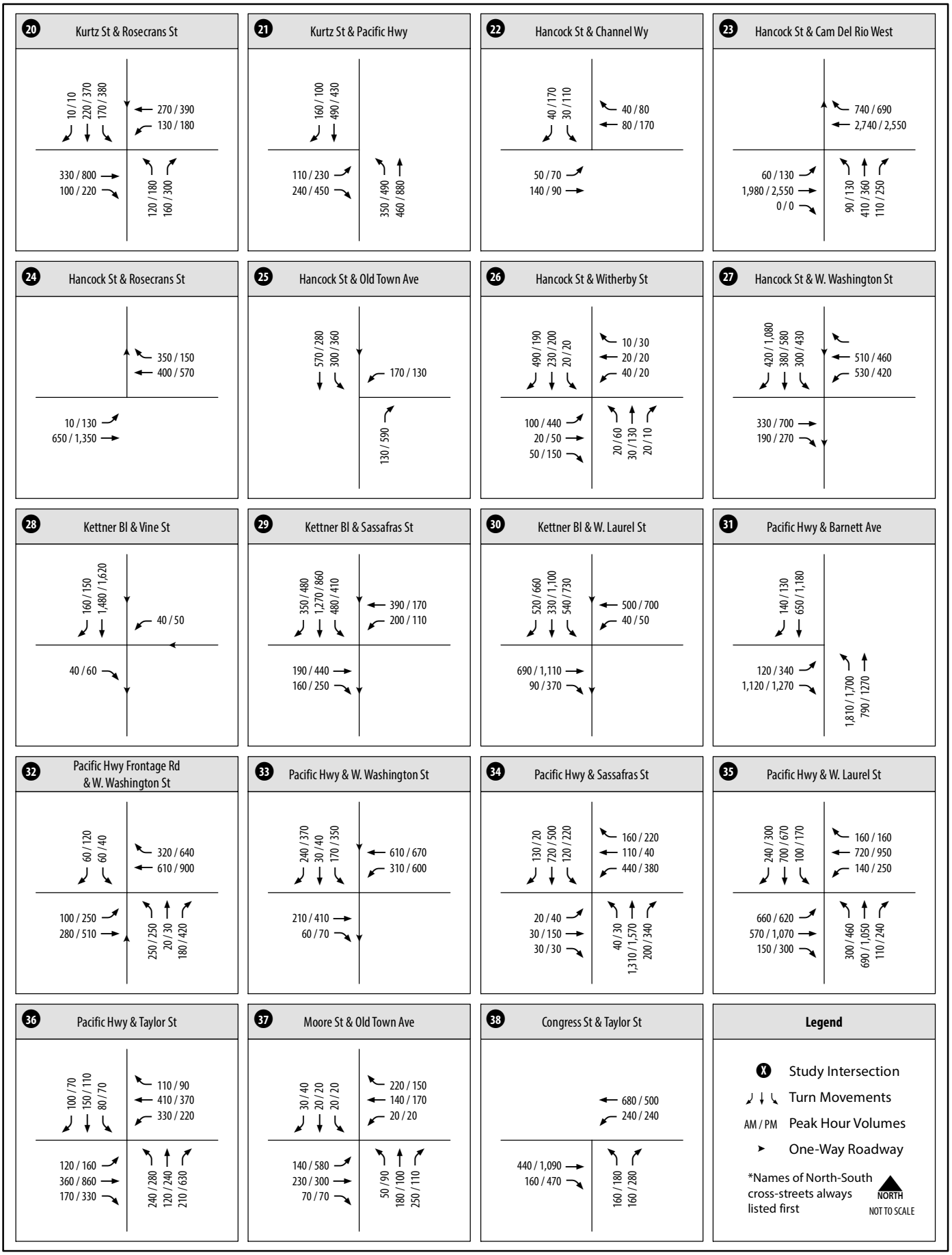

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Figure 6-4

Peak Hour Turning Movement Volumes - Preferred Plan Conditions (Intersections 20-38)

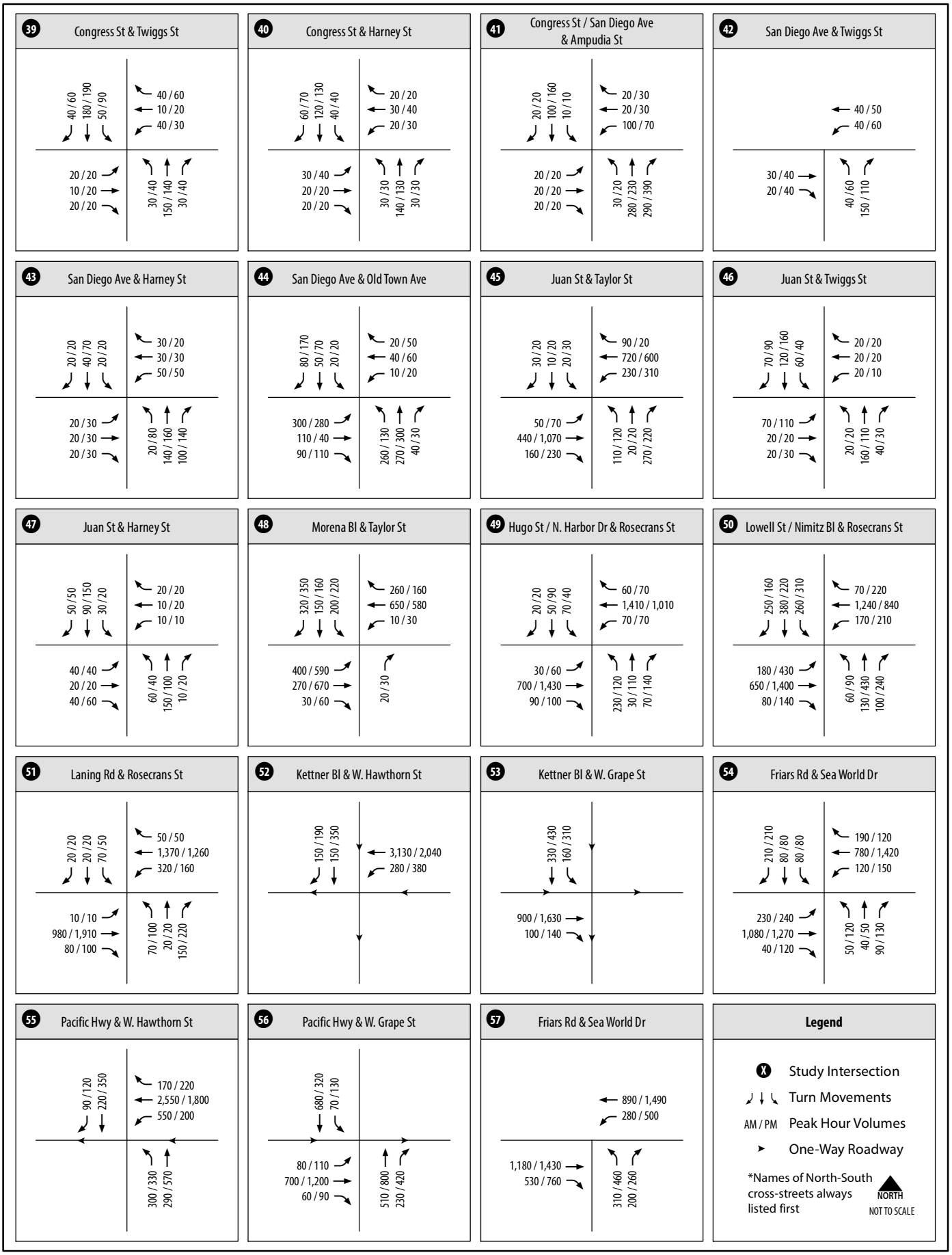

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Figure 6-4

Peak Hour Turning Movement Volumes - Preferred Plan Conditions (Intersections 39-57)

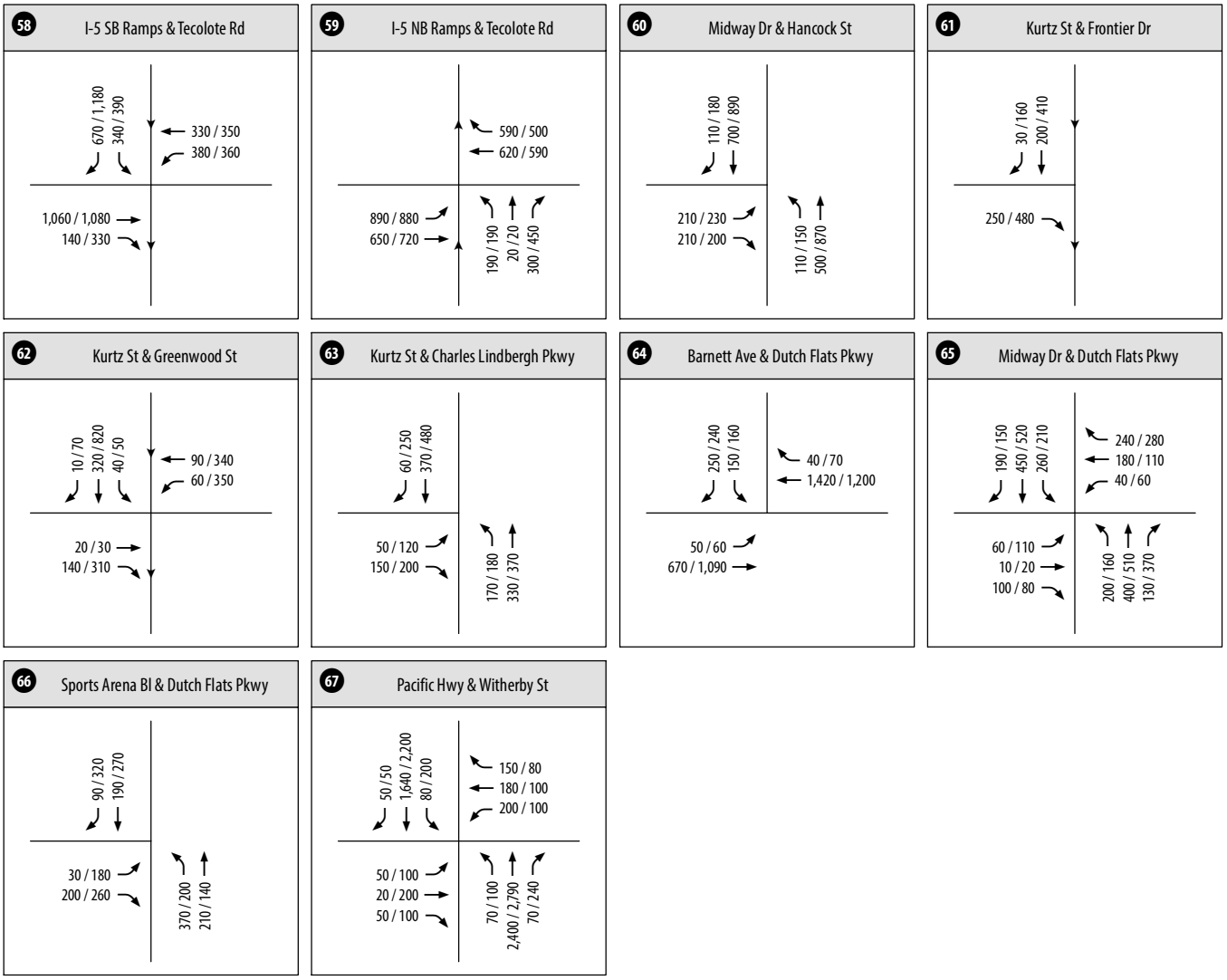

Figure 6-4
Peak Hour Turning Movement Volumes - Preferred Plan Conditions (Intersections 58-67)

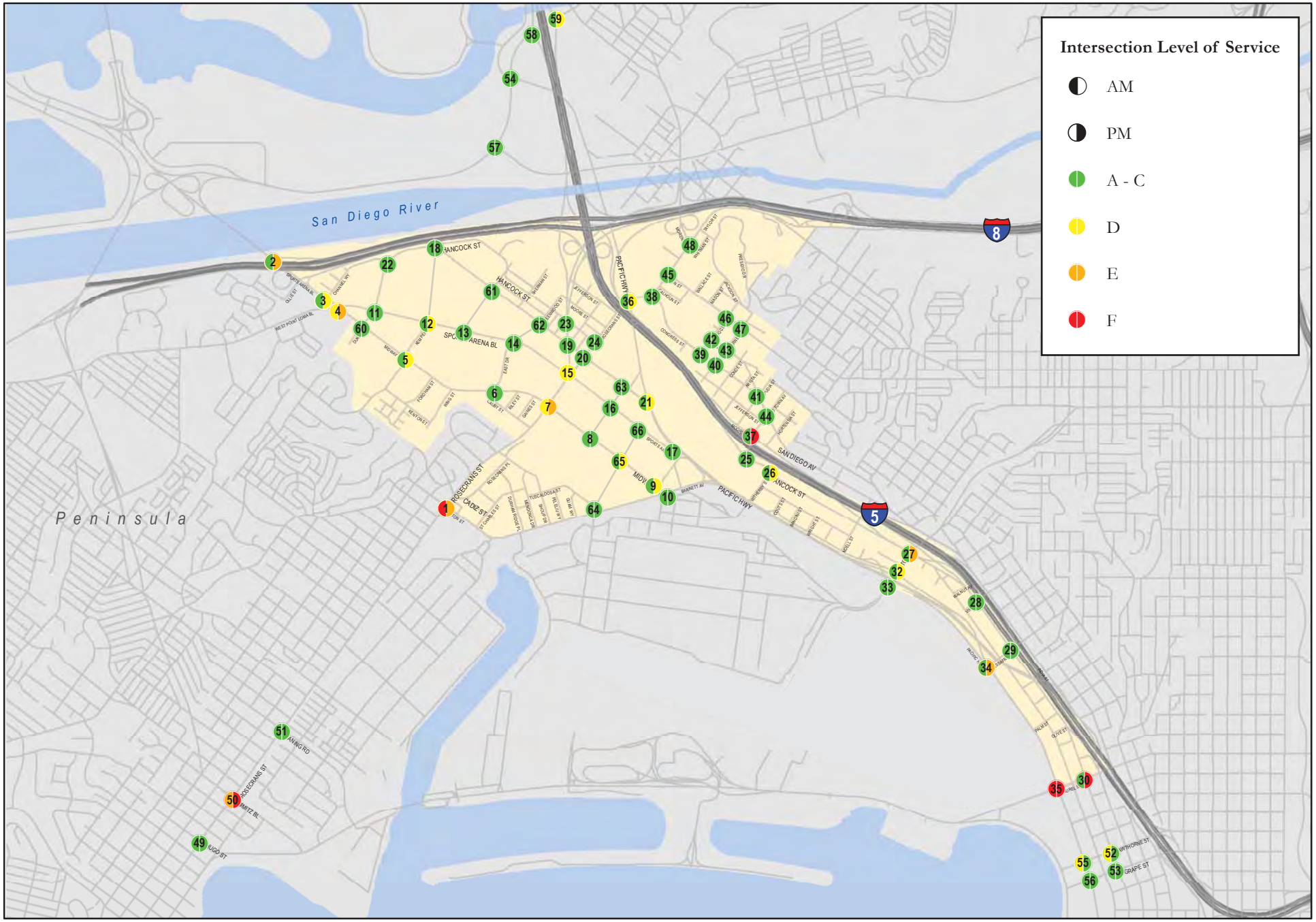

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Figure 6-5
Peak Hour Intersection LOS
Preferred Plan Conditions

Table 6.2 Peak Hour Intersection LOS and Delay Results – Preferred Plan Conditions

No.	Intersection	Control	AM Delay (Sec)	AM LOS	AM Existing LOS	PM Delay (Sec)	PM LOS	PM Existing LOS
Midway-Pacific Highway								
1	Lytton St and Rosecrans St	Signal	97.7	F	E	55.2	E	D
2	W Mission Bay Dr and I-8 WB Off-Ramp	Signal	15.5	B	B	71.0	E	E
3	Sports Arena Blvd and Channel Way	SSSC	12.4	B	B	31.0	D	B
4	Midway Dr and Sports Arena/W Point Loma Blvd	Signal	54.0	D	D	73.4	E	D
5	Midway Dr and Kemper St	Signal	31.8	C	C	38.7	D	D
6	Midway Dr and East Dr	Signal	6.8	A	A	17.6	B	B
7	Midway Dr and Rosecrans St	Signal	40.7	D	C	76.0	E	D
8	Midway Dr and Charles Lindbergh Pkwy	Signal	11.2	B	(1)	28.7	C	(1)
9	Midway Dr and Enterprise St	SSSC	13.3	B	B	26.5	D	C
10	Midway Dr and Barnett Ave	Signal	13.7	B	B	12.3	B	B
11	Sports Arena Blvd and Hancock St	Signal	15.0	B	A	19.2	B	B
12	Sports Arena Blvd and Kemper St	Signal	37.9	D	B	46.7	D	B
13	Sports Arena Blvd and Sports Arena Driveway	Signal	18.2	B	B	26.6	C	C
14	Sports Arena Blvd and East Dr	Signal	7.7	A	C	26.5	C	B
15	Sports Arena Blvd and Rosecrans St	Signal	39.5	D	D	53.2	D	D
16	Sports Arena Blvd and Charles Lindbergh Pkwy	Signal	13.6	B	(1)	18.6	B	(1)
17	Sports Arena Blvd and Pacific Hwy	Signal	24.9	C	B	17.8	B	B
18	Kurtz St and Hancock St	Signal	12.6	B	(2)	12.5	B	(2)
19	Kurtz St and Camino Del Rio West	Signal	28.3	C	A	54.6	D	C
20	Kurtz St and Rosecrans St	Signal	29.6	C	B	40.9	D	C
21	Kurtz St and Pacific Hwy	Signal	33.3	C	B	50.3	D	B
22	Hancock St and Channel Wy	SSSC	10.2	B	A	15.0	C	B
23	Hancock St and Camino Del Rio West	Signal	44.1	D	C	46.4	D	C
24	Hancock St and Rosecrans St	*No Conflicting Movements*						
25	Hancock St and Old Town Ave	AWSC	24.8	C	C	20.9	C	B
26	Hancock St and Witherby St	AWSC	13.9	B	C	34.9	D	C
27	Hancock St and Washington St	Signal	23.1	C	C	75.2	E	C
28	Kettner Blvd and Vine St	SSSC	16.4	C	B	19.9	C	C
29	Kettner Blvd and Sassafras St	Signal	15.1	B	B	15.3	B	B
30	Kettner Blvd and West Laurel St	Signal	19.6	B	B	96.2	F	C
31	Pacific Hwy and Barnett Ave	*No Conflicting Movements*						
32	Pacific Hwy and Washington St @ Frontage Rd	Signal	20.4	C	B	47.5	D	D
33	Pacific Hwy and Washington St	Signal	20.3	C	B	26.6	C	C

Table 6.2 Peak Hour Intersection LOS and Delay Results – Preferred Plan Conditions

No.	Intersection	Control	AM			PM		
			Delay (Sec)	LOS	Existing LOS	Delay (Sec)	LOS	Existing LOS
34	Pacific Hwy and Sassafras St	Signal	30.7	C	B	68.4	E	C
35	Pacific Hwy and West Laurel St	Signal	89.8	F	D	139.9	F	D
Old Town								
36	Pacific Hwy and Taylor St	Signal	31.5	C	E	51.5	D	C
37	Moore St and Old Town Ave	Signal	23.1	C	B	98.9	F	B
38	Congress St and Taylor St	Signal	14.4	B	B	19.6	B	C
39	Congress St and Twiggs St	AWSC	9.7	A	A	10.8	B	A
40	Congress St and Harney St	AWSC	9.1	A	A	9.4	A	A
41	Congress St and San Diego Ave/Ampudia St	SSSC	18.2	C	B	16.3	C	B
42	San Diego Ave and Twiggs St	AWSC	7.9	A	A	8.1	A	A
43	San Diego Ave and Harney St	AWSC	9	A	A	10.8	B	A
44	San Diego Ave and Old Town Ave	Signal	18.5	B	B	14.2	B	B
45	Juan St and Taylor St	Signal	14.6	B	B	19	B	B
46	Juan St and Twiggs St	AWSC	9.7	A	A	10.1	B	A
47	Juan St and Harney St	AWSC	9	A	A	9	A	A
48	Morena Blvd and Taylor St	Signal	21.9	C	C	25.6	C	B
Intersections Outside of Study Communities								
49	Hugo St/N. Harbor Dr and Rosecrans St	Signal	29.1	C	B	31.5	C	C
50	Lowell St/Nimitz Blvd and Rosecrans St	Signal	60	E	D	108.1	F	E
51	Laning Rd and Rosecrans St	Signal	25.6	C	B	23.3	C	B
52	Kettner Blvd and West Hawthorn St	Signal	40.1	D	B	13.5	B	B
53	Kettner Blvd and West Grape St	Signal	10.1	B	A	9.7	A	A
54	Pacific Hwy and Sea World Dr	Signal	23.9	C	B	34.2	C	C
55	Pacific Hwy and West Hawthorn St	Signal	36.8	D	D	32.1	C	C
56	Pacific Hwy and West Grape St	Signal	17.9	B	B	31.4	C	C
57	Friars Rd and Sea World Dr	Signal	15.4	B	B	26.4	C	B
58	I-5 SB Ramps and Sea World Dr	Signal	17.8	B	B	20	C	E
59	I-5 NB Ramps and Sea World Dr	Signal	29.3	C	C	44	D	C
New Intersections (Midway-Pacific Highway Community)								
60	Midway Dr & Duke Street / Hancock St	Signal	27	C	(1)	32.1	C	(1)
61	Kurtz St & Frontier Dr	SSSC	10.7	B	(1)	25	C	(1)
62	Kurtz St & Greenwood St	Signal	12.5	B	(1)	20.9	C	(1)
63	Kurtz St & Charles Lindbergh Pkwy	Signal	8.3	A	(1)	25.6	C	(1)
64	Barnett Ave & Dutch Flats Pkwy	Signal	24.6	C	(1)	14.5	B	(1)

Table 6.2 Peak Hour Intersection LOS and Delay Results – Preferred Plan Conditions

No.	Intersection	Control	AM Delay (Sec)	AM LOS	AM Existing LOS	PM Delay (Sec)	PM LOS	PM Existing LOS
65	Midway Dr & Dutch Flats Pkwy	Signal	48.1	D	(1)	53.7	D	(1)
66	Dutch Flats Pkwy & Sports Arena Bl	Signal	11.8	B	(1)	22.4	C	(1)

Source: Chen Ryan Associates (May 2017)

Notes:
(1) Intersection does not currently exist.
(2) Intersection experienced no control delay under existing conditions.
Bold letters indicate LOS E or F.

The following mitigation measures were identified for the two communities:

Midway-Pacific Highway Community

1. *Lytton Street and Rosecrans Street (LOS F: AM Peak Hour and LOS E PM Peak Hour)* – The westbound through movement, as well as the southbound left-turn and through movements are projected to be over capacity, under implementation of the Preferred Plan. Implementing the following improvements would allow the intersection to operate at LOS D or better during both peak hours.

    - Add a second southbound left-turn lane
    - Add an additional westbound through movement lane on Rosecrans Street (three total)
    - Implement right-turn overlap (RTOL) phases at all legs of the intersection

    The identified significant traffic related impact to this intersection would be fully mitigated with the implementation of this improvement.

    Partial Mitigation: If the second southbound left-turn and RTOL phase are implemented (feasible improvements) the overall intersection delay would be reduced to the following:

    AM: LOS E
    PM: LOS D

    Implementation of this improvement will partially mitigate the traffic related impact at the intersection.

2. *Sports Arena Boulevard / West Mission Bay and I-8 WB Off-Ramp (LOS E: PM Peak Hour)* – The westbound right-turn movement at this intersection is projected to be over capacity during the PM peak hour, under the implementation of the Preferred Plan. Providing a third exclusive westbound right-turn lane or converting the movement to free-right-turn movement would improve the intersection operations to LOS D. The identified significant traffic related impact to this intersection would be fully mitigated with the implementation of this improvement.

    Partial Mitigation: None recommended.

4. *Midway Drive / West Point Loma Drive and Sports Arena Boulevard (LOS E: PM Peak Hour)* – All four left-turn movements at this intersection are projected to be over capacity during the PM Peak Hour. Providing dual-left turn lanes in the northbound, southbound and eastbound directions would improve intersection operations to LOS D during the PM peak hour. The identified significant traffic related impact to this intersection would be fully mitigated with the implementation of this improvement.

   Partial Mitigation: None recommended.

7. *Midway Drive and Rosecrans Street* (LOS E: PM Peak Hour) – Rosecrans Street is projected to operate at LOS E during the PM peak hours, under implementation of the Preferred Plan. Widening the eastbound and westbound approaches of the intersection to include a fourth through lane would improve the intersection operations to LOS D. The identified significant traffic related impact to this intersection would be fully mitigated with the implementation of this improvement.

   Partial Mitigation: None recommended, limited to no right-of-way is anticipated to be available with proposed Multi-Use Urban Path improvements.

27. *Hancock Street and Washington Street (LOS E: PM Peak Hour)* – The southbound right-turn movement of the intersection is projected to be over capacity during the PM peak hour, under the implementation of the Preferred Plan. Restriping the southbound approach to include a second southbound right-turn lane would allow the intersection to operate at LOS C during the PM Peak Hour. This improvement is feasible but may require additional engineering study. The identified significant traffic related impact to this intersection would be fully mitigated with the implementation of this improvement.

   Partial Mitigation: None recommended.

30. *Kettner Boulevard and Laurel Street (LOS F: PM Peak Hour)* – The eastbound through movement at the intersection is projected to be over capacity during the PM peak hour, under implementation of the Preferred Plan. Widening the eastbound approach of the intersection to include a third through lane would improve the intersection operations to LOS D. The identified significant traffic related impact to this intersection would be fully mitigated with the implementation of this improvement.

   Partial Mitigation: None recommended.

34. *Pacific Highway and Sassafras Street (LOS E: PM Peak Hour)* – The southbound left-turn movement of the intersection is projected to be over capacity during the PM peak hour, under the implementation of the Preferred Plan. Adding a second southbound left-turn lane would allow the intersection to operate at LOS D during the PM peak hour. The

identified significant traffic related impact to this intersection would be fully mitigated with the implementation of this improvement.

Partial Mitigation: None recommended.

35. *Pacific Highway and Laurel Street (LOS F: AM and PM Peak Hours)* – Laurel Street is projected to be over capacity during both peak hours, under implementation of the Preferred Plan. Widening the eastbound, westbound and northbound approaches of the intersection to include a third through lane and a second eastbound left-turn lane, as well as a second northbound left-turn lane and exclusive right-turn lane would improve the intersection operations to LOS D. The identified significant traffic related impact to this intersection would be fully mitigated with the implementation of this improvement.

    Partial Mitigation: None recommended.

Old Town Community

37. *Moore Street and Old Town Street (LOS F: PM Peak Hour)* – The eastbound and westbound movements of the intersection are projected to be over capacity during the PM peak hour, under implementation of the Preferred Plan. Implementation of the following improvements would allow the intersection to operate at LOS D during the PM peak hour.

    - Implement exclusive eastbound and westbound left-turn lanes.
    - Convert the eastbound/westbound signal phasing from permitted to protected phasing.

    The identified significant traffic related impact to this intersection would be fully mitigated with the implementation of this improvement.

    Partial Mitigation: None recommended.

Outside of the Community

50. *Nimitz Boulevard / Lowell Street and Rosecrans Street (LOS E: AM Peak Hour and LOS F: PM Peak Hour*) – Both the southbound through movement and eastbound left-turn movement are anticipated to be over capacity during both peak hours, under implementation of Preferred Plan. Widening the northbound and southbound approaches of the intersection to include a third through lane and a second southbound left-turn lane would improve the intersection operations to LOS D or better during both the AM and PM peak hours. Implementation of the following improvements would allow the intersection to operate at LOS D or better during both the AM and PM peak hours.

    The identified significant traffic related impact to this intersection would be fully mitigated with the implementation of this improvement.

    Partial Mitigation: None recommended.

6.1.3 Intersection Queuing Analysis

A queuing analysis was conducted under Preferred Plan conditions, at each of the study intersections to assess potential overflowing issues at exclusive turn-lanes and closely spaced intersections. Closely spaced intersections include all ramp intersections and intersections within close proximity (less than 500 feet) to one another. The limitations in turn-lane storage capacity could result in turning vehicles overflow into adjacent lanes, while excessive queuing (queue length exceeds distance to upstream intersection) at closely spaced intersection could negatively affect the operations of the upstream intersection. When either situation occurs, traffic operations could deteriorate, resulting in additional levels of congestion.

Table 6.3 displays the average (50th percentile) and maximum (95th percentile) queue lengths at closely spaced intersections (500 feet apart), for relevant movements. Synchro intersection queuing reports are provided in Appendix E following the intersection LOS worksheets.

Table 6.3 Queue Lengths at Closely Spaced Intersections – Preferred Plan Conditions

#	Impacted Intersection	Peak Hour	Upstream Intersection	Spacing (Feet)	Turning Movement	95th% Queue Length (Feet)	50th% Queue Length (Feet)
7	Midway Dr and Rosecrans St	AM	15. Sports Arena Blvd and Rosecrans St	665	EBT	315	268
		PM				825	744
15	Sports Arena Blvd and Rosecrans St	AM	19. Kurtz St and Camino Del Rio West	380	EBT	594	526
		PM				961	875
19	Kurtz St and Camino Del Rio West	AM	23. Hancock St and Camino Del Rio West	315	NET	342	260
		PM				290	314
20	Kurtz St and Rosecrans St	AM	15. Sports Arena Blvd and Rosecrans St	310	WBT	717	580
		PM				913	829
N/A	I-5 SB Off-Ramp and Camino Del Rio West	AM	23. Hancock St and Camino Del Rio West	490	SWT	1,260	1,180
		PM				1,218	1,141

Source: Chen Ryan Associates (May 2017)

Midway-Pacific Highway Community

As shown, the maximum (95th percentile) and average (50th percentile) queue lengths at all closely spaced intersections, with the exception of the average queue length at Kurtz Street and Camino Del Rio West, are anticipated to exceed the spacing between intersections under implementation of Preferred Plan conditions. Queuing spillovers could degrade traffic operations at the upstream intersections.

Old Town

There are no signalized intersections within 500 feet of each other within the Old Town Community.

Table 6.4 displays the average (50th percentile) and maximum (95th percentile) queue lengths for intersection movements where the maximum peak hour queue length is projected to exceed the current storage length under Preferred Plan conditions. Synchro intersection queuing reports are provided in Appendix E following the intersection LOS worksheets.

Table 6.4 Queue Lengths at Closely Spaced Intersections – Preferred Plan Conditions

No.	Intersection	Movement	Peak	95th % Queue Length (Feet)	50th % Queue Length (Feet)	Pocket Length (Feet)	Excess 95th % Queue (Feet)	Excess 50th % Queue (feet)
Midway-Pacific Highway								
1	Lytton St and Rosecrans St	EBL	AM	166	66	105	61	0
			PM	223	98	105	118	0
		NBL	AM	309	215	230	79	0
			PM	384	267	230	154	37
		SBL	AM	976	741	185	791	556
			PM	551	350	185	366	165
4	Midway Dr and Sports Arena/W Point Loma Blvd	EBL	AM	798	390	380	418	10
			PM	694	479	380	314	99
		NBL	AM	257	139	230	27	0
			PM	729	508	230	499	278
5	Midway Dr and Kemper St	EBL	AM	127	93	100	27	0
			PM	196	146	100	96	46
7	Midway Dr and Rosecrans St	WBL	AM	241	146	340	0	0
			PM	436	317	340	96	0
		SBL	AM	164	87	90	74	0
			PM	299	189	90	209	99
		NBL	AM	198	88	190	8	0
			PM	472	291	190	282	101
		NBR	AM	93	42	190	0	0
			PM	405	278	190	215	88
12	Sports Arena Blvd and Kemper Street	EBL	AM	97	66	50	47	16
			PM	134	81	50	84	31
		NBL	AM	288	153	160	128	0
			PM	414	276	160	254	116
14	Sports Arena Blvd and East Drive	NBL	AM	47	27	130	0	0
			PM	166	132	130	36	2
15	Sports Arena Blvd and Rosecrans St	EBL	AM	151	87	220	0	0
			PM	236	163	220	16	0
		NBL	AM	316	164	130	186	34
			PM	385	215	130	255	85

Table 6.4 Queue Lengths at Closely Spaced Intersections – Preferred Plan Conditions

No.	Intersection	Movement	Peak	95th % Queue Length (Feet)	50th % Queue Length (Feet)	Pocket Length (Feet)	Excess 95th % Queue (Feet)	Excess 50th % Queue (feet)
19	Kurtz St and Camino Del Rio West	SBL	AM	397	302	0	397	302
			PM	1054	798	210	844	588
		WBL	AM	467	419	110	357	309
			PM	310	344	110	200	234
20	Kurtz St and Rosecrans St	NBL	AM	167	106	60	107	46
			PM	220	109	60	160	49
		WBL	AM	103	48	85	18	0
			PM	193	62	85	108	0
23	Hancock St and Camino Del Rio West	WBR	AM	782	481	140	642	341
			PM	815	521	140	675	381
		EBL	AM	57	44	110	0	0
			PM	113	121	110	3	11
27	Hancock St and Washington St	WBL	AM	222	137	140	82	0
			PM	187	142	140	47	2
		SBR	AM	150	59	270	0	0
			PM	1317	1053	270	1047	783
29	Kettner Blvd and Sassafras Street	SBL	AM	220	134	80	140	54
			PM	207	124	80	127	44
34	Pacific Highway and Sassafras Street	WBL	AM	453	256	100	353	156
			PM	570	372	100	470	272
		SBL	AM	150	72	250	0	0
			PM	348	187	250	98	0
35	Pacific Hwy and West Laurel St	EBL	AM	1006	767	375	631	392
			PM	1146	900	375	771	525
		WBL	AM	195	125	70	125	55
			PM	470	281	70	400	211
		NBL	AM	533	344	90	443	254
			PM	894	667	90	804	577
		SBL	AM	199	92	250	0	0
			PM	432	268	250	182	18
Old Town								
36	Pacific Hwy and Taylor St	EBL	AM	172	64	150	22	0
			PM	245	95	150	95	0
		WBL	AM	221	93	160	61	0
			PM	130	65	160	0	0

Table 6.4 Queue Lengths at Closely Spaced Intersections – Preferred Plan Conditions

No.	Intersection	Movement	Peak	95th % Queue Length (Feet)	50th % Queue Length (Feet)	Pocket Length (Feet)	Excess 95th % Queue (Feet)	Excess 50th % Queue (feet)
36	Pacific Hwy and Taylor St	NBL	AM	177	69	100	77	0
			PM	210	88	100	110	0
		NBR	AM	42	0	200	0	0
			PM	576	356	200	376	156
38	Congress St and Taylor St	WBL	AM	246	82	100	146	0
			PM	254	101	100	154	1
44	San Diego Avenue and Old Town Street	NBL	AM	166	75	75	91	0
			PM	87	26	75	12	0
45	Juan Street and Taylor Street	WBL	AM	105	37	95	10	0
			PM	214	67	95	119	0
48	Morena Blvd and Taylor St	EBL	AM	186	86	180	6	0
			PM	289	134	180	109	0
Intersections Outside of Study Communities								
49	Hugo St and Rosecrans St	NBL	AM	294	183	115	179	68
			PM	188	119	115	73	4
50	Nimitz Blvd and Rosecrans St	EBL	AM	345	173	300	45	0
			PM	764	527	300	464	227
		WBL	AM	193	117	300	0	0
			PM	439	256	300	139	0
		NBL	AM	96	49	75	21	0
			PM	152	91	75	77	16
		SBL	AM	421	246	285	136	0
			PM	583	385	285	298	100
54	Pacific Highway and Seaworld Drive	WBL	AM	185	58	170	15	0
			PM	241	87	170	71	0
		NBL	AM	81	24	150	0	0
			PM	210	70	150	60	0
56	Pacific Highway and Grape St	SBL	AM	75	34	130	0	0
			PM	131	72	130	1	0
57	Friars Road and Seaworld Dr	EBR	AM	101	62	180	0	0
			PM	339	216	180	159	36
		WBL	AM	151	61	205	0	0
			PM	293	162	205	88	0
		NBL	AM	101	66	150	0	0
			PM	185	135	150	35	0

Table 6.4 Queue Lengths at Closely Spaced Intersections – Preferred Plan Conditions

No.	Intersection	Movement	Peak	95th % Queue Length (Feet)	50th % Queue Length (Feet)	Pocket Length (Feet)	Excess 95th % Queue (Feet)	Excess 50th % Queue (feet)
58	I-5 SB Ramps and Tecolote Road	WBL	AM	144	82	120	24	0
			PM	133	89	120	13	0
59	I-5 NB Ramps and Tecolote Road	EBL	AM	350	236	170	180	66
			PM	308	221	170	138	51

Source: Chen Ryan Associates (May 2017)

Midway-Pacific Highway Community

As shown, under implementation of the Preferred Plan, 30 different movements within the Midway-Pacific Highway Community are projected to have queue lengths exceeding their storage capacity at the most congested point of the peak hour (95th Percentile). The spillovers could degrade traffic operations within the intersection or adjacent closely spaced, upstream intersections for approximately one to two cycles during the peak hour. However, only 26 movements are anticipated to have queues that exceed their storage capacity on an average during either peak hour (50th Percentile).

Old Town

As shown, under implementation of the Preferred Plan, 8 different movements within the Old Town Community are projected to have queue lengths exceeding their storage capacity at the most congested point of the peak hour (95th Percentile). The spillovers could degrade traffic operations within the intersection or adjacent closely spaced, upstream intersections for approximately one to two cycles during the peak hour. However, only 2 movements are anticipated to have queues that exceed their storage capacity on an average during either peak hour (50th Percentile).

Other Communities

As shown, under implementation of the Preferred Plan, 13 different movements within other communities are projected to have queue lengths that exceed their storage capacity at the most congested point of the peak hour (95th Percentile). The spillovers could degrade traffic operations within the intersection or adjacent closely spaced, upstream intersections for approximately one to two cycles during the peak hour. However, only 6 movements are anticipated to have queues that exceed their storage capacity on an average during either peak hour (50th Percentile).

6.1.4 Freeway Segments and LOS Analysis

Neither the Revenue Constrained Alternative of SANDAG's *San Diego Forward Plan* (October 2015) nor the Preferred Plan include freeway improvements, as noted in Sections 3.2.2 and 4.2.2. Table 6.5 displays the freeway segment LOS in the vicinity of the Midway-Pacific Highway and Old Town communities. Forecast freeway volumes were obtained from the modeling process described in Section 5.0.

Table 6.5 Freeway Segment LOS Results – Preferred Plan Conditions

								AM					PM				
Freeway	To	From	Dir	Daily Volume	HVF	Lanes	Aux	K	D	Peak Volume	V/C	LOS	K	D	Peak Volume	V/C	LOS
I-8	Beginning of Freeway	Sports Arena Boulevard	EB	61,400	1.2%	2	0	6.4%	61%	2,600	0.55	B	8.6%	71%	3,100	0.66	C
			WB			2	0		39%	1,700	0.36	A		29%	2,800	0.60	B
	Sports Arena Boulevard	I-5	EB	123,000	2.8%	3	1	6.4%	61%	5,500	0.65	C	7.8%	61%	5,500	0.65	C
			WB			3	1		39%	3,500	0.41	B		39%	5,300	0.63	C
	I-5	Morena Boulevard	EB	184,000	2.8%	4	1	6.4%	42%	5,600	0.52	B	7.2%	49%	6,600	0.61	B
			WB			5	0		58%	7,700	0.66	C		51%	8,400	0.71	C
	Morena Boulevard	Hotel Circle	EB	217,300	2.8%	4	1	6.6%	48%	7,600	0.70	C	8.2%	55%	11,000	1.02	F
			WB			5	0		52%	8,400	0.71	C		45%	9,000	0.77	C
I-5	Clairemont Drive	Sea World Drive	NB	240,800	4.5%	5	0	6.4%	62%	11,000	0.94	E	8.3%	51%	11,700	1.00	E
			SB			5	0		38%	6,800	0.58	B		49%	11,200	0.95	E
	Sea World Drive	I-8	NB	230,700	4.5%	4	1	6.4%	62%	10,500	0.97	E	8.4%	52%	11,600	1.07	F
			SB			4	2		38%	6,300	0.52	B		48%	10,700	0.88	D
	I-8	Old Town Avenue	NB	241,300	4.1%	4	1	6.9%	49%	9,400	0.87	D	8.2%	39%	8,800	0.81	D
			SB			5	0		51%	9,700	0.83	D		61%	13,800	1.17	F
	Old Town Avenue	Washington Avenue	NB	225,700	4.1%	4	0	7.0%	49%	8,800	0.94	E	8.0%	51%	10,600	1.13	F
			SB			5	0		51%	9,300	0.79	D		49%	10,100	0.86	D
	Washington Avenue	Pacific Highway	NB	171,200	4.1%	4	0	6.9%	53%	7,100	0.76	C	8.1%	36%	5,700	0.61	B
			SB			4	0		47%	6,300	0.67	C		64%	10,100	1.07	F
	Pacific Highway	Laurel Street	NB	216,600	4.1%	4	1	6.7%	57%	9,600	0.89	D	7.1%	50%	8,400	0.78	C
			SB			4	1		43%	7,100	0.66	C		50%	9,200	0.85	D
	Laurel Street	Hawthorne Avenue	NB	224,200	4.1%	4	1	6.8%	57%	9,900	0.92	D	7.2%	47%	8,200	0.76	C
			SB			4	1		43%	7,500	0.69	C		53%	10,400	0.96	E

Source: Chen Ryan Associates (May 2017)

Note:
Bold letter indicates LOS E or F

As shown, all mainline freeway segments are projected to operate at LOS D or better under Preferred Plan conditions, with the exception of the following:

- I-8 EB, between Morena Boulevard and Hotel Circle Drive (LOS F: PM Peak Hour)
- I-5 NB, between Clairemont Drive and Sea World Drive (LOS E: AM & PM Peak Hours)
- I-5 SB, between Clairemont Drive and Sea World Drive (LOS E: PM Peak Hour)
- I-5 NB, between Sea World Drive and I-8 (LOS E: AM Peak Hour, LOS F PM Peak Hour)
- I-5 SB, between I-8 and Old Town Avenue (LOS F: PM Peak Hour)
- I-5 NB, between Old Town Avenue and Washington Avenue (LOS E: AM Peak Hour and LOS F: PM Peak Hour)
- I-5 SB, between Washington Avenue and Pacific Highway (LOS F: PM Peak Hour)
- I-5 SB, between Laurel Street and Hawthorne Avenue (LOS E: PM Peak Hour)

6.1.5 Meter Analysis

Table 6.6 summarizes the freeway ramp metering analysis results under implementation of the Preferred Plan for all ramp meter locations within both study communities. The volumes were derived using the outputs for the modeling described in Section 5.0. Existing ramp meter flow rates were assumed under Preferred Plan conditions.

Table 6.6 Freeway Ramp Metering Analysis – Preferred Plan Conditions

Ramp	Peak	Lanes SOV	Lanes HOV	Flow Rate	Volume	Excess Demand	Delay (Minutes)	Queue (Feet)
I-8 EB / Sports Arena Boulevard	PM	2	1	641	930	289	27.1	8,381
I-5 SB / Sea World Drive	AM	1	1	444	530	86	11.6	2,494
	PM	1	1	444	690	246	33.2	7,134
I-5 NB / Sea World Drive	AM	2	0	1,555	1,480	0	0.0	0
	PM	2	0	1,656	1,380	0	0.0	0
I-5 SB / Old Town Avenue	PM	1	0	461	410	0	0.0	0
I-5 NB / Old Town Avenue	AM	2	0	905	370	0	0.0	0
	PM	2	0	888	690	0	0.0	0

Source: Chen Ryan Associates (May 2017)

Notes:
SOV = Single Occupancy Vehicle; HOV = High Occupancy Vehicle.
[1] Demand is the peak hour demand expected to use the on-ramp.
[2] Meter Rate is the peak hour capacity expected to be processed through the ramp meter. This value was obtained from Caltrans.
[3] Excess Demand = (Demand) – (Meter Rate) or zero, whichever is greater.
[4] Delay = (Excess Demand / Meter Rate) X 60 min/hr.
[5] Queue = (Excess Demand) X 29 ft/veh.

As shown in the table, the anticipated peak hour demand is not anticipated to exceed the anticipated meter rate at any of the study ramp meter locations creating a delay of 15 minutes[1], with the exception of the following:

- I-8 EB / Sports Arena Boulevard during the PM peak hour (27.1 minutes)
- I-5 SB / Sea World Drive during the PM peak hour (33.2 minutes)

6.2 Intelligent Transportation Systems (ITS)

The implementation of Intelligent Transportation Systems (ITS) can provide many benefits to the local roadway network, including improving roadway traffic operations, improving transit operations, relaying valuable traffic-related information and providing guidance to drivers (e.g. locations of available parking, traffic congestion points, and the location of accidents). Coordinated traffic signals and transit signal priority treatments are examples of ITS programs that can help improve both transit and roadway operations.

The City of San Diego should investigate the feasibility of the following ITS improvements within the Midway-Pacific Highway and Old Town communities:

- Expand signal coordination along major roadway corridors including Rosecrans Street, Taylor Street, Midway Drive, Sports Arena Boulevard, Pacific Highway, Kettner Street and San Diego Avenue.
- Regularly update the timing of traffic signals to reflect shifting travel patterns
- Use traffic responsive or adaptive traffic control in areas with variable traffic patterns
- Implement transit signal priority treatments at signalized intersections serving rapid bus routes
- Use variable message signs to direct motorists to available parking and to alert them of street closures.

The recommendations identified above are consistent with the goals of the future traffic signal communications network elements identified in the City of San Diego *Traffic Signal Communication Master Plan* (2014).

6.3 Transportation Demand Management (TDM) Strategies

The goal of the City's Transportation Demand Management (TDM) program is to improve mobility, reduce congestion and air pollution, and provide options for employees and residents to commute to/ from work. Typical TDM strategies include promoting the following:

- Teleworking
- Alternative Work Schedules
- Transit
- Mixed-Use Development

[1] The City of San Diego Traffic Impact Study Manual (July 1998) defines ramp meters with more than 15 minutes of delay as having a significant impact.

- Walking
- Bicycling
- Carpooling
- Vanpooling
- Shared Mobility Services (e.g., bikeshare, carshare, and on-demand ridesharing services)
- Other Transportation Options

TDM measures improve the efficiency of the transportation system by helping to reduce vehicle trips during peak periods of demand. The San Diego Association of Governments (SANDAG) has an established program (iCommute) that serves as the administrator for TDM programs throughout the region. iCommute provides the following services:

Ridematching Services – the iCommute TripPlanner tool allows users to compare multiple transportation choices in addition to finding vanpool and carpool matches.

Subsidized Vanpool Program – Through the SANDAG vanpool program, each qualified vanpool receives a $400 monthly subsidy when leased through SANDAG preferred vendors, Enterprise Rideshare and vRide. Vanpools range from 7 to 15 passenger vehicles where commuters share the ride to work and split the cost thereby saving money, wear and tear on their personal vehicles, as well as reducing Greenhouse Gas emissions.

Employer Services - The SANDAG iCommute program provides assistance and tools to help local San Diego organizations design and implement customized commuter programs that assist and support employees commute using alternative modes of transportation. The iCommute Diamond Awards recognizes employers with exemplary commute programs and mode-share.

Walk, Ride, and Roll to School – Part of the Safe Routes to School program, this service supports active transportation to and from K-12 schools including biking, walking, skating, skateboarding, or riding a scooter to help promote physical activity and healthier lifestyles for students.

Telework - Teleworking is a convenient solution that enables employees to work from home or a remote location one or more days per week. Telework has proven benefits to employees and employers such as reducing commute costs, lowering parking demand, and helping the environment.

Transit Information – Provides information about San Diego regional transit agencies in addition to Compass Card information.

Bike Parking Program– Provides secure bike parking spaces at more than sixty transit stops and some Park & Ride lots throughout San Diego County in addition to a Regional Bike Map, which has been updated to show bike paths, lanes and routes.

Guaranteed Ride Home – A free service that allows registered iCommute users getting to work by alternative modes to receive free emergency rides home in the cases of illness or unscheduled overtime. Commuters can use the service up to three times per year.

In addition to the iCommute program, Caltrans owns and/or maintains several Park & Ride lots throughout the region that are used to promote carpool and vanpool activity.

The City of San Diego's Land Development Code (LDC) requires new development to provide sufficient bicycle parking stalls, carpool parking, and motorcycle facilities to encourage the use of alternative modes of transportation. The City is early in the process of developing recommendations to amend the LDC requirements for pedestrian, bicycle, carpool, and commuter information facilities. The City's municipal code now allows for on-street carshare operations. Pricing strategies are also used to reduce demand on the transportation system.

6.4 Pedestrian Assessment and Results

This section presents an assessment of the pedestrian network under implementation of the Preferred Plan, which assumes the implementation of the pedestrian related improvements outlined in Sections 3.3.2 and 4.3.2. The City of San Diego Pedestrian Master Plan Phase I identifies the following six Pedestrian Route Typologies and the purpose they serve:

District Sidewalks – Sidewalks along roads that support heavy pedestrian levels in mixed-use concentrated urban areas.

Corridor Sidewalks – Sidewalks along roads that support moderate density business and shopping districts with moderate pedestrian level.

Connector Sidewalks – Sidewalks along roads that support institutional, industrial or business complexes with limited lateral access and low pedestrian levels.

Neighborhood Sidewalks – Sidewalks along roads that support low to moderate density housing with low to moderate pedestrian levels.

Ancillary pedestrian facilities – Facilities away or crossing over streets such as plazas, paseos, promenades, courtyards or pedestrian bridges and stairways.

Path – Walkways and paved paths that are not adjacent to roads that support recreational and transportation purposes.

The assumed Pedestrian Route Typologies within both communities is displayed in Figure 6-6.

The proposed pedestrian network under Preferred Plan conditions was assessed using the methodologies described in Section 2.3.1. The pedestrian network connectivity, quality and overall adequacy (combining both quality and connectivity) are discussed below.

6.4.1 Pedestrian Network Connectivity

Figure 6-7 displays the pedestrian network connectivity to/from pedestrian attracting land uses (residential, commercial, office and recreational uses) throughout both communities. This analysis calculates the percent of area accessible to pedestrians within a half mile walking distance from the respective land uses (connectivity ratio). A connectivity ratio of 50% or better is considered to be ideal.

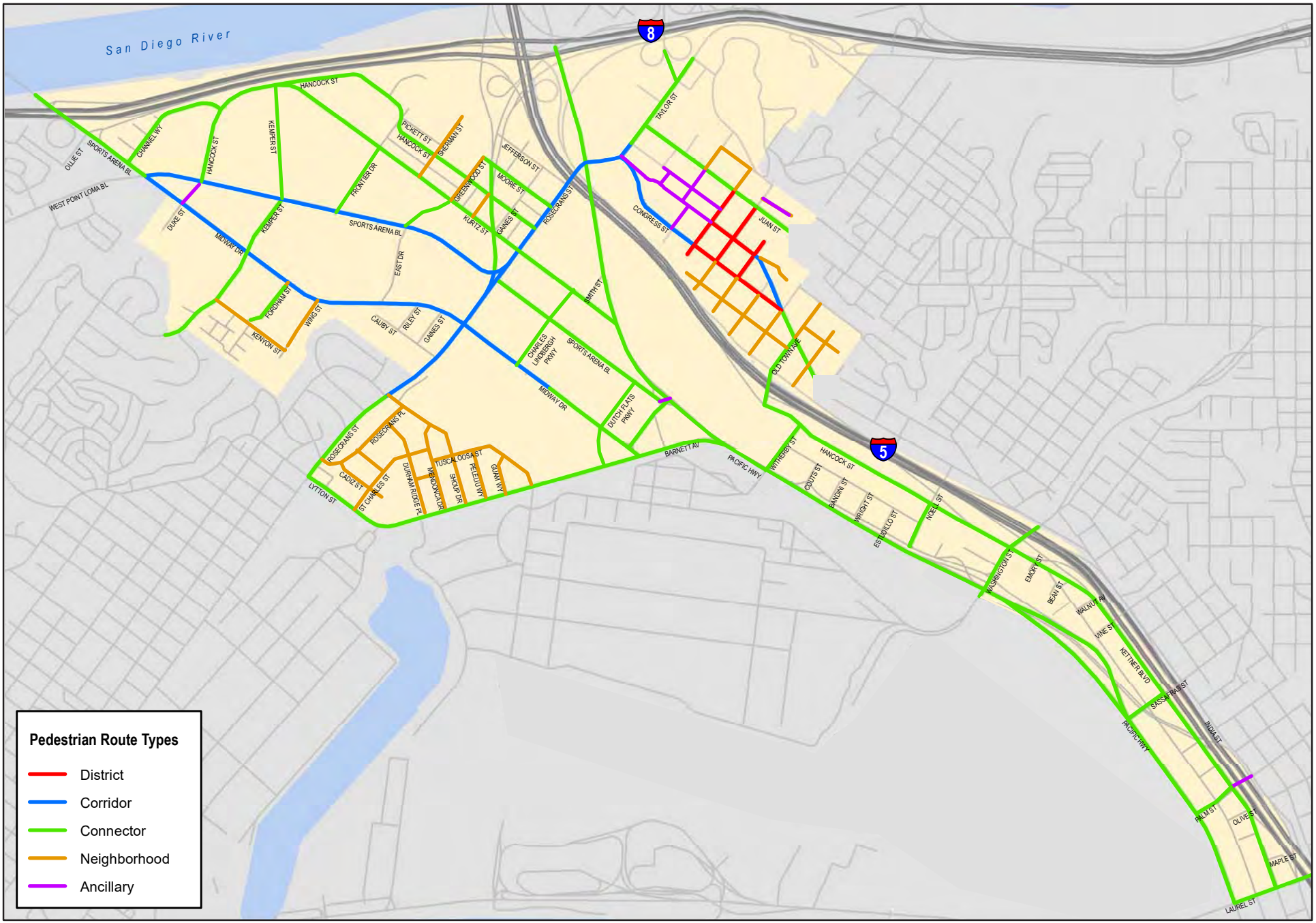

Figure 6-6
Pedestrian Route Typologies -
Preferred Plan Conditions

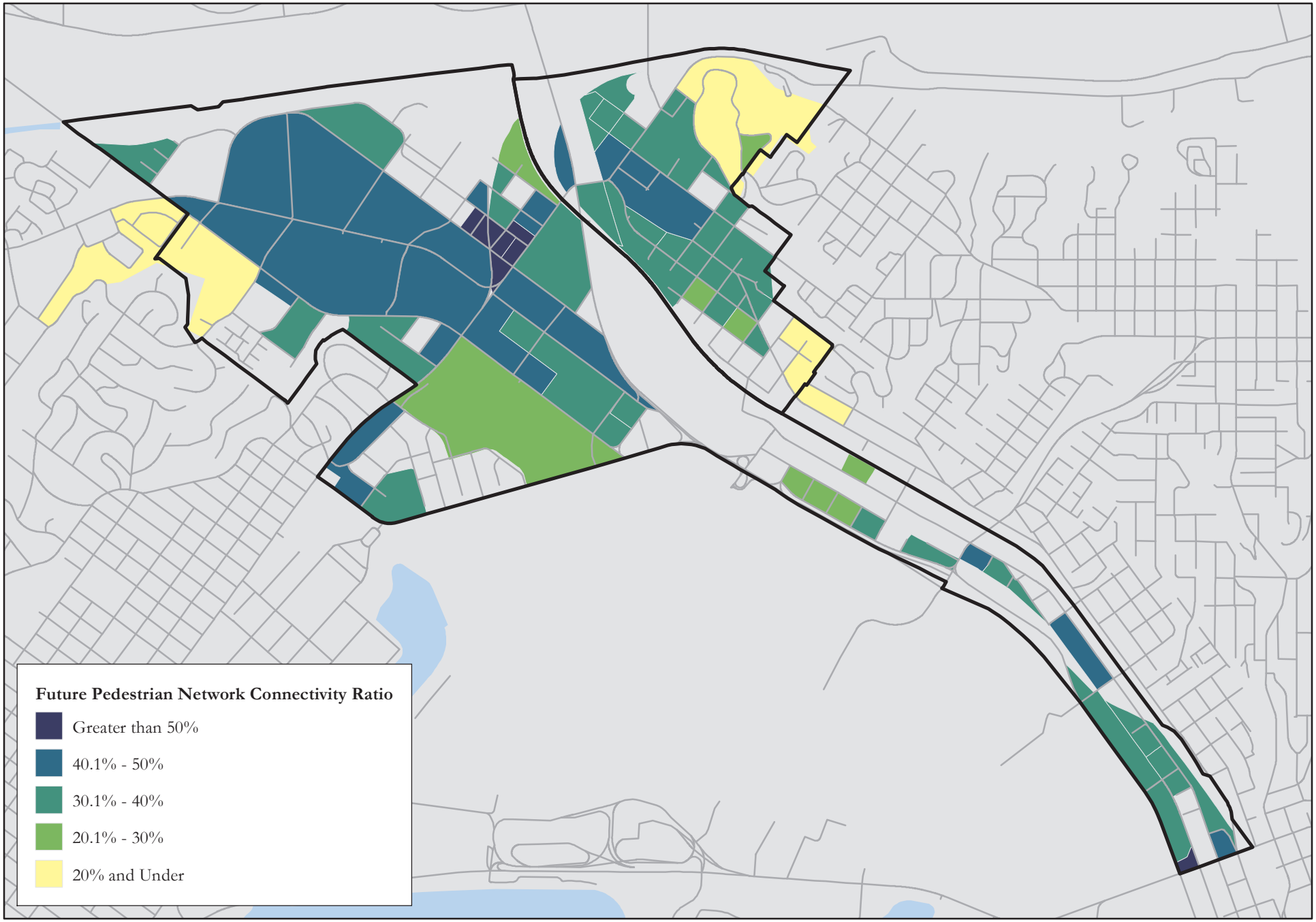

Figure 6-7
Pedestrian Network Connectivity -
Preferred Plan Conditions

Midway-Pacific Highway Community

As shown in the figure, pedestrian connectivity is at ideal levels (50%+ connectivity ratio) within the center of the community (in the area to the northeast of the intersection of Kurtz Street and Rosecrans Street, on either side of Camino Del Rio West. This is primarily due to the dense grid network present in this area. The lower connectivity ratio areas include the northwest area of the community west of Midway Drive and in the area west of Midway Drive and south of Rosecrans Street. The lower ratio is due to large, disconnected parking lots, superblocks, and private property with primary access points along Midway Drive.

Old Town Community

As shown in the figure, the Old Town Community generally has a good connectivity ratio between 40-50%, which is highest in the tourist areas around the Historic State Park and Transit Center Area, and gets lower toward the outskirts of the community. The lower connectivity ratio on the outskirts of the community is primarily due to the barriers created by the I-5 and I-8 freeways where pedestrian crossings are constrained.

6.4.2 Pedestrian Network Quality

Figure 6-8 and Tables 6.7A and 6.7B display the PEQE analysis results for roadways segments and intersections, along the major pedestrian corridors within the community. PEQE calculation worksheets are provided in Appendix F. As shown in the table, with the implementation of the proposed improvements, the pedestrian facilities along all major roadways within both communities have a Medium or High grade under implementation of the Preferred Plan with the exception of the following:

Midway-Pacific Highway Community

Kettner Boulevard between Vine Street and Sassafras Street – This segment has a score of Low due to the lack of pedestrian facilities on the west side of the roadway (where there are no fronting land uses) and high posted speed limit (40 mph). It should be noted that the east side of the roadway, where the fronting land uses are located, has a grade of Medium. Based on the results of the PEQE analysis, the pedestrian improvements proposed under the Preferred Plan would significantly improve the walkability and safety within Midway-Pacific Highway community from their current conditions.

Old Town Community

Taylor Street between Morena Boulevard and I-8 Ramps – This segment has a grade of Low due to the lack of pedestrian facilities. However, it should be noted that there are no fronting land uses on either side of this segment, nor does this segment connect to any activity centers to the east of the community. While the Old Town community is very walkable today, the improvements proposed under the Preferred Plan provide both access and safety upgrades throughout the community. Improvements such as ADA ramps, continental cross-walks and bulb outs (at key intersections) upgrade many of the intersections within the community from Low to Medium conditions.

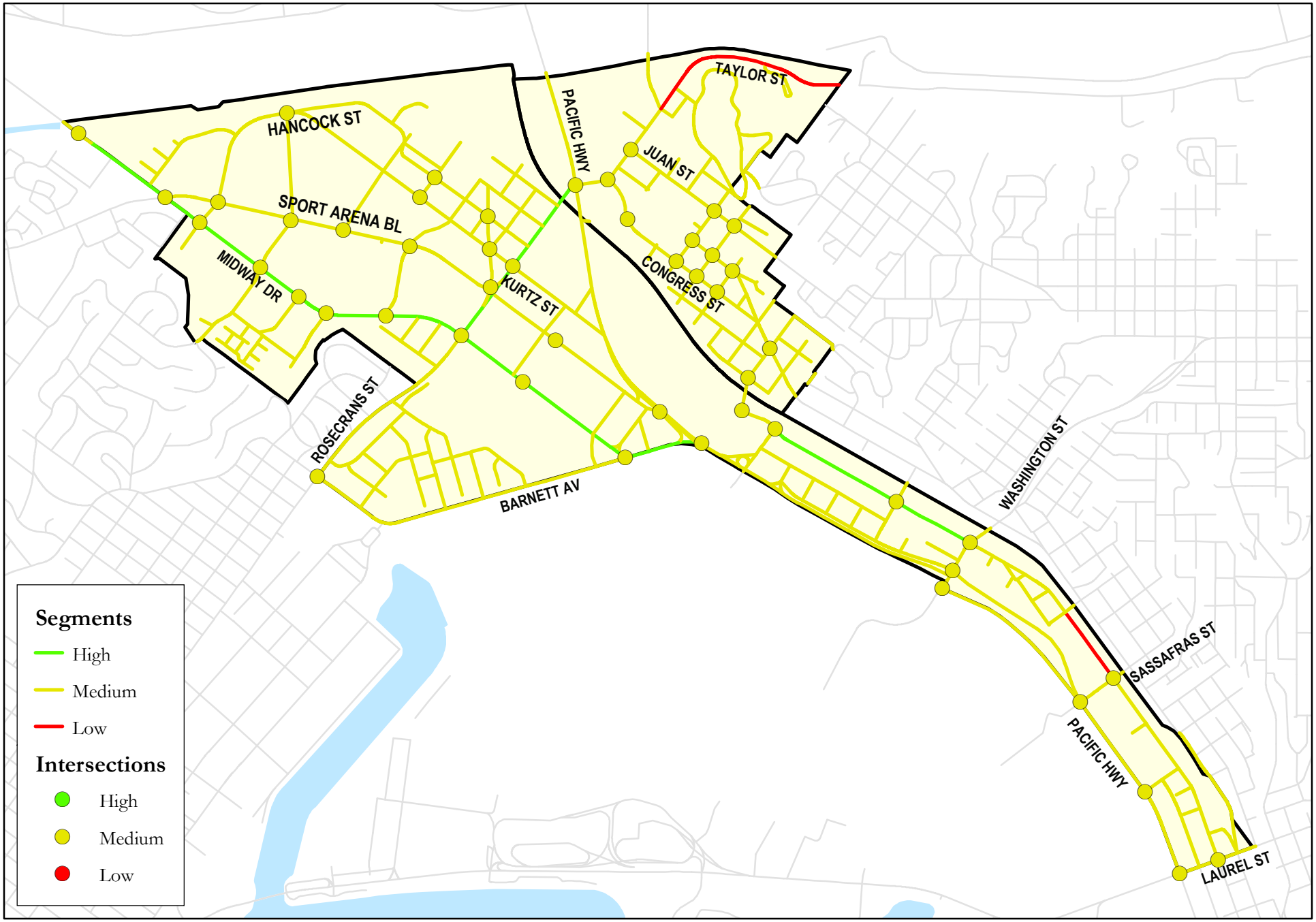

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Figure 6-8
PEQE Scoring
Preferred Plan Conditions

Table 6.7A PEQE Results: Roadway Segments – Preferred Plan Conditions

Roadway	To	From	Northside/ Eastside		Southside/ Westside		Total	
			Score	Grade	Score	Grade	Score	Grade
North-South								
Midway/Pacific Highway Corridor								
Lytton Street/ Barnett Avenue	Rosecrans St	Midway Dr	4	Medium	4	Medium	8	Medium
	Midway Dr	Pacific Hwy	7	High	7	High	14	High
W. Mission Bay Dr	I-8 WB Ramps	I-8 EB Ramps	4	Medium	4	Medium	8	Medium
Midway Dr	W. Point Loma Blvd/Sports Arena Blvd	Kemper St	7	High	7	High	14	High
	Kemper St	East Dr	7	High	7	High	14	High
	East Dr	Rosecrans St	7	High	7	High	14	High
	Rosecrans St	Barnett Ave	7	High	7	High	14	High
Sports Arena Blvd	I-8 EB Ramps	W. Point Loma Blvd/Sports Arena Blvd	6	Medium	7	High	13	High
	W. Point Loma Blvd/Midway Dr	Kemper St	5	Medium	5	Medium	10	Medium
	Kemper St	East Dr	5	Medium	5	Medium	10	Medium
	East Dr	Rosecrans St	5	Medium	5	Medium	10	Medium
	Rosecrans St	Pacific Hwy	6	Medium	5	Medium	11	Medium
Kurtz St	Hancock St	Rosecrans St	6	Medium	6	Medium	12	Medium
	Rosecrans St	Pacific Hwy	4	Medium	4	Medium	8	Medium
Hancock St	Sports Arena Blvd	Kurtz St	3	Low	6	Medium	9	Medium
	Kurtz St	Camino Del Rio West	4	Medium	6	Medium	10	Medium
	Camino Del Rio West	Rosecrans St	5	Medium	5	Medium	10	Medium
	Old Town Ave	Witherby St	4	Medium	4	Medium	8	Medium
	Witherby St	Washington St	6	Medium	7	High	13	High
Kettner Blvd	Washington St	Vine St	3	Low	5	Medium	8	Medium
	Vine St	Sassafras St	4	Medium	2	Low	6	Medium
	Sassafras St	Laurel St	5	Medium	5	Medium	10	Medium
Pacific Hwy	Sea World Dr	Taylor St	5	Medium	5	Medium	10	Medium
	Taylor St	Kurtz St	6	Medium	6	Medium	12	Medium
	Kurtz St	Sports Arena Blvd	6	Medium	6	Medium	12	Medium
	Sports Arena Blvd	Barnett Ave	6	Medium	6	Medium	12	Medium
	Barnett Ave	Harney Washington St	6	Medium	6	Medium	12	Medium
	Washington St	Sassafras St	6	Medium	6	Medium	12	Medium
	Sassafras St	Laurel St	6	Medium	6	Medium	12	Medium
Old Town								
Congress St	Taylor St	Twiggs St	6	Medium	6	Medium	12	Medium
	Twiggs St	Harney St	6	Medium	6	Medium	12	Medium
	Harney St	San Diego Ave/Ampudia St	6	Medium	6	Medium	12	Medium
San Diego Ave	Twiggs St	Harney St	6	Medium	6	Medium	12	Medium
	Harney St	Ampudia St	6	Medium	6	Medium	12	Medium

Table 6.7A PEQE Results: Roadway Segments – Preferred Plan Conditions

Roadway	To	From	Northside/ Eastside		Southside/ Westside		Total	
			Score	Grade	Score	Grade	Score	Grade
San Diego Ave	Ampudia St	Old Town Ave	6	Medium	6	Medium	12	Medium
	Old Town Ave	Hortensia St	6	Medium	6	Medium	12	Medium
Juan St	Taylor St	Twiggs St	6	Medium	6	Medium	12	Medium
	Twiggs St	Harney St	6	Medium	6	Medium	12	Medium
	Harney St	San Juan Rd	6	Medium	6	Medium	12	Medium
East-West								
Midway/Pacific Highway Corridor								
Channel Wy	W. Mission Bay Dr	Hancock St	6	Medium	6	Medium	12	Medium
Kemper St	Kenyon St	Midway Dr	6	Medium	5	Medium	11	Medium
	Midway Dr	Sports Arena Blvd	6	Medium	6	Medium	12	Medium
Camino Del Rio West	Rosecrans St	I-5/I-8 Ramps	4	Medium	4	Medium	8	Medium
Rosecrans St	Lytton St	Midway Dr	6	Medium	6	Medium	12	Medium
	Midway Dr	Sports Arena Blvd	7	High	7	High	14	High
	Sports Arena Blvd	Pacific Hwy/Taylor St	7	High	7	High	14	High
Washington St	Frontage Rd	Pacific St	5	Medium	5	Medium	10	Medium
	Pacific St	Hancock St	6	Medium	5	Medium	11	Medium
Vine St	California St	Kettner Blvd	7	High	5	Medium	12	Medium
Sassafras St	Pacific Hwy	Kettner Blvd	5	Medium	5	Medium	10	Medium
Laurel St	Pacific Hwy	Kettner Blvd	5	Medium	5	Medium	10	Medium
Old Town								
Taylor St	Pacific Hwy/ Rosecrans St	Congress St	4	Medium	4	Medium	8	Medium
	Congress St	Juan St	4	Medium	4	Medium	8	Medium
	Juan St	Morena Blvd	4	Medium	4	Medium	8	Medium
	Morena Blvd	I-8 EB Ramps	1	Low	1	Low	2	Low
Twiggs St	Congress St	San Diego Ave	5	Medium	5	Medium	10	Medium
	San Diego Ave	Juan St	6	Medium	6	Medium	12	Medium
Harney St	Congress St	San Diego Ave	6	Medium	6	Medium	12	Medium
	San Diego Ave	Juan St	6	Medium	5	Medium	11	Medium
Old Town Ave	Hancock St	Moore St	5	Medium	5	Medium	10	Medium
	Moore St	San Diego Ave	5	Medium	5	Medium	10	Medium

Source: Chen Ryan Associates (June 2016)

Table 6.7B PEQE Results: Intersections – Preferred Plan Conditions

#	Intersection	Score	Grade
Midway-Pacific Highway			
1	Lytton St and Rosecrans St	6	Medium
2	W Mission Bay Dr and I-8 WB Off-Ramp	6	Medium
3	W Mission Bay Dr and Channel Way	5	Medium
4	Midway Dr and Sports Arena/W Point Loma Blvd	6	Medium
5	Midway Dr and Kemper St	6	Medium
6	Midway Dr and East Dr	6	Medium
7	Midway Dr and Rosecrans St	6	Medium
8	Midway Dr and Charles Lindbergh Pkwy	6	Medium
9	Midway Dr and Enterprise St	5	Medium
10	Midway Dr and Barnett Ave	6	Medium
11	Sports Arena Blvd and Hancock St	6	Medium
12	Sports Arena Blvd and Kemper St	6	Medium
13	Sports Arena Blvd and Sports Arena Driveway	6	Medium
14	Sports Arena Blvd and East Dr	6	Medium
15	Sports Arena Blvd and Rosecrans St	6	Medium
16	Sports Arena Blvd and Charles Lindbergh Pkwy	6	Medium
17	Sports Arena Blvd and Pacific Hwy	6	Medium
18	Kurtz St and Hancock St	5	Medium
19	Kurtz St and Camino Del Rio West	6	Medium
20	Kurtz St and Rosecrans St	6	Medium
21	Kurtz St and Pacific Hwy	6	Medium
22	Hancock St and Channel Wy	5	Medium
23	Hancock St and Camino Del Rio West	6	Medium
24	Hancock St and Rosecrans St	5	Medium
25	Hancock St and Old Town Ave	5	Medium
26	Hancock St and Witherby St	5	Medium
27	Hancock St and Washington St	6	Medium
28	Kettner Blvd and Vine St	5	Medium
29	Kettner Blvd and Sassafras St	6	Medium
30	Kettner Blvd and West Laurel St	6	Medium
31	Pacific Hwy and Barnett Ave	6	Medium
32	Pacific Hwy and Washington St @ Frontage Rd	6	Medium
33	Pacific Hwy and Washington St @ Pacific St	6	Medium
34	Pacific Hwy and Sassafras St	6	Medium
35	Pacific Hwy and West Laurel St	6	Medium
Old Town			
36	Pacific Hwy and Taylor St	6	Medium
37	Moore St and Old Town Ave	6	Medium
38	Congress St and Taylor St	6	Medium

Table 6.7B PEQE Results: Intersections – Preferred Plan Conditions

#	Intersection	Score	Grade
39	Congress St and Twiggs St	5	Medium
40	Congress St and Harney St	5	Medium
41	Congress St and San Diego Ave/Ampudia St	5	Medium
42	San Diego Ave and Twiggs St	5	Medium
43	San Diego Ave and Harney St	5	Medium
44	San Diego Ave and Old Town Ave	6	Medium
45	Juan St and Taylor St	6	Medium
46	Juan St and Twiggs St	5	Medium
47	Juan St and Harney St	5	Medium
48	Morena Blvd and Taylor St	6	Medium
New Intersections			
61	Kurtz St & Frontier Dr	5	Medium
63	Kurtz St & Charles Lindbergh Pkwy	6	Medium
64	Barnett Ave & Dutch Flats Pkwy	6	Medium
65	Midway Dr & Dutch Flats Pkwy	6	Medium
66	Dutch Flats Pkwy & Sports Arena Bl	6	Medium

Source: Chen Ryan Associates (June 2016)

As shown, all study intersections within both communities are projected to have a Medium grade under implementation of the Preferred Plan.

6.4.3 Pedestrian Quality Network Coverage

Figure 6-9 displays the Pedestrian Quality Network Coverage at all study intersections across both communities. This analysis calculates the ratio of the length of quality pedestrian network facilities (PEQE score Medium or High) within a half-mile walk from an intersection, compared to the total network available (based on existing conditions).

Midway-Pacific Highway Community

As shown in the figure, under implementation of the Preferred Plan, the Pedestrian Quality Network Coverage increases to over 75% at all study intersections within the community. The significant increase in coverage is primarily due to the new roadway links proposed under Preferred Plan conditions, including multi-use urban path improvements.

Old Town Community

As shown in the figure, under implementation of the Preferred Plan, the Pedestrian Quality Network Coverage increases to over 75% at all study intersections within the community. The significant increase in coverage is primarily due to the overall improvement to the intersections within the community by implementing minor improvements such as ADA ramps and Continental Crosswalks.

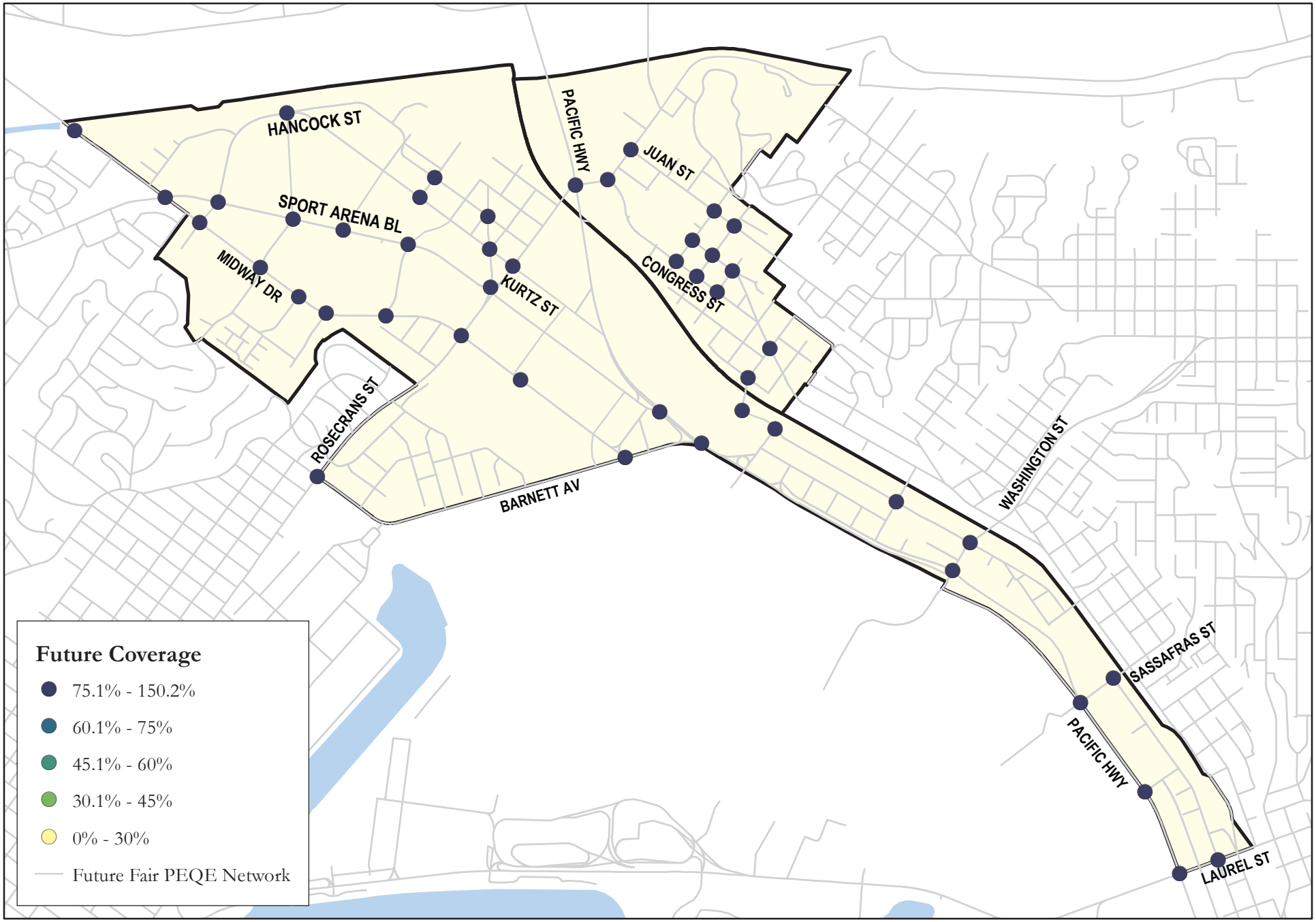

Figure 6-9
Pedestrian Quality Network Coverage -
Preferred Plan Conditions

6.5 Cycling Environment Assessment and Results

This section presents an assessment of the cycling environment under implementation of the Preferred Plan conditions, which assumes implementation of the cycling-related improvements outlined in Sections 3.4.2 and 4.4.2. Figure 6-10 displays the proposed bicycle network in both communities under implementation of the Preferred Plan.

The cycling environment under Preferred Plan conditions was assessed using the methodologies presented in Section 2.3.2. Cycling network connectivity, quality and overall adequacy (combining both quality and connectivity) are assessed below.

6.5.1 Bicycle Network Connectivity

Figure 6-11 displays bicycle network connectivity to/from the study area intersections across both communities. This analysis calculates the percent of area that a cyclist can access within a one mile ride from the respective intersection (connectivity ratio). A connectivity ratio of 50% or better is considered to be ideal.

Midway-Pacific Highway Community

As shown in the figure, the bicycle connectivity is at good levels (40%+ connectivity ratio) in the center of the community around the block bound by Rosecrans Street, Midway Drive, Sports Arena Boulevard and East Drive. This improvement in connectivity is predominantly due to the new roadway connections between Midway and Sports Arena Boulevard.

Old Town Community

As shown in the figure, the Old Town community generally has a good connectivity ratio of 35+%, with the highest connectivity along Taylor Street, where regional connections are available from Taylor Street (Coastal Rail Trail and Ocean Beach Bike Path).

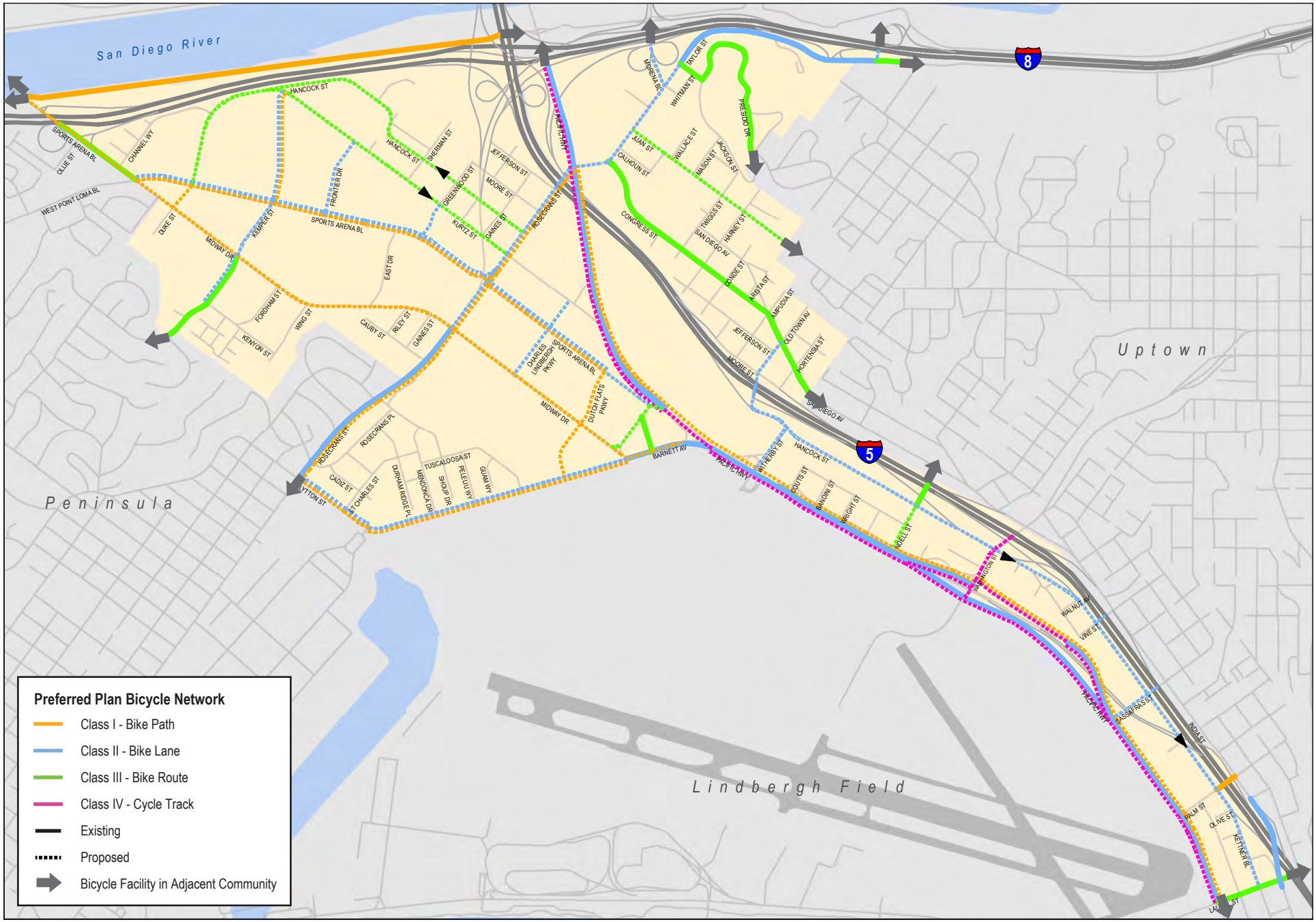

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Figure 6-10
Bicycle Network -
Preferred Plan Conditions

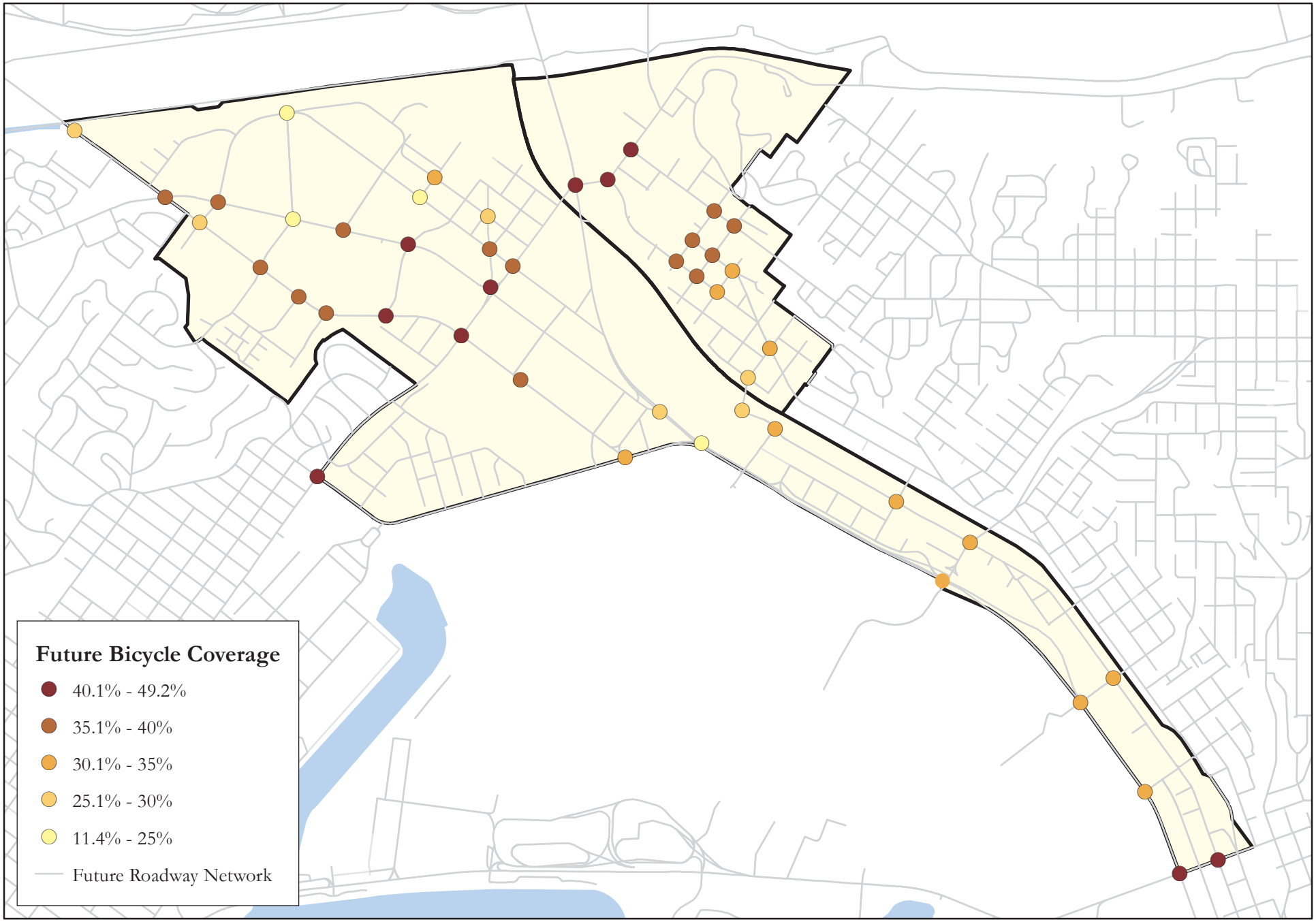


Figure 6-11
Bicycle Network Connectivity
Preferred Plan Conditions

6.5.2 Bicycle Network Quality

Figure 6-12 display the LTS analysis results for roadways segments and intersections along all Mobility Element roadways within the community.

Midway-Pacific Highway Community

As shown in the figure, the new multi-use urban paths proposed as part of the Midway/Pacific Highway Urban Greening Plan (La Playa Trail, Bay-to-Bay Path, the Historic Highway 101 Path, and the Midway Path), and the Preferred Plan, provide a slower low stress environment for cyclists (all paths have a score of LTS 1). Additionally, the proposed Class IV One-Way Cycle Tracks proposed along Pacific Highway provide a safe cycling environment for higher speed cyclists entering the community from either the north or south. These facilities have an LTS 1 score. Finally, the Enhanced Class II Buffered Bikes Lanes proposed along Sport Area Boulevard and Rosecrans Street provide more confident and higher speed cyclists a safe in-road alternative along these routes. Both facilities have a score of LTS 1.

Hancock Street between Kurtz Street and Rosecrans Street, and Hancock Street/Kettner Boulevard between Noel Street and Laurel Street were identified as providing LTS 4 environments under Preferred Plan conditions. The LTS 4 designation is largely due to the one-way directional travel. When calculating LTS scores for one-way streets the number of vehicular travel lanes is doubled, and the street is treated as though it has a median. This results in Hancock Street and Hancock Street/Kettner Boulevard as providing conditions equivalent to a 6-lane roadway, from the cyclist's perception. Hancock Street, between Kurtz Street and Rosecrans Street, does not have a bicycle facility, resulting in the LTS 4 score. Hancock Street/Kettner Boulevard, between Noel Street and Laurel Street, does have a Class II bike lane under Preferred Plan conditions, however, the posted speed limit of 40 MPH results in the LTS 4 score.

Based on the results of the LTS analysis, the bicycle facilities proposed under the Preferred Plan would significantly improve the connectivity and safety for cyclists within Midway-Pacific Highway community from their current conditions.

Old Town Community

As shown in the figure all roadways, with the exception of Taylor Street and Morena Boulevard, are projected to be low stress cycling environments (LTS 1 or 2). This is due to the low speed nature of the roadways within the Old Town Community. However, even with Class II Bike Lanes proposed along Taylor Street, the roadway is still projected to have an LTS score of 3. This is due to the high vehicular travel speed along Taylor Street and lack of a horizontal or vertical buffer between cyclists and motorists.

As noted in section 4.4.2, the connection along Morena Boulevard between Taylor Street and Linda Vista Road is critical. A connection here would link the Old Town and Linda Vista communities, as well as provide a connection to the Ocean Beach Bike Path.

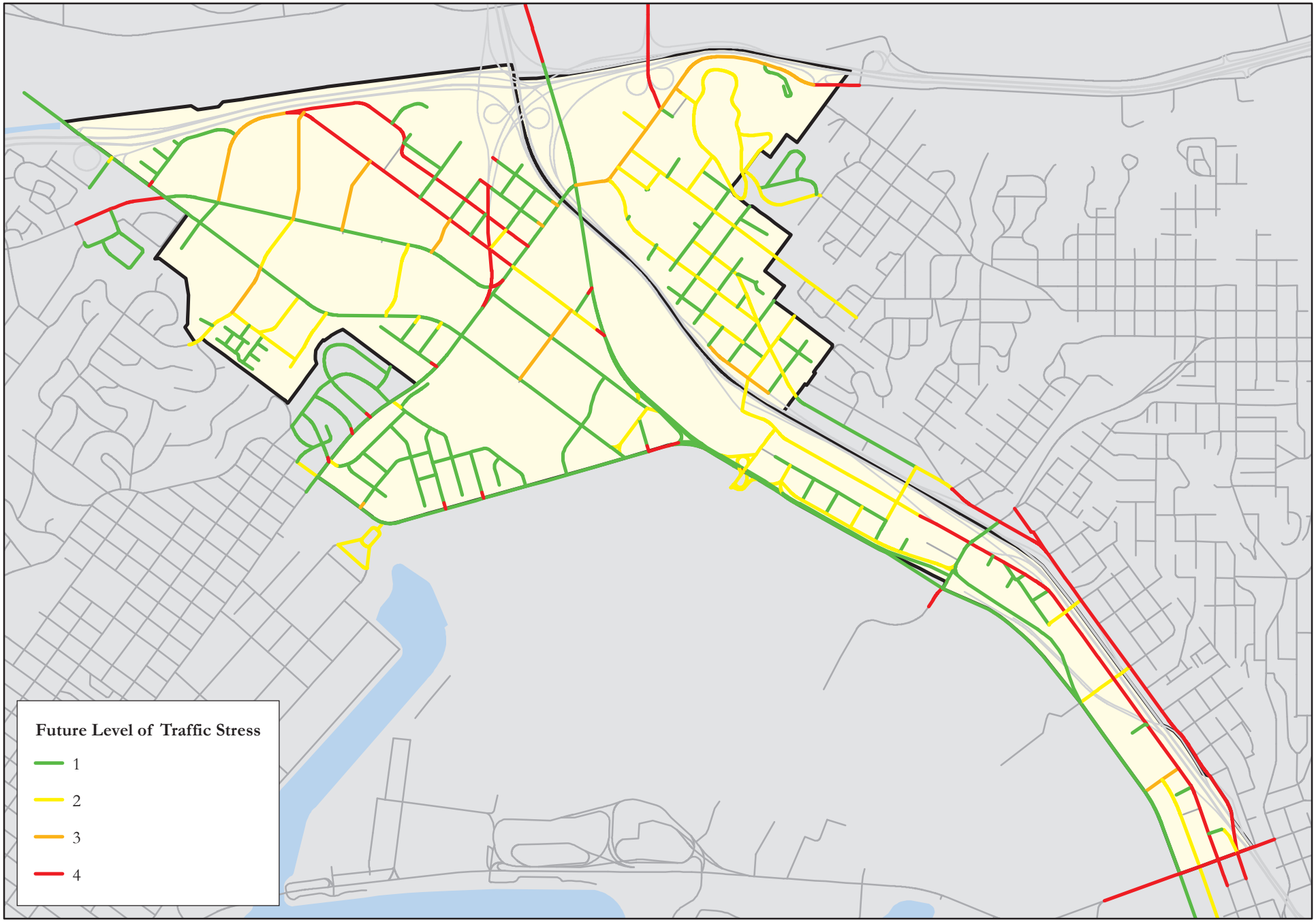


Figure 6-12
Bicycle LTS Score - Preferred Plan Conditions

Unfortunately, the bridge along this segment of the roadway has a constrained right-of-way, and the current configuration of the I-8 Morena Boulevard ramps position four high-speed free-right turn movements on/off the bridge. Due to these constraints there is not feasible bicycle facility that can be implemented along this segment without both widening the bridge and reconfiguring the I-8 / Morena Boulevard Ramps. However, it is recommended that the City work with both Caltrans and SANDAG to look for opportunities to implement bicycle facilities and better pedestrian facilities along this segment should any improvements be done to this segment.

6.5.3 Combined Bicycle Network Connectivity and Quality Assessment

Figure 6-13 displays the combined Bicycle Network Connectivity and Quality Assessment for all bicycle accessible land uses (residential, commercial, office, recreational and instructional land uses) throughout both communities. This analysis calculates the percent of TAZs with bicycle accessible land uses that a cyclist can reach using only LTS 1 and 2 facilities.

Midway-Pacific Highway Community

As shown in the figure, the proposed bicycle improvements enhance the level of connectivity to/from the residential land uses located on the western side of the community. In this area, cyclists can connect to 40+% of the bicycle accessible land uses within the community using only LTS 1 or 2 facilities. The proposed commercial areas within the community (north of Rosecrans Street) can typically connect to 30-40% of the bicycle accessible land uses within the community using only LTS 1 or 2 facilities. The only areas that have low connectivity (0-10%) are the more industrial areas located in the north and northeast portions of the community. However, these areas have very few bicycle accessible land uses.

Old Town Community

As shown in the figure, the community as a whole has generally moderate connectivity levels between 20% and 40%. The main barrier limiting the overall quality connectivity within the community is Taylor Street, which has an LTS score of 3. If the LTS score along Taylor Street can be improved to an LTS 1 or 2, the overall quality connectivity within the Old Town Community will increase significantly. However, based on the roadway's current configuration, enhanced bicycle facilities such as Buffered Class II Bike Lanes or a Class IV Cycle Track is not currently feasible along Taylor Street. Therefore, a policy should be included in the Mobility Element that if Taylor Street is ever widened beyond its current right-of-way, enhanced bicycle facilities such as Class II Buffered Bike Lanes or a Class IV Cycle Track should be implemented as well.

6.6 Public Transit Services and Facilities Assessment and Results

This section assesses the proposed transit network under implementation of the Preferred Plan conditions, which assumes implementation of the transit-related improvements outlined in Sections 3.5.2 and 4.5.2. The proposed Transit network under Preferred Plan conditions was assessed using the methodologies contained in Section 2.3.3. Transit stop/station ridership and amenities are assessed below as well as the roadway arterial speed along roadways continuing transit routes.

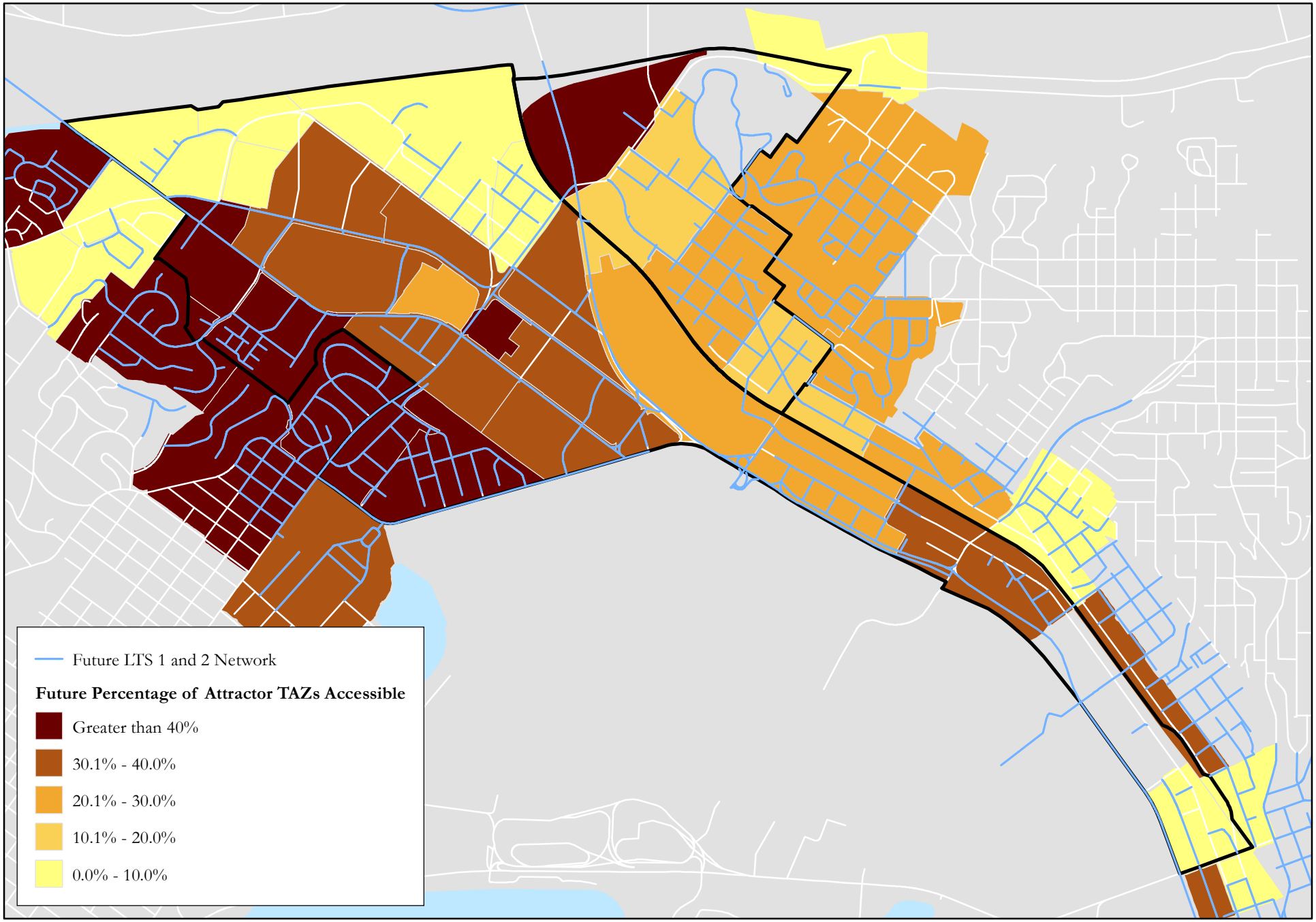


Figure 6-13
Combined Bicycle Network Connectivity and Quality Assessment
Preferred Plan Conditions

6.6.1 Transit Stop/Station Amenities and Average Daily Boardings and Alightings

While projecting increases in multimodal trips requires some level of judgment and is dependent on numerous factors, quantitative methods are available to assist in this process. A community-wide transit ridership growth factor was derived based on future growth estimates in SANDAG Series 12 Transportation Forecast Model, as documented in Section 5.0. Based on the SANDAG model results, a 1.75 growth factor was applied to existing transit ridership volumes, which is consistent with the projection of regional growth. Due to the methodology, projected ridership is only presented for existing locations and does not include the future Blue Line extension.

Table 6.8 displays the projected transit boarding and alightings by route and by stop within both communities under Preferred Plan conditions.

Table 6.8 Average Daily Transit Boardings and Alightings by Route and Station – Preferred Plan Conditions

Route # and Location	Boardings	Alightings	Total Trips
Bus Route 8 Clockwise			
Sports Arena Blvd and Midway Dr	30	30	60
Sports Arena Blvd and Midway Dr	150	50	200
Sports Arena Blvd Between Hancock and Kemper	60	20	70
Sports Arena Blvd Between Kemper and Sports Arena Driveway	70	50	160
Sports Arena Blvd and East Dr	120	50	170
Rosecrans St and Pacific Highway	40	40	70
Old Town Transit Center	20	1,090	1,110
Bus Route 9 Counter Clockwise			
Old Town Transit Center	1,110	20	1,120
Rosecrans St and Moore St	30	20	40
Rosecrans St and Kurtz St	20	40	50
Sports Arena Blvd and Camino Del Rio West	20	60	70
Sports Arena Blvd and East Dr	20	90	110
Sports Arena Blvd and Sports Arena Driveway	50	130	170
Sports Arena Blvd and Hancock St	60	180	230
Bus Route 10 East			
Old Town Transit Center	1,770	30	1,790
Pacific Highway and Sports Arena Blvd	50	30	70
Pacific Highway and Witherby St	100	170	260
Washington St and Pacific Highway	90	70	160
Washington St and Hancock St	40	10	50
Washington St and India St	90	30	120
Bus Route 10 West			
Washington St and India St	20	90	100

Table 6.8 Average Daily Transit Boardings and Alightings by Route and Station – Preferred Plan Conditions

Route # and Location	Boardings	Alightings	Total Trips
Washington St and Hancock St	10	20	30
Washington St and The Trolley Tracks	30	150	170
Pacific Highway and Washington St	30	30	60
Pacific Highway and Witherby St	90	110	200
Pacific Highway and Enterprise St	20	60	80
Pacific Highway and Kurtz St	10	10	10
Old Town Transit Center	30	1,450	1,470
Bus Route 28 East			
Rosecrans St and Lytton St	30	20	40
Rosecrans St and North Evergreen St	30	30	60
Rosecrans St and Loma Square	80	60	140
Rosecrans St and Sports Arena Blvd	60	60	110
Rosecrans St and Pacific Highway	30	10	30
Old Town Transit Center	N/A	1,090	1,090
Bus Route 28 West			
Old Town Transit Center	930	N/A	930
Rosecrans St and Moore St	20	N/A	20
Rosecrans St and Kurtz St	20	20	30
Rosecrans St and Midway Drive	50	50	90
Rosecrans St and Midway Drive	80	90	160
Rosecrans St and North Evergreen St	30	40	60
Rosecrans St and Lytton St	10	20	30
Bus Route 30 North			
Pacific Highway and Witherby St	90	80	170
Pacific Highway and Enterprise St	20	40	50
Pacific Highway and Kurtz St	10	10	10
Old Town Transit Center	1,110	610	1,710
Bus Route 30 South			
Old Town Transit Center	590	1,090	1,680
Pacific Highway and Sports Arena Blvd	20	590	60
Bus Route 35 East			
Midway Drive and Duke St	100	60	160
Midway Drive and Kemper St	70	40	110
Midway Drive and Fordham St	110	40	140
Midway Drive and East Drive	70	70	140
Rosecrans St and Sports Arena Blvd	100	30	130
Rosecrans St and Pacific Highway	20	20	30

Table 6.8 Average Daily Transit Boardings and Alightings by Route and Station – Preferred Plan Conditions

Route # and Location	Boardings	Alightings	Total Trips
Old Town Transit Center	N/A	990	990
Bus Route 35 West			
Old Town Transit Center	1,010	N/A	1,010
Rosecrans St and Moore St	40	10	50
Rosecrans St and Kurtz St	20	30	40
Rosecrans St and Midway Drive	50	70	110
Midway Drive and East Drive	80	60	140
Midway Drive and Fordham St	40	110	140
Midway Drive and Kemper St	50	110	150
Midway Drive and Duke St	40	130	160
Bus Route 44 North			
Old Town Transit Center	1,820	10	1,830
Taylor St and Juan St	20	10	20
Bus Route 44 South			
Taylor St and Sunset St	10	10	20
Old Town Transit Center	50	1,570	1,610
Bus Route 88 East			
Old Town Transit Center	240	20	250
Taylor St and Juan St	10	10	10
Taylor St and Presidio Drive	10	10	10
Taylor St and I-8 East	10	10	10
Bus Route 88 West			
Taylor St and I-8 East	10	10	10
Taylor St and Presidio Drive	10	10	10
Taylor St and Sunset St	10	10	10
Old Town Transit Center	10	140	150
Bus Route 105 North			
Old Town Transit Center	770	10	780
Taylor St and Juan St	10	10	10
Bus Route 105 South			
Taylor St and Juan St	10	10	10
Old Town Transit Center	10	570	570
Bus Route 150 North			
Pacific Highway and Witherby St	50	20	70
Pacific Highway and Enterprise St	10	20	20
Pacific Highway and Kurtz St	10	10	10
Old Town Transit Center	470	140	610

Table 6.8 Average Daily Transit Boardings and Alightings by Route and Station – Preferred Plan Conditions

Route # and Location	Boardings	Alightings	Total Trips
Bus Route 150 South			
Old Town Transit Center	120	660	80
Pacific Highway and Sports Arena Blvd	20	10	20
Green Line Trolley East			
Old Town Transit Center	8,280	390	8,670
Washington Street Station	280	660	930
Middletown Station	10	11,110	11,110
Green Line Trolley West			
Old Town Transit Center	10,600	7,680	18,270
Washington Street Station	690	220	910
Middletown Station	330	190	510

Source: Chen Ryan Associates (March 2017)

Table 6.9 displays the projected transit boardings and alightings at each transit stop/station within both communities under implementation of the Preferred Plan. The table also shows the required stop/station amenities, as shown in Table 2.2, based on the future ridership projects.

Table 6.9 Transit Station/Stop Locations, Amenities and Average Daily Boardings and Alightings – Preferred Plan Conditions

				Amenities at the Stops			
Station	Boardings	Alightings	Total	Signs	Shelter	Bench	Trash Can
Sports Arena Blvd and Midway Dr (Clockwise)	180	80	260	✓	✓	✓	✓
Sports Arena Blvd Between Hancock and Kemper (Clockwise)	60	20	70	✓	□	○	□
Sports Arena Blvd Between Kemper and Sports Arena Driveway (Clockwise)	70	50	160	✓	□	✓	□
Sports Arena Blvd and East Dr (Clockwise)	120	50	170	✓	○	✓	□
Rosecrans St and Pacific Highway (Clockwise)	40	40	70	✓	✓	✓	✓
Old Town Transit Center (Clockwise)	20	1,090	1,110	✓	✓	✓	✓
Old Town Transit Center (Counter Clockwise)	1,110	20	1,120	✓	✓	✓	✓
Rosecrans St and Moore St (Counter Clockwise)	30	20	40	✓	□	✓	✓
Rosecrans St and Kurtz St (Counter Clockwise)	20	40	50	✓	□	✓	□
Sports Arena Blvd and Camino Del Rio West (Counter Clockwise)	20	60	70	✓	□	✓	□
Sports Arena Blvd and East Dr (Counter Clockwise)	20	90	110	✓	□	✓	✓

Table 6.9 Transit Station/Stop Locations, Amenities and Average Daily Boardings and Alightings – Preferred Plan Conditions

Station	Boardings	Alightings	Total	Amenities at the Stops			
				Signs	Shelter	Bench	Trash Can
Sports Arena Blvd and Sports Arena Driveway (Counter Clockwise)	50	130	170	✓		✓	
Sports Arena Blvd and Hancock St (Counter Clockwise)	60	180	230	✓		✓	
Old Town Transit Center (Eastbound)	2,010	2,130	4,120	✓	✓	✓	✓
Pacific Highway and Sports Arena Blvd (Eastbound)	50	30	70	✓			
Pacific Highway and Witherby St (Eastbound)	100	170	260	✓		✓	✓
Washington St and Pacific Highway (Eastbound)	90	70	160	✓		✓	
Washington St and Hancock St (Eastbound)	40	10	50	✓		✓	✓
Washington St and India St (Eastbound)	90	30	120	✓		✓	✓
Washington St and India St (Westbound)	20	90	100	✓			✓
Washington St and Hancock St (Westbound)	10	20	30	✓		✓	✓
Washington St and The Trolley Tracks (Westbound)	30	150	170	✓			
Pacific Highway and Washington St (Westbound)	30	30	60	✓		✓	
Pacific Highway and Witherby St (Westbound)	90	110	200	✓	✓	✓	✓
Pacific Highway and Enterprise St (Westbound)	20	60	80	✓			
Pacific Highway and Kurtz St (Westbound)	10	10	10	✓			
Old Town Transit Center (Westbound)	1,980	1,590	3,560	✓	✓	✓	✓
Rosecrans St and Lytton St (Eastbound)	30	20	40	✓	✓	✓	✓
Rosecrans St and North Evergreen St (Eastbound)	30	30	60	✓		✓	✓
Rosecrans St and Loma Square (Eastbound)	80	60	140	✓	✓	✓	✓
Rosecrans St and Sports Arena Blvd (Eastbound)	160	90	240	✓	✓	✓	✓
Rosecrans St and Pacific Highway (Eastbound)	50	30	60	✓	✓	✓	✓
Rosecrans St and Moore St (Westbound)	60	10	70	✓		✓	✓
Rosecrans St and Kurtz St (Westbound)	40	50	70	✓		✓	
Rosecrans St and Midway Drive (Westbound)	180	210	360	✓	○	✓	✓
Rosecrans St and North Evergreen St (Westbound)	30	40	60	✓			
Rosecrans St and Lytton St (Westbound)	10	20	30	✓			

Table 6.9 Transit Station/Stop Locations, Amenities and Average Daily Boardings and Alightings – Preferred Plan Conditions

Station	Boardings	Alightings	Total	Amenities at the Stops			
				Signs	Shelter	Bench	Trash Can
Pacific Highway and Witherby St (Northbound)	140	100	240	✓	✓	✓	✓
Pacific Highway and Enterprise St (Northbound)	30	60	70	✓			
Pacific Highway and Kurtz St (Northbound)	20	20	20	✓			
Old Town Transit Center (Northbound)	4,170	770	4,930	✓	✓	✓	✓
Old Town Transit Center (Southbound)	770	3,890	3,940	✓	✓	✓	✓
Pacific Highway and Sports Arena Blvd (Southbound)	40	600	80	✓			
Midway Drive and Duke St (Eastbound)	100	60	160	✓	✓	✓	✓
Midway Drive and Fordham St (Eastbound)	110	40	140	✓	✓	✓	✓
Midway Drive and East Drive (Eastbound)	70	70	140	✓	✓	✓	✓
Midway Drive and East Drive (Westbound)	80	60	140	✓		✓	
Midway Drive and Fordham St (Westbound)	40	110	140	✓		✓	
Midway Drive and Kemper St (Westbound)	50	110	150	✓		✓	
Midway Drive and Duke St (Westbound)	40	130	160	✓		✓	
Taylor St and Juan St (Northbound)	30	20	30	✓		✓	
Taylor St and Sunset St (Southbound)	10	10	20	✓		✓	
Taylor St and Juan St (Eastbound)	10	10	10	✓		✓	
Taylor St and Presidio Drive (Eastbound)	10	10	10	✓		✓	
Taylor St and I-8 East (Eastbound)	10	10	10	✓			
Taylor St and I-8 East (Westbound)	10	10	10	✓		✓	
Taylor St and Presidio Drive (Westbound)	10	10	10	✓		✓	
Taylor St and Sunset St (Westbound)	10	10	10	✓		✓	
Taylor St and Juan St (Southbound)	10	10	10	✓		✓	
Old Town Transit Center	8,280	390	8,670	✓	✓	✓	✓
Washington Street Station	280	660	930	✓	✓	✓	✓
Middletown Station	10	11,110	11,110	✓	✓	✓	✓

Source: Chen Ryan Associates (March 2017)

Notes:
✓: Existing Amenity
O: Needed Amenity

As shown, the majority of the existing stops/stations already provide adequate amenities to accommodate the projected future ridership. However, additional amenities will be needed at the following stations as ridership increased:

Midway-Pacific Highway Community

- Sports Arena Boulevard, between Hancock Street and Kemper Street (Clockwise) – Bench
- Sports Arena Boulevard and East Drive (Clockwise) – Shelter
- Rosecrans Street and Midway Drive (Westbound) – Shelter

Old Town

- None

6.6.2 Arterial Speed Analysis Along Roadways Serving Transit Routes

An HCM peak hour arterial speed analysis was conducted along all roadway corridors where transit routes are projected to operate in order to identify future roadway congestion that could potentially impact transit route travel times and on-time performance. Transit priority measures such as queue jumper lanes and transit priority signal timing should be implemented in locations where future roadway congestion is anticipated.

Table 6.10 displays peak hour arterial speed analyses for all roadway facilities where a transit route operates under implementation of the Preferred Plan. Peak hour arterial analysis worksheets are provided in Appendix G.

Table 6.10 Arterial Speed Analysis Along Transit Corridors – Preferred Plan Conditions

Roadway	Segment	Posted Speed (MPH)	AM				PM			
			EB/NB		WB/SB		EB/NB		WB/SB	
			Speed	LOS	Speed	LOS	Speed	LOS	Speed	LOS
Midway-Pacific Highway Community										
Camino Del Rio West	Sports Arena Blvd to Kurtz Street	35	5.7	F	6.5	F	3.6	F	5.1	F
	Kurtz Street to Hancock Street	35	10.8	D	24.2	B	12	D	24	B
Rosecrans Street	Barnett Avenue to Midway Drive	35	22.3	C	9.5	F	12.6	F	19.2	D
	Midway Drive to Sports Arena Blvd	35	31.2	B	9.1	F	31.2	B	8.3	F
	Sports Arena Blvd to Kurtz Street	35	10.6	F	2.6	F	7.2	F	2.7	F
	Kurtz Street to Pacific Highway	35	17	E	21	D	14.8	E	20.4	D
Midway Drive	Sports Arena Blvd to Duke Street/Hancock Street	35	6.1	F	10.4	E	5.1	F	9.2	F
	Duke Street/Hancock Street to Kemper Street	35	20.5	C	17.6	D	16.1	D	13.3	E
	Kemper Street to East Drive	35	19.1	C	24.9	B	15.5	D	23.7	C
	East Drive to Rosecrans Street	35	23	C	12.3	E	20	C	8.4	F
Sports Arena Boulevard	I-8 WB Off-Ramp to W Point Loma Blvd	35	21.1	C	7.7	F	8.8	F	8.2	F
	W Point Loma Blvd to Hancock Street	35	11.7	E	21.1	C	4.8	F	23	C
	Hancock Street to Kemper Street	35	15	D	13.6	E	18	C	9.1	F
	Kemper Street to Frontier Drive	35	10.9	E	14.7	D	13.6	E	17.5	D
	Frontier Drive to Greenwood Street	35	12.1	E	20.6	C	12.5	E	11.3	E
	Greenwood Street to Rosecrans Street	35	26.2	B	7	F	23.3	C	6	F
Pacific Highway	Taylor Street to Kurtz Street	45	24.4	C	21.1	D	22.7	C	15.6	E
	Kurtz Street to Sports Arena Blvd	45	23.5	C	17.4	D	14.1	E	22.6	C

Table 6.10 Arterial Speed Analysis Along Transit Corridors – Preferred Plan Conditions

Roadway	Segment	Posted Speed (MPH)	AM				PM			
			EB/NB		WB/SB		EB/NB		WB/SB	
			Speed	LOS	Speed	LOS	Speed	LOS	Speed	LOS
Pacific Highway	Sports Arena Blvd to Barnett Avenue	45	11.7	F	12	F	9.4	F	4.8	F
	Washington Street to Sassafras Street	45	9.6	F	28.1	B	5.5	F	28.2	B
	Sassafras Street to W Laurel Street	45	31.6	B	15.5	E	27.8	C	14	E
Old Town Community										
Taylor Street	Pacific Highway to Congress Street	35	12.5	D	9	E	9.3	D	8.6	E
	Congress Street to Juan Street	35	9.8	D	12.9	D	6.8	F	13.8	C
	Juan Street to Whitman Street	35	17.5	C	14.6	C	15.4	C	15.3	C

Source: Chen Ryan Associates (March 2017)

Note:
Bold letter indicates LOS E or F

As shown, several segments within both communities are projected to operate at LOS E or F during both the AM and PM Peak hours:

<u>Midway-Pacific Highway</u>

- Camino del Rio West, between Sports Arena Boulevard and Kurtz Street
  - LOS F: AM & PM peak hours, westbound & eastbound directions
- Rosecrans Street, between Barnett Avenue and Midway Drive
  - LOS F: AM peak hour, westbound direction
  - LOS F: PM peak hour, eastbound direction
- Rosecrans Street, between Midway Drive and Sports Arena Boulevard
  - LOS F: AM & PM peak hours, westbound direction
- Rosecrans Street, between Sports Arena Boulevard and Kurtz Street
  - LOS F: AM & PM peak hours, westbound & eastbound directions
- Rosecrans Street, between Kurtz Street and Pacific Highway
  - LOS E: AM & PM peak hours, eastbound direction
- Midway Drive, between Sports Arena Boulevard and Hancock Street
  - LOS F: AM & PM peak hours, northbound direction
  - LOS E: AM peak hour, southbound direction
  - LOS F: PM peak hour, southbound direction
- Midway Driveway, between Hancock Street and Kemper Street
  - LOS E: PM peak hour, southbound direction
- Midway Drive, between East Drive and Rosecrans Street
  - LOS E: AM peak hour southbound direction
  - LOS F: PM peak hour southbound direction
- Sports Arena Boulevard, between I-8 Westbound Ramps and West Point Loma Boulevard
  - LOS F: AM peak hour, southbound direction
  - LOS F: PM peak hour, northbound & southbound directions
- Sports Arena Boulevard, between West Point Loma Boulevard and Hancock Street
  - LOS E: AM peak hour, northbound direction

    - LOS F: PM peak hour, northbound direction
- Sports Arena Boulevard, between Hancock Street and Kemper Street
    - LOS E: AM peak hour, southbound direction
    - LOS F: PM peak hour, southbound direction
- Sports Arena Boulevard, between Kemper Street and Frontier Drive
    - LOS E: AM & PM peak hours, northbound direction
- Sports Arena Boulevard, between Frontier Drive and Greenwood Street
    - LOS E: AM peak hour, northbound direction
    - LOS E: PM peak hour, northbound & southbound directions
- Sports Arena Boulevard, between Greenwood Street and Rosecrans Street
    - LOS F: AM & PM peak hours, southbound direction
- Pacific Highway, between Taylor Street to Kurtz Street
    - LOS E: PM peak hour, southbound direction
- Pacific Highway, between Kurtz Street and Sports Arena Boulevard
    - LOS E: PM peak hour, northbound direction
- Pacific Highway, between Sports Arena Boulevard and Barnett Avenue
    - LOS F: AM & PM peak hours, northbound & southbound directions
- Pacific Highway, between Washington Avenue and Sassafras Street
    - LOS F: AM & PM peak hours, northbound direction
- Pacific Highway, between Sassafras Street and Laurel Street
    - LOS E: AM & PM peak hours, southbound direction

As noted in Section 3.5.2, the following transit priority treatments are recommended to help on-time performance for bus routes within the Midway-Pacific Highway community:

Pacific Highway - Pacific Highway serves several regional bus routes that connect multiple communities. The projected low travel speeds along several segments of Pacific Highway could impact the efficiency and on-time performance of these regional routes. Therefore, it is recommended that, transit priority measures such as queue jumper lanes and transit priority signals are implemented at all signalized intersections along Pacific Highway between Taylor Street and Laurel Street.

Rosecrans Street – Rosecrans Street east of Camino Del Rio West currently serves four MTS bus Routes (8, 9, 28 and 35). A queue jumper lane and transit signal have already been implemented on the eastbound approach at the Taylor Street / Rosecrans Street and Pacific Highway intersection. Similar transit priority improvements should also be looked at the Rosecrans Street Camino Del Rio West and Sports Arena Boulevard intersection to allow westbound buses (Routes 8, 9 and 35) to turn right onto Sports Arena Boulevard and avoid congestion.

New Roadway Connections – The proposed new roadway connections can serve as alternative east/west routes for busses traveling through the community. Rerouting to these new facilities, if possible, may help avoid the congestion on Rosecrans Street. It is recommended that after the construction of any of the new roadways, the City of San Diego coordinate with MTS to look at bus rerouting opportunities.

Old Town

- Taylor Street, between Pacific Highway and Congress Street
  - LOS E: AM & PM peak hours, southbound direction
- Taylor Street, between Congress Street and Juan Street
  - LOS F: PM peak hour, northbound direction

Taylor Street serves several regional bus routes connecting multiple communities. Therefore, it is recommended that transit priority treatments be implemented along Taylor Street to help increase transit performance. It is recommended to implement queue jumper lanes and transit priority signals in either direction at both the Taylor Street / Juan Street and Taylor Street / Morena Boulevard intersections.

6.7 Parking Management

It is anticipated that any additional parking demand associated with future developments will be accommodated on-site. It is assumed that all on-street public parking spaces will be maintained under Preferred Plan implementation, with the exception of the following:

Midway-Pacific Highway

Rosecrans Street, between Sports Arena Boulevard / Camino Del Rio West and Pacific Highway – To implement the multi-use urban path improvements proposed as part of the Preferred Plan, parking along both sides of Rosecrans Street will need to be removed. Approximately 65 on-street parking spaces will be removed along this segment. Since there is abundant off-street parking within the community and these spaces are not heavily utilized, the removal of these spaces should not negatively impact the community.

Sports Arena Boulevard, between West Point Loma Boulevard and Rosecrans Street – To implement the multi-use urban path improvements proposed as part of the Preferred Plan, parking along the southwest side of Sports Arena Boulevard will need to be removed. Approximately 24 on-street parking spaces will be removed along this segment. Since there is abundant off-street parking within the community and these spaces are not heavily utilized, removal of these spaces should not negatively impact the community.

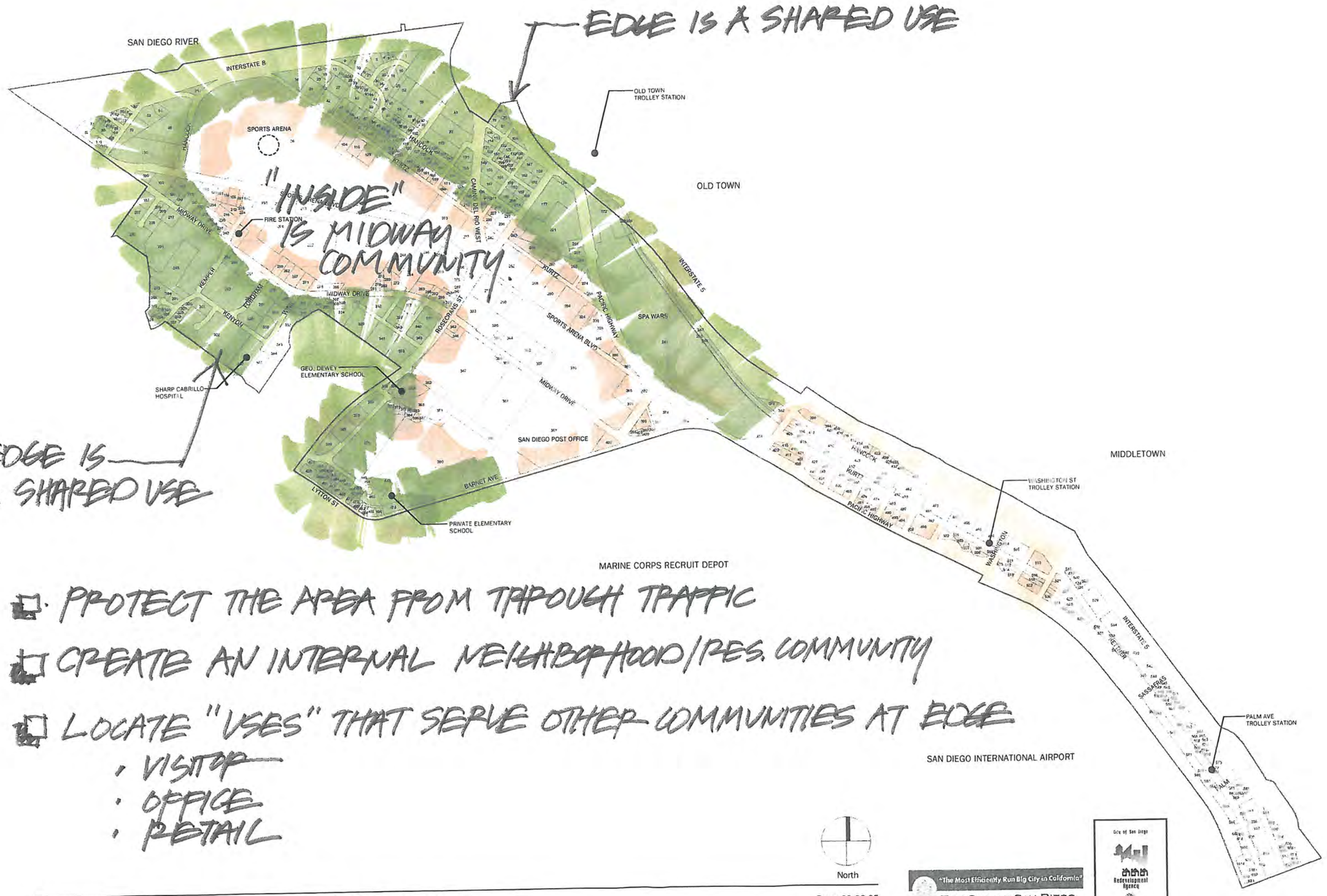
Old Town

There is not anticipated to be any loss of on-street parking within the Old Town Community. However, as noted in Section 4.2.2 it is proposed that the parking along the east side of San Diego Avenue, between Twiggs Street and Conde Street, be converted from parallel to diagonal parking. This improvement could potentially result in up to 20 additional on-street parking spaces along San Diego Avenue.

The community is not currently in favor of metering parking within Old Town as a means to create parking turnover, therefore, use of the existing parking supply should be maximized to help meet

parking demands. The Caltrans parking lot, located north of the Congress Street and Taylor Street intersection, provides approximately 800 parking spaces that are open to the public on nights and weekends and is frequently under capacity. Increased utilization of these spaces may help alleviate some of the parking demand experienced throughout the Old Town community. Additional wayfinding signage may be beneficial to help direct community visitors and employees to the lot.

Appendix A
Midway/Pacific Highway Urban Greening Plan
Cross-Sections and Concept Plans



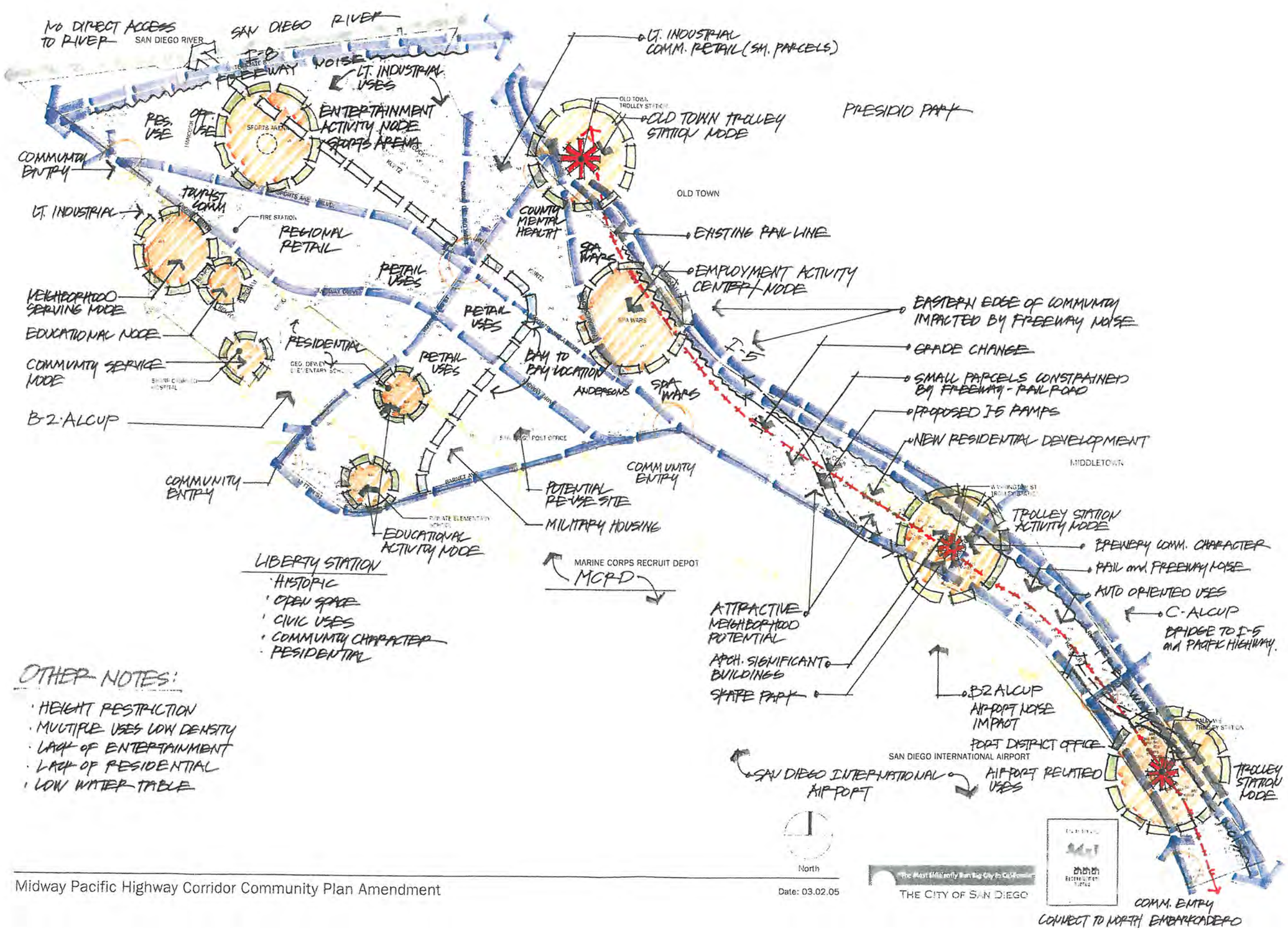
- PROTECT THE AREA FROM THROUGH TRAFFIC
- CREATE AN INTERNAL NEIGHBORHOOD/RES. COMMUNITY
- LOCATE "USES" THAT SERVE OTHER COMMUNITIES AT EDGE
  - VISITOR
  - OFFICE
  - RETAIL

North

"The Most Efficiently Run Big City in California"

THE CITY OF SAN DIEGO

City of San Diego Redevelopment Agency


NO DIRECT ACCESS TO RIVER
SAN DIEGO RIVER
SAN DIEGO RIVER
I-8 FREEWAY
NOISE
LT. INDUSTRIAL USES
RES. USE
OFF. USE
ENTERTAINMENT ACTIVITY NODE
SPORTS ARENA
COMMUNITY ENTRY
LT. INDUSTRIAL
TOURIST COMM.
FIRE STATION
REGIONAL RETAIL
NEIGHBORHOOD SERVING NODE
EDUCATIONAL NODE
COMMUNITY SERVICE NODE
B-2-ALCUP
RESIDENTIAL
RETAIL USES
RETAIL USES
RETAIL USES
BAY TO BAY CONNECTION
ANDERSONS
SPA WARS
LT. INDUSTRIAL COMM. RETAIL (SM. PARCELS)
OLD TOWN TROLLEY STATION
OLD TOWN TROLLEY STATION NODE
PRESIDIO PARK
OLD TOWN
COUNTY MENTAL HEALTH
SPA WARS
EXISTING RAIL LINE
EMPLOYMENT ACTIVITY CENTER/NODE
EASTERN EDGE OF COMMUNITY IMPACTED BY FREEWAY NOISE
I-5
GRADE CHANGE
SMALL PARCELS CONSTRAINED BY FREEWAY - RAILROAD
PROPOSED I-5 RAMPS
NEW RESIDENTIAL DEVELOPMENT
MIDDLETOWN
SAN DIEGO POST OFFICE
COMMUNITY ENTRY
POTENTIAL RE-USE SITE
MILITARY HOUSING
EDUCATIONAL ACTIVITY NODE
COMMUNITY ENTRY
LIBERTY STATION
· HISTORIC
· OPEN SPACE
· CIVIC USES
· COMMUNITY CHARACTER
· RESIDENTIAL
MARINE CORPS RECRUIT DEPOT
MCRD
ATTRACTIVE NEIGHBORHOOD POTENTIAL
ARCH. SIGNIFICANT BUILDINGS
SKATE PARK
B2 ALCUP
AIRPORT NOISE IMPACT
PORT DISTRICT OFFICE
SAN DIEGO INTERNATIONAL AIRPORT
SAN DIEGO INTERNATIONAL AIRPORT
AIRPORT RELATED USES
TROLLEY STATION NODE
TROLLEY STATION ACTIVITY NODE
BREWERY COMM. CHARACTER
RAIL and FREEWAY NOISE
AUTO ORIENTED USES
C-ALCUP
BRIDGE TO I-5 and PACIFIC HIGHWAY.
COMM. ENTRY
CONNECT TO NORTH EMBARCADERO
OTHER NOTES:
· HEIGHT RESTRICTION
· MULTIPLE USES LOW DENSITY
· LACK OF ENTERTAINMENT
· LACK OF RESIDENTIAL
· LOW WATER TABLE
North
THE CITY OF SAN DIEGO

Appendix B
City of San Diego Unfunded Transportation Needs List (8/5/14)

ID	Title	Prioritization_Score	Description	Status	Community	CD	CIP_NO	PFFP_NO	Estimate	Funding_Identified_in_Financing_Plan	Grant_Funding_Source	Comments	High_Accident	TR_Number	Mapped_By	Item Type	Path
2491	Market St @ Pitta St	0	Re-evaluated in August 2012 and no longer meets warrants.	No longer meets warrants	Encanto Neighborhoods, Southeastern	4							0	320405		Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
2503	Cardiff St @ San Vicente St	0	Re-evaluated March 2012 and no longer meets warrants.	No longer meets warrants	Encanto Neighborhoods, Southeastern	4							0	320397		Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
2767	58th St @ Skyline Dr/Trinidad Wy	0	Re-evaluated in Oct. 2012 and no longer meets warrants.	No longer meets warrants	Encanto Neighborhoods, Southeastern	4							0	326167		Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
3517	Sampson Street southwest of 28th Street 156', northwest side Street Light	0		No longer meets warrants	Southeastern San Diego, Southeastern	8			2000				0	329954	Hughes, Duncan	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
827	30th Street & Market Street Traffic Signal Upgrade	0	Install left-turn phasing for EB/WB traffic on Market Street	No longer meets warrants	Southeastern San Diego, Southeastern	8			13785			LT phasing installed by Streets Div. on 5/15/12.	0	305875	Pornan, Donald	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
751	Southcrest Redevelopment Project Area Street Lights	1	This project will install up to 73 street lights in the Southcrest Redevelopment Area.	PITS	Southeastern San Diego, Southeastern	4;#8	52-293.0		655600	Redevelopment			Yes		Pornan, Donald	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
530	60th St. from Upland St. to Weaver St.-Install New Guardrail	17	This project will install 1,230' of guardrail.	TEO Funded	Encanto Neighborhoods,	4			78000				No		Nascimento, Claudio	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
531	60th St. from Broadway to Radio Dr.-Install New Guardrail	20	This project will install 272' of guardrail along the west side of 60th St within the specified limits.	TEO Funded	Encanto Neighborhoods, Southeastern	4						In Design, estimate to be provided by consultant.	No	283409	Nascimento, Claudio	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
4109	Medio St and Pocatello St - Install New Guardrail	21	This project will install approximately 375' of new guardrail along the west side of Pocatello St and Medio St between Eleanor Dr and Bishop St.	TEO Unfunded	Southeastern San Diego, Southeastern	4			45000			Cost Estimate Complete.	No		Alo, Leo	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
491	Wunderlin Ave from 63rd Street to 900' east(North Side) - Install New Sidewalk	25	This project will provide PCC sidewalk on the north side of Wunderlin Avenue.	TEO Unfunded	Encanto Neighborhoods, Southeastern	4			115000	Other	CDBG;#Safe Route to School	Conflicts: Landscaping, Utility Poles, Trees	Yes	318208	Pornan, Donald	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
814	19th Street & Market Street Traffic Signal Upgrade	25	Install pedestrian heads for all crossings	TEO Unfunded	Southeastern San Diego, Southeastern	8			12500				0		Pornan, Donald	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
934	25th Street & Imperial Avenue Traffic Signal Upgrade	25	Install PPB (2010).	TEO Unfunded	Southeastern San Diego, Southeastern	8			6000				0		Pornan, Donald	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
935	25th Street & Market Street Traffic Signal Upgrade	25	Change out left turn signal; head from PV to regular signal heads with arrows .	TEO Unfunded	Southeastern San Diego, Southeastern	8			16100				0		Pornan, Donald	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
938	30th Street (S) & Ocean View Boulevard Traffic Signal Upgrade	25	Install pedestrian indications on the NWC and NEC	TEO Unfunded	Southeastern San Diego, Southeastern	8			9500				0		Pornan, Donald	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
449	Pocatello St from Eleanor Dr to Medio St, Medio St from Pocatello St to Bishop Dr, Bishop Dr from Medio St to Eleanor Dr - Improve to residential local street	27	This project will provide for a low volume, residential local street along Pocatello, Medio and Bishop per Street Design Manual Standards. It will require excavation, new AC street section,curb, gutter and sidewalk, street lights, retaining walls, and encroachment removal.	TEO Unfunded	Southeastern San Diego, Southeastern	4				Other			0		Pornan, Donald	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
498	Skyline Dr. at Woodman St.-Install New Guardrail	28	This project will install approximately 80' of guardrail at the southeast corner of this intersection.	TEO Unfunded	Encanto Neighborhoods, Southeastern;#Skyli	4			30000				No	308921	Nascimento, Claudio	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
551	Imperial Ave from I-5 to 32nd St - Widen to 4-lane major	28	This project provides for the widening of Imperial Avenue to a four-lane major street.	TEO Unfunded	Southeastern San Diego, Southeastern	4;#8		SESD-T9	2800000				0		Pornan, Donald	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
947	32nd St & Market St Traffic Signal Upgrade	28	Add pedestrian signal heads and push buttons	TEO Unfunded	Southeastern San Diego, Southeastern	8			14600				0		Pornan, Donald	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
984	Euclid Av & Logan Av/Olvera Av Traffic Signal Upgrade	28	Relocate PPB 180 degrees at NWC of Logan and Euclid (south leg of Logan, PPB on median); relocate PPB 180 degrees at SEC of Olvera & Euclid (2002)	TEO Unfunded	Encanto Neighborhoods, Southeastern	4			600				0		Pornan, Donald	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
1077	32nd St & Imperial Ave Traffic Signal Upgrade	28	Install new limit line loops to improve bicycle detection for all approaches (Mod. Type E)	TEO Unfunded	Southeastern San Diego, Southeastern	4			20000				0	314,613	Pornan, Donald	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
251	60th St from Imperial to Federal - Widen to 2-lane collector	29	This project provides for the widening of 60th Street to a two-lane collector.	TEO Unfunded	Southeastern San Diego, Southeastern	4;#8		SESD-17	7000000	Other			0		Pornan, Donald	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
267	Guymon St from 1000' w/o Euclid Ave to 1400' w/o Euclid Ave - Widen road	29	Widen road to standard 40' c/c	TEO Unfunded	Southeastern San Diego, Southeastern	8				Other		Conflicts: Environmental, No C&G, Drainage	0	313469	Pornan, Donald	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
3481	36th St & National Av APS Traffic Signal Upgrade	29	Install Polara push buttons Upgrade curb ramps Install ped countdown timers	TEO Unfunded	Southeastern San Diego, Southeastern	9			30000				0	329545		Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
3791	25th St & J St Traffic Signal Upgrade	29	Install ped countdown timers (8) Upgrade ped push buttons (7)	TEO Unfunded	Southeastern San Diego, Southeastern	8			2600				0	331,264		Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
474	35th St from Durant St to Webster Ave(West Side)-Install New Sidewalk	30	This project will provide approximately 100 linear feet of new PCC sidewalk on the west side of 35th Street. It will require excavation.	TEO Unfunded	Southeastern San Diego, Southeastern	9			27000	Other	CDBG	Conflicts: None Observed IMCAT Conflicts as of	0	308882	Nascimento, Claudio	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
4115	Merlin Drive north of Brooklyn Avenue 395', west side	30		TEO Unfunded	Encanto Neighborhoods,	4			2000		Smart Growth;#CDBG			TR334870	Semaan, Jerry	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
4116	Merlin Drive north of Brooklyn Avenue 575', west side	30		TEO Unfunded	Encanto Neighborhoods,	4			2000		Smart Growth;#CDBG			TR334870	Semaan, Jerry	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
4117	Merlin Drive north of Brooklyn Avenue 915', west side	30		TEO Unfunded	Encanto Neighborhoods,	4			2000		Smart Growth;#CDBG			TR334870		Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
3014	Skyline Dr & Sychar Rd Traffic Signal Upgrade	30	Upgrade curb ramps Install ped countdown timers	TEO Unfunded	Encanto Neighborhoods,	4			40000				0	328,180	Morabe, Lindsay	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
3015	Meadowbrook Dr & Skyline Dr Traffic Signal Upgrade	30	Upgrade curb ramps Install ped countdown timers	TEO Unfunded	Encanto Neighborhoods,	4			40000				0	328,179	Morabe, Lindsay	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List

3017	Skyline Dr & Woodman St Traffic Signal Upgrade	30	Install new loops for phases 2 & 5 Upgrade curb ramps Upgrade ped push buttons Install ped countdown timers	TEO Unfunded	Encanto Neighborhoods, Southeastern	4			55000				0	328,183	Morabe, Lindsay	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
116	Bancroft St from Island Ave to J St(West Side)- Install New Sidewalk	31	This project will provide approximately 291 linear feet of sidewalk, relocate three (3) street lights, 18 linear feet of driveway, and add five (5) pedestrian ramps.	TEO Unfunded	Southeastern San Diego, Southeastern	8			192000	Other	CDBG;#Safe Route to School	Conflicts: Utility Poles, Utility Boxes, Landscaping	0	308866	Tawfiq, Kharman	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
323	Geneva Ave from Winston Dr to Beverly St(South Side)- Install New Sidewalk	31	This project will install PCC sidewalk on the South Side of Geneva Ave.	TEO Unfunded	Encanto Neighborhoods, Southeastern	4				Other		Conflicts: Slope, Utility Poles, Mailboxes, Landscaping IMCAT Conflicts as of	0	309002	Pornan, Donald	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
353	58th St from South of Atla Vista Ave to End of 58th St(West Side)- Install New Sidewalk	31	This project will install PCC sidewalk on the west side of 58th Street.	TEO Unfunded	Encanto Neighborhoods, Southeastern	4				Other	CDBG	Conflicts: Drainage, Possible ROW Encroachment	0	318210	Pornan, Donald	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
493	Santa Isabel Dr from Bonita Dr to Olvera Ave(West Side)- Install New Sidewalk	31	This project will install PCC sidewalk on the west side of Santa Isabel Drive.	TEO Unfunded	Encanto Neighborhoods, Southeastern	4				Other	CDBG	Conflicts: Utility Poles, Landscaping, Driveway Clearance, Trees, Slop	Yes	309079	Pornan, Donald	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
3018	Skyline Dr & Valencia Traffic Signal Upgrade	31	Upgrade ped push buttons Install ped countdown timers	TEO Unfunded	Encanto Neighborhoods,	4			8000				0	328,186	Morabe, Lindsay	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
352	54th St from Imperial Ave to Santa Margarita St(East Side)- Install New Sidewalk	32	This project will install PCC sidewalk on the East Side of 54th Street.	TEO Unfunded	Encanto Neighborhoods, Southeastern	4					CDBG	Conflicts: No C&G, Drainage Concerns, Utility Poles IMCAT Conflicts as of	0	303500	Pornan, Donald	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
370	53rd St from Santa Margarita St to Imperial Ave(East Side)- Install New Sidewalk	32	This project will install PCC sidewalk on the east side of 53rd Street.	TEO Unfunded	Encanto Neighborhoods, Southeastern	4				Other	CDBG	Conflicts: None Oserved	0	306252	Pornan, Donald	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
1263	Roswell St from Swaner St to Old Memory Lane (North Side) -Install New Sidewalk	32	This project will install a missing sidewalk segment on the North Side of Roswell St.	TEO Unfunded	Encanto Neighborhoods, Southeastern	4						Conflicts: No C&G, Drainage Concerns	0		Pornan, Donald	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
1242	Citywide Streetlights FY 2011	32	Installation of street lights at various locations: Enterprise Street at Jessop Lane, north side Pershing Avenue at Upas Street, southeast corner Bancroft Street at Greely Avenue, southeast corner Houston Street at Kurtz Street, southwest corner Central Avenue at Dwight Street, northeast corner 62nd Street at Akins Avenue, southeast corner 31st Street at Juniper Street, northeast corner 32nd Street at Juniper Street, northeast corner 33rd Street at Juniper Street, northeast corner Bancroft Street at Juniper Street, northeast corner Dale Street at Juniper Street, northeast corner	TEO Funded	Encanto Neighborhoods, Southeastern;#Greater North Park;#Mid-City:City Heights;#Midway-Pacific Highway;#Southeastern San Diego, Southeastern	2;#3;#4;#8	B1114 7		96000				Yes		Pornan, Donald	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
3016	O'Meara St & Skyline Dr Traffic Signal Upgrade	32	Install ped countdown timers	TEO Unfunded	Encanto	4			2000				0	328,184	Morabe,	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
298	Brooklyn Ave from Merlin St to 63rd St(North Side)- Install New Sidewalk	33	This project will provide approximately 377 linear feet of sidewalk, six driveways, and two pedestrian ramps.	TEO Unfunded	Encanto Neighborhoods, Southeastern	4			116000	Other	CDBG;#Safe Route to School	Conflicts: Utility Box, Utility Poles, Decorative Pavement IMCAT Conflicts as of	0	309098A	Pornan, Donald	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
328	54th St from Imperial Ave to Naranja St(East Side)- Install New Sidewalk	33	This project will install PCC sidewalk on the East Side of 54th Street.	TEO Unfunded	Encanto Neighborhoods, Southeastern	4					CDBG	Conflicts: No C&G, Drainage Concerns	0	303499	Pornan, Donald	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
332	G St from 22nd St to 24th St(North Side)- Install New Sidewalk	33	This project will provide approximately 410 Linear feet of new PCC sidewalk and curb ramps on the north side of G Street. It will require clearing and grubbing, sign relocation, fence relocation, and Caltrans Encroachment Permit.	TEO Unfunded	Southeastern San Diego, Southeastern	8			148000	Other	CDBG;#Safe Route to School	Conflicts: Guardrail, Fence, ROW space, Utility Boxes IMCAT Conflicts as of 1/3/13: Overlay FY14	0	308999	Nascimento, Claudio	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
381	Groveland Dr from Euclid Ave to 53rd St(North Side)- Install New Sidewalk	33	This project will provide approximately 407 linear feet of sidewalk, 84 linear feet of driveway, 491 linear feet of curb and gutter, two pedestrian ramps, and relocate one fire hydrant.	TEO Unfunded	Encanto Neighborhoods, Southeastern	4			261000		CDBG	Conflicts: Utility Poles, Utility Boxes IMCAT Conflicts as of 12/28/12: None	0	309225	Pornan, Donald	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
463	Leghorn Ave from 66th St to Varney Dr(West Side)- Install New Sidewalk	33	This project will provide approximately 921 linear feet of guardrail, five driveways, 295 feet of curb, gutter, 141 linear feet of retaining wall, and 141 feet of guardrail.	TEO Unfunded	Encanto Neighborhoods, Southeastern	4			321000	Other		Conflicts: Mailboxes, Street Light, Utility Boxes, Guardrail, Storm Drain, Substandard Segment needs widening	0	309025	Nascimento, Claudio	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
470	Santa Margarita St from San Jacinto Dr to 55th St(South Side)- Install New Sidewalk	33	This project will install PCC sidewalk on the south side of Santa Margarita Street.	TEO Unfunded	Encanto Neighborhoods, Southeastern	4				Other	CDBG;#Safe Route to School	Conflicts: Utility Poles, Slopes, Landscaping, Trees, Draina IMCAT Conflicts as of	0	309080	Pornan, Donald	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List

665	Brooklyn Ave from 63rd St to Otay St(South Side)- Install New Sidewalk	33	This project will provide approximately 702 linear feet of sidewalk, 85 linear feet of driveway, three pedestrian ramps, and relocate two fire hydrants.	TEO Unfunded	Encanto Neighborhoods, Southeastern	4			201000		CDBG;#Safe Route to School	Conflicts: Utility Poles, Fire Hydrant, Fence IMCAT Conflicts as of	0	309097B	Pornan, Donald	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
666	Brooklyn Ave from Merlin St to 63rd St(South Side)- Install New Sidewalk	33	This project will install PCC sidewalk on the South Side of Brooklyn Avenue.	TEO Unfunded	Encanto Neighborhoods, Southeastern	4					CDBG;#Safe Route to School	Conflicts: Utility Box, Utility Poles, Decorative Pavement IMCAT Conflicts as of	0	309098B	Pornan, Donald	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
693	Benson Ave from Roth Ct to Jojo Ct (South Side) - Install New Sidewalk	33	This project will install PCC sidewalk on the south side of Benson Ave.	TEO Unfunded	Encanto Neighborhoods, Southeastern	4					CDBG;#Safe Route to School	Conflicts: Widening needed, Slope IMCAT Conflicts as of	0	309085	Pornan, Donald	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
785	29th St from Imperial Ave to Commercial St (East Side)- Install New Sidewalk	33	This project will provide approx. 330 LF of sidewalk, trees w/ grates, AC pavement, curb ramps, driveway apron, Type B inlet, and traffic striping. It will require sidewalk removal, pavement removal, inlet removal, sign relocation, meter box adjustment, and fire hydrant relocation.	TEO Unfunded	Southeastern San Diego, Southeastern	8			486000		CDBG	Conflicts: No Curb & Gutter, Drainage IMCAT Conflicts as of 1/3/13: Overlay FY15 (Start Cnst: 11/14 End Cnst: 7/15)	0	311510	Pornan, Donald	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
555	Akins Ave from 62nd St to 65th St Channel Improvements	33	This project provides for approximately 1400 feet of six foot high vinyl coated chain link fence with one gate. Remove existing fence.	PITS	Southeastern San Diego, Southeastern	4	527780		75000	Other			0			Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
813	19th Street & Imperial Avenue Traffic Signal Upgrade	33	Install signal poles and mast arms; upgrade to 12" signal heads; install detection; replace controller	TEO Unfunded	Southeastern San Diego, Southeastern	8			96000				0		Pornan, Donald	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
250	47th St from Market St to Imperial Ave - Widen to 4-lane major	34	This project provides for the widening of 47th Street to a four-lane Major.	TEO Unfunded	Southeastern San Diego, Southeastern	8		SESD-T18	5100000	Other			0		Pornan, Donald	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
263	Imperial Ave from I-15 to 40th St - Widen to 4-lane collector	34	This project provides for the widening of Imperial Avenue to a four-lane collector. Cost includes property acquisition and demolition of businesses and homes on southside.	TEO Unfunded	Southeastern San Diego, Southeastern	4;#8		SESD-T10		Other			0	315962	Pornan, Donald	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
266	Woodman St from Imperial Ave to Skyline Dr - Widen to 2-lane collector	34	This project provided for the improvement of Woodman Street to a two-lane collector.	PITS	Southeastern San Diego, Southeastern	4;#8		SESD-T14	1300000	Other			0		Pornan, Donald	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
283	33rd St from Imperial Ave to 75' N/O Imperial Ave(West Side)- Install New Sidewalk	34	This project will install PCC sidewalk on the west side of 33rd Street.	TEO Unfunded	Southeastern San Diego, Southeastern	8				Other	CDBG	Conflicts: Utility Boxes IMCAT Conflicts as of	0	318209	Pornan, Donald	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
334	Mallard St from Federal Blvd to 69th St (South Side)- Install New Sidewalk	34	This project will install PCC sidewak on the South Side of Mallard Street.	TEO Unfunded	Encanto Neighborhoods, Southeastern	4				Other		Conflicts: Utility POles, Mailboxes, Landscaping, Slopes, Fire Hydrant, Trees, Shrubs, Vegetation, Guardrail	0	309030	Pornan, Donald	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
469	Castana St from Euclid Ave to San Jacinto Dr(South Side) Install New Sidewalk	34	Install a sidewalk along the south side of Castana Street.	TEO Unfunded	Encanto Neighborhoods, Southeastern	4				Other	CDBG	Conflicts: Fire Hydrant, Utility Box, Utility Pole	0	309100	Pornan, Donald	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
1222	S 45th St from T Street to Logan Ave (East Side)- Install New Sidewalk	34	This project will install PCC sidewalk on the East Side of S 45th Street.	TEO Unfunded	Southeastern San Diego, Southeastern	4					CDBG	Conflicts: No C&G, Tree, Drainage, Business Access IMCAT Conflicts as of	0		Pornan, Donald	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
1234	Manzanares Wy from Euclid Ave to San Jacinto (South Side)- Install New Sidewalk	34	This project will install PCC sidewalk on the South Side of Manzanares Wy.	TEO Unfunded	Encanto Neighborhoods, Southeastern	4					CDBG	Conflicts: Utility Poles, Trees, Landscaping, Fire Hydrants, Fences	0		Pornan, Donald	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
441	Woodman St from Imperial Ave to Skyline Dr(West Side) - Install New Sidewalk	35	This project will install PCC sidewalk on the west side of Woodman Street.	TEO Unfunded	Encanto Neighborhoods, Southeastern	4			600000		CDBG	Water Group Job (Pipe Rehab) started 2/12 and Underground Utilities improvements will	No	317233, 325410, 333706	Pornan, Donald	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
3988	Radio Drive east of Paradise Street 850', south side street light	35		TEO Unfunded	Encanto Neighborhoods,	4			2000		CDBG		0	TR332999	Avila-Zepeda , Felipe R	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
264	Market St from Euclid Ave to 32nd St - Widen to 4-lane major	36	This project provides for the widening of Market Street to a four-lane major street with Class II bicycle lanes. The cost for property acquisition and building demolition are included in this estimate.	TEO Unfunded	Southeastern San Diego, Southeastern	4;#8		SESD-T11	6000000	Other			0		Pornan, Donald	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
363	Bluebird St from Mallard St to Mulberry St(West Side)- Install New Sidewalk	36	This project will install PCC sidewalk on the west side of Bluebird St.	TEO Unfunded	Encanto Neighborhoods, Southeastern	4				Other		Conflicts: Landscaping, No C&G, Mailboxes, Vegetation, Drainage, Utility Poles	0	309096B	Pornan, Donald	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
664	Bluebird St from Mallard St to Mulberry St(East Side)- Install New Sidewalk	36	This project will install PCC sidewalk on the East Side of Bluebird Street.	TEO Unfunded	Encanto Neighborhoods, Southeastern	4						Conflicts: Landscaping, No C&G, Mailboxes, Vegetation, Drainage, Utility Poles	0	309096A, 308872	Pornan, Donald	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
783	45th St from Benfield Ct to Imperial Ave (East Side)- Install New Sidewalk	36	This project will install PCC sidewalk on the east side of 45th Street.	TEO Unfunded	Southeastern San Diego, Southeastern	4			185000		CDBG	Conflicts: Needs Widening, Drainage, AC Curb, Utility Poles, Drain Inlet, Mailboxes, Outility Boxes	0	313467	Pornan, Donald	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List

112	Bittern St from Klauber Ave to Madera St(West Side)- Install New Sidewalk	37	This project will provide approximately 675 Linear Feet of sidewalk on the west side of Bittern Street. It will require excavation, sign relocation, mailbox relocation, meter box adjustment, and fire hydrant relocation. It will include new PCC sidewalk, curb ramps, and driveway aprons. .	TEO Unfunded	Encanto Neighborhoods, Southeastern	4			150000	Other		Conflicts: Landscaping, Mailboxes, Slope, Retaining Wall Fire Hydrants, Utility Poles IMCAT Conflicts as of	0	309095B	Nascimento, Claudio	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
262	Holly Dr from Willie James Jones Ave to Euclid Ave - Widen for CG&S	37	1000' widen road and CG&S & Drainage	PITS	Southeastern San Diego, Southeastern	4			1400000	Other			0		Pornan, Donald	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
270	Benson St from 61st St to Jenna St (South Side) - Install New Sidewalk	37	Widen, CG&S, Pvmt, Fill	TEO Unfunded	Southeastern San Diego, Southeastern	8			396000	Other		Conflicts: Needs Widening, Drainage, Utility Poles, Utility Boxes	0		Pornan, Donald	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
280	Beta St from 43rd St to End (North Side)- Install New Sidewalk	37	This project will provide approximately 601 linear feet of sidewalk. It will include curb and gutter, 13 driveways, and pavement.	TEO Unfunded	Southeastern San Diego, Southeastern	9			417000	Other	CDBG	Conflicts: Substandard Street, No C&G, Drainage, Trees, ROW Aquistion/Encroachm	0	309094B	Pornan, Donald	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
318	Coban St from Bonita Dr to Reynolds St(North Side)- Install New Sidewalk	37	This project will provide approximately 505 linear feet of sidewalk, five driveways, two pedestrian ramps, and 209 linear feet of curb and gutter.	TEO Unfunded	Encanto Neighborhoods, Southeastern	4			200000	Other	CDBG	Conflicts: Fire Hydrant, Utility Pole, No C&G, Wall, Tree, Landscaping	0	309103A	Pornan, Donald	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
466	Swan St from Springfield St to Tooley (West Side)- Install New Sidewalk	37	This project will install PCC sidewalk on the west side of Swan Street.	TEO Unfunded	Encanto Neighborhoods, Southeastern	4				Other		Conflicts: No C&G, Substandard Street Potentially, Landscaping,	0	309130	Pornan, Donald	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
662	Beta St from 43rd St to End (South Side)- Install New Sidewalk	37	This project will provide approximately 383 linear feet of sidewalk. It will include curb, gutter, 9 driveways, and pavement.	TEO Unfunded	Southeastern San Diego, Southeastern	9			310000		CDBG	Conflicts: Substandard Street, No C&G, Drainage, Trees, ROW Aquistion/Encroachm	0	309094A	Pornan, Donald	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
663	Bittern St from Klauber Ave to Madera St(East Side)- Install New Sidewalk	37	This project will provide approximately 1190 Linear Feet of sidewalk on the east side of ittern Street. It will require excavation, sign relocation, and mailbox relocation. It will include new PCC sidewalk, curb ramps, driveway aprons and a 130 LF 3" high retaining wall.	TEO Unfunded	Encanto Neighborhoods, Southeastern	4			243000			Conflicts: Landscaping, Mailboxes, Slope IMCAT Conflicts as of 12/28/12: None	0	309095A	Pornan, Donald	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
671	Coban St from Bonita Dr to Reynolds St(South Side)- Install New Sidewalk	37	This project will provide approximately 565 linear feet of sidewalk, 120 linear feet of curb and gutter, one driveway, and for pedestrian ramps.	TEO Unfunded	Encanto Neighborhoods, Southeastern	4			155000		CDBG	Conflicts: Fire Hydrant, Utility Pole, No C&G, Wall, Tree, Landscaping	0	309103B	Pornan, Donald	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
688	Swan St from Springfield St to Tooley (East Side)- Install New Sidewalk	37	This project will install PCC sidewalk on the East Side of Swan Street.	TEO Unfunded	Encanto Neighborhoods, Southeastern	4						Conflicts: No C&G, Substandard Street Potentially, Landscaping,	0	309130B	Pornan, Donald	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
265	Oceanview Blvd from 40th St to 32nd St - Widen to 4-lane major	38	This project provides for the widening of Oceanview Boulevard to a modified four-lane major street. No additional right of way is anticipated.	TEO Unfunded	Southeastern San Diego, Southeastern	4;#8		SESD-T12	96000000	Other			0		Pornan, Donald	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
394	Webster Avenue from 36th St to Western End of Webster (Both Sides) - Install New Sidewalk	38	This project will install PCC sidewalk on both side of Webster Avenue.	TEO Unfunded	Southeastern San Diego, Southeastern	9				Other	CDBG	Conflicts: Utility Poles, Drainage, Trees, Utility Boxes IMCAT Conflicts as of	0	309033	Pornan, Donald	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
533	Logan Ave from S47th St to 100' East (North Side)- Install New Sidewalk	38	This project will provide approximately 71 LF of sidewalk, and 71 feet of curb and gutter.	PITS	Encanto Neighborhoods,	4			41000		CDBG;#Safe Route to School	Funded by Brock Jones of Disability	0	308153	Pornan, Donald	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
3676	Nogal Street - 75' East of 47th Street (north side) - Install Driveway	38	Install missing (removed by previous owner) driveway	TEO Unfunded	Encanto Neighborhoods, Southeastern	4						Conflict Check: Undergrounding Utilities (start con:	0	330569	Turner, Scott	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
115	Cervantes Ave from Euclid Ave to Bonita Dr(North Side)- Install New Sidewalk	39	This project will provide approximately 2070 LF of CG&S, curb ramps, and driveway aprons. It will require AC curb removal, sign relocation, fence relocation, excavation, clearing and grubbing, and ROW acquisition.	TEO Unfunded	Encanto Neighborhoods, Southeastern	4			414000	Other	CDBG	Conflicts: Fire Hydrants, Fences, Landscaping, Utility Poles, Slope, Utility Boxes, Mailboxes	0	308880	Nascimento, Claudio	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
119	Alta Vista Ave from Cervantes Ave to 58th St(South Side)- Install New Sidewalk	39	This project will provide approximately install 1259 linear feet of sidewalk, 243 linear feet of driveway, with respective curb and gutter, four pedestrian ramps, 273 linear feet of retaining wall, relocate 12 mail boxes, and three signs on the south side of Alta Vista Avenue.	TEO Unfunded	Encanto Neighborhoods, Southeastern	4			492000	Other	CDBG	Conflicts: No C&G, Drainage, Mailboxes, Landscaping, Slope, Trees, Walls, Fences IMCAT Conflicts as of 12/28/12: None	0	306235	Tawfiq, Kharman	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
252	61st St from Akins St to Brooklyn St(East Side)- Install New Sidewalk	39	This project will provide approximately 701 linear feet of sidewalk, 432 linear feet of driveway, 1146 linear feet of curb and gutter, one pedestrian ramp, replace 3 fire hydrants, and replace one street sign.	TEO Unfunded	Encanto Neighborhoods, Southeastern	4			442000		CDBG	Conflicts: Utility Pole, Fire Hydrant, Trees IMCAT Conflicts as of 12/28/12: Overlay	0	306237	Tawfiq, Kharman	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
390	Radio Dr from 60th St to Springfield Dr(North Side)- Sidewalk Improvement	39	This project will install PCC sidewalk on the north side of Radio Drive.	TEO Unfunded	Encanto Neighborhoods, Southeastern	4			24150000	Other		Conflicts: Substandard Roadways- needs many improvements IMCAT Conflicts as of	0	284464	Nascimento, Claudio	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
465	Castana St from San Jacinto Dr to Groveland Dr(North Side)- Install New Sidewalk	39	This project will provide approximately 470 linear feet of sidewalk, and 31 feet of driveway.	TEO Unfunded	Encanto Neighborhoods, Southeastern	4			57000	Other	CDBG	Conflicts: None observed	0	309100A, 306233	Nascimento, Claudio	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List

518	Radio Dr from 60th St to Springfield Dr(South Side)- Sidewalk Improvement	39	This project will install PCC sidewalk on the South Side of Radio Drive.	TEO Unfunded	Encanto Neighborhoods, Southeastern	4			24150000			Conflicts: Substandard Roadways- needs many improvements IMCAT Conflicts as of	0	284464	Pornan, Donald	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
668	Castana St from San Jacinto Dr to Groveland Dr(South Side)- Install New Sidewalk	39	This project will provide approximately 377 linear feet of sidewalk, and 104 linear feet of driveway. It will be neccessary to relocate one fire hydrant and one traffic sign.	TEO Unfunded	Encanto Neighborhoods, Southeastern	4			84000		CDBG	Conflicts: None observed IMCAT Conflicts as of	0	309100B	Pornan, Donald	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
670	Cervantes Ave from Euclid Ave to Bonita Dr(South Side)- Install New Sidewalk	39	This project will provide approximately 2070 LF of sidewalk on the south side of Cervantes Avenue. It will require AC curb removal, sign relocation, fence relocation, excavation, clearing and grubbing, and ROW acquisition. It will include new CG&S, curb ramps, and driveway aprons.	TEO Unfunded	Encanto Neighborhoods, Southeastern	4			414000		CDBG	Conflicts: Fire Hydrants, Fences, Landscaping, Utility Poles, Slope, Utility Boxes, Mailboxes IMCAT Conflicts as of	0	308880	Pornan, Donald	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
701	Cervantes Ave from Bonita Dr to Alta Vista Ave(North Side)- Install New Sidewalk	39	This project will provide approximately 541 linear feet of sidewalk, six driveways, and six pedestrian ramps.	TEO Unfunded	Encanto Neighborhoods, Southeastern	4			240000		CDBG	Conflicts: ROW Encroachments, Fences, Landscaping, Utility Poles, Slope,	0	309229	Pornan, Donald	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
702	Cervantes Ave from Bonita Dr to Alta Vista Ave(South Side)- Install New Sidewalk	39	This project will provide approximatley 1032 linear feet of sidewalk, two driveways, nine pedesrtian ramps, and 132 linear feet of retaining wall.	TEO Unfunded	Encanto Neighborhoods, Southeastern	4			375000		CDBG	Conflicts: ROW Encroachments, Fences, Landscaping, Utility Poles, Slope,	0	309228	Pornan, Donald	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
703	Coban St from Euclid Ave to Reynolds St(North Side)- Install New Sidewalk	39	This project will install PCC sidewalk on the North Side of Coban Street.	TEO Unfunded	Encanto Neighborhoods, Southeastern	4					CDBG	Conflicts: Fire Hydrant, Utility Pole, Decorative Pavement, Trees, Landscaping	0	309227	Pornan, Donald	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
704	Coban St from Euclid Ave to Reynolds St(South Side)- Install New Sidewalk	39	This project will provide approximately 913 linear feet of sidewalk, 17 driveways, and two pedestrian ramps.	TEO Unfunded	Encanto Neighborhoods, Southeastern	4			276000		CDBG	Conflicts: Fire Hydrant, Utility Pole, Decorative Pavement, Trees, Landscaping	0	309226	Pornan, Donald	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
705	Groveland Dr from 53rd St to 54th St(North Side)- Install New Sidewalk	39	This project will provide approximately 407 linear feet of sidewalk, 84 linear feet of driveway, 491 linear feet of curb and gutter, two pedestrian ramps, and relocate one fire hydrant.	TEO Unfunded	Encanto Neighborhoods, Southeastern	4			261000		CDBG	Conflicts: Substandard Street, Drainage, No C&G, Utility Poles IMCAT Conflicts as of	0	309225	Pornan, Donald	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
706	Groveland Dr from 53rd St to 54th St(South Side)- Install New Sidewalk	39	This project will install PCC sidewalk on the South Side of Groveland Drive.	TEO Unfunded	Encanto Neighborhoods, Southeastern	4					CDBG	Conflicts: Substandard Street, Drainage, No C&G, Utility Poles	0	309224	Pornan, Donald	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
1154	Iona Dr from Kenwood St to Brooklyn Ave (Both Sides)- Install New Sidewalk	39	This location is missing sidewalk on both sides of Iona Drive.	TEO Unfunded	Encanto Neighborhoods, Southeastern	4					CDBG	Conflicts: Fire Hydrants, Landscaping	0	317012	Pornan, Donald	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
2776	47th St from Logan Ave to Division St (West Side)- Install New Sidewalk	39	This project will install PCC sidewalk on the west side of 47th St within the specified limits.	TEO Unfunded	Encanto Neighborhoods, Southeastern	4					CDBG		0			Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
308	60th St from Old Memory Lane to Broadway St - Widen to 2-lane collector	40	Widen to 2-lane collector (both sides)	TEO Unfunded	Encanto Neighborhoods, Southeastern	4		SESD-T17			Other	Road Widening PFFP SESD-T17 Project originally for east side only - estimated as $700,000 on 2/5/09. West side improvements added per CPC request. Cost estimate needs updating to include west side. Conflicts:ROW encroachment, Utility	No	306249	Tawfiq, Kharman	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
253	Akins Ave from Iona Dr to 69th St - Widen to install CG&S	40	3,120 linear feet of CG&S	No longer meets warrants	Southeastern San Diego, Southeastern	8					Other		***This location has sidewalk***	0	313015	Pornan, Donald	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
315	Fergus St from Brooklyn St to Akins St(East Side)- Install New Sidewalk	40	This project will provide approximately 611 linear feet of sidewalk, 242 linear feet of driveway, two pedestrian ramps, relocate one fire hydrant and one traffic sign.	TEO Unfunded	Encanto Neighborhoods, Southeastern	4			203000	Other	CDBG	Conflicts: ROW encroachment, Utility Poles	0	306243	Tawfiq, Kharman	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
333	West Street from south of Imerial Ave to End of West St (East Side) - Install New Sidewalk	40	This project will provide approximately 513 linear feet of sidewalk, 141 linear feet of driveways, 36 linear feet of curb and gutter, replace one street sign, and six mail boxes.	TEO Unfunded	Southeastern San Diego, Southeastern	4			104000	Other	CDBG	Conflicts: ROW encroachment, utility poles IMCAT conflicts as of 10/8/12: Sewer &	0	306240	Tawfiq, Kharman	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
694	Benson Ave from Pagel Pl to Aviation Dr (South Side) - Install New Sidewalk	40	This project will install new PCC sidewalk on the south side of Benson Ave.	TEO Unfunded	Encanto Neighborhoods, Southeastern	4			400000		CDBG	Conflicts: Trees, Utility Poles, Drainage, No C&G, Possible Property Aquisition Required, Mailboxes,	0	309084	Pornan, Donald	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
1223	Broadway from Scimitar Dr to 65th St (North Side)- Install New Sidewalk	40	This project will install CG&S on the North Side of Broadway from approx. 40' West of Scimitar Dr to 65th St.	TEO Unfunded	Encanto Neighborhoods, Southeastern	4					CDBG;#Safe Route to School	Conflicts: Utility Pole, Tree, Mailbox, Landscaping, Slope IMCAT Conflicts as of 12/28/12: Overlay	0	320593	Pornan, Donald	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List

1239	Euclid Frontage Rd from Trinidad Way to Manzaranres Way (East Side)- Install New Sidewalk	40	This project will install PCC sidewalk on the East side of S Euclid Frontage Road.	TEO Unfunded	Encanto Neighborhoods, Southeastern	4					CDBG;#Safe Route to School	Conflicts: Landscaping, Utility Boxes, Fire Hydrant, Walls	0	321112	Pornan, Donald	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
3382	69th Street north of Wunderlin Avenue 120', west side, streetlight	40		TEO Unfunded	Encanto Neighborhoods,	4			15000				0	TR327235		Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
3383	69th Street north of Brooklyn Avenue 265', est side, streetlight	40		TEO Unfunded	Encanto Neighborhoods,	4			2000				0	TR327235		Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
3384	69th Street north of Brooklyn Avenue 105', west side, streetlight	40		TEO Unfunded	Encanto Neighborhoods,	4							Yes	TR327235		Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
3727	Central Avenue south of Monroe Avenue 175', east side-streetlight	40	Priority 3a	TEO Unfunded	Encanto Neighborhoods,	9			8000		CDBG		0	TR316281	Semaan, Jerry	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
3808	Julian Avenue east of Dewey Street 295', north side streetlight	40		TEO Unfunded	Southeastern San Diego, Southeastern	8			15000				0	TR 331,383	Hughes, Duncan	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
3809	Julian Avenue east of Dewey Street 160', south side streetlight	40		TEO Unfunded	Southeastern San Diego, Southeastern	8			15000				0	TR 331.383	Hughes, Duncan	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
3810	Julian Avenue west of Evans Steet (S) 155', south side streetlight	40		TEO Unfunded	Southeastern San Diego, Southeastern	8			15000				0	TR 331,383	Hughes, Duncan	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
3927	Boston Avenue east of S 43th Street 170', north side street light	40		TEO Funded	Southeastern San Diego, Southeastern	9			8000		CDBG	B-14107	Yes	TR332941	Avila-Zepeda , Felipe R	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
3928	Boston Avenue east of S 44th Street 90', south side street light	40		TEO Funded	Southeastern San Diego, Southeastern	9			2000		CDBG	B-14107	Yes	TR332938	Avila-Zepeda , Felipe R	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
4020	S Evans Street south of Julian Avenue 180', west side, at alley	40		TEO Unfunded	Southeastern San Diego, Southeastern	8			2000		CDBG		0	TR333309	Semaan, Jerry	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
4031	60th Street north of Kenwood Street 110', west side	40		TEO Unfunded	Encanto Neighborhoods,	4			2000		CDBG		0	TR333433	Semaan, Jerry	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
4110	Merlin Drive south of Market Street 130', east side	40		TEO Unfunded	Encanto Neighborhoods,	4			2000		Smart Growth;#CDBG			TR334870	Semaan, Jerry	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
4111	Merlin Drive north of Market Street 110', west side	40		TEO Unfunded	Encanto Neighborhoods,	4			2000		Smart Growth;#CDBG			TR334870		Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
4112	Merlin Drive north of Market Street 260', west side	40		TEO Unfunded	Encanto Neighborhoods,	4			2000		Smart Growth;#CDBG			TR334870	Semaan, Jerry	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
4113	Merlin Drive south of Brooklyn Avenue 565', west side	40		TEO Unfunded	Encanto Neighborhoods,	4			2000		Smart Growth;#CDBG			TR334870	Semaan, Jerry	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
4114	Merlin Drive south of Brooklyn Avenue 240', west side	40		TEO Unfunded	Encanto Neighborhoods,	4			2000		Smart Growth;#CDBG			TR334870	Semaan, Jerry	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
2452	40th St and Alpha St Pop-Outs	40	This project will provide approximately 3886 square feet of pop out, 324 feet of curb and gutter, 192 linear feet of RCP for storm drain, three clean outs, four storm drain inlets, and eight pedestrian ramps.	PITS	Southeastern San Diego, Southeastern	8			430000				0		Pornan, Donald	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
248	43rd St from Imperial Ave to Logan Ave - Widen to 4-lane collector	41	This project provides for the construction of 43rd Street to a four-lane collector. This project is recommended for deletion. See comments.	TEO Unfunded	Southeastern San Diego, Southeastern	4;#8		SESD-T16	7400000	Other			No		Pornan, Donald	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
552	Valencia Pkwy from Imperial Ave to Market St - Widen to 4-lane major	41	This project provides for the extension of Valencia Parkway as a four-lane major street.	TEO Unfunded	Southeastern San Diego, Southeastern	4;#8		SESD-T13	5500000				No		Pornan, Donald	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
1235	San Alberto Wy from Santa Rosalia to Trinidad Wy (Both Sides)- Install New Sidewalk	41	This project will provide approximately 2015 LF of sidewalk within the project limits. It will require clearing and grubbing, inlet removal, sign relocation, tree removal, fence relocation, meter box adjustments, and fire hydrant relocations. It will include new CG&S, AC pavement, driveway aprons, curb ramps, and Type B inlets with 18" storm pipe.	TEO Unfunded	Encanto Neighborhoods, Southeastern	4			285000		CDBG	Conflicts: Drain Inlet on Corner, ROW encroachment (Trees, Landscaping, fences, bushes, walls), Utility Poles, Driveways IMCAT conflicts as of 10/8/12: FY10 Overlay Group 3 Start:	0	320991	Pornan, Donald	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
1236	Agua Vista Wy from Trinidad Wy to Northern Terminus (Both Sides)- Install New Sidewalk	41	This project will provide approximately 1700 LF of Sidewalk within the project limits. It will require excavation, clearing & grubbing, sign relocation, meter box adjustments, and fire hyrant relocation. It will include new PCC sidewalk, driveway aprons, and curb ramps.	TEO Unfunded	Encanto Neighborhoods, Southeastern	4			192000		CDBG	Conflicts: Utility Poles, ROW encroachment (Landscaping, Bushes, Fences), IMCAT conflicts as of 10/8/12: FY10 Overlay	0	321052	Pornan, Donald	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
1237	Santa Rosalia Dr from Manzanares Wy to Southern Terminus (Both Sides)- Install New Sidewalk	41	This project will install PCC sidewalk on both side of Santa Rosalia Dr.	TEO Unfunded	Encanto Neighborhoods, Southeastern	4					CDBG	Conflicts: ROW encroachment (Landscaping, Walls, Bushes), Utility Poles, Drainage Inlet	0	320992	Pornan, Donald	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
1238	Trinidad Wy from Santa Maria Terr to Euclid Ave (Both Sides)- Install New Sidewalk	41	This project will install PCC sidewalk on both side of Trinidad Way.	TEO Unfunded	Encanto Neighborhoods, Southeastern	4					CDBG;#Safe Route to School	Conflicts: Drainage, Utility Boxes/Poles, ROW encroachment (Landscaping, Trees, Walls, Bushes, Fences),	0	321051	Pornan, Donald	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
2524	S. Boundary St from Ocean View Bl to T St (Both Sides) - Install New Sidewalk	41	This project will install PCC sidewalk on both sides of South Boundary St	TEO Unfunded	Southeastern San Diego, Southeastern	9			55000			Conflicts: Phone, Cox, SDGE, Water, Large Trees, Shrubs IMCAT Conflicts as of 11/21/12: Water	0	326984		Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List

4108	56th Street from Glen Road (south) to northern cul-de-sac end - Install new sidewalk (west side)	41	This project installs new sidewalk, curb and gutter along west side of 56th Street. The project has several meter boxes, clean-outs and existing vaults that will need to be adjusted to grade. Many conflicts with transformer boxes, trees, tree roots, stairs, decorative paving, masonary blocks, and signs also exist. Will require minor earthwork.	TEO Unfunded	Encanto Neighborhoods, Southeastern	4								333726	Turner, Scott	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
254	Klauber Ave from Bittern St to 69th St - Widen to 2-lane collector	42	4000' Widen CG&S, Rwall, Drainage Major Road Proj	TEO Unfunded	Southeastern San Diego, Southeastern	8				Other		Conflicts: Substandard Road, Slopes, ROW Encroachments/Aquisition, Utility Poles, Mailboxes, Drainage, No C&G, Landscaping,	No	313021	Pornan, Donald	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
110	53rd St from Imperial Ave to Groveland St(Both Sides)- Install New Sidewalk	42	This project will provide approximately 400 linear feet of sidewalk, one pedestrian ramp, relocate three signs and two fire hydrants.	TEO Unfunded	Encanto Neighborhoods, Southeastern	4			72000	Other	CDBG	Conflicts: Utility Poles/Boxes IMCAT conflicts as of	0	323284	Tawfiq, Kharman	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
383	La Paz Dr from Euclid Ave to San Bernardo(North Side)- Install New Sidewalk	42	This project will provide approximately 1445 linear feet of sidewalk, 339 linear feet of driveways, four pedestrian ramps, and relocate six signs on the north side of the street.	TEO Funded	Encanto Neighborhoods, Southeastern	4	B-13085		228000	Other	CDBG		0	323283	Nascimento, Claudio	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
483	Solola Ave from Euclid Ave to Palin St(Both Sides)- Install New Sidewalk	42	This project will provide approximately 460 linear feet of sidewalk, 108 linear feet of driveway, seven pedestrian ramps, and 11 linear feet of retaining wall. It will include sidewalk and median modification at existing bus stop to comply with ADA standards.	TEO Unfunded	Encanto Neighborhoods, Southeastern	4			163000	Other	CDBG	Poles/Boxes IMCAT conflicts as of 10/8/12: None observed	0	323294	Nascimento, Claudio	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
268	Madera St from 66th St to 69th St - Widen for CG&S	43	CG&S 3200'	TEO Unfunded	Encanto Neighborhoods, Southeastern	4				Other		Conflicts: SLopes, Landscaping Utility Poles, Mailboxes, Drainage, Missing	0	313022	Pornan, Donald	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
2782	56th St from North of Roswell St to South of Roswell St (west Side)- Install New Sidewalk	43	This project will install PCC sidewalk on the west side of 56th Street within the limits.	TEO Unfunded	Encanto Neighborhoods,	4							0			Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
3596	Cielo Drive - Woodman St to 65th St - Install new sidewalk	43	Install new sidewalk, curb and gutter - south side of Cielo Dr from Woodman St to 61st St; north side of Cielo Dr from Woodman St to Pagel Pl. 7 curb ramps, driveway replacement and retaining wall	TEO Unfunded	Encanto Neighborhoods, Southeastern	4			525000			ADA project OS-13-02-0015	0	TR328222		Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
3854	51st Street from Hilltop Ave to approx. 340 ft. north (west side) - Install new sidewalk	43	This project will construct approx. 340 LF of sidewalk, a curb return and two ped ramps. Earthwork and a retaining wall are required. Also, removal of several cactus, bushes and a tree is necessary. Curb and gutter are in.	TEO Unfunded	Encanto Neighborhoods, Southeastern	4							No	333667	Turner, Scott	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
3909	Mariposa Street (Both sides) and Mariposa Place from Mariposa St to Shell Ave (North Side) - Install New Sidewalk	43	Mariposa St: Install curb, gutter, sidewalk and driveway entrances (both sides). Mariposa Place: Install curb, gutter, sidewalk and driveway entrances (north side only), may require power pole, blowoff/AV&AR, and fire hydrant relocation.	TEO Unfunded	Encanto Neighborhoods, Southeastern	4							0	331976	Turner, Scott	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
4072	Ocean View Blvd from Willie James Jones W to Willie James Jones E - Widening	43	This project will widen Ocean View Blvd from Willie James Jones W Ave to Willie James Jones E Ave and provide 265' of curb, gutter, and sidewalk.	TEO Unfunded	Encanto Neighborhoods, Southeastern	4						IMCAT Conflicts (4/7/2014): Water Main Replacement DESIGN: (9/6/2013 - 1/23/2014) CONST: (8/21/2014 - 7/21/2015)		334044		Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
794	Kelton Rd at Kelton Pl Electronic Speed Sign	43	This project will one Electronic V-Calm sign on Kelton Rd by Kelton Pl facing southbound traffic	TEO Funded	Encanto Neighborhoods, Southeastern	4			8000		TransNet	Funded by "Old Transnet" funding	Yes		Pornan, Donald	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
255	Cesar Chavez Pkwy from Commercial St to I-5 - Widen to 4-lane collector	44	This project will provide for the widening of Cesar Chavez Pkwy to a four-lane Collector.	TEO Unfunded	Southeastern San Diego, Southeastern	8		SESD-T20	1900000	Other			No		Pornan, Donald	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
261	Division St from Lorenz Ave to 61st St - Widen to 4-lane collector	44	This project will provide for the widening of Division Street to a modified four lane Collector.	TEO Unfunded	Southeastern San Diego, Southeastern	8		SESD-T19	1300000	Other			No		Pornan, Donald	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
269	Brooklyn Ave from 65th St to 66th St - Improve road	44	Fully improve to 40' c/c, Rwalls, Grade adjustment	TEO Unfunded	Southeastern San Diego, Southeastern	8				Other		TR request submitted	No	311608	Pornan, Donald	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
2777	63rd St from Broadway to Imperial Ave (Both Sides)- Install New Sidewalk	44	This project will provide approximately 2320 LF of sidewalk within the project limits. It will require clearing and grubbing, sign relocation, meter box adjustment, and fire hydrant relocation. It will new PCC sidewalk. driveway aprons, curb ramps, and 125 LF of 3' retaining walls.	TEO Funded	Encanto Neighborhoods, Southeastern	4	B1403 9		307000			Project was sent to Street Division for review for construction.	0			Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
4032	26th St & Market St New Traffic Signal	45	Install new traffic signal	PITS	Southeastern San Diego, Southeastern	8			275000		TransNet	Design to be provided by Fehr & Peers.	0			Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
271	69th St from Madera St to Mallard St - Widen for CG&S	45	CG&S, Pavement, Drainage, Road widening	TEO Unfunded	Encanto Neighborhoods, Southeastern	4				Other		CONFLICTS: Utility poles, Trees, bushes, fence	0	313016	Pornan, Donald	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List

2762	Madrone Ave from 63rd St to Shaules Ave (Both Sides)- Install New Sidewalk	45	This project will install sidewalk on both sides of Madrone Ave.	TEO Unfunded	Encanto Neighborhoods, Southeastern	4						Conflicts: Slopes both sides, nonstandard width roadway, guardrails, utility poles, water valves, drainage issues, no c&g, fire hydrants, ROW encroachments:	0			Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
2811	Olvera Ave from Gwen St to Santa Isabel Dr (South Side) Install New Sidewalk	45	This project will install PCC sidewalk on the south sides of Olver Ave within the specified limits. Conflicts include fire hydrants and a small masonary wall. Will also require relocation of an existing driveway entrance at curb return. Some adjustments to grade for existing meter boxes. Some earthwork also needed. Curb and gutter in.	TEO Unfunded	Encanto Neighborhoods, Southeastern	4						IMCAT Conflicts as of 2/20/14: Street segment SS-020537, Project ID FY10-S3 Slurry moratorium Start 3/6/2012 End 3/6/2015	No		Turner, Scott	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
2812	Olvera Ave from San Onofre Ter. to Las Flores (South Side)- Install New Sidewalk	45	This project will install PCC sidewalk on the south side of Olvera Ave within the specified limits. Conflicts include fire hydrants, masonary walls, decorative rock, utility poles, vegitation and shrubs. Some adjustments to grade to clean outs and meter boxes will be needed. Curb is in, but in deteriorated condition and may need repair/replacement.	TEO Unfunded	Encanto Neighborhoods, Southeastern	4						IMCAT Conflicts as of 2/20/14: Street segment SS-020533, project ID FY10-S3 Slurry Overlay Moratorium start 3/6/2012 end 3/6/2015	No	333730	Turner, Scott	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
3956	Pitta St from Market St to Kenwood St (Both Sides) - Install New Sidewalk	45	This project will provide curb/gutter and sidewalk on both sides of Pitta Street north of Market Street.	TEO Unfunded	Encanto Neighborhoods, Southeastern	4						ROW width of street is 40 feet with curb to curb of 25 feet. IMCAT Conflicts: Pipeline Rehabilitation Design: 1/2014 to 4/2014 Construction: 8/2014	0	332534		Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
2823	Egret Street north of Weaver Street 300', east side streetlight	45	Priority 2b	TEO Funded	Encanto Neighborhoods,	4			2000				Yes	TR246076		Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
3001	31st St @ Imperial Ave New Traffic Signal	46	Install a new traffic signal	PITS	Southeastern San	8			275000				0	306689	Hughes,	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
2779	Scimitar Dr from Broadway to Kluaber Ave (Both Sides)- Install New Sidewalk	46	This project will install PCC sidewalk on both sides of Scimitar Dr, also to include road widening.	TEO Unfunded	Encanto Neighborhoods, Southeastern	4							0			Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
2453	40th St at National Ave	46		PITS	Southeastern San	4			502000				0		Pornan,	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
1230	41st St @ National Ave New Traffic Signal	47	Install a new traffic signal	PITS	Southeastern San	4;#8			275000				0	318737	Pornan,	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
2809	Eider St from Scimitar Dr to Klauber Ave (Both Sides)- Install New Sidewalk	47	This project will install sidewalk,curb and gutter on both sides of Eider St within the specified limits. Drainage will become an issue. Extensive earthwork, shoring and retaining walls necessary for project. Right of Way acquisition may be necessary due to limited street widths and room for sidewalk. Numerous conflicts with trees, slopes, utilities, poles, walls. Street also in poor condition and needs overlay.	TEO Unfunded	Encanto Neighborhoods, Southeastern	4						IMCAT conflicts as of 6/3/14: No conflicts	No			Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
2810	Wren St from Scimitar Dr to Klauber Ave (Both Sides)- Install New Sidewalk	48	This project will install PCC sidewalk and curb returns on Wren St within the specified limits. Will require earthwork and retaining walls. Conflicts include several utility poles, mail boxes, several medium to tall trees, shrubs, and ground vegitation. Curb and gutter are mostly in.	TEO Unfunded	Encanto Neighborhoods, Southeastern	4						IMCAT conflicts as of 6/3/14: None	No	333986	Turner, Scott	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
3853	Elwood Ave from Lenox Dr to Geneva Ave (West Side) - Install new sidewalk	48	This project will provide sidewalk and install/upgrade curb return ped ramps. Will require utility pole relocation, meter box adjustment to grade and minor vegitation removal. One masonary wall conflicts w/ proposed 4' wide path of travel.	TEO Unfunded	Encanto Neighborhoods, Southeastern	4							No	333668	Turner, Scott	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
770	31st St @ National Ave New Traffic Signal	49	Install a new traffic signal	TEO Unfunded	Southeastern San Diego, Southeastern	8			275000				0	308,848	Nascimento, Claudio	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
1316	31st St @ Ocean View Bl New Traffic Signal	49	Install a new traffic signal.	PITS	Southeastern San	4			275000				0	321035	Pornan,	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
543	S 38th St at Alpha St- Pop-Outs(4)	49	This project will provide approximately 2980 square feet of pop out, 249 feet of curb and gutter, four pedestrian ramps, relocate one fire hydrant, one manhole, and two storm drain inlets. Assume: grades flat, subsurface drainage proposed.	TEO Unfunded	Southeastern San Diego, Southeastern	8			294000		CDBG;#Safe Route to School	FY 14: $75,000 Prelim Fy 15: $100,000 Design FY 16: $119,000 Construction	0	308053	Nascimento, Claudio	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
440	Market St from Euclid Ave to 54th St. - Widening	50	This project provides for the widening of Market St to a four lane major street.	TEO Unfunded	Encanto Neighborhoods,	4			1300000	Other			No		Pornan, Donald	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
468	Creston Dr from Selma Pl to Roswell St(Both Sides)- Install New Sidewalk	50	This project will provide approximately 544 linear feet of PCC sidewalk, 156 linear feet of driveway, one pedestrian ramp, and relocate two signs.	TEO Unfunded	Encanto Neighborhoods, Southeastern	4			114000			Conflicts: Fire Hydrant, Landscaping, Utility Pole, Trees IMCAT Conflicts as of 12/28/12: Pipeline	Yes	306231, 333725	Nascimento, Claudio	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
2778	65th St from Imperial Ave to Madrone (Both Sides)- Install New Sidewalk	50	This project will install PCC sidewalk on 65th St within the specified limits. It will also include road widening.	TEO Unfunded	Encanto Neighborhoods, Southeastern	4					CDBG		0			Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List

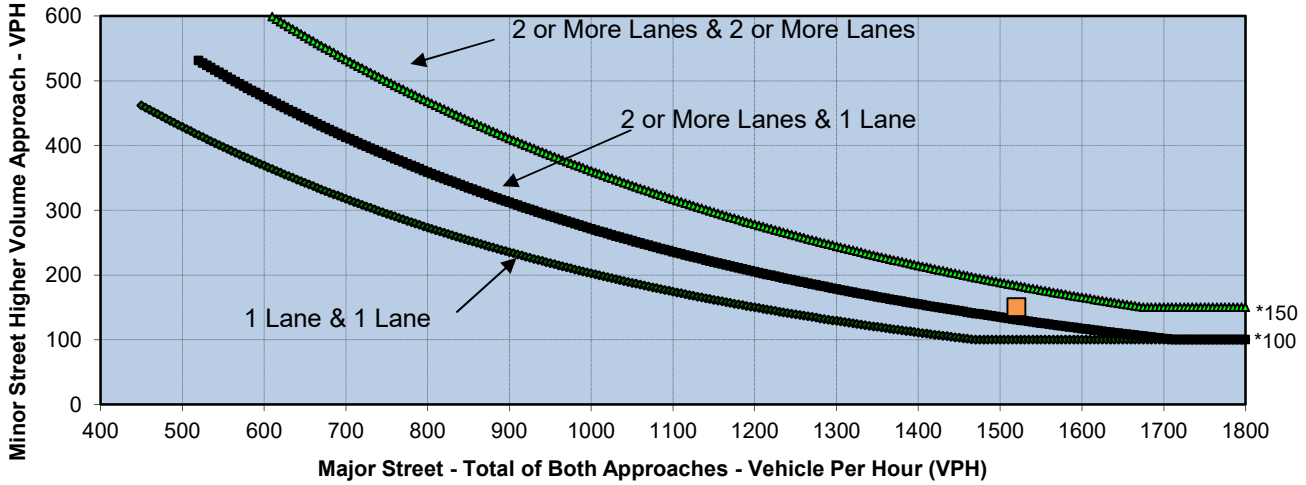
3851	Lenox Drive from Winston Dr to Beverly St (Both Sides) - Install new sidewalk	50	This project will install sidewalk and ped ramps, earthwork and retaining walls required. Conflicts include utility poles, mail boxes, masonary walls, fire hydrants, a large tree stump, shrubs and ground vegitation, and decorative paving/rocks. Several meter boxes require adjustment to grade. Curb and gutter are in.	TEO Unfunded	Encanto Neighborhoods, Southeastern	4						IMCAT conflits as of 6/3/14: Pipeline Rehab - Phase G-2 (laterals) start 1/22/2015 end 8/24/2016	No	333727	Turner, Scott	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
3852	Winston Drive from Lenox Dr to Hilltop Dr (Both Sides) - Install new sidewalk	50	This project will provide sidewalk on both the east and west side of Winston Drive. Will require earthwork and retaining walls. Conflicts include large palm trees, smaller trees, shrubs and ground vegitation. Will require adjustment to grade of meter boxes. Curb and gutter are in, but are deteriorated and damaged. May require replacement/repair.	TEO Unfunded	Encanto Neighborhoods, Southeastern	4						IMCAT conflicts as of 2/21/14: Street segment SS-029003, project ID FY10-O2 Asphalt overlay moratorium Stert 9/20/2011 end 9/20/2016	No	333723	Turner, Scott	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
3073	Raven Street south of Hilltop Drive 137', east side streetlight	50		TEO Unfunded	Southeastern San Diego, Southeastern	9			8000				Yes	TR256791		Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
3078	Southlook Avenue south of Gilmore Street 165', west side streetlight	50		TEO Unfunded	Southeastern San Diego, Southeastern	9			8000				Yes	TR258639A		Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
3079	Southlook Avenue south of Imperial Avenue 110', west side streetlight	50		TEO Unfunded	Southeastern San Diego, Southeastern	9			8000				Yes	TR258639A		Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
3081	Ada Street north of Franklin Avenue 155', west side streetlight	50		TEO Unfunded	Southeastern San Diego, Southeastern	9			8000				Yes	TR258944		Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
3082	Ada Street south of Imperial Avenue 150', west side streetlight	50		TEO Unfunded	Southeastern San Diego, Southeastern	9			8000				Yes	TR258944		Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
3083	Ada Street south of Imperial Avenue 346', west side streetlight	50		TEO Unfunded	Southeastern San Diego, Southeastern	9			8000				Yes	TR258944		Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
3087	Bancroft Street south of Greely Avenue 100', west side streetlight	50		TEO Unfunded	Southeastern San Diego, Southeastern	8			8000				Yes	TR260576		Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
3089	Solola Avenue west of Palin Street 132', south side streetlight	50		TEO Unfunded	Encanto Neighborhoods,	4			2000				Yes	TR261798A		Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
3097	K Street east of 26th Street 312', south side streetlight	50		TEO Unfunded	Southeastern San Diego, Southeastern	8			8000				Yes	TR264211		Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
3177	39TH (S) Street north of Superior Street at alley 120', west side streetlight	50		TEO Unfunded	Southeastern San Diego, Southeastern	9			2000				Yes	TR314106		Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
3178	39TH (S) Street south of Imperial Avenue at alley 120', west side streetlight	50		TEO Unfunded	Southeastern San Diego, Southeastern	9			2000				Yes	TR314106		Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
3209	Acacia Street west of South 35th Street 140', north side streetlight	50		TEO Unfunded	Southeastern San Diego, Southeastern	9			8000				Yes	TR320603		Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
3210	Boston Avenue east of South 35th Street 175', north side streetlight	50		TEO Unfunded	Southeastern San Diego, Southeastern	9			8000				Yes	TR320603		Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
3220	35th Street (South) south of Martin Avenue 275', west side streetlight	50		TEO Unfunded	Southeastern San Diego, Southeastern	9			2000				Yes	TR322078		Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
3228	33rd Street north of Imperial Avenue 130', west side at alley streetlight	50	Priority 2a	TEO Funded	Southeastern San Diego, Southeastern	8			2000				Yes	TR324036		Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
3259	Bonita Drive north of Cervantes Avenue 180', west side streetlight	50		TEO Unfunded	Encanto Neighborhoods,	4			8000				Yes	TR326417		Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
3269	42nd Street south of Broadway 145' at alley, southwest corner streetlight	50		TEO Unfunded	Southeastern San Diego, Southeastern	9			2000				Yes	TR326746		Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
3274	Superba Street east of 38th Street 160', south side streetlight	50		TEO Unfunded	Southeastern San Diego, Southeastern	9			8000				Yes	TR219413		Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
3278	Valle Avenue west of South 35th Street 220', north side streetlight	50		TEO Unfunded	Southeastern San Diego, Southeastern	9			8000				Yes	TR228103		Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
3284	Ada Street south of Imperial Avenue 630', west side streetlight	50		TEO Unfunded	Southeastern San Diego, Southeastern	9			8000				Yes	TR229556		Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
3287	Jewell Drive south of T Street 164', east side streetlight	50		TEO Unfunded	Southeastern San Diego, Southeastern	9			8000				Yes	TR231558		Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
3377	Franklin Avenue east of 40th Street 145', south side at alley streetlight	50		TEO Unfunded	Southeastern San Diego, Southeastern	9			5000				Yes	TR244871		Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
3688	Alta Vista Avenue east of Paradise Road 590', north side street lights	50		TEO Unfunded	Encanto Neighborhoods,	4			2000		CDBG		0	TR329548	Avila-Zepeda , Felipe R	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
3691	NWC of S 47th Street and Franklin Avenue street lights	50		TEO Unfunded	Encanto Neighborhoods,	4			15000		CDBG		0	TR330817	Avila-Zepeda , Felipe R	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
3692	NEC of S 47th Street and Franklin Avenue street lights	50		TEO Unfunded	Encanto Neighborhoods,	4			15000		CDBG		0	TR330817	Avila-Zepeda , Felipe R	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
3693	S 47th Street north of T street 175', east side street lights	50		TEO Unfunded	Encanto Neighborhoods,	4			15000		CDBG		0	TR330817	Avila-Zepeda , Felipe R	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
3694	S 47th Street south of T street 190', east side street lights	50		TEO Unfunded	Encanto Neighborhoods,	4			15000		CDBG		0	TR330817	Avila-Zepeda , Felipe R	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
3817	Dodson Street south of Market Street 135', west side streetlight	50	Priority 2a	TEO Funded	Southeastern San Diego, Southeastern	8			2000		Smart Growth	Smart Growth Area SD SE-3	Yes	TR 331,935	Hughes, Duncan	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
3874	Franklin Avenue west of S 30th Street 175', north side street light	50		TEO Unfunded	Southeastern San Diego, Southeastern	8			15000		CDBG		0	TR332395	Avila-Zepeda , Felipe R	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
3926	Boston Avenue east of S 38th Street 130', north side street light	50		TEO Unfunded	Southeastern San Diego, Southeastern	9			8000		CDBG		0	TR332926	Avila-Zepeda , Felipe R	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
3929	Boston Avenue west of S 38th Street 260', north side street light	50		TEO Funded	Southeastern San Diego, Southeastern	9			8000		CDBG	B-14107	Yes	TR332936	Avila-Zepeda , Felipe R	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
3930	Boston Avenue west of S 36th Street 106', north side street light	50		TEO Unfunded	Southeastern San Diego, Southeastern	9			15000		CDBG		0	TR332937	Avila-Zepeda , Felipe R	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
3931	Boston Avenue west of S 40th Street 165', north side street light	50		TEO Unfunded	Southeastern San Diego, Southeastern	9			15000		CDBG		0	TR332935	Avila-Zepeda , Felipe R	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
3954	Boston Avenue east of S 39th Street 150', north side street light	50		TEO Unfunded	Southeastern San Diego, Southeastern	9			15000		CDBG		0	TR332925	Avila-Zepeda , Felipe R	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
3957	33rd Street north of Imperial Avenue 135', west side, at alley	50	Priority 2a	TEO Funded	Southeastern San Diego, Southeastern	8			2000		CDBG	DUPLICATE - SEE GIS_ID 3228	Yes	TR332756	Semaan, Jerry	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List

3958	33rd Street north of L Street 150', west side, at alley	50	Priority 2a	TEO Funded	Southeastern San Diego, Southeastern	8			2000		CDBG		Yes	TR332756	Semaan, Jerry	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
4064	San Jacinto Dr south of Groveland Dr 182', west side	50		TEO Unfunded	Southeastern San Diego, Southeastern	4			2000			Install pole attachment between 264 & 274 San Jacinto				Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
4089	S 28th Street south of Imperial Avenue 160' at alley, west side	50	Priority 2a	TEO Funded	Southeastern San Diego, Southeastern	8			2000		Smart Growth;#CDBG	Duplicate: See TUNL ID 3020		TR334489	Semaan, Jerry	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
4090	S 29th Street south of Imperial Avenue 175' at alley, southwest corner	50	Priority 2a	TEO Funded	Southeastern San Diego, Southeastern	8			2000		Smart Growth;#CDBG			TR334489		Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
4124	S 33rd Street north of Webster Avenue 85, west side	50		TEO Unfunded	Southeastern San Diego, Southeastern	8			2000		CDBG			TR335463B	Semaan, Jerry	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
1179	SR-94 / Euclid Ave Interchange	51	Provides a PRS for improvements to the interchange.	TEO Unfunded	Encanto Neighborhoods,	4	S-11046		1000000		TransNet		No		Pornan, Donald	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
2780	Market St from Euclid Ave to Pita St (Both Sides)- Install New Sidewalk	51	This project will install PCC sidewalk on both sides of Maket St witin the limits, also to include road widening.	TEO Unfunded	Encanto Neighborhoods, Southeastern	4						IMCAT: FY-15 Object ID#7717 Strt: 11/15/2014 End:	0			Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
1216	Division St @ Valencia Pkwy New Traffic Signal	52	Install a new traffic signal	TEO Unfunded	Encanto	4			275000				0	315440	Pornan,	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
3850	Beverly St from Roswell St to Lenox Dr (Both Sides) - Install new sidewalk	52	This project will provide 3 curb returns, 16 driveways and sidewalk along both sides of Beverly. Many utility boxes need adjustment to grade. Curb and gutter are in.	TEO Unfunded	Encanto Neighborhoods, Southeastern	4			287000				No	333649	Turner, Scott	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
2841	Egret Street north of Weaver Street 800', north side at cul de sac streetlight	62	Priority 1e	TEO Funded	Encanto Neighborhoods,	4			8000			DUPLICATE LOCATION	Yes	TR246076		Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
3680	Radio Drive north of Market Street 170', west side street lights	62		TEO Unfunded	Encanto Neighborhoods,	4			2000		Smart Growth		0	TR330816	Avila-Zepeda , Felipe R	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
2824	Egret Street north of Weaver Street 300', east side streetlight	64		No longer meets warrants	Encanto Neighborhoods, Southeastern	4			2000			DUPLICATE: REFER TO GIS_ID 2823	Yes	TR246076		Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
2828	Kelton Road north of Kelton Place 250', west side streetlight	64	Priority 1d	TEO Funded	Encanto Neighborhoods,	4			15000		TransNet		Yes	TR239339		Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
2829	Kelton Road north of Kelton Place 500', west side streetlight	64	Priority 1d	TEO Funded	Encanto Neighborhoods,	4			15000		TransNet		Yes	TR239339		Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
2891	Market Street east of 45th Street 170', north side	66	FY15 budget $1.4M	TEO Funded	Encanto	4			15000			Priority 1c	Yes	TR258616		Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
2910	National Avenue east of S 32nd Street 155', south side streetlight	66	Priority 1c	TEO Funded	Southeastern San Diego, Southeastern	8			2000				Yes	TR322359		Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
2988	Market Street east of 45th Street 450', north side streetlight	66	FY15 budget $1.4M	TEO Funded	Encanto Neighborhoods,	4			15000			Priority 1c	Yes	TR258616		Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
2876	6308 63rd Street at Shaules Avenue, northeast corner streetlight	70	Priority 1a	TEO Funded	Encanto Neighborhoods,	4			2000		TransNet	B-14106 FY 2014	Yes	TR312615		Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
2885	Ginna Place at Logan Avenue, southeast corner streetlight	70	Priority 1a	TEO Funded	Encanto Neighborhoods,	4			2000		TransNet	Duplicate: See TUNL ID 3961	Yes	TR304278		Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
2941	Brooklyn Ave & Madera St streetlight	70	Priority 1a	TEO Funded	Encanto Neighborhoods,	4			2000		TransNet	B-14106 FY 2013	Yes	TR310491		Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
3682	Sicard Street southwest of S 28th Street 185', west side street light	70	Priority 2a	TEO Funded	Southeastern San Diego, Southeastern	8			2000			FY 2014	Yes	330,687	Hughes, Duncan	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
3925	S 44th Street and Boston Avenue southwest street light	70		TEO Funded	Southeastern San Diego, Southeastern	9			2000		CDBG	B-14107	Yes		Avila-Zepeda , Felipe R	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
3961	Ginna Place at Logan Avenue, south side street light	70	Priority 1a	TEO Funded	Encanto Neighborhoods,	4			2000		CDBG	B-14106 FY 2014	Yes	TR333000	Avila-Zepeda , Felipe R	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
3987	37th Street (S) and Logan Avenue, northeast corner	70	FY15 budget $1.4M	TEO Funded	Southeastern San Diego, Southeastern	9			8000		CDBG	Priority 1a	Yes	TR332842	Avila-Zepeda , Felipe R	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
3997	Clay Avenue at Sampson Street, at alley, northwest corner street ;ight	70	Priority 1a	TEO Funded	Southeastern San Diego, Southeastern	8			2000		CDBG;#TransNet		Yes	TR275743	Avila-Zepeda , Felipe R	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
3856	Hilltop Drive from Winston Dr to Roswell St (Both Sides) - Install new sidewalk		This project will provide sidewalk on both sides of Hilltop Drive. Project requires earthwork and retaining walls. Conflict includes very large, medium and small palm trees (will probably require removal) and utility poles. Several metar boxes will need to be adjusted to grade. Curb and gutter are in.	TEO Unfunded	Encanto Neighborhoods, Southeastern	4						IMCAT conflicts as of 2/21/14: PROJECT ID B11074 Sewer pipeline rehabilitation start6/11/2012 end 5/8/2014 Street segment SS-	No		Turner, Scott	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
3858	Pitta St from Market St to end of street [south] (both sides) - Install new sidewalk			TEO Unfunded	Encanto Neighborhoods,	4							0		Turner, Scott	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
3859	Castana Street from 47th St to Escuela St (both sides) - Install new sidewalk			TEO Unfunded	Encanto Neighborhoods,	4							0		Turner, Scott	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
4085	San Jacinto from Groveland to Imperial (west side) - Sidewalk		This project will install approximately 640 LF of sidewalk within the project limits.	TEO Unfunded	Encanto Neighborhoods,	4			95000					335596		Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
3624	61st Street at Flipper Flashing Beacon		Installation of a flashing beacon at the school crosswalk	TEO Unfunded	Encanto Neighborhoods,	4					TransNet		0			Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
3720	Market Street Electronic Speed Signs		Installation of two electronic speed signs on Market Street near 26th street	TEO Funded	Southeastern San Diego, Southeastern	8			16000		TransNet	Funded with "Old Transnet" funding	0			Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List

Appendix C
Signal Warrant Worksheets

Sheet No 1 of 2

Figure 4C-3
Warrant 3, Peak Hour



* Note: 150 VPH APPLIES AS THE LOWER THRESHOLD VOLUME FOR A MINOR STREET APPROACH WITH TWO OR MORE LANES AND 100 VPH APPLIES AS THE LOWER THRESHOLD VOLUME FOR A MINOR STREET APPROACHING WITH ONE LANE.

Source: *California Manual on Uniform Traffic Control Devices*, Caltrans, 2006

#8

Major Street	Midway Drive
Minor Street	Charles Lindbergh Parkway

Project	Midway & Old Town CPU
Scenario	2B
Peak Hour	AM

Turn Movement Volumes

	NB	SB	EB	WB
Left	0	150	0	120
Through	600	680	0	0
Right	90	0	0	30
Total	690	830	0	150

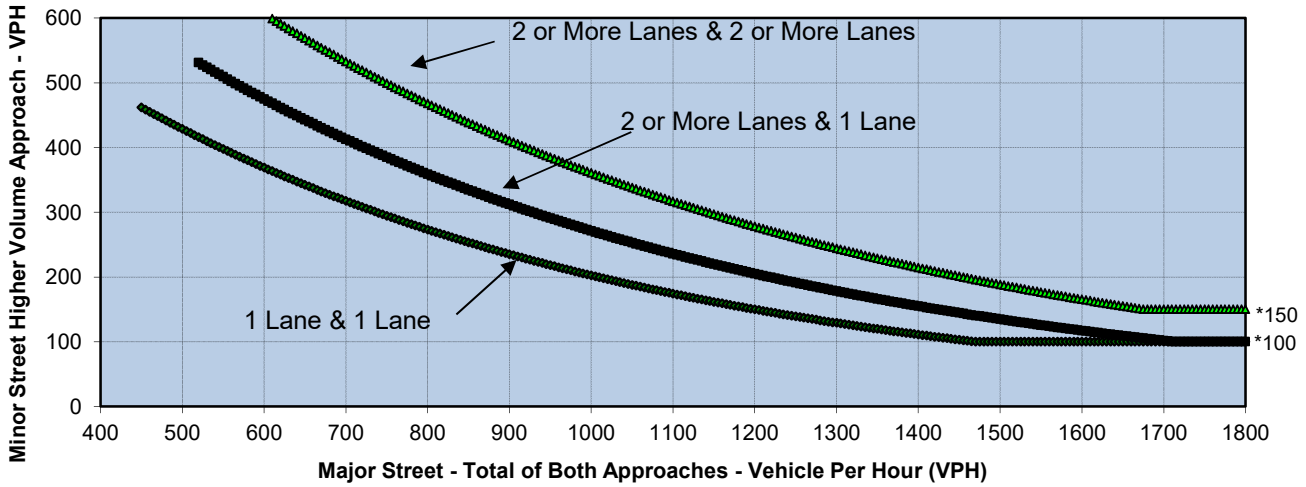
Major Street Direction

X	North/South
	East/West

	Major Street	Minor Street	Warrant Met
	Midway Drive	Charles Lindbergh Parkway	
Number of Approach Lanes	**2**	**1**	**YES**
Traffic Volume (VPH) *	**1,520**	**150**	

Sheet No 2 of 2

Figure 4C-3
Warrant 3, Peak Hour



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Source: *California Manual on Uniform Traffic Control Devices*, Caltrans, 2006

#8

Major Street	Midway Drive
Minor Street	Charles Lindbergh Parkway

Project	Midway & Old Town CPU
Scenario	2B
Peak Hour	PM

Turn Movement Volumes

	NB	SB	EB	WB
Left	0	400	0	120
Through	780	850	0	0
Right	120	0	0	300
Total	900	1,250	0	420

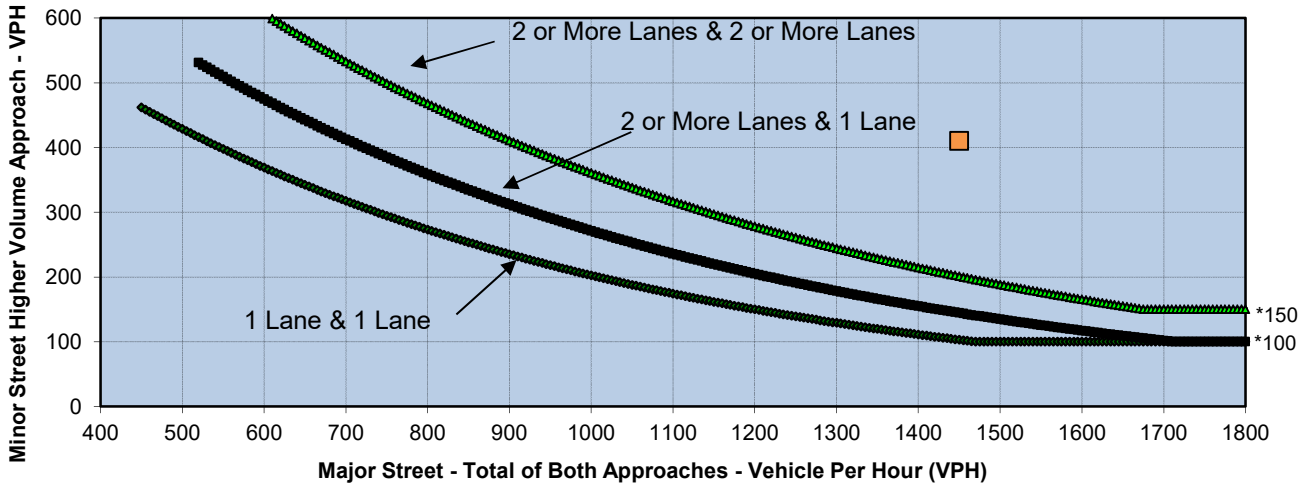
Major Street Direction

X	North/South
	East/West

	Major Street	Minor Street	Warrant Met
	Midway Drive	Charles Lindbergh Parkway	
Number of Approach Lanes	2	1	YES
Traffic Volume (VPH) *	2,150	420	

Sheet No 1 of 2

Figure 4C-3
Warrant 3, Peak Hour



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Source: *California Manual on Uniform Traffic Control Devices*, Caltrans, 2006

#12

Major Street	Sports Arean Boulevard
Minor Street	Kemper Street

Project	Midway & Old Town CPU
Scenario	2B
Peak Hour	AM

Turn Movement Volumes

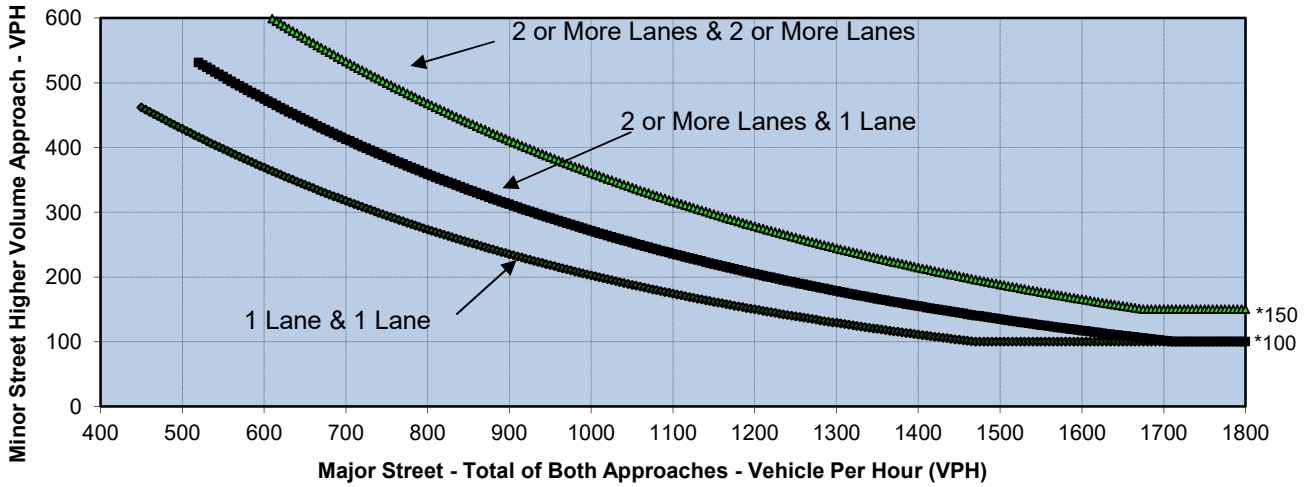
	NB	SB	EB	WB
Left	210	80	90	160
Through	420	540	50	140
Right	90	110	120	110
Total	720	730	260	410

Major Street Direction

X	North/South
	East/West

	Major Street	Minor Street	Warrant Met
	Sports Arean Boulevard	Kemper Street	
Number of Approach Lanes	**3**	**1**	**YES**
Traffic Volume (VPH) *	**1,450**	**410**	

Figure 4C-3
Warrant 3, Peak Hour



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Source: *California Manual on Uniform Traffic Control Devices*, Caltrans, 2006

#12

Major Street	Sports Arean Boulevard
Minor Street	Kemper Street

Project	Midway & Old Town CPU
Scenario	2B
Peak Hour	PM

Turn Movement Volumes

	NB	SB	EB	WB
Left	250	150	90	150
Through	1,130	890	130	40
Right	120	100	160	170
Total	1,500	1,140	380	360

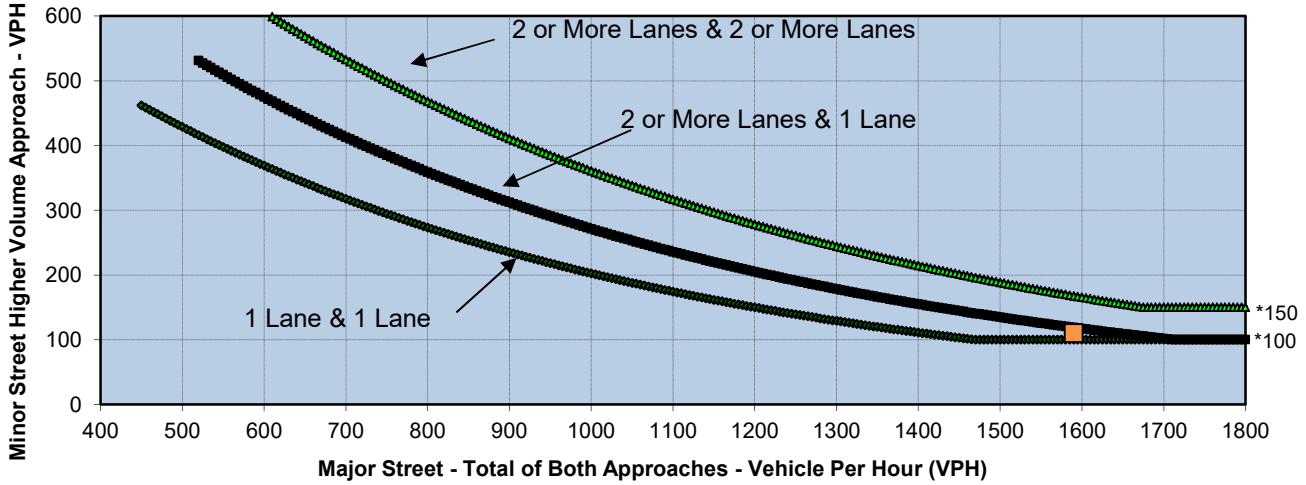
Major Street Direction

X	North/South
	East/West

	Major Street	Minor Street	Warrant Met
	Sports Arean Boulevard	Kemper Street	
Number of Approach Lanes	**3**	**1**	**YES**
Traffic Volume (VPH) *	**2,640**	**380**	

Sheet No 1 of 2

Figure 4C-3
Warrant 3, Peak Hour



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Source: *California Manual on Uniform Traffic Control Devices*, Caltrans, 2006

#13

Major Street	Sports Arean Boulevard
Minor Street	Frontier Street

Project	Midway & Old Town CPU
Scenario	2B
Peak Hour	AM

Turn Movement Volumes

	NB	SB	EB	WB
Left	30	130	40	40
Through	630	650	20	20
Right	70	80	20	50
Total	730	860	80	110

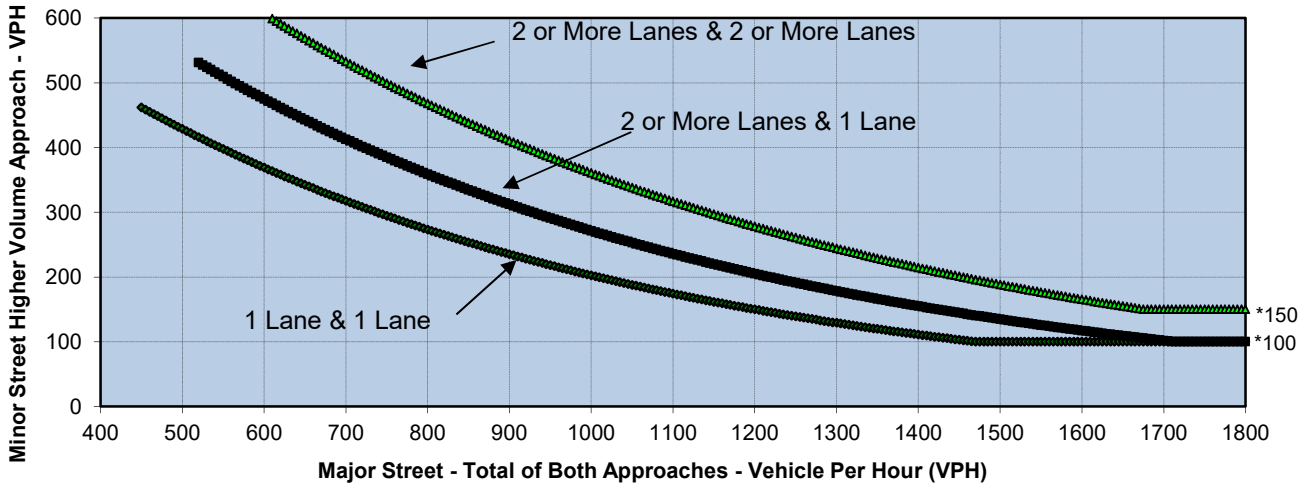
Major Street Direction

X	North/South
	East/West

	Major Street	Minor Street	Warrant Met
	Sports Arean Boulevard	Frontier Street	
Number of Approach Lanes	**3**	**1**	**NO**
Traffic Volume (VPH) *	**1,590**	**110**	

Sheet No 2 of 2

Figure 4C-3
Warrant 3, Peak Hour



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Source: *California Manual on Uniform Traffic Control Devices*, Caltrans, 2006

#13

Major Street	Sports Arean Boulevard
Minor Street	Frontier Street

Project	Midway & Old Town CPU
Scenario	2B
Peak Hour	PM

Turn Movement Volumes

	NB	SB	EB	WB
Left	50	120	60	150
Through	1,280	1,110	30	30
Right	70	80	70	140
Total	1,400	1,310	160	320

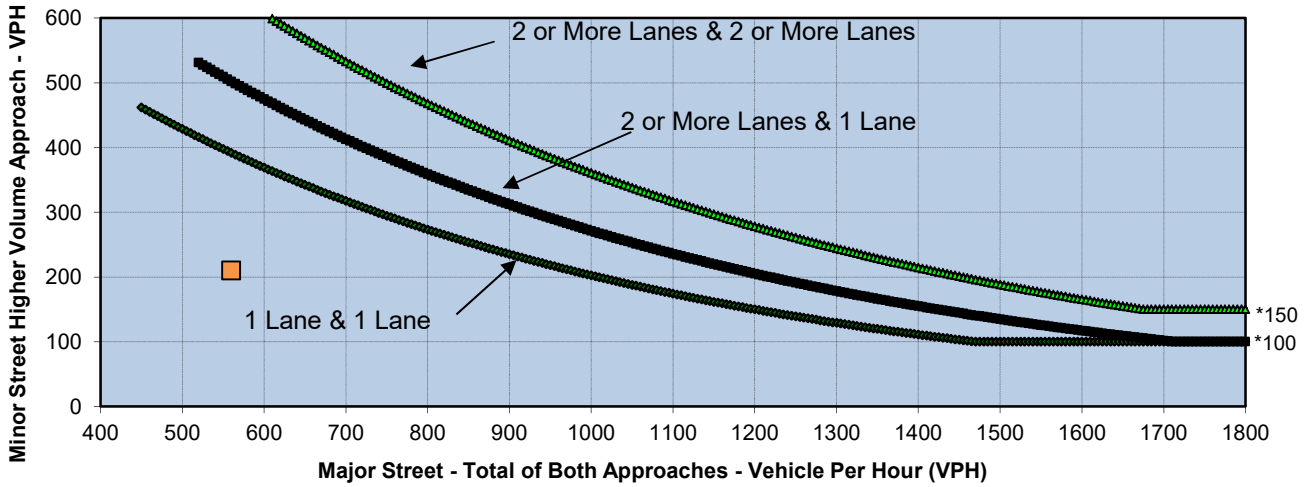
Major Street Direction

X	North/South
	East/West

	Major Street	Minor Street	Warrant Met
	Sports Arean Boulevard	Frontier Street	
Number of Approach Lanes	3	1	YES
Traffic Volume (VPH) *	2,710	320	

Sheet No 1 of 2

Figure 4C-3
Warrant 3, Peak Hour



* Note: 150 VPH APPLIES AS THE LOWER THRESHOLD VOLUME FOR A MINOR STREET APPROACH WITH TWO OR MORE LANES AND 100 VPH APPLIES AS THE LOWER THRESHOLD VOLUME FOR A MINOR STREET APPROACHING WITH ONE LANE.

Source: *California Manual on Uniform Traffic Control Devices*, Caltrans, 2006

#16		Project	Midway & Old Town CPU
Major Street	Sports Arean Boulevard	Scenario	2B
Minor Street	Charles Lindbergh Parkway	Peak Hour	AM

Turn Movement Volumes

	NB	SB	EB	WB
Left	70	20	50	90
Through	50	80	100	140
Right	90	90	100	80
Total	210	190	250	310

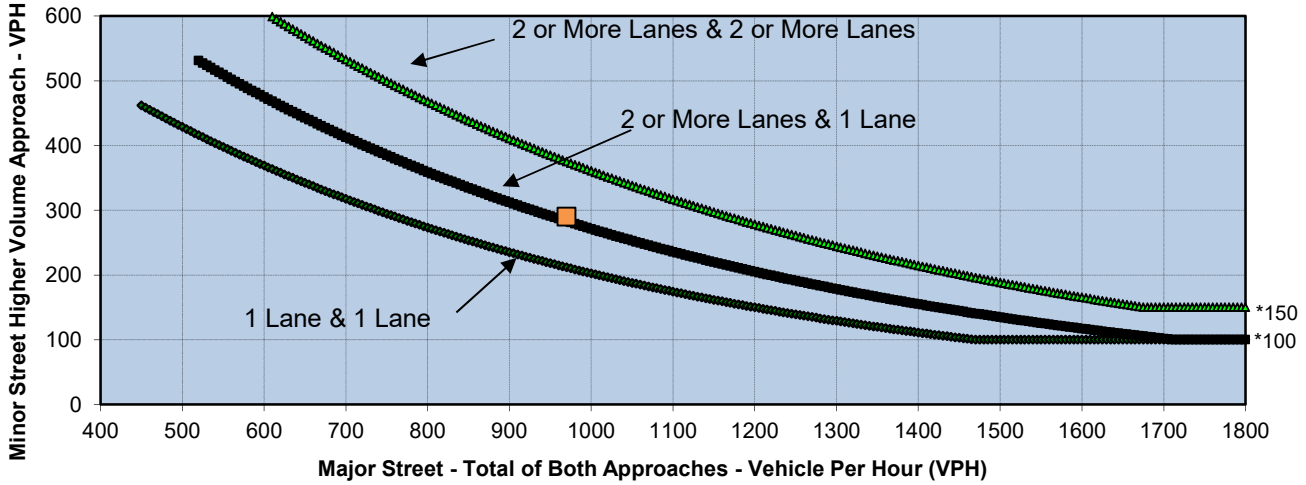
Major Street Direction

	North/South
X	East/West

	Major Street	Minor Street	Warrant Met
	Sports Arean Boulevard	Charles Lindbergh Parkway	
Number of Approach Lanes	**1**	**1**	**NO**
Traffic Volume (VPH) *	**560**	**210**	

Sheet No 2 of 2

Figure 4C-3
Warrant 3, Peak Hour



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Source: *California Manual on Uniform Traffic Control Devices*, Caltrans, 2006

#16

Major Street	Sports Arean Boulevard
Minor Street	Charles Lindbergh Parkway

Project	Midway & Old Town CPU
Scenario	2B
Peak Hour	PM

Turn Movement Volumes

	NB	SB	EB	WB
Left	70	90	90	130
Through	90	100	120	250
Right	120	100	310	70
Total	280	290	520	450

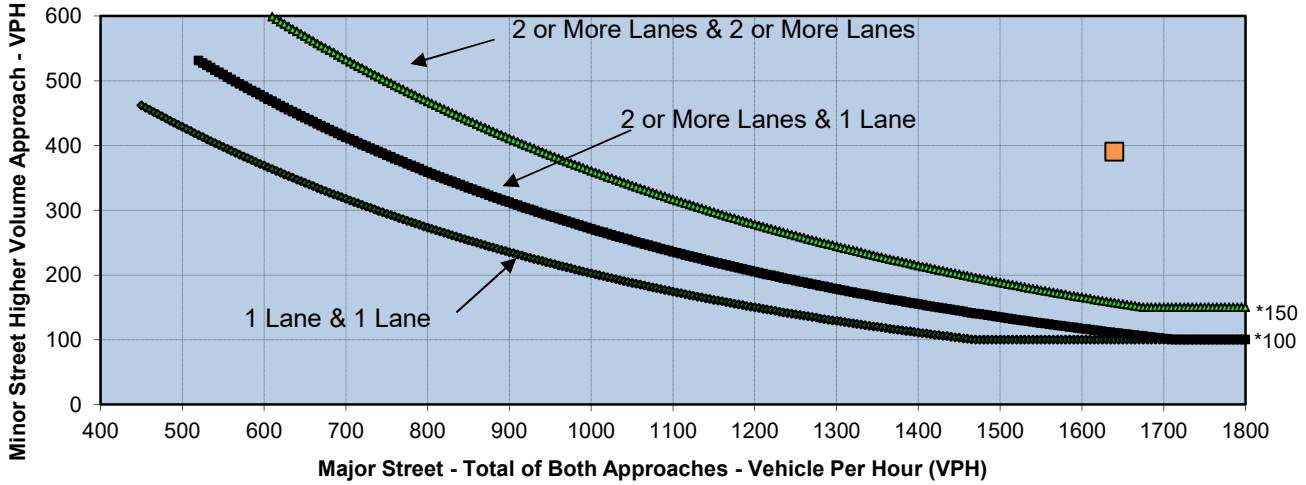
Major Street Direction

	North/South
X	East/West

	Major Street	Minor Street	Warrant Met
	Sports Arean Boulevard	Charles Lindbergh Parkway	
Number of Approach Lanes	1	1	YES
Traffic Volume (VPH) *	970	290	

Sheet No 1 of 2

Figure 4C-3
Warrant 3, Peak Hour



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Source: *California Manual on Uniform Traffic Control Devices*, Caltrans, 2006

#17

Major Street	Pacific Highway
Minor Street	Sports Arena Blvd

Project	Midway & Old Town CPU
Scenario	2B
Peak Hour	AM

Turn Movement Volumes

	NB	SB	EB	WB
Left	300	0	200	0
Through	610	600	0	0
Right	0	130	190	0
Total	910	730	390	0

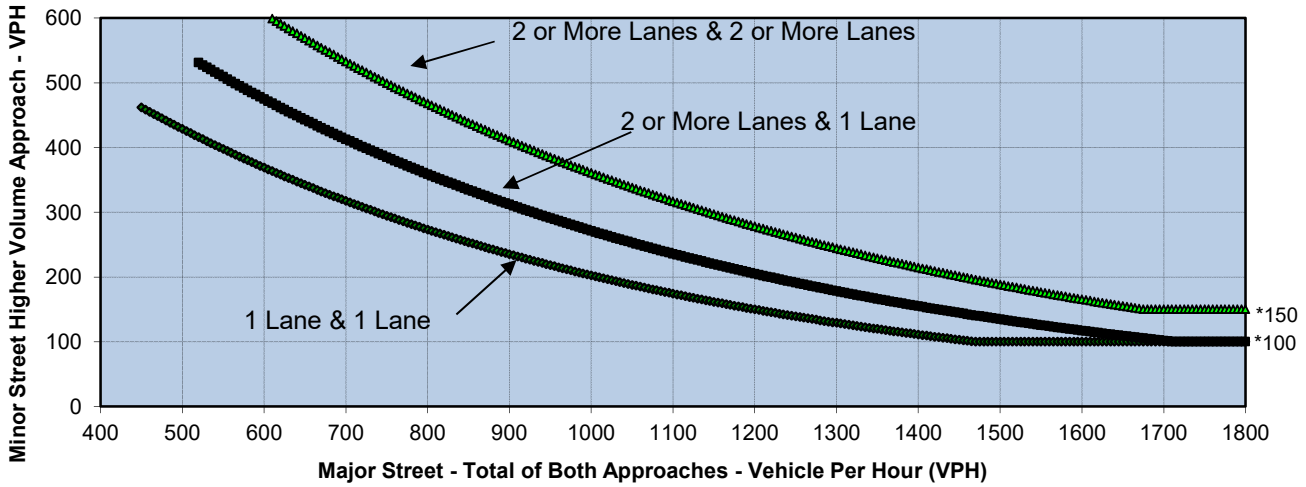
Major Street Direction

X	North/South
	East/West

	Major Street	Minor Street	Warrant Met
	Pacific Highway	Sports Arena Blvd	
Number of Approach Lanes	**3**	**1**	**YES**
Traffic Volume (VPH) *	**1,640**	**390**	

Sheet No 2 of 2

Figure 4C-3
Warrant 3, Peak Hour



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Source: *California Manual on Uniform Traffic Control Devices*, Caltrans, 2006

#17

Major Street	Pacific Highway
Minor Street	Sports Arena Blvd

Project	Midway & Old Town CPU
Scenario	2B
Peak Hour	PM

Turn Movement Volumes

	NB	SB	EB	WB
Left	290	0	50	0
Through	1,320	830	0	0
Right	0	50	480	0
Total	1,610	880	530	0

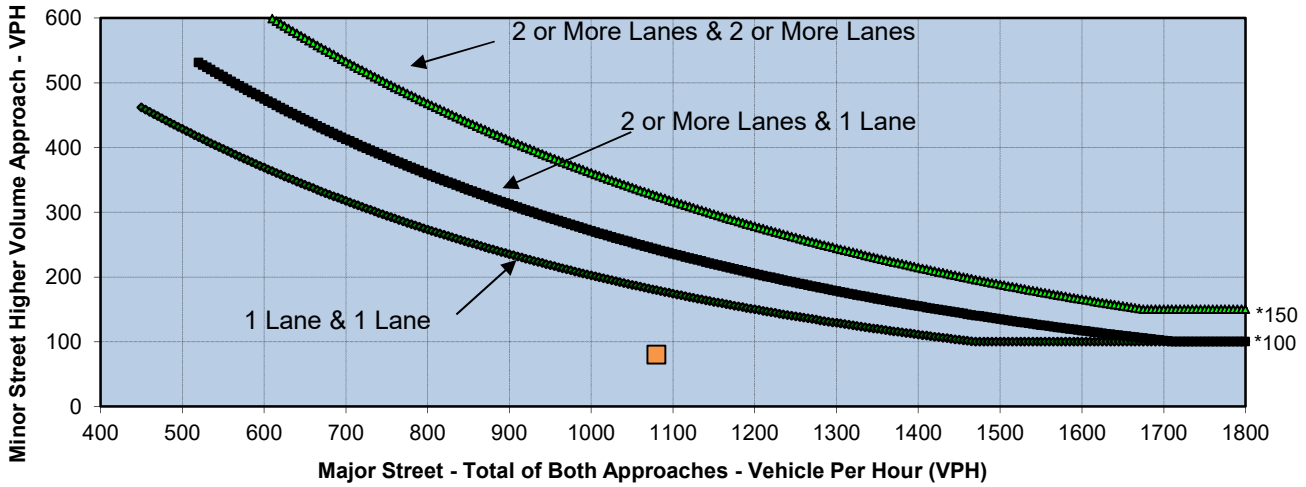
Major Street Direction

X	North/South
	East/West

	Major Street	Minor Street	Warrant Met
	Pacific Highway	Sports Arena Blvd	
Number of Approach Lanes	3	1	YES
Traffic Volume (VPH) *	2,490	530	

Sheet No 1 of 2

Figure 4C-3
Warrant 3, Peak Hour



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Source: *California Manual on Uniform Traffic Control Devices*, Caltrans, 2006

#18		Project	Midway & Old Town CPU
Major Street	Kurtz Street	Scenario	2B
Minor Street	Hancock Street	Peak Hour	AM

Turn Movement Volumes

	NB	SB	EB	WB
Left	0	0	30	460
Through	0	70	0	390
Right	0	10	100	100
Total	0	80	130	950

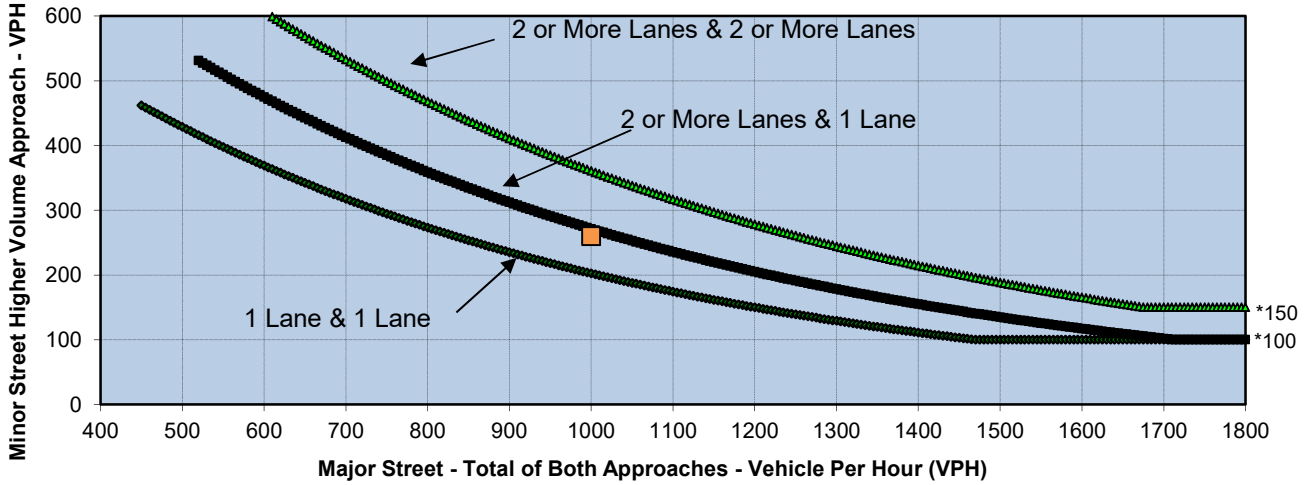
Major Street Direction

	North/South
X	East/West

	Major Street	Minor Street	Warrant Met
	Kurtz Street	Hancock Street	
Number of Approach Lanes	**1**	**1**	**NO**
Traffic Volume (VPH) *	**1,080**	**80**	

Sheet No 2 of 2

Figure 4C-3
Warrant 3, Peak Hour



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Source: *California Manual on Uniform Traffic Control Devices*, Caltrans, 2006

#18

Major Street	Kurtz Street
Minor Street	Hancock Street

Project	Midway & Old Town CPU
Scenario	2B
Peak Hour	PM

Turn Movement Volumes

	NB	SB	EB	WB
Left	0	0	100	300
Through	0	170	0	310
Right	0	90	140	150
Total	0	260	240	760

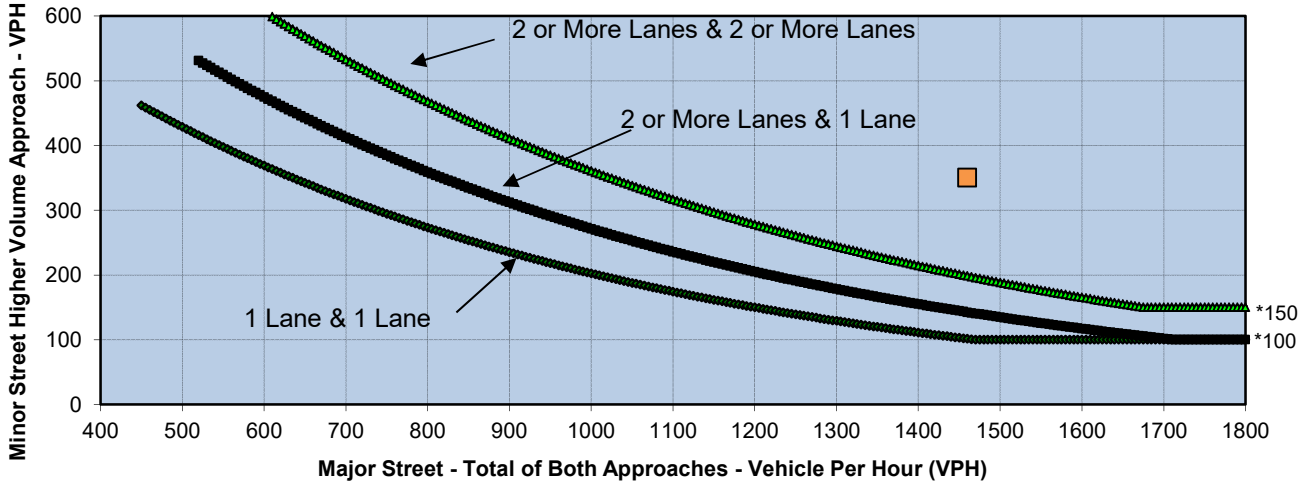
Major Street Direction

	North/South
X	East/West

	Major Street	Minor Street	Warrant Met
	Kurtz Street	Hancock Street	
Number of Approach Lanes	1	1	YES
Traffic Volume (VPH) *	1,000	260	

Sheet No 1 of 2

Figure 4C-3
Warrant 3, Peak Hour



* Note: 150 VPH APPLIES AS THE LOWER THRESHOLD VOLUME FOR A MINOR STREET APPROACH WITH TWO OR MORE LANES AND 100 VPH APPLIES AS THE LOWER THRESHOLD VOLUME FOR A MINOR STREET APPROACHING WITH ONE LANE.

Source: *California Manual on Uniform Traffic Control Devices*, Caltrans, 2006

#21

Major Street	Pacific Highway
Minor Street	Kurtz Street

Project	Midway & Old Town CPU
Scenario	2B
Peak Hour	AM

Turn Movement Volumes

	NB	SB	EB	WB
Left	350	0	110	0
Through	460	490	0	0
Right	0	160	240	0
Total	810	650	350	0

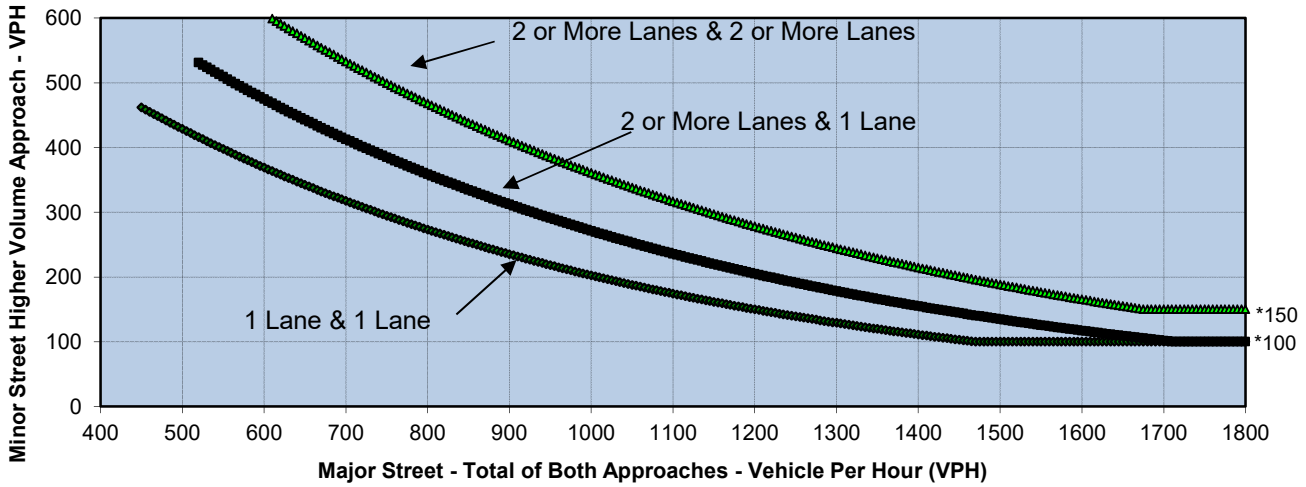
Major Street Direction

X	North/South
	East/West

	Major Street	Minor Street	Warrant Met
	Pacific Highway	Kurtz Street	
Number of Approach Lanes	**3**	**1**	**YES**
Traffic Volume (VPH) *	**1,460**	**350**	

Sheet No 2 of 2

Figure 4C-3
Warrant 3, Peak Hour



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Source: *California Manual on Uniform Traffic Control Devices*, Caltrans, 2006

#21

Major Street	Pacific Highway
Minor Street	Kurtz Street

Project	Midway & Old Town CPU
Scenario	2B
Peak Hour	PM

Turn Movement Volumes

	NB	SB	EB	WB
Left	490	0	230	0
Through	880	430	0	0
Right	0	100	450	0
Total	1,370	530	680	0

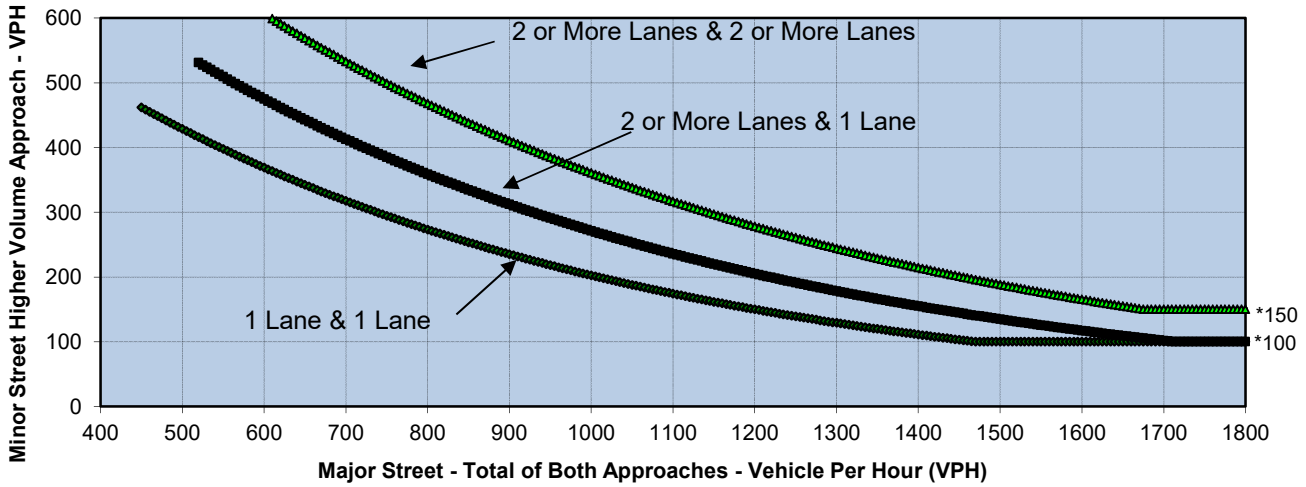
Major Street Direction

X	North/South
	East/West

	Major Street	Minor Street	Warrant Met
	Pacific Highway	Kurtz Street	
Number of Approach Lanes	3	1	YES
Traffic Volume (VPH) *	1,900	680	

Sheet No 1 of 2

Figure 4C-3
Warrant 3, Peak Hour



* Note: 150 VPH APPLIES AS THE LOWER THRESHOLD VOLUME FOR A MINOR STREET APPROACH WITH TWO OR MORE LANES AND 100 VPH APPLIES AS THE LOWER THRESHOLD VOLUME FOR A MINOR STREET APPROACHING WITH ONE LANE.

Source: *California Manual on Uniform Traffic Control Devices*, Caltrans, 2006

#62

Major Street	Kurtz Street
Minor Street	Greenwood Street

Project	Midway & Old Town CPU
Scenario	2B
Peak Hour	AM

Turn Movement Volumes

	NB	SB	EB	WB
Left	0	40	0	60
Through	0	320	20	90
Right	0	10	140	0
Total	0	370	160	150

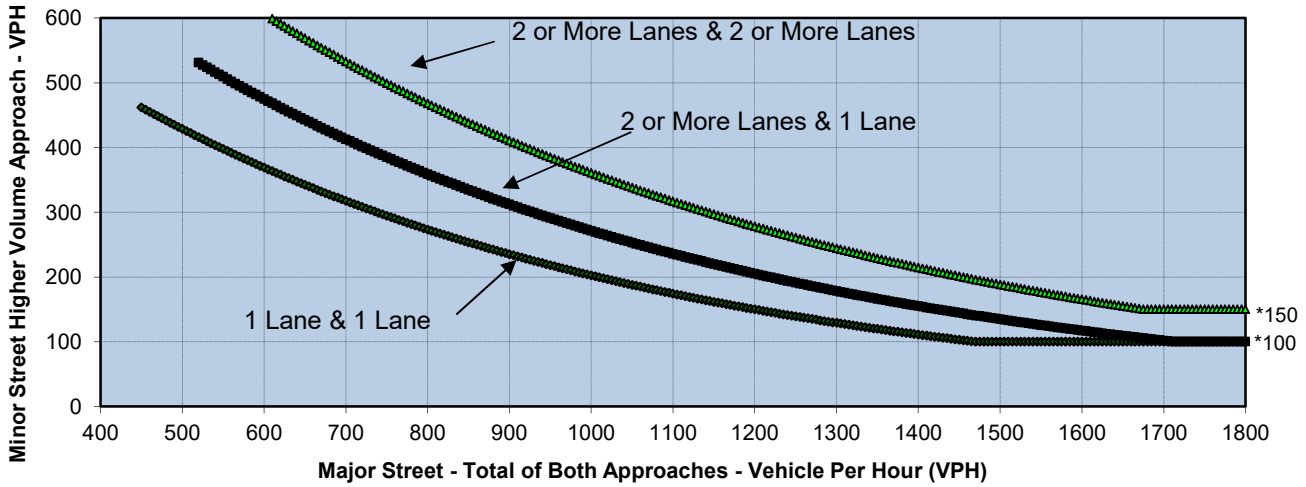
Major Street Direction

X	North/South
	East/West

	Major Street	Minor Street	Warrant Met
	Kurtz Street	Greenwood Street	
Number of Approach Lanes	**2**	**1**	**NO**
Traffic Volume (VPH) *	**370**	**160**	

Sheet No 2 of 2

Figure 4C-3
Warrant 3, Peak Hour



* Note: 150 VPH APPLIES AS THE LOWER THRESHOLD VOLUME FOR A MINOR STREET APPROACH WITH TWO OR MORE LANES AND 100 VPH APPLIES AS THE LOWER THRESHOLD VOLUME FOR A MINOR STREET APPROACHING WITH ONE LANE.

Source: *California Manual on Uniform Traffic Control Devices*, Caltrans, 2006

#62

Major Street	Kurtz Street
Minor Street	Greenwood Street

Project	Midway & Old Town CPU
Scenario	2B
Peak Hour	PM

Turn Movement Volumes

	NB	SB	EB	WB
Left	0	50	0	350
Through	0	820	30	340
Right	0	70	310	0
Total	0	940	340	690

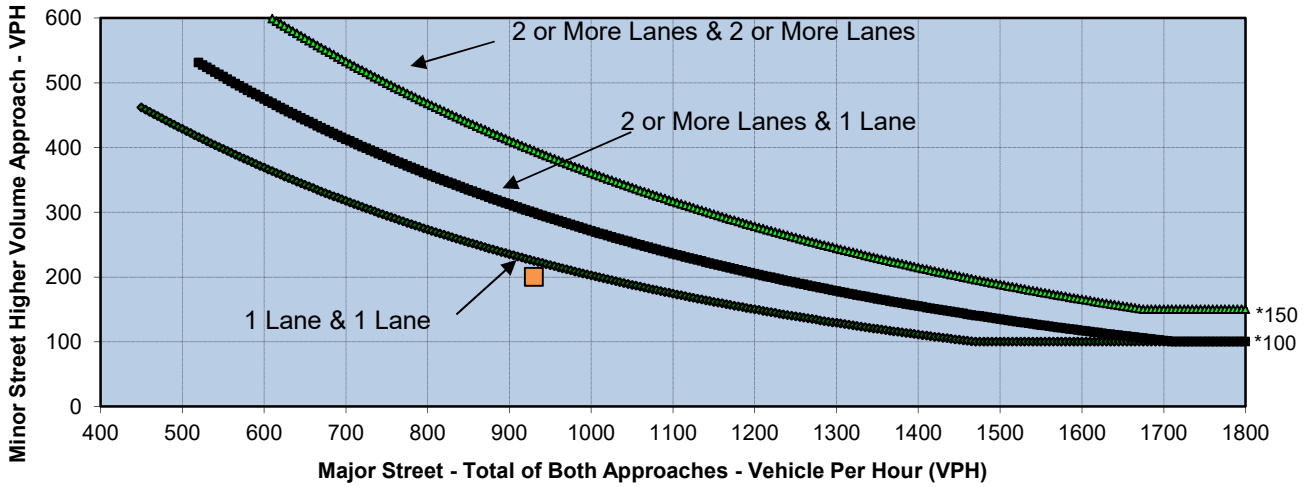
Major Street Direction

X	North/South
	East/West

	Major Street	Minor Street	Warrant Met
	Kurtz Street	Greenwood Street	
Number of Approach Lanes	2	1	YES
Traffic Volume (VPH) *	940	690	

Sheet No 1 of 2

Figure 4C-3
Warrant 3, Peak Hour



* Note: 150 VPH APPLIES AS THE LOWER THRESHOLD VOLUME FOR A MINOR STREET APPROACH WITH TWO OR MORE LANES AND 100 VPH APPLIES AS THE LOWER THRESHOLD VOLUME FOR A MINOR STREET APPROACHING WITH ONE LANE.

Source: *California Manual on Uniform Traffic Control Devices*, Caltrans, 2006

#63		Project	Midway & Old Town CPU
Major Street	Kurtz Street	Scenario	2B
Minor Street	Charles Lindbergh Parkway	Peak Hour	AM

Turn Movement Volumes

	NB	SB	EB	WB
Left	170	0	50	0
Through	330	370	0	0
Right	0	60	150	0
Total	500	430	200	0

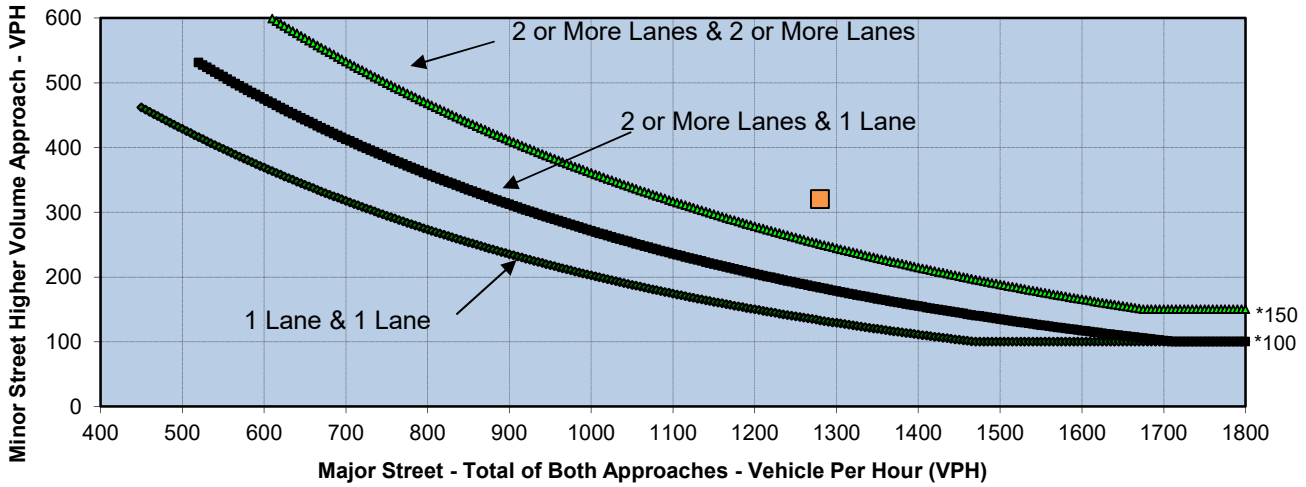
Major Street Direction

X	North/South
	East/West

	Major Street	Minor Street	Warrant Met
	Kurtz Street	Charles Lindbergh Parkway	
Number of Approach Lanes	**2**	**1**	**NO**
Traffic Volume (VPH) *	**930**	**200**	

Sheet No 2 of 2

Figure 4C-3
Warrant 3, Peak Hour



* Note: 150 VPH APPLIES AS THE LOWER THRESHOLD VOLUME FOR A MINOR STREET APPROACH WITH TWO OR MORE LANES AND 100 VPH APPLIES AS THE LOWER THRESHOLD VOLUME FOR A MINOR STREET APPROACHING WITH ONE LANE.

Source: *California Manual on Uniform Traffic Control Devices*, Caltrans, 2006

#63		Project	Midway & Old Town CPU
Major Street	Kurtz Street	Scenario	2B
Minor Street	Charles Lindbergh Parkway	Peak Hour	PM

Turn Movement Volumes

	NB	SB	EB	WB
Left	180	0	120	0
Through	370	480	0	0
Right	0	250	200	0
Total	550	730	320	0

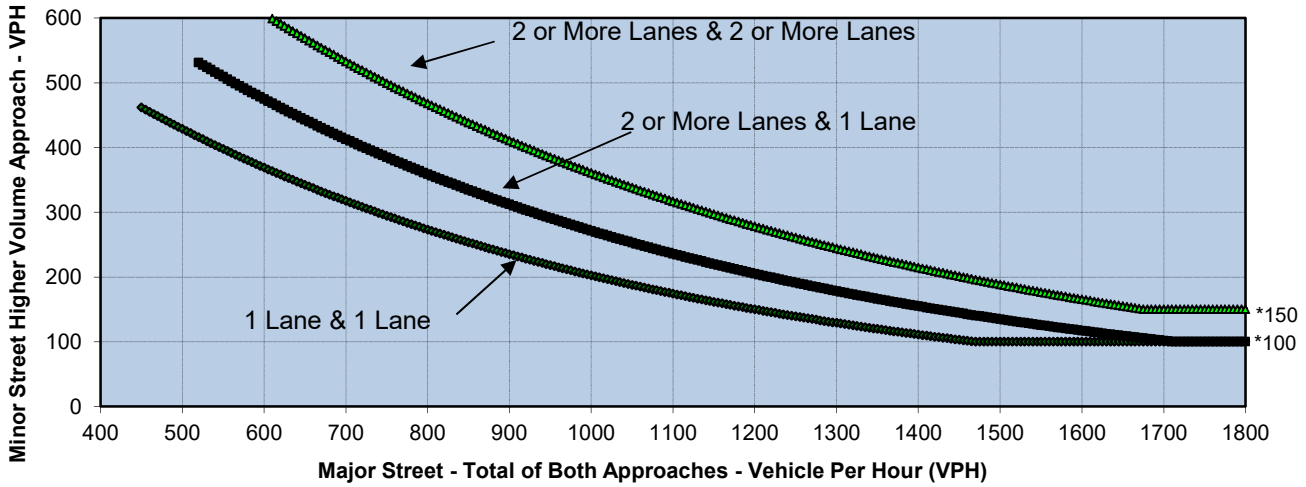
Major Street Direction

X	North/South
	East/West

	Major Street	Minor Street	Warrant Met
	Kurtz Street	Charles Lindbergh Parkway	
Number of Approach Lanes	2	1	YES
Traffic Volume (VPH) *	1,280	320	

Sheet No 1 of 2

Figure 4C-3
Warrant 3, Peak Hour



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Source: *California Manual on Uniform Traffic Control Devices*, Caltrans, 2006

#64		Project	Midway & Old Town CPU
Major Street	Barnett Avenue	Scenario	2B
Minor Street	Dutch Flats Parkway	Peak Hour	AM

Turn Movement Volumes

	NB	SB	EB	WB
Left	0	0	50	0
Through	0	150	670	1,420
Right	0	250	0	40
Total	0	400	720	1,460

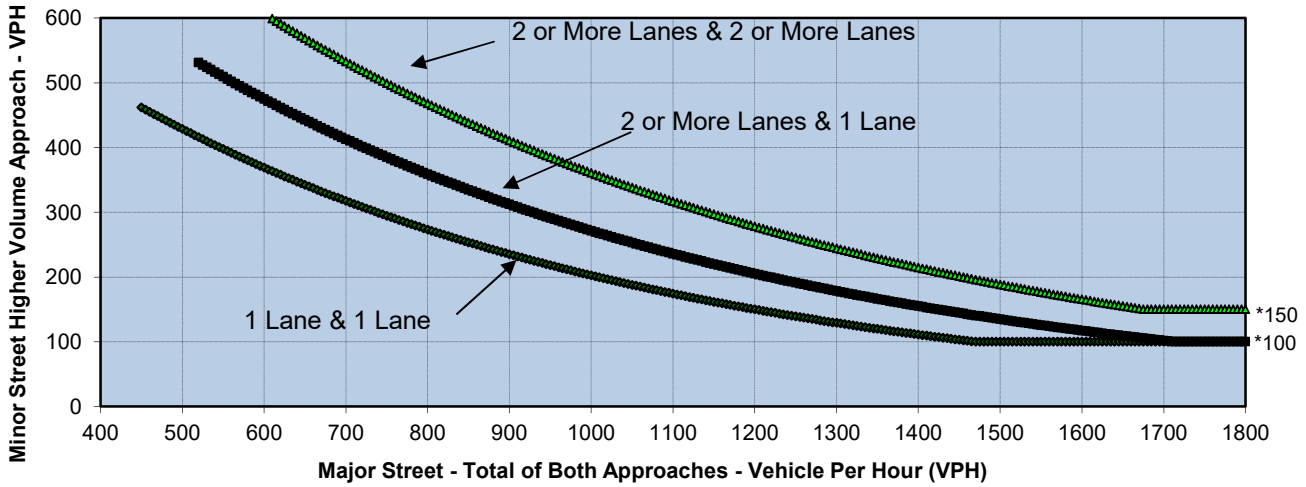
Major Street Direction

	North/South
X	East/West

	Major Street	Minor Street	Warrant Met
	Barnett Avenue	Dutch Flats Parkway	
Number of Approach Lanes	**2**	**1**	**YES**
Traffic Volume (VPH) *	**2,180**	**400**	

Sheet No 2 of 2

Figure 4C-3
Warrant 3, Peak Hour



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Source: *California Manual on Uniform Traffic Control Devices*, Caltrans, 2006

#64		Project	Midway & Old Town CPU
Major Street	Barnett Avenue	Scenario	2B
Minor Street	Dutch Flats Parkway	Peak Hour	PM

Turn Movement Volumes

	NB	SB	EB	WB
Left	0	0	60	0
Through	0	160	1,090	1,200
Right	0	240	0	70
Total	0	400	1,150	1,270

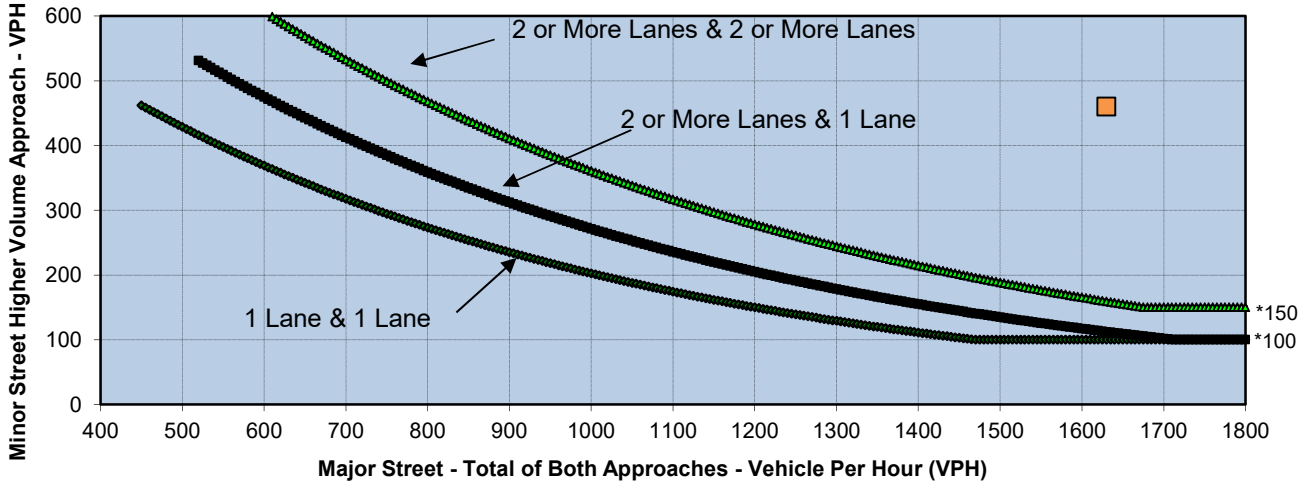
Major Street Direction

	North/South
X	East/West

	Major Street	Minor Street	Warrant Met
	Barnett Avenue	Dutch Flats Parkway	
Number of Approach Lanes	2	1	YES
Traffic Volume (VPH) *	2,420	400	

Sheet No 1 of 2

Figure 4C-3
Warrant 3, Peak Hour



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Source: *California Manual on Uniform Traffic Control Devices*, Caltrans, 2006

#65

Major Street	Midway Drive
Minor Street	Dutch Flats Parkway

Project	Midway & Old Town CPU
Scenario	2B
Peak Hour	AM

Turn Movement Volumes

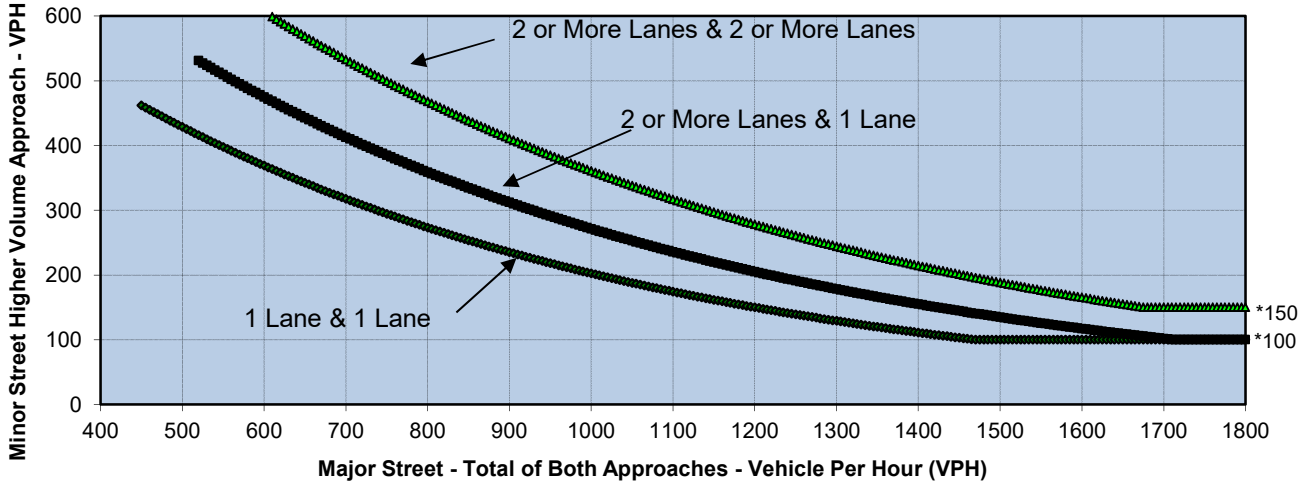
	NB	SB	EB	WB
Left	200	260	60	40
Through	400	450	10	180
Right	130	190	100	240
Total	730	900	170	460

Major Street Direction

X	North/South
	East/West

	Major Street	Minor Street	Warrant Met
	Midway Drive	Dutch Flats Parkway	
Number of Approach Lanes	**2**	**1**	**YES**
Traffic Volume (VPH) *	**1,630**	**460**	

Figure 4C-3
Warrant 3, Peak Hour



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Source: *California Manual on Uniform Traffic Control Devices*, Caltrans, 2006

#65

Major Street	Midway Drive
Minor Street	Dutch Flats Parkway

Project	Midway & Old Town CPU
Scenario	2B
Peak Hour	PM

Turn Movement Volumes

	NB	SB	EB	WB
Left	160	210	110	60
Through	510	520	20	110
Right	370	150	80	280
Total	1,040	880	210	450

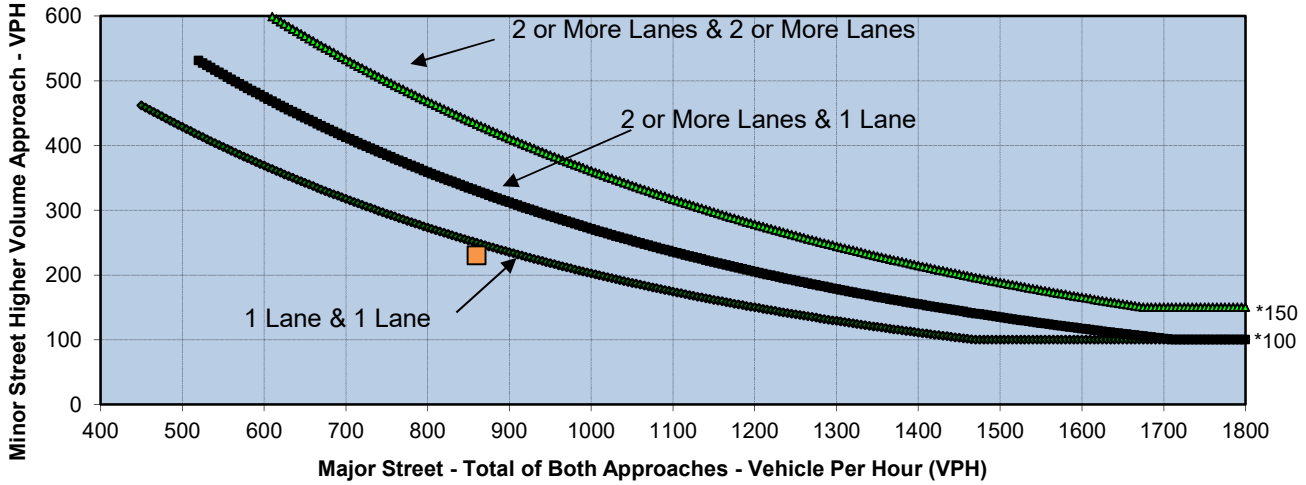
Major Street Direction

X	North/South
	East/West

	Major Street	Minor Street	Warrant Met
	Midway Drive	Dutch Flats Parkway	
Number of Approach Lanes	2	1	YES
Traffic Volume (VPH) *	1,920	450	

Sheet No 1 of 2

Figure 4C-3
Warrant 3, Peak Hour



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Source: *California Manual on Uniform Traffic Control Devices*, Caltrans, 2006

#66

Major Street	Sports Arena Boulevard
Minor Street	Dutch Flats Parkway

Project	Midway & Old Town CPU
Scenario	2B
Peak Hour	AM

Turn Movement Volumes

	NB	SB	EB	WB
Left	370	0	30	0
Through	210	190	0	0
Right	0	90	200	0
Total	580	280	230	0

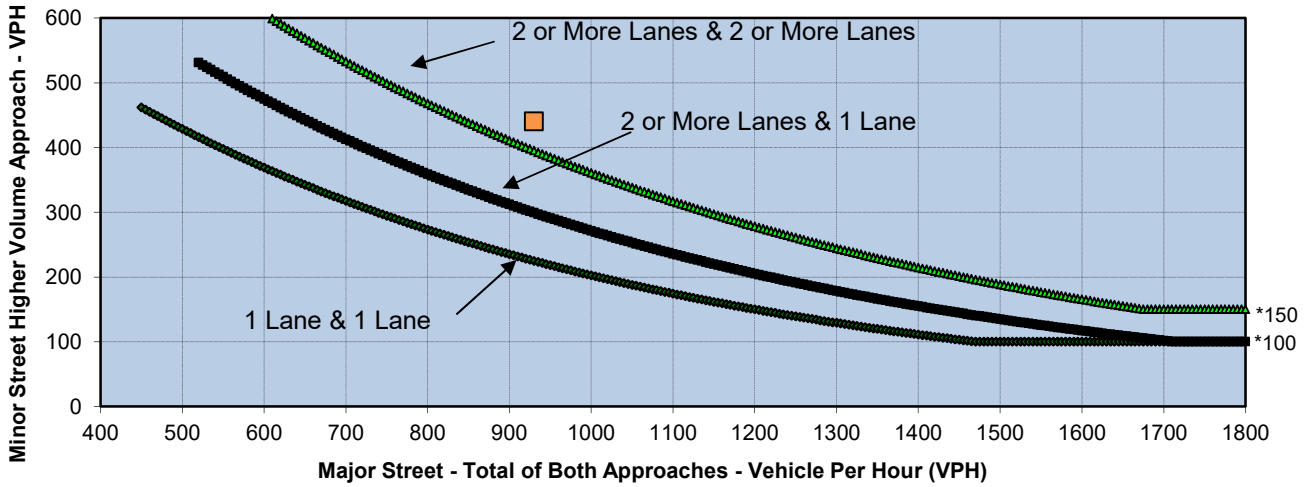
Major Street Direction

X	North/South
	East/West

	Major Street	Minor Street	Warrant Met
	Sports Arena Boulevard	Dutch Flats Parkway	
Number of Approach Lanes	**1**	**1**	**NO**
Traffic Volume (VPH) *	**860**	**230**	

Sheet No 2 of 2

Figure 4C-3
Warrant 3, Peak Hour



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Source: *California Manual on Uniform Traffic Control Devices*, Caltrans, 2006

#66		Project	Midway & Old Town CPU
Major Street	Sports Arena Boulevard	Scenario	2B
Minor Street	Dutch Flats Parkway	Peak Hour	PM

Turn Movement Volumes

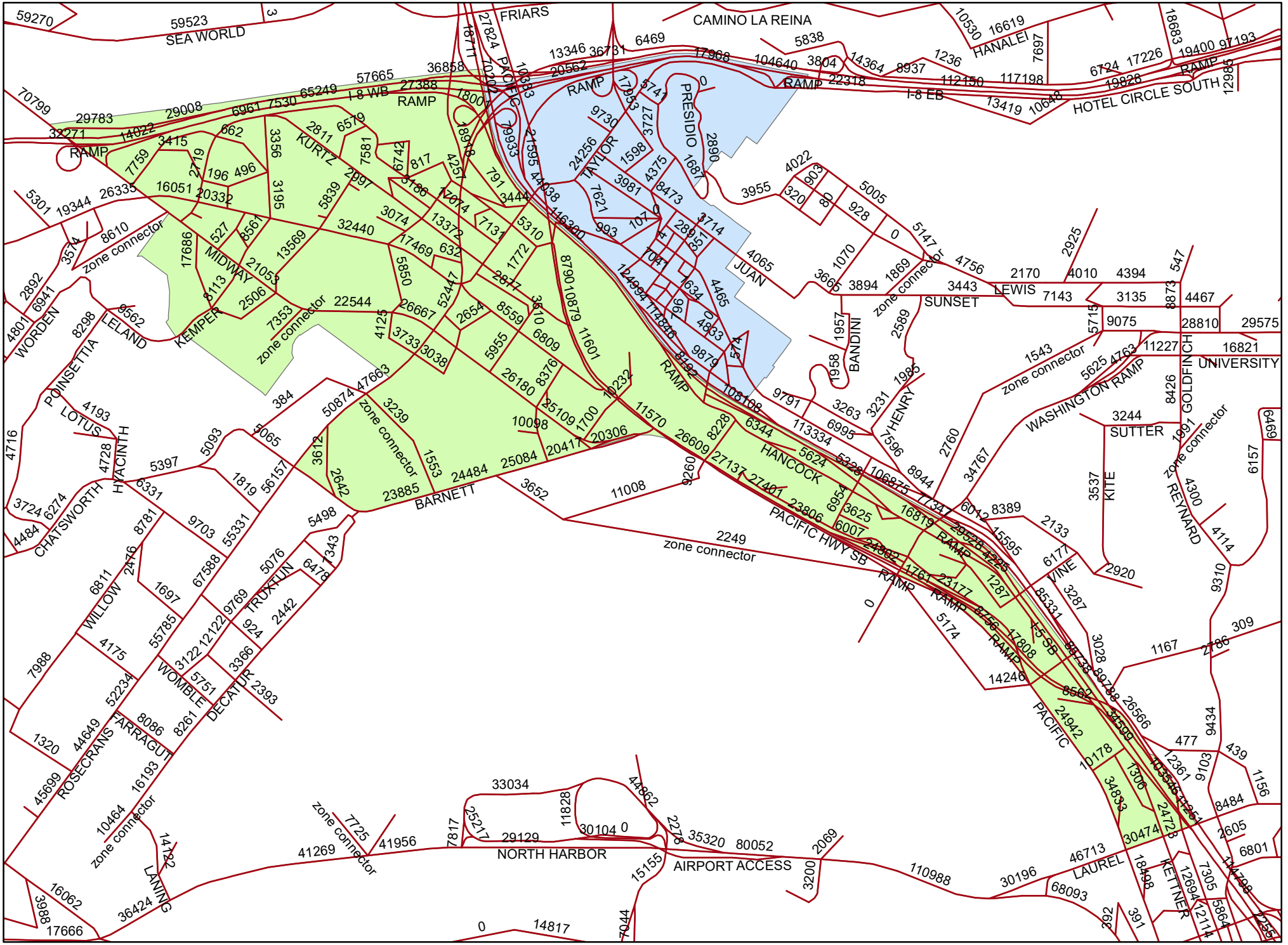
	NB	SB	EB	WB
Left	200	0	180	0
Through	140	270	0	0
Right	0	320	260	0
Total	340	590	440	0

Major Street Direction

X	North/South
	East/West

	Major Street	Minor Street	Warrant Met
	Sports Arena Boulevard	Dutch Flats Parkway	
Number of Approach Lanes	1	1	YES
Traffic Volume (VPH) *	930	440	

Appendix D
SANDAG Series 12 Model Outputs, Documentation and VMT Analysis



Midway-Pacific Highway and Old Town Community Plan

Scenario 2B

VMT Analysis

	Base Year 2008										
	SF (1)			MF			Mobile Homes				Estimated
	VR(2)	PPH(3)	SFDU	VR(2)	PPH(3)	MFDU	VR(2)	PPH(3)	MHDU	TOTAL DU	Populatio
Midway	2.00%	1.78	1,274	3.10%	1.78	484	0.00%	1.78		1,758	3,057
Old Town	6.90%	1.62	229	7.10%	1.62	25	0.00%	1.62	-	254	383

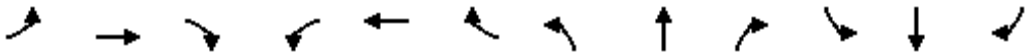
	Preferred CPU - Buildout for Communities, Year 2035 for Region										
	SF (1)			MF			Mobile Homes				Estimated
	VR(4)	PPH(5)	SFDU	VR(4)	PPH(5)	MFDU	VR(4)	PPH(5)	MHDU	TOTAL DU	Populatio
Midway	1.70%	1.82	-	2.40%	1.82	11,415	0.00%	1.82		11,415	20,277
Old Town	0.00%	1.66	79	5.10%	1.66	1,253	0.00%	1.66	-	1,332	2,105

	Delta (CPU Buildout for SESD & Encanto, Year 2035 for Region) - Base Year (2008)						
	DELTAS				Percent increase	Estimated Population Increase	Percent Increase
	SFDU	MFDU	MHDU	Total DU			
Midway	-1274	10931	0	9657	5.493174	17219.5143	5.632486
Old Town	-150	1228	0	1078	4.244094	1722.03414	4.496092

(1) Single family includes detached single family and multi-unit single family
(2) Vacancy Rate data for 2010 per SANDAG Community Profiles
(3) Persons Per Household data for 2010 per SANDAG Community Profiles
(4) Vacancy Rate data for 2050 per SANDAG Community Profiles
(5) Persons Per Household data for 2050 per SANDAG Community Profiles

Appendix E
Peak Hour Intersection Calculation Worksheets and Queuing Reports

Peak Hour Intersection Calculation Worksheets



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	60	1140	400	160	1330	180	480	400	150	580	280	120
Future Volume (vph)	60	1140	400	160	1330	180	480	400	150	580	280	120
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	
Lane Util. Factor	1.00	0.91	1.00	0.97	0.95	1.00	0.97	1.00	1.00	1.00	1.00	
Frpb, ped/bikes	1.00	1.00	0.99	1.00	1.00	0.95	1.00	1.00	0.98	1.00	1.00	
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.96	
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)	1770	5085	1563	3433	3539	1497	3433	1863	1559	1770	1771	
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (perm)	1770	5085	1563	3433	3539	1497	3433	1863	1559	1770	1771	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	65	1239	435	174	1446	196	522	435	163	630	304	130
RTOR Reduction (vph)	0	0	286	0	0	85	0	0	99	0	12	0
Lane Group Flow (vph)	65	1239	149	174	1446	111	522	435	64	630	422	0
Confl. Peds. (#/hr)	8					8			3	3		
Confl. Bikes (#/hr)			1			5						3
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases			2			6			8			
Actuated Green, G (s)	4.0	37.7	37.7	10.8	44.4	44.4	31.4	33.2	33.2	35.8	35.8	
Effective Green, g (s)	4.4	39.0	39.0	11.2	45.8	45.8	31.8	34.0	34.0	34.8	37.0	
Actuated g/C Ratio	0.03	0.29	0.29	0.08	0.34	0.34	0.24	0.25	0.25	0.26	0.27	
Clearance Time (s)	4.4	5.3	5.3	4.4	5.4	5.4	4.4	4.8	4.8	3.0	5.2	
Vehicle Extension (s)	2.0	4.4	4.4	2.0	4.4	4.4	2.0	3.8	3.8	2.0	2.0	
Lane Grp Cap (vph)	57	1469	451	284	1200	507	808	469	392	456	485	
v/s Ratio Prot	c0.04	0.24		0.05	c0.41		0.15	c0.23		c0.36	0.24	
v/s Ratio Perm			0.10			0.07			0.04			
v/c Ratio	1.14	0.84	0.33	0.61	1.21	0.22	0.65	0.93	0.16	1.38	0.87	
Uniform Delay, d1	65.3	45.1	37.7	59.8	44.6	31.8	46.5	49.3	39.4	50.1	46.7	
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	162.7	6.1	2.0	2.7	100.4	1.0	1.3	24.8	0.3	185.0	14.8	
Delay (s)	228.0	51.2	39.7	62.5	145.0	32.8	47.9	74.1	39.7	235.1	61.5	
Level of Service	F	D	D	E	F	C	D	E	D	F	E	
Approach Delay (s)		54.9			125.0			56.9			164.3	
Approach LOS		D			F			E			F	

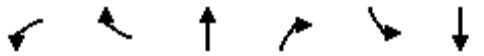
Intersection Summary			
HCM 2000 Control Delay	97.7	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.17		
Actuated Cycle Length (s)	135.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	107.3%	ICU Level of Service	G
Analysis Period (min)	15		

c Critical Lane Group

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	550	1190	370	0	0	660
Future Volume (vph)	550	1190	370	0	0	660
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	7.0	7.0	7.0			7.0
Lane Util. Factor	0.97	0.88	0.95			0.95
Frt	1.00	0.85	1.00			1.00
Flt Protected	0.95	1.00	1.00			1.00
Satd. Flow (prot)	3433	2787	3539			3539
Flt Permitted	0.95	1.00	1.00			1.00
Satd. Flow (perm)	3433	2787	3539			3539
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	598	1293	402	0	0	717
RTOR Reduction (vph)	0	301	0	0	0	0
Lane Group Flow (vph)	598	992	402	0	0	717
Turn Type	Prot	Perm	NA			NA
Protected Phases	4		2			6
Permitted Phases		4				
Actuated Green, G (s)	19.7	19.7	13.1			13.1
Effective Green, g (s)	19.7	19.7	13.1			13.1
Actuated g/C Ratio	0.42	0.42	0.28			0.28
Clearance Time (s)	7.0	7.0	7.0			7.0
Vehicle Extension (s)	0.2	0.2	0.2			0.2
Lane Grp Cap (vph)	1445	1173	990			990
v/s Ratio Prot	0.17		0.11			c0.20
v/s Ratio Perm		c0.36				
v/c Ratio	0.41	0.85	0.41			0.72
Uniform Delay, d1	9.5	12.2	13.7			15.2
Progression Factor	1.00	1.00	1.00			1.00
Incremental Delay, d2	0.1	5.5	0.1			2.3
Delay (s)	9.6	17.7	13.8			17.5
Level of Service	A	B	B			B
Approach Delay (s)	15.1		13.8			17.5
Approach LOS	B		B			B

Intersection Summary			
HCM 2000 Control Delay	15.5	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.80		
Actuated Cycle Length (s)	46.8	Sum of lost time (s)	14.0
Intersection Capacity Utilization	63.5%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group



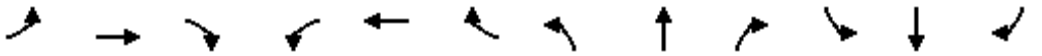
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	0	130	970	240	0	1210
Future Volume (Veh/h)	0	130	970	240	0	1210
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	141	1054	261	0	1315
Pedestrians						3
Lane Width (ft)						12.0
Walking Speed (ft/s)						4.0
Percent Blockage						0
Right turn flare (veh)						
Median type			None			None
Median storage veh)						
Upstream signal (ft)			810			780
pX, platoon unblocked	0.97	0.97			0.97	
vC, conflicting volume	1623	485			1315	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1489	346			1205	
tC, single (s)	6.8	6.9			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	100	78			100	
cM capacity (veh/h)	111	627			556	

Direction, Lane #	WB 1	NB 1	NB 2	NB 3	SB 1	SB 2	SB 3
Volume Total	141	422	422	472	438	438	438
Volume Left	0	0	0	0	0	0	0
Volume Right	141	0	0	261	0	0	0
cSH	627	1700	1700	1700	1700	1700	1700
Volume to Capacity	0.22	0.25	0.25	0.28	0.26	0.26	0.26
Queue Length 95th (ft)	21	0	0	0	0	0	0
Control Delay (s)	12.4	0.0	0.0	0.0	0.0	0.0	0.0
Lane LOS	B						
Approach Delay (s)	12.4	0.0			0.0		
Approach LOS	B						

Intersection Summary			
Average Delay	0.6		
Intersection Capacity Utilization	39.6%	ICU Level of Service	A
Analysis Period (min)	15		

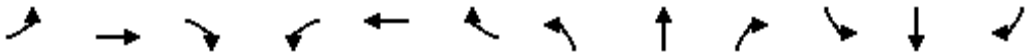
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	450	300	280	30	140	300	180	460	50	440	520	250
Future Volume (vph)	450	300	280	30	140	300	180	460	50	440	520	250
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.1	4.0	3.1	3.0	4.0	4.0	3.1	4.0		3.1	4.0	4.0
Lane Util. Factor	1.00	1.00	1.00	1.00	0.95	1.00	1.00	0.95		1.00	0.95	1.00
Frpb, ped/bikes	1.00	1.00	0.99	1.00	1.00	0.99	1.00	1.00		1.00	1.00	0.99
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.99		1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1770	1863	1565	1770	3539	1574	1770	3482		1770	3539	1566
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)	1770	1863	1565	1770	3539	1574	1770	3482		1770	3539	1566
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	489	326	304	33	152	326	196	500	54	478	565	272
RTOR Reduction (vph)	0	0	58	0	0	44	0	6	0	0	0	124
Lane Group Flow (vph)	489	326	246	33	152	282	196	548	0	478	565	148
Confl. Peds. (#/hr)			4			3			5			8
Turn Type	Prot	NA	pm+ov	Prot	NA	pm+ov	Prot	NA		Prot	NA	pm+ov
Protected Phases	5	2	3	1	6	7	3	8		7	4	5
Permitted Phases			2			6						4
Actuated Green, G (s)	30.3	46.1	64.0	3.4	19.1	48.4	17.9	24.2		29.3	35.6	65.9
Effective Green, g (s)	31.2	47.0	65.8	4.4	20.1	48.4	18.8	25.1		30.2	36.5	65.9
Actuated g/C Ratio	0.26	0.39	0.54	0.04	0.17	0.40	0.16	0.21		0.25	0.30	0.55
Clearance Time (s)	4.0	4.9	4.0	4.0	5.0	4.0	4.0	4.9		4.0	4.9	4.0
Vehicle Extension (s)	3.0	0.2	3.0	3.0	8.0	3.0	3.0	3.1		3.0	5.5	3.0
Lane Grp Cap (vph)	457	724	852	64	588	630	275	723		442	1069	854
v/s Ratio Prot	c0.28	c0.18	0.04	0.02	0.04	0.11	0.11	c0.16		c0.27	0.16	0.04
v/s Ratio Perm			0.11			0.07						0.05
v/c Ratio	1.07	0.45	0.29	0.52	0.26	0.45	0.71	0.76		1.08	0.53	0.17
Uniform Delay, d1	44.8	27.3	14.9	57.2	43.9	26.4	48.4	45.0		45.3	35.0	13.8
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	62.1	0.2	0.2	6.9	1.0	0.5	8.4	4.6		66.5	1.0	0.1
Delay (s)	106.9	27.5	15.0	64.0	44.9	26.9	56.9	49.6		111.8	36.0	13.9
Level of Service	F	C	B	E	D	C	E	D		F	D	B
Approach Delay (s)		58.8			34.7			51.5			59.0	
Approach LOS		E			C			D			E	

Intersection Summary			
HCM 2000 Control Delay	54.0	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.91		
Actuated Cycle Length (s)	120.8	Sum of lost time (s)	16.0
Intersection Capacity Utilization	86.3%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			



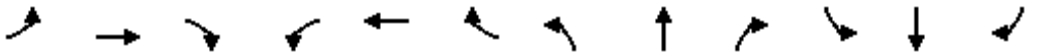
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	110	110	110	90	110	170	80	320	50	90	410	90
Future Volume (vph)	110	110	110	90	110	170	80	320	50	90	410	90
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0
Lane Util. Factor	0.95	0.95	1.00	1.00	1.00	1.00	0.97	0.95		1.00	0.95	1.00
Frpb, ped/bikes	1.00	1.00	0.98	1.00	1.00	0.98	1.00	1.00		1.00	1.00	1.00
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.98		1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1681	1770	1556	1770	1863	1551	3433	3459		1770	3539	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)	1681	1770	1556	1770	1863	1551	3433	3459		1770	3539	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	120	120	120	98	120	185	87	348	54	98	446	98
RTOR Reduction (vph)	0	0	96	0	0	158	0	7	0	0	0	48
Lane Group Flow (vph)	120	120	25	98	120	27	87	395	0	98	446	50
Confl. Peds. (#/hr)			12			8			5			
Turn Type	Split	NA	pm+ov	Split	NA	Perm	Prot	NA		Prot	NA	Perm
Protected Phases	8	8	1	7	7		1	6		5	2	
Permitted Phases			8			7						2
Actuated Green, G (s)	17.0	17.0	23.7	16.5	16.5	16.5	6.7	55.1		12.3	60.7	60.7
Effective Green, g (s)	17.9	17.9	24.5	17.4	17.4	17.4	7.1	56.0		12.7	61.6	61.6
Actuated g/C Ratio	0.15	0.15	0.20	0.14	0.14	0.14	0.06	0.47		0.11	0.51	0.51
Clearance Time (s)	4.9	4.9	4.4	4.9	4.9	4.9	4.4	4.9		4.4	4.9	4.9
Vehicle Extension (s)	3.0	3.0	2.0	3.0	3.0	3.0	2.0	4.5		2.0	4.6	4.6
Lane Grp Cap (vph)	250	264	317	256	270	224	203	1614		187	1816	812
v/s Ratio Prot	c0.07	0.07	0.00	0.06	c0.06		0.03	0.11		c0.06	c0.13	
v/s Ratio Perm			0.01			0.02						0.03
v/c Ratio	0.48	0.45	0.08	0.38	0.44	0.12	0.43	0.24		0.52	0.25	0.06
Uniform Delay, d1	46.8	46.6	38.6	46.4	46.9	44.6	54.5	19.3		50.8	16.3	14.7
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.25	0.71	0.71
Incremental Delay, d2	1.5	1.2	0.0	1.0	1.2	0.2	0.5	0.4		1.0	0.3	0.1
Delay (s)	48.2	47.8	38.6	47.4	48.1	44.9	55.0	19.6		64.6	11.8	10.5
Level of Service	D	D	D	D	D	D	E	B		E	B	B
Approach Delay (s)		44.9			46.4			25.9			19.6	
Approach LOS		D			D			C			B	

Intersection Summary			
HCM 2000 Control Delay	31.8	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.36		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	58.9%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	30	20	20	30	20	30	60	660	90	30	550	10
Future Volume (vph)	30	20	20	30	20	30	60	660	90	30	550	10
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0			4.0		4.0	4.0		4.0	4.0	
Lane Util. Factor		1.00			1.00		1.00	0.95		1.00	0.95	
Frpb, ped/bikes		1.00			0.99		1.00	1.00		1.00	1.00	
Flpb, ped/bikes		1.00			1.00		1.00	1.00		1.00	1.00	
Frt		0.96			0.95		1.00	0.98		1.00	1.00	
Flt Protected		0.98			0.98		0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1746			1724		1770	3475		1770	3528	
Flt Permitted		0.84			0.84		0.40	1.00		0.33	1.00	
Satd. Flow (perm)		1506			1482		741	3475		609	3528	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	33	22	22	33	22	33	65	717	98	33	598	11
RTOR Reduction (vph)	0	19	0	0	28	0	0	13	0	0	1	0
Lane Group Flow (vph)	0	58	0	0	60	0	65	802	0	33	608	0
Confl. Peds. (#/hr)			1			10						3
Turn Type	Perm	NA		Perm	NA		pm+pt	NA		pm+pt	NA	
Protected Phases		8			4		1	6		5	2	
Permitted Phases	8			4			6			2		
Actuated Green, G (s)		5.2			5.2		22.6	21.2		20.8	20.3	
Effective Green, g (s)		6.1			6.1		23.4	22.1		21.6	21.2	
Actuated g/C Ratio		0.15			0.15		0.57	0.54		0.53	0.52	
Clearance Time (s)		4.9			4.9		4.4	4.9		4.4	4.9	
Vehicle Extension (s)		2.0			2.0		2.0	2.9		2.0	2.9	
Lane Grp Cap (vph)		223			219		466	1868		345	1819	
v/s Ratio Prot							c0.01	c0.23		0.00	0.17	
v/s Ratio Perm		0.04			c0.04		0.07			0.05		
v/c Ratio		0.26			0.27		0.14	0.43		0.10	0.33	
Uniform Delay, d1		15.5			15.5		4.0	5.7		4.7	5.8	
Progression Factor		1.00			1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2		0.2			0.2		0.1	0.2		0.0	0.1	
Delay (s)		15.7			15.8		4.0	5.9		4.8	5.9	
Level of Service		B			B		A	A		A	A	
Approach Delay (s)		15.7			15.8			5.7			5.9	
Approach LOS		B			B			A			A	

Intersection Summary			
HCM 2000 Control Delay	6.8	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.39		
Actuated Cycle Length (s)	41.1	Sum of lost time (s)	12.0
Intersection Capacity Utilization	43.4%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	220	1470	180	340	1820	300	120	330	210	230	280	180
Future Volume (vph)	220	1470	180	340	1820	300	120	330	210	230	280	180
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0	4.4	4.0	4.0	3.5	4.0	4.0	3.5
Lane Util. Factor	0.97	0.91		0.97	0.91	1.00	1.00	0.95	1.00	0.97	0.95	1.00
Frpb, ped/bikes	1.00	1.00		1.00	1.00	0.98	1.00	1.00	0.97	1.00	1.00	0.98
Flpb, ped/bikes	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.98		1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	4979		3433	5085	1544	1770	3539	1541	3433	3539	1554
Flt Permitted	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	4979		3433	5085	1544	1770	3539	1541	3433	3539	1554
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	239	1598	196	370	1978	326	130	359	228	250	304	196
RTOR Reduction (vph)	0	13	0	0	0	76	0	0	78	0	0	79
Lane Group Flow (vph)	239	1781	0	370	1978	250	130	359	150	250	304	117
Confl. Peds. (#/hr)	14		25	25		14	18		27	27		14
Turn Type	Prot	NA		Prot	NA	pm+ov	Prot	NA	pm+ov	Prot	NA	pm+ov
Protected Phases	5	2		1	6	7	3	8	1	7	4	5
Permitted Phases						6			8			4
Actuated Green, G (s)	8.8	43.2		9.8	44.3	53.5	8.5	24.0	33.8	9.2	24.7	33.5
Effective Green, g (s)	9.2	44.3		10.2	45.3	53.5	8.9	24.9	35.6	9.6	25.6	35.3
Actuated g/C Ratio	0.09	0.42		0.10	0.43	0.51	0.08	0.24	0.34	0.09	0.24	0.34
Clearance Time (s)	4.4	5.1		4.4	5.0	4.4	4.4	4.9	4.4	4.4	4.9	4.4
Vehicle Extension (s)	2.0	3.5		2.0	3.7	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lane Grp Cap (vph)	300	2100		333	2193	786	150	839	573	313	862	522
v/s Ratio Prot	0.07	c0.36		0.11	c0.39	0.03	c0.07	c0.10	0.03	c0.07	0.09	0.02
v/s Ratio Perm						0.13			0.07			0.05
v/c Ratio	0.80	0.85		1.11	0.90	0.32	0.87	0.43	0.26	0.80	0.35	0.22
Uniform Delay, d1	47.0	27.3		47.4	27.8	15.1	47.5	34.0	25.2	46.8	32.8	25.0
Progression Factor	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	12.8	4.5		82.7	6.6	0.1	36.3	0.1	0.1	12.4	0.1	0.1
Delay (s)	59.8	31.8		130.1	34.4	15.2	83.8	34.1	25.3	59.2	32.9	25.1
Level of Service	E	C		F	C	B	F	C	C	E	C	C
Approach Delay (s)		35.1			45.3			40.3			39.6	
Approach LOS		D			D			D			D	

Intersection Summary			
HCM 2000 Control Delay	40.7	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.81		
Actuated Cycle Length (s)	105.0	Sum of lost time (s)	16.4
Intersection Capacity Utilization	81.8%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	120	30	600	90	150	680
Future Volume (vph)	120	30	600	90	150	680
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.5		4.5		4.5	4.5
Lane Util. Factor	1.00		0.95		1.00	0.95
Frt	0.97		0.98		1.00	1.00
Flt Protected	0.96		1.00		0.95	1.00
Satd. Flow (prot)	1742		3470		1770	3539
Flt Permitted	0.96		1.00		0.95	1.00
Satd. Flow (perm)	1742		3470		1770	3539
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	130	33	652	98	163	739
RTOR Reduction (vph)	16	0	14	0	0	0
Lane Group Flow (vph)	147	0	736	0	163	739
Turn Type	Prot		NA		Prot	NA
Protected Phases	8		2		1	6
Permitted Phases						
Actuated Green, G (s)	8.9		30.2		8.8	43.5
Effective Green, g (s)	8.9		30.2		8.8	43.5
Actuated g/C Ratio	0.14		0.49		0.14	0.71
Clearance Time (s)	4.5		4.5		4.5	4.5
Vehicle Extension (s)	3.0		3.0		3.0	3.0
Lane Grp Cap (vph)	252		1706		253	2507
v/s Ratio Prot	c0.08		c0.21		c0.09	0.21
v/s Ratio Perm						
v/c Ratio	0.58		0.43		0.64	0.29
Uniform Delay, d1	24.5		10.1		24.8	3.3
Progression Factor	1.00		1.00		1.00	1.00
Incremental Delay, d2	3.4		0.8		5.5	0.3
Delay (s)	27.9		10.9		30.4	3.6
Level of Service	C		B		C	A
Approach Delay (s)	27.9		10.9			8.4
Approach LOS	C		B			A

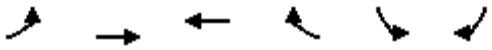
Intersection Summary			
HCM 2000 Control Delay	11.2	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.50		
Actuated Cycle Length (s)	61.4	Sum of lost time (s)	13.5
Intersection Capacity Utilization	47.5%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	0	180	560	100	0	590
Future Volume (Veh/h)	0	180	560	100	0	590
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	196	609	109	0	641
Pedestrians	2					3
Lane Width (ft)	12.0					12.0
Walking Speed (ft/s)	4.0					4.0
Percent Blockage	0					0
Right turn flare (veh)						
Median type			None			None
Median storage veh)						
Upstream signal (ft)			215			491
pX, platoon unblocked	0.86					
vC, conflicting volume	986	364			720	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	664	364			720	
tC, single (s)	6.8	6.9			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	100	69			100	
cM capacity (veh/h)	339	630			876	

Direction, Lane #	WB 1	NB 1	NB 2	SB 1	SB 2
Volume Total	196	406	312	320	320
Volume Left	0	0	0	0	0
Volume Right	196	0	109	0	0
cSH	630	1700	1700	1700	1700
Volume to Capacity	0.31	0.24	0.18	0.19	0.19
Queue Length 95th (ft)	33	0	0	0	0
Control Delay (s)	13.3	0.0	0.0	0.0	0.0
Lane LOS	B				
Approach Delay (s)	13.3	0.0		0.0	
Approach LOS	B				

Intersection Summary			
Average Delay	1.7		
Intersection Capacity Utilization	37.0%	ICU Level of Service	A
Analysis Period (min)	15		



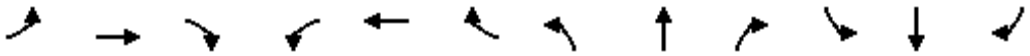
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	0	820	1290	660	420	170
Future Volume (vph)	0	820	1290	660	420	170
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.4	5.4	5.9	5.2	5.2
Lane Util. Factor		0.95	0.95	0.88	0.97	1.00
Frpb, ped/bikes		1.00	1.00	1.00	1.00	1.00
Flpb, ped/bikes		1.00	1.00	1.00	1.00	1.00
Frt		1.00	1.00	0.85	1.00	0.85
Flt Protected		1.00	1.00	1.00	0.95	1.00
Satd. Flow (prot)		3539	3539	2787	3433	1583
Flt Permitted		1.00	1.00	1.00	0.95	1.00
Satd. Flow (perm)		3539	3539	2787	3433	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	891	1402	717	457	185
RTOR Reduction (vph)	0	0	0	289	0	148
Lane Group Flow (vph)	0	891	1402	428	457	37
Confl. Peds. (#/hr)				8	8	
Turn Type		NA	NA	custom	Prot	Perm
Protected Phases		2	2	8	1	
Permitted Phases						1
Actuated Green, G (s)		31.9	31.9	27.3	12.1	12.1
Effective Green, g (s)		31.9	31.9	26.8	12.1	12.1
Actuated g/C Ratio		0.52	0.52	0.44	0.20	0.20
Clearance Time (s)		5.4	5.4	5.4	5.2	5.2
Vehicle Extension (s)		2.9	2.9	3.0	2.5	2.5
Lane Grp Cap (vph)		1856	1856	1228	683	315
v/s Ratio Prot		0.25	c0.40	0.15	c0.13	
v/s Ratio Perm						0.02
v/c Ratio		0.48	0.76	0.35	0.67	0.12
Uniform Delay, d1		9.2	11.4	11.2	22.5	20.0
Progression Factor		1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2		0.2	1.8	0.2	2.2	0.1
Delay (s)		9.4	13.2	11.4	24.7	20.1
Level of Service		A	B	B	C	C
Approach Delay (s)		9.4	12.6		23.4	
Approach LOS		A	B		C	

Intersection Summary			
HCM 2000 Control Delay	13.7	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.74		
Actuated Cycle Length (s)	60.8	Sum of lost time (s)	17.1
Intersection Capacity Utilization	56.5%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	30	50	420	80	130	660
Future Volume (vph)	30	50	420	80	130	660
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.9	4.0	4.9		4.4	4.9
Lane Util. Factor	1.00	1.00	0.91		1.00	0.91
Frpb, ped/bikes	1.00	0.98	1.00		1.00	1.00
Flpb, ped/bikes	1.00	1.00	1.00		1.00	1.00
Frt	1.00	0.85	0.98		1.00	1.00
Flt Protected	0.95	1.00	1.00		0.95	1.00
Satd. Flow (prot)	1770	1550	4946		1770	5085
Flt Permitted	0.95	1.00	1.00		0.95	1.00
Satd. Flow (perm)	1770	1550	4946		1770	5085
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	33	54	457	87	141	717
RTOR Reduction (vph)	0	48	13	0	0	0
Lane Group Flow (vph)	33	6	531	0	141	717
Confl. Peds. (#/hr)	4	11		9	9	
Turn Type	Prot	Perm	NA		Prot	NA
Protected Phases	4		6		5	2
Permitted Phases		4				
Actuated Green, G (s)	11.9	11.9	70.8		13.1	88.3
Effective Green, g (s)	11.9	12.8	70.8		13.1	88.3
Actuated g/C Ratio	0.11	0.12	0.64		0.12	0.80
Clearance Time (s)	4.9	4.9	4.9		4.4	4.9
Vehicle Extension (s)	2.0	2.0	5.0		2.0	3.2
Lane Grp Cap (vph)	191	180	3183		210	4081
v/s Ratio Prot	c0.02		0.11		c0.08	c0.14
v/s Ratio Perm		0.00				
v/c Ratio	0.17	0.03	0.17		0.67	0.18
Uniform Delay, d1	44.6	43.1	7.8		46.4	2.5
Progression Factor	1.00	1.00	2.16		1.00	1.00
Incremental Delay, d2	0.2	0.0	0.1		6.5	0.1
Delay (s)	44.7	43.1	17.0		52.9	2.6
Level of Service	D	D	B		D	A
Approach Delay (s)	43.8		17.0			10.8
Approach LOS	D		B			B

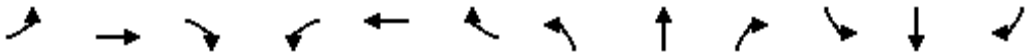
Intersection Summary			
HCM 2000 Control Delay	15.0	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.25		
Actuated Cycle Length (s)	110.0	Sum of lost time (s)	14.2
Intersection Capacity Utilization	56.6%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group



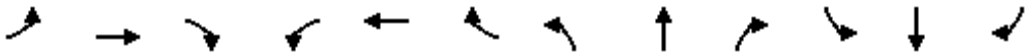
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	90	50	120	160	140	110	210	420	90	80	540	110
Future Volume (vph)	90	50	120	160	140	110	210	420	90	80	540	110
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.5	4.0	
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	0.91		0.97	0.95	
Frpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	0.97		1.00	1.00	
Flpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Frt	1.00	0.89		1.00	0.93		1.00	0.97		1.00	0.97	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1770	1665		1770	1739		1770	4793		3433	3449	
Flt Permitted	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (perm)	1770	1665		1770	1739		1770	4793		3433	3449	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	98	54	130	174	152	120	228	457	98	87	587	120
RTOR Reduction (vph)	0	95	0	0	25	0	0	27	0	0	14	0
Lane Group Flow (vph)	98	89	0	174	247	0	228	528	0	87	693	0
Confl. Peds. (#/hr)									120			
Turn Type	Split	NA		Split	NA		Prot	NA		Prot	NA	
Protected Phases	7	7		8	8		1	6		5	2	
Permitted Phases												
Actuated Green, G (s)	14.3	14.3		18.2	18.2		17.6	33.6		24.3	40.8	
Effective Green, g (s)	15.2	15.2		19.1	19.1		18.0	34.5		24.7	41.7	
Actuated g/C Ratio	0.14	0.14		0.17	0.17		0.16	0.31		0.22	0.38	
Clearance Time (s)	4.9	4.9		4.9	4.9		4.4	4.9		4.9	4.9	
Vehicle Extension (s)	3.0	3.0		2.0	2.0		2.0	3.9		3.9	3.9	
Lane Grp Cap (vph)	244	230		307	301		289	1503		770	1307	
v/s Ratio Prot	c0.06	0.05		0.10	c0.14		c0.13	0.11		0.03	c0.20	
v/s Ratio Perm												
v/c Ratio	0.40	0.39		0.57	0.82		0.79	0.35		0.11	0.53	
Uniform Delay, d1	43.3	43.2		41.7	43.8		44.2	29.1		33.9	26.5	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		0.94	0.95	
Incremental Delay, d2	1.1	1.1		1.4	15.6		12.4	0.6		0.1	1.5	
Delay (s)	44.3	44.2		43.1	59.4		56.5	29.8		32.1	26.9	
Level of Service	D	D		D	E		E	C		C	C	
Approach Delay (s)		44.3			53.0			37.6			27.4	
Approach LOS		D			D			D			C	

Intersection Summary			
HCM 2000 Control Delay	37.9	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.62		
Actuated Cycle Length (s)	110.0	Sum of lost time (s)	16.5
Intersection Capacity Utilization	63.3%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	40	20	20	40	20	50	30	630	70	130	650	80
Future Volume (vph)	40	20	20	40	20	50	30	630	70	130	650	80
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.9		4.9	4.9		4.4	4.9		4.9	4.9	
Lane Util. Factor		1.00		1.00	1.00		1.00	0.91		0.97	0.95	
Frpb, ped/bikes		1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Flpb, ped/bikes		1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Frt		0.97		1.00	0.89		1.00	0.99		1.00	0.98	
Flt Protected		0.98		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1749		1770	1664		1770	4996		3433	3468	
Flt Permitted		0.98		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (perm)		1749		1770	1664		1770	4996		3433	3468	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	43	22	22	43	22	54	33	685	76	141	707	87
RTOR Reduction (vph)	0	10	0	0	50	0	0	8	0	0	6	0
Lane Group Flow (vph)	0	77	0	43	26	0	33	753	0	141	788	0
Confl. Peds. (#/hr)			7	7			9		4	4		9
Turn Type	Split	NA		Split	NA		Prot	NA		Prot	NA	
Protected Phases	8	8		7	7		1	6		5	2	
Permitted Phases												
Actuated Green, G (s)		9.0		5.4	5.4		2.1	20.1		13.4	31.9	
Effective Green, g (s)		9.0		5.4	5.4		2.1	20.1		13.4	31.9	
Actuated g/C Ratio		0.13		0.08	0.08		0.03	0.30		0.20	0.47	
Clearance Time (s)		4.9		4.9	4.9		4.4	4.9		4.9	4.9	
Vehicle Extension (s)		2.0		2.0	2.0		2.0	2.0		2.0	2.0	
Lane Grp Cap (vph)		233		141	133		55	1487		681	1638	
v/s Ratio Prot		c0.04		c0.02	0.02		c0.02	0.15		0.04	c0.23	
v/s Ratio Perm												
v/c Ratio		0.33		0.30	0.20		0.60	0.51		0.21	0.48	
Uniform Delay, d1		26.5		29.3	29.0		32.3	19.6		22.6	12.2	
Progression Factor		1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2		0.3		0.4	0.3		11.2	0.1		0.1	0.1	
Delay (s)		26.8		29.7	29.3		43.5	19.7		22.7	12.2	
Level of Service		C		C	C		D	B		C	B	
Approach Delay (s)		26.8			29.4			20.7			13.8	
Approach LOS		C			C			C			B	

Intersection Summary			
HCM 2000 Control Delay	18.2	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.44		
Actuated Cycle Length (s)	67.5	Sum of lost time (s)	19.6
Intersection Capacity Utilization	51.0%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	30	10	50	10	10	60	60	640	70	40	680	40
Future Volume (vph)	30	10	50	10	10	60	60	640	70	40	680	40
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0	4.0		4.9	4.0	4.0	4.0		4.0	4.0	
Lane Util. Factor		1.00	1.00		1.00	1.00	1.00	0.91		1.00	0.91	
Frt		1.00	0.85		1.00	0.85	1.00	0.99		1.00	0.99	
Flt Protected		0.96	1.00		0.98	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1795	1583		1817	1583	1770	5010		1770	5043	
Flt Permitted		0.77	1.00		0.84	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (perm)		1440	1583		1562	1583	1770	5010		1770	5043	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	33	11	54	11	11	65	65	696	76	43	739	43
RTOR Reduction (vph)	0	0	47	0	0	56	0	16	0	0	8	0
Lane Group Flow (vph)	0	44	7	0	22	9	65	756	0	43	774	0
Turn Type	Perm	NA	Perm	Perm	NA	Perm	Prot	NA		Prot	NA	
Protected Phases		8			8		1	6		5	2	
Permitted Phases	8		8	8		8						
Actuated Green, G (s)		7.4	7.4		7.4	7.4	4.4	33.1		2.5	31.2	
Effective Green, g (s)		7.4	7.4		6.5	7.4	4.4	33.1		2.5	31.2	
Actuated g/C Ratio		0.13	0.13		0.12	0.13	0.08	0.60		0.05	0.57	
Clearance Time (s)		4.0	4.0		4.0	4.0	4.0	4.0		4.0	4.0	
Vehicle Extension (s)		3.0	3.0		3.0	3.0	3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)		193	212		184	212	141	3015		80	2860	
v/s Ratio Prot							c0.04	0.15		c0.02	c0.15	
v/s Ratio Perm		c0.03	0.00		0.01	0.01						
v/c Ratio		0.23	0.03		0.12	0.04	0.46	0.25		0.54	0.27	
Uniform Delay, d1		21.2	20.7		21.7	20.7	24.2	5.1		25.7	6.1	
Progression Factor		1.00	1.00		1.00	1.00	0.81	0.61		1.00	1.00	
Incremental Delay, d2		0.6	0.1		0.3	0.1	2.0	0.2		6.8	0.2	
Delay (s)		21.9	20.8		22.0	20.8	21.7	3.3		32.5	6.3	
Level of Service		C	C		C	C	C	A		C	A	
Approach Delay (s)		21.3			21.1			4.7			7.7	
Approach LOS		C			C			A			A	

Intersection Summary			
HCM 2000 Control Delay	7.7	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.29		
Actuated Cycle Length (s)	55.0	Sum of lost time (s)	12.9
Intersection Capacity Utilization	36.2%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

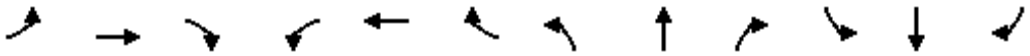
Movement	EBL	EBT	EBR	EBR2	WBT	WBR	NBR2	SBL2	SBL	SBT	SBR	NWL
Lane Configurations												
Traffic Volume (vph)	220	1360	150	180	2190	380	100	270	180	110	70	200
Future Volume (vph)	220	1360	150	180	2190	380	100	270	180	110	70	200
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	2.6	4.0		6.1	4.0	7.8	5.9	5.9	5.9	5.9	5.9	5.9
Lane Util. Factor	0.97	0.86		0.86	0.91	1.00	1.00	0.95	0.91	0.91	1.00	1.00
Frpb, ped/bikes	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.88	1.00
Flpb, ped/bikes	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.98		0.85	1.00	0.85	0.86	1.00	1.00	1.00	0.85	1.00
Flt Protected	0.95	1.00		1.00	1.00	1.00	1.00	0.95	0.95	0.98	1.00	0.95
Satd. Flow (prot)	3433	4726		1362	5085	1583	1611	1681	1610	1658	1399	1770
Flt Permitted	0.95	1.00		1.00	1.00	1.00	1.00	0.95	0.95	0.98	1.00	0.95
Satd. Flow (perm)	3433	4726		1362	5085	1583	1611	1681	1610	1658	1399	1770
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	239	1478	163	196	2380	413	109	293	196	120	76	217
RTOR Reduction (vph)	0	1	0	75	0	34	74	0	0	0	65	0
Lane Group Flow (vph)	239	1660	0	101	2380	379	35	179	212	218	11	217
Confl. Peds. (#/hr)								9			45	18
Confl. Bikes (#/hr)											10	
Turn Type	Prot	NA		Perm	NA	pm+ov	Perm	Split	Split	NA	Perm	Prot
Protected Phases	5	2			6	4		4	4	4		3
Permitted Phases				2		6	8				4	
Actuated Green, G (s)	8.2	63.1		63.1	51.1	67.0	34.9	15.9	15.9	15.9	15.9	13.1
Effective Green, g (s)	9.6	65.2		63.1	53.0	63.2	34.9	15.9	15.9	15.9	15.9	13.1
Actuated g/C Ratio	0.09	0.59		0.57	0.48	0.57	0.32	0.14	0.14	0.14	0.14	0.12
Clearance Time (s)	4.0	6.1		6.1	5.9	5.9	5.9	5.9	5.9	5.9	5.9	5.9
Vehicle Extension (s)	3.0	2.8		2.8	3.2	2.9	4.1	2.9	2.9	2.9	2.9	2.9
Lane Grp Cap (vph)	299	2801		781	2450	909	511	242	232	239	202	210
v/s Ratio Prot	c0.07	0.35			c0.47	0.05		0.11	c0.13	0.13		c0.12
v/s Ratio Perm				0.07		0.19	0.02				0.01	
v/c Ratio	0.80	0.59		0.13	0.97	0.42	0.07	0.74	0.91	0.91	0.05	1.03
Uniform Delay, d1	49.3	14.1		10.8	27.8	13.1	26.2	45.1	46.4	46.4	40.6	48.5
Progression Factor	1.00	1.00		1.00	1.00	1.00	1.00	0.86	0.87	0.87	5.56	1.00
Incremental Delay, d2	13.8	0.9		0.3	12.6	0.3	0.1	11.0	36.0	35.0	0.1	71.1
Delay (s)	63.1	15.0		11.1	40.4	13.4	26.3	49.6	76.2	75.2	225.5	119.5
Level of Service	E	B		B	D	B	C	D	E	E	F	F
Approach Delay (s)		20.2			36.4					85.5		82.1
Approach LOS		C			D					F		F

Intersection Summary			
HCM 2000 Control Delay	39.5	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.97		
Actuated Cycle Length (s)	110.0	Sum of lost time (s)	20.3
Intersection Capacity Utilization	86.4%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group

Movement	NWR	NWR2
Lane Configurations		
Traffic Volume (vph)	170	30
Future Volume (vph)	170	30
Ideal Flow (vphpl)	1900	1900
Total Lost time (s)	5.9	
Lane Util. Factor	0.88	
Frpb, ped/bikes	1.00	
Flpb, ped/bikes	1.00	
Frt	0.85	
Flt Protected	1.00	
Satd. Flow (prot)	2787	
Flt Permitted	1.00	
Satd. Flow (perm)	2787	
Peak-hour factor, PHF	0.92	0.92
Adj. Flow (vph)	185	33
RTOR Reduction (vph)	114	0
Lane Group Flow (vph)	104	0
Confl. Peds. (#/hr)		9
Confl. Bikes (#/hr)		1
Turn Type	Prot	
Protected Phases	3	
Permitted Phases		
Actuated Green, G (s)	13.1	
Effective Green, g (s)	13.1	
Actuated g/C Ratio	0.12	
Clearance Time (s)	5.9	
Vehicle Extension (s)	2.9	
Lane Grp Cap (vph)	331	
v/s Ratio Prot	0.04	
v/s Ratio Perm		
v/c Ratio	0.32	
Uniform Delay, d1	44.3	
Progression Factor	1.00	
Incremental Delay, d2	0.5	
Delay (s)	44.9	
Level of Service	D	
Approach Delay (s)		
Approach LOS		

Intersection Summary



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	50	100	100	90	140	80	70	50	90	20	80	90
Future Volume (vph)	50	100	100	90	140	80	70	50	90	20	80	90
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.5			4.5			4.5			4.0	
Lane Util. Factor		1.00			1.00			1.00			1.00	
Frt		0.95			0.97			0.94			0.94	
Flt Protected		0.99			0.99			0.98			0.99	
Satd. Flow (prot)		1745			1772			1726			1734	
Flt Permitted		0.88			0.82			0.85			0.96	
Satd. Flow (perm)		1558			1469			1498			1681	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	54	109	109	98	152	87	76	54	98	22	87	98
RTOR Reduction (vph)	0	47	0	0	24	0	0	34	0	0	40	0
Lane Group Flow (vph)	0	225	0	0	313	0	0	194	0	0	167	0
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)		15.6			15.6			26.8			27.3	
Effective Green, g (s)		15.6			15.6			26.8			27.3	
Actuated g/C Ratio		0.30			0.30			0.52			0.53	
Clearance Time (s)		4.5			4.5			4.5			4.0	
Vehicle Extension (s)		3.0			3.0			3.0			3.0	
Lane Grp Cap (vph)		472			445			781			892	
v/s Ratio Prot												
v/s Ratio Perm		0.14			c0.21			c0.13			0.10	
v/c Ratio		0.48			0.70			0.25			0.19	
Uniform Delay, d1		14.6			15.8			6.8			6.3	
Progression Factor		1.00			1.00			1.00			1.00	
Incremental Delay, d2		0.8			5.0			0.8			0.1	
Delay (s)		15.3			20.8			7.5			6.4	
Level of Service		B			C			A			A	
Approach Delay (s)		15.3			20.8			7.5			6.4	
Approach LOS		B			C			A			A	

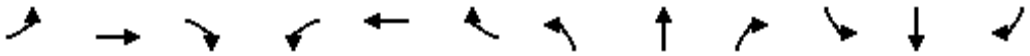
Intersection Summary			
HCM 2000 Control Delay	13.6	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.42		
Actuated Cycle Length (s)	51.4	Sum of lost time (s)	9.0
Intersection Capacity Utilization	60.4%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

Movement	NBL	NBT	SBT	SBR	SEL	SER
Lane Configurations						
Traffic Volume (vph)	300	610	600	130	200	190
Future Volume (vph)	300	610	600	130	200	190
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0		4.0	4.0
Lane Util. Factor	1.00	0.91	0.91		1.00	1.00
Frt	1.00	1.00	0.97		1.00	0.85
Flt Protected	0.95	1.00	1.00		0.95	1.00
Satd. Flow (prot)	1770	5085	4950		1770	1583
Flt Permitted	0.95	1.00	1.00		0.95	1.00
Satd. Flow (perm)	1770	5085	4950		1770	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	326	663	652	141	217	207
RTOR Reduction (vph)	0	0	19	0	0	172
Lane Group Flow (vph)	326	663	774	0	217	35
Turn Type	Prot	NA	NA		Prot	Perm
Protected Phases	7	4	8		5	
Permitted Phases						5
Actuated Green, G (s)	27.5	91.7	60.2		20.3	20.3
Effective Green, g (s)	27.5	91.7	60.2		20.3	20.3
Actuated g/C Ratio	0.23	0.76	0.50		0.17	0.17
Clearance Time (s)	4.0	4.0	4.0		4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0		3.0	3.0
Lane Grp Cap (vph)	405	3885	2483		299	267
v/s Ratio Prot	c0.18	0.13	c0.16		c0.12	
v/s Ratio Perm						0.02
v/c Ratio	0.80	0.17	0.31		0.73	0.13
Uniform Delay, d1	43.7	3.8	17.7		47.2	42.4
Progression Factor	1.14	0.17	0.96		1.00	1.00
Incremental Delay, d2	10.9	0.1	0.3		8.5	0.2
Delay (s)	60.8	0.7	17.3		55.7	42.6
Level of Service	E	A	B		E	D
Approach Delay (s)		20.5	17.3		49.3	
Approach LOS		C	B		D	

Intersection Summary			
HCM 2000 Control Delay	24.9	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.51		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	52.2%	ICU Level of Service	A
Analysis Period (min)	15		

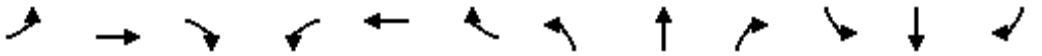
c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	30	0	100	460	390	100	0	0	0	0	70	10
Future Volume (vph)	30	0	100	460	390	100	0	0	0	0	70	10
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0		4.0	4.0	4.0						4.0	
Lane Util. Factor	1.00		1.00	1.00	1.00						1.00	
Frt	1.00		0.85	1.00	0.97						0.98	
Flt Protected	0.95		1.00	0.95	1.00						1.00	
Satd. Flow (prot)	1770		1583	1770	1806						1831	
Flt Permitted	0.53		1.00	0.95	1.00						1.00	
Satd. Flow (perm)	980		1583	1770	1806						1831	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	33	0	109	500	424	109	0	0	0	0	76	11
RTOR Reduction (vph)	0	0	91	292	12	0	0	0	0	0	9	0
Lane Group Flow (vph)	33	0	18	208	521	0	0	0	0	0	78	0
Turn Type	Perm		Perm	Split	NA						NA	
Protected Phases				8	8						6	
Permitted Phases	4		4									
Actuated Green, G (s)	7.6		7.6	19.4	19.4						7.6	
Effective Green, g (s)	7.6		7.6	19.4	19.4						7.6	
Actuated g/C Ratio	0.16		0.16	0.42	0.42						0.16	
Clearance Time (s)	4.0		4.0	4.0	4.0						4.0	
Vehicle Extension (s)	3.0		3.0	3.0	3.0						3.0	
Lane Grp Cap (vph)	159		258	736	751						298	
v/s Ratio Prot				0.12	c0.29						c0.04	
v/s Ratio Perm	c0.03		0.01									
v/c Ratio	0.21		0.07	0.28	0.69						0.26	
Uniform Delay, d1	16.9		16.5	9.0	11.2						17.0	
Progression Factor	1.00		1.00	1.00	1.00						1.00	
Incremental Delay, d2	0.7		0.1	0.2	2.8						0.5	
Delay (s)	17.5		16.6	9.2	14.0						17.5	
Level of Service	B		B	A	B						B	
Approach Delay (s)		16.8			11.7			0.0			17.5	
Approach LOS		B			B			A			B	

Intersection Summary			
HCM 2000 Control Delay	12.6	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.49		
Actuated Cycle Length (s)	46.6	Sum of lost time (s)	12.0
Intersection Capacity Utilization	46.0%	ICU Level of Service	A
Analysis Period (min)	15		

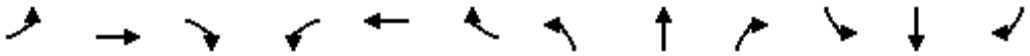
c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	1650	10	410	2420	0	0	0	0	390	290	150
Future Volume (vph)	0	1650	10	410	2420	0	0	0	0	390	290	150
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0		4.0	4.0					4.0	4.0	4.0
Lane Util. Factor		0.91		1.00	0.86					0.95	0.95	1.00
Frt		1.00		1.00	1.00					1.00	1.00	0.85
Flt Protected		1.00		0.95	1.00					0.95	0.99	1.00
Satd. Flow (prot)		5081		1770	6408					1681	1753	1583
Flt Permitted		1.00		0.95	1.00					0.95	0.99	1.00
Satd. Flow (perm)		5081		1770	6408					1681	1753	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	1793	11	446	2630	0	0	0	0	424	315	163
RTOR Reduction (vph)	0	1	0	0	0	0	0	0	0	0	0	39
Lane Group Flow (vph)	0	1803	0	446	2630	0	0	0	0	352	387	124
Turn Type		NA		Prot	NA					Perm	NA	Perm
Protected Phases		2		1	6						4	
Permitted Phases										4		4
Actuated Green, G (s)		52.1		33.5	90.3					34.9	34.9	34.9
Effective Green, g (s)		53.3		33.9	91.2					35.8	35.8	35.8
Actuated g/C Ratio		0.39		0.25	0.68					0.27	0.27	0.27
Clearance Time (s)		5.2		4.4	4.9					4.9	4.9	4.9
Vehicle Extension (s)		3.8		2.0	4.6					2.0	2.0	2.0
Lane Grp Cap (vph)		2006		444	4328					445	464	419
v/s Ratio Prot		c0.35		c0.25	0.41							
v/s Ratio Perm										0.21	0.22	0.08
v/c Ratio		0.90		1.00	0.61					0.79	0.83	0.30
Uniform Delay, d1		38.3		50.5	12.1					46.1	46.8	39.6
Progression Factor		1.00		1.09	0.08					1.00	1.00	1.00
Incremental Delay, d2		6.9		13.9	0.1					8.7	11.7	0.1
Delay (s)		45.3		69.2	1.1					54.8	58.5	39.7
Level of Service		D		E	A					D	E	D
Approach Delay (s)		45.3			10.9			0.0			53.7	
Approach LOS		D			B			A			D	

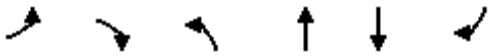
Intersection Summary			
HCM 2000 Control Delay	28.3	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.91		
Actuated Cycle Length (s)	135.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	83.7%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group



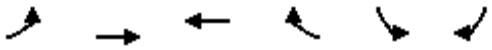
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	330	100	130	270	0	120	0	160	170	220	10
Future Volume (vph)	0	330	100	130	270	0	120	0	160	170	220	10
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0		4.0	4.0		4.0		4.0	4.0	4.0	
Lane Util. Factor		0.95		1.00	0.95		1.00		1.00	1.00	1.00	
Frpb, ped/bikes		0.97		1.00	1.00		1.00		0.98	1.00	1.00	
Flpb, ped/bikes		1.00		0.99	1.00		1.00		1.00	1.00	1.00	
Frt		0.97		1.00	1.00		1.00		0.85	1.00	0.99	
Flt Protected		1.00		0.95	1.00		0.95		1.00	0.95	1.00	
Satd. Flow (prot)		3329		1749	3539		1770		1548	1770	1849	
Flt Permitted		1.00		0.41	1.00		0.95		1.00	0.95	1.00	
Satd. Flow (perm)		3329		756	3539		1770		1548	1770	1849	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	359	109	141	293	0	130	0	174	185	239	11
RTOR Reduction (vph)	0	15	0	0	0	0	0	0	87	0	2	0
Lane Group Flow (vph)	0	453	0	141	293	0	130	0	87	185	248	0
Confl. Peds. (#/hr)			21	21		47	2		4			2
Turn Type		NA		pm+pt	NA		Prot		Perm	Split	NA	
Protected Phases		2		1	6		3			4	4	
Permitted Phases				6					2			
Actuated Green, G (s)		64.0		77.7	77.7		14.9		64.0	23.2	23.2	
Effective Green, g (s)		64.9		78.1	78.6		15.3		64.9	24.1	24.1	
Actuated g/C Ratio		0.50		0.60	0.60		0.12		0.50	0.19	0.19	
Clearance Time (s)		4.9		4.4	4.9		4.4		4.9	4.9	4.9	
Vehicle Extension (s)		6.7		2.0	6.7		3.0		6.7	3.0	3.0	
Lane Grp Cap (vph)		1661		528	2139		208		772	328	342	
v/s Ratio Prot		0.14		c0.02	0.08		c0.07			0.10	c0.13	
v/s Ratio Perm				c0.14					0.06			
v/c Ratio		0.27		0.27	0.14		0.62		0.11	0.56	0.73	
Uniform Delay, d1		18.9		11.8	11.1		54.6		17.3	48.2	49.8	
Progression Factor		1.00		1.00	1.00		1.00		1.00	1.00	1.00	
Incremental Delay, d2		0.4		0.1	0.1		5.7		0.3	2.2	7.5	
Delay (s)		19.3		11.9	11.2		60.4		17.6	50.4	57.3	
Level of Service		B		B	B		E		B	D	E	
Approach Delay (s)		19.3			11.4			35.9			54.4	
Approach LOS		B			B			D			D	

Intersection Summary			
HCM 2000 Control Delay	29.6	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.42		
Actuated Cycle Length (s)	130.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	52.5%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	110	240	350	460	490	160
Future Volume (vph)	110	240	350	460	490	160
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0		4.4	4.0	4.9	
Lane Util. Factor	1.00		1.00	0.91	0.91	
Frpb, ped/bikes	0.99		1.00	1.00	1.00	
Flpb, ped/bikes	1.00		1.00	1.00	1.00	
Frt	0.91		1.00	1.00	0.96	
Flt Protected	0.98		0.95	1.00	1.00	
Satd. Flow (prot)	1646		1770	5085	4898	
Flt Permitted	0.98		0.95	1.00	1.00	
Satd. Flow (perm)	1646		1770	5085	4898	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	120	261	380	500	533	174
RTOR Reduction (vph)	70	0	0	0	36	0
Lane Group Flow (vph)	311	0	380	500	671	0
Confl. Peds. (#/hr)		2				
Turn Type	Prot		Prot	NA	NA	
Protected Phases	2		3	8	4	
Permitted Phases						
Actuated Green, G (s)	26.6		32.2	85.4	49.2	
Effective Green, g (s)	26.6		31.8	85.4	48.3	
Actuated g/C Ratio	0.22		0.27	0.71	0.40	
Clearance Time (s)	4.0		4.0	4.0	4.0	
Vehicle Extension (s)	3.0		3.0	3.0	3.0	
Lane Grp Cap (vph)	364		469	3618	1971	
v/s Ratio Prot	c0.19		c0.21	0.10	c0.14	
v/s Ratio Perm						
v/c Ratio	0.85		0.81	0.14	0.34	
Uniform Delay, d1	44.8		41.3	5.5	24.8	
Progression Factor	1.00		1.03	1.44	1.00	
Incremental Delay, d2	17.4		10.1	0.1	0.5	
Delay (s)	62.2		52.4	8.0	25.3	
Level of Service	E		D	A	C	
Approach Delay (s)	62.2			27.2	25.3	
Approach LOS	E			C	C	

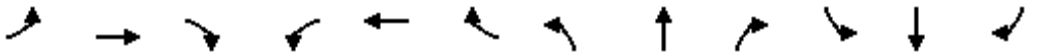
Intersection Summary			
HCM 2000 Control Delay	33.3	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.61		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	13.3
Intersection Capacity Utilization	64.2%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	50	140	80	40	30	40
Future Volume (Veh/h)	50	140	80	40	30	40
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	54	152	87	43	33	43
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type		None	None			
Median storage veh)						
Upstream signal (ft)		1157	644			
pX, platoon unblocked						
vC, conflicting volume	130				368	108
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	130				368	108
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	96				95	95
cM capacity (veh/h)	1455				608	945

Direction, Lane #	EB 1	EB 2	WB 1	SB 1
Volume Total	54	152	130	76
Volume Left	54	0	0	33
Volume Right	0	0	43	43
cSH	1455	1700	1700	762
Volume to Capacity	0.04	0.09	0.08	0.10
Queue Length 95th (ft)	3	0	0	8
Control Delay (s)	7.6	0.0	0.0	10.2
Lane LOS	A			B
Approach Delay (s)	2.0		0.0	10.2
Approach LOS				B

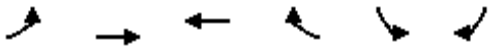
Intersection Summary			
Average Delay	2.9		
Intersection Capacity Utilization	20.2%	ICU Level of Service	A
Analysis Period (min)	15		



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	60	1980	0	0	2740	740	90	410	110	0	0	0
Future Volume (vph)	60	1980	0	0	2740	740	90	410	110	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0			4.0	4.0		4.0				
Lane Util. Factor	1.00	0.91			0.91	1.00		0.95				
Frt	1.00	1.00			1.00	0.85		0.97				
Flt Protected	0.95	1.00			1.00	1.00		0.99				
Satd. Flow (prot)	1770	5085			5085	1583		3418				
Flt Permitted	0.95	1.00			1.00	1.00		0.99				
Satd. Flow (perm)	1770	5085			5085	1583		3418				
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	65	2152	0	0	2978	804	98	446	120	0	0	0
RTOR Reduction (vph)	0	0	0	0	0	116	0	6	0	0	0	0
Lane Group Flow (vph)	65	2152	0	0	2978	688	0	658	0	0	0	0
Turn Type	Prot	NA			NA	Perm	Split	NA				
Protected Phases	5	2			6		4	4				
Permitted Phases						6						
Actuated Green, G (s)	10.9	88.3			73.0	73.0		36.9				
Effective Green, g (s)	11.3	89.2			73.9	73.9		37.8				
Actuated g/C Ratio	0.08	0.66			0.55	0.55		0.28				
Clearance Time (s)	4.4	4.9			4.9	4.9		4.9				
Vehicle Extension (s)	2.0	3.8			4.6	4.6		2.0				
Lane Grp Cap (vph)	148	3359			2783	866		957				
v/s Ratio Prot	0.04	c0.42			c0.59			c0.19				
v/s Ratio Perm						0.43						
v/c Ratio	0.44	0.64			1.07	0.79		0.69				
Uniform Delay, d1	58.8	13.5			30.5	24.5		43.3				
Progression Factor	0.80	0.89			1.00	1.00		1.00				
Incremental Delay, d2	0.4	0.5			39.4	7.4		1.7				
Delay (s)	47.7	12.5			70.0	31.9		45.0				
Level of Service	D	B			E	C		D				
Approach Delay (s)		13.5			61.9			45.0			0.0	
Approach LOS		B			E			D			A	

Intersection Summary			
HCM 2000 Control Delay	44.1	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.93		
Actuated Cycle Length (s)	135.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	83.7%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	10	650	400	350	0	0
Future Volume (Veh/h)	10	650	400	350	0	0
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	11	707	435	380	0	0
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type		None	None			
Median storage veh)						
Upstream signal (ft)		480	811			
pX, platoon unblocked	0.93				0.96	0.93
vC, conflicting volume	815				1000	408
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	652				665	214
tC, single (s)	4.1				6.8	6.9
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	99				100	100
cM capacity (veh/h)	866				371	736

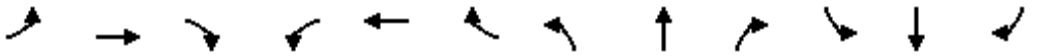
Direction, Lane #	EB 1	EB 2	EB 3	WB 1	WB 2
Volume Total	11	354	354	290	525
Volume Left	11	0	0	0	0
Volume Right	0	0	0	0	380
cSH	866	1700	1700	1700	1700
Volume to Capacity	0.01	0.21	0.21	0.17	0.31
Queue Length 95th (ft)	1	0	0	0	0
Control Delay (s)	9.2	0.0	0.0	0.0	0.0
Lane LOS	A				
Approach Delay (s)	0.1			0.0	
Approach LOS					

Intersection Summary			
Average Delay	0.1		
Intersection Capacity Utilization	25.6%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Sign Control	Stop		Stop			Stop
Traffic Volume (vph)	170	0	0	130	300	570
Future Volume (vph)	170	0	0	130	300	570
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	185	0	0	141	326	620

Direction, Lane #	WB 1	NB 1	SB 1	SB 2
Volume Total (vph)	185	141	326	620
Volume Left (vph)	185	0	326	0
Volume Right (vph)	0	141	0	0
Hadj (s)	0.23	-0.57	0.53	0.03
Departure Headway (s)	6.2	5.0	5.8	5.3
Degree Utilization, x	0.32	0.19	0.53	0.91
Capacity (veh/h)	567	702	611	675
Control Delay (s)	12.0	9.1	13.8	38.0
Approach Delay (s)	12.0	9.1	29.7	
Approach LOS	B	A	D	

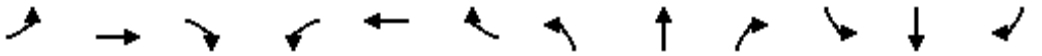
Intersection Summary			
Delay	24.8		
Level of Service	C		
Intersection Capacity Utilization	46.5%	ICU Level of Service	A
Analysis Period (min)	15		



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Traffic Volume (vph)	100	20	50	40	20	10	20	30	20	20	230	490
Future Volume (vph)	100	20	50	40	20	10	20	30	20	20	230	490
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	109	22	54	43	22	11	22	33	22	22	250	533

Direction, Lane #	EB 1	EB 2	WB 1	NB 1	SB 1	SB 2
Volume Total (vph)	120	65	76	77	272	533
Volume Left (vph)	109	0	43	22	22	0
Volume Right (vph)	0	54	11	22	0	533
Hadj (s)	0.49	-0.55	0.06	-0.08	0.07	-0.67
Departure Headway (s)	7.1	6.1	6.7	6.1	5.5	4.8
Degree Utilization, x	0.24	0.11	0.14	0.13	0.42	0.71
Capacity (veh/h)	473	547	493	553	632	729
Control Delay (s)	11.1	8.6	10.9	10.1	11.3	17.5
Approach Delay (s)	10.2		10.9	10.1	15.4	
Approach LOS	B		B	B	C	

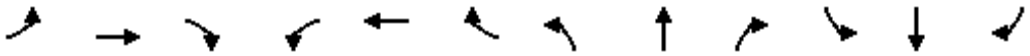
Intersection Summary				
Delay	13.9			
Level of Service	B			
Intersection Capacity Utilization	48.1%	ICU Level of Service	A	
Analysis Period (min)	15			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	330	190	530	510	0	0	0	0	300	380	420
Future Volume (vph)	0	330	190	530	510	0	0	0	0	300	380	420
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0	4.0	4.0	4.0					4.0	4.0	4.0
Lane Util. Factor		0.95	1.00	0.97	0.95					0.91	0.91	1.00
Frt		1.00	0.85	1.00	1.00					1.00	1.00	0.85
Flt Protected		1.00	1.00	0.95	1.00					0.95	0.99	1.00
Satd. Flow (prot)		3539	1583	3433	3539					1610	3358	1583
Flt Permitted		1.00	1.00	0.95	1.00					0.95	0.99	1.00
Satd. Flow (perm)		3539	1583	3433	3539					1610	3358	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	359	207	576	554	0	0	0	0	326	413	457
RTOR Reduction (vph)	0	0	83	0	0	0	0	0	0	0	0	231
Lane Group Flow (vph)	0	359	124	576	554	0	0	0	0	228	511	226
Turn Type		NA	Perm	Prot	NA					Perm	NA	Perm
Protected Phases		2		1	6						4	
Permitted Phases			2							4		4
Actuated Green, G (s)		30.0	30.0	15.8	50.2					20.0	20.0	20.0
Effective Green, g (s)		30.9	30.9	16.2	51.1					20.9	20.9	20.9
Actuated g/C Ratio		0.39	0.39	0.20	0.64					0.26	0.26	0.26
Clearance Time (s)		4.9	4.9	4.4	4.9					4.9	4.9	4.9
Vehicle Extension (s)		3.8	3.8	2.0	4.2					2.0	2.0	2.0
Lane Grp Cap (vph)		1366	611	695	2260					420	877	413
v/s Ratio Prot		c0.10		c0.17	0.16							
v/s Ratio Perm			0.08							0.14	0.15	0.14
v/c Ratio		0.26	0.20	0.83	0.25					0.54	0.58	0.55
Uniform Delay, d1		16.8	16.3	30.6	6.2					25.4	25.7	25.5
Progression Factor		1.00	1.00	1.00	1.00					1.00	1.00	1.00
Incremental Delay, d2		0.5	0.7	7.7	0.3					0.8	0.6	0.8
Delay (s)		17.2	17.1	38.3	6.4					26.2	26.4	26.3
Level of Service		B	B	D	A					C	C	C
Approach Delay (s)		17.2			22.7			0.0			26.3	
Approach LOS		B			C			A			C	

Intersection Summary			
HCM 2000 Control Delay	23.1	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.50		
Actuated Cycle Length (s)	80.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	49.7%	ICU Level of Service	A
Analysis Period (min)	15		

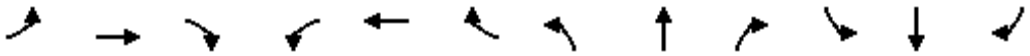
c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	0	40	40	0	0	0	0	0	0	1480	160
Future Volume (Veh/h)	0	0	40	40	0	0	0	0	0	0	1480	160
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	0	43	43	0	0	0	0	0	0	1609	174
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)								1066				
pX, platoon unblocked												
vC, conflicting volume	1696	1696	623	579	1783	0	1783			0		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	1696	1696	623	579	1783	0	1783			0		
tC, single (s)	7.5	6.5	6.9	7.5	6.5	6.9	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	100	100	90	88	100	100	100			100		
cM capacity (veh/h)	60	92	429	358	81	1084	344			1622		

Direction, Lane #	EB 1	WB 1	SB 1	SB 2	SB 3
Volume Total	43	43	644	644	496
Volume Left	0	43	0	0	0
Volume Right	43	0	0	0	174
cSH	429	358	1700	1700	1700
Volume to Capacity	0.10	0.12	0.38	0.38	0.29
Queue Length 95th (ft)	8	10	0	0	0
Control Delay (s)	14.3	16.4	0.0	0.0	0.0
Lane LOS	B	C			
Approach Delay (s)	14.3	16.4	0.0		
Approach LOS	B	C			

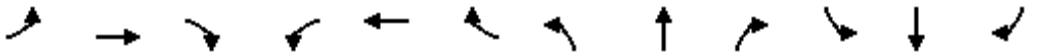
Intersection Summary				
Average Delay	0.7			
Intersection Capacity Utilization	50.7%	ICU Level of Service	A	
Analysis Period (min)	15			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	190	160	200	390	0	0	0	0	480	1270	350
Future Volume (vph)	0	190	160	200	390	0	0	0	0	480	1270	350
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0	4.0		4.0					4.0	4.0	
Lane Util. Factor		1.00	1.00		0.95					1.00	0.91	
Frt		1.00	0.85		1.00					1.00	0.97	
Flt Protected		1.00	1.00		0.98					0.95	1.00	
Satd. Flow (prot)		1863	1583		3480					1770	4921	
Flt Permitted		1.00	1.00		0.76					0.95	1.00	
Satd. Flow (perm)		1863	1583		2675					1770	4921	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	207	174	217	424	0	0	0	0	522	1380	380
RTOR Reduction (vph)	0	0	35	0	0	0	0	0	0	0	76	0
Lane Group Flow (vph)	0	207	139	0	641	0	0	0	0	522	1684	0
Turn Type		NA	Perm	Perm	NA					Perm	NA	
Protected Phases		4			8						6	
Permitted Phases			4	8						6		
Actuated Green, G (s)		21.3	21.3		21.3					30.7	30.7	
Effective Green, g (s)		24.0	24.0		24.0					33.0	33.0	
Actuated g/C Ratio		0.37	0.37		0.37					0.51	0.51	
Clearance Time (s)		6.7	6.7		6.7					6.3	6.3	
Vehicle Extension (s)		2.0	2.0		2.5					4.6	4.6	
Lane Grp Cap (vph)		687	584		987					898	2498	
v/s Ratio Prot		0.11									c0.34	
v/s Ratio Perm			0.09		c0.24					0.29		
v/c Ratio		0.30	0.24		0.65					0.58	0.67	
Uniform Delay, d1		14.5	14.2		17.0					11.2	12.0	
Progression Factor		1.00	1.00		1.00					1.00	1.00	
Incremental Delay, d2		1.1	1.0		3.3					2.7	1.5	
Delay (s)		15.7	15.1		20.3					13.9	13.4	
Level of Service		B	B		C					B	B	
Approach Delay (s)		15.4			20.3			0.0			13.6	
Approach LOS		B			C			A			B	

Intersection Summary			
HCM 2000 Control Delay	15.1	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.66		
Actuated Cycle Length (s)	65.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	68.9%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

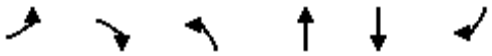


Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	690	90	40	500	0	0	0	0	540	330	520
Future Volume (vph)	0	690	90	40	500	0	0	0	0	540	330	520
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		6.7		4.0	6.7						6.3	4.0
Lane Util. Factor		0.95		1.00	0.95						0.86	0.86
Frt		0.98		1.00	1.00						1.00	0.85
Flt Protected		1.00		0.95	1.00						0.97	1.00
Satd. Flow (prot)		3478		1770	3539						4661	1362
Flt Permitted		1.00		0.95	1.00						0.97	1.00
Satd. Flow (perm)		3478		1770	3539						4661	1362
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	750	98	43	543	0	0	0	0	587	359	565
RTOR Reduction (vph)	0	15	0	0	0	0	0	0	0	0	0	124
Lane Group Flow (vph)	0	833	0	43	543	0	0	0	0	0	946	441
Turn Type		NA		Prot	NA					Perm	NA	Perm
Protected Phases		2		1	6						4	
Permitted Phases										4		4
Actuated Green, G (s)		22.4		2.8	27.9						25.1	25.1
Effective Green, g (s)		20.6		3.2	27.8						24.2	26.5
Actuated g/C Ratio		0.32		0.05	0.43						0.37	0.41
Clearance Time (s)		4.9		4.4	6.6						5.4	5.4
Vehicle Extension (s)		1.0		2.0	1.0						1.0	1.0
Lane Grp Cap (vph)		1102		87	1513						1735	555
v/s Ratio Prot		c0.24		0.02	c0.15							
v/s Ratio Perm											0.20	c0.32
v/c Ratio		0.76		0.49	0.36						0.94dl	0.79
Uniform Delay, d1		19.9		30.1	12.6						16.1	16.9
Progression Factor		1.00		1.34	0.84						1.00	1.00
Incremental Delay, d2		4.8		1.5	0.6						0.2	7.2
Delay (s)		24.8		42.0	11.1						16.3	24.1
Level of Service		C		D	B						B	C
Approach Delay (s)		24.8			13.4			0.0			19.2	
Approach LOS		C			B			A			B	

Intersection Summary			
HCM 2000 Control Delay	19.6	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.80		
Actuated Cycle Length (s)	65.0	Sum of lost time (s)	17.0
Intersection Capacity Utilization	80.2%	ICU Level of Service	D
Analysis Period (min)	15		

dl Defacto Left Lane. Recode with 1 though lane as a left lane.

c Critical Lane Group



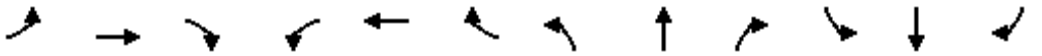
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	120	1120	1810	790	650	140
Future Volume (vph)	120	1120	1810	790	650	140
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	0.88	0.97	0.91	0.91	1.00
Frpb, ped/bikes	1.00	0.99	1.00	1.00	1.00	1.00
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected	0.95	1.00	0.95	1.00	1.00	1.00
Satd. Flow (prot)	1770	2766	3433	5085	5085	1583
Flt Permitted	0.95	1.00	0.95	1.00	1.00	1.00
Satd. Flow (perm)	1770	2766	3433	5085	5085	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	130	1217	1967	859	707	152
RTOR Reduction (vph)	0	19	0	0	0	1
Lane Group Flow (vph)	130	1198	1967	859	707	151
Confl. Peds. (#/hr)	129	61	34			
Turn Type	Prot	pm+ov	Prot	NA	NA	pm+ov
Protected Phases	5	7	7	4	8	5
Permitted Phases		5				8
Actuated Green, G (s)	14.1	76.0	61.9	97.9	32.0	46.1
Effective Green, g (s)	14.1	76.0	61.9	97.9	32.0	46.1
Actuated g/C Ratio	0.12	0.63	0.52	0.82	0.27	0.38
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	207	1844	1770	4148	1356	660
v/s Ratio Prot	0.07	c0.34	c0.57	0.17	c0.14	0.03
v/s Ratio Perm		0.10				0.07
v/c Ratio	0.63	0.65	1.11	0.21	0.52	0.23
Uniform Delay, d1	50.5	13.7	29.1	2.4	37.5	24.9
Progression Factor	1.00	1.00	0.41	0.57	0.77	0.89
Incremental Delay, d2	5.8	0.8	53.4	0.0	1.4	0.2
Delay (s)	56.3	14.5	65.3	1.4	30.4	22.4
Level of Service	E	B	E	A	C	C
Approach Delay (s)	18.5			45.9	28.9	
Approach LOS	B			D	C	

Intersection Summary			
HCM 2000 Control Delay	35.7	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.88		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	80.8%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	SEL	SET	SER	NWL	NWT	NWR
Lane Configurations												
Traffic Volume (vph)	100	280	0	0	610	320	60	0	60	250	20	180
Future Volume (vph)	100	280	0	0	610	320	60	0	60	250	20	180
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0			4.0	4.0		4.0		4.0	4.0	4.0
Lane Util. Factor	1.00	0.95			0.95	1.00		1.00		0.95	0.95	1.00
Frt	1.00	1.00			1.00	0.85		0.93		1.00	1.00	0.85
Flt Protected	0.95	1.00			1.00	1.00		0.98		0.95	0.96	1.00
Satd. Flow (prot)	1770	3539			3539	1583		1695		1681	1697	1583
Flt Permitted	0.95	1.00			1.00	1.00		0.76		0.50	0.54	1.00
Satd. Flow (perm)	1770	3539			3539	1583		1326		893	964	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	109	304	0	0	663	348	65	0	65	272	22	196
RTOR Reduction (vph)	0	0	0	0	0	232	0	118	0	0	0	151
Lane Group Flow (vph)	109	304	0	0	663	116	0	12	0	147	147	45
Turn Type	Prot	NA			NA	Perm	Perm	NA		Perm	NA	Perm
Protected Phases	5	2			6			8			7	
Permitted Phases						6	8			7		7
Actuated Green, G (s)	4.6	28.4			19.8	19.8		5.3		13.7	13.7	13.7
Effective Green, g (s)	4.6	28.4			19.8	19.8		5.3		13.7	13.7	13.7
Actuated g/C Ratio	0.08	0.48			0.33	0.33		0.09		0.23	0.23	0.23
Clearance Time (s)	4.0	4.0			4.0	4.0		4.0		4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0			3.0	3.0		3.0		3.0	3.0	3.0
Lane Grp Cap (vph)	137	1692			1179	527		118		205	222	365
v/s Ratio Prot	c0.06	0.09			c0.19							
v/s Ratio Perm						0.07		c0.01		c0.16	0.15	0.03
v/c Ratio	0.80	0.18			0.56	0.22		0.10		0.72	0.66	0.12
Uniform Delay, d1	26.9	8.8			16.2	14.2		24.9		21.1	20.7	18.1
Progression Factor	1.00	1.00			1.00	1.00		1.00		1.00	1.00	1.00
Incremental Delay, d2	26.5	0.2			1.9	1.0		0.4		11.3	7.2	0.2
Delay (s)	53.4	9.1			18.2	15.2		25.2		32.4	28.0	18.3
Level of Service	D	A			B	B		C		C	C	B
Approach Delay (s)		20.8			17.2			25.2			25.4	
Approach LOS		C			B			C			C	

Intersection Summary			
HCM 2000 Control Delay	20.4	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.58		
Actuated Cycle Length (s)	59.4	Sum of lost time (s)	16.0
Intersection Capacity Utilization	46.1%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

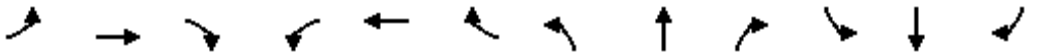


Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	210	60	310	610	0	0	0	0	170	30	240
Future Volume (vph)	0	210	60	310	610	0	0	0	0	170	30	240
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0		5.9	5.9					1.8	1.8	1.8
Lane Util. Factor		0.95		1.00	1.00					0.95	0.95	1.00
Frpb, ped/bikes		1.00		1.00	1.00					1.00	1.00	1.00
Flpb, ped/bikes		1.00		1.00	1.00					1.00	1.00	1.00
Frt		0.97		1.00	1.00					1.00	1.00	0.85
Flt Protected		1.00		0.95	1.00					0.95	0.97	1.00
Satd. Flow (prot)		3408		1763	1863					1681	1708	1583
Flt Permitted		1.00		0.57	1.00					0.95	0.97	1.00
Satd. Flow (perm)		3408		1063	1863					1681	1708	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	228	65	337	663	0	0	0	0	185	33	261
RTOR Reduction (vph)	0	34	0	0	0	0	0	0	0	0	0	77
Lane Group Flow (vph)	0	259	0	337	663	0	0	0	0	100	118	184
Confl. Peds. (#/hr)	5		5	5		10						
Turn Type		NA		Perm	NA					Perm	NA	custom
Protected Phases		7			8						6	7
Permitted Phases				8						6		6
Actuated Green, G (s)		11.1		26.1	26.1					10.0	10.0	21.1
Effective Green, g (s)		11.1		26.4	26.4					12.2	12.2	25.5
Actuated g/C Ratio		0.18		0.43	0.43					0.20	0.20	0.42
Clearance Time (s)		4.0		6.2	6.2					4.0	4.0	4.0
Vehicle Extension (s)		3.0		2.0	2.0					3.0	3.0	3.0
Lane Grp Cap (vph)		616		457	801					334	339	703
v/s Ratio Prot		c0.08			c0.36							0.06
v/s Ratio Perm				0.32						0.06	0.07	0.06
v/c Ratio		0.42		0.74	0.83					0.30	0.35	0.26
Uniform Delay, d1		22.3		14.6	15.5					21.0	21.2	11.8
Progression Factor		1.00		1.00	1.00					1.00	1.00	1.00
Incremental Delay, d2		0.5		5.3	6.7					0.5	0.6	0.2
Delay (s)		22.8		19.9	22.2					21.5	21.8	12.0
Level of Service		C		B	C					C	C	B
Approach Delay (s)		22.8			21.4			0.0			16.4	
Approach LOS		C			C			A			B	

Intersection Summary			
HCM 2000 Control Delay	20.3	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.61		
Actuated Cycle Length (s)	61.4	Sum of lost time (s)	11.7
Intersection Capacity Utilization	55.2%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

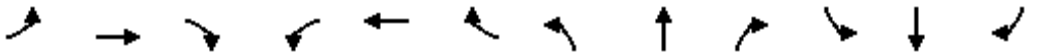
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	20	30	30	440	110	160	40	1310	200	120	720	130
Future Volume (vph)	20	30	30	440	110	160	40	1310	200	120	720	130
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.3	4.3		4.0	4.0		4.0	4.0	
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	0.91		1.00	0.91	
Frpb, ped/bikes	1.00	0.99		1.00	1.00		1.00	1.00		1.00	1.00	
Flpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Frt	1.00	0.93		1.00	0.91		1.00	0.98		1.00	0.98	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1770	1710		1764	1697		1770	4984		1770	4952	
Flt Permitted	0.46	1.00		0.71	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (perm)	866	1710		1326	1697		1770	4984		1770	4952	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	22	33	33	478	120	174	43	1424	217	130	783	141
RTOR Reduction (vph)	0	21	0	0	59	0	0	22	0	0	27	0
Lane Group Flow (vph)	22	45	0	478	235	0	43	1619	0	130	897	0
Confl. Peds. (#/hr)			4	4			1					1
Turn Type	Perm	NA		Perm	NA		Prot	NA		Prot	NA	
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4			8								
Actuated Green, G (s)	33.8	33.8		33.1	33.1		3.5	33.2		9.1	38.6	
Effective Green, g (s)	33.8	33.8		33.5	33.5		3.5	34.6		9.6	40.7	
Actuated g/C Ratio	0.38	0.38		0.37	0.37		0.04	0.38		0.11	0.45	
Clearance Time (s)	4.0	4.0		4.7	4.7		4.0	5.4		4.5	6.1	
Vehicle Extension (s)	2.0	2.0		3.0	3.0		2.0	4.8		3.0	3.7	
Lane Grp Cap (vph)	325	642		493	631		68	1916		188	2239	
v/s Ratio Prot		0.03			0.14		0.02	c0.32		c0.07	0.18	
v/s Ratio Perm	0.03			c0.36								
v/c Ratio	0.07	0.07		0.97	0.37		0.63	0.84		0.69	0.40	
Uniform Delay, d1	18.0	18.0		27.7	20.6		42.6	25.3		38.8	16.5	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	0.0	0.0		32.4	0.4		13.2	4.8		10.5	0.5	
Delay (s)	18.0	18.0		60.1	21.0		55.9	30.0		49.2	17.0	
Level of Service	B	B		E	C		E	C		D	B	
Approach Delay (s)		18.0			45.2			30.7			21.0	
Approach LOS		B			D			C			C	

Intersection Summary			
HCM 2000 Control Delay	30.7	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.88		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	12.3
Intersection Capacity Utilization	77.7%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	660	570	150	140	720	160	300	690	110	100	700	240
Future Volume (vph)	660	570	150	140	720	160	300	690	110	100	700	240
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	4.0
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00	0.91		1.00	0.91	1.00
Frpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	0.99
Flpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	1.00
Frt	1.00	0.97		1.00	0.97		1.00	0.98		1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1770	3429		1770	3432		1770	4971		1770	5085	1571
Flt Permitted	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)	1770	3429		1770	3432		1770	4971		1770	5085	1571
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	717	620	163	152	783	174	326	750	120	109	761	261
RTOR Reduction (vph)	0	17	0	0	15	0	0	17	0	0	0	51
Lane Group Flow (vph)	717	766	0	152	942	0	326	853	0	109	761	210
Confl. Peds. (#/hr)	4					4	5		1	1		5
Turn Type	Prot	NA		Prot	NA		Prot	NA		Prot	NA	pm+ov
Protected Phases	7	4		3	8		5	2		1	6	7
Permitted Phases												6
Actuated Green, G (s)	40.6	57.2		15.0	31.0		18.6	29.8		9.1	20.2	60.8
Effective Green, g (s)	41.0	58.4		15.4	32.8		19.0	30.7		9.5	21.2	61.6
Actuated g/C Ratio	0.32	0.45		0.12	0.25		0.15	0.24		0.07	0.16	0.47
Clearance Time (s)	4.4	5.2		4.4	5.8		4.4	4.9		4.4	5.0	4.4
Vehicle Extension (s)	2.0	3.9		2.0	2.7		2.0	3.3		2.0	4.1	2.0
Lane Grp Cap (vph)	558	1540		209	865		258	1173		129	829	744
v/s Ratio Prot	c0.41	0.22		0.09	c0.27		c0.18	0.17		0.06	c0.15	0.09
v/s Ratio Perm												0.04
v/c Ratio	1.28	0.50		0.73	1.09		1.26	0.73		0.84	0.92	0.28
Uniform Delay, d1	44.5	25.4		55.3	48.6		55.5	45.8		59.5	53.5	20.8
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	141.4	0.3		10.2	57.7		145.8	4.0		35.8	16.7	0.1
Delay (s)	185.9	25.7		65.5	106.3		201.3	49.8		95.3	70.3	20.8
Level of Service	F	C		E	F		F	D		F	E	C
Approach Delay (s)		102.3			100.7			91.1			61.3	
Approach LOS		F			F			F			E	

Intersection Summary			
HCM 2000 Control Delay	89.8	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.16		
Actuated Cycle Length (s)	130.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	106.7%	ICU Level of Service	G
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	120	360	170	330	410	110	240	120	210	80	150	100
Future Volume (vph)	120	360	170	330	410	110	240	120	210	80	150	100
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	5.5	5.5	4.0	5.4	5.4
Lane Util. Factor	1.00	0.95	0.88	0.97	0.95	1.00	0.97	1.00	1.00	1.00	0.91	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1770	3539	2787	3433	3539	1583	3433	1863	1583	1770	5085	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1770	3539	2787	3433	3539	1583	3433	1863	1583	1770	5085	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	130	391	185	359	446	120	261	130	228	87	163	109
RTOR Reduction (vph)	0	0	101	0	0	74	0	0	154	0	0	85
Lane Group Flow (vph)	130	391	84	359	446	46	261	130	74	87	163	24
Turn Type	Prot	NA	pm+ov	Prot	NA	Perm	Prot	NA	pm+ov	Prot	NA	Perm
Protected Phases	5	2	3	1	6		3	8	1	7	4	
Permitted Phases			2			6			8			4
Actuated Green, G (s)	9.6	32.8	40.4	10.9	34.1	34.1	7.6	20.8	31.7	7.3	20.5	20.5
Effective Green, g (s)	10.0	33.7	41.2	11.3	35.0	35.0	8.0	20.2	29.5	7.7	20.0	20.0
Actuated g/C Ratio	0.11	0.37	0.46	0.12	0.39	0.39	0.09	0.22	0.33	0.09	0.22	0.22
Clearance Time (s)	4.4	4.9	4.4	4.4	4.9	4.9	4.4	4.9	4.4	4.4	4.9	4.9
Vehicle Extension (s)	2.0	2.1	2.0	2.0	2.3	2.3	2.0	4.5	2.0	2.0	4.5	4.5
Lane Grp Cap (vph)	195	1319	1270	429	1370	612	303	416	516	150	1125	350
v/s Ratio Prot	0.07	0.11	0.01	c0.10	c0.13		c0.08	c0.07	0.02	0.05	0.03	
v/s Ratio Perm			0.02			0.03			0.03			0.02
v/c Ratio	0.67	0.30	0.07	0.84	0.33	0.08	0.86	0.31	0.14	0.58	0.14	0.07
Uniform Delay, d1	38.6	20.0	13.8	38.6	19.4	17.5	40.7	29.3	21.5	39.8	28.3	27.8
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	6.5	0.6	0.0	12.7	0.6	0.2	20.7	0.7	0.0	3.4	0.1	0.1
Delay (s)	45.1	20.6	13.8	51.4	20.1	17.7	61.4	30.0	21.6	43.1	28.4	28.0
Level of Service	D	C	B	D	C	B	E	C	C	D	C	C
Approach Delay (s)		23.3			31.9			40.1			31.9	
Approach LOS		C			C			D			C	

Intersection Summary			
HCM 2000 Control Delay	31.5	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.48		
Actuated Cycle Length (s)	90.4	Sum of lost time (s)	19.0
Intersection Capacity Utilization	46.5%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

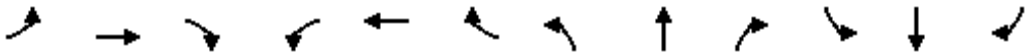
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	140	230	70	20	140	220	50	180	250	20	20	30
Future Volume (vph)	140	230	70	20	140	220	50	180	250	20	20	30
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0			4.0			4.0			4.0	
Lane Util. Factor		1.00			1.00			1.00			1.00	
Frpb, ped/bikes		1.00			1.00			0.98			1.00	
Flpb, ped/bikes		1.00			1.00			1.00			1.00	
Frt		0.98			0.92			0.93			0.94	
Flt Protected		0.98			1.00			0.99			0.99	
Satd. Flow (prot)		1787			1712			1691			1728	
Flt Permitted		0.77			0.97			0.96			0.80	
Satd. Flow (perm)		1403			1663			1634			1398	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	152	250	76	22	152	239	54	196	272	22	22	33
RTOR Reduction (vph)	0	10	0	0	42	0	0	57	0	0	23	0
Lane Group Flow (vph)	0	468	0	0	371	0	0	465	0	0	54	0
Confl. Peds. (#/hr)			3	3					8	8		
Turn Type	pm+pt	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases	5	2			6			8			4	
Permitted Phases	2			6			8			4		
Actuated Green, G (s)		39.1			39.1			20.3			20.3	
Effective Green, g (s)		40.0			40.0			21.2			21.2	
Actuated g/C Ratio		0.58			0.58			0.31			0.31	
Clearance Time (s)		4.9			4.9			4.9			4.9	
Vehicle Extension (s)		2.0			2.0			2.0			2.0	
Lane Grp Cap (vph)		810			961			500			428	
v/s Ratio Prot												
v/s Ratio Perm		c0.33			0.22			c0.28			0.04	
v/c Ratio		0.58			0.39			0.93			0.13	
Uniform Delay, d1		9.3			7.9			23.3			17.3	
Progression Factor		1.00			1.00			1.00			1.00	
Incremental Delay, d2		0.6			1.2			23.8			0.0	
Delay (s)		9.9			9.1			47.1			17.4	
Level of Service		A			A			D			B	
Approach Delay (s)		9.9			9.1			47.1			17.4	
Approach LOS		A			A			D			B	

Intersection Summary			
HCM 2000 Control Delay	23.1	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.75		
Actuated Cycle Length (s)	69.2	Sum of lost time (s)	12.0
Intersection Capacity Utilization	86.4%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	440	160	240	680	160	160
Future Volume (vph)	440	160	240	680	160	160
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0		4.0	4.9	4.0	4.0
Lane Util. Factor	0.91		1.00	0.95	1.00	1.00
Frpb, ped/bikes	0.99		1.00	1.00	1.00	1.00
Flpb, ped/bikes	1.00		1.00	1.00	1.00	1.00
Frt	0.96		1.00	1.00	1.00	0.85
Flt Protected	1.00		0.95	1.00	0.95	1.00
Satd. Flow (prot)	4843		1770	3539	1770	1583
Flt Permitted	1.00		0.95	1.00	0.95	1.00
Satd. Flow (perm)	4843		1770	3539	1770	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	478	174	261	739	174	174
RTOR Reduction (vph)	85	0	0	0	0	132
Lane Group Flow (vph)	567	0	261	739	174	42
Confl. Peds. (#/hr)		7	7		30	15
Turn Type	NA		Prot	NA	Prot	Prot
Protected Phases	2		1	6	8	8
Permitted Phases						
Actuated Green, G (s)	21.5		10.8	36.7	13.6	13.6
Effective Green, g (s)	23.4		11.2	36.7	14.5	14.5
Actuated g/C Ratio	0.39		0.19	0.61	0.24	0.24
Clearance Time (s)	4.9		4.4	4.9	4.9	4.9
Vehicle Extension (s)	2.9		2.0	2.0	2.0	2.0
Lane Grp Cap (vph)	1885		329	2161	427	381
v/s Ratio Prot	0.12		c0.15	c0.21	c0.10	0.03
v/s Ratio Perm						
v/c Ratio	0.30		0.79	0.34	0.41	0.11
Uniform Delay, d1	12.7		23.3	5.8	19.2	17.8
Progression Factor	1.00		1.00	1.00	1.00	1.00
Incremental Delay, d2	0.4		11.6	0.4	0.2	0.0
Delay (s)	13.1		34.9	6.2	19.4	17.8
Level of Service	B		C	A	B	B
Approach Delay (s)	13.1			13.7	18.6	
Approach LOS	B			B	B	

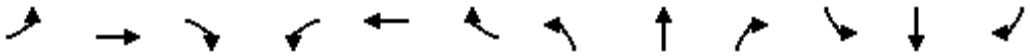
Intersection Summary			
HCM 2000 Control Delay	14.4	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.47		
Actuated Cycle Length (s)	60.1	Sum of lost time (s)	11.0
Intersection Capacity Utilization	49.7%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Traffic Volume (vph)	20	10	20	40	10	40	30	150	30	50	180	40
Future Volume (vph)	20	10	20	40	10	40	30	150	30	50	180	40
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	22	11	22	43	11	43	33	163	33	54	196	43

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total (vph)	55	97	229	293
Volume Left (vph)	22	43	33	54
Volume Right (vph)	22	43	33	43
Hadj (s)	-0.13	-0.14	-0.02	-0.02
Departure Headway (s)	5.1	5.1	4.6	4.6
Degree Utilization, x	0.08	0.14	0.29	0.37
Capacity (veh/h)	619	637	744	756
Control Delay (s)	8.6	8.9	9.5	10.2
Approach Delay (s)	8.6	8.9	9.5	10.2
Approach LOS	A	A	A	B

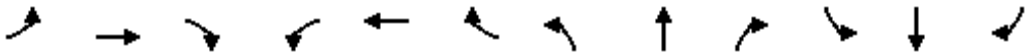
Intersection Summary				
Delay	9.7			
Level of Service	A			
Intersection Capacity Utilization	36.3%	ICU Level of Service	A	
Analysis Period (min)	15			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Traffic Volume (vph)	30	20	20	20	30	20	30	140	30	40	120	60
Future Volume (vph)	30	20	20	20	30	20	30	140	30	40	120	60
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	33	22	22	22	33	22	33	152	33	43	130	65

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total (vph)	77	77	218	238
Volume Left (vph)	33	22	33	43
Volume Right (vph)	22	22	33	65
Hadj (s)	-0.05	-0.08	-0.03	-0.09
Departure Headway (s)	5.0	5.0	4.5	4.5
Degree Utilization, x	0.11	0.11	0.28	0.30
Capacity (veh/h)	646	649	757	768
Control Delay (s)	8.6	8.6	9.3	9.3
Approach Delay (s)	8.6	8.6	9.3	9.3
Approach LOS	A	A	A	A

Intersection Summary				
Delay	9.1			
Level of Service	A			
Intersection Capacity Utilization	31.3%	ICU Level of Service	A	
Analysis Period (min)	15			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Traffic Volume (vph)	20	20	20	100	20	20	30	280	290	10	100	20
Future Volume (vph)	20	20	20	100	20	20	30	280	290	10	100	20
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	22	22	22	109	22	22	33	304	315	11	109	22

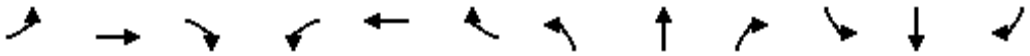
Direction, Lane #	EB 1	WB 1	NB 1	NB 2	SB 1
Volume Total (vph)	66	153	337	315	142
Volume Left (vph)	22	109	33	0	11
Volume Right (vph)	22	22	0	315	22
Hadj (s)	-0.10	0.09	0.08	-0.67	-0.04
Departure Headway (s)	5.8	5.8	5.4	4.7	5.3
Degree Utilization, x	0.11	0.25	0.51	0.41	0.21
Capacity (veh/h)	560	575	651	753	637
Control Delay (s)	9.5	10.6	12.6	9.6	9.7
Approach Delay (s)	9.5	10.6	11.2		9.7
Approach LOS	A	B	B		A

Intersection Summary				
Delay	10.8			
Level of Service	B			
Intersection Capacity Utilization	44.1%	ICU Level of Service	A	
Analysis Period (min)	15			

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Sign Control	Stop			Stop	Stop	
Traffic Volume (vph)	30	20	40	40	40	150
Future Volume (vph)	30	20	40	40	40	150
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	33	22	43	43	43	163

Direction, Lane #	EB 1	WB 1	NB 1
Volume Total (vph)	55	86	206
Volume Left (vph)	0	43	43
Volume Right (vph)	22	0	163
Hadj (s)	-0.21	0.13	-0.40
Departure Headway (s)	4.2	4.5	3.8
Degree Utilization, x	0.06	0.11	0.22
Capacity (veh/h)	807	750	907
Control Delay (s)	7.5	8.1	7.9
Approach Delay (s)	7.5	8.1	7.9
Approach LOS	A	A	A

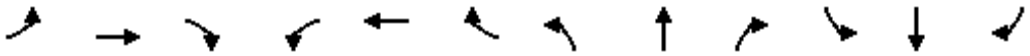
Intersection Summary			
Delay	7.9		
Level of Service	A		
Intersection Capacity Utilization	35.7%	ICU Level of Service	A
Analysis Period (min)	15		



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Traffic Volume (vph)	20	20	20	50	30	30	20	140	100	20	40	20
Future Volume (vph)	20	20	20	50	30	30	20	140	100	20	40	20
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	22	22	22	54	33	33	22	152	109	22	43	22

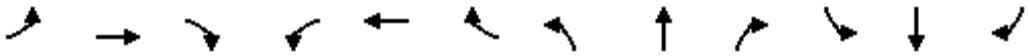
Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total (vph)	66	120	283	87
Volume Left (vph)	22	54	22	22
Volume Right (vph)	22	33	109	22
Hadj (s)	-0.10	-0.04	-0.18	-0.07
Departure Headway (s)	4.8	4.8	4.3	4.6
Degree Utilization, x	0.09	0.16	0.34	0.11
Capacity (veh/h)	679	691	806	728
Control Delay (s)	8.3	8.7	9.5	8.2
Approach Delay (s)	8.3	8.7	9.5	8.2
Approach LOS	A	A	A	A

Intersection Summary				
Delay	9.0			
Level of Service	A			
Intersection Capacity Utilization	38.2%	ICU Level of Service	A	
Analysis Period (min)	15			



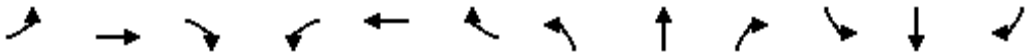
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	300	110	90	10	40	20	260	270	40	20	50	80
Future Volume (vph)	300	110	90	10	40	20	260	270	40	20	50	80
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0			4.0		4.0	4.0		4.0	4.0	
Lane Util. Factor		1.00			1.00		1.00	1.00		1.00	1.00	
Frpb, ped/bikes		1.00			1.00		1.00	1.00		1.00	0.98	
Flpb, ped/bikes		1.00			1.00		1.00	1.00		1.00	1.00	
Frt		0.98			0.96		1.00	0.98		1.00	0.91	
Flt Protected		0.97			0.99		0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1760			1769		1763	1821		1764	1665	
Flt Permitted		0.77			0.93		0.67	1.00		0.48	1.00	
Satd. Flow (perm)		1401			1659		1238	1821		883	1665	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	326	120	98	11	43	22	283	293	43	22	54	87
RTOR Reduction (vph)	0	14	0	0	12	0	0	7	0	0	50	0
Lane Group Flow (vph)	0	530	0	0	64	0	283	329	0	22	91	0
Confl. Peds. (#/hr)	5					5	3		4	4		3
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		8			4			2			6	
Permitted Phases	8			4			2			6		
Actuated Green, G (s)		25.2			25.2		24.4	24.4		24.4	24.4	
Effective Green, g (s)		25.2			25.2		24.4	24.4		24.4	24.4	
Actuated g/C Ratio		0.44			0.44		0.42	0.42		0.42	0.42	
Clearance Time (s)		4.0			4.0		4.0	4.0		4.0	4.0	
Vehicle Extension (s)		2.0			2.0		4.4	4.4		2.1	2.1	
Lane Grp Cap (vph)		612			725		524	771		374	705	
v/s Ratio Prot								0.18			0.05	
v/s Ratio Perm		c0.38			0.04		c0.23			0.02		
v/c Ratio		0.87			0.09		0.54	0.43		0.06	0.13	
Uniform Delay, d1		14.7			9.5		12.4	11.7		9.8	10.1	
Progression Factor		1.00			1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2		11.9			0.0		4.0	1.7		0.3	0.4	
Delay (s)		26.5			9.5		16.4	13.4		10.1	10.5	
Level of Service		C			A		B	B		B	B	
Approach Delay (s)		26.5			9.5			14.8			10.4	
Approach LOS		C			A			B			B	

Intersection Summary			
HCM 2000 Control Delay	18.5	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.70		
Actuated Cycle Length (s)	57.6	Sum of lost time (s)	8.0
Intersection Capacity Utilization	74.8%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	50	440	160	230	720	90	110	20	270	20	10	30
Future Volume (vph)	50	440	160	230	720	90	110	20	270	20	10	30
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0			4.0			4.0	
Lane Util. Factor	1.00	0.91		1.00	0.95			1.00			1.00	
Frpb, ped/bikes	1.00	1.00		1.00	1.00			0.99			1.00	
Flpb, ped/bikes	1.00	1.00		1.00	1.00			1.00			1.00	
Frt	1.00	0.96		1.00	0.98			0.91			0.93	
Flt Protected	0.95	1.00		0.95	1.00			0.99			0.98	
Satd. Flow (prot)	1769	4882		1770	3471			1646			1706	
Flt Permitted	0.32	1.00		0.30	1.00			0.89			0.82	
Satd. Flow (perm)	587	4882		563	3471			1478			1424	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	54	478	174	250	783	98	120	22	293	22	11	33
RTOR Reduction (vph)	0	80	0	0	12	0	0	127	0	0	24	0
Lane Group Flow (vph)	54	572	0	250	869	0	0	308	0	0	42	0
Confl. Peds. (#/hr)	2					2			13	13		
Turn Type	pm+pt	NA		pm+pt	NA		Perm	NA		Perm	NA	
Protected Phases	5	2		1	6			8			4	
Permitted Phases	2			6			8			4		
Actuated Green, G (s)	22.5	20.3		33.3	26.7			15.5			15.5	
Effective Green, g (s)	23.3	21.3		33.7	27.6			16.4			16.4	
Actuated g/C Ratio	0.40	0.36		0.58	0.47			0.28			0.28	
Clearance Time (s)	4.4	5.0		4.4	4.9			4.9			4.9	
Vehicle Extension (s)	2.0	3.3		2.0	3.3			2.0			2.0	
Lane Grp Cap (vph)	285	1774		507	1634			413			398	
v/s Ratio Prot	0.01	0.12		c0.07	c0.25							
v/s Ratio Perm	0.07			0.21				c0.21			0.03	
v/c Ratio	0.19	0.32		0.49	0.53			0.74			0.11	
Uniform Delay, d1	11.0	13.4		6.6	10.9			19.2			15.7	
Progression Factor	1.00	1.00		1.00	1.00			1.00			1.00	
Incremental Delay, d2	0.1	0.5		0.3	1.2			6.3			0.0	
Delay (s)	11.1	13.9		6.9	12.2			25.5			15.7	
Level of Service	B	B		A	B			C			B	
Approach Delay (s)		13.7			11.0			25.5			15.7	
Approach LOS		B			B			C			B	

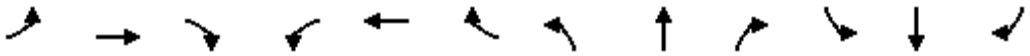
Intersection Summary			
HCM 2000 Control Delay	14.6	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.63		
Actuated Cycle Length (s)	58.6	Sum of lost time (s)	12.0
Intersection Capacity Utilization	66.4%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Traffic Volume (vph)	70	20	20	20	20	20	20	160	40	60	120	70
Future Volume (vph)	70	20	20	20	20	20	20	160	40	60	120	70
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	76	22	22	22	22	22	22	174	43	65	130	76

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total (vph)	120	66	239	271
Volume Left (vph)	76	22	22	65
Volume Right (vph)	22	22	43	76
Hadj (s)	0.05	-0.10	-0.06	-0.09
Departure Headway (s)	5.3	5.2	4.7	4.6
Degree Utilization, x	0.18	0.10	0.31	0.35
Capacity (veh/h)	618	611	732	741
Control Delay (s)	9.4	8.7	9.8	10.1
Approach Delay (s)	9.4	8.7	9.8	10.1
Approach LOS	A	A	A	B

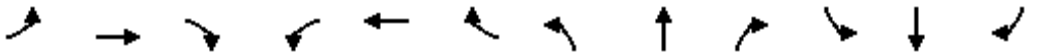
Intersection Summary				
Delay	9.7			
Level of Service	A			
Intersection Capacity Utilization	45.8%	ICU Level of Service	A	
Analysis Period (min)	15			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Traffic Volume (vph)	40	20	40	10	10	20	60	150	10	30	90	50
Future Volume (vph)	40	20	40	10	10	20	60	150	10	30	90	50
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	43	22	43	11	11	22	65	163	11	33	98	54

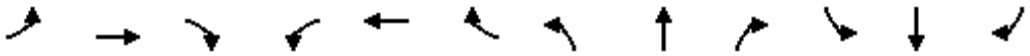
Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total (vph)	108	44	239	185
Volume Left (vph)	43	11	65	33
Volume Right (vph)	43	22	11	54
Hadj (s)	-0.13	-0.22	0.06	-0.11
Departure Headway (s)	4.8	4.8	4.6	4.5
Degree Utilization, x	0.14	0.06	0.30	0.23
Capacity (veh/h)	680	667	759	766
Control Delay (s)	8.6	8.1	9.5	8.8
Approach Delay (s)	8.6	8.1	9.5	8.8
Approach LOS	A	A	A	A

Intersection Summary				
Delay	9.0			
Level of Service	A			
Intersection Capacity Utilization	35.2%	ICU Level of Service	A	
Analysis Period (min)	15			



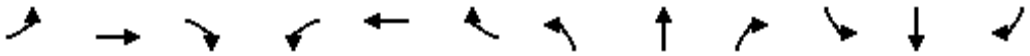
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	400	270	30	10	650	260	0	0	20	200	150	320
Future Volume (vph)	400	270	30	10	650	260	0	0	20	200	150	320
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0				4.0	4.0	4.0	4.0
Lane Util. Factor	0.97	0.95		1.00	0.95				1.00	0.95	0.95	1.00
Frpb, ped/bikes	1.00	1.00		1.00	1.00				0.99	1.00	1.00	1.00
Flpb, ped/bikes	1.00	1.00		1.00	1.00				1.00	1.00	1.00	1.00
Frt	1.00	0.98		1.00	0.96				0.86	1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00				1.00	0.95	0.98	1.00
Satd. Flow (prot)	3433	3478		1770	3387				1590	1681	1736	1583
Flt Permitted	0.95	1.00		0.95	1.00				1.00	0.95	0.98	1.00
Satd. Flow (perm)	3433	3478		1770	3387				1590	1681	1736	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	435	293	33	11	707	283	0	0	22	217	163	348
RTOR Reduction (vph)	0	8	0	0	46	0	0	0	0	0	0	214
Lane Group Flow (vph)	435	318	0	11	944	0	0	0	22	113	267	134
Confl. Peds. (#/hr)			1	1					4	4		
Turn Type	Prot	NA		Prot	NA				Free	Split	NA	Perm
Protected Phases	5	2		1	6					4	4	
Permitted Phases									Free			4
Actuated Green, G (s)	11.2	38.3		0.7	27.8				71.2	17.6	17.6	17.6
Effective Green, g (s)	11.6	39.2		1.1	28.7				71.2	18.9	18.9	18.9
Actuated g/C Ratio	0.16	0.55		0.02	0.40				1.00	0.27	0.27	0.27
Clearance Time (s)	4.4	4.9		4.4	4.9					5.3	5.3	5.3
Vehicle Extension (s)	2.0	3.3		2.0	3.8					4.4	4.4	4.4
Lane Grp Cap (vph)	559	1914		27	1365				1590	446	460	420
v/s Ratio Prot	c0.13	0.09		0.01	c0.28					0.07	c0.15	
v/s Ratio Perm									0.01			0.08
v/c Ratio	0.78	0.17		0.41	0.69				0.01	0.25	0.58	0.32
Uniform Delay, d1	28.6	7.9		34.7	17.6				0.0	20.6	22.7	21.0
Progression Factor	1.00	1.00		1.00	1.00				1.00	1.00	1.00	1.00
Incremental Delay, d2	6.2	0.2		3.6	2.9				0.0	0.5	2.5	0.7
Delay (s)	34.7	8.1		38.3	20.5				0.0	21.1	25.2	21.7
Level of Service	C	A		D	C				A	C	C	C
Approach Delay (s)		23.3			20.7			0.0			22.9	
Approach LOS		C			C			A			C	

Intersection Summary			
HCM 2000 Control Delay	21.9	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.67		
Actuated Cycle Length (s)	71.2	Sum of lost time (s)	12.0
Intersection Capacity Utilization	63.8%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	30	700	90	70	1410	60	230	30	70	70	50	20
Future Volume (vph)	30	700	90	70	1410	60	230	30	70	70	50	20
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0		4.0	4.0			4.0	
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00	1.00			1.00	
Frpb, ped/bikes	1.00	0.99		1.00	1.00		1.00	0.98			1.00	
Flpb, ped/bikes	1.00	1.00		1.00	1.00		0.99	1.00			0.99	
Frt	1.00	0.98		1.00	0.99		1.00	0.90			0.98	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00			0.98	
Satd. Flow (prot)	1678	3363		1671	3411		1635	1527			1669	
Flt Permitted	0.95	1.00		0.95	1.00		0.63	1.00			0.80	
Satd. Flow (perm)	1678	3363		1671	3411		1078	1527			1374	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	33	761	98	76	1533	65	250	33	76	76	54	22
RTOR Reduction (vph)	0	7	0	0	2	0	0	56	0	0	5	0
Lane Group Flow (vph)	33	852	0	76	1596	0	250	53	0	0	147	0
Confl. Peds. (#/hr)	14		16	16		14	13		13	13		13
Confl. Bikes (#/hr)			3			3			1			
Bus Blockages (#/hr)	13	13	13	14	14	14	16	16	16	13	13	13
Turn Type	Prot	NA		Prot	NA		Perm	NA		Perm	NA	
Protected Phases	5	2		1	6			4			4	
Permitted Phases							4			4		
Actuated Green, G (s)	3.1	67.0		8.0	71.9		30.8	30.8			30.8	
Effective Green, g (s)	3.5	67.9		8.4	72.8		31.7	31.7			31.7	
Actuated g/C Ratio	0.03	0.57		0.07	0.61		0.26	0.26			0.26	
Clearance Time (s)	4.4	4.9		4.4	4.9		4.9	4.9			4.9	
Vehicle Extension (s)	2.0	2.1		2.0	2.1		2.0	2.0			2.0	
Lane Grp Cap (vph)	48	1902		116	2069		284	403			362	
v/s Ratio Prot	0.02	0.25		c0.05	c0.47			0.03				
v/s Ratio Perm							c0.23				0.11	
v/c Ratio	0.69	0.45		0.66	0.77		0.88	0.13			0.41	
Uniform Delay, d1	57.7	15.1		54.4	17.4		42.3	33.7			36.4	
Progression Factor	1.00	1.00		0.84	1.51		1.00	1.00			1.00	
Incremental Delay, d2	27.8	0.8		2.8	0.8		25.0	0.1			0.3	
Delay (s)	85.5	15.9		48.7	27.1		67.3	33.7			36.7	
Level of Service	F	B		D	C		E	C			D	
Approach Delay (s)		18.5			28.1			57.1			36.7	
Approach LOS		B			C			E			D	

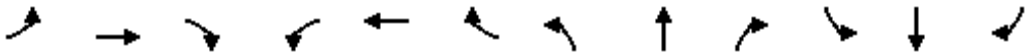
Intersection Summary			
HCM 2000 Control Delay	29.1	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.81		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	74.2%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	180	650	80	170	1240	70	60	130	100	260	380	250
Future Volume (vph)	180	650	80	170	1240	70	60	130	100	260	380	250
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0		4.0	4.0	4.0	4.0	4.0	
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00	0.95	1.00	1.00	0.95	
Frpb, ped/bikes	1.00	0.99		1.00	1.00		1.00	1.00	0.98	1.00	0.98	
Flpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	
Frt	1.00	0.98		1.00	0.99		1.00	1.00	0.85	1.00	0.94	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)	1770	3461		1770	3501		1770	3539	1550	1770	3267	
Flt Permitted	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (perm)	1770	3461		1770	3501		1770	3539	1550	1770	3267	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	196	707	87	185	1348	76	65	141	109	283	413	272
RTOR Reduction (vph)	0	7	0	0	3	0	0	0	45	0	92	0
Lane Group Flow (vph)	196	787	0	185	1421	0	65	141	64	283	593	0
Confl. Peds. (#/hr)	23		24	24		23	19		14	14		19
Confl. Bikes (#/hr)			9			5			12			6
Turn Type	Prot	NA		Prot	NA		Prot	NA	pm+ov	Prot	NA	
Protected Phases	5	2		1	6		3	8	1	7	4	
Permitted Phases									8			
Actuated Green, G (s)	13.9	41.0		16.3	42.9		7.0	21.4	37.7	22.6	37.1	
Effective Green, g (s)	14.3	41.9		16.7	44.3		7.4	22.4	38.5	23.0	38.0	
Actuated g/C Ratio	0.12	0.35		0.14	0.37		0.06	0.19	0.32	0.19	0.32	
Clearance Time (s)	4.4	4.9		4.4	5.4		4.4	5.0	4.4	4.4	4.9	
Vehicle Extension (s)	2.0	4.2		2.0	3.0		2.0	4.0	2.0	2.0	2.6	
Lane Grp Cap (vph)	210	1208		246	1292		109	660	497	339	1034	
v/s Ratio Prot	c0.11	0.23		0.10	c0.41		c0.04	0.04	0.02	c0.16	c0.18	
v/s Ratio Perm									0.02			
v/c Ratio	0.93	0.65		0.75	1.10		0.60	0.21	0.13	0.83	0.57	
Uniform Delay, d1	52.4	32.9		49.7	37.9		54.8	41.3	28.9	46.7	34.2	
Progression Factor	1.20	0.78		1.04	0.85		1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	41.4	2.6		9.2	55.3		5.7	0.2	0.0	15.4	0.7	
Delay (s)	104.2	28.3		60.8	87.4		60.6	41.6	28.9	62.1	34.9	
Level of Service	F	C		E	F		E	D	C	E	C	
Approach Delay (s)		43.3			84.3			41.1			42.9	
Approach LOS		D			F			D			D	

Intersection Summary			
HCM 2000 Control Delay	60.0	HCM 2000 Level of Service	E
HCM 2000 Volume to Capacity ratio	0.89		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	88.6%	ICU Level of Service	E
Analysis Period (min)	15		

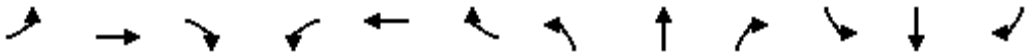
c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	10	980	80	320	1370	50	70	20	150	70	20	20
Future Volume (vph)	10	980	80	320	1370	50	70	20	150	70	20	20
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0			4.0	4.0		4.0	
Lane Util. Factor	1.00	0.91		1.00	0.95			1.00	1.00		1.00	
Frpb, ped/bikes	1.00	1.00		1.00	1.00			1.00	0.98		0.99	
Flpb, ped/bikes	1.00	1.00		1.00	1.00			1.00	1.00		1.00	
Frt	1.00	0.99		1.00	0.99			1.00	0.85		0.98	
Flt Protected	0.95	1.00		0.95	1.00			0.96	1.00		0.97	
Satd. Flow (prot)	1770	5014		1770	3518			1792	1552		1750	
Flt Permitted	0.95	1.00		0.95	1.00			0.70	1.00		0.70	
Satd. Flow (perm)	1770	5014		1770	3518			1309	1552		1267	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	11	1065	87	348	1489	54	76	22	163	76	22	22
RTOR Reduction (vph)	0	6	0	0	2	0	0	0	135	0	7	0
Lane Group Flow (vph)	11	1146	0	348	1541	0	0	98	28	0	113	0
Confl. Peds. (#/hr)	1		1	1		1	1		1	1		1
Confl. Bikes (#/hr)			17			4			5			12
Turn Type	Prot	NA		Prot	NA		Perm	NA	Perm	Perm	NA	
Protected Phases	5	2		1	6			8			4	
Permitted Phases							8		8	4		
Actuated Green, G (s)	0.8	57.1		28.3	84.6			20.0	20.0		20.0	
Effective Green, g (s)	1.2	58.4		28.7	85.9			20.9	20.9		20.9	
Actuated g/C Ratio	0.01	0.49		0.24	0.72			0.17	0.17		0.17	
Clearance Time (s)	4.4	5.3		4.4	5.3			4.9	4.9		4.9	
Vehicle Extension (s)	2.0	4.4		2.0	4.4			2.0	2.0		2.0	
Lane Grp Cap (vph)	17	2440		423	2518			227	270		220	
v/s Ratio Prot	0.01	0.23		c0.20	c0.44							
v/s Ratio Perm								0.07	0.02		c0.09	
v/c Ratio	0.65	0.47		0.82	0.61			0.43	0.11		0.51	
Uniform Delay, d1	59.2	20.5		43.2	8.6			44.2	41.7		44.9	
Progression Factor	0.83	1.50		1.00	1.00			1.00	1.00		1.00	
Incremental Delay, d2	40.4	0.5		11.6	1.1			0.5	0.1		0.8	
Delay (s)	89.3	31.3		54.9	9.7			44.7	41.7		45.8	
Level of Service	F	C		D	A			D	D		D	
Approach Delay (s)		31.9			18.1			42.9			45.8	
Approach LOS		C			B			D			D	

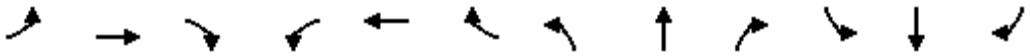
Intersection Summary			
HCM 2000 Control Delay	25.6	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.66		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	65.9%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group



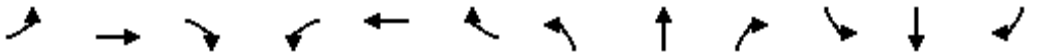
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	0	0	280	3130	0	0	0	0	0	150	150
Future Volume (vph)	0	0	0	280	3130	0	0	0	0	0	150	150
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)					4.0						4.0	
Lane Util. Factor					0.91						0.91	
Frpb, ped/bikes					1.00						0.99	
Flpb, ped/bikes					1.00						1.00	
Frt					1.00						0.93	
Flt Protected					1.00						1.00	
Satd. Flow (prot)					5061						4651	
Flt Permitted					1.00						1.00	
Satd. Flow (perm)					5061						4651	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	304	3402	0	0	0	0	0	163	163
RTOR Reduction (vph)	0	0	0	0	9	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	0	0	0	3697	0	0	0	0	0	326	0
Confl. Peds. (#/hr)				6								7
Turn Type				Perm	NA						NA	
Protected Phases					6						4	
Permitted Phases				6								
Actuated Green, G (s)					61.8						18.0	
Effective Green, g (s)					63.1						18.9	
Actuated g/C Ratio					0.70						0.21	
Clearance Time (s)					5.3						4.9	
Vehicle Extension (s)					0.2						0.2	
Lane Grp Cap (vph)					3548						976	
v/s Ratio Prot											c0.07	
v/s Ratio Perm					0.73							
v/c Ratio					1.04						0.33	
Uniform Delay, d1					13.4						30.2	
Progression Factor					1.00						1.00	
Incremental Delay, d2					27.5						0.1	
Delay (s)					41.0						30.3	
Level of Service					D						C	
Approach Delay (s)		0.0			41.0			0.0			30.3	
Approach LOS		A			D			A			C	

Intersection Summary			
HCM 2000 Control Delay	40.1	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.88		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	87.8%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			



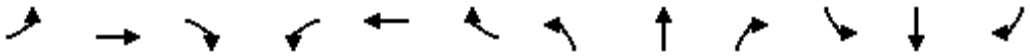
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	900	100	0	0	0	0	0	0	160	330	0
Future Volume (vph)	0	900	100	0	0	0	0	0	0	160	330	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0									4.0	
Lane Util. Factor		0.91									0.91	
Frpb, ped/bikes		1.00									1.00	
Flpb, ped/bikes		1.00									0.99	
Frt		0.98									1.00	
Flt Protected		1.00									0.98	
Satd. Flow (prot)		4997									4977	
Flt Permitted		1.00									0.98	
Satd. Flow (perm)		4997									4977	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	978	109	0	0	0	0	0	0	174	359	0
RTOR Reduction (vph)	0	15	0	0	0	0	0	0	0	0	70	0
Lane Group Flow (vph)	0	1072	0	0	0	0	0	0	0	0	463	0
Confl. Peds. (#/hr)			9							14		
Turn Type		NA								Perm	NA	
Protected Phases		2									4	
Permitted Phases										4		
Actuated Green, G (s)		47.0									19.0	
Effective Green, g (s)		47.0									20.0	
Actuated g/C Ratio		0.63									0.27	
Clearance Time (s)		4.0									5.0	
Vehicle Extension (s)		3.0									3.0	
Lane Grp Cap (vph)		3131									1327	
v/s Ratio Prot		c0.21										
v/s Ratio Perm											0.09	
v/c Ratio		0.34									0.35	
Uniform Delay, d1		6.7									22.2	
Progression Factor		0.58									1.00	
Incremental Delay, d2		0.3									0.2	
Delay (s)		4.1									22.4	
Level of Service		A									C	
Approach Delay (s)		4.1			0.0			0.0			22.4	
Approach LOS		A			A			A			C	

Intersection Summary			
HCM 2000 Control Delay	10.1	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.34		
Actuated Cycle Length (s)	75.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	43.3%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	230	1080	40	120	780	190	50	40	90	80	80	210
Future Volume (vph)	230	1080	40	120	780	190	50	40	90	80	80	210
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.97	0.95		1.00	0.95	1.00	1.00	1.00	1.00	0.97	1.00	1.00
Frpb, ped/bikes	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.99
Flpb, ped/bikes	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.99		1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	3520		1770	3539	1583	1770	1863	1583	3433	1863	1562
Flt Permitted	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	3520		1770	3539	1583	1770	1863	1583	3433	1863	1562
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	250	1174	43	130	848	207	54	43	98	87	87	228
RTOR Reduction (vph)	0	3	0	0	0	192	0	0	84	0	0	187
Lane Group Flow (vph)	250	1214	0	130	848	15	54	43	14	87	87	41
Confl. Peds. (#/hr)	2											2
Turn Type	Prot	NA		Prot	NA	custom	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases						7			8			4
Actuated Green, G (s)	8.5	34.2		7.1	32.9	5.5	2.8	8.9	8.9	5.5	12.5	12.5
Effective Green, g (s)	8.5	35.7		7.1	34.3	5.5	2.8	10.7	10.7	5.5	13.4	13.4
Actuated g/C Ratio	0.11	0.48		0.09	0.46	0.07	0.04	0.14	0.14	0.07	0.18	0.18
Clearance Time (s)	4.0	5.5		4.0	5.4	4.0	4.0	5.8	5.8	4.0	4.9	4.9
Vehicle Extension (s)	2.0	3.7		2.0	4.0	2.0	2.0	2.0	2.0	2.0	3.0	3.0
Lane Grp Cap (vph)	389	1675		167	1618	116	66	265	225	251	332	279
v/s Ratio Prot	0.07	c0.34		c0.07	0.24		c0.03	0.02		0.03	c0.05	
v/s Ratio Perm						0.01			0.01			0.03
v/c Ratio	0.64	0.73		0.78	0.52	0.13	0.82	0.16	0.06	0.35	0.26	0.15
Uniform Delay, d1	31.8	15.7		33.2	14.5	32.5	35.8	28.2	27.8	33.0	26.5	26.0
Progression Factor	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	2.7	2.8		18.5	1.2	0.2	50.1	0.1	0.0	0.3	0.4	0.2
Delay (s)	34.5	18.5		51.7	15.7	32.7	85.9	28.3	27.9	33.3	27.0	26.2
Level of Service	C	B		D	B	C	F	C	C	C	C	C
Approach Delay (s)		21.2			22.7			44.0			27.9	
Approach LOS		C			C			D			C	

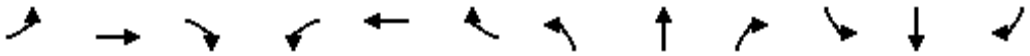
Intersection Summary			
HCM 2000 Control Delay	23.9	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.63		
Actuated Cycle Length (s)	75.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	57.5%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	0	0	550	2550	170	300	290	0	0	220	90
Future Volume (vph)	0	0	0	550	2550	170	300	290	0	0	220	90
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)					4.9		4.4	4.9			5.4	
Lane Util. Factor					0.86		1.00	0.95			0.95	
Frpb, ped/bikes					1.00		1.00	1.00			0.99	
Flpb, ped/bikes					1.00		1.00	1.00			1.00	
Frt					0.99		1.00	1.00			0.96	
Flt Protected					0.99		0.95	1.00			1.00	
Satd. Flow (prot)					6272		1770	3539			3367	
Flt Permitted					0.99		0.95	1.00			1.00	
Satd. Flow (perm)					6272		1770	3539			3367	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	0	0	0	579	2684	179	316	305	0	0	232	95
RTOR Reduction (vph)	0	0	0	0	7	0	0	0	0	0	27	0
Lane Group Flow (vph)	0	0	0	0	3435	0	316	305	0	0	300	0
Confl. Peds. (#/hr)	4		13	13		4	2		2	2		2
Confl. Bikes (#/hr)												1
Turn Type				Perm	NA		Prot	NA			NA	
Protected Phases					6		3	8			4	
Permitted Phases				6								
Actuated Green, G (s)					62.5		20.6	37.7			12.2	
Effective Green, g (s)					62.5		20.6	37.7			12.2	
Actuated g/C Ratio					0.57		0.19	0.34			0.11	
Clearance Time (s)					4.9		4.4	4.9			5.4	
Vehicle Extension (s)					2.4		3.0	3.3			2.4	
Lane Grp Cap (vph)					3563		331	1212			373	
v/s Ratio Prot							c0.18	0.09			c0.09	
v/s Ratio Perm					0.55							
v/c Ratio					0.96		0.95	0.25			0.81	
Uniform Delay, d1					22.7		44.2	26.0			47.7	
Progression Factor					1.00		1.00	1.00			1.00	
Incremental Delay, d2					8.8		37.3	0.1			11.6	
Delay (s)					31.5		81.5	26.1			59.3	
Level of Service					C		F	C			E	
Approach Delay (s)		0.0			31.5			54.3			59.3	
Approach LOS		A			C			D			E	

Intersection Summary			
HCM 2000 Control Delay	36.8	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.94		
Actuated Cycle Length (s)	110.0	Sum of lost time (s)	14.7
Intersection Capacity Utilization	86.4%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group

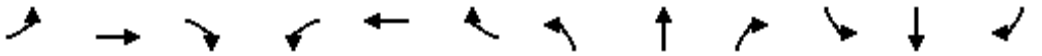


Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	80	700	60	0	0	0	0	510	230	70	680	0
Future Volume (vph)	80	700	60	0	0	0	0	510	230	70	680	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0	4.0					4.9		4.0	4.9	
Lane Util. Factor		0.91	1.00					0.91		1.00	0.91	
Frpb, ped/bikes		1.00	0.98					0.99		1.00	1.00	
Flpb, ped/bikes		1.00	1.00					1.00		1.00	1.00	
Frt		1.00	0.85					0.95		1.00	1.00	
Flt Protected		0.99	1.00					1.00		0.95	1.00	
Satd. Flow (prot)		5058	1551					4809		1770	5085	
Flt Permitted		0.99	1.00					1.00		0.95	1.00	
Satd. Flow (perm)		5058	1551					4809		1770	5085	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	87	761	65	0	0	0	0	554	250	76	739	0
RTOR Reduction (vph)	0	0	36	0	0	0	0	106	0	0	0	0
Lane Group Flow (vph)	0	848	29	0	0	0	0	698	0	76	739	0
Confl. Peds. (#/hr)	4		12				6		12	12		6
Turn Type	Perm	NA	Perm					NA		Prot	NA	
Protected Phases		2						8		7	4	
Permitted Phases	2		2									
Actuated Green, G (s)		32.2	32.2					22.0		6.6	33.0	
Effective Green, g (s)		33.1	33.1					22.0		7.0	33.0	
Actuated g/C Ratio		0.44	0.44					0.29		0.09	0.44	
Clearance Time (s)		4.9	4.9					4.9		4.4	4.9	
Vehicle Extension (s)		4.4	4.4					3.3		2.0	3.3	
Lane Grp Cap (vph)		2232	684					1410		165	2237	
v/s Ratio Prot								c0.15		c0.04	0.15	
v/s Ratio Perm		0.17	0.02									
v/c Ratio		0.38	0.04					0.50		0.46	0.33	
Uniform Delay, d1		14.1	11.9					21.9		32.2	13.8	
Progression Factor		1.00	1.00					1.00		1.00	1.00	
Incremental Delay, d2		0.5	0.1					1.2		9.0	0.4	
Delay (s)		14.6	12.0					23.2		41.2	14.2	
Level of Service		B	B					C		D	B	
Approach Delay (s)		14.4			0.0			23.2			16.7	
Approach LOS		B			A			C			B	

Intersection Summary			
HCM 2000 Control Delay	17.9	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.43		
Actuated Cycle Length (s)	75.0	Sum of lost time (s)	12.9
Intersection Capacity Utilization	86.4%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			

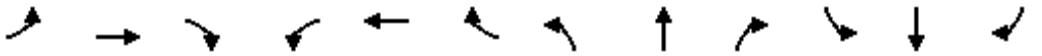
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	1180	530	280	890	310	200
Future Volume (vph)	1180	530	280	890	310	200
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.5	4.0	4.0	4.0
Lane Util. Factor	0.95	1.00	0.97	0.95	0.97	0.91
Frpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	0.99
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.85	1.00	1.00	0.98	0.85
Flt Protected	1.00	1.00	0.95	1.00	0.96	1.00
Satd. Flow (prot)	3539	1583	3433	3539	3377	1421
Flt Permitted	1.00	1.00	0.95	1.00	0.96	1.00
Satd. Flow (perm)	3539	1583	3433	3539	3377	1421
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	1283	576	304	967	337	217
RTOR Reduction (vph)	0	5	0	0	24	116
Lane Group Flow (vph)	1283	571	304	967	378	36
Confl. Peds. (#/hr)						2
Turn Type	NA	pm+ov	Prot	NA	Prot	Perm
Protected Phases	2	8	1	6	8	
Permitted Phases		2				8
Actuated Green, G (s)	28.6	42.3	8.0	41.8	13.7	13.7
Effective Green, g (s)	30.8	46.7	7.9	43.2	15.9	15.9
Actuated g/C Ratio	0.46	0.70	0.12	0.64	0.24	0.24
Clearance Time (s)	6.2	6.2	4.4	5.4	6.2	6.2
Vehicle Extension (s)	4.0	2.0	2.0	5.2	2.0	2.0
Lane Grp Cap (vph)	1624	1196	404	2278	800	336
v/s Ratio Prot	c0.36	c0.11	c0.09	0.27	0.11	
v/s Ratio Perm		0.25				0.03
v/c Ratio	0.79	0.48	0.75	0.42	0.47	0.11
Uniform Delay, d1	15.4	4.6	28.7	5.9	22.0	20.0
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	4.0	0.1	6.9	0.6	0.2	0.1
Delay (s)	19.4	4.8	35.5	6.4	22.2	20.1
Level of Service	B	A	D	A	C	C
Approach Delay (s)	14.9			13.4	21.6	
Approach LOS	B			B	C	

Intersection Summary			
HCM 2000 Control Delay	15.4	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.72		
Actuated Cycle Length (s)	67.1	Sum of lost time (s)	12.5
Intersection Capacity Utilization	62.7%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	1060	140	380	330	0	0	0	0	340	0	670
Future Volume (vph)	0	1060	140	380	330	0	0	0	0	340	0	670
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0	4.0	4.0	4.0					4.0		3.4
Lane Util. Factor		0.95	1.00	0.97	0.95					1.00		1.00
Frpb, ped/bikes		1.00	0.99	1.00	1.00					1.00		1.00
Flpb, ped/bikes		1.00	1.00	1.00	1.00					1.00		1.00
Frt		1.00	0.85	1.00	1.00					1.00		0.85
Flt Protected		1.00	1.00	0.95	1.00					0.95		1.00
Satd. Flow (prot)		3539	1561	3433	3539					1770		1583
Flt Permitted		1.00	1.00	0.95	1.00					0.95		1.00
Satd. Flow (perm)		3539	1561	3433	3539					1770		1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	1152	152	413	359	0	0	0	0	370	0	728
RTOR Reduction (vph)	0	0	87	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	1152	65	413	359	0	0	0	0	370	0	728
Confl. Peds. (#/hr)			2	2								
Turn Type		NA	Perm	Prot	NA					Prot		Free
Protected Phases		2		1	6					4		
Permitted Phases			2									Free
Actuated Green, G (s)		25.9	25.9	9.0	39.1					14.5		63.2
Effective Green, g (s)		26.9	26.9	9.2	40.1					15.1		63.2
Actuated g/C Ratio		0.43	0.43	0.15	0.63					0.24		1.00
Clearance Time (s)		5.0	5.0	4.2	5.0					4.6		
Vehicle Extension (s)		0.2	0.2	0.2	0.2					0.2		
Lane Grp Cap (vph)		1506	664	499	2245					422		1583
v/s Ratio Prot		c0.33		c0.12	0.10					c0.21		
v/s Ratio Perm			0.04									0.46
v/c Ratio		0.76	0.10	0.83	0.16					0.88		0.46
Uniform Delay, d1		15.5	10.9	26.2	4.7					23.2		0.0
Progression Factor		1.00	1.00	1.00	1.00					1.00		1.00
Incremental Delay, d2		3.8	0.3	10.3	0.2					17.6		1.0
Delay (s)		19.2	11.2	36.6	4.9					40.8		1.0
Level of Service		B	B	D	A					D		A
Approach Delay (s)		18.3			21.8			0.0			14.4	
Approach LOS		B			C			A			B	

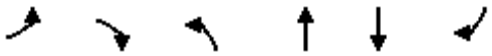
Intersection Summary			
HCM 2000 Control Delay	17.8	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.81		
Actuated Cycle Length (s)	63.2	Sum of lost time (s)	12.0
Intersection Capacity Utilization	82.8%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	890	650	0	0	620	590	190	0	300	0	0	0
Future Volume (vph)	890	650	0	0	620	590	190	0	300	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	5.0			5.0			4.0	4.0			
Lane Util. Factor	0.97	0.95			0.95			1.00	1.00			
Frt	1.00	1.00			0.93			1.00	0.85			
Flt Protected	0.95	1.00			1.00			0.95	1.00			
Satd. Flow (prot)	3433	3539			3280			1770	1583			
Flt Permitted	0.95	1.00			1.00			0.95	1.00			
Satd. Flow (perm)	3433	3539			3280			1770	1583			
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	967	707	0	0	674	641	207	0	326	0	0	0
RTOR Reduction (vph)	0	0	0	0	202	0	0	0	277	0	0	0
Lane Group Flow (vph)	967	707	0	0	1113	0	0	207	49	0	0	0
Turn Type	Prot	NA			NA		Split	NA	Perm			
Protected Phases	5	2			6		4	4				
Permitted Phases									4			
Actuated Green, G (s)	23.6	59.3			31.5			10.0	10.0			
Effective Green, g (s)	23.8	59.8			32.0			10.6	10.6			
Actuated g/C Ratio	0.30	0.75			0.40			0.13	0.13			
Clearance Time (s)	4.2	5.5			5.5			4.6	4.6			
Vehicle Extension (s)	0.2	0.2			0.2			0.2	0.2			
Lane Grp Cap (vph)	1029	2665			1321			236	211			
v/s Ratio Prot	c0.28	0.20			c0.34			c0.12				
v/s Ratio Perm									0.03			
v/c Ratio	0.94	0.27			0.84			0.88	0.23			
Uniform Delay, d1	27.1	3.0			21.4			33.8	30.8			
Progression Factor	1.00	1.00			1.00			1.00	1.00			
Incremental Delay, d2	15.3	0.2			6.7			27.8	0.2			
Delay (s)	42.4	3.3			28.1			61.5	31.0			
Level of Service	D	A			C			E	C			
Approach Delay (s)		25.8			28.1			42.8			0.0	
Approach LOS		C			C			D			A	

Intersection Summary			
HCM 2000 Control Delay	29.3	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.88		
Actuated Cycle Length (s)	79.4	Sum of lost time (s)	13.0
Intersection Capacity Utilization	82.8%	ICU Level of Service	E
Analysis Period (min)	15		

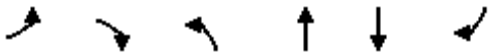
c Critical Lane Group



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	210	210	110	500	700	110
Future Volume (vph)	210	210	110	500	700	110
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0		4.0	4.0	4.0	
Lane Util. Factor	1.00		1.00	0.95	0.95	
Frt	0.93		1.00	1.00	0.98	
Flt Protected	0.98		0.95	1.00	1.00	
Satd. Flow (prot)	1695		1770	3539	3467	
Flt Permitted	0.98		0.95	1.00	1.00	
Satd. Flow (perm)	1695		1770	3539	3467	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	228	228	120	543	761	120
RTOR Reduction (vph)	35	0	0	0	9	0
Lane Group Flow (vph)	421	0	120	543	872	0
Turn Type	Prot		Prot	NA	NA	
Protected Phases	7		1	6	2	
Permitted Phases						
Actuated Green, G (s)	35.5		13.1	76.5	59.4	
Effective Green, g (s)	35.5		13.1	76.5	59.4	
Actuated g/C Ratio	0.30		0.11	0.64	0.49	
Clearance Time (s)	4.0		4.0	4.0	4.0	
Vehicle Extension (s)	3.0		3.0	3.0	3.0	
Lane Grp Cap (vph)	501		193	2256	1716	
v/s Ratio Prot	c0.25		c0.07	0.15	c0.25	
v/s Ratio Perm						
v/c Ratio	0.84		0.62	0.24	0.51	
Uniform Delay, d1	39.6		51.1	9.3	20.4	
Progression Factor	1.00		1.00	0.91	1.00	
Incremental Delay, d2	11.8		6.0	0.2	1.1	
Delay (s)	51.4		57.1	8.8	21.5	
Level of Service	D		E	A	C	
Approach Delay (s)	51.4			17.5	21.5	
Approach LOS	D			B	C	

Intersection Summary			
HCM 2000 Control Delay	27.0	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.63		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	63.5%	ICU Level of Service	B
Analysis Period (min)	15		

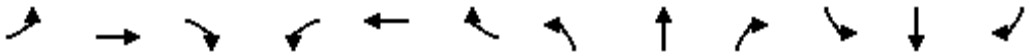
c Critical Lane Group



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	0	250	0	0	200	30
Future Volume (Veh/h)	0	250	0	0	200	30
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	272	0	0	217	33
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage veh)						
Upstream signal (ft)				973	1298	
pX, platoon unblocked						
vC, conflicting volume	234	125	250			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	234	125	250			
tC, single (s)	6.8	6.9	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	100	70	100			
cM capacity (veh/h)	734	902	1313			

Direction, Lane #	EB 1	SB 1	SB 2
Volume Total	272	145	105
Volume Left	0	0	0
Volume Right	272	0	33
cSH	902	1700	1700
Volume to Capacity	0.30	0.09	0.06
Queue Length 95th (ft)	32	0	0
Control Delay (s)	10.7	0.0	0.0
Lane LOS	B		
Approach Delay (s)	10.7	0.0	
Approach LOS	B		

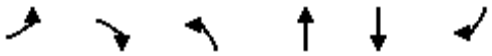
Intersection Summary			
Average Delay	5.6		
Intersection Capacity Utilization	28.6%	ICU Level of Service	A
Analysis Period (min)	15		



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	20	140	60	90	0	0	0	0	40	320	10
Future Volume (vph)	0	20	140	60	90	0	0	0	0	40	320	10
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.5			4.5						4.5	
Lane Util. Factor		1.00			1.00						0.95	
Frt		0.88			1.00						1.00	
Flt Protected		1.00			0.98						0.99	
Satd. Flow (prot)		1643			1826						3506	
Flt Permitted		1.00			0.84						0.99	
Satd. Flow (perm)		1643			1572						3506	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	22	152	65	98	0	0	0	0	43	348	11
RTOR Reduction (vph)	0	78	0	0	0	0	0	0	0	0	3	0
Lane Group Flow (vph)	0	96	0	0	163	0	0	0	0	0	399	0
Turn Type		NA		Perm	NA					Perm	NA	
Protected Phases		2			6						4	
Permitted Phases				6						4		
Actuated Green, G (s)		31.5			31.5						24.5	
Effective Green, g (s)		31.5			31.5						24.5	
Actuated g/C Ratio		0.48			0.48						0.38	
Clearance Time (s)		4.5			4.5						4.5	
Vehicle Extension (s)		3.0			3.0						3.0	
Lane Grp Cap (vph)		796			761						1321	
v/s Ratio Prot		0.06										
v/s Ratio Perm					c0.10						0.11	
v/c Ratio		0.12			0.21						0.30	
Uniform Delay, d1		9.2			9.6						14.2	
Progression Factor		1.00			1.00						1.00	
Incremental Delay, d2		0.1			0.6						0.6	
Delay (s)		9.2			10.3						14.8	
Level of Service		A			B						B	
Approach Delay (s)		9.2			10.3			0.0			14.8	
Approach LOS		A			B			A			B	

Intersection Summary			
HCM 2000 Control Delay	12.5	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.25		
Actuated Cycle Length (s)	65.0	Sum of lost time (s)	9.0
Intersection Capacity Utilization	39.3%	ICU Level of Service	A
Analysis Period (min)	15		

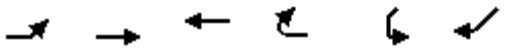
c Critical Lane Group



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	50	150	170	330	370	60
Future Volume (vph)	50	150	170	330	370	60
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0			4.0	4.0	
Lane Util. Factor	1.00			1.00	1.00	
Frt	0.90			1.00	0.98	
Flt Protected	0.99			0.98	1.00	
Satd. Flow (prot)	1653			1832	1828	
Flt Permitted	0.99			0.73	1.00	
Satd. Flow (perm)	1653			1359	1828	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	54	163	185	359	402	65
RTOR Reduction (vph)	141	0	0	0	6	0
Lane Group Flow (vph)	76	0	0	544	461	0
Turn Type	Prot		Perm	NA	NA	
Protected Phases	4			2	6	
Permitted Phases			2			
Actuated Green, G (s)	8.3			45.5	45.5	
Effective Green, g (s)	8.3			45.5	45.5	
Actuated g/C Ratio	0.13			0.74	0.74	
Clearance Time (s)	4.0			4.0	4.0	
Vehicle Extension (s)	3.0			3.0	3.0	
Lane Grp Cap (vph)	222			1000	1345	
v/s Ratio Prot	c0.05				0.25	
v/s Ratio Perm				c0.40		
v/c Ratio	0.34			0.54	0.34	
Uniform Delay, d1	24.3			3.6	2.9	
Progression Factor	1.00			1.00	1.00	
Incremental Delay, d2	0.9			2.1	0.7	
Delay (s)	25.2			5.7	3.6	
Level of Service	C			A	A	
Approach Delay (s)	25.2			5.7	3.6	
Approach LOS	C			A	A	

Intersection Summary			
HCM 2000 Control Delay	8.3	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.51		
Actuated Cycle Length (s)	61.8	Sum of lost time (s)	8.0
Intersection Capacity Utilization	71.9%	ICU Level of Service	C
Analysis Period (min)	15		

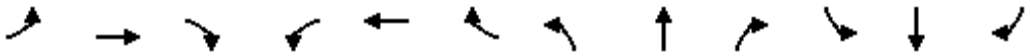
c Critical Lane Group



Movement	EBL	EBT	WBT	WBR	SWL	SWR
Lane Configurations						
Traffic Volume (vph)	50	670	1420	40	150	250
Future Volume (vph)	50	670	1420	40	150	250
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.5	4.5	4.5		4.5	
Lane Util. Factor	1.00	0.95	0.95		1.00	
Frt	1.00	1.00	1.00		0.92	
Flt Protected	0.95	1.00	1.00		0.98	
Satd. Flow (prot)	1770	3539	3525		1674	
Flt Permitted	0.95	1.00	1.00		0.98	
Satd. Flow (perm)	1770	3539	3525		1674	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	54	728	1543	43	163	272
RTOR Reduction (vph)	0	0	3	0	74	0
Lane Group Flow (vph)	54	728	1583	0	361	0
Turn Type	Prot	NA	NA		Prot	
Protected Phases	7	4	8		6	
Permitted Phases						
Actuated Green, G (s)	3.5	46.0	38.0		23.6	
Effective Green, g (s)	3.5	46.0	38.0		23.6	
Actuated g/C Ratio	0.04	0.59	0.48		0.30	
Clearance Time (s)	4.5	4.5	4.5		4.5	
Vehicle Extension (s)	3.0	3.0	3.0		3.0	
Lane Grp Cap (vph)	78	2071	1704		502	
v/s Ratio Prot	c0.03	0.21	c0.45		c0.22	
v/s Ratio Perm						
v/c Ratio	0.69	0.35	0.93		0.72	
Uniform Delay, d1	37.0	8.5	19.0		24.5	
Progression Factor	1.00	1.00	1.00		1.00	
Incremental Delay, d2	23.3	0.1	9.4		8.6	
Delay (s)	60.3	8.6	28.4		33.1	
Level of Service	E	A	C		C	
Approach Delay (s)		12.2	28.4		33.1	
Approach LOS		B	C		C	

Intersection Summary			
HCM 2000 Control Delay	24.6	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.84		
Actuated Cycle Length (s)	78.6	Sum of lost time (s)	13.5
Intersection Capacity Utilization	72.7%	ICU Level of Service	C
Analysis Period (min)	15		

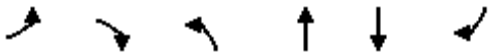
c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	60	10	100	40	180	240	200	400	130	260	450	190
Future Volume (vph)	60	10	100	40	180	240	200	400	130	260	450	190
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.5			4.5		4.5	4.5		4.5	4.5	
Lane Util. Factor		1.00			1.00		1.00	0.95		1.00	0.95	
Frt		0.92			0.93		1.00	0.96		1.00	0.96	
Flt Protected		0.98			1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1685			1724		1770	3409		1770	3381	
Flt Permitted		0.98			1.00		0.95	1.00		0.95	1.00	
Satd. Flow (perm)		1685			1724		1770	3409		1770	3381	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	65	11	109	43	196	261	217	435	141	283	489	207
RTOR Reduction (vph)	0	62	0	0	42	0	0	35	0	0	51	0
Lane Group Flow (vph)	0	123	0	0	458	0	217	541	0	283	645	0
Turn Type	Split	NA		Split	NA		Prot	NA		Prot	NA	
Protected Phases	2	2		6	6		3	8		7	4	
Permitted Phases												
Actuated Green, G (s)		11.0			21.6		11.6	15.9		15.4	19.7	
Effective Green, g (s)		11.0			21.6		11.6	15.9		15.4	19.7	
Actuated g/C Ratio		0.13			0.26		0.14	0.19		0.19	0.24	
Clearance Time (s)		4.5			4.5		4.5	4.5		4.5	4.5	
Vehicle Extension (s)		3.0			3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)		226			454		250	661		332	813	
v/s Ratio Prot		c0.07			c0.27		0.12	0.16		c0.16	c0.19	
v/s Ratio Perm												
v/c Ratio		0.54			1.01		0.87	0.82		0.85	0.79	
Uniform Delay, d1		33.1			30.2		34.4	31.6		32.2	29.2	
Progression Factor		1.00			1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2		2.7			44.5		25.7	7.8		18.6	5.4	
Delay (s)		35.8			74.6		60.1	39.4		50.7	34.5	
Level of Service		D			E		E	D		D	C	
Approach Delay (s)		35.8			74.6			45.1			39.2	
Approach LOS		D			E			D			D	

Intersection Summary			
HCM 2000 Control Delay	48.1	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.86		
Actuated Cycle Length (s)	81.9	Sum of lost time (s)	18.0
Intersection Capacity Utilization	68.3%	ICU Level of Service	C
Analysis Period (min)	15		

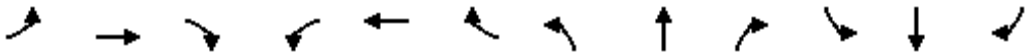
c Critical Lane Group



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	30	200	370	210	190	90
Future Volume (vph)	30	200	370	210	190	90
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.5			4.5	4.5	
Lane Util. Factor	1.00			1.00	1.00	
Frt	0.88			1.00	0.96	
Flt Protected	0.99			0.97	1.00	
Satd. Flow (prot)	1634			1805	1782	
Flt Permitted	0.99			0.64	1.00	
Satd. Flow (perm)	1634			1187	1782	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	33	217	402	228	207	98
RTOR Reduction (vph)	188	0	0	0	19	0
Lane Group Flow (vph)	62	0	0	630	286	0
Turn Type	Prot		Perm	NA	NA	
Protected Phases	4			2	6	
Permitted Phases			2			
Actuated Green, G (s)	8.1			43.5	43.5	
Effective Green, g (s)	8.1			43.5	43.5	
Actuated g/C Ratio	0.13			0.72	0.72	
Clearance Time (s)	4.5			4.5	4.5	
Vehicle Extension (s)	3.0			3.0	3.0	
Lane Grp Cap (vph)	218			852	1279	
v/s Ratio Prot	c0.04				0.16	
v/s Ratio Perm				c0.53		
v/c Ratio	0.28			0.74	0.22	
Uniform Delay, d1	23.6			5.1	2.9	
Progression Factor	1.00			1.00	1.00	
Incremental Delay, d2	0.7			5.7	0.4	
Delay (s)	24.4			10.9	3.3	
Level of Service	C			B	A	
Approach Delay (s)	24.4			10.9	3.3	
Approach LOS	C			B	A	

Intersection Summary			
HCM 2000 Control Delay	11.8	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.67		
Actuated Cycle Length (s)	60.6	Sum of lost time (s)	9.0
Intersection Capacity Utilization	72.3%	ICU Level of Service	C
Analysis Period (min)	15		

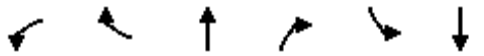
c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	90	1670	560	120	1160	360	460	350	180	300	260	40
Future Volume (vph)	90	1670	560	120	1160	360	460	350	180	300	260	40
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	
Lane Util. Factor	1.00	0.91	1.00	0.97	0.95	1.00	0.97	1.00	1.00	1.00	1.00	
Frpb, ped/bikes	1.00	1.00	0.99	1.00	1.00	0.95	1.00	1.00	0.98	1.00	1.00	
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.98	
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)	1770	5085	1561	3433	3539	1506	3433	1863	1552	1770	1822	
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (perm)	1770	5085	1561	3433	3539	1506	3433	1863	1552	1770	1822	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	98	1815	609	130	1261	391	500	380	196	326	283	43
RTOR Reduction (vph)	0	0	240	0	0	159	0	0	95	0	4	0
Lane Group Flow (vph)	98	1815	369	130	1261	232	500	380	101	326	322	0
Confl. Peds. (#/hr)	6		1	1		6			6	6		
Confl. Bikes (#/hr)			1			5						3
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases			2			6			8			
Actuated Green, G (s)	8.6	59.7	59.7	10.0	61.0	61.0	23.0	32.9	32.9	29.9	38.0	
Effective Green, g (s)	9.0	61.0	61.0	10.4	62.4	62.4	23.4	33.7	33.7	28.9	39.2	
Actuated g/C Ratio	0.06	0.41	0.41	0.07	0.42	0.42	0.16	0.22	0.22	0.19	0.26	
Clearance Time (s)	4.4	5.3	5.3	4.4	5.4	5.4	4.4	4.8	4.8	3.0	5.2	
Vehicle Extension (s)	2.0	4.4	4.4	2.0	4.4	4.4	2.0	3.8	3.8	2.0	2.0	
Lane Grp Cap (vph)	106	2067	634	238	1472	626	535	418	348	341	476	
v/s Ratio Prot	c0.06	c0.36		0.04	0.36		0.15	c0.20		c0.18	0.18	
v/s Ratio Perm			0.24			0.15			0.06			
v/c Ratio	0.92	0.88	0.58	0.55	0.86	0.37	0.93	0.91	0.29	0.96	0.68	
Uniform Delay, d1	70.2	41.1	34.6	67.5	39.7	30.2	62.5	56.7	48.2	59.9	49.7	
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	62.6	5.7	3.9	1.4	6.6	1.7	23.4	23.5	0.6	36.6	3.0	
Delay (s)	132.8	46.8	38.5	68.9	46.4	31.9	85.9	80.2	48.8	96.5	52.7	
Level of Service	F	D	D	E	D	C	F	F	D	F	D	
Approach Delay (s)		48.1			44.8			77.1			74.6	
Approach LOS		D			D			E			E	

Intersection Summary			
HCM 2000 Control Delay	55.2	HCM 2000 Level of Service	E
HCM 2000 Volume to Capacity ratio	0.90		
Actuated Cycle Length (s)	150.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	87.2%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	830	1790	930	0	0	880
Future Volume (vph)	830	1790	930	0	0	880
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	7.0	7.0	7.0			7.0
Lane Util. Factor	0.97	0.88	0.95			0.95
Frt	1.00	0.85	1.00			1.00
Flt Protected	0.95	1.00	1.00			1.00
Satd. Flow (prot)	3433	2787	3539			3539
Flt Permitted	0.95	1.00	1.00			1.00
Satd. Flow (perm)	3433	2787	3539			3539
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	902	1946	1011	0	0	957
RTOR Reduction (vph)	0	5	0	0	0	0
Lane Group Flow (vph)	902	1941	1011	0	0	957
Turn Type	Prot	Perm	NA			NA
Protected Phases	4		2			6
Permitted Phases		4				
Actuated Green, G (s)	94.0	94.0	42.0			42.0
Effective Green, g (s)	94.0	94.0	42.0			42.0
Actuated g/C Ratio	0.63	0.63	0.28			0.28
Clearance Time (s)	7.0	7.0	7.0			7.0
Vehicle Extension (s)	0.2	0.2	0.2			0.2
Lane Grp Cap (vph)	2151	1746	990			990
v/s Ratio Prot	0.26		c0.29			0.27
v/s Ratio Perm		c0.70				
v/c Ratio	0.42	1.11	1.02			0.97
Uniform Delay, d1	14.2	28.0	54.0			53.3
Progression Factor	1.00	1.00	1.00			1.00
Incremental Delay, d2	0.0	59.0	34.1			20.6
Delay (s)	14.2	87.0	88.1			73.9
Level of Service	B	F	F			E
Approach Delay (s)	64.0		88.1			73.9
Approach LOS	E		F			E

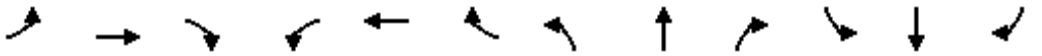
Intersection Summary			
HCM 2000 Control Delay	71.0	HCM 2000 Level of Service	E
HCM 2000 Volume to Capacity ratio	1.08		
Actuated Cycle Length (s)	150.0	Sum of lost time (s)	14.0
Intersection Capacity Utilization	100.0%	ICU Level of Service	F
Analysis Period (min)	15		

c Critical Lane Group

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	0	290	1460	130	0	1510
Future Volume (Veh/h)	0	290	1460	130	0	1510
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	315	1587	141	0	1641
Pedestrians						3
Lane Width (ft)						12.0
Walking Speed (ft/s)						4.0
Percent Blockage						0
Right turn flare (veh)						
Median type			None			None
Median storage veh)						
Upstream signal (ft)			810			779
pX, platoon unblocked	0.83					
vC, conflicting volume	2204	602			1728	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1723	602			1728	
tC, single (s)	6.8	6.9			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	100	29			100	
cM capacity (veh/h)	66	441			361	

Direction, Lane #	WB 1	NB 1	NB 2	NB 3	SB 1	SB 2	SB 3
Volume Total	315	635	635	458	547	547	547
Volume Left	0	0	0	0	0	0	0
Volume Right	315	0	0	141	0	0	0
cSH	441	1700	1700	1700	1700	1700	1700
Volume to Capacity	0.71	0.37	0.37	0.27	0.32	0.32	0.32
Queue Length 95th (ft)	138	0	0	0	0	0	0
Control Delay (s)	31.0	0.0	0.0	0.0	0.0	0.0	0.0
Lane LOS	D						
Approach Delay (s)	31.0	0.0			0.0		
Approach LOS	D						

Intersection Summary			
Average Delay	2.7		
Intersection Capacity Utilization	56.1%	ICU Level of Service	B
Analysis Period (min)	15		



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	380	430	320	80	540	700	420	510	120	400	710	400
Future Volume (vph)	380	430	320	80	540	700	420	510	120	400	710	400
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.9	4.0	4.0		4.0	4.0	4.9
Lane Util. Factor	1.00	1.00	1.00	1.00	0.95	1.00	1.00	0.95		1.00	0.95	1.00
Frpb, ped/bikes	1.00	1.00	0.99	1.00	1.00	0.99	1.00	1.00		1.00	1.00	0.99
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.97		1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1770	1863	1568	1770	3539	1568	1770	3438		1770	3539	1566
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)	1770	1863	1568	1770	3539	1568	1770	3438		1770	3539	1566
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	413	467	348	87	587	761	457	554	130	435	772	435
RTOR Reduction (vph)	0	0	31	0	0	32	0	14	0	0	0	50
Lane Group Flow (vph)	413	467	317	87	587	729	457	670	0	435	772	385
Confl. Peds. (#/hr)	6		3	3		6	6					6
Turn Type	Prot	NA	pm+ov	Prot	NA	pm+ov	Prot	NA		Prot	NA	pm+ov
Protected Phases	5	2	3	1	6	7	3	8		7	4	5
Permitted Phases			2			6						4
Actuated Green, G (s)	29.1	50.2	84.3	11.0	32.1	68.5	34.1	32.7		36.4	35.0	64.1
Effective Green, g (s)	30.0	51.1	86.1	12.0	33.1	68.5	35.0	33.6		37.3	35.9	64.1
Actuated g/C Ratio	0.20	0.34	0.57	0.08	0.22	0.46	0.23	0.22		0.25	0.24	0.43
Clearance Time (s)	4.9	4.9	4.9	5.0	5.0	4.9	4.9	4.9		4.9	4.9	4.9
Vehicle Extension (s)	0.2	0.2	3.1	8.0	8.0	5.5	3.1	3.1		5.5	5.5	0.2
Lane Grp Cap (vph)	354	634	941	141	780	767	413	770		440	847	669
v/s Ratio Prot	c0.23	0.25	0.08	0.05	0.17	c0.23	c0.26	0.19		0.25	0.22	0.11
v/s Ratio Perm			0.12			0.23						0.13
v/c Ratio	1.17	0.74	0.34	0.62	0.75	0.95	1.11	0.87		0.99	0.91	0.58
Uniform Delay, d1	60.0	43.5	16.9	66.8	54.6	39.1	57.5	56.1		56.1	55.5	32.6
Progression Factor	1.00	1.00	1.00	1.21	0.69	1.20	1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	101.3	7.5	0.2	16.5	6.3	21.1	76.4	10.6		39.8	14.8	0.7
Delay (s)	161.3	51.0	17.1	97.2	44.1	67.9	133.9	66.7		96.0	70.3	33.4
Level of Service	F	D	B	F	D	E	F	E		F	E	C
Approach Delay (s)		78.5			60.0			93.6			67.3	
Approach LOS		E			E			F			E	

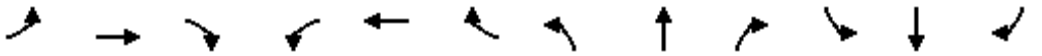
Intersection Summary			
HCM 2000 Control Delay	73.4	HCM 2000 Level of Service	E
HCM 2000 Volume to Capacity ratio	1.09		
Actuated Cycle Length (s)	150.0	Sum of lost time (s)	17.8
Intersection Capacity Utilization	104.8%	ICU Level of Service	G
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	200	140	170	80	170	100	240	640	70	160	730	170
Future Volume (vph)	200	140	170	80	170	100	240	640	70	160	730	170
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0
Lane Util. Factor	0.95	0.95	1.00	1.00	1.00	1.00	0.97	0.95		1.00	0.95	1.00
Frpb, ped/bikes	1.00	1.00	0.98	1.00	1.00	0.98	1.00	1.00		1.00	1.00	0.97
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.99		1.00	1.00	0.85
Flt Protected	0.95	0.99	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1681	1750	1557	1770	1863	1547	3433	3476		1770	3539	1531
Flt Permitted	0.95	0.99	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)	1681	1750	1557	1770	1863	1547	3433	3476		1770	3539	1531
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	217	152	185	87	185	109	261	696	76	174	793	185
RTOR Reduction (vph)	0	0	132	0	0	89	0	5	0	0	0	106
Lane Group Flow (vph)	174	195	53	87	185	20	261	767	0	174	793	79
Confl. Peds. (#/hr)	10		12	12		10	15		12	12		15
Turn Type	Split	NA	pm+ov	Split	NA	Perm	Prot	NA		Prot	NA	Perm
Protected Phases	8	8	1	7	7		1	6		5	2	
Permitted Phases			8			7						2
Actuated Green, G (s)	23.9	23.9	36.2	22.8	22.8	22.8	12.3	49.0		15.2	51.9	51.9
Effective Green, g (s)	24.8	24.8	37.0	23.7	23.7	23.7	12.7	49.9		15.6	52.8	52.8
Actuated g/C Ratio	0.19	0.19	0.28	0.18	0.18	0.18	0.10	0.38		0.12	0.41	0.41
Clearance Time (s)	4.9	4.9	4.4	4.9	4.9	4.9	4.4	4.9		4.4	4.9	4.9
Vehicle Extension (s)	3.0	3.0	2.0	3.0	3.0	3.0	2.0	4.5		2.0	4.6	4.6
Lane Grp Cap (vph)	320	333	443	322	339	282	335	1334		212	1437	621
v/s Ratio Prot	0.10	c0.11	0.01	0.05	c0.10		0.08	0.22		c0.10	c0.22	
v/s Ratio Perm			0.02			0.01						0.05
v/c Ratio	0.54	0.59	0.12	0.27	0.55	0.07	0.78	0.58		0.82	0.55	0.13
Uniform Delay, d1	47.5	47.9	34.4	45.7	48.3	44.0	57.3	31.7		55.8	29.5	24.2
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.41	0.66	0.41
Incremental Delay, d2	1.9	2.6	0.0	0.5	1.8	0.1	10.0	1.8		15.2	1.1	0.3
Delay (s)	49.4	50.5	34.5	46.2	50.1	44.1	67.3	33.5		93.8	20.5	10.2
Level of Service	D	D	C	D	D	D	E	C		F	C	B
Approach Delay (s)		44.8			47.5			42.0			29.9	
Approach LOS		D			D			D			C	

Intersection Summary			
HCM 2000 Control Delay	38.7	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.60		
Actuated Cycle Length (s)	130.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	72.9%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

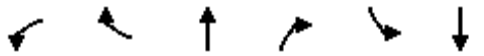
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	40	20	50	80	20	70	90	1050	200	60	960	30
Future Volume (vph)	40	20	50	80	20	70	90	1050	200	60	960	30
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0			4.0		4.0	4.0		4.0	4.0	
Lane Util. Factor		1.00			1.00		1.00	0.95		1.00	0.95	
Frpb, ped/bikes		1.00			0.97		1.00	0.99		1.00	1.00	
Flpb, ped/bikes		0.99			1.00		1.00	1.00		1.00	1.00	
Frt		0.94			0.94		1.00	0.98		1.00	1.00	
Flt Protected		0.98			0.98		0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1696			1659		1770	3435		1770	3523	
Flt Permitted		0.78			0.71		0.22	1.00		0.16	1.00	
Satd. Flow (perm)		1351			1208		414	3435		296	3523	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	43	22	54	87	22	76	98	1141	217	65	1043	33
RTOR Reduction (vph)	0	22	0	0	18	0	0	7	0	0	1	0
Lane Group Flow (vph)	0	97	0	0	167	0	98	1351	0	65	1075	0
Confl. Peds. (#/hr)	33					33			3	3		
Turn Type	Perm	NA		Perm	NA		pm+pt	NA		pm+pt	NA	
Protected Phases		8			4		1	6		5	2	
Permitted Phases	8			4			6			2		
Actuated Green, G (s)		23.6			23.6		113.9	107.3		110.5	105.6	
Effective Green, g (s)		24.5			24.5		114.7	108.2		111.3	106.5	
Actuated g/C Ratio		0.16			0.16		0.76	0.72		0.74	0.71	
Clearance Time (s)		4.9			4.9		4.4	4.9		4.4	4.9	
Vehicle Extension (s)		2.0			2.0		2.0	2.9		2.0	2.9	
Lane Grp Cap (vph)		220			197		379	2477		271	2501	
v/s Ratio Prot							c0.01	c0.39		0.01	0.31	
v/s Ratio Perm		0.07			c0.14		0.19			0.17		
v/c Ratio		0.44			0.85		0.26	0.55		0.24	0.43	
Uniform Delay, d1		56.6			60.9		5.7	9.6		7.1	9.1	
Progression Factor		1.00			1.26		1.00	1.00		1.00	1.00	
Incremental Delay, d2		0.5			24.3		0.1	0.9		0.2	0.5	
Delay (s)		57.1			101.2		5.8	10.5		7.3	9.6	
Level of Service		E			F		A	B		A	A	
Approach Delay (s)		57.1			101.2			10.2			9.5	
Approach LOS		E			F			B			A	

Intersection Summary			
HCM 2000 Control Delay	17.6	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.59		
Actuated Cycle Length (s)	150.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	65.0%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	380	1870	210	510	1550	390	230	640	410	350	530	290
Future Volume (vph)	380	1870	210	510	1550	390	230	640	410	350	530	290
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0	4.4	4.0	4.0	3.5	4.0	4.0	3.5
Lane Util. Factor	0.97	0.91		0.97	0.91	1.00	1.00	0.95	1.00	0.97	0.95	1.00
Frpb, ped/bikes	1.00	0.99		1.00	1.00	0.92	1.00	1.00	0.96	1.00	1.00	0.96
Flpb, ped/bikes	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.98		1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	4948		3433	5085	1464	1770	3539	1521	3433	3539	1516
Flt Permitted	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	4948		3433	5085	1464	1770	3539	1521	3433	3539	1516
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	413	2033	228	554	1685	424	250	696	446	380	576	315
RTOR Reduction (vph)	0	9	0	0	0	39	0	0	55	0	0	55
Lane Group Flow (vph)	413	2252	0	554	1685	385	250	696	391	380	576	260
Confl. Peds. (#/hr)	48		65	65		48	42		40	40		42
Turn Type	Prot	NA		Prot	NA	pm+ov	Prot	NA	pm+ov	Prot	NA	pm+ov
Protected Phases	5	2		1	6	7	3	8	1	7	4	5
Permitted Phases						6			8			4
Actuated Green, G (s)	19.7	58.7		19.9	59.0	75.9	16.2	30.7	50.6	16.9	31.4	51.1
Effective Green, g (s)	20.1	59.8		20.3	60.0	75.9	16.6	31.6	52.4	17.3	32.3	52.9
Actuated g/C Ratio	0.14	0.41		0.14	0.41	0.52	0.11	0.22	0.36	0.12	0.22	0.36
Clearance Time (s)	4.4	5.1		4.4	5.0	4.4	4.4	4.9	4.4	4.4	4.9	4.4
Vehicle Extension (s)	2.0	3.5		2.0	3.7	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lane Grp Cap (vph)	475	2040		480	2104	766	202	771	586	409	788	553
v/s Ratio Prot	0.12	c0.46		c0.16	0.33	0.06	c0.14	c0.20	0.10	c0.11	0.16	0.07
v/s Ratio Perm						0.20			0.16			0.10
v/c Ratio	0.87	1.10		1.15	0.80	0.50	1.24	0.90	0.67	0.93	0.73	0.47
Uniform Delay, d1	61.2	42.6		62.4	37.3	22.4	64.2	55.2	39.0	63.2	52.3	35.3
Progression Factor	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	15.0	54.7		90.8	2.4	0.2	141.9	13.6	2.2	26.8	3.0	0.2
Delay (s)	76.2	97.3		153.2	39.6	22.5	206.1	68.8	41.2	90.1	55.3	35.5
Level of Service	E	F		F	D	C	F	E	D	F	E	D
Approach Delay (s)		94.0			60.5			84.6			60.8	
Approach LOS		F			E			F			E	

Intersection Summary			
HCM 2000 Control Delay	76.0	HCM 2000 Level of Service	E
HCM 2000 Volume to Capacity ratio	1.07		
Actuated Cycle Length (s)	145.0	Sum of lost time (s)	16.4
Intersection Capacity Utilization	105.0%	ICU Level of Service	G
Analysis Period (min)	15		
c Critical Lane Group			



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	120	300	780	120	400	850
Future Volume (vph)	120	300	780	120	400	850
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.5		4.5		4.5	4.5
Lane Util. Factor	1.00		0.95		1.00	0.95
Frt	0.90		0.98		1.00	1.00
Flt Protected	0.99		1.00		0.95	1.00
Satd. Flow (prot)	1659		3469		1770	3539
Flt Permitted	0.99		1.00		0.95	1.00
Satd. Flow (perm)	1659		3469		1770	3539
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	130	326	848	130	435	924
RTOR Reduction (vph)	130	0	17	0	0	0
Lane Group Flow (vph)	326	0	961	0	435	924
Turn Type	Prot		NA		Prot	NA
Protected Phases	8		2		1	6
Permitted Phases						
Actuated Green, G (s)	15.2		21.7		18.8	45.0
Effective Green, g (s)	15.2		21.7		18.8	45.0
Actuated g/C Ratio	0.22		0.31		0.27	0.65
Clearance Time (s)	4.5		4.5		4.5	4.5
Vehicle Extension (s)	3.0		3.0		3.0	3.0
Lane Grp Cap (vph)	364		1087		480	2301
v/s Ratio Prot	c0.20		c0.28		c0.25	0.26
v/s Ratio Perm						
v/c Ratio	0.89		0.88		0.91	0.40
Uniform Delay, d1	26.2		22.6		24.3	5.7
Progression Factor	1.00		1.00		1.00	1.00
Incremental Delay, d2	23.2		10.5		20.5	0.5
Delay (s)	49.5		33.1		44.8	6.3
Level of Service	D		C		D	A
Approach Delay (s)	49.5		33.1			18.6
Approach LOS	D		C			B

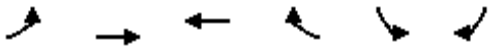
Intersection Summary			
HCM 2000 Control Delay	28.7	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.89		
Actuated Cycle Length (s)	69.2	Sum of lost time (s)	13.5
Intersection Capacity Utilization	83.9%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	0	350	690	170	0	660
Future Volume (Veh/h)	0	350	690	170	0	660
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	380	750	185	0	717
Pedestrians	2					3
Lane Width (ft)	12.0					12.0
Walking Speed (ft/s)	4.0					4.0
Percent Blockage	0					0
Right turn flare (veh)						
Median type			None			None
Median storage veh)						
Upstream signal (ft)			215			407
pX, platoon unblocked	0.83					
vC, conflicting volume	1203	472			937	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	838	472			937	
tC, single (s)	6.8	6.9			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	100	29			100	
cM capacity (veh/h)	253	536			726	

Direction, Lane #	WB 1	NB 1	NB 2	SB 1	SB 2
Volume Total	380	500	435	358	358
Volume Left	0	0	0	0	0
Volume Right	380	0	185	0	0
cSH	536	1700	1700	1700	1700
Volume to Capacity	0.71	0.29	0.26	0.21	0.21
Queue Length 95th (ft)	142	0	0	0	0
Control Delay (s)	26.5	0.0	0.0	0.0	0.0
Lane LOS	D				
Approach Delay (s)	26.5	0.0		0.0	
Approach LOS	D				

Intersection Summary				
Average Delay	4.9			
Intersection Capacity Utilization	53.2%	ICU Level of Service		A
Analysis Period (min)	15			



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	0	1250	970	860	360	300
Future Volume (vph)	0	1250	970	860	360	300
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.4	5.4	5.9	5.2	5.2
Lane Util. Factor		0.95	0.95	0.88	0.97	1.00
Frpb, ped/bikes		1.00	1.00	1.00	1.00	1.00
Flpb, ped/bikes		1.00	1.00	1.00	1.00	1.00
Frt		1.00	1.00	0.85	1.00	0.85
Flt Protected		1.00	1.00	1.00	0.95	1.00
Satd. Flow (prot)		3539	3539	2787	3433	1583
Flt Permitted		1.00	1.00	1.00	0.95	1.00
Satd. Flow (perm)		3539	3539	2787	3433	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	1359	1054	935	391	326
RTOR Reduction (vph)	0	0	0	429	0	267
Lane Group Flow (vph)	0	1359	1054	506	391	59
Confl. Peds. (#/hr)				6	3	
Turn Type		NA	NA	custom	Prot	Perm
Protected Phases		2	2	2	1	
Permitted Phases				8		1
Actuated Green, G (s)		34.2	34.2	34.2	11.2	11.2
Effective Green, g (s)		34.2	34.2	33.7	11.2	11.2
Actuated g/C Ratio		0.55	0.55	0.54	0.18	0.18
Clearance Time (s)		5.4	5.4	5.4	5.2	5.2
Vehicle Extension (s)		2.9	2.9	2.9	2.5	2.5
Lane Grp Cap (vph)		1942	1942	1507	617	284
v/s Ratio Prot		c0.38	0.30	0.18	c0.11	
v/s Ratio Perm						0.04
v/c Ratio		0.70	0.54	0.34	0.63	0.21
Uniform Delay, d1		10.3	9.0	8.0	23.7	21.8
Progression Factor		1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2		1.1	0.3	0.1	1.9	0.3
Delay (s)		11.4	9.3	8.1	25.5	22.0
Level of Service		B	A	A	C	C
Approach Delay (s)		11.4	8.8		23.9	
Approach LOS		B	A		C	

Intersection Summary			
HCM 2000 Control Delay	12.3	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.68		
Actuated Cycle Length (s)	62.3	Sum of lost time (s)	16.6
Intersection Capacity Utilization	54.2%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	80	230	1090	130	130	970
Future Volume (vph)	80	230	1090	130	130	970
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	3.1	4.9		4.4	4.9
Lane Util. Factor	1.00	1.00	0.91		1.00	0.91
Frpb, ped/bikes	1.00	0.94	1.00		1.00	1.00
Flpb, ped/bikes	1.00	1.00	1.00		1.00	1.00
Frt	1.00	0.85	0.98		1.00	1.00
Flt Protected	0.95	1.00	1.00		0.95	1.00
Satd. Flow (prot)	1770	1495	4984		1770	5085
Flt Permitted	0.95	1.00	1.00		0.95	1.00
Satd. Flow (perm)	1770	1495	4984		1770	5085
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	87	250	1185	141	141	1054
RTOR Reduction (vph)	0	227	5	0	0	0
Lane Group Flow (vph)	87	23	1321	0	141	1054
Confl. Peds. (#/hr)		16		18	18	
Turn Type	Prot	Perm	NA		Prot	NA
Protected Phases	4		6		5	2
Permitted Phases		4				
Actuated Green, G (s)	12.7	12.7	107.7		16.3	128.4
Effective Green, g (s)	12.7	13.6	107.7		16.3	128.4
Actuated g/C Ratio	0.08	0.09	0.72		0.11	0.86
Clearance Time (s)	4.0	4.0	4.9		4.4	4.9
Vehicle Extension (s)	3.0	3.0	5.0		2.0	3.2
Lane Grp Cap (vph)	149	135	3578		192	4352
v/s Ratio Prot	c0.05		c0.26		c0.08	0.21
v/s Ratio Perm		0.02				
v/c Ratio	0.58	0.17	0.37		0.73	0.24
Uniform Delay, d1	66.1	63.0	8.1		64.8	2.0
Progression Factor	1.00	1.00	1.69		1.13	1.24
Incremental Delay, d2	5.7	0.6	0.2		8.0	0.1
Delay (s)	71.8	63.6	13.9		81.4	2.5
Level of Service	E	E	B		F	A
Approach Delay (s)	65.7		13.9			11.8
Approach LOS	E		B			B

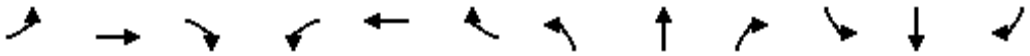
Intersection Summary			
HCM 2000 Control Delay	19.2	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.43		
Actuated Cycle Length (s)	150.0	Sum of lost time (s)	13.3
Intersection Capacity Utilization	51.4%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	90	130	160	150	40	170	250	1130	120	150	890	100
Future Volume (vph)	90	130	160	150	40	170	250	1130	120	150	890	100
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	0.91		0.97	0.95	
Frpb, ped/bikes	1.00	0.99		1.00	0.98		1.00	1.00		1.00	1.00	
Flpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Frt	1.00	0.92		1.00	0.88		1.00	0.99		1.00	0.98	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1770	1685		1770	1610		1770	4994		3433	3472	
Flt Permitted	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (perm)	1770	1685		1770	1610		1770	4994		3433	3472	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	98	141	174	163	43	185	272	1228	130	163	967	109
RTOR Reduction (vph)	0	30	0	0	104	0	0	9	0	0	5	0
Lane Group Flow (vph)	98	285	0	163	124	0	272	1349	0	163	1071	0
Confl. Peds. (#/hr)	3		9	9		3	14		14	14		14
Turn Type	Split	NA		Split	NA		Prot	NA		Prot	NA	
Protected Phases	7	7		8	8		1	6		5	2	
Permitted Phases												
Actuated Green, G (s)	28.8	28.8		16.2	16.2		25.4	65.4		20.5	60.5	
Effective Green, g (s)	29.7	29.7		17.1	17.1		25.8	66.3		20.9	61.4	
Actuated g/C Ratio	0.20	0.20		0.11	0.11		0.17	0.44		0.14	0.41	
Clearance Time (s)	4.9	4.9		4.9	4.9		4.4	4.9		4.4	4.9	
Vehicle Extension (s)	3.0	3.0		2.0	2.0		2.0	3.9		2.0	3.9	
Lane Grp Cap (vph)	350	333		201	183		304	2207		478	1421	
v/s Ratio Prot	0.06	c0.17		c0.09	0.08		c0.15	0.27		0.05	c0.31	
v/s Ratio Perm												
v/c Ratio	0.28	0.85		0.81	0.68		0.89	0.61		0.34	0.75	
Uniform Delay, d1	51.1	58.1		64.9	63.8		60.8	32.0		58.3	37.8	
Progression Factor	1.00	1.00		1.00	1.00		1.06	0.56		0.92	1.22	
Incremental Delay, d2	0.4	18.7		20.4	7.6		23.3	1.1		0.2	3.7	
Delay (s)	51.5	76.8		85.3	71.5		87.9	19.0		54.0	49.9	
Level of Service	D	E		F	E		F	B		D	D	
Approach Delay (s)		70.8			77.2			30.5			50.5	
Approach LOS		E			E			C			D	

Intersection Summary			
HCM 2000 Control Delay	46.7	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.81		
Actuated Cycle Length (s)	150.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	82.6%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	60	30	70	150	30	140	50	1280	70	120	1110	80
Future Volume (vph)	60	30	70	150	30	140	50	1280	70	120	1110	80
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.9		4.9	4.9		4.4	4.9		4.4	4.9	
Lane Util. Factor		1.00		1.00	1.00		1.00	0.91		0.97	0.95	
Frpb, ped/bikes		0.99		1.00	1.00		1.00	1.00		1.00	1.00	
Flpb, ped/bikes		1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Frt		0.94		1.00	0.88		1.00	0.99		1.00	0.99	
Flt Protected		0.98		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1706		1770	1633		1770	5026		3433	3494	
Flt Permitted		0.98		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (perm)		1706		1770	1633		1770	5026		3433	3494	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	65	33	76	163	33	152	54	1391	76	130	1207	87
RTOR Reduction (vph)	0	22	0	0	115	0	0	3	0	0	3	0
Lane Group Flow (vph)	0	152	0	163	70	0	54	1464	0	130	1291	0
Confl. Peds. (#/hr)			6	6			7		18	18		7
Turn Type	Split	NA		Split	NA		Prot	NA		Prot	NA	
Protected Phases	8	8		7	7		1	6		5	2	
Permitted Phases												
Actuated Green, G (s)		19.9		17.6	17.6		7.1	79.3		14.1	86.3	
Effective Green, g (s)		19.9		17.6	17.6		7.1	79.3		14.1	86.3	
Actuated g/C Ratio		0.13		0.12	0.12		0.05	0.53		0.09	0.58	
Clearance Time (s)		4.9		4.9	4.9		4.4	4.9		4.4	4.9	
Vehicle Extension (s)		2.0		2.0	2.0		2.0	2.0		2.0	2.0	
Lane Grp Cap (vph)		226		207	191		83	2657		322	2010	
v/s Ratio Prot		c0.09		c0.09	0.04		0.03	c0.29		0.04	c0.37	
v/s Ratio Perm												
v/c Ratio		0.67		0.79	0.37		0.65	0.55		0.40	0.64	
Uniform Delay, d1		62.0		64.4	61.1		70.2	23.5		64.0	21.5	
Progression Factor		1.00		1.00	1.00		1.10	0.92		0.64	0.40	
Incremental Delay, d2		6.1		16.5	0.4		12.6	0.8		0.2	1.1	
Delay (s)		68.1		80.9	61.5		89.9	22.5		40.9	9.8	
Level of Service		E		F	E		F	C		D	A	
Approach Delay (s)		68.1			70.6			24.9			12.6	
Approach LOS		E			E			C			B	

Intersection Summary			
HCM 2000 Control Delay	26.6	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.67		
Actuated Cycle Length (s)	150.0	Sum of lost time (s)	19.1
Intersection Capacity Utilization	75.9%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	50	20	70	30	110	220	140	1130	30	50	1160	120
Future Volume (vph)	50	20	70	30	110	220	140	1130	30	50	1160	120
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.9	4.9		5.8	4.0	4.4	4.9		4.4	4.9	
Lane Util. Factor		1.00	1.00		1.00	1.00	1.00	0.91		1.00	0.91	
Frpb, ped/bikes		1.00	0.99		1.00	1.00	1.00	1.00		1.00	0.99	
Flpb, ped/bikes		1.00	1.00		1.00	1.00	1.00	1.00		1.00	1.00	
Frt		1.00	0.85		1.00	0.85	1.00	1.00		1.00	0.99	
Flt Protected		0.97	1.00		0.99	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1799	1562		1842	1583	1770	5055		1770	4968	
Flt Permitted		0.45	1.00		0.90	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (perm)		840	1562		1669	1583	1770	5055		1770	4968	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	54	22	76	33	120	239	152	1228	33	54	1261	130
RTOR Reduction (vph)	0	0	67	0	0	0	0	1	0	0	6	0
Lane Group Flow (vph)	0	76	9	0	153	239	152	1260	0	54	1385	0
Confl. Peds. (#/hr)			1	1			19		19	19		19
Turn Type	Perm	NA	Perm	Perm	NA	Free	Prot	NA		Prot	NA	
Protected Phases		8			8		1	6		5	2	
Permitted Phases	8		8	8		Free						
Actuated Green, G (s)		18.5	18.5		18.5	150.0	31.5	109.3		8.0	85.8	
Effective Green, g (s)		18.5	18.5		17.6	150.0	31.5	109.3		8.0	85.8	
Actuated g/C Ratio		0.12	0.12		0.12	1.00	0.21	0.73		0.05	0.57	
Clearance Time (s)		4.9	4.9		4.9		4.4	4.9		4.4	4.9	
Vehicle Extension (s)		2.0	2.0		2.0		2.0	2.9		2.0	3.9	
Lane Grp Cap (vph)		103	192		195	1583	371	3683		94	2841	
v/s Ratio Prot							c0.09	0.25		0.03	c0.28	
v/s Ratio Perm		0.09	0.01		c0.09	0.15						
v/c Ratio		0.74	0.05		0.78	0.15	0.41	0.34		0.57	0.49	
Uniform Delay, d1		63.4	58.0		64.4	0.0	51.2	7.4		69.3	19.0	
Progression Factor		1.24	2.62		1.00	1.00	0.90	0.85		0.94	1.48	
Incremental Delay, d2		19.2	0.0		17.1	0.2	0.1	0.1		4.1	0.5	
Delay (s)		97.9	152.0		81.5	0.2	46.0	6.4		69.2	28.7	
Level of Service		F	F		F	A	D	A		E	C	
Approach Delay (s)		125.0			31.9			10.6			30.3	
Approach LOS		F			C			B			C	

Intersection Summary			
HCM 2000 Control Delay	26.5	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.51		
Actuated Cycle Length (s)	150.0	Sum of lost time (s)	15.1
Intersection Capacity Utilization	59.7%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	EBR2	WBT	WBR	NBR2	SBL2	SBL	SBT	SBR	NWL
Lane Configurations												
Traffic Volume (vph)	300	1660	470	200	2030	680	150	350	400	150	220	200
Future Volume (vph)	300	1660	470	200	2030	680	150	350	400	150	220	200
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	2.6	4.0		6.1	4.0	5.9	5.9	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.97	0.86		0.86	0.91	1.00	1.00	0.95	0.91	0.91	1.00	1.00
Frpb, ped/bikes	1.00	0.99		1.00	1.00	0.94	1.00	1.00	1.00	1.00	0.81	1.00
Flpb, ped/bikes	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.97		0.85	1.00	0.85	0.86	1.00	1.00	1.00	0.85	1.00
Flt Protected	0.95	1.00		1.00	1.00	1.00	1.00	0.95	0.95	0.97	1.00	0.95
Satd. Flow (prot)	3433	4582		1362	5085	1486	1611	1681	1610	1649	1289	1770
Flt Permitted	0.95	1.00		1.00	1.00	1.00	1.00	0.95	0.95	0.97	1.00	0.95
Satd. Flow (perm)	3433	4582		1362	5085	1486	1611	1681	1610	1649	1289	1770
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	326	1804	511	217	2207	739	163	380	435	163	239	217
RTOR Reduction (vph)	0	0	0	58	0	14	104	0	0	0	155	0
Lane Group Flow (vph)	326	2337	0	137	2207	725	59	243	363	372	84	217
Confl. Peds. (#/hr)	29		31			29		10			63	63
Turn Type	Prot	NA		Perm	NA	pm+ov	Perm	Split	Split	NA	Perm	Prot
Protected Phases	5	2			6	4		4	4	4		3
Permitted Phases				2		6	8				4	
Actuated Green, G (s)	15.8	83.9		83.9	64.3	97.3	54.1	33.0	33.0	33.0	33.0	19.0
Effective Green, g (s)	17.2	86.0		83.9	66.2	93.5	54.1	33.0	33.0	33.0	33.0	19.0
Actuated g/C Ratio	0.11	0.57		0.56	0.44	0.62	0.36	0.22	0.22	0.22	0.22	0.13
Clearance Time (s)	4.0	6.1		6.1	5.9	4.0	5.9	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	2.8		2.8	3.2	3.0	4.1	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	393	2627		761	2244	926	581	369	354	362	283	224
v/s Ratio Prot	0.09	c0.51			c0.43	0.16		0.14	0.23	c0.23		c0.12
v/s Ratio Perm				0.10		0.33	0.04				0.06	
v/c Ratio	0.83	0.89		0.18	0.98	0.78	0.10	0.66	1.03	1.03	0.30	0.97
Uniform Delay, d1	65.0	27.9		16.2	41.4	20.8	31.8	53.4	58.5	58.5	48.8	65.2
Progression Factor	1.00	1.00		1.00	1.03	1.39	1.00	0.78	0.79	0.78	0.90	1.00
Incremental Delay, d2	13.5	5.0		0.5	12.9	3.3	0.1	3.8	52.0	52.2	0.5	50.7
Delay (s)	78.5	32.9		16.7	55.6	32.1	31.9	45.7	98.0	98.0	44.2	115.9
Level of Service	E	C		B	E	C	C	D	F	F	D	F
Approach Delay (s)		37.0			49.7					77.0		103.0
Approach LOS		D			D					E		F

Intersection Summary			
HCM 2000 Control Delay	53.2	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.99		
Actuated Cycle Length (s)	150.0	Sum of lost time (s)	16.5
Intersection Capacity Utilization	90.9%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			

Movement	NWR	NWR2
Lane Configurations		
Traffic Volume (vph)	330	50
Future Volume (vph)	330	50
Ideal Flow (vphpl)	1900	1900
Total Lost time (s)	4.0	
Lane Util. Factor	0.88	
Frpb, ped/bikes	1.00	
Flpb, ped/bikes	1.00	
Frt	0.85	
Flt Protected	1.00	
Satd. Flow (prot)	2787	
Flt Permitted	1.00	
Satd. Flow (perm)	2787	
Peak-hour factor, PHF	0.92	0.92
Adj. Flow (vph)	359	54
RTOR Reduction (vph)	83	0
Lane Group Flow (vph)	330	0
Confl. Peds. (#/hr)		31
Turn Type	Prot	
Protected Phases	3	
Permitted Phases		
Actuated Green, G (s)	19.0	
Effective Green, g (s)	19.0	
Actuated g/C Ratio	0.13	
Clearance Time (s)	4.0	
Vehicle Extension (s)	3.0	
Lane Grp Cap (vph)	353	
v/s Ratio Prot	0.12	
v/s Ratio Perm		
v/c Ratio	0.93	
Uniform Delay, d1	64.9	
Progression Factor	1.00	
Incremental Delay, d2	31.4	
Delay (s)	96.3	
Level of Service	F	
Approach Delay (s)		
Approach LOS		

Intersection Summary

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	90	120	310	130	250	70	70	90	120	90	100	100
Future Volume (vph)	90	120	310	130	250	70	70	90	120	90	100	100
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.5			4.5			4.5			4.0	
Lane Util. Factor		1.00			1.00			1.00			1.00	
Frt		0.92			0.98			0.94			0.95	
Flt Protected		0.99			0.99			0.99			0.98	
Satd. Flow (prot)		1698			1798			1734			1749	
Flt Permitted		0.85			0.70			0.86			0.84	
Satd. Flow (perm)		1464			1272			1518			1484	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	98	130	337	141	272	76	76	98	130	98	109	109
RTOR Reduction (vph)	0	98	0	0	12	0	0	37	0	0	26	0
Lane Group Flow (vph)	0	467	0	0	477	0	0	267	0	0	290	0
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)		23.9			23.9			21.9			22.4	
Effective Green, g (s)		23.9			23.9			21.9			22.4	
Actuated g/C Ratio		0.44			0.44			0.40			0.41	
Clearance Time (s)		4.5			4.5			4.5			4.0	
Vehicle Extension (s)		3.0			3.0			3.0			3.0	
Lane Grp Cap (vph)		638			554			606			606	
v/s Ratio Prot												
v/s Ratio Perm		0.32			c0.37			0.18			c0.20	
v/c Ratio		0.73			0.86			0.44			0.48	
Uniform Delay, d1		12.8			13.9			12.0			11.9	
Progression Factor		1.00			1.00			1.00			1.00	
Incremental Delay, d2		4.3			12.9			2.3			0.6	
Delay (s)		17.1			26.8			14.3			12.5	
Level of Service		B			C			B			B	
Approach Delay (s)		17.1			26.8			14.3			12.5	
Approach LOS		B			C			B			B	

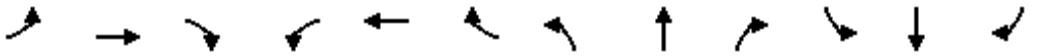
Intersection Summary			
HCM 2000 Control Delay	18.6	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.68		
Actuated Cycle Length (s)	54.8	Sum of lost time (s)	9.0
Intersection Capacity Utilization	71.5%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Movement	NBL	NBT	SBT	SBR	SEL	SER
Lane Configurations						
Traffic Volume (vph)	290	1320	830	50	50	480
Future Volume (vph)	290	1320	830	50	50	480
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0		4.0	4.0
Lane Util. Factor	1.00	0.91	0.91		1.00	1.00
Frt	1.00	1.00	0.99		1.00	0.85
Flt Protected	0.95	1.00	1.00		0.95	1.00
Satd. Flow (prot)	1770	5085	5042		1770	1583
Flt Permitted	0.95	1.00	1.00		0.95	1.00
Satd. Flow (perm)	1770	5085	5042		1770	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	315	1435	902	54	54	522
RTOR Reduction (vph)	0	0	3	0	0	468
Lane Group Flow (vph)	315	1435	953	0	54	54
Turn Type	Prot	NA	NA		Prot	Perm
Protected Phases	7	4	8		5	
Permitted Phases						5
Actuated Green, G (s)	26.6	99.6	69.0		12.4	12.4
Effective Green, g (s)	26.6	99.6	69.0		12.4	12.4
Actuated g/C Ratio	0.22	0.83	0.58		0.10	0.10
Clearance Time (s)	4.0	4.0	4.0		4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0		3.0	3.0
Lane Grp Cap (vph)	392	4220	2899		182	163
v/s Ratio Prot	c0.18	c0.28	0.19		0.03	
v/s Ratio Perm						c0.03
v/c Ratio	0.80	0.34	0.33		0.30	0.33
Uniform Delay, d1	44.2	2.4	13.4		49.8	49.9
Progression Factor	1.00	1.00	0.60		1.00	1.00
Incremental Delay, d2	11.3	0.2	0.2		0.9	1.2
Delay (s)	55.5	2.6	8.2		50.7	51.1
Level of Service	E	A	A		D	D
Approach Delay (s)		12.2	8.2		51.1	
Approach LOS		B	A		D	

Intersection Summary			
HCM 2000 Control Delay	17.8	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.46		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	53.5%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

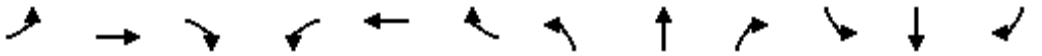


Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	100	0	140	300	310	150	0	0	0	0	70	90
Future Volume (vph)	100	0	140	300	310	150	0	0	0	0	70	90
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0		4.0	4.0	4.0						4.0	
Lane Util. Factor	1.00		1.00	1.00	1.00						1.00	
Frt	1.00		0.85	1.00	0.95						0.92	
Flt Protected	0.95		1.00	0.95	1.00						1.00	
Satd. Flow (prot)	1770		1583	1770	1772						1721	
Flt Permitted	0.95		1.00	0.95	1.00						1.00	
Satd. Flow (perm)	1770		1583	1770	1772						1721	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	109	0	152	326	337	163	0	0	0	0	76	98
RTOR Reduction (vph)	0	0	135	192	23	0	0	0	0	0	78	0
Lane Group Flow (vph)	109	0	17	134	477	0	0	0	0	0	96	0
Turn Type	Prot		Perm	Split	NA						NA	
Protected Phases	2!			8	8						6!	
Permitted Phases			4									
Actuated Green, G (s)	8.5		4.9	17.8	17.8						8.5	
Effective Green, g (s)	8.5		4.9	17.8	17.8						8.5	
Actuated g/C Ratio	0.20		0.11	0.41	0.41						0.20	
Clearance Time (s)	4.0		4.0	4.0	4.0						4.0	
Vehicle Extension (s)	3.0		3.0	3.0	3.0						3.0	
Lane Grp Cap (vph)	348		179	729	730						338	
v/s Ratio Prot	c0.06			0.08	c0.27						0.06	
v/s Ratio Perm			c0.01									
v/c Ratio	0.31		0.10	0.18	0.65						0.28	
Uniform Delay, d1	14.9		17.2	8.1	10.2						14.8	
Progression Factor	1.00		1.00	1.00	1.00						1.00	
Incremental Delay, d2	0.5		0.2	0.1	2.1						0.5	
Delay (s)	15.4		17.4	8.2	12.3						15.2	
Level of Service	B		B	A	B						B	
Approach Delay (s)		16.6			10.7			0.0			15.2	
Approach LOS		B			B			A			B	

Intersection Summary			
HCM 2000 Control Delay	12.5	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.47		
Actuated Cycle Length (s)	43.2	Sum of lost time (s)	12.0
Intersection Capacity Utilization	50.2%	ICU Level of Service	A
Analysis Period (min)	15		

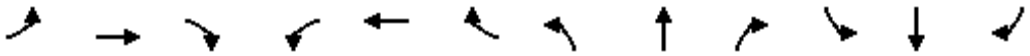
! Phase conflict between lane groups.

c Critical Lane Group



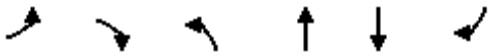
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	1890	170	290	2390	0	0	0	0	790	270	320
Future Volume (vph)	0	1890	170	290	2390	0	0	0	0	790	270	320
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0		4.0	4.0					4.0	4.0	4.0
Lane Util. Factor		0.91		1.00	0.86					0.95	0.95	1.00
Frpb, ped/bikes		1.00		1.00	1.00					1.00	1.00	0.98
Flpb, ped/bikes		1.00		1.00	1.00					0.98	0.99	1.00
Frt		0.99		1.00	1.00					1.00	1.00	0.85
Flt Protected		1.00		0.95	1.00					0.95	0.98	1.00
Satd. Flow (prot)		5022		1770	6408					1656	1724	1559
Flt Permitted		1.00		0.95	1.00					0.95	0.98	1.00
Satd. Flow (perm)		5022		1770	6408					1656	1724	1559
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	2054	185	315	2598	0	0	0	0	859	293	348
RTOR Reduction (vph)	0	7	0	0	0	0	0	0	0	0	0	31
Lane Group Flow (vph)	0	2232	0	315	2598	0	0	0	0	661	491	317
Confl. Peds. (#/hr)				13						14		3
Turn Type		NA		Prot	NA					Perm	NA	Perm
Protected Phases		2		1	6						4	
Permitted Phases										4		4
Actuated Green, G (s)		60.8		23.6	89.1					51.1	51.1	51.1
Effective Green, g (s)		62.0		24.0	90.0					52.0	52.0	52.0
Actuated g/C Ratio		0.41		0.16	0.60					0.35	0.35	0.35
Clearance Time (s)		5.2		4.4	4.9					4.9	4.9	4.9
Vehicle Extension (s)		3.8		2.0	4.6					2.0	2.0	2.0
Lane Grp Cap (vph)		2075		283	3844					574	597	540
v/s Ratio Prot		c0.44		c0.18	0.41							
v/s Ratio Perm										c0.40	0.28	0.20
v/c Ratio		1.08		1.11	0.68					1.15	0.82	0.59
Uniform Delay, d1		44.0		63.0	20.2					49.0	44.8	40.2
Progression Factor		1.00		1.30	0.05					1.00	1.00	1.00
Incremental Delay, d2		39.0		56.0	0.1					86.9	8.5	1.1
Delay (s)		83.1		137.8	1.2					135.9	53.3	41.2
Level of Service		F		F	A					F	D	D
Approach Delay (s)		83.1			15.9			0.0			86.9	
Approach LOS		F			B			A			F	

Intersection Summary			
HCM 2000 Control Delay	54.6	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	1.11		
Actuated Cycle Length (s)	150.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	95.9%	ICU Level of Service	F
Analysis Period (min)	15		
c Critical Lane Group			



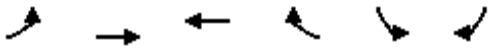
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	800	220	180	390	0	180	0	300	380	370	10
Future Volume (vph)	0	800	220	180	390	0	180	0	300	380	370	10
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0		4.0	4.0		4.0		4.0	4.0	4.0	
Lane Util. Factor		0.95		1.00	0.95		1.00		1.00	1.00	1.00	
Frpb, ped/bikes		0.97		1.00	1.00		1.00		0.98	1.00	1.00	
Flpb, ped/bikes		1.00		1.00	1.00		1.00		1.00	1.00	1.00	
Frt		0.97		1.00	1.00		1.00		0.85	1.00	1.00	
Flt Protected		1.00		0.95	1.00		0.95		1.00	0.95	1.00	
Satd. Flow (prot)		3317		1770	3539		1770		1556	1770	1854	
Flt Permitted		1.00		0.11	1.00		0.95		1.00	0.95	1.00	
Satd. Flow (perm)		3317		204	3539		1770		1556	1770	1854	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	870	239	196	424	0	196	0	326	413	402	11
RTOR Reduction (vph)	0	28	0	0	0	0	0	0	206	0	1	0
Lane Group Flow (vph)	0	1081	0	196	424	0	196	0	120	413	412	0
Confl. Peds. (#/hr)			43	43		51	17		3	3		17
Turn Type		NA		pm+pt	NA		Prot		Perm	Split	NA	
Protected Phases		2		1	6		3			4	4	
Permitted Phases				6					2			
Actuated Green, G (s)		32.2		42.9	42.9		11.9		32.2	21.0	21.0	
Effective Green, g (s)		33.1		43.3	43.8		12.3		33.1	21.9	21.9	
Actuated g/C Ratio		0.37		0.48	0.49		0.14		0.37	0.24	0.24	
Clearance Time (s)		4.9		4.4	4.9		4.4		4.9	4.9	4.9	
Vehicle Extension (s)		6.7		2.0	6.7		3.0		6.7	3.0	3.0	
Lane Grp Cap (vph)		1219		214	1722		241		572	430	451	
v/s Ratio Prot		0.33		c0.07	0.12		c0.11			c0.23	0.22	
v/s Ratio Perm				c0.37					0.08			
v/c Ratio		0.89		0.92	0.25		0.81		0.21	0.96	0.91	
Uniform Delay, d1		26.7		19.1	13.5		37.7		19.5	33.6	33.1	
Progression Factor		1.00		1.00	1.00		1.00		1.00	1.00	1.00	
Incremental Delay, d2		9.7		38.2	0.3		18.5		0.8	33.2	22.8	
Delay (s)		36.4		57.3	13.8		56.3		20.3	66.8	56.0	
Level of Service		D		E	B		E		C	E	E	
Approach Delay (s)		36.4			27.6			33.8			61.4	
Approach LOS		D			C			C			E	

Intersection Summary			
HCM 2000 Control Delay	40.9	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.94		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	83.3%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	230	450	490	880	430	100
Future Volume (vph)	230	450	490	880	430	100
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0		4.4	4.0	4.9	
Lane Util. Factor	1.00		1.00	0.91	0.91	
Frpb, ped/bikes	1.00		1.00	1.00	0.99	
Flpb, ped/bikes	1.00		1.00	1.00	1.00	
Frt	0.91		1.00	1.00	0.97	
Flt Protected	0.98		0.95	1.00	1.00	
Satd. Flow (prot)	1668		1770	5085	4915	
Flt Permitted	0.98		0.95	1.00	1.00	
Satd. Flow (perm)	1668		1770	5085	4915	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	250	489	533	957	467	109
RTOR Reduction (vph)	59	0	0	0	32	0
Lane Group Flow (vph)	680	0	533	957	544	0
Confl. Peds. (#/hr)			2			2
Turn Type	Prot		Prot	NA	NA	
Protected Phases	2		3	8	4	
Permitted Phases						
Actuated Green, G (s)	49.0		37.0	63.0	22.0	
Effective Green, g (s)	49.0		36.6	63.0	21.1	
Actuated g/C Ratio	0.41		0.31	0.52	0.18	
Clearance Time (s)	4.0		4.0	4.0	4.0	
Vehicle Extension (s)	3.0		3.0	3.0	3.0	
Lane Grp Cap (vph)	681		539	2669	864	
v/s Ratio Prot	c0.41		c0.30	0.19	c0.11	
v/s Ratio Perm						
v/c Ratio	1.00		0.99	0.36	0.63	
Uniform Delay, d1	35.5		41.5	16.7	45.8	
Progression Factor	1.00		1.05	1.21	1.00	
Incremental Delay, d2	34.0		34.7	0.4	3.5	
Delay (s)	69.5		78.1	20.5	49.3	
Level of Service	E		E	C	D	
Approach Delay (s)	69.5			41.1	49.3	
Approach LOS	E			D	D	

Intersection Summary			
HCM 2000 Control Delay	50.3	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.92		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	13.3
Intersection Capacity Utilization	91.6%	ICU Level of Service	F
Analysis Period (min)	15		
c Critical Lane Group			



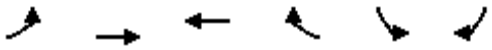
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	70	90	170	80	110	170
Future Volume (Veh/h)	70	90	170	80	110	170
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	76	98	185	87	120	185
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type		None	None			
Median storage veh)						
Upstream signal (ft)		1226	738			
pX, platoon unblocked						
vC, conflicting volume	272				478	228
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	272				478	228
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	94				77	77
cM capacity (veh/h)	1291				514	811

Direction, Lane #	EB 1	EB 2	WB 1	SB 1
Volume Total	76	98	272	305
Volume Left	76	0	0	120
Volume Right	0	0	87	185
cSH	1291	1700	1700	660
Volume to Capacity	0.06	0.06	0.16	0.46
Queue Length 95th (ft)	5	0	0	61
Control Delay (s)	8.0	0.0	0.0	15.0
Lane LOS	A			C
Approach Delay (s)	3.5		0.0	15.0
Approach LOS				C

Intersection Summary			
Average Delay	6.9		
Intersection Capacity Utilization	44.2%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	130	2550	0	0	2550	690	130	360	250	0	0	0
Future Volume (vph)	130	2550	0	0	2550	690	130	360	250	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0			4.0	4.0		4.0				
Lane Util. Factor	1.00	0.91			0.91	1.00		0.95				
Frpb, ped/bikes	1.00	1.00			1.00	0.96		0.99				
Flpb, ped/bikes	1.00	1.00			1.00	1.00		1.00				
Frt	1.00	1.00			1.00	0.85		0.95				
Flt Protected	0.95	1.00			1.00	1.00		0.99				
Satd. Flow (prot)	1770	5085			5085	1519		3294				
Flt Permitted	0.95	1.00			1.00	1.00		0.99				
Satd. Flow (perm)	1770	5085			5085	1519		3294				
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	141	2772	0	0	2772	750	141	391	272	0	0	0
RTOR Reduction (vph)	0	0	0	0	0	98	0	2	0	0	0	0
Lane Group Flow (vph)	141	2772	0	0	2772	652	0	802	0	0	0	0
Confl. Peds. (#/hr)	15		2			15	1		20			
Turn Type	Prot	NA			NA	Perm	Split	NA				
Protected Phases	5	2			6		4	4				
Permitted Phases						6						
Actuated Green, G (s)	19.8	99.3			75.1	75.1		40.9				
Effective Green, g (s)	20.2	100.2			76.0	76.0		41.8				
Actuated g/C Ratio	0.13	0.67			0.51	0.51		0.28				
Clearance Time (s)	4.4	4.9			4.9	4.9		4.9				
Vehicle Extension (s)	2.0	3.8			4.6	4.6		2.0				
Lane Grp Cap (vph)	238	3396			2576	769		917				
v/s Ratio Prot	0.08	c0.55			c0.55			c0.24				
v/s Ratio Perm						0.43						
v/c Ratio	0.59	0.82			1.08	0.85		0.87				
Uniform Delay, d1	61.0	18.2			37.0	32.0		51.6				
Progression Factor	0.74	0.56			1.00	1.00		1.00				
Incremental Delay, d2	0.2	0.2			42.2	11.2		9.0				
Delay (s)	45.2	10.4			79.2	43.2		60.6				
Level of Service	D	B			E	D		E				
Approach Delay (s)		12.1			71.6			60.6			0.0	
Approach LOS		B			E			E			A	

Intersection Summary			
HCM 2000 Control Delay	46.4	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.99		
Actuated Cycle Length (s)	150.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	95.9%	ICU Level of Service	F
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	130	1350	570	150	0	0
Future Volume (Veh/h)	130	1350	570	150	0	0
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	141	1467	620	163	0	0
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type		None	None			
Median storage veh)						
Upstream signal (ft)		345	945			
pX, platoon unblocked	0.94				0.75	0.94
vC, conflicting volume	783				1717	392
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	652				953	238
tC, single (s)	4.1				6.8	6.9
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	84				100	100
cM capacity (veh/h)	878				162	721

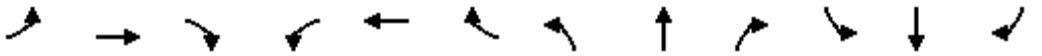
Direction, Lane #	EB 1	EB 2	EB 3	WB 1	WB 2
Volume Total	141	734	734	413	370
Volume Left	141	0	0	0	0
Volume Right	0	0	0	0	163
cSH	878	1700	1700	1700	1700
Volume to Capacity	0.16	0.43	0.43	0.24	0.22
Queue Length 95th (ft)	14	0	0	0	0
Control Delay (s)	9.9	0.0	0.0	0.0	0.0
Lane LOS	A				
Approach Delay (s)	0.9			0.0	
Approach LOS					

Intersection Summary			
Average Delay	0.6		
Intersection Capacity Utilization	40.7%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Sign Control	Stop		Stop			Stop
Traffic Volume (vph)	130	0	0	590	360	280
Future Volume (vph)	130	0	0	590	360	280
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	141	0	0	641	391	304

Direction, Lane #	WB 1	NB 1	SB 1	SB 2
Volume Total (vph)	141	641	391	304
Volume Left (vph)	141	0	391	0
Volume Right (vph)	0	641	0	0
Hadj (s)	0.23	-0.57	0.53	0.03
Departure Headway (s)	6.9	4.7	6.2	5.7
Degree Utilization, x	0.27	0.84	0.67	0.48
Capacity (veh/h)	499	751	565	624
Control Delay (s)	12.4	27.4	19.7	12.6
Approach Delay (s)	12.4	27.4	16.6	
Approach LOS	B	D	C	

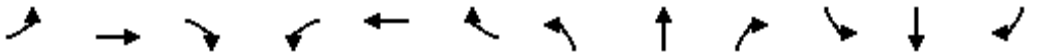
Intersection Summary			
Delay	20.9		
Level of Service	C		
Intersection Capacity Utilization	63.1%	ICU Level of Service	B
Analysis Period (min)	15		



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Traffic Volume (vph)	440	50	150	20	20	30	60	130	10	20	200	190
Future Volume (vph)	440	50	150	20	20	30	60	130	10	20	200	190
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	478	54	163	22	22	33	65	141	11	22	217	207

Direction, Lane #	EB 1	EB 2	WB 1	NB 1	SB 1	SB 2
Volume Total (vph)	505	190	77	217	239	207
Volume Left (vph)	478	0	22	65	22	0
Volume Right (vph)	0	163	33	11	0	207
Hadj (s)	0.51	-0.57	-0.17	0.06	0.08	-0.67
Departure Headway (s)	7.3	6.2	7.8	7.5	7.4	6.6
Degree Utilization, x	1.03	0.33	0.17	0.45	0.49	0.38
Capacity (veh/h)	485	567	432	457	478	531
Control Delay (s)	73.1	11.0	12.3	16.7	16.1	12.5
Approach Delay (s)	56.2		12.3	16.7	14.4	
Approach LOS	F		B	C	B	

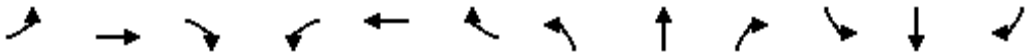
Intersection Summary				
Delay	34.9			
Level of Service	D			
Intersection Capacity Utilization	63.8%	ICU Level of Service	B	
Analysis Period (min)	15			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	700	270	420	460	0	0	0	0	430	580	1080
Future Volume (vph)	0	700	270	420	460	0	0	0	0	430	580	1080
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0	4.0	4.0	4.0					4.0	4.0	4.0
Lane Util. Factor		0.95	1.00	0.97	0.95					0.91	0.91	1.00
Frt		1.00	0.85	1.00	1.00					1.00	1.00	0.85
Flt Protected		1.00	1.00	0.95	1.00					0.95	1.00	1.00
Satd. Flow (prot)		3539	1583	3433	3539					1610	3390	1583
Flt Permitted		1.00	1.00	0.95	1.00					0.95	1.00	1.00
Satd. Flow (perm)		3539	1583	3433	3539					1610	3390	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	761	293	457	500	0	0	0	0	467	630	1174
RTOR Reduction (vph)	0	0	152	0	0	0	0	0	0	0	0	94
Lane Group Flow (vph)	0	761	141	457	500	0	0	0	0	467	630	1080
Turn Type		NA	Perm	Prot	NA					Perm	NA	Perm
Protected Phases		2		1	6						4	
Permitted Phases			2							4		4
Actuated Green, G (s)		26.7	26.7	15.0	46.1					64.1	64.1	64.1
Effective Green, g (s)		27.6	27.6	15.4	47.0					65.0	65.0	65.0
Actuated g/C Ratio		0.23	0.23	0.13	0.39					0.54	0.54	0.54
Clearance Time (s)		4.9	4.9	4.4	4.9					4.9	4.9	4.9
Vehicle Extension (s)		3.8	3.8	2.0	4.2					2.0	2.0	2.0
Lane Grp Cap (vph)		813	364	440	1386					872	1836	857
v/s Ratio Prot		c0.22		c0.13	0.14							
v/s Ratio Perm			0.09							0.29	0.19	c0.68
v/c Ratio		0.94	0.39	1.04	0.36					0.54	0.34	1.26
Uniform Delay, d1		45.3	39.1	52.3	25.9					17.8	15.5	27.5
Progression Factor		1.00	1.00	1.00	1.00					1.00	1.00	1.00
Incremental Delay, d2		19.4	3.1	53.3	0.7					0.3	0.0	126.5
Delay (s)		64.7	42.2	105.6	26.6					18.1	15.5	154.0
Level of Service		E	D	F	C					B	B	F
Approach Delay (s)		58.4			64.3			0.0			87.6	
Approach LOS		E			E			A			F	

Intersection Summary			
HCM 2000 Control Delay	75.2	HCM 2000 Level of Service	E
HCM 2000 Volume to Capacity ratio	1.14		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	86.3%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	0	60	50	0	0	0	0	0	0	1620	150
Future Volume (Veh/h)	0	0	60	50	0	0	0	0	0	0	1620	150
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	0	65	54	0	0	0	0	0	0	1761	163
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)								1066				
pX, platoon unblocked												
vC, conflicting volume	1842	1842	668	652	1924	0	1924			0		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	1842	1842	668	652	1924	0	1924			0		
tC, single (s)	7.5	6.5	6.9	7.5	6.5	6.9	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	100	100	84	82	100	100	100			100		
cM capacity (veh/h)	47	74	400	296	66	1084	303			1622		

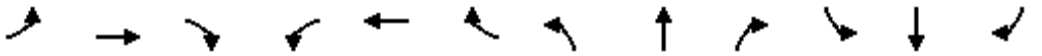
Direction, Lane #	EB 1	WB 1	SB 1	SB 2	SB 3
Volume Total	65	54	704	704	515
Volume Left	0	54	0	0	0
Volume Right	65	0	0	0	163
cSH	400	296	1700	1700	1700
Volume to Capacity	0.16	0.18	0.41	0.41	0.30
Queue Length 95th (ft)	14	16	0	0	0
Control Delay (s)	15.7	19.9	0.0	0.0	0.0
Lane LOS	C	C			
Approach Delay (s)	15.7	19.9	0.0		
Approach LOS	C	C			

Intersection Summary				
Average Delay	1.0			
Intersection Capacity Utilization	53.5%	ICU Level of Service	A	
Analysis Period (min)	15			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	440	250	110	170	0	0	0	0	410	860	480
Future Volume (vph)	0	440	250	110	170	0	0	0	0	410	860	480
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0	4.0		4.0					4.0	4.0	
Lane Util. Factor		1.00	1.00		0.95					1.00	0.91	
Frt		1.00	0.85		1.00					1.00	0.95	
Flt Protected		1.00	1.00		0.98					0.95	1.00	
Satd. Flow (prot)		1863	1583		3471					1770	4812	
Flt Permitted		1.00	1.00		0.62					0.95	1.00	
Satd. Flow (perm)		1863	1583		2177					1770	4812	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	478	272	120	185	0	0	0	0	446	935	522
RTOR Reduction (vph)	0	0	38	0	0	0	0	0	0	0	155	0
Lane Group Flow (vph)	0	478	234	0	305	0	0	0	0	446	1302	0
Turn Type		NA	Perm	Perm	NA					Perm	NA	
Protected Phases		4			8						6	
Permitted Phases			4	8						6		
Actuated Green, G (s)		25.3	25.3		25.3					26.7	26.7	
Effective Green, g (s)		28.0	28.0		28.0					29.0	29.0	
Actuated g/C Ratio		0.43	0.43		0.43					0.45	0.45	
Clearance Time (s)		6.7	6.7		6.7					6.3	6.3	
Vehicle Extension (s)		2.0	2.0		2.5					4.6	4.6	
Lane Grp Cap (vph)		802	681		937					789	2146	
v/s Ratio Prot		c0.26									c0.27	
v/s Ratio Perm			0.15		0.14					0.25		
v/c Ratio		0.60	0.34		0.33					0.57	0.61	
Uniform Delay, d1		14.2	12.4		12.2					13.3	13.7	
Progression Factor		1.00	1.00		1.00					1.00	1.00	
Incremental Delay, d2		3.3	1.4		0.9					2.9	1.3	
Delay (s)		17.4	13.7		13.2					16.3	15.0	
Level of Service		B	B		B					B	B	
Approach Delay (s)		16.1			13.2			0.0			15.3	
Approach LOS		B			B			A			B	

Intersection Summary			
HCM 2000 Control Delay	15.3	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.60		
Actuated Cycle Length (s)	65.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	68.4%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

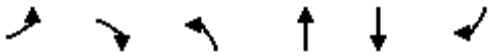


Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	1110	370	50	700	0	0	0	0	730	1100	660
Future Volume (vph)	0	1110	370	50	700	0	0	0	0	730	1100	660
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		6.7		4.0	6.7						6.3	4.0
Lane Util. Factor		0.95		1.00	0.95						0.86	0.86
Frt		0.96		1.00	1.00						1.00	0.85
Flt Protected		1.00		0.95	1.00						0.98	1.00
Satd. Flow (prot)		3407		1770	3539						4712	1362
Flt Permitted		1.00		0.95	1.00						0.98	1.00
Satd. Flow (perm)		3407		1770	3539						4712	1362
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	1207	402	54	761	0	0	0	0	793	1196	717
RTOR Reduction (vph)	0	34	0	0	0	0	0	0	0	0	0	52
Lane Group Flow (vph)	0	1576	0	54	761	0	0	0	0	0	1989	665
Turn Type		NA		Prot	NA					Perm	NA	Perm
Protected Phases		2		1	6						4	
Permitted Phases										4		4
Actuated Green, G (s)		31.5		3.4	37.6						40.4	40.4
Effective Green, g (s)		29.7		3.8	37.5						39.5	41.8
Actuated g/C Ratio		0.33		0.04	0.42						0.44	0.46
Clearance Time (s)		4.9		4.4	6.6						5.4	5.4
Vehicle Extension (s)		1.0		2.0	1.0						1.0	1.0
Lane Grp Cap (vph)		1124		74	1474						2068	632
v/s Ratio Prot		c0.46		c0.03	0.22							
v/s Ratio Perm											0.42	c0.49
v/c Ratio		1.40		0.73	0.52						1.08dl	1.05
Uniform Delay, d1		30.1		42.6	19.5						24.5	24.1
Progression Factor		1.00		1.00	1.00						1.00	1.00
Incremental Delay, d2		186.2		26.0	1.3						12.0	50.3
Delay (s)		216.3		68.6	20.8						36.5	74.4
Level of Service		F		E	C						D	E
Approach Delay (s)		216.3			24.0			0.0			46.6	
Approach LOS		F			C			A			D	

Intersection Summary			
HCM 2000 Control Delay	96.2	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.21		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	17.0
Intersection Capacity Utilization	94.3%	ICU Level of Service	F
Analysis Period (min)	15		

dl Defacto Left Lane. Recode with 1 though lane as a left lane.

c Critical Lane Group



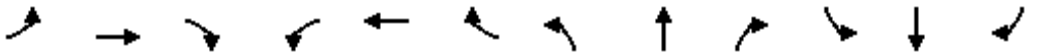
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	340	1270	1700	1270	1180	130
Future Volume (vph)	340	1270	1700	1270	1180	130
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	0.88	0.97	0.91	0.91	1.00
Frpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	0.99
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected	0.95	1.00	0.95	1.00	1.00	1.00
Satd. Flow (prot)	1770	2787	3433	5085	5085	1566
Flt Permitted	0.95	1.00	0.95	1.00	1.00	1.00
Satd. Flow (perm)	1770	2787	3433	5085	5085	1566
Peak-hour factor, PHF	0.92	0.95	0.95	0.95	0.92	0.92
Adj. Flow (vph)	370	1337	1789	1337	1283	141
RTOR Reduction (vph)	0	0	0	0	0	5
Lane Group Flow (vph)	370	1337	1789	1337	1283	136
Confl. Peds. (#/hr)			3			3
Turn Type	Prot	pm+ov	Prot	NA	NA	pm+ov
Protected Phases	5	7	7	4	8	5
Permitted Phases		5				8
Actuated Green, G (s)	23.0	88.0	65.0	99.0	30.0	53.0
Effective Green, g (s)	23.0	88.0	65.0	99.0	30.0	53.0
Actuated g/C Ratio	0.18	0.68	0.50	0.76	0.23	0.41
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	313	1972	1716	3872	1173	686
v/s Ratio Prot	c0.21	0.34	c0.52	0.26	c0.25	0.04
v/s Ratio Perm		0.14				0.05
v/c Ratio	1.18	0.68	1.04	0.35	1.09	0.20
Uniform Delay, d1	53.5	12.5	32.5	5.0	50.0	24.8
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	109.8	0.9	33.7	0.2	55.7	0.1
Delay (s)	163.3	13.5	66.2	5.3	105.7	25.0
Level of Service	F	B	E	A	F	C
Approach Delay (s)	46.0			40.2	97.7	
Approach LOS	D			D	F	

Intersection Summary			
HCM 2000 Control Delay	54.8	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	1.08		
Actuated Cycle Length (s)	130.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	100.1%	ICU Level of Service	G
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	SEL	SET	SER	NWL	NWT	NWR
Lane Configurations												
Traffic Volume (vph)	250	510	0	0	900	640	40	0	120	250	30	420
Future Volume (vph)	250	510	0	0	900	640	40	0	120	250	30	420
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.5	4.0			4.4	4.4		6.4		4.0	4.0	
Lane Util. Factor	1.00	0.95			0.95	1.00		1.00		0.91	0.91	
Frt	1.00	1.00			1.00	0.85		0.90		1.00	0.87	
Flt Protected	0.95	1.00			1.00	1.00		0.99		0.95	1.00	
Satd. Flow (prot)	1770	3539			3539	1583		1653		1610	2933	
Flt Permitted	0.95	1.00			1.00	1.00		0.99		0.95	1.00	
Satd. Flow (perm)	1770	3539			3539	1583		1653		1610	2933	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	272	554	0	0	978	696	43	0	130	272	33	457
RTOR Reduction (vph)	0	0	0	0	0	427	0	111	0	0	399	0
Lane Group Flow (vph)	272	554	0	0	978	269	0	62	0	245	118	0
Turn Type	Prot	NA			NA	Perm	Split	NA		Split	NA	
Protected Phases	5	2			6		8	8		7	7	
Permitted Phases						6						
Actuated Green, G (s)	10.6	49.2			33.7	33.7		12.6		11.1	11.1	
Effective Green, g (s)	10.6	49.2			33.7	33.7		12.6		11.1	11.1	
Actuated g/C Ratio	0.12	0.56			0.39	0.39		0.14		0.13	0.13	
Clearance Time (s)	4.5	4.0			4.4	4.4		6.4		4.0	4.0	
Vehicle Extension (s)	3.5	2.0			3.5	3.5		2.0		2.0	2.0	
Lane Grp Cap (vph)	214	1994			1366	611		238		204	372	
v/s Ratio Prot	c0.15	0.16			c0.28			c0.04		c0.15	0.04	
v/s Ratio Perm						0.17						
v/c Ratio	1.27	0.28			0.72	0.44		0.26		1.20	0.32	
Uniform Delay, d1	38.4	9.9			22.7	19.8		33.2		38.1	34.7	
Progression Factor	1.00	1.00			1.00	1.00		1.00		1.00	1.00	
Incremental Delay, d2	153.3	0.3			3.2	2.3		0.2		127.8	0.2	
Delay (s)	191.7	10.2			26.0	22.1		33.4		165.9	34.8	
Level of Service	F	B			C	C		C		F	C	
Approach Delay (s)		70.0			24.4			33.4			77.0	
Approach LOS		E			C			C			E	

Intersection Summary			
HCM 2000 Control Delay	47.5	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.80		
Actuated Cycle Length (s)	87.3	Sum of lost time (s)	19.3
Intersection Capacity Utilization	78.7%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

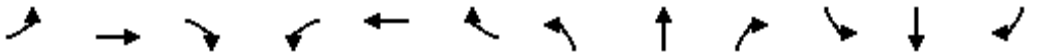


Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	410	70	600	670	0	0	0	0	350	40	370
Future Volume (vph)	0	410	70	600	670	0	0	0	0	350	40	370
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0		5.9	5.9					1.8	1.8	1.8
Lane Util. Factor		0.95		1.00	1.00					0.95	0.95	1.00
Frpb, ped/bikes		1.00		1.00	1.00					1.00	1.00	1.00
Flpb, ped/bikes		1.00		1.00	1.00					1.00	1.00	1.00
Frt		0.98		1.00	1.00					1.00	1.00	0.85
Flt Protected		1.00		0.95	1.00					0.95	0.96	1.00
Satd. Flow (prot)		3453		1770	1863					1681	1701	1583
Flt Permitted		1.00		0.95	1.00					0.95	0.96	1.00
Satd. Flow (perm)		3453		1770	1863					1681	1701	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	446	76	652	728	0	0	0	0	380	43	402
RTOR Reduction (vph)	0	18	0	0	0	0	0	0	0	0	0	71
Lane Group Flow (vph)	0	504	0	652	728	0	0	0	0	201	222	331
Confl. Peds. (#/hr)	5		5	5		10						
Turn Type		NA		Split	NA					Split	NA	custom
Protected Phases		7		8	8					6	6	6
Permitted Phases												7
Actuated Green, G (s)		14.2		29.7	29.7					10.7	10.7	24.9
Effective Green, g (s)		14.2		30.0	30.0					12.9	12.9	29.3
Actuated g/C Ratio		0.21		0.44	0.44					0.19	0.19	0.43
Clearance Time (s)		4.0		6.2	6.2					4.0	4.0	4.0
Vehicle Extension (s)		3.0		2.0	2.0					3.0	3.0	3.0
Lane Grp Cap (vph)		712		771	812					315	318	715
v/s Ratio Prot		c0.15		0.37	c0.39					0.12	c0.13	0.09
v/s Ratio Perm												0.12
v/c Ratio		0.71		0.85	0.90					0.64	0.70	0.46
Uniform Delay, d1		25.4		17.3	18.0					25.8	26.1	14.1
Progression Factor		1.00		1.00	1.00					1.00	1.00	1.00
Incremental Delay, d2		3.2		8.2	12.2					4.2	6.5	0.5
Delay (s)		28.6		25.5	30.2					30.0	32.7	14.6
Level of Service		C		C	C					C	C	B
Approach Delay (s)		28.6			28.0			0.0			23.2	
Approach LOS		C			C			A			C	

Intersection Summary			
HCM 2000 Control Delay	26.6	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.80		
Actuated Cycle Length (s)	68.8	Sum of lost time (s)	11.7
Intersection Capacity Utilization	69.2%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

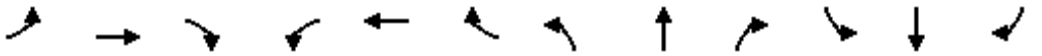
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	40	150	30	380	40	220	30	1570	340	220	500	20
Future Volume (vph)	40	150	30	380	40	220	30	1570	340	220	500	20
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.3	4.3		4.0	4.0		6.2	4.0	
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	0.91		1.00	0.91	
Frpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Flpb, ped/bikes	1.00	1.00		0.99	1.00		1.00	1.00		1.00	1.00	
Frt	1.00	0.97		1.00	0.87		1.00	0.97		1.00	0.99	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1770	1809		1757	1626		1770	4949		1770	5050	
Flt Permitted	0.45	1.00		0.55	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (perm)	831	1809		1020	1626		1770	4949		1770	5050	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	43	163	33	413	43	239	33	1707	370	239	543	22
RTOR Reduction (vph)	0	6	0	0	155	0	0	28	0	0	3	0
Lane Group Flow (vph)	43	190	0	413	127	0	33	2049	0	239	562	0
Confl. Peds. (#/hr)			9	9			2					2
Turn Type	Perm	NA		Perm	NA		Prot	NA		Prot	NA	
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4			8								
Actuated Green, G (s)	43.1	43.1		42.4	42.4		3.6	46.1		18.9	60.7	
Effective Green, g (s)	43.1	43.1		42.8	42.8		3.6	47.5		16.7	62.8	
Actuated g/C Ratio	0.35	0.35		0.35	0.35		0.03	0.39		0.14	0.52	
Clearance Time (s)	4.0	4.0		4.7	4.7		4.0	5.4		4.0	6.1	
Vehicle Extension (s)	2.0	2.0		3.0	3.0		2.0	4.8		2.0	3.7	
Lane Grp Cap (vph)	294	641		359	572		52	1934		243	2610	
v/s Ratio Prot		0.11			0.08		0.02	c0.41		c0.14	0.11	
v/s Ratio Perm	0.05			c0.40								
v/c Ratio	0.15	0.30		1.15	0.22		0.63	1.06		0.98	0.22	
Uniform Delay, d1	26.7	28.3		39.4	27.7		58.3	37.0		52.3	16.0	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	0.1	0.1		95.0	0.2		17.1	38.3		52.6	0.2	
Delay (s)	26.8	28.4		134.4	27.9		75.4	75.3		104.9	16.1	
Level of Service	C	C		F	C		E	E		F	B	
Approach Delay (s)		28.1			91.1			75.3			42.5	
Approach LOS		C			F			E			D	

Intersection Summary			
HCM 2000 Control Delay	68.4	HCM 2000 Level of Service	E
HCM 2000 Volume to Capacity ratio	1.08		
Actuated Cycle Length (s)	121.5	Sum of lost time (s)	14.5
Intersection Capacity Utilization	100.6%	ICU Level of Service	G
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	620	1070	300	250	950	160	460	1050	240	170	670	300
Future Volume (vph)	620	1070	300	250	950	160	460	1050	240	170	670	300
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	4.0
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00	0.91		1.00	0.91	1.00
Frpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	0.99
Flpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	1.00
Frt	1.00	0.97		1.00	0.98		1.00	0.97		1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1770	3423		1770	3454		1770	4930		1770	5085	1569
Flt Permitted	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)	1770	3423		1770	3454		1770	4930		1770	5085	1569
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	674	1163	326	272	1033	174	500	1141	261	185	728	326
RTOR Reduction (vph)	0	17	0	0	9	0	0	25	0	0	0	50
Lane Group Flow (vph)	674	1472	0	272	1198	0	500	1377	0	185	728	276
Confl. Peds. (#/hr)	4					4	5		1	1		5
Turn Type	Prot	NA		Prot	NA		Prot	NA		Prot	NA	pm+ov
Protected Phases	7	4		3	8		5	2		1	6	7
Permitted Phases												6
Actuated Green, G (s)	38.6	58.2		22.2	41.2		28.6	42.1		8.6	22.0	60.6
Effective Green, g (s)	39.0	59.4		22.6	43.0		29.0	43.0		9.0	23.0	61.4
Actuated g/C Ratio	0.26	0.40		0.15	0.29		0.19	0.29		0.06	0.15	0.41
Clearance Time (s)	4.4	5.2		4.4	5.8		4.4	4.9		4.4	5.0	4.4
Vehicle Extension (s)	2.0	3.9		2.0	2.7		2.0	3.3		2.0	4.1	2.0
Lane Grp Cap (vph)	460	1355		266	990		342	1413		106	779	642
v/s Ratio Prot	c0.38	0.43		0.15	c0.35		c0.28	c0.28		c0.10	0.14	0.11
v/s Ratio Perm												0.06
v/c Ratio	1.47	1.09		1.02	1.21		1.46	0.97		1.75	0.93	0.43
Uniform Delay, d1	55.5	45.3		63.7	53.5		60.5	53.0		70.5	62.8	31.8
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	221.0	51.5		61.1	103.9		223.4	18.6		371.3	19.7	0.2
Delay (s)	276.5	96.8		124.8	157.4		283.9	71.6		441.8	82.5	31.9
Level of Service	F	F		F	F		F	E		F	F	C
Approach Delay (s)		152.8			151.4			127.4			122.8	
Approach LOS		F			F			F			F	

Intersection Summary			
HCM 2000 Control Delay	139.9	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.32		
Actuated Cycle Length (s)	150.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	119.6%	ICU Level of Service	H
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	160	860	330	220	370	90	280	240	630	70	110	70
Future Volume (vph)	160	860	330	220	370	90	280	240	630	70	110	70
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	5.5	5.5	4.0	5.4	5.4
Lane Util. Factor	1.00	0.95	0.88	0.97	0.95	1.00	0.97	1.00	1.00	1.00	0.91	1.00
Frpb, ped/bikes	1.00	1.00	0.97	1.00	1.00	0.71	1.00	1.00	0.98	1.00	1.00	0.97
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1770	3539	2709	3433	3539	1131	3433	1863	1555	1770	5085	1537
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1770	3539	2709	3433	3539	1131	3433	1863	1555	1770	5085	1537
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	174	935	359	239	402	98	304	261	685	76	120	76
RTOR Reduction (vph)	0	0	196	0	0	63	0	0	59	0	0	58
Lane Group Flow (vph)	174	935	163	239	402	35	304	261	626	76	120	18
Confl. Peds. (#/hr)			27	27		170	23		15	15		23
Turn Type	Prot	NA	pm+ov	Prot	NA	Perm	Prot	NA	pm+ov	Prot	NA	Perm
Protected Phases	5	2	3	1	6		3	8	1	7	4	
Permitted Phases			2			6			8			4
Actuated Green, G (s)	11.0	33.2	41.1	10.1	32.3	32.3	7.9	24.0	34.1	6.6	22.7	22.7
Effective Green, g (s)	11.4	34.1	41.9	10.5	33.2	33.2	8.3	23.4	31.9	7.0	22.2	22.2
Actuated g/C Ratio	0.12	0.37	0.45	0.11	0.36	0.36	0.09	0.25	0.34	0.08	0.24	0.24
Clearance Time (s)	4.4	4.9	4.4	4.4	4.9	4.9	4.4	4.9	4.4	4.4	4.9	4.9
Vehicle Extension (s)	2.0	2.1	2.0	2.0	2.3	2.3	2.0	4.5	2.0	2.0	4.5	4.5
Lane Grp Cap (vph)	218	1304	1227	389	1270	405	308	471	536	133	1220	368
v/s Ratio Prot	0.10	c0.26	0.01	0.07	0.11		c0.09	0.14	c0.11	0.04	0.02	
v/s Ratio Perm			0.05			0.03			0.29			0.01
v/c Ratio	0.80	0.72	0.13	0.61	0.32	0.09	0.99	0.55	1.17	0.57	0.10	0.05
Uniform Delay, d1	39.4	25.1	14.7	39.1	21.4	19.6	42.0	30.0	30.3	41.3	27.4	27.0
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	17.0	3.4	0.0	2.0	0.7	0.4	47.2	2.1	94.3	3.6	0.1	0.1
Delay (s)	56.5	28.5	14.7	41.1	22.1	20.0	89.2	32.1	124.6	44.9	27.4	27.1
Level of Service	E	C	B	D	C	C	F	C	F	D	C	C
Approach Delay (s)		28.4			28.0			96.7			32.2	
Approach LOS		C			C			F			C	

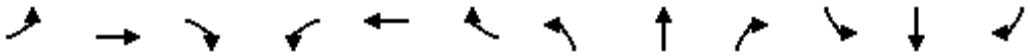
Intersection Summary			
HCM 2000 Control Delay	51.5	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.95		
Actuated Cycle Length (s)	92.5	Sum of lost time (s)	19.0
Intersection Capacity Utilization	82.3%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	580	300	70	20	170	150	90	100	110	20	20	40
Future Volume (vph)	580	300	70	20	170	150	90	100	110	20	20	40
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0			4.0			4.0			4.0	
Lane Util. Factor		1.00			1.00			1.00			1.00	
Frpb, ped/bikes		1.00			0.99			0.99			0.99	
Flpb, ped/bikes		1.00			1.00			1.00			1.00	
Frt		0.99			0.94			0.95			0.93	
Flt Protected		0.97			1.00			0.99			0.99	
Satd. Flow (prot)		1784			1731			1722			1698	
Flt Permitted		0.62			0.92			0.86			0.79	
Satd. Flow (perm)		1136			1599			1495			1365	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	630	326	76	22	185	163	98	109	120	22	22	43
RTOR Reduction (vph)	0	3	0	0	16	0	0	19	0	0	32	0
Lane Group Flow (vph)	0	1029	0	0	354	0	0	308	0	0	55	0
Confl. Peds. (#/hr)	1		3	3		1	1		4	4		1
Turn Type	pm+pt	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases	5	2			6			8			4	
Permitted Phases	2			6			8			4		
Actuated Green, G (s)		79.2			79.2			21.0			21.0	
Effective Green, g (s)		80.1			80.1			21.9			21.9	
Actuated g/C Ratio		0.73			0.73			0.20			0.20	
Clearance Time (s)		4.9			4.9			4.9			4.9	
Vehicle Extension (s)		2.0			2.0			2.0			2.0	
Lane Grp Cap (vph)		827			1164			297			271	
v/s Ratio Prot												
v/s Ratio Perm		c0.91			0.22			c0.21			0.04	
v/c Ratio		1.24			0.30			1.04			0.20	
Uniform Delay, d1		15.0			5.2			44.0			36.8	
Progression Factor		1.00			1.00			1.00			1.00	
Incremental Delay, d2		120.2			0.7			62.0			0.1	
Delay (s)		135.2			5.9			106.0			36.9	
Level of Service		F			A			F			D	
Approach Delay (s)		135.2			5.9			106.0			36.9	
Approach LOS		F			A			F			D	

Intersection Summary			
HCM 2000 Control Delay	98.9	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.25		
Actuated Cycle Length (s)	110.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	105.2%	ICU Level of Service	G
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	1090	470	240	500	180	280
Future Volume (vph)	1090	470	240	500	180	280
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0		4.0	4.9	4.0	4.0
Lane Util. Factor	0.91		1.00	0.95	1.00	1.00
Frpb, ped/bikes	0.97		1.00	1.00	1.00	1.00
Flpb, ped/bikes	1.00		1.00	1.00	1.00	1.00
Frt	0.95		1.00	1.00	1.00	0.85
Flt Protected	1.00		0.95	1.00	0.95	1.00
Satd. Flow (prot)	4697		1770	3539	1770	1583
Flt Permitted	1.00		0.95	1.00	0.95	1.00
Satd. Flow (perm)	4697		1770	3539	1770	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	1185	511	261	543	196	304
RTOR Reduction (vph)	87	0	0	0	0	237
Lane Group Flow (vph)	1609	0	261	543	196	67
Confl. Peds. (#/hr)		53	53		46	81
Turn Type	NA		Prot	NA	Prot	Prot
Protected Phases	2		1	6	8	8
Permitted Phases						
Actuated Green, G (s)	29.3		12.9	46.6	14.8	14.8
Effective Green, g (s)	31.2		13.3	46.6	15.7	15.7
Actuated g/C Ratio	0.44		0.19	0.65	0.22	0.22
Clearance Time (s)	4.9		4.4	4.9	4.9	4.9
Vehicle Extension (s)	2.9		2.0	2.0	2.0	2.0
Lane Grp Cap (vph)	2058		330	2316	390	349
v/s Ratio Prot	c0.34		c0.15	0.15	c0.11	0.04
v/s Ratio Perm						
v/c Ratio	0.78		0.79	0.23	0.50	0.19
Uniform Delay, d1	17.1		27.6	5.0	24.3	22.6
Progression Factor	1.00		1.00	1.00	1.00	1.00
Incremental Delay, d2	3.0		11.4	0.2	0.4	0.1
Delay (s)	20.1		39.0	5.3	24.7	22.7
Level of Service	C		D	A	C	C
Approach Delay (s)	20.1			16.2	23.5	
Approach LOS	C			B	C	

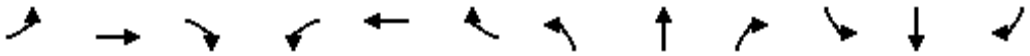
Intersection Summary			
HCM 2000 Control Delay	19.6	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.71		
Actuated Cycle Length (s)	71.2	Sum of lost time (s)	11.0
Intersection Capacity Utilization	66.1%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Traffic Volume (vph)	20	20	20	30	20	60	40	140	40	90	190	60
Future Volume (vph)	20	20	20	30	20	60	40	140	40	90	190	60
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	22	22	22	33	22	65	43	152	43	98	207	65

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total (vph)	66	120	238	370
Volume Left (vph)	22	33	43	98
Volume Right (vph)	22	65	43	65
Hadj (s)	-0.10	-0.24	-0.04	-0.02
Departure Headway (s)	5.5	5.2	4.8	4.7
Degree Utilization, x	0.10	0.17	0.32	0.48
Capacity (veh/h)	572	610	707	735
Control Delay (s)	9.1	9.3	10.1	12.0
Approach Delay (s)	9.1	9.3	10.1	12.0
Approach LOS	A	A	B	B

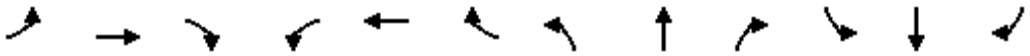
Intersection Summary				
Delay	10.8			
Level of Service	B			
Intersection Capacity Utilization	48.9%	ICU Level of Service	A	
Analysis Period (min)	15			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Traffic Volume (vph)	40	20	20	30	40	20	30	130	30	40	130	70
Future Volume (vph)	40	20	20	30	40	20	30	130	30	40	130	70
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	43	22	22	33	43	22	33	141	33	43	141	76

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total (vph)	87	98	207	260
Volume Left (vph)	43	33	33	43
Volume Right (vph)	22	22	33	76
Hadj (s)	-0.02	-0.03	-0.03	-0.11
Departure Headway (s)	5.1	5.1	4.7	4.5
Degree Utilization, x	0.12	0.14	0.27	0.33
Capacity (veh/h)	630	635	732	753
Control Delay (s)	8.9	8.9	9.4	9.7
Approach Delay (s)	8.9	8.9	9.4	9.7
Approach LOS	A	A	A	A

Intersection Summary				
Delay	9.4			
Level of Service	A			
Intersection Capacity Utilization	34.8%	ICU Level of Service	A	
Analysis Period (min)	15			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Traffic Volume (vph)	20	20	20	70	30	30	20	230	390	10	160	20
Future Volume (vph)	20	20	20	70	30	30	20	230	390	10	160	20
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	22	22	22	76	33	33	22	250	424	11	174	22

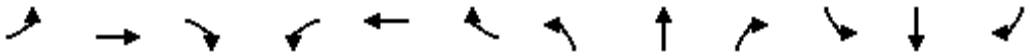
Direction, Lane #	EB 1	WB 1	NB 1	NB 2	SB 1
Volume Total (vph)	66	142	272	424	207
Volume Left (vph)	22	76	22	0	11
Volume Right (vph)	22	33	0	424	22
Hadj (s)	-0.10	0.00	0.07	-0.67	-0.02
Departure Headway (s)	6.0	5.9	5.5	4.7	5.4
Degree Utilization, x	0.11	0.23	0.41	0.56	0.31
Capacity (veh/h)	532	556	645	747	639
Control Delay (s)	9.7	10.7	11.1	12.2	10.7
Approach Delay (s)	9.7	10.7	11.8		10.7
Approach LOS	A	B	B		B

Intersection Summary				
Delay	11.3			
Level of Service	B			
Intersection Capacity Utilization	48.9%	ICU Level of Service	A	
Analysis Period (min)	15			

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Sign Control	Stop			Stop	Stop	
Traffic Volume (vph)	40	40	60	50	60	110
Future Volume (vph)	40	40	60	50	60	110
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	43	43	65	54	65	120

Direction, Lane #	EB 1	WB 1	NB 1
Volume Total (vph)	86	119	185
Volume Left (vph)	0	65	65
Volume Right (vph)	43	0	120
Hadj (s)	-0.27	0.14	-0.28
Departure Headway (s)	4.2	4.5	4.1
Degree Utilization, x	0.10	0.15	0.21
Capacity (veh/h)	818	751	840
Control Delay (s)	7.6	8.3	8.2
Approach Delay (s)	7.6	8.3	8.2
Approach LOS	A	A	A

Intersection Summary			
Delay	8.1		
Level of Service	A		
Intersection Capacity Utilization	34.3%	ICU Level of Service	A
Analysis Period (min)	15		



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Traffic Volume (vph)	30	30	30	50	30	20	80	160	140	20	70	20
Future Volume (vph)	30	30	30	50	30	20	80	160	140	20	70	20
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	33	33	33	54	33	22	87	174	152	22	76	22

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total (vph)	99	109	413	120
Volume Left (vph)	33	54	87	22
Volume Right (vph)	33	22	152	22
Hadj (s)	-0.10	0.01	-0.14	-0.04
Departure Headway (s)	5.2	5.3	4.5	4.9
Degree Utilization, x	0.14	0.16	0.51	0.16
Capacity (veh/h)	612	605	776	676
Control Delay (s)	9.1	9.3	12.1	8.9
Approach Delay (s)	9.1	9.3	12.1	8.9
Approach LOS	A	A	B	A

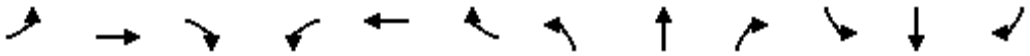
Intersection Summary				
Delay	10.8			
Level of Service	B			
Intersection Capacity Utilization	50.7%	ICU Level of Service	A	
Analysis Period (min)	15			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	280	40	110	20	60	50	130	300	30	20	70	170
Future Volume (vph)	280	40	110	20	60	50	130	300	30	20	70	170
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0			4.0		4.0	4.0		4.0	4.0	
Lane Util. Factor		1.00			1.00		1.00	1.00		1.00	1.00	
Frpb, ped/bikes		1.00			0.99		1.00	1.00		1.00	0.98	
Flpb, ped/bikes		1.00			1.00		1.00	1.00		1.00	1.00	
Frt		0.97			0.95		1.00	0.99		1.00	0.89	
Flt Protected		0.97			0.99		0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1738			1742		1765	1833		1764	1637	
Flt Permitted		0.75			0.92		0.57	1.00		0.47	1.00	
Satd. Flow (perm)		1353			1607		1064	1833		867	1637	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	304	43	120	22	65	54	141	326	33	22	76	185
RTOR Reduction (vph)	0	25	0	0	32	0	0	5	0	0	104	0
Lane Group Flow (vph)	0	442	0	0	109	0	141	354	0	22	157	0
Confl. Peds. (#/hr)	5					5	3		4	4		3
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		8			4			6			2	
Permitted Phases	8			4			6			2		
Actuated Green, G (s)		21.2			21.2		22.5	22.5		22.5	22.5	
Effective Green, g (s)		21.2			21.2		22.5	22.5		22.5	22.5	
Actuated g/C Ratio		0.41			0.41		0.44	0.44		0.44	0.44	
Clearance Time (s)		4.0			4.0		4.0	4.0		4.0	4.0	
Vehicle Extension (s)		2.0			2.0		2.1	2.1		2.1	2.1	
Lane Grp Cap (vph)		554			658		463	797		377	712	
v/s Ratio Prot								c0.19			0.10	
v/s Ratio Perm		c0.33			0.07		0.13			0.03		
v/c Ratio		0.80			0.17		0.30	0.44		0.06	0.22	
Uniform Delay, d1		13.4			9.7		9.5	10.2		8.5	9.1	
Progression Factor		1.00			1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2		7.4			0.0		1.7	1.8		0.3	0.7	
Delay (s)		20.7			9.7		11.2	12.0		8.8	9.8	
Level of Service		C			A		B	B		A	A	
Approach Delay (s)		20.7			9.7			11.8			9.7	
Approach LOS		C			A			B			A	

Intersection Summary			
HCM 2000 Control Delay	14.2	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.62		
Actuated Cycle Length (s)	51.7	Sum of lost time (s)	8.0
Intersection Capacity Utilization	65.7%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	70	1070	230	310	600	20	120	20	220	30	20	20
Future Volume (vph)	70	1070	230	310	600	20	120	20	220	30	20	20
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0			4.0			4.0	
Lane Util. Factor	1.00	0.91		1.00	0.95			1.00			1.00	
Frpb, ped/bikes	1.00	0.99		1.00	1.00			0.99			1.00	
Flpb, ped/bikes	1.00	1.00		1.00	1.00			1.00			1.00	
Frt	1.00	0.97		1.00	1.00			0.92			0.96	
Flt Protected	0.95	1.00		0.95	1.00			0.98			0.98	
Satd. Flow (prot)	1765	4911		1770	3518			1665			1745	
Flt Permitted	0.40	1.00		0.15	1.00			0.87			0.76	
Satd. Flow (perm)	735	4911		284	3518			1474			1357	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	76	1163	250	337	652	22	130	22	239	33	22	22
RTOR Reduction (vph)	0	43	0	0	3	0	0	92	0	0	16	0
Lane Group Flow (vph)	76	1370	0	337	671	0	0	299	0	0	61	0
Confl. Peds. (#/hr)	13		12	12		13	6		2	2		6
Turn Type	pm+pt	NA		pm+pt	NA		Perm	NA		Perm	NA	
Protected Phases	5	2		1	6			8			4	
Permitted Phases	2			6			8			4		
Actuated Green, G (s)	24.4	21.7		36.6	29.5			15.7			15.7	
Effective Green, g (s)	25.2	22.7		37.0	30.4			16.6			16.6	
Actuated g/C Ratio	0.41	0.37		0.60	0.49			0.27			0.27	
Clearance Time (s)	4.4	5.0		4.4	4.9			4.9			4.9	
Vehicle Extension (s)	2.0	3.3		2.0	3.3			2.0			2.0	
Lane Grp Cap (vph)	349	1795		427	1722			394			362	
v/s Ratio Prot	0.01	0.28		c0.14	0.19							
v/s Ratio Perm	0.08			c0.33				c0.20			0.04	
v/c Ratio	0.22	0.76		0.79	0.39			0.76			0.17	
Uniform Delay, d1	11.5	17.3		12.0	10.0			20.9			17.5	
Progression Factor	1.00	1.00		1.00	1.00			1.00			1.00	
Incremental Delay, d2	0.1	3.1		8.7	0.7			7.2			0.1	
Delay (s)	11.6	20.5		20.7	10.7			28.2			17.5	
Level of Service	B	C		C	B			C			B	
Approach Delay (s)		20.0			14.0			28.2			17.5	
Approach LOS		C			B			C			B	

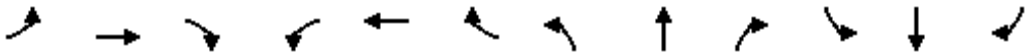
Intersection Summary			
HCM 2000 Control Delay	19.0	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.81		
Actuated Cycle Length (s)	62.1	Sum of lost time (s)	12.0
Intersection Capacity Utilization	78.4%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Traffic Volume (vph)	110	20	30	10	20	20	20	110	30	40	160	90
Future Volume (vph)	110	20	30	10	20	20	20	110	30	40	160	90
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	120	22	33	11	22	22	22	120	33	43	174	98

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total (vph)	175	55	175	315
Volume Left (vph)	120	11	22	43
Volume Right (vph)	33	22	33	98
Hadj (s)	0.06	-0.17	-0.05	-0.13
Departure Headway (s)	5.2	5.2	4.9	4.6
Degree Utilization, x	0.25	0.08	0.24	0.40
Capacity (veh/h)	631	608	692	739
Control Delay (s)	10.0	8.6	9.4	10.7
Approach Delay (s)	10.0	8.6	9.4	10.7
Approach LOS	A	A	A	B

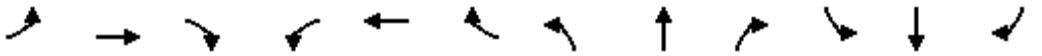
Intersection Summary				
Delay	10.1			
Level of Service	B			
Intersection Capacity Utilization	45.4%	ICU Level of Service	A	
Analysis Period (min)	15			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Traffic Volume (vph)	40	20	60	10	20	20	40	100	20	20	150	50
Future Volume (vph)	40	20	60	10	20	20	40	100	20	20	150	50
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	43	22	65	11	22	22	43	109	22	22	163	54

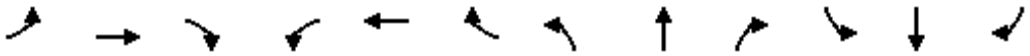
Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total (vph)	130	55	174	239
Volume Left (vph)	43	11	43	22
Volume Right (vph)	65	22	22	54
Hadj (s)	-0.20	-0.17	0.01	-0.08
Departure Headway (s)	4.7	4.9	4.7	4.5
Degree Utilization, x	0.17	0.07	0.22	0.30
Capacity (veh/h)	692	660	734	761
Control Delay (s)	8.7	8.3	9.0	9.4
Approach Delay (s)	8.7	8.3	9.0	9.4
Approach LOS	A	A	A	A

Intersection Summary				
Delay	9.0			
Level of Service	A			
Intersection Capacity Utilization	37.0%	ICU Level of Service	A	
Analysis Period (min)	15			



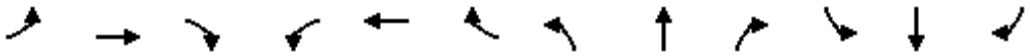
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	590	670	60	30	580	160	0	0	30	220	160	350
Future Volume (vph)	590	670	60	30	580	160	0	0	30	220	160	350
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0				4.0	4.0	4.0	4.0
Lane Util. Factor	0.97	0.95		1.00	0.95				1.00	0.95	0.95	1.00
Frpb, ped/bikes	1.00	1.00		1.00	1.00				1.00	1.00	1.00	0.99
Flpb, ped/bikes	1.00	1.00		1.00	1.00				1.00	1.00	1.00	1.00
Frt	1.00	0.99		1.00	0.97				0.86	1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00				1.00	0.95	0.98	1.00
Satd. Flow (prot)	3433	3487		1770	3412				1611	1681	1736	1561
Flt Permitted	0.95	1.00		0.95	1.00				1.00	0.95	0.98	1.00
Satd. Flow (perm)	3433	3487		1770	3412				1611	1681	1736	1561
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	641	728	65	33	630	174	0	0	33	239	174	380
RTOR Reduction (vph)	0	7	0	0	28	0	0	0	0	0	0	258
Lane Group Flow (vph)	641	786	0	33	776	0	0	0	33	127	286	122
Confl. Peds. (#/hr)	5		4	4		5						3
Turn Type	Prot	NA		Prot	NA				Free	Split	NA	Perm
Protected Phases	5	2		1	6					4	4	
Permitted Phases									Free			4
Actuated Green, G (s)	13.5	36.5		2.0	25.0				71.4	18.3	18.3	18.3
Effective Green, g (s)	13.9	37.4		2.4	25.9				71.4	19.6	19.6	19.6
Actuated g/C Ratio	0.19	0.52		0.03	0.36				1.00	0.27	0.27	0.27
Clearance Time (s)	4.4	4.9		4.4	4.9					5.3	5.3	5.3
Vehicle Extension (s)	2.0	3.3		2.0	3.8					4.4	4.4	4.4
Lane Grp Cap (vph)	668	1826		59	1237				1611	461	476	428
v/s Ratio Prot	c0.19	0.23		0.02	c0.23					0.08	c0.16	
v/s Ratio Perm									0.02			0.08
v/c Ratio	0.96	0.43		0.56	0.63				0.02	0.28	0.60	0.29
Uniform Delay, d1	28.5	10.5		34.0	18.8				0.0	20.3	22.5	20.4
Progression Factor	1.00	1.00		1.00	1.00				1.00	1.00	1.00	1.00
Incremental Delay, d2	24.7	0.7		6.4	2.4				0.0	0.5	2.7	0.6
Delay (s)	53.2	11.2		40.4	21.2				0.0	20.9	25.2	21.0
Level of Service	D	B		D	C				A	C	C	C
Approach Delay (s)		30.0			21.9			0.0			22.5	
Approach LOS		C			C			A			C	

Intersection Summary			
HCM 2000 Control Delay	25.6	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.70		
Actuated Cycle Length (s)	71.4	Sum of lost time (s)	12.0
Intersection Capacity Utilization	59.8%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	60	1430	100	70	1010	70	120	110	140	40	90	20
Future Volume (vph)	60	1430	100	70	1010	70	120	110	140	40	90	20
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0		4.0	4.0			4.0	
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00	1.00			1.00	
Frpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	0.99			1.00	
Flpb, ped/bikes	1.00	1.00		1.00	1.00		0.99	1.00			1.00	
Frt	1.00	0.99		1.00	0.99		1.00	0.92			0.98	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00			0.99	
Satd. Flow (prot)	1678	3406		1671	3399		1646	1575			1704	
Flt Permitted	0.95	1.00		0.95	1.00		0.49	1.00			0.44	
Satd. Flow (perm)	1678	3406		1671	3399		852	1575			764	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	65	1554	109	76	1098	76	130	120	152	43	98	22
RTOR Reduction (vph)	0	3	0	0	3	0	0	34	0	0	4	0
Lane Group Flow (vph)	65	1660	0	76	1171	0	130	238	0	0	159	0
Confl. Peds. (#/hr)	4		3	3		4	6		5	5		6
Confl. Bikes (#/hr)			3			2			4			
Bus Blockages (#/hr)	13	13	13	14	14	14	16	16	16	13	13	13
Turn Type	Prot	NA		Prot	NA		Perm	NA		Perm	NA	
Protected Phases	5	2		1	6			4			4	
Permitted Phases							4			4		
Actuated Green, G (s)	9.3	94.7		10.0	95.4		26.1	26.1			26.1	
Effective Green, g (s)	9.7	95.6		10.4	96.3		27.0	27.0			27.0	
Actuated g/C Ratio	0.07	0.66		0.07	0.66		0.19	0.19			0.19	
Clearance Time (s)	4.4	4.9		4.4	4.9		4.9	4.9			4.9	
Vehicle Extension (s)	2.0	2.1		2.0	2.1		2.0	2.0			2.0	
Lane Grp Cap (vph)	112	2245		119	2257		158	293			142	
v/s Ratio Prot	0.04	c0.49		c0.05	0.34			0.15				
v/s Ratio Perm							0.15				c0.21	
v/c Ratio	0.58	0.74		0.64	0.52		0.82	0.81			1.12	
Uniform Delay, d1	65.7	16.4		65.5	12.5		56.7	56.6			59.0	
Progression Factor	1.00	1.00		1.00	0.85		1.00	1.00			1.00	
Incremental Delay, d2	4.9	2.2		3.3	0.3		26.8	14.8			111.1	
Delay (s)	70.5	18.7		68.7	11.0		83.5	71.4			170.1	
Level of Service	E	B		E	B		F	E			F	
Approach Delay (s)		20.6			14.5			75.3			170.1	
Approach LOS		C			B			E			F	

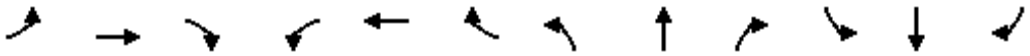
Intersection Summary			
HCM 2000 Control Delay	31.5	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.81		
Actuated Cycle Length (s)	145.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	86.1%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	430	1400	140	210	840	220	90	430	240	310	220	160
Future Volume (vph)	430	1400	140	210	840	220	90	430	240	310	220	160
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0		4.0	4.0	4.0	4.0	4.0	
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00	0.95	1.00	1.00	0.95	
Frpb, ped/bikes	1.00	0.99		1.00	0.99		1.00	1.00	0.96	1.00	0.96	
Flpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	
Frt	1.00	0.99		1.00	0.97		1.00	1.00	0.85	1.00	0.94	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)	1770	3472		1770	3380		1770	3539	1526	1770	3180	
Flt Permitted	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (perm)	1770	3472		1770	3380		1770	3539	1526	1770	3180	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	467	1522	152	228	913	239	98	467	261	337	239	174
RTOR Reduction (vph)	0	5	0	0	16	0	0	0	62	0	89	0
Lane Group Flow (vph)	467	1669	0	228	1136	0	98	467	199	337	324	0
Confl. Peds. (#/hr)	26		26	26		26	41		25	25		41
Confl. Bikes (#/hr)			8			2			13			8
Turn Type	Prot	NA		Prot	NA		Prot	NA	pm+ov	Prot	NA	
Protected Phases	5	2		1	6		3	8	1	7	4	
Permitted Phases									8			
Actuated Green, G (s)	31.6	59.1		15.6	42.6		11.9	25.9	41.5	25.7	39.8	
Effective Green, g (s)	32.0	60.0		16.0	44.0		12.3	26.9	42.3	26.1	40.7	
Actuated g/C Ratio	0.22	0.41		0.11	0.30		0.08	0.19	0.29	0.18	0.28	
Clearance Time (s)	4.4	4.9		4.4	5.4		4.4	5.0	4.4	4.4	4.9	
Vehicle Extension (s)	2.0	4.2		2.0	3.0		2.0	4.0	2.0	2.0	2.6	
Lane Grp Cap (vph)	390	1436		195	1025		150	656	445	318	892	
v/s Ratio Prot	c0.26	c0.48		0.13	0.34		0.06	c0.13	0.05	c0.19	0.10	
v/s Ratio Perm									0.08			
v/c Ratio	1.20	1.16		1.17	1.11		0.65	0.71	0.45	1.06	0.36	
Uniform Delay, d1	56.5	42.5		64.5	50.5		64.3	55.4	41.8	59.5	41.8	
Progression Factor	1.07	0.95		1.09	0.93		1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	107.4	79.5		113.1	61.0		7.5	3.9	0.3	67.1	0.2	
Delay (s)	168.0	119.9		183.5	108.0		71.8	59.3	42.1	126.6	42.0	
Level of Service	F	F		F	F		E	E	D	F	D	
Approach Delay (s)		130.4			120.5			55.4			80.0	
Approach LOS		F			F			E			E	

Intersection Summary			
HCM 2000 Control Delay	108.1	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.08		
Actuated Cycle Length (s)	145.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	104.3%	ICU Level of Service	G
Analysis Period (min)	15		

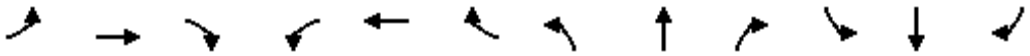
c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	10	1910	100	160	1260	50	100	20	220	50	20	20
Future Volume (vph)	10	1910	100	160	1260	50	100	20	220	50	20	20
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0			4.0	4.0		4.0	
Lane Util. Factor	1.00	0.91		1.00	0.95			1.00	1.00		1.00	
Frpb, ped/bikes	1.00	1.00		1.00	1.00			1.00	0.98		0.99	
Flpb, ped/bikes	1.00	1.00		1.00	1.00			1.00	1.00		1.00	
Frt	1.00	0.99		1.00	0.99			1.00	0.85		0.97	
Flt Protected	0.95	1.00		0.95	1.00			0.96	1.00		0.97	
Satd. Flow (prot)	1770	5038		1770	3516			1788	1553		1742	
Flt Permitted	0.95	1.00		0.95	1.00			0.67	1.00		0.63	
Satd. Flow (perm)	1770	5038		1770	3516			1248	1553		1126	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	11	2076	109	174	1370	54	109	22	239	54	22	22
RTOR Reduction (vph)	0	3	0	0	2	0	0	0	202	0	8	0
Lane Group Flow (vph)	11	2182	0	174	1422	0	0	131	37	0	90	0
Confl. Peds. (#/hr)			3	3								
Confl. Bikes (#/hr)			11			1			5			20
Turn Type	Prot	NA		Prot	NA		Perm	NA	Perm	Perm	NA	
Protected Phases	5	2		1	6			8			4	
Permitted Phases							8		8	4		
Actuated Green, G (s)	2.0	90.1		18.6	106.7			21.7	21.7		21.7	
Effective Green, g (s)	2.4	91.4		19.0	108.0			22.6	22.6		22.6	
Actuated g/C Ratio	0.02	0.63		0.13	0.74			0.16	0.16		0.16	
Clearance Time (s)	4.4	5.3		4.4	5.3			4.9	4.9		4.9	
Vehicle Extension (s)	2.0	4.4		2.0	4.4			2.0	2.0		2.0	
Lane Grp Cap (vph)	29	3175		231	2618			194	242		175	
v/s Ratio Prot	0.01	c0.43		c0.10	0.40							
v/s Ratio Perm								c0.10	0.02		0.08	
v/c Ratio	0.38	0.69		0.75	0.54			0.68	0.15		0.52	
Uniform Delay, d1	70.6	17.5		60.7	7.9			57.7	52.9		56.2	
Progression Factor	0.86	1.22		1.00	1.00			1.00	1.00		1.00	
Incremental Delay, d2	0.3	0.1		11.6	0.8			7.1	0.1		1.1	
Delay (s)	60.9	21.4		72.4	8.7			64.8	53.0		57.3	
Level of Service	E	C		E	A			E	D		E	
Approach Delay (s)		21.6			15.7			57.2			57.3	
Approach LOS		C			B			E			E	

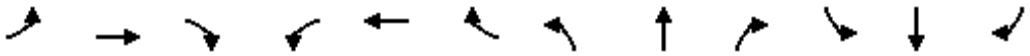
Intersection Summary			
HCM 2000 Control Delay	23.3	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.69		
Actuated Cycle Length (s)	145.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	69.7%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	0	0	380	2040	0	0	0	0	0	350	190
Future Volume (vph)	0	0	0	380	2040	0	0	0	0	0	350	190
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)					4.0						4.0	
Lane Util. Factor					0.91						0.91	
Frpb, ped/bikes					1.00						0.99	
Flpb, ped/bikes					1.00						1.00	
Frt					1.00						0.95	
Flt Protected					0.99						1.00	
Satd. Flow (prot)					5038						4778	
Flt Permitted					0.99						1.00	
Satd. Flow (perm)					5038						4778	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	413	2217	0	0	0	0	0	380	207
RTOR Reduction (vph)	0	0	0	0	13	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	0	0	0	2617	0	0	0	0	0	587	0
Confl. Peds. (#/hr)				6								7
Turn Type				Perm	NA						NA	
Protected Phases					6						4	
Permitted Phases				6								
Actuated Green, G (s)					61.8						18.0	
Effective Green, g (s)					63.1						18.9	
Actuated g/C Ratio					0.70						0.21	
Clearance Time (s)					5.3						4.9	
Vehicle Extension (s)					0.2						0.2	
Lane Grp Cap (vph)					3532						1003	
v/s Ratio Prot											c0.12	
v/s Ratio Perm					0.52							
v/c Ratio					0.74						0.59	
Uniform Delay, d1					8.4						32.0	
Progression Factor					1.00						0.93	
Incremental Delay, d2					1.4						0.1	
Delay (s)					9.8						29.9	
Level of Service					A						C	
Approach Delay (s)		0.0			9.8			0.0			29.9	
Approach LOS		A			A			A			C	

Intersection Summary			
HCM 2000 Control Delay	13.5	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.71		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	68.8%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

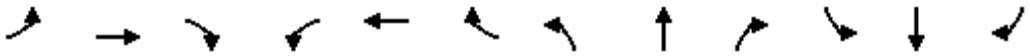


Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	1630	140	0	0	0	0	0	0	310	430	0
Future Volume (vph)	0	1630	140	0	0	0	0	0	0	310	430	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0									4.0	
Lane Util. Factor		0.91									0.91	
Frpb, ped/bikes		1.00									1.00	
Flpb, ped/bikes		1.00									0.99	
Frt		0.99									1.00	
Flt Protected		1.00									0.98	
Satd. Flow (prot)		5015									4939	
Flt Permitted		1.00									0.98	
Satd. Flow (perm)		5015									4939	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	1772	152	0	0	0	0	0	0	337	467	0
RTOR Reduction (vph)	0	10	0	0	0	0	0	0	0	0	16	0
Lane Group Flow (vph)	0	1914	0	0	0	0	0	0	0	0	788	0
Confl. Peds. (#/hr)			9							14		
Turn Type		NA								Perm	NA	
Protected Phases		2									4	
Permitted Phases										4		
Actuated Green, G (s)		58.9									22.1	
Effective Green, g (s)		58.9									23.1	
Actuated g/C Ratio		0.65									0.26	
Clearance Time (s)		4.0									5.0	
Vehicle Extension (s)		3.0									3.0	
Lane Grp Cap (vph)		3282									1267	
v/s Ratio Prot		c0.38										
v/s Ratio Perm											0.16	
v/c Ratio		0.58									0.62	
Uniform Delay, d1		8.7									29.6	
Progression Factor		0.38									0.77	
Incremental Delay, d2		0.5									0.9	
Delay (s)		3.8									23.7	
Level of Service		A									C	
Approach Delay (s)		3.8			0.0			0.0			23.7	
Approach LOS		A			A			A			C	

Intersection Summary			
HCM 2000 Control Delay	9.7	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.59		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	58.5%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	240	1270	120	150	1420	120	120	50	130	80	80	210
Future Volume (vph)	240	1270	120	150	1420	120	120	50	130	80	80	210
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.97	0.95		1.00	0.95	1.00	1.00	1.00	1.00	0.97	1.00	1.00
Frpb, ped/bikes	1.00	1.00		1.00	1.00	0.98	1.00	1.00	1.00	1.00	1.00	0.99
Flpb, ped/bikes	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.99		1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	3494		1770	3539	1557	1770	1863	1583	3433	1863	1563
Flt Permitted	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	3494		1770	3539	1557	1770	1863	1583	3433	1863	1563
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	261	1380	130	163	1543	130	130	54	141	87	87	228
RTOR Reduction (vph)	0	6	0	0	0	121	0	0	118	0	0	136
Lane Group Flow (vph)	261	1504	0	163	1543	9	130	54	23	87	87	92
Confl. Peds. (#/hr)	1					1	1					1
Turn Type	Prot	NA		Prot	NA	custom	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases						7			8			4
Actuated Green, G (s)	7.0	40.8		9.0	42.9	5.7	7.0	12.2	12.2	5.7	11.8	11.8
Effective Green, g (s)	7.0	42.3		9.0	44.3	5.7	7.0	14.0	14.0	5.7	12.7	12.7
Actuated g/C Ratio	0.08	0.49		0.10	0.51	0.07	0.08	0.16	0.16	0.07	0.15	0.15
Clearance Time (s)	4.0	5.5		4.0	5.4	4.0	4.0	5.8	5.8	4.0	4.9	4.9
Vehicle Extension (s)	2.0	3.7		2.0	4.0	2.0	2.0	2.0	2.0	2.0	3.0	3.0
Lane Grp Cap (vph)	276	1698		183	1802	102	142	299	254	224	271	228
v/s Ratio Prot	0.08	0.43		c0.09	c0.44		c0.07	0.03		0.03	0.05	
v/s Ratio Perm						0.01			0.01			c0.06
v/c Ratio	0.95	0.89		0.89	0.86	0.08	0.92	0.18	0.09	0.39	0.32	0.40
Uniform Delay, d1	39.8	20.2		38.5	18.6	38.2	39.7	31.5	31.1	39.0	33.3	33.7
Progression Factor	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	39.0	7.2		36.8	5.5	0.1	49.8	0.1	0.1	0.4	0.7	1.2
Delay (s)	78.8	27.4		75.3	24.1	38.3	89.5	31.6	31.1	39.4	34.0	34.9
Level of Service	E	C		E	C	D	F	C	C	D	C	C
Approach Delay (s)		35.0			29.6			54.6			35.7	
Approach LOS		C			C			D			D	

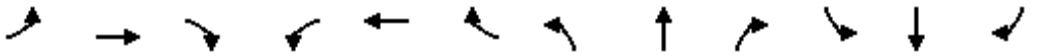
Intersection Summary			
HCM 2000 Control Delay	34.2	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.80		
Actuated Cycle Length (s)	87.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	70.6%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	0	0	200	1800	220	330	570	0	0	350	120
Future Volume (vph)	0	0	0	200	1800	220	330	570	0	0	350	120
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)					4.9		4.4	4.9			5.4	
Lane Util. Factor					0.86		1.00	0.95			0.95	
Frpb, ped/bikes					1.00		1.00	1.00			1.00	
Flpb, ped/bikes					1.00		1.00	1.00			1.00	
Frt					0.99		1.00	1.00			0.96	
Flt Protected					1.00		0.95	1.00			1.00	
Satd. Flow (prot)					6258		1770	3539			3389	
Flt Permitted					1.00		0.95	1.00			1.00	
Satd. Flow (perm)					6258		1770	3539			3389	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	0	0	0	211	1895	232	347	600	0	0	368	126
RTOR Reduction (vph)	0	0	0	0	16	0	0	0	0	0	31	0
Lane Group Flow (vph)	0	0	0	0	2322	0	347	600	0	0	463	0
Confl. Peds. (#/hr)	4		13	13		4	2		2	2		2
Confl. Bikes (#/hr)												1
Turn Type				Perm	NA		Prot	NA			NA	
Protected Phases					6		3	8			4	
Permitted Phases				6								
Actuated Green, G (s)					51.8		25.3	48.4			18.2	
Effective Green, g (s)					51.8		25.3	48.4			18.2	
Actuated g/C Ratio					0.47		0.23	0.44			0.17	
Clearance Time (s)					4.9		4.4	4.9			5.4	
Vehicle Extension (s)					2.4		3.0	3.3			2.4	
Lane Grp Cap (vph)					2946		407	1557			560	
v/s Ratio Prot							c0.20	0.17			c0.14	
v/s Ratio Perm					0.37							
v/c Ratio					0.79		0.85	0.39			0.83	
Uniform Delay, d1					24.5		40.6	20.8			44.4	
Progression Factor					1.00		1.00	1.00			1.00	
Incremental Delay, d2					2.2		15.7	0.2			9.5	
Delay (s)					26.7		56.3	20.9			53.9	
Level of Service					C		E	C			D	
Approach Delay (s)		0.0			26.7			33.9			53.9	
Approach LOS		A			C			C			D	

Intersection Summary			
HCM 2000 Control Delay	32.1	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.81		
Actuated Cycle Length (s)	110.0	Sum of lost time (s)	14.7
Intersection Capacity Utilization	77.0%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	110	1200	90	0	0	0	0	800	420	130	320	0
Future Volume (vph)	110	1200	90	0	0	0	0	800	420	130	320	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0	4.0					4.9		4.0	4.9	
Lane Util. Factor		0.91	1.00					0.91		1.00	0.91	
Frpb, ped/bikes		1.00	0.97					0.99		1.00	1.00	
Flpb, ped/bikes		1.00	1.00					1.00		1.00	1.00	
Frt		1.00	0.85					0.95		1.00	1.00	
Flt Protected		1.00	1.00					1.00		0.95	1.00	
Satd. Flow (prot)		5062	1532					4775		1770	5085	
Flt Permitted		1.00	1.00					1.00		0.95	1.00	
Satd. Flow (perm)		5062	1532					4775		1770	5085	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	120	1304	98	0	0	0	0	870	457	141	348	0
RTOR Reduction (vph)	0	0	59	0	0	0	0	92	0	0	0	0
Lane Group Flow (vph)	0	1424	39	0	0	0	0	1235	0	141	348	0
Confl. Peds. (#/hr)	5		25				6		12	12		6
Turn Type	Perm	NA	Perm					NA		Prot	NA	
Protected Phases		2						8		7	4	
Permitted Phases	2		2									
Actuated Green, G (s)		35.1	35.1					25.1		15.6	45.1	
Effective Green, g (s)		36.0	36.0					25.1		16.0	45.1	
Actuated g/C Ratio		0.40	0.40					0.28		0.18	0.50	
Clearance Time (s)		4.9	4.9					4.9		4.4	4.9	
Vehicle Extension (s)		4.4	4.4					3.3		2.0	3.3	
Lane Grp Cap (vph)		2024	612					1331		314	2548	
v/s Ratio Prot								c0.26		c0.08	0.07	
v/s Ratio Perm		0.28	0.03									
v/c Ratio		0.70	0.06					0.93		0.45	0.14	
Uniform Delay, d1		22.5	16.6					31.6		33.1	12.0	
Progression Factor		1.00	1.00					1.00		1.00	1.00	
Incremental Delay, d2		2.1	0.2					12.6		4.6	0.1	
Delay (s)		24.6	16.8					44.2		37.6	12.1	
Level of Service		C	B					D		D	B	
Approach Delay (s)		24.1			0.0			44.2			19.5	
Approach LOS		C			A			D			B	

Intersection Summary			
HCM 2000 Control Delay	31.4	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.72		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	12.9
Intersection Capacity Utilization	77.0%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

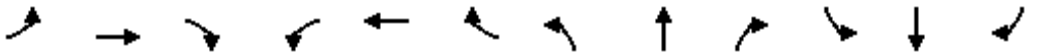
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	1430	760	500	1490	460	260
Future Volume (vph)	1430	760	500	1490	460	260
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.5	4.0	4.0	4.0
Lane Util. Factor	0.95	1.00	0.97	0.95	0.97	0.91
Frpb, ped/bikes	1.00	0.99	1.00	1.00	1.00	0.98
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected	1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (prot)	3539	1569	3433	3539	3433	1418
Flt Permitted	1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (perm)	3539	1569	3433	3539	3433	1418
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	1554	826	543	1620	500	283
RTOR Reduction (vph)	0	3	0	0	0	217
Lane Group Flow (vph)	1554	823	543	1620	500	66
Confl. Peds. (#/hr)						1
Confl. Bikes (#/hr)		6				3
Turn Type	NA	pm+ov	Prot	NA	Prot	Perm
Protected Phases	2	8	1	6	8	
Permitted Phases		2				8
Actuated Green, G (s)	40.6	60.1	15.8	61.6	19.5	19.5
Effective Green, g (s)	42.8	64.5	15.7	63.0	21.7	21.7
Actuated g/C Ratio	0.46	0.70	0.17	0.68	0.23	0.23
Clearance Time (s)	6.2	6.2	4.4	5.4	6.2	6.2
Vehicle Extension (s)	4.0	2.0	2.0	5.2	2.0	2.0
Lane Grp Cap (vph)	1633	1159	581	2405	803	331
v/s Ratio Prot	c0.44	c0.17	c0.16	0.46	0.15	
v/s Ratio Perm		0.36				0.05
v/c Ratio	0.95	0.71	0.93	0.67	0.62	0.20
Uniform Delay, d1	24.0	8.5	38.0	8.8	31.8	28.5
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	13.4	1.7	22.1	1.5	1.1	0.1
Delay (s)	37.4	10.2	60.1	10.3	32.9	28.6
Level of Service	D	B	E	B	C	C
Approach Delay (s)	27.9			22.8	31.4	
Approach LOS	C			C	C	

Intersection Summary			
HCM 2000 Control Delay	26.4	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.90		
Actuated Cycle Length (s)	92.7	Sum of lost time (s)	12.5
Intersection Capacity Utilization	80.3%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

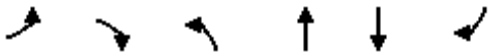
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	1080	330	360	350	0	0	0	0	390	0	1180
Future Volume (vph)	0	1080	330	360	350	0	0	0	0	390	0	1180
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0	4.0	4.0	4.0					4.0		3.4
Lane Util. Factor		0.95	1.00	0.97	0.95					1.00		1.00
Frpb, ped/bikes		1.00	0.99	1.00	1.00					1.00		1.00
Flpb, ped/bikes		1.00	1.00	1.00	1.00					1.00		1.00
Frt		1.00	0.85	1.00	1.00					1.00		0.85
Flt Protected		1.00	1.00	0.95	1.00					0.95		1.00
Satd. Flow (prot)		3539	1560	3433	3539					1770		1583
Flt Permitted		1.00	1.00	0.95	1.00					0.95		1.00
Satd. Flow (perm)		3539	1560	3433	3539					1770		1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	1174	359	391	380	0	0	0	0	424	0	1283
RTOR Reduction (vph)	0	0	229	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	1174	130	391	380	0	0	0	0	424	0	1283
Confl. Peds. (#/hr)			2	2								
Turn Type		NA	Perm	Prot	NA					Prot		Free
Protected Phases		2		1	6					4		
Permitted Phases			2									Free
Actuated Green, G (s)		26.2	26.2	13.6	44.0					21.4		75.0
Effective Green, g (s)		27.2	27.2	13.8	45.0					22.0		75.0
Actuated g/C Ratio		0.36	0.36	0.18	0.60					0.29		1.00
Clearance Time (s)		5.0	5.0	4.2	5.0					4.6		
Vehicle Extension (s)		0.2	0.2	0.2	0.2					0.2		
Lane Grp Cap (vph)		1283	565	631	2123					519		1583
v/s Ratio Prot		0.33		0.11	0.11					0.24		
v/s Ratio Perm			0.08									c0.81
v/c Ratio		0.92	0.23	0.62	0.18					0.82		0.81
Uniform Delay, d1		22.8	16.6	28.2	6.7					24.6		0.0
Progression Factor		1.00	1.00	0.87	1.39					1.00		1.00
Incremental Delay, d2		11.6	1.0	0.7	0.1					9.2		4.6
Delay (s)		34.4	17.6	25.1	9.4					33.8		4.6
Level of Service		C	B	C	A					C		A
Approach Delay (s)		30.5			17.4			0.0			11.9	
Approach LOS		C			B			A			B	

Intersection Summary			
HCM 2000 Control Delay	20.0	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.96		
Actuated Cycle Length (s)	75.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	80.0%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	880	720	0	0	590	500	190	20	450	0	0	0
Future Volume (vph)	880	720	0	0	590	500	190	20	450	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	5.0			5.0			4.0	4.0			
Lane Util. Factor	0.97	0.95			0.95			1.00	1.00			
Frpb, ped/bikes	1.00	1.00			0.99			1.00	1.00			
Flpb, ped/bikes	1.00	1.00			1.00			1.00	1.00			
Frt	1.00	1.00			0.93			1.00	0.85			
Flt Protected	0.95	1.00			1.00			0.96	1.00			
Satd. Flow (prot)	3433	3539			3272			1782	1583			
Flt Permitted	0.95	1.00			1.00			0.96	1.00			
Satd. Flow (perm)	3433	3539			3272			1782	1583			
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	957	783	0	0	641	543	207	22	489	0	0	0
RTOR Reduction (vph)	0	0	0	0	184	0	0	0	231	0	0	0
Lane Group Flow (vph)	957	783	0	0	1000	0	0	229	258	0	0	0
Confl. Peds. (#/hr)	3		1	1		3						
Turn Type	Prot	NA			NA		Split	NA	Perm			
Protected Phases	5	2			6		4	4				
Permitted Phases									4			
Actuated Green, G (s)	20.8	54.5			29.5			10.4	10.4			
Effective Green, g (s)	21.0	55.0			30.0			11.0	11.0			
Actuated g/C Ratio	0.28	0.73			0.40			0.15	0.15			
Clearance Time (s)	4.2	5.5			5.5			4.6	4.6			
Vehicle Extension (s)	0.2	0.2			0.2			0.2	0.2			
Lane Grp Cap (vph)	961	2595			1308			261	232			
v/s Ratio Prot	c0.28	0.22			c0.31			0.13				
v/s Ratio Perm									c0.16			
v/c Ratio	1.00	0.30			0.76			0.88	1.11			
Uniform Delay, d1	27.0	3.4			19.4			31.3	32.0			
Progression Factor	1.38	0.64			1.00			1.00	1.00			
Incremental Delay, d2	21.9	0.2			4.3			25.8	92.1			
Delay (s)	59.2	2.4			23.7			57.1	124.1			
Level of Service	E	A			C			E	F			
Approach Delay (s)		33.7			23.7			102.7			0.0	
Approach LOS		C			C			F			A	

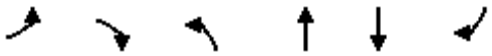
Intersection Summary			
HCM 2000 Control Delay	44.0	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.90		
Actuated Cycle Length (s)	75.0	Sum of lost time (s)	13.0
Intersection Capacity Utilization	80.0%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	230	200	150	870	890	180
Future Volume (vph)	230	200	150	870	890	180
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.5		4.5	4.5	4.5	
Lane Util. Factor	1.00		1.00	0.95	0.95	
Frt	0.94		1.00	1.00	0.97	
Flt Protected	0.97		0.95	1.00	1.00	
Satd. Flow (prot)	1700		1770	3539	3450	
Flt Permitted	0.97		0.95	1.00	1.00	
Satd. Flow (perm)	1700		1770	3539	3450	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	250	217	163	946	967	196
RTOR Reduction (vph)	26	0	0	0	11	0
Lane Group Flow (vph)	441	0	163	946	1152	0
Turn Type	Prot		Prot	NA	NA	
Protected Phases	7		1	6	2	
Permitted Phases						
Actuated Green, G (s)	37.9		16.0	83.1	62.6	
Effective Green, g (s)	37.9		16.0	83.1	62.6	
Actuated g/C Ratio	0.29		0.12	0.64	0.48	
Clearance Time (s)	4.5		4.5	4.5	4.5	
Vehicle Extension (s)	3.0		3.0	3.0	3.0	
Lane Grp Cap (vph)	495		217	2262	1661	
v/s Ratio Prot	c0.26		c0.09	0.27	c0.33	
v/s Ratio Perm						
v/c Ratio	0.89		0.75	0.42	0.69	
Uniform Delay, d1	44.1		55.1	11.5	26.2	
Progression Factor	1.00		1.03	1.26	1.00	
Incremental Delay, d2	18.0		12.4	0.5	2.4	
Delay (s)	62.1		69.3	15.0	28.6	
Level of Service	E		E	B	C	
Approach Delay (s)	62.1			23.0	28.6	
Approach LOS	E			C	C	

Intersection Summary			
HCM 2000 Control Delay	32.1	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.77		
Actuated Cycle Length (s)	130.0	Sum of lost time (s)	13.5
Intersection Capacity Utilization	74.9%	ICU Level of Service	D
Analysis Period (min)	15		

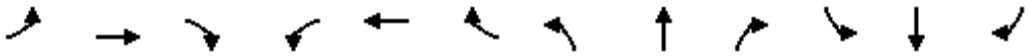
c Critical Lane Group



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	0	480	0	0	410	160
Future Volume (Veh/h)	0	480	0	0	410	160
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	522	0	0	446	174
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage veh)						
Upstream signal (ft)				897	1285	
pX, platoon unblocked						
vC, conflicting volume	533	310	620			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	533	310	620			
tC, single (s)	6.8	6.9	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	100	24	100			
cM capacity (veh/h)	477	686	956			

Direction, Lane #	EB 1	SB 1	SB 2
Volume Total	522	297	323
Volume Left	0	0	0
Volume Right	522	0	174
cSH	686	1700	1700
Volume to Capacity	0.76	0.17	0.19
Queue Length 95th (ft)	177	0	0
Control Delay (s)	25.0	0.0	0.0
Lane LOS	C		
Approach Delay (s)	25.0	0.0	
Approach LOS	C		

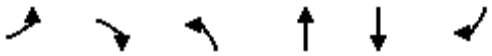
Intersection Summary			
Average Delay	11.4		
Intersection Capacity Utilization	52.8%	ICU Level of Service	A
Analysis Period (min)	15		



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	30	310	350	340	0	0	0	0	50	820	70
Future Volume (vph)	0	30	310	350	340	0	0	0	0	50	820	70
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0		4.0	4.0						4.0	
Lane Util. Factor		1.00		1.00	1.00						0.95	
Frt		0.88		1.00	1.00						0.99	
Flt Protected		1.00		0.95	1.00						1.00	
Satd. Flow (prot)		1634		1770	1863						3490	
Flt Permitted		1.00		0.46	1.00						1.00	
Satd. Flow (perm)		1634		858	1863						3490	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	33	337	380	370	0	0	0	0	54	891	76
RTOR Reduction (vph)	0	20	0	0	0	0	0	0	0	0	8	0
Lane Group Flow (vph)	0	350	0	380	370	0	0	0	0	0	1013	0
Turn Type		NA		Perm	NA					Perm	NA	
Protected Phases		4			8						6	
Permitted Phases				8						6		
Actuated Green, G (s)		31.1		31.1	31.1						25.4	
Effective Green, g (s)		31.1		31.1	31.1						25.4	
Actuated g/C Ratio		0.48		0.48	0.48						0.39	
Clearance Time (s)		4.0		4.0	4.0						4.0	
Vehicle Extension (s)		3.0		3.0	3.0						3.0	
Lane Grp Cap (vph)		787		413	898						1374	
v/s Ratio Prot		0.21			0.20							
v/s Ratio Perm				c0.44							0.29	
v/c Ratio		0.45		0.92	0.41						0.74	
Uniform Delay, d1		11.0		15.5	10.8						16.7	
Progression Factor		1.00		1.00	1.00						1.00	
Incremental Delay, d2		0.4		25.6	0.3						3.6	
Delay (s)		11.4		41.1	11.1						20.3	
Level of Service		B		D	B						C	
Approach Delay (s)		11.4			26.3			0.0			20.3	
Approach LOS		B			C			A			C	

Intersection Summary			
HCM 2000 Control Delay	20.9	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.84		
Actuated Cycle Length (s)	64.5	Sum of lost time (s)	8.0
Intersection Capacity Utilization	68.6%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	120	200	180	370	480	250
Future Volume (vph)	120	200	180	370	480	250
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0			4.0	4.0	
Lane Util. Factor	1.00			1.00	1.00	
Frt	0.92			1.00	0.95	
Flt Protected	0.98			0.98	1.00	
Satd. Flow (prot)	1674			1833	1777	
Flt Permitted	0.98			0.48	1.00	
Satd. Flow (perm)	1674			897	1777	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	130	217	196	402	522	272
RTOR Reduction (vph)	89	0	0	0	25	0
Lane Group Flow (vph)	258	0	0	598	769	0
Turn Type	Prot		Perm	NA	NA	
Protected Phases	4			2	6	
Permitted Phases			2			
Actuated Green, G (s)	13.9			47.0	47.0	
Effective Green, g (s)	13.9			47.0	47.0	
Actuated g/C Ratio	0.20			0.68	0.68	
Clearance Time (s)	4.0			4.0	4.0	
Vehicle Extension (s)	3.0			3.0	3.0	
Lane Grp Cap (vph)	337			611	1212	
v/s Ratio Prot	c0.15				0.43	
v/s Ratio Perm				c0.67		
v/c Ratio	0.77			0.98	0.63	
Uniform Delay, d1	26.0			10.5	6.1	
Progression Factor	1.00			1.00	1.00	
Incremental Delay, d2	10.0			31.6	2.5	
Delay (s)	36.0			42.0	8.7	
Level of Service	D			D	A	
Approach Delay (s)	36.0			42.0	8.7	
Approach LOS	D			D	A	

Intersection Summary			
HCM 2000 Control Delay	25.6	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.93		
Actuated Cycle Length (s)	68.9	Sum of lost time (s)	8.0
Intersection Capacity Utilization	98.9%	ICU Level of Service	F
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	WBT	WBR	SWL	SWR
Lane Configurations						
Traffic Volume (vph)	60	1090	1200	70	160	240
Future Volume (vph)	60	1090	1200	70	160	240
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0		4.0	
Lane Util. Factor	1.00	0.95	0.95		1.00	
Frt	1.00	1.00	0.99		0.92	
Flt Protected	0.95	1.00	1.00		0.98	
Satd. Flow (prot)	1770	3539	3510		1678	
Flt Permitted	0.13	1.00	1.00		0.98	
Satd. Flow (perm)	237	3539	3510		1678	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	65	1185	1304	76	174	261
RTOR Reduction (vph)	0	0	7	0	27	0
Lane Group Flow (vph)	65	1185	1373	0	408	0
Turn Type	Perm	NA	NA		Prot	
Protected Phases		4	8		6	
Permitted Phases	4					
Actuated Green, G (s)	31.5	31.5	31.5		22.1	
Effective Green, g (s)	31.5	31.5	31.5		22.1	
Actuated g/C Ratio	0.51	0.51	0.51		0.36	
Clearance Time (s)	4.0	4.0	4.0		4.0	
Vehicle Extension (s)	3.0	3.0	3.0		3.0	
Lane Grp Cap (vph)	121	1809	1794		602	
v/s Ratio Prot		0.33	c0.39		c0.24	
v/s Ratio Perm	0.27					
v/c Ratio	0.54	0.66	0.77		0.68	
Uniform Delay, d1	10.1	11.1	12.1		16.7	
Progression Factor	1.00	1.00	1.00		1.00	
Incremental Delay, d2	4.5	0.9	2.0		6.0	
Delay (s)	14.7	11.9	14.1		22.8	
Level of Service	B	B	B		C	
Approach Delay (s)		12.1	14.1		22.8	
Approach LOS		B	B		C	

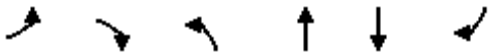
Intersection Summary			
HCM 2000 Control Delay	14.5	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.73		
Actuated Cycle Length (s)	61.6	Sum of lost time (s)	8.0
Intersection Capacity Utilization	72.3%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	110	20	80	60	110	280	160	510	370	210	520	150
Future Volume (vph)	110	20	80	60	110	280	160	510	370	210	520	150
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.5			4.5		4.5	4.5		4.5	4.5	
Lane Util. Factor		1.00			1.00		1.00	0.95		1.00	0.95	
Frt		0.95			0.92		1.00	0.94		1.00	0.97	
Flt Protected		0.97			0.99		0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1722			1695		1770	3316		1770	3420	
Flt Permitted		0.97			0.99		0.95	1.00		0.95	1.00	
Satd. Flow (perm)		1722			1695		1770	3316		1770	3420	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	120	22	87	65	120	304	174	554	402	228	565	163
RTOR Reduction (vph)	0	22	0	0	59	0	0	131	0	0	26	0
Lane Group Flow (vph)	0	207	0	0	430	0	174	825	0	228	702	0
Turn Type	Split	NA		Split	NA		Prot	NA		Prot	NA	
Protected Phases	8	8		4	4		5	2		1	6	
Permitted Phases												
Actuated Green, G (s)		14.7			25.5		12.8	26.4		13.9	27.5	
Effective Green, g (s)		14.7			25.5		12.8	26.4		13.9	27.5	
Actuated g/C Ratio		0.15			0.26		0.13	0.27		0.14	0.28	
Clearance Time (s)		4.5			4.5		4.5	4.5		4.5	4.5	
Vehicle Extension (s)		3.0			3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)		256			438		230	888		249	954	
v/s Ratio Prot		c0.12			c0.25		0.10	c0.25		c0.13	0.21	
v/s Ratio Perm												
v/c Ratio		0.81			0.98		0.76	0.93		0.92	0.74	
Uniform Delay, d1		40.5			36.3		41.3	35.1		41.7	32.2	
Progression Factor		1.00			1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2		16.8			38.2		13.2	15.6		35.0	3.0	
Delay (s)		57.4			74.5		54.6	50.7		76.7	35.2	
Level of Service		E			E		D	D		E	D	
Approach Delay (s)		57.4			74.5			51.3			45.1	
Approach LOS		E			E			D			D	

Intersection Summary			
HCM 2000 Control Delay	53.7	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.92		
Actuated Cycle Length (s)	98.5	Sum of lost time (s)	18.0
Intersection Capacity Utilization	83.2%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group

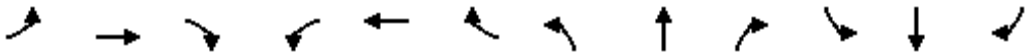


Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	180	260	200	140	270	320
Future Volume (vph)	180	260	200	140	270	320
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0			4.0	4.0	
Lane Util. Factor	1.00			1.00	1.00	
Frt	0.92			1.00	0.93	
Flt Protected	0.98			0.97	1.00	
Satd. Flow (prot)	1680			1810	1726	
Flt Permitted	0.98			0.40	1.00	
Satd. Flow (perm)	1680			754	1726	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	196	283	217	152	293	348
RTOR Reduction (vph)	82	0	0	0	63	0
Lane Group Flow (vph)	397	0	0	369	578	0
Turn Type	Prot		Perm	NA	NA	
Protected Phases	4			2	6	
Permitted Phases			2			
Actuated Green, G (s)	17.4			38.1	38.1	
Effective Green, g (s)	17.4			38.1	38.1	
Actuated g/C Ratio	0.27			0.60	0.60	
Clearance Time (s)	4.0			4.0	4.0	
Vehicle Extension (s)	3.0			3.0	3.0	
Lane Grp Cap (vph)	460			452	1035	
v/s Ratio Prot	c0.24				0.33	
v/s Ratio Perm				c0.49		
v/c Ratio	0.86			0.82	0.56	
Uniform Delay, d1	21.9			10.0	7.6	
Progression Factor	1.00			1.00	1.00	
Incremental Delay, d2	15.3			15.0	2.2	
Delay (s)	37.2			24.9	9.8	
Level of Service	D			C	A	
Approach Delay (s)	37.2			24.9	9.8	
Approach LOS	D			C	A	

Intersection Summary			
HCM 2000 Control Delay	22.4	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.83		
Actuated Cycle Length (s)	63.5	Sum of lost time (s)	8.0
Intersection Capacity Utilization	88.2%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group

Peak Hour Intersection Calculation Worksheets - Mitigation



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	60	1140	400	160	1330	180	480	400	150	580	280	120
Future Volume (vph)	60	1140	400	160	1330	180	480	400	150	580	280	120
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	3.1	4.0	4.0	1.6	4.0	4.0	3.6	4.0	4.0	
Lane Util. Factor	1.00	0.91	1.00	0.97	0.91	1.00	0.97	1.00	1.00	0.97	1.00	
Frpb, ped/bikes	1.00	1.00	0.99	1.00	1.00	0.98	1.00	1.00	0.99	1.00	1.00	
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.96	
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)	1770	5085	1572	3433	5085	1544	3433	1863	1564	3433	1771	
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (perm)	1770	5085	1572	3433	5085	1544	3433	1863	1564	3433	1771	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	65	1239	435	174	1446	196	522	435	163	630	304	130
RTOR Reduction (vph)	0	0	159	0	0	93	0	0	47	0	17	0
Lane Group Flow (vph)	65	1239	276	174	1446	103	522	435	116	630	417	0
Confl. Peds. (#/hr)	8					8			3	3		
Confl. Bikes (#/hr)			1			5						3
Turn Type	Prot	NA	pm+ov	Prot	NA	pm+ov	Prot	NA	pm+ov	Prot	NA	
Protected Phases	5	2	3	1	6	7	3	8	1	7	4	
Permitted Phases			2			6			8			
Actuated Green, G (s)	4.0	26.6	47.9	4.9	27.4	49.6	21.3	28.8	33.7	22.2	27.9	
Effective Green, g (s)	4.4	27.9	50.5	5.3	28.8	52.4	21.7	29.6	35.3	21.2	29.1	
Actuated g/C Ratio	0.04	0.28	0.50	0.05	0.29	0.52	0.22	0.30	0.35	0.21	0.29	
Clearance Time (s)	4.4	5.3	4.4	4.4	5.4	3.0	4.4	4.8	4.4	3.0	5.2	
Vehicle Extension (s)	2.0	4.4	2.0	2.0	4.4	2.0	2.0	3.8	2.0	2.0	2.0	
Lane Grp Cap (vph)	77	1418	842	181	1464	833	744	551	608	727	515	
v/s Ratio Prot	0.04	0.24	0.07	c0.05	c0.28	0.03	0.15	0.23	0.01	c0.18	c0.24	
v/s Ratio Perm			0.10			0.04			0.06			
v/c Ratio	0.84	0.87	0.33	0.96	0.99	0.12	0.70	0.79	0.19	0.87	0.81	
Uniform Delay, d1	47.5	34.4	14.7	47.2	35.4	12.1	36.2	32.3	22.4	38.0	32.9	
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	51.8	7.7	0.1	55.1	20.8	0.0	2.5	7.7	0.1	10.3	8.6	
Delay (s)	99.3	42.1	14.8	102.3	56.2	12.1	38.6	40.1	22.5	48.3	41.5	
Level of Service	F	D	B	F	E	B	D	D	C	D	D	
Approach Delay (s)		37.4			55.9			36.8			45.5	
Approach LOS		D			E			D			D	

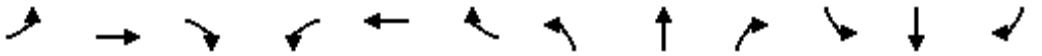
Intersection Summary			
HCM 2000 Control Delay	44.6	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.90		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	80.7%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	550	1190	370	0	0	660
Future Volume (vph)	550	1190	370	0	0	660
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	7.0	7.0	7.0			7.0
Lane Util. Factor	0.97	0.76	0.95			0.95
Frt	1.00	0.85	1.00			1.00
Flt Protected	0.95	1.00	1.00			1.00
Satd. Flow (prot)	3433	3610	3539			3539
Flt Permitted	0.95	1.00	1.00			1.00
Satd. Flow (perm)	3433	3610	3539			3539
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	598	1293	402	0	0	717
RTOR Reduction (vph)	0	547	0	0	0	0
Lane Group Flow (vph)	598	746	402	0	0	717
Turn Type	Prot	Perm	NA			NA
Protected Phases	4		2			6
Permitted Phases		4				
Actuated Green, G (s)	9.9	9.9	12.2			12.2
Effective Green, g (s)	9.9	9.9	12.2			12.2
Actuated g/C Ratio	0.27	0.27	0.34			0.34
Clearance Time (s)	7.0	7.0	7.0			7.0
Vehicle Extension (s)	0.2	0.2	0.2			0.2
Lane Grp Cap (vph)	941	990	1196			1196
v/s Ratio Prot	0.17		0.11			c0.20
v/s Ratio Perm		c0.21				
v/c Ratio	0.64	0.75	0.34			0.60
Uniform Delay, d1	11.5	12.0	8.9			9.9
Progression Factor	1.00	1.00	1.00			1.00
Incremental Delay, d2	1.0	2.9	0.1			0.5
Delay (s)	12.6	14.9	9.0			10.5
Level of Service	B	B	A			B
Approach Delay (s)	14.2		9.0			10.5
Approach LOS	B		A			B

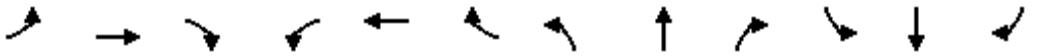
Intersection Summary			
HCM 2000 Control Delay	12.6	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.67		
Actuated Cycle Length (s)	36.1	Sum of lost time (s)	14.0
Intersection Capacity Utilization	49.6%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group



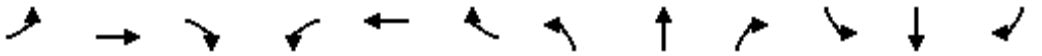
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	450	300	280	30	140	300	180	460	50	440	520	250
Future Volume (vph)	450	300	280	30	140	300	180	460	50	440	520	250
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.1	4.0	3.1	3.0	4.0	4.0	3.1	4.0		3.1	4.0	4.0
Lane Util. Factor	0.97	1.00	1.00	1.00	0.95	1.00	0.97	0.95		0.97	0.95	1.00
Frpb, ped/bikes	1.00	1.00	0.99	1.00	1.00	0.99	1.00	1.00		1.00	1.00	0.99
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.99		1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	3433	1863	1565	1770	3539	1569	3433	3482		3433	3539	1565
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)	3433	1863	1565	1770	3539	1569	3433	3482		3433	3539	1565
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	489	326	304	33	152	326	196	500	54	478	565	272
RTOR Reduction (vph)	0	0	99	0	0	86	0	9	0	0	0	158
Lane Group Flow (vph)	489	326	205	33	152	240	196	545	0	478	565	114
Confl. Peds. (#/hr)			4			3			5			8
Turn Type	Prot	NA	pm+ov	Prot	NA	pm+ov	Prot	NA		Prot	NA	pm+ov
Protected Phases	5	2	3	1	6	7	3	8		7	4	5
Permitted Phases			2			6						4
Actuated Green, G (s)	10.4	27.2	34.5	1.8	18.5	28.9	7.3	18.0		10.4	21.1	31.5
Effective Green, g (s)	11.3	28.1	36.3	2.8	19.5	28.9	8.2	18.9		11.3	22.0	31.5
Actuated g/C Ratio	0.15	0.37	0.48	0.04	0.26	0.38	0.11	0.25		0.15	0.29	0.42
Clearance Time (s)	4.0	4.9	4.0	4.0	5.0	4.0	4.0	4.9		4.0	4.9	4.0
Vehicle Extension (s)	3.0	0.2	3.0	3.0	8.0	3.0	3.0	3.1		3.0	5.5	3.0
Lane Grp Cap (vph)	515	696	755	65	917	602	374	875		515	1035	655
v/s Ratio Prot	c0.14	c0.18	0.03	0.02	0.04	0.06	0.06	c0.16		c0.14	c0.16	0.02
v/s Ratio Perm			0.10			0.10						0.05
v/c Ratio	0.95	0.47	0.27	0.51	0.17	0.40	0.52	0.62		0.93	0.55	0.17
Uniform Delay, d1	31.7	17.9	11.6	35.5	21.6	16.8	31.7	25.0		31.5	22.4	13.7
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	27.1	0.2	0.2	6.1	0.4	0.4	1.3	1.4		23.0	1.2	0.1
Delay (s)	58.8	18.1	11.8	41.6	21.9	17.3	33.0	26.4		54.6	23.6	13.8
Level of Service	E	B	B	D	C	B	C	C		D	C	B
Approach Delay (s)		34.1			20.2			28.1			32.8	
Approach LOS		C			C			C			C	

Intersection Summary			
HCM 2000 Control Delay	30.5	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.70		
Actuated Cycle Length (s)	75.2	Sum of lost time (s)	16.0
Intersection Capacity Utilization	62.9%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	220	1470	180	340	1820	300	120	330	210	230	280	180
Future Volume (vph)	220	1470	180	340	1820	300	120	330	210	230	280	180
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0	4.4	4.0	4.0	3.5	4.0	4.0	3.5
Lane Util. Factor	0.97	0.86		0.97	0.86	1.00	1.00	0.95	1.00	0.97	0.95	1.00
Frpb, ped/bikes	1.00	1.00		1.00	1.00	0.98	1.00	1.00	0.98	1.00	1.00	0.98
Flpb, ped/bikes	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.98		1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	6276		3433	6408	1547	1770	3539	1545	3433	3539	1555
Flt Permitted	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	6276		3433	6408	1547	1770	3539	1545	3433	3539	1555
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	239	1598	196	370	1978	326	130	359	228	250	304	196
RTOR Reduction (vph)	0	20	0	0	0	98	0	0	81	0	0	84
Lane Group Flow (vph)	239	1774	0	370	1978	228	130	359	147	250	304	112
Confl. Peds. (#/hr)	14		25	25		14	18		27	27		14
Turn Type	Prot	NA		Prot	NA	pm+ov	Prot	NA	pm+ov	Prot	NA	pm+ov
Protected Phases	5	2		1	6	7	3	8	1	7	4	5
Permitted Phases						6			8			4
Actuated Green, G (s)	8.1	33.5		10.6	36.1	44.5	7.6	23.7	34.3	8.4	24.5	32.6
Effective Green, g (s)	8.5	34.6		11.0	37.1	44.5	8.0	24.6	36.1	8.8	25.4	34.4
Actuated g/C Ratio	0.09	0.36		0.12	0.39	0.47	0.08	0.26	0.38	0.09	0.27	0.36
Clearance Time (s)	4.4	5.1		4.4	5.0	4.4	4.4	4.9	4.4	4.4	4.9	4.4
Vehicle Extension (s)	2.0	3.5		2.0	3.7	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lane Grp Cap (vph)	307	2285		397	2502	724	149	916	644	318	946	563
v/s Ratio Prot	0.07	c0.28		0.11	c0.31	0.03	c0.07	c0.10	0.03	c0.07	0.09	0.02
v/s Ratio Perm						0.12			0.07			0.05
v/c Ratio	0.78	0.78		0.93	0.79	0.31	0.87	0.39	0.23	0.79	0.32	0.20
Uniform Delay, d1	42.3	26.8		41.6	25.5	15.7	43.0	29.0	20.0	42.2	27.9	20.8
Progression Factor	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	10.8	2.7		28.2	2.6	0.1	38.1	0.1	0.1	11.2	0.1	0.1
Delay (s)	53.1	29.4		69.9	28.2	15.8	81.1	29.1	20.1	53.4	28.0	20.9
Level of Service	D	C		E	C	B	F	C	C	D	C	C
Approach Delay (s)		32.2			32.4			35.7			34.6	
Approach LOS		C			C			D			C	

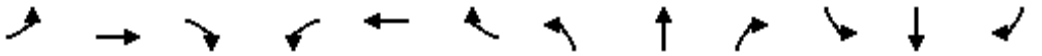
Intersection Summary			
HCM 2000 Control Delay	33.0	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.73		
Actuated Cycle Length (s)	95.0	Sum of lost time (s)	16.4
Intersection Capacity Utilization	73.7%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	330	190	530	510	0	0	0	0	300	380	420
Future Volume (vph)	0	330	190	530	510	0	0	0	0	300	380	420
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0	4.0	4.0	4.0					4.0	4.0	4.0
Lane Util. Factor		0.95	1.00	0.97	0.95					0.91	0.91	0.88
Frt		1.00	0.85	1.00	1.00					1.00	1.00	0.85
Flt Protected		1.00	1.00	0.95	1.00					0.95	0.99	1.00
Satd. Flow (prot)		3539	1583	3433	3539					1610	3358	2787
Flt Permitted		1.00	1.00	0.95	1.00					0.95	0.99	1.00
Satd. Flow (perm)		3539	1583	3433	3539					1610	3358	2787
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	359	207	576	554	0	0	0	0	326	413	457
RTOR Reduction (vph)	0	0	84	0	0	0	0	0	0	0	0	338
Lane Group Flow (vph)	0	359	123	576	554	0	0	0	0	228	511	119
Turn Type		NA	Perm	Prot	NA					Perm	NA	Perm
Protected Phases		2		1	6						4	
Permitted Phases			2							4		4
Actuated Green, G (s)		29.9	29.9	15.9	50.2					20.0	20.0	20.0
Effective Green, g (s)		30.8	30.8	16.3	51.1					20.9	20.9	20.9
Actuated g/C Ratio		0.39	0.39	0.20	0.64					0.26	0.26	0.26
Clearance Time (s)		4.9	4.9	4.4	4.9					4.9	4.9	4.9
Vehicle Extension (s)		3.8	3.8	2.0	4.2					2.0	2.0	2.0
Lane Grp Cap (vph)		1362	609	699	2260					420	877	728
v/s Ratio Prot		c0.10		c0.17	0.16							
v/s Ratio Perm			0.08							0.14	0.15	0.04
v/c Ratio		0.26	0.20	0.82	0.25					0.54	0.58	0.16
Uniform Delay, d1		16.8	16.4	30.5	6.2					25.4	25.7	22.8
Progression Factor		1.00	1.00	1.00	1.00					1.00	1.00	1.00
Incremental Delay, d2		0.5	0.7	7.5	0.3					0.8	0.6	0.0
Delay (s)		17.3	17.2	37.9	6.4					26.2	26.4	22.8
Level of Service		B	B	D	A					C	C	C
Approach Delay (s)		17.3			22.5			0.0			25.0	
Approach LOS		B			C			A			C	

Intersection Summary			
HCM 2000 Control Delay	22.5	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.50		
Actuated Cycle Length (s)	80.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	49.7%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

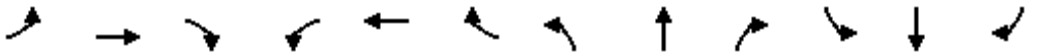


Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	690	90	40	500	0	0	0	0	540	330	520
Future Volume (vph)	0	690	90	40	500	0	0	0	0	540	330	520
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		6.7		4.0	6.7						6.3	4.0
Lane Util. Factor		0.91		1.00	0.95						0.86	0.86
Frt		0.98		1.00	1.00						1.00	0.85
Flt Protected		1.00		0.95	1.00						0.97	1.00
Satd. Flow (prot)		4997		1770	3539						4661	1362
Flt Permitted		1.00		0.95	1.00						0.97	1.00
Satd. Flow (perm)		4997		1770	3539						4661	1362
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	750	98	43	543	0	0	0	0	587	359	565
RTOR Reduction (vph)	0	25	0	0	0	0	0	0	0	0	0	114
Lane Group Flow (vph)	0	823	0	43	543	0	0	0	0	0	946	451
Turn Type		NA		Prot	NA					Perm	NA	Perm
Protected Phases		2		1	6						4	
Permitted Phases										4		4
Actuated Green, G (s)		22.1		2.4	27.2						25.8	25.8
Effective Green, g (s)		20.3		2.8	27.1						24.9	27.2
Actuated g/C Ratio		0.31		0.04	0.42						0.38	0.42
Clearance Time (s)		4.9		4.4	6.6						5.4	5.4
Vehicle Extension (s)		1.0		2.0	1.0						1.0	1.0
Lane Grp Cap (vph)		1560		76	1475						1785	569
v/s Ratio Prot		c0.16		0.02	c0.15							
v/s Ratio Perm											0.20	c0.33
v/c Ratio		0.53		0.57	0.37						0.91dl	0.79
Uniform Delay, d1		18.4		30.5	13.1						15.5	16.4
Progression Factor		1.00		1.35	0.83						1.00	1.00
Incremental Delay, d2		1.3		5.2	0.7						0.1	7.0
Delay (s)		19.7		46.4	11.4						15.7	23.4
Level of Service		B		D	B						B	C
Approach Delay (s)		19.7			14.0			0.0			18.6	
Approach LOS		B			B			A			B	

Intersection Summary			
HCM 2000 Control Delay	18.0	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.70		
Actuated Cycle Length (s)	65.0	Sum of lost time (s)	17.0
Intersection Capacity Utilization	75.0%	ICU Level of Service	D
Analysis Period (min)	15		

dl Defacto Left Lane. Recode with 1 though lane as a left lane.

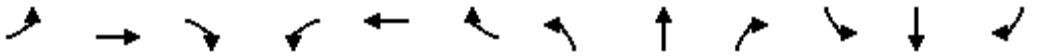
c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	20	30	30	440	110	160	40	1310	200	120	720	130
Future Volume (vph)	20	30	30	440	110	160	40	1310	200	120	720	130
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.3	4.3		4.0	4.0		4.0	4.0	
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	0.91		0.97	0.91	
Frpb, ped/bikes	1.00	0.99		1.00	1.00		1.00	1.00		1.00	1.00	
Flpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Frt	1.00	0.93		1.00	0.91		1.00	0.98		1.00	0.98	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1770	1710		1765	1697		1770	4984		3433	4952	
Flt Permitted	0.49	1.00		0.71	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (perm)	904	1710		1326	1697		1770	4984		3433	4952	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	22	33	33	478	120	174	43	1424	217	130	783	141
RTOR Reduction (vph)	0	20	0	0	69	0	0	24	0	0	30	0
Lane Group Flow (vph)	22	46	0	478	225	0	43	1617	0	130	894	0
Confl. Peds. (#/hr)			4	4			1					1
Turn Type	Perm	NA		Perm	NA		Prot	NA		Prot	NA	
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4			8								
Actuated Green, G (s)	31.1	31.1		30.4	30.4		3.5	29.6		4.3	30.2	
Effective Green, g (s)	31.1	31.1		30.8	30.8		3.5	31.0		4.8	32.3	
Actuated g/C Ratio	0.39	0.39		0.39	0.39		0.04	0.39		0.06	0.41	
Clearance Time (s)	4.0	4.0		4.7	4.7		4.0	5.4		4.5	6.1	
Vehicle Extension (s)	2.0	2.0		3.0	3.0		2.0	4.8		3.0	3.7	
Lane Grp Cap (vph)	356	674		517	662		78	1958		208	2027	
v/s Ratio Prot		0.03			0.13		0.02	c0.32		c0.04	0.18	
v/s Ratio Perm	0.02			c0.36								
v/c Ratio	0.06	0.07		0.92	0.34		0.55	0.83		0.62	0.44	
Uniform Delay, d1	14.8	14.9		22.9	16.9		36.9	21.5		36.2	16.8	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	0.0	0.0		22.4	0.3		4.7	4.1		5.7	0.7	
Delay (s)	14.9	14.9		45.4	17.2		41.6	25.7		41.9	17.5	
Level of Service	B	B		D	B		D	C		D	B	
Approach Delay (s)		14.9			34.6			26.1			20.5	
Approach LOS		B			C			C			C	

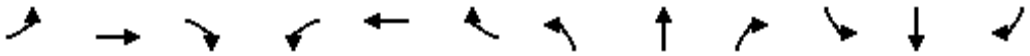
Intersection Summary			
HCM 2000 Control Delay	26.0	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.86		
Actuated Cycle Length (s)	78.9	Sum of lost time (s)	12.3
Intersection Capacity Utilization	74.5%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group



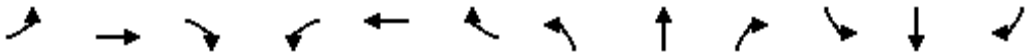
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	660	570	150	140	720	160	300	690	110	100	700	240
Future Volume (vph)	660	570	150	140	720	160	300	690	110	100	700	240
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0		4.0	4.0	4.9	4.0	4.0	4.0
Lane Util. Factor	0.94	0.91		0.97	0.91		0.97	0.91	1.00	1.00	0.91	1.00
Frpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00	0.99	1.00	1.00	0.99
Flpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.97		1.00	0.97		1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	4990	4927		3433	4933		3433	5085	1562	1770	5085	1565
Flt Permitted	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	4990	4927		3433	4933		3433	5085	1562	1770	5085	1565
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	717	620	163	152	783	174	326	750	120	109	761	261
RTOR Reduction (vph)	0	56	0	0	43	0	0	0	86	0	0	52
Lane Group Flow (vph)	717	727	0	152	914	0	326	750	34	109	761	209
Confl. Peds. (#/hr)	4					4	5		1	1		5
Turn Type	Prot	NA		Prot	NA		Prot	NA	Perm	Prot	NA	pm+ov
Protected Phases	7	4		3	8		5	2		1	6	7
Permitted Phases									2			6
Actuated Green, G (s)	11.7	28.3		7.2	23.2		7.6	23.4	23.4	4.6	20.3	32.0
Effective Green, g (s)	12.1	29.5		7.6	25.0		8.0	24.3	23.4	5.0	21.3	32.8
Actuated g/C Ratio	0.15	0.36		0.09	0.30		0.10	0.29	0.28	0.06	0.26	0.40
Clearance Time (s)	4.4	5.2		4.4	5.8		4.4	4.9	4.9	4.4	5.0	4.4
Vehicle Extension (s)	2.0	3.9		2.0	2.7		2.0	3.3	3.3	2.0	4.1	2.0
Lane Grp Cap (vph)	732	1763		316	1496		333	1499	443	107	1314	622
v/s Ratio Prot	c0.14	0.15		0.04	c0.19		c0.09	c0.15		0.06	c0.15	0.05
v/s Ratio Perm									0.02			0.08
v/c Ratio	0.98	0.41		0.48	0.61		0.98	0.50	0.08	1.02	0.58	0.34
Uniform Delay, d1	35.0	19.9		35.5	24.5		37.1	24.0	21.6	38.7	26.6	17.2
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	27.7	0.2		0.4	0.7		43.0	1.2	0.3	92.1	1.9	0.1
Delay (s)	62.8	20.1		35.9	25.2		80.1	25.2	21.9	130.8	28.5	17.3
Level of Service	E	C		D	C		F	C	C	F	C	B
Approach Delay (s)		40.5			26.7			39.8			35.8	
Approach LOS		D			C			D			D	

Intersection Summary			
HCM 2000 Control Delay	36.2	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.69		
Actuated Cycle Length (s)	82.4	Sum of lost time (s)	16.0
Intersection Capacity Utilization	68.0%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	140	230	70	20	140	220	50	180	250	20	20	30
Future Volume (vph)	140	230	70	20	140	220	50	180	250	20	20	30
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		3.1	4.0			4.0			4.0	
Lane Util. Factor	1.00	1.00		1.00	1.00			1.00			1.00	
Frpb, ped/bikes	1.00	0.99		1.00	1.00			0.98			1.00	
Flpb, ped/bikes	1.00	1.00		1.00	1.00			1.00			1.00	
Frt	1.00	0.97		1.00	0.91			0.93			0.94	
Flt Protected	0.95	1.00		0.95	1.00			0.99			0.99	
Satd. Flow (prot)	1770	1787		1770	1692			1690			1728	
Flt Permitted	0.95	1.00		0.95	1.00			0.96			0.81	
Satd. Flow (perm)	1770	1787		1770	1692			1633			1412	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	152	250	76	22	152	239	54	196	272	22	22	33
RTOR Reduction (vph)	0	13	0	0	69	0	0	53	0	0	23	0
Lane Group Flow (vph)	152	313	0	22	322	0	0	469	0	0	54	0
Confl. Peds. (#/hr)			3	3					8	8		
Turn Type	Prot	NA		Prot	NA		Perm	NA		Perm	NA	
Protected Phases	5	2		1	6			8			4	
Permitted Phases							8			4		
Actuated Green, G (s)	11.5	36.4		1.5	26.0			22.4			22.4	
Effective Green, g (s)	11.9	37.3		2.4	26.9			23.3			23.3	
Actuated g/C Ratio	0.16	0.50		0.03	0.36			0.31			0.31	
Clearance Time (s)	4.4	4.9		4.0	4.9			4.9			4.9	
Vehicle Extension (s)	1.0	2.0		3.0	2.0			2.0			2.0	
Lane Grp Cap (vph)	284	899		57	614			513			443	
v/s Ratio Prot	c0.09	0.17		0.01	c0.19							
v/s Ratio Perm								c0.29			0.04	
v/c Ratio	0.54	0.35		0.39	0.52			0.91			0.12	
Uniform Delay, d1	28.6	11.1		35.1	18.6			24.4			18.1	
Progression Factor	1.00	1.00		1.00	1.00			1.00			1.00	
Incremental Delay, d2	1.0	1.1		4.3	3.2			20.4			0.0	
Delay (s)	29.5	12.1		39.4	21.8			44.8			18.2	
Level of Service	C	B		D	C			D			B	
Approach Delay (s)		17.7			22.7			44.8			18.2	
Approach LOS		B			C			D			B	

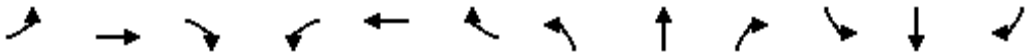
Intersection Summary			
HCM 2000 Control Delay	28.6	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.67		
Actuated Cycle Length (s)	74.1	Sum of lost time (s)	12.0
Intersection Capacity Utilization	73.6%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	180	650	80	170	1240	70	60	130	100	260	380	250
Future Volume (vph)	180	650	80	170	1240	70	60	130	100	260	380	250
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0		4.0	4.0	4.0	4.0	4.0	
Lane Util. Factor	0.97	0.91		1.00	0.91		1.00	0.95	1.00	0.97	0.95	
Frpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00	0.98	1.00	0.98	
Flpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	
Frt	1.00	0.98		1.00	0.99		1.00	1.00	0.85	1.00	0.94	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)	3433	4978		1770	5033		1770	3539	1555	3433	3278	
Flt Permitted	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (perm)	3433	4978		1770	5033		1770	3539	1555	3433	3278	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	196	707	87	185	1348	76	65	141	109	283	413	272
RTOR Reduction (vph)	0	18	0	0	6	0	0	0	59	0	143	0
Lane Group Flow (vph)	196	776	0	185	1418	0	65	141	50	283	542	0
Confl. Peds. (#/hr)	23		24	24		23	19		14	14		19
Confl. Bikes (#/hr)			9			5			12			6
Turn Type	Prot	NA		Prot	NA		Prot	NA	pm+ov	Prot	NA	
Protected Phases	5	2		1	6		3	8	1	7	4	
Permitted Phases									8			
Actuated Green, G (s)	7.9	24.3		13.0	28.9		6.1	17.6	30.6	11.4	23.0	
Effective Green, g (s)	8.3	25.2		13.4	30.3		6.5	18.6	31.4	11.8	23.9	
Actuated g/C Ratio	0.10	0.30		0.16	0.36		0.08	0.22	0.37	0.14	0.28	
Clearance Time (s)	4.4	4.9		4.4	5.4		4.4	5.0	4.4	4.4	4.9	
Vehicle Extension (s)	2.0	4.2		2.0	3.0		2.0	4.0	2.0	2.0	2.6	
Lane Grp Cap (vph)	335	1475		279	1794		135	774	574	476	921	
v/s Ratio Prot	0.06	0.16		c0.10	c0.28		c0.04	0.04	0.01	0.08	c0.17	
v/s Ratio Perm									0.02			
v/c Ratio	0.59	0.53		0.66	0.79		0.48	0.18	0.09	0.59	0.59	
Uniform Delay, d1	36.7	24.9		33.7	24.5		37.6	27.0	17.5	34.4	26.3	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	1.7	1.3		4.5	3.6		1.0	0.2	0.0	1.3	0.8	
Delay (s)	38.4	26.3		38.2	28.1		38.6	27.2	17.5	35.7	27.1	
Level of Service	D	C		D	C		D	C	B	D	C	
Approach Delay (s)		28.7			29.3			26.2			29.6	
Approach LOS		C			C			C			C	

Intersection Summary			
HCM 2000 Control Delay	29.0	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.69		
Actuated Cycle Length (s)	85.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	68.3%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	90	1670	560	120	1160	360	460	350	180	300	260	40
Future Volume (vph)	90	1670	560	120	1160	360	460	350	180	300	260	40
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	3.1	4.0	4.0	4.0	4.0	4.0	3.6	4.0	4.0	
Lane Util. Factor	1.00	0.91	1.00	0.97	0.91	1.00	0.97	1.00	1.00	0.97	1.00	
Frpb, ped/bikes	1.00	1.00	0.99	1.00	1.00	0.96	1.00	1.00	0.99	1.00	1.00	
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.98	
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)	1770	5085	1568	3433	5085	1515	3433	1863	1560	3433	1822	
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (perm)	1770	5085	1568	3433	5085	1515	3433	1863	1560	3433	1822	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	98	1815	609	130	1261	391	500	380	196	326	283	43
RTOR Reduction (vph)	0	0	139	0	0	247	0	0	50	0	5	0
Lane Group Flow (vph)	98	1815	470	130	1261	144	500	380	146	326	321	0
Confl. Peds. (#/hr)	6		1	1		6			6	6		
Confl. Bikes (#/hr)			1			5						3
Turn Type	Prot	NA	pm+ov	Prot	NA	Perm	Prot	NA	pm+ov	Prot	NA	
Protected Phases	5	2	3	1	6		3	8	1	7	4	
Permitted Phases			2			6			8			
Actuated Green, G (s)	8.3	41.9	57.2	5.7	39.2	39.2	15.3	29.9	35.6	15.0	27.8	
Effective Green, g (s)	8.7	43.2	59.8	6.1	40.6	40.6	15.7	30.7	37.2	14.0	29.0	
Actuated g/C Ratio	0.08	0.39	0.54	0.06	0.37	0.37	0.14	0.28	0.34	0.13	0.26	
Clearance Time (s)	4.4	5.3	4.4	4.4	5.4	5.4	4.4	4.8	4.4	3.0	5.2	
Vehicle Extension (s)	2.0	4.4	2.0	2.0	4.4	4.4	2.0	3.8	2.0	2.0	2.0	
Lane Grp Cap (vph)	139	1997	852	190	1876	559	489	519	527	436	480	
v/s Ratio Prot	c0.06	c0.36	0.08	0.04	0.25		c0.15	c0.20	0.02	0.09	c0.18	
v/s Ratio Perm			0.22			0.10			0.08			
v/c Ratio	0.71	0.91	0.55	0.68	0.67	0.26	1.02	0.73	0.28	0.75	0.67	
Uniform Delay, d1	49.4	31.5	16.4	51.0	29.1	24.2	47.1	35.9	26.6	46.3	36.2	
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	12.5	7.6	0.4	7.9	1.9	1.1	46.5	5.6	0.1	6.0	2.7	
Delay (s)	61.8	39.1	16.8	58.9	31.1	25.3	93.7	41.5	26.7	52.3	38.9	
Level of Service	E	D	B	E	C	C	F	D	C	D	D	
Approach Delay (s)		34.6			31.8			63.0			45.6	
Approach LOS		C			C			E			D	

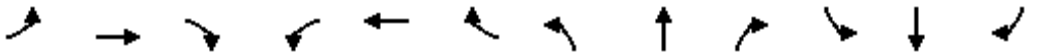
Intersection Summary			
HCM 2000 Control Delay	40.1	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.87		
Actuated Cycle Length (s)	110.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	78.3%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	830	1790	930	0	0	880
Future Volume (vph)	830	1790	930	0	0	880
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	7.0	7.0	7.0			7.0
Lane Util. Factor	0.97	0.76	0.95			0.95
Frt	1.00	0.85	1.00			1.00
Flt Protected	0.95	1.00	1.00			1.00
Satd. Flow (prot)	3433	3610	3539			3539
Flt Permitted	0.95	1.00	1.00			1.00
Satd. Flow (perm)	3433	3610	3539			3539
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	902	1946	1011	0	0	957
RTOR Reduction (vph)	0	13	0	0	0	0
Lane Group Flow (vph)	902	1933	1011	0	0	957
Turn Type	Prot	Perm	NA			NA
Protected Phases	4		2			6
Permitted Phases		4				
Actuated Green, G (s)	48.0	48.0	26.6			26.6
Effective Green, g (s)	48.0	48.0	26.6			26.6
Actuated g/C Ratio	0.54	0.54	0.30			0.30
Clearance Time (s)	7.0	7.0	7.0			7.0
Vehicle Extension (s)	0.2	0.2	0.2			0.2
Lane Grp Cap (vph)	1859	1955	1062			1062
v/s Ratio Prot	0.26		c0.29			0.27
v/s Ratio Perm		c0.54				
v/c Ratio	0.49	0.99	0.95			0.90
Uniform Delay, d1	12.6	20.0	30.4			29.7
Progression Factor	1.00	1.00	1.00			1.00
Incremental Delay, d2	0.1	17.5	17.1			10.3
Delay (s)	12.7	37.5	47.5			40.0
Level of Service	B	D	D			D
Approach Delay (s)	29.6		47.5			40.0
Approach LOS	C		D			D

Intersection Summary			
HCM 2000 Control Delay	35.4	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.98		
Actuated Cycle Length (s)	88.6	Sum of lost time (s)	14.0
Intersection Capacity Utilization	79.1%	ICU Level of Service	D
Analysis Period (min)	15		

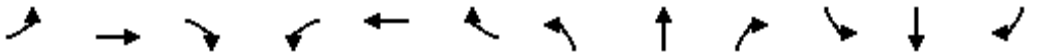
c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	380	430	320	80	540	700	420	510	120	400	710	400
Future Volume (vph)	380	430	320	80	540	700	420	510	120	400	710	400
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.9	4.0	4.0		4.0	4.0	4.9
Lane Util. Factor	0.97	1.00	1.00	1.00	0.95	1.00	0.97	0.95		0.97	0.95	1.00
Frpb, ped/bikes	1.00	1.00	0.99	1.00	1.00	0.99	1.00	1.00		1.00	1.00	0.99
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.97		1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	3433	1863	1567	1770	3539	1567	3433	3438		3433	3539	1562
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)	3433	1863	1567	1770	3539	1567	3433	3438		3433	3539	1562
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	413	467	348	87	587	761	457	554	130	435	772	435
RTOR Reduction (vph)	0	0	56	0	0	54	0	18	0	0	0	63
Lane Group Flow (vph)	413	467	292	87	587	707	457	666	0	435	772	372
Confl. Peds. (#/hr)	6		3	3		6	6					6
Turn Type	Prot	NA	pm+ov	Prot	NA	pm+ov	Prot	NA		Prot	NA	pm+ov
Protected Phases	5	2	3	1	6	7	3	8		7	4	5
Permitted Phases			2			6						4
Actuated Green, G (s)	13.3	37.0	55.1	8.0	31.7	58.4	18.1	28.6		26.7	37.2	50.5
Effective Green, g (s)	14.2	37.9	56.9	9.0	32.7	58.4	19.0	29.5		27.6	38.1	50.5
Actuated g/C Ratio	0.12	0.32	0.47	0.08	0.27	0.49	0.16	0.25		0.23	0.32	0.42
Clearance Time (s)	4.9	4.9	4.9	5.0	5.0	4.9	4.9	4.9		4.9	4.9	4.9
Vehicle Extension (s)	0.2	0.2	3.1	8.0	8.0	5.5	3.1	3.1		5.5	5.5	0.2
Lane Grp Cap (vph)	406	588	795	132	964	826	543	845		789	1123	657
v/s Ratio Prot	c0.12	0.25	0.06	0.05	0.17	c0.19	0.13	c0.19		0.13	0.22	0.06
v/s Ratio Perm			0.13			0.26						0.18
v/c Ratio	1.02	0.79	0.37	0.66	0.61	0.86	0.84	0.79		0.55	0.69	0.57
Uniform Delay, d1	52.9	37.5	20.1	54.0	38.1	27.1	49.0	42.3		40.7	35.8	26.4
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	49.1	10.6	0.3	22.5	2.9	9.7	11.4	4.9		1.6	2.5	0.7
Delay (s)	102.0	48.1	20.4	76.5	40.9	36.7	60.4	47.3		42.4	38.2	27.1
Level of Service	F	D	C	E	D	D	E	D		D	D	C
Approach Delay (s)		58.4			40.9			52.5			36.4	
Approach LOS		E			D			D			D	

Intersection Summary			
HCM 2000 Control Delay	45.9	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.90		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	17.8
Intersection Capacity Utilization	83.5%	ICU Level of Service	E
Analysis Period (min)	15		

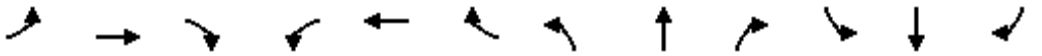
c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	380	1870	210	510	1550	390	230	640	410	350	530	290
Future Volume (vph)	380	1870	210	510	1550	390	230	640	410	350	530	290
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0	4.4	4.0	4.0	3.5	4.0	4.0	3.5
Lane Util. Factor	0.97	0.86		0.97	0.86	1.00	1.00	0.95	1.00	0.97	0.95	1.00
Frpb, ped/bikes	1.00	0.99		1.00	1.00	0.93	1.00	1.00	0.96	1.00	1.00	0.96
Flpb, ped/bikes	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.98		1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	6240		3433	6408	1475	1770	3539	1526	3433	3539	1522
Flt Permitted	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	6240		3433	6408	1475	1770	3539	1526	3433	3539	1522
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	413	2033	228	554	1685	424	250	696	446	380	576	315
RTOR Reduction (vph)	0	14	0	0	0	44	0	0	56	0	0	59
Lane Group Flow (vph)	413	2247	0	554	1685	380	250	696	390	380	576	256
Confl. Peds. (#/hr)	48		65	65		48	42		40	40		42
Turn Type	Prot	NA		Prot	NA	pm+ov	Prot	NA	pm+ov	Prot	NA	pm+ov
Protected Phases	5	2		1	6	7	3	8	1	7	4	5
Permitted Phases						6			8			4
Actuated Green, G (s)	19.3	48.4		20.6	49.8	66.6	18.6	30.4	51.0	16.8	28.6	47.9
Effective Green, g (s)	19.7	49.5		21.0	50.8	66.6	19.0	31.3	52.8	17.2	29.5	49.7
Actuated g/C Ratio	0.15	0.37		0.16	0.38	0.49	0.14	0.23	0.39	0.13	0.22	0.37
Clearance Time (s)	4.4	5.1		4.4	5.0	4.4	4.4	4.9	4.4	4.4	4.9	4.4
Vehicle Extension (s)	2.0	3.5		2.0	3.7	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lane Grp Cap (vph)	500	2288		534	2411	727	249	820	636	437	773	560
v/s Ratio Prot	0.12	c0.36		c0.16	0.26	0.07	c0.14	c0.20	0.10	c0.11	0.16	0.07
v/s Ratio Perm						0.19			0.16			0.10
v/c Ratio	0.83	0.98		1.04	0.70	0.52	1.00	0.85	0.61	0.87	0.75	0.46
Uniform Delay, d1	56.0	42.3		57.0	35.6	23.4	58.0	49.6	32.9	57.8	49.2	32.4
Progression Factor	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	10.2	15.1		49.0	1.0	0.3	58.1	7.9	1.2	16.1	3.4	0.2
Delay (s)	66.2	57.4		106.0	36.6	23.7	116.1	57.5	34.2	73.9	52.7	32.6
Level of Service	E	E		F	D	C	F	E	C	E	D	C
Approach Delay (s)		58.7			49.0			60.5			54.1	
Approach LOS		E			D			E			D	

Intersection Summary			
HCM 2000 Control Delay	55.0	HCM 2000 Level of Service	E
HCM 2000 Volume to Capacity ratio	0.96		
Actuated Cycle Length (s)	135.0	Sum of lost time (s)	16.4
Intersection Capacity Utilization	94.8%	ICU Level of Service	F
Analysis Period (min)	15		

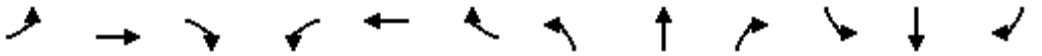
c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	700	270	420	460	0	0	0	0	430	580	1080
Future Volume (vph)	0	700	270	420	460	0	0	0	0	430	580	1080
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0	4.0	4.0	4.0					4.0	4.0	4.0
Lane Util. Factor		0.95	1.00	0.97	0.95					0.91	0.91	0.88
Frt		1.00	0.85	1.00	1.00					1.00	1.00	0.85
Flt Protected		1.00	1.00	0.95	1.00					0.95	1.00	1.00
Satd. Flow (prot)		3539	1583	3433	3539					1610	3390	2787
Flt Permitted		1.00	1.00	0.95	1.00					0.95	1.00	1.00
Satd. Flow (perm)		3539	1583	3433	3539					1610	3390	2787
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	761	293	457	500	0	0	0	0	467	630	1174
RTOR Reduction (vph)	0	0	63	0	0	0	0	0	0	0	0	380
Lane Group Flow (vph)	0	761	230	457	500	0	0	0	0	467	630	794
Turn Type		NA	Perm	Prot	NA					Perm	NA	Perm
Protected Phases		2		1	6						4	
Permitted Phases			2							4		4
Actuated Green, G (s)		25.0	25.0	13.1	42.5					27.7	27.7	27.7
Effective Green, g (s)		25.9	25.9	13.5	43.4					28.6	28.6	28.6
Actuated g/C Ratio		0.32	0.32	0.17	0.54					0.36	0.36	0.36
Clearance Time (s)		4.9	4.9	4.4	4.9					4.9	4.9	4.9
Vehicle Extension (s)		3.8	3.8	2.0	4.2					2.0	2.0	2.0
Lane Grp Cap (vph)		1145	512	579	1919					575	1211	996
v/s Ratio Prot		c0.22		c0.13	0.14							
v/s Ratio Perm			0.15							c0.29	0.19	0.29
v/c Ratio		0.66	0.45	0.79	0.26					0.81	0.52	0.80
Uniform Delay, d1		23.3	21.4	31.9	9.8					23.3	20.3	23.1
Progression Factor		1.00	1.00	1.00	1.00					1.00	1.00	1.00
Incremental Delay, d2		3.1	2.8	6.5	0.3					8.1	0.2	4.2
Delay (s)		26.4	24.2	38.4	10.1					31.4	20.5	27.3
Level of Service		C	C	D	B					C	C	C
Approach Delay (s)		25.8			23.6			0.0			26.3	
Approach LOS		C			C			A			C	

Intersection Summary			
HCM 2000 Control Delay	25.5	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.75		
Actuated Cycle Length (s)	80.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	60.3%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

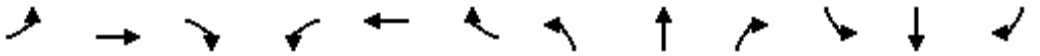


Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	1110	370	50	700	0	0	0	0	730	1100	660
Future Volume (vph)	0	1110	370	50	700	0	0	0	0	730	1100	660
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		6.7		4.0	6.7						6.3	4.0
Lane Util. Factor		0.91		1.00	0.95						0.86	0.86
Frt		0.96		1.00	1.00						1.00	0.85
Flt Protected		1.00		0.95	1.00						0.98	1.00
Satd. Flow (prot)		4895		1770	3539						4712	1362
Flt Permitted		1.00		0.95	1.00						0.98	1.00
Satd. Flow (perm)		4895		1770	3539						4712	1362
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	1207	402	54	761	0	0	0	0	793	1196	717
RTOR Reduction (vph)	0	32	0	0	0	0	0	0	0	0	0	47
Lane Group Flow (vph)	0	1577	0	54	761	0	0	0	0	0	1989	670
Turn Type		NA		Prot	NA					Perm	NA	Perm
Protected Phases		2		1	6						4	
Permitted Phases										4		4
Actuated Green, G (s)		38.5		3.4	44.6						53.4	53.4
Effective Green, g (s)		36.7		3.8	44.5						52.5	54.8
Actuated g/C Ratio		0.33		0.03	0.40						0.48	0.50
Clearance Time (s)		4.9		4.4	6.6						5.4	5.4
Vehicle Extension (s)		1.0		2.0	1.0						1.0	1.0
Lane Grp Cap (vph)		1633		61	1431						2248	678
v/s Ratio Prot		c0.32		c0.03	0.22							
v/s Ratio Perm											0.42	c0.49
v/c Ratio		0.97		0.89	0.53						0.99dl	0.99
Uniform Delay, d1		36.0		52.9	24.8						26.0	27.3
Progression Factor		1.00		1.00	1.00						1.00	1.00
Incremental Delay, d2		15.5		73.6	1.4						4.4	31.1
Delay (s)		51.5		126.5	26.3						30.5	58.4
Level of Service		D		F	C						C	E
Approach Delay (s)		51.5			32.9			0.0			37.9	
Approach LOS		D			C			A			D	

Intersection Summary			
HCM 2000 Control Delay	41.4	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	1.00		
Actuated Cycle Length (s)	110.0	Sum of lost time (s)	17.0
Intersection Capacity Utilization	88.2%	ICU Level of Service	E
Analysis Period (min)	15		

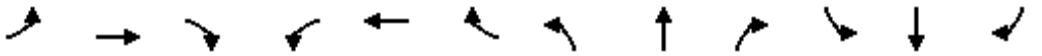
dl Defacto Left Lane. Recode with 1 though lane as a left lane.

c Critical Lane Group



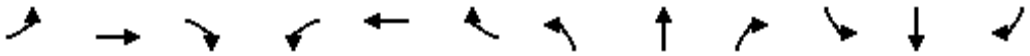
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	40	150	30	380	40	220	30	1570	340	220	500	20
Future Volume (vph)	40	150	30	380	40	220	30	1570	340	220	500	20
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.3	4.3		4.0	4.0		6.2	4.0	
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	0.91		0.97	0.91	
Frpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Flpb, ped/bikes	1.00	1.00		0.99	1.00		1.00	1.00		1.00	1.00	
Frt	1.00	0.97		1.00	0.87		1.00	0.97		1.00	0.99	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1770	1809		1757	1626		1770	4949		3433	5050	
Flt Permitted	0.47	1.00		0.56	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (perm)	869	1809		1045	1626		1770	4949		3433	5050	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	43	163	33	413	43	239	33	1707	370	239	543	22
RTOR Reduction (vph)	0	6	0	0	87	0	0	28	0	0	4	0
Lane Group Flow (vph)	43	190	0	413	195	0	33	2049	0	239	561	0
Confl. Peds. (#/hr)			9	9			2					2
Turn Type	Perm	NA		Perm	NA		Prot	NA		Prot	NA	
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4			8								
Actuated Green, G (s)	47.0	47.0		46.3	46.3		3.6	50.2		11.0	56.9	
Effective Green, g (s)	47.0	47.0		46.7	46.7		3.6	51.6		8.8	59.0	
Actuated g/C Ratio	0.39	0.39		0.38	0.38		0.03	0.42		0.07	0.49	
Clearance Time (s)	4.0	4.0		4.7	4.7		4.0	5.4		4.0	6.1	
Vehicle Extension (s)	2.0	2.0		3.0	3.0		2.0	4.8		2.0	3.7	
Lane Grp Cap (vph)	335	699		401	624		52	2100		248	2450	
v/s Ratio Prot		0.10			0.12		0.02	c0.41		c0.07	0.11	
v/s Ratio Perm	0.05			c0.40								
v/c Ratio	0.13	0.27		1.03	0.31		0.63	0.98		0.96	0.23	
Uniform Delay, d1	24.1	25.6		37.4	26.2		58.3	34.4		56.2	18.1	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	0.1	0.1		52.8	0.3		17.1	14.7		46.5	0.2	
Delay (s)	24.1	25.6		90.3	26.5		75.4	49.1		102.7	18.3	
Level of Service	C	C		F	C		E	D		F	B	
Approach Delay (s)		25.4			64.4			49.5			43.4	
Approach LOS		C			E			D			D	

Intersection Summary			
HCM 2000 Control Delay	49.4	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	1.00		
Actuated Cycle Length (s)	121.6	Sum of lost time (s)	14.5
Intersection Capacity Utilization	94.7%	ICU Level of Service	F
Analysis Period (min)	15		
c Critical Lane Group			



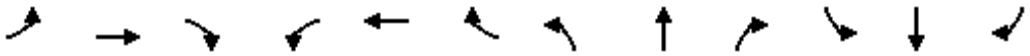
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	620	1070	300	250	950	160	460	1050	240	170	670	300
Future Volume (vph)	620	1070	300	250	950	160	460	1050	240	170	670	300
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0		4.0	4.0	4.9	4.0	4.0	4.0
Lane Util. Factor	0.94	0.91		0.97	0.91		0.97	0.91	1.00	1.00	0.91	1.00
Frpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00	0.99	1.00	1.00	0.99
Flpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.97		1.00	0.98		1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	4990	4918		3433	4964		3433	5085	1562	1770	5085	1562
Flt Permitted	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	4990	4918		3433	4964		3433	5085	1562	1770	5085	1562
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	674	1163	326	272	1033	174	500	1141	261	185	728	326
RTOR Reduction (vph)	0	46	0	0	21	0	0	0	181	0	0	71
Lane Group Flow (vph)	674	1443	0	272	1186	0	500	1141	80	185	728	255
Confl. Peds. (#/hr)	4					4	5		1	1		5
Turn Type	Prot	NA		Prot	NA		Prot	NA	Perm	Prot	NA	pm+ov
Protected Phases	7	4		3	8		5	2		1	6	7
Permitted Phases									2			6
Actuated Green, G (s)	15.0	34.8		10.8	30.0		18.2	32.7	32.7	11.8	26.2	41.2
Effective Green, g (s)	15.4	36.0		11.2	31.8		18.6	33.6	32.7	12.2	27.2	42.0
Actuated g/C Ratio	0.14	0.33		0.10	0.29		0.17	0.31	0.30	0.11	0.25	0.39
Clearance Time (s)	4.4	5.2		4.4	5.8		4.4	4.9	4.9	4.4	5.0	4.4
Vehicle Extension (s)	2.0	3.9		2.0	2.7		2.0	3.3	3.3	2.0	4.1	2.0
Lane Grp Cap (vph)	705	1624		352	1448		585	1567	468	198	1268	601
v/s Ratio Prot	c0.14	c0.29		0.08	0.24		c0.15	c0.22		0.10	0.14	0.06
v/s Ratio Perm									0.05			0.10
v/c Ratio	0.96	0.89		0.77	0.82		0.85	0.73	0.17	0.93	0.57	0.42
Uniform Delay, d1	46.5	34.6		47.7	35.9		43.9	33.6	28.2	48.0	35.8	24.6
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	23.2	6.5		9.2	3.7		11.3	3.0	0.8	44.9	1.9	0.2
Delay (s)	69.7	41.1		56.9	39.6		55.2	36.6	29.0	92.9	37.7	24.8
Level of Service	E	D		E	D		E	D	C	F	D	C
Approach Delay (s)		50.0			42.8			40.4			42.6	
Approach LOS		D			D			D			D	

Intersection Summary			
HCM 2000 Control Delay	44.4	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.89		
Actuated Cycle Length (s)	109.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	77.5%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	580	300	70	20	170	150	90	100	110	20	20	40
Future Volume (vph)	580	300	70	20	170	150	90	100	110	20	20	40
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		3.1	4.0			4.0			4.0	
Lane Util. Factor	1.00	1.00		1.00	1.00			1.00			1.00	
Frpb, ped/bikes	1.00	0.99		1.00	0.99			0.99			0.99	
Flpb, ped/bikes	1.00	1.00		1.00	1.00			1.00			1.00	
Frt	1.00	0.97		1.00	0.93			0.95			0.93	
Flt Protected	0.95	1.00		0.95	1.00			0.99			0.99	
Satd. Flow (prot)	1770	1800		1770	1714			1724			1696	
Flt Permitted	0.95	1.00		0.95	1.00			0.88			0.84	
Satd. Flow (perm)	1770	1800		1770	1714			1537			1436	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	630	326	76	22	185	163	98	109	120	22	22	43
RTOR Reduction (vph)	0	8	0	0	33	0	0	24	0	0	33	0
Lane Group Flow (vph)	630	394	0	22	315	0	0	303	0	0	54	0
Confl. Peds. (#/hr)	1		3	3		1	1		4	4		1
Turn Type	Prot	NA		Prot	NA		Perm	NA		Perm	NA	
Protected Phases	5	2		1	6			8			4	
Permitted Phases							8			4		
Actuated Green, G (s)	31.9	54.3		1.5	23.5			18.8			18.8	
Effective Green, g (s)	32.3	55.2		2.4	24.4			19.7			19.7	
Actuated g/C Ratio	0.37	0.62		0.03	0.28			0.22			0.22	
Clearance Time (s)	4.4	4.9		4.0	4.9			4.9			4.9	
Vehicle Extension (s)	1.0	2.0		3.0	2.0			2.0			2.0	
Lane Grp Cap (vph)	646	1123		48	473			342			320	
v/s Ratio Prot	c0.36	0.22		0.01	c0.18							
v/s Ratio Perm								c0.20			0.04	
v/c Ratio	0.98	0.35		0.46	0.67			0.89			0.17	
Uniform Delay, d1	27.7	8.0		42.4	28.4			33.3			27.7	
Progression Factor	1.00	1.00		1.00	1.00			1.00			1.00	
Incremental Delay, d2	28.9	0.9		6.8	7.2			22.3			0.1	
Delay (s)	56.5	8.8		49.2	35.6			55.6			27.8	
Level of Service	E	A		D	D			E			C	
Approach Delay (s)		38.0			36.4			55.6			27.8	
Approach LOS		D			D			E			C	

Intersection Summary			
HCM 2000 Control Delay	40.3	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.85		
Actuated Cycle Length (s)	88.4	Sum of lost time (s)	12.0
Intersection Capacity Utilization	84.1%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	430	1400	140	210	840	220	90	430	240	310	220	160
Future Volume (vph)	430	1400	140	210	840	220	90	430	240	310	220	160
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0		4.0	4.0	4.0	4.0	4.0	
Lane Util. Factor	0.97	0.91		1.00	0.91		1.00	0.95	1.00	0.97	0.95	
Frpb, ped/bikes	1.00	1.00		1.00	0.99		1.00	1.00	0.97	1.00	0.97	
Flpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	
Frt	1.00	0.99		1.00	0.97		1.00	1.00	0.85	1.00	0.94	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)	3433	4994		1770	4872		1770	3539	1539	3433	3210	
Flt Permitted	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (perm)	3433	4994		1770	4872		1770	3539	1539	3433	3210	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	467	1522	152	228	913	239	98	467	261	337	239	174
RTOR Reduction (vph)	0	11	0	0	43	0	0	0	47	0	125	0
Lane Group Flow (vph)	467	1663	0	228	1109	0	98	467	214	337	288	0
Confl. Peds. (#/hr)	26		26	26		26	41		25	25		41
Confl. Bikes (#/hr)			8			2			13			8
Turn Type	Prot	NA		Prot	NA		Prot	NA	pm+ov	Prot	NA	
Protected Phases	5	2		1	6		3	8	1	7	4	
Permitted Phases									8			
Actuated Green, G (s)	16.6	34.4		15.1	32.4		8.5	24.1	39.2	12.7	28.4	
Effective Green, g (s)	17.0	35.3		15.5	33.8		8.9	25.1	40.0	13.1	29.3	
Actuated g/C Ratio	0.16	0.34		0.15	0.32		0.08	0.24	0.38	0.12	0.28	
Clearance Time (s)	4.4	4.9		4.4	5.4		4.4	5.0	4.4	4.4	4.9	
Vehicle Extension (s)	2.0	4.2		2.0	3.0		2.0	4.0	2.0	2.0	2.6	
Lane Grp Cap (vph)	555	1678		261	1568		150	845	586	428	895	
v/s Ratio Prot	c0.14	c0.33		0.13	0.23		c0.06	c0.13	0.05	c0.10	0.09	
v/s Ratio Perm									0.09			
v/c Ratio	0.84	0.99		0.87	0.71		0.65	0.55	0.37	0.79	0.32	
Uniform Delay, d1	42.7	34.7		43.8	31.3		46.6	35.0	23.4	44.6	30.0	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	10.7	19.9		25.3	2.7		7.5	1.0	0.1	8.6	0.2	
Delay (s)	53.4	54.6		69.1	34.0		54.1	36.0	23.5	53.2	30.1	
Level of Service	D	D		E	C		D	D	C	D	C	
Approach Delay (s)		54.3			39.8			34.2			40.5	
Approach LOS		D			D			C			D	

Intersection Summary			
HCM 2000 Control Delay	45.1	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.83		
Actuated Cycle Length (s)	105.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	83.0%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group

Queuing Reports

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	65	1239	435	174	1446	196	522	435	163	630	434
v/c Ratio	1.14	0.84	0.59	0.61	1.21	0.33	0.65	0.93	0.33	1.38	0.87
Control Delay	218.4	51.2	8.5	70.2	139.5	13.5	52.1	76.4	12.2	223.4	63.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	218.4	51.2	8.5	70.2	139.5	13.5	52.1	76.4	12.2	223.4	63.0
Queue Length 50th (ft)	~66	368	21	78	~810	41	215	371	21	~741	349
Queue Length 95th (ft)	#166	427	115	#127	#950	105	#309	#566	80	#976	455
Internal Link Dist (ft)		2325			484			648			1369
Turn Bay Length (ft)											
Base Capacity (vph)	57	1533	752	284	1200	592	808	480	499	456	589
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	1.14	0.81	0.58	0.61	1.21	0.33	0.65	0.91	0.33	1.38	0.74

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Lane Group	WBL	WBR	NBT	SBT
Lane Group Flow (vph)	598	1293	402	717
v/c Ratio	0.42	0.88	0.41	0.73
Control Delay	11.1	17.1	15.4	20.5
Queue Delay	0.0	0.0	0.0	0.0
Total Delay	11.1	17.1	15.4	20.5
Queue Length 50th (ft)	53	93	50	98
Queue Length 95th (ft)	106	#290	79	145
Internal Link Dist (ft)	810		406	1779
Turn Bay Length (ft)				
Base Capacity (vph)	1631	1597	1834	1834
Starvation Cap Reductn	0	0	0	0
Spillback Cap Reductn	0	0	0	0
Storage Cap Reductn	0	0	0	0
Reduced v/c Ratio	0.37	0.81	0.22	0.39

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT	SBR
Lane Group Flow (vph)	489	326	304	33	152	326	196	554	478	565	272
v/c Ratio	1.06	0.44	0.33	0.32	0.28	0.48	0.70	0.75	1.07	0.52	0.27
Control Delay	100.7	30.6	8.4	66.9	46.2	21.2	62.5	50.7	104.8	37.7	2.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	100.7	30.6	8.4	66.9	46.2	21.2	62.5	50.7	104.8	37.7	2.5
Queue Length 50th (ft)	~390	190	64	24	54	129	139	202	~385	182	0
Queue Length 95th (ft)	#798	312	124	68	93	238	257	304	#787	301	44
Internal Link Dist (ft)		611			563			507		730	
Turn Bay Length (ft)											
Base Capacity (vph)	463	883	1020	104	959	673	388	1125	448	1259	995
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	1.06	0.37	0.30	0.32	0.16	0.48	0.51	0.49	1.07	0.45	0.27

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT	SBR
Lane Group Flow (vph)	120	120	120	98	120	185	87	402	98	446	98
v/c Ratio	0.48	0.45	0.29	0.38	0.45	0.48	0.43	0.25	0.52	0.25	0.11
Control Delay	50.8	49.7	6.7	48.1	49.8	9.6	61.5	22.9	72.1	14.8	4.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	50.8	49.7	6.7	48.1	49.8	9.6	61.5	22.9	72.1	14.8	4.3
Queue Length 50th (ft)	93	93	0	72	89	0	34	84	79	38	0
Queue Length 95th (ft)	127	126	39	102	121	54	#63	193	m#178	231	m72
Internal Link Dist (ft)		644			610			685		849	
Turn Bay Length (ft)											
Base Capacity (vph)	502	529	419	514	541	582	201	1625	187	1822	864
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.24	0.23	0.29	0.19	0.22	0.32	0.43	0.25	0.52	0.24	0.11

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.

Lane Group	EBT	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	77	88	65	815	33	609
v/c Ratio	0.20	0.21	0.10	0.34	0.06	0.27
Control Delay	11.1	10.2	5.4	6.9	5.6	8.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	11.1	10.2	5.4	6.9	5.6	8.2
Queue Length 50th (ft)	6	6	4	33	2	23
Queue Length 95th (ft)	40	42	26	171	16	125
Internal Link Dist (ft)	218	191		927		475
Turn Bay Length (ft)						
Base Capacity (vph)	1019	1006	643	2809	559	2832
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.08	0.09	0.10	0.29	0.06	0.22

Intersection Summary

Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	239	1794	370	1978	326	130	359	228	250	304	196
v/c Ratio	0.79	0.85	1.11	0.90	0.38	0.87	0.43	0.38	0.80	0.35	0.32
Control Delay	67.5	33.5	127.0	36.2	7.1	93.7	34.2	11.1	67.5	32.7	9.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	67.5	33.5	127.0	36.2	7.1	93.7	34.2	11.1	67.5	32.7	9.7
Queue Length 50th (ft)	83	431	~146	~520	47	88	96	42	87	81	31
Queue Length 95th (ft)	#157	#553	#241	#616	93	#198	136	93	#164	117	77
Internal Link Dist (ft)		286		607			736			927	
Turn Bay Length (ft)											
Base Capacity (vph)	301	2115	333	2193	869	150	1108	607	312	1085	607
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.79	0.85	1.11	0.90	0.38	0.87	0.32	0.38	0.80	0.28	0.32

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Lane Group	WBL	NBT	SBL	SBT
Lane Group Flow (vph)	163	750	163	739
v/c Ratio	0.52	0.41	0.54	0.29
Control Delay	25.5	13.1	29.5	4.4
Queue Delay	0.0	0.0	0.0	0.0
Total Delay	25.5	13.1	29.5	4.4
Queue Length 50th (ft)	46	94	53	44
Queue Length 95th (ft)	95	168	107	86
Internal Link Dist (ft)	266	258		736
Turn Bay Length (ft)				
Base Capacity (vph)	497	1821	374	2581
Starvation Cap Reductn	0	0	0	0
Spillback Cap Reductn	0	0	0	0
Storage Cap Reductn	0	0	0	0
Reduced v/c Ratio	0.33	0.41	0.44	0.29

Intersection Summary

Lane Group	EBT	WBT	WBR	SBL	SBR
Lane Group Flow (vph)	891	1402	717	457	185
v/c Ratio	0.48	0.76	0.45	0.62	0.38
Control Delay	11.1	16.1	5.5	28.6	7.9
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	11.1	16.1	5.5	28.6	7.9
Queue Length 50th (ft)	70	136	14	62	0
Queue Length 95th (ft)	247	#517	114	#224	57
Internal Link Dist (ft)	776	812		135	
Turn Bay Length (ft)					
Base Capacity (vph)	2402	2402	1598	738	485
Starvation Cap Reductn	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.37	0.58	0.45	0.62	0.38

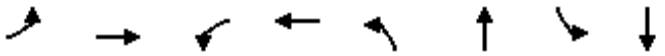
Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Lane Group	WBL	WBR	NBT	SBL	SBT
Lane Group Flow (vph)	33	54	544	141	717
v/c Ratio	0.16	0.23	0.17	0.67	0.17
Control Delay	39.8	10.5	22.6	61.3	4.4
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	39.8	10.5	22.6	61.3	4.4
Queue Length 50th (ft)	23	0	88	97	21
Queue Length 95th (ft)	36	26	m160	156	117
Internal Link Dist (ft)	700		918		563
Turn Bay Length (ft)					
Base Capacity (vph)	645	611	3241	331	4173
Starvation Cap Reductn	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.05	0.09	0.17	0.43	0.17

Intersection Summary

m Volume for 95th percentile queue is metered by upstream signal.



Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	98	184	174	272	228	555	87	707
v/c Ratio	0.40	0.57	0.57	0.83	0.79	0.36	0.11	0.53
Control Delay	45.7	24.0	51.3	62.7	63.8	28.9	32.3	27.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	45.7	24.0	51.3	62.7	63.8	28.9	32.3	27.5
Queue Length 50th (ft)	66	49	114	167	153	100	24	183
Queue Length 95th (ft)	97	99	#217	#355	#288	156	53	327
Internal Link Dist (ft)		610		1546		668		918
Turn Bay Length (ft)								
Base Capacity (vph)	497	546	306	326	301	1533	776	1323
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.20	0.34	0.57	0.83	0.76	0.36	0.11	0.53

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Lane Group	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	87	43	76	33	761	141	794
v/c Ratio	0.28	0.19	0.30	0.18	0.59	0.19	0.43
Control Delay	24.6	36.7	20.0	38.7	25.9	27.8	16.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	24.6	36.7	20.0	38.7	25.9	27.8	16.7
Queue Length 50th (ft)	23	14	7	10	83	21	82
Queue Length 95th (ft)	79	68	63	57	232	73	312
Internal Link Dist (ft)	465		807		727		668
Turn Bay Length (ft)							
Base Capacity (vph)	1124	940	908	231	2695	1823	2818
Starvation Cap Reductn	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.08	0.05	0.08	0.14	0.28	0.08	0.28

Intersection Summary

Lane Group	EBT	EBR	WBT	WBR	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	44	54	22	65	65	772	43	782
v/c Ratio	0.20	0.14	0.10	0.16	0.34	0.23	0.22	0.24
Control Delay	20.5	0.7	19.3	0.9	22.8	3.5	25.4	7.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	20.5	0.7	19.3	0.9	22.8	3.5	25.4	7.1
Queue Length 50th (ft)	13	0	7	0	27	10	13	43
Queue Length 95th (ft)	30	0	19	0	m47	51	38	91
Internal Link Dist (ft)	286		160			994		727
Turn Bay Length (ft)								
Base Capacity (vph)	418	587	428	587	193	3395	196	3239
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.11	0.09	0.05	0.11	0.34	0.23	0.22	0.24

Intersection Summary

m Volume for 95th percentile queue is metered by upstream signal.

Lane Group	EBL	EBT	EBR2	WBT	WBR	NBR2	SBL2	SBL	SBT	SBR	NWL	NWR
Lane Group Flow (vph)	239	1661	176	2380	413	109	179	212	218	76	217	218
v/c Ratio	0.80	0.59	0.21	0.97	0.44	0.11	0.74	0.91	0.91	0.24	1.03	0.49
Control Delay	69.6	15.2	2.2	40.8	6.9	0.2	57.4	81.6	80.7	8.3	119.2	23.0
Queue Delay	0.0	0.0	0.0	42.4	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	69.6	15.2	2.2	83.3	7.1	0.2	57.4	81.6	80.7	8.3	119.2	23.0
Queue Length 50th (ft)	87	268	0	580	61	0	129	163	169	0	~164	32
Queue Length 95th (ft)	#151	315	33	#717	97	0	#235	#319	#326	32	#316	74
Internal Link Dist (ft)		607		437					994		422	
Turn Bay Length (ft)												
Base Capacity (vph)	299	2801	856	2450	946	1036	246	235	242	315	210	445
Starvation Cap Reductn	0	0	0	397	107	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.80	0.59	0.21	1.16	0.49	0.11	0.73	0.90	0.90	0.24	1.03	0.49

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Lane Group	EBT	WBT	NBT	SBT
Lane Group Flow (vph)	272	337	228	207
v/c Ratio	0.52	0.72	0.28	0.22
Control Delay	14.3	23.2	7.2	5.8
Queue Delay	0.0	0.0	0.0	0.0
Total Delay	14.3	23.2	7.2	5.8
Queue Length 50th (ft)	48	78	23	16
Queue Length 95th (ft)	100	149	75	60
Internal Link Dist (ft)	271	339	940	771
Turn Bay Length (ft)				
Base Capacity (vph)	930	865	813	930
Starvation Cap Reductn	0	0	0	0
Spillback Cap Reductn	0	0	0	0
Storage Cap Reductn	0	0	0	0
Reduced v/c Ratio	0.29	0.39	0.28	0.22

Intersection Summary

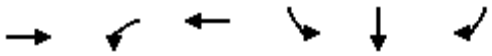
Lane Group	NBL	NBT	SBT	SEL	SER
Lane Group Flow (vph)	326	663	793	217	207
v/c Ratio	0.80	0.17	0.32	0.73	0.47
Control Delay	64.3	0.8	18.3	60.7	8.9
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	64.3	0.8	18.3	60.7	8.9
Queue Length 50th (ft)	209	6	148	161	0
Queue Length 95th (ft)	222	9	208	229	61
Internal Link Dist (ft)		764	913	479	
Turn Bay Length (ft)					
Base Capacity (vph)	575	3886	2502	545	631
Starvation Cap Reductn	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.57	0.17	0.32	0.40	0.33

Intersection Summary

Lane Group	EBL	EBR	WBL	WBT	SBT
Lane Group Flow (vph)	33	109	500	533	87
v/c Ratio	0.17	0.27	0.48	0.69	0.28
Control Delay	18.3	6.2	3.5	20.3	19.6
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	18.3	6.2	3.5	20.3	19.6
Queue Length 50th (ft)	8	0	0	110	19
Queue Length 95th (ft)	27	30	54	#327	55
Internal Link Dist (ft)				363	564
Turn Bay Length (ft)					
Base Capacity (vph)	355	643	1046	789	753
Starvation Cap Reductn	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.09	0.17	0.48	0.68	0.12

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.



Lane Group	EBT	WBL	WBT	SBL	SBT	SBR
Lane Group Flow (vph)	1804	446	2630	352	387	163
v/c Ratio	0.90	1.00	0.61	0.79	0.83	0.36
Control Delay	45.3	67.4	1.1	58.8	62.1	27.4
Queue Delay	46.7	21.2	2.0	0.3	0.4	0.0
Total Delay	92.0	88.6	3.1	59.1	62.5	27.4
Queue Length 50th (ft)	526	~419	21	302	336	77
Queue Length 95th (ft)	594	m#467	m21	397	437	132
Internal Link Dist (ft)	437		346		833	
Turn Bay Length (ft)						
Base Capacity (vph)	2070	445	4330	535	558	540
Starvation Cap Reductn	445	28	1483	0	0	0
Spillback Cap Reductn	0	0	0	21	22	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	1.11	1.07	0.92	0.68	0.72	0.30

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

Lane Group	EBT	WBL	WBT	NBL	NBR	SBL	SBT
Lane Group Flow (vph)	468	141	293	130	174	185	250
v/c Ratio	0.28	0.26	0.14	0.62	0.20	0.57	0.73
Control Delay	20.5	14.4	12.8	67.3	4.3	54.0	61.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	20.5	14.4	12.8	67.3	4.3	54.0	61.2
Queue Length 50th (ft)	107	48	52	106	0	144	200
Queue Length 95th (ft)	191	103	96	167	48	205	271
Internal Link Dist (ft)	422		400				360
Turn Bay Length (ft)							
Base Capacity (vph)	1677	613	2141	364	860	447	469
Starvation Cap Reductn	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.28	0.23	0.14	0.36	0.20	0.41	0.53

Intersection Summary

Lane Group	EBL	NBL	NBT	SBT
Lane Group Flow (vph)	381	380	500	707
v/c Ratio	0.88	0.81	0.14	0.35
Control Delay	55.0	55.4	8.9	25.7
Queue Delay	0.0	0.0	0.0	0.0
Total Delay	55.0	55.4	8.9	25.7
Queue Length 50th (ft)	222	301	58	127
Queue Length 95th (ft)	327	392	87	198
Internal Link Dist (ft)	648		913	1745
Turn Bay Length (ft)				
Base Capacity (vph)	517	775	3618	2007
Starvation Cap Reductn	0	0	0	0
Spillback Cap Reductn	0	0	0	0
Storage Cap Reductn	0	0	0	0
Reduced v/c Ratio	0.74	0.49	0.14	0.35

Intersection Summary

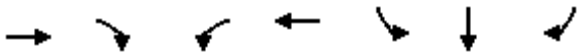
Lane Group	EBL	EBT	WBT	WBR	NBT
Lane Group Flow (vph)	65	2152	2978	804	664
v/c Ratio	0.40	0.64	1.06	0.81	0.69
Control Delay	49.9	13.7	65.4	26.7	46.0
Queue Delay	0.0	0.5	17.9	0.0	0.2
Total Delay	49.9	14.2	83.4	26.7	46.2
Queue Length 50th (ft)	44	260	~1180	481	250
Queue Length 95th (ft)	m57	342	#1260	#782	315
Internal Link Dist (ft)		346	988		517
Turn Bay Length (ft)					
Base Capacity (vph)	183	3358	2815	991	1142
Starvation Cap Reductn	0	663	0	0	0
Spillback Cap Reductn	0	0	113	0	75
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.36	0.80	1.10	0.81	0.62

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

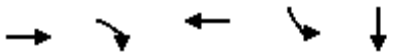
m Volume for 95th percentile queue is metered by upstream signal.



Lane Group	EBT	EBR	WBL	WBT	SBL	SBT	SBR
Lane Group Flow (vph)	359	207	576	554	228	511	457
v/c Ratio	0.26	0.30	0.83	0.25	0.54	0.58	0.71
Control Delay	18.8	8.9	42.3	7.3	29.5	27.9	14.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	18.8	8.9	42.3	7.3	29.5	27.9	14.4
Queue Length 50th (ft)	65	23	137	54	107	122	59
Queue Length 95th (ft)	105	74	#222	94	168	157	150
Internal Link Dist (ft)	269			774		2836	
Turn Bay Length (ft)							
Base Capacity (vph)	1367	694	715	2259	521	1087	724
Starvation Cap Reductn	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.26	0.30	0.81	0.25	0.44	0.47	0.63

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.



Lane Group	EBT	EBR	WBT	SBL	SBT
Lane Group Flow (vph)	207	174	641	522	1760
v/c Ratio	0.30	0.28	0.65	0.58	0.68
Control Delay	16.1	11.3	20.8	14.4	12.6
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	16.1	11.3	20.8	14.4	12.6
Queue Length 50th (ft)	57	31	107	134	161
Queue Length 95th (ft)	103	72	161	220	210
Internal Link Dist (ft)	458		806		986
Turn Bay Length (ft)					
Base Capacity (vph)	687	619	988	898	2575
Starvation Cap Reductn	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.30	0.28	0.65	0.58	0.68

Intersection Summary

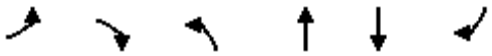
Lane Group	EBT	WBL	WBT	SBT	SBR
Lane Group Flow (vph)	848	43	543	946	565
v/c Ratio	0.70	0.31	0.36	0.94dl	0.83
Control Delay	23.4	44.2	11.3	17.5	24.0
Queue Delay	0.0	0.0	0.2	0.6	0.0
Total Delay	23.4	44.2	11.5	18.1	24.0
Queue Length 50th (ft)	162	19	54	109	139
Queue Length 95th (ft)	#251	m43	70	150	#362
Internal Link Dist (ft)	458		157	1023	
Turn Bay Length (ft)					
Base Capacity (vph)	1218	139	1519	1738	679
Starvation Cap Reductn	0	0	358	0	0
Spillback Cap Reductn	1	0	0	395	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.70	0.31	0.47	0.70	0.83

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

dl Defacto Left Lane. Recode with 1 though lane as a left lane.



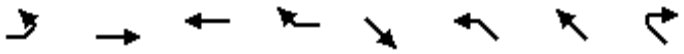
Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Group Flow (vph)	130	1217	1967	859	707	152
v/c Ratio	0.63	0.69	1.11	0.21	0.52	0.23
Control Delay	63.2	15.3	69.3	1.6	30.5	20.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	63.2	15.3	69.3	1.6	30.5	20.1
Queue Length 50th (ft)	97	275	~913	26	198	102
Queue Length 95th (ft)	157	349	m#1035	m55	234	147
Internal Link Dist (ft)	812			696	764	
Turn Bay Length (ft)						
Base Capacity (vph)	354	1771	1770	4148	1356	792
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.37	0.69	1.11	0.21	0.52	0.19

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

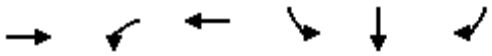
m Volume for 95th percentile queue is metered by upstream signal.



Lane Group	EBL	EBT	WBT	WBR	SET	NWL	NWT	NWR
Lane Group Flow (vph)	109	304	663	348	130	147	147	196
v/c Ratio	0.59	0.18	0.55	0.45	0.47	0.70	0.64	0.37
Control Delay	42.5	10.9	21.0	4.9	10.9	40.9	35.6	5.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	42.5	10.9	21.0	4.9	10.9	40.9	35.6	5.9
Queue Length 50th (ft)	38	33	111	0	0	48	47	0
Queue Length 95th (ft)	#110	63	#181	57	37	#136	#128	43
Internal Link Dist (ft)		323	269		463		382	
Turn Bay Length (ft)								
Base Capacity (vph)	186	1685	1214	771	472	250	270	585
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.59	0.18	0.55	0.45	0.28	0.59	0.54	0.34

Intersection Summary

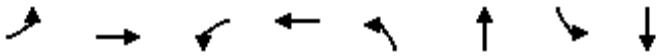
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.



Lane Group	EBT	WBL	WBT	SBL	SBT	SBR
Lane Group Flow (vph)	293	337	663	100	118	261
v/c Ratio	0.46	0.75	0.84	0.30	0.35	0.34
Control Delay	23.7	28.5	28.2	27.0	27.8	7.8
Queue Delay	0.0	0.0	0.4	0.0	0.0	0.0
Total Delay	23.7	28.5	28.6	27.0	27.8	7.8
Queue Length 50th (ft)	46	101	210	35	42	30
Queue Length 95th (ft)	92	#267	#469	87	100	81
Internal Link Dist (ft)	435		323		512	
Turn Bay Length (ft)						
Base Capacity (vph)	951	612	1074	517	525	909
Starvation Cap Reductn	0	0	113	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.31	0.55	0.69	0.19	0.22	0.29

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.



Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	22	66	478	294	43	1641	130	924
v/c Ratio	0.07	0.10	0.95	0.42	0.38	0.87	0.68	0.40
Control Delay	18.1	10.8	58.5	15.5	50.6	31.8	57.4	16.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	18.1	10.8	58.5	15.5	50.6	31.8	57.4	16.5
Queue Length 50th (ft)	8	12	256	78	24	309	72	127
Queue Length 95th (ft)	24	37	#453	146	57	#377	#150	163
Internal Link Dist (ft)		526		458		1888		582
Turn Bay Length (ft)								
Base Capacity (vph)	342	697	521	723	120	1884	200	2306
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.06	0.09	0.92	0.41	0.36	0.87	0.65	0.40

Intersection Summary

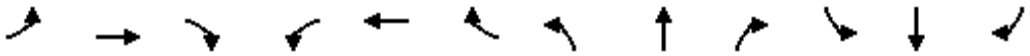
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT	SBR
Lane Group Flow (vph)	717	783	152	957	326	870	109	761	261
v/c Ratio	1.28	0.50	0.73	1.09	1.26	0.73	0.84	0.92	0.33
Control Delay	178.7	26.3	74.7	101.1	190.4	48.9	106.0	70.3	12.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	178.7	26.3	74.7	101.1	190.4	48.9	106.0	70.3	12.5
Queue Length 50th (ft)	~767	234	125	~470	~344	243	92	234	74
Queue Length 95th (ft)	#1006	308	195	#606	#533	295	#199	#311	132
Internal Link Dist (ft)		403		458		623		529	
Turn Bay Length (ft)									
Base Capacity (vph)	558	1558	262	881	258	1190	130	829	802
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	1.28	0.50	0.58	1.09	1.26	0.73	0.84	0.92	0.33

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

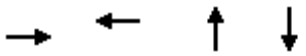
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	130	391	185	359	446	120	261	130	228	87	163	109
v/c Ratio	0.66	0.29	0.12	0.83	0.32	0.17	0.85	0.31	0.30	0.50	0.15	0.26
Control Delay	57.9	22.7	3.0	58.2	22.6	5.7	67.9	31.4	3.5	51.0	27.2	6.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	57.9	22.7	3.0	58.2	22.6	5.7	67.9	31.4	3.5	51.0	27.2	6.3
Queue Length 50th (ft)	64	69	0	93	80	0	69	63	0	43	27	0
Queue Length 95th (ft)	#172	147	21	#221	168	40	#177	114	42	106	43	36
Internal Link Dist (ft)		731			423			1745			245	
Turn Bay Length (ft)									100			
Base Capacity (vph)	223	1330	1515	432	1382	691	308	669	765	235	2050	704
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.58	0.29	0.12	0.83	0.32	0.17	0.85	0.19	0.30	0.37	0.08	0.15

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.



Lane Group	EBT	WBT	NBT	SBT
Lane Group Flow (vph)	478	413	522	77
v/c Ratio	0.58	0.41	0.94	0.17
Control Delay	12.6	7.6	47.2	12.5
Queue Delay	0.0	0.0	0.0	0.0
Total Delay	12.6	7.6	47.2	12.5
Queue Length 50th (ft)	114	64	184	13
Queue Length 95th (ft)	200	120	#369	42
Internal Link Dist (ft)	342	520	255	125
Turn Bay Length (ft)				
Base Capacity (vph)	821	1002	575	467
Starvation Cap Reductn	0	0	0	0
Spillback Cap Reductn	0	0	0	0
Storage Cap Reductn	0	0	0	0
Reduced v/c Ratio	0.58	0.41	0.91	0.16

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Lane Group	EBT	WBL	WBT	NBL	NBR
Lane Group Flow (vph)	652	261	739	174	174
v/c Ratio	0.33	0.80	0.34	0.41	0.34
Control Delay	11.8	47.4	7.8	21.1	5.0
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	11.8	47.4	7.8	21.1	5.0
Queue Length 50th (ft)	38	82	46	52	0
Queue Length 95th (ft)	88	#246	133	97	36
Internal Link Dist (ft)	423		279	871	
Turn Bay Length (ft)					
Base Capacity (vph)	1964	328	2156	746	768
Starvation Cap Reductn	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.33	0.80	0.34	0.23	0.23

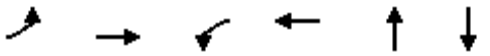
Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Lane Group	EBT	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	544	76	283	336	22	141
v/c Ratio	0.87	0.10	0.54	0.43	0.06	0.19
Control Delay	29.9	6.9	19.7	15.4	13.5	7.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	29.9	6.9	19.7	15.4	13.5	7.0
Queue Length 50th (ft)	152	10	75	80	5	11
Queue Length 95th (ft)	#322	28	166	164	19	46
Internal Link Dist (ft)	520	293		203		240
Turn Bay Length (ft)						
Base Capacity (vph)	824	972	522	777	373	752
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.66	0.08	0.54	0.43	0.06	0.19

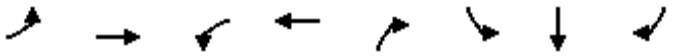
Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.



Lane Group	EBL	EBT	WBL	WBT	NBT	SBT
Lane Group Flow (vph)	54	652	250	881	435	66
v/c Ratio	0.16	0.38	0.49	0.52	0.79	0.15
Control Delay	9.7	13.9	11.5	13.9	21.7	9.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	9.7	13.9	11.5	13.9	21.7	9.5
Queue Length 50th (ft)	7	47	37	113	81	8
Queue Length 95th (ft)	29	101	105	223	174	31
Internal Link Dist (ft)		279		609	1265	205
Turn Bay Length (ft)						
Base Capacity (vph)	341	1729	585	1698	834	737
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.16	0.38	0.43	0.52	0.52	0.09

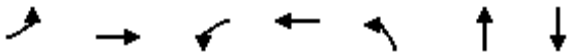
Intersection Summary



Lane Group	EBL	EBT	WBL	WBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	435	326	11	990	22	113	267	348
v/c Ratio	0.74	0.16	0.09	0.76	0.01	0.24	0.55	0.53
Control Delay	37.0	8.5	35.0	23.7	0.0	19.5	24.9	7.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	37.0	8.5	35.0	23.7	0.0	19.5	24.9	7.4
Queue Length 50th (ft)	86	24	4	166	0	37	98	17
Queue Length 95th (ft)	#186	80	21	#349	0	73	163	72
Internal Link Dist (ft)		609		486			881	
Turn Bay Length (ft)								
Base Capacity (vph)	615	2023	118	1298	1590	786	812	896
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.71	0.16	0.09	0.76	0.01	0.14	0.33	0.39

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.



Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBT
Lane Group Flow (vph)	33	859	76	1598	250	109	152
v/c Ratio	0.43	0.45	0.66	0.75	0.88	0.24	0.41
Control Delay	73.2	16.6	55.4	29.0	71.7	12.6	36.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	73.2	16.6	55.4	29.0	71.7	12.6	36.8
Queue Length 50th (ft)	25	207	61	522	183	19	91
Queue Length 95th (ft)	#72	264	m66	m363	#294	61	147
Internal Link Dist (ft)		624		906		244	377
Turn Bay Length (ft)							
Base Capacity (vph)	77	1912	116	2123	341	535	439
Starvation Cap Reductn	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.43	0.45	0.66	0.75	0.73	0.20	0.35

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

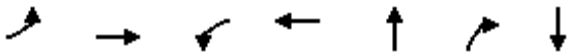
m Volume for 95th percentile queue is metered by upstream signal.

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	196	794	185	1424	65	141	109	283	685
v/c Ratio	0.93	0.64	0.75	1.08	0.51	0.21	0.20	0.87	0.61
Control Delay	105.3	28.7	67.0	79.3	67.7	39.9	6.2	74.3	30.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	105.3	28.7	67.0	79.3	67.7	39.9	6.2	74.3	30.4
Queue Length 50th (ft)	~173	286	117	~651	49	45	13	~246	188
Queue Length 95th (ft)	#345	375	193	#786	96	73	33	#421	255
Internal Link Dist (ft)		906		1436		1074			606
Turn Bay Length (ft)									
Base Capacity (vph)	211	1238	314	1318	146	884	608	327	1160
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.93	0.64	0.59	1.08	0.45	0.16	0.18	0.87	0.59

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

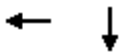
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.



Lane Group	EBL	EBT	WBL	WBT	NBT	NBR	SBT
Lane Group Flow (vph)	11	1152	348	1543	98	163	120
v/c Ratio	0.14	0.47	0.82	0.59	0.43	0.40	0.53
Control Delay	49.0	35.2	58.9	9.8	47.8	8.8	48.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	49.0	35.2	58.9	9.8	47.8	8.8	48.0
Queue Length 50th (ft)	9	273	257	298	63	0	73
Queue Length 95th (ft)	m15	324	335	464	115	55	133
Internal Link Dist (ft)		1436		2539	649		441
Turn Bay Length (ft)							
Base Capacity (vph)	77	2447	604	2623	305	487	302
Starvation Cap Reductn	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.14	0.47	0.58	0.59	0.32	0.33	0.40

Intersection Summary

m Volume for 95th percentile queue is metered by upstream signal.



Lane Group	WBT	SBT
Lane Group Flow (vph)	3706	326
v/c Ratio	1.04	0.33
Control Delay	42.5	31.3
Queue Delay	0.0	0.0
Total Delay	42.5	31.3
Queue Length 50th (ft)	~843	58
Queue Length 95th (ft)	#932	84
Internal Link Dist (ft)	692	1330
Turn Bay Length (ft)		
Base Capacity (vph)	3557	1364
Starvation Cap Reductn	0	0
Spillback Cap Reductn	0	0
Storage Cap Reductn	0	0
Reduced v/c Ratio	1.04	0.24

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Lane Group	EBT	SBT
Lane Group Flow (vph)	1087	533
v/c Ratio	0.35	0.38
Control Delay	4.0	19.1
Queue Delay	0.0	0.0
Total Delay	4.0	19.1
Queue Length 50th (ft)	42	59
Queue Length 95th (ft)	50	88
Internal Link Dist (ft)	496	288
Turn Bay Length (ft)		
Base Capacity (vph)	3146	1853
Starvation Cap Reductn	0	0
Spillback Cap Reductn	0	0
Storage Cap Reductn	0	0
Reduced v/c Ratio	0.35	0.29

Intersection Summary

Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	250	1217	130	848	207	54	43	98	87	87	228
v/c Ratio	0.63	0.71	0.76	0.51	0.67	0.45	0.15	0.28	0.34	0.26	0.48
Control Delay	40.9	19.9	65.0	17.2	18.4	49.6	27.1	4.8	39.8	28.0	7.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	40.9	19.9	65.0	17.2	18.4	49.6	27.1	4.8	39.8	28.0	7.6
Queue Length 50th (ft)	55	213	58	136	0	24	17	0	19	36	0
Queue Length 95th (ft)	#124	#460	#185	272	#93	#81	42	22	49	72	51
Internal Link Dist (ft)		445		606			613			390	
Turn Bay Length (ft)											
Base Capacity (vph)	426	1713	171	1651	309	122	688	665	255	688	720
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.59	0.71	0.76	0.51	0.67	0.44	0.06	0.15	0.34	0.13	0.32

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Lane Group	WBT	NBL	NBT	SBT
Lane Group Flow (vph)	3442	316	305	327
v/c Ratio	0.96	0.95	0.25	0.82
Control Delay	31.8	84.4	26.6	60.6
Queue Delay	43.5	1.6	0.0	0.0
Total Delay	75.3	86.0	26.6	60.6
Queue Length 50th (ft)	642	223	80	109
Queue Length 95th (ft)	#734	#397	115	#176
Internal Link Dist (ft)	485		269	645
Turn Bay Length (ft)				
Base Capacity (vph)	3572	331	1225	412
Starvation Cap Reductn	451	3	0	0
Spillback Cap Reductn	0	0	0	0
Storage Cap Reductn	0	0	0	0
Reduced v/c Ratio	1.10	0.96	0.25	0.79

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

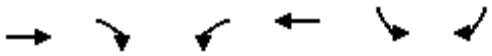
Lane Group	EBT	EBR	NBT	SBL	SBT
Lane Group Flow (vph)	848	65	804	76	739
v/c Ratio	0.38	0.09	0.53	0.46	0.33
Control Delay	14.7	1.9	19.3	41.9	14.3
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	14.7	1.9	19.3	41.9	14.3
Queue Length 50th (ft)	93	0	91	34	79
Queue Length 95th (ft)	122	13	127	75	106
Internal Link Dist (ft)	183		353		269
Turn Bay Length (ft)					
Base Capacity (vph)	2232	735	1516	165	2237
Starvation Cap Reductn	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.38	0.09	0.53	0.46	0.33

Intersection Summary

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Group Flow (vph)	1283	576	304	967	402	152
v/c Ratio	0.79	0.48	0.76	0.43	0.49	0.34
Control Delay	21.9	4.5	44.5	7.7	21.7	5.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	21.9	4.5	44.5	7.7	21.7	5.8
Queue Length 50th (ft)	212	62	61	80	66	0
Queue Length 95th (ft)	#464	101	#151	202	101	39
Internal Link Dist (ft)	216			273	735	
Turn Bay Length (ft)						
Base Capacity (vph)	1620	1496	401	2274	1498	708
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.79	0.39	0.76	0.43	0.27	0.21

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.



Lane Group	EBT	EBR	WBL	WBT	SBL	SBR
Lane Group Flow (vph)	1152	152	413	359	370	728
v/c Ratio	0.77	0.20	0.83	0.16	0.88	0.46
Control Delay	20.7	3.4	42.1	5.3	46.7	1.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	20.7	3.4	42.1	5.3	46.7	1.0
Queue Length 50th (ft)	206	0	82	27	136	0
Queue Length 95th (ft)	283	30	#144	43	#266	0
Internal Link Dist (ft)	139			450		
Turn Bay Length (ft)						
Base Capacity (vph)	1504	750	544	2244	476	1583
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.77	0.20	0.76	0.16	0.78	0.46

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

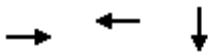
Lane Group	EBL	EBT	WBT	NBT	NBR
Lane Group Flow (vph)	967	707	1315	207	326
v/c Ratio	0.94	0.27	0.86	0.88	0.67
Control Delay	44.8	3.4	23.9	70.1	11.9
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	44.8	3.4	23.9	70.1	11.9
Queue Length 50th (ft)	236	45	245	102	3
Queue Length 95th (ft)	#350	62	#390	#217	76
Internal Link Dist (ft)		450	517	531	
Turn Bay Length (ft)					
Base Capacity (vph)	1080	2665	1523	249	497
Starvation Cap Reductn	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.90	0.27	0.86	0.83	0.66

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Lane Group	EBL	NBL	NBT	SBT
Lane Group Flow (vph)	456	120	543	881
v/c Ratio	0.85	0.62	0.24	0.51
Control Delay	49.9	64.4	9.8	23.5
Queue Delay	0.0	0.0	0.0	0.0
Total Delay	49.9	64.4	9.8	23.5
Queue Length 50th (ft)	299	97	70	233
Queue Length 95th (ft)	382	151	211	364
Internal Link Dist (ft)	72		849	507
Turn Bay Length (ft)				
Base Capacity (vph)	707	229	2255	1723
Starvation Cap Reductn	0	0	0	0
Spillback Cap Reductn	0	0	0	0
Storage Cap Reductn	0	0	0	0
Reduced v/c Ratio	0.64	0.52	0.24	0.51

Intersection Summary

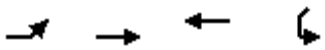


Lane Group	EBT	WBT	SBT
Lane Group Flow (vph)	174	163	402
v/c Ratio	0.20	0.21	0.30
Control Delay	3.1	10.6	14.8
Queue Delay	0.0	0.0	0.0
Total Delay	3.1	10.6	14.8
Queue Length 50th (ft)	4	35	56
Queue Length 95th (ft)	32	67	86
Internal Link Dist (ft)	272	260	893
Turn Bay Length (ft)			
Base Capacity (vph)	874	761	1324
Starvation Cap Reductn	0	0	0
Spillback Cap Reductn	0	0	0
Storage Cap Reductn	0	0	0
Reduced v/c Ratio	0.20	0.21	0.30

Intersection Summary

Lane Group	EBL	NBT	SBT
Lane Group Flow (vph)	217	544	467
v/c Ratio	0.60	0.54	0.35
Control Delay	14.5	6.9	4.1
Queue Delay	0.0	0.0	0.0
Total Delay	14.5	6.9	4.1
Queue Length 50th (ft)	17	60	39
Queue Length 95th (ft)	67	178	104
Internal Link Dist (ft)	339	648	504
Turn Bay Length (ft)			
Base Capacity (vph)	550	1000	1349
Starvation Cap Reductn	0	0	0
Spillback Cap Reductn	0	0	0
Storage Cap Reductn	0	0	0
Reduced v/c Ratio	0.39	0.54	0.35

Intersection Summary



Lane Group	EBL	EBT	WBT	SWL
Lane Group Flow (vph)	54	728	1586	435
v/c Ratio	0.52	0.36	0.92	0.75
Control Delay	56.7	9.1	29.2	28.4
Queue Delay	0.0	0.0	0.0	0.0
Total Delay	56.7	9.1	29.2	28.4
Queue Length 50th (ft)	27	88	372	150
Queue Length 95th (ft)	#76	121	#542	#292
Internal Link Dist (ft)		1988	776	623
Turn Bay Length (ft)				
Base Capacity (vph)	103	2175	1759	583
Starvation Cap Reductn	0	0	0	0
Spillback Cap Reductn	0	0	0	0
Storage Cap Reductn	0	0	0	0
Reduced v/c Ratio	0.52	0.33	0.90	0.75

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Lane Group	EBT	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	185	500	217	576	283	696
v/c Ratio	0.64	1.01	0.86	0.83	0.85	0.81
Control Delay	31.0	72.7	68.7	41.6	58.7	35.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	31.0	72.7	68.7	41.6	58.7	35.7
Queue Length 50th (ft)	55	~242	112	139	143	160
Queue Length 95th (ft)	119	#486	#257	#244	#305	#270
Internal Link Dist (ft)	623	665		411		690
Turn Bay Length (ft)						
Base Capacity (vph)	437	496	251	723	335	894
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.42	1.01	0.86	0.80	0.84	0.78

Intersection Summary

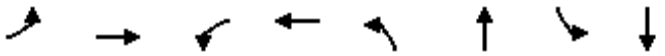
~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Lane Group	EBL	NBT	SBT
Lane Group Flow (vph)	250	630	305
v/c Ratio	0.62	0.74	0.23
Control Delay	12.5	14.0	3.2
Queue Delay	0.0	0.0	0.0
Total Delay	12.5	14.0	3.2
Queue Length 50th (ft)	10	91	19
Queue Length 95th (ft)	63	#378	59
Internal Link Dist (ft)	665	479	940
Turn Bay Length (ft)			
Base Capacity (vph)	592	852	1299
Starvation Cap Reductn	0	0	0
Spillback Cap Reductn	0	0	0
Storage Cap Reductn	0	0	0
Reduced v/c Ratio	0.42	0.74	0.23

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.



Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	54	76	217	359	76	2685	87	1837
v/c Ratio	0.46	0.16	0.98	0.45	0.54	0.98	0.74	0.66
Control Delay	66.1	19.1	108.8	26.1	67.2	39.6	74.4	20.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	66.1	19.1	108.8	26.1	67.2	39.6	74.4	20.0
Queue Length 50th (ft)	41	7	170	73	57	711	65	380
Queue Length 95th (ft)	84	31	#329	123	109	#864	m#122	420
Internal Link Dist (ft)		306		551		569		696
Turn Bay Length (ft)								
Base Capacity (vph)	132	468	221	806	162	2748	118	2768
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.41	0.16	0.98	0.45	0.47	0.98	0.74	0.66

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.

Lane Group	EBL	NBL	NBT
Lane Group Flow (vph)	120	326	989
v/c Ratio	0.17	0.46	0.70
Control Delay	8.6	11.5	13.2
Queue Delay	0.0	0.0	0.0
Total Delay	8.6	11.5	13.2
Queue Length 50th (ft)	16	50	90
Queue Length 95th (ft)	38	99	141
Internal Link Dist (ft)	260		609
Turn Bay Length (ft)			
Base Capacity (vph)	708	708	1415
Starvation Cap Reductn	0	0	0
Spillback Cap Reductn	0	0	0
Storage Cap Reductn	0	0	0
Reduced v/c Ratio	0.17	0.46	0.70

Intersection Summary

Lane Group	EBL	EBT	WBT	NBT	NBR
Lane Group Flow (vph)	446	891	641	380	22
v/c Ratio	0.59	0.71	0.47	0.61	0.06
Control Delay	25.2	12.9	13.4	28.5	0.3
Queue Delay	0.0	43.8	0.0	0.0	0.0
Total Delay	25.2	56.7	13.4	28.5	0.3
Queue Length 50th (ft)	94	213	73	74	0
Queue Length 95th (ft)	142	#335	126	104	0
Internal Link Dist (ft)		157	779	808	
Turn Bay Length (ft)					
Base Capacity (vph)	761	1247	1369	1119	583
Starvation Cap Reductn	0	425	0	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.59	1.08	0.47	0.34	0.04

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	98	1815	609	130	1261	391	500	380	196	326	326
v/c Ratio	0.92	0.88	0.70	0.55	0.86	0.50	0.93	0.91	0.44	0.96	0.68
Control Delay	138.1	46.9	16.1	76.1	46.4	11.0	87.6	82.6	21.9	98.3	57.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	138.1	46.9	16.1	76.1	46.4	11.0	87.6	82.6	21.9	98.3	57.2
Queue Length 50th (ft)	98	583	162	64	567	73	~267	362	58	~350	284
Queue Length 95th (ft)	#223	669	320	99	665	165	#384	#541	137	#551	398
Internal Link Dist (ft)		2325			484			648			1369
Turn Bay Length (ft)											
Base Capacity (vph)	106	2071	875	297	1526	804	535	432	454	340	482
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.92	0.88	0.70	0.44	0.83	0.49	0.93	0.88	0.43	0.96	0.68

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Lane Group	WBL	WBR	NBT	SBT
Lane Group Flow (vph)	902	1946	1011	957
v/c Ratio	0.42	1.11	1.02	0.97
Control Delay	14.9	86.7	86.5	74.6
Queue Delay	0.0	0.0	0.0	0.0
Total Delay	14.9	86.7	86.5	74.6
Queue Length 50th (ft)	219	~1233	~550	488
Queue Length 95th (ft)	263	#1380	#687	#629
Internal Link Dist (ft)	810		699	1779
Turn Bay Length (ft)				
Base Capacity (vph)	2151	1751	990	990
Starvation Cap Reductn	0	0	0	0
Spillback Cap Reductn	0	0	0	0
Storage Cap Reductn	0	0	0	0
Reduced v/c Ratio	0.42	1.11	1.02	0.97

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT	SBR
Lane Group Flow (vph)	413	467	348	87	587	761	457	684	435	772	435
v/c Ratio	1.17	0.74	0.37	0.62	0.75	1.02	1.11	0.87	0.99	0.91	0.61
Control Delay	152.4	51.7	13.1	98.9	44.4	76.7	128.1	67.4	95.5	71.2	17.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	152.4	51.7	13.1	98.9	44.4	76.7	128.1	67.4	95.5	71.2	17.0
Queue Length 50th (ft)	~479	402	128	65	132	~682	~508	330	~456	390	122
Queue Length 95th (ft)	#694	539	192	#156	274	#1012	#729	406	#683	#504	177
Internal Link Dist (ft)		614			571			545		730	
Turn Bay Length (ft)											
Base Capacity (vph)	354	634	931	141	780	748	413	836	440	847	719
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	1.17	0.74	0.37	0.62	0.75	1.02	1.11	0.82	0.99	0.91	0.61

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT	SBR
Lane Group Flow (vph)	174	195	185	87	185	109	261	772	174	793	185
v/c Ratio	0.54	0.58	0.32	0.27	0.55	0.29	0.78	0.58	0.82	0.55	0.25
Control Delay	52.0	53.4	5.0	44.9	52.6	8.6	73.6	37.5	98.1	24.0	3.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	52.0	53.4	5.0	44.9	52.6	8.6	73.6	37.5	98.1	24.0	3.1
Queue Length 50th (ft)	146	166	0	67	149	0	109	247	156	86	0
Queue Length 95th (ft)	196	218	47	102	198	45	#189	#489	m#244	#447	m30
Internal Link Dist (ft)		644			610			685		811	
Turn Bay Length (ft)											
Base Capacity (vph)	464	483	581	475	500	495	336	1339	219	1437	728
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.38	0.40	0.32	0.18	0.37	0.22	0.78	0.58	0.79	0.55	0.25

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.

Lane Group	EBT	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	119	185	98	1358	65	1076
v/c Ratio	0.49	0.86	0.26	0.54	0.23	0.43
Control Delay	49.5	97.7	6.3	11.4	6.7	10.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	49.5	97.7	6.3	11.4	6.7	10.6
Queue Length 50th (ft)	83	148	19	294	12	210
Queue Length 95th (ft)	140	180	44	453	32	328
Internal Link Dist (ft)	218	191		926		474
Turn Bay Length (ft)						
Base Capacity (vph)	344	306	413	2503	349	2501
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.35	0.60	0.24	0.54	0.19	0.43

Intersection Summary

Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	413	2261	554	1685	424	250	696	446	380	576	315
v/c Ratio	0.87	1.10	1.15	0.80	0.52	1.24	0.90	0.73	0.93	0.73	0.51
Control Delay	79.9	94.0	144.3	41.1	12.3	192.8	71.2	37.8	92.1	58.6	26.6
Queue Delay	0.0	0.0	0.0	0.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	79.9	94.0	144.3	42.0	12.3	192.8	71.2	37.8	92.1	58.6	26.6
Queue Length 50th (ft)	198	~886	~317	513	111	~291	335	278	~189	267	156
Queue Length 95th (ft)	#276	#977	#436	576	163	#472	#431	405	#299	337	245
Internal Link Dist (ft)		286		607			727			926	
Turn Bay Length (ft)											
Base Capacity (vph)	497	2050	480	2104	810	202	805	608	410	790	622
Starvation Cap Reductn	0	0	0	183	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.83	1.10	1.15	0.88	0.52	1.24	0.86	0.73	0.93	0.73	0.51

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Lane Group	WBL	NBT	SBL	SBT
Lane Group Flow (vph)	456	978	435	924
v/c Ratio	0.92	0.89	0.90	0.40
Control Delay	44.1	34.6	49.8	6.5
Queue Delay	0.0	0.0	0.0	0.0
Total Delay	44.1	34.6	49.8	6.5
Queue Length 50th (ft)	123	207	178	86
Queue Length 95th (ft)	#292	#327	#336	119
Internal Link Dist (ft)	633	267		727
Turn Bay Length (ft)				
Base Capacity (vph)	512	1103	499	2301
Starvation Cap Reductn	0	0	0	0
Spillback Cap Reductn	0	0	0	0
Storage Cap Reductn	0	0	0	0
Reduced v/c Ratio	0.89	0.89	0.87	0.40

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Lane Group	EBT	WBT	WBR	SBL	SBR
Lane Group Flow (vph)	1359	1054	935	391	326
v/c Ratio	0.70	0.54	0.48	0.59	0.57
Control Delay	14.1	11.3	1.9	29.6	8.7
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	14.1	11.3	1.9	29.6	8.7
Queue Length 50th (ft)	124	84	0	58	0
Queue Length 95th (ft)	#484	304	36	#188	76
Internal Link Dist (ft)	621	812		135	
Turn Bay Length (ft)					
Base Capacity (vph)	2372	2372	2159	679	574
Starvation Cap Reductn	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.57	0.44	0.43	0.58	0.57

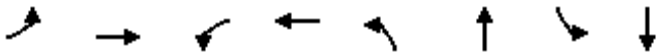
Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Lane Group	WBL	WBR	NBT	SBL	SBT
Lane Group Flow (vph)	87	250	1326	141	1054
v/c Ratio	0.58	0.69	0.37	0.73	0.24
Control Delay	80.6	17.2	15.1	87.6	2.7
Queue Delay	0.0	0.1	0.0	0.0	0.0
Total Delay	80.6	17.3	15.1	87.6	2.7
Queue Length 50th (ft)	83	0	334	139	37
Queue Length 95th (ft)	140	87	480	m167	m150
Internal Link Dist (ft)	835		918		571
Turn Bay Length (ft)					
Base Capacity (vph)	448	572	3581	325	4351
Starvation Cap Reductn	0	0	0	0	0
Spillback Cap Reductn	0	28	244	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.19	0.46	0.40	0.43	0.24

Intersection Summary

m Volume for 95th percentile queue is metered by upstream signal.



Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	98	315	163	228	272	1358	163	1076
v/c Ratio	0.28	0.87	0.81	0.79	0.89	0.61	0.34	0.76
Control Delay	52.0	73.6	93.0	51.0	91.1	19.3	56.4	52.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1
Total Delay	52.0	73.6	93.0	51.0	91.1	19.3	56.4	52.2
Queue Length 50th (ft)	81	264	155	106	276	451	76	442
Queue Length 95th (ft)	134	#378	#269	#232	#414	64	102	626
Internal Link Dist (ft)		610		1517		668		918
Turn Bay Length (ft)								
Base Capacity (vph)	401	411	216	299	330	2393	479	1425
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	24
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.24	0.77	0.75	0.76	0.82	0.57	0.34	0.77

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Lane Group	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	174	163	185	54	1467	130	1294
v/c Ratio	0.70	0.79	0.60	0.56	0.55	0.43	0.64
Control Delay	66.7	89.3	28.3	97.2	24.5	43.9	11.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.1
Total Delay	66.7	89.3	28.3	97.2	24.5	43.9	11.2
Queue Length 50th (ft)	144	157	50	55	251	53	188
Queue Length 95th (ft)	199	234	131	#92	476	m79	482
Internal Link Dist (ft)	465		811		724		668
Turn Bay Length (ft)							
Base Capacity (vph)	429	260	351	107	2726	318	2032
Starvation Cap Reductn	0	0	0	0	0	0	111
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.41	0.63	0.53	0.50	0.54	0.41	0.67

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.

Lane Group	EBT	EBR	WBT	WBR	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	76	76	153	239	152	1261	54	1391
v/c Ratio	0.74	0.29	0.78	0.15	0.42	0.34	0.51	0.48
Control Delay	111.7	26.8	89.5	0.2	49.0	7.1	76.5	28.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	111.7	26.8	89.5	0.2	49.0	7.1	76.5	28.8
Queue Length 50th (ft)	75	12	149	0	132	104	52	332
Queue Length 95th (ft)	127	63	214	0	m166	m235	m87	468
Internal Link Dist (ft)	286		160			995		724
Turn Bay Length (ft)								
Base Capacity (vph)	202	437	391	1583	361	3716	160	2878
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.38	0.17	0.39	0.15	0.42	0.34	0.34	0.48

Intersection Summary

m Volume for 95th percentile queue is metered by upstream signal.

Lane Group	EBL	EBT	EBR2	WBT	WBR	NBR2	SBL2	SBL	SBT	SBR	NWL	NWR
Lane Group Flow (vph)	326	2337	195	2207	739	163	243	363	372	239	217	413
v/c Ratio	0.83	0.89	0.24	0.98	0.77	0.20	0.66	1.03	1.03	0.55	0.97	0.95
Control Delay	82.8	33.3	6.3	55.3	18.5	0.6	50.5	97.6	97.5	14.1	116.6	81.5
Queue Delay	0.0	28.6	0.0	41.5	4.5	0.0	83.2	54.2	0.0	0.0	0.0	43.4
Total Delay	82.8	61.8	6.3	96.9	23.0	0.6	133.7	151.8	97.5	14.1	116.6	124.9
Queue Length 50th (ft)	163	744	32	829	461	0	150	~426	~436	30	215	181
Queue Length 95th (ft)	#236	825	80	#913	555	0	215	#619	#627	104	#385	#298
Internal Link Dist (ft)		607		437					995		195	
Turn Bay Length (ft)												
Base Capacity (vph)	398	2628	819	2244	957	800	369	354	362	438	224	435
Starvation Cap Reductn	0	420	0	800	152	0	0	0	0	0	0	0
Spillback Cap Reductn	0	244	0	0	0	0	293	281	0	0	0	69
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.82	1.06	0.24	1.53	0.92	0.20	3.20	4.97	1.03	0.55	0.97	1.13

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Lane Group	EBT	WBT	NBT	SBT
Lane Group Flow (vph)	565	489	304	316
v/c Ratio	0.77	0.87	0.47	0.50
Control Delay	16.3	30.0	14.7	15.9
Queue Delay	0.0	0.0	0.0	0.0
Total Delay	16.3	30.0	14.7	15.9
Queue Length 50th (ft)	97	128	56	63
Queue Length 95th (ft)	199	242	148	163
Internal Link Dist (ft)	633	311	949	790
Turn Bay Length (ft)				
Base Capacity (vph)	998	821	642	631
Starvation Cap Reductn	0	1	0	0
Spillback Cap Reductn	0	0	0	0
Storage Cap Reductn	0	0	0	0
Reduced v/c Ratio	0.57	0.60	0.47	0.50

Intersection Summary

Lane Group	NBL	NBT	SBT	SEL	SER
Lane Group Flow (vph)	315	1435	956	54	522
v/c Ratio	0.80	0.34	0.33	0.30	0.83
Control Delay	59.4	3.3	9.4	50.7	15.8
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	59.4	3.3	9.4	50.7	15.8
Queue Length 50th (ft)	232	61	140	40	0
Queue Length 95th (ft)	311	161	m222	71	103
Internal Link Dist (ft)		763	913	452	
Turn Bay Length (ft)					
Base Capacity (vph)	531	4218	2901	575	866
Starvation Cap Reductn	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.59	0.34	0.33	0.09	0.60

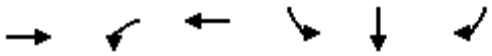
Intersection Summary

m Volume for 95th percentile queue is metered by upstream signal.

Lane Group	EBL	EBR	WBL	WBT	SBT
Lane Group Flow (vph)	109	152	326	500	174
v/c Ratio	0.31	0.40	0.35	0.66	0.42
Control Delay	19.7	8.0	2.9	16.3	12.3
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	19.7	8.0	2.9	16.3	12.3
Queue Length 50th (ft)	25	0	0	85	18
Queue Length 95th (ft)	64	39	40	#253	63
Internal Link Dist (ft)				439	658
Turn Bay Length (ft)					
Base Capacity (vph)	761	732	1057	916	796
Starvation Cap Reductn	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.14	0.21	0.31	0.55	0.22

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.



Lane Group	EBT	WBL	WBT	SBL	SBT	SBR
Lane Group Flow (vph)	2239	315	2598	661	491	348
v/c Ratio	1.07	1.11	0.68	1.15	0.82	0.61
Control Delay	80.4	125.7	1.2	130.5	57.6	40.0
Queue Delay	11.0	0.0	12.2	0.1	0.3	0.1
Total Delay	91.4	125.7	13.4	130.6	57.9	40.1
Queue Length 50th (ft)	~875	~344	35	~798	462	244
Queue Length 95th (ft)	m#961	m#310	m27	#1054	#632	356
Internal Link Dist (ft)	437		346		820	
Turn Bay Length (ft)						
Base Capacity (vph)	2083	283	3844	574	597	571
Starvation Cap Reductn	250	0	969	0	0	0
Spillback Cap Reductn	0	0	1274	6	7	9
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	1.22	1.11	1.01	1.16	0.83	0.62

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

Lane Group	EBT	WBL	WBT	NBL	NBR	SBL	SBT
Lane Group Flow (vph)	1109	196	424	196	326	413	413
v/c Ratio	0.89	0.91	0.25	0.82	0.42	0.96	0.92
Control Delay	36.1	61.5	14.0	64.5	4.2	70.2	60.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	36.1	61.5	14.0	64.5	4.2	70.2	60.6
Queue Length 50th (ft)	296	62	71	109	0	232	229
Queue Length 95th (ft)	#423	#193	101	#220	53	#414	#404
Internal Link Dist (ft)	152		265				360
Turn Bay Length (ft)							
Base Capacity (vph)	1248	216	1723	247	778	430	451
Starvation Cap Reductn	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.89	0.91	0.25	0.79	0.42	0.96	0.92

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Lane Group	EBL	NBL	NBT	SBT
Lane Group Flow (vph)	739	533	957	576
v/c Ratio	1.00	0.99	0.36	0.64
Control Delay	64.5	79.0	20.6	46.5
Queue Delay	0.0	0.0	0.0	0.0
Total Delay	64.5	79.0	20.6	46.5
Queue Length 50th (ft)	512	424	146	143
Queue Length 95th (ft)	#787	#654	276	185
Internal Link Dist (ft)	585		913	1745
Turn Bay Length (ft)				
Base Capacity (vph)	739	539	2669	896
Starvation Cap Reductn	0	0	0	0
Spillback Cap Reductn	0	0	0	0
Storage Cap Reductn	0	0	0	0
Reduced v/c Ratio	1.00	0.99	0.36	0.64

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

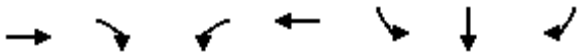
Lane Group	EBL	EBT	WBT	WBR	NBT
Lane Group Flow (vph)	141	2772	2772	750	804
v/c Ratio	0.59	0.82	1.08	0.87	0.87
Control Delay	46.5	10.9	77.8	35.8	62.7
Queue Delay	0.0	4.2	0.0	0.0	0.0
Total Delay	46.5	15.1	77.8	35.8	62.7
Queue Length 50th (ft)	121	314	~1141	521	384
Queue Length 95th (ft)	m113	m290	#1218	#815	467
Internal Link Dist (ft)		346	988		236
Turn Bay Length (ft)					
Base Capacity (vph)	238	3397	2577	867	987
Starvation Cap Reductn	0	550	0	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.59	0.97	1.08	0.87	0.81

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

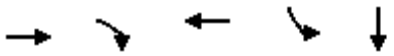


Lane Group	EBT	EBR	WBL	WBT	SBL	SBT	SBR
Lane Group Flow (vph)	761	293	457	500	467	630	1174
v/c Ratio	0.94	0.57	1.04	0.36	0.54	0.34	1.23
Control Delay	65.0	18.3	104.0	26.8	20.6	16.1	138.1
Queue Delay	17.7	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	82.8	18.4	104.0	26.8	20.6	16.1	138.1
Queue Length 50th (ft)	306	61	~196	142	246	144	~1053
Queue Length 95th (ft)	#425	154	#303	187	353	186	#1317
Internal Link Dist (ft)	321			774		2836	
Turn Bay Length (ft)							
Base Capacity (vph)	813	515	440	1386	872	1836	951
Starvation Cap Reductn	72	3	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	1.03	0.57	1.04	0.36	0.54	0.34	1.23

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.



Lane Group	EBT	EBR	WBT	SBL	SBT
Lane Group Flow (vph)	478	272	305	446	1457
v/c Ratio	0.60	0.38	0.33	0.57	0.63
Control Delay	18.0	11.2	13.5	16.8	12.5
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	18.0	11.2	13.5	16.8	12.5
Queue Length 50th (ft)	139	51	40	124	123
Queue Length 95th (ft)	226	103	67	207	166
Internal Link Dist (ft)	451		806		986
Turn Bay Length (ft)					
Base Capacity (vph)	802	719	937	789	2300
Starvation Cap Reductn	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.60	0.38	0.33	0.57	0.63

Intersection Summary

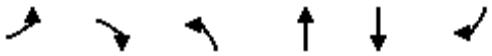
Lane Group	EBT	WBL	WBT	SBT	SBR
Lane Group Flow (vph)	1609	54	761	1989	717
v/c Ratio	1.35	0.60	0.52	1.08dl	1.05
Control Delay	190.2	69.9	21.1	38.1	70.6
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	190.2	69.9	21.1	38.1	70.6
Queue Length 50th (ft)	~653	31	164	413	~483
Queue Length 95th (ft)	#790	#86	218	#544	#738
Internal Link Dist (ft)	458		38	1023	
Turn Bay Length (ft)					
Base Capacity (vph)	1192	90	1474	2067	684
Starvation Cap Reductn	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	1.35	0.60	0.52	0.96	1.05

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

dl Defacto Left Lane. Recode with 1 though lane as a left lane.



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Group Flow (vph)	370	1337	1789	1337	1283	141
v/c Ratio	1.18	0.68	1.04	0.35	1.09	0.22
Control Delay	155.8	12.9	66.0	5.3	102.2	22.4
Queue Delay	0.0	0.0	23.4	0.0	0.0	0.0
Total Delay	155.8	12.9	89.4	5.3	102.2	22.4
Queue Length 50th (ft)	~374	324	~839	115	~446	68
Queue Length 95th (ft)	#572	403	#976	134	#543	114
Internal Link Dist (ft)	812			667	763	
Turn Bay Length (ft)						
Base Capacity (vph)	313	1972	1716	3872	1173	643
Starvation Cap Reductn	0	0	125	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	1.18	0.68	1.12	0.35	1.09	0.22

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

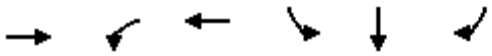
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Lane Group	EBL	EBT	WBT	WBR	SET	NWL	NWT
Lane Group Flow (vph)	272	554	978	696	173	245	517
v/c Ratio	1.27	0.28	0.72	0.67	0.50	1.20	0.67
Control Delay	187.5	12.0	28.5	5.8	14.8	163.1	11.5
Queue Delay	0.0	0.5	2.5	0.3	0.0	0.0	0.0
Total Delay	187.5	12.5	31.0	6.1	14.8	163.1	11.5
Queue Length 50th (ft)	~167	62	205	0	21	~158	14
Queue Length 95th (ft)	#399	146	382	88	74	#396	72
Internal Link Dist (ft)		269	321		401		767
Turn Bay Length (ft)							
Base Capacity (vph)	214	1990	1359	1036	588	205	772
Starvation Cap Reductn	0	962	254	57	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	1.27	0.54	0.89	0.71	0.29	1.20	0.67

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

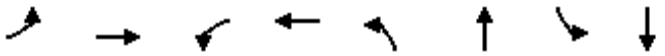
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.



Lane Group	EBT	WBL	WBT	SBL	SBT	SBR
Lane Group Flow (vph)	522	652	728	201	222	402
v/c Ratio	0.72	0.85	0.90	0.64	0.70	0.51
Control Delay	31.4	30.1	34.6	39.1	42.1	12.5
Queue Delay	0.0	6.9	16.0	0.0	0.0	0.0
Total Delay	31.4	36.9	50.5	39.1	42.1	12.5
Queue Length 50th (ft)	113	251	290	92	104	86
Queue Length 95th (ft)	165	#441	#502	#186	#211	164
Internal Link Dist (ft)	435		269		2903	
Turn Bay Length (ft)						
Base Capacity (vph)	832	890	937	327	331	782
Starvation Cap Reductn	0	192	208	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.63	0.93	1.00	0.61	0.67	0.51

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.



Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	43	196	413	282	33	2077	239	565
v/c Ratio	0.14	0.30	1.13	0.38	0.40	1.08	0.98	0.21
Control Delay	27.8	27.8	125.0	7.2	69.8	81.0	103.2	16.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	27.8	27.8	125.0	7.2	69.8	81.0	103.2	16.0
Queue Length 50th (ft)	22	103	~372	22	25	~652	187	87
Queue Length 95th (ft)	51	164	#570	85	60	#749	#348	112
Internal Link Dist (ft)		480		451		1866		540
Turn Bay Length (ft)								
Base Capacity (vph)	298	656	364	734	88	1923	247	2647
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.14	0.30	1.13	0.38	0.38	1.08	0.97	0.21

Intersection Summary

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95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT	SBR
Lane Group Flow (vph)	674	1489	272	1207	500	1402	185	728	326
v/c Ratio	1.47	1.09	1.02	1.21	1.46	0.97	1.75	0.93	0.47
Control Delay	259.9	92.8	122.2	147.9	264.6	69.8	409.1	82.2	23.8
Queue Delay	0.0	0.0	0.0	0.4	0.0	0.0	0.0	0.0	0.0
Total Delay	259.9	92.8	122.2	148.3	264.6	69.8	409.1	82.2	23.8
Queue Length 50th (ft)	~900	~849	~281	~753	~667	490	~268	261	161
Queue Length 95th (ft)	#1146	#991	#470	#894	#894	#597	#432	#342	248
Internal Link Dist (ft)		403		458		623		529	
Turn Bay Length (ft)									
Base Capacity (vph)	460	1372	266	999	342	1438	106	779	697
Starvation Cap Reductn	0	0	0	79	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	1.47	1.09	1.02	1.31	1.46	0.97	1.75	0.93	0.47

Intersection Summary

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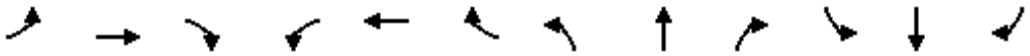

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	174	935	359	239	402	98	304	261	685	76	120	76
v/c Ratio	0.79	0.71	0.25	0.61	0.31	0.21	0.98	0.55	1.13	0.48	0.10	0.17
Control Delay	68.3	30.3	2.4	48.5	24.1	5.4	90.4	34.5	102.2	53.4	26.0	2.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	68.3	30.3	2.4	48.5	24.1	5.4	90.4	34.5	102.2	53.4	26.0	2.8
Queue Length 50th (ft)	95	226	0	65	82	0	88	135	~356	41	19	0
Queue Length 95th (ft)	#245	384	28	#130	153	31	#210	214	#576	97	34	15
Internal Link Dist (ft)		865			423			1745			245	
Turn Bay Length (ft)									100			
Base Capacity (vph)	223	1317	1443	391	1282	460	311	691	606	198	1999	669
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.78	0.71	0.25	0.61	0.31	0.21	0.98	0.38	1.13	0.38	0.06	0.11

Intersection Summary

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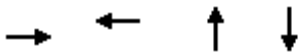
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.



Lane Group	EBT	WBT	NBT	SBT
Lane Group Flow (vph)	1032	370	327	87
v/c Ratio	1.24	0.31	1.03	0.29
Control Delay	139.3	5.1	100.8	24.5
Queue Delay	0.0	0.0	0.0	0.0
Total Delay	139.3	5.1	100.8	24.5
Queue Length 50th (ft)	~912	64	~234	28
Queue Length 95th (ft)	#1166	102	#414	74
Internal Link Dist (ft)	342	520	255	125
Turn Bay Length (ft)				
Base Capacity (vph)	829	1180	316	303
Starvation Cap Reductn	0	0	0	0
Spillback Cap Reductn	0	0	0	0
Storage Cap Reductn	0	0	0	0
Reduced v/c Ratio	1.24	0.31	1.03	0.29

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Lane Group	EBT	WBL	WBT	NBL	NBR
Lane Group Flow (vph)	1696	261	543	196	304
v/c Ratio	0.79	0.79	0.23	0.50	0.52
Control Delay	21.0	48.6	6.5	28.2	6.2
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	21.0	48.6	6.5	28.2	6.2
Queue Length 50th (ft)	190	101	36	75	0
Queue Length 95th (ft)	#371	#254	92	131	53
Internal Link Dist (ft)	423		279	871	
Turn Bay Length (ft)					
Base Capacity (vph)	2135	351	2313	627	757
Starvation Cap Reductn	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.79	0.74	0.23	0.31	0.40

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

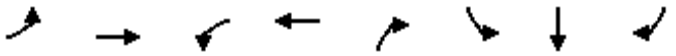
Lane Group	EBT	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	467	141	141	359	22	261
v/c Ratio	0.81	0.20	0.31	0.45	0.06	0.32
Control Delay	23.4	6.5	15.4	14.9	13.2	6.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	23.4	6.5	15.4	14.9	13.2	6.0
Queue Length 50th (ft)	105	15	26	68	4	13
Queue Length 95th (ft)	197	39	87	190	20	68
Internal Link Dist (ft)	520	293		203		240
Turn Bay Length (ft)						
Base Capacity (vph)	950	1129	460	797	375	813
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.49	0.12	0.31	0.45	0.06	0.32

Intersection Summary

Lane Group	EBL	EBT	WBL	WBT	NBT	SBT
Lane Group Flow (vph)	76	1413	337	674	391	77
v/c Ratio	0.19	0.82	0.78	0.38	0.79	0.20
Control Delay	9.1	24.9	26.4	12.4	25.5	13.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	9.1	24.9	26.4	12.4	25.5	13.7
Queue Length 50th (ft)	11	168	67	86	91	16
Queue Length 95th (ft)	33	#311	#217	155	183	43
Internal Link Dist (ft)		279		609	1265	205
Turn Bay Length (ft)						
Base Capacity (vph)	410	1718	494	1774	695	585
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.19	0.82	0.68	0.38	0.56	0.13

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.



Lane Group	EBL	EBT	WBL	WBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	641	793	33	804	33	127	286	380
v/c Ratio	0.92	0.42	0.23	0.68	0.02	0.27	0.58	0.54
Control Delay	49.9	12.3	36.4	23.4	0.0	19.7	25.5	6.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	49.9	12.3	36.4	23.4	0.0	19.7	25.5	6.1
Queue Length 50th (ft)	134	75	13	138	0	43	107	8
Queue Length 95th (ft)	#289	214	43	253	0	82	176	61
Internal Link Dist (ft)		609		486			881	
Turn Bay Length (ft)								
Base Capacity (vph)	695	1909	148	1176	1611	772	797	909
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.92	0.42	0.22	0.68	0.02	0.16	0.36	0.42

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
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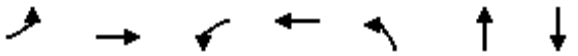

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBT
Lane Group Flow (vph)	65	1663	76	1174	130	272	163
v/c Ratio	0.58	0.74	0.63	0.52	0.82	0.83	1.12
Control Delay	85.0	20.5	74.9	11.8	91.7	68.1	160.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	85.0	20.5	74.9	11.8	91.7	68.1	160.1
Queue Length 50th (ft)	60	529	74	186	119	214	~172
Queue Length 95th (ft)	#152	723	m85	m79	188	300	#280
Internal Link Dist (ft)		624		906		244	377
Turn Bay Length (ft)							
Base Capacity (vph)	112	2247	129	2267	211	422	193
Starvation Cap Reductn	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.58	0.74	0.59	0.52	0.62	0.64	0.84

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	467	1674	228	1152	98	467	261	337	413
v/c Ratio	1.20	1.16	1.17	1.11	0.65	0.71	0.51	1.06	0.42
Control Delay	157.6	116.2	171.2	102.9	83.9	61.5	18.8	122.4	31.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	157.6	116.2	171.2	102.9	83.9	61.5	18.8	122.4	31.2
Queue Length 50th (ft)	~527	~986	~256	~646	91	214	85	~385	116
Queue Length 95th (ft)	m#764	#1110	#439	#638	152	276	143	#583	173
Internal Link Dist (ft)		906		1436		1074			606
Turn Bay Length (ft)									
Base Capacity (vph)	390	1441	195	1041	189	732	513	318	981
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	1.20	1.16	1.17	1.11	0.52	0.64	0.51	1.06	0.42

Intersection Summary

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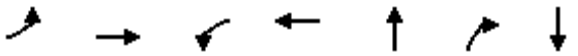
Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.



Lane Group	EBL	EBT	WBL	WBT	NBT	NBR	SBT
Lane Group Flow (vph)	11	2185	174	1424	131	239	98
v/c Ratio	0.17	0.69	0.75	0.53	0.68	0.54	0.54
Control Delay	59.1	23.9	79.9	9.1	73.6	10.5	60.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	59.1	23.9	79.9	9.1	73.6	10.5	60.3
Queue Length 50th (ft)	10	519	161	260	113	0	75
Queue Length 95th (ft)	m12	m330	233	397	186	75	136
Internal Link Dist (ft)		1436		2539	649		441
Turn Bay Length (ft)							
Base Capacity (vph)	64	3178	339	2689	244	496	228
Starvation Cap Reductn	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.17	0.69	0.51	0.53	0.54	0.48	0.43

Intersection Summary

m Volume for 95th percentile queue is metered by upstream signal.

Lane Group	WBT	SBT
Lane Group Flow (vph)	2630	587
v/c Ratio	0.74	0.59
Control Delay	9.9	30.3
Queue Delay	0.0	0.0
Total Delay	9.9	30.3
Queue Length 50th (ft)	287	129
Queue Length 95th (ft)	342	m125
Internal Link Dist (ft)	692	1330
Turn Bay Length (ft)		
Base Capacity (vph)	3544	2888
Starvation Cap Reductn	0	0
Spillback Cap Reductn	0	0
Storage Cap Reductn	0	0
Reduced v/c Ratio	0.74	0.20

Intersection Summary

m Volume for 95th percentile queue is metered by upstream signal.

Lane Group	EBT	SBT
Lane Group Flow (vph)	1924	804
v/c Ratio	0.59	0.63
Control Delay	4.0	24.1
Queue Delay	0.1	0.0
Total Delay	4.0	24.1
Queue Length 50th (ft)	76	92
Queue Length 95th (ft)	m109	116
Internal Link Dist (ft)	496	288
Turn Bay Length (ft)		
Base Capacity (vph)	3288	1495
Starvation Cap Reductn	217	0
Spillback Cap Reductn	0	0
Storage Cap Reductn	0	0
Reduced v/c Ratio	0.63	0.54

Intersection Summary

m Volume for 95th percentile queue is metered by upstream signal.

Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	261	1510	163	1543	130	130	54	141	87	87	228
v/c Ratio	0.94	0.89	0.89	0.86	0.57	0.92	0.18	0.38	0.39	0.32	0.63
Control Delay	84.2	29.3	84.7	26.1	18.3	99.4	32.0	8.5	46.0	35.5	19.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	84.2	29.3	84.7	26.1	18.3	99.4	32.0	8.5	46.0	35.5	19.5
Queue Length 50th (ft)	72	351	87	344	0	70	26	0	23	43	34
Queue Length 95th (ft)	#177	#678	#241	#672	55	#210	57	45	53	83	101
Internal Link Dist (ft)		445		509			613			390	
Turn Bay Length (ft)											
Base Capacity (vph)	277	1701	183	1799	232	142	577	588	237	556	578
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.94	0.89	0.89	0.86	0.56	0.92	0.09	0.24	0.37	0.16	0.39

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Lane Group	WBT	NBL	NBT	SBT
Lane Group Flow (vph)	2338	347	600	494
v/c Ratio	0.79	0.85	0.39	0.84
Control Delay	27.5	60.4	21.0	54.2
Queue Delay	0.3	10.7	1.1	0.0
Total Delay	27.8	71.1	22.1	54.2
Queue Length 50th (ft)	411	231	138	163
Queue Length 95th (ft)	476	#353	176	225
Internal Link Dist (ft)	485		269	645
Turn Bay Length (ft)				
Base Capacity (vph)	2965	460	1708	635
Starvation Cap Reductn	156	89	829	0
Spillback Cap Reductn	0	0	0	0
Storage Cap Reductn	0	0	0	0
Reduced v/c Ratio	0.83	0.94	0.68	0.78

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
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Lane Group	EBT	EBR	NBT	SBL	SBT
Lane Group Flow (vph)	1424	98	1327	141	348
v/c Ratio	0.70	0.15	0.93	0.45	0.14
Control Delay	24.9	4.4	41.8	38.3	12.2
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	24.9	4.4	41.8	38.3	12.2
Queue Length 50th (ft)	242	0	246	72	36
Queue Length 95th (ft)	295	29	#340	131	53
Internal Link Dist (ft)	183		353		269
Turn Bay Length (ft)					
Base Capacity (vph)	2025	671	1422	314	2548
Starvation Cap Reductn	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.70	0.15	0.93	0.45	0.14

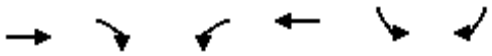
Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Group Flow (vph)	1554	826	543	1620	500	283
v/c Ratio	0.95	0.76	0.93	0.67	0.62	0.52
Control Delay	39.4	12.2	63.8	11.4	35.2	7.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	39.4	12.2	63.8	11.4	35.2	7.1
Queue Length 50th (ft)	443	216	162	257	135	0
Queue Length 95th (ft)	#698	339	#293	424	185	65
Internal Link Dist (ft)	216			273	735	
Turn Bay Length (ft)						
Base Capacity (vph)	1630	1221	582	2403	1084	641
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.95	0.68	0.93	0.67	0.46	0.44

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.



Lane Group	EBT	EBR	WBL	WBT	SBL	SBR
Lane Group Flow (vph)	1174	359	391	380	424	1283
v/c Ratio	0.92	0.45	0.62	0.18	0.82	0.81
Control Delay	37.5	4.5	29.9	11.1	37.0	4.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	37.5	4.5	29.9	11.1	37.0	4.8
Queue Length 50th (ft)	272	0	89	60	181	0
Queue Length 95th (ft)	#437	55	m#133	m87	243	0
Internal Link Dist (ft)	222			450		
Turn Bay Length (ft)						
Base Capacity (vph)	1280	793	632	2121	755	1583
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.92	0.45	0.62	0.18	0.56	0.81

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.

Lane Group	EBL	EBT	WBT	NBT	NBR
Lane Group Flow (vph)	957	783	1184	229	489
v/c Ratio	1.00	0.30	0.79	0.88	1.06
Control Delay	60.4	2.4	19.1	65.8	74.7
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	60.4	2.4	19.1	65.8	74.7
Queue Length 50th (ft)	221	32	185	106	~134
Queue Length 95th (ft)	m#308	m42	267	#227	#315
Internal Link Dist (ft)		450	517	531	
Turn Bay Length (ft)					
Base Capacity (vph)	961	2595	1492	261	463
Starvation Cap Reductn	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	1.00	0.30	0.79	0.88	1.06

Intersection Summary

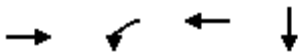
~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

Lane Group	EBL	NBL	NBT	SBT
Lane Group Flow (vph)	467	163	946	1163
v/c Ratio	0.90	0.75	0.42	0.70
Control Delay	60.9	75.8	16.1	30.1
Queue Delay	0.0	0.0	0.0	0.9
Total Delay	60.9	75.8	16.1	31.0
Queue Length 50th (ft)	347	122	90	402
Queue Length 95th (ft)	471	205	320	528
Internal Link Dist (ft)	112		811	545
Turn Bay Length (ft)				
Base Capacity (vph)	592	251	2261	1672
Starvation Cap Reductn	0	0	0	245
Spillback Cap Reductn	0	0	0	0
Storage Cap Reductn	0	0	0	0
Reduced v/c Ratio	0.79	0.65	0.42	0.81

Intersection Summary



Lane Group	EBT	WBL	WBT	SBT
Lane Group Flow (vph)	370	380	370	1021
v/c Ratio	0.46	0.92	0.41	0.74
Control Delay	11.5	46.3	11.9	22.4
Queue Delay	0.0	0.0	0.0	0.0
Total Delay	11.5	46.3	11.9	22.4
Queue Length 50th (ft)	79	128	87	202
Queue Length 95th (ft)	137	#296	142	#278
Internal Link Dist (ft)	276		303	817
Turn Bay Length (ft)				
Base Capacity (vph)	965	497	1082	1378
Starvation Cap Reductn	0	0	0	0
Spillback Cap Reductn	0	0	0	0
Storage Cap Reductn	0	0	0	0
Reduced v/c Ratio	0.38	0.76	0.34	0.74

Intersection Summary

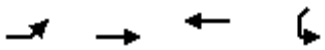
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Lane Group	EBL	NBT	SBT
Lane Group Flow (vph)	347	598	794
v/c Ratio	0.82	0.98	0.64
Control Delay	34.2	46.6	9.0
Queue Delay	0.0	0.0	0.0
Total Delay	34.2	46.6	9.0
Queue Length 50th (ft)	93	~233	156
Queue Length 95th (ft)	#212	#460	265
Internal Link Dist (ft)	311	585	567
Turn Bay Length (ft)			
Base Capacity (vph)	474	613	1237
Starvation Cap Reductn	0	0	0
Spillback Cap Reductn	0	0	0
Storage Cap Reductn	0	0	0
Reduced v/c Ratio	0.73	0.98	0.64

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.



Lane Group	EBL	EBT	WBT	SWL
Lane Group Flow (vph)	65	1185	1380	435
v/c Ratio	0.54	0.66	0.77	0.69
Control Delay	30.5	13.0	15.2	23.6
Queue Delay	0.0	0.0	0.0	0.0
Total Delay	30.5	13.0	15.2	23.6
Queue Length 50th (ft)	15	156	197	134
Queue Length 95th (ft)	#71	214	271	#262
Internal Link Dist (ft)		2143	621	511
Turn Bay Length (ft)				
Base Capacity (vph)	135	2018	2008	628
Starvation Cap Reductn	0	0	0	0
Spillback Cap Reductn	0	0	0	0
Storage Cap Reductn	0	0	0	0
Reduced v/c Ratio	0.48	0.59	0.69	0.69

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Lane Group	EBT	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	229	489	174	956	228	728
v/c Ratio	0.82	0.98	0.76	0.94	0.91	0.74
Control Delay	59.8	69.0	63.1	46.5	82.1	36.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	59.8	69.0	63.1	46.5	82.1	36.7
Queue Length 50th (ft)	126	270	108	263	146	215
Queue Length 95th (ft)	#241	#484	#203	#394	#288	285
Internal Link Dist (ft)	511	686		327		774
Turn Bay Length (ft)						
Base Capacity (vph)	301	497	248	1026	250	979
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.76	0.98	0.70	0.93	0.91	0.74

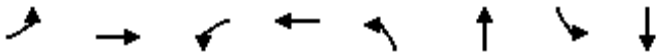
Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Lane Group	EBL	NBT	SBT
Lane Group Flow (vph)	479	369	641
v/c Ratio	0.88	0.82	0.58
Control Delay	37.2	29.4	8.6
Queue Delay	0.0	0.0	0.0
Total Delay	37.2	29.4	8.6
Queue Length 50th (ft)	136	106	102
Queue Length 95th (ft)	#295	#274	189
Internal Link Dist (ft)	686	452	949
Turn Bay Length (ft)			
Base Capacity (vph)	582	451	1098
Starvation Cap Reductn	0	0	0
Spillback Cap Reductn	0	0	0
Storage Cap Reductn	0	0	0
Reduced v/c Ratio	0.82	0.82	0.58

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.



Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	109	326	109	196	109	3294	217	2445
v/c Ratio	1.03	0.82	1.03	0.46	0.73	1.03	1.32	0.75
Control Delay	161.5	72.9	161.5	38.3	93.0	52.7	227.9	20.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.6
Total Delay	161.5	72.9	161.5	38.3	93.0	52.7	227.9	23.3
Queue Length 50th (ft)	~113	144	~113	52	105	~1261	~273	588
Queue Length 95th (ft)	#245	#218	#245	95	#185	#1327	#445	643
Internal Link Dist (ft)		253		576		2903		667
Turn Bay Length (ft)								
Base Capacity (vph)	106	399	106	429	165	3188	165	3255
Starvation Cap Reductn	0	0	0	0	0	0	0	665
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	1.03	0.82	1.03	0.46	0.66	1.03	1.32	0.94

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Lane Group	EBL	NBL	NBT
Lane Group Flow (vph)	109	511	772
v/c Ratio	0.15	0.72	0.55
Control Delay	8.4	18.4	11.0
Queue Delay	0.0	0.0	0.0
Total Delay	8.4	18.4	11.0
Queue Length 50th (ft)	15	90	65
Queue Length 95th (ft)	36	#212	103
Internal Link Dist (ft)	303		541
Turn Bay Length (ft)			
Base Capacity (vph)	708	708	1415
Starvation Cap Reductn	0	0	0
Spillback Cap Reductn	0	0	0
Storage Cap Reductn	0	0	0
Reduced v/c Ratio	0.15	0.72	0.55

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Appendix F
PEQE Calculation Worksheets

Roadway	To	From	Horizontal Buffer North/East	Lighting	Clear Zone	Posted Speed Limit	Score		Horizontal Buffer	Lighting	Clear Zone South/West	Posted Speed Limit	Score		Horizontal Buffer	Lighting	Clear Zone	Posted Speed Limit	Horizontal Buffer	Lighting	Clear Zone	Posted Speed Limit
Midway/Pacific Highway Corridor																						
Lytton Street/ Barnett Avenue	Rosecrans St	Midway Dr	0	Standard	No Obstructions	40	4	Fair	0	Standard	No Obstructions	40	4	Fair	0	1	2	1	0	1	2	1
	Midway Dr	Pacific Hwy	15	Exceed Standard	No Obstructions	40	7	Good	15	Exceed Standard	No Obstructions	40	7	Good	2	2	2	1	2	2	2	1
W. Mission Bay Dr	I-8 WB Ramps	I-8 EB Ramps	0	Standard	No Obstructions	35	4	Fair	0	Standard	No Obstructions	35	4	Fair	0	1	2	1	0	1	2	1
Midway Dr	W. Point Loma Blvd/Sports Arena Blvd	Kemper St	15	Exceed Standard	No Obstructions	35	7	Good	15	Exceed Standard	No Obstructions	35	7	Good	2	2	2	1	2	2	2	1
	Kemper St	East Dr	15	Exceed Standard	No Obstructions	35	7	Good	15	Exceed Standard	No Obstructions	35	7	Good	2	2	2	1	2	2	2	1
	East Dr	Rosecrans St	15	Exceed Standard	No Obstructions	35	7	Good	15	Exceed Standard	No Obstructions	35	7	Good	2	2	2	1	2	2	2	1
	Rosecrans St	Barnett Ave	15	Exceed Standard	No Obstructions	35	7	Good	15	Exceed Standard	No Obstructions	35	7	Good	2	2	2	1	2	2	2	1
Sports Arena Blvd	I-8 EB Ramps	W. Point Loma Blvd/Sports Arena Blvd	15	Standard	No Obstructions	35	6	Fair	15	Exceed Standard	No Obstructions	35	7	Good	2	1	2	1	2	2	2	1
	W. Point Loma Blvd/Midway	Kemper St	8	Standard	No Obstructions	35	5	Fair	8	Standard	No Obstructions	35	5	Fair	1	1	2	1	1	1	2	1
	Kemper St	East Dr	7	Standard	No Obstructions	35	5	Fair	7	Standard	No Obstructions	35	5	Fair	1	1	2	1	1	1	2	1
	East Dr	Rosecrans St	7	Standard	No Obstructions	35	5	Fair	7	Standard	No Obstructions	35	5	Fair	1	1	2	1	1	1	2	1
	Rosecrans St	Pacific Hwy	13	Exceed Standard	No Obstructions	35	6	Fair	13	Standard	No Obstructions	35	5	Fair	1	2	2	1	1	1	2	1
Kurtz St	Hancock St	Rosecrans St	8	Standard	No Obstructions	30	6	Fair	8	Standard	No Obstructions	30	6	Fair	1	1	2	2	1	1	2	2
	Rosecrans St	Pacific Hwy	0	Standard	No Obstructions	30	4	Fair	0	Standard	No Obstructions	30	4	Fair	0	0	2	2	0	0	2	2
Hancock St	Sports Arena Blvd	Kurtz St	0	Standard	Obstructed	30	3	Poor	8	Standard	No Obstructions	30	6	Fair	0	1	0	2	1	1	2	2
	Kurtz St	Camino Del Rio West	8	Standard	Obstructed	30	4	Fair	8	Standard	No Obstructions	30	6	Fair	1	1	0	2	1	1	2	2
	Camino Del Rio West	Rosecrans St	0	Standard	No Obstructions	30	5	Fair	0	Standard	No Obstructions	30	5	Fair	0	1	2	2	0	1	2	2
	Old Town Ave	Witherby St	0	Standard	Obstructed	30	2	Poor	0	Standard	Obstructed	30	2	Poor	0	0	0	2	0	0	0	2
	Witherby St	Washington St	8	Standard	No Obstructions	30	6	Fair	16	Standard	No Obstructions	30	7	Good	1	1	2	2	2	1	2	2
Kettner Blvd	Washington St	Vine St	0	Exceed Standard	Obstructed	40	3	Poor	0	Exceed Standard	No Obstructions	40	5	Fair	0	2	0	1	0	2	2	1
	Vine St	Sassafras St	0	Standard	Obstructed	40	1	Poor	8	Standard	No Obstructions	40	5	Fair	0	0	0	1	1	1	2	1
	Sassafras St	Laurel St	8	Standard	No Obstructions	40	5	Fair	8	Standard	No Obstructions	40	5	Fair	1	1	2	1	1	1	2	1
Pacific Hwy	Sea World Dr	Taylor St	17	Standard	No Obstructions	45	5	Fair	17	Standard	No Obstructions	45	5	Fair	2	1	2	0	2	1	2	0
	Taylor St	Kurtz St	17	Exceed Standard	No Obstructions	45	6	Standard	17	Exceed Standard	No Obstructions	45	6	Fair	2	2	2	0	2	2	2	0
	Kurtz St	Sports Arena Blvd	17	Exceed Standard	No Obstructions	45	6	Standard	17	Exceed Standard	No Obstructions	45	6	Fair	2	2	2	0	2	2	2	0
	Sports Arena Blvd	Barnett Ave	17	Exceed Standard	No Obstructions	45	6	Standard	17	Exceed Standard	No Obstructions	45	6	Fair	2	2	2	0	2	2	2	0
	Barnett Ave	Harney Washington St	17	Exceed Standard	No Obstructions	55	6	Standard	17	Exceed Standard	No Obstructions	55	6	Fair	2	2	2	0	2	2	2	0
	Washington St	Sassafras St	17	Exceed Standard	No Obstructions	45	6	Standard	17	Exceed Standard	No Obstructions	45	6	Fair	2	2	2	0	2	2	2	0
	Sassafras St	Laurel St	17	Exceed Standard	No Obstructions	45	6	Standard	17	Exceed Standard	No Obstructions	45	6	Fair	2	2	2	0	2	2	2	0
Old Town								Poor						Poor								
Congress St	Taylor St	Twiggs St	8	Standard	No Obstructions	25	6	Fair	8	Standard	No Obstructions	25	6	Fair	1	1	2	2	1	1	2	2
	Twiggs St	Harney St	8	Standard	No Obstructions	25	6	Fair	8	Standard	No Obstructions	25	6	Fair	1	1	2	2	1	1	2	2
	Harney St	San Diego Ave/ Ampudia St	8	Standard	No Obstructions	25	6	Fair	8	Standard	No Obstructions	25	6	Fair	1	1	2	2	1	1	2	2
San Diego Ave	Twiggs St	Harney St	8	Standard	No Obstructions	25	6	Fair	8	Standard	No Obstructions	25	6	Fair	1	1	2	2	1	1	2	2
	Harney St	Ampudia St	8	Standard	No Obstructions	25	6	Fair	8	Standard	No Obstructions	25	6	Fair	1	1	2	2	1	1	2	2
	Ampudia St	Old Town Ave	8	Standard	No Obstructions	25	6	Fair	8	Standard	No Obstructions	25	6	Fair	1	1	2	2	1	1	2	2
	Old Town Ave	Hortensia St	13	Standard	No Obstructions	25	6	Fair	13	Standard	No Obstructions	25	6	Fair	1	1	2	2	1	1	2	2
Juan St	Taylor St	Twiggs St	8	Standard	No Obstructions	30	6	Fair	8	Standard	No Obstructions	30	6	Fair	1	1	2	2	1	1	2	2
	Twiggs St	Harney St	8	Standard	No Obstructions	30	6	Fair	8	Standard	No Obstructions	30	6	Fair	1	1	2	2	1	1	2	2
	Harney St	San Juan Rd	8	Standard	No Obstructions	30	6	Fair	8	Standard	No Obstructions	30	6	Fair	1	1	2	2	1	1	2	2
East-West								Poor						Poor								
Midway/Pacific Highway Corridor								Poor						Poor								
Channel Wy	W. Mission Bay Dr	Hancock St	8	Standard	No Obstructions	25	6	Fair	8	Standard	No Obstructions	25	6	Fair	1	1	2	2	1	1	2	2
Kemper St	Kenyon St	Midway Dr	8	Below Standard	No Obstructions	25	5	Fair	0	Standard	No Obstructions	25	5	Fair	1	0	2	2	0	1	2	2
	Midway Dr	Sports Arena Blvd	8	Standard	No Obstructions	25	6	Fair	8	Standard	No Obstructions	25	6	Fair	1	1	2	2	1	1	2	2
Camino Del Rio West	Rosecrans St	I-5/I-8 Ramps	0	Standard	No Obstructions	35	4	Fair	0	Standard	No Obstructions	35	4	Fair	0	1	2	1	0	1	2	1
Rosecrans St	Lytton St	Midway Dr	9	Exceed Standard	No Obstructions	35	6	Fair	10	Exceed Standard	No Obstructions	35	6	Fair	1	2	2	1	1	2	2	1
	Midway Dr	Sports Arena Blvd	15	Exceed Standard	No Obstructions	35	7	Good	15	Exceed Standard	No Obstructions	35	7	Good	2	2	2	1	2	2	2	1
	Sports Arena Blvd	Pacific Hwy/Taylor St	15	Exceed Standard	No Obstructions	35	7	Good	15	Exceed Standard	No Obstructions	35	7	Good	2	2	2	1	2	2	2	1
Washington St	Frontage Rd	Pacific St	0	Standard	No Obstructions	25	5	Fair	0	Standard	No Obstructions	25	5	Fair	0	1	2	2	0	1	2	2
	Pacific St	Hancock St	8	Standard	No Obstructions	25	6	Fair	0	Standard	No Obstructions	25	5	Fair	1	1	2	2	0	1	2	2
Vine St	California St	Kettner Blvd	16	Standard	No Obstructions	25	7	Good	0	Standard	No Obstructions	25	5	Fair	2	1	2	2	0	1	2	2
Sassafras St	Pacific Hwy	Kettner Blvd	0	Standard	No Obstructions	25	5	Fair	0	Standard	No Obstructions	25	5	Fair	0	1	2	2	0	1	2	2
Laurel St	Pacific Hwy	Kettner Blvd	0	Standard	No Obstructions	25	5	Fair	0	Standard	No Obstructions	25	5	Fair	0	1	2	2	0	1	2	2
Old Town								Poor						Poor								
Taylor St	Pacific Hwy/ Rosecrans St	Congress St	0	Standard	No Obstructions	35	4	Fair	0	Standard	No Obstructions	35	4	Fair	0	1	2	1	0	1	2	1
	Congress St	Juan St	0	Standard	No Obstructions	35	4	Fair	0	Standard	No Obstructions	35	4	Fair	0	1	2	1	0	1	2	1
	Juan St	Morena Blvd	0	Standard	No Obstructions	35	4	Fair	0	Standard	No Obstructions	35	4	Fair	0	1	2	1	0	1	2	1
	Morena Blvd	I-8 EB Ramps	0	Below Standard	Obstructed	35	1	Poor	0	Below Standard	Obstructed	35	1	Poor	0	0	0	1	0	0	0	1
Twiggs St	Congress St	San Diego Ave	0	Standard	No Obstructions	25	5	Fair	0	Standard	No Obstructions	25	5	Fair	0	1	2	2	0	1	2	2
	San Diego Ave	Juan St	8	Standard	No Obstructions	25	6	Fair	8	Standard	No Obstructions	25	6	Fair	1	1	2	2	1	1	2	2
Harney St	Congress St	San Diego Ave	8	Standard	No Obstructions	25	6	Fair	8	Standard	No Obstructions	25	6	Fair	1	1	2	2	1	1	2	2
	San Diego Ave	Juan St	8	Standard	No Obstructions	25	6	Fair	0	Standard	No Obstructions	25	5	Fair	1	1	2	2	0	1	2	2
Old Town Ave	Hancock St	Moore St	0	Standard	No Obstructions	25	5	Fair	0	Standard	No Obstructions	25	5	Fair	0	1	2	2	0	1	2	2
	Moore St	San Diego Ave	0	Standard	No Obstructions	25	5	Fair	0	Standard	No Obstructions	25	5	Fair	0	1	2	2	0	1	2	2

	Intersection	Control	Physical	Ops	ADA	Legs	Score	Grade	Control	Physical	Ops	ADA	Control	Physical	Ops	ADA	Legs	Score	Grade	Control	Physical	Ops	ADA
	Features	3.1	7.1																				
	Grade	3.1	6.1																				
1	1: Barnett Ave/Lytton St & Rosecrans St.	Signal	0	0	No	4	2	Poor	2	0	0	0	Signal	8		Yes	4	6	Fair	2	2	0	2
2	2: Midway Dr/W Mission Bay Dr & I-8 WB Off Ramp	Signal	0	0	Yes	3	4	Fair	2	0	0	2	Signal	6		Yes	3	6	Fair	2	2	0	2
3	3: W Mission Bay Dr & Channel Way	SSSC	0	0	No	3	1	Poor	1	0	0	0	SSSC	6		Yes	3	5	Fair	1	2	0	2
4	4: Midway Dr/W Mission Bay Dr & Sports Arena	Signal	0	0	No	4	2	Poor	2	0	0	0	Signal	8		Yes	4	6	Fair	2	2	0	2
	Midway Dr & Duke Street	Signal	0	0	No	3	2	Poor	2	0	0	0	Signal	6		Yes	3	6	Fair	2	2	0	2
5	5: Midway Dr & Kemper St/Kemper Street	Signal	3	0	No	4	2	Poor	2	0	0	0	Signal	8		Yes	4	6	Fair	2	2	0	2
	Midway Dr & Fodam Street	Signal	0	0	No	4	2	Poor	2	0	0	0	Signal	8		Yes	4	6	Fair	2	2	0	2
	Midway Dr & Wing Street	Signal	0	0	No	3	2	Poor	2	0	0	0	Signal	6		Yes	3	6	Fair	2	2	0	2
6	6: Midway Dr & East Drive	Signal	0	0	No	3	2	Poor	2	0	0	0	Signal	6		Yes	3	6	Fair	2	2	0	2
	Midway Drive & Riely Street	SSSC	0	0	No	3	1	Poor	1	0	0	0	SSSC	6		Yes	3	5	Fair	1	2	0	2
	Midway Drive & Gaines Street	SSSC	0	0	No	3	1	Poor	1	0	0	0	SSSC	6		Yes	3	5	Fair	1	2	0	2
7	7: Midway Dr & Rosecrans St.	Signal	0	0	No	4	2	Poor	2	0	0	0	Signal	8		Yes	4	6	Fair	2	2	0	2
8	8: Midway Dr & Charles Lindbergh Parkway	Signal	N/A				4	Fair	2	2	0	0	Signal	8		Yes	4	6	Fair	2	2	0	2
9	9: Midway Dr & Enterprise St	SSSC	0	0	No	3	1	Poor	1	0	0	0	SSSC	8		Yes	3	5	Fair	1	2	0	2
10	10: Barnett Ave & Midway Dr	Signal	3	0	No	3	3	Poor	2	1	0	0	Signal	8		Yes	3	6	Fair	2	2	0	2
11	11: Sports Arena & Hancock Street	Signal	2	0	Yes	3	4	Fair	2	0	0	2	Signal	8		Yes	3	6	Fair	2	2	0	2
12	12: Sports Arena & Kemper Street	Signal	0	0	No	4	2	Poor	2	0	0	0	Signal	8		Yes	4	6	Fair	2	2	0	2
13	13: Sports Arena & Ralphs Driveway/Frontier Street	Signal	1	0	No	4	2	Poor	2	0	0	0	Signal	8		Yes	4	6	Fair	2	2	0	2
#VALUE!	Sports Arena Drive / Target Driveway	SSSC	0	0	No	3	1	Poor	1	0	0	0	SSSC	6		Yes	3	5	Fair	1	2	0	2
14	14: Sports Arena & East Drive/Greenwood Street	Signal	0	0	No	3	2	Poor	2	0	0	0	Signal	6		Yes	3	6	Fair	2	2	0	2
15	15: Rosecrans St/Sports Arena & Rosecrans St./Camino Del Rio W	Signal	0	0	No	5	2	Poor	2	0	0	0	Signal	10		Yes	5	6	Fair	2	2	0	2
16	16: Sports Arena Bl & Charles Lindbergh Parkway	Signal	N/A				4	Fair	2	2	0	0	Signal	8		Yes	4	6	Fair	2	2	0	2
17	17: Pacific Highway & Sports Arena Bl	Signal	N/A				4	Fair	2	2	0	0	Signal	8		Yes	4	6	Fair	2	2	0	2
18	18: Kemper Street & Kurtz St & Hancock/Hancock St	SSSC	0	0	No	3	1	Poor	1	0	0	0	SSSC	6		Yes	3	5	Fair	1	2	0	2
#VALUE!	Kurtz Street / Sherman Street	AWSC	0	0	No	3	1	Poor	1	0	0	0	AWSC	6		Yes	3	5	Fair	1	2	0	2
#VALUE!	Kurtz Street / Greenwood Street	SSSC	0	0	No	3	1	Poor	1	0	0	0	SSSC	6		Yes	3	5	Fair	1	2	0	2
#VALUE!	Kurtz Street / Riely Street	SSSC	0	0	No	3	1	Poor	1	0	0	0	SSSC	6		Yes	3	5	Fair	1	2	0	2
19	19: Kurtz/Kurtz St & Camino Del Rio W	Signal	0	0	No	4	2	Poor	2	0	0	0	Signal	8		Yes	4	6	Fair	2	2	0	2
20	20: Kurtz St/Kurtz & Rosecrans St	Signal	2	0	No	4	2	Poor	2	0	0	0	Signal	8		Yes	4	6	Fair	2	2	0	2
#VALUE!	Kurtz Street / Smith Street	SSSC	0	0	No	3	1	Poor	1	0	0	0	SSSC	6		Yes	3	5	Fair	1	2	0	2
21	21: Pacific Highway & Kurtz St	SSSC	0	0	Yes	3	3	Poor	1	0	0	2	Signal	6		Yes	3	6	Fair	2	2	0	2
22	22: Hancock & Channel Way	SSSC	0	0	No	3	1	Poor	1	0	0	0	SSSC	6		Yes	3	5	Fair	1	2	0	2
#VALUE!	Hancock Street / Hicock Street	SSSC	0	0	No	3	1	Poor	1	0	0	0	SSSC	6		Yes	3	5	Fair	1	2	0	2
#VALUE!	Hancock Street / Sherman Street	AWSC	0	0	No	4	1	Poor	1	0	0	0	AWSC	6		Yes	4	4	Poor	1	1	0	2
#VALUE!	Hancock Street / Greenwood Street	SSSC	1	0	Yes	4	3	Poor	1	0	0	2	SSSC	8		Yes	4	5	Fair	1	2	0	2
23	23: Hancock St & Camino Del Rio W	Signal	0	0	No	5	2	Poor	2	0	0	0	Signal	10		Yes	5	6	Fair	2	2	0	2
#VALUE!	Hancock Street & Gains Street	SSSC	0	0	No	4	1	Poor	1	0	0	0	SSSC	8		Yes	4	5	Fair	1	2	0	2
24	24: Rosecrans St & Hanccok Street	SSSC	0	0	No	3	1	Poor	1	0	0	0	SSSC	6		Yes	3	5	Fair	1	2	0	2
25	25: Hancock St & Old Town St	AWSC	0	0	No	3	1	Poor	1	0	0	0	AWSC	6		Yes	3	5	Fair	1	2	0	2
26	26: Hancock St & Witherby St	AWSC	0	0	No	3	1	Poor	1	0	0	0	AWSC	6		Yes	3	5	Fair	1	2	0	2
#VALUE!	Hancock Street & Noell Street	AWSC	0	0	No	4	1	Poor	1	0	0	0	AWSC	8		Yes	4	5	Fair	1	2	0	2
#VALUE!	Hancock Street & I-5 SB Ramp	SSSC	0	0	No	3	1	Poor	1	0	0	0	SSSC	6		Yes	3	5	Fair	1	2	0	2
27	27: Hancock St & Washington St	Signal	0	0	No	4	2	Poor	2	0	0	0	Signal	8		Yes	4	6	Fair	2	2	0	2
#VALUE!	Hancock Street & Emory Street	SSSC	0	0	Yes	3	3	Poor	1	0	0	2	SSSC	6		Yes	3	5	Fair	1	2	0	2
#VALUE!	Hancock Street & California Street	SSSC	0	0	Yes	3	3	Poor	1	0	0	2	SSSC	6		Yes	3	5	Fair	1	2	0	2
#VALUE!	Hancock Street & Chalmers Street	SSSC	0	0	Yes	3	3	Poor	1	0	0	2	SSSC	6		Yes	3	5	Fair	1	2	0	2
#VALUE!	Hancock Street & Walnut Avenue	SSSC	0	0	No	3	1	Poor	1	0	0	0	SSSC	6		Yes	3	5	Fair	1	2	0	2
28	28: Kettner Bl/Hancock St & Vine St	SSSC	0	0	No	3	1	Poor	1	0	0	0	SSSC	6		Yes	3	5	Fair	1	2	0	2
29	29: Kettner Blvd/Kettner Bl & Sassafras St	Signal	0	0	No	4	2	Poor	2	0	0	0	Signal	8		Yes	4	6	Fair	2	2	0	2
#VALUE!	Kettner Boulevard / Redwood Street	SSSC	0	0	No	3	1	Poor	1	0	0	0	SSSC	6		Yes	3	5	Fair	1	2	0	2
#VALUE!	Kettner Boulevard / Palm Street	SSSC	0	0	No	3	1	Poor	1	0	0	0	SSSC	6		Yes	3	5	Fair	1	2	0	2
#VALUE!	Kettner Boulevard / Olive Street	SSSC	0	0	No	4	1	Poor	1	0	0	0	SSSC	8		Yes	4	5	Fair	1	2	0	2
#VALUE!	Kettner Boulevard / Maple Street	SSSC	0	0	No	3	1	Poor	1	0	0	0	SSSC	6		Yes	3	5	Fair	1	2	0	2
30	30: Kettner Blvd & W Laurel St	Signal	0	0	No	4	2	Poor	2	0	0	0	Signal	8		Yes	4	6	Fair	2	2	0	2
31	31: Pacific Highway & Barnett Ave	Signal	N/A				4	Fair	2	2	0	0	Signal	6		Yes	3	6	Fair	2	2	0	2
#VALUE!	Pacific Highway & Witherby Street	SSSC	0	0	No	4	1	Poor	1	0	0	0	SSSC	8		Yes	4	5	Fair	1	2	0	2
32	32: Pacific Highway NB Frontage Road & Washington St	Signal	0	0	No	4	2	Poor	2	0	0	0	Signal	8		Yes	4	6	Fair	2	2	0	2
33	33: Washington St & Pacific Highway SB	Signal	0	0	No	4	2	Poor	2	0	0	0	Signal	8		Yes	4	6	Fair	2	2	0	2
34	34: Pacific Highway & Sassafras St	Signal	1	0	No	4	2	Poor	2	0	0	0	Signal	8		Yes	4	6	Fair	2	2	0	2
#VALUE!	Pacific Highway & Palm Street	Signal	0	0	No	4	2	Poor	2	0	0	0	Signal	8		Yes	4	6	Fair	2	2	0	2
35	35: Pacific Highway & W Laurel St	Signal	0	1	Yes	4	4	Fair	2	0	0	2	Signal	8		Yes	4	6	Fair	2	2	0	2
36	36: Pacific Highway & Rosecrans St/Taylor St	Signal	0	0	Yes	4	4	Fair	2	0	0	2	Signal	8		Yes	4	6	Fair	2	2	0	2
37	37: Moore St & Old Town St	Signal	0	0	No	4	2	Poor	2	0	0	0	Signal	8		Yes	4	6	Fair	2	2	0	2
38	38: Congress St & Taylor St	Signal	0	0	Yes	3	4	Fair	2	0	0	2	Signal	6		Yes	3	6	Fair	2	2	0	2
#VALUE!	Congress Street & Old Town Station Entrance	SSSC	0	0	No	3	1	Poor	1	0	0	0	SSSC	6		Yes	3	5	Fair	1	2	0	2
#VALUE!	Congress Street & Old Town Station Exit	Signal	1	0	No	3	2	Poor	2	0	0	0	Signal	8		Yes	3	6	Fair	2	2	0	2
#VALUE!	Congress Street & Mason Street	SSSC	0	0	No	3	1	Poor	1	0	0	0	SSSC	6		Yes	3	5	Fair	1	2	0	2
39	39: Congress St & Twiggs St	AWSC	0	0	No	4	1	Poor	1	0	0	0	AWSC	8		Yes	4	5	Fair	1	2	0	2
40	40: Congress St & Harney St	AWSC	0	0	No	4	1	Poor	1	0	0	0	AWSC	8		Yes	4	5	Fair	1	2	0	2
#VALUE!	Congress Street & Conde Street	SSSC	5	0	No	4	2	Poor	1	1	0	0	SSSC	8		Yes	4	5	Fair	1	2	0	2
#VALUE!	Congress Street & Arista Street	SSSC	0	0	No	3	1	Poor	1	0	0	0	SSSC	6		Yes	3	5	Fair	1	2	0	2
41	41: San Diego Ave & Congress St	SSSC	0	0	No	5	1	Poor	1	0	0	0	SSSC	10		Yes	5	5	Fair	1	2	0	2
#VALUE!	San Diego Avenue & Arista	SSSC	1	0	No	3	1	Poor	1	0	0	0	SSSC	8		Yes	3	5	Fair	1	2	0	2
#VALUE!	San Diego Avenue & Linwood Street	SSSC	0	0	No	3	1	Poor	1	0	0	0	SSSC	6		Yes	3	5	Fair	1	2	0	2
#VALUE!	San Diego Avenue & Conde Street	AWSC	0	0	No	4	1	Poor	1	0	0	0	AWSC	8		Yes	4	5	Fair	1	2	0	2
42	42: San Diego Ave & Twiggs St	AWSC	0	0	No	3	1	Poor	1	0	0	0	AWSC	6		Yes	3	5	Fair	1	2	0	2
43	43: San Diego Ave & Harney St	AWSC	1	0	No	4	1	Poor	1	0	0	0	AWSC	9		Yes	4	5	Fair	1	2	0	2
44	44: San Diego Ave & Old Town St	Signal	0	0	No	4	2	Poor	2	0	0	0	Signal	8		Yes	4	6	Fair	2	2	0	2
45	45: Juan St & Taylor St	Signal	1	0	Yes	3	4	Fair	2	0	0	2	Signal			Yes	3	4	Poor	2	0	0	2
46	46: Juan St & Twiggs St	AWSC	0	0	No	4	1	Poor	1	0	0	0	AWSC	8		Yes	4	5	Fair	1	2	0	2

47	47: Juan St & Harney St	AWSC	1	0 No	4	1 Poor	1	0	0	0	AWSC	8	Yes	4	5 Fair	1	2	0	2
48		Signal	1	0 Yes	3	4 Fair	2	0	0	2	Signal	8	Yes	3	6 Fair	2	2	0	2
61	61: Kurtz St & Frontier Street	SSSC	0		4	1 Poor	1	0	0	0	SSSC	8	Yes	4	5 Fair	1	2	0	2
63	63: Kurtz St & Charles Lindbergh Parkway	Signal	0		4	2 Poor	2	0	0	0	Signal	8	Yes	4	6 Fair	2	2	0	2
64	64: Barnett Ave & Dutch Flats Parkway	Signal	0		4	2 Poor	2	0	0	0	Signal	8	Yes	4	6 Fair	2	2	0	2
65	65: Midway Dr & Dutch Flats Parkway	Signal	0		4	2 Poor	2	0	0	0	Signal	8	Yes	4	6 Fair	2	2	0	2
66	66: Dutch Flats Parkway & Sports Arena Bl	Signal	0		4	2 Poor	2	0	0	0	Signal	8	Yes	4	6 Fair	2	2	0	2

Appendix G
Peak Hour Arterial Analysis Worksheets

Arterial Level of Service: EB Camino Del Rio West

Cross Street	Arterial Class	Flow Speed	Running Time	Signal Delay	Travel Time (s)	Dist (mi)	Arterial Speed	Arterial LOS
Kurtz	IV	35	16.2	45.3	61.5	0.10	5.7	F
Hancock St	IV	35	13.3	13.7	27.0	0.08	10.8	D
Total	IV		29.5	59.0	88.5	0.18	7.3	E

Arterial Level of Service: WB Camino Del Rio West

Cross Street	Arterial Class	Flow Speed	Running Time	Signal Delay	Travel Time (s)	Dist (mi)	Arterial Speed	Arterial LOS
Hancock St	III	35	24.3	65.4	89.7	0.20	8.1	F
Kurtz St	III	35	10.9	1.1	12.0	0.08	24.2	B
Sports Arena Blvd	III	35	13.2	40.8	54.0	0.10	6.5	F
Total	III		48.4	107.3	155.7	0.38	8.8	F

Arterial Level of Service: NB Midway Drive

Cross Street	Arterial Class	Flow Speed	Running Time	Signal Delay	Travel Time (s)	Dist (mi)	Arterial Speed	Arterial LOS
Dutch Flats Parkway	III	35	17.1	41.6	58.7	0.13	8.2	F
Charles Lindbergh Pa	III	35	25.2	13.1	38.3	0.21	19.7	C
Rosecrans St	III	35	19.8	34.2	54.0	0.15	10.3	E
East Drive	III	35	22.9	6.9	29.8	0.19	23.0	C
Kemper Street	III	35	39.9	22.9	62.8	0.33	19.1	C
Duke Street	III	35	21.1	9.8	30.9	0.18	20.5	C
Sports Arena Blvd	III	35	15.0	50.7	65.7	0.11	6.1	F
Total	III		161.0	179.2	340.2	1.31	13.8	E

Arterial Level of Service: SB Midway Drive

Cross Street	Arterial Class	Flow Speed	Running Time	Signal Delay	Travel Time (s)	Dist (mi)	Arterial Speed	Arterial LOS
Duke Street	III	35	15.0	23.5	38.5	0.11	10.4	E
Kemper St	III	35	21.1	14.8	35.9	0.18	17.6	D
East Drive	III	35	39.9	8.2	48.1	0.33	24.9	B
Rosecrans St	III	35	22.9	32.7	55.6	0.19	12.3	E
Charles Lindbergh Pa	III	35	19.8	4.4	24.2	0.15	23.0	C
Dutch Flats Parkway	III	35	25.2	35.7	60.9	0.21	12.4	E
Barnett Ave	III	35	17.1	28.6	45.7	0.13	10.5	E
Total	III		161.0	147.9	308.9	1.31	15.2	D

Arterial Level of Service: NB Pacific Highway

Cross Street	Arterial Class	Flow Speed	Running Time	Signal Delay	Travel Time (s)	Dist (mi)	Arterial Speed	Arterial LOS
Grape St	II	30	11.6	19.3	30.9	0.08	9.6	F
Hawthorne St	II	30	10.2	26.6	36.8	0.07	6.5	F
W Laurel St	II	32	34.3	48.9	83.2	0.27	11.7	F
Sassafras St	II	45	43.0	31.8	74.8	0.49	23.5	C
Witherby St	II	47	43.1	39.6	82.7	0.56	24.4	C
Barnett Ave	II	55	14.3	1.6	15.9	0.15	33.3	B
Sports Arena Blvd	II	45	17.4	0.8	18.2	0.16	31.6	B
Kurtz St	II	45	20.5	8.9	29.4	0.19	23.0	C
Taylor St	II	45	33.2	31.4	64.6	0.35	19.3	D
Total	II		227.6	208.9	436.5	2.31	19.0	D

Arterial Level of Service: SB Pacific Highway

Cross Street	Arterial Class	Flow Speed	Running Time	Signal Delay	Travel Time (s)	Dist (mi)	Arterial Speed	Arterial LOS
Rosecrans St	II	45	38.8	27.2	66.0	0.41	22.5	C
Kurtz St	II	45	33.2	25.7	58.9	0.35	21.1	D
Sports Arena Blvd	II	45	20.5	18.3	38.8	0.19	17.4	D
Barnett Ave	II	45	17.4	30.5	47.9	0.16	12.0	F
Witherby St	II	55	14.3	20.0	34.3	0.15	15.4	E
Washington St	II	49	41.4	27.8	69.2	0.56	29.2	B
Sassafras St	II	43	40.6	16.5	57.1	0.45	28.1	B
W Laurel St	II	45	43.0	70.3	113.3	0.49	15.5	E
Hawthorne St	II	32	34.3	60.6	94.9	0.27	10.3	F
Grape St	II	30	10.2	14.3	24.5	0.07	9.7	F
Total	II		293.7	311.2	604.9	3.09	18.4	D

Arterial Level of Service: EB Rosecrans St

Cross Street	Arterial Class	Flow Speed	Running Time	Signal Delay	Travel Time (s)	Dist (mi)	Arterial Speed	Arterial LOS
Hugo St	II	35	16.7	16.6	33.3	0.13	14.4	E
Nimitz Blvd	II	35	23.3	28.7	52.0	0.19	12.9	F
Laning Rd	II	40	29.3	35.2	64.5	0.29	16.0	E
Barnett Ave	II	40	85.6	51.2	136.8	0.95	25.0	C
Midway Drive	II	40	45.5	33.5	79.0	0.49	22.3	C
Sports Arena Blvd	II	40	15.0	0.0	15.0	0.13	31.2	B
Kurtz St	II	35	11.9	20.5	32.4	0.10	10.6	F
Pacific Highway	II	35	29.1	22.7	51.8	0.24	17.0	E
Total	II		256.4	208.4	464.8	2.52	19.5	D

Arterial Level of Service: WB Rosecrans St

Cross Street	Arterial Class	Flow Speed	Running Time	Signal Delay	Travel Time (s)	Dist (mi)	Arterial Speed	Arterial LOS
Kurtz	II	35	29.1	12.8	41.9	0.24	21.0	D
Camino Del Rio West	II	35	11.9	119.2	131.1	0.10	2.6	F
Midway Drive	II	40	15.0	36.2	51.2	0.13	9.1	F
Lytton St	II	40	45.5	139.5	185.0	0.49	9.5	F
Laning Rd	II	40	85.6	9.8	95.4	0.95	35.9	A
Lowell St	II	40	29.3	79.3	108.6	0.29	9.5	F
Hugo St	II	35	23.3	29.0	52.3	0.19	12.9	F
Total	II		239.7	425.8	665.5	2.38	12.9	F

Arterial Level of Service: NB Sports Arena Blvd

Cross Street	Arterial Class	Flow Speed	Running Time	Signal Delay	Travel Time (s)	Dist (mi)	Arterial Speed	Arterial LOS
Dutch Flats Parkway	III	25	23.3	14.0	37.3	0.11	10.2	E
Charles Lindbergh Pa	III	25	31.9	7.2	39.1	0.19	17.8	D
Greenwood Street	III	35	24.4	3.5	27.9	0.20	26.2	B
Frontier Street	III	35	19.6	25.9	45.5	0.15	12.1	E
Kemper Street	III	35	18.1	28.9	47.0	0.14	10.9	E
Hancock Street	III	35	22.7	22.6	45.3	0.19	15.0	D
Sports Arena Blvd	III	35	16.4	21.2	37.6	0.12	11.7	E
I-8 WB Off Ramp	III	35	36.1	15.4	51.5	0.30	21.1	C
Total	III		192.5	138.7	331.2	1.41	15.3	D

Arterial Level of Service: SB Sports Arena Blvd

Cross Street	Arterial Class	Flow Speed	Running Time	Signal Delay	Travel Time (s)	Dist (mi)	Arterial Speed	Arterial LOS
Sports Arena	III	35	36.1	104.8	140.9	0.30	7.7	F
Hancock Street	III	35	16.4	4.4	20.8	0.12	21.1	C
Kemper Street	III	35	22.7	27.5	50.2	0.19	13.6	E
Ralphs Driveway	III	35	18.1	16.7	34.8	0.14	14.7	D
East Drive	III	35	19.6	7.1	26.7	0.15	20.6	C
Rosecrans St	III	35	24.4	80.7	105.1	0.20	7.0	F
Charles Lindbergh Pa	III	25	29.0	5.8	34.8	0.16	16.7	D
Dutch Flats Parkway	III	25	31.9	3.2	35.1	0.19	19.8	C
Pacific Highway	III	25	23.3	60.7	84.0	0.11	4.5	F
Total	III		221.5	310.9	532.4	1.57	10.6	E

Arterial Level of Service: EB Taylor St

Cross Street	Arterial Class	Flow Speed	Running Time	Signal Delay	Travel Time (s)	Dist (mi)	Arterial Speed	Arterial LOS
Congress St	IV	35	15.7	11.8	27.5	0.10	12.5	D
Juan St	IV	35	11.2	13.9	25.1	0.07	9.8	D
	IV	35	18.3	8.5	26.8	0.13	17.5	C
Total	IV		45.2	34.2	79.4	0.29	13.3	C

Arterial Level of Service: WB Taylor St

Cross Street	Arterial Class	Flow Speed	Running Time	Signal Delay	Travel Time (s)	Dist (mi)	Arterial Speed	Arterial LOS
Morena Blvd	IV	35	17.7	23.7	41.4	0.11	9.3	D
	IV	35	18.3	13.9	32.2	0.13	14.6	C
Congress St	IV	35	11.2	7.8	19.0	0.07	12.9	D
Pacific Highway	IV	35	15.7	22.6	38.3	0.10	9.0	E
Total	IV		62.9	68.0	130.9	0.40	11.0	D

Arterial Level of Service: EB Camino Del Rio West

Cross Street	Arterial Class	Flow Speed	Running Time	Signal Delay	Travel Time (s)	Dist (mi)	Arterial Speed	Arterial LOS
Kurtz	IV	35	16.2	80.4	96.6	0.10	3.6	F
Hancock St	IV	35	13.3	10.9	24.2	0.08	12.0	D
Total	IV		29.5	91.3	120.8	0.18	5.3	F

Arterial Level of Service: WB Camino Del Rio West

Cross Street	Arterial Class	Flow Speed	Running Time	Signal Delay	Travel Time (s)	Dist (mi)	Arterial Speed	Arterial LOS
Hancock St	III	35	24.3	77.8	102.1	0.20	7.1	F
Kurtz St	III	35	10.9	1.2	12.1	0.08	24.0	B
Sports Arena Blvd	III	35	13.2	55.3	68.5	0.10	5.1	F
Total	III		48.4	134.3	182.7	0.38	7.5	F

Arterial Level of Service: NB Midway Drive

Cross Street	Arterial Class	Flow Speed	Running Time	Signal Delay	Travel Time (s)	Dist (mi)	Arterial Speed	Arterial LOS
Dutch Flats Parkway	III	35	15.9	46.5	62.4	0.12	6.8	F
Charles Lindbergh Pa	III	35	27.3	34.6	61.9	0.23	13.2	E
Rosecrans St	III	35	19.6	71.2	90.8	0.15	6.1	F
East Drive	III	35	22.9	11.4	34.3	0.19	20.0	C
Kemper Street	III	35	39.9	37.5	77.4	0.33	15.5	D
	III	35	21.6	16.1	37.7	0.17	16.1	D
Sports Arena Blvd	III	35	16.0	67.4	83.4	0.12	5.1	F
Total	III		163.2	284.7	447.9	1.31	10.5	E

Arterial Level of Service: SB Midway Drive

Cross Street	Arterial Class	Flow Speed	Running Time	Signal Delay	Travel Time (s)	Dist (mi)	Arterial Speed	Arterial LOS
	III	35	16.0	30.1	46.1	0.12	9.2	F
Kemper St	III	35	21.6	24.0	45.6	0.17	13.3	E
East Drive	III	35	39.9	10.6	50.5	0.33	23.7	C
Rosecrans St	III	35	22.9	58.6	81.5	0.19	8.4	F
Charles Lindbergh Pa	III	35	19.6	6.5	26.1	0.15	21.1	C
Dutch Flats Parkway	III	35	27.3	36.7	64.0	0.23	12.8	E
Barnett Ave	III	35	15.9	29.6	45.5	0.12	9.3	F
Total	III		163.2	196.1	359.3	1.31	13.1	E

Arterial Level of Service: NB Pacific Highway

Cross Street	Arterial Class	Flow Speed	Running Time	Signal Delay	Travel Time (s)	Dist (mi)	Arterial Speed	Arterial LOS
Grape St	II	30	11.6	41.8	53.4	0.08	5.5	F
Hawthorne St	II	30	10.2	21.0	31.2	0.07	7.6	F
W Laurel St	II	30	34.3	69.8	104.1	0.27	9.4	F
Sassafras St	II	45	42.6	81.0	123.6	0.48	14.1	E
Witherby St.	II	55	37.0	52.7	89.7	0.56	22.7	C
Barnett Ave	II	55	13.7	5.3	19.0	0.14	26.8	C
Sports Arena Blvd	II	45	17.4	3.3	20.7	0.16	27.8	C
Kurtz St	II	45	20.5	20.6	41.1	0.19	16.5	E
Taylor St	II	45	33.2	34.5	67.7	0.35	18.4	D
Total	II		220.5	330.0	550.5	2.30	15.1	E

Arterial Level of Service: SB Pacific Highway

Cross Street	Arterial Class	Flow Speed	Running Time	Signal Delay	Travel Time (s)	Dist (mi)	Arterial Speed	Arterial LOS
Rosecrans St	II	45	38.8	26.0	64.8	0.41	22.9	C
Kurtz St	II	45	33.2	46.5	79.7	0.35	15.6	E
Sports Arena Blvd	II	45	20.5	9.4	29.9	0.19	22.6	C
Barnett Ave	II	45	17.4	102.2	119.6	0.16	4.8	F
Witherby St.	II	55	13.7	20.6	34.3	0.14	14.8	E
Washington St	II	55	37.0	42.1	79.1	0.56	25.7	C
Sassafras St	II	45	39.7	16.0	55.7	0.44	28.2	B
W Laurel St	II	45	42.6	82.2	124.8	0.48	14.0	E
Hawthorne St	II	30	34.3	54.2	88.5	0.27	11.0	F
Grape St	II	30	10.2	12.2	22.4	0.07	10.6	F
Total	II		287.4	411.4	698.8	3.07	15.8	E

Arterial Level of Service: EB Rosecrans St

Cross Street	Arterial Class	Flow Speed	Running Time	Signal Delay	Travel Time (s)	Dist (mi)	Arterial Speed	Arterial LOS
Hugo St	II	35	16.7	20.5	37.2	0.13	12.9	F
Nimitz Blvd	II	35	23.3	116.2	139.5	0.19	4.8	F
Laning Rd	II	40	29.3	23.9	53.2	0.29	19.4	D
Barnett Ave	II	40	85.6	46.9	132.5	0.95	25.9	C
Midway Drive	II	40	45.5	94.0	139.5	0.49	12.6	F
Sports Arena Blvd	II	40	15.0	0.0	15.0	0.13	31.2	B
Kurtz St	II	35	12.0	36.1	48.1	0.10	7.2	F
Pacific Highway	II	35	29.1	30.3	59.4	0.24	14.8	E
Total	II		256.5	367.9	624.4	2.52	14.5	E

Arterial Level of Service: WB Rosecrans St

Cross Street	Arterial Class	Flow Speed	Running Time	Signal Delay	Travel Time (s)	Dist (mi)	Arterial Speed	Arterial LOS
Kurtz	II	35	29.1	14.0	43.1	0.24	20.4	D
Camino Del Rio West	II	35	12.0	116.6	128.6	0.10	2.7	F
Midway Drive	II	40	15.0	41.1	56.1	0.13	8.3	F
Lytton St	II	40	45.5	46.4	91.9	0.49	19.2	D
Laning Rd	II	40	85.6	9.1	94.7	0.95	36.2	A
Lowell St	II	40	29.3	102.9	132.2	0.29	7.8	F
Hugo St	II	35	23.3	11.8	35.1	0.19	19.2	D
Total	II		239.8	341.9	581.7	2.39	14.8	E

Arterial Level of Service: NB Sports Arena Blvd

Cross Street	Arterial Class	Flow Speed	Running Time	Signal Delay	Travel Time (s)	Dist (mi)	Arterial Speed	Arterial LOS
Dutch Flats Parkway	III	25	22.2	29.4	51.6	0.10	7.0	F
Charles Lindbergh Pa	III	25	32.2	14.7	46.9	0.19	15.0	D
Greenwood Street	III	35	24.4	7.1	31.5	0.20	23.3	C
Frontier Drive	III	35	19.5	24.5	44.0	0.15	12.5	E
Kemper Street	III	35	18.1	19.3	37.4	0.14	13.6	E
Hancock St.	III	35	22.7	15.1	37.8	0.19	18.0	C
Sports Arena Blvd	III	35	16.6	76.7	93.3	0.12	4.8	F
I-8 WB Off Ramp	III	35	36.1	86.5	122.6	0.30	8.8	F
Total	III		191.8	273.3	465.1	1.41	10.9	E

Arterial Level of Service: SB Sports Arena Blvd

Cross Street	Arterial Class	Flow Speed	Running Time	Signal Delay	Travel Time (s)	Dist (mi)	Arterial Speed	Arterial LOS
W Point Loma Blvd	III	35	36.1	95.6	131.7	0.30	8.2	F
Hancock St.	III	35	16.6	2.7	19.3	0.12	23.0	C
Kemper Street	III	35	22.7	52.1	74.8	0.19	9.1	F
Frontier Drive	III	35	18.1	11.1	29.2	0.14	17.5	D
East Drive	III	35	19.5	28.8	48.3	0.15	11.3	E
Rosecrans St	III	35	24.4	97.5	121.9	0.20	6.0	F
Charles Lindbergh Pa	III	25	29.7	15.9	45.6	0.16	13.0	E
Dutch Flats Parkway	III	25	32.2	8.6	40.8	0.19	17.2	D
Pacific Highway	III	25	22.2	50.7	72.9	0.10	5.0	F
Total	III		221.5	363.0	584.5	1.57	9.7	F

Arterial Level of Service: EB Taylor St

Cross Street	Arterial Class	Flow Speed	Running Time	Signal Delay	Travel Time (s)	Dist (mi)	Arterial Speed	Arterial LOS
Congress St	IV	35	15.7	21.0	36.7	0.10	9.3	D
Juan St	IV	35	11.2	24.9	36.1	0.07	6.8	F
	IV	35	18.3	12.3	30.6	0.13	15.4	C
Total	IV		45.2	58.2	103.4	0.29	10.2	D

Arterial Level of Service: WB Taylor St

Cross Street	Arterial Class	Flow Speed	Running Time	Signal Delay	Travel Time (s)	Dist (mi)	Arterial Speed	Arterial LOS
Morena Blvd	IV	35	17.7	23.4	41.1	0.11	9.4	D
	IV	35	18.3	12.4	30.7	0.13	15.3	C
Congress St	IV	35	11.2	6.5	17.7	0.07	13.8	C
Pacific Highway	IV	35	15.7	24.1	39.8	0.10	8.6	E
Total	IV		62.9	66.4	129.3	0.40	11.2	D

Mobility Report

Midway-Pacific Highway and Old Town Communities

May 2017

Prepared for:
City of San Diego

Prepared by:

CHEN RYAN
3900 Fifth Avenue, Suite 210
San Diego, CA 92103

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1.0 Introduction

1.1 Study Background and Purpose

This Mobility Report summarizes the physical and operational conditions of the Midway-Pacific Highway and Old Town communities' mobility systems as part of the City of San Diego's community plan update process. The evaluation culminates with an analysis of all travel modes under the horizon year 2035 Preferred Plan conditions. The report also describes key terms and methodologies utilized for conducting the analyses presented.

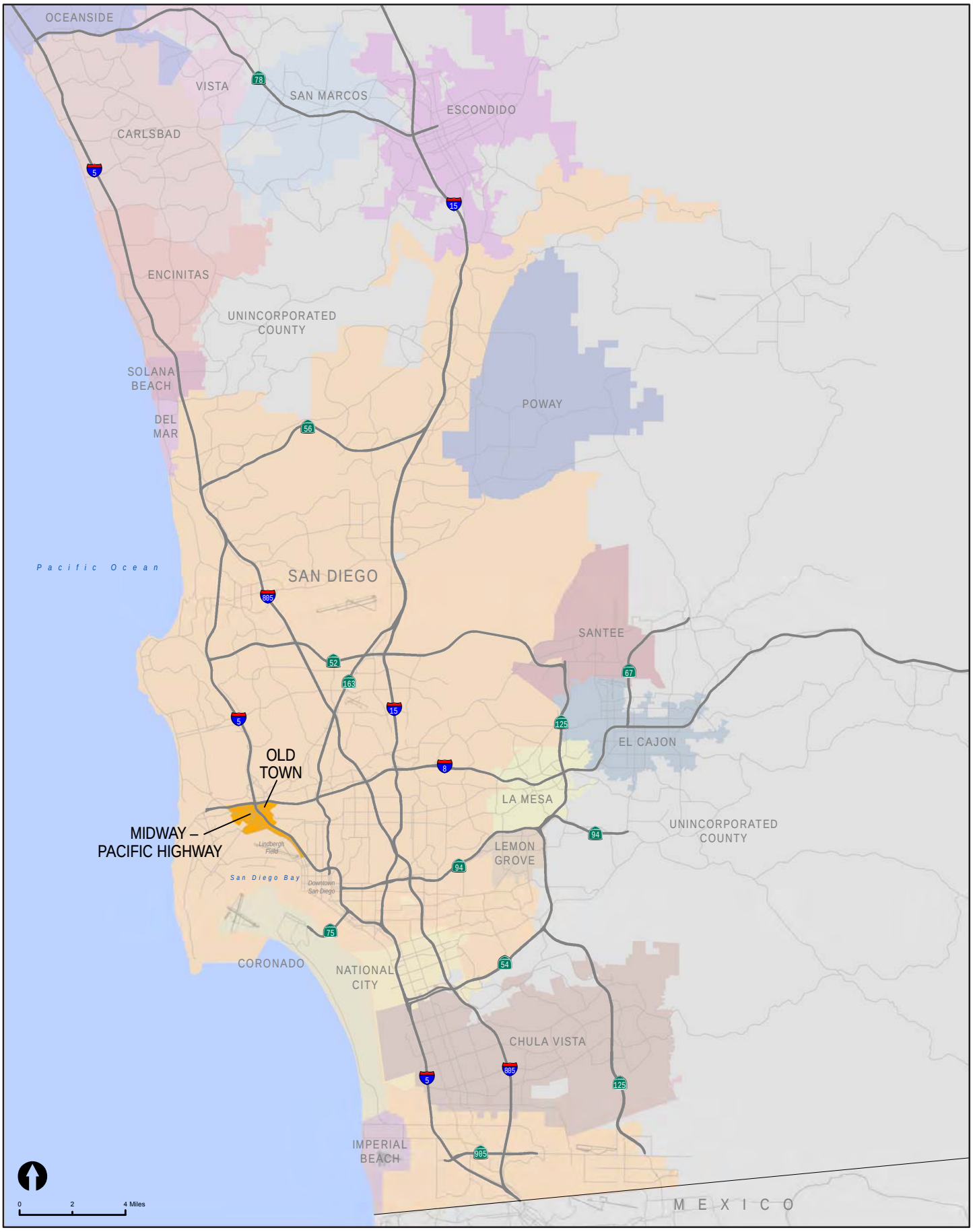
This Mobility Report is an update to the Midway-Pacific Highway Corridor Community Plan and Local Coastal Program Land Use Plan which was adopted by City Council in 1991, and the Old Town San Diego Community Plan, adopted in 1987.

The Preferred Plan is a strategy to address existing and forecast deficiencies related to mobility systems within the Midway-Pacific Highway and Old Town communities. The mobility networks are comprised of roadway and freeway systems, pedestrian and bicycle infrastructure, and public transit. Each of these transportation modes is discussed in the following chapters.

1.2 Study Location

The Midway-Pacific Highway and Old Town communities are located north of Downtown San Diego. The communities are both bound by Interstate 8 along the northern edge. Interstate 5 divides the communities, forming a north-south running boundary for each community. The Midway-Pacific Highway Community is bound by the Peninsula community and Barnett Avenue to west; and the Marine Corps Recruit Depot San Diego, the San Diego International Airport, and Laurel Street to the south. The Old Town Community is bound by Uptown and Mission Hills to the south and east.

Figure 1-1 displays the Midway-Pacific Highway and Old Town communities within the region.



Midway-Pacific Highway and Old Town Community Plan Update

CHEN RYAN

Figure 1-1
Midway-Pacific Highway and Old Town within the Region

Midway-Pacific Highway Community

The Midway-Pacific Highway community is situated north of Downtown San Diego and between the Old Town and Peninsula communities. The community encompasses approximately 800 acres of mostly flatland and is comprised of two basic elements: the central Midway area and the narrow, linear-shaped Pacific Highway Corridor.

Central Midway has an urbanized commercial core containing numerous shopping centers and institutional facilities which cater to the commercial needs of nearby residential and visitor populations. The area is characterized by wide streets, flat topography, and a varied mixture of flat-roofed large and small commercial buildings. The Pacific Highway Corridor, between Interstate 5 and Lindbergh Field, contains some of the City's oldest industrial areas. The corridor is defined by large scale buildings and unscreened commercial parking lots in the southern portion, and a group of smaller scale, low lying industrial buildings located between Witherby Street and Washington Street in the northern portion.

There are a few multifamily residential complexes located in the western portion of the community, adjacent to the Point Loma area. The planning area is generally characterized by a variety of commercial retail activities, and wide, multi-directional traffic intersections.

Since the 1960s, the Midway area has experienced an irregular development pattern, resulting in a lack of clear visual form both in terms of orientation and community legibility. The resulting diversity in development patterns, architectural styles, setbacks, and other development criteria has contributed to a disjointed and sporadic community image, where few buildings have compatibility or any functional relationship to each other and the surrounding neighborhood. Due to the area's low land valuations, high traffic utilization and inadequate zoning and development regulation, many auto-oriented commercial uses have located throughout the industrially zoned portions of the community. Much of the commercial development, including retail oriented auto sales and services, adult entertainment, and drive-thru restaurants, now exhibit a general lack of adequate parking, landscaping, and other commercial development amenities.

Old Town

The Old Town community covers 230 acres and is bound on the north by Interstate 8 and Mission Valley, on the west by Interstate 5 and Midway, and on the south and east by the Uptown/ Mission Hills hillsides.

Old Town San Diego, considered the "birthplace" of California, is the site of the first permanent Spanish Mission and settlement in California. The first Spanish Mission and Presidio were built on a hillside overlooking what is currently known as Old Town San Diego. At the base of the hill in the 1820's, a small Mexican community of adobe buildings was formed and by 1835 had attained the status of El Pueblo de San Diego.

In 1968, the State of California Department of Parks and Recreation established Old Town State Historic Park to preserve the rich heritage that characterized San Diego during the 1821 to 1872 period. The park includes a main plaza, exhibits, museums and living history demonstrations. Due to the historical nature and attractions within the community, Old Town San Diego is currently one of the region's largest tourist attractions. Within the community's central core (San Diego Avenue & Congress Street, between Twiggs Street and Ampudia Street) there are currently more than 150 shops, several restaurants, 17 museums, and historical sites.

There is a small number of residential neighborhoods located along the eastern, western and southern boundaries of the community.

1.3 Organization of the Report

The remainder of this Mobility Report is organized into the following chapters:

- *Chapter 2* describes the methodologies used to determine the study area and assess the pedestrian, transit, bicycle and vehicular systems.
- *Chapter 3* presents the Preferred Plan for the Midway-Pacific Highway community, including the development process, identification of existing community needs, and recommended improvements.
- *Chapter 4* presents the Preferred Plan for the Old Town community, including the development process, identification of existing community needs, and recommended improvements.
- *Chapter 5* provides an overview of the Transportation Demand Model Forecasting process utilized to project future travel patters under implementation of the Preferred Plan.
- *Chapter 6* concludes this document with the Preferred Plan analysis results for each mode. Additionally, Intelligent Transportation Systems (ITS), Transportation Demand Management (TDM) Systems, and Parking Management are described in this chapter.

2.0 Analysis Methodology

This chapter describes the methodologies used to determine the study area and assess the pedestrian, transit, bicycle and vehicular systems within the Midway-Pacific Highway and Old Town communities.

2.1 Selection of the Study Area

This section describes the process used to identify roadway segments and intersections for analysis.

2.1.1 Roadway Segments

Roadway segments were evaluated if one or more of the following circumstances applied:

- The roadway segment is an existing or planned circulation element roadway as identified in the Midway-Pacific Highway Corridor Community Plan and Local Coastal Program Land Use Plan (1991), or the Old Town San Diego Community Plan (1987).
- The roadway segment provides freeway access to/from the Midway-Pacific Highway or Old Town communities.
- The roadway segment is located outside of either study community, however, it may influence or impact the flow of transportation within either of the communities.

Based on the criteria listed above, Table 2.1 displays the roadway segments selected for analysis.

Table 2.1 Study Area Roadway Segments

ID	Roadway	From	To
North-South			
Midway Pacific Highway			
1	Lytton Street / Barnett Ave	Rosecrans St	Midway Dr
2	Midway Dr	W. Point Loma Blvd/Sports Arena Blvd	Kemper St
3		Kemper St	East Dr
4		East Dr	Rosecrans St
5		Rosecrans St	Barnett Ave
6	Sports Arena Blvd	I-8 WB Ramps	I-8 EB Ramps
7		I-8 EB Ramps	W. Point Loma Blvd
8		W. Point Loma Blvd/Midway Dr	Kemper St
9		Kemper St	East Dr
10		East Dr	Rosecrans St
11		Rosecrans St	Pacific Hwy
12	Kurtz St	Hancock St	Rosecrans St

Table 2.1 Study Area Roadway Segments

ID	Roadway	From	To
13	Kurtz St	Rosecrans St	Pacific Hwy
14	Hancock St	Sports Arena Blvd	Kurtz St
15		Kurtz St	Camino Del Rio West
16		Camino Del Rio West	Rosecrans St
17		Old Town Ave	Witherby St
18		Witherby St	Washington St
19	Kettner Blvd	Washington St	Vine St
20		Vine St	Sassafras St
21		Sassafras St	Laurel St
22	Pacific Hwy	Interstate-8	Taylor St
23		Taylor St	Kurtz St
24		Kurtz St	Sports Arena Blvd
25		Sports Arena Blvd	Barnett Ave
26		Barnett Ave	Washington St
27		Washington St	Sassafras St
28		Sassafras St	Laurel St
Old Town			
29	Congress St	Taylor St	Twiggs St
30		Twiggs St	Harney St
31		Harney St	San Diego Ave/ Ampudia St
32	San Diego Ave	Twiggs St	Conde St
33		Conde St	Ampudia St
34		Ampudia St	Old Town Ave
35		Old Town Ave	Hortensia St
36	Juan St	Taylor St	Twiggs St
37		Twiggs St	Harney St
38		Harney St	San Juan Rd
East-West			
Midway Pacific Highway			
39	Channel Wy	W. Mission Bay Dr	Hancock St
40	Kemper St	Kenyon St	Midway Dr
41		Midway Dr	Sports Arena Blvd
42		Sports Arena Blvd	Hancock St
43	Frontier Dr	Sports Arena Blvd	Kurtz St
44	Greenwood St	Sports Arena Blvd	Kurtz St
45	Camino Del Rio West	Rosecrans St	I-5/I-8 Ramps
46	Rosecrans St	Lytton St	Midway Dr
47		Midway Dr	Sports Arena Blvd
48	Rosecrans St	Sports Arena Blvd	Pacific Hwy/Taylor St

Table 2.1 Study Area Roadway Segments

ID	Roadway	From	To
49	Charles Lindbergh Pkwy	Midway Dr	Sports Arena Blvd
50		Sports Arena Blvd	Kurtz Street
51	Dutch Flats Pkwy	Barnett Avenue	Midway Dr
52		Midway Dr	Sports Arena Blvd
53	Barnett Ave	Midway Dr	Pacific Hwy
54	Washington St	Frontage Rd	Pacific St
55		Pacific St	Hancock St
56	Vine St	California St	Kettner Blvd
57	Sassafras St	Pacific Hwy	Kettner Blvd
58	Laurel St	Pacific Hwy	Kettner Blvd
Old Town			
59	Taylor St	Pacific Hwy/ Rosecrans St	Congress St
60		Congress St	Juan St
61		Juan St	Morena Blvd
62		Morena Blvd	I-8 EB Ramps
63	Twiggs St	Congress St	San Diego Ave
64		San Diego Ave	Juan St
65	Harney St	Congress St	San Diego Ave
66		San Diego Ave	Juan St
67	Old Town Ave	Hancock St	Moore St
68		Moore St	San Diego Ave

Source: Chen Ryan Associates (2016)

2.1.2 Intersections

Intersections were evaluated if one or more of the following circumstances applied:

- The intersection is comprised of a circulation element roadway intersecting with another circulation element roadway. This includes existing and future/planned circulation element roadways as identified in the Midway-Pacific Highway Corridor Community Plan and Local Coastal Program Land Use Plan (1991), or the Old Town San Diego Community Plan (1987).
- The intersection is at a freeway ramp interchange located within the Midway-Pacific Highway or Old Town communities or is a major gateway to either community.
- The intersection is a major intersection located outside of either community, however, it may influence or impact the flow of transportation within the communities.
- The intersection meets criteria used in previous studies, whereby both streets meet one of the following:
    - 4 lanes or greater

- 3 lanes and carries over 15,000 ADT
- 2 lanes and carries over 10,000 ADT

- Intersections at freeway access ramps.
- Significant intersections where travel time analysis is performed.

A total of 59 intersections were identified based on the criteria listed above, which include 11 intersections located outside the study communities. These intersections were added to the study area because of their proximity to the communities, and the likelihood that changes within the communities could directly affect traffic in/out of the communities. The 59 intersections include the following:

Midway-Pacific Highway

1. Lytton Street and Rosecrans Street
2. W. Mission Bay Drive and I-8 WB Off-Ramp
3. Sports Arena Boulevard and Channel Way
4. Midway Drive and Sports Arena/W. Point Loma Boulevard
5. Midway Drive and Kemper Street
6. Midway Drive and East Drive
7. Midway Drive and Rosecrans Street
8. Midway Drive and Charles Lindbergh Parkway
9. Midway Drive and Enterprise Street
10. Midway Drive and Barnett Avenue
11. Sports Arena Boulevard and Hancock Street
12. Sports Arena Boulevard and Kemper Street
13. Sports Arena Boulevard and Sports Arena Driveway
14. Sports Arena Boulevard and East Drive
15. Sports Arena Boulevard and Rosecrans Street
16. Sports Arena Boulevard and Charles Lindbergh Parkway
17. Sports Arena Boulevard and Pacific Highway
18. Kurtz Street and Hancock Street
19. Kurtz Street and Camino Del Rio West
20. Kurtz Street and Rosecrans Street
21. Kurtz Street and Pacific Highway
22. Hancock Street and Channel Way
23. Hancock Street and Camino Del Rio West
24. Hancock Street and Rosecrans Street
25. Hancock Street and Old Town Avenue
26. Hancock Street and Witherby Street
27. Hancock Street and Washington Street
28. Kettner Boulevard and Vine Street
29. Kettner Boulevard and Sassafras Street

30. Kettner Boulevard and West Laurel Street
31. Pacific Highway and Barnett Avenue
32. Pacific Highway and Washington Street @ Frontage Road
33. Pacific Highway and Washington Street
34. Pacific Highway and Sassafras Street
35. Pacific Highway and West Laurel Street

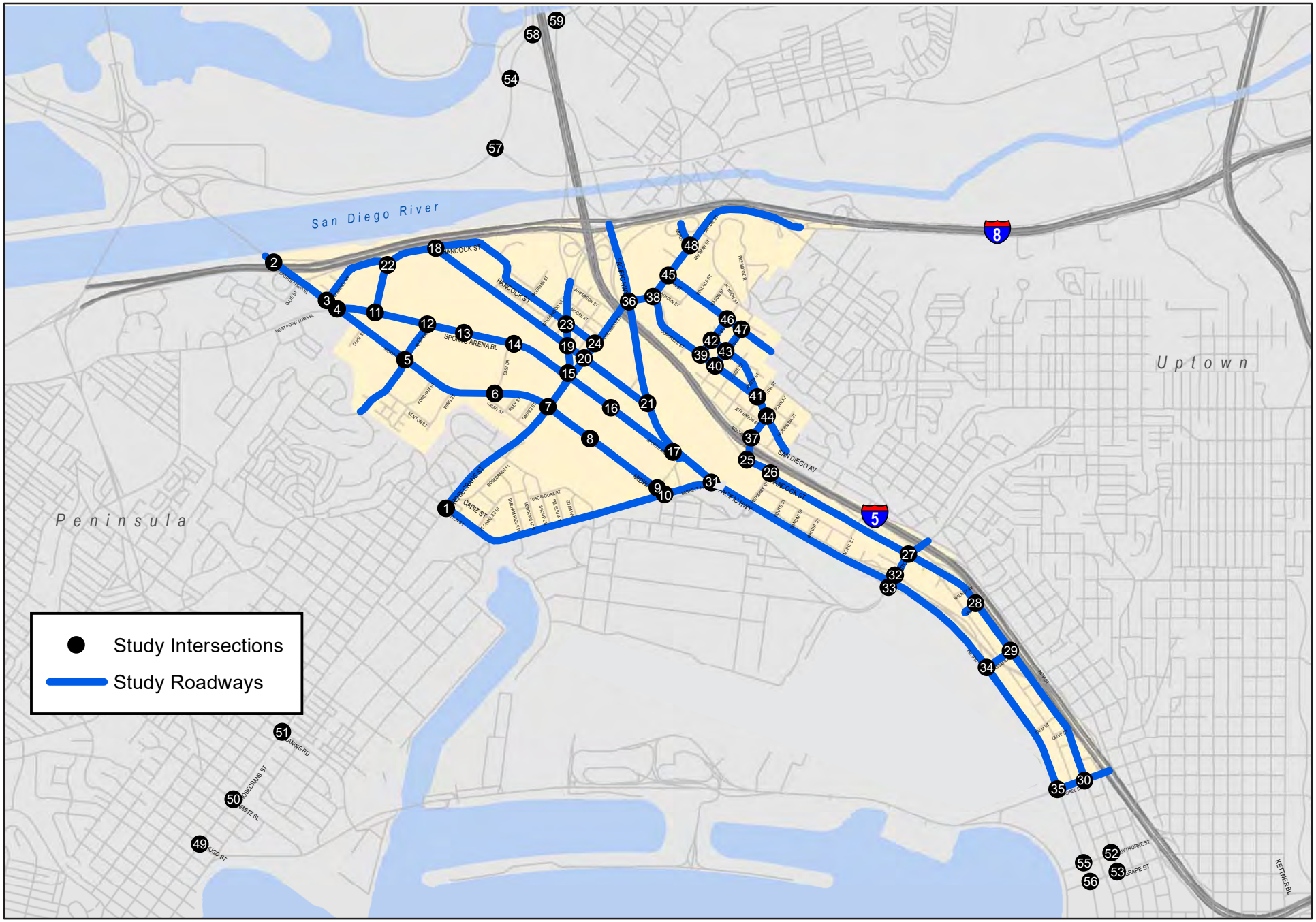
Old Town

36. Pacific Highway and Taylor Street
37. Moore Street and Old Town Avenue
38. Congress Street and Taylor Street
39. Congress Street and Twiggs Street
40. Congress Street and Harney Street
41. Congress Street and San Diego Avenue/Ampudia Street
42. San Diego Avenue and Twiggs Street
43. San Diego Avenue and Harney Street
44. San Diego Avenue and Old Town Avenue
45. Juan Street and Taylor Street
46. Juan Street and Twiggs Street
47. Juan Street and Harney Street
48. Morena Boulevard and Taylor Street

Intersections Outside of Study Communities

49. Hugo Street/N Harbor Drive and Rosecrans Street
50. Lowell Street/Nimitz Boulevard and Rosecrans Street
51. Kettner Boulevard and W Hawthorn Street
52. Kettner Boulevard and W Grape Street
53. Laning Road and Rosecrans Street
54. Pacific Highway and Sea World Drive
55. Pacific Highway and W Hawthorn Street
56. Pacific Highway and W Grape Street
57. Friars Road and Sea World Drive
58. I-5 SB Ramps and Sea World Drive
59. I-5 NB Ramps and Sea World Drive

Figure 2-1 displays the location of the 59 study intersections. As shown, this includes the 11 intersections located outside of the study communities.



Midway-Pacific Highway and
Old Town Community Plan Update

CHEN RYAN

Figure 2-1
Project Study Area

2.2 Vehicular Analysis

Analysis of the vehicular systems – roadways, intersections, and freeways – were prepared for this report in accordance with the City of San Diego and SANTEC/ITE Guidelines. Vehicular level of service (LOS) is a quantitative measure that represents the quality of service – or how well a transportation facility operates – as experienced by vehicular drivers. These conditions are generally described in terms of factors such as speed, travel time, freedom to maneuver, comfort, convenience, and safety. LOS A represents the best operating conditions from a driver's perspective, while LOS F represents the worst. Table 2.2 describes generalized definitions of vehicular LOS A through F as identified by the Highway Capacity Manual (2000).

Table 2.2 Vehicular Level of Service Definitions

LOS	Definition
A	Primarily free-flow operation. Vehicles are completely unimpeded in their ability to maneuver within the traffic stream. Controlled delay at the boundary intersections is minimal. The travel speed exceeds 85% of the base free-flow speed.
B	Reasonably unimpeded operation. The ability to maneuver within the traffic stream is only slightly restricted and control delay at the boundary intersections is not significant. The travel speed is between 67% and 85% of the base free-flow speed.
C	Stable operation. The ability to maneuver and change lanes at mid-segment locations may be more restricted than at LOS B. Longer queues at the boundary intersections may contribute to lower travel speeds. The travel speed is between 50% and 67% of the base free-flow speed.
D	Less stable condition in which small increases in flow may cause substantial increases in delay and decreases in travel speed. This operation may be due to adverse signal progression, high volume, or inappropriate signal timing at the boundary intersections. The travel speed is between 40% and 50% of the base free-flow speed.
E	Unstable operation and significant delay. Such operations may be due to some combination of adverse signal progression, high volume, and inappropriate signal timing at the boundary intersections. The travel speed is between 30% and 40% of the base free-flow speed.
F	Flow at extremely low speed. Congestion is likely occurring at the boundary intersections, as indicated by high delay and extensive queuing. The travel speed is 30% or less of the base free-flow speed. Also, LOS F is assigned to the subject direction of travel if the through movement at one or more boundary intersections have a volume-to-capacity ratio greater than 1.0.

Source: Highway Capacity Manual (2000)

2.2.1 Roadway Segment

Roadway segment level of service standards and thresholds provided the basis for analysis of arterial roadway segment performance. The analysis of roadway segment level of service is based on the functional classification of the roadway, the maximum capacity, roadway geometrics, and existing or forecast Average Daily Traffic (ADT) volumes.

Table 2.3 presents the roadway segment capacity and LOS standards utilized to analyze roadways evaluated in this report. These standards are generally used as long-range planning guidelines to determine the functional classification of roadways. The actual capacity of a roadway varies according to its physical and operational attributes. LOS D is considered acceptable for Mobility Element roadway segments in the City of San Diego. Often, a roadway segment operating at LOS

E or F based on theoretical capacity is found to operate acceptably in practice. In such cases, HCM arterial analysis may be conducted and utilized (or intersection analysis, if arterial analysis is not applicable) to provide a more accurate indication of LOS.

Table 2.3 City of San Diego Roadway Segment Daily Capacity and Level of Service Standards

Roadway Functional Classification	Level of Service				
	A	B	C	D	E
Expressway (6-lane)	< 30,000	< 42,000	< 60,000	< 70,000	< 80,000
Prime Arterial (6-lane)	< 25,000	< 35,000	< 50,000	< 55,000	< 60,000
Major Arterial (6-lane, divided)	< 20,000	< 28,000	< 40,000	< 45,000	< 50,000
Major Arterial (4-lane, divided)	< 15,000	< 21,000	< 30,000	< 35,000	< 40,000
Collector (4-lane w/ center left-turn lane)	< 10,000	< 14,000	< 20,000	< 25,000	< 30,000
Collector (3-lane w/ center left-turn lane)	< 7,500	< 10,500	< 15,000	< 19,000	< 22,500
Collector (4-lane w/o center lane)	< 5,000	< 7,000	< 10,000	< 13,000	< 15,000
Collector (2-lane w/ center left-turn lane)					
Collector (2-lane no fronting property)	< 4,000	< 5,500	< 7,500	< 9,000	< 10,000
Collector (2-lane w/ commercial fronting)	< 2,500	< 3,500	< 5,000	< 6,500	< 8,000
Collector (2-lane multi-family fronting)					
Sub-Collector (2-lane single-family)	-	-	< 2,200	-	-

Source: City of San Diego Traffic Impact Study Manual (1998)

Note: Bold numbers indicate the ADT thresholds for acceptable LOS.

2.2.2 Peak Hour Intersection

This section presents the methodologies used to perform peak hour intersection capacity analysis, for both signalized and unsignalized intersections. The following assumptions were utilized in conducting all intersection level of service analyses:

- Pedestrian Calls per Hour: Based on existing pedestrian counts.
- Heavy Vehicle Factor: A 2% heavy vehicle factor was assumed for all intersections within the study area.
- Peak Hour Factor: Based on existing peak hour counts.
- Signal Timing: Based on existing signal timing plans (as of November 2012).

Signalized Intersection Analysis

The signalized intersection analysis utilized in this study conforms to the operational analysis methodology outlined in 2000 Highway Capacity Manual (HCM), Transportation Research Board Special Report 209. This method defines LOS in terms of delay, or more specifically, average control delay per vehicle (sec/veh). The 2000 HCM methodology sets 1,900 passenger-cars per hour per lane (pcphpl) as the ideal saturation flow rate at signalized intersections based upon the minimum headway that can be sustained between departing vehicles at a signalized intersection. The service saturation flow rate, which reflects the saturation flow rate specific to the study facility, is determined by adjusting the ideal saturation flow rate for lane width, on-street parking, bus stops, pedestrian volume, traffic composition (or percentage of heavy vehicles), and shared

lane movements (e.g. through and right-turn movements sharing the same lane). The level of service criteria used for this technique are described in Table 2.4. The computerized analysis of intersection operations was performed utilizing the Synchro 8.0 (2000 HCM methodology) traffic analysis software (by Trafficware, 2011).

Table 2.4 Signalized intersection LOS – HCM Operational Analysis Method

Average Control Delay Per Vehicle (seconds)	Level of Service (LOS) Characteristics
≤10.0	*LOS A* occurs when the volume-to-capacity ratio is low and either progression is exceptionally favorable or the cycle length is very short. If it is due to favorable progression, most vehicles arrive during the green indication and travel through the intersection without stopping.
10.1 – 20.0	*LOS B* occurs when the volume-to-capacity ratio is low and either progression is highly favorable or the cycle length is short. More vehicles stop than with LOS A.
20.1 – 35.0	*LOS C* occurs when progression is favorable or the cycle length is moderate. The number of vehicles stopping is significant, although many vehicles still pass through the intersection without stopping.
35.1 – 55.0	*LOS D* occurs when the volume-to-capacity ratio is high and either progression is ineffective or the cycle length is long. Many vehicles stop and individual cycle failures are noticeable.
55.1 – 80.0	*LOS E* occurs when the volume-to-capacity ratio is high, progression is unfavorable, and the cycle length is long. Individual cycle failures are frequent.
>80.0	*LOS F* occurs when the volume-to-capacity ratio is very high, progression is very poor, and the cycle length is long. Most cycles fail to clear the queue.

Source: Highway Capacity Manual, Transportation Research Board Special Report 209 (2000)

Unsignalized Intersection Analysis

Unsignalized intersections, including two-way and all-way stop controlled intersections were analyzed using the *2000 HCM* unsignalized intersection analysis methodology. The Synchro 8.0 software supports this methodology and was utilized to produce LOS results. The LOS for a two-way stop controlled (TWSC) intersection is determined by the computed or measured control delay and is defined for each minor movement. The LOS for an all-way stop controlled (AWSC) intersection is determined by the computed or measured average control delay of all movements. Table 2.5 summarizes the level of service criteria for unsignalized intersections.

Table 2.5 Level of Service Criteria for Stop Controlled Unsignalized Intersections

Average Control Delay (sec/veh)	Level of Service
≤10.0	A
10.1 – 15.0	B
15.1 – 25.0	C
25.1 – 35.0	D
35.1 – 50.0	E
>50.0	F

Source: Highway Capacity Manual (2000)

The City of San Diego considers LOS D or better during the AM and PM peak hours to be an acceptable intersection level of service.

2.2.3 Freeway

The freeway level of service analysis followed procedures developed by Caltrans District 11. The procedure involves estimating a peak hour volume to capacity ratio (V/C). Peak hour volumes are estimated from the application of design hour ("K"), directional ("D"), and truck ("T") factors to average daily traffic (ADT) volumes). The base capacities were assumed to be 2,350 passenger-cars per hour per main lane (pc/h/ln) and 1,410 pc/h/ln for auxiliary lane. A 0.95 peak hour factor (PHF) was utilized for this analysis. The resulting V/C ratio was then compared to acceptable ranges of V/C values corresponding to the various levels of service for each facility classification, as shown in Table 2.6. The corresponding level of service represents an approximation of anticipated future freeway operating conditions in the peak direction of travel during the peak hour. LOS D or better was used in this study as the threshold for acceptable freeway operations based upon Caltrans and the SANDAG Regional Growth Management Strategy (RGMS) requirements.

Table 2.6 Caltrans District 11 Freeway Segment Level of Service Definitions

LOS	V/C	Congestion/Delay	Traffic Description
Used for freeways, expressways and conventional highways			
"A"	<0.41	None	Free flow.
"B"	0.42-0.62	None	Free to stable flow, light to moderate volumes.
"C"	0.63-0.79	None to minimal	Stable flow, moderate volumes, freedom to maneuver noticeably restricted.
"D"	0.80-0.92	Minimal to substantial	Approaches unstable flow, heavy volumes, very limited freedom to maneuver.
"E"	0.93-1.00	Significant	Extremely unstable flow, maneuverability and psychological comfort extremely poor.
Used for conventional highways			
"F"	>1.00	Considerable	Forced or breakdown flow. Delay measured in average travel speed (MPH). Signalized segments experience delays >60.0 seconds/vehicle.
Used for freeways and expressways			
"F0"	1.01–1.25	Considerable (0-1 hour delay)	Forced flow, heavy congestion, long queues form behind breakdown points, stop and go.
"F1"	1.26-1.35	Severe (1-2 hour delay)	Very heavy congestion, very long queues.
"F2"	1.36-1.45	Very severe (2-3 hour delay)	Extremely heavy congestion, longer queues, more numerous breakdown points, longer stop periods.
"F3"	>1.46	Extremely severe (3+ hours of delay)	Gridlock.

Source: SANTEC/ITE Guidelines for TIS in the San Diego Region

2.2.4 Ramp Metering Analysis

Ramp metering is a means of controlling the volume of traffic entering the freeway with the goal of improving freeway main lane traffic operations and flow. Freeway ramp meter analyses estimate peak hour queues and delays at freeway ramps by comparing existing volumes to the meter rate at the given location.

Meter rates, which represent the amount of vehicles permitted through the signal, onto the ramp and freeway, were obtained from Caltrans for use in the analysis. Ramp metering analyses to calculate delays at study area freeway ramps were conducted following the procedures outlined in the *City of San Diego Traffic Impact Study Manual (1998)*.

2.3 Multimodal Analysis

Recent planning efforts and legislative actions have redefined the way community transportation planning is carried out. An important unifying theme is to achieve a more balanced, multimodal transportation system that allows people of varying physical and economic conditions to accomplish daily activities without making a single-occupant vehicle trip. A balanced system will address many complex transportation issues such as traffic congestion, greenhouse gas emissions, community health, and economic vitality of a community.

Multimodal analyses are gaining attention among local and regional jurisdictions as one method of supporting progress toward these issues. This section describes the pedestrian, bicycle, and transit analysis methodologies used in this report.

2.3.1 Pedestrian Assessment

Three analyses were utilized to assess overall pedestrian mobility: 1) network connectivity; 2) facility quality; and 3) combined network connectivity and quality.

Pedestrian Connectivity Ratio

A pedestrian travelshed analysis was used to assess the level of connectivity provided from each Traffic Analysis Zone (TAZ) with pedestrian friendly land uses (residential, commercial, office or recreational). A 0.5 mile pedestrian network buffer was drawn around each TAZ within the community containing pedestrian friendly land uses. That area was then compared to the area of a 0.5 mile as-the-crow-flies buffer (502.7 acres) to develop a Pedestrian Connectivity Ratio for the intersection. The higher the Pedestrian Connectivity Ratio, the better the overall walking connectivity from the TAZ.

Pedestrian Environment Quality Evaluation (PEQE)

The quality of all roadway segments, intersections, and mid-block crossings within the Midway-Pacific Highway and Old Town communities were evaluated under Preferred Plan conditions using the Pedestrian Environmental Quality Evaluation (PEQE) tool. Table 2.7 outlines the evaluation system used to develop the PEQE scoring metric.

Table 2.7 Pedestrian Environment Quality Ranking System

Facility Type	Measure	Description/Feature	Scoring
Segment *(between two intersections)*	Horizontal Buffer	Between the edge of auto travel way and the edge of clear pedestrian zone	0 point: < 6 feet 1 point: 6 – 14 feet 2 points: > 14 feet
	Lighting	--	0 point: below standard/requirement 1 point: meet standard/requirement 2 points: exceed standard/requirement
	Clear Pedestrian Zone	5' minimum	0 point: has obstructions 2 points: no obstructions
	Posted Speed Limit	--	0 point: > 40 mph 1 point: 30 – 40 mph 2 points: < 30 mph
		Maximum Points	8 points
Intersection	Physical Feature	• Enhanced/High Visibility Crosswalk • Raised Crosswalk/Speed Table • Advanced Stop Bar • Bulb out/Curb Extension	0 point: < 1 feature per ped crossing 1 point: 1 – 2 features per ped crossing 2 points: > 2 features per ped crossing
	Operational Feature	• Pedestrian Countdown Signal • Pedestrian Lead Interval • No-Turn On Red Sign/Signal • Additional Pedestrian Signage	0 point: < 1 feature per ped crossing 1 point: 1 – 2 features per ped crossing 2 points: > 2 features per ped crossing
Intersection (Continued)	ADA Curb Ramp	--	0 point: below standard/requirement 2 points: meet standard/requirement
	Traffic Control	--	0 point: No control 1 point: Stop sign controlled 2 points: Signal/Roundabout/Traffic Circle
		Maximum Points	8 points
Mid-block Crossing	Visibility	--	0 point: w/o high visibility crosswalk 2 points: with high visibility crosswalk
	Crossing Distance	--	0 point: no treatment 2 points: with bulb out or pedestrian refuge
	ADA Curb Ramp	--	0 point: below standard/requirement 2 points: meet standard/requirement
	Traffic Control	--	0 point: No control 1 point: Flashing Beacon 2 points: Signal/Pedestrian Hybrid Beacon
		Maximum Points	8 points
Final PEQE Scoring:			
Low: < 4 points Medium: 4-6 points High: > 7 points			

Combined Pedestrian Network Connectivity and Quality Assessment

This evaluation involves assessing the connectivity and quality of the walking environment within each community. Pedestrian network connectivity and quality is assessed using a combination of the pedestrian travelshed and quality assessment previously described. The following steps outline the evaluation process used:

a. *Total Walking Distance* – a 0.5 mile pedestrian network buffer is drawn around each study intersection, regardless of PEQE score.

b. *Quality Walking Distance* – a 0.5 mile pedestrian network buffer is drawn around each study intersection, using only pedestrian facilities with a PEQE ranking of Medium or High (including roadway links and intersections, and not including mid-block crossings). PEQE scores on each side of the roadway segment are added together and assigned a quality rating using the following scale (Low: 0-7, Medium: 8-12, High: 13+), to get a single quality measure for the roadway segment. Segments with a "High" rating are considered quality segments.

c. *Quality Walk Ratio* – The ratio of high quality connectivity to overall connectivity along all pedestrian facilities is determined using the following equation:

$$\text{Quality Walk Ratio} = \frac{\textit{Quality Walking Distance}}{\textit{Total Walking Distance (Existing Conditions)}}$$

2.3.2 Bicycle Assessment

Three analyses were utilized to assess overall bicycle mobility: 1) network connectivity; 2) facility quality; and 3) combined network connectivity and quality.

Bicycle Connectivity Ratio – Travelshed Analysis

A bicycle travelshed analysis was used to assess the level of connectivity provided from each study intersection. A 1.0 mile bicycle network buffer (using all bikeable roadways plus multi-use paths) is drawn around each intersection. That area is then compared to the area of a 1.0 mile as-the-crow-flies buffer (2,010.6 acres) to develop a Bicycle Connectivity Ratio for the intersection. The higher the Connectivity Ratio, the better the overall connectivity from the intersection.

Bicycle Facility Quality

The bicycle environment is assessed using the Bicycle Level of Traffic Stress (LTS) methodology, as developed by Mekuria, et al. (2012) of the Mineta Transportation Institute and reported in *Low-Stress Bicycle and Network Connectivity*. LTS classifies the street network into categories according to the level of stress it causes cyclists, taking into consideration a cyclist's physical separation from vehicular traffic, vehicular traffic speeds along the roadway segment, number of travel lanes, and factors related to intersection approaches with right-turn lanes and unsignalized crossings. LTS scores range from 1 (lowest stress) to 4 (highest stress).

Table 2.8 displays the four LTS categories with descriptions of traffic stress experienced by the cyclist and the cycling conditions associated with each category.

Combined Bicycle Network Connectivity and Quality Assessment

This assessment quantifies the connectivity of low stress bicycle facilities (LTS score 1 or 2) between TAZs within the study communities. This measure results in each TAZ being assigned a percentage reflecting the number of total TAZ reachable via low stress bicycle facilities within the study area.

Table 2.8 Level of Traffic Stress Classifications and Descriptions

LTS Category	LTS Description	Cycling Conditions Fitting LTS Category
LTS 1	Presenting little traffic stress and demanding little attention from cyclists; suitable for almost all cyclists, including children trained to safely cross intersections	• Facility that is physically separated from traffic or an exclusive cycling zone next to a slow traffic stream with no more than one lane per direction • A shared roadway where cyclists only interact with the occasional motor vehicle with a low speed differential • Ample space for cyclist when alongside a parking lane • Intersections are easy to approach and cross
LTS 2	Presenting little traffic stress but demanding more attention than might be expected from children	• Facility that is physically separated from traffic or an exclusive cycling zone next to a well-connected traffic stream with adequate clearance from parking lanes • A shared roadway where cyclists only interact with the occasional motor vehicle (as opposed to a stream of traffic) with a low speed differential • Unambiguous priority to the cyclist where cars must cross bike lanes (e.g. at dedicated right-turn lanes); design speed for right-turn lanes comparable to bicycling speeds • Crossings not difficult for most adults
LTS 3	Presenting enough traffic stress to deter riders not comfortable with sharing the roadway with traffic	• An exclusive cycling zone (lane) next to moderate-speed vehicular traffic • A shared roadway that is not multilane and has moderately low automobile travel speeds • Crossings may be longer or across higher-speed roadways than allowed by LTS 2, but area still considered acceptably safe to most adult pedestrians
LTS 4	Presenting enough traffic stress to deter all but the Strong & Fearless cycling demographic (estimated at <1% of the population)	• An exclusive cycling zone (lane) next to high-speed and multi-lane vehicular traffic • A shared roadway with multiple lanes per direction with high traffic speeds • Cyclist must maneuver through dedicated right-turn lanes containing no dedicated bicycling space and designed for turning speeds faster than bicycling speeds

Source: Mekuria, et al. (2012)

2.3.3 Transit Assessment

Two performance measures were used to analyze transit conditions, including station quality and arterial speed.

Station Quality – Presence of Amenities

Each transit station/stop was reviewed for the presence of the following amenities:

- Shelters
- Benches
- Trash Receptacles
- Station Signs
- Maps/Wayfinding
- Lighting
- ADA Compliancy

Table 2.9 displays the standard amenities that should be provided at transit stops/stations based on daily passenger boardings (across all routes).

Table 2.9 Transit Amenity Standards by Ridership Levels

Amenity	Daily Passenger Boardings by Stop/Station				
	< 50	50 – 100	101 – 200	201 – 500	> 500
Sign and Pole	X	X	X	X	
Built-in Sign					X
Expanded Sidewalk			X	X	X
Bench		X	X	X	X
Shelter			X	X	X
Route Designations	X	X	X	X	X
Time Table				X	X
Route Map			X	X	X
System Map					X
Trash Receptacle				X	X
Lighting			X	X	X
ADA Compliant	X	X	X	X	X

Source: MTS Design for Transit (1993)

Arterial Speed

On-time bus performance can be directly impacted by vehicular traffic congestion along roadways servicing bus routes. An HCM roadway arterial speed analysis was used to identify locations in which on-time performance is currently or may be impacted under future conditions by vehicular traffic congestion.

Arterial Level of Service (LOS) is based on the average peak hour travel speeds along a roadway segment. The average travel speed is computed from the running time on the arterial segment(s) and the intersection approach delay. Average speed is strongly influenced by the number of signals per mile and the average intersection delay. On a given facility, factors such as

inappropriate signal timing, poor progression, and increasing traffic flow can substantially degrade the arterial LOS.

Table 2.10 displays the LOS thresholds used for the arterial analysis. Arterial speed analyses should be performed utilizing the methodologies in the version of the Highway Capacity Manual (HCM) that is currently accepted by the City of San Diego

Table 2.10 Arterial Analysis Level of Service Thresholds

Arterial Class	I	II	III
Range of Free Flow Speed (mph)	45 to 35	35 to 30	30 to 25
Typical Free Flow Speed (mph)	40 mph	33 mph	27 mph
Level of Service Analysis	**Average Travel Speed**		
A	35	30	25
B	28	24	19
C	22	18	13
D	17	14	9
E	13	10	7
F	< 13	< 10	< 7

Source: Highway Capacity Manual (TRB 1997)

3.0 Midway-Pacific Highway Preferred Plan

This section documents the mobility related issues and needs of the Midway-Pacific Highway community and the process used to identify those issues. This section also outlines the mobility improvements recommended under buildout of Preferred Plan conditions and the process used to develop these improvements.

3.1 Development of the Preferred Plan

3.1.1 Identification of Issues and Needs

Existing mobility related issues and needs within the Midway-Pacific Highway community were identified in the *Community of Midway/Pacific Highway Corridor and Old Town Mobility Existing Conditions Report; September 2012 (Existing Conditions Report)*. The issues and needs identified in the Existing Conditions Report were used, in conjunction with the other planning efforts and the overall community vision, to develop the recommended mobility improvements incorporated into the Preferred Plan.

3.1.2 Development of Preferred Plan Improvements

Preferred Plan improvements were developed by first cross checking the mobility issues and needs, identified in the Existing Conditions Report, against the mobility issues and needs identified in several other on-going or recent planning efforts, including:

- Midway/Pacific Highway Urban Greening Plan (December 2016)
- I-8 Corridor Study (August 2016)
- San Diego Forward, The Regional Plan (October 2015)
- City of San Diego Bicycle Master Plan (December 2013)
- City of San Diego Pedestrian Master Plan – Phase 4 (December 2013)
- Rosecrans Corridor Mobility Study (February 2010)
- Destination Lindbergh Technical Report: San Diego International Airport (November 2008)
- San Diego International Airport Master Plan (November 2008)

Where possible, the Preferred Plan carried forward or maintained the relevant improvements from on-going or previous planning efforts which have been adopted or vetted by the community. New improvement strategies were then developed for the issues and needs, identified in the Existing Conditions Report, which were not addressed in other planning efforts. Additional mobility improvements were also developed to accommodate the anticipated future growth within the community. The following sections outline the mobility issues and needs identified in the Existing Conditions Report and the associated improvements recommended under the Preferred Plan to alleviate them.

3.2 Street and Freeway System

3.2.1 Identified Street and Freeway Needs

There is constrained regional access to/from the Midway-Pacific Highway Community and to adjacent communities. A significant amount of regional traffic traverses the local roadway system within the community since there are limited regional access points, missing freeway-to-freeway connectors between I-8 and I-5, as well as major employment centers and trip generators within and adjacent to the community. Figure 3-1 displays regional access issues in the Midway-Pacific Highway community.

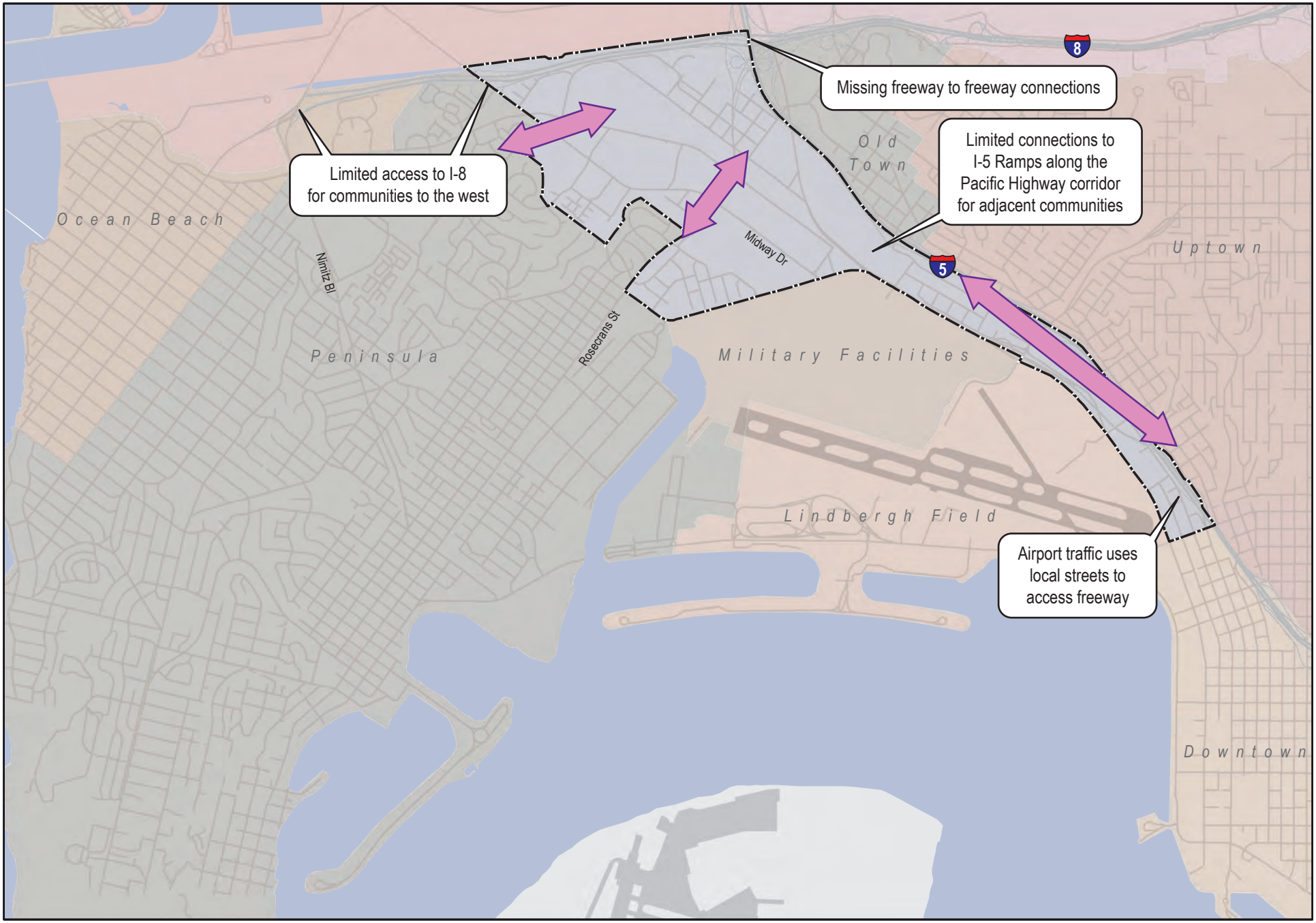
Constrained regional access, large trip generators, and limited circulation created by large blocks within and adjacent to the community, result in highly concentrated traffic volumes along study roadways providing freeway access. This concentration of traffic volumes creates congestion, low traffic speeds and delays on both the Rosecrans Street and Camino Del Rio West. Figure 3-2 displays the location of identified issues/needs within the Midway-Pacific Highway community.

3.2.2 Street and Freeway Improvements

A list of Preferred Plan proposed roadway improvements, new roadways, intersection improvements, new intersections, and freeway improvements are presented throughout this section. These improvements are predominantly based on the future year traffic volumes that are projected under buildout of the Preferred Plan, as displayed in Figure 5-1. Full analysis of all Preferred Plan roadways is provided in Chapter 6.

Roadways

- *Lytton Street/Barnett Avenue, between Rosecrans Street and Midway Drive* – Construct a raised median along these portions of Lytton Street / Barnett Avenue. This will improve Lytton Street to a four-lane major configuration.
- *Sports Arena Boulevard, between Interstate 8 and Rosecrans Street* – Improve this section of Sports Arena Boulevard to a six-lane major arterial. *(Note: Conceptual drawings of the improvements along Sports Arena Boulevard are provided in Figures 3-8 and 3-10).*
- *Sports Arena Boulevard, between Rosecrans Street and Pacific Highway* – Improve this section of Sports Arena Boulevard from a sub-collector to a two-lane collector with a continuous left-turn lane.
- *Kurtz Street, between Rosecrans Street and Pacific Highway* – Restripe this section of Kurtz Street from a two-lane collector to a two-lane collector with center left turn lane.
- *Rosecrans Street, between Lytton Street and Sports Arena Boulevard* – Improve this section of Rosecrans Street from a six-lane major to a six-lane prime arterial, which would require limiting driveway access. *(Note: A conceptual drawing of the improvements along Rosecrans Street are provided as Figure 3-6).*



Midway-Pacific Highway and
Old Town Community Plan Update

CHEN RYAN

Figure 3-1
Regional Access -
Midway-Pacific Highway Community

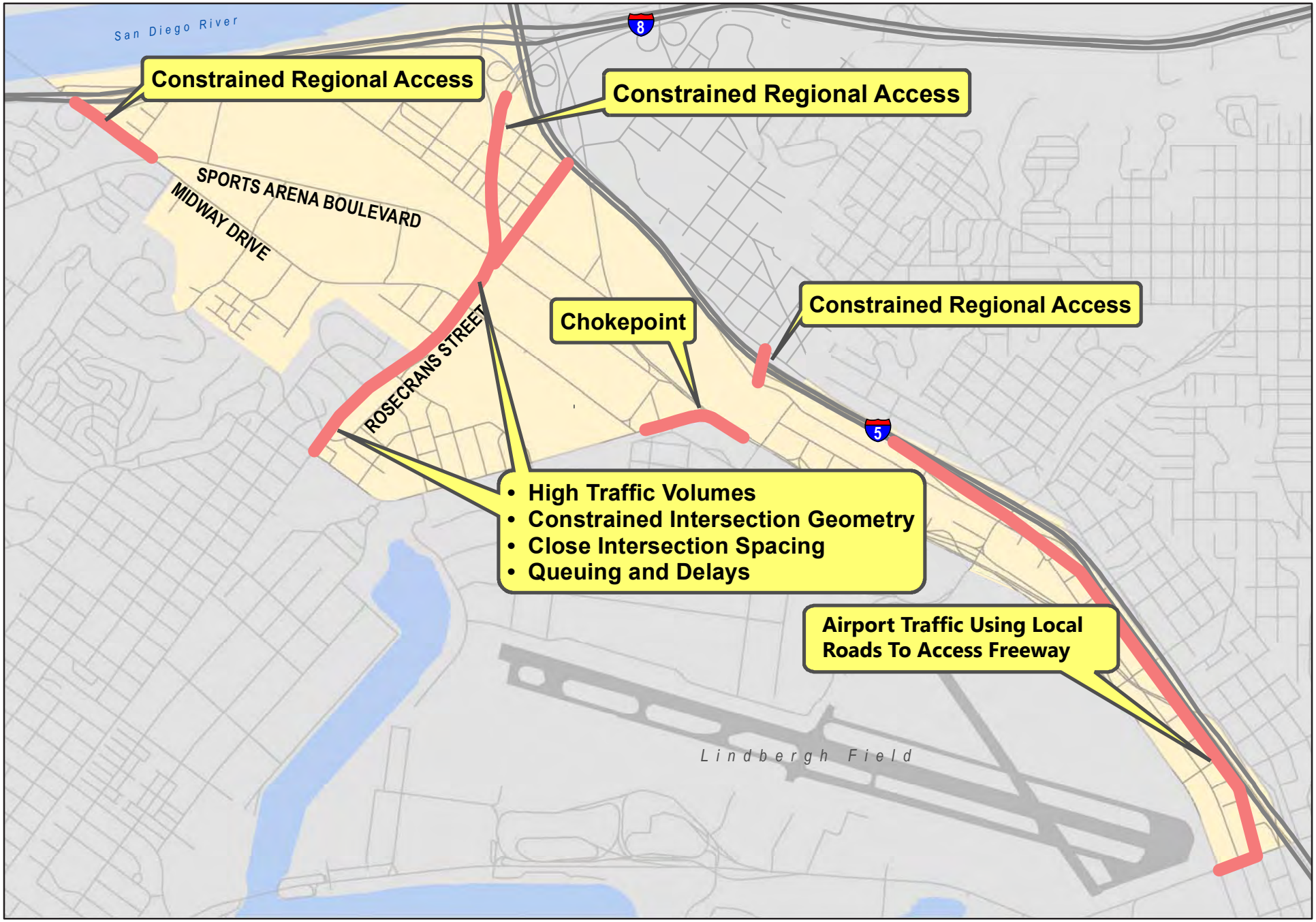


Figure 3-2
Identified Vehicular Issues and Needs -
Midway-Pacific Highway Community

Roadways (continued)

- *Rosecrans Street, between Sports Arena Boulevard and Taylor Street* – Construct a landscaped median along this section of Rosecrans Street. This will improve this section of Rosecrans Street to a four-lane major configuration. *(Note: A conceptual drawing of the improvements along this segment of Rosecrans Street is provided as Figure 3-7)*.
- *Hancock Street, between Kurtz Street and Rosecrans Street* – Widen this section of Hancock Street from a two-lane collector (one-way) to a three-lane major (one-way).
- *Hancock Street, between Old Town Avenue and Witherby Street* – Widen this section of Hancock Street from a two-lane collector to a four-lane collector.
- *Barnett Avenue, between Midway Drive and Pacific Highway* – Widen this section of Barnett Avenue from a four-lane major to a six-lane prime arterial.
- *W. Mission Bay Drive, between I-8 WB Ramps and I-8 EB Ramps* – Widen this section of W. Mission Bay Drive from a five-lane prime arterial to a six-lane prime arterial.
- *Camino Del Rio, Moore Street/Greenwood Street* – Extend the existing median to close the southbound left turn pocket along Camino Del Rio W at the intersection of Moore Street / Greenwood Street to reduce vehicular conflicts.

New Roadways

To provide better east/west connectivity throughout the Midway-Pacific Highway community and provide additional access to potential new developments within the existing "super blocks," the Preferred Plan proposes the following new roadways segments:

1. *Kemper Street Extension* – Kemper Street will be extended between Sports Arena Boulevard and Kurtz Street, connecting as the southwest leg of the Kurtz Street / Hancock Street intersection. The Kemper Street extension will be constructed as a two-lane collector with a continuous left-turn lane.
2. *Frontier Drive* – Frontier Drive will be a new roadway connecting between Sports Arena Boulevard and Kurtz Street. Frontier Drive will be located between the new Kemper Street extension and the Greenwood Street extension. Frontier Drive will be constructed as a two-lane collector with a continuous left-turn lane.
3. *Greenwood Street Extension* – Greenwood Street will be extended between Kurtz Street and Sports Arena Boulevard. Greenwood Street between Sports Arena Boulevard and Midway Drive will follow the alignment of the existing East Drive private street. Greenwood Street will be constructed as a two-lane collector.
4. *Charles Lindbergh Parkway* – Charles Lindbergh Parkway will be a new street connecting between Kurtz Street and Midway Drive. Charles Lindbergh Parkway will be located halfway between Rosecrans Street and the new Dutch Flats Parkway. Charles Lindbergh Parkway will be constructed as a two-lane collector with a continuous left-turn lane.
5. *Dutch Flats Parkway* – Dutch Flats Parkway will be a new roadway connecting between Sports Arena Boulevard and Barnett Avenue. Dutch Flats Parkway will be located between

the new Charles Lindbergh Parkway and Enterprise Street. Dutch Flats Parkway will be constructed as a two-lane collector with a continuous left-turn lane.

It should be noted that implementation of these new roadway segments would necessitate additional right-of-way and most likely require the redevelopment of adjacent properties. All roadways will be designed in accordance with the *City of San Diego Street Design Manual* and their corresponding classification. A summary of the roadway improvements in the Midway-Pacific Highway community is presented in Table 3.1.

Table 3.1 Summary of Roadway Improvements

Roadway	Segment	Existing Configuration	Recommended Classification
Segment Modifications			
Lytton St / Barnett Ave	Rosecrans St and Midway Dr	4-Lane Collector W/ CLTL	4-Lane Major
Sports Arena Blvd	Interstate 8 and Rosecrans St	5-Lane Major	6-Lane Major
Sports Arena Blvd	Rosecrans St and Pacific Hwy	Sub-Collector	2-Lane Collector W/ CLTL
Kurtz St	Rosecrans St and Pacific Hwy	2-Lane Collector	2-Lane Collector W/ CLTL
Rosecrans St	Lytton St and Sports Arena Blvd	6-Lane Major	6-Lane Prime
Rosecrans St	Sports Arena Blvd and Taylor St	4-Lane Collector W/ CLTL	4-Lane Major
Hancock St	Kurtz St and Rosecrans St	2-Lane Collector (One-Way)	3-Lane Major (One-Way)
Hancock St	Old Town Ave and Witherby St	2-Lane Collector	4-Lane Collector
Barnett Ave	Midway Dr and Pacific Hwy	4-Lane Major	6-Lane Prime
W. Mission Bay Dr	I-8 WB Ramps and I-8 EB Ramps	5-Lane Prime	6-Lane Prime
New Roadways			
Kemper St	Sports Arena Blvd and Kurtz St	Does Not Exist	2-Lane Collector W/CLTL
Frontier Dr	Sports Arena Blvd and Kurtz St	Does Not Exist	2-Lane Collector W/ CLTL
Greenwood St	Kurtz St and Sports Arena Blvd	Does Not Exist	2-Lane Collector
Charles Lindbergh Pkwy	Kurtz St and Midway Dr	Does Not Exist	2-Lane Collector W/ CLTL
Dutch Flats Pkwy	Sports Arena Blvd and Barnett Ave	Does Not Exist	2-Lane Collector W/ CLTL

Source: Chen Ryan Associates (June 2016)

Intersections

Rosecrans Street / Sports Arena Boulevard / Camino Del Rio West:

- Remove the southbound free right-turn movement from Camino Del Rio West onto Sports Arena Boulevard and replace it with an exclusive right-turn lane.
- Allow southbound movements to continue on Sports Arena Boulevard through the intersection. It should be noted that vehicles would still not be able to access the southern leg of Sports Arena Boulevard from westbound Rosecrans Street or southwest bound Camino del Rio West.

Additional improvement concepts were also considered for the Rosecrans Street / Sports Arena Boulevard / Camino Del Rio West intersection, but ultimately not selected. These alternative concepts include the following:

Alternative 1: This alternative would allow full access to the southern leg of Sports Area Boulevard from all approaches of the intersection and remove the eastbound (Rosecrans Street) to northbound (Sports Arena Boulevard) left-turn movements. The eastbound left-turn movement was removed to limit the number of signal phases at the intersection and provide for more efficient signal timing patterns. The removal of the eastbound left-turn movement is consistent with the recommendations provided in the *Rosecrans Corridor Mobility Study (February 2010).*

With the implementation of this concept the Rosecrans Street / Sports Arena Boulevard / Camino Del Rio West intersection was projected to perform at acceptable levels (AM: LOS C / PM: LOS D) with minor queuing impacts. However, the community does not support the removal of the eastbound left-turn movement and therefore this alterative was removed.

Alternative 2: This alternative would allow full access to the southern leg of Sports Area Boulevard from all approaches, and keep the eastbound left-turn movement intact. Due to the additional intersection phases and cycle length required to allow full access to the southern leg of Sports Arena Boulevard, the intersection performed poorly under this alternative (AM: LOS D / PM: LOS E) with excessive queuing issues on both Rosecrans Street and Camino del Rio West. Due to the poor intersection performance and queuing issues this alternative was not selected.

Alternative 3: This alternative would remove traffic from the westbound approach of Rosecrans Street and reroute the traffic up Kurtz Street and then to Camino del Rio West. To accommodate this improvement Kurtz Street would be reconfigured from a one-way southbound roadway to a one-way northbound roadway, between Hancock Street and Rosecrans Street. Conversely, Hancock Street would need to be reconfigured as a one-way southbound roadway along the same section to complete the couplet. While this configuration does allow the Rosecrans Street / Sports Arena Boulevard / Camino Del Rio West intersection to operate at acceptable levels (AM: LOS C / PM: LOS D), it is projected to result in substantial queuing issues along the short segment of Kurtz Street between Camino del Rio West and Rosecrans Street (260 feet). This excessive queuing is projected to negatively impact the operations at the Kurtz Street / Camino del Rio West intersection as well as the Kurtz Street / Rosecrans Street intersection and cause significant congestion at these intersections. Due to these queuing issues this alterative was not selected.

Sports Arena Boulevard / Pacific Highway:

- Move intersection approximately 500 feet to the north.
- Re-align Sports Arena Boulevard to create a right-angle with Pacific Highway.
- Signalize the intersection.

- Provide an exclusive eastbound left-turn lane from Sports Arena Boulevard onto Pacific Highway.
- Provide an exclusive northbound left-turn lane from Pacific Highway onto Sports Arena Boulevard.

The proposed relocation of the Sports Arena Boulevard / Pacific Highway intersection meets the 500 feet minimum spacing requirements for intersections. An additional focus during the design phase needs to ensure the curved radii resulting from the intersection realignment will adhere to design standards.

Sports Arena Boulevard / West Point Loma Boulevard / Midway Drive

- Square up and control the westbound free right-turn movement from Sports Arena Boulevard onto Sports Arena Boulevard with the intersection.
- Remove the northbound free right-turn movement from Midway Drive onto Sports Arena Boulevard. The right-of-way will be used to extend the curb and create a curb bulb-out to reduce the pedestrian crossing distance. Right-turn movements will be permitted from the outside through lane.

Camino Del Rio and Moore Street / Greenwood Street

- Extend the existing median to close the southbound left turn pocket along Camino Del Rio W at the intersection of Moore Street / Greenwood Street to reduce vehicular conflicts. (This improvement is also noted in the "Roadway" subheading above.)

<u>Pacific Highway Corridor – Barnett Avenue /Witherby Street / Washington Street</u>

As part of this mobility study, downgrading the section between Barnett Avenue and Washington Street of Pacific Highway from an expressway to a 6-lane major arterial was discussed. The purpose of this downgrade would be to improve safety for vehicles, pedestrians, and cyclists, create a community gateway along Pacific Highway, and enhance the multimodal connections between the community and Downtown San Diego. Ultimately, the recommendation for the Preferred Plan is to carry forward the expressway classification between Barnett Avenue and Washington Street, and the other sections of Pacific Highway in this community, to remain or be developed as a 5-lane or 6-lane major arterial roadway.

One of the main challenges associated with downgrading the expressway is bringing the Barnett Avenue and Witherby Street intersections to grade in order to meet the standards of a 6-lane major arterial roadway. The at-grade approach was not considered as part of the Mobility Study analysis; however, to fully understand the feasibility of these improvements, from both an engineering and constructability standpoint, an Engineering Feasibility Study is recommended. The Engineering Feasibility Study should analyze and address the following:

- The feasibility of bringing both interchanges to grade

- Multi-modal facility alternatives that do not require at-grade intersections (pedestrian and bicycle bridges, alternative multi-use urban path alignments, etc.)
- Addressing the existing flooding issues at both interchanges

Since it is unknown at this time if these improvements are feasible, they were not included in the technical analysis of the Preferred Plan. It is recommended that the feasibility of these improvements be further assessed and incorporated into a future plan. The Preferred Plan identifies Witherby Street as a 2-lane collector with continuous left-turn lane, however, the additional feasibility analysis may determine a need to widen Witherby Street to a 4-lane collector. A potential concept of what these improvements could look like is displayed in Figure 3-3. Additionally, the feasibility analysis may determine a need for additional improvements at Pacific Highway at West Washington Street that are not identified in this mobility study.

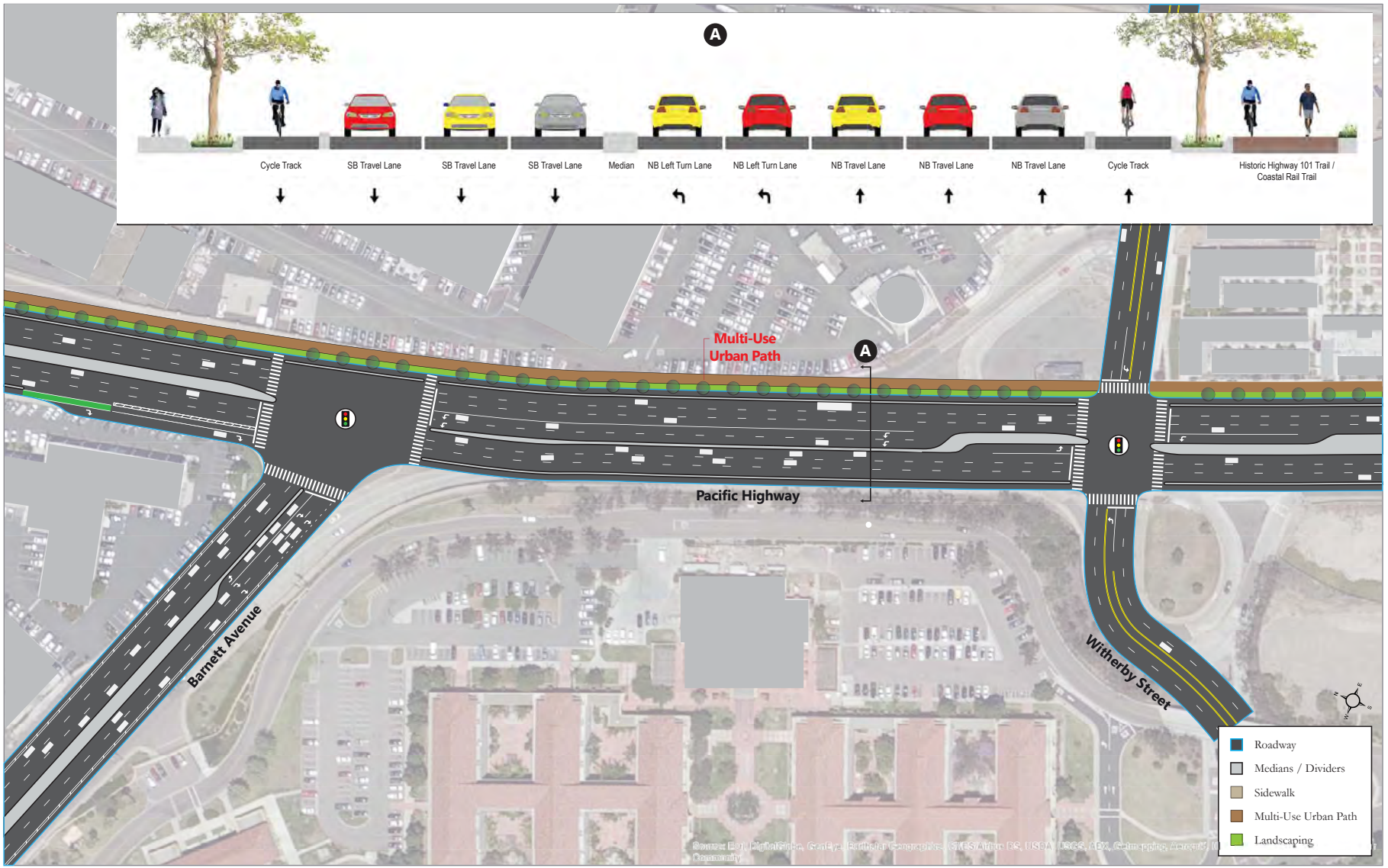
Based on the assumptions displayed in the Figure 3-3, the at-grade intersections would be anticipated to operate as follows:

- Barnett Avenue / Pacific Highway – AM: Delay 35.3 seconds, LOS D | PM: Delay 53.2 seconds, LOS D
- Witherby Street / Pacific Highway – AM: Delay 36.7 seconds, LOS D | PM: Delay 52.0 seconds, LOS D

Intersection Operations

Seven new intersections are recommended for the Midway-Pacific Highway community. Additionally, the roadway network was evaluated to identify intersection locations, both existing and new intersections, that would benefit from the implementation of a roundabout or signalization. A summary of recommended intersection improvements is displayed in Table 3.2. It is not known at this time if the implementation of a roundabout will be feasible at any or all intersections. A roundabout feasibility analysis will need to be performed once the new intersections and roadways are designed. Therefore, to be conservative, the analysis assumed that all new intersections would be signalized, unless otherwise noted. However, it is recommended that a roundabout be implemented in lieu of a signal at all new intersections, where feasible.

Traffic signal warrants were conducted at the intersections where signalization is recommended. Figure 4C-103 (CA) of the California Manual on Uniform Traffic Control Devices (MUTCD) 2012 Edition was utilized and all intersections would meet the warrants. Signal warrants worksheets are included in Appendix C.



This graphic is for conceptual purposes only. Further engineering study would be required at the project level prior to implementation.

Figure 3-3
Barnett Avenue and Witherby Street / Pacific Highway at-Grade Intersection Concepts

Table 3.2 Summary of Intersection Improvements

No.	Intersection	Improvement	Preferred Plan Control
8	Midway Drive / Charles Lindbergh Parkway	New intersection	Roundabout/Signalized
12	Kemper Street / Sports Arena Boulevard	Add north leg	Signalized
13	Sports Arena Boulevard / Frontier Drive	Add north leg	Signalized
14	Sports Arena Boulevard / Greenwood Street	Add north leg	Signalized
16	Sports Arena Boulevard / Charles Lindbergh Parkway	New intersection	Roundabout/Signalized
17	Sports Arena Boulevard / Pacific Highway	Relocate intersection and signalize	Signalized
18	Kurtz Street / Hancock Street / Kemper Street	Add south leg and signalize	Signalized
21	Kurtz Street / Pacific Highway	Signalize	Signalized
61	Kurtz Street / Frontier Drive	New intersection	Roundabout/SSSC
62	Kurtz Street / Greenwood Street	Add south leg and signalize	Signalized
63	Kurtz Street / Charles Lindbergh Parkway	New intersection	Roundabout/Signalized
64	Barnett Avenue / Dutch Flats Parkway	New intersection	Roundabout/Signalized
65	Midway Drive / Dutch Flats Parkway	New intersection	Roundabout/Signalized
66	Sports Arena Boulevard / Dutch Flats Parkway	New intersection	Roundabout/Signalized
N/A	Hancock Street / Greenwood Street	Signalize	Signalized

Source: Chen Ryan Associates (June 2016)

Freeway Improvements

There are no freeway improvements included in the Revenue Constrained alternative of *SANDAG's San Diego Forward, The Regional Plan (Adopted October 2015)* within the vicinity of the Midway-Pacific Highway community to be completed before this plan's horizon year (Year 2035).

I-8 / I-5 Ramp Connection – It should be noted that the missing I-8 East to I-5 North, and I-5 South to I-8 West ramps are included in the Unconstrained Revenue scenario of the Regional Transportation Plan (RTP); therefore, there is currently no funding mechanism for these ramps and they are not included in the Preferred Plan assessment. However, these ramps are needed to enhance the regional access for the community. A policy statement should be included in the Mobility Element recommending that the City of San Diego work with SANDAG and Caltrans to implement these ramps.

I-5 to Pacific Highway Ramps – Ramps connecting Interstate 5 to Pacific Highway are included in the RTP; however, since there is currently no funding mechanism for these ramps they are not included in the Preferred Plan assessment. These ramps are needed to enhance the regional access for the community. A policy should be included in the Mobility Element recommending that the City of San Diego work with SANDAG and Caltrans to implement these ramps.

3.3 Pedestrian Environment

3.3.1 Identified Pedestrian Needs

The Existing Conditions Report identified the following pedestrian issues/needs in the Midway-Pacific Highway community, as displayed in Figure 3-4:

Midway Drive / Sports Arena Boulevard / West Point Loma Boulevard Intersection – This is a major vehicular junction point within the community in which two major roadways (Sports Arena Boulevard and Midway Drive) intersect with two major regional access points (West Point Loma Boulevard connecting to both the Peninsula and Ocean Beach communities to the west, and West Mission Bay Drive and I-8 ramps). To accommodate the high intersecting traffic volumes there is currently a yield control northbound right-turn movement, a stop controlled southbound right-turn movement and a free westbound right-turn movement. The high traffic volumes and uncontrolled right-turn movements create an intimidating environment for pedestrians to cross.

East/West Connectivity – Due to the large block sizes within the community, there are currently few pedestrian corridors directly connecting the east and west sides of the community. Rosecrans Street is the only east/west corridor that currently spans the entire community from east to west.

Walkability Issues along Rosecrans Street and Camino Del Rio West – As mentioned above, Rosecrans Street is the only east/west pedestrian corridor that spans the entire length of the community and is the only corridor that connects to the Old Town Transit Center, located to the east. The retail and institutional uses along both Rosecrans Street and Camino Del Rio West are also major pedestrian attractions within the corridors. Currently both corridors have 5 - 7 foot sidewalks with no parkways or on-street parking to buffer pedestrians from vehicular traffic. The narrow sidewalks with a lack of buffer create an unfriendly pedestrian environment.

Rosecrans Street / I-5 Underpass – This is the only connection point for pedestrians between the Old Town Transit Center and the Midway-Pacific Highway community. The 200-foot wide underpass is poorly lit and has narrow sidewalks, with no parkways or on-street parking to buffer pedestrians from vehicular traffic, creating an unfriendly pedestrian environment.

Missing Sidewalk Facilities – There are currently no sidewalks provided along Sports Arena Boulevard from Rosecrans Street to Pacific Highway, with the exception of a small portion on its south side near the intersection of Rosecrans Street. This area currently predominantly serves industrial uses and attracts little pedestrian traffic; however, it is one of the few major north/south corridors that span the entire community.

Figure 3-4
Identified Pedestrian Issues and Needs -
Midway-Pacific Highway Community

Barnett Avenue / Pacific Highway – There is currently no pedestrian access to Pacific Highway from Barnett Avenue for pedestrians on the north side of Barnett Avenue. Pedestrians on the north side of the roadway heading east on Barnett Avenue hit a dead end and are forced to head north along Pacific Highway.

At-Grade Rail Crossings – Pedestrians accessing both the Washington Street and Middletown Trolley stations from Pacific Highway currently have to cross the rail right-of-way to access both stations. During gate down times, pedestrians may be delayed from accessing the station by on- coming trolleys or trains.

3.3.2 Pedestrian Improvements

Multi-Use Urban Paths

The Preferred Plan includes the implementation of several multi-use urban paths along key roadways, cumulatively creating an Urban Path system throughout the Midway-Pacific Highway community, which is consistent with recommendations in the Midway/Pacific Highway Urban Greening Plan. The individual multi-use urban paths are described below:

La Playa Trail – The La Playa Trail multi-use urban path will run along the south side of Rosecrans Street between Lytton Street and Pacific Highway. The path will be approximately 12 feet wide and replace the sidewalks on the southern side of the roadway. The ultimate right-of-way required along Rosecrans Street to implement this facility would be as follows:

- 127 feet between Lytton Street and Midway Drive.
- 116 feet between Midway Drive and Sports Arena Boulevard.
- 100 feet between Sports Arena Boulevard and Taylor Street.

It is recommended that pedestrian scale lighting be installed along the entire length of the path. The implementation of these improvements may necessitate acquiring additional right-of-way along the corridor.

Bay-to-Bay – The Bay-to-Bay multi-use urban path will be constructed along Sports Arena Boulevard, Lytton Street / Barnett Avenue, Kemper Street, and a connecting segment along the proposed Dutch Flats Parkway to mimic the previous Community Plan's Bay-to-Bay proposed canal alignment. The path will run along the southeast side of the Kemper Street extension between Kurtz Street and Sports Arena Boulevard, along the northeast side of Sports Arena Boulevard between Midway Drive and Dutch Flats Parkway, on the southern side of Dutch Flats Parkway between Barnett Avenue and Sports Arena Boulevard, and on the south side of Lytton Street / Barnett Avenue between Rosecrans Street and Pacific Highway. The segment of path on Sports Arena Boulevard between West Point Loma Boulevard and the I-8 should be further evaluated regarding its placement, whether on the southwest, or northeast side of the roadway. The path will be 12 feet wide and replace the sidewalks on the appropriate side of the roadway in each segment, as described.

The ultimate right-of-way required along each roadway segment to implement this facility is as follows:

- Kemper Street, between Kurtz Street and Sports Arena Boulevard: 90 feet
- Sports Arena Boulevard, between I-8 and Rosecrans Street: 117 feet
- Sports Arena Boulevard, between Rosecrans Street and Dutch Flats Parkway: 78 feet
- Lytton Street / Barnett Avenue, between Rosecrans Street and Pacific Highway: 90 feet
- Dutch Flats Parkway, between Barnett Avenue and Sports Arena Boulevard: 78 feet. An additional 30' of right-of-way will be required to provide for a linear park adjacent to Dutch Flats Parkway. This 30' may need to be obtained as public right-of-way or as an easement on privately held land.

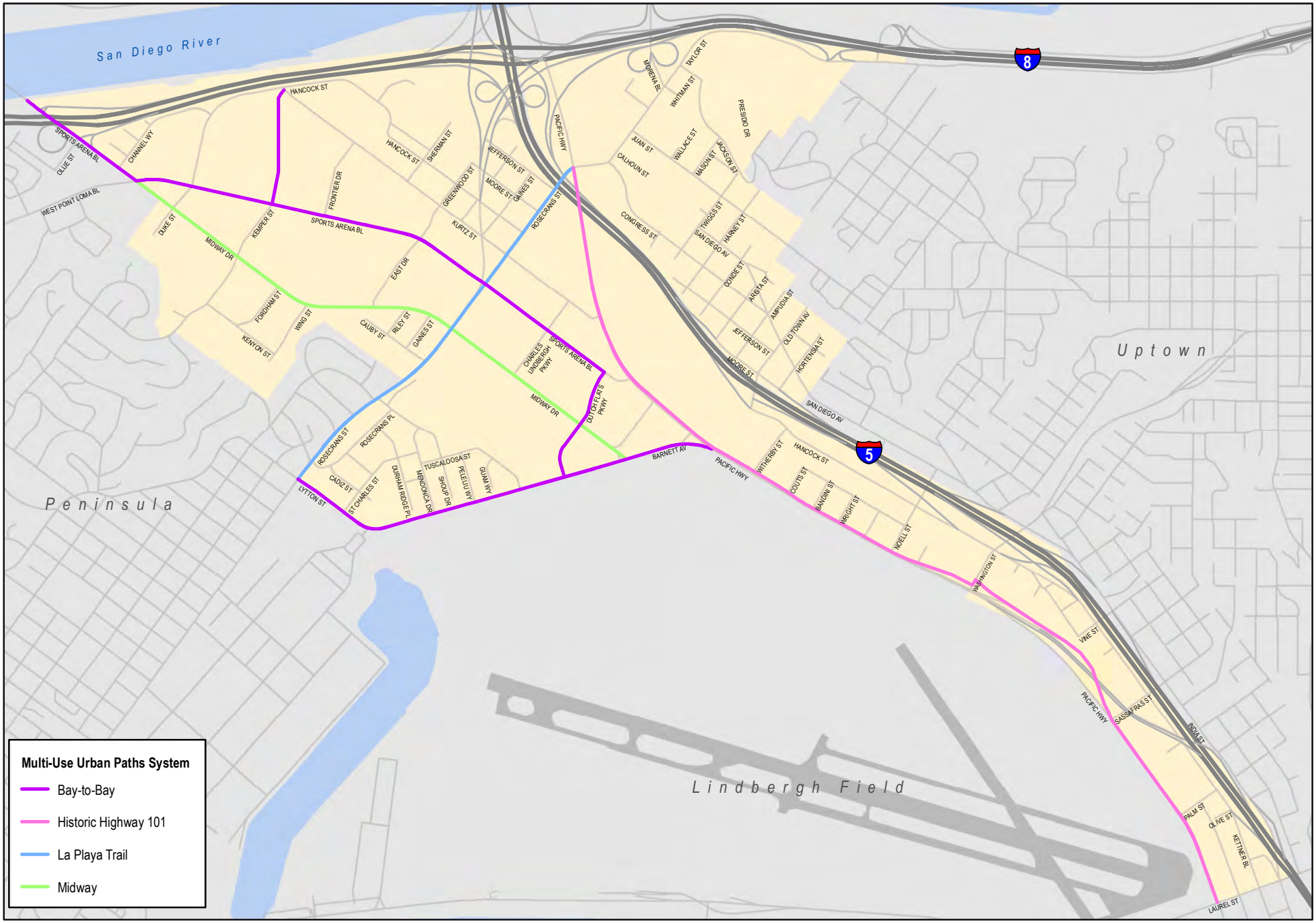
It is recommended that pedestrian scale lighting be installed along the entire length of the path. The implementation of these improvements may necessitate acquiring additional right-of-way along the corridor. *(Note: Figure 3-8 and Figure 3-10 provide conceptual drawings of the proposed Bay-to-Bay Path configuration along Sports Arena Boulevard)*.

Midway – The Midway multi-use urban path will run along the southwest side of Midway Drive between Sports Arena Boulevard and Barnett Avenue. The path will be approximately 12 feet and will replace the existing southwest sidewalk. The ultimate right-of-way required along Midway Drive to implement this facility would be 81 feet. It is recommended that pedestrian scale lighting be installed along the entire length of the path. The implementation of these improvements may necessitate acquiring additional right-of-way along the corridor.

Historic Highway 101 – The Historic Highway 101 multi-use urban path will run along the east side of Pacific Highway between Taylor Street and Laurel Street. The multi-use urban path will be 12 feet wide and will replace the existing sidewalk on the east side of the roadway. The ultimate right-of-way required along Pacific Highway to implement this facility would be 131 feet. It is recommended that pedestrian scale lighting be installed along the entire length of the path. The implementation of these improvements may necessitate acquiring additional right-of-way along the corridor.

Hancock Street Extension – Hancock Street will be extended between Midway Drive and Sports Arena Boulevard as a pedestrian and bicycle connection. This segment will not be open to vehicular traffic. *(Note: This pedestrian and bicycle connection, which is located just southeast of the W. Point Loma Boulevard / Sports Arena Boulevard / Midway Drive intersection, is illustrated in Figure 3-8 and Figure 3-10).*

The complete Multi-Use Urban Path system is displayed in Figure 3-5. Figure 3-6 and 3-7 provide concept drawings of the proposed La Playa Trail configuration along Rosecrans Street. Figure 3-8 displays a concept drawing of the Bay-to-Bay Path along Sports Arena Boulevard, north of Rosecrans Street. Figure 3-9 provides a concept drawing of the proposed Midway Path configuration along Midway Drive.



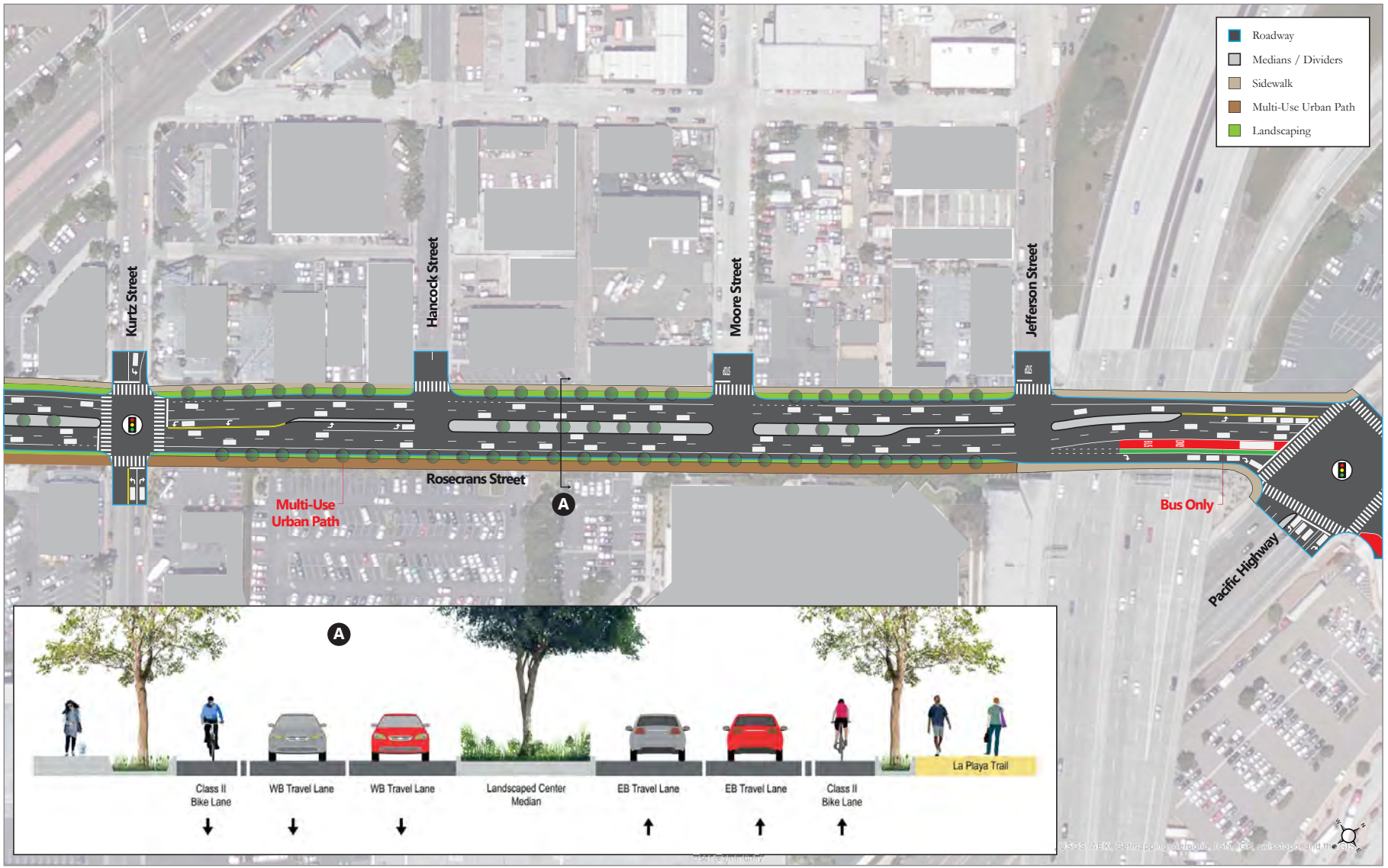
Midway-Pacific Highway and
Old Town Community Plan Update

CHEN RYAN

Figure 3-5
Multi-Use Urban Paths System

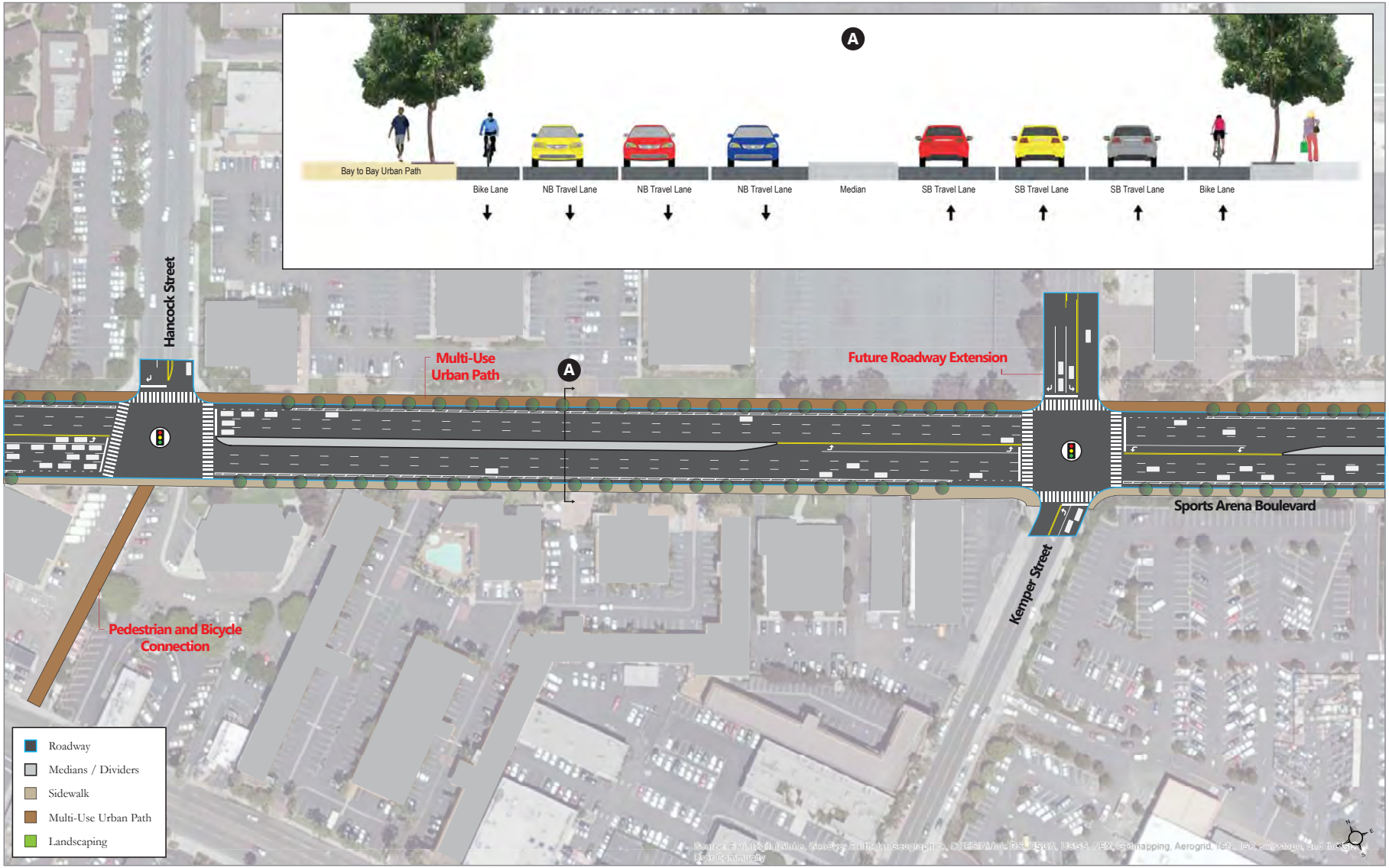
This graphic is for conceptual purposes only. Further engineering study would be required at the project level prior to implementation.

Figure 3-6
Rosecrans Street with La Playa Trail - West of Midway Drive



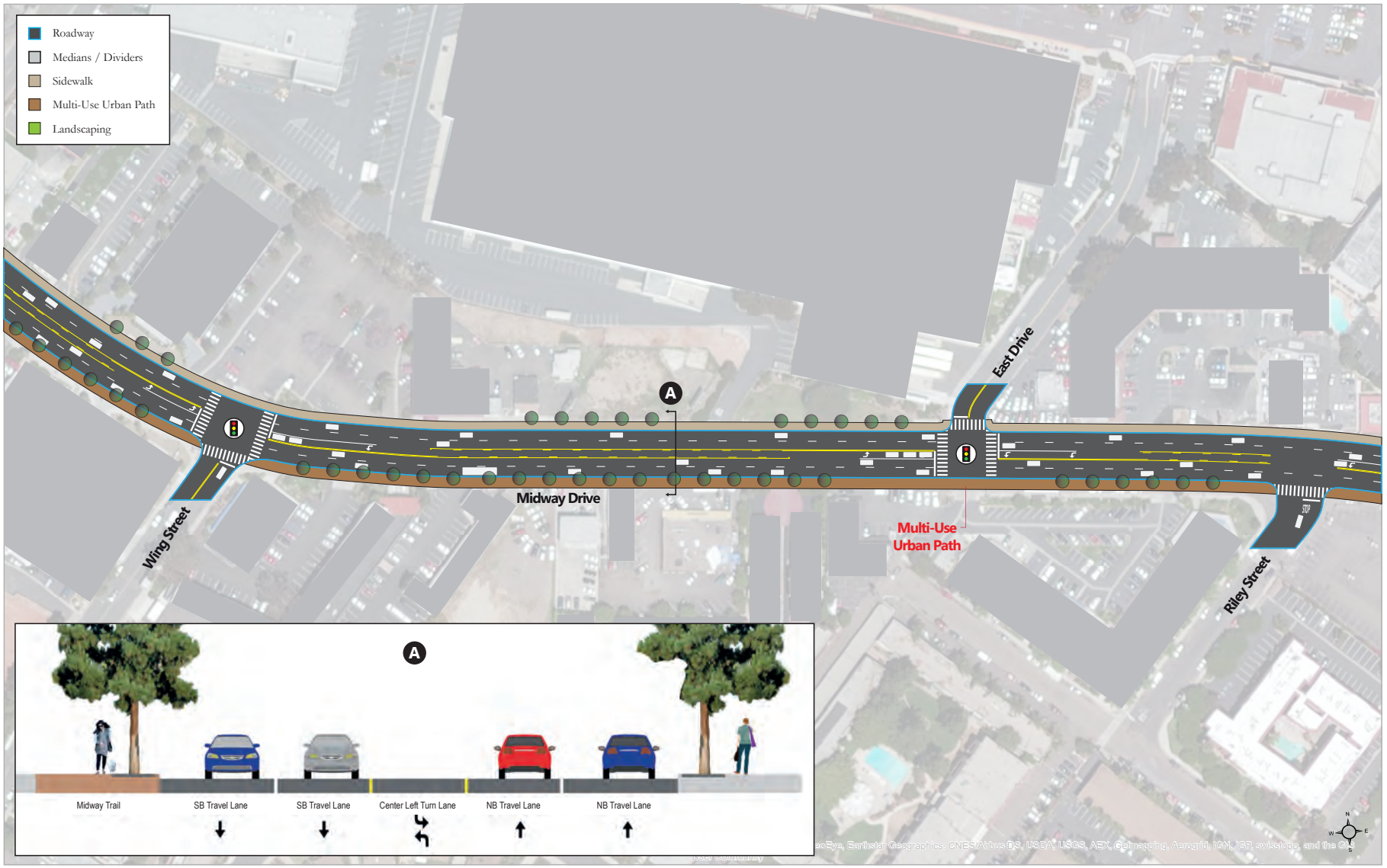
This graphic is for conceptual purposes only. Further engineering study would be required at the project level prior to implementation.

Figure 3-7
Rosecrans Street with La Playa Trail - East of Sports Arena Boulevard



This graphic is for conceptual purposes only. Further engineering study would be required at the project level prior to implementation.

Figure 3-8
Sports Arena Boulevard with Bay to Bay Trail - North of Rosecrans Street



This graphic is for conceptual purposes only. Further engineering study would be required at the project level prior to implementation.

Figure 3-9
Midway Drive with Midway Trail -
North of Rosecrans Street

Street Trees

The Preferred Plan includes the implementation of street trees along the following roadway corridors, which is consistent with the Midway/Pacific Highway Urban Greening Plan:

- Barnett Avenue, between Rosecrans Street and Pacific Highway
- Midway Drive, between Sports Arena Boulevard and Barnett Avenue
- Sports Arena Boulevard, between West Mission Bay Drive and Rosecrans Street
- Pacific Highway, between Taylor Street and Laurel Street
- Rosecrans Street, between Midway Drive and Taylor Street

Intersections

All crossing points at intersections should be upgraded to include the following:

- ADA compliant pedestrian ramps
- High visibility continental cross-walks
- Advanced stop bar placement
- Pedestrian count down signals

New Sidewalks

Sidewalk facilities will be implemented along the following roadways:

- Midway Drive, between Bogley Drive and Barnett Avenue
- Jessop Lane, between Enterprise Street and Barnett Avenue
- St. Charles Street, between Lytton Street and Cadiz Street
- Kemper Street, Kenyon Street to Midway Drive (south side)
- Sports Arena Boulevard, between Rosecrans Street and Pacific Highway (southwest side)
- Kurtz Street, between Rosecrans Street and Pacific Highway
- Pacific Highway, between Couts Street and Washington Street (southwest side)
- Witherby Street, between Hancock Street and Pacific Highway
- Hancock Street, between Witherby Street to 465 ft south of Witherby Street (south side)

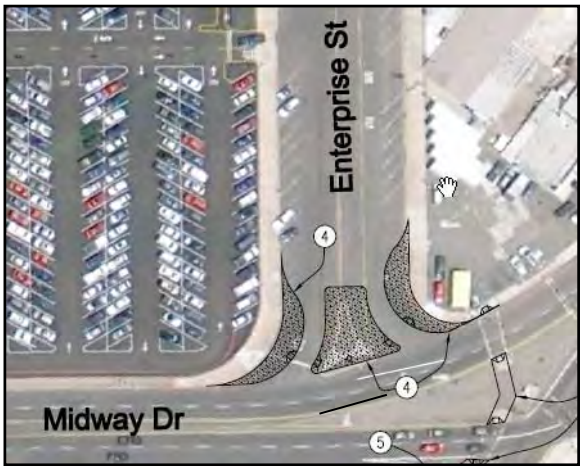
Specific Pedestrian-Related Intersection Improvements:

Midway Drive / Enterprise Street (Shown to the Right):

- Install bulb-outs and a pedestrian refuge island on the northeast leg of the intersection.

West Palm Street / Kettner Boulevard (intersection adjacent to the I-5 pedestrian bridge)

- Install bulb-outs on north leg of the intersection.
- Install continental cross-walk on the north leg of the intersection.
- Install a Pedestrian Hybrid Beacon on the north leg of the intersection (if warrants are met).



Conceptual Drawing from Phase IV of the City of San Diego Pedestrian Master Plan

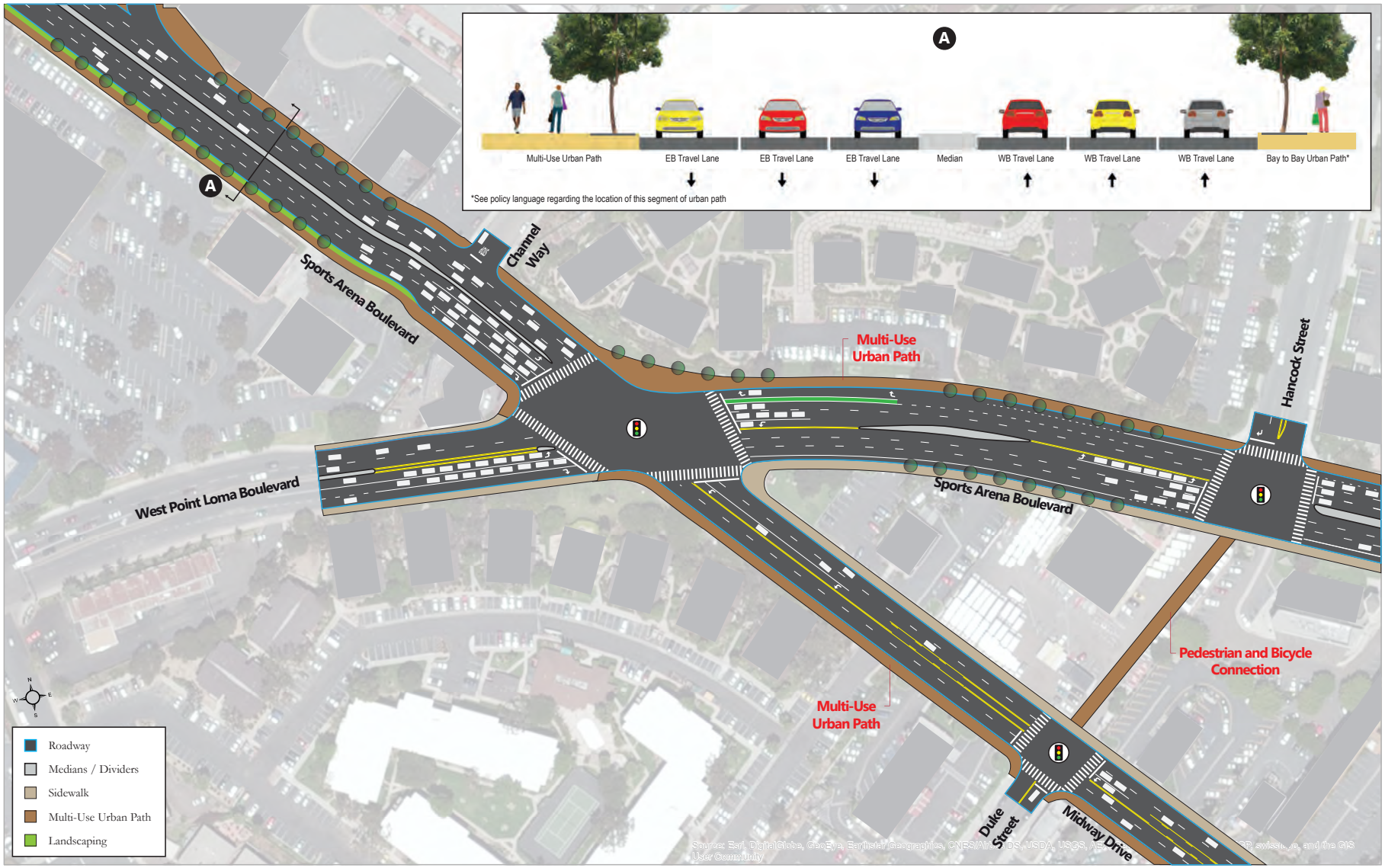
Sports Area Boulevard / West Point Loma Drive / Midway Drive

- Remove all free-right turn movements, which will decrease pedestrian crossing-distances.
- Improve the right-of-way with landscaping to improve the pedestrian environment.

Figure 3-10 displays a concept drawing of the proposed intersection improvements.

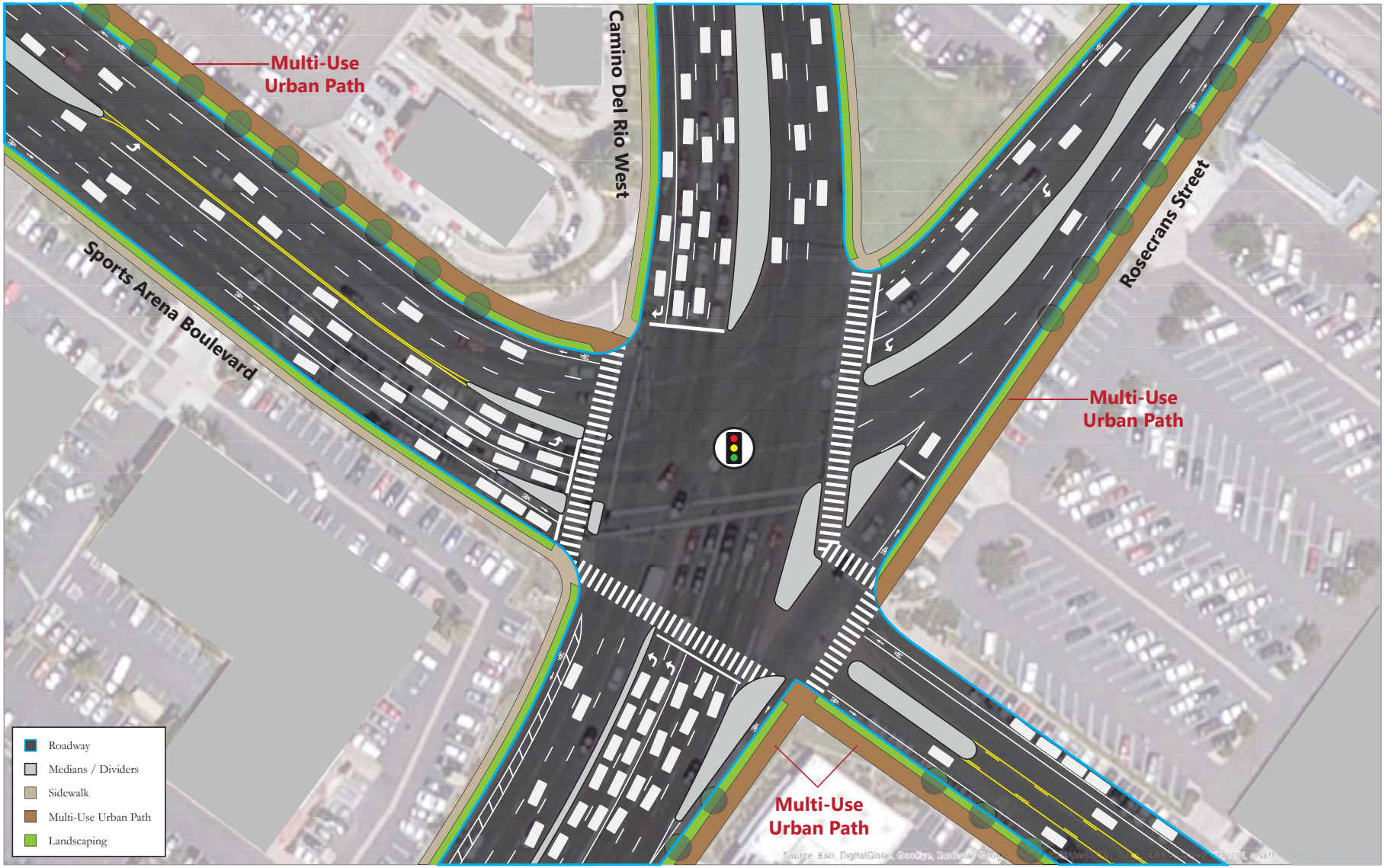
Sports Arena Boulevard / Rosecrans Street / Camino Del Rio West

- Remove the southbound free right-turn movement from Camino Del Rio West onto Sports Arena Boulevard and replace it with an exclusive right-turn lane, which will improve pedestrian safety while crossing the intersection. Figure 3-11 displays a concept drawing of the proposed intersection improvements.



This graphic is for conceptual purposes only. Further engineering study would be required at the project level prior to implementation.

Figure 3-10
Sports Arena Boulevard / West Point Loma Boulevard / Midway Drive - Proposed Pedestrian Improvements



This graphic is for conceptual purposes only. Further engineering study would be required at the project level prior to implementation.

Figure 3-11
Sports Arena Boulevard / Rosecrans Street / Camino Del Rio West - Proposed Pedestrian Improvements

3.4 Cycling Environment

3.4.1 Identified Bicycle Needs

The Midway-Pacific Highway Community is located at a junction point for several regional bicycle facilities including both the Coastal Rail Trail (along Pacific Highway) and the Ocean Beach Bike Path (along the San Diego River). Local bicycle connections to the surrounding neighborhoods are also provided, such as Class II Bike Lanes between Midway-Pacific Highway and the Peninsula communities along Rosecrans Street. A Class III Bike Route is provided along West Mission Bay Drive and terminates at its intersection with W. Point Loma Boulevard / Sports Arena Boulevard. These regional and local connections, along with strong transit service and high intensity commercial and institutional land uses, create high cycling demands within this community.

However, as shown in Figure 3-12 there are currently no bicycle facilities along the major corridors traversing the Midway-Pacific Highway Community (Midway Drive, Sports Arena Boulevard and Rosecrans Street) to accommodate the high bicycle demand. These corridors also have high vehicular traffic volumes and speeds as well as numerous conflict points (intersections, driveways, and alleyways) between motorists and cyclists, creating an uncomfortable environment for cyclists. Figure 3-5 displays the locations of issues/need, mainly defined as high cycling demand corridors that lack bicycle facilities and have high vehicular traffic volumes and speed.

3.4.2 Bicycle Improvements

The Bicycle Network under the Preferred Plan Conditions is shown in Figure 6-10 in this report. The recommended bicycle facilities proposed in this plan are consistent with and improve upon the recommendations outlined in The City of San Diego Bicycle Master Plan. The Preferred Plan proposes to implement the following bicycle facilities within the Midway-Pacific Highway Community:

<u>In Road Facilities</u>

- Class II Buffered Bike Lanes in both directions along Lytton Street / Barnett Avenue between Rosecrans Street and Pacific Highway.
- Class IV One-Way Cycle Tracks in both directions along Pacific Highway between Taylor Street and Laurel Street. This cycle track continues through the Old Town community, north to Sea World Drive.
- Class II Buffered Bike Lanes in both directions along Rosecrans Street between Lytton Street and Pacific Highway.
- Class II Buffered Bike Lanes in both directions along Sports Arena Boulevard between W. Point Loma Boulevard and Pacific Highway.
- Class II Bike Lanes in both directions along Hancock Street between Old Town Avenue and Noell Street.
- Class II Bike Lanes along the south side of Hancock Street/Kettner Boulevard between Noell Street and Laurel Street.

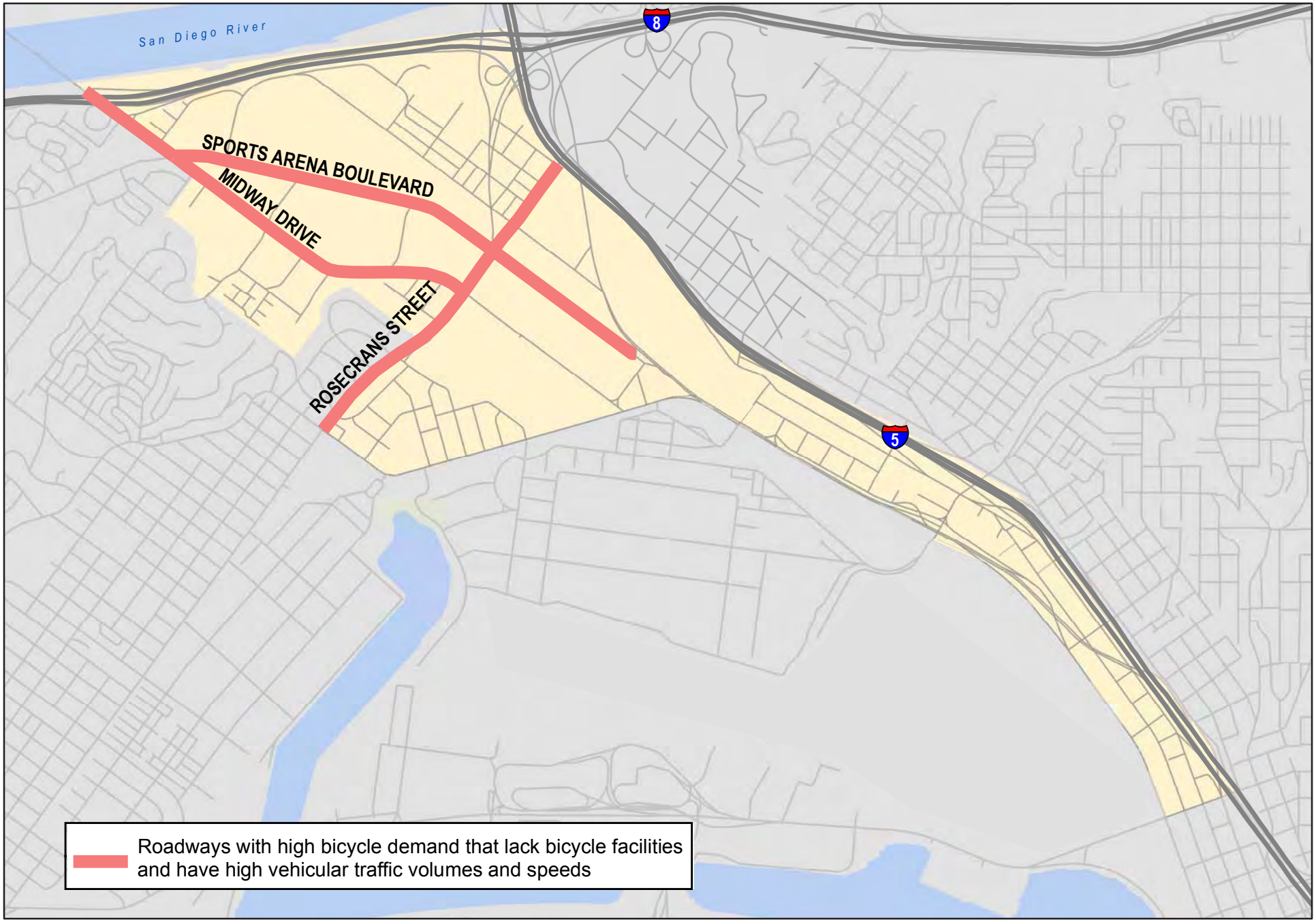


Figure 3-12
Bicycle Network Issues and Needs -
Midway-Pacific Highway Community

In Road Facilities (continued)

- Class II Buffered Bike Lanes in both directions along Kemper Street between Kenyon Street and Kurtz Street.
- Class IV Cycle Track on the north side of Washington Street between Pacific Highway and Interstate 5.
- Class II Bike Lanes in both directions along Old Town Avenue between Hancock Street and San Diego Avenue.
- Class II Buffered Bike lanes in both directions along Frontier Drive between Sports Arena Boulevard and Kurtz Street.
- Class II Buffered Bike lanes in both directions along Charles Lindbergh Parkway between Midway Drive and Kurtz Street.
- Class III Bicycle Route on Kurtz Street between Hancock Street and Rosecrans Street.
- Class III Bicycle Route on Noell Street between Pacific Highway and Hancock Street.
- Class III Bicycle Route on Hancock Street between Sports Arena Boulevard and Rosecrans Street.
- Class II Bike Lanes in both directions along Witherby Street between Pacific Highway and Hancock Street (The inclusion of bike lanes along this street would be determined by the available road width for these facilities; see section 3.2.2 for a discussion of a feasibility analysis to determine a need to widen Witherby Street)
- Class II Bike Lanes in both directions along Sassafras Street between Pacific Highway and Interstate 5.

Multi-Use Urban Paths

- Class I Multi-Use Urban Path connection, as an extension of Hancock Street between Sports Arena Boulevard and Midway Drive.
- Class I Multi-Use Urban Path along the south side of Rosecrans Street between Lytton Street and Pacific Highway.
- Class I Multi-Use Urban Path along the south side of Lytton Street / Barnett Avenue between Rosecrans Street and Pacific Highway.
- Class I Multi-Use Urban Path along the west side of Midway Drive between Sports Area Boulevard and Barnett Avenue.
- Class I Multi-Use Urban Path along the southwest or northeast side of Sports Arena Boulevard between I-8 and Midway Drive (to be determined by further study upon implementation), and on the northeast side of Sports Arena Boulevard between Midway Drive and Dutch Flats Parkway.
- Class I Multi-Use Urban Path along the south side of Dutch Flats Parkway between Barnett Avenue and Sports Arena Boulevard.
- Class I Multi-Use Urban Path along the east side of Pacific Highway between Taylor Street and Laurel Street.
- Class I Multi-Use Urban Path along the southeast side of Kemper Street between Sports Arena Boulevard and Kurtz Street.

3.5 Public Transit Service and Facilities

3.5.1 Identified Transit Needs

Underserved Areas – As shown in Figure 3-13, the following areas within the Midway-Pacific Highway Community are located beyond a quarter mile of a bus stop or transit station, indicating potentially poor levels of transit access:

- Barnett Avenue, between Truxtun Road and Midway Drive
- The northeast portion of the community (east of Kurtz Street and north of Sherman Street)
- Pacific Highway, between Wright Street and Noell Street
- Pacific Highway, between Vine Street and Sassafras Street

3.5.2 Transit Improvements

SANDAG's San Diego Forward, The Regional Plan (Adopted October 2015) indicates that a number of transit improvements are planned for the Midway-Pacific Highway Community, prior to this plan's Year 2035 horizon year, including:

Local Bus Service – Increase local bus service in key corridors to 10 minute headways programmed and scheduled for Year 2035.

Rapid Bus Route 28 – By the Year 2035, a new rapid bus route will be implemented providing service between Point Loma and Kearny Mesa via the Old Town Transit Center.

San Diego International Airport Intermodal Transit Center (ITC) – The ITC will act as an important hub connecting all modes of transportation accessing and departing from Lindbergh Field. The ITC is planned to be located on the north end of the airport, just south of Interstate 5 between Washington Street and Sassafras Street. The ITC is being planned as a major transit hub connecting all three existing trolley lines (Blue, Green and Orange), the COASTER, Amtrak, new MTS Express Bus routes directly serving the airport, several local MTS bus routes and the planned California High Speed Rail system. In addition to the transit connections, the ITC is planned to provide the following:

- 360 new parking spaces
- 126,000 SF of new retail uses
- Direct access to I-5 / via the Pacific Highway on/off-ramps
- Grade separation of the Washington Street and Sassafras at-grade rail crossings
- New grade separated crossing at Vine Street
- Raised bicycle lanes and cycle tracks on the street surrounding the ITC
- Wider sidewalks around both the ITC and new retail uses
- Curb extensions and planting/parking strips as well as provide new opportunities to employ green street strategies on impacted/new roadways.

The ITC is anticipated to be constructed and operational by the Year 2035.

Midway-Pacific Highway and
Old Town Community Plan Update

CHEN RYAN

Figure 3-13
Transit Coverage -
Midway-Pacific Highway Community

Transit Priority Improvements

Pacific Highway - Pacific Highway serves several express bus routes that link multiple communities. It is recommended that, as Pacific Highway is redeveloped, transit priority measures such as queue jumper lanes and transit priority signals be implemented at all signalized intersections along Pacific Highway between Taylor Street and Laurel Street.

Rosecrans Street – Rosecrans Street east of Camino Del Rio West currently serves four MTS bus Routes (8, 9, 28 and 35). A queue jumper lane and transit signal have already been implemented on the eastbound approach at the Taylor Street / Rosecrans Street and Pacific Highway intersection. Similar transit priority improvements should also be examined for feasibility at the Rosecrans Street / Camino Del Rio West / Sports Arena Boulevard intersection to allow westbound buses (Routes 8, 9 and 35) to turn right onto Sports Arena Boulevard and avoid congestion.

New Roadway Connections – The proposed new roadway connections can serve as alternative east/west routes for busses traveling through the community. Rerouting to these new facilities, if possible, may help avoid the congestion on Rosecrans Street. It is recommended that after the construction of any of the new roadways, the City of San Diego coordinate with MTS to examine opportunities for bus rerouting.

3.6 Currently Planned Improvements

The following section outlines the mobility improvements that are currently planned within the Midway-Pacific Highway community. Some improvements were too minor to incorporate at the community plan level, while others are mitigation measures from projects within the area and are not the responsibility of the community plan. Additionally, the pending improvements contained within the existing community Public Facilities Financing Plan are outlined and identified whether they are consistent with the Preferred Plan.

3.6.1 Auto

West Mission Bay Drive Bridge over San Diego River, CIP Project S00871 – the proposed City project will replace the existing bridge with a 6-lane bridge having a northbound and southbound Class I bicycle facility and pedestrian sidewalks. The project is in the final design phase and construction is estimated to start in July 2017. Improvements from this project were analyzed and its design was considered to develop recommendations in this study.

Midway/Pacific Highway Corridor Public Facilities Financing Plan, 2004 – this document contains several roadway improvements that have not yet been completed. It should be noted that all of these improvements are unfunded and currently not scheduled for implementation.

Signal Modifications:

- Barnett Avenue / Midway Drive (Project T7) – *Improvement has been completed and is consistent with the Preferred Plan.*

- Pacific Highway / West Washington Street (Project T29) – *Improvement is consistent the Preferred Plan.*

Extensions/New Streets:

- Extension of Barnett Avenue from Pacific Highway to Old Town Avenue (Project T8) – *Improvement is no longer recommended under the Preferred Plan.*
- Extension of Kemper Street as a four-lane collector from Sports Arena Boulevard to Hancock Street (Project T14) – *Improvement changed under the Preferred Plan.*
- New four-lane collector street connecting Sports Arena Boulevard and Midway Drive (Project T13) – *Improvement changed under the Preferred Plan.*

Street Widening:

- Improve Kurtz Street to a four-lane major between Rosecrans Street and Pacific Highway (Project T15) – *Improvement changed under the Preferred Plan.*
- Improve Sports Arena Boulevard to a four-lane collector between Rosecrans Street and Pacific Highway (Project T16) – *Improvement changed under the Preferred Plan.*
- *Add Project T23 and state whether improvement has changed under the Preferred Plan (we did not assumed it has in our cost estimating).*

Intersection Improvements

- Midway Drive / Sports Arena Boulevard (Project T17) – *Improvement changed under the Preferred Plan.*

Several roadway facility projects have been identified by the City of San Diego and are included on their Unfunded Transportation Needs List (8/5/2014). A list of the roadway related improvements located in the Midway-Pacific Highway Community is included in Appendix B. It should be noted that this list is updated on a regular basis and Appendix B only reflects a snapshot of the needs and planned improvements throughout the community at the time when this report was prepared.

3.6.2 Pedestrian

Public Facilities Financing Plans

The adopted Public Facilities Financing Plan for the Midway-Pacific Highway community currently contains planned pedestrian improvements that have not yet been completed, as follows:

- Install / upgrade 169 curb ramps to meet ADA standards (T25) – These improvements are currently not scheduled or funded. *Improvement is consistent with the Preferred Plan.*

Several pedestrian facility projects have been identified by the City of San Diego and are included on their Unfunded Transportation Needs List (8/5/2014). A list of the pedestrian improvements located in the Midway-Pacific Highway Community is included in Appendix B. It should be noted that this list is updated on a regular basis and Appendix B only reflects a snapshot of the needs and planned improvements throughout the community at the time when this report was prepared.

3.6.3 Bicycle

The City of San Diego's Transportation and Stormwater Department is currently resurfacing Barnett Avenue between Midway Drive and Pacific Coast Highway. The resurfaced pavement will include striping for a new Class II bicycle lane along the north side of Barnett Avenue between Pacific Highway and Midway Drive and green paint in areas of potential conflict zones between vehicular and bicycle traffic. The resurfacing project maintains the existing Class II bicycle facilities in this area on both sides of Barnett Avenue and enhances each facility with a 2' buffer on both sides of the roadway.

3.6.4 Transit

As noted in section 3.5.2 the Preferred Plan in consistent with *SANDAG's San Diego Forward, The Regional Plan* (Adopted October 2015).

4.0 Old Town Community Preferred Plan

4.1 Development of the Preferred Plan

4.1.1 Identification of Issues and Needs

Existing mobility related issues and needs within the Old Town Community were identified in the *Community of Midway/Pacific Highway Corridor and Old Town Mobility Existing Conditions Report; September 2012 (Existing Conditions Report)*. The issues and needs identified in the Existing Conditions Report were used, in conjunction with the other planning efforts and the overall community vision, to develop the recommended mobility improvements presented in the Preferred Plan.

4.1.2 Development of Preferred Plan Improvements

Preferred Plan improvements were developed by first cross checking the mobility issues and needs identified in the Existing Conditions Report against the mobility issues and needs identified in several other on-going or recent planning efforts, including:

- I-8 Corridor Study (August 2016)
- San Diego Forward, The Regional Plan (October 2015)
- Riding to 2050, The San Diego Regional Bike Plan (2010)
- City of San Diego Bicycle Master Plan (December 2013)
- Phase II Visitor Oriented Parking Facilities Study of the Old Town Community (May 2002)
- City of San Diego Pedestrian Master Plan - Phase 4 (Dec 2013)
- Mid-Coast Corridor Transit Project, Transportation Impacts and Mitigation Report (Sept 2014)

Where possible, the Preferred Plan carried forward or maintained the relevant improvements from on-going or previous planning efforts which have been adopted or vetted by the community. New improvement strategies were then developed to address the existing issues and needs, as identified in the Existing Conditions Report, which have not been addressed in other planning efforts. Additional mobility improvements were also developed to accommodate the anticipated future growth within the community. The following sections outline the mobility issues and needs identified in the Existing Conditions Report and the associated improvements recommended under the Preferred Plan to alleviate them.

4.2 Street and Freeway System

4.2.1 Identified Street and Freeway Issues and Needs

Taylor Street – Taylor Street provides connections to three major regional roadway facilities. To the east, Taylor Street provides a connection to I-8 and the regional freeway system. To the west, Taylor Street connects with both Rosecrans Street (which connects to communities to the west), and to Pacific Highway (which connects to communities to the north and the south). Taylor Street

accommodates a high volume of both regional and local traffic. There are currently two identified roadway related issues along Taylor Street, as described below:

At-Grade Rail Crossing – Currently the BNSF and MTS trolley right-of-way crosses Taylor Street at-grade between Pacific Highway and Congress Street. Gate down times at this crossing typically last between 30 seconds to 3 minutes, depending on the number of vehicles and train cars. During these gate down times, all other modes of transportation must stop, causing impacts to traffic operations at the adjacent intersections. Train crossings at this location typically cause additional intersection delay, queuing and congestion.

Taylor Street between Presidio Drive and I-8 Ramps – Taylor Street east of Presidio Drive reduces from four-lanes to two, with narrow lane widths (10 feet). Traffic volumes along this segment are high (13,140 ADT) since it leads to an I-8 interchange, and far exceeds the roadway LOS D maximum capacity of 9,000 ADT. The narrow lane widths and high traffic volumes result in congestion along this segment in the eastbound direction accessing the freeway ramps during the PM peak hour.

San Diego Avenue between Ampudia Street and Old Town Avenue – This segment of San Diego Avenue connects the commercial uses along both Congress Street and San Diego Avenue to the I-5 interchange located at Old Town Avenue. This segment of San Diego Avenue is currently a two-lane roadway with an average daily traffic volume of 10,160, which far exceeds the roadway LOS D maximum capacity of 6,500 ADT. This results in reduced speeds and congestion in the northbound direction during both the AM and PM peak hours.

*Old Town Avenue between Moore Street and San Diego Aven*ue – Old Town Avenue provides a regional connection point between the community and I-5. This segment of Old Town Avenue is currently two-lanes with an ADT of 11,750, which far exceeds the roadway LOS D maximum capacity of 6,500 ADT. This results in reduced speeds and congestion in the northbound direction during the PM peak hour.

The identified roadway issues and needs within the Old Town Community are displayed in Figure 4-1.

4.2.2 Street and Freeway Improvements

Due to the historic nature of the community, the Preferred Plan does not propose any roadway widenings or significant roadway capacity improvements.

Intersections

Congress Street / San Diego Avenue / Ampudia Street:

- Convert intersection to all-way stop control
- Implement bulb-outs on all legs of the intersection
- Widen the sidewalks along the north side of San Diego Avenue

Figure 4-2 displays a concept drawing of the proposed intersection improvements.

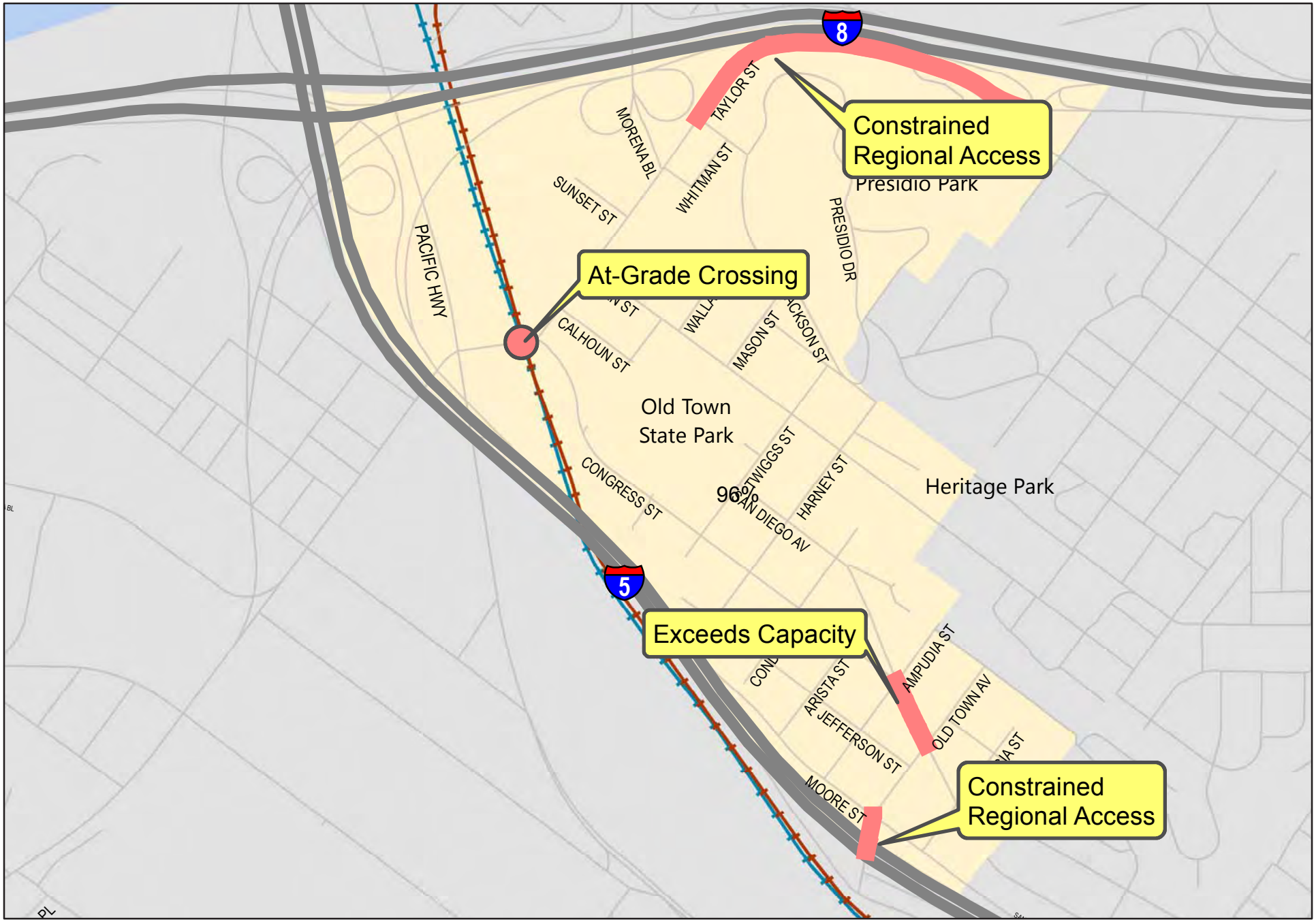


Figure 4-1
Identified Street and Freeway Related Issues and Needs - Old Town Community

This graphic is for conceptual purposes only. Further engineering study would be required at the project level prior to implementation.

Figure 4-2
Proposed Improvements - Congress Street / San Diego Avenue / Ampudia Street

Note: Converting the intersection control to a roundabout is also an option for this intersection. However, due to the tight spacing of the adjacent buildings there may not be enough right-of-way to accommodate a roundabout. Additional engineering study should be conducted to see if a roundabout is feasible at this intersection. If it is determined that a roundabout is feasible then it would become the preferred improvement.

Parking

San Diego Avenue between Twiggs Street and Conde Street has a large curb-to-curb width (50 feet) for a standard two-lane collector roadway (typically 40 feet wide). Therefore, in order to better utilize the curb-to-curb right-of-way, it is recommended that the parallel parking on the east side of the roadway be converted to angled parking, as shown in the figure below. The recommended improvement will not affect the capacity of the roadway and will increase the already constrained parking capacity within the Old Town community. Figure 4-3 displays a concept drawing of this improvement.

Freeway

There are no freeway improvements included in the Revenue Constrained alternative of *SANDAG's San Diego Forward, The Regional Plan (Adopted October 2015)* to be completed before this plan's Horizon Year (Year 2035). SANDAG prepared the Draft I-8 Corridor Study as a high level planning resource for potential improvements between Ocean Beach and Mission Valley. One of the identified improvements calls for the removal of all free movements from I-8 onto Morena Boulevard and "squaring up" each intersection. Since the plan has not yet been adopted and the improvements are not anticipated to be implemented until Year 2050, no improvements were assumed under Preferred Plan conditions.

This graphic is for conceptual purposes only. Further engineering study would be required at the project level prior to implementation.

Figure 4-3
Proposed San Diego Avenue Improvements between Twiggs Street and Conde Street

4.3 Pedestrian Environment

4.3.1 Identified Pedestrian Issues and Needs

The following pedestrian related issues and needs were identified in the Existing Conditions Report:

Taylor Street At-Grade Rail Crossing – Pedestrians accessing the Old Town Community or the Old Town Transit Center from Pacific Highway or Rosecrans Street currently have to cross the shared BNSF and MTS Trolley rail right-of-way. The Taylor Street at-grade rail crossing is over 100 feet wide, gate to gate, and pedestrians have to cross over four sets of rail tracks. During peak hours there are approximately 13 train crossing events lasting between 30 seconds and 3 minutes. During these times pedestrians are forced to wait until the train clears the crossing, causing excessive delays.

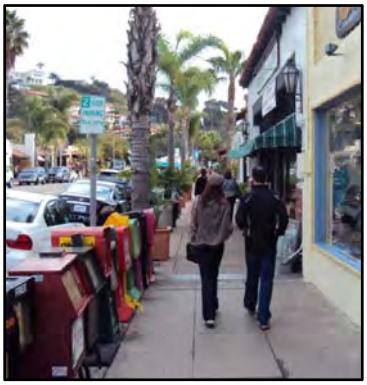
Old Town Transit Center Wayfinding – There is currently limited signage at the Old Town Transit Center directing pedestrians who are unfamiliar with the area, such as tourists, to the many restaurant, shops, historical monuments and structures, and parks in the community. Currently there is only a single map (identical to the map depicted in the picture below, which is located on San Diego Avenue) directing patrons to these various community features.

The Old Town San Diego Chamber of Commerce is implementing a wayfinding signage program that will install various signage types throughout the community to better inform patrons about how to access the various community features and help brand the community as a whole.

Missing Sidewalks – There are currently no sidewalks on Taylor Street, east of Presidio Drive and on the east side of San Diego Avenue, just north of Ampudia Street.

Connectivity between Community Features and Parks – There is currently no direct, convenient or identifiable path connecting the Old Town Transit Center, Old Town State Park and Presidio Park. Both parks are major community features attracting tourists and out of town guests who may not be familiar with the community or its amenities. The development of a clear, concise and well signed path connecting these three community assets would significantly improve pedestrian circulation within the community.

Sidewalk Capacity Issues – The retail and restaurant establishments along San Diego Avenue attract significant pedestrian traffic particularly during evenings and weekends. The sidewalks along San Diego Avenue are currently 7 to 8 feet wide with a limited parkway featuring street trees and planters. Retail shops and other merchants also take up part of the sidewalk with displays, racks and other attractions, as displayed in the photos to the right. During peak times, typical weekend evenings, pedestrian traffic along San Diego Avenue exceeds sidewalk capacity creating a congested pedestrian environment.



San Diego Avenue / Congress Street / Ampudia Street Intersection – This is currently a five legged intersection in which three of the approaches are stop-controlled (SB San Diego Avenue and EB & WB Ampudia Street) and the other two (NB San Diego Avenue and SB Congress Street) are free movements. There are also high vehicular traffic volumes crossing through the intersection along San Diego Avenue and Congress Street, which have no crosswalk facilities. This intersection is confusing and intimidating for pedestrians to cross due to the lack of traffic controls, high traffic volumes and missing crosswalk facilities.

The pedestrian related issues/needs within the Old Town Community, identified above, are displayed in Figure 4-4.

4.3.2 Pedestrian Improvements

Sidewalks

- Complete the sidewalks on the east side of San Diego Avenue, north of Ampudia Street.
- Complete sidewalks on Taylor Street, east of Presidio Drive.
- Implement sidewalks on the north side of Whitman Street.
- Complete sidewalks on Twiggs Street west of Congress Street.
- Implement sidewalks on Sunset Street between Juan Street and Mason Street.
- Implement a sidewalk on the west side of Mason Street between Juan Street and Jackson Street.
- Implement a sidewalk on the west side of Jackson Street between Presidio Drive and Mason Street

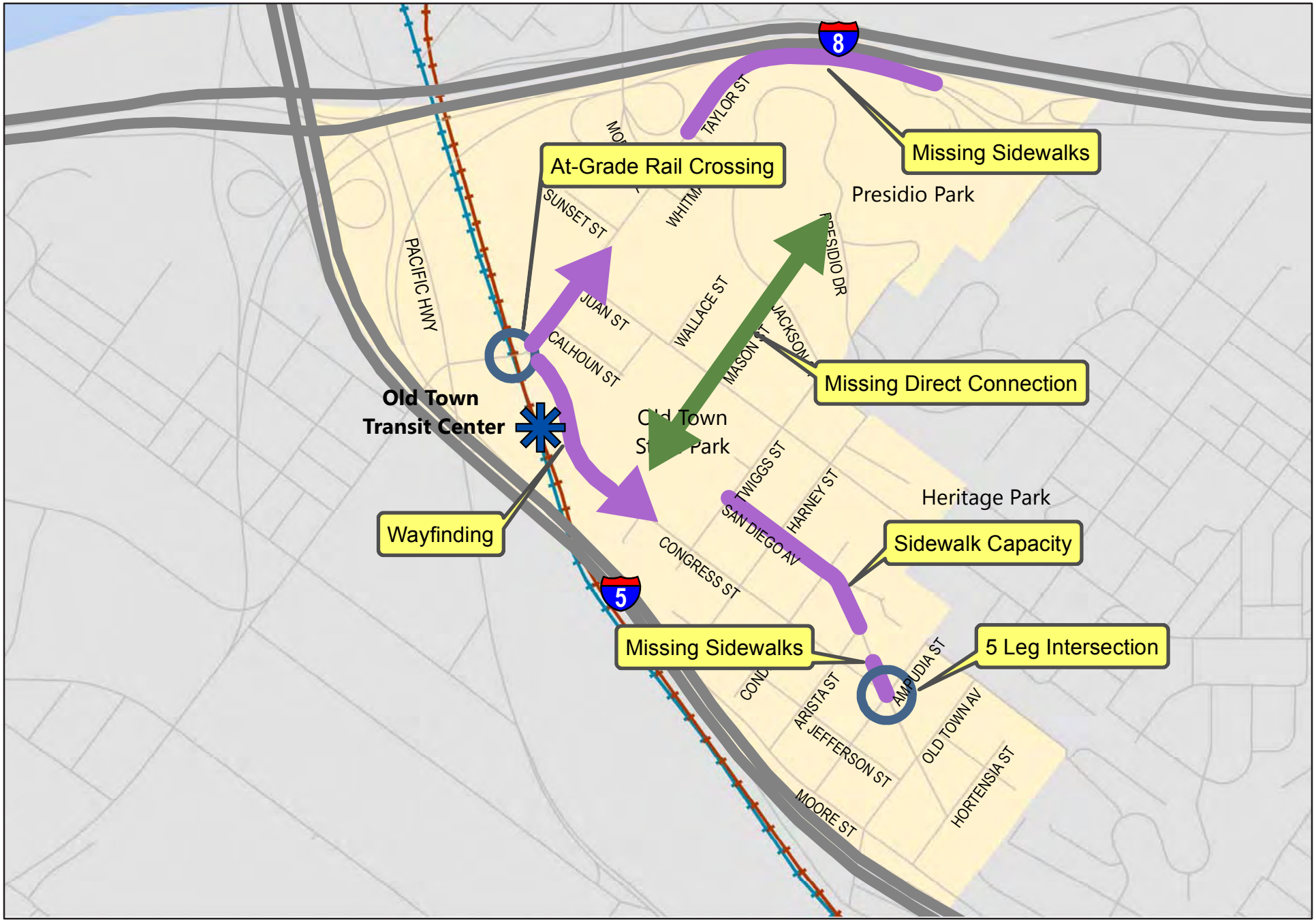
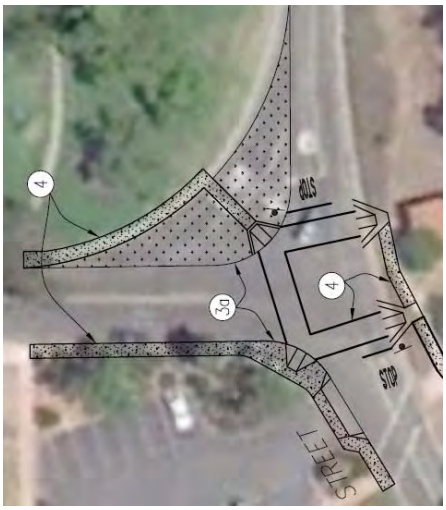


Figure 4-4
Identified Pedestrian Issues and Needs -
Old Town Community

Intersections

All crossing points at intersections should be upgraded to include the following:

- ADA compliant pedestrian ramps
- High visibility continental crosswalks
- Advanced stop bar placement
- Pedestrian count down signals



Proposed Improvements to Presidio Drive / Jackson Street intersection

Specific Intersection Improvements:

Presidio Drive / Jackson Street (Shown to the right):

- Implement bulb-outs on the west leg of the intersection
- Complete sidewalks on all sides of the intersection
- Square up intersection and remove southbound yielded right-turn movements
- Provide cross-walks across all legs of the intersection

Congress Street / Twiggs Street:

- Implement bulb-outs across all legs of the intersection

San Diego Avenue / Twiggs Street:

- Implement pavers or other high visible material in the center of the intersection to slow down and alert drivers to the heavy pedestrian presence, see example to the right.

Example of using bricks/pavers to create a highly visible intersection

Linwood Street / San Diego Avenue:

- Implement Pedestrian refuge island on the southern (Linwood Street) leg of the intersection.

Congress Street / San Diego Avenue / Ampudia Street (See figure 4-2):

- Convert intersection to all-way stop control
- Implement bulb-outs on all legs of the intersection
- Widen the sidewalks along the north side of San Diego Avenue

Note: As stated above, converting the intersection control to a roundabout is also an option for this intersection. However, due to the tight spacing of the adjacent buildings there may not be enough right-of-way to accommodate a roundabout. Additional engineering study should be conducted to see if a roundabout is feasible at this intersection. If it is determined that a roundabout is feasible then it would become the preferred improvement.

4.4 Cycling Environment

4.4.1 Identified Bicycle Issues and Needs

The following cycling related issues and needs were identified in the Existing Conditions Report:

Taylor Street – As mentioned previously, the Taylor Street corridor provides a significant regional east/west connection for vehicles as well as for cyclists. Taylor Street is currently classified as a Class III Bike Route within the Old Town Community; however, east of Presidio Drive, Taylor Street narrows to a two-lane roadway with narrow lane widths (10 feet) and no shoulders. Taylor Street is also a regional vehicular access point for the Old Town Community connecting the I-8 / Taylor Street interchange and Pacific Highway. The narrow lane widths, high vehicular traffic volumes and speeds along Taylor Street, east of Presidio Drive, create an uncomfortable environment for cyclists.

Congress Street / San Diego Avenue – Congress Street and San Diego Avenue (south of Ampudia Street) provide one of the few north/south connections for cyclists within the Old Town Community. Congress Street and San Diego Avenue (south of Ampudia Street) is currently classified as a Class III Bike Route designated by sharrow markings. Congress Street's proximity to the Old Town Transit Center and retail and restaurant uses make it a highly attractive route for cyclists. Both corridors currently have high traffic volumes, and on-street parking on both sides of the roadway which create an uncomfortable environment for cyclists.

The bicycle related issues/needs within the Old Town Community, identified above, are displayed in Figure 4-5.

4.4.2 Bicycle Improvements

The Preferred Plan proposes implementing the following bicycle facilities within the Old Town Community:

- Complete the Class II Bike Lanes in both directions along Taylor Street between Pacific Highway and the community boundary and bicycle boxes at appropriate intersections, as identified in the I-8 Corridor Study.
- Class III Bike Route in both directions along Juan Street between Taylor Street and community boundary.
- Class II Bike Lanes in both directions along Old Town Avenue between Hancock Street and San Diego Avenue.
- Class II Bike Lanes in both directions along Morena Boulevard between Taylor Street and the community boundary.

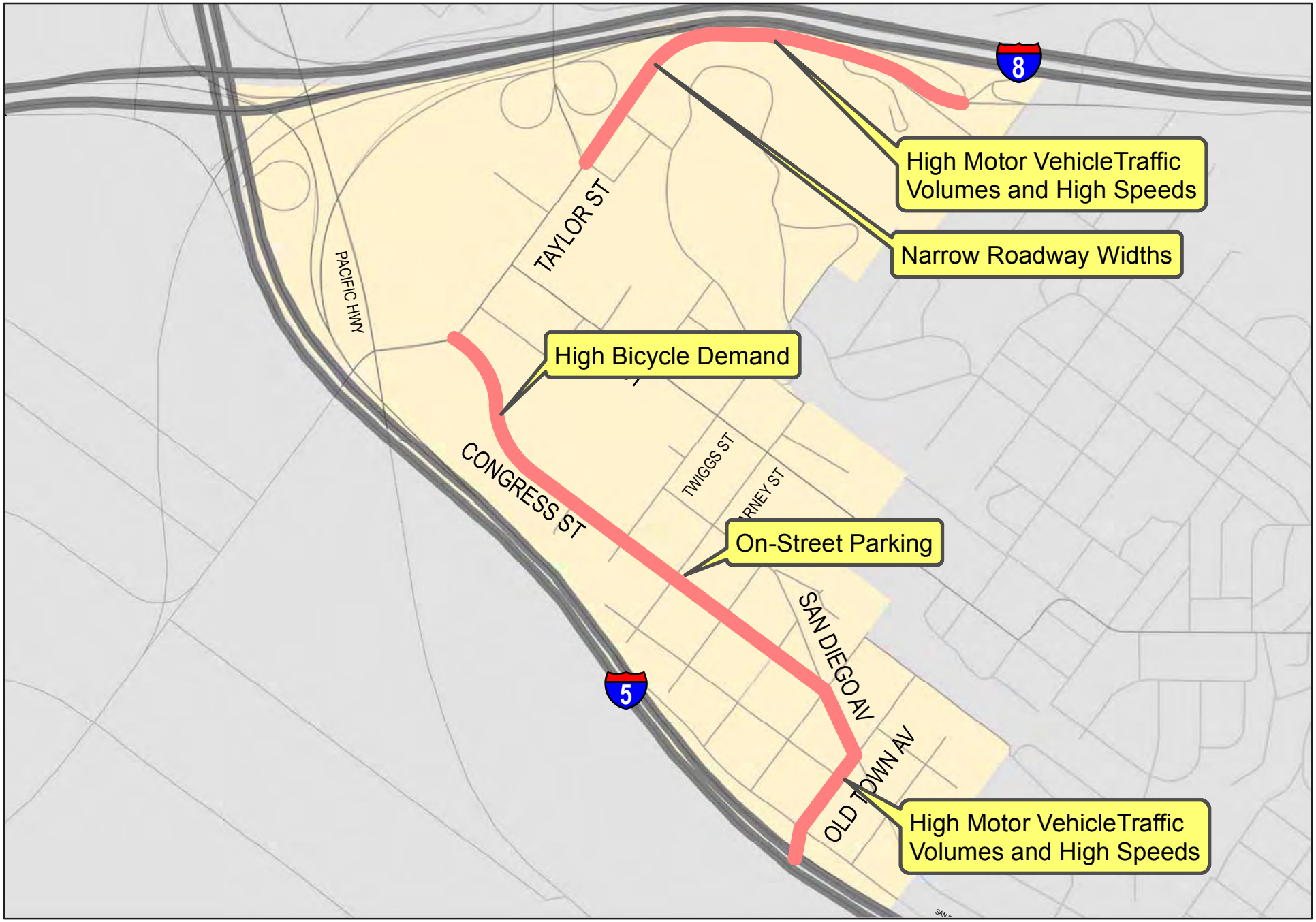


Figure 4-5
Bicycle Network Issues and Needs -
Old Town Community

A bicycle connection is currently lacking along Morena Boulevard between Taylor Street and Linda Vista Road. This is a critical connection that would link the Old Town and Linda Vista communities, as well as provide a connection to the Ocean Beach Bike Path. Unfortunately, the bridge along this segment of the roadway has a constrained right-of-way, and the current configuration of the I-8 Morena Boulevard ramps position four high-speed free-right turn movements on/off the bridge.

Due to these constraints there is not feasible bicycle facility that can be implemented along this segment without both widening the bridge and reconfiguring the I-8 / Morena Boulevard Ramps. However, it is recommended that the City work with both Caltrans and SANDAG to look for opportunities to implement bicycle facilities and better pedestrian facilities along this segment should any improvements be done to this segment. The I-8 Corridor Study identifies Class II bike lanes along Morena Boulevard, between W. Morena Boulevard and Taylor Street, as a high priority project. As described in section 4.2.2, the Corridor Study also proposes removing all free movements from I-8 onto Morena Boulevard and "squaring up" each intersection. Since the plan has not yet been adopted and the improvements are not anticipated to be implemented until Year 2050, no improvements were assumed under Preferred Plan conditions.

4.5 Public Transit Service and Facilities

4.5.1 Identified Transit Issues and Needs

The Old Town Community is served by 10 bus routes, a trolley line, a commuter rail service (The COASTER) and a regional rail line (Amtrak Surfliner), which all serve the Old Town Transit Center. Figure 4-6 displays the community's streets served by bus routes as well as the existing Trolley Lines.

This figure also shows the area within ½ mile of the Old Town Transit Center, which is considered a reasonable walking distance to a major transit center (as compared to a ¼ mile for bus stops). As depicted in this figure, nearly all of the commercial and recreational uses are within ½ mile of transit service.

Figure 4-6
Transit Coverage -
Old Town Community

4.5.2 Transit Improvements

SANDAG's *San Diego Forward, The Regional Plan* (Adopted October 2015), indicates that a number of transit improvements are planned for the Old Town Community, prior to this plan's Year 2035 Horizon Year, as described below.

COASTER – By the Year 2020, the frequency of the COASTER will be increased to every 20 minutes during peak periods and every 120 minutes during off-peak periods. The COASTER provides a commuter rail connection between the Old Town Transit Center and North County communities including Solana Beach, Encinitas and Oceanside.

COASTER – by the Year 2020, the COASTER line will be extended to the south and include stations at both Petco Park and the Convention Center.

Mid-Coast Trolley Line – The Mid-Coast Trolley will extend service from Santa Fe Depot in Downtown San Diego to the University City community, serving major activity centers such as Old Town, the University of California, San Diego (UCSD), and Westfield UTC. Construction of the Mid-Coast Trolley line is anticipated to be completed by the Year 2021.

Local Bus Service – Increase local bus service in key corridors to 10 minute headways programmed and scheduled for Year 2035.

Rapid Bus Route 28 – By the Year 2035, a new rapid bus route will be implemented providing service between Point Loma and Kearny Mesa via the Old Town Transit Center.

Rapid Bus Route 30 – By the Year 2035, a new rapid bus route will be implemented providing service between the Old Town Transit Center and Sorrento Mesa via Pacific Beach, La Jolla and UTC.

Rapid Bus Routes 640A – By the Year 2035, a new rapid bus route will be implemented providing service along I-5 between San Ysidro and the Old Town Transit Center, via City College downtown.

Transit Priority Treatments

Taylor Street serves several regional bus routes connecting multiple communities. Therefore, it is recommended that transit priority treatments be implemented along Taylor Street to help increase transit performance. It is recommended to implement queue jumper lanes and transit priority signals in either direction at both the Taylor Street / Juan Street and Taylor Street / Morena Boulevard intersections.

4.6 Currently Planned Improvements

The following section outlines the mobility improvements that are currently planned within the Old Town community. Some improvements were too minor to incorporate at the community plan level, while others are mitigation measures from projects within the area and are not the responsibility of the community plan. Additionally, the pending improvements contained within

the existing community Public Facilities Financing Plan are also outlined and identified if they are consistent with the Preferred Plan.

4.6.1 Auto

Mid-Coast Corridor Transit Project – The Mid-Coast Corridor and Transit Project Transportation Impacts and Mitigation Report; September 2014, identifies the following project related improvements at the Taylor Street / Rosecrans Street and Pacific Highway intersection:

- Provide second northbound right-turn lane
- Provide third eastbound through lane
- Provide second southbound left-turn lane

These improvements are designed to handle excess queuing at the intersection during gate down times. These improvements do not conflict with any improvements recommended by the Preferred Plan and have been incorporated into the future year analysis. However, since these improvements are mitigation measures for the Mid-Coast Corridor Transit Project they are not considered to be part of the Preferred Plan and should not be included in the IFS.

Old Town Public Facilities Financing Plan, 2004 – This plan identifies the widening of Presidio Drive to allow for a right-turn lane on Taylor Street (Project T10). This improvement is unfunded and is not currently scheduled for implementation. – *The Preferred Plan does not include this improvement as a recommendation.*

4.6.2 Pedestrian

Old Town Public Facilities Financing Plan, 2004 – Contains the following planned pedestrian improvements that have not yet been completed.

- Install / upgrade 20 curb ramps to meet ADA standards (Project T12) – These improvements are currently not scheduled or funded. – *Improvement is consistent with the Preferred Plan.*

Several pedestrian facility projects have been identified by the City of San Diego and are included on their Unfunded Transportation Needs List (8/5/2014). A list of the pedestrian improvements located in the Old Town Community are included in Appendix B. It should be noted that this list is updated on a regular basis and Appendix B only reflects a snapshot of the needs and planned improvements throughout the community at the time when this report was prepared.

SANDAG Uptown Bikeways Project – Phase 4 of the Uptown Bikeways project will include treatments to improve pedestrian safety (e.g., high visibility crosswalks, dual pedestrian ramps, bulb-outs). The project is located along Congress Street (from Taylor Street to San Diego Avenue) and San Diego Avenue (from Congress Street to south of Hortensia Avenue). The project is entering final design and is funded through construction. Since these improvements are funded through the Uptown Bikeways project, they should not be included in the IFS. *– Improvements are consistent with the Preferred Plan.*

Wayfinding Signage Program

The Old Town Chamber of Commerce is currently developing a wayfinding signage program in the Old Town Community. The wayfinding signage program will standardize and brand the various wayfinding signs currently within the community and highlight paths and links for pedestrians to access the various parks and attractions within the community.

4.6.3 Bicycle

SANDAG Uptown Bikeways Project – Phase 4 of the Uptown Bikeways project will include a mix of buffered bike lanes and shared lane markings along Congress Street (from Taylor Street to Mason Street) and shared lane markings, where not already marked (from Mason Street to San Diego Avenue). The project is currently in the design phase with specifications still being determined, therefore, it was not included as a recommendation in the Preferred Plan. Congress Street is currently designated as a Class III bicycle route, identifiable by vertical signage and shared lane markings. The Preferred Plan does not propose any modifications to the existing bicycle facility, nor does it include any recommendations that would prevent the Uptown Bikeways project from being implemented.

4.6.4 Transit

As noted in section 4.5.2 the Preferred Plan in consistent with *SANDAG's San Diego Forward, The Regional Plan (Adopted October 2015).*

5.0 Modeling and Forecasting

This chapter summarizes the future year travel demand model forecasting process utilized to project the future travel patterns within the Midway-Pacific Highway and Old Town communities, under buildout conditions. Future year traffic volumes were derived from a SANDAG Series 12 Transportation Forecast model run, which was verified per the City of San Diego's Small Study Area Traffic Modeling Process (April 2012) and calibrated for the Midway-Pacific Highway and Old Town communities.

5.1 Base Year (2012) Model Calibration

The base year model calibration process included verification and validation of base year model inputs (land uses and roadway network), as well as additional adjustments to the base year model (roadway speeds, centroid loadings, etc.) to calibrate the model to better represent existing travel patterns within the Midway-Pacific Highway and Old Town communities. Detailed descriptions of each validation step are provided in the following sections.

5.1.1 Base Year Land Use Verification/Validation

Existing land use data, as listed below, was collected for the Midway-Pacific Highway and Old Town communities and verified/adjusted in the Base Year model to correctly match actual conditions:

- Descriptions (land use type and code)
- Proper measurement unit types (square feet, units, acres)
- Quantity
- Vehicular trip generation rates

Land use types, descriptions and quantities were crosschecked with ground conditions using Google Earth imagery, as well as field verification, as necessary. Trip generation rates for individual land uses were coded based on the driveway rates provided in the *City of San Diego Land Development Code – Trip Generation Manual* (May 2003). Base year land use inputs for the project study area are provided in Appendix D.

5.1.2 Base Year Roadway Network Verification/Validation

The SANDAG Series 12 Base Year roadway network was compared to actual conditions to ensure an accurate model network. The following variables were compared and adjusted to match actual conditions:

- TAZ loading points
- Number of lanes for roadways
- Traffic controls
- Signalized intersection geometrics
- Street classification
- Roadway speed limits

5.1.3 Base Year Ground Count Validation & Adjustment

Historical ADT volumes over the past 11 years were compiled from the City of San Diego's Traffic Count Database and other recent studies for major roadway segments throughout the Midway-Pacific Highway and Old Town communities. The most recent historic counts along with counts from the past five (5) years were selected to establish a Base Year ground count database. This database included multiple counts from the same location on numerous segments, as well as the counts already included in the model. The final count was selected based upon nearby trip generators and traffic patterns along each roadway segment. Abnormally high or low traffic volumes were assumed to be outliers, and thus were not selected as model inputs.

5.1.4 Model Sensitivity Adjustment

Model calibration was performed by running a Base Year model estimate and comparing the results to the selected ground counts discussed above. Roadway segments that did not meet the model calibration targets established by the City of San Diego were identified for additional adjustments. These adjustments included the relocation of TAZ connectors and centroids, TAZ splitting, adjustments of roadway speed (to represent congestion), and in rare cases, ground count adjustments using historic counts older than three years.

5.2 Future Year Traffic Forecast Volume

The Future Year model was developed by inputting the future year land uses and roadway network into the calibrated Base Year model, described in the previous sections, with the following adjustments/assumptions:

- Implementation of the Preferred Plan land uses within the project study area (land use assumptions are provided in Appendix D).
- Existing roadway network within the study area with the following improvement projects:
    - Extension of Kemper Street between Sports Arena Boulevard and Kurtz Street
    - Implementation of Frontier Drive between Sports Arena Boulevard and Kurtz Street
    - Extension of Greenwood Street between Kurtz Street and Sports Arena Boulevard
    - Implementation of Charles Lindbergh Parkway between Sports Arena Boulevard and Midway Drive
    - Implementation of Dutch Flats Parkway between Sports Arena Boulevard and Barnett Avenue
- Year 2035 land uses outside of the study area
- Year 2035 roadway/transit network outside of the study area
- Year 2035 transit network both inside and outside of the study area

The model inputs described above were reviewed and approved by City staff prior to running the model forecasts.

Final SANDAG Series 12 Future Year Forecast Model results are provided in Appendix D. Figure 5-1 shows the final projected average daily traffic volumes that were used to develop and analyze the Preferred Plan mobility network, as described in the next chapter.

5.2.1 Vehicle Miles Traveled

The vehicle miles traveled (VMT) generated within the community was estimated using the SANDAG Series 12 Preferred Plan Future Year 2035 and Base Year models. VMT is the total number of miles driven by all vehicle trips within the Midway-Pacific Highway and Old Town communities, including trips to, from, and within the community. Tables 5.1A and 5.1B display the total VMT generated within each community and the average trip length under both the Preferred Plan and Base Year conditions. VMT calculations are provided in Appendix D.

Table 5.1A Vehicle Miles Traveled (VMT) Comparison – Midway-Pacific Highway Community

Measure	Community Planning Area				San Diego Region			
	Base Year	Preferred Plan	Δ in Value	Δ in %	Base Year	Year 2035	Δ in Value	Δ in %
Total VMT (miles)	730,121	833,315	103,194	14.1%	85,331,631	108,992,533	23,660,902	27.7%
Total # of Auto Trips	294,796	313,049	18,253	6.2%	16,458,692	20,183,171	3,724,479	22.6%
Average Trip Length[1] (miles)	2.5	2.7	0.2	7.5%	5.2	5.4	0.2	3.7%
Population	4,672	26,140	21,468	459.5%	3,130,717	4,035,834	905,117	28.9%
Daily VMT by Population (miles)	156	32	-124	-79.6%	27	27	0	-1.5%

Source: Chen Ryan Associates (March 2017)

Note:

1. Average trip length is estimated by dividing the total VMT by the total # of auto trips.

As shown, under implementation of the Preferred Plan the number of new auto trips and total VMT generated within the Midway-Pacific Highway community is only anticipated to experience minimal growth (based on the regional averages). With the implementation of the Preferred Plan infrastructure and land uses, the average vehicular trip length is anticipated to increase by 7.5%. However, with the significant population increase anticipated within the community, the daily VMT by population is anticipated to drop dramatically (-79.6%).

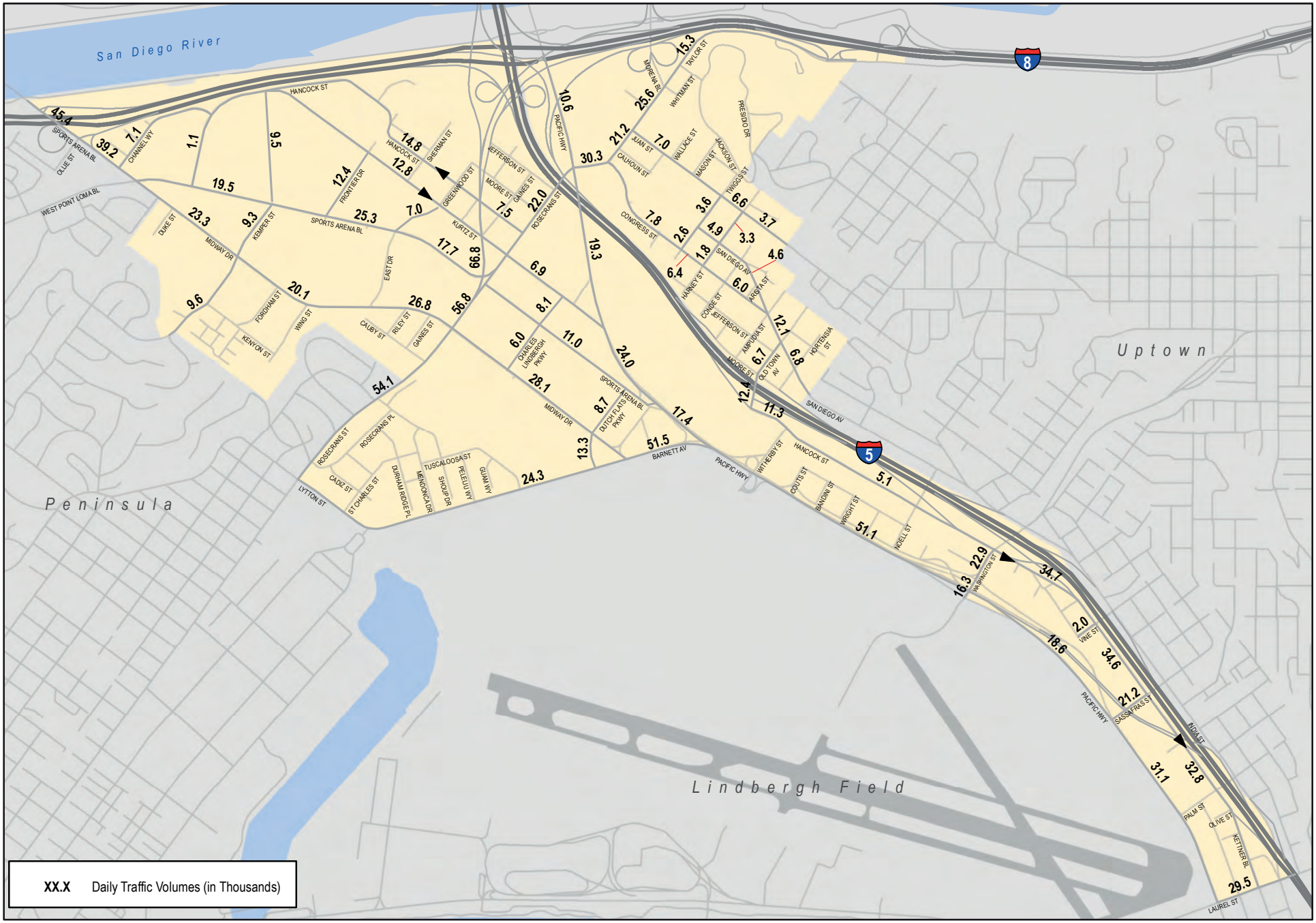


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Figure 5-1
Daily Roadway Segment Traffic Volumes - Preferred Plan Conditions

Table 5.1B Vehicle Miles Traveled (VMT) Comparison – Old Town Community

Measure	Community Planning Area				San Diego Region			
	Base Year	Preferred Plan	Δ in Value	Δ in %	Base Year	Year 2035	Δ in Value	Δ in %
Total VMT (miles)	151,300	175,289	23,989	15.9%	85,331,631	108,992,533	23,660,902	27.7%
Total # of Auto Trips	57,989	61,622	3,633	6.3%	16,458,692	20,183,171	3,724,479	22.6%
Average Trip Length[1] (miles)	2.6	2.8	0.2	9.0%	5.2	5.4	0.2	3.7%
Population	834	2,430	1,596	191.4%	3,130,717	4,035,834	905,117	28.9%
Daily VMT by Population (miles)	181	72	-109	-60.2%	27	27	0	-1.5%

Source: Chen Ryan Associates (March 2017)

Note:
1. Average trip length is estimated by dividing the total VMT by the total # of auto trips.

As shown, under implementation of the Preferred Plan the number of new auto trips and total VMT generated within the Old Town community is only anticipated to experience average growth (based on the region. With the implementation of the Preferred Plan infrastructure and land uses the average vehicular trip length is anticipated to increase by 9.0%. However, the anticipated population increase within the community results in an overall decrease in the daily VMT by population (-60.2%).

5.2.2 Community Mode Choice

The Mode Choice Model used in the SANDAG Series 12 Transportation Forecast is not sensitive to changes in bicycle and pedestrian facilities. In other words, the model does not accurately adjust travel behaviors in response to implementation of multimodal facilities, such as bicycle lanes or separated multi-use paths, or reflect land use changes that create more mixed use environments. Due to these constraints, the SANDAG Series 12 Model was not utilized to project the demands of future year non-motorized travel.

SANDAG is currently in the process of developing Series 13, an Activity Based Model (ABM) which will more accurately account for shifts in transportation modes based on the implementation of pedestrian and bicycle facilities. However, SANDAG modeling staff has indicated that this model is currently under development and will not be ready for public release until later in 2016.

Since the ABM model is not ready for use at this time, a subsequent mode choice analysis will be prepared by the City as a separate document. The mode choice analysis will use the methods outlined in both the California Air Pollution Control Officers Association (CAPCOA) Quantifying Green House Gas Measures manual, as well as the Urban Land Institute's (ULI) Growing Cooler to post process the Series 12 model results and develop a more accurate mode split for each community.

6.0 Preferred Plan Analysis

6.1 Street and Freeway System Assessment and Results

The following section provides a summary of vehicular analysis results along key study roadways, including the projected daily roadway LOS, and the peak hour intersection LOS analysis under implementation of the Preferred Plan.

6.1.1 Roadway Segment Analysis

This analysis assumes implementation of the roadway segment-related improvements outlined in Sections 3.2.2 and 4.2.2 under the Preferred Plan. The associated roadway classifications under implementation of the Preferred Plan, within both communities, is displayed in Figure 6-1.

Table 6.1 and Figure 6-2 display the projected ADT volume and associated roadway LOS under implementation of the Preferred Plan. Section 5.2 describes the process used to develop projected ADT volume estimations.

As shown, all Mobility Element roadways are projected to operate at LOS D or better under Preferred Plan conditions, with the exception of the following:

Midway-Pacific Highway Community

- Midway Drive, between East Drive and Rosecrans Street (LOS E)
- Midway Drive, between Rosecrans Street and Barnett Avenue (LOS E)
- Kurtz Street, between Hancock Street and Rosecrans Street (LOS E)
- Kettner Boulevard, between Washington Street and Vine Street (LOS F)
- Kettner Boulevard, between Vine Street and Sassafras Street (LOS F)
- Kettner Boulevard, between Sassafras Street and Laurel Street (LOS F)
- Greenwood Street, between Sports Arena Boulevard and Kurtz Street (LOS E)
- Camino Del Rio West, between Rosecrans Street and the I-5/I-8 Ramps (LOS F)
- Rosecrans Street, between Midway Drive and Sports Arena Boulevard (LOS E)
- Dutch Flats Parkway, between Barnett Avenue and Midway Drive (LOS E)
- Sassafras Street, between Pacific Highway and Kettner Boulevard (LOS F)

Old Town Community

- Congress Street between Taylor Street and Twiggs Street (LOS E)
- San Diego Avenue, between Ampudia St and Old Town Avenue (LOS F)
- San Diego Avenue, between Old Town Avenue and Hortensia Street (LOS E)
- Juan Street, between Taylor Street and Twiggs Street (LOS E)
- Juan Street, between Twiggs Street and Harney Street (LOS E)
- Taylor Street, between Morena Boulevard and I-8 Ramps (LOS F)
- Old Town Avenue, between Hancock Street and Moore Street (LOS F)
- Old Town Avenue, between Moore Street and San Diego Avenue (LOS E)

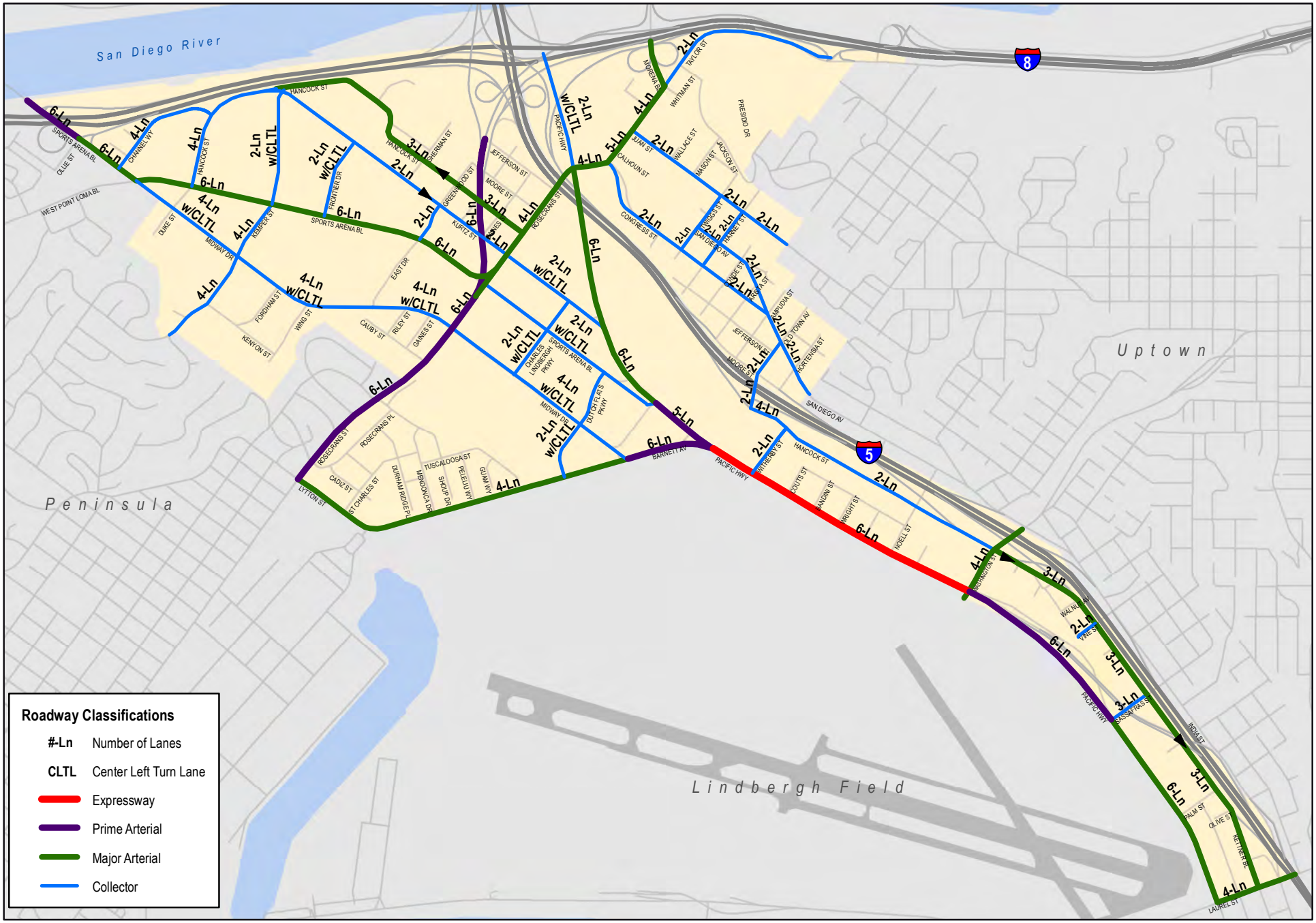

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Figure 6-1
Roadway Classifications -
Preferred Plan Conditions

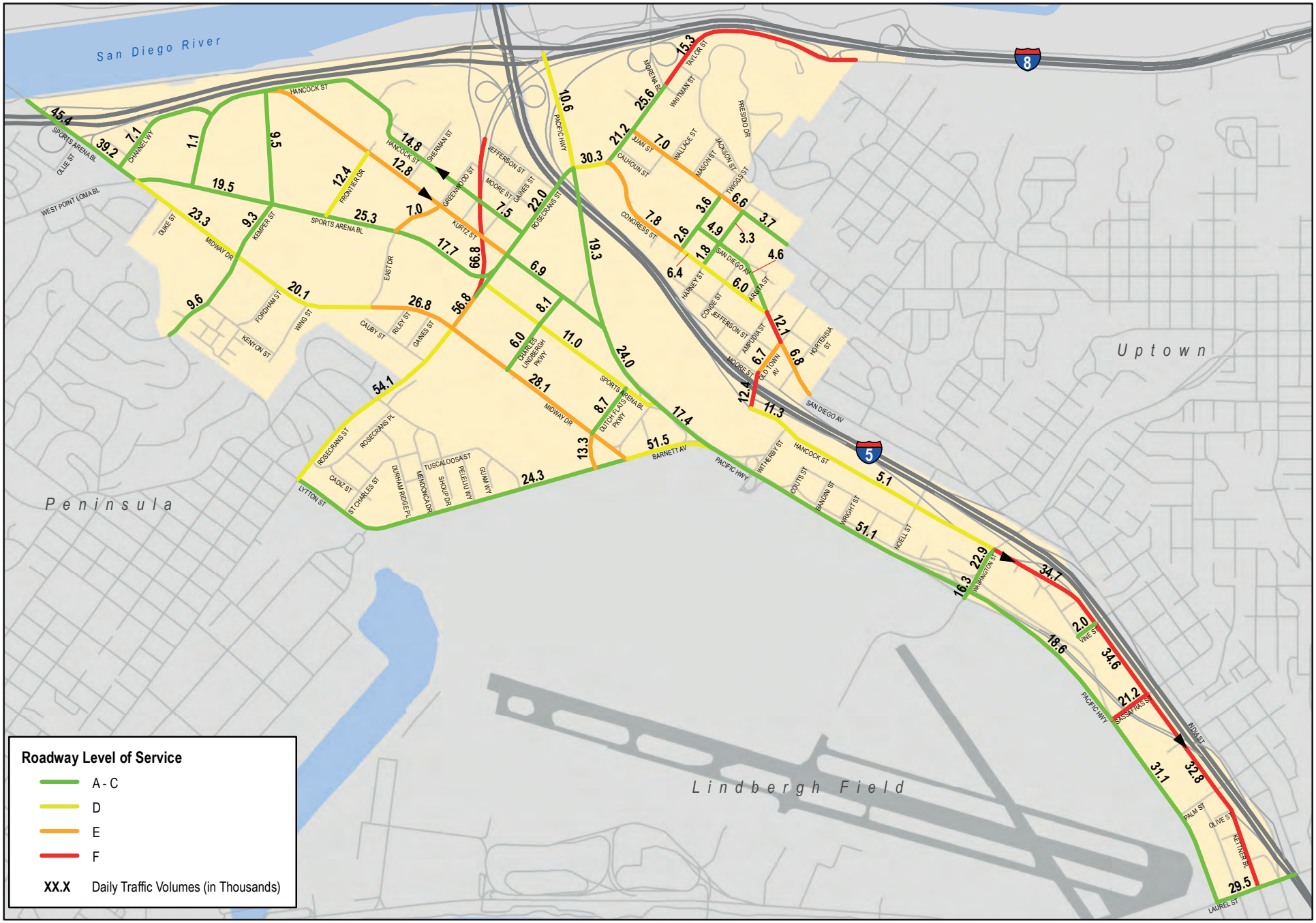

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Figure 6-2
Daily Roadway Segment Traffic Volumes and LOS - Preferred Plan Conditions

Table 6.1 Daily Roadway Segment Analysis - Preferred Plan Conditions

Roadway	From	To	Classification	Maximum Capacity at LOS E	ADT	V/C	LOS
North-South							
Midway Pacific Highway							
Lytton Street/ Barnett Ave	Rosecrans St	Midway Dr	4-Lane Major Arterial	40,000	24,300	0.61	C
Midway Dr	W. Point Loma Blvd/ Sports Arena Blvd	Kemper St	4-Lane Collector (CLTL)	30,000	23,300	0.78	D
	Kemper St	East Dr	4-Lane Collector (CLTL)	30,000	20,100	0.67	D
	East Dr	Rosecrans St	4-Lane Collector (CLTL)	30,000	26,800	0.89	E
	Rosecrans St	Barnett Ave	4-Lane Collector (CLTL)	30,000	28,100	0.94	E
Sports Arena Blvd	I-8 WB Ramps	I-8 EB Ramps	6-Lane Prime Arterial	60,000	45,400	0.76	C
	I-8 EB Ramps	W. Point Loma Blvd	6-Lane Major Arterial	50,000	39,200	0.78	C
	W. Point Loma Blvd/Midway Dr	Kemper St	6-Lane Major Arterial	50,000	19,500	0.39	A
	Kemper St	East Dr	6-Lane Major Arterial	50,000	25,300	0.51	B
	East Dr	Rosecrans St	6-Lane Major Arterial	50,000	17,700	0.35	A
	Rosecrans St	Pacific Hwy	2-Lane Collector (CLTL)	15,000	11,000	0.73	D
Kurtz St	Hancock St	Rosecrans St	2-Lane Collector (One-Way)	15,000	12,800	0.85	E
	Rosecrans St	Pacific Hwy	2-Lane Collector (CLTL)	15,000	6,900	0.46	B
Hancock St	Sports Arena Blvd	Kurtz St	4-Lane Collector	15,000	1,100	0.07	A
	Kurtz St	Camino Del Rio West	3-Lane Major (One-Way)	30,000	14,800	0.49	B
	Camino Del Rio West	Rosecrans St	3-Lane Major (One-Way)	30,000	7,500	0.25	A
	Old Town Ave	Witherby St	4-Lane Collector	15,000	11,300	0.75	D
	Witherby St	Washington St	2-Lane Collector	8,000	5,100	0.64	D
Kettner Blvd	Washington St	Vine St	3-Lane Major (One-Way)	30,000	34,700	1.16	F
	Vine St	Sassafras St	3-Lane Major (One-Way)	30,000	34,600	1.15	F
	Sassafras St	Laurel St	3-Lane Major (One-Way)	30,000	32,800	1.09	F
Pacific Hwy	Sea World Dr	Taylor St	2-Lane Collector (CLTL)	15,000	10,600	0.71	D

Table 6.1 Daily Roadway Segment Analysis - Preferred Plan Conditions

Roadway	From	To	Classification	Maximum Capacity at LOS E	ADT	V/C	LOS
Pacific Hwy	Taylor St	Kurtz St	6-Lane Major Arterial	50,000	19,300	0.39	A
	Kurtz St	Sports Arena Blvd	6-Lane Major Arterial	50,000	24,000	0.48	B
	Sports Arena Blvd	Barnett Ave	5-Lane Major Arterial	50,000	17,400	0.35	A
	Barnett Ave	Washington St	Expressway	80,000	51,100	0.64	C
	Washington St	Sassafras St	6-Lane Prime Arterial	60,000	18,600	0.37	A
	Sassafras St	Laurel St	6-Lane Major Arterial	50,000	31,100	0.62	C
Old Town							
Congress St[1]	Taylor St	Twiggs St	2-Lane Collector	8,000	7,800	0.98	E
	Twiggs St	Harney St	2-Lane Collector	8,000	6,400	0.8	D
	Harney St	San Diego Ave/ Ampudia St	2-Lane Collector	8,000	6,000	0.75	D
San Diego Ave[1]	Twiggs St	Harney St	2-Lane Collector	8,000	4,900	0.61	C
	Conde St	Arista Ave	2-Lane Collector	8,000	4,600	0.58	C
	Ampudia St	Old Town Ave	2-Lane Collector	8,000	12,100	1.51	F
	Old Town Ave	Hortensia St	2-Lane Collector	8,000	6,800	0.85	E
Juan St[1]	Taylor St	Twiggs St	2-Lane Collector	8,000	7,000	0.88	E
	Twiggs St	Harney St	2-Lane Collector	8,000	6,600	0.83	E
	Harney St	San Juan Rd	2-Lane Collector	8,000	3,700	0.46	C
East-West							
Midway Pacific Highway							
Channel Wy	W. Mission Bay Dr	Hancock St	4-Lane Collector	15,000	7,100	0.47	C
Kemper St	Kenyon St	Midway Dr	4-Lane Collector	15,000	9,600	0.64	C
	Midway Dr	Sports Arena Blvd	4-Lane Collector	15,000	9,300	0.62	C
	Sports Arena Blvd	Hancock St	2-Lane Collector (CLTL)	15,000	9,500	0.63	C
Frontier St	Sports Arena Blvd	Kurtz St	2-Lane Collector (CLTL)	15,000	12,400	0.83	D

Table 6.1 Daily Roadway Segment Analysis - Preferred Plan Conditions

Roadway	From	To	Classification	Maximum Capacity at LOS E	ADT	V/C	LOS
Greenwood St	Sports Arena Blvd	Kurtz St	2-Lane Collector	8,000	7,000	0.88	E
Camino Del Rio West	Rosecrans St	I-5/I-8 Ramps	6-Lane Prime Arterial	60,000	66,800	1.11	F
Rosecrans St	Lytton St	Midway Dr	6-Lane Prime Arterial	60,000	54,100	0.9	D
	Midway Dr	Sports Arena Blvd	6-Lane Prime Arterial	60,000	56,800	0.95	E
	Sports Arena Blvd	Pacific Hwy/Taylor St	4- Lane Major Arterial	40,000	22,000	0.55	C
Charles Lindbergh Pkwy	Midway Dr	Sports Arena Blvd	2-Lane Collector (CLTL)	15,000	6,000	0.4	B
	Sports Arena Blvd	Kurtz Street	2-Lane Collector (CLTL)	15,000	8,100	0.54	C
Dutch Flats Pkwy	Barnett Avenue	Midway Dr	2-Lane Collector (CLTL)	15,000	13,300	0.89	E
	Midway Dr	Sports Arena Blvd	2-Lane Collector (CLTL)	15,000	8,700	0.58	C
Barnett Ave	Midway Dr	Pacific Hwy	6-Lane Prime Arterial	60,000	51,500	0.86	D
Washington St	Frontage Rd	Pacific St	4- Lane Major Arterial	40,000	16,300	0.41	B
	Pacific St	Hancock St	4- Lane Major Arterial	40,000	22,900	0.57	C
Vine St	California St	Kettner Blvd	2-Lane Collector	8,000	2,000	0.25	A
Sassafras St	Pacific Hwy	Kettner Blvd	3-Lane Collector	11,500	21,200	1.84	F
Laurel St	Pacific Hwy	Kettner Blvd	4- Lane Major Arterial	40,000	29,500	0.74	C
Old Town							
Taylor St[1]	Pacific Hwy/ Rosecrans St	Congress St	4- Lane Major Arterial	40,000	30,300	0.76	D
	Congress St	Juan St	5-Lane Major Arterial	45,000	21,200	0.47	B
	Juan St	Morena Blvd	4- Lane Major Arterial	40,000	25,600	0.64	C
	Morena Blvd	I-8 EB Ramps	2-Lane Collector	8,000	15,300	1.91	F
Twiggs St[1]	Congress St	San Diego Ave	2-Lane Collector	8,000	2,600	0.33	B
	San Diego Ave	Juan St	2-Lane Collector	8,000	3,600	0.45	C
Harney St[1]	Congress St	San Diego Ave	2-Lane Collector	8,000	1,800	0.23	A
	San Diego Ave	Juan St	2-Lane Collector	8,000	3,300	0.41	B

Table 6.1 Daily Roadway Segment Analysis - Preferred Plan Conditions

Roadway	From	To	Classification	Maximum Capacity at LOS E	ADT	V/C	LOS
Old Town Ave[1]	Hancock St	Moore St	2-Lane Collector	8,000	12,100	1.51	F
	Moore St	San Diego Ave	2-Lane Collector	8,000	6,700	0.84	E

Source: Chen Ryan Associates (May 2017)

Note: **Bold** letter indicates LOS E or F

The following mitigation measures were identified for the two communities:

Midway-Pacific Highway Community

Midway Drive, between Rosecrans Street and Barnett Avenue (LOS E) – Improving the roadway way from a 4-Lane Collector with Center Left-Turn Lane to a 4-Lane Major Arterial would improve the operations to LOS C. The identified significant traffic related impact to this roadway segment would be fully mitigated with the implementation of this mitigation measure.

Kurtz Street, between Hancock Street and Rosecrans Street (LOS E) – Widening the roadway from a 2-Lane Collector (One-Way) Arterial to a 3-Lane - Lane Major (One-Way) Arterial would improve the operations to LOS B. The identified significant traffic related impact to this roadway segment would be fully mitigated with the implementation of this improvement.

Kettner Boulevard, between Washington Street and Vine Street (LOS F) – Widening the roadway from a 3-Lane Major (One-Way) Arterial to a 4-Lane - Lane Major (One-Way) Arterial would improve the operations to LOS D. The identified significant traffic related impact to this roadway segment would be fully mitigated with the implementation of this mitigation measure.

Kettner Boulevard, between Vine Street and Sassafras Street (LOS F) – Widening the roadway from a 3-Lane Major (One-Way) Arterial to a 4-Lane - Lane Major (One-Way) Arterial would improve the operations to LOS D. The identified significant traffic related impact to this roadway segment would be fully mitigated with the implementation of this mitigation measure.

Kettner Boulevard, between Sassafras Street and Laurel Street (LOS F) – Widening the roadway from a 3-Lane Major (One-Way) Arterial to a 4-Lane - Lane Major (One-Way) Arterial would improve the operations to LOS D. The identified significant traffic related impact to this roadway segment would be fully mitigated with the implementation of this mitigation measure.

Greenwood Street, between Sports Arena Boulevard and Kurtz Street (LOS E) – Improving from a 2-Lane Collector to a 2-Lane Collector with a Center Left Turn-Lane would improve the operations to LOS C. The identified significant traffic related impact to this roadway segment would be fully mitigated with the implementation of this mitigation measure. However, due to the neighborhood character and potential impacts to both bicycle and pedestrian travel, it is recommended that Greenwood Street be built as a 2-Lane Collector with a Center Left Turn-Lane.

Camino Del Rio West, between Rosecrans Street and the I-5/I-8 Ramps (LOS F) – Improving this roadway from a 6-Lane Prime Arterial to a 6-Lane Expressway would improve the operations to LOS D. The identified significant traffic related impact to this roadway segment would be fully mitigated with the implementation of this improvement.

Dutch Flats Parkway, between Barnett Avenue and Midway Drive (LOS E) – Improving from a 2-Lane Collector with a Center Left Turn-Lane to a 4-Lane Collector with a Center Left Turn-Lane would improve the operations to LOS B. The identified significant traffic related impact to this roadway segment would be fully mitigated with the implementation of this improvement. However, due to the neighborhood character and potential impacts to both bicycle and pedestrian travel, it is recommended that Dutch Flats Parkway be built as a 2-Lane Collector with a Center Left Turn-Lane.

Sassafras Street, between Pacific Highway and Kettner Boulevard (LOS F) - Widening the roadway from a 3-Lane Collector to a 4-Lane Collector with Center Left-Turn Lane would improve the operations to LOS D. The identified significant traffic related impact to this roadway segment would be fully mitigated with the implementation of this improvement.

Old Town Community

Congress Street between Taylor Street and Twiggs Street (LOS E) - Widening the roadway from a 2-Lane Collector to a 2-Lane Collector with Center Left-Turn Lane would improve the operations to LOS C. The identified significant traffic related impact to this roadway segment would be fully mitigated with the implementation of this improvement.

San Diego Avenue, between Ampudia St and Old Town Avenue (LOS F) - Widening the roadway from a 2-Lane Collector to a 2-Lane Collector with Center Left-Turn Lane would improve the operations to LOS D. The identified significant traffic related impact to this roadway segment would be fully mitigated with the implementation of this improvement.

San Diego Avenue, between Old Town Avenue and Hortensia Street (LOS E) - Widening the roadway from a 2-Lane Collector to a 2-Lane Collector with Center Left-Turn Lane would improve the operations to LOS B. The identified significant traffic related impact to this roadway segment would be fully mitigated with the implementation of this improvement.

Juan Street, between Taylor Street and Twiggs Street (LOS E) - Widening the roadway from a 2-Lane Collector to a 2-Lane Collector with Center Left-Turn Lane would improve the operations to LOS B. The identified significant traffic related impact to this roadway segment would be fully mitigated with the implementation of this mitigation measure.

Juan Street, between Twiggs Street and Harney Street (LOS E) - Widening the roadway from a 2-Lane Collector to a 2-Lane Collector with Center Left-Turn Lane would improve the operations to LOS B. The identified significant traffic related impact to this roadway segment would be fully mitigated with the implementation of this improvement.

Taylor Street, between Morena Boulevard and I-8 Ramps (LOS F) - Widening the roadway from a 2-Lane Collector to a 4-Lane Collector with Center Left-Turn Lane would improve the operations to LOS C. The identified significant traffic related impact to this roadway segment would be fully mitigated with the implementation of this improvement.

Old Town Avenue, between Hancock Street and Moore Street (LOS F) - Widening the roadway from a 2-Lane Collector to a 2-Lane Collector with Center Left-Turn Lane would improve the operations to LOS D. The identified significant traffic related impact to this roadway segment would be fully mitigated with the implementation of this mitigation measure.

Old Town Avenue, between Moore Street and San Diego Avenue (LOS E) - Widening the roadway from a 2-Lane Collector to a 2-Lane Collector with Center Left-Turn Lane would improve the operations to LOS B. The identified significant traffic related impact to this roadway segment would be fully mitigated with the implementation of this mitigation measure.

6.1.2 Intersection Geometry and LOS Analysis

AM and PM peak hour intersection LOS analyses were conducted for Preferred Plan conditions. It was assumed under implementation of the Preferred Plan that the proposed intersection improvements outlined in Sections 3.2.2 and 4.2.2 would be in place. Figure 6-3 and Figure 6-4 display the proposed intersection geometrics and forecast AM and PM peak hour turning movements under implementation of the Preferred Plan, respectively.

Table 6.2 and Figure 6-5 display the LOS results for the key study intersections located within both communities under Preferred Plan conditions. LOS analyses were conducted using the methodologies described in Chapter 2.0. Intersection LOS calculation worksheets are provided in Appendix E. Signal timing were assumed to be optimized under implementation of Preferred Plan conditions, therefore some signal operations may be projected to operate better than under existing conditions.

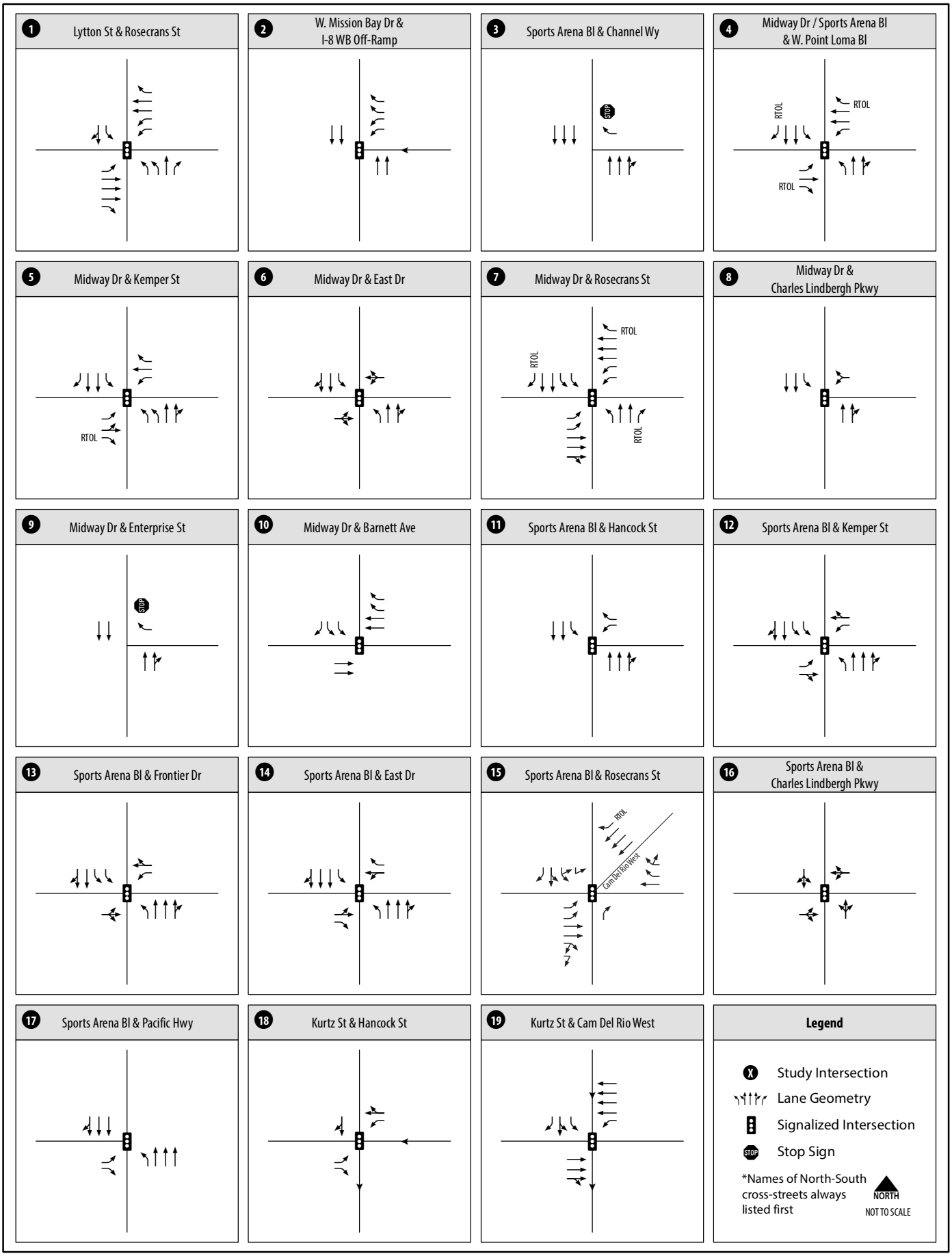

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Figure 6-3
Intersection Geometrics - Preferred Plan (Intersections 1-19)

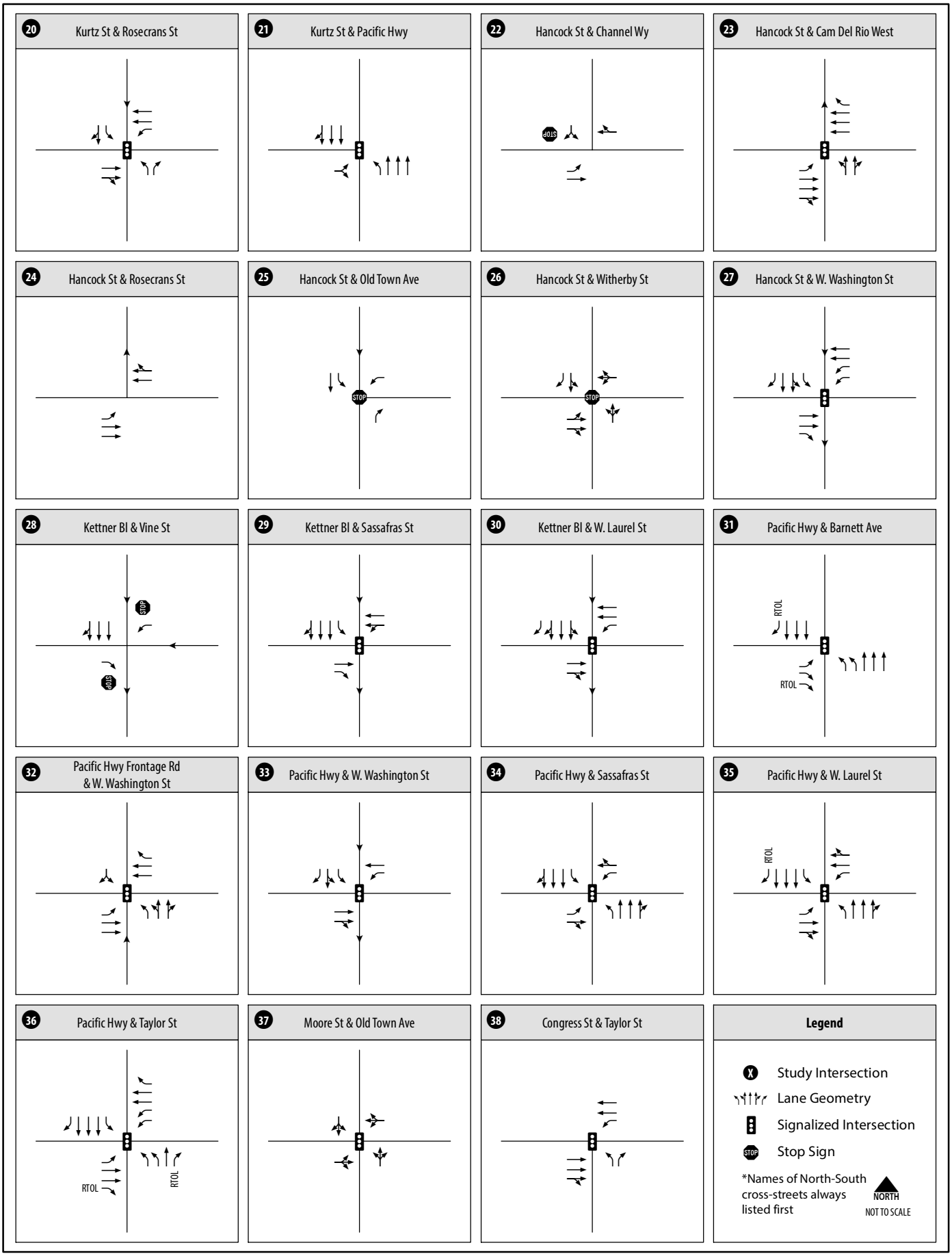

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Figure 6-3
Intersection Geometrics - Preferred Plan (Intersections 20-38)

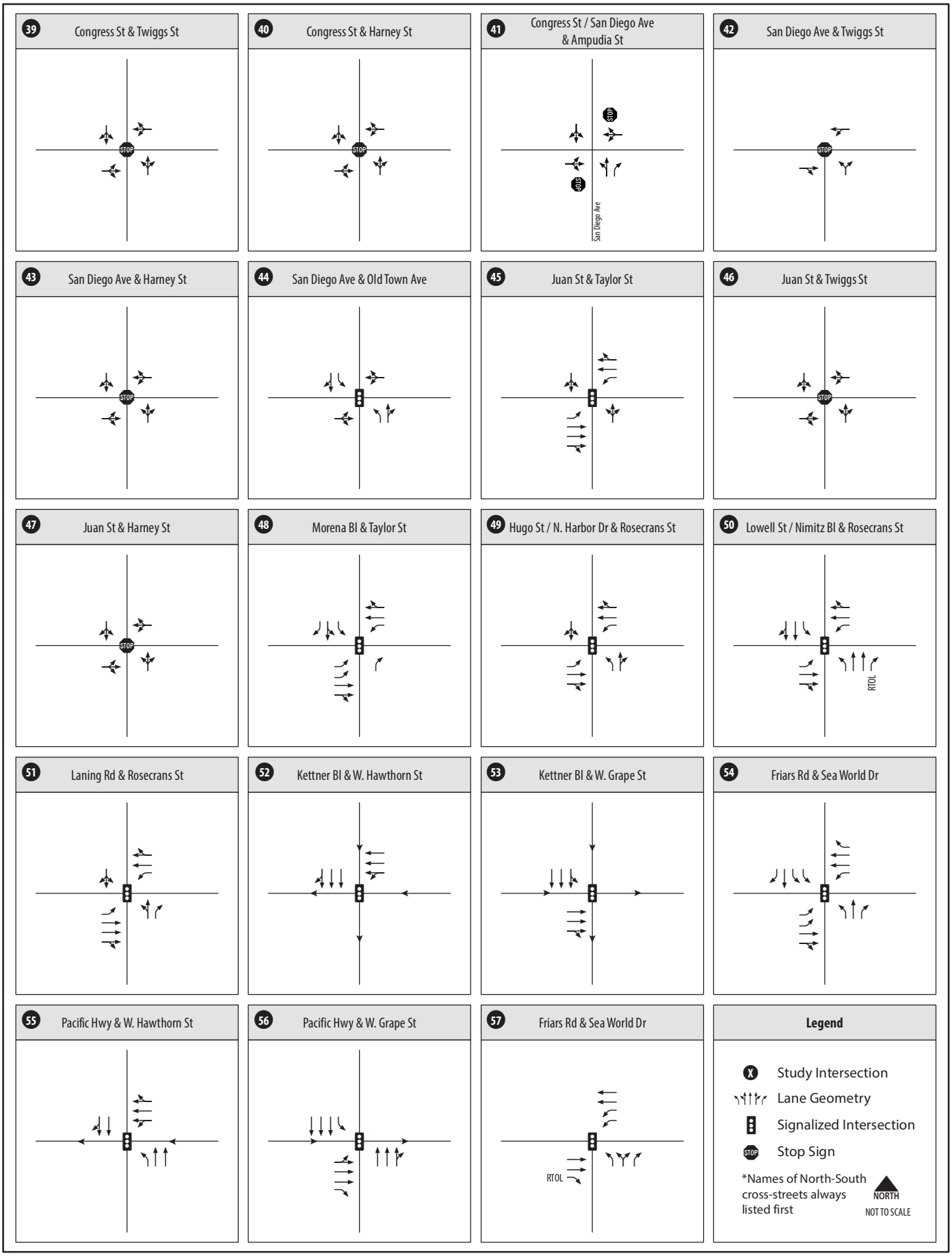

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Figure 6-3
Intersection Geometrics - Preferred Plan (Intersections 39-57)

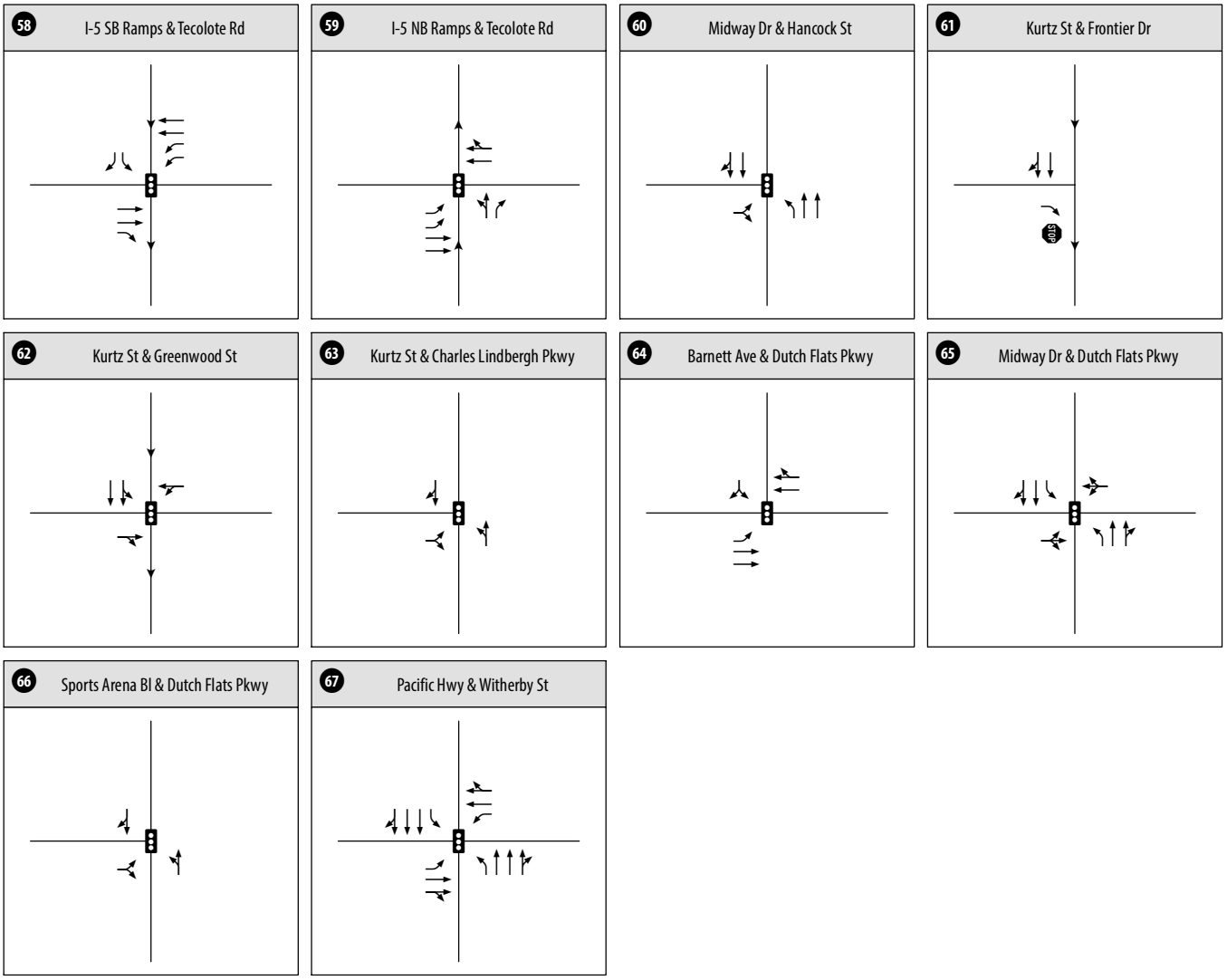

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Figure 6-3
Intersection Geometrics - Preferred Plan (Intersections 58-67)

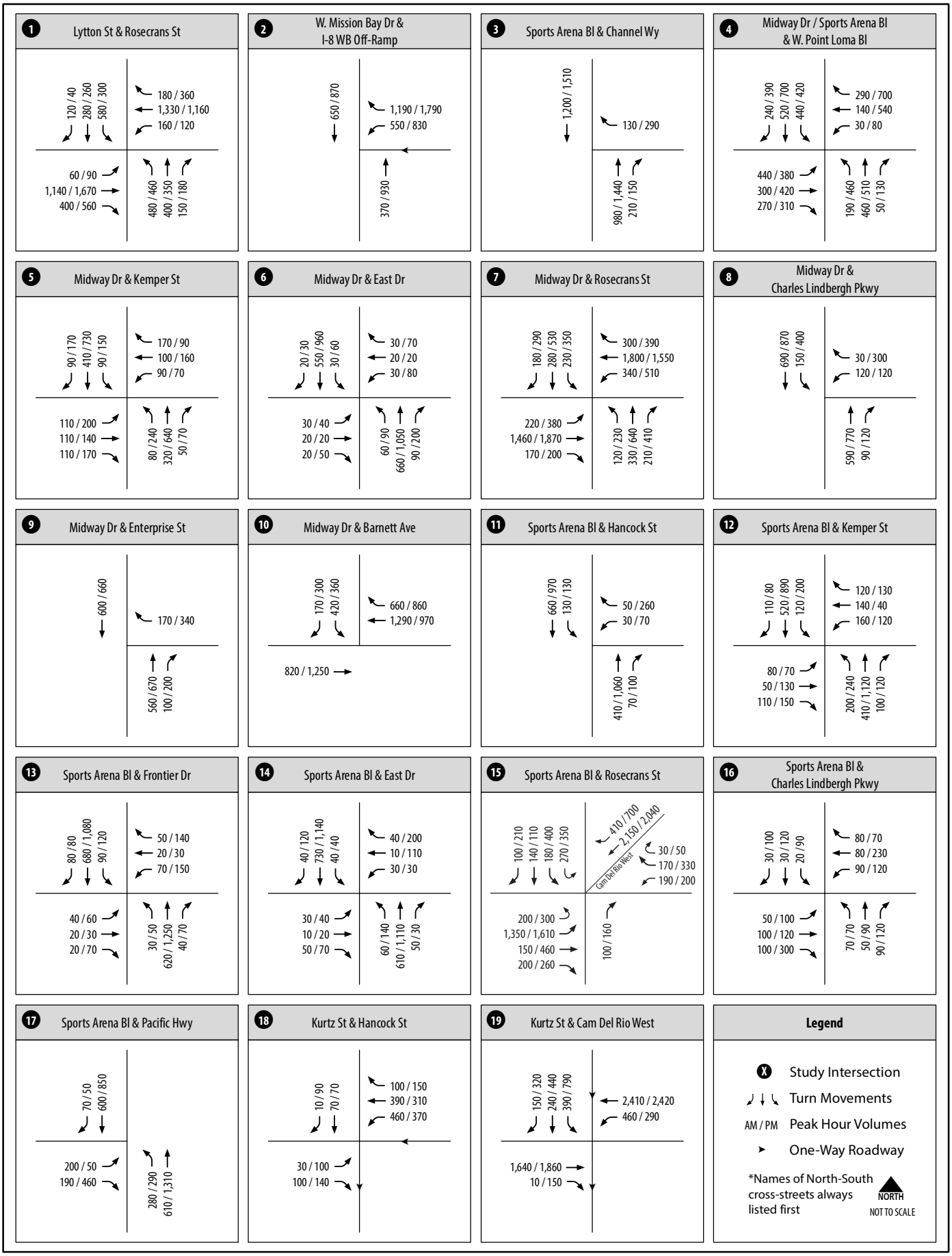

Figure 6-4

Peak Hour Turning Movement Volumes - Preferred Plan Conditions (Intersections 1-19)

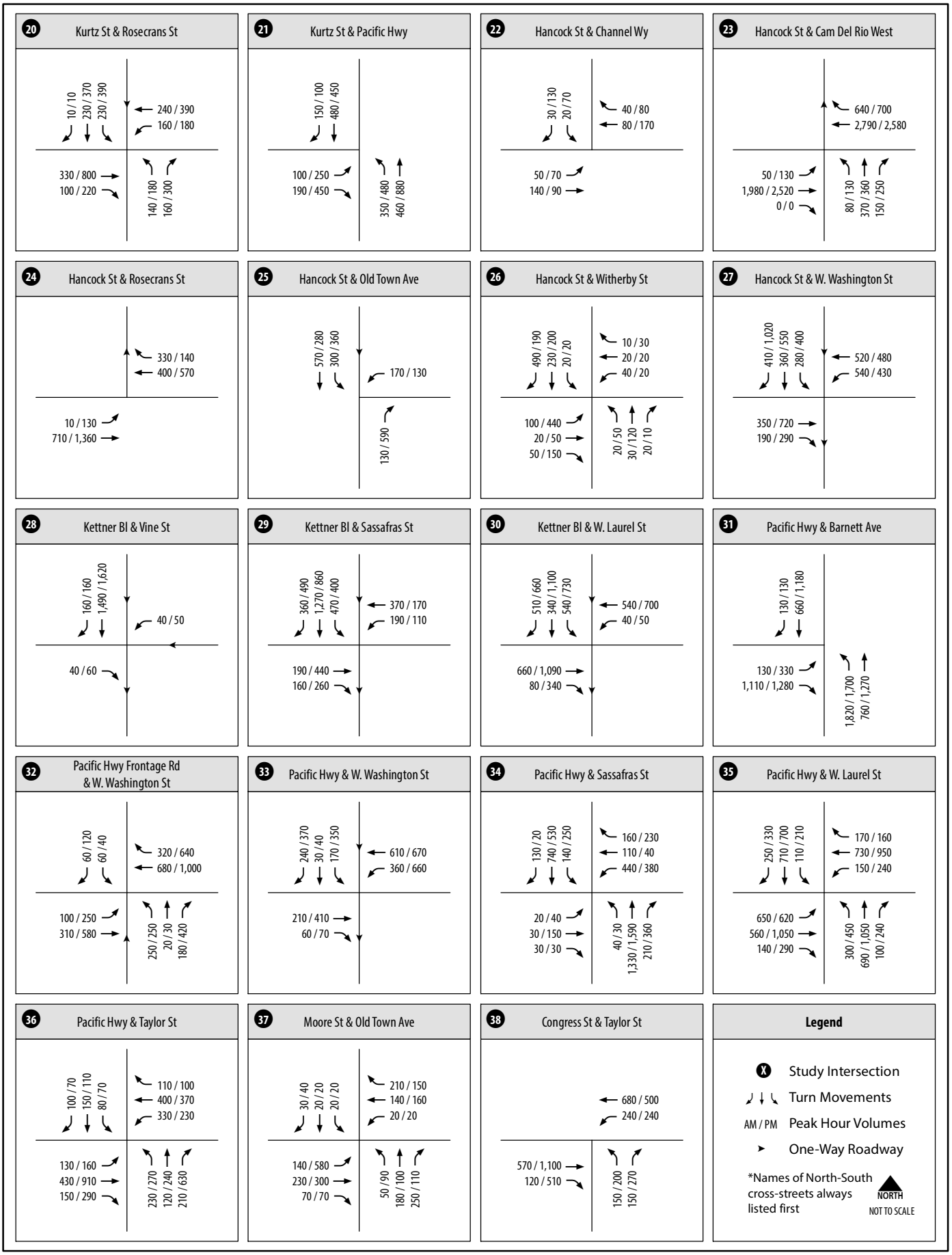

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Figure 6-4
Peak Hour Turning Movement Volumes - Preferred Plan Conditions (Intersections 20-38)

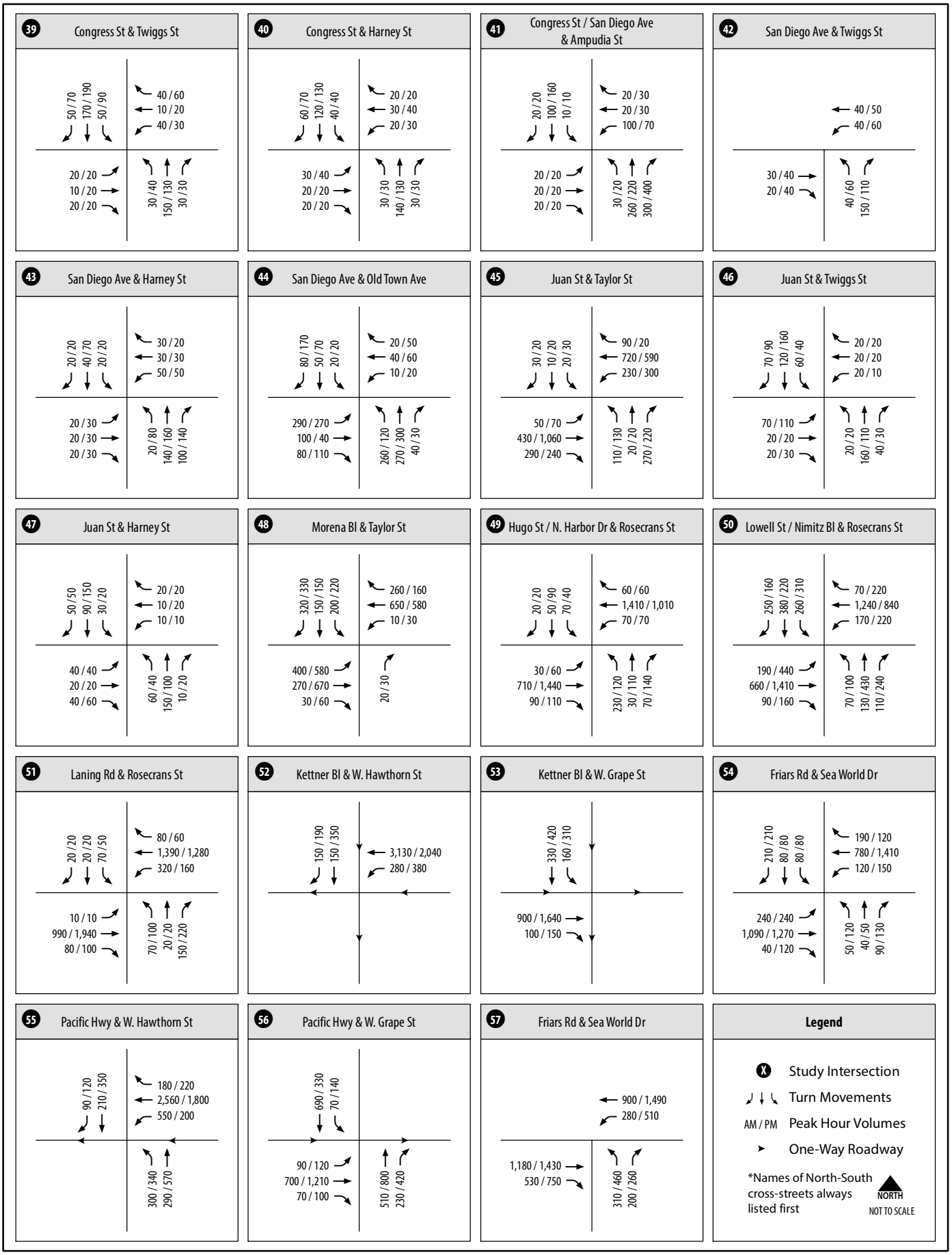


Figure 6-4

Peak Hour Turning Movement Volumes - Preferred Plan Conditions (Intersections 39-57)

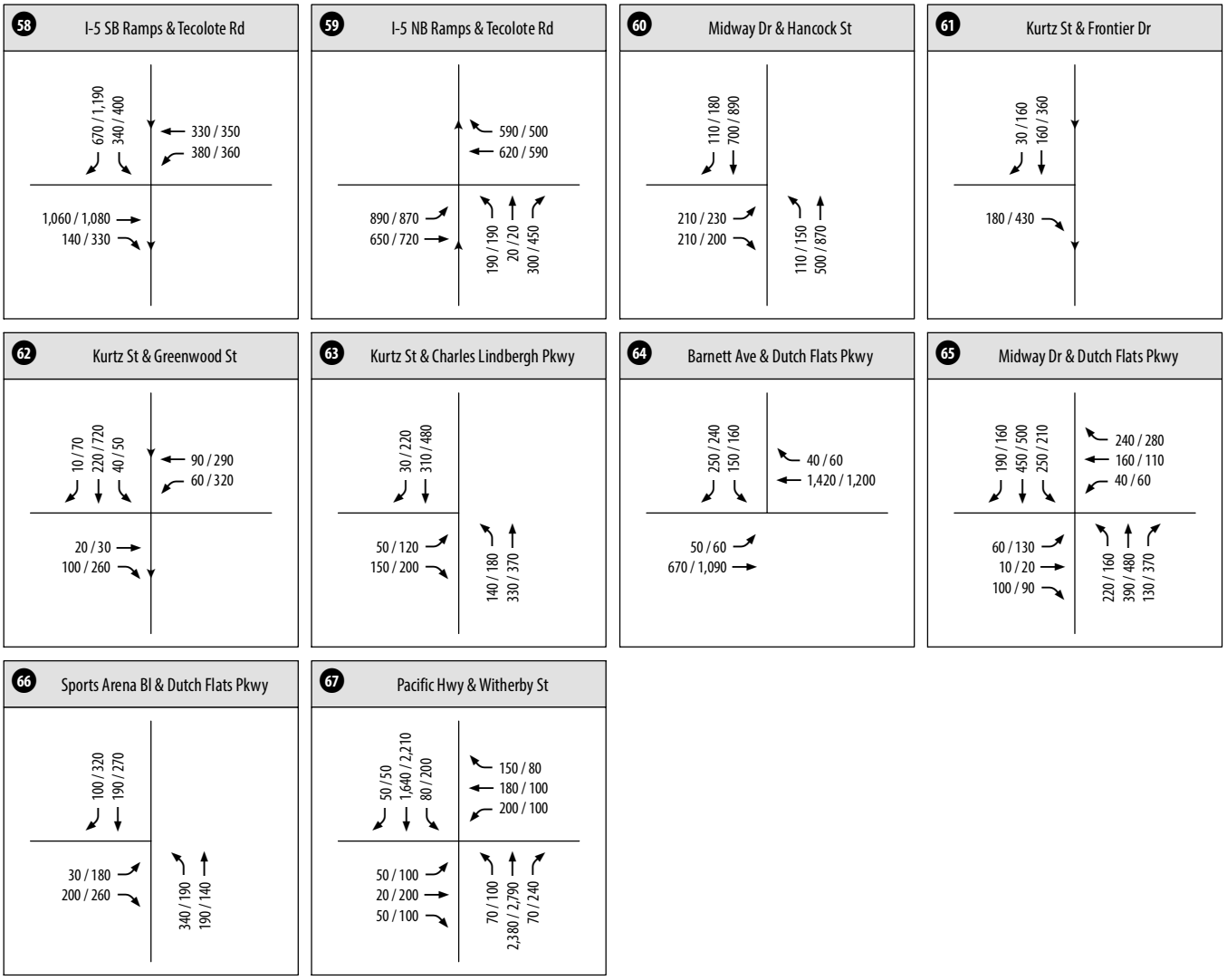
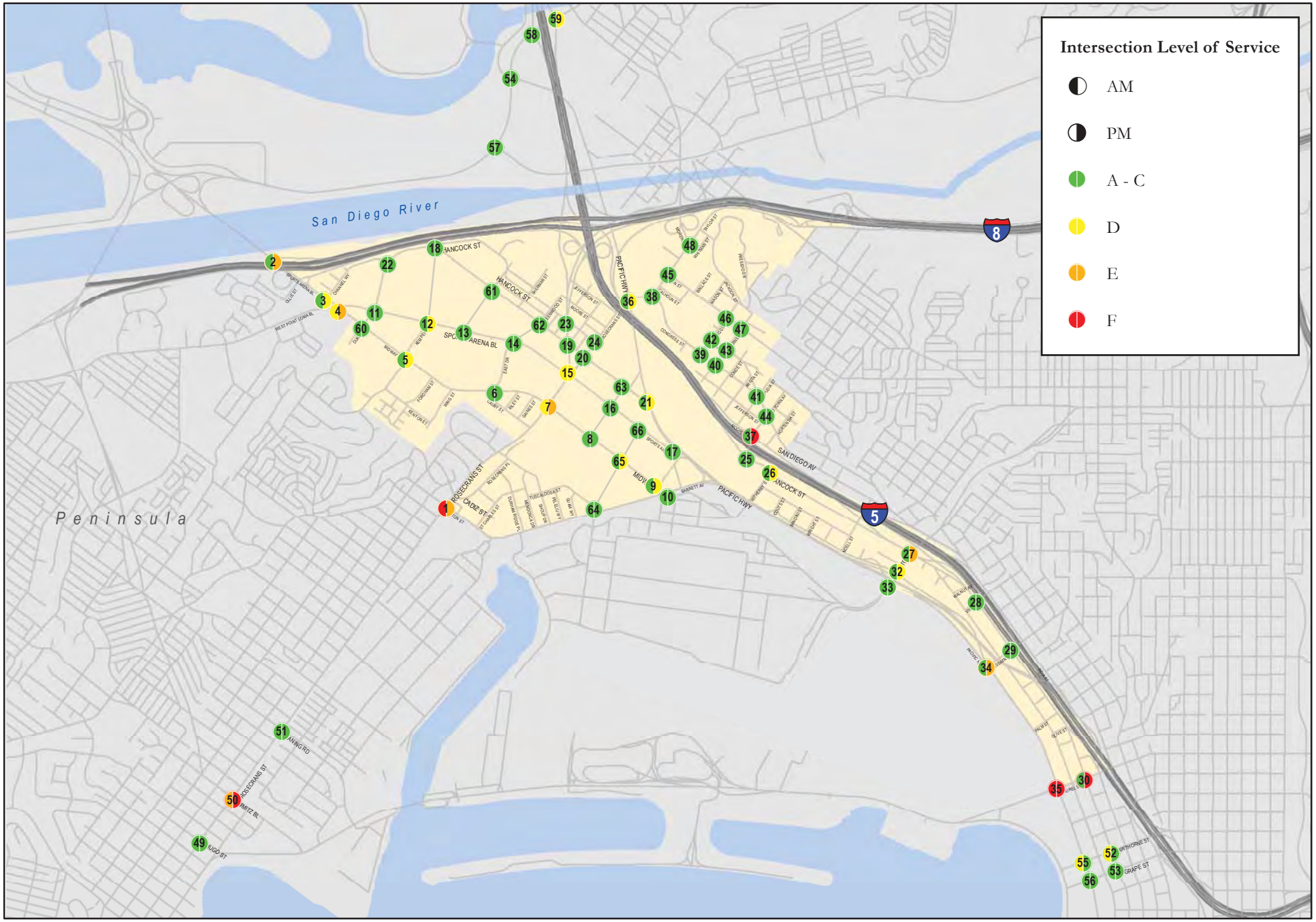


Figure 6-4
Peak Hour Turning Movement Volumes - Preferred Plan Conditions (Intersections 58-67)



Midway-Pacific Highway and
Old Town Community Plan Update

CHEN RYAN

Figure 6-5
Peak Hour Intersection LOS
Preferred Plan Conditions

Table 6.2 Peak Hour Intersection LOS and Delay Results – Preferred Plan Conditions

No.	Intersection	Control	AM Delay (Sec)	AM LOS	AM Existing LOS	PM Delay (Sec)	PM LOS	PM Existing LOS
Midway-Pacific Highway								
1	Lytton St and Rosecrans St	Signal	97.7	F	E	55.2	E	D
2	W Mission Bay Dr and I-8 WB Off-Ramp	Signal	15.4	B	B	70.5	E	E
3	Sports Arena Blvd and Channel Way	SSSC	12.1	B	B	31.4	D	B
4	Midway Dr and Sports Arena/W Point Loma Blvd	Signal	53.0	D	D	78.3	E	D
5	Midway Dr and Kemper St	Signal	31.7	C	C	38.1	D	D
6	Midway Dr and East Dr	Signal	6.8	A	A	17.6	B	B
7	Midway Dr and Rosecrans St	Signal	39.3	D	C	75.2	E	D
8	Midway Dr and Charles Lindbergh Pkwy	Signal	11.1	B	(1)	28.2	C	(1)
9	Midway Dr and Enterprise St	SSSC	13.1	B	B	25.8	D	C
10	Midway Dr and Barnett Ave	Signal	13.7	B	B	12.3	B	B
11	Sports Arena Blvd and Hancock St	Signal	14.8	B	A	19.1	B	B
12	Sports Arena Blvd and Kemper St	Signal	37.3	D	B	43.5	D	B
13	Sports Arena Blvd and Sports Arena Driveway	Signal	18.7	B	B	26.8	C	C
14	Sports Arena Blvd and East Dr	Signal	7.9	A	C	25.2	C	B
15	Sports Arena Blvd and Rosecrans St	Signal	36.9	D	D	51.9	D	D
16	Sports Arena Blvd and Charles Lindbergh Pkwy	Signal	13.9	B	(1)	18.5	B	(1)
17	Sports Arena Blvd and Pacific Hwy	Signal	25.4	C	B	17.5	B	B
18	Kurtz St and Hancock St	Signal	12.7	B	(2)	12.4	B	(2)
19	Kurtz St and Camino Del Rio West	Signal	30.7	C	A	53.9	D	C
20	Kurtz St and Rosecrans St	Signal	33.1	C	B	41.9	D	C
21	Kurtz St and Pacific Hwy	Signal	30.1	C	B	52.5	D	B
22	Hancock St and Channel Wy	SSSC	10.0	B	A	12.9	B	B
23	Hancock St and Camino Del Rio West	Signal	47.3	D	C	49.5	D	C
24	Hancock St and Rosecrans St	*No Conflicting Movements*						
25	Hancock St and Old Town Ave	AWSC	24.8	C	C	20.9	C	B
26	Hancock St and Witherby St	AWSC	13.9	B	C	33.6	D	C
27	Hancock St and Washington St	Signal	22.9	C	C	68.7	E	C
28	Kettner Blvd and Vine St	SSSC	16.5	C	B	19.9	C	C
29	Kettner Blvd and Sassafras St	Signal	14.9	B	B	15.3	B	B
30	Kettner Blvd and West Laurel St	Signal	19.3	B	B	88.2	F	C
31	Pacific Hwy and Barnett Ave	*No Conflicting Movements*						
32	Pacific Hwy and Washington St @ Frontage Rd	Signal	20.5	C	B	46.9	D	D
33	Pacific Hwy and Washington St	Signal	21.5	C	B	28.5	C	C

Table 6.2 Peak Hour Intersection LOS and Delay Results – Preferred Plan Conditions

No.	Intersection	Control	AM			PM		
			Delay (Sec)	LOS	Existing LOS	Delay (Sec)	LOS	Existing LOS
34	Pacific Hwy and Sassafras St	Signal	31.8	C	B	75.4	E	C
35	Pacific Hwy and West Laurel St	Signal	91.4	F	D	144.5	F	D
Old Town								
36	Pacific Hwy and Taylor St	Signal	31.1	C	E	51.2	D	C
37	Moore St and Old Town Ave	Signal	23.2	C	B	96.5	F	B
38	Congress St and Taylor St	Signal	14.3	B	B	20.5	C	C
39	Congress St and Twiggs St	AWSC	9.6	A	A	10.8	B	A
40	Congress St and Harney St	AWSC	9.1	A	A	9.4	A	A
41	Congress St and San Diego Ave/Ampudia St	SSSC	17.5	C	B	16.1	C	B
42	San Diego Ave and Twiggs St	AWSC	7.9	A	A	8.1	A	A
43	San Diego Ave and Harney St	AWSC	9.0	A	A	10.8	B	A
44	San Diego Ave and Old Town Ave	Signal	17.5	B	B	13.7	B	B
45	Juan St and Taylor St	Signal	14.8	B	B	19.6	B	B
46	Juan St and Twiggs St	AWSC	9.7	A	A	10.1	B	A
47	Juan St and Harney St	AWSC	9.0	A	A	9.0	A	A
48	Morena Blvd and Taylor St	Signal	21.9	C	C	24.4	C	B
Intersections Outside of Study Communities								
49	Hugo St/N. Harbor Dr and Rosecrans St	Signal	29.0	C	B	31.5	C	C
50	Lowell St/Nimitz Blvd and Rosecrans St	Signal	61.1	E	D	114.1	F	E
51	Laning Rd and Rosecrans St	Signal	25.5	C	B	23.1	C	B
52	Kettner Blvd and West Hawthorn St	Signal	40.1	D	B	13.4	B	B
53	Kettner Blvd and West Grape St	Signal	10.1	B	A	9.5	A	A
54	Pacific Hwy and Sea World Dr	Signal	24.2	C	B	34.1	C	C
55	Pacific Hwy and West Hawthorn St	Signal	37.1	D	D	32.5	C	C
56	Pacific Hwy and West Grape St	Signal	17.9	B	B	31.7	C	C
57	Friars Rd and Sea World Dr	Signal	15.4	B	B	26.8	C	B
58	I-5 SB Ramps and Sea World Dr	Signal	17.8	B	B	20.5	C	E
59	I-5 NB Ramps and Sea World Dr	Signal	29.3	C	C	43.3	D	C
New Intersections (Midway-Pacific Highway Community)								
60	Midway Dr & Duke Street / Hancock St	Signal	27.0	C	(1)	32.1	C	(1)
61	Kurtz St & Frontier Dr	SSSC	9.9	A	(1)	19.0	C	(1)
62	Kurtz St & Greenwood St	Signal	11.9	B	(1)	16.9	B	(1)
63	Kurtz St & Charles Lindbergh Pkwy	Signal	8.3	A	(1)	22.1	C	(1)
64	Barnett Ave & Dutch Flats Pkwy	Signal	24.6	C	(1)	14.4	B	(1)

Table 6.2 Peak Hour Intersection LOS and Delay Results – Preferred Plan Conditions

No.	Intersection	Control	AM Delay (Sec)	AM LOS	AM Existing LOS	PM Delay (Sec)	PM LOS	PM Existing LOS
65	Midway Dr & Dutch Flats Pkwy	Signal	46.1	D	(1)	53.0	D	(1)
66	Dutch Flats Pkwy & Sports Arena Bl	Signal	10.9	B	(1)	21.5	C	(1)

Source: Chen Ryan Associates (May 2017)

Notes:
Bold letter indicates LOS E or F.
[1] Significant Impact
[2] Single Side Stop Controlled
[3] All Way Stop Controlled

The following mitigation measures were identified for the two communities:

Midway-Pacific Highway Community

1. *Lytton Street and Rosecrans Street (LOS F: AM Peak Hour and LOS E PM Peak Hour)* – The westbound through movement, as well as the southbound left-turn and through movements are projected to be over capacity, under implementation of the Preferred Plan. Implementing the following improvements would allow the intersection to operate at LOS D or better during both peak hours.

    - Add a second southbound left-turn lane
    - Add an additional westbound through movement lane on Rosecrans Street (three total)
    - Implement right-turn overlap (RTOL) phases at all legs of the intersection

    The identified significant traffic related impact to this intersection would be fully mitigated with the implementation of this improvement.

    Partial Mitigation: If the second southbound left-turn and RTOL phase are implemented (feasible improvements) the overall intersection delay would be reduced to the following:

    AM: LOS E
    PM: LOS D

    Implementation of this improvement will partially mitigate the traffic related impact at the intersection.

2. *Sports Arena Boulevard / West Mission Bay and I-8 WB Off-Ramp (LOS E: PM Peak Hour)* – The westbound right-turn movement at this intersection is projected to be over capacity during the PM peak hour, under the implementation of the Preferred Plan. Providing a third exclusive westbound right-turn lane or converting the movement to free-right-turn movement would improve the intersection operations to LOS D. The identified significant traffic related impact to this intersection would be fully mitigated with the implementation of this improvement.

Partial Mitigation: None recommended.

4. *Midway Drive / West Point Loma Drive and Sports Arena Boulevard (LOS E: PM Peak Hour)* – All four left-turn movements at this intersection are projected to be over capacity during the PM Peak Hour. Providing dual-left turn lanes in the northbound, southbound and eastbound directions would improve intersection operations to LOS D during the PM peak hour. The identified significant traffic related impact to this intersection would be fully mitigated with the implementation of this improvement.

   Partial Mitigation: None recommended.

7. *Midway Drive and Rosecrans Street* (LOS E: PM Peak Hour) – Rosecrans Street is projected to operate at LOS E during the PM peak hours, under implementation of the Preferred Plan. Widening the eastbound and westbound approaches of the intersection to include a fourth through lane would improve the intersection operations to LOS D. The identified significant traffic related impact to this intersection would be fully mitigated with the implementation of this improvement.

   Partial Mitigation: None recommended, limited to no right-of-way is anticipated to be available with proposed Multi-Use Urban Path improvements.

27. *Hancock Street and Washington Street (LOS E: PM Peak Hour)* – The southbound right-turn movement of the intersection is projected to be over capacity during the PM peak hour, under the implementation of the Preferred Plan. Restriping the southbound approach to include a second southbound right-turn lane would allow the intersection to operate at LOS C during the PM Peak Hour. This improvement is feasible but may require additional engineering study. The identified significant traffic related impact to this intersection would be fully mitigated with the implementation of this improvement.

    Partial Mitigation: None recommended.

30. *Kettner Boulevard and Laurel Street (LOS F: PM Peak Hour)* – The eastbound through movement at the intersection is projected to be over capacity during the PM peak hour, under implementation of the Preferred Plan. Widening the eastbound approach of the intersection to include a third through lane would improve the intersection operations to LOS D. The identified significant traffic related impact to this intersection would be fully mitigated with the implementation of this improvement.

    Partial Mitigation: None recommended.

34. *Pacific Highway and Sassafras Street (LOS E: PM Peak Hour)* – The southbound left-turn movement of the intersection is projected to be over capacity during the PM peak hour, under the implementation of the Preferred Plan. Adding a second southbound left-turn lane would allow the intersection to operate at LOS D during the PM peak hour. The

identified significant traffic related impact to this intersection would be fully mitigated with the implementation of this improvement.

Partial Mitigation: None recommended.

35. *Pacific Highway and Laurel Street (LOS F: AM and PM Peak Hours)* – Laurel Street is projected to be over capacity during both peak hours, under implementation of the Preferred Plan. Widening the eastbound, westbound and northbound approaches of the intersection to include a third through lane and a second eastbound left-turn lane, as well as a second northbound left-turn lane and exclusive right-turn lane would improve the intersection operations to LOS D. The identified significant traffic related impact to this intersection would be fully mitigated with the implementation of this improvement.

Partial Mitigation: None recommended.

Old Town Community

37. *Moore Street and Old Town Street (LOS F: PM Peak Hour)* – The eastbound and westbound movements of the intersection are projected to be over capacity during the PM peak hour, under implementation of the Preferred Plan. Implementation of the following improvements would allow the intersection to operate at LOS D during the PM peak hour.

- Implement exclusive eastbound and westbound left-turn lanes.
- Convert the eastbound/westbound signal phasing from permitted to protected phasing.

The identified significant traffic related impact to this intersection would be fully mitigated with the implementation of this improvement.

Partial Mitigation: None recommended.

Outside of the Community

50. *Nimitz Boulevard / Lowell Street and Rosecrans Street (LOS E: AM Peak Hour and LOS F: PM Peak Hour*) – Both the southbound through movement and eastbound left-turn movement are anticipated to be over capacity during both peak hours, under implementation of Preferred Plan. Widening the northbound and southbound approaches of the intersection to include a third through lane and a second southbound left-turn lane would improve the intersection operations to LOS D or better during both the AM and PM peak hours. Implementation of the following improvements would allow the intersection to operate at LOS D or better during both the AM and PM peak hours.

The identified significant traffic related impact to this intersection would be fully mitigated with the implementation of this improvement.

Partial Mitigation: None recommended.

6.1.3 Intersection Queuing Analysis

A queuing analysis was conducted under Preferred Plan conditions, at each of the study intersections to assess potential overflowing issues at exclusive turn-lanes and closely spaced intersections. Closely spaced intersections include all ramp intersections and intersections within close proximity (less than 500 feet) to one another. The limitations in turn-lane storage capacity could result in turning vehicles overflow into adjacent lanes, while excessive queuing (queue length exceeds distance to upstream intersection) at closely spaced intersection could negatively affect the operations of the upstream intersection. When either situation occurs, traffic operations could deteriorate, resulting in additional levels of congestion.

Table 6.3 displays the average (50th percentile) and maximum (95th percentile) queue lengths at closely spaced intersections (500 feet apart), for relevant movements. Synchro intersection queuing reports are provided in Appendix E following the intersection LOS worksheets.

Table 6.3 Queue Lengths at Closely Spaced Intersections – Preferred Plan Conditions

#	Impacted Intersection	Peak Hour	Upstream Intersection	Spacing (Feet)	Turning Movement	95th% Queue Length (Feet)	50th% Queue Length (Feet)
7	Midway Dr and Rosecrans St	AM	15. Sports Arena Blvd and Rosecrans St	665	EBT	313	266
		PM				785	707
15	Sports Arena Blvd and Rosecrans St	AM	19. Kurtz St and Camino Del Rio West	380	EBT	590	521
		PM				887	653
19	Kurtz St and Camino Del Rio West	AM	23. Hancock St and Camino Del Rio West	315	NET	309	245
		PM				467	384
20	Kurtz St and Rosecrans St	AM	15. Sports Arena Blvd and Rosecrans St	310	WBT	694	561
		PM				920	820
N/A	I-5 SB Off-Ramp and Camino Del Rio West	AM	23. Hancock St and Camino Del Rio West	490	SWT	1,295	1,217
		PM				1,242	1,165

Source: Chen Ryan Associates (May 2017)

Midway-Pacific Highway Community

As shown, the maximum (95th percentile) and average (50th percentile) queue lengths at all closely spaced intersections are anticipated to exceed the spacing between intersections under implementation of Preferred Plan conditions. Queuing spillovers could degrade traffic operations at the upstream intersections.

Old Town

There are no signalized intersections within 500 feet of each other within the Old Town Community.

Table 6.4 displays the average (50th percentile) and maximum (95th percentile) queue lengths for intersection movements where the maximum peak hour queue length is projected to exceed the current storage length under Preferred Plan conditions. Synchro intersection queuing reports are provided in Appendix E following the intersection LOS worksheets.

Table 6.4 Queue Lengths at Closely Spaced Intersections – Preferred Plan Conditions

No.	Intersection	Movement	Peak	95th % Queue Length (Feet)	50th % Queue Length (Feet)	Pocket Length (Feet)	Excess 95th % Queue (Feet)	Excess 50th % Queue (feet)
Midway-Pacific Highway								
1	Lytton St and Rosecrans St	EBL	AM	166	66	105	61	0
			PM	223	98	105	118	0
		NBL	AM	309	215	230	79	0
			PM	384	267	230	154	37
		SBL	AM	976	741	185	791	556
			PM	551	350	185	366	165
4	Midway Dr and Sports Arena/W Point Loma Blvd	EBL	AM	781	381	380	401	1
			PM	694	479	380	314	99
		NBL	AM	273	148	230	43	0
			PM	823	595	230	593	365
5	Midway Dr and Kemper St	EBL	AM	127	93	100	27	0
			PM	196	146	100	96	46
7	Midway Dr and Rosecrans St	WBL	AM	241	146	340	0	0
			PM	436	317	340	96	0
		SBL	AM	164	87	90	74	0
			PM	299	189	90	209	99
		NBL	AM	198	88	190	8	0
			PM	472	291	190	282	101
		NBR	AM	93	42	190	0	0
			PM	405	278	190	215	88
12	Sports Arena Blvd and Kemper Street	EBL	AM	88	59	50	38	9
			PM	108	63	50	58	13
		NBL	AM	269	146	160	109	0
			PM	386	264	160	226	104
14	Sports Arena Blvd and East Drive	NBL	AM	47	25	130	0	0
			PM	165	132	130	35	2
15	Sports Arena Blvd and Rosecrans St	EBL	AM	131	78	220	0	0
			PM	236	163	220	16	0
		NBL	AM	298	148	130	168	18
			PM	385	215	130	255	85

Table 6.4 Queue Lengths at Closely Spaced Intersections – Preferred Plan Conditions

No.	Intersection	Movement	Peak	95th % Queue Length (Feet)	50th % Queue Length (Feet)	Pocket Length (Feet)	Excess 95th % Queue (Feet)	Excess 50th % Queue (feet)
19	Kurtz St and Camino Del Rio West	SBL	AM	397	307	210	187	97
			PM	1043	786	210	833	576
		WBL	AM	546	499	110	436	389
			PM	352	394	110	242	284
20	Kurtz St and Rosecrans St	NBL	AM	189	124	60	129	64
			PM	220	109	60	160	49
		WBL	AM	130	65	85	45	0
			PM	193	62	85	108	0
23	Hancock St and Camino Del Rio West	WBR	AM	471	294	140	331	154
			PM	837	540	140	697	400
		EBL	AM	47	36	110	0	0
			PM	117	121	110	7	11
27	Hancock St and Washington St	WBL	AM	229	140	140	89	0
			PM	312	205	140	172	65
		SBR	AM	146	58	270	0	0
			PM	1219	958	270	949	688
29	Kettner Blvd and Sassafras Street	SBL	AM	214	130	80	134	50
			PM	199	120	80	119	40
34	Pacific Highway and Sassafras Street	WBL	AM	453	256	100	353	156
			PM	570	372	100	470	272
		SBL	AM	184	85	250	0	0
			PM	411	239	250	161	0
35	Pacific Hwy and West Laurel St	EBL	AM	987	749	375	612	374
			PM	1146	900	375	771	525
		WBL	AM	209	134	70	139	64
			PM	444	258	70	374	188
		NBL	AM	533	344	90	443	254
			PM	870	645	90	780	555
		SBL	AM	225	102	250	0	0
			PM	531	355	250	281	105
Old Town								
36	Pacific Hwy and Taylor St	EBL	AM	192	70	150	42	0
			PM	245	95	150	95	0
		WBL	AM	221	93	160	61	0
			PM	140	69	160	0	0

Table 6.4 Queue Lengths at Closely Spaced Intersections – Preferred Plan Conditions

No.	Intersection	Movement	Peak	95th % Queue Length (Feet)	50th % Queue Length (Feet)	Pocket Length (Feet)	Excess 95th % Queue (Feet)	Excess 50th % Queue (feet)
36	Pacific Hwy and Taylor St	NBL	AM	168	65	100	68	0
			PM	201	85	100	101	0
		NBR	AM	54	9	200	0	0
			PM	578	357	200	378	157
38	Congress St and Taylor St	WBL	AM	246	81	100	146	0
			PM	254	103	100	154	3
44	San Diego Avenue and Old Town Street	NBL	AM	166	66	75	91	0
			PM	81	23	75	6	0
45	Juan Street and Taylor Street	WBL	AM	105	37	95	10	0
			PM	203	66	95	108	0
48	Morena Blvd and Taylor St	EBL	AM	186	86	180	6	0
			PM	282	129	180	102	0
Intersections Outside of Study Communities								
49	Hugo St and Rosecrans St	NBL	AM	294	183	115	179	68
			PM	188	119	115	73	4
50	Nimitz Blvd and Rosecrans St	EBL	AM	368	192	300	68	0
			PM	787	547	300	487	247
		WBL	AM	194	118	300	0	0
			PM	466	276	300	166	0
		NBL	AM	110	57	75	35	0
			PM	168	101	75	93	26
		SBL	AM	421	246	285	136	0
			PM	583	385	285	298	100
54	Pacific Highway and Seaworld Drive	WBL	AM	185	58	170	15	0
			PM	241	87	170	71	0
		NBL	AM	81	24	150	0	0
			PM	210	70	150	60	0
56	Pacific Highway and Grape St	SBL	AM	75	34	130	0	0
			PM	139	79	130	9	0
57	Friars Road and Seaworld Dr	EBR	AM	101	62	180	0	0
			PM	328	210	180	148	30
		WBL	AM	151	61	205	0	0
			PM	301	167	205	96	0
		NBL	AM	101	66	150	0	0
			PM	185	135	150	35	0

Table 6.4 Queue Lengths at Closely Spaced Intersections – Preferred Plan Conditions

No.	Intersection	Movement	Peak	95th % Queue Length (Feet)	50th % Queue Length (Feet)	Pocket Length (Feet)	Excess 95th % Queue (Feet)	Excess 50th % Queue (feet)
58	I-5 SB Ramps and Tecolote Road	WBL	AM	144	82	120	24	0
			PM	138	88	120	18	0
59	I-5 NB Ramps and Tecolote Road	EBL	AM	350	236	170	180	66
			PM	297	223	170	127	53

Source: Chen Ryan Associates (May 2017)

Midway-Pacific Highway Community

As shown, under implementation of the Preferred Plan, 30 different movements within the Midway-Pacific Highway Community are projected to have queue lengths exceeding their storage capacity at the most congested point of the peak hour (95th Percentile). The spillovers could degrade traffic operations within the intersection or adjacent closely spaced, upstream intersections for approximately one to two cycles during the peak hour. However, only 25 movements are anticipated to have queues that exceed their storage capacity on an average during either peak hour (50th Percentile).

Old Town

As shown, under implementation of the Preferred Plan, 8 different movements within the Old Town Community are projected to have queue lengths exceeding their storage capacity at the most congested point of the peak hour (95th Percentile). The spillovers could degrade traffic operations within the intersection or adjacent closely spaced, upstream intersections for approximately one to two cycles during the peak hour. However, only 2 movements are anticipated to have queues that exceed their storage capacity on an average during either peak hour (50th Percentile).

Other Communities

As shown, under implementation of the Preferred Plan, 13 different movements within other communities are projected to have queue lengths that exceed their storage capacity at the most congested point of the peak hour (95th Percentile). The spillovers could degrade traffic operations within the intersection or adjacent closely spaced, upstream intersections for approximately one to two cycles during the peak hour. However, only 6 movements are anticipated to have queues that exceed their storage capacity on an average during either peak hour (50th Percentile).

6.1.4 Freeway Segments and LOS Analysis

Neither the Revenue Constrained Alternative of SANDAG's *San Diego Forward Plan* (October 2015) nor the Preferred Plan include freeway improvements, as noted in Sections 3.2.2 and 4.2.2. Table 6.5 displays the freeway segment LOS in the vicinity of the Midway-Pacific Highway and Old Town communities. Forecast freeway volumes were obtained from the modeling process described in Section 5.0.

Table 6.5 Freeway Segment LOS Results – Preferred Plan Conditions

								AM					PM				
Freeway	To	From	Dir	Daily Volume	HVF	Lanes	Aux	K	D	Peak Volume	V/C	LOS	K	D	Peak Volume	V/C	LOS
I-8	Beginning of Freeway	Sports Arena Boulevard	EB	61,200	1.2%	2	0	6.3%	61%	2,600	0.55	B	8.6%	71%	3,100	0.66	C
			WB			2	0		39%	1,700	0.36	A		29%	2,800	0.60	B
	Sports Arena Boulevard	I-5	EB	122,200	2.8%	3	1	6.4%	61%	5,400	0.64	C	7.8%	62%	5,500	0.65	C
			WB			3	1		39%	3,500	0.41	B		38%	5,400	0.64	C
	I-5	Morena Boulevard	EB	183,000	2.8%	4	1	6.4%	42%	5,500	0.51	B	7.2%	50%	6,600	0.61	B
			WB			5	0		58%	7,700	0.66	C		50%	8,300	0.71	C
	Morena Boulevard	Hotel Circle	EB	216,900	2.8%	4	1	6.5%	47%	7,600	0.70	C	8.2%	55%	11,000	1.02	F
			WB			5	0		53%	8,400	0.71	C		45%	9,000	0.77	C
I-5	Clairemont Drive	Sea World Drive	NB	241,400	4.5%	5	0	6.4%	61%	11,000	0.94	E	8.3%	51%	11,700	1.00	E
			SB			5	0		39%	6,900	0.59	B		49%	11,300	0.96	E
	Sea World Drive	I-8	NB	231,600	4.5%	4	1	6.4%	62%	10,500	0.97	E	8.4%	52%	11,600	1.07	F
			SB			4	2		38%	6,400	0.52	B		48%	10,700	0.88	D
	I-8	Old Town Avenue	NB	242,700	4.1%	4	1	6.9%	49%	9,400	0.87	D	8.2%	39%	8,900	0.82	D
			SB			5	0		51%	9,700	0.83	D		61%	13,900	1.18	F
	Old Town Avenue	Washington Avenue	NB	227,100	4.1%	4	0	7.0%	49%	8,800	0.94	E	8.0%	51%	10,600	1.13	F
			SB			5	0		51%	9,300	0.79	D		49%	10,200	0.87	D
	Washington Avenue	Pacific Highway	NB	171,400	4.1%	4	0	6.9%	53%	7,100	0.76	C	8.1%	36%	5,700	0.61	B
			SB			4	0		47%	6,400	0.68	C		64%	10,200	1.09	F
	Pacific Highway	Laurel Street	NB	216,400	4.1%	4	1	6.8%	57%	9,600	0.89	D	7.1%	50%	8,400	0.78	C
			SB			4	1		43%	7,200	0.67	C		50%	9,300	0.86	D
	Laurel Street	Hawthorne Avenue	NB	222,000	4.1%	4	1	6.9%	57%	9,900	0.92	D	7.3%	47%	8,300	0.77	C
			SB			4	1		43%	7,600	0.70	C		53%	10,400	0.96	E

Source: Chen Ryan Associates (May 2017)

Note:
Bold letter indicates LOS E or F

As shown, all mainline freeway segments are projected to operate at LOS D or better under Preferred Plan conditions, with the exception of the following:

- I-8 EB, between Morena Boulevard and Hotel Circle Drive (LOS F: PM Peak Hour)
- I-5 NB, between Clairemont Drive and Sea World Drive (LOS E: AM & PM Peak Hours)
- I-5 SB, between Clairemont Drive and Sea World Drive (LOS E: PM Peak Hour)
- I-5 NB, between Sea World Drive and I-8 (LOS E: AM Peak Hour, LOS F PM Peak Hour)
- I-5 SB, between I-8 and Old Town Avenue (LOS F: PM Peak Hour)
- I-5 NB, between Old Town Avenue and Washington Avenue (LOS E: AM Peak Hour and LOS F: PM Peak Hour)
- I-5 SB, between Washington Avenue and Pacific Highway (LOS F: PM Peak Hour)
- I-5 SB, between Laurel Street and Hawthorne Avenue (LOS E: PM Peak Hour)

6.1.5 Meter Analysis

Table 6.6 summarizes the freeway ramp metering analysis results under implementation of the Preferred Plan for all ramp meter locations within both study communities. The volumes were derived using the outputs for the modeling described in Section 5.0. Existing ramp meter flow rates were assumed under Preferred Plan conditions.

Table 6.6 Freeway Ramp Metering Analysis – Preferred Plan Conditions

Ramp	Peak	Lanes SOV	Lanes HOV	Flow Rate	Volume	Excess Demand	Delay (Minutes)	Queue (Feet)
I-8 EB / Sports Arena Boulevard	PM	2	1	641	920	279	26.1	8,091
I-5 SB / Sea World Drive	AM	1	1	444	520	76	10.3	2,204
	PM	1	1	444	690	246	33.2	7,134
I-5 NB / Sea World Drive	AM	2	0	1,555	1,480	0	0.0	0
	PM	2	0	1,656	1,380	0	0.0	0
I-5 SB / Old Town Avenue	PM	1	0	461	410	0	0.0	0
I-5 NB / Old Town Avenue	AM	2	0	905	370	0	0.0	0
	PM	2	0	888	690	0	0.0	0

Source: Chen Ryan Associates (May 2017)

Notes:
SOV = Single Occupancy Vehicle; HOV = High Occupancy Vehicle.
[1] Demand is the peak hour demand expected to use the on-ramp.
[2] Meter Rate is the peak hour capacity expected to be processed through the ramp meter. This value was obtained from Caltrans.
[3] Excess Demand = (Demand) – (Meter Rate) or zero, whichever is greater.
[4] Delay = (Excess Demand / Meter Rate) X 60 min/hr.
[5] Queue = (Excess Demand) X 29 ft/veh.

As shown in the table, the anticipated peak hour demand is not anticipated to exceed the anticipated meter rate at any of the study ramp meter locations creating a delay of 15 minutes[1], with the exception of the following:

- I-8 EB / Sports Arena Boulevard during the PM peak hour (26.1 minutes)
- I-5 SB / Sea World Drive during the PM peak hour (33.2 minutes)

6.2 Intelligent Transportation Systems (ITS)

The implementation of Intelligent Transportation Systems (ITS) can provide many benefits to the local roadway network, including improving roadway traffic operations, improving transit operations, relaying valuable traffic-related information and providing guidance to drivers (e.g. locations of available parking, traffic congestion points, and the location of accidents). Coordinated traffic signals and transit signal priority treatments are examples of ITS programs that can help improve both transit and roadway operations.

The City of San Diego should investigate the feasibility of the following ITS improvements within the Midway-Pacific Highway and Old Town communities:

- Expand signal coordination along major roadway corridors including Rosecrans Street, Taylor Street, Midway Drive, Sports Arena Boulevard, Pacific Highway, Kettner Street and San Diego Avenue.
- Regularly update the timing of traffic signals to reflect shifting travel patterns
- Use traffic responsive or adaptive traffic control in areas with variable traffic patterns
- Implement transit signal priority treatments at signalized intersections serving rapid bus routes
- Use variable message signs to direct motorists to available parking and to alert them of street closures.

The recommendations identified above are consistent with the goals of the future traffic signal communications network elements identified in the City of San Diego *Traffic Signal Communication Master Plan* (2014).

6.3 Transportation Demand Management (TDM) Strategies

The goal of the City's Transportation Demand Management (TDM) program is to improve mobility, reduce congestion and air pollution, and provide options for employees and residents to commute to/ from work. Typical TDM strategies include promoting the following:

- Teleworking
- Alternative Work Schedules
- Transit
- Mixed-Use Development

[1] The City of San Diego Traffic Impact Study Manual (July 1998) defines ramp meters with more than 15 minutes of delay as having a significant impact.

- Walking
- Bicycling
- Carpooling
- Vanpooling
- Shared Mobility Services (e.g., bikeshare, carshare, and on-demand ridesharing services)
- Other Transportation Options

TDM measures improve the efficiency of the transportation system by helping to reduce vehicle trips during peak periods of demand. The San Diego Association of Governments (SANDAG) has an established program (iCommute) that serves as the administrator for TDM programs throughout the region. iCommute provides the following services:

Ridematching Services – the iCommute TripPlanner tool allows users to compare multiple transportation choices in addition to finding vanpool and carpool matches.

Subsidized Vanpool Program – Through the SANDAG vanpool program, each qualified vanpool receives a $400 monthly subsidy when leased through SANDAG preferred vendors, Enterprise Rideshare and vRide. Vanpools range from 7 to 15 passenger vehicles where commuters share the ride to work and split the cost thereby saving money, wear and tear on their personal vehicles, as well as reducing Greenhouse Gas emissions.

Employer Services - The SANDAG iCommute program provides assistance and tools to help local San Diego organizations design and implement customized commuter programs that assist and support employees commute using alternative modes of transportation. The iCommute Diamond Awards recognizes employers with exemplary commute programs and mode-share.

Walk, Ride, and Roll to School – Part of the Safe Routes to School program, this service supports active transportation to and from K-12 schools including biking, walking, skating, skateboarding, or riding a scooter to help promote physical activity and healthier lifestyles for students.

Telework - Teleworking is a convenient solution that enables employees to work from home or a remote location one or more days per week. Telework has proven benefits to employees and employers such as reducing commute costs, lowering parking demand, and helping the environment.

Transit Information – Provides information about San Diego regional transit agencies in addition to Compass Card information.

Bike Parking Program– Provides secure bike parking spaces at more than sixty transit stops and some Park & Ride lots throughout San Diego County in addition to a Regional Bike Map, which has been updated to show bike paths, lanes and routes.

Guaranteed Ride Home – A free service that allows registered iCommute users getting to work by alternative modes to receive free emergency rides home in the cases of illness or unscheduled overtime. Commuters can use the service up to three times per year.

In addition to the iCommute program, Caltrans owns and/or maintains several Park & Ride lots throughout the region that are used to promote carpool and vanpool activity.

The City of San Diego's Land Development Code (LDC) requires new development to provide sufficient bicycle parking stalls, carpool parking, and motorcycle facilities to encourage the use of alternative modes of transportation. The City is early in the process of developing recommendations to amend the LDC requirements for pedestrian, bicycle, carpool, and commuter information facilities. The City's municipal code now allows for on-street carshare operations. Pricing strategies are also used to reduce demand on the transportation system.

6.4 Pedestrian Assessment and Results

This section presents an assessment of the pedestrian network under implementation of the Preferred Plan, which assumes the implementation of the pedestrian related improvements outlined in Sections 3.3.2 and 4.3.2. The City of San Diego Pedestrian Master Plan Phase I identifies the following six Pedestrian Route Typologies and the purpose they serve:

District Sidewalks – Sidewalks along roads that support heavy pedestrian levels in mixed-use concentrated urban areas.

Corridor Sidewalks – Sidewalks along roads that support moderate density business and shopping districts with moderate pedestrian level.

Connector Sidewalks – Sidewalks along roads that support institutional, industrial or business complexes with limited lateral access and low pedestrian levels.

Neighborhood Sidewalks – Sidewalks along roads that support low to moderate density housing with low to moderate pedestrian levels.

Ancillary pedestrian facilities – Facilities away or crossing over streets such as plazas, paseos, promenades, courtyards or pedestrian bridges and stairways.

Path – Walkways and paved paths that are not adjacent to roads that support recreational and transportation purposes.

The assumed Pedestrian Route Typologies within both communities is displayed in Figure 6-6.

The proposed pedestrian network under Preferred Plan conditions was assessed using the methodologies described in Section 2.3.1. The pedestrian network connectivity, quality and overall adequacy (combining both quality and connectivity) are discussed below.

6.4.1 Pedestrian Network Connectivity

Figure 6-7 displays the pedestrian network connectivity to/from pedestrian attracting land uses (residential, commercial, office and recreational uses) throughout both communities. This analysis calculates the percent of area accessible to pedestrians within a half mile walking distance from the respective land uses (connectivity ratio). A connectivity ratio of 50% or better is considered to be ideal.

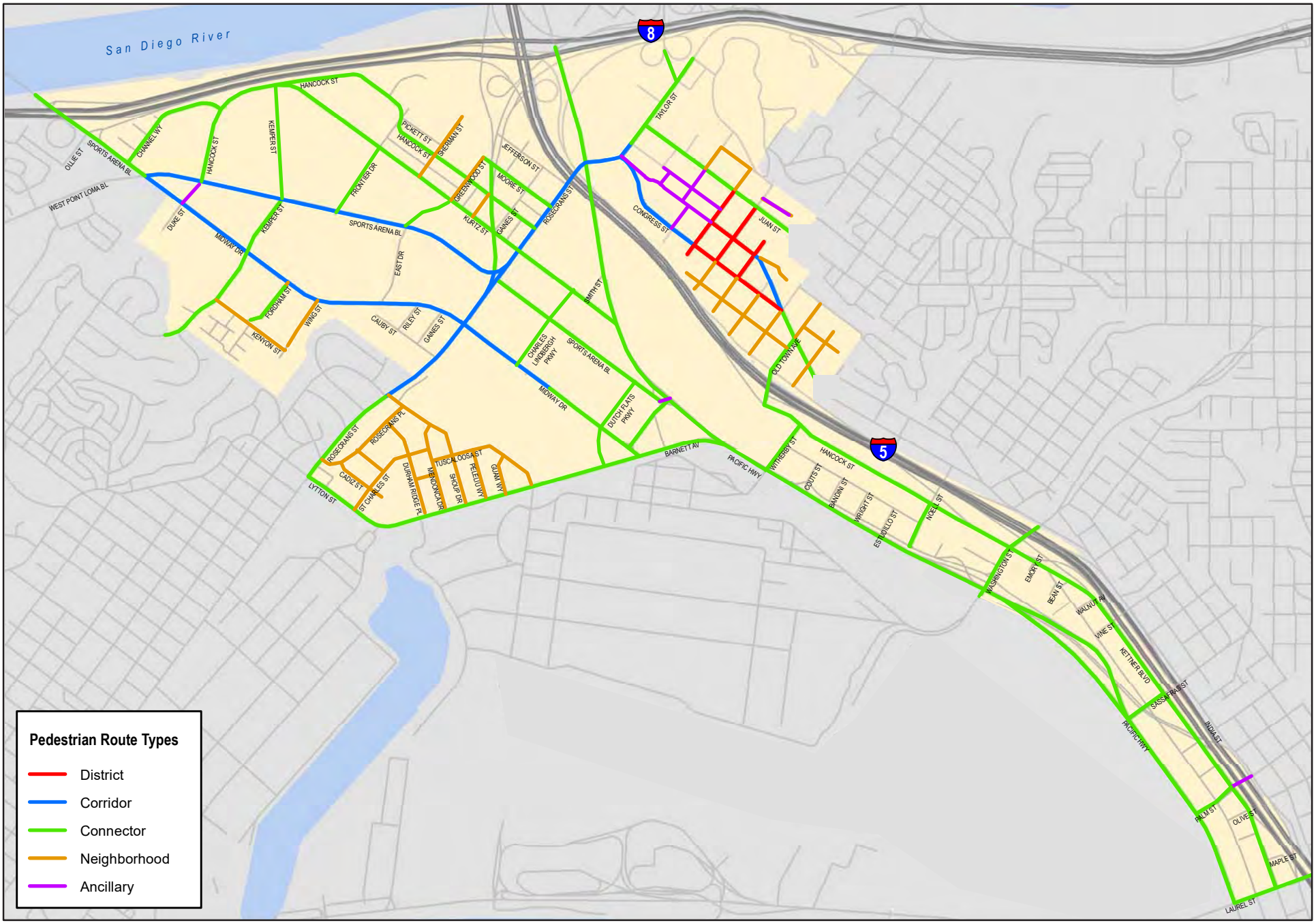


Figure 6-6
Pedestrian Route Typologies -
Preferred Plan Conditions

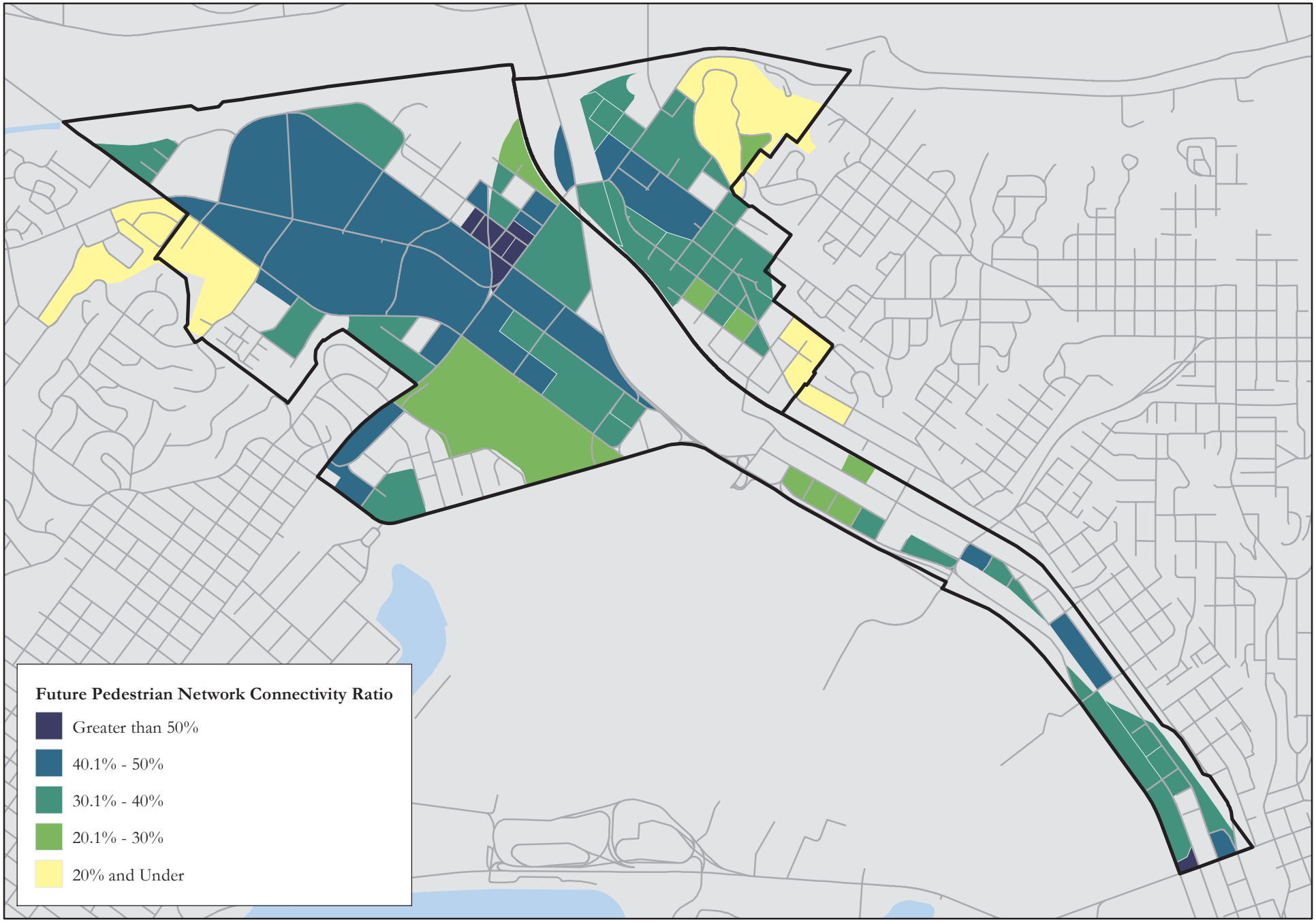


Figure 6-7
Pedestrian Network Connectivity -
Preferred Plan Conditions

Midway-Pacific Highway Community

As shown in the figure, pedestrian connectivity is at ideal levels (50%+ connectivity ratio) within the center of the community (in the area to the northeast of the intersection of Kurtz Street and Rosecrans Street, on either side of Camino Del Rio West. This is primarily due to the dense grid network present in this area. The lower connectivity ratio areas include the northwest area of the community west of Midway Drive and in the area west of Midway Drive and south of Rosecrans Street. The lower ratio is due to large, disconnected parking lots, superblocks, and private property with primary access points along Midway Drive.

Old Town Community

As shown in the figure, the Old Town Community generally has a good connectivity ratio between 40-50%, which is highest in the tourist areas around the Historic State Park and Transit Center Area, and gets lower toward the outskirts of the community. The lower connectivity ratio on the outskirts of the community is primarily due to the barriers created by the I-5 and I-8 freeways where pedestrian crossings are constrained.

6.4.2 Pedestrian Network Quality

Figure 6-8 and Tables 6.7A and 6.7B display the PEQE analysis results for roadways segments and intersections, along the major pedestrian corridors within the community. PEQE calculation worksheets are provided in Appendix F. As shown in the table, with the implementation of the proposed improvements, the pedestrian facilities along all major roadways within both communities have a Medium or High grade under implementation of the Preferred Plan with the exception of the following:

Midway-Pacific Highway Community

Kettner Boulevard between Vine Street and Sassafras Street – This segment has a score of Low due to the lack of pedestrian facilities on the west side of the roadway (where there are no fronting land uses) and high posted speed limit (40 mph). It should be noted that the east side of the roadway, where the fronting land uses are located, has a grade of Medium. Based on the results of the PEQE analysis, the pedestrian improvements proposed under the Preferred Plan would significantly improve the walkability and safety within Midway-Pacific Highway community from their current conditions.

Old Town Community

Taylor Street between Morena Boulevard and I-8 Ramps – This segment has a grade of Low due to the lack of pedestrian facilities. However, it should be noted that there are no fronting land uses on either side of this segment, nor does this segment connect to any activity centers to the east of the community. While the Old Town community is very walkable today, the improvements proposed under the Preferred Plan provide both access and safety upgrades throughout the community. Improvements such as ADA ramps, continental cross-walks and bulb outs (at key intersections) upgrade many of the intersections within the community from Low to Medium conditions.

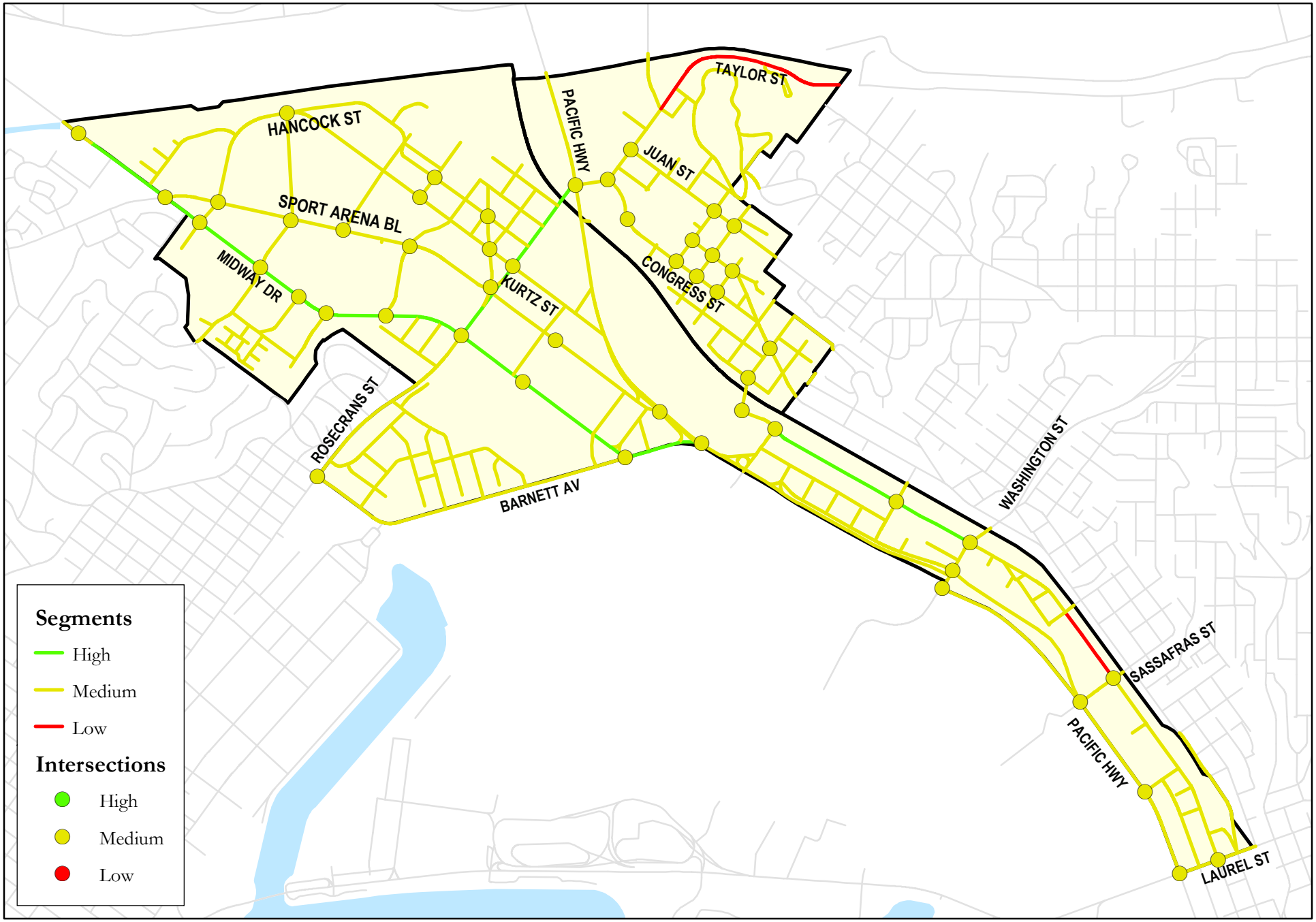


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Figure 6-8
PEQE Scoring
Preferred Plan Conditions

Table 6.7A PEQE Results: Roadway Segments – Preferred Plan Conditions

Roadway	To	From	Northside/ Eastside		Southside/ Westside		Total	
			Score	Grade	Score	Grade	Score	Grade
North-South								
Midway/Pacific Highway Corridor								
Lytton Street/ Barnett Avenue	Rosecrans St	Midway Dr	4	Medium	4	Medium	8	Medium
	Midway Dr	Pacific Hwy	7	High	7	High	14	High
W. Mission Bay Dr	I-8 WB Ramps	I-8 EB Ramps	4	Medium	4	Medium	8	Medium
Midway Dr	W. Point Loma Blvd/Sports Arena Blvd	Kemper St	7	High	7	High	14	High
	Kemper St	East Dr	7	High	7	High	14	High
	East Dr	Rosecrans St	7	High	7	High	14	High
	Rosecrans St	Barnett Ave	7	High	7	High	14	High
Sports Arena Blvd	I-8 EB Ramps	W. Point Loma Blvd/Sports Arena Blvd	6	Medium	7	High	13	High
	W. Point Loma Blvd/Midway Dr	Kemper St	5	Medium	5	Medium	10	Medium
	Kemper St	East Dr	5	Medium	5	Medium	10	Medium
	East Dr	Rosecrans St	5	Medium	5	Medium	10	Medium
	Rosecrans St	Pacific Hwy	6	Medium	5	Medium	11	Medium
Kurtz St	Hancock St	Rosecrans St	6	Medium	6	Medium	12	Medium
	Rosecrans St	Pacific Hwy	4	Medium	4	Medium	8	Medium
Hancock St	Sports Arena Blvd	Kurtz St	3	Low	6	Medium	9	Medium
	Kurtz St	Camino Del Rio West	4	Medium	6	Medium	10	Medium
	Camino Del Rio West	Rosecrans St	5	Medium	5	Medium	10	Medium
	Old Town Ave	Witherby St	4	Medium	4	Medium	8	Medium
	Witherby St	Washington St	6	Medium	7	High	13	High
Kettner Blvd	Washington St	Vine St	3	Low	5	Medium	8	Medium
	Vine St	Sassafras St	4	Medium	2	Low	6	Medium
	Sassafras St	Laurel St	5	Medium	5	Medium	10	Medium
Pacific Hwy	Sea World Dr	Taylor St	5	Medium	5	Medium	10	Medium
	Taylor St	Kurtz St	6	Medium	6	Medium	12	Medium
	Kurtz St	Sports Arena Blvd	6	Medium	6	Medium	12	Medium
	Sports Arena Blvd	Barnett Ave	6	Medium	6	Medium	12	Medium
	Barnett Ave	Harney Washington St	6	Medium	6	Medium	12	Medium
	Washington St	Sassafras St	6	Medium	6	Medium	12	Medium
	Sassafras St	Laurel St	6	Medium	6	Medium	12	Medium
Old Town								
Congress St	Taylor St	Twiggs St	6	Medium	6	Medium	12	Medium
	Twiggs St	Harney St	6	Medium	6	Medium	12	Medium
	Harney St	San Diego Ave/Ampudia St	6	Medium	6	Medium	12	Medium
San Diego Ave	Twiggs St	Harney St	6	Medium	6	Medium	12	Medium
	Harney St	Ampudia St	6	Medium	6	Medium	12	Medium

Table 6.7A PEQE Results: Roadway Segments – Preferred Plan Conditions

Roadway	To	From	Northside/ Eastside		Southside/ Westside		Total	
			Score	Grade	Score	Grade	Score	Grade
San Diego Ave	Ampudia St	Old Town Ave	6	Medium	6	Medium	12	Medium
	Old Town Ave	Hortensia St	6	Medium	6	Medium	12	Medium
Juan St	Taylor St	Twiggs St	6	Medium	6	Medium	12	Medium
	Twiggs St	Harney St	6	Medium	6	Medium	12	Medium
	Harney St	San Juan Rd	6	Medium	6	Medium	12	Medium
East-West								
Midway/Pacific Highway Corridor								
Channel Wy	W. Mission Bay Dr	Hancock St	6	Medium	6	Medium	12	Medium
Kemper St	Kenyon St	Midway Dr	6	Medium	5	Medium	11	Medium
	Midway Dr	Sports Arena Blvd	6	Medium	6	Medium	12	Medium
Camino Del Rio West	Rosecrans St	I-5/I-8 Ramps	4	Medium	4	Medium	8	Medium
Rosecrans St	Lytton St	Midway Dr	6	Medium	6	Medium	12	Medium
	Midway Dr	Sports Arena Blvd	7	High	7	High	14	High
	Sports Arena Blvd	Pacific Hwy/Taylor St	7	High	7	High	14	High
Washington St	Frontage Rd	Pacific St	5	Medium	5	Medium	10	Medium
	Pacific St	Hancock St	6	Medium	5	Medium	11	Medium
Vine St	California St	Kettner Blvd	7	High	5	Medium	12	Medium
Sassafras St	Pacific Hwy	Kettner Blvd	5	Medium	5	Medium	10	Medium
Laurel St	Pacific Hwy	Kettner Blvd	5	Medium	5	Medium	10	Medium
Old Town								
Taylor St	Pacific Hwy/ Rosecrans St	Congress St	4	Medium	4	Medium	8	Medium
	Congress St	Juan St	4	Medium	4	Medium	8	Medium
	Juan St	Morena Blvd	4	Medium	4	Medium	8	Medium
	Morena Blvd	I-8 EB Ramps	1	Low	1	Low	2	Low
Twiggs St	Congress St	San Diego Ave	5	Medium	5	Medium	10	Medium
	San Diego Ave	Juan St	6	Medium	6	Medium	12	Medium
Harney St	Congress St	San Diego Ave	6	Medium	6	Medium	12	Medium
	San Diego Ave	Juan St	6	Medium	5	Medium	11	Medium
Old Town Ave	Hancock St	Moore St	5	Medium	5	Medium	10	Medium
	Moore St	San Diego Ave	5	Medium	5	Medium	10	Medium

Source: Chen Ryan Associates (June 2016)

Table 6.7B PEQE Results: Intersections – Preferred Plan Conditions

#	Intersection	Score	Grade
Midway-Pacific Highway			
1	Lytton St and Rosecrans St	6	Medium
2	W Mission Bay Dr and I-8 WB Off-Ramp	6	Medium
3	W Mission Bay Dr and Channel Way	5	Medium
4	Midway Dr and Sports Arena/W Point Loma Blvd	6	Medium
5	Midway Dr and Kemper St	6	Medium
6	Midway Dr and East Dr	6	Medium
7	Midway Dr and Rosecrans St	6	Medium
8	Midway Dr and Charles Lindbergh Pkwy	6	Medium
9	Midway Dr and Enterprise St	5	Medium
10	Midway Dr and Barnett Ave	6	Medium
11	Sports Arena Blvd and Hancock St	6	Medium
12	Sports Arena Blvd and Kemper St	6	Medium
13	Sports Arena Blvd and Sports Arena Driveway	6	Medium
14	Sports Arena Blvd and East Dr	6	Medium
15	Sports Arena Blvd and Rosecrans St	6	Medium
16	Sports Arena Blvd and Charles Lindbergh Pkwy	6	Medium
17	Sports Arena Blvd and Pacific Hwy	6	Medium
18	Kurtz St and Hancock St	5	Medium
19	Kurtz St and Camino Del Rio West	6	Medium
20	Kurtz St and Rosecrans St	6	Medium
21	Kurtz St and Pacific Hwy	6	Medium
22	Hancock St and Channel Wy	5	Medium
23	Hancock St and Camino Del Rio West	6	Medium
24	Hancock St and Rosecrans St	5	Medium
25	Hancock St and Old Town Ave	5	Medium
26	Hancock St and Witherby St	5	Medium
27	Hancock St and Washington St	6	Medium
28	Kettner Blvd and Vine St	5	Medium
29	Kettner Blvd and Sassafras St	6	Medium
30	Kettner Blvd and West Laurel St	6	Medium
31	Pacific Hwy and Barnett Ave	6	Medium
32	Pacific Hwy and Washington St @ Frontage Rd	6	Medium
33	Pacific Hwy and Washington St @ Pacific St	6	Medium
34	Pacific Hwy and Sassafras St	6	Medium
35	Pacific Hwy and West Laurel St	6	Medium
Old Town			
36	Pacific Hwy and Taylor St	6	Medium
37	Moore St and Old Town Ave	6	Medium
38	Congress St and Taylor St	6	Medium

Table 6.7B PEQE Results: Intersections – Preferred Plan Conditions

#	Intersection	Score	Grade
39	Congress St and Twiggs St	5	Medium
40	Congress St and Harney St	5	Medium
41	Congress St and San Diego Ave/Ampudia St	5	Medium
42	San Diego Ave and Twiggs St	5	Medium
43	San Diego Ave and Harney St	5	Medium
44	San Diego Ave and Old Town Ave	6	Medium
45	Juan St and Taylor St	6	Medium
46	Juan St and Twiggs St	5	Medium
47	Juan St and Harney St	5	Medium
48	Morena Blvd and Taylor St	6	Medium
New Intersections			
61	Kurtz St & Frontier Dr	5	Medium
63	Kurtz St & Charles Lindbergh Pkwy	6	Medium
64	Barnett Ave & Dutch Flats Pkwy	6	Medium
65	Midway Dr & Dutch Flats Pkwy	6	Medium
66	Dutch Flats Pkwy & Sports Arena Bl	6	Medium

Source: Chen Ryan Associates (June 2016)

As shown, all study intersections within both communities are projected to have a Medium grade under implementation of the Preferred Plan.

6.4.3 Pedestrian Quality Network Coverage

Figure 6-9 displays the Pedestrian Quality Network Coverage at all study intersections across both communities. This analysis calculates the ratio of the length of quality pedestrian network facilities (PEQE score Medium or High) within a half-mile walk from an intersection, compared to the total network available (based on existing conditions).

Midway-Pacific Highway Community

As shown in the figure, under implementation of the Preferred Plan, the Pedestrian Quality Network Coverage increases to over 75% at all study intersections within the community. The significant increase in coverage is primarily due to the new roadway links proposed under Preferred Plan conditions, including multi-use urban path improvements.

Old Town Community

As shown in the figure, under implementation of the Preferred Plan, the Pedestrian Quality Network Coverage increases to over 75% at all study intersections within the community. The significant increase in coverage is primarily due to the overall improvement to the intersections within the community by implementing minor improvements such as ADA ramps and Continental Crosswalks.

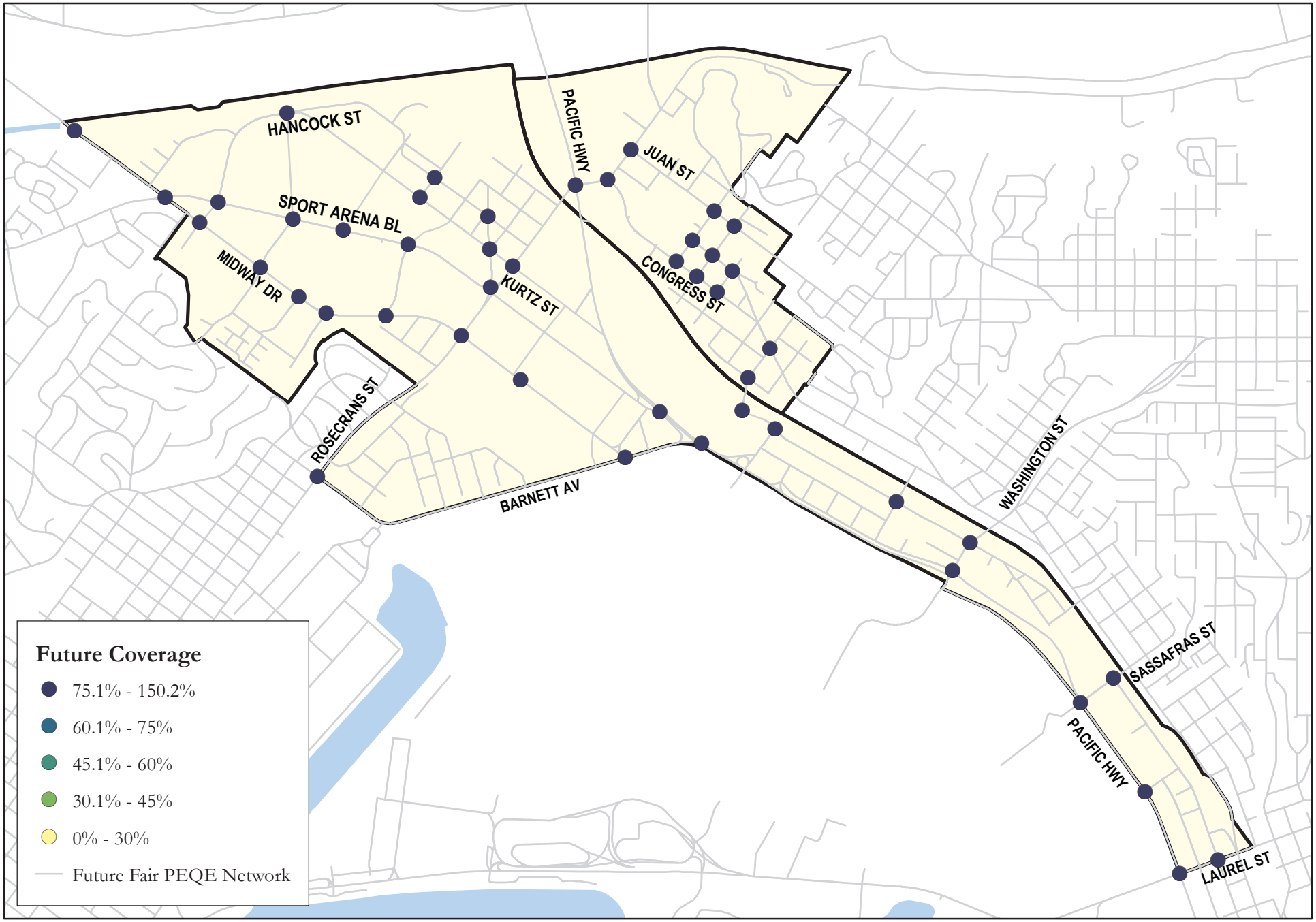

Figure 6-9
Pedestrian Quality Network Coverage -
Preferred Plan Conditions

6.5 Cycling Environment Assessment and Results

This section presents an assessment of the cycling environment under implementation of the Preferred Plan conditions, which assumes implementation of the cycling-related improvements outlined in Sections 3.4.2 and 4.4.2. Figure 6-10 displays the proposed bicycle network in both communities under implementation of the Preferred Plan.

The cycling environment under Preferred Plan conditions was assessed using the methodologies presented in Section 2.3.2. Cycling network connectivity, quality and overall adequacy (combining both quality and connectivity) are assessed below.

6.5.1 Bicycle Network Connectivity

Figure 6-11 displays bicycle network connectivity to/from the study area intersections across both communities. This analysis calculates the percent of area that a cyclist can access within a one mile ride from the respective intersection (connectivity ratio). A connectivity ratio of 50% or better is considered to be ideal.

Midway-Pacific Highway Community

As shown in the figure, the bicycle connectivity is at good levels (40%+ connectivity ratio) in the center of the community around the block bound by Rosecrans Street, Midway Drive, Sports Arena Boulevard and East Drive. This improvement in connectivity is predominantly due to the new roadway connections between Midway and Sports Arena Boulevard.

Old Town Community

As shown in the figure, the Old Town community generally has a good connectivity ratio of 35+%, with the highest connectivity along Taylor Street, where regional connections are available from Taylor Street (Coastal Rail Trail and Ocean Beach Bike Path).

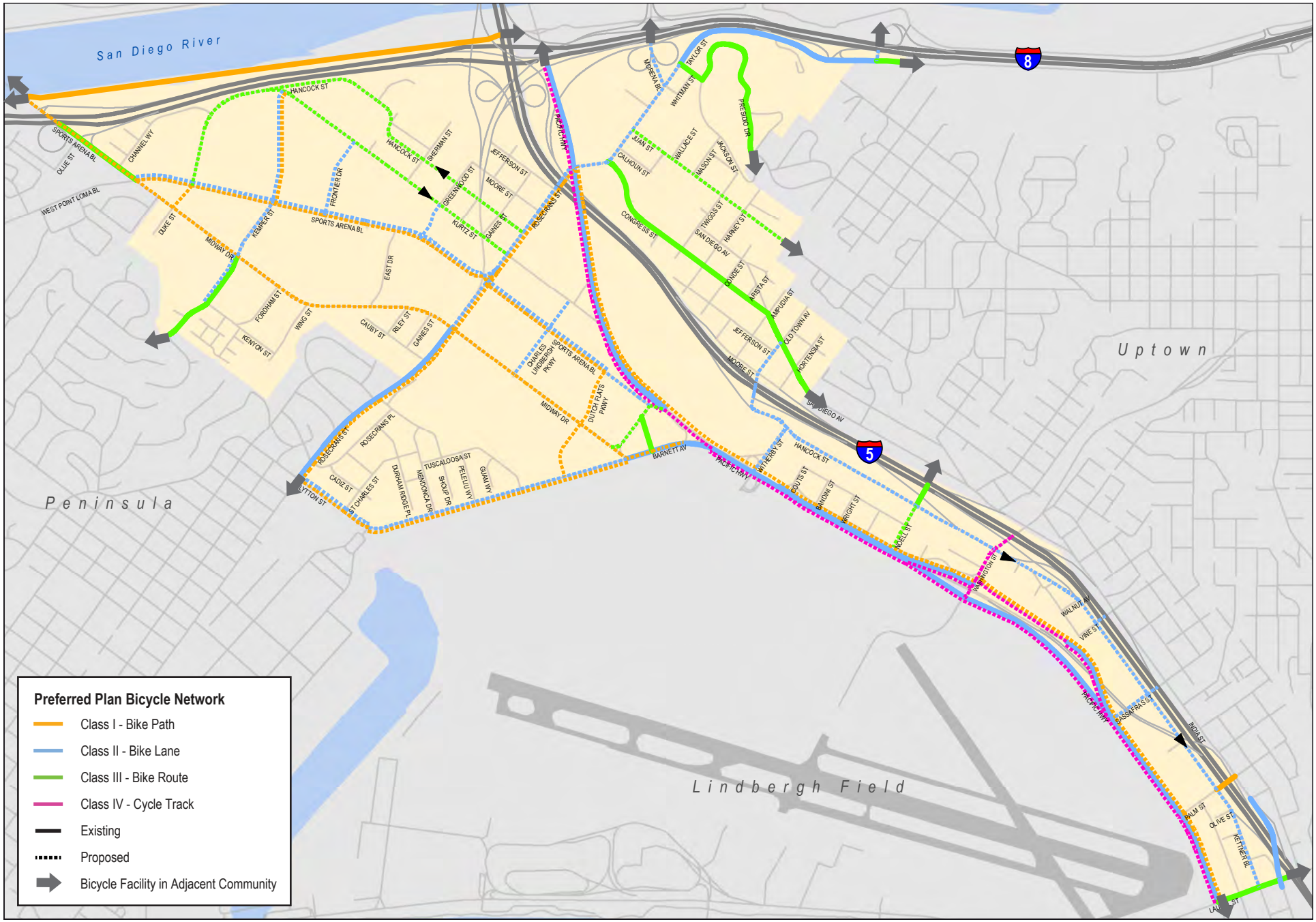

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Figure 6-10
Bicycle Network -
Preferred Plan Conditions

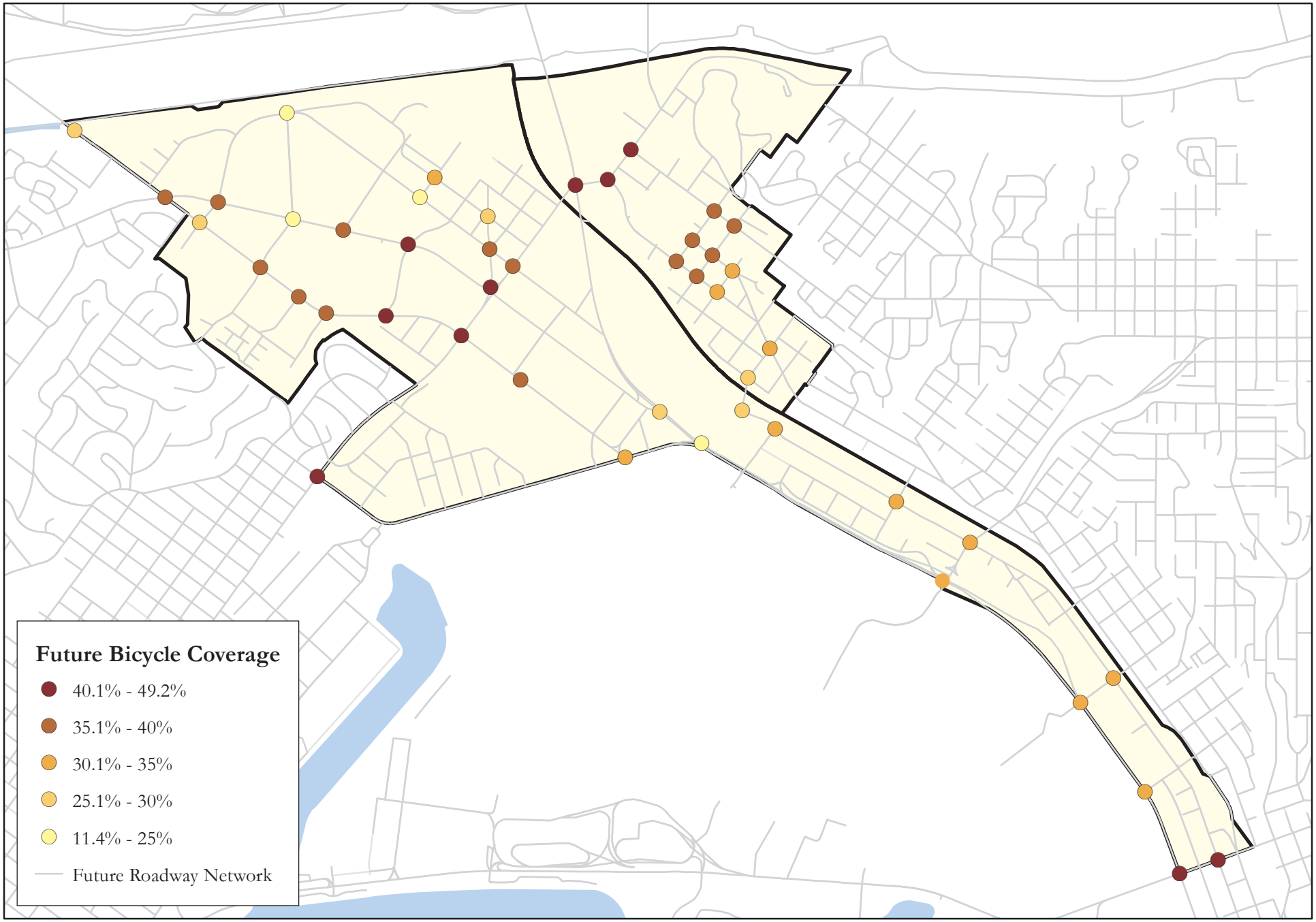


Figure 6-11
Bicycle Network Connectivity
Preferred Plan Conditions

6.5.2 Bicycle Network Quality

Figure 6-12 display the LTS analysis results for roadways segments and intersections along all Mobility Element roadways within the community.

Midway-Pacific Highway Community

As shown in the figure, the new multi-use urban paths proposed as part of the Midway/Pacific Highway Urban Greening Plan (La Playa Trail, Bay-to-Bay Path, the Historic Highway 101 Path, and the Midway Path), and the Preferred Plan, provide a slower low stress environment for cyclists (all paths have a score of LTS 1). Additionally, the proposed Class IV One-Way Cycle Tracks proposed along Pacific Highway provide a safe cycling environment for higher speed cyclists entering the community from either the north or south. These facilities have an LTS 1 score. Finally, the Enhanced Class II Buffered Bikes Lanes proposed along Sport Area Boulevard and Rosecrans Street provide more confident and higher speed cyclists a safe in-road alternative along these routes. Both facilities have a score of LTS 1.

Hancock Street between Kurtz Street and Rosecrans Street, and Hancock Street/Kettner Boulevard between Noel Street and Laurel Street were identified as providing LTS 4 environments under Preferred Plan conditions. The LTS 4 designation is largely due to the one-way directional travel. When calculating LTS scores for one-way streets the number of vehicular travel lanes is doubled, and the street is treated as though it has a median. This results in Hancock Street and Hancock Street/Kettner Boulevard as providing conditions equivalent to a 6-lane roadway, from the cyclist's perception. Hancock Street, between Kurtz Street and Rosecrans Street, does not have a bicycle facility, resulting in the LTS 4 score. Hancock Street/Kettner Boulevard, between Noel Street and Laurel Street, does have a Class II bike lane under Preferred Plan conditions, however, the posted speed limit of 40 MPH results in the LTS 4 score.

Based on the results of the LTS analysis, the bicycle facilities proposed under the Preferred Plan would significantly improve the connectivity and safety for cyclists within Midway-Pacific Highway community from their current conditions.

Old Town Community

As shown in the figure all roadways, with the exception of Taylor Street and Morena Boulevard, are projected to be low stress cycling environments (LTS 1 or 2). This is due to the low speed nature of the roadways within the Old Town Community. However, even with Class II Bike Lanes proposed along Taylor Street, the roadway is still projected to have an LTS score of 3. This is due to the high vehicular travel speed along Taylor Street and lack of a horizontal or vertical buffer between cyclists and motorists.

As noted in section 4.4.2, the connection along Morena Boulevard between Taylor Street and Linda Vista Road is critical. A connection here would link the Old Town and Linda Vista communities, as well as provide a connection to the Ocean Beach Bike Path.

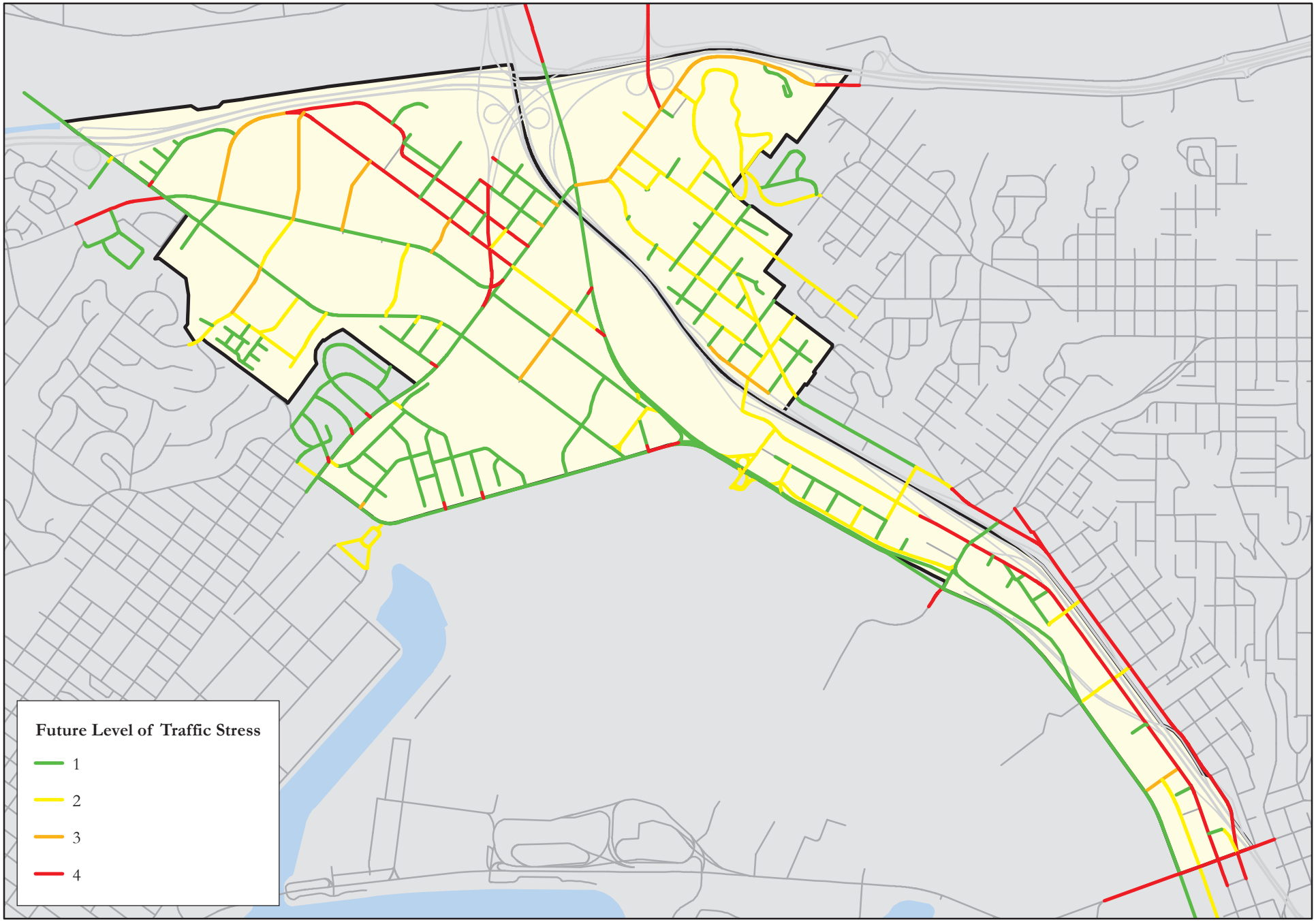


Figure 6-12
Bicycle LTS Score - Preferred Plan Conditions

Unfortunately, the bridge along this segment of the roadway has a constrained right-of-way, and the current configuration of the I-8 Morena Boulevard ramps position four high-speed free-right turn movements on/off the bridge. Due to these constraints there is not feasible bicycle facility that can be implemented along this segment without both widening the bridge and reconfiguring the I-8 / Morena Boulevard Ramps. However, it is recommended that the City work with both Caltrans and SANDAG to look for opportunities to implement bicycle facilities and better pedestrian facilities along this segment should any improvements be done to this segment.

6.5.3 Combined Bicycle Network Connectivity and Quality Assessment

Figure 6-13 displays the combined Bicycle Network Connectivity and Quality Assessment for all bicycle accessible land uses (residential, commercial, office, recreational and instructional land uses) throughout both communities. This analysis calculates the percent of TAZs with bicycle accessible land uses that a cyclist can reach using only LTS 1 and 2 facilities.

Midway-Pacific Highway Community

As shown in the figure, the proposed bicycle improvements enhance the level of connectivity to/from the residential land uses located on the western side of the community. In this area, cyclists can connect to 40+% of the bicycle accessible land uses within the community using only LTS 1 or 2 facilities. The proposed commercial areas within the community (north of Rosecrans Street) can typically connect to 30-40% of the bicycle accessible land uses within the community using only LTS 1 or 2 facilities. The only areas that have low connectivity (0-10%) are the more industrial areas located in the north and northeast portions of the community. However, these areas have very few bicycle accessible land uses.

Old Town Community

As shown in the figure, the community as a whole has generally moderate connectivity levels between 20% and 40%. The main barrier limiting the overall quality connectivity within the community is Taylor Street, which has an LTS score of 3. If the LTS score along Taylor Street can be improved to an LTS 1 or 2, the overall quality connectivity within the Old Town Community will increase significantly. However, based on the roadway's current configuration, enhanced bicycle facilities such as Buffered Class II Bike Lanes or a Class IV Cycle Track is not currently feasible along Taylor Street. Therefore, a policy should be included in the Mobility Element that if Taylor Street is ever widened beyond its current right-of-way, enhanced bicycle facilities such as Class II Buffered Bike Lanes or a Class IV Cycle Track should be implemented as well.

6.6 Public Transit Services and Facilities Assessment and Results

This section assesses the proposed transit network under implementation of the Preferred Plan conditions, which assumes implementation of the transit-related improvements outlined in Sections 3.5.2 and 4.5.2. The proposed Transit network under Preferred Plan conditions was assessed using the methodologies contained in Section 2.3.3. Transit stop/station ridership and amenities are assessed below as well as the roadway arterial speed along roadways continuing transit routes.

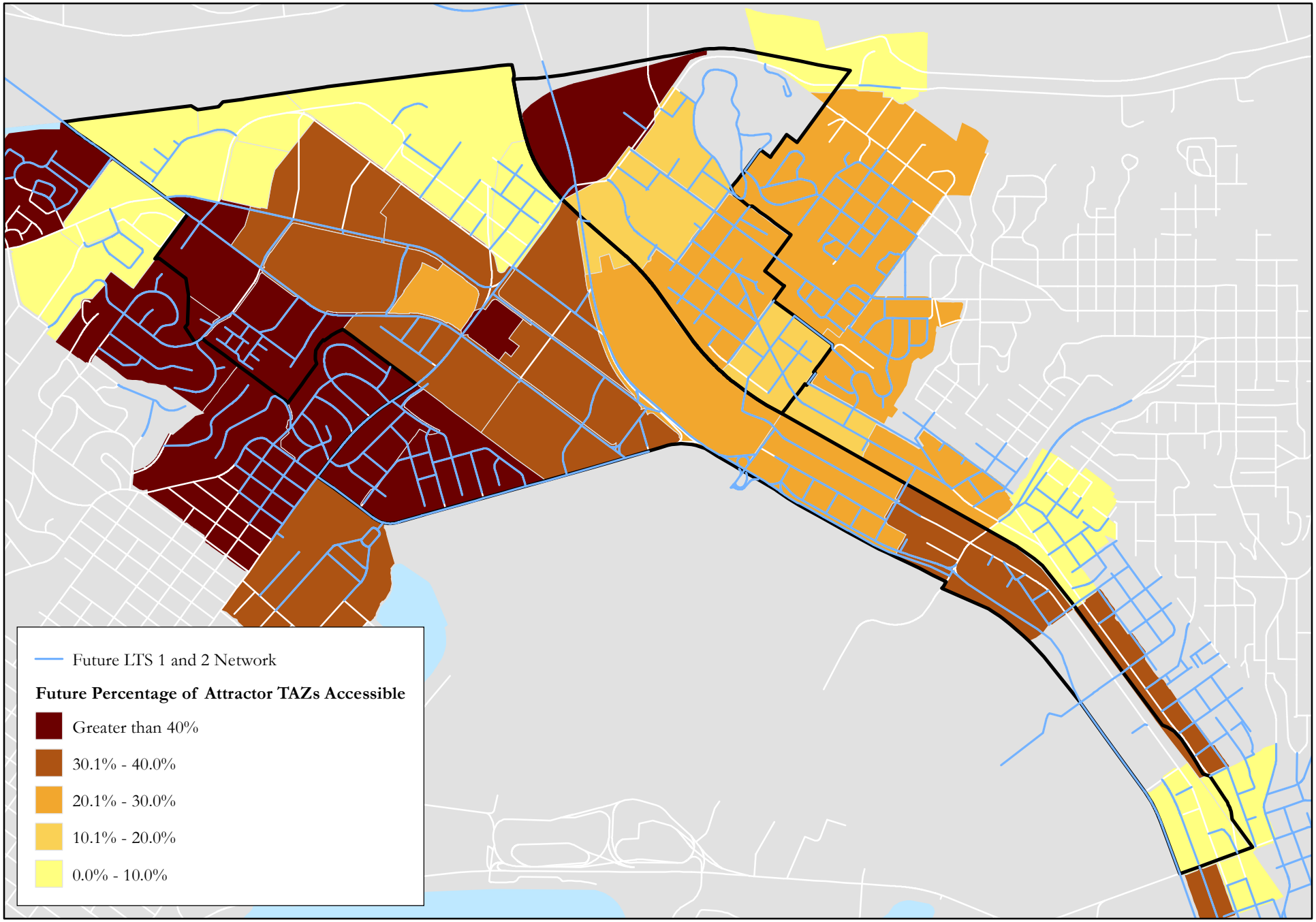


Figure 6-13
Combined Bicycle Network Connectivity and Quality Assessment
Preferred Plan Conditions

6.6.1 Transit Stop/Station Amenities and Average Daily Boardings and Alightings

While projecting increases in multimodal trips requires some level of judgment and is dependent on numerous factors, quantitative methods are available to assist in this process. A community-wide transit ridership growth factor was derived based on future growth estimates in SANDAG Series 12 Transportation Forecast Model, as documented in Section 5.0. Based on the SANDAG model results, a 1.75 growth factor was applied to existing transit ridership volumes, which is consistent with the projection of regional growth. Due to the methodology, projected ridership is only presented for existing locations and does not include the future Blue Line extension.

Table 6.8 displays the projected transit boarding and alightings by route and by stop within both communities under Preferred Plan conditions.

Table 6.8 Average Daily Transit Boardings and Alightings by Route and Station – Preferred Plan Conditions

Route # and Location	Boardings	Alightings	Total Trips
Bus Route 8 Clockwise			
Sports Arena Blvd and Midway Dr	30	30	60
Sports Arena Blvd and Midway Dr	150	50	200
Sports Arena Blvd Between Hancock and Kemper	60	20	70
Sports Arena Blvd Between Kemper and Sports Arena Driveway	70	50	160
Sports Arena Blvd and East Dr	120	50	170
Rosecrans St and Pacific Highway	40	40	70
Old Town Transit Center	20	1,090	1,110
Bus Route 9 Counter Clockwise			
Old Town Transit Center	1,110	20	1,120
Rosecrans St and Moore St	30	20	40
Rosecrans St and Kurtz St	20	40	50
Sports Arena Blvd and Camino Del Rio West	20	60	70
Sports Arena Blvd and East Dr	20	90	110
Sports Arena Blvd and Sports Arena Driveway	50	130	170
Sports Arena Blvd and Hancock St	60	180	230
Bus Route 10 East			
Old Town Transit Center	1,770	30	1,790
Pacific Highway and Sports Arena Blvd	50	30	70
Pacific Highway and Witherby St	100	170	260
Washington St and Pacific Highway	90	70	160
Washington St and Hancock St	40	10	50
Washington St and India St	90	30	120
Bus Route 10 West			
Washington St and India St	20	90	100

Table 6.8 Average Daily Transit Boardings and Alightings by Route and Station – Preferred Plan Conditions

Route # and Location	Boardings	Alightings	Total Trips
Washington St and Hancock St	10	20	30
Washington St and The Trolley Tracks	30	150	170
Pacific Highway and Washington St	30	30	60
Pacific Highway and Witherby St	90	110	200
Pacific Highway and Enterprise St	20	60	80
Pacific Highway and Kurtz St	10	10	10
Old Town Transit Center	30	1,450	1,470
Bus Route 28 East			
Rosecrans St and Lytton St	30	20	40
Rosecrans St and North Evergreen St	30	30	60
Rosecrans St and Loma Square	80	60	140
Rosecrans St and Sports Arena Blvd	60	60	110
Rosecrans St and Pacific Highway	30	10	30
Old Town Transit Center	N/A	1,090	1,090
Bus Route 28 West			
Old Town Transit Center	930	N/A	930
Rosecrans St and Moore St	20	N/A	20
Rosecrans St and Kurtz St	20	20	30
Rosecrans St and Midway Drive	50	50	90
Rosecrans St and Midway Drive	80	90	160
Rosecrans St and North Evergreen St	30	40	60
Rosecrans St and Lytton St	10	20	30
Bus Route 30 North			
Pacific Highway and Witherby St	90	80	170
Pacific Highway and Enterprise St	20	40	50
Pacific Highway and Kurtz St	10	10	10
Old Town Transit Center	1,110	610	1,710
Bus Route 30 South			
Old Town Transit Center	590	1,090	1,680
Pacific Highway and Sports Arena Blvd	20	590	60
Bus Route 35 East			
Midway Drive and Duke St	100	60	160
Midway Drive and Kemper St	70	40	110
Midway Drive and Fordham St	110	40	140
Midway Drive and East Drive	70	70	140
Rosecrans St and Sports Arena Blvd	100	30	130
Rosecrans St and Pacific Highway	20	20	30

Table 6.8 Average Daily Transit Boardings and Alightings by Route and Station – Preferred Plan Conditions

Route # and Location	Boardings	Alightings	Total Trips
Old Town Transit Center	N/A	990	990
Bus Route 35 West			
Old Town Transit Center	1,010	N/A	1,010
Rosecrans St and Moore St	40	10	50
Rosecrans St and Kurtz St	20	30	40
Rosecrans St and Midway Drive	50	70	110
Midway Drive and East Drive	80	60	140
Midway Drive and Fordham St	40	110	140
Midway Drive and Kemper St	50	110	150
Midway Drive and Duke St	40	130	160
Bus Route 44 North			
Old Town Transit Center	1,820	10	1,830
Taylor St and Juan St	20	10	20
Bus Route 44 South			
Taylor St and Sunset St	10	10	20
Old Town Transit Center	50	1,570	1,610
Bus Route 88 East			
Old Town Transit Center	240	20	250
Taylor St and Juan St	10	10	10
Taylor St and Presidio Drive	10	10	10
Taylor St and I-8 East	10	10	10
Bus Route 88 West			
Taylor St and I-8 East	10	10	10
Taylor St and Presidio Drive	10	10	10
Taylor St and Sunset St	10	10	10
Old Town Transit Center	10	140	150
Bus Route 105 North			
Old Town Transit Center	770	10	780
Taylor St and Juan St	10	10	10
Bus Route 105 South			
Taylor St and Juan St	10	10	10
Old Town Transit Center	10	570	570
Bus Route 150 North			
Pacific Highway and Witherby St	50	20	70
Pacific Highway and Enterprise St	10	20	20
Pacific Highway and Kurtz St	10	10	10
Old Town Transit Center	470	140	610

Table 6.8 Average Daily Transit Boardings and Alightings by Route and Station – Preferred Plan Conditions

Route # and Location	Boardings	Alightings	Total Trips
Bus Route 150 South			
Old Town Transit Center	120	660	80
Pacific Highway and Sports Arena Blvd	20	10	20
Green Line Trolley East			
Old Town Transit Center	8,280	390	8,670
Washington Street Station	280	660	930
Middletown Station	10	11,110	11,110
Green Line Trolley West			
Old Town Transit Center	10,600	7,680	18,270
Washington Street Station	690	220	910
Middletown Station	330	190	510

Source: Chen Ryan Associates (March 2017)

Table 6.9 displays the projected transit boardings and alightings at each transit stop/station within both communities under implementation of the Preferred Plan. The table also shows the required stop/station amenities, as shown in Table 2.2, based on the future ridership projects.

Table 6.9 Transit Station/Stop Locations, Amenities and Average Daily Boardings and Alightings – Preferred Plan Conditions

				Amenities at the Stops			
Station	Boardings	Alightings	Total	Signs	Shelter	Bench	Trash Can
Sports Arena Blvd and Midway Dr (Clockwise)	180	80	260	✓	✓	✓	✓
Sports Arena Blvd Between Hancock and Kemper (Clockwise)	60	20	70	✓	□	○	□
Sports Arena Blvd Between Kemper and Sports Arena Driveway (Clockwise)	70	50	160	✓	□	✓	□
Sports Arena Blvd and East Dr (Clockwise)	120	50	170	✓	○	✓	□
Rosecrans St and Pacific Highway (Clockwise)	40	40	70	✓	✓	✓	✓
Old Town Transit Center (Clockwise)	20	1,090	1,110	✓	✓	✓	✓
Old Town Transit Center (Counter Clockwise)	1,110	20	1,120	✓	✓	✓	✓
Rosecrans St and Moore St (Counter Clockwise)	30	20	40	✓	□	✓	✓
Rosecrans St and Kurtz St (Counter Clockwise)	20	40	50	✓	□	✓	□
Sports Arena Blvd and Camino Del Rio West (Counter Clockwise)	20	60	70	✓	□	✓	□
Sports Arena Blvd and East Dr (Counter Clockwise)	20	90	110	✓	□	✓	✓

Table 6.9 Transit Station/Stop Locations, Amenities and Average Daily Boardings and Alightings – Preferred Plan Conditions

Station	Boardings	Alightings	Total	Amenities at the Stops			
				Signs	Shelter	Bench	Trash Can
Sports Arena Blvd and Sports Arena Driveway (Counter Clockwise)	50	130	170	✓		✓	
Sports Arena Blvd and Hancock St (Counter Clockwise)	60	180	230	✓		✓	
Old Town Transit Center (Eastbound)	2,010	2,130	4,120	✓	✓	✓	✓
Pacific Highway and Sports Arena Blvd (Eastbound)	50	30	70	✓			
Pacific Highway and Witherby St (Eastbound)	100	170	260	✓		✓	✓
Washington St and Pacific Highway (Eastbound)	90	70	160	✓		✓	
Washington St and Hancock St (Eastbound)	40	10	50	✓		✓	✓
Washington St and India St (Eastbound)	90	30	120	✓		✓	✓
Washington St and India St (Westbound)	20	90	100	✓			✓
Washington St and Hancock St (Westbound)	10	20	30	✓		✓	✓
Washington St and The Trolley Tracks (Westbound)	30	150	170	✓			
Pacific Highway and Washington St (Westbound)	30	30	60	✓		✓	
Pacific Highway and Witherby St (Westbound)	90	110	200	✓	✓	✓	✓
Pacific Highway and Enterprise St (Westbound)	20	60	80	✓			
Pacific Highway and Kurtz St (Westbound)	10	10	10	✓			
Old Town Transit Center (Westbound)	1,980	1,590	3,560	✓	✓	✓	✓
Rosecrans St and Lytton St (Eastbound)	30	20	40	✓	✓	✓	✓
Rosecrans St and North Evergreen St (Eastbound)	30	30	60	✓		✓	✓
Rosecrans St and Loma Square (Eastbound)	80	60	140	✓	✓	✓	✓
Rosecrans St and Sports Arena Blvd (Eastbound)	160	90	240	✓	✓	✓	✓
Rosecrans St and Pacific Highway (Eastbound)	50	30	60	✓	✓	✓	✓
Rosecrans St and Moore St (Westbound)	60	10	70	✓		✓	✓
Rosecrans St and Kurtz St (Westbound)	40	50	70	✓		✓	
Rosecrans St and Midway Drive (Westbound)	180	210	360	✓	○	✓	✓
Rosecrans St and North Evergreen St (Westbound)	30	40	60	✓			
Rosecrans St and Lytton St (Westbound)	10	20	30	✓			

Table 6.9 Transit Station/Stop Locations, Amenities and Average Daily Boardings and Alightings – Preferred Plan Conditions

Station	Boardings	Alightings	Total	Amenities at the Stops			
				Signs	Shelter	Bench	Trash Can
Pacific Highway and Witherby St (Northbound)	140	100	240	✓	✓	✓	✓
Pacific Highway and Enterprise St (Northbound)	30	60	70	✓			
Pacific Highway and Kurtz St (Northbound)	20	20	20	✓			
Old Town Transit Center (Northbound)	4,170	770	4,930	✓	✓	✓	✓
Old Town Transit Center (Southbound)	770	3,890	3,940	✓	✓	✓	✓
Pacific Highway and Sports Arena Blvd (Southbound)	40	600	80	✓			
Midway Drive and Duke St (Eastbound)	100	60	160	✓	✓	✓	✓
Midway Drive and Fordham St (Eastbound)	110	40	140	✓	✓	✓	✓
Midway Drive and East Drive (Eastbound)	70	70	140	✓	✓	✓	✓
Midway Drive and East Drive (Westbound)	80	60	140	✓		✓	
Midway Drive and Fordham St (Westbound)	40	110	140	✓		✓	
Midway Drive and Kemper St (Westbound)	50	110	150	✓		✓	
Midway Drive and Duke St (Westbound)	40	130	160	✓		✓	
Taylor St and Juan St (Northbound)	30	20	30	✓		✓	
Taylor St and Sunset St (Southbound)	10	10	20	✓		✓	
Taylor St and Juan St (Eastbound)	10	10	10	✓		✓	
Taylor St and Presidio Drive (Eastbound)	10	10	10	✓		✓	
Taylor St and I-8 East (Eastbound)	10	10	10	✓			
Taylor St and I-8 East (Westbound)	10	10	10	✓		✓	
Taylor St and Presidio Drive (Westbound)	10	10	10	✓		✓	
Taylor St and Sunset St (Westbound)	10	10	10	✓		✓	
Taylor St and Juan St (Southbound)	10	10	10	✓		✓	
Old Town Transit Center	8,280	390	8,670	✓	✓	✓	✓
Washington Street Station	280	660	930	✓	✓	✓	✓
Middletown Station	10	11,110	11,110	✓	✓	✓	✓

Source: Chen Ryan Associates (March 2017)

Notes:
✓: Existing Amenity
O: Needed Amenity

As shown, the majority of the existing stops/stations already provide adequate amenities to accommodate the projected future ridership. However, additional amenities will be needed at the following stations as ridership increased:

Midway-Pacific Highway Community

- Sports Arena Boulevard, between Hancock Street and Kemper Street (Clockwise) – Bench
- Sports Arena Boulevard and East Drive (Clockwise) – Shelter
- Rosecrans Street and Midway Drive (Westbound) – Shelter

Old Town

- None

6.6.2 Arterial Speed Analysis Along Roadways Serving Transit Routes

An HCM peak hour arterial speed analysis was conducted along all roadway corridors where transit routes are projected to operate in order to identify future roadway congestion that could potentially impact transit route travel times and on-time performance. Transit priority measures such as queue jumper lanes and transit priority signal timing should be implemented in locations where future roadway congestion is anticipated.

Table 6.10 displays peak hour arterial speed analyses for all roadway facilities where a transit route operates under implementation of the Preferred Plan. Peak hour arterial analysis worksheets are provided in Appendix G.

Table 6.10 Arterial Speed Analysis Along Transit Corridors – Preferred Plan Conditions

Roadway	Segment	Posted Speed (MPH)	AM				PM			
			EB/NB		WB/SB		EB/NB		WB/SB	
			Speed	LOS	Speed	LOS	Speed	LOS	Speed	LOS
Midway-Pacific Highway Community										
Camino Del Rio West	Sports Arena Blvd to Kurtz Street	35	5.7	F	6.5	F	5.3	F	5.1	F
	Kurtz Street to Hancock Street	35	10.8	D	24.2	B	11.2	D	22.3	C
Rosecrans Street	Barnett Avenue to Midway Drive	35	22.3	C	9.5	F	12.9	F	19.2	D
	Midway Drive to Sports Arena Blvd	35	31.2	B	9.1	F	31.2	B	8.3	F
	Sports Arena Blvd to Kurtz Street	35	10.6	F	2.6	F	7.2	F	2.7	F
	Kurtz Street to Pacific Highway	35	17	E	21	D	14.5	E	20.4	D
Midway Drive	Sports Arena Blvd to Duke Street/Hancock Street	35	6.1	F	10.4	E	5.1	F	9.2	F
	Duke Street/Hancock Street to Kemper Street	35	20.5	C	17.6	D	16.1	D	13.4	E
	Kemper Street to East Drive	35	19.1	C	24.9	B	15.6	D	23.7	C
	East Drive to Rosecrans Street	35	23	C	12.3	E	20	C	8.4	F
Sports Arena Boulevard	I-8 WB Off-Ramp to W Point Loma Blvd	35	21.1	C	7.7	F	8.8	F	7.5	F
	W Point Loma Blvd to Hancock Street	35	11.7	E	21.1	C	4.8	F	23	C
	Hancock Street to Kemper Street	35	15	D	13.6	E	18.4	C	9.5	F
	Kemper Street to Frontier Drive	35	10.9	E	14.7	D	14.3	D	17.8	D
	Frontier Drive to Greenwood Street	35	12.1	E	20.6	C	12.3	E	11.8	E
	Greenwood Street to Rosecrans Street	35	26.2	B	7	F	23.6	C	6.6	F
Pacific Highway	Taylor Street to Kurtz Street	45	24.4	C	21.1	D	22.7	C	15.5	E
	Kurtz Street to Sports Arena Blvd	45	23.5	C	17.4	D	13.2	E	23	C

Table 6.10 Arterial Speed Analysis Along Transit Corridors – Preferred Plan Conditions

Roadway	Segment	Posted Speed (MPH)	AM				PM			
			EB/NB		WB/SB		EB/NB		WB/SB	
			Speed	LOS	Speed	LOS	Speed	LOS	Speed	LOS
Pacific Highway	Sports Arena Blvd to Barnett Avenue	45	11.7	F	12	F	9.4	F	4.8	F
	Washington Street to Sassafras Street	45	9.6	F	28.1	B	5.4	F	28.1	B
	Sassafras Street to W Laurel Street	45	31.6	B	15.5	E	28.2	B	13.2	E
Old Town Community										
Taylor Street	Pacific Highway to Congress Street	35	12.5	D	9	E	9	D	8.6	E
	Congress Street to Juan Street	35	9.8	D	12.9	D	6.7	F	13.8	C
	Juan Street to Whitman Street	35	17.5	C	14.6	C	15.5	C	15.3	C

Source: Chen Ryan Associates (March 2017)

Note:
Bold letter indicates LOS E or F

As shown, several segments within both communities are projected to operate at LOS E or F during both the AM and PM Peak hours:

<u>Midway-Pacific Highway</u>

- Camino del Rio West, between Sports Arena Boulevard and Kurtz Street
  - LOS F: AM & PM peak hours, westbound & eastbound directions
- Rosecrans Street, between Barnett Avenue and Midway Drive
  - LOS F: AM peak hour, westbound direction
  - LOS F: PM peak hour, eastbound direction
- Rosecrans Street, between Midway Drive and Sports Arena Boulevard
  - LOS F: AM & PM peak hours, westbound direction
- Rosecrans Street, between Sports Arena Boulevard and Kurtz Street
  - LOS F: AM & PM peak hours, westbound & eastbound directions
- Rosecrans Street, between Kurtz Street and Pacific Highway
  - LOS E: AM & PM peak hours, eastbound direction
- Midway Drive, between Sports Arena Boulevard and Hancock Street
  - LOS F: AM & PM peak hours, northbound direction
  - LOS E: AM peak hour, southbound direction
  - LOS F: PM peak hour, southbound direction
- Midway Driveway, between Hancock Street and Kemper Street
  - LOS E: PM peak hour, southbound direction
- Midway Drive, between East Drive and Rosecrans Street
  - LOS E: AM peak hour southbound direction
  - LOS F: PM peak hour southbound direction
- Sports Arena Boulevard, between I-8 Westbound Ramps and West Point Loma Boulevard
  - LOS F: AM peak hour, southbound direction
  - LOS F: PM peak hour, northbound & southbound directions
- Sports Arena Boulevard, between West Point Loma Boulevard and Hancock Street
  - LOS E: AM peak hour, northbound direction

    - LOS F: PM peak hour, northbound direction
- Sports Arena Boulevard, between Hancock Street and Kemper Street
    - LOS E: AM peak hour, southbound direction
    - LOS F: PM peak hour, southbound direction
- Sports Arena Boulevard, between Kemper Street and Frontier Drive
    - LOS E: AM peak hour, northbound direction
- Sports Arena Boulevard, between Frontier Drive and Greenwood Street
    - LOS E: AM peak hour, northbound direction
    - LOS E: PM peak hour, northbound & southbound directions
- Sports Arena Boulevard, between Greenwood Street and Rosecrans Street
    - LOS F: AM & PM peak hours, southbound direction
- Pacific Highway, between Taylor Street to Kurtz Street
    - LOS E: PM peak hour, southbound direction
- Pacific Highway, between Kurtz Street and Sports Arena Boulevard
    - LOS E: PM peak hour, northbound direction
- Pacific Highway, between Sports Arena Boulevard and Barnett Avenue
    - LOS F: AM & PM peak hours, northbound & southbound directions
- Pacific Highway, between Washington Avenue and Sassafras Street
    - LOS F: AM & PM peak hours, northbound direction
- Pacific Highway, between Sassafras Street and Laurel Street
    - LOS E: AM & PM peak hours, southbound direction

As noted in Section 3.5.2, the following transit priority treatments are recommended to help on-time performance for bus routes within the Midway-Pacific Highway community:

Pacific Highway - Pacific Highway serves several regional bus routes that connect multiple communities. The projected low travel speeds along several segments of Pacific Highway could impact the efficiency and on-time performance of these regional routes. Therefore, it is recommended that, transit priority measures such as queue jumper lanes and transit priority signals are implemented at all signalized intersections along Pacific Highway between Taylor Street and Laurel Street.

Rosecrans Street – Rosecrans Street east of Camino Del Rio West currently serves four MTS bus Routes (8, 9, 28 and 35). A queue jumper lane and transit signal have already been implemented on the eastbound approach at the Taylor Street / Rosecrans Street and Pacific Highway intersection. Similar transit priority improvements should also be looked at the Rosecrans Street Camino Del Rio West and Sports Arena Boulevard intersection to allow westbound buses (Routes 8, 9 and 35) to turn right onto Sports Arena Boulevard and avoid congestion.

New Roadway Connections – The proposed new roadway connections can serve as alternative east/west routes for busses traveling through the community. Rerouting to these new facilities, if possible, may help avoid the congestion on Rosecrans Street. It is recommended that after the construction of any of the new roadways, the City of San Diego coordinate with MTS to look at bus rerouting opportunities.

Old Town

- Taylor Street, between Pacific Highway and Congress Street
  - LOS E: AM & PM peak hours, southbound direction
- Taylor Street, between Congress Street and Juan Street
  - LOS F: PM peak hour, northbound direction

Taylor Street serves several regional bus routes connecting multiple communities. Therefore, it is recommended that transit priority treatments be implemented along Taylor Street to help increase transit performance. It is recommended to implement queue jumper lanes and transit priority signals in either direction at both the Taylor Street / Juan Street and Taylor Street / Morena Boulevard intersections.

6.7 Parking Management

It is anticipated that any additional parking demand associated with future developments will be accommodated on-site. It is assumed that all on-street public parking spaces will be maintained under Preferred Plan implementation, with the exception of the following:

Midway-Pacific Highway

Rosecrans Street, between Sports Arena Boulevard / Camino Del Rio West and Pacific Highway – To implement the multi-use urban path improvements proposed as part of the Preferred Plan, parking along both sides of Rosecrans Street will need to be removed. Approximately 65 on-street parking spaces will be removed along this segment. Since there is abundant off-street parking within the community and these spaces are not heavily utilized, the removal of these spaces should not negatively impact the community.

Sports Arena Boulevard, between West Point Loma Boulevard and Rosecrans Street – To implement the multi-use urban path improvements proposed as part of the Preferred Plan, parking along the southwest side of Sports Arena Boulevard will need to be removed. Approximately 24 on-street parking spaces will be removed along this segment. Since there is abundant off-street parking within the community and these spaces are not heavily utilized, removal of these spaces should not negatively impact the community.

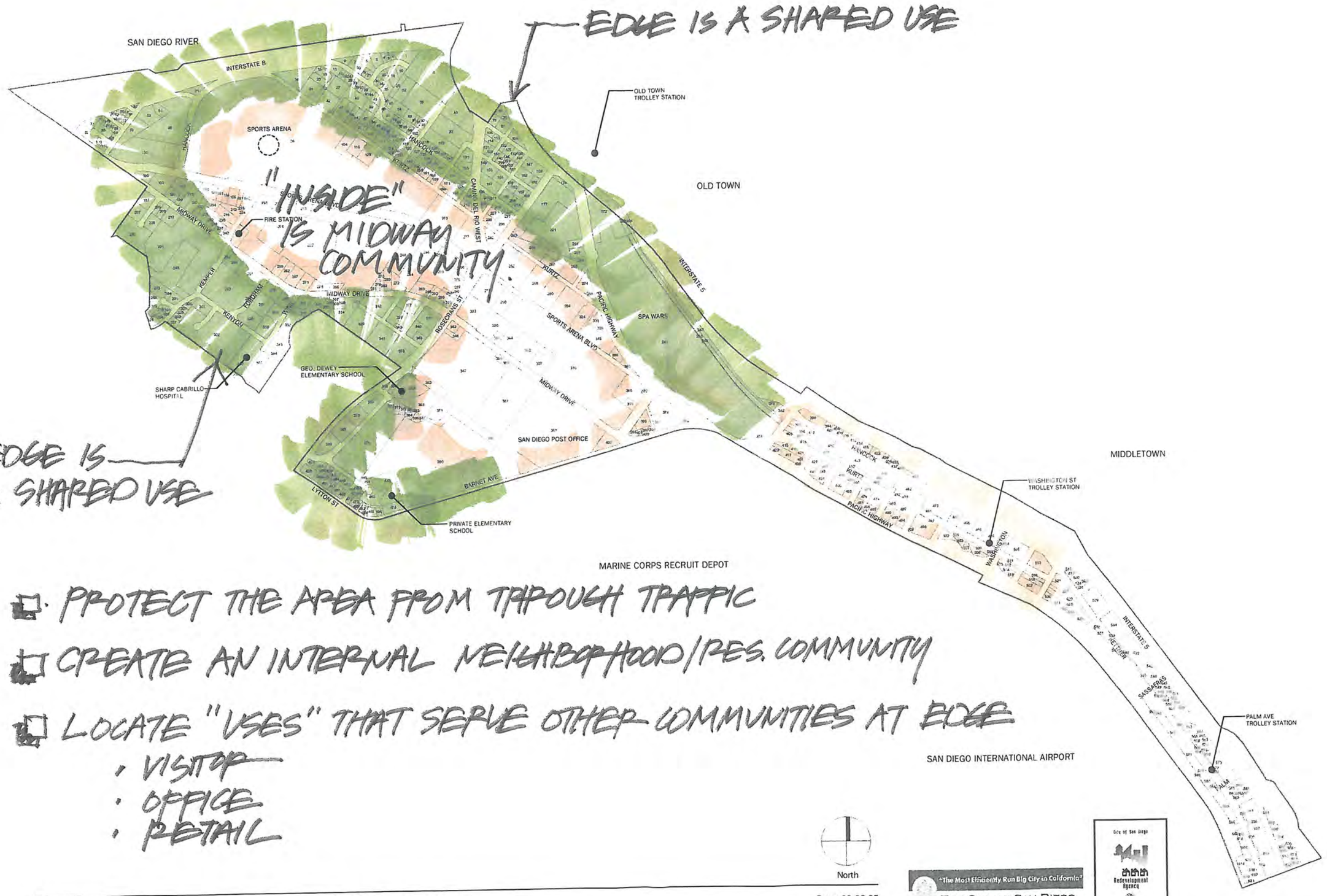
Old Town

There is not anticipated to be any loss of on-street parking within the Old Town Community. However, as noted in Section 4.2.2 it is proposed that the parking along the east side of San Diego Avenue, between Twiggs Street and Conde Street, be converted from parallel to diagonal parking. This improvement could potentially result in up to 20 additional on-street parking spaces along San Diego Avenue.

The community is not currently in favor of metering parking within Old Town as a means to create parking turnover, therefore, use of the existing parking supply should be maximized to help meet

parking demands. The Caltrans parking lot, located north of the Congress Street and Taylor Street intersection, provides approximately 800 parking spaces that are open to the public on nights and weekends and is frequently under capacity. Increased utilization of these spaces may help alleviate some of the parking demand experienced throughout the Old Town community. Additional wayfinding signage may be beneficial to help direct community visitors and employees to the lot.

Appendix A
Midway/Pacific Highway Urban Greening Plan
Cross-Sections and Concept Plans



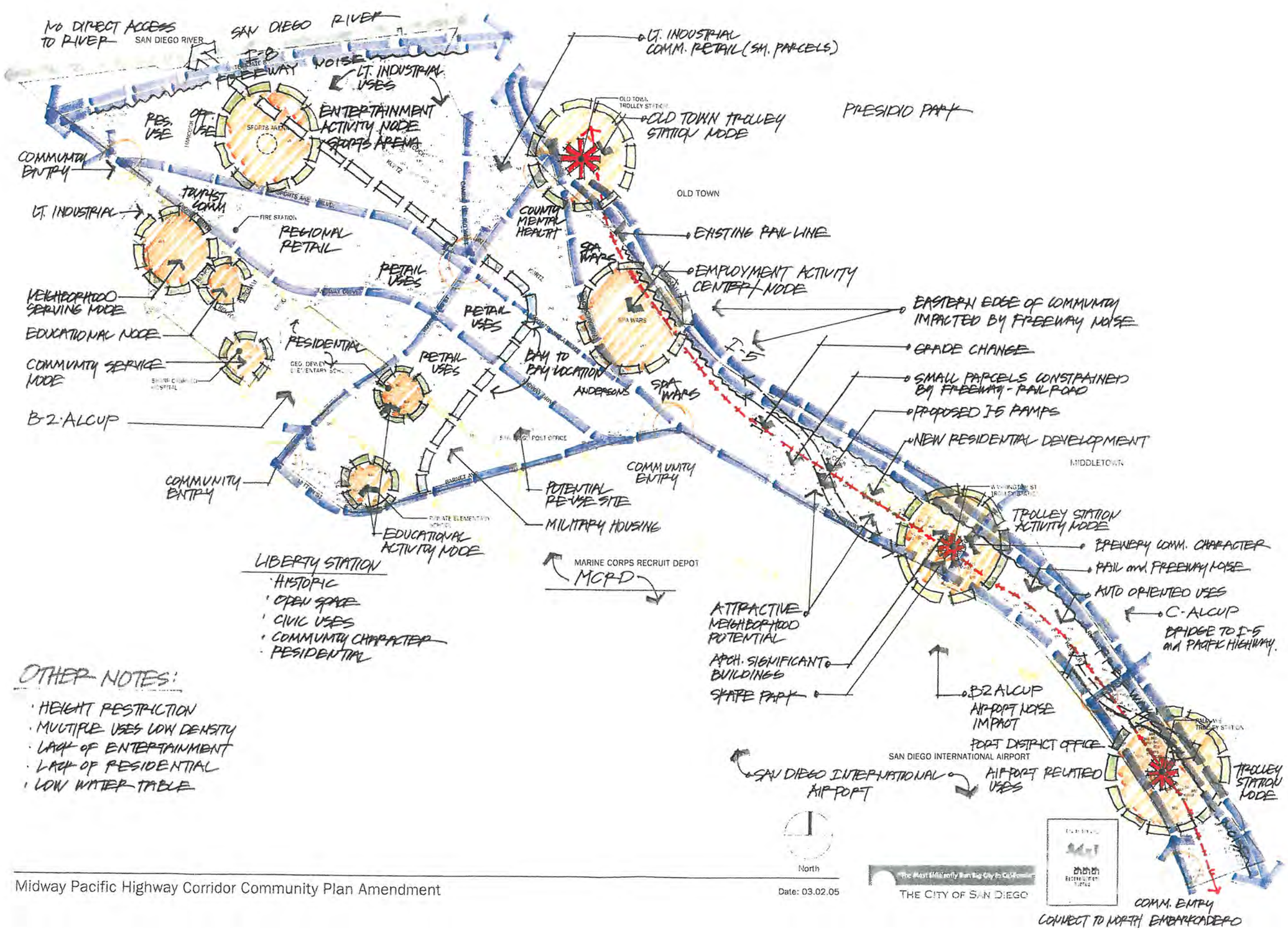
- PROTECT THE AREA FROM THROUGH TRAFFIC
- CREATE AN INTERNAL NEIGHBORHOOD/RES. COMMUNITY
- LOCATE "USES" THAT SERVE OTHER COMMUNITIES AT EDGE
  - VISITOR
  - OFFICE
  - RETAIL

North

"The Most Efficiently Run Big City in California"

THE CITY OF SAN DIEGO

City of San Diego Redevelopment Agency


NO DIRECT ACCESS TO RIVER
SAN DIEGO RIVER
SAN DIEGO RIVER
I-8 FREEWAY
NOISE
LT. INDUSTRIAL USES
RES. USE
OFF. USE
ENTERTAINMENT ACTIVITY NODE
SPORTS ARENA
COMMUNITY ENTRY
LT. INDUSTRIAL
TOURIST COMM.
FIRE STATION
REGIONAL RETAIL
NEIGHBORHOOD SERVING NODE
EDUCATIONAL NODE
COMMUNITY SERVICE NODE
B-2-ALCUP
RESIDENTIAL
RETAIL USES
RETAIL USES
RETAIL USES
BAY TO BAY CONNECTION
ANDERSONS
SPA WARS
LT. INDUSTRIAL COMM. RETAIL (SM. PARCELS)
OLD TOWN TROLLEY STATION
OLD TOWN TROLLEY STATION NODE
PRESIDIO PARK
OLD TOWN
COUNTY MENTAL HEALTH
SPA WARS
EXISTING RAIL LINE
EMPLOYMENT ACTIVITY CENTER/NODE
EASTERN EDGE OF COMMUNITY IMPACTED BY FREEWAY NOISE
I-5
GRADE CHANGE
SMALL PARCELS CONSTRAINED BY FREEWAY - RAILROAD
PROPOSED I-5 RAMPS
NEW RESIDENTIAL DEVELOPMENT
MIDDLETOWN
SAN DIEGO POST OFFICE
COMMUNITY ENTRY
POTENTIAL RE-USE SITE
MILITARY HOUSING
EDUCATIONAL ACTIVITY NODE
COMMUNITY ENTRY
LIBERTY STATION
· HISTORIC
· OPEN SPACE
· CIVIC USES
· COMMUNITY CHARACTER
· RESIDENTIAL
MARINE CORPS RECRUIT DEPOT
MCRD
ATTRACTIVE NEIGHBORHOOD POTENTIAL
ARCH. SIGNIFICANT BUILDINGS
SKATE PARK
B2 ALCUP
AIRPORT NOISE IMPACT
PORT DISTRICT OFFICE
SAN DIEGO INTERNATIONAL AIRPORT
SAN DIEGO INTERNATIONAL AIRPORT
AIRPORT RELATED USES
TROLLEY STATION NODE
TROLLEY STATION ACTIVITY NODE
BREWERY COMM. CHARACTER
RAIL and FREEWAY NOISE
AUTO ORIENTED USES
C-ALCUP
BRIDGE TO I-5 and PACIFIC HIGHWAY.
COMM. ENTRY
CONNECT TO NORTH EMBARCADERO
OTHER NOTES:
· HEIGHT RESTRICTION
· MULTIPLE USES LOW DENSITY
· LACK OF ENTERTAINMENT
· LACK OF RESIDENTIAL
· LOW WATER TABLE
North
THE CITY OF SAN DIEGO

Appendix B
City of San Diego Unfunded Transportation Needs List (8/5/14)

ID	Title	Prioritization_Score	Description	Status	Community	CD	CIP_NO	PFFP_NO	Estimate	Funding_Identified_in_Financing_Plan	Grant_Funding_Source	Comments	High_Accident	TR_Number	Mapped_By	Item Type	Path
2491	Market St @ Pitta St	0	Re-evaluated in August 2012 and no longer meets warrants.	No longer meets warrants	Encanto Neighborhoods, Southeastern	4							0	320405		Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
2503	Cardiff St @ San Vicente St	0	Re-evaluated March 2012 and no longer meets warrants.	No longer meets warrants	Encanto Neighborhoods, Southeastern	4							0	320397		Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
2767	58th St @ Skyline Dr/Trinidad Wy	0	Re-evaluated in Oct. 2012 and no longer meets warrants.	No longer meets warrants	Encanto Neighborhoods, Southeastern	4							0	326167		Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
3517	Sampson Street southwest of 28th Street 156', northwest side Street Light	0		No longer meets warrants	Southeastern San Diego, Southeastern	8			2000				0	329954	Hughes, Duncan	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
827	30th Street & Market Street Traffic Signal Upgrade	0	Install left-turn phasing for EB/WB traffic on Market Street	No longer meets warrants	Southeastern San Diego, Southeastern	8			13785			LT phasing installed by Streets Div. on 5/15/12.	0	305875	Pornan, Donald	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
751	Southcrest Redevelopment Project Area Street Lights	1	This project will install up to 73 street lights in the Southcrest Redevelopment Area.	PITS	Southeastern San Diego, Southeastern	4;#8	52-293.0		655600	Redevelopment			Yes		Pornan, Donald	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
530	60th St. from Upland St. to Weaver St.-Install New Guardrail	17	This project will install 1,230' of guardrail.	TEO Funded	Encanto Neighborhoods,	4			78000				No		Nascimento, Claudio	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
531	60th St. from Broadway to Radio Dr.-Install New Guardrail	20	This project will install 272' of guardrail along the west side of 60th St within the specified limits.	TEO Funded	Encanto Neighborhoods, Southeastern	4						In Design, estimate to be provided by consultant.	No	283409	Nascimento, Claudio	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
4109	Medio St and Pocatello St - Install New Guardrail	21	This project will install approximately 375' of new guardrail along the west side of Pocatello St and Medio St between Eleanor Dr and Bishop St.	TEO Unfunded	Southeastern San Diego, Southeastern	4			45000			Cost Estimate Complete.	No		Alo, Leo	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
491	Wunderlin Ave from 63rd Street to 900' east(North Side) - Install New Sidewalk	25	This project will provide PCC sidewalk on the north side of Wunderlin Avenue.	TEO Unfunded	Encanto Neighborhoods, Southeastern	4			115000	Other	CDBG;#Safe Route to School	Conflicts: Landscaping, Utility Poles, Trees	Yes	318208	Pornan, Donald	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
814	19th Street & Market Street Traffic Signal Upgrade	25	Install pedestrian heads for all crossings	TEO Unfunded	Southeastern San Diego, Southeastern	8			12500				0		Pornan, Donald	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
934	25th Street & Imperial Avenue Traffic Signal Upgrade	25	Install PPB (2010).	TEO Unfunded	Southeastern San Diego, Southeastern	8			6000				0		Pornan, Donald	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
935	25th Street & Market Street Traffic Signal Upgrade	25	Change out left turn signal; head from PV to regular signal heads with arrows .	TEO Unfunded	Southeastern San Diego, Southeastern	8			16100				0		Pornan, Donald	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
938	30th Street (S) & Ocean View Boulevard Traffic Signal Upgrade	25	Install pedestrian indications on the NWC and NEC	TEO Unfunded	Southeastern San Diego, Southeastern	8			9500				0		Pornan, Donald	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
449	Pocatello St from Eleanor Dr to Medio St, Medio St from Pocatello St to Bishop Dr, Bishop Dr from Medio St to Eleanor Dr - Improve to residential local street	27	This project will provide for a low volume, residential local street along Pocatello, Medio and Bishop per Street Design Manual Standards. It will require excavation, new AC street section,curb, gutter and sidewalk, street lights, retaining walls, and encroachment removal.	TEO Unfunded	Southeastern San Diego, Southeastern	4				Other			0		Pornan, Donald	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
498	Skyline Dr. at Woodman St.-Install New Guardrail	28	This project will install approximately 80' of guardrail at the southeast corner of this intersection.	TEO Unfunded	Encanto Neighborhoods, Southeastern;#Skyli	4			30000				No	308921	Nascimento, Claudio	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
551	Imperial Ave from I-5 to 32nd St - Widen to 4-lane major	28	This project provides for the widening of Imperial Avenue to a four-lane major street.	TEO Unfunded	Southeastern San Diego, Southeastern	4;#8		SESD-T9	2800000				0		Pornan, Donald	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
947	32nd St & Market St Traffic Signal Upgrade	28	Add pedestrian signal heads and push buttons	TEO Unfunded	Southeastern San Diego, Southeastern	8			14600				0		Pornan, Donald	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
984	Euclid Av & Logan Av/Olvera Av Traffic Signal Upgrade	28	Relocate PPB 180 degrees at NWC of Logan and Euclid (south leg of Logan, PPB on median); relocate PPB 180 degrees at SEC of Olvera & Euclid (2002)	TEO Unfunded	Encanto Neighborhoods, Southeastern	4			600				0		Pornan, Donald	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
1077	32nd St & Imperial Ave Traffic Signal Upgrade	28	Install new limit line loops to improve bicycle detection for all approaches (Mod. Type E)	TEO Unfunded	Southeastern San Diego, Southeastern	4			20000				0	314,613	Pornan, Donald	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
251	60th St from Imperial to Federal - Widen to 2-lane collector	29	This project provides for the widening of 60th Street to a two-lane collector.	TEO Unfunded	Southeastern San Diego, Southeastern	4;#8		SESD-17	7000000	Other			0		Pornan, Donald	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
267	Guymon St from 1000' w/o Euclid Ave to 1400' w/o Euclid Ave - Widen road	29	Widen road to standard 40' c/c	TEO Unfunded	Southeastern San Diego, Southeastern	8				Other		Conflicts: Environmental, No C&G, Drainage	0	313469	Pornan, Donald	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
3481	36th St & National Av APS Traffic Signal Upgrade	29	Install Polara push buttons Upgrade curb ramps Install ped countdown timers	TEO Unfunded	Southeastern San Diego, Southeastern	9			30000				0	329545		Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
3791	25th St & J St Traffic Signal Upgrade	29	Install ped countdown timers (8) Upgrade ped push buttons (7)	TEO Unfunded	Southeastern San Diego, Southeastern	8			2600				0	331,264		Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
474	35th St from Durant St to Webster Ave(West Side)-Install New Sidewalk	30	This project will provide approximately 100 linear feet of new PCC sidewalk on the west side of 35th Street. It will require excavation.	TEO Unfunded	Southeastern San Diego, Southeastern	9			27000	Other	CDBG	Conflicts: None Observed IMCAT Conflicts as of	0	308882	Nascimento, Claudio	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
4115	Merlin Drive north of Brooklyn Avenue 395', west side	30		TEO Unfunded	Encanto Neighborhoods,	4			2000		Smart Growth;#CDBG			TR334870	Semaan, Jerry	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
4116	Merlin Drive north of Brooklyn Avenue 575', west side	30		TEO Unfunded	Encanto Neighborhoods,	4			2000		Smart Growth;#CDBG			TR334870	Semaan, Jerry	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
4117	Merlin Drive north of Brooklyn Avenue 915', west side	30		TEO Unfunded	Encanto Neighborhoods,	4			2000		Smart Growth;#CDBG			TR334870		Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
3014	Skyline Dr & Sychar Rd Traffic Signal Upgrade	30	Upgrade curb ramps Install ped countdown timers	TEO Unfunded	Encanto Neighborhoods,	4			40000				0	328,180	Morabe, Lindsay	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
3015	Meadowbrook Dr & Skyline Dr Traffic Signal Upgrade	30	Upgrade curb ramps Install ped countdown timers	TEO Unfunded	Encanto Neighborhoods,	4			40000				0	328,179	Morabe, Lindsay	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List

3017	Skyline Dr & Woodman St Traffic Signal Upgrade	30	Install new loops for phases 2 & 5 Upgrade curb ramps Upgrade ped push buttons Install ped countdown timers	TEO Unfunded	Encanto Neighborhoods, Southeastern	4			55000				0	328,183	Morabe, Lindsay	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
116	Bancroft St from Island Ave to J St(West Side)- Install New Sidewalk	31	This project will provide approximately 291 linear feet of sidewalk, relocate three (3) street lights, 18 linear feet of driveway, and add five (5) pedestrian ramps.	TEO Unfunded	Southeastern San Diego, Southeastern	8			192000	Other	CDBG;#Safe Route to School	Conflicts: Utility Poles, Utility Boxes, Landscaping	0	308866	Tawfiq, Kharman	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
323	Geneva Ave from Winston Dr to Beverly St(South Side)- Install New Sidewalk	31	This project will install PCC sidewalk on the South Side of Geneva Ave.	TEO Unfunded	Encanto Neighborhoods, Southeastern	4				Other		Conflicts: Slope, Utility Poles, Mailboxes, Landscaping IMCAT Conflicts as of	0	309002	Pornan, Donald	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
353	58th St from South of Atla Vista Ave to End of 58th St(West Side)- Install New Sidewalk	31	This project will install PCC sidewalk on the west side of 58th Street.	TEO Unfunded	Encanto Neighborhoods, Southeastern	4				Other	CDBG	Conflicts: Drainage, Possible ROW Encroachment	0	318210	Pornan, Donald	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
493	Santa Isabel Dr from Bonita Dr to Olvera Ave(West Side)- Install New Sidewalk	31	This project will install PCC sidewalk on the west side of Santa Isabel Drive.	TEO Unfunded	Encanto Neighborhoods, Southeastern	4				Other	CDBG	Conflicts: Utility Poles, Landscaping, Driveway Clearance, Trees, Slop	Yes	309079	Pornan, Donald	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
3018	Skyline Dr & Valencia Traffic Signal Upgrade	31	Upgrade ped push buttons Install ped countdown timers	TEO Unfunded	Encanto Neighborhoods,	4			8000				0	328,186	Morabe, Lindsay	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
352	54th St from Imperial Ave to Santa Margarita St(East Side)- Install New Sidewalk	32	This project will install PCC sidewalk on the East Side of 54th Street.	TEO Unfunded	Encanto Neighborhoods, Southeastern	4					CDBG	Conflicts: No C&G, Drainage Concerns, Utility Poles IMCAT Conflicts as of	0	303500	Pornan, Donald	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
370	53rd St from Santa Margarita St to Imperial Ave(East Side)- Install New Sidewalk	32	This project will install PCC sidewalk on the east side of 53rd Street.	TEO Unfunded	Encanto Neighborhoods, Southeastern	4				Other	CDBG	Conflicts: None Oserved	0	306252	Pornan, Donald	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
1263	Roswell St from Swaner St to Old Memory Lane (North Side) -Install New Sidewalk	32	This project will install a missing sidewalk segment on the North Side of Roswell St.	TEO Unfunded	Encanto Neighborhoods, Southeastern	4						Conflicts: No C&G, Drainage Concerns	0		Pornan, Donald	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
1242	Citywide Streetlights FY 2011	32	Installation of street lights at various locations: Enterprise Street at Jessop Lane, north side Pershing Avenue at Upas Street, southeast corner Bancroft Street at Greely Avenue, southeast corner Houston Street at Kurtz Street, southwest corner Central Avenue at Dwight Street, northeast corner 62nd Street at Akins Avenue, southeast corner 31st Street at Juniper Street, northeast corner 32nd Street at Juniper Street, northeast corner 33rd Street at Juniper Street, northeast corner Bancroft Street at Juniper Street, northeast corner Dale Street at Juniper Street, northeast corner	TEO Funded	Encanto Neighborhoods, Southeastern;#Greater North Park;#Mid-City:City Heights;#Midway-Pacific Highway;#Southeastern San Diego, Southeastern	2;#3;#4;#8	B1114 7		96000				Yes		Pornan, Donald	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
3016	O'Meara St & Skyline Dr Traffic Signal Upgrade	32	Install ped countdown timers	TEO Unfunded	Encanto	4			2000				0	328,184	Morabe,	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
298	Brooklyn Ave from Merlin St to 63rd St(North Side)- Install New Sidewalk	33	This project will provide approximately 377 linear feet of sidewalk, six driveways, and two pedestrian ramps.	TEO Unfunded	Encanto Neighborhoods, Southeastern	4			116000	Other	CDBG;#Safe Route to School	Conflicts: Utility Box, Utility Poles, Decorative Pavement IMCAT Conflicts as of	0	309098A	Pornan, Donald	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
328	54th St from Imperial Ave to Naranja St(East Side)- Install New Sidewalk	33	This project will install PCC sidewalk on the East Side of 54th Street.	TEO Unfunded	Encanto Neighborhoods, Southeastern	4					CDBG	Conflicts: No C&G, Drainage Concerns	0	303499	Pornan, Donald	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
332	G St from 22nd St to 24th St(North Side)- Install New Sidewalk	33	This project will provide approximately 410 Linear feet of new PCC sidewalk and curb ramps on the north side of G Street. It will require clearing and grubbing, sign relocation, fence relocation, and Caltrans Encroachment Permit.	TEO Unfunded	Southeastern San Diego, Southeastern	8			148000	Other	CDBG;#Safe Route to School	Conflicts: Guardrail, Fence, ROW space, Utility Boxes IMCAT Conflicts as of 1/3/13: Overlay FY14	0	308999	Nascimento, Claudio	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
381	Groveland Dr from Euclid Ave to 53rd St(North Side)- Install New Sidewalk	33	This project will provide approximately 407 linear feet of sidewalk, 84 linear feet of driveway, 491 linear feet of curb and gutter, two pedestrian ramps, and relocate one fire hydrant.	TEO Unfunded	Encanto Neighborhoods, Southeastern	4			261000		CDBG	Conflicts: Utility Poles, Utility Boxes IMCAT Conflicts as of 12/28/12: None	0	309225	Pornan, Donald	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
463	Leghorn Ave from 66th St to Varney Dr(West Side)- Install New Sidewalk	33	This project will provide approximately 921 linear feet of guardrail, five driveways, 295 feet of curb, gutter, 141 linear feet of retaining wall, and 141 feet of guardrail.	TEO Unfunded	Encanto Neighborhoods, Southeastern	4			321000	Other		Conflicts: Mailboxes, Street Light, Utility Boxes, Guardrail, Storm Drain, Substandard Segment needs widening	0	309025	Nascimento, Claudio	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
470	Santa Margarita St from San Jacinto Dr to 55th St(South Side)- Install New Sidewalk	33	This project will install PCC sidewalk on the south side of Santa Margarita Street.	TEO Unfunded	Encanto Neighborhoods, Southeastern	4				Other	CDBG;#Safe Route to School	Conflicts: Utility Poles, Slopes, Landscaping, Trees, Draina IMCAT Conflicts as of	0	309080	Pornan, Donald	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List

665	Brooklyn Ave from 63rd St to Otay St(South Side)- Install New Sidewalk	33	This project will provide approximately 702 linear feet of sidewalk, 85 linear feet of driveway, three pedestrian ramps, and relocate two fire hydrants.	TEO Unfunded	Encanto Neighborhoods, Southeastern	4			201000		CDBG;#Safe Route to School	Conflicts: Utility Poles, Fire Hydrant, Fence IMCAT Conflicts as of	0	309097B	Pornan, Donald	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
666	Brooklyn Ave from Merlin St to 63rd St(South Side)- Install New Sidewalk	33	This project will install PCC sidewalk on the South Side of Brooklyn Avenue.	TEO Unfunded	Encanto Neighborhoods, Southeastern	4					CDBG;#Safe Route to School	Conflicts: Utility Box, Utility Poles, Decorative Pavement IMCAT Conflicts as of	0	309098B	Pornan, Donald	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
693	Benson Ave from Roth Ct to Jojo Ct (South Side) - Install New Sidewalk	33	This project will install PCC sidewalk on the south side of Benson Ave.	TEO Unfunded	Encanto Neighborhoods, Southeastern	4					CDBG;#Safe Route to School	Conflicts: Widening needed, Slope IMCAT Conflicts as of	0	309085	Pornan, Donald	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
785	29th St from Imperial Ave to Commercial St (East Side)- Install New Sidewalk	33	This project will provide approx. 330 LF of sidewalk, trees w/ grates, AC pavement, curb ramps, driveway apron, Type B inlet, and traffic striping. It will require sidewalk removal, pavement removal, inlet removal, sign relocation, meter box adjustment, and fire hydrant relocation.	TEO Unfunded	Southeastern San Diego, Southeastern	8			486000		CDBG	Conflicts: No Curb & Gutter, Drainage IMCAT Conflicts as of 1/3/13: Overlay FY15 (Start Cnst: 11/14 End Cnst: 7/15)	0	311510	Pornan, Donald	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
555	Akins Ave from 62nd St to 65th St Channel Improvements	33	This project provides for approximately 1400 feet of six foot high vinyl coated chain link fence with one gate. Remove existing fence.	PITS	Southeastern San Diego, Southeastern	4	527780		75000	Other			0			Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
813	19th Street & Imperial Avenue Traffic Signal Upgrade	33	Install signal poles and mast arms; upgrade to 12" signal heads; install detection; replace controller	TEO Unfunded	Southeastern San Diego, Southeastern	8			96000				0		Pornan, Donald	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
250	47th St from Market St to Imperial Ave - Widen to 4-lane major	34	This project provides for the widening of 47th Street to a four-lane Major.	TEO Unfunded	Southeastern San Diego, Southeastern	8		SESD-T18	5100000	Other			0		Pornan, Donald	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
263	Imperial Ave from I-15 to 40th St - Widen to 4-lane collector	34	This project provides for the widening of Imperial Avenue to a four-lane collector. Cost includes property acquisition and demolition of businesses and homes on southside.	TEO Unfunded	Southeastern San Diego, Southeastern	4;#8		SESD-T10		Other			0	315962	Pornan, Donald	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
266	Woodman St from Imperial Ave to Skyline Dr - Widen to 2-lane collector	34	This project provided for the improvement of Woodman Street to a two-lane collector.	PITS	Southeastern San Diego, Southeastern	4;#8		SESD-T14	1300000	Other			0		Pornan, Donald	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
283	33rd St from Imperial Ave to 75' N/O Imperial Ave(West Side)- Install New Sidewalk	34	This project will install PCC sidewalk on the west side of 33rd Street.	TEO Unfunded	Southeastern San Diego, Southeastern	8				Other	CDBG	Conflicts: Utility Boxes IMCAT Conflicts as of	0	318209	Pornan, Donald	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
334	Mallard St from Federal Blvd to 69th St (South Side)- Install New Sidewalk	34	This project will install PCC sidewak on the South Side of Mallard Street.	TEO Unfunded	Encanto Neighborhoods, Southeastern	4				Other		Conflicts: Utility POles, Mailboxes, Landscaping, Slopes, Fire Hydrant, Trees, Shrubs, Vegetation, Guardrail	0	309030	Pornan, Donald	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
469	Castana St from Euclid Ave to San Jacinto Dr(South Side) Install New Sidewalk	34	Install a sidewalk along the south side of Castana Street.	TEO Unfunded	Encanto Neighborhoods, Southeastern	4				Other	CDBG	Conflicts: Fire Hydrant, Utility Box, Utility Pole	0	309100	Pornan, Donald	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
1222	S 45th St from T Street to Logan Ave (East Side)- Install New Sidewalk	34	This project will install PCC sidewalk on the East Side of S 45th Street.	TEO Unfunded	Southeastern San Diego, Southeastern	4					CDBG	Conflicts: No C&G, Tree, Drainage, Business Access IMCAT Conflicts as of	0		Pornan, Donald	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
1234	Manzanares Wy from Euclid Ave to San Jacinto (South Side)- Install New Sidewalk	34	This project will install PCC sidewalk on the South Side of Manzanares Wy.	TEO Unfunded	Encanto Neighborhoods, Southeastern	4					CDBG	Conflicts: Utility Poles, Trees, Landscaping, Fire Hydrants, Fences	0		Pornan, Donald	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
441	Woodman St from Imperial Ave to Skyline Dr(West Side) - Install New Sidewalk	35	This project will install PCC sidewalk on the west side of Woodman Street.	TEO Unfunded	Encanto Neighborhoods, Southeastern	4			600000		CDBG	Water Group Job (Pipe Rehab) started 2/12 and Underground Utilities improvements will	No	317233, 325410, 333706	Pornan, Donald	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
3988	Radio Drive east of Paradise Street 850', south side street light	35		TEO Unfunded	Encanto Neighborhoods,	4			2000		CDBG		0	TR332999	Avila-Zepeda , Felipe R	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
264	Market St from Euclid Ave to 32nd St - Widen to 4-lane major	36	This project provides for the widening of Market Street to a four-lane major street with Class II bicycle lanes. The cost for property acquisition and building demolition are included in this estimate.	TEO Unfunded	Southeastern San Diego, Southeastern	4;#8		SESD-T11	6000000	Other			0		Pornan, Donald	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
363	Bluebird St from Mallard St to Mulberry St(West Side)- Install New Sidewalk	36	This project will install PCC sidewalk on the west side of Bluebird St.	TEO Unfunded	Encanto Neighborhoods, Southeastern	4				Other		Conflicts: Landscaping, No C&G, Mailboxes, Vegetation, Drainage, Utility Poles	0	309096B	Pornan, Donald	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
664	Bluebird St from Mallard St to Mulberry St(East Side)- Install New Sidewalk	36	This project will install PCC sidewalk on the East Side of Bluebird Street.	TEO Unfunded	Encanto Neighborhoods, Southeastern	4						Conflicts: Landscaping, No C&G, Mailboxes, Vegetation, Drainage, Utility Poles	0	309096A, 308872	Pornan, Donald	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
783	45th St from Benfield Ct to Imperial Ave (East Side)- Install New Sidewalk	36	This project will install PCC sidewalk on the east side of 45th Street.	TEO Unfunded	Southeastern San Diego, Southeastern	4			185000		CDBG	Conflicts: Needs Widening, Drainage, AC Curb, Utility Poles, Drain Inlet, Mailboxes, Outility Boxes	0	313467	Pornan, Donald	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List

112	Bittern St from Klauber Ave to Madera St(West Side)- Install New Sidewalk	37	This project will provide approximately 675 Linear Feet of sidewalk on the west side of Bittern Street. It will require excavation, sign relocation, mailbox relocation, meter box adjustment, and fire hydrant relocation. It will include new PCC sidewalk, curb ramps, and driveway aprons. .	TEO Unfunded	Encanto Neighborhoods, Southeastern	4			150000	Other		Conflicts: Landscaping, Mailboxes, Slope, Retaining Wall Fire Hydrants, Utility Poles IMCAT Conflicts as of	0	309095B	Nascimento, Claudio	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
262	Holly Dr from Willie James Jones Ave to Euclid Ave - Widen for CG&S	37	1000' widen road and CG&S & Drainage	PITS	Southeastern San Diego, Southeastern	4			1400000	Other			0		Pornan, Donald	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
270	Benson St from 61st St to Jenna St (South Side) - Install New Sidewalk	37	Widen, CG&S, Pvmt, Fill	TEO Unfunded	Southeastern San Diego, Southeastern	8			396000	Other		Conflicts: Needs Widening, Drainage, Utility Poles, Utility Boxes	0		Pornan, Donald	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
280	Beta St from 43rd St to End (North Side)- Install New Sidewalk	37	This project will provide approximately 601 linear feet of sidewalk. It will include curb and gutter, 13 driveways, and pavement.	TEO Unfunded	Southeastern San Diego, Southeastern	9			417000	Other	CDBG	Conflicts: Substandard Street, No C&G, Drainage, Trees, ROW Aquistion/Encroachm	0	309094B	Pornan, Donald	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
318	Coban St from Bonita Dr to Reynolds St(North Side)- Install New Sidewalk	37	This project will provide approximately 505 linear feet of sidewalk, five driveways, two pedestrian ramps, and 209 linear feet of curb and gutter.	TEO Unfunded	Encanto Neighborhoods, Southeastern	4			200000	Other	CDBG	Conflicts: Fire Hydrant, Utility Pole, No C&G, Wall, Tree, Landscaping	0	309103A	Pornan, Donald	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
466	Swan St from Springfield St to Tooley (West Side)- Install New Sidewalk	37	This project will install PCC sidewalk on the west side of Swan Street.	TEO Unfunded	Encanto Neighborhoods, Southeastern	4				Other		Conflicts: No C&G, Substandard Street Potentially, Landscaping,	0	309130	Pornan, Donald	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
662	Beta St from 43rd St to End (South Side)- Install New Sidewalk	37	This project will provide approximately 383 linear feet of sidewalk. It will include curb, gutter, 9 driveways, and pavement.	TEO Unfunded	Southeastern San Diego, Southeastern	9			310000		CDBG	Conflicts: Substandard Street, No C&G, Drainage, Trees, ROW Aquistion/Encroachm	0	309094A	Pornan, Donald	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
663	Bittern St from Klauber Ave to Madera St(East Side)- Install New Sidewalk	37	This project will provide approximately 1190 Linear Feet of sidewalk on the east side of ittern Street. It will require excavation, sign relocation, and mailbox relocation. It will include new PCC sidewalk, curb ramps, driveway aprons and a 130 LF 3" high retaining wall.	TEO Unfunded	Encanto Neighborhoods, Southeastern	4			243000			Conflicts: Landscaping, Mailboxes, Slope IMCAT Conflicts as of 12/28/12: None	0	309095A	Pornan, Donald	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
671	Coban St from Bonita Dr to Reynolds St(South Side)- Install New Sidewalk	37	This project will provide approximately 565 linear feet of sidewalk, 120 linear feet of curb and gutter, one driveway, and for pedestrian ramps.	TEO Unfunded	Encanto Neighborhoods, Southeastern	4			155000		CDBG	Conflicts: Fire Hydrant, Utility Pole, No C&G, Wall, Tree, Landscaping	0	309103B	Pornan, Donald	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
688	Swan St from Springfield St to Tooley (East Side)- Install New Sidewalk	37	This project will install PCC sidewalk on the East Side of Swan Street.	TEO Unfunded	Encanto Neighborhoods, Southeastern	4						Conflicts: No C&G, Substandard Street Potentially, Landscaping,	0	309130B	Pornan, Donald	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
265	Oceanview Blvd from 40th St to 32nd St - Widen to 4-lane major	38	This project provides for the widening of Oceanview Boulevard to a modified four-lane major street. No additional right of way is anticipated.	TEO Unfunded	Southeastern San Diego, Southeastern	4;#8		SESD-T12	96000000	Other			0		Pornan, Donald	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
394	Webster Avenue from 36th St to Western End of Webster (Both Sides) - Install New Sidewalk	38	This project will install PCC sidewalk on both side of Webster Avenue.	TEO Unfunded	Southeastern San Diego, Southeastern	9				Other	CDBG	Conflicts: Utility Poles, Drainage, Trees, Utility Boxes IMCAT Conflicts as of	0	309033	Pornan, Donald	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
533	Logan Ave from S47th St to 100' East (North Side)- Install New Sidewalk	38	This project will provide approximately 71 LF of sidewalk, and 71 feet of curb and gutter.	PITS	Encanto Neighborhoods,	4			41000		CDBG;#Safe Route to School	Funded by Brock Jones of Disability	0	308153	Pornan, Donald	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
3676	Nogal Street - 75' East of 47th Street (north side) - Install Driveway	38	Install missing (removed by previous owner) driveway	TEO Unfunded	Encanto Neighborhoods, Southeastern	4						Conflict Check: Undergrounding Utilities (start con:	0	330569	Turner, Scott	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
115	Cervantes Ave from Euclid Ave to Bonita Dr(North Side)- Install New Sidewalk	39	This project will provide approximately 2070 LF of CG&S, curb ramps, and driveway aprons. It will require AC curb removal, sign relocation, fence relocation, excavation, clearing and grubbing, and ROW acquisition.	TEO Unfunded	Encanto Neighborhoods, Southeastern	4			414000	Other	CDBG	Conflicts: Fire Hydrants, Fences, Landscaping, Utility Poles, Slope, Utility Boxes, Mailboxes	0	308880	Nascimento, Claudio	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
119	Alta Vista Ave from Cervantes Ave to 58th St(South Side)- Install New Sidewalk	39	This project will provide approximately install 1259 linear feet of sidewalk, 243 linear feet of driveway, with respective curb and gutter, four pedestrian ramps, 273 linear feet of retaining wall, relocate 12 mail boxes, and three signs on the south side of Alta Vista Avenue.	TEO Unfunded	Encanto Neighborhoods, Southeastern	4			492000	Other	CDBG	Conflicts: No C&G, Drainage, Mailboxes, Landscaping, Slope, Trees, Walls, Fences IMCAT Conflicts as of 12/28/12: None	0	306235	Tawfiq, Kharman	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
252	61st St from Akins St to Brooklyn St(East Side)- Install New Sidewalk	39	This project will provide approximately 701 linear feet of sidewalk, 432 linear feet of driveway, 1146 linear feet of curb and gutter, one pedestrian ramp, replace 3 fire hydrants, and replace one street sign.	TEO Unfunded	Encanto Neighborhoods, Southeastern	4			442000		CDBG	Conflicts: Utility Pole, Fire Hydrant, Trees IMCAT Conflicts as of 12/28/12: Overlay	0	306237	Tawfiq, Kharman	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
390	Radio Dr from 60th St to Springfield Dr(North Side)- Sidewalk Improvement	39	This project will install PCC sidewalk on the north side of Radio Drive.	TEO Unfunded	Encanto Neighborhoods, Southeastern	4			24150000	Other		Conflicts: Substandard Roadways- needs many improvements IMCAT Conflicts as of	0	284464	Nascimento, Claudio	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
465	Castana St from San Jacinto Dr to Groveland Dr(North Side)- Install New Sidewalk	39	This project will provide approximately 470 linear feet of sidewalk, and 31 feet of driveway.	TEO Unfunded	Encanto Neighborhoods, Southeastern	4			57000	Other	CDBG	Conflicts: None observed	0	309100A, 306233	Nascimento, Claudio	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List

518	Radio Dr from 60th St to Springfield Dr(South Side)- Sidewalk Improvement	39	This project will install PCC sidewalk on the South Side of Radio Drive.	TEO Unfunded	Encanto Neighborhoods, Southeastern	4			24150000			Conflicts: Substandard Roadways- needs many improvements IMCAT Conflicts as of	0	284464	Pornan, Donald	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
668	Castana St from San Jacinto Dr to Groveland Dr(South Side)- Install New Sidewalk	39	This project will provide approximately 377 linear feet of sidewalk, and 104 linear feet of driveway. It will be neccessary to relocate one fire hydrant and one traffic sign.	TEO Unfunded	Encanto Neighborhoods, Southeastern	4			84000		CDBG	Conflicts: None observed IMCAT Conflicts as of	0	309100B	Pornan, Donald	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
670	Cervantes Ave from Euclid Ave to Bonita Dr(South Side)- Install New Sidewalk	39	This project will provide approximately 2070 LF of sidewalk on the south side of Cervantes Avenue. It will require AC curb removal, sign relocation, fence relocation, excavation, clearing and grubbing, and ROW acquisition. It will include new CG&S, curb ramps, and driveway aprons.	TEO Unfunded	Encanto Neighborhoods, Southeastern	4			414000		CDBG	Conflicts: Fire Hydrants, Fences, Landscaping, Utility Poles, Slope, Utility Boxes, Mailboxes IMCAT Conflicts as of	0	308880	Pornan, Donald	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
701	Cervantes Ave from Bonita Dr to Alta Vista Ave(North Side)- Install New Sidewalk	39	This project will provide approximately 541 linear feet of sidewalk, six driveways, and six pedestrian ramps.	TEO Unfunded	Encanto Neighborhoods, Southeastern	4			240000		CDBG	Conflicts: ROW Encroachments, Fences, Landscaping, Utility Poles, Slope,	0	309229	Pornan, Donald	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
702	Cervantes Ave from Bonita Dr to Alta Vista Ave(South Side)- Install New Sidewalk	39	This project will provide approximatley 1032 linear feet of sidewalk, two driveways, nine pedesrtian ramps, and 132 linear feet of retaining wall.	TEO Unfunded	Encanto Neighborhoods, Southeastern	4			375000		CDBG	Conflicts: ROW Encroachments, Fences, Landscaping, Utility Poles, Slope,	0	309228	Pornan, Donald	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
703	Coban St from Euclid Ave to Reynolds St(North Side)- Install New Sidewalk	39	This project will install PCC sidewalk on the North Side of Coban Street.	TEO Unfunded	Encanto Neighborhoods, Southeastern	4					CDBG	Conflicts: Fire Hydrant, Utility Pole, Decorative Pavement, Trees, Landscaping	0	309227	Pornan, Donald	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
704	Coban St from Euclid Ave to Reynolds St(South Side)- Install New Sidewalk	39	This project will provide approximately 913 linear feet of sidewalk, 17 driveways, and two pedestrian ramps.	TEO Unfunded	Encanto Neighborhoods, Southeastern	4			276000		CDBG	Conflicts: Fire Hydrant, Utility Pole, Decorative Pavement, Trees, Landscaping	0	309226	Pornan, Donald	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
705	Groveland Dr from 53rd St to 54th St(North Side)- Install New Sidewalk	39	This project will provide approximately 407 linear feet of sidewalk, 84 linear feet of driveway, 491 linear feet of curb and gutter, two pedestrian ramps, and relocate one fire hydrant.	TEO Unfunded	Encanto Neighborhoods, Southeastern	4			261000		CDBG	Conflicts: Substandard Street, Drainage, No C&G, Utility Poles IMCAT Conflicts as of	0	309225	Pornan, Donald	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
706	Groveland Dr from 53rd St to 54th St(South Side)- Install New Sidewalk	39	This project will install PCC sidewalk on the South Side of Groveland Drive.	TEO Unfunded	Encanto Neighborhoods, Southeastern	4					CDBG	Conflicts: Substandard Street, Drainage, No C&G, Utility Poles	0	309224	Pornan, Donald	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
1154	Iona Dr from Kenwood St to Brooklyn Ave (Both Sides)- Install New Sidewalk	39	This location is missing sidewalk on both sides of Iona Drive.	TEO Unfunded	Encanto Neighborhoods, Southeastern	4					CDBG	Conflicts: Fire Hydrants, Landscaping	0	317012	Pornan, Donald	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
2776	47th St from Logan Ave to Division St (West Side)- Install New Sidewalk	39	This project will install PCC sidewalk on the west side of 47th St within the specified limits.	TEO Unfunded	Encanto Neighborhoods, Southeastern	4					CDBG		0			Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
308	60th St from Old Memory Lane to Broadway St - Widen to 2-lane collector	40	Widen to 2-lane collector (both sides)	TEO Unfunded	Encanto Neighborhoods, Southeastern	4		SESD-T17			Other	Road Widening PFFP SESD-T17 Project originally for east side only - estimated as $700,000 on 2/5/09. West side improvements added per CPC request. Cost estimate needs updating to include west side. Conflicts:ROW encroachment, Utility	No	306249	Tawfiq, Kharman	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
253	Akins Ave from Iona Dr to 69th St - Widen to install CG&S	40	3,120 linear feet of CG&S	No longer meets warrants	Southeastern San Diego, Southeastern	8					Other		***This location has sidewalk***	0	313015	Pornan, Donald	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
315	Fergus St from Brooklyn St to Akins St(East Side)- Install New Sidewalk	40	This project will provide approximately 611 linear feet of sidewalk, 242 linear feet of driveway, two pedestrian ramps, relocate one fire hydrant and one traffic sign.	TEO Unfunded	Encanto Neighborhoods, Southeastern	4			203000	Other	CDBG	Conflicts: ROW encroachment, Utility Poles	0	306243	Tawfiq, Kharman	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
333	West Street from south of Imerial Ave to End of West St (East Side) - Install New Sidewalk	40	This project will provide approximately 513 linear feet of sidewalk, 141 linear feet of driveways, 36 linear feet of curb and gutter, replace one street sign, and six mail boxes.	TEO Unfunded	Southeastern San Diego, Southeastern	4			104000	Other	CDBG	Conflicts: ROW encroachment, utility poles IMCAT conflicts as of 10/8/12: Sewer &	0	306240	Tawfiq, Kharman	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
694	Benson Ave from Pagel Pl to Aviation Dr (South Side) - Install New Sidewalk	40	This project will install new PCC sidewalk on the south side of Benson Ave.	TEO Unfunded	Encanto Neighborhoods, Southeastern	4			400000		CDBG	Conflicts: Trees, Utility Poles, Drainage, No C&G, Possible Property Aquisition Required, Mailboxes,	0	309084	Pornan, Donald	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
1223	Broadway from Scimitar Dr to 65th St (North Side)- Install New Sidewalk	40	This project will install CG&S on the North Side of Broadway from approx. 40' West of Scimitar Dr to 65th St.	TEO Unfunded	Encanto Neighborhoods, Southeastern	4					CDBG;#Safe Route to School	Conflicts: Utility Pole, Tree, Mailbox, Landscaping, Slope IMCAT Conflicts as of 12/28/12: Overlay	0	320593	Pornan, Donald	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List

1239	Euclid Frontage Rd from Trinidad Way to Manzaranres Way (East Side)- Install New Sidewalk	40	This project will install PCC sidewalk on the East side of S Euclid Frontage Road.	TEO Unfunded	Encanto Neighborhoods, Southeastern	4					CDBG;#Safe Route to School	Conflicts: Landscaping, Utility Boxes, Fire Hydrant, Walls	0	321112	Pornan, Donald	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
3382	69th Street north of Wunderlin Avenue 120', west side, streetlight	40		TEO Unfunded	Encanto Neighborhoods,	4			15000				0	TR327235		Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
3383	69th Street north of Brooklyn Avenue 265', est side, streetlight	40		TEO Unfunded	Encanto Neighborhoods,	4			2000				0	TR327235		Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
3384	69th Street north of Brooklyn Avenue 105', west side, streetlight	40		TEO Unfunded	Encanto Neighborhoods,	4							Yes	TR327235		Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
3727	Central Avenue south of Monroe Avenue 175', east side-streetlight	40	Priority 3a	TEO Unfunded	Encanto Neighborhoods,	9			8000		CDBG		0	TR316281	Semaan, Jerry	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
3808	Julian Avenue east of Dewey Street 295', north side streetlight	40		TEO Unfunded	Southeastern San Diego, Southeastern	8			15000				0	TR 331,383	Hughes, Duncan	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
3809	Julian Avenue east of Dewey Street 160', south side streetlight	40		TEO Unfunded	Southeastern San Diego, Southeastern	8			15000				0	TR 331.383	Hughes, Duncan	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
3810	Julian Avenue west of Evans Steet (S) 155', south side streetlight	40		TEO Unfunded	Southeastern San Diego, Southeastern	8			15000				0	TR 331,383	Hughes, Duncan	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
3927	Boston Avenue east of S 43th Street 170', north side street light	40		TEO Funded	Southeastern San Diego, Southeastern	9			8000		CDBG	B-14107	Yes	TR332941	Avila-Zepeda , Felipe R	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
3928	Boston Avenue east of S 44th Street 90', south side street light	40		TEO Funded	Southeastern San Diego, Southeastern	9			2000		CDBG	B-14107	Yes	TR332938	Avila-Zepeda , Felipe R	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
4020	S Evans Street south of Julian Avenue 180', west side, at alley	40		TEO Unfunded	Southeastern San Diego, Southeastern	8			2000		CDBG		0	TR333309	Semaan, Jerry	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
4031	60th Street north of Kenwood Street 110', west side	40		TEO Unfunded	Encanto Neighborhoods,	4			2000		CDBG		0	TR333433	Semaan, Jerry	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
4110	Merlin Drive south of Market Street 130', east side	40		TEO Unfunded	Encanto Neighborhoods,	4			2000		Smart Growth;#CDBG			TR334870	Semaan, Jerry	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
4111	Merlin Drive north of Market Street 110', west side	40		TEO Unfunded	Encanto Neighborhoods,	4			2000		Smart Growth;#CDBG			TR334870		Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
4112	Merlin Drive north of Market Street 260', west side	40		TEO Unfunded	Encanto Neighborhoods,	4			2000		Smart Growth;#CDBG			TR334870	Semaan, Jerry	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
4113	Merlin Drive south of Brooklyn Avenue 565', west side	40		TEO Unfunded	Encanto Neighborhoods,	4			2000		Smart Growth;#CDBG			TR334870	Semaan, Jerry	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
4114	Merlin Drive south of Brooklyn Avenue 240', west side	40		TEO Unfunded	Encanto Neighborhoods,	4			2000		Smart Growth;#CDBG			TR334870	Semaan, Jerry	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
2452	40th St and Alpha St Pop-Outs	40	This project will provide approximately 3886 square feet of pop out, 324 feet of curb and gutter, 192 linear feet of RCP for storm drain, three clean outs, four storm drain inlets, and eight pedestrian ramps.	PITS	Southeastern San Diego, Southeastern	8			430000				0		Pornan, Donald	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
248	43rd St from Imperial Ave to Logan Ave - Widen to 4-lane collector	41	This project provides for the construction of 43rd Street to a four-lane collector. This project is recommended for deletion. See comments.	TEO Unfunded	Southeastern San Diego, Southeastern	4;#8		SESD-T16	7400000	Other			No		Pornan, Donald	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
552	Valencia Pkwy from Imperial Ave to Market St - Widen to 4-lane major	41	This project provides for the extension of Valencia Parkway as a four-lane major street.	TEO Unfunded	Southeastern San Diego, Southeastern	4;#8		SESD-T13	5500000				No		Pornan, Donald	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
1235	San Alberto Wy from Santa Rosalia to Trinidad Wy (Both Sides)- Install New Sidewalk	41	This project will provide approximately 2015 LF of sidewalk within the project limits. It will require clearing and grubbing, inlet removal, sign relocation, tree removal, fence relocation, meter box adjustments, and fire hydrant relocations. It will include new CG&S, AC pavement, driveway aprons, curb ramps, and Type B inlets with 18" storm pipe.	TEO Unfunded	Encanto Neighborhoods, Southeastern	4			285000		CDBG	Conflicts: Drain Inlet on Corner, ROW encroachment (Trees, Landscaping, fences, bushes, walls), Utility Poles, Driveways IMCAT conflicts as of 10/8/12: FY10 Overlay Group 3 Start:	0	320991	Pornan, Donald	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
1236	Agua Vista Wy from Trinidad Wy to Northern Terminus (Both Sides)- Install New Sidewalk	41	This project will provide approximately 1700 LF of Sidewalk within the project limits. It will require excavation, clearing & grubbing, sign relocation, meter box adjustments, and fire hyrant relocation. It will include new PCC sidewalk, driveway aprons, and curb ramps.	TEO Unfunded	Encanto Neighborhoods, Southeastern	4			192000		CDBG	Conflicts: Utility Poles, ROW encroachment (Landscaping, Bushes, Fences), IMCAT conflicts as of 10/8/12: FY10 Overlay	0	321052	Pornan, Donald	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
1237	Santa Rosalia Dr from Manzanares Wy to Southern Terminus (Both Sides)- Install New Sidewalk	41	This project will install PCC sidewalk on both side of Santa Rosalia Dr.	TEO Unfunded	Encanto Neighborhoods, Southeastern	4					CDBG	Conflicts: ROW encroachment (Landscaping, Walls, Bushes), Utility Poles, Drainage Inlet	0	320992	Pornan, Donald	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
1238	Trinidad Wy from Santa Maria Terr to Euclid Ave (Both Sides)- Install New Sidewalk	41	This project will install PCC sidewalk on both side of Trinidad Way.	TEO Unfunded	Encanto Neighborhoods, Southeastern	4					CDBG;#Safe Route to School	Conflicts: Drainage, Utility Boxes/Poles, ROW encroachment (Landscaping, Trees, Walls, Bushes, Fences),	0	321051	Pornan, Donald	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
2524	S. Boundary St from Ocean View Bl to T St (Both Sides) - Install New Sidewalk	41	This project will install PCC sidewalk on both sides of South Boundary St	TEO Unfunded	Southeastern San Diego, Southeastern	9			55000			Conflicts: Phone, Cox, SDGE, Water, Large Trees, Shrubs IMCAT Conflicts as of 11/21/12: Water	0	326984		Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List

4108	56th Street from Glen Road (south) to northern cul-de-sac end - Install new sidewalk (west side)	41	This project installs new sidewalk, curb and gutter along west side of 56th Street. The project has several meter boxes, clean-outs and existing vaults that will need to be adjusted to grade. Many conflicts with transformer boxes, trees, tree roots, stairs, decorative paving, masonary blocks, and signs also exist. Will require minor earthwork.	TEO Unfunded	Encanto Neighborhoods, Southeastern	4								333726	Turner, Scott	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
254	Klauber Ave from Bittern St to 69th St - Widen to 2-lane collector	42	4000' Widen CG&S, Rwall, Drainage Major Road Proj	TEO Unfunded	Southeastern San Diego, Southeastern	8				Other		Conflicts: Substandard Road, Slopes, ROW Encroachments/Aquisition, Utility Poles, Mailboxes, Drainage, No C&G, Landscaping,	No	313021	Pornan, Donald	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
110	53rd St from Imperial Ave to Groveland St(Both Sides)- Install New Sidewalk	42	This project will provide approximately 400 linear feet of sidewalk, one pedestrian ramp, relocate three signs and two fire hydrants.	TEO Unfunded	Encanto Neighborhoods, Southeastern	4			72000	Other	CDBG	Conflicts: Utility Poles/Boxes IMCAT conflicts as of	0	323284	Tawfiq, Kharman	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
383	La Paz Dr from Euclid Ave to San Bernardo(North Side)- Install New Sidewalk	42	This project will provide approximately 1445 linear feet of sidewalk, 339 linear feet of driveways, four pedestrian ramps, and relocate six signs on the north side of the street.	TEO Funded	Encanto Neighborhoods, Southeastern	4	B-13085		228000	Other	CDBG		0	323283	Nascimento, Claudio	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
483	Solola Ave from Euclid Ave to Palin St(Both Sides)- Install New Sidewalk	42	This project will provide approximately 460 linear feet of sidewalk, 108 linear feet of driveway, seven pedestrian ramps, and 11 linear feet of retaining wall. It will include sidewalk and median modification at existing bus stop to comply with ADA standards.	TEO Unfunded	Encanto Neighborhoods, Southeastern	4			163000	Other	CDBG	Poles/Boxes IMCAT conflicts as of 10/8/12: None observed	0	323294	Nascimento, Claudio	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
268	Madera St from 66th St to 69th St - Widen for CG&S	43	CG&S 3200'	TEO Unfunded	Encanto Neighborhoods, Southeastern	4				Other		Conflicts: SLopes, Landscaping Utility Poles, Mailboxes, Drainage, Missing	0	313022	Pornan, Donald	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
2782	56th St from North of Roswell St to South of Roswell St (west Side)- Install New Sidewalk	43	This project will install PCC sidewalk on the west side of 56th Street within the limits.	TEO Unfunded	Encanto Neighborhoods,	4							0			Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
3596	Cielo Drive - Woodman St to 65th St - Install new sidewalk	43	Install new sidewalk, curb and gutter - south side of Cielo Dr from Woodman St to 61st St; north side of Cielo Dr from Woodman St to Pagel Pl. 7 curb ramps, driveway replacement and retaining wall	TEO Unfunded	Encanto Neighborhoods, Southeastern	4			525000			ADA project OS-13-02-0015	0	TR328222		Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
3854	51st Street from Hilltop Ave to approx. 340 ft. north (west side) - Install new sidewalk	43	This project will construct approx. 340 LF of sidewalk, a curb return and two ped ramps. Earthwork and a retaining wall are required. Also, removal of several cactus, bushes and a tree is necessary. Curb and gutter are in.	TEO Unfunded	Encanto Neighborhoods, Southeastern	4							No	333667	Turner, Scott	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
3909	Mariposa Street (Both sides) and Mariposa Place from Mariposa St to Shell Ave (North Side) - Install New Sidewalk	43	Mariposa St: Install curb, gutter, sidewalk and driveway entrances (both sides). Mariposa Place: Install curb, gutter, sidewalk and driveway entrances (north side only), may require power pole, blowoff/AV&AR, and fire hydrant relocation.	TEO Unfunded	Encanto Neighborhoods, Southeastern	4							0	331976	Turner, Scott	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
4072	Ocean View Blvd from Willie James Jones W to Willie James Jones E - Widening	43	This project will widen Ocean View Blvd from Willie James Jones W Ave to Willie James Jones E Ave and provide 265' of curb, gutter, and sidewalk.	TEO Unfunded	Encanto Neighborhoods, Southeastern	4						IMCAT Conflicts (4/7/2014): Water Main Replacement DESIGN: (9/6/2013 - 1/23/2014) CONST: (8/21/2014 - 7/21/2015)		334044		Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
794	Kelton Rd at Kelton Pl Electronic Speed Sign	43	This project will one Electronic V-Calm sign on Kelton Rd by Kelton Pl facing southbound traffic	TEO Funded	Encanto Neighborhoods, Southeastern	4			8000		TransNet	Funded by "Old Transnet" funding	Yes		Pornan, Donald	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
255	Cesar Chavez Pkwy from Commercial St to I-5 - Widen to 4-lane collector	44	This project will provide for the widening of Cesar Chavez Pkwy to a four-lane Collector.	TEO Unfunded	Southeastern San Diego, Southeastern	8		SESD-T20	1900000	Other			No		Pornan, Donald	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
261	Division St from Lorenz Ave to 61st St - Widen to 4-lane collector	44	This project will provide for the widening of Division Street to a modified four lane Collector.	TEO Unfunded	Southeastern San Diego, Southeastern	8		SESD-T19	1300000	Other			No		Pornan, Donald	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
269	Brooklyn Ave from 65th St to 66th St - Improve road	44	Fully improve to 40' c/c, Rwalls, Grade adjustment	TEO Unfunded	Southeastern San Diego, Southeastern	8				Other		TR request submitted	No	311608	Pornan, Donald	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
2777	63rd St from Broadway to Imperial Ave (Both Sides)- Install New Sidewalk	44	This project will provide approximately 2320 LF of sidewalk within the project limits. It will require clearing and grubbing, sign relocation, meter box adjustment, and fire hydrant relocation. It will new PCC sidewalk. driveway aprons, curb ramps, and 125 LF of 3' retaining walls.	TEO Funded	Encanto Neighborhoods, Southeastern	4	B1403 9		307000			Project was sent to Street Division for review for construction.	0			Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
4032	26th St & Market St New Traffic Signal	45	Install new traffic signal	PITS	Southeastern San Diego, Southeastern	8			275000		TransNet	Design to be provided by Fehr & Peers.	0			Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
271	69th St from Madera St to Mallard St - Widen for CG&S	45	CG&S, Pavement, Drainage, Road widening	TEO Unfunded	Encanto Neighborhoods, Southeastern	4				Other		CONFLICTS: Utility poles, Trees, bushes, fence	0	313016	Pornan, Donald	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List

2762	Madrone Ave from 63rd St to Shaules Ave (Both Sides)- Install New Sidewalk	45	This project will install sidewalk on both sides of Madrone Ave.	TEO Unfunded	Encanto Neighborhoods, Southeastern	4						Conflicts: Slopes both sides, nonstandard width roadway, guardrails, utility poles, water valves, drainage issues, no c&g, fire hydrants, ROW encroachments:	0			Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
2811	Olvera Ave from Gwen St to Santa Isabel Dr (South Side) Install New Sidewalk	45	This project will install PCC sidewalk on the south sides of Olver Ave within the specified limits. Conflicts include fire hydrants and a small masonary wall. Will also require relocation of an existing driveway entrance at curb return. Some adjustments to grade for existing meter boxes. Some earthwork also needed. Curb and gutter in.	TEO Unfunded	Encanto Neighborhoods, Southeastern	4						IMCAT Conflicts as of 2/20/14: Street segment SS-020537, Project ID FY10-S3 Slurry moratorium Start 3/6/2012 End 3/6/2015	No		Turner, Scott	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
2812	Olvera Ave from San Onofre Ter. to Las Flores (South Side)- Install New Sidewalk	45	This project will install PCC sidewalk on the south side of Olvera Ave within the specified limits. Conflicts include fire hydrants, masonary walls, decorative rock, utility poles, vegitation and shrubs. Some adjustments to grade to clean outs and meter boxes will be needed. Curb is in, but in deteriorated condition and may need repair/replacement.	TEO Unfunded	Encanto Neighborhoods, Southeastern	4						IMCAT Conflicts as of 2/20/14: Street segment SS-020533, project ID FY10-S3 Slurry Overlay Moratorium start 3/6/2012 end 3/6/2015	No	333730	Turner, Scott	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
3956	Pitta St from Market St to Kenwood St (Both Sides) - Install New Sidewalk	45	This project will provide curb/gutter and sidewalk on both sides of Pitta Street north of Market Street.	TEO Unfunded	Encanto Neighborhoods, Southeastern	4						ROW width of street is 40 feet with curb to curb of 25 feet. IMCAT Conflicts: Pipeline Rehabilitation Design: 1/2014 to 4/2014 Construction: 8/2014	0	332534		Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
2823	Egret Street north of Weaver Street 300', east side streetlight	45	Priority 2b	TEO Funded	Encanto Neighborhoods,	4			2000				Yes	TR246076		Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
3001	31st St @ Imperial Ave New Traffic Signal	46	Install a new traffic signal	PITS	Southeastern San	8			275000				0	306689	Hughes,	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
2779	Scimitar Dr from Broadway to Kluaber Ave (Both Sides)- Install New Sidewalk	46	This project will install PCC sidewalk on both sides of Scimitar Dr, also to include road widening.	TEO Unfunded	Encanto Neighborhoods, Southeastern	4							0			Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
2453	40th St at National Ave	46		PITS	Southeastern San	4			502000				0		Pornan,	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
1230	41st St @ National Ave New Traffic Signal	47	Install a new traffic signal	PITS	Southeastern San	4;#8			275000				0	318737	Pornan,	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
2809	Eider St from Scimitar Dr to Klauber Ave (Both Sides)- Install New Sidewalk	47	This project will install sidewalk,curb and gutter on both sides of Eider St within the specified limits. Drainage will become an issue. Extensive earthwork, shoring and retaining walls necessary for project. Right of Way acquisition may be necessary due to limited street widths and room for sidewalk. Numerous conflicts with trees, slopes, utilities, poles, walls. Street also in poor condition and needs overlay.	TEO Unfunded	Encanto Neighborhoods, Southeastern	4						IMCAT conflicts as of 6/3/14: No conflicts	No			Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
2810	Wren St from Scimitar Dr to Klauber Ave (Both Sides)- Install New Sidewalk	48	This project will install PCC sidewalk and curb returns on Wren St within the specified limits. Will require earthwork and retaining walls. Conflicts include several utility poles, mail boxes, several medium to tall trees, shrubs, and ground vegitation. Curb and gutter are mostly in.	TEO Unfunded	Encanto Neighborhoods, Southeastern	4						IMCAT conflicts as of 6/3/14: None	No	333986	Turner, Scott	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
3853	Elwood Ave from Lenox Dr to Geneva Ave (West Side) - Install new sidewalk	48	This project will provide sidewalk and install/upgrade curb return ped ramps. Will require utility pole relocation, meter box adjustment to grade and minor vegitation removal. One masonary wall conflicts w/ proposed 4' wide path of travel.	TEO Unfunded	Encanto Neighborhoods, Southeastern	4							No	333668	Turner, Scott	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
770	31st St @ National Ave New Traffic Signal	49	Install a new traffic signal	TEO Unfunded	Southeastern San Diego, Southeastern	8			275000				0	308,848	Nascimento, Claudio	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
1316	31st St @ Ocean View Bl New Traffic Signal	49	Install a new traffic signal.	PITS	Southeastern San	4			275000				0	321035	Pornan,	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
543	S 38th St at Alpha St- Pop-Outs(4)	49	This project will provide approximately 2980 square feet of pop out, 249 feet of curb and gutter, four pedestrian ramps, relocate one fire hydrant, one manhole, and two storm drain inlets. Assume: grades flat, subsurface drainage proposed.	TEO Unfunded	Southeastern San Diego, Southeastern	8			294000		CDBG;#Safe Route to School	FY 14: $75,000 Prelim Fy 15: $100,000 Design FY 16: $119,000 Construction	0	308053	Nascimento, Claudio	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
440	Market St from Euclid Ave to 54th St. - Widening	50	This project provides for the widening of Market St to a four lane major street.	TEO Unfunded	Encanto Neighborhoods,	4			1300000	Other			No		Pornan, Donald	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
468	Creston Dr from Selma Pl to Roswell St(Both Sides)- Install New Sidewalk	50	This project will provide approximately 544 linear feet of PCC sidewalk, 156 linear feet of driveway, one pedestrian ramp, and relocate two signs.	TEO Unfunded	Encanto Neighborhoods, Southeastern	4			114000			Conflicts: Fire Hydrant, Landscaping, Utility Pole, Trees IMCAT Conflicts as of 12/28/12: Pipeline	Yes	306231, 333725	Nascimento, Claudio	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
2778	65th St from Imperial Ave to Madrone (Both Sides)- Install New Sidewalk	50	This project will install PCC sidewalk on 65th St within the specified limits. It will also include road widening.	TEO Unfunded	Encanto Neighborhoods, Southeastern	4					CDBG		0			Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List

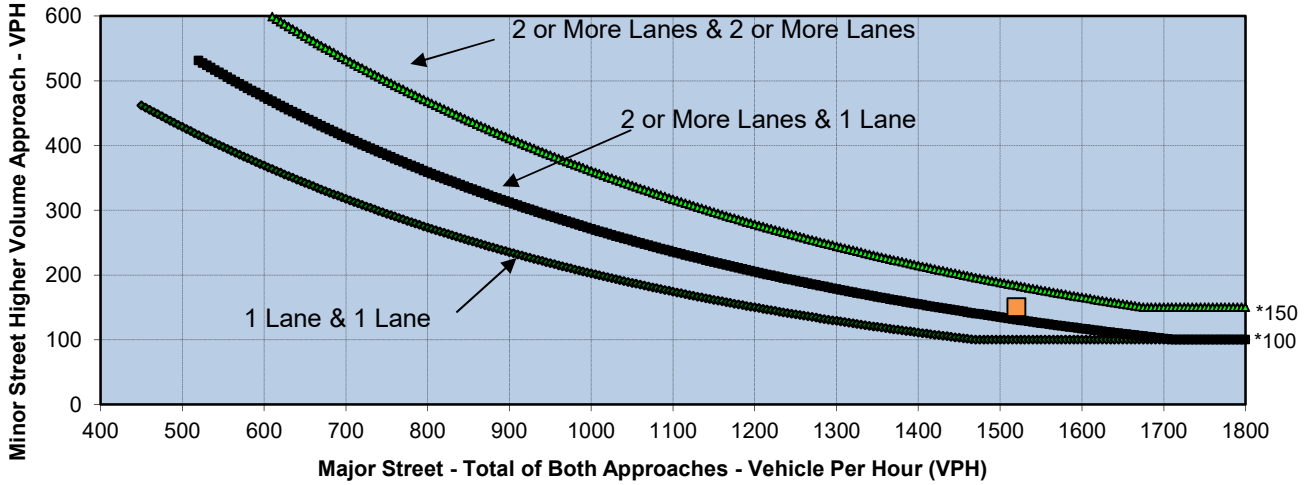
3851	Lenox Drive from Winston Dr to Beverly St (Both Sides) - Install new sidewalk	50	This project will install sidewalk and ped ramps, earthwork and retaining walls required. Conflicts include utility poles, mail boxes, masonary walls, fire hydrants, a large tree stump, shrubs and ground vegitation, and decorative paving/rocks. Several meter boxes require adjustment to grade. Curb and gutter are in.	TEO Unfunded	Encanto Neighborhoods, Southeastern	4						IMCAT conflits as of 6/3/14: Pipeline Rehab - Phase G-2 (laterals) start 1/22/2015 end 8/24/2016	No	333727	Turner, Scott	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
3852	Winston Drive from Lenox Dr to Hilltop Dr (Both Sides) - Install new sidewalk	50	This project will provide sidewalk on both the east and west side of Winston Drive. Will require earthwork and retaining walls. Conflicts include large palm trees, smaller trees, shrubs and ground vegitation. Will require adjustment to grade of meter boxes. Curb and gutter are in, but are deteriorated and damaged. May require replacement/repair.	TEO Unfunded	Encanto Neighborhoods, Southeastern	4						IMCAT conflicts as of 2/21/14: Street segment SS-029003, project ID FY10-O2 Asphalt overlay moratorium Stert 9/20/2011 end 9/20/2016	No	333723	Turner, Scott	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
3073	Raven Street south of Hilltop Drive 137', east side streetlight	50		TEO Unfunded	Southeastern San Diego, Southeastern	9			8000				Yes	TR256791		Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
3078	Southlook Avenue south of Gilmore Street 165', west side streetlight	50		TEO Unfunded	Southeastern San Diego, Southeastern	9			8000				Yes	TR258639A		Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
3079	Southlook Avenue south of Imperial Avenue 110', west side streetlight	50		TEO Unfunded	Southeastern San Diego, Southeastern	9			8000				Yes	TR258639A		Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
3081	Ada Street north of Franklin Avenue 155', west side streetlight	50		TEO Unfunded	Southeastern San Diego, Southeastern	9			8000				Yes	TR258944		Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
3082	Ada Street south of Imperial Avenue 150', west side streetlight	50		TEO Unfunded	Southeastern San Diego, Southeastern	9			8000				Yes	TR258944		Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
3083	Ada Street south of Imperial Avenue 346', west side streetlight	50		TEO Unfunded	Southeastern San Diego, Southeastern	9			8000				Yes	TR258944		Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
3087	Bancroft Street south of Greely Avenue 100', west side streetlight	50		TEO Unfunded	Southeastern San Diego, Southeastern	8			8000				Yes	TR260576		Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
3089	Solola Avenue west of Palin Street 132', south side streetlight	50		TEO Unfunded	Encanto Neighborhoods,	4			2000				Yes	TR261798A		Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
3097	K Street east of 26th Street 312', south side streetlight	50		TEO Unfunded	Southeastern San Diego, Southeastern	8			8000				Yes	TR264211		Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
3177	39TH (S) Street north of Superior Street at alley 120', west side streetlight	50		TEO Unfunded	Southeastern San Diego, Southeastern	9			2000				Yes	TR314106		Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
3178	39TH (S) Street south of Imperial Avenue at alley 120', west side streetlight	50		TEO Unfunded	Southeastern San Diego, Southeastern	9			2000				Yes	TR314106		Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
3209	Acacia Street west of South 35th Street 140', north side streetlight	50		TEO Unfunded	Southeastern San Diego, Southeastern	9			8000				Yes	TR320603		Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
3210	Boston Avenue east of South 35th Street 175', north side streetlight	50		TEO Unfunded	Southeastern San Diego, Southeastern	9			8000				Yes	TR320603		Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
3220	35th Street (South) south of Martin Avenue 275', west side streetlight	50		TEO Unfunded	Southeastern San Diego, Southeastern	9			2000				Yes	TR322078		Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
3228	33rd Street north of Imperial Avenue 130', west side at alley streetlight	50	Priority 2a	TEO Funded	Southeastern San Diego, Southeastern	8			2000				Yes	TR324036		Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
3259	Bonita Drive north of Cervantes Avenue 180', west side streetlight	50		TEO Unfunded	Encanto Neighborhoods,	4			8000				Yes	TR326417		Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
3269	42nd Street south of Broadway 145' at alley, southwest corner streetlight	50		TEO Unfunded	Southeastern San Diego, Southeastern	9			2000				Yes	TR326746		Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
3274	Superba Street east of 38th Street 160', south side streetlight	50		TEO Unfunded	Southeastern San Diego, Southeastern	9			8000				Yes	TR219413		Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
3278	Valle Avenue west of South 35th Street 220', north side streetlight	50		TEO Unfunded	Southeastern San Diego, Southeastern	9			8000				Yes	TR228103		Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
3284	Ada Street south of Imperial Avenue 630', west side streetlight	50		TEO Unfunded	Southeastern San Diego, Southeastern	9			8000				Yes	TR229556		Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
3287	Jewell Drive south of T Street 164', east side streetlight	50		TEO Unfunded	Southeastern San Diego, Southeastern	9			8000				Yes	TR231558		Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
3377	Franklin Avenue east of 40th Street 145', south side at alley streetlight	50		TEO Unfunded	Southeastern San Diego, Southeastern	9			5000				Yes	TR244871		Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
3688	Alta Vista Avenue east of Paradise Road 590', north side street lights	50		TEO Unfunded	Encanto Neighborhoods,	4			2000		CDBG		0	TR329548	Avila-Zepeda , Felipe R	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
3691	NWC of S 47th Street and Franklin Avenue street lights	50		TEO Unfunded	Encanto Neighborhoods,	4			15000		CDBG		0	TR330817	Avila-Zepeda , Felipe R	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
3692	NEC of S 47th Street and Franklin Avenue street lights	50		TEO Unfunded	Encanto Neighborhoods,	4			15000		CDBG		0	TR330817	Avila-Zepeda , Felipe R	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
3693	S 47th Street north of T street 175', east side street lights	50		TEO Unfunded	Encanto Neighborhoods,	4			15000		CDBG		0	TR330817	Avila-Zepeda , Felipe R	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
3694	S 47th Street south of T street 190', east side street lights	50		TEO Unfunded	Encanto Neighborhoods,	4			15000		CDBG		0	TR330817	Avila-Zepeda , Felipe R	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
3817	Dodson Street south of Market Street 135', west side streetlight	50	Priority 2a	TEO Funded	Southeastern San Diego, Southeastern	8			2000		Smart Growth	Smart Growth Area SD SE-3	Yes	TR 331,935	Hughes, Duncan	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
3874	Franklin Avenue west of S 30th Street 175', north side street light	50		TEO Unfunded	Southeastern San Diego, Southeastern	8			15000		CDBG		0	TR332395	Avila-Zepeda , Felipe R	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
3926	Boston Avenue east of S 38th Street 130', north side street light	50		TEO Unfunded	Southeastern San Diego, Southeastern	9			8000		CDBG		0	TR332926	Avila-Zepeda , Felipe R	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
3929	Boston Avenue west of S 38th Street 260', north side street light	50		TEO Funded	Southeastern San Diego, Southeastern	9			8000		CDBG	B-14107	Yes	TR332936	Avila-Zepeda , Felipe R	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
3930	Boston Avenue west of S 36th Street 106', north side street light	50		TEO Unfunded	Southeastern San Diego, Southeastern	9			15000		CDBG		0	TR332937	Avila-Zepeda , Felipe R	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
3931	Boston Avenue west of S 40th Street 165', north side street light	50		TEO Unfunded	Southeastern San Diego, Southeastern	9			15000		CDBG		0	TR332935	Avila-Zepeda , Felipe R	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
3954	Boston Avenue east of S 39th Street 150', north side street light	50		TEO Unfunded	Southeastern San Diego, Southeastern	9			15000		CDBG		0	TR332925	Avila-Zepeda , Felipe R	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
3957	33rd Street north of Imperial Avenue 135', west side, at alley	50	Priority 2a	TEO Funded	Southeastern San Diego, Southeastern	8			2000		CDBG	DUPLICATE - SEE GIS_ID 3228	Yes	TR332756	Semaan, Jerry	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List

3958	33rd Street north of L Street 150', west side, at alley	50	Priority 2a	TEO Funded	Southeastern San Diego, Southeastern	8			2000		CDBG		Yes	TR332756	Semaan, Jerry	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
4064	San Jacinto Dr south of Groveland Dr 182', west side	50		TEO Unfunded	Southeastern San Diego, Southeastern	4			2000			Install pole attachment between 264 & 274 San Jacinto				Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
4089	S 28th Street south of Imperial Avenue 160' at alley, west side	50	Priority 2a	TEO Funded	Southeastern San Diego, Southeastern	8			2000		Smart Growth;#CDBG	Duplicate: See TUNL ID 3020		TR334489	Semaan, Jerry	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
4090	S 29th Street south of Imperial Avenue 175' at alley, southwest corner	50	Priority 2a	TEO Funded	Southeastern San Diego, Southeastern	8			2000		Smart Growth;#CDBG			TR334489		Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
4124	S 33rd Street north of Webster Avenue 85, west side	50		TEO Unfunded	Southeastern San Diego, Southeastern	8			2000		CDBG			TR335463B	Semaan, Jerry	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
1179	SR-94 / Euclid Ave Interchange	51	Provides a PRS for improvements to the interchange.	TEO Unfunded	Encanto Neighborhoods,	4	S-11046		1000000		TransNet		No		Pornan, Donald	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
2780	Market St from Euclid Ave to Pita St (Both Sides)- Install New Sidewalk	51	This project will install PCC sidewalk on both sides of Maket St witin the limits, also to include road widening.	TEO Unfunded	Encanto Neighborhoods, Southeastern	4						IMCAT: FY-15 Object ID#7717 Strt: 11/15/2014 End:	0			Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
1216	Division St @ Valencia Pkwy New Traffic Signal	52	Install a new traffic signal	TEO Unfunded	Encanto	4			275000				0	315440	Pornan,	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
3850	Beverly St from Roswell St to Lenox Dr (Both Sides) - Install new sidewalk	52	This project will provide 3 curb returns, 16 driveways and sidewalk along both sides of Beverly. Many utility boxes need adjustment to grade. Curb and gutter are in.	TEO Unfunded	Encanto Neighborhoods, Southeastern	4			287000				No	333649	Turner, Scott	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
2841	Egret Street north of Weaver Street 800', north side at cul de sac streetlight	62	Priority 1e	TEO Funded	Encanto Neighborhoods,	4			8000			DUPLICATE LOCATION	Yes	TR246076		Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
3680	Radio Drive north of Market Street 170', west side street lights	62		TEO Unfunded	Encanto Neighborhoods,	4			2000		Smart Growth		0	TR330816	Avila-Zepeda , Felipe R	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
2824	Egret Street north of Weaver Street 300', east side streetlight	64		No longer meets warrants	Encanto Neighborhoods, Southeastern	4			2000			DUPLICATE: REFER TO GIS_ID 2823	Yes	TR246076		Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
2828	Kelton Road north of Kelton Place 250', west side streetlight	64	Priority 1d	TEO Funded	Encanto Neighborhoods,	4			15000		TransNet		Yes	TR239339		Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
2829	Kelton Road north of Kelton Place 500', west side streetlight	64	Priority 1d	TEO Funded	Encanto Neighborhoods,	4			15000		TransNet		Yes	TR239339		Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
2891	Market Street east of 45th Street 170', north side	66	FY15 budget $1.4M	TEO Funded	Encanto	4			15000			Priority 1c	Yes	TR258616		Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
2910	National Avenue east of S 32nd Street 155', south side streetlight	66	Priority 1c	TEO Funded	Southeastern San Diego, Southeastern	8			2000				Yes	TR322359		Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
2988	Market Street east of 45th Street 450', north side streetlight	66	FY15 budget $1.4M	TEO Funded	Encanto Neighborhoods,	4			15000			Priority 1c	Yes	TR258616		Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
2876	6308 63rd Street at Shaules Avenue, northeast corner streetlight	70	Priority 1a	TEO Funded	Encanto Neighborhoods,	4			2000		TransNet	B-14106 FY 2014	Yes	TR312615		Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
2885	Ginna Place at Logan Avenue, southeast corner streetlight	70	Priority 1a	TEO Funded	Encanto Neighborhoods,	4			2000		TransNet	Duplicate: See TUNL ID 3961	Yes	TR304278		Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
2941	Brooklyn Ave & Madera St streetlight	70	Priority 1a	TEO Funded	Encanto Neighborhoods,	4			2000		TransNet	B-14106 FY 2013	Yes	TR310491		Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
3682	Sicard Street southwest of S 28th Street 185', west side street light	70	Priority 2a	TEO Funded	Southeastern San Diego, Southeastern	8			2000			FY 2014	Yes	330,687	Hughes, Duncan	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
3925	S 44th Street and Boston Avenue southwest street light	70		TEO Funded	Southeastern San Diego, Southeastern	9			2000		CDBG	B-14107	Yes		Avila-Zepeda , Felipe R	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
3961	Ginna Place at Logan Avenue, south side street light	70	Priority 1a	TEO Funded	Encanto Neighborhoods,	4			2000		CDBG	B-14106 FY 2014	Yes	TR333000	Avila-Zepeda , Felipe R	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
3987	37th Street (S) and Logan Avenue, northeast corner	70	FY15 budget $1.4M	TEO Funded	Southeastern San Diego, Southeastern	9			8000		CDBG	Priority 1a	Yes	TR332842	Avila-Zepeda , Felipe R	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
3997	Clay Avenue at Sampson Street, at alley, northwest corner street ;ight	70	Priority 1a	TEO Funded	Southeastern San Diego, Southeastern	8			2000		CDBG;#TransNet		Yes	TR275743	Avila-Zepeda , Felipe R	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
3856	Hilltop Drive from Winston Dr to Roswell St (Both Sides) - Install new sidewalk		This project will provide sidewalk on both sides of Hilltop Drive. Project requires earthwork and retaining walls. Conflict includes very large, medium and small palm trees (will probably require removal) and utility poles. Several metar boxes will need to be adjusted to grade. Curb and gutter are in.	TEO Unfunded	Encanto Neighborhoods, Southeastern	4						IMCAT conflicts as of 2/21/14: PROJECT ID B11074 Sewer pipeline rehabilitation start6/11/2012 end 5/8/2014 Street segment SS-	No		Turner, Scott	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
3858	Pitta St from Market St to end of street [south] (both sides) - Install new sidewalk			TEO Unfunded	Encanto Neighborhoods,	4							0		Turner, Scott	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
3859	Castana Street from 47th St to Escuela St (both sides) - Install new sidewalk			TEO Unfunded	Encanto Neighborhoods,	4							0		Turner, Scott	Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
4085	San Jacinto from Groveland to Imperial (west side) - Sidewalk		This project will install approximately 640 LF of sidewalk within the project limits.	TEO Unfunded	Encanto Neighborhoods,	4			95000					335596		Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
3624	61st Street at Flipper Flashing Beacon		Installation of a flashing beacon at the school crosswalk	TEO Unfunded	Encanto Neighborhoods,	4					TransNet		0			Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List
3720	Market Street Electronic Speed Signs		Installation of two electronic speed signs on Market Street near 26th street	TEO Funded	Southeastern San Diego, Southeastern	8			16000		TransNet	Funded with "Old Transnet" funding	0			Item	forums/tsw/teo/PM/Lists/Transportation Unfunded Needs List

Appendix C
Signal Warrant Worksheets

Sheet No 1 of 2

Figure 4C-3
Warrant 3, Peak Hour



* Note: 150 VPH APPLIES AS THE LOWER THRESHOLD VOLUME FOR A MINOR STREET APPROACH WITH TWO OR MORE LANES AND 100 VPH APPLIES AS THE LOWER THRESHOLD VOLUME FOR A MINOR STREET APPROACHING WITH ONE LANE.

Source: *California Manual on Uniform Traffic Control Devices*, Caltrans, 2006

#8

Major Street	Midway Drive
Minor Street	Charles Lindbergh Parkway

Project	Midway & Old Town CPU
Scenario	3A
Peak Hour	AM

Turn Movement Volumes

	NB	SB	EB	WB
Left	0	150	0	120
Through	590	690	0	0
Right	90	0	0	30
Total	680	840	0	150

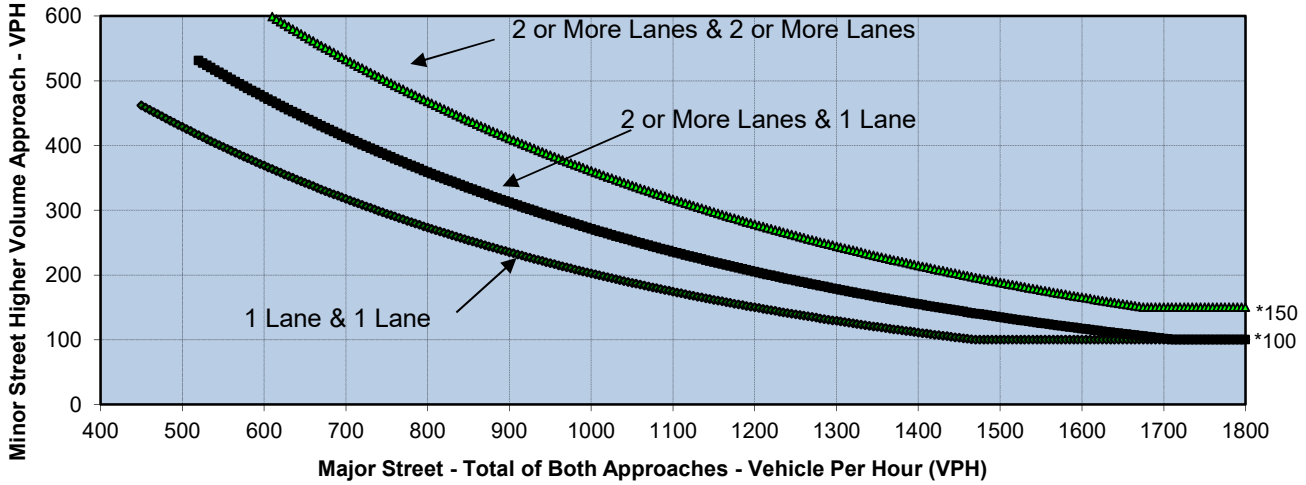
Major Street Direction

X	North/South
	East/West

	Major Street	Minor Street	Warrant Met
	Midway Drive	Charles Lindbergh Parkway	
Number of Approach Lanes	**2**	**1**	**YES**
Traffic Volume (VPH) *	**1,520**	**150**	

Sheet No 2 of 2

Figure 4C-3
Warrant 3, Peak Hour



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Source: *California Manual on Uniform Traffic Control Devices*, Caltrans, 2006

#8

Major Street	Midway Drive
Minor Street	Charles Lindbergh Parkway

Project	Midway & Old Town CPU
Scenario	3A
Peak Hour	PM

Turn Movement Volumes

	NB	SB	EB	WB
Left	0	400	0	120
Through	770	870	0	0
Right	120	0	0	300
Total	890	1,270	0	420

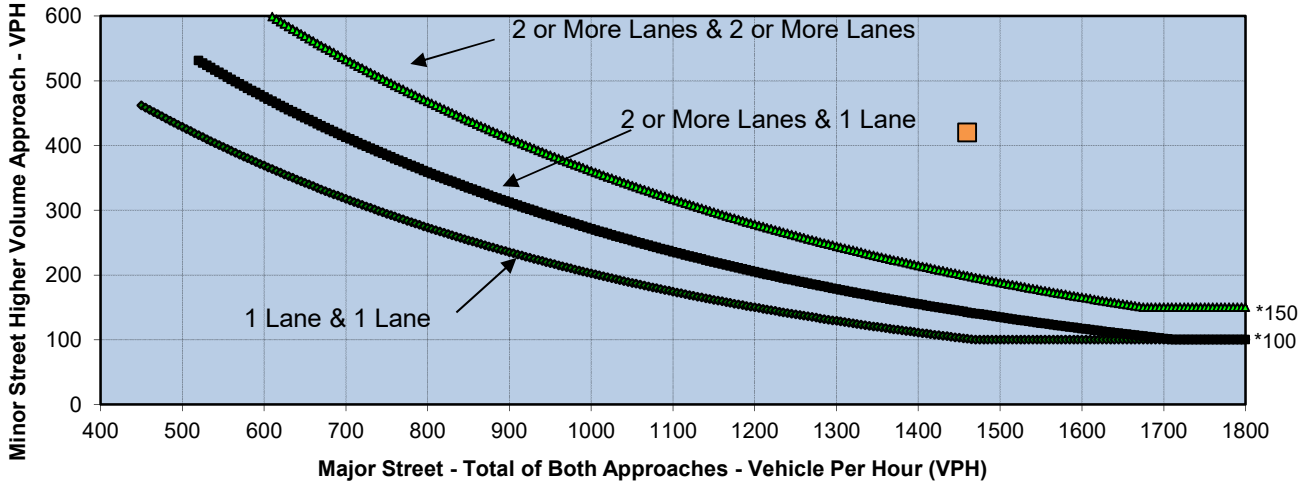
Major Street Direction

X	North/South
	East/West

	Major Street	Minor Street	Warrant Met
	Midway Drive	Charles Lindbergh Parkway	
Number of Approach Lanes	2	1	YES
Traffic Volume (VPH) *	2,160	420	

Sheet No 1 of 2

Figure 4C-3
Warrant 3, Peak Hour



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Source: *California Manual on Uniform Traffic Control Devices*, Caltrans, 2006

#12

Major Street	Sports Arean Boulevard
Minor Street	Kemper Street

Project	Midway & Old Town CPU
Scenario	3A
Peak Hour	AM

Turn Movement Volumes

	NB	SB	EB	WB
Left	200	120	80	160
Through	410	520	50	140
Right	100	110	110	120
Total	710	750	240	420

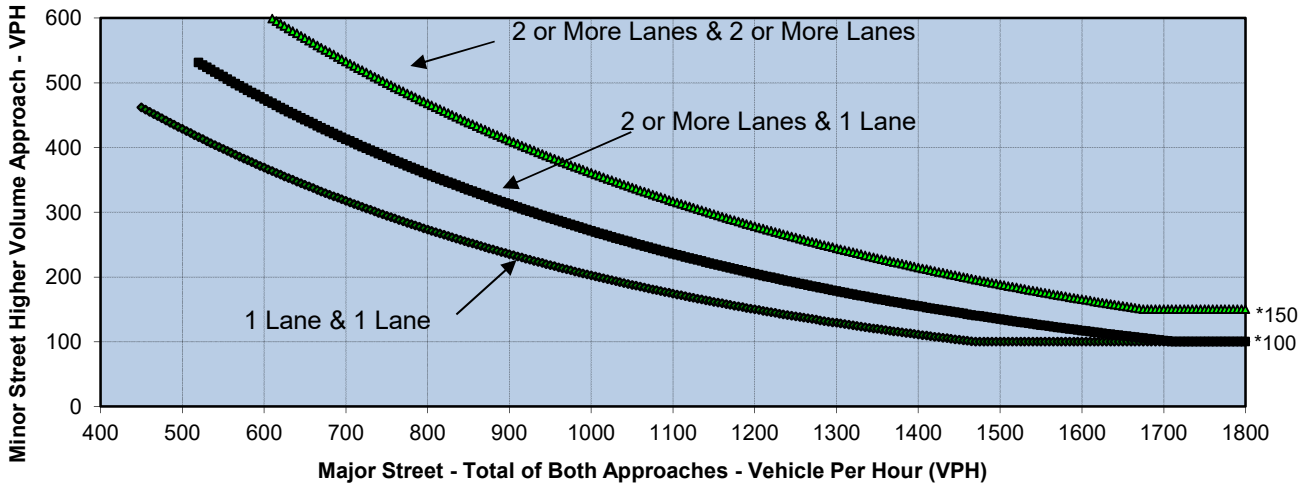
Major Street Direction

X	North/South
	East/West

	Major Street	Minor Street	Warrant Met
	Sports Arean Boulevard	Kemper Street	
Number of Approach Lanes	**3**	**1**	**YES**
Traffic Volume (VPH) *	**1,460**	**420**	

Sheet No 2 of 2

Figure 4C-3
Warrant 3, Peak Hour



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Source: *California Manual on Uniform Traffic Control Devices*, Caltrans, 2006

#12

Major Street	Sports Arean Boulevard
Minor Street	Kemper Street

Project	Midway & Old Town CPU
Scenario	3A
Peak Hour	PM

Turn Movement Volumes

	NB	SB	EB	WB
Left	240	200	70	120
Through	1,120	890	130	40
Right	120	80	150	130
Total	1,480	1,170	350	290

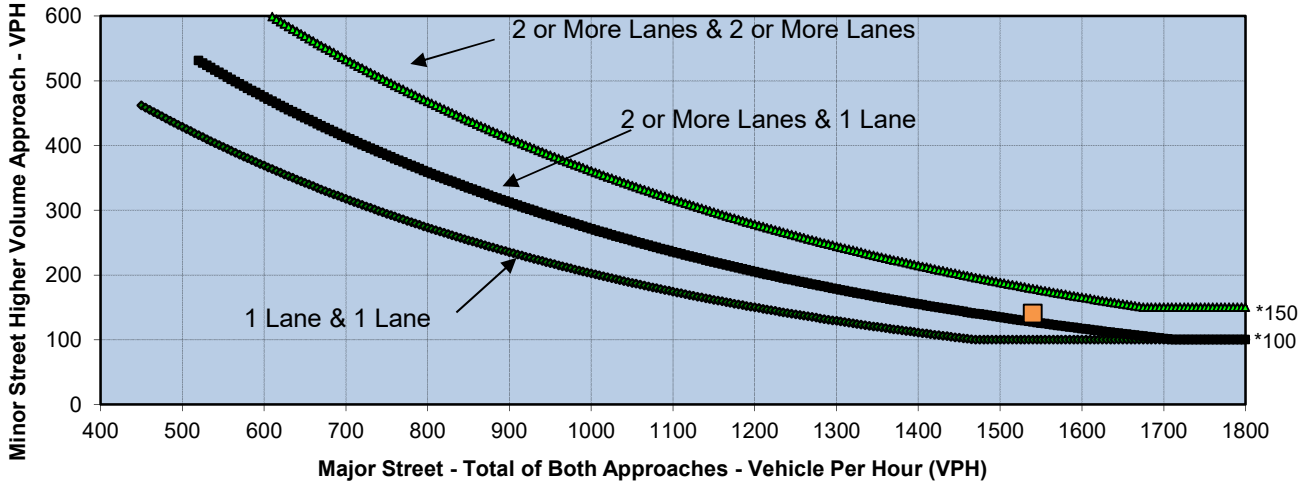
Major Street Direction

X	North/South
	East/West

	Major Street	Minor Street	Warrant Met
	Sports Arean Boulevard	Kemper Street	
Number of Approach Lanes	3	1	YES
Traffic Volume (VPH) *	2,650	350	

Sheet No 1 of 2

Figure 4C-3
Warrant 3, Peak Hour



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Source: *California Manual on Uniform Traffic Control Devices*, Caltrans, 2006

#13

Major Street	Sports Arean Boulevard
Minor Street	Frontier Street

Project	Midway & Old Town CPU
Scenario	3A
Peak Hour	AM

Turn Movement Volumes

	NB	SB	EB	WB
Left	30	90	40	70
Through	620	680	20	20
Right	40	80	20	50
Total	690	850	80	140

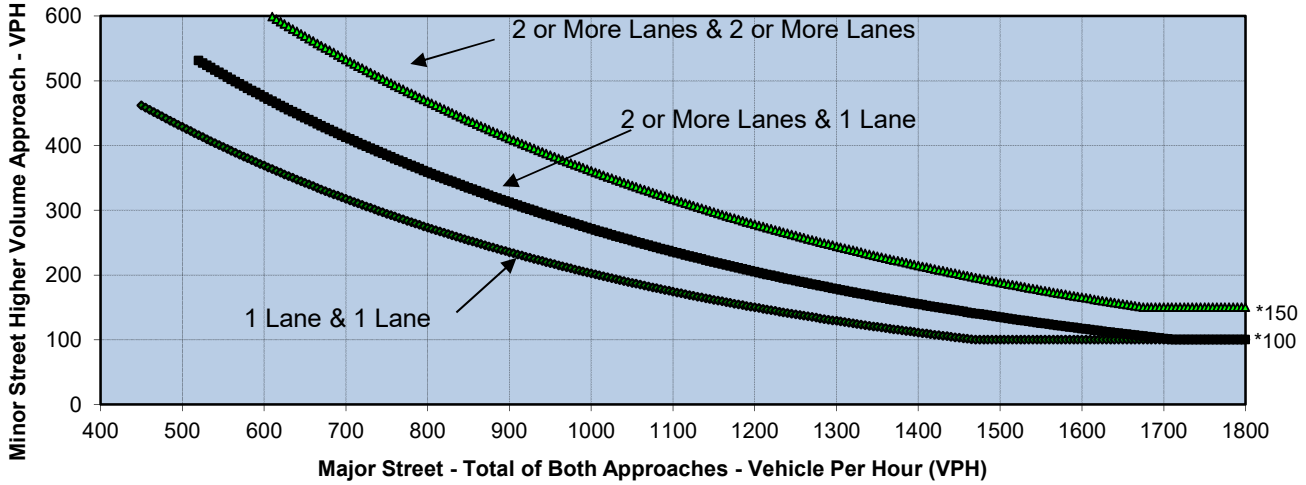
Major Street Direction

X	North/South
	East/West

	Major Street	Minor Street	Warrant Met
	Sports Arean Boulevard	Frontier Street	
Number of Approach Lanes	**3**	**1**	**YES**
Traffic Volume (VPH) *	**1,540**	**140**	

Sheet No 2 of 2

Figure 4C-3
Warrant 3, Peak Hour



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Source: *California Manual on Uniform Traffic Control Devices*, Caltrans, 2006

#13

Major Street	Sports Arean Boulevard
Minor Street	Frontier Street

Project	Midway & Old Town CPU
Scenario	3A
Peak Hour	PM

Turn Movement Volumes

	NB	SB	EB	WB
Left	50	120	60	150
Through	1,250	1,080	30	30
Right	70	80	70	140
Total	1,370	1,280	160	320

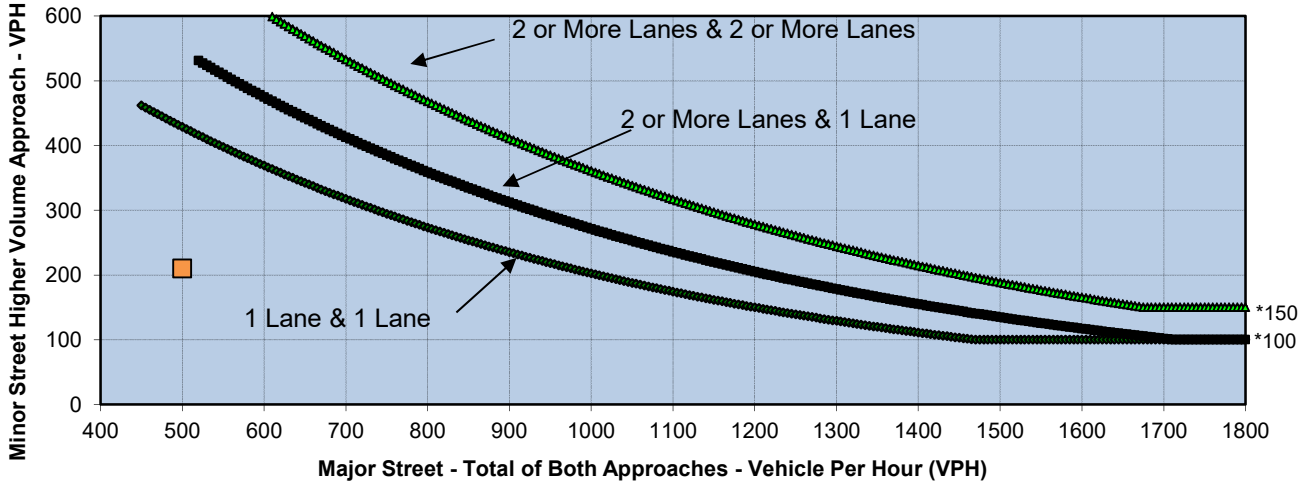
Major Street Direction

X	North/South
	East/West

	Major Street	Minor Street	Warrant Met
	Sports Arean Boulevard	Frontier Street	
Number of Approach Lanes	3	1	YES
Traffic Volume (VPH) *	2,650	320	

Sheet No 1 of 2

Figure 4C-3
Warrant 3, Peak Hour



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Source: *California Manual on Uniform Traffic Control Devices*, Caltrans, 2006

#16		Project	Midway & Old Town CPU
Major Street	Sports Arean Boulevard	Scenario	3A
Minor Street	Charles Lindbergh Parkway	Peak Hour	AM

Turn Movement Volumes

	NB	SB	EB	WB
Left	70	20	50	90
Through	50	30	100	80
Right	90	30	100	80
Total	210	80	250	250

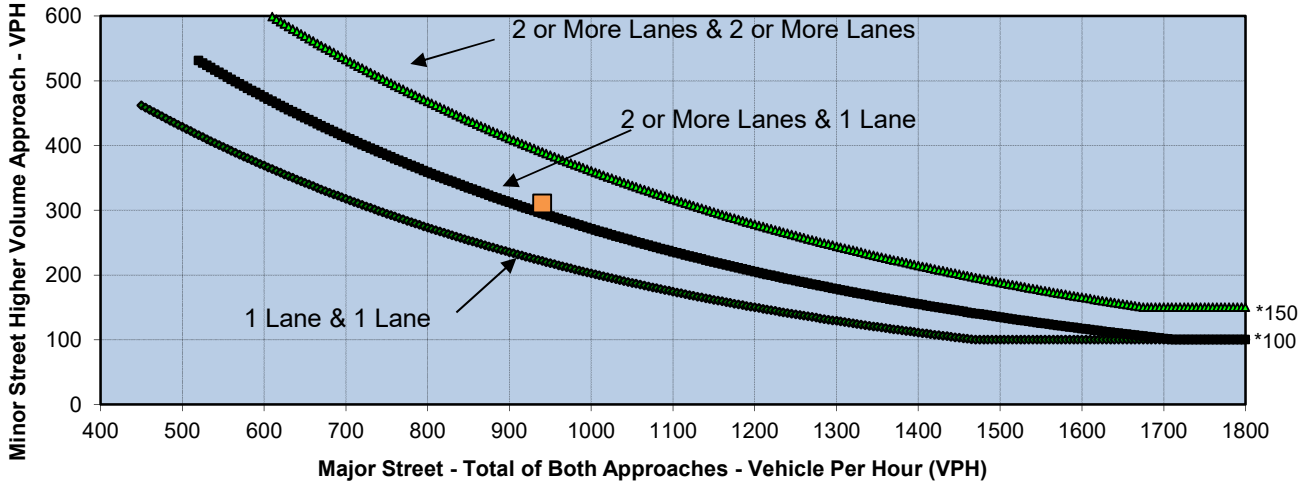
Major Street Direction

	North/South
X	East/West

	Major Street	Minor Street	Warrant Met
	Sports Arean Boulevard	Charles Lindbergh Parkway	
Number of Approach Lanes	**1**	**1**	**NO**
Traffic Volume (VPH) *	**500**	**210**	

Sheet No 2 of 2

Figure 4C-3
Warrant 3, Peak Hour



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Source: *California Manual on Uniform Traffic Control Devices*, Caltrans, 2006

#16

Major Street	Sports Arean Boulevard
Minor Street	Charles Lindbergh Parkway

Project	Midway & Old Town CPU
Scenario	3A
Peak Hour	PM

Turn Movement Volumes

	NB	SB	EB	WB
Left	70	90	100	120
Through	90	120	120	230
Right	120	100	300	70
Total	280	310	520	420

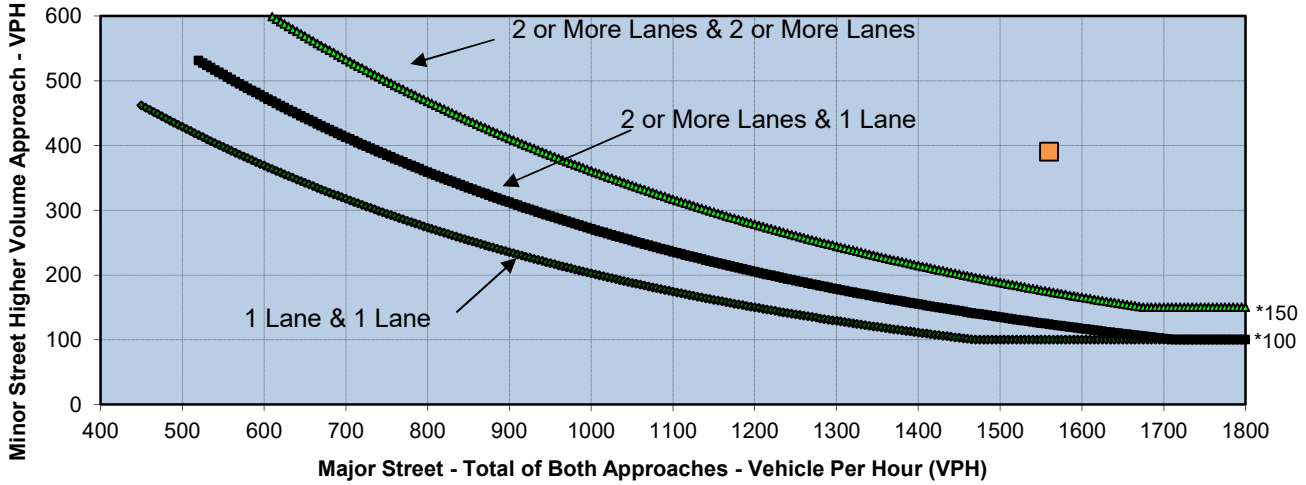
Major Street Direction

	North/South
X	East/West

	Major Street	Minor Street	Warrant Met
	Sports Arean Boulevard	Charles Lindbergh Parkway	
Number of Approach Lanes	1	1	YES
Traffic Volume (VPH) *	940	310	

Sheet No 1 of 2

Figure 4C-3
Warrant 3, Peak Hour



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Source: *California Manual on Uniform Traffic Control Devices*, Caltrans, 2006

#17

Major Street	Pacific Highway
Minor Street	Sports Arena Blvd

Project	Midway & Old Town CPU
Scenario	3A
Peak Hour	AM

Turn Movement Volumes

	NB	SB	EB	WB
Left	280	0	200	0
Through	610	600	0	0
Right	0	70	190	0
Total	890	670	390	0

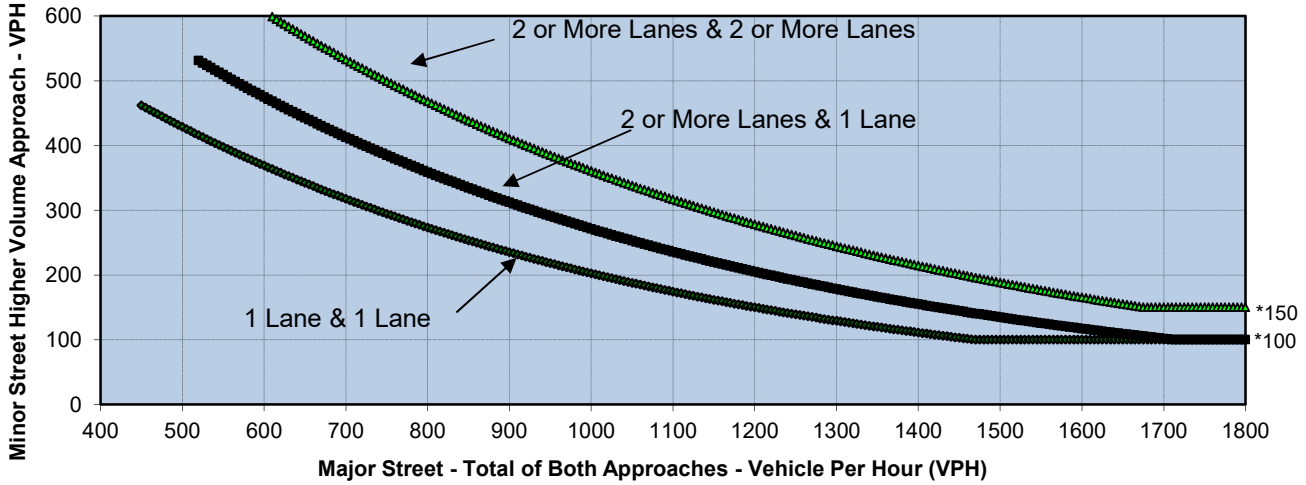
Major Street Direction

X	North/South
	East/West

	Major Street	Minor Street	Warrant Met
	Pacific Highway	Sports Arena Blvd	
Number of Approach Lanes	**3**	**1**	**YES**
Traffic Volume (VPH) *	**1,560**	**390**	

Sheet No 2 of 2

Figure 4C-3
Warrant 3, Peak Hour



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Source: *California Manual on Uniform Traffic Control Devices*, Caltrans, 2006

#17

Major Street	Pacific Highway	Project	Midway & Old Town CPU
Minor Street	Sports Arena Blvd	Scenario	3A
		Peak Hour	PM

Turn Movement Volumes

	NB	SB	EB	WB
Left	290	0	50	0
Through	1,310	850	0	0
Right	0	50	460	0
Total	1,600	900	510	0

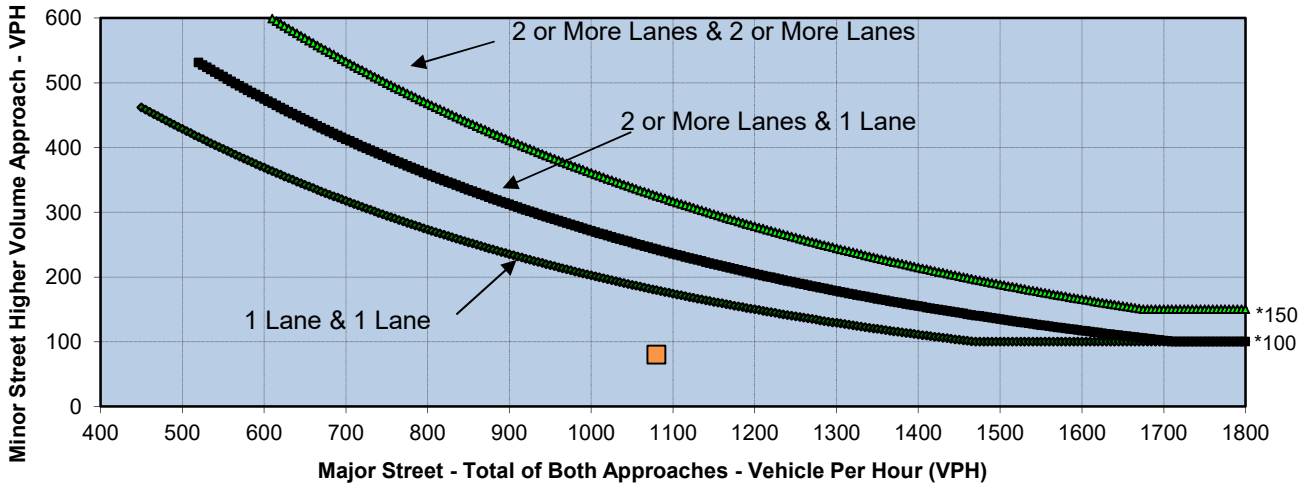
Major Street Direction

X	North/South
	East/West

	Major Street	Minor Street	Warrant Met
	Pacific Highway	Sports Arena Blvd	
Number of Approach Lanes	3	1	YES
Traffic Volume (VPH) *	2,500	510	

Sheet No 1 of 2

Figure 4C-3
Warrant 3, Peak Hour



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Source: *California Manual on Uniform Traffic Control Devices*, Caltrans, 2006

#18		Project	Midway & Old Town CPU
Major Street	Kurtz Street	Scenario	3A
Minor Street	Hancock Street	Peak Hour	AM

Turn Movement Volumes

	NB	SB	EB	WB
Left	0	0	30	460
Through	0	70	0	390
Right	0	10	100	100
Total	0	80	130	950

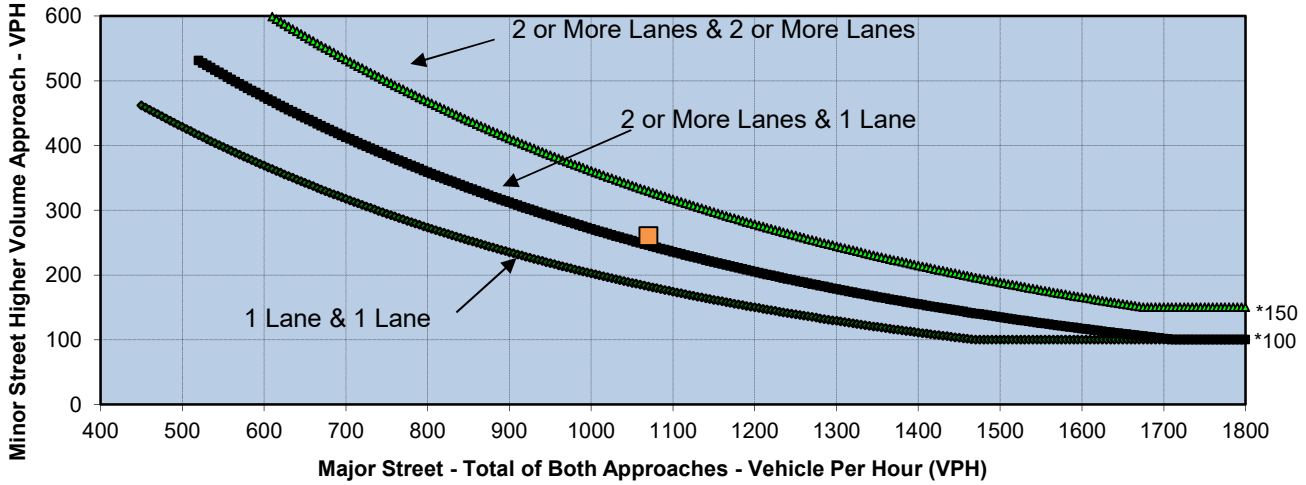
Major Street Direction

	North/South
X	East/West

	Major Street	Minor Street	Warrant Met
	Kurtz Street	Hancock Street	
Number of Approach Lanes	**1**	**1**	**NO**
Traffic Volume (VPH) *	**1,080**	**80**	

Sheet No 2 of 2

Figure 4C-3
Warrant 3, Peak Hour



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Source: *California Manual on Uniform Traffic Control Devices*, Caltrans, 2006

#18		Project	Midway & Old Town CPU
Major Street	Kurtz Street	Scenario	3A
Minor Street	Hancock Street	Peak Hour	PM

Turn Movement Volumes

	NB	SB	EB	WB
Left	0	0	100	370
Through	0	170	0	310
Right	0	90	140	150
Total	0	260	240	830

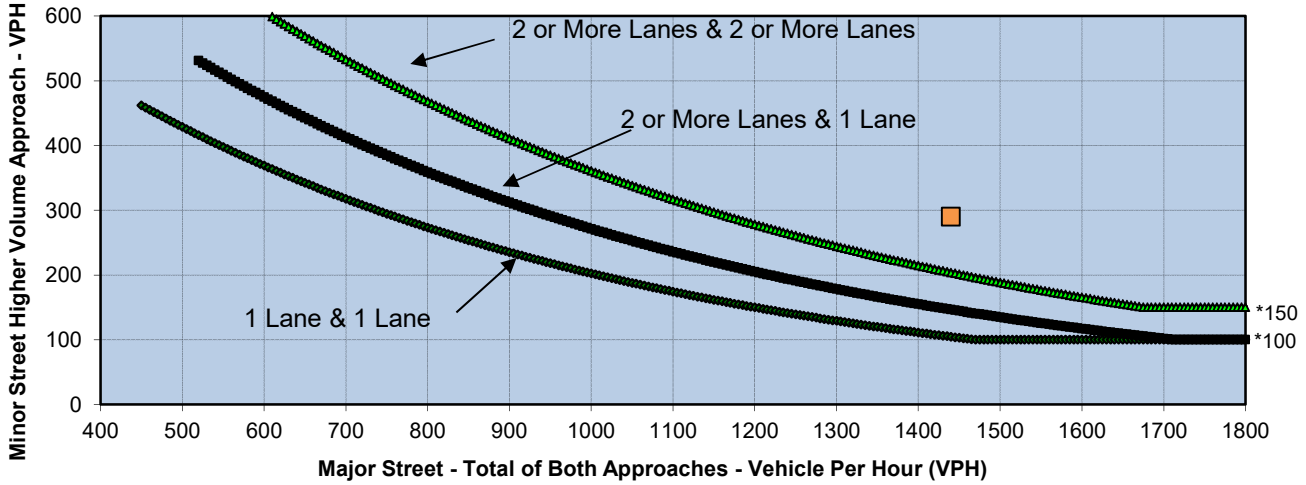
Major Street Direction

	North/South
X	East/West

	Major Street Kurtz Street	Minor Street Hancock Street	Warrant Met
Number of Approach Lanes	1	1	YES
Traffic Volume (VPH) *	1,070	260	

Sheet No 1 of 2

Figure 4C-3
Warrant 3, Peak Hour



* Note: 150 VPH APPLIES AS THE LOWER THRESHOLD VOLUME FOR A MINOR STREET APPROACH WITH TWO OR MORE LANES AND 100 VPH APPLIES AS THE LOWER THRESHOLD VOLUME FOR A MINOR STREET APPROACHING WITH ONE LANE.

Source: *California Manual on Uniform Traffic Control Devices*, Caltrans, 2006

#21

Major Street	Pacific Highway
Minor Street	Kurtz Street

Project	Midway & Old Town CPU
Scenario	3A
Peak Hour	AM

Turn Movement Volumes

	NB	SB	EB	WB
Left	350	0	100	0
Through	460	480	0	0
Right	0	150	190	0
Total	810	630	290	0

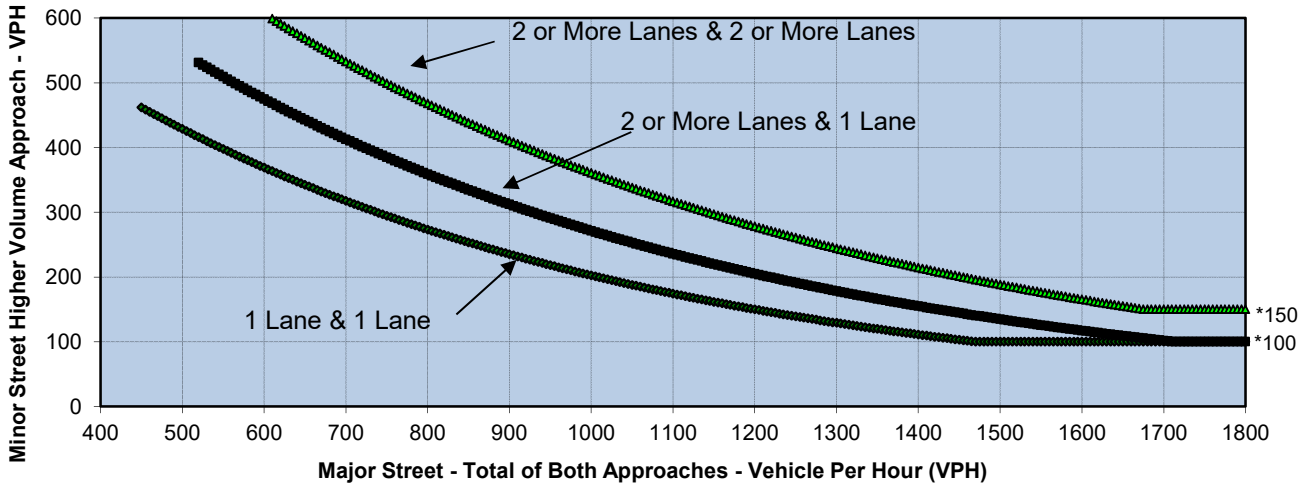
Major Street Direction

X	North/South
	East/West

	Major Street	Minor Street	Warrant Met
	Pacific Highway	Kurtz Street	
Number of Approach Lanes	**3**	**1**	**YES**
Traffic Volume (VPH) *	**1,440**	**290**	

Sheet No 2 of 2

Figure 4C-3
Warrant 3, Peak Hour



* Note: 150 VPH APPLIES AS THE LOWER THRESHOLD VOLUME FOR A MINOR STREET APPROACH WITH TWO OR MORE LANES AND 100 VPH APPLIES AS THE LOWER THRESHOLD VOLUME FOR A MINOR STREET APPROACHING WITH ONE LANE.

Source: *California Manual on Uniform Traffic Control Devices*, Caltrans, 2006

#21

Major Street	Pacific Highway
Minor Street	Kurtz Street

Project	Midway & Old Town CPU
Scenario	3A
Peak Hour	PM

Turn Movement Volumes

	NB	SB	EB	WB
Left	480	0	250	0
Through	880	450	0	0
Right	0	100	450	0
Total	1,360	550	700	0

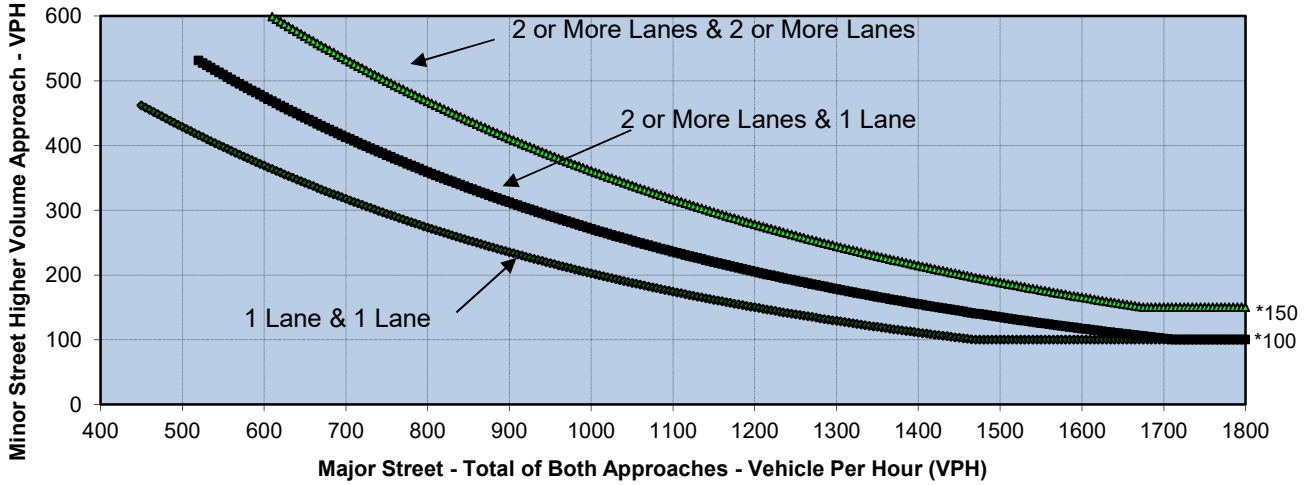
Major Street Direction

X	North/South
	East/West

	Major Street	Minor Street	Warrant Met
	Pacific Highway	Kurtz Street	
Number of Approach Lanes	3	1	YES
Traffic Volume (VPH) *	1,910	700	

Sheet No 1 of 2

Figure 4C-3
Warrant 3, Peak Hour



* Note: 150 VPH APPLIES AS THE LOWER THRESHOLD VOLUME FOR A MINOR STREET APPROACH WITH TWO OR MORE LANES AND 100 VPH APPLIES AS THE LOWER THRESHOLD VOLUME FOR A MINOR STREET APPROACHING WITH ONE LANE.

Source: *California Manual on Uniform Traffic Control Devices*, Caltrans, 2006

#62

Major Street	Kurtz Street
Minor Street	Greenwood Street

Project	Midway & Old Town CPU
Scenario	3A
Peak Hour	AM

Turn Movement Volumes

	NB	SB	EB	WB
Left	0	40	0	60
Through	0	220	20	90
Right	0	10	100	0
Total	0	270	120	150

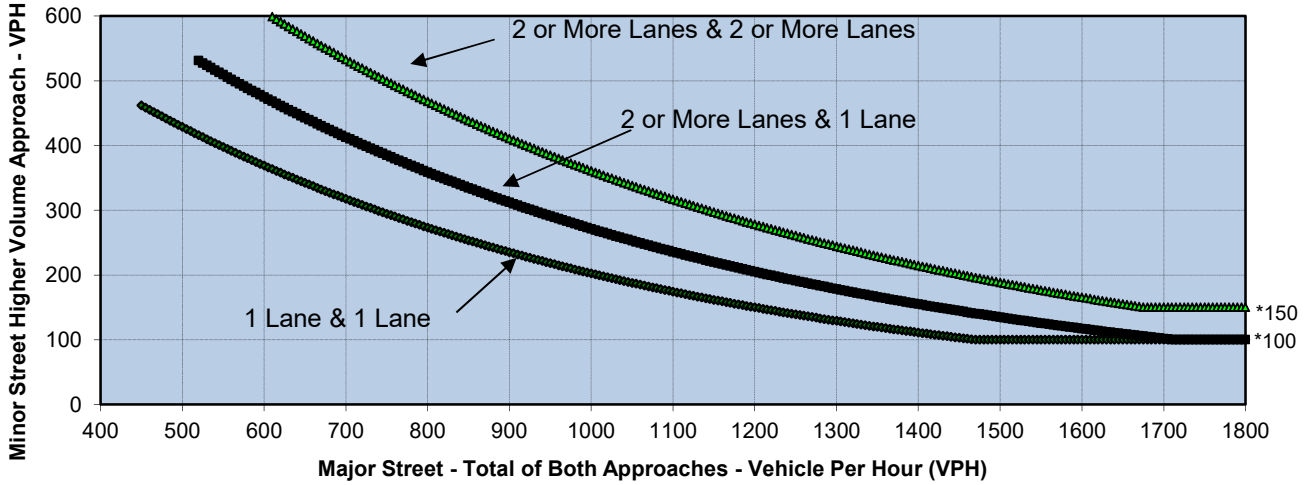
Major Street Direction

X	North/South
	East/West

	Major Street	Minor Street	Warrant Met
	Kurtz Street	Greenwood Street	
Number of Approach Lanes	**2**	**1**	**NO**
Traffic Volume (VPH) *	**270**	**150**	

Sheet No 2 of 2

Figure 4C-3
Warrant 3, Peak Hour



* Note: 150 VPH APPLIES AS THE LOWER THRESHOLD VOLUME FOR A MINOR STREET APPROACH WITH TWO OR MORE LANES AND 100 VPH APPLIES AS THE LOWER THRESHOLD VOLUME FOR A MINOR STREET APPROACHING WITH ONE LANE.

Source: *California Manual on Uniform Traffic Control Devices*, Caltrans, 2006

#62

Major Street	Kurtz Street
Minor Street	Greenwood Street

Project	Midway & Old Town CPU
Scenario	3A
Peak Hour	PM

Turn Movement Volumes

	NB	SB	EB	WB
Left	0	50	0	320
Through	0	720	30	290
Right	0	70	260	0
Total	0	840	290	610

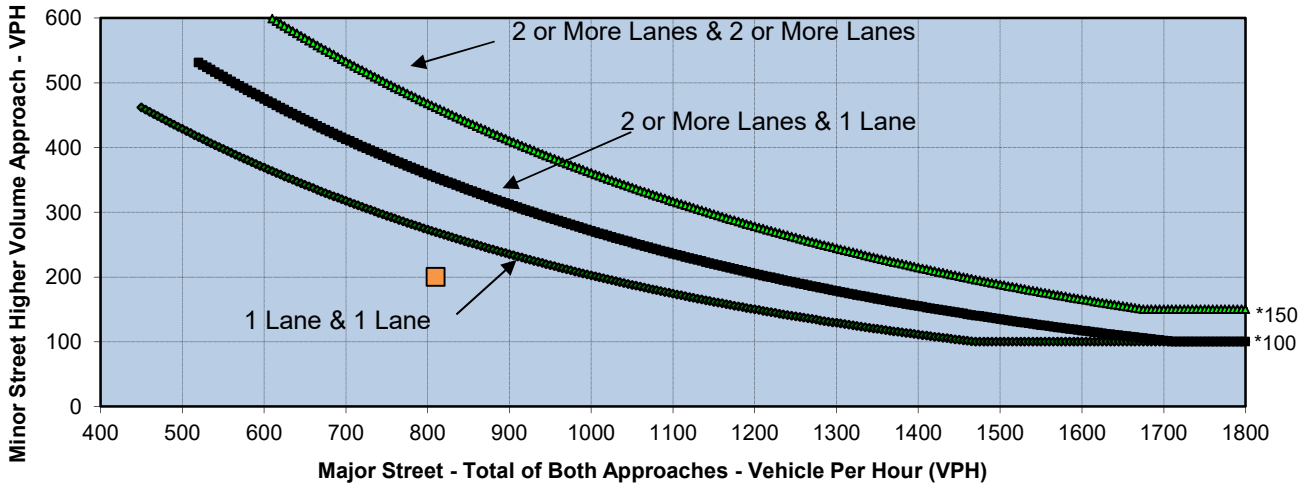
Major Street Direction

X	North/South
	East/West

	Major Street	Minor Street	Warrant Met
	Kurtz Street	Greenwood Street	
Number of Approach Lanes	2	1	YES
Traffic Volume (VPH) *	840	610	

Sheet No 1 of 2

Figure 4C-3
Warrant 3, Peak Hour



* Note: 150 VPH APPLIES AS THE LOWER THRESHOLD VOLUME FOR A MINOR STREET APPROACH WITH TWO OR MORE LANES AND 100 VPH APPLIES AS THE LOWER THRESHOLD VOLUME FOR A MINOR STREET APPROACHING WITH ONE LANE.

Source: *California Manual on Uniform Traffic Control Devices*, Caltrans, 2006

#63		Project	Midway & Old Town CPU
Major Street	Kurtz Street	Scenario	3A
Minor Street	Charles Lindbergh Parkway	Peak Hour	AM

Turn Movement Volumes

	NB	SB	EB	WB
Left	140	0	50	0
Through	330	310	0	0
Right	0	30	150	0
Total	470	340	200	0

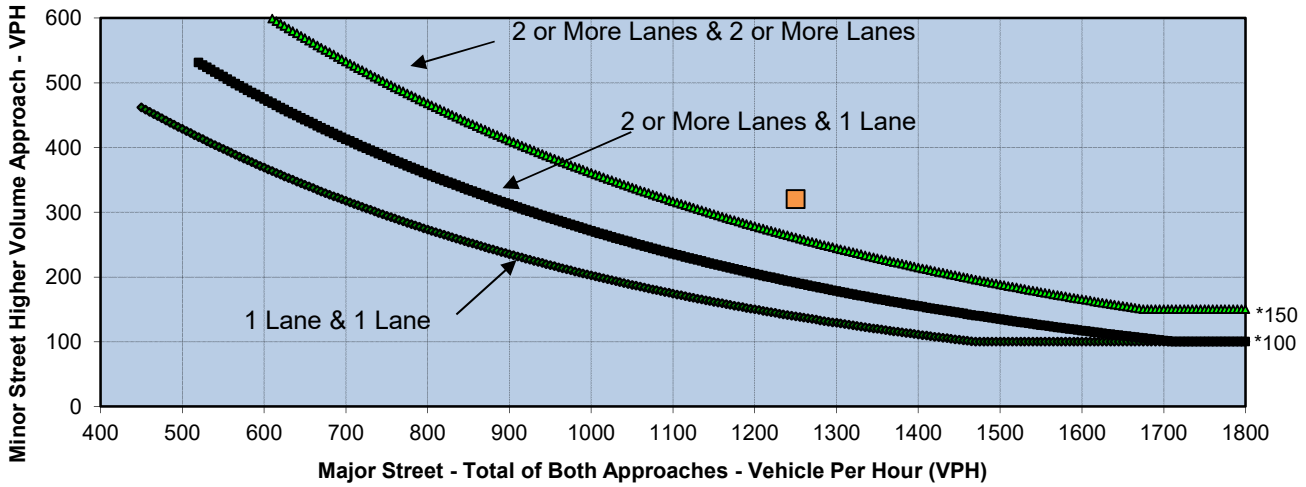
Major Street Direction

X	North/South
	East/West

	Major Street	Minor Street	Warrant Met
	Kurtz Street	Charles Lindbergh Parkway	
Number of Approach Lanes	**2**	**1**	**NO**
Traffic Volume (VPH) *	**810**	**200**	

Sheet No 2 of 2

Figure 4C-3
Warrant 3, Peak Hour



* Note: 150 VPH APPLIES AS THE LOWER THRESHOLD VOLUME FOR A MINOR STREET APPROACH WITH TWO OR MORE LANES AND 100 VPH APPLIES AS THE LOWER THRESHOLD VOLUME FOR A MINOR STREET APPROACHING WITH ONE LANE.

Source: *California Manual on Uniform Traffic Control Devices*, Caltrans, 2006

#63		Project	Midway & Old Town CPU
Major Street	Kurtz Street	Scenario	3A
Minor Street	Charles Lindbergh Parkway	Peak Hour	PM

Turn Movement Volumes

	NB	SB	EB	WB
Left	180	0	120	0
Through	370	480	0	0
Right	0	220	200	0
Total	550	700	320	0

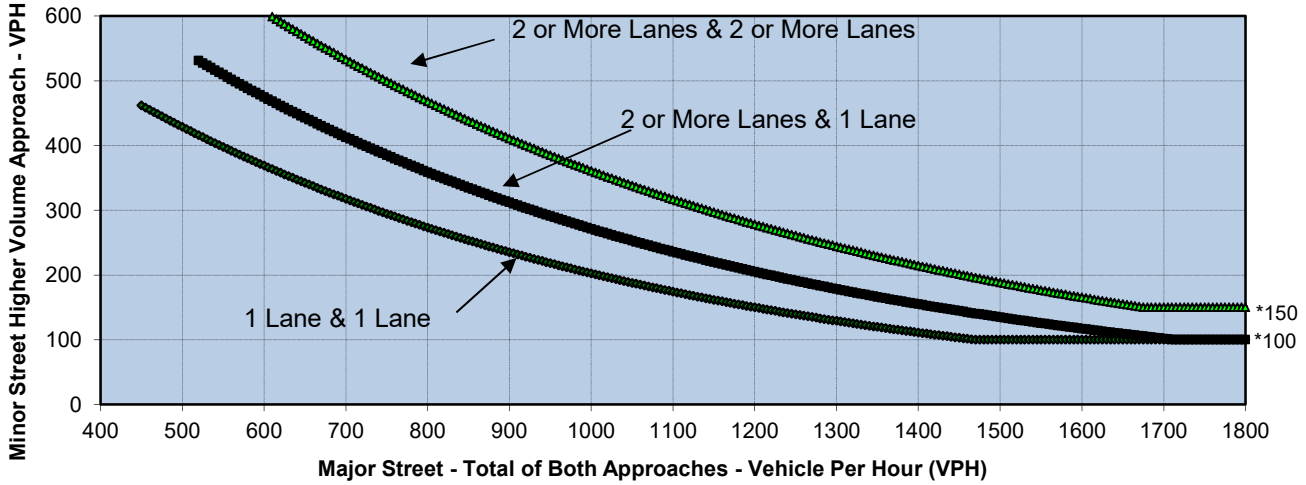
Major Street Direction

X	North/South
	East/West

	Major Street	Minor Street	Warrant Met
	Kurtz Street	Charles Lindbergh Parkway	
Number of Approach Lanes	2	1	YES
Traffic Volume (VPH) *	1,250	320	

Sheet No 1 of 2

Figure 4C-3
Warrant 3, Peak Hour



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Source: *California Manual on Uniform Traffic Control Devices*, Caltrans, 2006

#64		Project	Midway & Old Town CPU
Major Street	Barnett Avenue	Scenario	3A
Minor Street	Dutch Flats Parkway	Peak Hour	AM

Turn Movement Volumes

	NB	SB	EB	WB
Left	0	0	50	0
Through	0	150	670	1,420
Right	0	250	0	40
Total	0	400	720	1,460

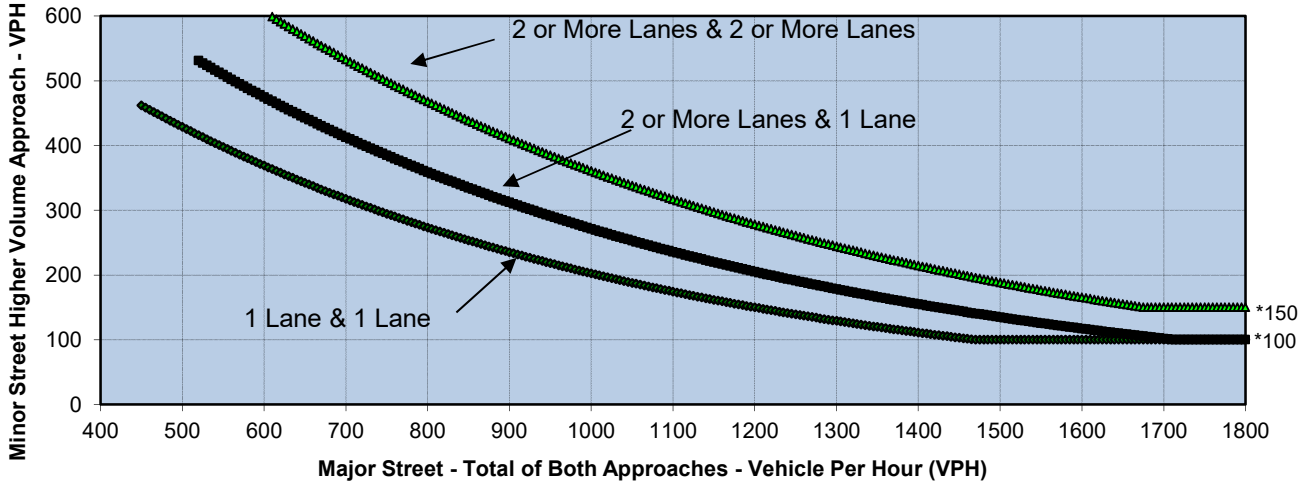
Major Street Direction

	North/South
X	East/West

	Major Street	Minor Street	Warrant Met
	Barnett Avenue	Dutch Flats Parkway	
Number of Approach Lanes	**2**	**1**	**YES**
Traffic Volume (VPH) *	**2,180**	**400**	

Sheet No 2 of 2

Figure 4C-3
Warrant 3, Peak Hour



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Source: *California Manual on Uniform Traffic Control Devices*, Caltrans, 2006

#64		Project	Midway & Old Town CPU
Major Street	Barnett Avenue	Scenario	3A
Minor Street	Dutch Flats Parkway	Peak Hour	PM

Turn Movement Volumes

	NB	SB	EB	WB
Left	0	0	60	0
Through	0	160	1,090	1,200
Right	0	240	0	60
Total	0	400	1,150	1,260

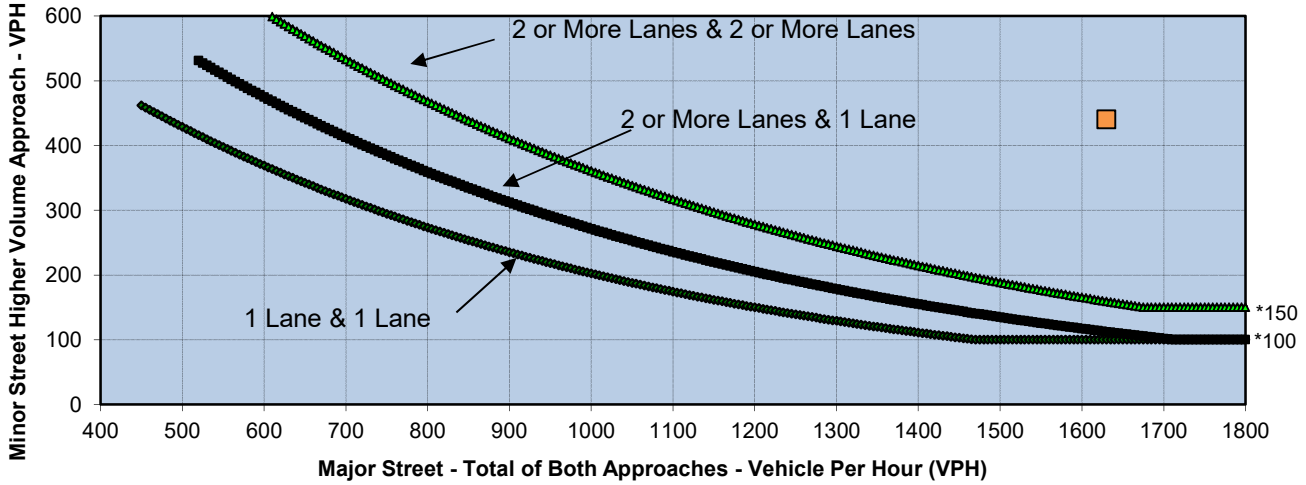
Major Street Direction

	North/South
X	East/West

	Major Street	Minor Street	Warrant Met
	Barnett Avenue	Dutch Flats Parkway	
Number of Approach Lanes	2	1	YES
Traffic Volume (VPH) *	2,410	400	

Sheet No 1 of 2

Figure 4C-3
Warrant 3, Peak Hour



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Source: *California Manual on Uniform Traffic Control Devices*, Caltrans, 2006

#65		Project	Midway & Old Town CPU
Major Street	Midway Drive	Scenario	3A
Minor Street	Dutch Flats Parkway	Peak Hour	AM

Turn Movement Volumes

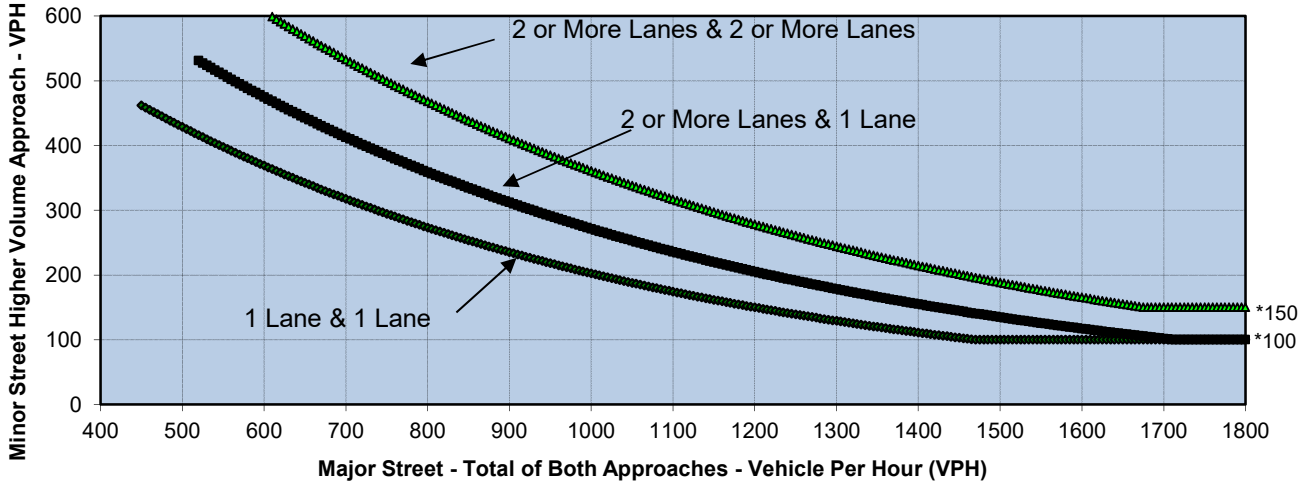
	NB	SB	EB	WB
Left	220	250	60	40
Through	390	450	10	160
Right	130	190	100	240
Total	740	890	170	440

Major Street Direction

X	North/South
	East/West

	Major Street	Minor Street	Warrant Met
	Midway Drive	Dutch Flats Parkway	
Number of Approach Lanes	**2**	**1**	**YES**
Traffic Volume (VPH) *	**1,630**	**440**	

Figure 4C-3
Warrant 3, Peak Hour



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Source: *California Manual on Uniform Traffic Control Devices*, Caltrans, 2006

#65

Major Street	Midway Drive
Minor Street	Dutch Flats Parkway

Project	Midway & Old Town CPU
Scenario	3A
Peak Hour	PM

Turn Movement Volumes

	NB	SB	EB	WB
Left	160	210	130	60
Through	480	500	20	110
Right	370	160	90	280
Total	1,010	870	240	450

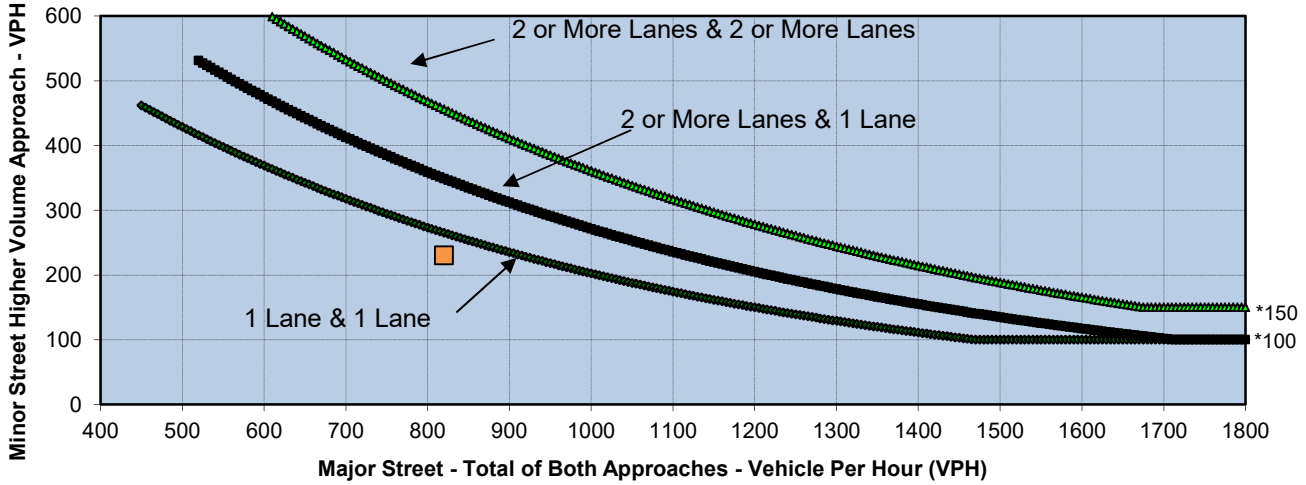
Major Street Direction

X	North/South
	East/West

	Major Street	Minor Street	Warrant Met
	Midway Drive	Dutch Flats Parkway	
Number of Approach Lanes	2	1	YES
Traffic Volume (VPH) *	1,880	450	

Sheet No 1 of 2

Figure 4C-3
Warrant 3, Peak Hour



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Source: *California Manual on Uniform Traffic Control Devices*, Caltrans, 2006

#66		Project	Midway & Old Town CPU
Major Street	Sports Arena Boulevard	Scenario	3A
Minor Street	Dutch Flats Parkway	Peak Hour	AM

Turn Movement Volumes

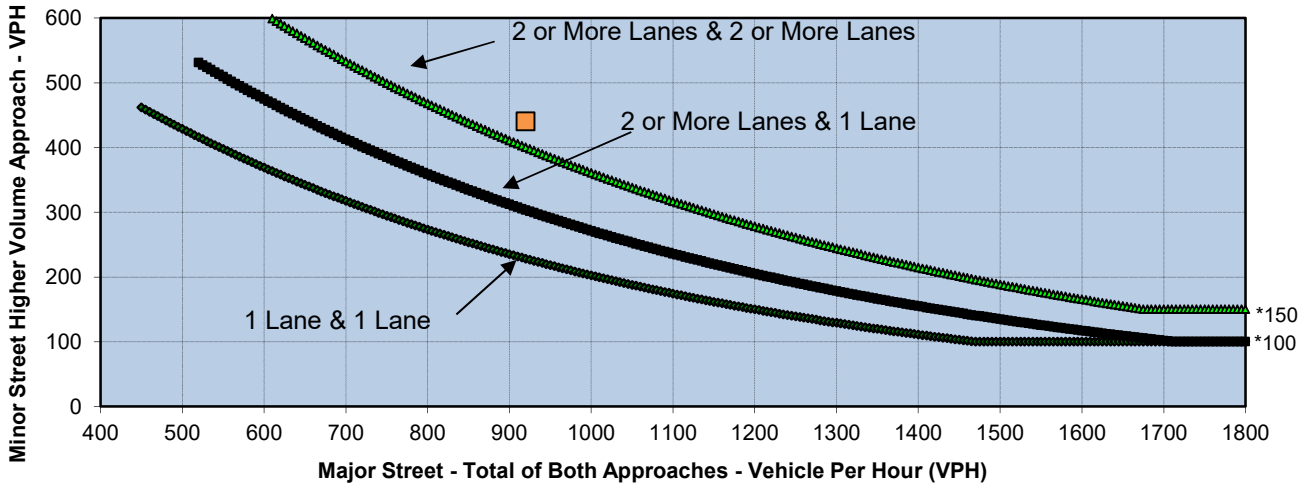
	NB	SB	EB	WB
Left	340	0	30	0
Through	190	190	0	0
Right	0	100	200	0
Total	530	290	230	0

Major Street Direction

X	North/South
	East/West

	Major Street	Minor Street	Warrant Met
	Sports Arena Boulevard	Dutch Flats Parkway	
Number of Approach Lanes	**1**	**1**	**NO**
Traffic Volume (VPH) *	**820**	**230**	

Figure 4C-3
Warrant 3, Peak Hour



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Source: *California Manual on Uniform Traffic Control Devices*, Caltrans, 2006

#66		Project	Midway & Old Town CPU
Major Street	Sports Arena Boulevard	Scenario	3A
Minor Street	Dutch Flats Parkway	Peak Hour	PM

Turn Movement Volumes

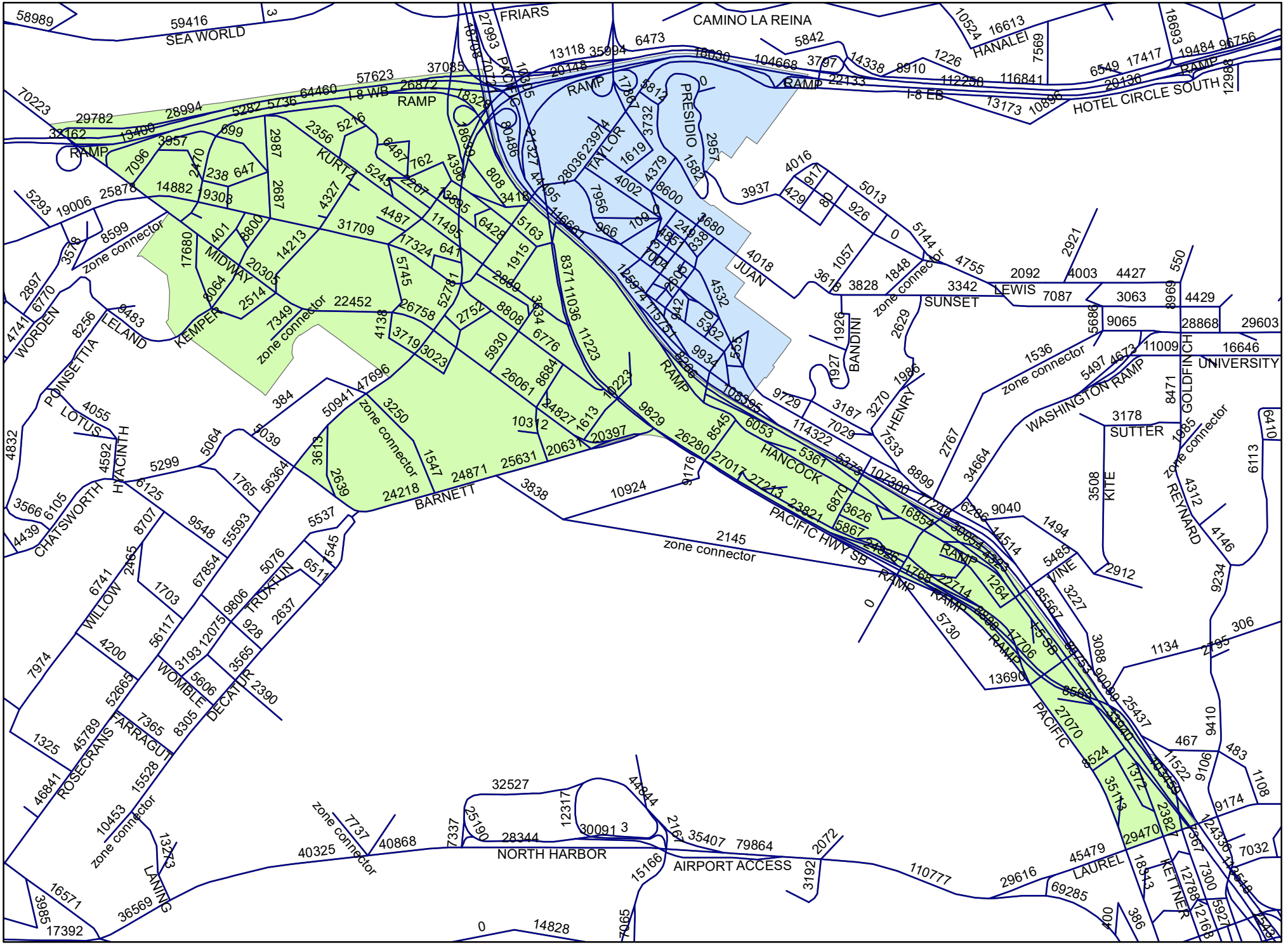
	NB	SB	EB	WB
Left	190	0	180	0
Through	140	270	0	0
Right	0	320	260	0
Total	330	590	440	0

Major Street Direction

X	North/South
	East/West

	Major Street	Minor Street	Warrant Met
	Sports Arena Boulevard	Dutch Flats Parkway	
Number of Approach Lanes	1	1	YES
Traffic Volume (VPH) *	920	440	

Appendix D
SANDAG Series 12 Model Outputs, Documentation and VMT Analysis



Midway-Pacific Highway and Old Town Community Plan

Scenario 3A

VMT Analysis

	Base Year 2008										
	SF (1)			MF			Mobile Homes				Estimated
	VR(2)	PPH(3)	SFDU	VR(2)	PPH(3)	MFDU	VR(2)	PPH(3)	MHDU	TOTAL DU	Populatio
Midway	2.00%	1.78	1,274	3.10%	1.78	484	0.00%	1.78		1,758	3,057
Old Town	6.90%	1.62	229	7.10%	1.62	25	0.00%	1.62	-	254	383

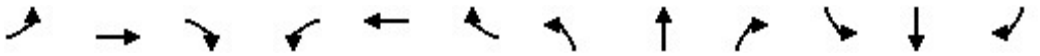
	Preferred CPU - Buildout for Communities, Year 2035 for Region										
	SF (1)			MF			Mobile Homes				Estimated
	VR(4)	PPH(5)	SFDU	VR(4)	PPH(5)	MFDU	VR(4)	PPH(5)	MHDU	TOTAL DU	Populatio
Midway	1.70%	1.82	-	2.40%	1.82	11,415	0.00%	1.82		11,415	20,277
Old Town	0.00%	1.66	79	5.10%	1.66	1,253	0.00%	1.66	-	1,332	2,105

	Delta (CPU Buildout for SESD & Encanto, Year 2035 for Region) - Base Year (2008)						
	DELTAS				Percent increase	Estimated Population Increase	Percent Increase
	SFDU	MFDU	MHDU	Total DU			
Midway	-1274	10931	0	9657	5.493174	17219.5143	5.632486
Old Town	-150	1228	0	1078	4.244094	1722.03414	4.496092

(1) Single family includes detached single family and multi-unit single family
(2) Vacancy Rate data for 2010 per SANDAG Community Profiles
(3) Persons Per Household data for 2010 per SANDAG Community Profiles
(4) Vacancy Rate data for 2050 per SANDAG Community Profiles
(5) Persons Per Household data for 2050 per SANDAG Community Profiles

Appendix E
Peak Hour Intersection Calculation Worksheets and Queuing Reports

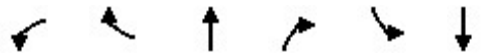
Peak Hour Intersection Calculation Worksheets



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	60	1140	400	160	1330	180	480	400	150	580	280	120
Future Volume (vph)	60	1140	400	160	1330	180	480	400	150	580	280	120
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	
Lane Util. Factor	1.00	0.91	1.00	0.97	0.95	1.00	0.97	1.00	1.00	1.00	1.00	
Frpb, ped/bikes	1.00	1.00	0.99	1.00	1.00	0.95	1.00	1.00	0.98	1.00	1.00	
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.96	
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)	1770	5085	1563	3433	3539	1497	3433	1863	1559	1770	1771	
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (perm)	1770	5085	1563	3433	3539	1497	3433	1863	1559	1770	1771	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	65	1239	435	174	1446	196	522	435	163	630	304	130
RTOR Reduction (vph)	0	0	286	0	0	85	0	0	99	0	12	0
Lane Group Flow (vph)	65	1239	149	174	1446	111	522	435	64	630	422	0
Confl. Peds. (#/hr)	8					8			3	3		
Confl. Bikes (#/hr)			1			5						3
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases			2			6			8			
Actuated Green, G (s)	4.0	37.7	37.7	10.8	44.4	44.4	31.4	33.2	33.2	35.8	35.8	
Effective Green, g (s)	4.4	39.0	39.0	11.2	45.8	45.8	31.8	34.0	34.0	34.8	37.0	
Actuated g/C Ratio	0.03	0.29	0.29	0.08	0.34	0.34	0.24	0.25	0.25	0.26	0.27	
Clearance Time (s)	4.4	5.3	5.3	4.4	5.4	5.4	4.4	4.8	4.8	3.0	5.2	
Vehicle Extension (s)	2.0	4.4	4.4	2.0	4.4	4.4	2.0	3.8	3.8	2.0	2.0	
Lane Grp Cap (vph)	57	1469	451	284	1200	507	808	469	392	456	485	
v/s Ratio Prot	c0.04	0.24		0.05	c0.41		0.15	c0.23		c0.36	0.24	
v/s Ratio Perm			0.10			0.07			0.04			
v/c Ratio	1.14	0.84	0.33	0.61	1.21	0.22	0.65	0.93	0.16	1.38	0.87	
Uniform Delay, d1	65.3	45.1	37.7	59.8	44.6	31.8	46.5	49.3	39.4	50.1	46.7	
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	162.7	6.1	2.0	2.7	100.4	1.0	1.3	24.8	0.3	185.0	14.8	
Delay (s)	228.0	51.2	39.7	62.5	145.0	32.8	47.9	74.1	39.7	235.1	61.5	
Level of Service	F	D	D	E	F	C	D	E	D	F	E	
Approach Delay (s)		54.9			125.0			56.9			164.3	
Approach LOS		D			F			E			F	

Intersection Summary			
HCM 2000 Control Delay	97.7	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.17		
Actuated Cycle Length (s)	135.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	107.3%	ICU Level of Service	G
Analysis Period (min)	15		

c Critical Lane Group



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	550	1190	370	0	0	650
Future Volume (vph)	550	1190	370	0	0	650
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	7.0	7.0	7.0			7.0
Lane Util. Factor	0.97	0.88	0.95			0.95
Frt	1.00	0.85	1.00			1.00
Flt Protected	0.95	1.00	1.00			1.00
Satd. Flow (prot)	3433	2787	3539			3539
Flt Permitted	0.95	1.00	1.00			1.00
Satd. Flow (perm)	3433	2787	3539			3539
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	598	1293	402	0	0	707
RTOR Reduction (vph)	0	301	0	0	0	0
Lane Group Flow (vph)	598	992	402	0	0	707
Turn Type	Prot	Perm	NA			NA
Protected Phases	4		2			6
Permitted Phases		4				
Actuated Green, G (s)	19.7	19.7	13.0			13.0
Effective Green, g (s)	19.7	19.7	13.0			13.0
Actuated g/C Ratio	0.42	0.42	0.28			0.28
Clearance Time (s)	7.0	7.0	7.0			7.0
Vehicle Extension (s)	0.2	0.2	0.2			0.2
Lane Grp Cap (vph)	1448	1175	985			985
v/s Ratio Prot	0.17		0.11			c0.20
v/s Ratio Perm		c0.36				
v/c Ratio	0.41	0.84	0.41			0.72
Uniform Delay, d1	9.5	12.1	13.7			15.2
Progression Factor	1.00	1.00	1.00			1.00
Incremental Delay, d2	0.1	5.5	0.1			2.1
Delay (s)	9.5	17.6	13.8			17.3
Level of Service	A	B	B			B
Approach Delay (s)	15.1		13.8			17.3
Approach LOS	B		B			B

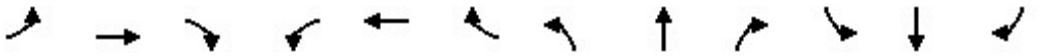
Intersection Summary			
HCM 2000 Control Delay	15.4	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.79		
Actuated Cycle Length (s)	46.7	Sum of lost time (s)	14.0
Intersection Capacity Utilization	63.5%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	0	130	980	210	0	1200
Future Volume (Veh/h)	0	130	980	210	0	1200
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	141	1065	228	0	1304
Pedestrians						3
Lane Width (ft)						12.0
Walking Speed (ft/s)						4.0
Percent Blockage						0
Right turn flare (veh)						
Median type			None			None
Median storage veh)						
Upstream signal (ft)			810			780
pX, platoon unblocked	0.97	0.97			0.97	
vC, conflicting volume	1614	472			1293	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1499	327			1177	
tC, single (s)	6.8	6.9			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	100	78			100	
cM capacity (veh/h)	109	644			568	

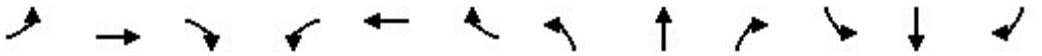
Direction, Lane #	WB 1	NB 1	NB 2	NB 3	SB 1	SB 2	SB 3
Volume Total	141	426	426	441	435	435	435
Volume Left	0	0	0	0	0	0	0
Volume Right	141	0	0	228	0	0	0
cSH	644	1700	1700	1700	1700	1700	1700
Volume to Capacity	0.22	0.25	0.25	0.26	0.26	0.26	0.26
Queue Length 95th (ft)	21	0	0	0	0	0	0
Control Delay (s)	12.1	0.0	0.0	0.0	0.0	0.0	0.0
Lane LOS	B						
Approach Delay (s)	12.1	0.0			0.0		
Approach LOS	B						

Intersection Summary			
Average Delay	0.6		
Intersection Capacity Utilization	39.1%	ICU Level of Service	A
Analysis Period (min)	15		



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	440	300	270	30	140	290	190	460	50	440	520	240
Future Volume (vph)	440	300	270	30	140	290	190	460	50	440	520	240
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.1	4.0	3.1	3.0	4.0	4.0	3.1	4.0		3.1	4.0	4.0
Lane Util. Factor	1.00	1.00	1.00	1.00	0.95	1.00	1.00	0.95		1.00	0.95	1.00
Frpb, ped/bikes	1.00	1.00	0.99	1.00	1.00	0.99	1.00	1.00		1.00	1.00	0.99
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.99		1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1770	1863	1565	1770	3539	1574	1770	3482		1770	3539	1566
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)	1770	1863	1565	1770	3539	1574	1770	3482		1770	3539	1566
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	478	326	293	33	152	315	207	500	54	478	565	261
RTOR Reduction (vph)	0	0	58	0	0	44	0	6	0	0	0	119
Lane Group Flow (vph)	478	326	235	33	152	271	207	548	0	478	565	142
Confl. Peds. (#/hr)			4			3			5			8
Turn Type	Prot	NA	pm+ov	Prot	NA	pm+ov	Prot	NA		Prot	NA	pm+ov
Protected Phases	5	2	3	1	6	7	3	8		7	4	5
Permitted Phases			2			6						4
Actuated Green, G (s)	30.3	46.1	64.7	3.4	19.1	49.4	18.6	24.4		30.3	36.1	66.4
Effective Green, g (s)	31.2	47.0	66.5	4.4	20.1	49.4	19.5	25.3		31.2	37.0	66.4
Actuated g/C Ratio	0.26	0.39	0.55	0.04	0.16	0.40	0.16	0.21		0.26	0.30	0.54
Clearance Time (s)	4.0	4.9	4.0	4.0	5.0	4.0	4.0	4.9		4.0	4.9	4.0
Vehicle Extension (s)	3.0	0.2	3.0	3.0	8.0	3.0	3.0	3.1		3.0	5.5	3.0
Lane Grp Cap (vph)	452	717	853	63	583	637	282	722		452	1073	852
v/s Ratio Prot	c0.27	c0.18	0.04	0.02	0.04	0.11	0.12	c0.16		c0.27	0.16	0.04
v/s Ratio Perm			0.11			0.07						0.05
v/c Ratio	1.06	0.45	0.28	0.52	0.26	0.43	0.73	0.76		1.06	0.53	0.17
Uniform Delay, d1	45.4	27.9	14.9	57.8	44.5	26.1	48.8	45.5		45.4	35.2	13.9
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	58.4	0.2	0.2	7.6	1.0	0.5	9.5	4.6		58.4	1.0	0.1
Delay (s)	103.8	28.1	15.0	65.4	45.5	26.6	58.3	50.1		103.8	36.3	14.0
Level of Service	F	C	B	E	D	C	E	D		F	D	B
Approach Delay (s)		57.6			34.9			52.3			56.6	
Approach LOS		E			C			D			E	

Intersection Summary			
HCM 2000 Control Delay	53.0	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.90		
Actuated Cycle Length (s)	122.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	85.7%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			



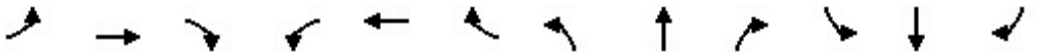
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	110	110	110	90	100	170	80	320	50	90	410	90
Future Volume (vph)	110	110	110	90	100	170	80	320	50	90	410	90
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0
Lane Util. Factor	0.95	0.95	1.00	1.00	1.00	1.00	0.97	0.95		1.00	0.95	1.00
Frpb, ped/bikes	1.00	1.00	0.98	1.00	1.00	0.98	1.00	1.00		1.00	1.00	1.00
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.98		1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1681	1770	1556	1770	1863	1551	3433	3459		1770	3539	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)	1681	1770	1556	1770	1863	1551	3433	3459		1770	3539	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	120	120	120	98	109	185	87	348	54	98	446	98
RTOR Reduction (vph)	0	0	96	0	0	159	0	7	0	0	0	47
Lane Group Flow (vph)	120	120	25	98	109	26	87	395	0	98	446	51
Confl. Peds. (#/hr)			12			8			5			
Turn Type	Split	NA	pm+ov	Split	NA	Perm	Prot	NA		Prot	NA	Perm
Protected Phases	8	8	1	7	7		1	6		5	2	
Permitted Phases			8			7						2
Actuated Green, G (s)	17.0	17.0	23.7	16.0	16.0	16.0	6.7	55.6		12.3	61.2	61.2
Effective Green, g (s)	17.9	17.9	24.5	16.9	16.9	16.9	7.1	56.5		12.7	62.1	62.1
Actuated g/C Ratio	0.15	0.15	0.20	0.14	0.14	0.14	0.06	0.47		0.11	0.52	0.52
Clearance Time (s)	4.9	4.9	4.4	4.9	4.9	4.9	4.4	4.9		4.4	4.9	4.9
Vehicle Extension (s)	3.0	3.0	2.0	3.0	3.0	3.0	2.0	4.5		2.0	4.6	4.6
Lane Grp Cap (vph)	250	264	317	249	262	218	203	1628		187	1831	819
v/s Ratio Prot	c0.07	0.07	0.00	0.06	c0.06		0.03	0.11		c0.06	c0.13	
v/s Ratio Perm			0.01			0.02						0.03
v/c Ratio	0.48	0.45	0.08	0.39	0.42	0.12	0.43	0.24		0.52	0.24	0.06
Uniform Delay, d1	46.8	46.6	38.6	46.9	47.0	45.0	54.5	19.0		50.8	16.0	14.4
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.27	0.71	0.71
Incremental Delay, d2	1.5	1.2	0.0	1.0	1.1	0.2	0.5	0.4		1.0	0.3	0.1
Delay (s)	48.2	47.8	38.6	47.9	48.1	45.3	55.0	19.3		65.8	11.6	10.4
Level of Service	D	D	D	D	D	D	E	B		E	B	B
Approach Delay (s)		44.9			46.7			25.7			19.7	
Approach LOS		D			D			C			B	

Intersection Summary			
HCM 2000 Control Delay	31.7	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.35		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	58.9%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	30	20	20	30	20	30	60	660	90	30	550	20
Future Volume (vph)	30	20	20	30	20	30	60	660	90	30	550	20
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0			4.0		4.0	4.0		4.0	4.0	
Lane Util. Factor		1.00			1.00		1.00	0.95		1.00	0.95	
Frpb, ped/bikes		1.00			0.99		1.00	1.00		1.00	1.00	
Flpb, ped/bikes		1.00			1.00		1.00	1.00		1.00	1.00	
Frt		0.96			0.95		1.00	0.98		1.00	0.99	
Flt Protected		0.98			0.98		0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1746			1724		1770	3475		1770	3517	
Flt Permitted		0.84			0.84		0.39	1.00		0.33	1.00	
Satd. Flow (perm)		1506			1482		730	3475		609	3517	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	33	22	22	33	22	33	65	717	98	33	598	22
RTOR Reduction (vph)	0	19	0	0	28	0	0	13	0	0	3	0
Lane Group Flow (vph)	0	58	0	0	60	0	65	802	0	33	617	0
Confl. Peds. (#/hr)			1			10						3
Turn Type	Perm	NA		Perm	NA		pm+pt	NA		pm+pt	NA	
Protected Phases		8			4		1	6		5	2	
Permitted Phases	8			4			6			2		
Actuated Green, G (s)		5.2			5.2		22.6	21.2		20.8	20.3	
Effective Green, g (s)		6.1			6.1		23.4	22.1		21.6	21.2	
Actuated g/C Ratio		0.15			0.15		0.57	0.54		0.53	0.52	
Clearance Time (s)		4.9			4.9		4.4	4.9		4.4	4.9	
Vehicle Extension (s)		2.0			2.0		2.0	2.9		2.0	2.9	
Lane Grp Cap (vph)		223			219		461	1868		345	1814	
v/s Ratio Prot							c0.01	c0.23		0.00	0.18	
v/s Ratio Perm		0.04			c0.04		0.07			0.05		
v/c Ratio		0.26			0.27		0.14	0.43		0.10	0.34	
Uniform Delay, d1		15.5			15.5		4.0	5.7		4.7	5.8	
Progression Factor		1.00			1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2		0.2			0.2		0.1	0.2		0.0	0.1	
Delay (s)		15.7			15.8		4.0	5.9		4.8	5.9	
Level of Service		B			B		A	A		A	A	
Approach Delay (s)		15.7			15.8			5.7			5.9	
Approach LOS		B			B			A			A	

Intersection Summary			
HCM 2000 Control Delay	6.8	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.39		
Actuated Cycle Length (s)	41.1	Sum of lost time (s)	12.0
Intersection Capacity Utilization	43.4%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	220	1460	170	340	1800	300	120	330	210	230	280	180
Future Volume (vph)	220	1460	170	340	1800	300	120	330	210	230	280	180
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0	4.4	4.0	4.0	3.5	4.0	4.0	3.5
Lane Util. Factor	0.97	0.91		0.97	0.91	1.00	1.00	0.95	1.00	0.97	0.95	1.00
Frpb, ped/bikes	1.00	1.00		1.00	1.00	0.98	1.00	1.00	0.97	1.00	1.00	0.98
Flpb, ped/bikes	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.98		1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	4984		3433	5085	1544	1770	3539	1542	3433	3539	1554
Flt Permitted	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	4984		3433	5085	1544	1770	3539	1542	3433	3539	1554
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	239	1587	185	370	1957	326	130	359	228	250	304	196
RTOR Reduction (vph)	0	12	0	0	0	76	0	0	77	0	0	79
Lane Group Flow (vph)	239	1760	0	370	1957	250	130	359	151	250	304	117
Confl. Peds. (#/hr)	14		25	25		14	18		27	27		14
Turn Type	Prot	NA		Prot	NA	pm+ov	Prot	NA	pm+ov	Prot	NA	pm+ov
Protected Phases	5	2		1	6	7	3	8	1	7	4	5
Permitted Phases						6			8			4
Actuated Green, G (s)	8.8	42.6		10.4	44.3	53.5	8.5	24.0	34.4	9.2	24.7	33.5
Effective Green, g (s)	9.2	43.7		10.8	45.3	53.5	8.9	24.9	36.2	9.6	25.6	35.3
Actuated g/C Ratio	0.09	0.42		0.10	0.43	0.51	0.08	0.24	0.34	0.09	0.24	0.34
Clearance Time (s)	4.4	5.1		4.4	5.0	4.4	4.4	4.9	4.4	4.4	4.9	4.4
Vehicle Extension (s)	2.0	3.5		2.0	3.7	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lane Grp Cap (vph)	300	2074		353	2193	786	150	839	583	313	862	522
v/s Ratio Prot	0.07	c0.35		0.11	c0.38	0.03	c0.07	c0.10	0.03	c0.07	0.09	0.02
v/s Ratio Perm						0.13			0.07			0.05
v/c Ratio	0.80	0.85		1.05	0.89	0.32	0.87	0.43	0.26	0.80	0.35	0.22
Uniform Delay, d1	47.0	27.7		47.1	27.6	15.1	47.5	34.0	24.7	46.8	32.8	25.0
Progression Factor	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	12.8	4.6		61.1	6.1	0.1	36.3	0.1	0.1	12.4	0.1	0.1
Delay (s)	59.8	32.2		108.2	33.6	15.2	83.8	34.1	24.8	59.2	32.9	25.1
Level of Service	E	C		F	C	B	F	C	C	E	C	C
Approach Delay (s)		35.5			41.8			40.2			39.6	
Approach LOS		D			D			D			D	

Intersection Summary			
HCM 2000 Control Delay	39.3	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.80		
Actuated Cycle Length (s)	105.0	Sum of lost time (s)	16.4
Intersection Capacity Utilization	81.4%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	120	30	590	90	150	690
Future Volume (vph)	120	30	590	90	150	690
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.5		4.5		4.5	4.5
Lane Util. Factor	1.00		0.95		1.00	0.95
Frt	0.97		0.98		1.00	1.00
Flt Protected	0.96		1.00		0.95	1.00
Satd. Flow (prot)	1742		3469		1770	3539
Flt Permitted	0.96		1.00		0.95	1.00
Satd. Flow (perm)	1742		3469		1770	3539
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	130	33	641	98	163	750
RTOR Reduction (vph)	16	0	14	0	0	0
Lane Group Flow (vph)	147	0	725	0	163	750
Turn Type	Prot		NA		Prot	NA
Protected Phases	8		2		1	6
Permitted Phases						
Actuated Green, G (s)	8.9		30.2		8.8	43.5
Effective Green, g (s)	8.9		30.2		8.8	43.5
Actuated g/C Ratio	0.14		0.49		0.14	0.71
Clearance Time (s)	4.5		4.5		4.5	4.5
Vehicle Extension (s)	3.0		3.0		3.0	3.0
Lane Grp Cap (vph)	252		1706		253	2507
v/s Ratio Prot	c0.08		c0.21		c0.09	0.21
v/s Ratio Perm						
v/c Ratio	0.58		0.42		0.64	0.30
Uniform Delay, d1	24.5		10.0		24.8	3.3
Progression Factor	1.00		1.00		1.00	1.00
Incremental Delay, d2	3.4		0.8		5.5	0.3
Delay (s)	27.9		10.8		30.4	3.6
Level of Service	C		B		C	A
Approach Delay (s)	27.9		10.8			8.4
Approach LOS	C		B			A

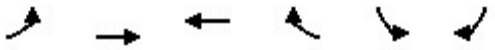
Intersection Summary			
HCM 2000 Control Delay	11.1	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.49		
Actuated Cycle Length (s)	61.4	Sum of lost time (s)	13.5
Intersection Capacity Utilization	47.2%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	0	170	560	100	0	600
Future Volume (Veh/h)	0	170	560	100	0	600
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	185	609	109	0	652
Pedestrians	2					3
Lane Width (ft)	12.0					12.0
Walking Speed (ft/s)	4.0					4.0
Percent Blockage	0					0
Right turn flare (veh)						
Median type			None			None
Median storage veh)						
Upstream signal (ft)			215			491
pX, platoon unblocked	0.86					
vC, conflicting volume	992	364			720	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	667	364			720	
tC, single (s)	6.8	6.9			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	100	71			100	
cM capacity (veh/h)	337	630			876	

Direction, Lane #	WB 1	NB 1	NB 2	SB 1	SB 2
Volume Total	185	406	312	326	326
Volume Left	0	0	0	0	0
Volume Right	185	0	109	0	0
cSH	630	1700	1700	1700	1700
Volume to Capacity	0.29	0.24	0.18	0.19	0.19
Queue Length 95th (ft)	30	0	0	0	0
Control Delay (s)	13.1	0.0	0.0	0.0	0.0
Lane LOS	B				
Approach Delay (s)	13.1	0.0		0.0	
Approach LOS	B				

Intersection Summary			
Average Delay	1.6		
Intersection Capacity Utilization	36.5%	ICU Level of Service	A
Analysis Period (min)	15		

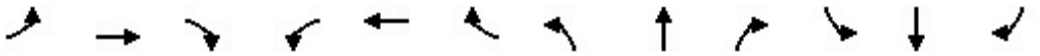


Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	0	820	1290	660	420	170
Future Volume (vph)	0	820	1290	660	420	170
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.4	5.4	5.9	5.2	5.2
Lane Util. Factor		0.95	0.95	0.88	0.97	1.00
Frpb, ped/bikes		1.00	1.00	1.00	1.00	1.00
Flpb, ped/bikes		1.00	1.00	1.00	1.00	1.00
Frt		1.00	1.00	0.85	1.00	0.85
Flt Protected		1.00	1.00	1.00	0.95	1.00
Satd. Flow (prot)		3539	3539	2787	3433	1583
Flt Permitted		1.00	1.00	1.00	0.95	1.00
Satd. Flow (perm)		3539	3539	2787	3433	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	891	1402	717	457	185
RTOR Reduction (vph)	0	0	0	289	0	148
Lane Group Flow (vph)	0	891	1402	428	457	37
Confl. Peds. (#/hr)				8	8	
Turn Type		NA	NA	custom	Prot	Perm
Protected Phases		2	2	8	1	
Permitted Phases						1
Actuated Green, G (s)		31.9	31.9	27.3	12.1	12.1
Effective Green, g (s)		31.9	31.9	26.8	12.1	12.1
Actuated g/C Ratio		0.52	0.52	0.44	0.20	0.20
Clearance Time (s)		5.4	5.4	5.4	5.2	5.2
Vehicle Extension (s)		2.9	2.9	3.0	2.5	2.5
Lane Grp Cap (vph)		1856	1856	1228	683	315
v/s Ratio Prot		0.25	c0.40	0.15	c0.13	
v/s Ratio Perm						0.02
v/c Ratio		0.48	0.76	0.35	0.67	0.12
Uniform Delay, d1		9.2	11.4	11.2	22.5	20.0
Progression Factor		1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2		0.2	1.8	0.2	2.2	0.1
Delay (s)		9.4	13.2	11.4	24.7	20.1
Level of Service		A	B	B	C	C
Approach Delay (s)		9.4	12.6		23.4	
Approach LOS		A	B		C	

Intersection Summary			
HCM 2000 Control Delay	13.7	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.74		
Actuated Cycle Length (s)	60.8	Sum of lost time (s)	17.1
Intersection Capacity Utilization	56.5%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	30	50	410	70	130	660
Future Volume (vph)	30	50	410	70	130	660
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.9	4.0	4.9		4.4	4.9
Lane Util. Factor	1.00	1.00	0.91		1.00	0.91
Frpb, ped/bikes	1.00	0.98	1.00		1.00	1.00
Flpb, ped/bikes	1.00	1.00	1.00		1.00	1.00
Frt	1.00	0.85	0.98		1.00	1.00
Flt Protected	0.95	1.00	1.00		0.95	1.00
Satd. Flow (prot)	1770	1550	4959		1770	5085
Flt Permitted	0.95	1.00	1.00		0.95	1.00
Satd. Flow (perm)	1770	1550	4959		1770	5085
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	33	54	446	76	141	717
RTOR Reduction (vph)	0	48	11	0	0	0
Lane Group Flow (vph)	33	6	511	0	141	717
Confl. Peds. (#/hr)	4	11		9	9	
Turn Type	Prot	Perm	NA		Prot	NA
Protected Phases	4		6		5	2
Permitted Phases		4				
Actuated Green, G (s)	11.9	11.9	70.8		13.1	88.3
Effective Green, g (s)	11.9	12.8	70.8		13.1	88.3
Actuated g/C Ratio	0.11	0.12	0.64		0.12	0.80
Clearance Time (s)	4.9	4.9	4.9		4.4	4.9
Vehicle Extension (s)	2.0	2.0	5.0		2.0	3.2
Lane Grp Cap (vph)	191	180	3191		210	4081
v/s Ratio Prot	c0.02		0.10		c0.08	c0.14
v/s Ratio Perm		0.00				
v/c Ratio	0.17	0.03	0.16		0.67	0.18
Uniform Delay, d1	44.6	43.1	7.8		46.4	2.5
Progression Factor	1.00	1.00	2.10		1.00	1.00
Incremental Delay, d2	0.2	0.0	0.1		6.5	0.1
Delay (s)	44.7	43.1	16.4		52.9	2.6
Level of Service	D	D	B		D	A
Approach Delay (s)	43.8		16.4			10.8
Approach LOS	D		B			B

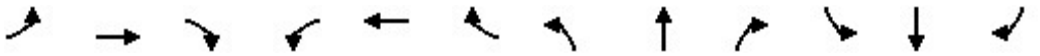
Intersection Summary			
HCM 2000 Control Delay	14.8	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.25		
Actuated Cycle Length (s)	110.0	Sum of lost time (s)	14.2
Intersection Capacity Utilization	56.6%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	80	50	110	160	140	120	200	410	100	120	520	110
Future Volume (vph)	80	50	110	160	140	120	200	410	100	120	520	110
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.5	4.0	
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	0.91		0.97	0.95	
Frpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	0.96		1.00	1.00	
Flpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Frt	1.00	0.90		1.00	0.93		1.00	0.97		1.00	0.97	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1770	1670		1770	1734		1770	4760		3433	3446	
Flt Permitted	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (perm)	1770	1670		1770	1734		1770	4760		3433	3446	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	87	54	120	174	152	130	217	446	109	130	565	120
RTOR Reduction (vph)	0	87	0	0	26	0	0	34	0	0	14	0
Lane Group Flow (vph)	87	87	0	174	256	0	217	521	0	130	671	0
Confl. Peds. (#/hr)									120			
Turn Type	Split	NA		Split	NA		Prot	NA		Prot	NA	
Protected Phases	7	7		8	8		1	6		5	2	
Permitted Phases												
Actuated Green, G (s)	14.0	14.0		19.5	19.5		16.8	33.3		23.6	40.6	
Effective Green, g (s)	14.9	14.9		20.4	20.4		17.2	34.2		24.0	41.5	
Actuated g/C Ratio	0.14	0.14		0.19	0.19		0.16	0.31		0.22	0.38	
Clearance Time (s)	4.9	4.9		4.9	4.9		4.4	4.9		4.9	4.9	
Vehicle Extension (s)	3.0	3.0		2.0	2.0		2.0	3.9		3.9	3.9	
Lane Grp Cap (vph)	239	226		328	321		276	1479		749	1300	
v/s Ratio Prot	0.05	c0.05		0.10	c0.15		c0.12	0.11		0.04	c0.19	
v/s Ratio Perm												
v/c Ratio	0.36	0.38		0.53	0.80		0.79	0.35		0.17	0.52	
Uniform Delay, d1	43.2	43.4		40.5	42.8		44.6	29.3		34.9	26.5	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		0.95	0.95	
Incremental Delay, d2	0.9	1.1		0.8	12.1		12.7	0.7		0.1	1.5	
Delay (s)	44.2	44.4		41.3	54.9		57.3	30.0		33.3	26.7	
Level of Service	D	D		D	D		E	C		C	C	
Approach Delay (s)		44.4			49.7			37.7			27.8	
Approach LOS		D			D			D			C	

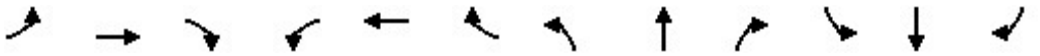
Intersection Summary			
HCM 2000 Control Delay	37.3	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.61		
Actuated Cycle Length (s)	110.0	Sum of lost time (s)	16.5
Intersection Capacity Utilization	62.8%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	40	20	20	70	20	50	30	620	40	90	680	80
Future Volume (vph)	40	20	20	70	20	50	30	620	40	90	680	80
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.9		4.9	4.9		4.4	4.9		4.9	4.9	
Lane Util. Factor		1.00		1.00	1.00		1.00	0.91		0.97	0.95	
Frpb, ped/bikes		1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Flpb, ped/bikes		1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Frt		0.97		1.00	0.89		1.00	0.99		1.00	0.98	
Flt Protected		0.98		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1749		1770	1664		1770	5032		3433	3471	
Flt Permitted		0.98		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (perm)		1749		1770	1664		1770	5032		3433	3471	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	43	22	22	76	22	54	33	674	43	98	739	87
RTOR Reduction (vph)	0	10	0	0	49	0	0	4	0	0	5	0
Lane Group Flow (vph)	0	77	0	76	27	0	33	713	0	98	821	0
Confl. Peds. (#/hr)			7	7			9		4	4		9
Turn Type	Split	NA		Split	NA		Prot	NA		Prot	NA	
Protected Phases	8	8		7	7		1	6		5	2	
Permitted Phases												
Actuated Green, G (s)		9.0		6.5	6.5		2.1	20.4		13.5	32.3	
Effective Green, g (s)		9.0		6.5	6.5		2.1	20.4		13.5	32.3	
Actuated g/C Ratio		0.13		0.09	0.09		0.03	0.30		0.20	0.47	
Clearance Time (s)		4.9		4.9	4.9		4.4	4.9		4.9	4.9	
Vehicle Extension (s)		2.0		2.0	2.0		2.0	2.0		2.0	2.0	
Lane Grp Cap (vph)		228		166	156		53	1487		671	1624	
v/s Ratio Prot		c0.04		c0.04	0.02		c0.02	0.14		0.03	c0.24	
v/s Ratio Perm												
v/c Ratio		0.34		0.46	0.17		0.62	0.48		0.15	0.51	
Uniform Delay, d1		27.3		29.6	28.8		33.1	19.9		23.0	12.8	
Progression Factor		1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2		0.3		0.7	0.2		15.2	0.1		0.0	0.1	
Delay (s)		27.6		30.3	29.0		48.3	20.0		23.0	12.9	
Level of Service		C		C	C		D	C		C	B	
Approach Delay (s)		27.6			29.6			21.3			14.0	
Approach LOS		C			C			C			B	

Intersection Summary			
HCM 2000 Control Delay	18.7	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.48		
Actuated Cycle Length (s)	69.0	Sum of lost time (s)	19.6
Intersection Capacity Utilization	51.8%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	30	10	50	30	10	40	60	610	50	40	730	40
Future Volume (vph)	30	10	50	30	10	40	60	610	50	40	730	40
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0	4.0		4.9	4.0	4.0	4.0		4.0	4.0	
Lane Util. Factor		1.00	1.00		1.00	1.00	1.00	0.91		1.00	0.91	
Frt		1.00	0.85		1.00	0.85	1.00	0.99		1.00	0.99	
Flt Protected		0.96	1.00		0.96	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1795	1583		1795	1583	1770	5028		1770	5046	
Flt Permitted		0.76	1.00		0.75	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (perm)		1414	1583		1399	1583	1770	5028		1770	5046	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	33	11	54	33	11	43	65	663	54	43	793	43
RTOR Reduction (vph)	0	0	47	0	0	37	0	11	0	0	7	0
Lane Group Flow (vph)	0	44	7	0	44	6	65	706	0	43	829	0
Turn Type	Perm	NA	Perm	Perm	NA	Perm	Prot	NA		Prot	NA	
Protected Phases		8			8		1	6		5	2	
Permitted Phases	8		8	8		8						
Actuated Green, G (s)		7.4	7.4		7.4	7.4	4.4	33.1		2.5	31.2	
Effective Green, g (s)		7.4	7.4		6.5	7.4	4.4	33.1		2.5	31.2	
Actuated g/C Ratio		0.13	0.13		0.12	0.13	0.08	0.60		0.05	0.57	
Clearance Time (s)		4.0	4.0		4.0	4.0	4.0	4.0		4.0	4.0	
Vehicle Extension (s)		3.0	3.0		3.0	3.0	3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)		190	212		165	212	141	3025		80	2862	
v/s Ratio Prot							c0.04	0.14		c0.02	c0.16	
v/s Ratio Perm		0.03	0.00		c0.03	0.00						
v/c Ratio		0.23	0.03		0.27	0.03	0.46	0.23		0.54	0.29	
Uniform Delay, d1		21.3	20.7		22.1	20.7	24.2	5.1		25.7	6.2	
Progression Factor		1.00	1.00		1.00	1.00	0.83	0.64		1.00	1.00	
Incremental Delay, d2		0.6	0.1		0.9	0.1	2.0	0.2		6.8	0.3	
Delay (s)		21.9	20.8		23.0	20.7	22.1	3.4		32.5	6.4	
Level of Service		C	C		C	C	C	A		C	A	
Approach Delay (s)		21.3			21.9			4.9			7.7	
Approach LOS		C			C			A			A	

Intersection Summary			
HCM 2000 Control Delay	7.9	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.31		
Actuated Cycle Length (s)	55.0	Sum of lost time (s)	12.9
Intersection Capacity Utilization	37.9%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

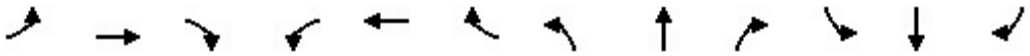
Movement	EBL	EBT	EBR	EBR2	WBT	WBR	NBR2	SBL2	SBL	SBT	SBR	NWL
Lane Configurations												
Traffic Volume (vph)	200	1350	150	200	2150	410	100	270	180	140	100	190
Future Volume (vph)	200	1350	150	200	2150	410	100	270	180	140	100	190
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	2.6	4.0		6.1	4.0	7.8	5.9	5.9	5.9	5.9	5.9	5.9
Lane Util. Factor	0.97	0.86		0.86	0.91	1.00	1.00	0.95	0.91	0.91	1.00	1.00
Frpb, ped/bikes	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.88	1.00
Flpb, ped/bikes	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.98		0.85	1.00	0.85	0.86	1.00	1.00	1.00	0.85	1.00
Flt Protected	0.95	1.00		1.00	1.00	1.00	1.00	0.95	0.95	0.98	1.00	0.95
Satd. Flow (prot)	3433	4725		1362	5085	1583	1611	1681	1610	1666	1401	1770
Flt Permitted	0.95	1.00		1.00	1.00	1.00	1.00	0.95	0.95	0.98	1.00	0.95
Satd. Flow (perm)	3433	4725		1362	5085	1583	1611	1681	1610	1666	1401	1770
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	217	1467	163	217	2337	446	109	293	196	152	109	207
RTOR Reduction (vph)	0	1	0	84	0	36	74	0	0	0	93	0
Lane Group Flow (vph)	217	1651	0	111	2337	410	35	179	228	234	16	207
Confl. Peds. (#/hr)								9			45	18
Confl. Bikes (#/hr)											10	
Turn Type	Prot	NA		Perm	NA	pm+ov	Perm	Split	Split	NA	Perm	Prot
Protected Phases	5	2			6	4		4	4	4		3
Permitted Phases				2		6	8				4	
Actuated Green, G (s)	8.0	62.8		62.8	51.0	67.1	35.2	16.1	16.1	16.1	16.1	13.2
Effective Green, g (s)	9.4	64.9		62.8	52.9	63.3	35.2	16.1	16.1	16.1	16.1	13.2
Actuated g/C Ratio	0.09	0.59		0.57	0.48	0.58	0.32	0.15	0.15	0.15	0.15	0.12
Clearance Time (s)	4.0	6.1		6.1	5.9	5.9	5.9	5.9	5.9	5.9	5.9	5.9
Vehicle Extension (s)	3.0	2.8		2.8	3.2	2.9	4.1	2.9	2.9	2.9	2.9	2.9
Lane Grp Cap (vph)	293	2787		777	2445	910	515	246	235	243	205	212
v/s Ratio Prot	c0.06	0.35			c0.46	0.06		0.11	c0.14	0.14		c0.12
v/s Ratio Perm				0.08		0.20	0.02				0.01	
v/c Ratio	0.74	0.59		0.14	0.96	0.45	0.07	0.73	0.97	0.96	0.08	0.98
Uniform Delay, d1	49.1	14.2		11.0	27.4	13.4	26.0	44.9	46.7	46.7	40.5	48.2
Progression Factor	1.00	1.00		1.00	1.00	1.00	1.00	0.86	0.88	0.87	1.74	1.00
Incremental Delay, d2	9.7	0.9		0.4	10.4	0.3	0.1	10.0	49.6	46.6	0.2	54.5
Delay (s)	58.8	15.1		11.4	37.9	13.7	26.1	48.6	90.5	87.4	70.6	102.8
Level of Service	E	B		B	D	B	C	D	F	F	E	F
Approach Delay (s)		19.4			34.0					76.6		73.0
Approach LOS		B			C					E		E

Intersection Summary			
HCM 2000 Control Delay	36.9	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.96		
Actuated Cycle Length (s)	110.0	Sum of lost time (s)	20.3
Intersection Capacity Utilization	85.0%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group

Movement	NWR	NWR2
Lane Configurations		
Traffic Volume (vph)	170	30
Future Volume (vph)	170	30
Ideal Flow (vphpl)	1900	1900
Total Lost time (s)	5.9	
Lane Util. Factor	0.88	
Frpb, ped/bikes	1.00	
Flpb, ped/bikes	1.00	
Frt	0.85	
Flt Protected	1.00	
Satd. Flow (prot)	2787	
Flt Permitted	1.00	
Satd. Flow (perm)	2787	
Peak-hour factor, PHF	0.92	0.92
Adj. Flow (vph)	185	33
RTOR Reduction (vph)	114	0
Lane Group Flow (vph)	104	0
Confl. Peds. (#/hr)		9
Confl. Bikes (#/hr)		1
Turn Type	Prot	
Protected Phases	3	
Permitted Phases		
Actuated Green, G (s)	13.2	
Effective Green, g (s)	13.2	
Actuated g/C Ratio	0.12	
Clearance Time (s)	5.9	
Vehicle Extension (s)	2.9	
Lane Grp Cap (vph)	334	
v/s Ratio Prot	0.04	
v/s Ratio Perm		
v/c Ratio	0.31	
Uniform Delay, d1	44.3	
Progression Factor	1.00	
Incremental Delay, d2	0.5	
Delay (s)	44.8	
Level of Service	D	
Approach Delay (s)		
Approach LOS		

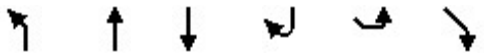
Intersection Summary



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	50	100	100	90	80	80	70	50	90	20	30	30
Future Volume (vph)	50	100	100	90	80	80	70	50	90	20	30	30
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.5			4.5			4.5			4.0	
Lane Util. Factor		1.00			1.00			1.00			1.00	
Frt		0.95			0.96			0.94			0.95	
Flt Protected		0.99			0.98			0.98			0.99	
Satd. Flow (prot)		1745			1751			1726			1747	
Flt Permitted		0.90			0.75			0.89			0.92	
Satd. Flow (perm)		1577			1335			1563			1635	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	54	109	109	98	87	87	76	54	98	22	33	33
RTOR Reduction (vph)	0	50	0	0	35	0	0	32	0	0	15	0
Lane Group Flow (vph)	0	222	0	0	237	0	0	196	0	0	73	0
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)		12.9			12.9			26.7			27.2	
Effective Green, g (s)		12.9			12.9			26.7			27.2	
Actuated g/C Ratio		0.27			0.27			0.55			0.56	
Clearance Time (s)		4.5			4.5			4.5			4.0	
Vehicle Extension (s)		3.0			3.0			3.0			3.0	
Lane Grp Cap (vph)		418			354			858			915	
v/s Ratio Prot												
v/s Ratio Perm		0.14			c0.18			c0.13			0.04	
v/c Ratio		0.53			0.67			0.23			0.08	
Uniform Delay, d1		15.3			15.9			5.6			4.9	
Progression Factor		1.00			1.00			1.00			1.00	
Incremental Delay, d2		1.3			4.7			0.6			0.0	
Delay (s)		16.6			20.7			6.3			5.0	
Level of Service		B			C			A			A	
Approach Delay (s)		16.6			20.7			6.3			5.0	
Approach LOS		B			C			A			A	

Intersection Summary			
HCM 2000 Control Delay	13.9	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.37		
Actuated Cycle Length (s)	48.6	Sum of lost time (s)	9.0
Intersection Capacity Utilization	50.0%	ICU Level of Service	A
Analysis Period (min)	15		

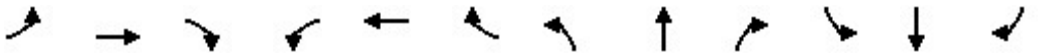
c Critical Lane Group



Movement	NBL	NBT	SBT	SBR	SEL	SER
Lane Configurations						
Traffic Volume (vph)	280	610	600	70	200	190
Future Volume (vph)	280	610	600	70	200	190
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0		4.0	4.0
Lane Util. Factor	1.00	0.91	0.91		1.00	1.00
Frt	1.00	1.00	0.98		1.00	0.85
Flt Protected	0.95	1.00	1.00		0.95	1.00
Satd. Flow (prot)	1770	5085	5006		1770	1583
Flt Permitted	0.95	1.00	1.00		0.95	1.00
Satd. Flow (perm)	1770	5085	5006		1770	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	304	663	652	76	217	207
RTOR Reduction (vph)	0	0	8	0	0	172
Lane Group Flow (vph)	304	663	720	0	217	35
Turn Type	Prot	NA	NA		Prot	Perm
Protected Phases	7	4	8		5	
Permitted Phases						5
Actuated Green, G (s)	26.1	91.7	61.6		20.3	20.3
Effective Green, g (s)	26.1	91.7	61.6		20.3	20.3
Actuated g/C Ratio	0.22	0.76	0.51		0.17	0.17
Clearance Time (s)	4.0	4.0	4.0		4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0		3.0	3.0
Lane Grp Cap (vph)	384	3885	2569		299	267
v/s Ratio Prot	c0.17	0.13	c0.14		c0.12	
v/s Ratio Perm						0.02
v/c Ratio	0.79	0.17	0.28		0.73	0.13
Uniform Delay, d1	44.4	3.8	16.6		47.2	42.4
Progression Factor	1.17	0.17	1.10		1.00	1.00
Incremental Delay, d2	10.5	0.1	0.3		8.5	0.2
Delay (s)	62.5	0.7	18.5		55.7	42.6
Level of Service	E	A	B		E	D
Approach Delay (s)		20.2	18.5		49.3	
Approach LOS		C	B		D	

Intersection Summary			
HCM 2000 Control Delay	25.4	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.49		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	49.7%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	30	0	100	460	390	100	0	0	0	0	70	10
Future Volume (vph)	30	0	100	460	390	100	0	0	0	0	70	10
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0		4.0	4.0	4.0						4.0	
Lane Util. Factor	1.00		1.00	1.00	1.00						1.00	
Frt	1.00		0.85	1.00	0.97						0.98	
Flt Protected	0.95		1.00	0.95	1.00						1.00	
Satd. Flow (prot)	1770		1583	1770	1806						1831	
Flt Permitted	0.53		1.00	0.95	1.00						1.00	
Satd. Flow (perm)	993		1583	1770	1806						1831	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	33	0	109	500	424	109	0	0	0	0	76	11
RTOR Reduction (vph)	0	0	92	292	12	0	0	0	0	0	9	0
Lane Group Flow (vph)	33	0	17	208	521	0	0	0	0	0	78	0
Turn Type	Perm		Perm	Split	NA						NA	
Protected Phases				8	8						6	
Permitted Phases	4		4									
Actuated Green, G (s)	7.5		7.5	19.5	19.5						7.9	
Effective Green, g (s)	7.5		7.5	19.5	19.5						7.9	
Actuated g/C Ratio	0.16		0.16	0.42	0.42						0.17	
Clearance Time (s)	4.0		4.0	4.0	4.0						4.0	
Vehicle Extension (s)	3.0		3.0	3.0	3.0						3.0	
Lane Grp Cap (vph)	158		253	735	750						308	
v/s Ratio Prot				0.12	c0.29						c0.04	
v/s Ratio Perm	c0.03		0.01									
v/c Ratio	0.21		0.07	0.28	0.69						0.25	
Uniform Delay, d1	17.1		16.7	9.1	11.3						16.9	
Progression Factor	1.00		1.00	1.00	1.00						1.00	
Incremental Delay, d2	0.7		0.1	0.2	2.8						0.4	
Delay (s)	17.8		16.8	9.3	14.1						17.4	
Level of Service	B		B	A	B						B	
Approach Delay (s)		17.1			11.7			0.0			17.4	
Approach LOS		B			B			A			B	

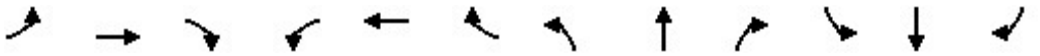
Intersection Summary			
HCM 2000 Control Delay	12.7	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.49		
Actuated Cycle Length (s)	46.9	Sum of lost time (s)	12.0
Intersection Capacity Utilization	46.0%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	1640	10	460	2410	0	0	0	0	390	240	150
Future Volume (vph)	0	1640	10	460	2410	0	0	0	0	390	240	150
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0		4.0	4.0					4.0	4.0	4.0
Lane Util. Factor		0.91		1.00	0.86					0.95	0.95	1.00
Frt		1.00		1.00	1.00					1.00	1.00	0.85
Flt Protected		1.00		0.95	1.00					0.95	0.99	1.00
Satd. Flow (prot)		5081		1770	6408					1681	1751	1583
Flt Permitted		1.00		0.95	1.00					0.95	0.99	1.00
Satd. Flow (perm)		5081		1770	6408					1681	1751	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	1783	11	500	2620	0	0	0	0	424	261	163
RTOR Reduction (vph)	0	1	0	0	0	0	0	0	0	0	0	39
Lane Group Flow (vph)	0	1793	0	500	2620	0	0	0	0	352	333	124
Turn Type		NA		Prot	NA					Perm	NA	Perm
Protected Phases		2		1	6						4	
Permitted Phases										4		4
Actuated Green, G (s)		52.1		34.5	91.3					33.9	33.9	33.9
Effective Green, g (s)		53.3		34.9	92.2					34.8	34.8	34.8
Actuated g/C Ratio		0.39		0.26	0.68					0.26	0.26	0.26
Clearance Time (s)		5.2		4.4	4.9					4.9	4.9	4.9
Vehicle Extension (s)		3.8		2.0	4.6					2.0	2.0	2.0
Lane Grp Cap (vph)		2006		457	4376					433	451	408
v/s Ratio Prot		c0.35		c0.28	0.41							
v/s Ratio Perm										c0.21	0.19	0.08
v/c Ratio		0.89		1.09	0.60					0.81	0.74	0.30
Uniform Delay, d1		38.2		50.1	11.5					47.0	45.9	40.3
Progression Factor		1.00		1.09	0.07					1.00	1.00	1.00
Incremental Delay, d2		6.6		46.1	0.1					10.6	5.4	0.2
Delay (s)		44.9		100.6	0.9					57.6	51.3	40.5
Level of Service		D		F	A					E	D	D
Approach Delay (s)		44.9			16.9			0.0			51.8	
Approach LOS		D			B			A			D	

Intersection Summary			
HCM 2000 Control Delay	30.7	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.93		
Actuated Cycle Length (s)	135.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	84.6%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	330	100	160	240	0	140	0	160	230	230	10
Future Volume (vph)	0	330	100	160	240	0	140	0	160	230	230	10
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0		4.0	4.0		4.0		4.0	4.0	4.0	
Lane Util. Factor		0.95		1.00	0.95		1.00		1.00	1.00	1.00	
Frpb, ped/bikes		0.97		1.00	1.00		1.00		0.98	1.00	1.00	
Flpb, ped/bikes		1.00		0.99	1.00		1.00		1.00	1.00	1.00	
Frt		0.97		1.00	1.00		1.00		0.85	1.00	0.99	
Flt Protected		1.00		0.95	1.00		0.95		1.00	0.95	1.00	
Satd. Flow (prot)		3329		1750	3539		1770		1548	1770	1850	
Flt Permitted		1.00		0.40	1.00		0.95		1.00	0.95	1.00	
Satd. Flow (perm)		3329		739	3539		1770		1548	1770	1850	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	359	109	174	261	0	152	0	174	250	250	11
RTOR Reduction (vph)	0	16	0	0	0	0	0	0	92	0	2	0
Lane Group Flow (vph)	0	452	0	174	261	0	152	0	82	250	259	0
Confl. Peds. (#/hr)			21	21		47	2		4			2
Turn Type		NA		pm+pt	NA		Prot		Perm	Split	NA	
Protected Phases		2		1	6		3			4	4	
Permitted Phases				6					2			
Actuated Green, G (s)		60.1		75.3	75.3		16.4		60.1	24.1	24.1	
Effective Green, g (s)		61.0		75.7	76.2		16.8		61.0	25.0	25.0	
Actuated g/C Ratio		0.47		0.58	0.59		0.13		0.47	0.19	0.19	
Clearance Time (s)		4.9		4.4	4.9		4.4		4.9	4.9	4.9	
Vehicle Extension (s)		6.7		2.0	6.7		3.0		6.7	3.0	3.0	
Lane Grp Cap (vph)		1562		517	2074		228		726	340	355	
v/s Ratio Prot		0.14		c0.03	0.07		c0.09			c0.14	0.14	
v/s Ratio Perm				c0.17					0.05			
v/c Ratio		0.29		0.34	0.13		0.67		0.11	0.74	0.73	
Uniform Delay, d1		21.2		13.2	12.0		53.9		19.3	49.4	49.3	
Progression Factor		1.00		1.00	1.00		1.00		1.00	1.00	1.00	
Incremental Delay, d2		0.5		0.1	0.1		7.2		0.3	8.0	7.5	
Delay (s)		21.7		13.3	12.1		61.1		19.6	57.4	56.9	
Level of Service		C		B	B		E		B	E	E	
Approach Delay (s)		21.7			12.6			39.0			57.1	
Approach LOS		C			B			D			E	

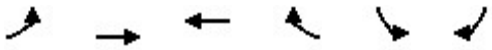
Intersection Summary			
HCM 2000 Control Delay	33.1	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.48		
Actuated Cycle Length (s)	130.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	55.8%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	100	190	350	460	480	150
Future Volume (vph)	100	190	350	460	480	150
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0		4.4	4.0	4.9	
Lane Util. Factor	1.00		1.00	0.91	0.91	
Frpb, ped/bikes	0.99		1.00	1.00	1.00	
Flpb, ped/bikes	1.00		1.00	1.00	1.00	
Frt	0.91		1.00	1.00	0.96	
Flt Protected	0.98		0.95	1.00	1.00	
Satd. Flow (prot)	1651		1770	5085	4904	
Flt Permitted	0.98		0.95	1.00	1.00	
Satd. Flow (perm)	1651		1770	5085	4904	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	109	207	380	500	522	163
RTOR Reduction (vph)	64	0	0	0	32	0
Lane Group Flow (vph)	252	0	380	500	653	0
Confl. Peds. (#/hr)		2				
Turn Type	Prot		Prot	NA	NA	
Protected Phases	2		3	8	4	
Permitted Phases						
Actuated Green, G (s)	23.3		32.2	88.7	52.5	
Effective Green, g (s)	23.3		31.8	88.7	51.6	
Actuated g/C Ratio	0.19		0.27	0.74	0.43	
Clearance Time (s)	4.0		4.0	4.0	4.0	
Vehicle Extension (s)	3.0		3.0	3.0	3.0	
Lane Grp Cap (vph)	320		469	3758	2108	
v/s Ratio Prot	c0.15		c0.21	0.10	c0.13	
v/s Ratio Perm						
v/c Ratio	0.79		0.81	0.13	0.31	
Uniform Delay, d1	46.0		41.3	4.5	22.5	
Progression Factor	1.00		0.99	1.42	1.00	
Incremental Delay, d2	12.1		10.1	0.1	0.4	
Delay (s)	58.1		50.7	6.5	22.9	
Level of Service	E		D	A	C	
Approach Delay (s)	58.1			25.6	22.9	
Approach LOS	E			C	C	

Intersection Summary			
HCM 2000 Control Delay	30.1	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.56		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	13.3
Intersection Capacity Utilization	60.1%	ICU Level of Service	B
Analysis Period (min)	15		

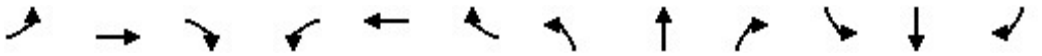
c Critical Lane Group



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	50	140	80	40	20	30
Future Volume (Veh/h)	50	140	80	40	20	30
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	54	152	87	43	22	33
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type		None	None			
Median storage veh)						
Upstream signal (ft)		1157	644			
pX, platoon unblocked						
vC, conflicting volume	130				368	108
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	130				368	108
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	96				96	97
cM capacity (veh/h)	1455				608	945

Direction, Lane #	EB 1	EB 2	WB 1	SB 1
Volume Total	54	152	130	55
Volume Left	54	0	0	22
Volume Right	0	0	43	33
cSH	1455	1700	1700	774
Volume to Capacity	0.04	0.09	0.08	0.07
Queue Length 95th (ft)	3	0	0	6
Control Delay (s)	7.6	0.0	0.0	10.0
Lane LOS	A			B
Approach Delay (s)	2.0		0.0	10.0
Approach LOS				B

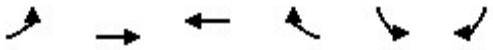
Intersection Summary			
Average Delay	2.5		
Intersection Capacity Utilization	19.4%	ICU Level of Service	A
Analysis Period (min)	15		



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	50	1980	0	0	2790	640	80	370	150	0	0	0
Future Volume (vph)	50	1980	0	0	2790	640	80	370	150	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0			4.0	4.0		4.0				
Lane Util. Factor	1.00	0.91			0.91	1.00		0.95				
Frt	1.00	1.00			1.00	0.85		0.96				
Flt Protected	0.95	1.00			1.00	1.00		0.99				
Satd. Flow (prot)	1770	5085			5085	1583		3384				
Flt Permitted	0.95	1.00			1.00	1.00		0.99				
Satd. Flow (perm)	1770	5085			5085	1583		3384				
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	54	2152	0	0	3033	696	87	402	163	0	0	0
RTOR Reduction (vph)	0	0	0	0	0	137	0	6	0	0	0	0
Lane Group Flow (vph)	54	2152	0	0	3033	559	0	646	0	0	0	0
Turn Type	Prot	NA			NA	Perm	Split	NA				
Protected Phases	5	2			6		4	4				
Permitted Phases						6						
Actuated Green, G (s)	10.9	88.3			73.0	73.0		36.9				
Effective Green, g (s)	11.3	89.2			73.9	73.9		37.8				
Actuated g/C Ratio	0.08	0.66			0.55	0.55		0.28				
Clearance Time (s)	4.4	4.9			4.9	4.9		4.9				
Vehicle Extension (s)	2.0	3.8			4.6	4.6		2.0				
Lane Grp Cap (vph)	148	3359			2783	866		947				
v/s Ratio Prot	0.03	c0.42			c0.60			c0.19				
v/s Ratio Perm						0.35						
v/c Ratio	0.36	0.64			1.09	0.65		0.68				
Uniform Delay, d1	58.5	13.5			30.5	21.4		43.3				
Progression Factor	0.80	0.89			1.00	1.00		1.00				
Incremental Delay, d2	0.3	0.5			47.2	3.7		1.6				
Delay (s)	47.2	12.4			77.7	25.1		44.9				
Level of Service	D	B			E	C		D				
Approach Delay (s)		13.3			67.9			44.9			0.0	
Approach LOS		B			E			D			A	

Intersection Summary			
HCM 2000 Control Delay	47.3	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.94		
Actuated Cycle Length (s)	135.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	84.6%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	10	710	400	330	0	0
Future Volume (Veh/h)	10	710	400	330	0	0
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	11	772	435	359	0	0
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type		None	None			
Median storage veh)						
Upstream signal (ft)		480	811			
pX, platoon unblocked	0.93				0.96	0.93
vC, conflicting volume	794				1022	397
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	635				676	210
tC, single (s)	4.1				6.8	6.9
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	99				100	100
cM capacity (veh/h)	881				367	743

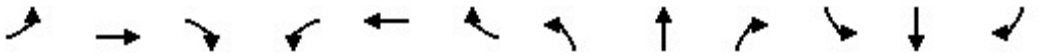
Direction, Lane #	EB 1	EB 2	EB 3	WB 1	WB 2
Volume Total	11	386	386	290	504
Volume Left	11	0	0	0	0
Volume Right	0	0	0	0	359
cSH	881	1700	1700	1700	1700
Volume to Capacity	0.01	0.23	0.23	0.17	0.30
Queue Length 95th (ft)	1	0	0	0	0
Control Delay (s)	9.1	0.0	0.0	0.0	0.0
Lane LOS	A				
Approach Delay (s)	0.1			0.0	
Approach LOS					

Intersection Summary			
Average Delay	0.1		
Intersection Capacity Utilization	25.0%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Sign Control	Stop		Stop			Stop
Traffic Volume (vph)	170	0	0	130	300	570
Future Volume (vph)	170	0	0	130	300	570
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	185	0	0	141	326	620

Direction, Lane #	WB 1	NB 1	SB 1	SB 2
Volume Total (vph)	185	141	326	620
Volume Left (vph)	185	0	326	0
Volume Right (vph)	0	141	0	0
Hadj (s)	0.23	-0.57	0.53	0.03
Departure Headway (s)	6.2	5.0	5.8	5.3
Degree Utilization, x	0.32	0.19	0.53	0.91
Capacity (veh/h)	567	702	611	675
Control Delay (s)	12.0	9.1	13.8	38.0
Approach Delay (s)	12.0	9.1	29.7	
Approach LOS	B	A	D	

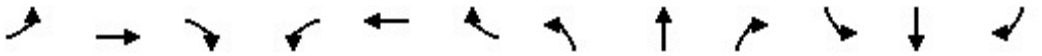
Intersection Summary			
Delay	24.8		
Level of Service	C		
Intersection Capacity Utilization	46.5%	ICU Level of Service	A
Analysis Period (min)	15		



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Traffic Volume (vph)	100	20	50	40	20	10	20	30	20	20	230	490
Future Volume (vph)	100	20	50	40	20	10	20	30	20	20	230	490
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	109	22	54	43	22	11	22	33	22	22	250	533

Direction, Lane #	EB 1	EB 2	WB 1	NB 1	SB 1	SB 2
Volume Total (vph)	120	65	76	77	272	533
Volume Left (vph)	109	0	43	22	22	0
Volume Right (vph)	0	54	11	22	0	533
Hadj (s)	0.49	-0.55	0.06	-0.08	0.07	-0.67
Departure Headway (s)	7.1	6.1	6.7	6.1	5.5	4.8
Degree Utilization, x	0.24	0.11	0.14	0.13	0.42	0.71
Capacity (veh/h)	473	547	493	553	632	729
Control Delay (s)	11.1	8.6	10.9	10.1	11.3	17.5
Approach Delay (s)	10.2		10.9	10.1	15.4	
Approach LOS	B		B	B	C	

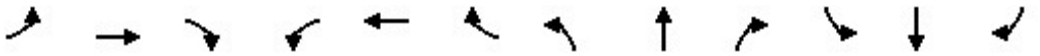
Intersection Summary				
Delay	13.9			
Level of Service	B			
Intersection Capacity Utilization	48.1%	ICU Level of Service	A	
Analysis Period (min)	15			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	350	190	540	520	0	0	0	0	280	360	410
Future Volume (vph)	0	350	190	540	520	0	0	0	0	280	360	410
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0	4.0	4.0	4.0					4.0	4.0	4.0
Lane Util. Factor		0.95	1.00	0.97	0.95					0.91	0.91	1.00
Frt		1.00	0.85	1.00	1.00					1.00	1.00	0.85
Flt Protected		1.00	1.00	0.95	1.00					0.95	0.99	1.00
Satd. Flow (prot)		3539	1583	3433	3539					1610	3358	1583
Flt Permitted		1.00	1.00	0.95	1.00					0.95	0.99	1.00
Satd. Flow (perm)		3539	1583	3433	3539					1610	3358	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	380	207	587	565	0	0	0	0	304	391	446
RTOR Reduction (vph)	0	0	90	0	0	0	0	0	0	0	0	227
Lane Group Flow (vph)	0	380	117	587	565	0	0	0	0	213	482	219
Turn Type		NA	Perm	Prot	NA					Perm	NA	Perm
Protected Phases		2		1	6						4	
Permitted Phases			2							4		4
Actuated Green, G (s)		30.2	30.2	16.1	50.7					19.5	19.5	19.5
Effective Green, g (s)		31.1	31.1	16.5	51.6					20.4	20.4	20.4
Actuated g/C Ratio		0.39	0.39	0.21	0.65					0.25	0.25	0.25
Clearance Time (s)		4.9	4.9	4.4	4.9					4.9	4.9	4.9
Vehicle Extension (s)		3.8	3.8	2.0	4.2					2.0	2.0	2.0
Lane Grp Cap (vph)		1375	615	708	2282					410	856	403
v/s Ratio Prot		c0.11		c0.17	0.16							
v/s Ratio Perm			0.07							0.13	0.14	0.14
v/c Ratio		0.28	0.19	0.83	0.25					0.52	0.56	0.54
Uniform Delay, d1		16.7	16.1	30.4	6.0					25.6	25.9	25.8
Progression Factor		1.00	1.00	1.00	1.00					1.00	1.00	1.00
Incremental Delay, d2		0.5	0.7	7.6	0.3					0.5	0.5	0.8
Delay (s)		17.2	16.8	38.0	6.3					26.1	26.4	26.6
Level of Service		B	B	D	A					C	C	C
Approach Delay (s)		17.1			22.4			0.0			26.4	
Approach LOS		B			C			A			C	

Intersection Summary			
HCM 2000 Control Delay	22.9	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.50		
Actuated Cycle Length (s)	80.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	49.2%	ICU Level of Service	A
Analysis Period (min)	15		

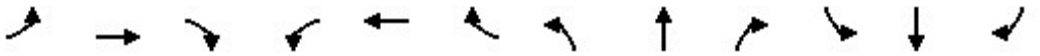
c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	0	40	40	0	0	0	0	0	0	1490	160
Future Volume (Veh/h)	0	0	40	40	0	0	0	0	0	0	1490	160
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	0	43	43	0	0	0	0	0	0	1620	174
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)								1066				
pX, platoon unblocked												
vC, conflicting volume	1707	1707	627	583	1794	0	1794			0		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	1707	1707	627	583	1794	0	1794			0		
tC, single (s)	7.5	6.5	6.9	7.5	6.5	6.9	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	100	100	90	88	100	100	100			100		
cM capacity (veh/h)	59	90	426	356	80	1084	341			1622		

Direction, Lane #	EB 1	WB 1	SB 1	SB 2	SB 3
Volume Total	43	43	648	648	498
Volume Left	0	43	0	0	0
Volume Right	43	0	0	0	174
cSH	426	356	1700	1700	1700
Volume to Capacity	0.10	0.12	0.38	0.38	0.29
Queue Length 95th (ft)	8	10	0	0	0
Control Delay (s)	14.4	16.5	0.0	0.0	0.0
Lane LOS	B	C			
Approach Delay (s)	14.4	16.5	0.0		
Approach LOS	B	C			

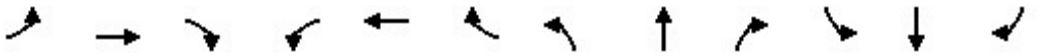
Intersection Summary				
Average Delay	0.7			
Intersection Capacity Utilization	50.9%	ICU Level of Service	A	
Analysis Period (min)	15			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	190	160	190	370	0	0	0	0	470	1270	360
Future Volume (vph)	0	190	160	190	370	0	0	0	0	470	1270	360
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0	4.0		4.0					4.0	4.0	
Lane Util. Factor		1.00	1.00		0.95					1.00	0.91	
Frt		1.00	0.85		1.00					1.00	0.97	
Flt Protected		1.00	1.00		0.98					0.95	1.00	
Satd. Flow (prot)		1863	1583		3480					1770	4917	
Flt Permitted		1.00	1.00		0.76					0.95	1.00	
Satd. Flow (perm)		1863	1583		2673					1770	4917	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	207	174	207	402	0	0	0	0	511	1380	391
RTOR Reduction (vph)	0	0	35	0	0	0	0	0	0	0	78	0
Lane Group Flow (vph)	0	207	139	0	609	0	0	0	0	511	1693	0
Turn Type		NA	Perm	Perm	NA					Perm	NA	
Protected Phases		4			8						6	
Permitted Phases			4	8						6		
Actuated Green, G (s)		21.3	21.3		21.3					30.7	30.7	
Effective Green, g (s)		24.0	24.0		24.0					33.0	33.0	
Actuated g/C Ratio		0.37	0.37		0.37					0.51	0.51	
Clearance Time (s)		6.7	6.7		6.7					6.3	6.3	
Vehicle Extension (s)		2.0	2.0		2.5					4.6	4.6	
Lane Grp Cap (vph)		687	584		986					898	2496	
v/s Ratio Prot		0.11									c0.34	
v/s Ratio Perm			0.09		c0.23					0.29		
v/c Ratio		0.30	0.24		0.62					0.57	0.68	
Uniform Delay, d1		14.5	14.2		16.8					11.1	12.0	
Progression Factor		1.00	1.00		1.00					1.00	1.00	
Incremental Delay, d2		1.1	1.0		2.9					2.6	1.5	
Delay (s)		15.7	15.1		19.7					13.7	13.5	
Level of Service		B	B		B					B	B	
Approach Delay (s)		15.4			19.7			0.0			13.6	
Approach LOS		B			B			A			B	

Intersection Summary			
HCM 2000 Control Delay	14.9	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.65		
Actuated Cycle Length (s)	65.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	68.3%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	660	80	40	540	0	0	0	0	540	340	510
Future Volume (vph)	0	660	80	40	540	0	0	0	0	540	340	510
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		6.7		4.0	6.7						6.3	4.0
Lane Util. Factor		0.95		1.00	0.95						0.86	0.86
Frt		0.98		1.00	1.00						1.00	0.85
Flt Protected		1.00		0.95	1.00						0.97	1.00
Satd. Flow (prot)		3482		1770	3539						4663	1362
Flt Permitted		1.00		0.95	1.00						0.97	1.00
Satd. Flow (perm)		3482		1770	3539						4663	1362
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	717	87	43	587	0	0	0	0	587	370	554
RTOR Reduction (vph)	0	14	0	0	0	0	0	0	0	0	0	107
Lane Group Flow (vph)	0	790	0	43	587	0	0	0	0	0	957	447
Turn Type		NA		Prot	NA					Perm	NA	Perm
Protected Phases		2		1	6						4	
Permitted Phases										4		4
Actuated Green, G (s)		22.4		2.8	27.9						25.1	25.1
Effective Green, g (s)		20.6		3.2	27.8						24.2	26.5
Actuated g/C Ratio		0.32		0.05	0.43						0.37	0.41
Clearance Time (s)		4.9		4.4	6.6						5.4	5.4
Vehicle Extension (s)		1.0		2.0	1.0						1.0	1.0
Lane Grp Cap (vph)		1103		87	1513						1736	555
v/s Ratio Prot		c0.23		0.02	c0.17							
v/s Ratio Perm											0.21	c0.33
v/c Ratio		0.72		0.49	0.39						0.94dl	0.81
Uniform Delay, d1		19.6		30.1	12.8						16.1	17.0
Progression Factor		1.00		1.32	0.84						1.00	1.00
Incremental Delay, d2		4.0		1.5	0.7						0.2	7.9
Delay (s)		23.6		41.2	11.4						16.3	24.8
Level of Service		C		D	B						B	C
Approach Delay (s)		23.6			13.5			0.0			19.4	
Approach LOS		C			B			A			B	

Intersection Summary			
HCM 2000 Control Delay	19.3	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.79		
Actuated Cycle Length (s)	65.0	Sum of lost time (s)	17.0
Intersection Capacity Utilization	79.2%	ICU Level of Service	D
Analysis Period (min)	15		

dl Defacto Left Lane. Recode with 1 though lane as a left lane.

c Critical Lane Group

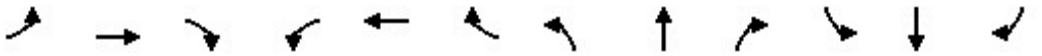
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	130	1110	1820	760	660	130
Future Volume (vph)	130	1110	1820	760	660	130
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	0.88	0.97	0.91	0.91	1.00
Frpb, ped/bikes	1.00	0.99	1.00	1.00	1.00	1.00
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected	0.95	1.00	0.95	1.00	1.00	1.00
Satd. Flow (prot)	1770	2765	3433	5085	5085	1583
Flt Permitted	0.95	1.00	0.95	1.00	1.00	1.00
Satd. Flow (perm)	1770	2765	3433	5085	5085	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	141	1207	1978	826	717	141
RTOR Reduction (vph)	0	18	0	0	0	1
Lane Group Flow (vph)	141	1189	1978	826	717	140
Confl. Peds. (#/hr)	129	61	34			
Turn Type	Prot	pm+ov	Prot	NA	NA	pm+ov
Protected Phases	5	7	7	4	8	5
Permitted Phases		5				8
Actuated Green, G (s)	14.8	76.0	61.2	97.2	32.0	46.8
Effective Green, g (s)	14.8	76.0	61.2	97.2	32.0	46.8
Actuated g/C Ratio	0.12	0.63	0.51	0.81	0.27	0.39
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	218	1843	1750	4118	1356	670
v/s Ratio Prot	0.08	c0.33	c0.58	0.16	c0.14	0.03
v/s Ratio Perm		0.10				0.06
v/c Ratio	0.65	0.64	1.13	0.20	0.53	0.21
Uniform Delay, d1	50.1	13.6	29.4	2.6	37.6	24.3
Progression Factor	1.00	1.00	0.42	0.60	0.82	0.98
Incremental Delay, d2	6.5	0.8	61.7	0.0	1.4	0.2
Delay (s)	56.6	14.4	74.1	1.6	32.1	24.0
Level of Service	E	B	E	A	C	C
Approach Delay (s)	18.8			52.8	30.8	
Approach LOS	B			D	C	

Intersection Summary			
HCM 2000 Control Delay	39.9	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.89		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	81.9%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	SEL	SET	SER	NWL	NWT	NWR
Lane Configurations												
Traffic Volume (vph)	100	310	0	0	680	320	60	0	60	250	20	180
Future Volume (vph)	100	310	0	0	680	320	60	0	60	250	20	180
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0			4.0	4.0		4.0		4.0	4.0	4.0
Lane Util. Factor	1.00	0.95			0.95	1.00		1.00		0.95	0.95	1.00
Frt	1.00	1.00			1.00	0.85		0.93		1.00	1.00	0.85
Flt Protected	0.95	1.00			1.00	1.00		0.98		0.95	0.96	1.00
Satd. Flow (prot)	1770	3539			3539	1583		1695		1681	1697	1583
Flt Permitted	0.95	1.00			1.00	1.00		0.76		0.50	0.54	1.00
Satd. Flow (perm)	1770	3539			3539	1583		1326		893	964	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	109	337	0	0	739	348	65	0	65	272	22	196
RTOR Reduction (vph)	0	0	0	0	0	232	0	118	0	0	0	151
Lane Group Flow (vph)	109	337	0	0	739	116	0	12	0	147	147	45
Turn Type	Prot	NA			NA	Perm	Perm	NA		Perm	NA	Perm
Protected Phases	5	2			6			8			7	
Permitted Phases						6	8			7		7
Actuated Green, G (s)	4.6	28.4			19.8	19.8		5.3		13.7	13.7	13.7
Effective Green, g (s)	4.6	28.4			19.8	19.8		5.3		13.7	13.7	13.7
Actuated g/C Ratio	0.08	0.48			0.33	0.33		0.09		0.23	0.23	0.23
Clearance Time (s)	4.0	4.0			4.0	4.0		4.0		4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0			3.0	3.0		3.0		3.0	3.0	3.0
Lane Grp Cap (vph)	137	1692			1179	527		118		205	222	365
v/s Ratio Prot	c0.06	0.10			c0.21							
v/s Ratio Perm						0.07		c0.01		c0.16	0.15	0.03
v/c Ratio	0.80	0.20			0.63	0.22		0.10		0.72	0.66	0.12
Uniform Delay, d1	26.9	8.9			16.7	14.2		24.9		21.1	20.7	18.1
Progression Factor	1.00	1.00			1.00	1.00		1.00		1.00	1.00	1.00
Incremental Delay, d2	26.5	0.3			2.5	1.0		0.4		11.3	7.2	0.2
Delay (s)	53.4	9.2			19.2	15.2		25.2		32.4	28.0	18.3
Level of Service	D	A			B	B		C		C	C	B
Approach Delay (s)		20.0			17.9			25.2			25.4	
Approach LOS		C			B			C			C	

Intersection Summary			
HCM 2000 Control Delay	20.5	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.61		
Actuated Cycle Length (s)	59.4	Sum of lost time (s)	16.0
Intersection Capacity Utilization	48.0%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group



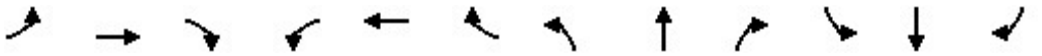
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	210	60	360	610	0	0	0	0	170	30	240
Future Volume (vph)	0	210	60	360	610	0	0	0	0	170	30	240
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0		5.9	5.9					1.8	1.8	1.8
Lane Util. Factor		0.95		1.00	1.00					0.95	0.95	1.00
Frpb, ped/bikes		1.00		1.00	1.00					1.00	1.00	1.00
Flpb, ped/bikes		1.00		1.00	1.00					1.00	1.00	1.00
Frt		0.97		1.00	1.00					1.00	1.00	0.85
Flt Protected		1.00		0.95	1.00					0.95	0.97	1.00
Satd. Flow (prot)		3408		1763	1863					1681	1708	1583
Flt Permitted		1.00		0.57	1.00					0.95	0.97	1.00
Satd. Flow (perm)		3408		1062	1863					1681	1708	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	228	65	391	663	0	0	0	0	185	33	261
RTOR Reduction (vph)	0	34	0	0	0	0	0	0	0	0	0	78
Lane Group Flow (vph)	0	259	0	391	663	0	0	0	0	100	118	183
Confl. Peds. (#/hr)	5		5	5		10						
Turn Type		NA		Perm	NA					Perm	NA	custom
Protected Phases		7			8						6	7
Permitted Phases				8						6		6
Actuated Green, G (s)		11.2		27.8	27.8					10.1	10.1	21.3
Effective Green, g (s)		11.2		28.1	28.1					12.3	12.3	25.7
Actuated g/C Ratio		0.18		0.44	0.44					0.19	0.19	0.41
Clearance Time (s)		4.0		6.2	6.2					4.0	4.0	4.0
Vehicle Extension (s)		3.0		2.0	2.0					3.0	3.0	3.0
Lane Grp Cap (vph)		602		471	827					326	331	687
v/s Ratio Prot		c0.08			0.36							0.06
v/s Ratio Perm				c0.37						0.06	0.07	0.06
v/c Ratio		0.43		0.83	0.80					0.31	0.36	0.27
Uniform Delay, d1		23.2		15.5	15.2					21.8	22.1	12.5
Progression Factor		1.00		1.00	1.00					1.00	1.00	1.00
Incremental Delay, d2		0.5		11.3	5.3					0.5	0.7	0.2
Delay (s)		23.7		26.8	20.5					22.4	22.7	12.7
Level of Service		C		C	C					C	C	B
Approach Delay (s)		23.7			22.8			0.0			17.2	
Approach LOS		C			C			A			B	

Intersection Summary			
HCM 2000 Control Delay	21.5	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.62		
Actuated Cycle Length (s)	63.3	Sum of lost time (s)	11.7
Intersection Capacity Utilization	55.2%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	20	30	30	440	110	160	40	1330	210	140	740	130
Future Volume (vph)	20	30	30	440	110	160	40	1330	210	140	740	130
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.3	4.3		4.0	4.0		4.0	4.0	
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	0.91		1.00	0.91	
Frpb, ped/bikes	1.00	0.99		1.00	1.00		1.00	1.00		1.00	1.00	
Flpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Frt	1.00	0.93		1.00	0.91		1.00	0.98		1.00	0.98	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1770	1710		1764	1697		1770	4981		1770	4955	
Flt Permitted	0.46	1.00		0.71	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (perm)	864	1710		1326	1697		1770	4981		1770	4955	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	22	33	33	478	120	174	43	1446	228	152	804	141
RTOR Reduction (vph)	0	21	0	0	59	0	0	23	0	0	26	0
Lane Group Flow (vph)	22	45	0	478	235	0	43	1651	0	152	919	0
Confl. Peds. (#/hr)			4	4			1					1
Turn Type	Perm	NA		Perm	NA		Prot	NA		Prot	NA	
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4			8								
Actuated Green, G (s)	33.9	33.9		33.2	33.2		3.6	33.3		9.3	38.8	
Effective Green, g (s)	33.9	33.9		33.6	33.6		3.6	34.7		9.8	40.9	
Actuated g/C Ratio	0.37	0.37		0.37	0.37		0.04	0.38		0.11	0.45	
Clearance Time (s)	4.0	4.0		4.7	4.7		4.0	5.4		4.5	6.1	
Vehicle Extension (s)	2.0	2.0		3.0	3.0		2.0	4.8		3.0	3.7	
Lane Grp Cap (vph)	324	641		492	630		70	1911		191	2241	
v/s Ratio Prot		0.03			0.14		0.02	c0.33		c0.09	0.19	
v/s Ratio Perm	0.03			c0.36								
v/c Ratio	0.07	0.07		0.97	0.37		0.61	0.86		0.80	0.41	
Uniform Delay, d1	18.1	18.1		27.9	20.7		42.7	25.7		39.3	16.6	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	0.0	0.0		33.1	0.4		10.7	5.5		20.1	0.6	
Delay (s)	18.1	18.2		61.1	21.1		53.4	31.2		59.4	17.2	
Level of Service	B	B		E	C		D	C		E	B	
Approach Delay (s)		18.2			45.8			31.7			23.0	
Approach LOS		B			D			C			C	

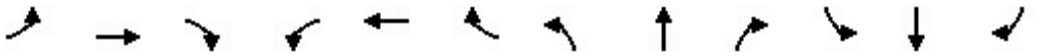
Intersection Summary			
HCM 2000 Control Delay	31.8	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.90		
Actuated Cycle Length (s)	90.4	Sum of lost time (s)	12.3
Intersection Capacity Utilization	79.4%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	650	560	140	150	730	170	300	690	100	110	710	250
Future Volume (vph)	650	560	140	150	730	170	300	690	100	110	710	250
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	4.0
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00	0.91		1.00	0.91	1.00
Frpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	0.99
Flpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	1.00
Frt	1.00	0.97		1.00	0.97		1.00	0.98		1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1770	3433		1770	3428		1770	4980		1770	5085	1571
Flt Permitted	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)	1770	3433		1770	3428		1770	4980		1770	5085	1571
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	707	609	152	163	793	185	326	750	109	120	772	272
RTOR Reduction (vph)	0	16	0	0	16	0	0	15	0	0	0	51
Lane Group Flow (vph)	707	745	0	163	962	0	326	844	0	120	772	221
Confl. Peds. (#/hr)	4					4	5		1	1		5
Turn Type	Prot	NA		Prot	NA		Prot	NA		Prot	NA	pm+ov
Protected Phases	7	4		3	8		5	2		1	6	7
Permitted Phases												6
Actuated Green, G (s)	40.6	56.7		15.5	31.0		18.6	29.7		9.2	20.2	60.8
Effective Green, g (s)	41.0	57.9		15.9	32.8		19.0	30.6		9.6	21.2	61.6
Actuated g/C Ratio	0.32	0.45		0.12	0.25		0.15	0.24		0.07	0.16	0.47
Clearance Time (s)	4.4	5.2		4.4	5.8		4.4	4.9		4.4	5.0	4.4
Vehicle Extension (s)	2.0	3.9		2.0	2.7		2.0	3.3		2.0	4.1	2.0
Lane Grp Cap (vph)	558	1529		216	864		258	1172		130	829	744
v/s Ratio Prot	c0.40	0.22		0.09	c0.28		c0.18	0.17		0.07	c0.15	0.09
v/s Ratio Perm												0.05
v/c Ratio	1.27	0.49		0.75	1.11		1.26	0.72		0.92	0.93	0.30
Uniform Delay, d1	44.5	25.5		55.2	48.6		55.5	45.8		59.8	53.7	20.9
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	133.9	0.3		12.4	66.8		145.8	3.8		55.0	18.4	0.1
Delay (s)	178.4	25.9		67.6	115.4		201.3	49.6		114.8	72.1	21.0
Level of Service	F	C		E	F		F	D		F	E	C
Approach Delay (s)		99.3			108.6			91.3			64.6	
Approach LOS		F			F			F			E	

Intersection Summary			
HCM 2000 Control Delay	91.4	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.16		
Actuated Cycle Length (s)	130.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	106.7%	ICU Level of Service	G
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	130	430	150	330	400	110	230	120	210	80	150	100
Future Volume (vph)	130	430	150	330	400	110	230	120	210	80	150	100
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	5.5	5.5	4.0	5.4	5.4
Lane Util. Factor	1.00	0.95	0.88	0.97	0.95	1.00	0.97	1.00	1.00	1.00	0.91	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1770	3539	2787	3433	3539	1583	3433	1863	1583	1770	5085	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1770	3539	2787	3433	3539	1583	3433	1863	1583	1770	5085	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	141	467	163	359	435	120	250	130	228	87	163	109
RTOR Reduction (vph)	0	0	89	0	0	74	0	0	135	0	0	85
Lane Group Flow (vph)	141	467	74	359	435	46	250	130	93	87	163	24
Turn Type	Prot	NA	pm+ov	Prot	NA	Perm	Prot	NA	pm+ov	Prot	NA	Perm
Protected Phases	5	2	3	1	6		3	8	1	7	4	
Permitted Phases			2			6			8			4
Actuated Green, G (s)	9.9	32.8	40.4	10.9	33.8	33.8	7.6	20.8	31.7	7.3	20.5	20.5
Effective Green, g (s)	10.3	33.7	41.2	11.3	34.7	34.7	8.0	20.2	29.5	7.7	20.0	20.0
Actuated g/C Ratio	0.11	0.37	0.46	0.12	0.38	0.38	0.09	0.22	0.33	0.09	0.22	0.22
Clearance Time (s)	4.4	4.9	4.4	4.4	4.9	4.9	4.4	4.9	4.4	4.4	4.9	4.9
Vehicle Extension (s)	2.0	2.1	2.0	2.0	2.3	2.3	2.0	4.5	2.0	2.0	4.5	4.5
Lane Grp Cap (vph)	201	1319	1270	429	1358	607	303	416	516	150	1125	350
v/s Ratio Prot	0.08	c0.13	0.01	c0.10	0.12		c0.07	c0.07	0.02	0.05	0.03	
v/s Ratio Perm			0.02			0.03			0.04			0.02
v/c Ratio	0.70	0.35	0.06	0.84	0.32	0.08	0.83	0.31	0.18	0.58	0.14	0.07
Uniform Delay, d1	38.6	20.5	13.8	38.6	19.6	17.7	40.5	29.3	21.8	39.8	28.3	27.8
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	8.7	0.7	0.0	12.7	0.6	0.2	15.8	0.7	0.1	3.4	0.1	0.1
Delay (s)	47.3	21.2	13.8	51.4	20.2	17.9	56.3	30.0	21.9	43.1	28.4	28.0
Level of Service	D	C	B	D	C	B	E	C	C	D	C	C
Approach Delay (s)		24.4			32.1			37.8			31.9	
Approach LOS		C			C			D			C	

Intersection Summary			
HCM 2000 Control Delay	31.1	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.48		
Actuated Cycle Length (s)	90.4	Sum of lost time (s)	19.0
Intersection Capacity Utilization	48.2%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	140	230	70	20	140	210	50	180	250	20	20	30
Future Volume (vph)	140	230	70	20	140	210	50	180	250	20	20	30
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0			4.0			4.0			4.0	
Lane Util. Factor		1.00			1.00			1.00			1.00	
Frpb, ped/bikes		1.00			1.00			0.98			1.00	
Flpb, ped/bikes		1.00			1.00			1.00			1.00	
Frt		0.98			0.92			0.93			0.94	
Flt Protected		0.98			1.00			0.99			0.99	
Satd. Flow (prot)		1787			1715			1691			1728	
Flt Permitted		0.78			0.97			0.96			0.80	
Satd. Flow (perm)		1410			1664			1634			1398	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	152	250	76	22	152	228	54	196	272	22	22	33
RTOR Reduction (vph)	0	10	0	0	40	0	0	57	0	0	23	0
Lane Group Flow (vph)	0	468	0	0	362	0	0	465	0	0	54	0
Confl. Peds. (#/hr)			3	3					8	8		
Turn Type	pm+pt	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases	5	2			6			8			4	
Permitted Phases	2			6			8			4		
Actuated Green, G (s)		39.1			39.1			20.3			20.3	
Effective Green, g (s)		40.0			40.0			21.2			21.2	
Actuated g/C Ratio		0.58			0.58			0.31			0.31	
Clearance Time (s)		4.9			4.9			4.9			4.9	
Vehicle Extension (s)		2.0			2.0			2.0			2.0	
Lane Grp Cap (vph)		815			961			500			428	
v/s Ratio Prot												
v/s Ratio Perm		c0.33			0.22			c0.28			0.04	
v/c Ratio		0.57			0.38			0.93			0.13	
Uniform Delay, d1		9.2			7.9			23.3			17.3	
Progression Factor		1.00			1.00			1.00			1.00	
Incremental Delay, d2		0.6			1.1			23.8			0.0	
Delay (s)		9.8			9.0			47.1			17.4	
Level of Service		A			A			D			B	
Approach Delay (s)		9.8			9.0			47.1			17.4	
Approach LOS		A			A			D			B	

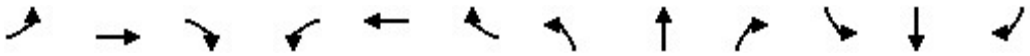
Intersection Summary			
HCM 2000 Control Delay	23.2	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.75		
Actuated Cycle Length (s)	69.2	Sum of lost time (s)	12.0
Intersection Capacity Utilization	85.8%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	570	120	240	680	150	150
Future Volume (vph)	570	120	240	680	150	150
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0		4.0	4.9	4.0	4.0
Lane Util. Factor	0.91		1.00	0.95	1.00	1.00
Frpb, ped/bikes	0.99		1.00	1.00	1.00	1.00
Flpb, ped/bikes	1.00		1.00	1.00	1.00	1.00
Frt	0.97		1.00	1.00	1.00	0.85
Flt Protected	1.00		0.95	1.00	0.95	1.00
Satd. Flow (prot)	4928		1770	3539	1770	1583
Flt Permitted	1.00		0.95	1.00	0.95	1.00
Satd. Flow (perm)	4928		1770	3539	1770	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	620	130	261	739	163	163
RTOR Reduction (vph)	42	0	0	0	0	124
Lane Group Flow (vph)	708	0	261	739	163	39
Confl. Peds. (#/hr)		7	7		30	15
Turn Type	NA		Prot	NA	Prot	Prot
Protected Phases	2		1	6	8	8
Permitted Phases						
Actuated Green, G (s)	21.5		10.8	36.7	13.4	13.4
Effective Green, g (s)	23.4		11.2	36.7	14.3	14.3
Actuated g/C Ratio	0.39		0.19	0.61	0.24	0.24
Clearance Time (s)	4.9		4.4	4.9	4.9	4.9
Vehicle Extension (s)	2.9		2.0	2.0	2.0	2.0
Lane Grp Cap (vph)	1925		330	2168	422	377
v/s Ratio Prot	c0.14		c0.15	0.21	c0.09	0.02
v/s Ratio Perm						
v/c Ratio	0.37		0.79	0.34	0.39	0.10
Uniform Delay, d1	13.0		23.2	5.7	19.1	17.8
Progression Factor	1.00		1.00	1.00	1.00	1.00
Incremental Delay, d2	0.5		11.4	0.4	0.2	0.0
Delay (s)	13.5		34.6	6.1	19.3	17.8
Level of Service	B		C	A	B	B
Approach Delay (s)	13.5			13.6	18.6	
Approach LOS	B			B	B	

Intersection Summary			
HCM 2000 Control Delay	14.3	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.47		
Actuated Cycle Length (s)	59.9	Sum of lost time (s)	11.0
Intersection Capacity Utilization	49.1%	ICU Level of Service	A
Analysis Period (min)	15		

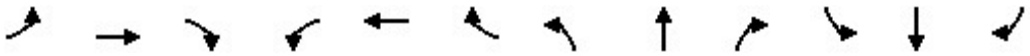
c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Traffic Volume (vph)	20	10	20	40	10	40	30	150	30	50	170	50
Future Volume (vph)	20	10	20	40	10	40	30	150	30	50	170	50
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	22	11	22	43	11	43	33	163	33	54	185	54

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total (vph)	55	97	229	293
Volume Left (vph)	22	43	33	54
Volume Right (vph)	22	43	33	54
Hadj (s)	-0.13	-0.14	-0.02	-0.04
Departure Headway (s)	5.1	5.1	4.6	4.5
Degree Utilization, x	0.08	0.14	0.29	0.37
Capacity (veh/h)	619	637	744	760
Control Delay (s)	8.6	8.8	9.5	10.2
Approach Delay (s)	8.6	8.8	9.5	10.2
Approach LOS	A	A	A	B

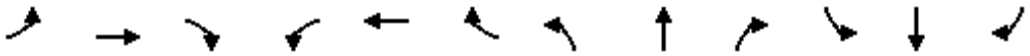
Intersection Summary				
Delay	9.6			
Level of Service	A			
Intersection Capacity Utilization	36.5%	ICU Level of Service	A	
Analysis Period (min)	15			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Traffic Volume (vph)	30	20	20	20	30	20	30	140	30	40	120	60
Future Volume (vph)	30	20	20	20	30	20	30	140	30	40	120	60
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	33	22	22	22	33	22	33	152	33	43	130	65

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total (vph)	77	77	218	238
Volume Left (vph)	33	22	33	43
Volume Right (vph)	22	22	33	65
Hadj (s)	-0.05	-0.08	-0.03	-0.09
Departure Headway (s)	5.0	5.0	4.5	4.5
Degree Utilization, x	0.11	0.11	0.28	0.30
Capacity (veh/h)	646	649	757	768
Control Delay (s)	8.6	8.6	9.3	9.3
Approach Delay (s)	8.6	8.6	9.3	9.3
Approach LOS	A	A	A	A

Intersection Summary				
Delay	9.1			
Level of Service	A			
Intersection Capacity Utilization	31.3%	ICU Level of Service	A	
Analysis Period (min)	15			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Traffic Volume (vph)	20	20	20	100	20	20	30	260	300	10	100	20
Future Volume (vph)	20	20	20	100	20	20	30	260	300	10	100	20
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	22	22	22	109	22	22	33	283	326	11	109	22

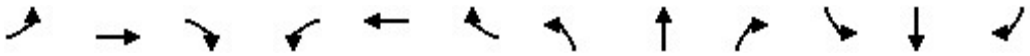
Direction, Lane #	EB 1	WB 1	NB 1	NB 2	SB 1
Volume Total (vph)	66	153	316	326	142
Volume Left (vph)	22	109	33	0	11
Volume Right (vph)	22	22	0	326	22
Hadj (s)	-0.10	0.09	0.09	-0.67	-0.04
Departure Headway (s)	5.8	5.7	5.4	4.7	5.3
Degree Utilization, x	0.11	0.24	0.48	0.42	0.21
Capacity (veh/h)	562	577	651	754	639
Control Delay (s)	9.4	10.6	18.0	9.8	9.7
Approach Delay (s)	9.4	10.6	18.0		9.7
Approach LOS	A	B	C		A

Intersection Summary				
Delay	17.5			
Level of Service	C			
Intersection Capacity Utilization	57.1%	ICU Level of Service	A	
Analysis Period (min)	15			

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Sign Control	Stop			Stop	Stop	
Traffic Volume (vph)	30	20	40	40	40	150
Future Volume (vph)	30	20	40	40	40	150
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	33	22	43	43	43	163

Direction, Lane #	EB 1	WB 1	NB 1
Volume Total (vph)	55	86	206
Volume Left (vph)	0	43	43
Volume Right (vph)	22	0	163
Hadj (s)	-0.21	0.13	-0.40
Departure Headway (s)	4.2	4.5	3.8
Degree Utilization, x	0.06	0.11	0.22
Capacity (veh/h)	807	750	907
Control Delay (s)	7.5	8.1	7.9
Approach Delay (s)	7.5	8.1	7.9
Approach LOS	A	A	A

Intersection Summary			
Delay	7.9		
Level of Service	A		
Intersection Capacity Utilization	35.7%	ICU Level of Service	A
Analysis Period (min)	15		



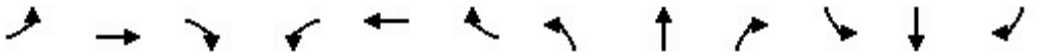
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Traffic Volume (vph)	20	20	20	50	30	30	20	140	100	20	40	20
Future Volume (vph)	20	20	20	50	30	30	20	140	100	20	40	20
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	22	22	22	54	33	33	22	152	109	22	43	22

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total (vph)	66	120	283	87
Volume Left (vph)	22	54	22	22
Volume Right (vph)	22	33	109	22
Hadj (s)	-0.10	-0.04	-0.18	-0.07
Departure Headway (s)	4.8	4.8	4.3	4.6
Degree Utilization, x	0.09	0.16	0.34	0.11
Capacity (veh/h)	679	691	806	728
Control Delay (s)	8.3	8.7	9.5	8.2
Approach Delay (s)	8.3	8.7	9.5	8.2
Approach LOS	A	A	A	A

Intersection Summary				
Delay	9.0			
Level of Service	A			
Intersection Capacity Utilization	38.2%	ICU Level of Service	A	
Analysis Period (min)	15			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	290	100	80	10	40	20	260	270	40	20	50	80
Future Volume (vph)	290	100	80	10	40	20	260	270	40	20	50	80
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0			4.0		4.0	4.0		4.0	4.0	
Lane Util. Factor		1.00			1.00		1.00	1.00		1.00	1.00	
Frpb, ped/bikes		1.00			1.00		1.00	1.00		1.00	0.99	
Flpb, ped/bikes		1.00			1.00		1.00	1.00		1.00	1.00	
Frt		0.98			0.96		1.00	0.98		1.00	0.91	
Flt Protected		0.97			0.99		0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1761			1769		1763	1821		1764	1665	
Flt Permitted		0.77			0.93		0.67	1.00		0.49	1.00	
Satd. Flow (perm)		1394			1662		1238	1821		902	1665	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	315	109	87	11	43	22	283	293	43	22	54	87
RTOR Reduction (vph)	0	13	0	0	13	0	0	7	0	0	49	0
Lane Group Flow (vph)	0	498	0	0	63	0	283	329	0	22	92	0
Confl. Peds. (#/hr)	5					5	3		4	4		3
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		8			4			2			6	
Permitted Phases	8			4			2			6		
Actuated Green, G (s)		23.3			23.3		24.4	24.4		24.4	24.4	
Effective Green, g (s)		23.3			23.3		24.4	24.4		24.4	24.4	
Actuated g/C Ratio		0.42			0.42		0.44	0.44		0.44	0.44	
Clearance Time (s)		4.0			4.0		4.0	4.0		4.0	4.0	
Vehicle Extension (s)		2.0			2.0		4.4	4.4		2.1	2.1	
Lane Grp Cap (vph)		583			695		542	797		395	729	
v/s Ratio Prot								0.18			0.06	
v/s Ratio Perm		c0.36			0.04		c0.23			0.02		
v/c Ratio		0.85			0.09		0.52	0.41		0.06	0.13	
Uniform Delay, d1		14.7			9.8		11.4	10.7		9.0	9.3	
Progression Factor		1.00			1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2		11.2			0.0		3.6	1.6		0.3	0.4	
Delay (s)		25.9			9.8		15.0	12.3		9.3	9.7	
Level of Service		C			A		B	B		A	A	
Approach Delay (s)		25.9			9.8			13.5			9.6	
Approach LOS		C			A			B			A	

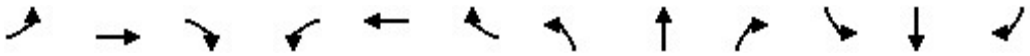
Intersection Summary			
HCM 2000 Control Delay	17.5	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.68		
Actuated Cycle Length (s)	55.7	Sum of lost time (s)	8.0
Intersection Capacity Utilization	73.1%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	50	430	290	230	720	90	110	20	270	20	10	30
Future Volume (vph)	50	430	290	230	720	90	110	20	270	20	10	30
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0			4.0			4.0	
Lane Util. Factor	1.00	0.91		1.00	0.95			1.00			1.00	
Frpb, ped/bikes	1.00	1.00		1.00	1.00			0.99			1.00	
Flpb, ped/bikes	1.00	1.00		1.00	1.00			1.00			1.00	
Frt	1.00	0.94		1.00	0.98			0.91			0.93	
Flt Protected	0.95	1.00		0.95	1.00			0.99			0.98	
Satd. Flow (prot)	1769	4778		1770	3471			1646			1706	
Flt Permitted	0.32	1.00		0.25	1.00			0.89			0.82	
Satd. Flow (perm)	587	4778		458	3471			1478			1424	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	54	467	315	250	783	98	120	22	293	22	11	33
RTOR Reduction (vph)	0	149	0	0	12	0	0	127	0	0	24	0
Lane Group Flow (vph)	54	633	0	250	869	0	0	308	0	0	42	0
Confl. Peds. (#/hr)	2					2			13	13		
Turn Type	pm+pt	NA		pm+pt	NA		Perm	NA		Perm	NA	
Protected Phases	5	2		1	6			8			4	
Permitted Phases	2			6			8			4		
Actuated Green, G (s)	22.5	20.3		33.3	26.7			15.5			15.5	
Effective Green, g (s)	23.3	21.3		33.7	27.6			16.4			16.4	
Actuated g/C Ratio	0.40	0.36		0.58	0.47			0.28			0.28	
Clearance Time (s)	4.4	5.0		4.4	4.9			4.9			4.9	
Vehicle Extension (s)	2.0	3.3		2.0	3.3			2.0			2.0	
Lane Grp Cap (vph)	285	1736		462	1634			413			398	
v/s Ratio Prot	0.01	0.13		c0.08	c0.25							
v/s Ratio Perm	0.07			0.23				c0.21			0.03	
v/c Ratio	0.19	0.36		0.54	0.53			0.74			0.11	
Uniform Delay, d1	11.0	13.7		6.9	10.9			19.2			15.7	
Progression Factor	1.00	1.00		1.00	1.00			1.00			1.00	
Incremental Delay, d2	0.1	0.6		0.7	1.2			6.3			0.0	
Delay (s)	11.1	14.3		7.6	12.2			25.5			15.7	
Level of Service	B	B		A	B			C			B	
Approach Delay (s)		14.1			11.2			25.5			15.7	
Approach LOS		B			B			C			B	

Intersection Summary			
HCM 2000 Control Delay	14.8	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.64		
Actuated Cycle Length (s)	58.6	Sum of lost time (s)	12.0
Intersection Capacity Utilization	67.8%	ICU Level of Service	C
Analysis Period (min)	15		

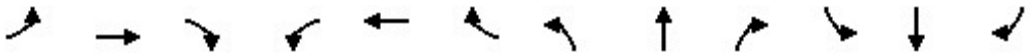
c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Traffic Volume (vph)	70	20	20	20	20	20	20	160	40	60	120	70
Future Volume (vph)	70	20	20	20	20	20	20	160	40	60	120	70
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	76	22	22	22	22	22	22	174	43	65	130	76

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total (vph)	120	66	239	271
Volume Left (vph)	76	22	22	65
Volume Right (vph)	22	22	43	76
Hadj (s)	0.05	-0.10	-0.06	-0.09
Departure Headway (s)	5.3	5.2	4.7	4.6
Degree Utilization, x	0.18	0.10	0.31	0.35
Capacity (veh/h)	618	611	732	741
Control Delay (s)	9.4	8.7	9.8	10.1
Approach Delay (s)	9.4	8.7	9.8	10.1
Approach LOS	A	A	A	B

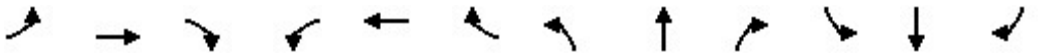
Intersection Summary				
Delay	9.7			
Level of Service	A			
Intersection Capacity Utilization	45.8%	ICU Level of Service	A	
Analysis Period (min)	15			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Traffic Volume (vph)	40	20	40	10	10	20	60	150	10	30	90	50
Future Volume (vph)	40	20	40	10	10	20	60	150	10	30	90	50
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	43	22	43	11	11	22	65	163	11	33	98	54

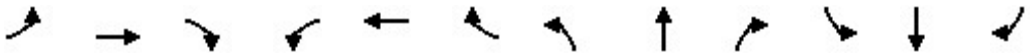
Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total (vph)	108	44	239	185
Volume Left (vph)	43	11	65	33
Volume Right (vph)	43	22	11	54
Hadj (s)	-0.13	-0.22	0.06	-0.11
Departure Headway (s)	4.8	4.8	4.6	4.5
Degree Utilization, x	0.14	0.06	0.30	0.23
Capacity (veh/h)	680	667	759	766
Control Delay (s)	8.6	8.1	9.5	8.8
Approach Delay (s)	8.6	8.1	9.5	8.8
Approach LOS	A	A	A	A

Intersection Summary				
Delay	9.0			
Level of Service	A			
Intersection Capacity Utilization	35.2%	ICU Level of Service	A	
Analysis Period (min)	15			



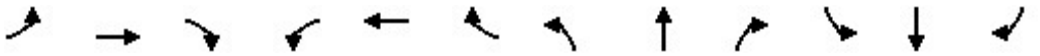
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	400	270	30	10	650	260	0	0	20	200	150	320
Future Volume (vph)	400	270	30	10	650	260	0	0	20	200	150	320
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0				4.0	4.0	4.0	4.0
Lane Util. Factor	0.97	0.95		1.00	0.95				1.00	0.95	0.95	1.00
Frpb, ped/bikes	1.00	1.00		1.00	1.00				0.99	1.00	1.00	1.00
Flpb, ped/bikes	1.00	1.00		1.00	1.00				1.00	1.00	1.00	1.00
Frt	1.00	0.98		1.00	0.96				0.86	1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00				1.00	0.95	0.98	1.00
Satd. Flow (prot)	3433	3478		1770	3387				1590	1681	1736	1583
Flt Permitted	0.95	1.00		0.95	1.00				1.00	0.95	0.98	1.00
Satd. Flow (perm)	3433	3478		1770	3387				1590	1681	1736	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	435	293	33	11	707	283	0	0	22	217	163	348
RTOR Reduction (vph)	0	8	0	0	46	0	0	0	0	0	0	214
Lane Group Flow (vph)	435	318	0	11	944	0	0	0	22	113	267	134
Confl. Peds. (#/hr)			1	1					4	4		
Turn Type	Prot	NA		Prot	NA				Free	Split	NA	Perm
Protected Phases	5	2		1	6					4	4	
Permitted Phases									Free			4
Actuated Green, G (s)	11.2	38.3		0.7	27.8				71.2	17.6	17.6	17.6
Effective Green, g (s)	11.6	39.2		1.1	28.7				71.2	18.9	18.9	18.9
Actuated g/C Ratio	0.16	0.55		0.02	0.40				1.00	0.27	0.27	0.27
Clearance Time (s)	4.4	4.9		4.4	4.9					5.3	5.3	5.3
Vehicle Extension (s)	2.0	3.3		2.0	3.8					4.4	4.4	4.4
Lane Grp Cap (vph)	559	1914		27	1365				1590	446	460	420
v/s Ratio Prot	c0.13	0.09		0.01	c0.28					0.07	c0.15	
v/s Ratio Perm									0.01			0.08
v/c Ratio	0.78	0.17		0.41	0.69				0.01	0.25	0.58	0.32
Uniform Delay, d1	28.6	7.9		34.7	17.6				0.0	20.6	22.7	21.0
Progression Factor	1.00	1.00		1.00	1.00				1.00	1.00	1.00	1.00
Incremental Delay, d2	6.2	0.2		3.6	2.9				0.0	0.5	2.5	0.7
Delay (s)	34.7	8.1		38.3	20.5				0.0	21.1	25.2	21.7
Level of Service	C	A		D	C				A	C	C	C
Approach Delay (s)		23.3			20.7			0.0			22.9	
Approach LOS		C			C			A			C	

Intersection Summary			
HCM 2000 Control Delay	21.9	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.67		
Actuated Cycle Length (s)	71.2	Sum of lost time (s)	12.0
Intersection Capacity Utilization	63.8%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	30	710	90	70	1410	60	230	30	70	70	50	20
Future Volume (vph)	30	710	90	70	1410	60	230	30	70	70	50	20
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0		4.0	4.0			4.0	
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00	1.00			1.00	
Frpb, ped/bikes	1.00	0.99		1.00	1.00		1.00	0.98			1.00	
Flpb, ped/bikes	1.00	1.00		1.00	1.00		0.99	1.00			0.99	
Frt	1.00	0.98		1.00	0.99		1.00	0.90			0.98	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00			0.98	
Satd. Flow (prot)	1678	3364		1671	3411		1635	1527			1669	
Flt Permitted	0.95	1.00		0.95	1.00		0.63	1.00			0.80	
Satd. Flow (perm)	1678	3364		1671	3411		1078	1527			1374	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	33	772	98	76	1533	65	250	33	76	76	54	22
RTOR Reduction (vph)	0	7	0	0	2	0	0	56	0	0	5	0
Lane Group Flow (vph)	33	863	0	76	1596	0	250	53	0	0	147	0
Confl. Peds. (#/hr)	14		16	16		14	13		13	13		13
Confl. Bikes (#/hr)			3			3			1			
Bus Blockages (#/hr)	13	13	13	14	14	14	16	16	16	13	13	13
Turn Type	Prot	NA		Prot	NA		Perm	NA		Perm	NA	
Protected Phases	5	2		1	6			4			4	
Permitted Phases							4			4		
Actuated Green, G (s)	3.1	67.0		8.0	71.9		30.8	30.8			30.8	
Effective Green, g (s)	3.5	67.9		8.4	72.8		31.7	31.7			31.7	
Actuated g/C Ratio	0.03	0.57		0.07	0.61		0.26	0.26			0.26	
Clearance Time (s)	4.4	4.9		4.4	4.9		4.9	4.9			4.9	
Vehicle Extension (s)	2.0	2.1		2.0	2.1		2.0	2.0			2.0	
Lane Grp Cap (vph)	48	1903		116	2069		284	403			362	
v/s Ratio Prot	0.02	0.26		c0.05	c0.47			0.03				
v/s Ratio Perm							c0.23				0.11	
v/c Ratio	0.69	0.45		0.66	0.77		0.88	0.13			0.41	
Uniform Delay, d1	57.7	15.2		54.4	17.4		42.3	33.7			36.4	
Progression Factor	1.00	1.00		0.85	1.50		1.00	1.00			1.00	
Incremental Delay, d2	27.8	0.8		2.8	0.8		25.0	0.1			0.3	
Delay (s)	85.5	16.0		48.9	26.9		67.3	33.7			36.7	
Level of Service	F	B		D	C		E	C			D	
Approach Delay (s)		18.5			27.9			57.1			36.7	
Approach LOS		B			C			E			D	

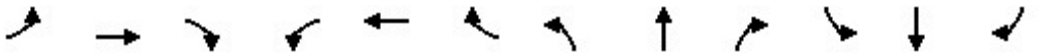
Intersection Summary			
HCM 2000 Control Delay	29.0	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.81		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	74.2%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	190	660	90	170	1240	70	70	130	110	260	380	250
Future Volume (vph)	190	660	90	170	1240	70	70	130	110	260	380	250
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0		4.0	4.0	4.0	4.0	4.0	
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00	0.95	1.00	1.00	0.95	
Frpb, ped/bikes	1.00	0.99		1.00	1.00		1.00	1.00	0.98	1.00	0.98	
Flpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	
Frt	1.00	0.98		1.00	0.99		1.00	1.00	0.85	1.00	0.94	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)	1770	3454		1770	3501		1770	3539	1550	1770	3267	
Flt Permitted	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (perm)	1770	3454		1770	3501		1770	3539	1550	1770	3267	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	207	717	98	185	1348	76	76	141	120	283	413	272
RTOR Reduction (vph)	0	8	0	0	3	0	0	0	45	0	92	0
Lane Group Flow (vph)	207	807	0	185	1421	0	76	141	75	283	593	0
Confl. Peds. (#/hr)	23		24	24		23	19		14	14		19
Confl. Bikes (#/hr)			9			5			12			6
Turn Type	Prot	NA		Prot	NA		Prot	NA	pm+ov	Prot	NA	
Protected Phases	5	2		1	6		3	8	1	7	4	
Permitted Phases									8			
Actuated Green, G (s)	13.9	40.9		16.3	42.8		7.3	21.4	37.7	22.7	36.9	
Effective Green, g (s)	14.3	41.8		16.7	44.2		7.7	22.4	38.5	23.1	37.8	
Actuated g/C Ratio	0.12	0.35		0.14	0.37		0.06	0.19	0.32	0.19	0.31	
Clearance Time (s)	4.4	4.9		4.4	5.4		4.4	5.0	4.4	4.4	4.9	
Vehicle Extension (s)	2.0	4.2		2.0	3.0		2.0	4.0	2.0	2.0	2.6	
Lane Grp Cap (vph)	210	1203		246	1289		113	660	497	340	1029	
v/s Ratio Prot	c0.12	0.23		0.10	c0.41		c0.04	0.04	0.02	c0.16	c0.18	
v/s Ratio Perm									0.03			
v/c Ratio	0.99	0.67		0.75	1.10		0.67	0.21	0.15	0.83	0.58	
Uniform Delay, d1	52.7	33.2		49.7	37.9		54.9	41.3	29.1	46.6	34.4	
Progression Factor	1.19	0.79		1.06	0.84		1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	55.6	2.8		9.0	56.0		11.7	0.2	0.1	15.2	0.7	
Delay (s)	118.3	28.9		61.4	88.0		66.6	41.6	29.1	61.8	35.1	
Level of Service	F	C		E	F		E	D	C	E	D	
Approach Delay (s)		47.0			84.9			42.8			42.9	
Approach LOS		D			F			D			D	

Intersection Summary			
HCM 2000 Control Delay	61.1	HCM 2000 Level of Service	E
HCM 2000 Volume to Capacity ratio	0.90		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	89.1%	ICU Level of Service	E
Analysis Period (min)	15		

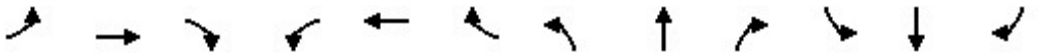
c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	10	990	80	320	1390	80	70	20	150	70	20	20
Future Volume (vph)	10	990	80	320	1390	80	70	20	150	70	20	20
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0			4.0	4.0		4.0	
Lane Util. Factor	1.00	0.91		1.00	0.95			1.00	1.00		1.00	
Frpb, ped/bikes	1.00	1.00		1.00	1.00			1.00	0.98		0.99	
Flpb, ped/bikes	1.00	1.00		1.00	1.00			1.00	1.00		1.00	
Frt	1.00	0.99		1.00	0.99			1.00	0.85		0.98	
Flt Protected	0.95	1.00		0.95	1.00			0.96	1.00		0.97	
Satd. Flow (prot)	1770	5015		1770	3506			1792	1552		1750	
Flt Permitted	0.95	1.00		0.95	1.00			0.70	1.00		0.70	
Satd. Flow (perm)	1770	5015		1770	3506			1309	1552		1267	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	11	1076	87	348	1511	87	76	22	163	76	22	22
RTOR Reduction (vph)	0	6	0	0	3	0	0	0	135	0	7	0
Lane Group Flow (vph)	11	1157	0	348	1595	0	0	98	28	0	113	0
Confl. Peds. (#/hr)	1		1	1		1	1		1	1		1
Confl. Bikes (#/hr)			17			4			5			12
Turn Type	Prot	NA		Prot	NA		Perm	NA	Perm	Perm	NA	
Protected Phases	5	2		1	6			8			4	
Permitted Phases							8		8	4		
Actuated Green, G (s)	0.8	57.1		28.3	84.6			20.0	20.0		20.0	
Effective Green, g (s)	1.2	58.4		28.7	85.9			20.9	20.9		20.9	
Actuated g/C Ratio	0.01	0.49		0.24	0.72			0.17	0.17		0.17	
Clearance Time (s)	4.4	5.3		4.4	5.3			4.9	4.9		4.9	
Vehicle Extension (s)	2.0	4.4		2.0	4.4			2.0	2.0		2.0	
Lane Grp Cap (vph)	17	2440		423	2509			227	270		220	
v/s Ratio Prot	0.01	0.23		c0.20	c0.46							
v/s Ratio Perm								0.07	0.02		c0.09	
v/c Ratio	0.65	0.47		0.82	0.64			0.43	0.11		0.51	
Uniform Delay, d1	59.2	20.6		43.2	8.9			44.2	41.7		44.9	
Progression Factor	0.81	1.50		1.00	1.00			1.00	1.00		1.00	
Incremental Delay, d2	39.9	0.5		11.6	1.2			0.5	0.1		0.8	
Delay (s)	87.9	31.3		54.9	10.1			44.7	41.7		45.8	
Level of Service	F	C		D	B			D	D		D	
Approach Delay (s)		31.8			18.1			42.9			45.8	
Approach LOS		C			B			D			D	

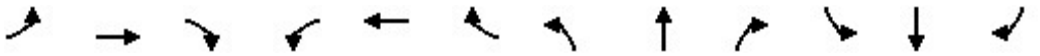
Intersection Summary			
HCM 2000 Control Delay	25.5	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.68		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	67.5%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group



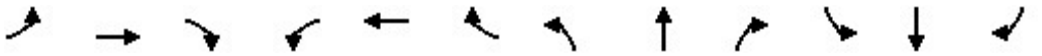
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	0	0	280	3130	0	0	0	0	0	150	150
Future Volume (vph)	0	0	0	280	3130	0	0	0	0	0	150	150
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)					4.0						4.0	
Lane Util. Factor					0.91						0.91	
Frpb, ped/bikes					1.00						0.99	
Flpb, ped/bikes					1.00						1.00	
Frt					1.00						0.93	
Flt Protected					1.00						1.00	
Satd. Flow (prot)					5061						4651	
Flt Permitted					1.00						1.00	
Satd. Flow (perm)					5061						4651	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	304	3402	0	0	0	0	0	163	163
RTOR Reduction (vph)	0	0	0	0	9	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	0	0	0	3697	0	0	0	0	0	326	0
Confl. Peds. (#/hr)				6								7
Turn Type				Perm	NA						NA	
Protected Phases					6						4	
Permitted Phases				6								
Actuated Green, G (s)					61.8						18.0	
Effective Green, g (s)					63.1						18.9	
Actuated g/C Ratio					0.70						0.21	
Clearance Time (s)					5.3						4.9	
Vehicle Extension (s)					0.2						0.2	
Lane Grp Cap (vph)					3548						976	
v/s Ratio Prot											c0.07	
v/s Ratio Perm					0.73							
v/c Ratio					1.04						0.33	
Uniform Delay, d1					13.4						30.2	
Progression Factor					1.00						1.00	
Incremental Delay, d2					27.5						0.1	
Delay (s)					41.0						30.3	
Level of Service					D						C	
Approach Delay (s)		0.0			41.0			0.0			30.3	
Approach LOS		A			D			A			C	

Intersection Summary			
HCM 2000 Control Delay	40.1	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.88		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	87.8%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			



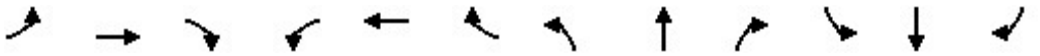
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	900	100	0	0	0	0	0	0	160	330	0
Future Volume (vph)	0	900	100	0	0	0	0	0	0	160	330	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0									4.0	
Lane Util. Factor		0.91									0.91	
Frpb, ped/bikes		1.00									1.00	
Flpb, ped/bikes		1.00									0.99	
Frt		0.98									1.00	
Flt Protected		1.00									0.98	
Satd. Flow (prot)		4997									4977	
Flt Permitted		1.00									0.98	
Satd. Flow (perm)		4997									4977	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	978	109	0	0	0	0	0	0	174	359	0
RTOR Reduction (vph)	0	15	0	0	0	0	0	0	0	0	70	0
Lane Group Flow (vph)	0	1072	0	0	0	0	0	0	0	0	463	0
Confl. Peds. (#/hr)			9							14		
Turn Type		NA								Perm	NA	
Protected Phases		2									4	
Permitted Phases										4		
Actuated Green, G (s)		47.0									19.0	
Effective Green, g (s)		47.0									20.0	
Actuated g/C Ratio		0.63									0.27	
Clearance Time (s)		4.0									5.0	
Vehicle Extension (s)		3.0									3.0	
Lane Grp Cap (vph)		3131									1327	
v/s Ratio Prot		c0.21										
v/s Ratio Perm											0.09	
v/c Ratio		0.34									0.35	
Uniform Delay, d1		6.7									22.2	
Progression Factor		0.58									1.00	
Incremental Delay, d2		0.3									0.2	
Delay (s)		4.1									22.4	
Level of Service		A									C	
Approach Delay (s)		4.1			0.0			0.0			22.4	
Approach LOS		A			A			A			C	

Intersection Summary			
HCM 2000 Control Delay	10.1	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.34		
Actuated Cycle Length (s)	75.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	43.3%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	240	1090	40	120	780	190	50	40	90	80	80	210
Future Volume (vph)	240	1090	40	120	780	190	50	40	90	80	80	210
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.97	0.95		1.00	0.95	1.00	1.00	1.00	1.00	0.97	1.00	1.00
Frpb, ped/bikes	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.99
Flpb, ped/bikes	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.99		1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	3521		1770	3539	1583	1770	1863	1583	3433	1863	1562
Flt Permitted	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	3521		1770	3539	1583	1770	1863	1583	3433	1863	1562
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	261	1185	43	130	848	207	54	43	98	87	87	228
RTOR Reduction (vph)	0	3	0	0	0	192	0	0	84	0	0	187
Lane Group Flow (vph)	261	1225	0	130	848	15	54	43	14	87	87	41
Confl. Peds. (#/hr)	2											2
Turn Type	Prot	NA		Prot	NA	custom	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases						7			8			4
Actuated Green, G (s)	8.7	34.3		7.1	32.8	5.5	2.8	8.9	8.9	5.5	12.5	12.5
Effective Green, g (s)	8.7	35.8		7.1	34.2	5.5	2.8	10.7	10.7	5.5	13.4	13.4
Actuated g/C Ratio	0.12	0.48		0.09	0.46	0.07	0.04	0.14	0.14	0.07	0.18	0.18
Clearance Time (s)	4.0	5.5		4.0	5.4	4.0	4.0	5.8	5.8	4.0	4.9	4.9
Vehicle Extension (s)	2.0	3.7		2.0	4.0	2.0	2.0	2.0	2.0	2.0	3.0	3.0
Lane Grp Cap (vph)	397	1678		167	1611	115	65	265	225	251	332	278
v/s Ratio Prot	c0.08	c0.35		0.07	0.24		c0.03	0.02		0.03	c0.05	
v/s Ratio Perm						0.01			0.01			0.03
v/c Ratio	0.66	0.73		0.78	0.53	0.13	0.83	0.16	0.06	0.35	0.26	0.15
Uniform Delay, d1	31.8	15.8		33.2	14.6	32.6	35.9	28.3	27.9	33.1	26.6	26.0
Progression Factor	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	3.0	2.8		18.5	1.2	0.2	54.8	0.1	0.0	0.3	0.4	0.2
Delay (s)	34.8	18.6		51.8	15.9	32.8	90.8	28.4	27.9	33.4	27.0	26.3
Level of Service	C	B		D	B	C	F	C	C	C	C	C
Approach Delay (s)		21.4			22.8			45.4			28.0	
Approach LOS		C			C			D			C	

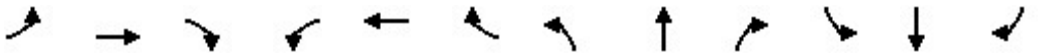
Intersection Summary			
HCM 2000 Control Delay	24.2	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.64		
Actuated Cycle Length (s)	75.1	Sum of lost time (s)	16.0
Intersection Capacity Utilization	57.8%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	0	0	550	2560	180	300	290	0	0	210	90
Future Volume (vph)	0	0	0	550	2560	180	300	290	0	0	210	90
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)					4.9		4.4	4.9			5.4	
Lane Util. Factor					0.86		1.00	0.95			0.95	
Frpb, ped/bikes					1.00		1.00	1.00			0.99	
Flpb, ped/bikes					1.00		1.00	1.00			1.00	
Frt					0.99		1.00	1.00			0.95	
Flt Protected					0.99		0.95	1.00			1.00	
Satd. Flow (prot)					6269		1770	3539			3362	
Flt Permitted					0.99		0.95	1.00			1.00	
Satd. Flow (perm)					6269		1770	3539			3362	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	0	0	0	579	2695	189	316	305	0	0	221	95
RTOR Reduction (vph)	0	0	0	0	7	0	0	0	0	0	27	0
Lane Group Flow (vph)	0	0	0	0	3456	0	316	305	0	0	289	0
Confl. Peds. (#/hr)	4		13	13		4	2		2	2		2
Confl. Bikes (#/hr)												1
Turn Type				Perm	NA		Prot	NA			NA	
Protected Phases					6		3	8			4	
Permitted Phases				6								
Actuated Green, G (s)					62.6		20.6	37.6			12.1	
Effective Green, g (s)					62.6		20.6	37.6			12.1	
Actuated g/C Ratio					0.57		0.19	0.34			0.11	
Clearance Time (s)					4.9		4.4	4.9			5.4	
Vehicle Extension (s)					2.4		3.0	3.3			2.4	
Lane Grp Cap (vph)					3567		331	1209			369	
v/s Ratio Prot							c0.18	0.09			c0.09	
v/s Ratio Perm					0.55							
v/c Ratio					0.97		0.95	0.25			0.78	
Uniform Delay, d1					22.8		44.2	26.1			47.7	
Progression Factor					1.00		1.00	1.00			1.00	
Incremental Delay, d2					9.4		37.3	0.1			10.0	
Delay (s)					32.2		81.5	26.2			57.7	
Level of Service					C		F	C			E	
Approach Delay (s)		0.0			32.2			54.3			57.7	
Approach LOS		A			C			D			E	

Intersection Summary			
HCM 2000 Control Delay	37.1	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.94		
Actuated Cycle Length (s)	110.0	Sum of lost time (s)	14.7
Intersection Capacity Utilization	86.5%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	90	700	70	0	0	0	0	510	230	70	690	0
Future Volume (vph)	90	700	70	0	0	0	0	510	230	70	690	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0	4.0					4.9		4.0	4.9	
Lane Util. Factor		0.91	1.00					0.91		1.00	0.91	
Frpb, ped/bikes		1.00	0.98					0.99		1.00	1.00	
Flpb, ped/bikes		1.00	1.00					1.00		1.00	1.00	
Frt		1.00	0.85					0.95		1.00	1.00	
Flt Protected		0.99	1.00					1.00		0.95	1.00	
Satd. Flow (prot)		5055	1551					4809		1770	5085	
Flt Permitted		0.99	1.00					1.00		0.95	1.00	
Satd. Flow (perm)		5055	1551					4809		1770	5085	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	98	761	76	0	0	0	0	554	250	76	750	0
RTOR Reduction (vph)	0	0	42	0	0	0	0	106	0	0	0	0
Lane Group Flow (vph)	0	859	34	0	0	0	0	698	0	76	750	0
Confl. Peds. (#/hr)	4		12				6		12	12		6
Turn Type	Perm	NA	Perm					NA		Prot	NA	
Protected Phases		2						8		7	4	
Permitted Phases	2		2									
Actuated Green, G (s)		32.2	32.2					22.0		6.6	33.0	
Effective Green, g (s)		33.1	33.1					22.0		7.0	33.0	
Actuated g/C Ratio		0.44	0.44					0.29		0.09	0.44	
Clearance Time (s)		4.9	4.9					4.9		4.4	4.9	
Vehicle Extension (s)		4.4	4.4					3.3		2.0	3.3	
Lane Grp Cap (vph)		2230	684					1410		165	2237	
v/s Ratio Prot								c0.15		c0.04	0.15	
v/s Ratio Perm		0.17	0.02									
v/c Ratio		0.39	0.05					0.50		0.46	0.34	
Uniform Delay, d1		14.1	12.0					21.9		32.2	13.8	
Progression Factor		1.00	1.00					1.00		1.00	1.00	
Incremental Delay, d2		0.5	0.1					1.2		9.0	0.4	
Delay (s)		14.6	12.1					23.2		41.2	14.2	
Level of Service		B	B					C		D	B	
Approach Delay (s)		14.4			0.0			23.2			16.7	
Approach LOS		B			A			C			B	

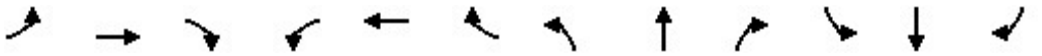
Intersection Summary			
HCM 2000 Control Delay	17.9	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.43		
Actuated Cycle Length (s)	75.0	Sum of lost time (s)	12.9
Intersection Capacity Utilization	86.5%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	1180	530	280	900	310	200
Future Volume (vph)	1180	530	280	900	310	200
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.5	4.0	4.0	4.0
Lane Util. Factor	0.95	1.00	0.97	0.95	0.97	0.91
Frpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	0.99
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.85	1.00	1.00	0.98	0.85
Flt Protected	1.00	1.00	0.95	1.00	0.96	1.00
Satd. Flow (prot)	3539	1583	3433	3539	3377	1421
Flt Permitted	1.00	1.00	0.95	1.00	0.96	1.00
Satd. Flow (perm)	3539	1583	3433	3539	3377	1421
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	1283	576	304	978	337	217
RTOR Reduction (vph)	0	5	0	0	24	116
Lane Group Flow (vph)	1283	571	304	978	378	36
Confl. Peds. (#/hr)						2
Turn Type	NA	pm+ov	Prot	NA	Prot	Perm
Protected Phases	2	8	1	6	8	
Permitted Phases		2				8
Actuated Green, G (s)	28.6	42.3	8.0	41.8	13.7	13.7
Effective Green, g (s)	30.8	46.7	7.9	43.2	15.9	15.9
Actuated g/C Ratio	0.46	0.70	0.12	0.64	0.24	0.24
Clearance Time (s)	6.2	6.2	4.4	5.4	6.2	6.2
Vehicle Extension (s)	4.0	2.0	2.0	5.2	2.0	2.0
Lane Grp Cap (vph)	1624	1196	404	2278	800	336
v/s Ratio Prot	c0.36	c0.11	c0.09	0.28	0.11	
v/s Ratio Perm		0.25				0.03
v/c Ratio	0.79	0.48	0.75	0.43	0.47	0.11
Uniform Delay, d1	15.4	4.6	28.7	5.9	22.0	20.0
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	4.0	0.1	6.9	0.6	0.2	0.1
Delay (s)	19.4	4.8	35.5	6.5	22.2	20.1
Level of Service	B	A	D	A	C	C
Approach Delay (s)	14.9			13.4	21.6	
Approach LOS	B			B	C	

Intersection Summary			
HCM 2000 Control Delay	15.4	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.72		
Actuated Cycle Length (s)	67.1	Sum of lost time (s)	12.5
Intersection Capacity Utilization	62.7%	ICU Level of Service	B
Analysis Period (min)	15		

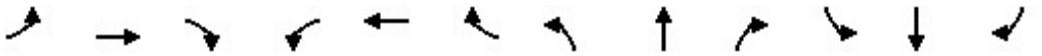
c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	1060	140	380	330	0	0	0	0	340	0	670
Future Volume (vph)	0	1060	140	380	330	0	0	0	0	340	0	670
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0	4.0	4.0	4.0					4.0		3.4
Lane Util. Factor		0.95	1.00	0.97	0.95					1.00		1.00
Frpb, ped/bikes		1.00	0.99	1.00	1.00					1.00		1.00
Flpb, ped/bikes		1.00	1.00	1.00	1.00					1.00		1.00
Frt		1.00	0.85	1.00	1.00					1.00		0.85
Flt Protected		1.00	1.00	0.95	1.00					0.95		1.00
Satd. Flow (prot)		3539	1561	3433	3539					1770		1583
Flt Permitted		1.00	1.00	0.95	1.00					0.95		1.00
Satd. Flow (perm)		3539	1561	3433	3539					1770		1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	1152	152	413	359	0	0	0	0	370	0	728
RTOR Reduction (vph)	0	0	87	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	1152	65	413	359	0	0	0	0	370	0	728
Confl. Peds. (#/hr)			2	2								
Turn Type		NA	Perm	Prot	NA					Prot		Free
Protected Phases		2		1	6					4		
Permitted Phases			2									Free
Actuated Green, G (s)		25.9	25.9	9.0	39.1					14.5		63.2
Effective Green, g (s)		26.9	26.9	9.2	40.1					15.1		63.2
Actuated g/C Ratio		0.43	0.43	0.15	0.63					0.24		1.00
Clearance Time (s)		5.0	5.0	4.2	5.0					4.6		
Vehicle Extension (s)		0.2	0.2	0.2	0.2					0.2		
Lane Grp Cap (vph)		1506	664	499	2245					422		1583
v/s Ratio Prot		c0.33		c0.12	0.10					c0.21		
v/s Ratio Perm			0.04									0.46
v/c Ratio		0.76	0.10	0.83	0.16					0.88		0.46
Uniform Delay, d1		15.5	10.9	26.2	4.7					23.2		0.0
Progression Factor		1.00	1.00	1.00	1.00					1.00		1.00
Incremental Delay, d2		3.8	0.3	10.3	0.2					17.6		1.0
Delay (s)		19.2	11.2	36.6	4.9					40.8		1.0
Level of Service		B	B	D	A					D		A
Approach Delay (s)		18.3			21.8			0.0			14.4	
Approach LOS		B			C			A			B	

Intersection Summary			
HCM 2000 Control Delay	17.8	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.81		
Actuated Cycle Length (s)	63.2	Sum of lost time (s)	12.0
Intersection Capacity Utilization	82.8%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	890	650	0	0	620	590	190	0	300	0	0	0
Future Volume (vph)	890	650	0	0	620	590	190	0	300	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	5.0			5.0			4.0	4.0			
Lane Util. Factor	0.97	0.95			0.95			1.00	1.00			
Frt	1.00	1.00			0.93			1.00	0.85			
Flt Protected	0.95	1.00			1.00			0.95	1.00			
Satd. Flow (prot)	3433	3539			3280			1770	1583			
Flt Permitted	0.95	1.00			1.00			0.95	1.00			
Satd. Flow (perm)	3433	3539			3280			1770	1583			
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	967	707	0	0	674	641	207	0	326	0	0	0
RTOR Reduction (vph)	0	0	0	0	202	0	0	0	277	0	0	0
Lane Group Flow (vph)	967	707	0	0	1113	0	0	207	49	0	0	0
Turn Type	Prot	NA			NA		Split	NA	Perm			
Protected Phases	5	2			6		4	4				
Permitted Phases									4			
Actuated Green, G (s)	23.6	59.3			31.5			10.0	10.0			
Effective Green, g (s)	23.8	59.8			32.0			10.6	10.6			
Actuated g/C Ratio	0.30	0.75			0.40			0.13	0.13			
Clearance Time (s)	4.2	5.5			5.5			4.6	4.6			
Vehicle Extension (s)	0.2	0.2			0.2			0.2	0.2			
Lane Grp Cap (vph)	1029	2665			1321			236	211			
v/s Ratio Prot	c0.28	0.20			c0.34			c0.12				
v/s Ratio Perm									0.03			
v/c Ratio	0.94	0.27			0.84			0.88	0.23			
Uniform Delay, d1	27.1	3.0			21.4			33.8	30.8			
Progression Factor	1.00	1.00			1.00			1.00	1.00			
Incremental Delay, d2	15.3	0.2			6.7			27.8	0.2			
Delay (s)	42.4	3.3			28.1			61.5	31.0			
Level of Service	D	A			C			E	C			
Approach Delay (s)		25.8			28.1			42.8			0.0	
Approach LOS		C			C			D			A	

Intersection Summary			
HCM 2000 Control Delay	29.3	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.88		
Actuated Cycle Length (s)	79.4	Sum of lost time (s)	13.0
Intersection Capacity Utilization	82.8%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	210	210	110	500	700	110
Future Volume (vph)	210	210	110	500	700	110
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0		4.0	4.0	4.0	
Lane Util. Factor	1.00		1.00	0.95	0.95	
Frt	0.93		1.00	1.00	0.98	
Flt Protected	0.98		0.95	1.00	1.00	
Satd. Flow (prot)	1695		1770	3539	3467	
Flt Permitted	0.98		0.95	1.00	1.00	
Satd. Flow (perm)	1695		1770	3539	3467	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	228	228	120	543	761	120
RTOR Reduction (vph)	35	0	0	0	9	0
Lane Group Flow (vph)	421	0	120	543	872	0
Turn Type	Prot		Prot	NA	NA	
Protected Phases	7		1	6	2	
Permitted Phases						
Actuated Green, G (s)	35.5		13.1	76.5	59.4	
Effective Green, g (s)	35.5		13.1	76.5	59.4	
Actuated g/C Ratio	0.30		0.11	0.64	0.49	
Clearance Time (s)	4.0		4.0	4.0	4.0	
Vehicle Extension (s)	3.0		3.0	3.0	3.0	
Lane Grp Cap (vph)	501		193	2256	1716	
v/s Ratio Prot	c0.25		c0.07	0.15	c0.25	
v/s Ratio Perm						
v/c Ratio	0.84		0.62	0.24	0.51	
Uniform Delay, d1	39.6		51.1	9.3	20.4	
Progression Factor	1.00		1.01	0.91	1.00	
Incremental Delay, d2	11.8		6.0	0.2	1.1	
Delay (s)	51.4		57.4	8.8	21.5	
Level of Service	D		E	A	C	
Approach Delay (s)	51.4			17.6	21.5	
Approach LOS	D			B	C	

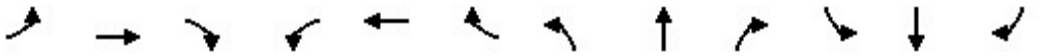
Intersection Summary			
HCM 2000 Control Delay	27.0	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.63		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	63.5%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	0	180	0	0	160	30
Future Volume (Veh/h)	0	180	0	0	160	30
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	196	0	0	174	33
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage veh)						
Upstream signal (ft)				973	1298	
pX, platoon unblocked						
vC, conflicting volume	190	104	207			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	190	104	207			
tC, single (s)	6.8	6.9	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	100	79	100			
cM capacity (veh/h)	781	931	1361			

Direction, Lane #	EB 1	SB 1	SB 2
Volume Total	196	116	91
Volume Left	0	0	0
Volume Right	196	0	33
cSH	931	1700	1700
Volume to Capacity	0.21	0.07	0.05
Queue Length 95th (ft)	20	0	0
Control Delay (s)	9.9	0.0	0.0
Lane LOS	A		
Approach Delay (s)	9.9	0.0	
Approach LOS	A		

Intersection Summary			
Average Delay	4.8		
Intersection Capacity Utilization	23.2%	ICU Level of Service	A
Analysis Period (min)	15		



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	20	100	60	90	0	0	0	0	40	220	10
Future Volume (vph)	0	20	100	60	90	0	0	0	0	40	220	10
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.5			4.5						4.5	
Lane Util. Factor		1.00			1.00						0.95	
Frt		0.89			1.00						0.99	
Flt Protected		1.00			0.98						0.99	
Satd. Flow (prot)		1654			1826						3494	
Flt Permitted		1.00			0.86						0.99	
Satd. Flow (perm)		1654			1598						3494	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	22	109	65	98	0	0	0	0	43	239	11
RTOR Reduction (vph)	0	56	0	0	0	0	0	0	0	0	4	0
Lane Group Flow (vph)	0	75	0	0	163	0	0	0	0	0	289	0
Turn Type		NA		Perm	NA					Perm	NA	
Protected Phases		2			6						4	
Permitted Phases				6						4		
Actuated Green, G (s)		31.5			31.5						24.5	
Effective Green, g (s)		31.5			31.5						24.5	
Actuated g/C Ratio		0.48			0.48						0.38	
Clearance Time (s)		4.5			4.5						4.5	
Vehicle Extension (s)		3.0			3.0						3.0	
Lane Grp Cap (vph)		801			774						1316	
v/s Ratio Prot		0.05										
v/s Ratio Perm					c0.10						0.08	
v/c Ratio		0.09			0.21						0.22	
Uniform Delay, d1		9.0			9.6						13.8	
Progression Factor		1.00			1.00						1.00	
Incremental Delay, d2		0.1			0.6						0.4	
Delay (s)		9.1			10.2						14.1	
Level of Service		A			B						B	
Approach Delay (s)		9.1			10.2			0.0			14.1	
Approach LOS		A			B			A			B	

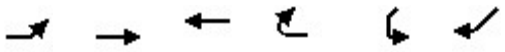
Intersection Summary			
HCM 2000 Control Delay	11.9	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.21		
Actuated Cycle Length (s)	65.0	Sum of lost time (s)	9.0
Intersection Capacity Utilization	29.8%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	50	150	140	330	310	30
Future Volume (vph)	50	150	140	330	310	30
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0			4.0	4.0	
Lane Util. Factor	1.00			1.00	1.00	
Frt	0.90			1.00	0.99	
Flt Protected	0.99			0.99	1.00	
Satd. Flow (prot)	1653			1835	1840	
Flt Permitted	0.99			0.80	1.00	
Satd. Flow (perm)	1653			1481	1840	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	54	163	152	359	337	33
RTOR Reduction (vph)	141	0	0	0	4	0
Lane Group Flow (vph)	76	0	0	511	366	0
Turn Type	Prot		Perm	NA	NA	
Protected Phases	4			2	6	
Permitted Phases			2			
Actuated Green, G (s)	8.3			45.5	45.5	
Effective Green, g (s)	8.3			45.5	45.5	
Actuated g/C Ratio	0.13			0.74	0.74	
Clearance Time (s)	4.0			4.0	4.0	
Vehicle Extension (s)	3.0			3.0	3.0	
Lane Grp Cap (vph)	222			1090	1354	
v/s Ratio Prot	c0.05				0.20	
v/s Ratio Perm				c0.35		
v/c Ratio	0.34			0.47	0.27	
Uniform Delay, d1	24.3			3.3	2.7	
Progression Factor	1.00			1.00	1.00	
Incremental Delay, d2	0.9			1.4	0.5	
Delay (s)	25.2			4.7	3.2	
Level of Service	C			A	A	
Approach Delay (s)	25.2			4.7	3.2	
Approach LOS	C			A	A	

Intersection Summary			
HCM 2000 Control Delay	8.3	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.45		
Actuated Cycle Length (s)	61.8	Sum of lost time (s)	8.0
Intersection Capacity Utilization	65.3%	ICU Level of Service	C
Analysis Period (min)	15		

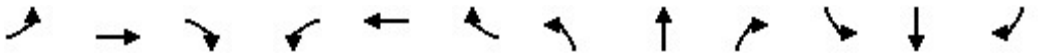
c Critical Lane Group



Movement	EBL	EBT	WBT	WBR	SWL	SWR
Lane Configurations						
Traffic Volume (vph)	50	670	1420	40	150	250
Future Volume (vph)	50	670	1420	40	150	250
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.5	4.5	4.5		4.5	
Lane Util. Factor	1.00	0.95	0.95		1.00	
Frt	1.00	1.00	1.00		0.92	
Flt Protected	0.95	1.00	1.00		0.98	
Satd. Flow (prot)	1770	3539	3525		1674	
Flt Permitted	0.95	1.00	1.00		0.98	
Satd. Flow (perm)	1770	3539	3525		1674	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	54	728	1543	43	163	272
RTOR Reduction (vph)	0	0	3	0	74	0
Lane Group Flow (vph)	54	728	1583	0	361	0
Turn Type	Prot	NA	NA		Prot	
Protected Phases	7	4	8		6	
Permitted Phases						
Actuated Green, G (s)	3.5	46.0	38.0		23.6	
Effective Green, g (s)	3.5	46.0	38.0		23.6	
Actuated g/C Ratio	0.04	0.59	0.48		0.30	
Clearance Time (s)	4.5	4.5	4.5		4.5	
Vehicle Extension (s)	3.0	3.0	3.0		3.0	
Lane Grp Cap (vph)	78	2071	1704		502	
v/s Ratio Prot	c0.03	0.21	c0.45		c0.22	
v/s Ratio Perm						
v/c Ratio	0.69	0.35	0.93		0.72	
Uniform Delay, d1	37.0	8.5	19.0		24.5	
Progression Factor	1.00	1.00	1.00		1.00	
Incremental Delay, d2	23.3	0.1	9.4		8.6	
Delay (s)	60.3	8.6	28.4		33.1	
Level of Service	E	A	C		C	
Approach Delay (s)		12.2	28.4		33.1	
Approach LOS		B	C		C	

Intersection Summary			
HCM 2000 Control Delay	24.6	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.84		
Actuated Cycle Length (s)	78.6	Sum of lost time (s)	13.5
Intersection Capacity Utilization	72.7%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	60	10	100	40	160	240	220	390	130	250	450	190
Future Volume (vph)	60	10	100	40	160	240	220	390	130	250	450	190
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.5			4.5		4.5	4.5		4.5	4.5	
Lane Util. Factor		1.00			1.00		1.00	0.95		1.00	0.95	
Frt		0.92			0.93		1.00	0.96		1.00	0.96	
Flt Protected		0.98			1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1685			1718		1770	3407		1770	3381	
Flt Permitted		0.98			1.00		0.95	1.00		0.95	1.00	
Satd. Flow (perm)		1685			1718		1770	3407		1770	3381	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	65	11	109	43	174	261	239	424	141	272	489	207
RTOR Reduction (vph)	0	62	0	0	46	0	0	35	0	0	51	0
Lane Group Flow (vph)	0	123	0	0	432	0	239	530	0	272	645	0
Turn Type	Split	NA		Split	NA		Prot	NA		Prot	NA	
Protected Phases	2	2		6	6		3	8		7	4	
Permitted Phases												
Actuated Green, G (s)		11.0			21.6		11.7	15.8		15.1	19.2	
Effective Green, g (s)		11.0			21.6		11.7	15.8		15.1	19.2	
Actuated g/C Ratio		0.13			0.27		0.14	0.19		0.19	0.24	
Clearance Time (s)		4.5			4.5		4.5	4.5		4.5	4.5	
Vehicle Extension (s)		3.0			3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)		227			455		254	660		327	796	
v/s Ratio Prot		c0.07			c0.25		0.14	0.16		c0.15	c0.19	
v/s Ratio Perm												
v/c Ratio		0.54			0.95		0.94	0.80		0.83	0.81	
Uniform Delay, d1		32.9			29.4		34.6	31.4		32.0	29.4	
Progression Factor		1.00			1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2		2.6			29.2		40.5	7.0		16.3	6.3	
Delay (s)		35.5			58.6		75.0	38.3		48.3	35.7	
Level of Service		D			E		E	D		D	D	
Approach Delay (s)		35.5			58.6			49.2			39.2	
Approach LOS		D			E			D			D	

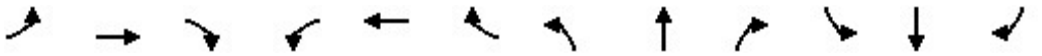
Intersection Summary			
HCM 2000 Control Delay	46.1	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.84		
Actuated Cycle Length (s)	81.5	Sum of lost time (s)	18.0
Intersection Capacity Utilization	68.4%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	30	200	340	190	190	100
Future Volume (vph)	30	200	340	190	190	100
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.5			4.5	4.5	
Lane Util. Factor	1.00			1.00	1.00	
Frt	0.88			1.00	0.95	
Flt Protected	0.99			0.97	1.00	
Satd. Flow (prot)	1634			1805	1776	
Flt Permitted	0.99			0.63	1.00	
Satd. Flow (perm)	1634			1175	1776	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	33	217	370	207	207	109
RTOR Reduction (vph)	188	0	0	0	21	0
Lane Group Flow (vph)	62	0	0	577	295	0
Turn Type	Prot		Perm	NA	NA	
Protected Phases	4			2	6	
Permitted Phases			2			
Actuated Green, G (s)	8.1			43.5	43.5	
Effective Green, g (s)	8.1			43.5	43.5	
Actuated g/C Ratio	0.13			0.72	0.72	
Clearance Time (s)	4.5			4.5	4.5	
Vehicle Extension (s)	3.0			3.0	3.0	
Lane Grp Cap (vph)	218			843	1274	
v/s Ratio Prot	c0.04				0.17	
v/s Ratio Perm				c0.49		
v/c Ratio	0.28			0.68	0.23	
Uniform Delay, d1	23.6			4.7	2.9	
Progression Factor	1.00			1.00	1.00	
Incremental Delay, d2	0.7			4.5	0.4	
Delay (s)	24.4			9.2	3.3	
Level of Service	C			A	A	
Approach Delay (s)	24.4			9.2	3.3	
Approach LOS	C			A	A	

Intersection Summary			
HCM 2000 Control Delay	10.9	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.62		
Actuated Cycle Length (s)	60.6	Sum of lost time (s)	9.0
Intersection Capacity Utilization	70.2%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	90	1670	560	120	1160	360	460	350	180	300	260	40
Future Volume (vph)	90	1670	560	120	1160	360	460	350	180	300	260	40
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	
Lane Util. Factor	1.00	0.91	1.00	0.97	0.95	1.00	0.97	1.00	1.00	1.00	1.00	
Frpb, ped/bikes	1.00	1.00	0.99	1.00	1.00	0.95	1.00	1.00	0.98	1.00	1.00	
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.98	
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)	1770	5085	1561	3433	3539	1506	3433	1863	1552	1770	1822	
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (perm)	1770	5085	1561	3433	3539	1506	3433	1863	1552	1770	1822	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	98	1815	609	130	1261	391	500	380	196	326	283	43
RTOR Reduction (vph)	0	0	240	0	0	159	0	0	95	0	4	0
Lane Group Flow (vph)	98	1815	369	130	1261	232	500	380	101	326	322	0
Confl. Peds. (#/hr)	6		1	1		6			6	6		
Confl. Bikes (#/hr)			1			5						3
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases			2			6			8			
Actuated Green, G (s)	8.6	59.7	59.7	10.0	61.0	61.0	23.0	32.9	32.9	29.9	38.0	
Effective Green, g (s)	9.0	61.0	61.0	10.4	62.4	62.4	23.4	33.7	33.7	28.9	39.2	
Actuated g/C Ratio	0.06	0.41	0.41	0.07	0.42	0.42	0.16	0.22	0.22	0.19	0.26	
Clearance Time (s)	4.4	5.3	5.3	4.4	5.4	5.4	4.4	4.8	4.8	3.0	5.2	
Vehicle Extension (s)	2.0	4.4	4.4	2.0	4.4	4.4	2.0	3.8	3.8	2.0	2.0	
Lane Grp Cap (vph)	106	2067	634	238	1472	626	535	418	348	341	476	
v/s Ratio Prot	c0.06	c0.36		0.04	0.36		0.15	c0.20		c0.18	0.18	
v/s Ratio Perm			0.24			0.15			0.06			
v/c Ratio	0.92	0.88	0.58	0.55	0.86	0.37	0.93	0.91	0.29	0.96	0.68	
Uniform Delay, d1	70.2	41.1	34.6	67.5	39.7	30.2	62.5	56.7	48.2	59.9	49.7	
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	62.6	5.7	3.9	1.4	6.6	1.7	23.4	23.5	0.6	36.6	3.0	
Delay (s)	132.8	46.8	38.5	68.9	46.4	31.9	85.9	80.2	48.8	96.5	52.7	
Level of Service	F	D	D	E	D	C	F	F	D	F	D	
Approach Delay (s)		48.1			44.8			77.1			74.6	
Approach LOS		D			D			E			E	

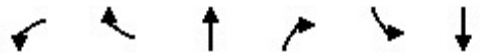
Intersection Summary			
HCM 2000 Control Delay	55.2	HCM 2000 Level of Service	E
HCM 2000 Volume to Capacity ratio	0.90		
Actuated Cycle Length (s)	150.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	87.2%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	830	1790	930	0	0	870
Future Volume (vph)	830	1790	930	0	0	870
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	7.0	7.0	7.0			7.0
Lane Util. Factor	0.97	0.88	0.95			0.95
Frt	1.00	0.85	1.00			1.00
Flt Protected	0.95	1.00	1.00			1.00
Satd. Flow (prot)	3433	2787	3539			3539
Flt Permitted	0.95	1.00	1.00			1.00
Satd. Flow (perm)	3433	2787	3539			3539
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	902	1946	1011	0	0	946
RTOR Reduction (vph)	0	5	0	0	0	0
Lane Group Flow (vph)	902	1941	1011	0	0	946
Turn Type	Prot	Perm	NA			NA
Protected Phases	4		2			6
Permitted Phases		4				
Actuated Green, G (s)	94.0	94.0	42.0			42.0
Effective Green, g (s)	94.0	94.0	42.0			42.0
Actuated g/C Ratio	0.63	0.63	0.28			0.28
Clearance Time (s)	7.0	7.0	7.0			7.0
Vehicle Extension (s)	0.2	0.2	0.2			0.2
Lane Grp Cap (vph)	2151	1746	990			990
v/s Ratio Prot	0.26		c0.29			0.27
v/s Ratio Perm		c0.70				
v/c Ratio	0.42	1.11	1.02			0.96
Uniform Delay, d1	14.2	28.0	54.0			53.1
Progression Factor	1.00	1.00	1.00			1.00
Incremental Delay, d2	0.0	59.0	34.1			18.5
Delay (s)	14.2	87.0	88.1			71.6
Level of Service	B	F	F			E
Approach Delay (s)	64.0		88.1			71.6
Approach LOS	E		F			E

Intersection Summary			
HCM 2000 Control Delay	70.5	HCM 2000 Level of Service	E
HCM 2000 Volume to Capacity ratio	1.08		
Actuated Cycle Length (s)	150.0	Sum of lost time (s)	14.0
Intersection Capacity Utilization	100.0%	ICU Level of Service	F
Analysis Period (min)	15		

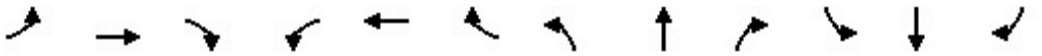
c Critical Lane Group



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	0	290	1440	150	0	1510
Future Volume (Veh/h)	0	290	1440	150	0	1510
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	315	1565	163	0	1641
Pedestrians						3
Lane Width (ft)						12.0
Walking Speed (ft/s)						4.0
Percent Blockage						0
Right turn flare (veh)						
Median type			None			None
Median storage veh)						
Upstream signal (ft)			810			779
pX, platoon unblocked	0.83					
vC, conflicting volume	2194	606			1728	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1710	606			1728	
tC, single (s)	6.8	6.9			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	100	28			100	
cM capacity (veh/h)	68	439			361	

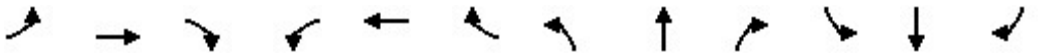
Direction, Lane #	WB 1	NB 1	NB 2	NB 3	SB 1	SB 2	SB 3
Volume Total	315	626	626	476	547	547	547
Volume Left	0	0	0	0	0	0	0
Volume Right	315	0	0	163	0	0	0
cSH	439	1700	1700	1700	1700	1700	1700
Volume to Capacity	0.72	0.37	0.37	0.28	0.32	0.32	0.32
Queue Length 95th (ft)	140	0	0	0	0	0	0
Control Delay (s)	31.4	0.0	0.0	0.0	0.0	0.0	0.0
Lane LOS	D						
Approach Delay (s)	31.4	0.0			0.0		
Approach LOS	D						

Intersection Summary			
Average Delay	2.7		
Intersection Capacity Utilization	56.1%	ICU Level of Service	B
Analysis Period (min)	15		



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	380	420	310	80	540	700	460	510	130	420	700	390
Future Volume (vph)	380	420	310	80	540	700	460	510	130	420	700	390
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.9	4.0	4.0		4.0	4.0	4.9
Lane Util. Factor	1.00	1.00	1.00	1.00	0.95	1.00	1.00	0.95		1.00	0.95	1.00
Frpb, ped/bikes	1.00	1.00	0.99	1.00	1.00	0.99	1.00	1.00		1.00	1.00	0.99
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.97		1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1770	1863	1568	1770	3539	1568	1770	3432		1770	3539	1566
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)	1770	1863	1568	1770	3539	1568	1770	3432		1770	3539	1566
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	413	457	337	87	587	761	500	554	141	457	761	424
RTOR Reduction (vph)	0	0	32	0	0	32	0	15	0	0	0	50
Lane Group Flow (vph)	413	457	305	87	587	729	500	680	0	457	761	374
Confl. Peds. (#/hr)	6		3	3		6	6					6
Turn Type	Prot	NA	pm+ov	Prot	NA	pm+ov	Prot	NA		Prot	NA	pm+ov
Protected Phases	5	2	3	1	6	7	3	8		7	4	5
Permitted Phases			2			6						4
Actuated Green, G (s)	29.1	50.2	84.3	11.0	32.1	68.2	34.1	33.0		36.1	35.0	64.1
Effective Green, g (s)	30.0	51.1	86.1	12.0	33.1	68.2	35.0	33.9		37.0	35.9	64.1
Actuated g/C Ratio	0.20	0.34	0.57	0.08	0.22	0.45	0.23	0.23		0.25	0.24	0.43
Clearance Time (s)	4.9	4.9	4.9	5.0	5.0	4.9	4.9	4.9		4.9	4.9	4.9
Vehicle Extension (s)	0.2	0.2	3.1	8.0	8.0	5.5	3.1	3.1		5.5	5.5	0.2
Lane Grp Cap (vph)	354	634	941	141	780	764	413	775		436	847	669
v/s Ratio Prot	c0.23	0.25	0.08	0.05	0.17	c0.23	c0.28	0.20		c0.26	0.22	0.11
v/s Ratio Perm			0.12			0.24						0.13
v/c Ratio	1.17	0.72	0.32	0.62	0.75	0.95	1.21	0.88		1.05	0.90	0.56
Uniform Delay, d1	60.0	43.2	16.7	66.8	54.6	39.4	57.5	56.0		56.5	55.3	32.3
Progression Factor	1.00	1.00	1.00	1.15	0.66	1.12	1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	101.3	6.9	0.2	16.5	6.3	21.8	115.4	11.0		56.3	13.2	0.6
Delay (s)	161.3	50.2	16.9	93.2	42.5	66.0	172.9	67.0		112.8	68.5	32.9
Level of Service	F	D	B	F	D	E	F	E		F	E	C
Approach Delay (s)		78.9			58.0			111.3			71.6	
Approach LOS		E			E			F			E	

Intersection Summary			
HCM 2000 Control Delay	78.3	HCM 2000 Level of Service	E
HCM 2000 Volume to Capacity ratio	1.13		
Actuated Cycle Length (s)	150.0	Sum of lost time (s)	17.8
Intersection Capacity Utilization	106.8%	ICU Level of Service	G
Analysis Period (min)	15		
c Critical Lane Group			

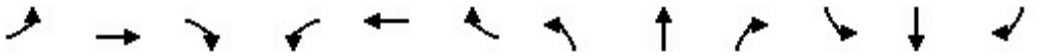


Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	200	140	170	70	160	90	240	640	70	150	730	170
Future Volume (vph)	200	140	170	70	160	90	240	640	70	150	730	170
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0
Lane Util. Factor	0.95	0.95	1.00	1.00	1.00	1.00	0.97	0.95		1.00	0.95	1.00
Frpb, ped/bikes	1.00	1.00	0.98	1.00	1.00	0.98	1.00	1.00		1.00	1.00	0.97
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.99		1.00	1.00	0.85
Flt Protected	0.95	0.99	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1681	1750	1557	1770	1863	1547	3433	3476		1770	3539	1531
Flt Permitted	0.95	0.99	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)	1681	1750	1557	1770	1863	1547	3433	3476		1770	3539	1531
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	217	152	185	76	174	98	261	696	76	163	793	185
RTOR Reduction (vph)	0	0	132	0	0	80	0	5	0	0	0	106
Lane Group Flow (vph)	174	195	53	76	174	18	261	767	0	163	793	79
Confl. Peds. (#/hr)	10		12	12		10	15		12	12		15
Turn Type	Split	NA	pm+ov	Split	NA	Perm	Prot	NA		Prot	NA	Perm
Protected Phases	8	8	1	7	7		1	6		5	2	
Permitted Phases			8			7						2
Actuated Green, G (s)	23.9	23.9	36.2	22.4	22.4	22.4	12.3	50.2		14.4	52.3	52.3
Effective Green, g (s)	24.8	24.8	37.0	23.3	23.3	23.3	12.7	51.1		14.8	53.2	53.2
Actuated g/C Ratio	0.19	0.19	0.28	0.18	0.18	0.18	0.10	0.39		0.11	0.41	0.41
Clearance Time (s)	4.9	4.9	4.4	4.9	4.9	4.9	4.4	4.9		4.4	4.9	4.9
Vehicle Extension (s)	3.0	3.0	2.0	3.0	3.0	3.0	2.0	4.5		2.0	4.6	4.6
Lane Grp Cap (vph)	320	333	443	317	333	277	335	1366		201	1448	626
v/s Ratio Prot	0.10	c0.11	0.01	0.04	c0.09		0.08	0.22		c0.09	c0.22	
v/s Ratio Perm			0.02			0.01						0.05
v/c Ratio	0.54	0.59	0.12	0.24	0.52	0.06	0.78	0.56		0.81	0.55	0.13
Uniform Delay, d1	47.5	47.9	34.4	45.8	48.3	44.3	57.3	30.7		56.2	29.2	23.9
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.41	0.66	0.41
Incremental Delay, d2	1.9	2.6	0.0	0.4	1.5	0.1	10.0	1.7		14.8	1.0	0.3
Delay (s)	49.4	50.5	34.5	46.1	49.8	44.4	67.3	32.4		93.9	20.3	10.1
Level of Service	D	D	C	D	D	D	E	C		F	C	B
Approach Delay (s)		44.8			47.5			41.2			29.1	
Approach LOS		D			D			D			C	

Intersection Summary			
HCM 2000 Control Delay	38.1	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.59		
Actuated Cycle Length (s)	130.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	72.5%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	40	20	50	80	20	70	90	1050	200	60	960	30
Future Volume (vph)	40	20	50	80	20	70	90	1050	200	60	960	30
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0			4.0		4.0	4.0		4.0	4.0	
Lane Util. Factor		1.00			1.00		1.00	0.95		1.00	0.95	
Frpb, ped/bikes		1.00			0.97		1.00	0.99		1.00	1.00	
Flpb, ped/bikes		0.99			1.00		1.00	1.00		1.00	1.00	
Frt		0.94			0.94		1.00	0.98		1.00	1.00	
Flt Protected		0.98			0.98		0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1696			1659		1770	3435		1770	3523	
Flt Permitted		0.78			0.71		0.22	1.00		0.16	1.00	
Satd. Flow (perm)		1351			1208		414	3435		296	3523	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	43	22	54	87	22	76	98	1141	217	65	1043	33
RTOR Reduction (vph)	0	22	0	0	18	0	0	7	0	0	1	0
Lane Group Flow (vph)	0	97	0	0	167	0	98	1351	0	65	1075	0
Confl. Peds. (#/hr)	33					33			3	3		
Turn Type	Perm	NA		Perm	NA		pm+pt	NA		pm+pt	NA	
Protected Phases		8			4		1	6		5	2	
Permitted Phases	8			4			6			2		
Actuated Green, G (s)		23.6			23.6		113.9	107.3		110.5	105.6	
Effective Green, g (s)		24.5			24.5		114.7	108.2		111.3	106.5	
Actuated g/C Ratio		0.16			0.16		0.76	0.72		0.74	0.71	
Clearance Time (s)		4.9			4.9		4.4	4.9		4.4	4.9	
Vehicle Extension (s)		2.0			2.0		2.0	2.9		2.0	2.9	
Lane Grp Cap (vph)		220			197		379	2477		271	2501	
v/s Ratio Prot							c0.01	c0.39		0.01	0.31	
v/s Ratio Perm		0.07			c0.14		0.19			0.17		
v/c Ratio		0.44			0.85		0.26	0.55		0.24	0.43	
Uniform Delay, d1		56.6			60.9		5.7	9.6		7.1	9.1	
Progression Factor		1.00			1.26		1.00	1.00		1.00	1.00	
Incremental Delay, d2		0.5			24.3		0.1	0.9		0.2	0.5	
Delay (s)		57.1			101.0		5.8	10.5		7.3	9.6	
Level of Service		E			F		A	B		A	A	
Approach Delay (s)		57.1			101.0			10.2			9.5	
Approach LOS		E			F			B			A	

Intersection Summary			
HCM 2000 Control Delay	17.6	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.59		
Actuated Cycle Length (s)	150.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	65.0%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	380	1870	200	510	1550	390	230	640	410	350	530	290
Future Volume (vph)	380	1870	200	510	1550	390	230	640	410	350	530	290
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0	4.4	4.0	4.0	3.5	4.0	4.0	3.5
Lane Util. Factor	0.97	0.91		0.97	0.91	1.00	1.00	0.95	1.00	0.97	0.95	1.00
Frpb, ped/bikes	1.00	0.99		1.00	1.00	0.92	1.00	1.00	0.96	1.00	1.00	0.96
Flpb, ped/bikes	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.99		1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	4954		3433	5085	1464	1770	3539	1521	3433	3539	1516
Flt Permitted	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	4954		3433	5085	1464	1770	3539	1521	3433	3539	1516
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	413	2033	217	554	1685	424	250	696	446	380	576	315
RTOR Reduction (vph)	0	9	0	0	0	39	0	0	55	0	0	55
Lane Group Flow (vph)	413	2241	0	554	1685	385	250	696	391	380	576	260
Confl. Peds. (#/hr)	48		65	65		48	42		40	40		42
Turn Type	Prot	NA		Prot	NA	pm+ov	Prot	NA	pm+ov	Prot	NA	pm+ov
Protected Phases	5	2		1	6	7	3	8	1	7	4	5
Permitted Phases						6			8			4
Actuated Green, G (s)	19.7	58.7		19.9	59.0	75.9	16.2	30.7	50.6	16.9	31.4	51.1
Effective Green, g (s)	20.1	59.8		20.3	60.0	75.9	16.6	31.6	52.4	17.3	32.3	52.9
Actuated g/C Ratio	0.14	0.41		0.14	0.41	0.52	0.11	0.22	0.36	0.12	0.22	0.36
Clearance Time (s)	4.4	5.1		4.4	5.0	4.4	4.4	4.9	4.4	4.4	4.9	4.4
Vehicle Extension (s)	2.0	3.5		2.0	3.7	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lane Grp Cap (vph)	475	2043		480	2104	766	202	771	586	409	788	553
v/s Ratio Prot	0.12	c0.45		c0.16	0.33	0.06	c0.14	c0.20	0.10	c0.11	0.16	0.07
v/s Ratio Perm						0.20			0.16			0.10
v/c Ratio	0.87	1.10		1.15	0.80	0.50	1.24	0.90	0.67	0.93	0.73	0.47
Uniform Delay, d1	61.2	42.6		62.4	37.3	22.4	64.2	55.2	39.0	63.2	52.3	35.3
Progression Factor	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	15.0	52.0		90.8	2.4	0.2	141.9	13.6	2.2	26.8	3.0	0.2
Delay (s)	76.2	94.6		153.2	39.6	22.5	206.1	68.8	41.2	90.1	55.3	35.5
Level of Service	E	F		F	D	C	F	E	D	F	E	D
Approach Delay (s)		91.8			60.5			84.6			60.8	
Approach LOS		F			E			F			E	

Intersection Summary			
HCM 2000 Control Delay	75.2	HCM 2000 Level of Service	E
HCM 2000 Volume to Capacity ratio	1.07		
Actuated Cycle Length (s)	145.0	Sum of lost time (s)	16.4
Intersection Capacity Utilization	104.7%	ICU Level of Service	G
Analysis Period (min)	15		
c Critical Lane Group			

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	120	300	770	120	400	870
Future Volume (vph)	120	300	770	120	400	870
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.5		4.5		4.5	4.5
Lane Util. Factor	1.00		0.95		1.00	0.95
Frt	0.90		0.98		1.00	1.00
Flt Protected	0.99		1.00		0.95	1.00
Satd. Flow (prot)	1659		3468		1770	3539
Flt Permitted	0.99		1.00		0.95	1.00
Satd. Flow (perm)	1659		3468		1770	3539
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	130	326	837	130	435	946
RTOR Reduction (vph)	130	0	17	0	0	0
Lane Group Flow (vph)	326	0	950	0	435	946
Turn Type	Prot		NA		Prot	NA
Protected Phases	8		2		1	6
Permitted Phases						
Actuated Green, G (s)	15.2		21.7		18.8	45.0
Effective Green, g (s)	15.2		21.7		18.8	45.0
Actuated g/C Ratio	0.22		0.31		0.27	0.65
Clearance Time (s)	4.5		4.5		4.5	4.5
Vehicle Extension (s)	3.0		3.0		3.0	3.0
Lane Grp Cap (vph)	364		1087		480	2301
v/s Ratio Prot	c0.20		c0.27		c0.25	0.27
v/s Ratio Perm						
v/c Ratio	0.89		0.87		0.91	0.41
Uniform Delay, d1	26.2		22.5		24.3	5.8
Progression Factor	1.00		1.00		1.00	1.00
Incremental Delay, d2	23.2		9.8		20.5	0.5
Delay (s)	49.5		32.2		44.8	6.3
Level of Service	D		C		D	A
Approach Delay (s)	49.5		32.2			18.5
Approach LOS	D		C			B

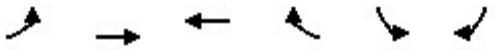
Intersection Summary			
HCM 2000 Control Delay	28.2	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.89		
Actuated Cycle Length (s)	69.2	Sum of lost time (s)	13.5
Intersection Capacity Utilization	83.6%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	0	340	670	200	0	660
Future Volume (Veh/h)	0	340	670	200	0	660
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	370	728	217	0	717
Pedestrians	2					3
Lane Width (ft)	12.0					12.0
Walking Speed (ft/s)	4.0					4.0
Percent Blockage	0					0
Right turn flare (veh)						
Median type			None			None
Median storage veh)						
Upstream signal (ft)			215			407
pX, platoon unblocked	0.83					
vC, conflicting volume	1197	478			947	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	840	478			947	
tC, single (s)	6.8	6.9			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	100	30			100	
cM capacity (veh/h)	253	532			719	

Direction, Lane #	WB 1	NB 1	NB 2	SB 1	SB 2
Volume Total	370	485	460	358	358
Volume Left	0	0	0	0	0
Volume Right	370	0	217	0	0
cSH	532	1700	1700	1700	1700
Volume to Capacity	0.70	0.29	0.27	0.21	0.21
Queue Length 95th (ft)	135	0	0	0	0
Control Delay (s)	25.8	0.0	0.0	0.0	0.0
Lane LOS	D				
Approach Delay (s)	25.8	0.0		0.0	
Approach LOS	D				

Intersection Summary			
Average Delay	4.7		
Intersection Capacity Utilization	53.0%	ICU Level of Service	A
Analysis Period (min)	15		

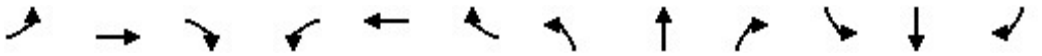


Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	0	1250	970	860	360	300
Future Volume (vph)	0	1250	970	860	360	300
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.4	5.4	5.9	5.2	5.2
Lane Util. Factor		0.95	0.95	0.88	0.97	1.00
Frpb, ped/bikes		1.00	1.00	1.00	1.00	1.00
Flpb, ped/bikes		1.00	1.00	1.00	1.00	1.00
Frt		1.00	1.00	0.85	1.00	0.85
Flt Protected		1.00	1.00	1.00	0.95	1.00
Satd. Flow (prot)		3539	3539	2787	3433	1583
Flt Permitted		1.00	1.00	1.00	0.95	1.00
Satd. Flow (perm)		3539	3539	2787	3433	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	1359	1054	935	391	326
RTOR Reduction (vph)	0	0	0	429	0	267
Lane Group Flow (vph)	0	1359	1054	506	391	59
Confl. Peds. (#/hr)				6	3	
Turn Type		NA	NA	custom	Prot	Perm
Protected Phases		2	2	2	1	
Permitted Phases				8		1
Actuated Green, G (s)		34.2	34.2	34.2	11.2	11.2
Effective Green, g (s)		34.2	34.2	33.7	11.2	11.2
Actuated g/C Ratio		0.55	0.55	0.54	0.18	0.18
Clearance Time (s)		5.4	5.4	5.4	5.2	5.2
Vehicle Extension (s)		2.9	2.9	2.9	2.5	2.5
Lane Grp Cap (vph)		1942	1942	1507	617	284
v/s Ratio Prot		c0.38	0.30	0.18	c0.11	
v/s Ratio Perm						0.04
v/c Ratio		0.70	0.54	0.34	0.63	0.21
Uniform Delay, d1		10.3	9.0	8.0	23.7	21.8
Progression Factor		1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2		1.1	0.3	0.1	1.9	0.3
Delay (s)		11.4	9.3	8.1	25.5	22.0
Level of Service		B	A	A	C	C
Approach Delay (s)		11.4	8.8		23.9	
Approach LOS		B	A		C	

Intersection Summary			
HCM 2000 Control Delay	12.3	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.68		
Actuated Cycle Length (s)	62.3	Sum of lost time (s)	16.6
Intersection Capacity Utilization	54.2%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

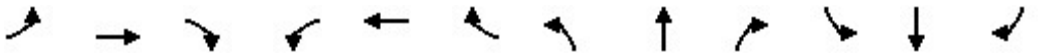
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	70	260	1060	100	130	970
Future Volume (vph)	70	260	1060	100	130	970
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	3.1	4.9		4.4	4.9
Lane Util. Factor	1.00	1.00	0.91		1.00	0.91
Frpb, ped/bikes	1.00	0.94	1.00		1.00	1.00
Flpb, ped/bikes	1.00	1.00	1.00		1.00	1.00
Frt	1.00	0.85	0.99		1.00	1.00
Flt Protected	0.95	1.00	1.00		0.95	1.00
Satd. Flow (prot)	1770	1495	5003		1770	5085
Flt Permitted	0.95	1.00	1.00		0.95	1.00
Satd. Flow (perm)	1770	1495	5003		1770	5085
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	76	283	1152	109	141	1054
RTOR Reduction (vph)	0	258	4	0	0	0
Lane Group Flow (vph)	76	25	1257	0	141	1054
Confl. Peds. (#/hr)	11	16		18	18	
Turn Type	Prot	Perm	NA		Prot	NA
Protected Phases	4		6		5	2
Permitted Phases		4				
Actuated Green, G (s)	12.2	12.2	108.2		16.3	128.9
Effective Green, g (s)	12.2	13.1	108.2		16.3	128.9
Actuated g/C Ratio	0.08	0.09	0.72		0.11	0.86
Clearance Time (s)	4.0	4.0	4.9		4.4	4.9
Vehicle Extension (s)	3.0	3.0	5.0		2.0	3.2
Lane Grp Cap (vph)	143	130	3608		192	4369
v/s Ratio Prot	c0.04		c0.25		c0.08	0.21
v/s Ratio Perm		0.02				
v/c Ratio	0.53	0.19	0.35		0.73	0.24
Uniform Delay, d1	66.2	63.5	7.8		64.8	1.9
Progression Factor	1.00	1.00	1.64		1.14	1.26
Incremental Delay, d2	3.8	0.7	0.2		7.4	0.1
Delay (s)	69.9	64.2	12.9		81.3	2.4
Level of Service	E	E	B		F	A
Approach Delay (s)	65.4		12.9			11.7
Approach LOS	E		B			B

Intersection Summary			
HCM 2000 Control Delay	19.1	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.41		
Actuated Cycle Length (s)	150.0	Sum of lost time (s)	13.3
Intersection Capacity Utilization	51.1%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



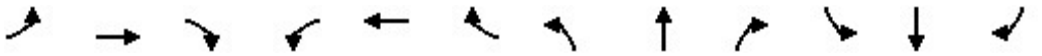
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	70	130	150	120	40	130	240	1120	120	200	890	80
Future Volume (vph)	70	130	150	120	40	130	240	1120	120	200	890	80
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	0.91		0.97	0.95	
Frpb, ped/bikes	1.00	0.99		1.00	0.98		1.00	1.00		1.00	1.00	
Flpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Frt	1.00	0.92		1.00	0.89		1.00	0.99		1.00	0.99	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1770	1690		1770	1622		1770	4993		3433	3484	
Flt Permitted	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (perm)	1770	1690		1770	1622		1770	4993		3433	3484	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	76	141	163	130	43	141	261	1217	130	217	967	87
RTOR Reduction (vph)	0	29	0	0	80	0	0	9	0	0	4	0
Lane Group Flow (vph)	76	275	0	130	104	0	261	1338	0	217	1050	0
Confl. Peds. (#/hr)	3		9	9		3	14		14	14		14
Turn Type	Split	NA		Split	NA		Prot	NA		Prot	NA	
Protected Phases	7	7		8	8		1	6		5	2	
Permitted Phases												
Actuated Green, G (s)	28.2	28.2		14.3	14.3		24.9	68.5		19.9	63.5	
Effective Green, g (s)	29.1	29.1		15.2	15.2		25.3	69.4		20.3	64.4	
Actuated g/C Ratio	0.19	0.19		0.10	0.10		0.17	0.46		0.14	0.43	
Clearance Time (s)	4.9	4.9		4.9	4.9		4.4	4.9		4.4	4.9	
Vehicle Extension (s)	3.0	3.0		2.0	2.0		2.0	3.9		2.0	3.9	
Lane Grp Cap (vph)	343	327		179	164		298	2310		464	1495	
v/s Ratio Prot	0.04	c0.16		c0.07	0.06		c0.15	0.27		0.06	c0.30	
v/s Ratio Perm												
v/c Ratio	0.22	0.84		0.73	0.63		0.88	0.58		0.47	0.70	
Uniform Delay, d1	50.9	58.2		65.4	64.7		60.8	29.6		59.9	35.0	
Progression Factor	1.00	1.00		1.00	1.00		1.06	0.54		0.90	1.24	
Incremental Delay, d2	0.3	17.4		11.7	5.8		20.8	0.9		0.3	2.8	
Delay (s)	51.2	75.6		77.1	70.5		85.5	17.0		54.0	46.0	
Level of Service	D	E		E	E		F	B		D	D	
Approach Delay (s)		70.8			73.2			28.1			47.4	
Approach LOS		E			E			C			D	

Intersection Summary			
HCM 2000 Control Delay	43.5	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.77		
Actuated Cycle Length (s)	150.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	79.3%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	60	30	70	150	30	140	50	1250	70	120	1080	80
Future Volume (vph)	60	30	70	150	30	140	50	1250	70	120	1080	80
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.9		4.9	4.9		4.4	4.9		4.4	4.9	
Lane Util. Factor		1.00		1.00	1.00		1.00	0.91		0.97	0.95	
Frpb, ped/bikes		0.99		1.00	1.00		1.00	1.00		1.00	1.00	
Flpb, ped/bikes		1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Frt		0.94		1.00	0.88		1.00	0.99		1.00	0.99	
Flt Protected		0.98		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1706		1770	1633		1770	5024		3433	3492	
Flt Permitted		0.98		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (perm)		1706		1770	1633		1770	5024		3433	3492	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	65	33	76	163	33	152	54	1359	76	130	1174	87
RTOR Reduction (vph)	0	22	0	0	115	0	0	3	0	0	3	0
Lane Group Flow (vph)	0	152	0	163	70	0	54	1432	0	130	1258	0
Confl. Peds. (#/hr)			6	6			7		18	18		7
Turn Type	Split	NA		Split	NA		Prot	NA		Prot	NA	
Protected Phases	8	8		7	7		1	6		5	2	
Permitted Phases												
Actuated Green, G (s)		19.9		17.6	17.6		7.1	79.4		14.0	86.3	
Effective Green, g (s)		19.9		17.6	17.6		7.1	79.4		14.0	86.3	
Actuated g/C Ratio		0.13		0.12	0.12		0.05	0.53		0.09	0.58	
Clearance Time (s)		4.9		4.9	4.9		4.4	4.9		4.4	4.9	
Vehicle Extension (s)		2.0		2.0	2.0		2.0	2.0		2.0	2.0	
Lane Grp Cap (vph)		226		207	191		83	2659		320	2009	
v/s Ratio Prot		c0.09		c0.09	0.04		0.03	c0.28		0.04	c0.36	
v/s Ratio Perm												
v/c Ratio		0.67		0.79	0.37		0.65	0.54		0.41	0.63	
Uniform Delay, d1		62.0		64.4	61.1		70.2	23.2		64.1	21.1	
Progression Factor		1.00		1.00	1.00		1.09	0.95		0.64	0.39	
Incremental Delay, d2		6.1		16.5	0.4		12.7	0.8		0.2	1.2	
Delay (s)		68.1		80.9	61.5		89.0	22.8		41.4	9.5	
Level of Service		E		F	E		F	C		D	A	
Approach Delay (s)		68.1			70.6			25.2			12.5	
Approach LOS		E			E			C			B	

Intersection Summary			
HCM 2000 Control Delay	26.8	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.66		
Actuated Cycle Length (s)	150.0	Sum of lost time (s)	19.1
Intersection Capacity Utilization	75.1%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	40	20	70	30	110	200	140	1110	30	40	1140	120
Future Volume (vph)	40	20	70	30	110	200	140	1110	30	40	1140	120
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.9	4.9		5.8	4.0	4.4	4.9		4.4	4.9	
Lane Util. Factor		1.00	1.00		1.00	1.00	1.00	0.91		1.00	0.91	
Frpb, ped/bikes		1.00	0.99		1.00	1.00	1.00	1.00		1.00	0.99	
Flpb, ped/bikes		1.00	1.00		1.00	1.00	1.00	1.00		1.00	1.00	
Frt		1.00	0.85		1.00	0.85	1.00	1.00		1.00	0.99	
Flt Protected		0.97	1.00		0.99	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1803	1562		1842	1583	1770	5055		1770	4966	
Flt Permitted		0.48	1.00		0.91	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (perm)		903	1562		1696	1583	1770	5055		1770	4966	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	43	22	76	33	120	217	152	1207	33	43	1239	130
RTOR Reduction (vph)	0	0	67	0	0	0	0	1	0	0	7	0
Lane Group Flow (vph)	0	65	9	0	153	217	152	1239	0	43	1362	0
Confl. Peds. (#/hr)			1	1			19		19	19		19
Turn Type	Perm	NA	Perm	Perm	NA	Free	Prot	NA		Prot	NA	
Protected Phases		8			8		1	6		5	2	
Permitted Phases	8		8	8		Free						
Actuated Green, G (s)		18.5	18.5		18.5	150.0	31.5	110.2		7.1	85.8	
Effective Green, g (s)		18.5	18.5		17.6	150.0	31.5	110.2		7.1	85.8	
Actuated g/C Ratio		0.12	0.12		0.12	1.00	0.21	0.73		0.05	0.57	
Clearance Time (s)		4.9	4.9		4.9		4.4	4.9		4.4	4.9	
Vehicle Extension (s)		2.0	2.0		2.0		2.0	2.9		2.0	3.9	
Lane Grp Cap (vph)		111	192		198	1583	371	3713		83	2840	
v/s Ratio Prot							c0.09	0.25		0.02	c0.27	
v/s Ratio Perm		0.07	0.01		c0.09	0.14						
v/c Ratio		0.59	0.05		0.77	0.14	0.41	0.33		0.52	0.48	
Uniform Delay, d1		62.1	58.0		64.3	0.0	51.2	7.0		69.8	18.9	
Progression Factor		1.25	2.62		1.00	1.00	0.90	0.84		0.95	1.41	
Incremental Delay, d2		4.5	0.0		15.6	0.2	0.1	0.1		1.8	0.5	
Delay (s)		82.5	152.0		79.8	0.2	46.0	6.0		67.9	27.1	
Level of Service		F	F		E	A	D	A		E	C	
Approach Delay (s)		119.9			33.1			10.4			28.4	
Approach LOS		F			C			B			C	

Intersection Summary			
HCM 2000 Control Delay	25.2	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.50		
Actuated Cycle Length (s)	150.0	Sum of lost time (s)	15.1
Intersection Capacity Utilization	59.3%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	EBR2	WBT	WBR	NBR2	SBL2	SBL	SBT	SBR	NWL
Lane Configurations												
Traffic Volume (vph)	300	1610	460	260	2040	700	160	350	400	110	210	200
Future Volume (vph)	300	1610	460	260	2040	700	160	350	400	110	210	200
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	2.6	4.0		6.1	4.0	5.9	5.9	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.97	0.86		0.86	0.91	1.00	1.00	0.95	0.91	0.91	1.00	1.00
Frpb, ped/bikes	1.00	0.99		1.00	1.00	0.94	1.00	1.00	1.00	1.00	0.81	1.00
Flpb, ped/bikes	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.97		0.85	1.00	0.85	0.86	1.00	1.00	1.00	0.85	1.00
Flt Protected	0.95	1.00		1.00	1.00	1.00	1.00	0.95	0.95	0.97	1.00	0.95
Satd. Flow (prot)	3433	4578		1362	5085	1486	1611	1681	1610	1641	1289	1770
Flt Permitted	0.95	1.00		1.00	1.00	1.00	1.00	0.95	0.95	0.97	1.00	0.95
Satd. Flow (perm)	3433	4578		1362	5085	1486	1611	1681	1610	1641	1289	1770
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	326	1750	500	283	2217	761	174	380	435	120	228	217
RTOR Reduction (vph)	0	1	0	79	0	14	111	0	0	0	155	0
Lane Group Flow (vph)	326	2277	0	176	2217	747	63	243	341	351	73	217
Confl. Peds. (#/hr)	29		31			29		10			63	63
Turn Type	Prot	NA		Perm	NA	pm+ov	Perm	Split	Split	NA	Perm	Prot
Protected Phases	5	2			6	4		4	4	4		3
Permitted Phases				2		6	8				4	
Actuated Green, G (s)	15.8	83.9		83.9	64.3	97.3	54.1	33.0	33.0	33.0	33.0	19.0
Effective Green, g (s)	17.2	86.0		83.9	66.2	93.5	54.1	33.0	33.0	33.0	33.0	19.0
Actuated g/C Ratio	0.11	0.57		0.56	0.44	0.62	0.36	0.22	0.22	0.22	0.22	0.13
Clearance Time (s)	4.0	6.1		6.1	5.9	4.0	5.9	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	2.8		2.8	3.2	3.0	4.1	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	393	2624		761	2244	926	581	369	354	361	283	224
v/s Ratio Prot	0.09	c0.50			c0.44	0.17		0.14	0.21	c0.21		c0.12
v/s Ratio Perm				0.13		0.34	0.04				0.06	
v/c Ratio	0.83	0.87		0.23	0.99	0.81	0.11	0.66	0.96	0.97	0.26	0.97
Uniform Delay, d1	65.0	27.2		16.7	41.5	21.4	31.9	53.4	57.9	58.0	48.4	65.2
Progression Factor	1.00	1.00		1.00	1.04	1.45	1.00	0.82	0.83	0.83	0.98	1.00
Incremental Delay, d2	13.5	4.2		0.7	13.6	3.8	0.1	3.8	35.7	37.6	0.4	50.7
Delay (s)	78.5	31.4		17.4	56.7	35.0	32.0	47.8	83.6	85.6	47.9	115.9
Level of Service	E	C		B	E	C	C	D	F	F	D	F
Approach Delay (s)		35.5			51.1					69.7		103.0
Approach LOS		D			D					E		F

Intersection Summary			
HCM 2000 Control Delay	51.9	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.98		
Actuated Cycle Length (s)	150.0	Sum of lost time (s)	16.5
Intersection Capacity Utilization	90.4%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			

Movement	NWR	NWR2
Lane Configurations		
Traffic Volume (vph)	330	50
Future Volume (vph)	330	50
Ideal Flow (vphpl)	1900	1900
Total Lost time (s)	4.0	
Lane Util. Factor	0.88	
Frpb, ped/bikes	1.00	
Flpb, ped/bikes	1.00	
Frt	0.85	
Flt Protected	1.00	
Satd. Flow (prot)	2787	
Flt Permitted	1.00	
Satd. Flow (perm)	2787	
Peak-hour factor, PHF	0.92	0.92
Adj. Flow (vph)	359	54
RTOR Reduction (vph)	83	0
Lane Group Flow (vph)	330	0
Confl. Peds. (#/hr)		31
Turn Type	Prot	
Protected Phases	3	
Permitted Phases		
Actuated Green, G (s)	19.0	
Effective Green, g (s)	19.0	
Actuated g/C Ratio	0.13	
Clearance Time (s)	4.0	
Vehicle Extension (s)	3.0	
Lane Grp Cap (vph)	353	
v/s Ratio Prot	0.12	
v/s Ratio Perm		
v/c Ratio	0.93	
Uniform Delay, d1	64.9	
Progression Factor	1.00	
Incremental Delay, d2	31.4	
Delay (s)	96.3	
Level of Service	F	
Approach Delay (s)		
Approach LOS		

Intersection Summary

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	100	120	300	120	230	70	70	90	120	90	120	100
Future Volume (vph)	100	120	300	120	230	70	70	90	120	90	120	100
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.5			4.5			4.5			4.0	
Lane Util. Factor		1.00			1.00			1.00			1.00	
Frt		0.92			0.98			0.94			0.96	
Flt Protected		0.99			0.99			0.99			0.99	
Satd. Flow (prot)		1701			1795			1734			1756	
Flt Permitted		0.84			0.70			0.86			0.84	
Satd. Flow (perm)		1440			1279			1509			1497	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	109	130	326	130	250	76	76	98	130	98	130	109
RTOR Reduction (vph)	0	94	0	0	14	0	0	36	0	0	23	0
Lane Group Flow (vph)	0	471	0	0	442	0	0	268	0	0	314	0
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)		22.0			22.0			22.0			22.5	
Effective Green, g (s)		22.0			22.0			22.0			22.5	
Actuated g/C Ratio		0.42			0.42			0.42			0.42	
Clearance Time (s)		4.5			4.5			4.5			4.0	
Vehicle Extension (s)		3.0			3.0			3.0			3.0	
Lane Grp Cap (vph)		597			530			626			635	
v/s Ratio Prot												
v/s Ratio Perm		0.33			c0.35			0.18			c0.21	
v/c Ratio		0.79			0.83			0.43			0.49	
Uniform Delay, d1		13.5			13.9			11.0			11.1	
Progression Factor		1.00			1.00			1.00			1.00	
Incremental Delay, d2		6.8			10.8			2.1			0.6	
Delay (s)		20.3			24.7			13.2			11.7	
Level of Service		C			C			B			B	
Approach Delay (s)		20.3			24.7			13.2			11.7	
Approach LOS		C			C			B			B	

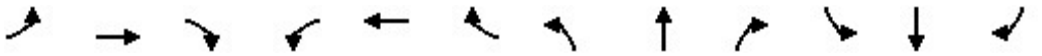
Intersection Summary			
HCM 2000 Control Delay	18.5	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.67		
Actuated Cycle Length (s)	53.0	Sum of lost time (s)	9.0
Intersection Capacity Utilization	67.7%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Movement	NBL	NBT	SBT	SBR	SEL	SER
Lane Configurations						
Traffic Volume (vph)	290	1310	850	50	50	460
Future Volume (vph)	290	1310	850	50	50	460
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0		4.0	4.0
Lane Util. Factor	1.00	0.91	0.91		1.00	1.00
Frt	1.00	1.00	0.99		1.00	0.85
Flt Protected	0.95	1.00	1.00		0.95	1.00
Satd. Flow (prot)	1770	5085	5043		1770	1583
Flt Permitted	0.95	1.00	1.00		0.95	1.00
Satd. Flow (perm)	1770	5085	5043		1770	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	315	1424	924	54	54	500
RTOR Reduction (vph)	0	0	3	0	0	450
Lane Group Flow (vph)	315	1424	975	0	54	50
Turn Type	Prot	NA	NA		Prot	Perm
Protected Phases	7	4	8		5	
Permitted Phases						5
Actuated Green, G (s)	26.6	100.1	69.5		11.9	11.9
Effective Green, g (s)	26.6	100.1	69.5		11.9	11.9
Actuated g/C Ratio	0.22	0.83	0.58		0.10	0.10
Clearance Time (s)	4.0	4.0	4.0		4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0		3.0	3.0
Lane Grp Cap (vph)	392	4241	2920		175	156
v/s Ratio Prot	c0.18	c0.28	0.19		0.03	
v/s Ratio Perm						c0.03
v/c Ratio	0.80	0.34	0.33		0.31	0.32
Uniform Delay, d1	44.2	2.3	13.2		50.2	50.3
Progression Factor	1.00	1.00	0.59		1.00	1.00
Incremental Delay, d2	11.3	0.2	0.2		1.0	1.2
Delay (s)	55.5	2.5	7.9		51.2	51.5
Level of Service	E	A	A		D	D
Approach Delay (s)		12.1	7.9		51.4	
Approach LOS		B	A		D	

Intersection Summary			
HCM 2000 Control Delay	17.5	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.46		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	52.7%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	100	0	140	370	310	150	0	0	0	0	70	90
Future Volume (vph)	100	0	140	370	310	150	0	0	0	0	70	90
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0		4.0	4.0	4.0						4.0	
Lane Util. Factor	1.00		1.00	1.00	1.00						1.00	
Frt	1.00		0.85	1.00	0.95						0.92	
Flt Protected	0.95		1.00	0.95	1.00						1.00	
Satd. Flow (prot)	1770		1583	1770	1772						1721	
Flt Permitted	0.95		1.00	0.95	1.00						1.00	
Satd. Flow (perm)	1770		1583	1770	1772						1721	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	109	0	152	402	337	163	0	0	0	0	76	98
RTOR Reduction (vph)	0	0	134	235	23	0	0	0	0	0	78	0
Lane Group Flow (vph)	109	0	18	167	477	0	0	0	0	0	96	0
Turn Type	Prot		Perm	Split	NA						NA	
Protected Phases	2!			8	8						6!	
Permitted Phases			4									
Actuated Green, G (s)	8.4		5.0	18.0	18.0						8.4	
Effective Green, g (s)	8.4		5.0	18.0	18.0						8.4	
Actuated g/C Ratio	0.19		0.12	0.41	0.41						0.19	
Clearance Time (s)	4.0		4.0	4.0	4.0						4.0	
Vehicle Extension (s)	3.0		3.0	3.0	3.0						3.0	
Lane Grp Cap (vph)	342		182	734	734						333	
v/s Ratio Prot	c0.06			0.09	c0.27						0.06	
v/s Ratio Perm			c0.01									
v/c Ratio	0.32		0.10	0.23	0.65						0.29	
Uniform Delay, d1	15.0		17.2	8.2	10.2						14.9	
Progression Factor	1.00		1.00	1.00	1.00						1.00	
Incremental Delay, d2	0.5		0.2	0.2	2.1						0.5	
Delay (s)	15.6		17.4	8.4	12.2						15.4	
Level of Service	B		B	A	B						B	
Approach Delay (s)		16.6			10.5			0.0			15.4	
Approach LOS		B			B			A			B	

Intersection Summary			
HCM 2000 Control Delay	12.4	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.47		
Actuated Cycle Length (s)	43.4	Sum of lost time (s)	12.0
Intersection Capacity Utilization	50.2%	ICU Level of Service	A
Analysis Period (min)	15		

! Phase conflict between lane groups.
c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	1860	150	290	2420	0	0	0	0	790	440	320
Future Volume (vph)	0	1860	150	290	2420	0	0	0	0	790	440	320
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0		4.0	4.0					4.0	4.0	4.0
Lane Util. Factor		0.91		1.00	0.86					0.95	0.95	1.00
Frpb, ped/bikes		1.00		1.00	1.00					1.00	1.00	0.98
Flpb, ped/bikes		1.00		1.00	1.00					0.98	1.00	1.00
Frt		0.99		1.00	1.00					1.00	1.00	0.85
Flt Protected		1.00		0.95	1.00					0.95	0.99	1.00
Satd. Flow (prot)		5028		1770	6408					1656	1736	1559
Flt Permitted		1.00		0.95	1.00					0.95	0.99	1.00
Satd. Flow (perm)		5028		1770	6408					1656	1736	1559
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	2022	163	315	2630	0	0	0	0	859	478	348
RTOR Reduction (vph)	0	6	0	0	0	0	0	0	0	0	0	31
Lane Group Flow (vph)	0	2179	0	315	2630	0	0	0	0	661	676	317
Confl. Peds. (#/hr)				13						14		3
Turn Type		NA		Prot	NA					Perm	NA	Perm
Protected Phases		2		1	6						4	
Permitted Phases										4		4
Actuated Green, G (s)		63.8		19.6	88.1					52.1	52.1	52.1
Effective Green, g (s)		65.0		20.0	89.0					53.0	53.0	53.0
Actuated g/C Ratio		0.43		0.13	0.59					0.35	0.35	0.35
Clearance Time (s)		5.2		4.4	4.9					4.9	4.9	4.9
Vehicle Extension (s)		3.8		2.0	4.6					2.0	2.0	2.0
Lane Grp Cap (vph)		2178		236	3802					585	613	550
v/s Ratio Prot		c0.43		c0.18	0.41							
v/s Ratio Perm										c0.40	0.39	0.20
v/c Ratio		1.00		1.33	0.69					1.13	1.10	0.58
Uniform Delay, d1		42.5		65.0	21.0					48.5	48.5	39.4
Progression Factor		0.89		1.23	0.10					1.00	1.00	1.00
Incremental Delay, d2		13.6		153.3	0.1					78.4	67.8	0.9
Delay (s)		51.3		233.0	2.1					126.9	116.3	40.3
Level of Service		D		F	A					F	F	D
Approach Delay (s)		51.3			26.8			0.0			104.7	
Approach LOS		D			C			A			F	

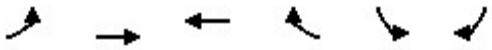
Intersection Summary			
HCM 2000 Control Delay	53.9	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	1.10		
Actuated Cycle Length (s)	150.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	98.9%	ICU Level of Service	F
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	800	220	180	390	0	180	0	300	390	370	10
Future Volume (vph)	0	800	220	180	390	0	180	0	300	390	370	10
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0		4.0	4.0		4.0		4.0	4.0	4.0	
Lane Util. Factor		0.95		1.00	0.95		1.00		1.00	1.00	1.00	
Frpb, ped/bikes		0.97		1.00	1.00		1.00		0.98	1.00	1.00	
Flpb, ped/bikes		1.00		1.00	1.00		1.00		1.00	1.00	1.00	
Frt		0.97		1.00	1.00		1.00		0.85	1.00	1.00	
Flt Protected		1.00		0.95	1.00		0.95		1.00	0.95	1.00	
Satd. Flow (prot)		3317		1770	3539		1770		1556	1770	1854	
Flt Permitted		1.00		0.11	1.00		0.95		1.00	0.95	1.00	
Satd. Flow (perm)		3317		204	3539		1770		1556	1770	1854	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	870	239	196	424	0	196	0	326	424	402	11
RTOR Reduction (vph)	0	28	0	0	0	0	0	0	206	0	1	0
Lane Group Flow (vph)	0	1081	0	196	424	0	196	0	120	424	412	0
Confl. Peds. (#/hr)			43	43		51	17		3	3		17
Turn Type		NA		pm+pt	NA		Prot		Perm	Split	NA	
Protected Phases		2		1	6		3			4	4	
Permitted Phases				6					2			
Actuated Green, G (s)		32.2		42.9	42.9		11.9		32.2	21.0	21.0	
Effective Green, g (s)		33.1		43.3	43.8		12.3		33.1	21.9	21.9	
Actuated g/C Ratio		0.37		0.48	0.49		0.14		0.37	0.24	0.24	
Clearance Time (s)		4.9		4.4	4.9		4.4		4.9	4.9	4.9	
Vehicle Extension (s)		6.7		2.0	6.7		3.0		6.7	3.0	3.0	
Lane Grp Cap (vph)		1219		214	1722		241		572	430	451	
v/s Ratio Prot		0.33		c0.07	0.12		c0.11			c0.24	0.22	
v/s Ratio Perm				c0.37					0.08			
v/c Ratio		0.89		0.92	0.25		0.81		0.21	0.99	0.91	
Uniform Delay, d1		26.7		19.1	13.5		37.7		19.5	33.9	33.1	
Progression Factor		1.00		1.00	1.00		1.00		1.00	1.00	1.00	
Incremental Delay, d2		9.7		38.2	0.3		18.5		0.8	39.4	22.8	
Delay (s)		36.4		57.3	13.8		56.3		20.3	73.3	56.0	
Level of Service		D		E	B		E		C	E	E	
Approach Delay (s)		36.4			27.6			33.8			64.7	
Approach LOS		D			C			C			E	

Intersection Summary			
HCM 2000 Control Delay	41.9	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.94		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	83.3%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	250	450	480	880	450	100
Future Volume (vph)	250	450	480	880	450	100
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0		4.4	4.0	4.9	
Lane Util. Factor	1.00		1.00	0.91	0.91	
Frpb, ped/bikes	1.00		1.00	1.00	1.00	
Flpb, ped/bikes	1.00		1.00	1.00	1.00	
Frt	0.91		1.00	1.00	0.97	
Flt Protected	0.98		0.95	1.00	1.00	
Satd. Flow (prot)	1671		1770	5085	4922	
Flt Permitted	0.98		0.95	1.00	1.00	
Satd. Flow (perm)	1671		1770	5085	4922	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	272	489	522	957	489	109
RTOR Reduction (vph)	54	0	0	0	30	0
Lane Group Flow (vph)	707	0	522	957	568	0
Confl. Peds. (#/hr)			2			2
Turn Type	Prot		Prot	NA	NA	
Protected Phases	2		3	8	4	
Permitted Phases						
Actuated Green, G (s)	49.0		36.7	63.0	22.3	
Effective Green, g (s)	49.0		36.3	63.0	21.4	
Actuated g/C Ratio	0.41		0.30	0.52	0.18	
Clearance Time (s)	4.0		4.0	4.0	4.0	
Vehicle Extension (s)	3.0		3.0	3.0	3.0	
Lane Grp Cap (vph)	682		535	2669	877	
v/s Ratio Prot	c0.42		c0.29	0.19	c0.12	
v/s Ratio Perm						
v/c Ratio	1.04		0.98	0.36	0.65	
Uniform Delay, d1	35.5		41.4	16.7	45.8	
Progression Factor	1.00		1.05	1.20	1.00	
Incremental Delay, d2	44.4		31.7	0.4	3.7	
Delay (s)	79.9		75.0	20.4	49.5	
Level of Service	E		E	C	D	
Approach Delay (s)	79.9			39.7	49.5	
Approach LOS	E			D	D	

Intersection Summary			
HCM 2000 Control Delay	52.5	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.94		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	13.3
Intersection Capacity Utilization	92.2%	ICU Level of Service	F
Analysis Period (min)	15		
c Critical Lane Group			



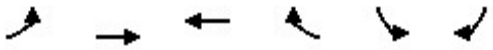
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	70	90	170	80	70	130
Future Volume (Veh/h)	70	90	170	80	70	130
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	76	98	185	87	76	141
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type		None	None			
Median storage veh)						
Upstream signal (ft)		1226	738			
pX, platoon unblocked						
vC, conflicting volume	272				478	228
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	272				478	228
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	94				85	83
cM capacity (veh/h)	1291				514	811

Direction, Lane #	EB 1	EB 2	WB 1	SB 1
Volume Total	76	98	272	217
Volume Left	76	0	0	76
Volume Right	0	0	87	141
cSH	1291	1700	1700	674
Volume to Capacity	0.06	0.06	0.16	0.32
Queue Length 95th (ft)	5	0	0	35
Control Delay (s)	8.0	0.0	0.0	12.9
Lane LOS	A			B
Approach Delay (s)	3.5		0.0	12.9
Approach LOS				B

Intersection Summary			
Average Delay	5.1		
Intersection Capacity Utilization	39.6%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	130	2520	0	0	2580	700	130	360	250	0	0	0
Future Volume (vph)	130	2520	0	0	2580	700	130	360	250	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0			4.0	4.0		4.0				
Lane Util. Factor	1.00	0.91			0.91	1.00		0.95				
Frpb, ped/bikes	1.00	1.00			1.00	0.96		0.99				
Flpb, ped/bikes	1.00	1.00			1.00	1.00		1.00				
Frt	1.00	1.00			1.00	0.85		0.95				
Flt Protected	0.95	1.00			1.00	1.00		0.99				
Satd. Flow (prot)	1770	5085			5085	1519		3294				
Flt Permitted	0.95	1.00			1.00	1.00		0.99				
Satd. Flow (perm)	1770	5085			5085	1519		3294				
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	141	2739	0	0	2804	761	141	391	272	0	0	0
RTOR Reduction (vph)	0	0	0	0	0	98	0	2	0	0	0	0
Lane Group Flow (vph)	141	2739	0	0	2804	663	0	802	0	0	0	0
Confl. Peds. (#/hr)	15		2			15	1		20			
Turn Type	Prot	NA			NA	Perm	Split	NA				
Protected Phases	5	2			6		4	4				
Permitted Phases						6						
Actuated Green, G (s)	19.8	99.3			75.1	75.1		40.9				
Effective Green, g (s)	20.2	100.2			76.0	76.0		41.8				
Actuated g/C Ratio	0.13	0.67			0.51	0.51		0.28				
Clearance Time (s)	4.4	4.9			4.9	4.9		4.9				
Vehicle Extension (s)	2.0	3.8			4.6	4.6		2.0				
Lane Grp Cap (vph)	238	3396			2576	769		917				
v/s Ratio Prot	0.08	c0.54			c0.55			c0.24				
v/s Ratio Perm						0.44						
v/c Ratio	0.59	0.81			1.09	0.86		0.87				
Uniform Delay, d1	61.0	17.9			37.0	32.4		51.6				
Progression Factor	0.80	0.67			1.00	1.00		1.00				
Incremental Delay, d2	0.2	0.2			47.1	12.2		9.0				
Delay (s)	49.1	12.2			84.1	44.6		60.6				
Level of Service	D	B			F	D		E				
Approach Delay (s)		14.0			75.7			60.6			0.0	
Approach LOS		B			E			E			A	

Intersection Summary			
HCM 2000 Control Delay	49.5	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	1.00		
Actuated Cycle Length (s)	150.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	98.9%	ICU Level of Service	F
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	130	1360	570	140	0	0
Future Volume (Veh/h)	130	1360	570	140	0	0
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	141	1478	620	152	0	0
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type		None	None			
Median storage veh)						
Upstream signal (ft)		345	945			
pX, platoon unblocked	0.94				0.75	0.94
vC, conflicting volume	772				1717	386
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	641				953	232
tC, single (s)	4.1				6.8	6.9
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	84				100	100
cM capacity (veh/h)	887				162	727

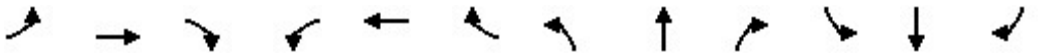
Direction, Lane #	EB 1	EB 2	EB 3	WB 1	WB 2
Volume Total	141	739	739	413	359
Volume Left	141	0	0	0	0
Volume Right	0	0	0	0	152
cSH	887	1700	1700	1700	1700
Volume to Capacity	0.16	0.43	0.43	0.24	0.21
Queue Length 95th (ft)	14	0	0	0	0
Control Delay (s)	9.8	0.0	0.0	0.0	0.0
Lane LOS	A				
Approach Delay (s)	0.9			0.0	
Approach LOS					

Intersection Summary			
Average Delay	0.6		
Intersection Capacity Utilization	40.9%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Sign Control	Stop		Stop			Stop
Traffic Volume (vph)	130	0	0	590	360	280
Future Volume (vph)	130	0	0	590	360	280
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	141	0	0	641	391	304

Direction, Lane #	WB 1	NB 1	SB 1	SB 2
Volume Total (vph)	141	641	391	304
Volume Left (vph)	141	0	391	0
Volume Right (vph)	0	641	0	0
Hadj (s)	0.23	-0.57	0.53	0.03
Departure Headway (s)	6.9	4.7	6.2	5.7
Degree Utilization, x	0.27	0.84	0.67	0.48
Capacity (veh/h)	499	751	565	624
Control Delay (s)	12.4	27.4	19.7	12.6
Approach Delay (s)	12.4	27.4	16.6	
Approach LOS	B	D	C	

Intersection Summary			
Delay	20.9		
Level of Service	C		
Intersection Capacity Utilization	63.1%	ICU Level of Service	B
Analysis Period (min)	15		



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Traffic Volume (vph)	440	50	150	20	20	30	50	120	10	20	200	190
Future Volume (vph)	440	50	150	20	20	30	50	120	10	20	200	190
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	478	54	163	22	22	33	54	130	11	22	217	207

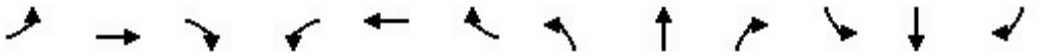
Direction, Lane #	EB 1	EB 2	WB 1	NB 1	SB 1	SB 2
Volume Total (vph)	505	190	77	195	239	207
Volume Left (vph)	478	0	22	54	22	0
Volume Right (vph)	0	163	33	11	0	207
Hadj (s)	0.51	-0.57	-0.17	0.06	0.08	-0.67
Departure Headway (s)	7.2	6.1	7.7	7.5	7.3	6.6
Degree Utilization, x	1.01	0.32	0.16	0.41	0.49	0.38
Capacity (veh/h)	491	575	440	467	482	536
Control Delay (s)	69.6	10.9	12.1	15.6	15.9	12.4
Approach Delay (s)	53.5		12.1	15.6	14.2	
Approach LOS	F		B	C	B	

Intersection Summary				
Delay	33.6			
Level of Service	D			
Intersection Capacity Utilization	62.8%	ICU Level of Service		B
Analysis Period (min)	15			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	720	290	430	480	0	0	0	0	400	550	1020
Future Volume (vph)	0	720	290	430	480	0	0	0	0	400	550	1020
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0	4.0	4.0	4.0					4.0	4.0	4.0
Lane Util. Factor		0.95	1.00	0.97	0.95					0.91	0.91	1.00
Frt		1.00	0.85	1.00	1.00					1.00	1.00	0.85
Flt Protected		1.00	1.00	0.95	1.00					0.95	1.00	1.00
Satd. Flow (prot)		3539	1583	3433	3539					1610	3390	1583
Flt Permitted		1.00	1.00	0.95	1.00					0.95	1.00	1.00
Satd. Flow (perm)		3539	1583	3433	3539					1610	3390	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	783	315	467	522	0	0	0	0	435	598	1109
RTOR Reduction (vph)	0	0	164	0	0	0	0	0	0	0	0	87
Lane Group Flow (vph)	0	783	151	467	522	0	0	0	0	435	598	1022
Turn Type		NA	Perm	Prot	NA					Perm	NA	Perm
Protected Phases		2		1	6						4	
Permitted Phases			2							4		4
Actuated Green, G (s)		26.7	26.7	15.0	46.1					64.1	64.1	64.1
Effective Green, g (s)		27.6	27.6	15.4	47.0					65.0	65.0	65.0
Actuated g/C Ratio		0.23	0.23	0.13	0.39					0.54	0.54	0.54
Clearance Time (s)		4.9	4.9	4.4	4.9					4.9	4.9	4.9
Vehicle Extension (s)		3.8	3.8	2.0	4.2					2.0	2.0	2.0
Lane Grp Cap (vph)		813	364	440	1386					872	1836	857
v/s Ratio Prot		c0.22		c0.14	0.15							
v/s Ratio Perm			0.10							0.27	0.18	c0.65
v/c Ratio		0.96	0.41	1.06	0.38					0.50	0.33	1.19
Uniform Delay, d1		45.7	39.3	52.3	26.0					17.3	15.3	27.5
Progression Factor		1.00	1.00	1.00	1.00					1.00	1.00	1.00
Incremental Delay, d2		23.8	3.5	60.1	0.8					0.2	0.0	98.1
Delay (s)		69.5	42.8	112.4	26.8					17.4	15.3	125.6
Level of Service		E	D	F	C					B	B	F
Approach Delay (s)		61.8			67.2			0.0			72.8	
Approach LOS		E			E			A			E	

Intersection Summary			
HCM 2000 Control Delay	68.7	HCM 2000 Level of Service	E
HCM 2000 Volume to Capacity ratio	1.11		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	83.1%	ICU Level of Service	E
Analysis Period (min)	15		

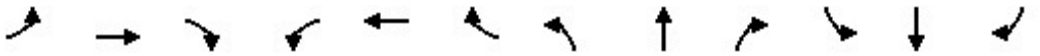
c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	0	60	50	0	0	0	0	0	0	1620	160
Future Volume (Veh/h)	0	0	60	50	0	0	0	0	0	0	1620	160
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	0	65	54	0	0	0	0	0	0	1761	174
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)								1066				
pX, platoon unblocked												
vC, conflicting volume	1848	1848	674	652	1935	0	1935			0		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	1848	1848	674	652	1935	0	1935			0		
tC, single (s)	7.5	6.5	6.9	7.5	6.5	6.9	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	100	100	84	82	100	100	100			100		
cM capacity (veh/h)	46	74	397	295	65	1084	300			1622		

Direction, Lane #	EB 1	WB 1	SB 1	SB 2	SB 3
Volume Total	65	54	704	704	526
Volume Left	0	54	0	0	0
Volume Right	65	0	0	0	174
cSH	397	295	1700	1700	1700
Volume to Capacity	0.16	0.18	0.41	0.41	0.31
Queue Length 95th (ft)	14	16	0	0	0
Control Delay (s)	15.8	19.9	0.0	0.0	0.0
Lane LOS	C	C			
Approach Delay (s)	15.8	19.9	0.0		
Approach LOS	C	C			

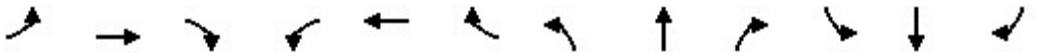
Intersection Summary				
Average Delay	1.0			
Intersection Capacity Utilization	53.7%	ICU Level of Service		A
Analysis Period (min)	15			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	440	260	110	170	0	0	0	0	400	860	490
Future Volume (vph)	0	440	260	110	170	0	0	0	0	400	860	490
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0	4.0		4.0					4.0	4.0	
Lane Util. Factor		1.00	1.00		0.95					1.00	0.91	
Frt		1.00	0.85		1.00					1.00	0.95	
Flt Protected		1.00	1.00		0.98					0.95	1.00	
Satd. Flow (prot)		1863	1583		3471					1770	4808	
Flt Permitted		1.00	1.00		0.62					0.95	1.00	
Satd. Flow (perm)		1863	1583		2177					1770	4808	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	478	283	120	185	0	0	0	0	435	935	533
RTOR Reduction (vph)	0	0	38	0	0	0	0	0	0	0	158	0
Lane Group Flow (vph)	0	478	245	0	305	0	0	0	0	435	1310	0
Turn Type		NA	Perm	Perm	NA					Perm	NA	
Protected Phases		4			8						6	
Permitted Phases			4	8						6		
Actuated Green, G (s)		25.3	25.3		25.3					26.7	26.7	
Effective Green, g (s)		28.0	28.0		28.0					29.0	29.0	
Actuated g/C Ratio		0.43	0.43		0.43					0.45	0.45	
Clearance Time (s)		6.7	6.7		6.7					6.3	6.3	
Vehicle Extension (s)		2.0	2.0		2.5					4.6	4.6	
Lane Grp Cap (vph)		802	681		937					789	2145	
v/s Ratio Prot		c0.26									c0.27	
v/s Ratio Perm			0.16		0.14					0.25		
v/c Ratio		0.60	0.36		0.33					0.55	0.61	
Uniform Delay, d1		14.2	12.5		12.2					13.2	13.7	
Progression Factor		1.00	1.00		1.00					1.00	1.00	
Incremental Delay, d2		3.3	1.5		0.9					2.8	1.3	
Delay (s)		17.4	13.9		13.2					16.0	15.0	
Level of Service		B	B		B					B	B	
Approach Delay (s)		16.1			13.2			0.0			15.2	
Approach LOS		B			B			A			B	

Intersection Summary			
HCM 2000 Control Delay	15.3	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.60		
Actuated Cycle Length (s)	65.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	68.6%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	1090	340	50	700	0	0	0	0	730	1100	660
Future Volume (vph)	0	1090	340	50	700	0	0	0	0	730	1100	660
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		6.7		4.0	6.7						6.3	4.0
Lane Util. Factor		0.95		1.00	0.95						0.86	0.86
Frt		0.96		1.00	1.00						1.00	0.85
Flt Protected		1.00		0.95	1.00						0.98	1.00
Satd. Flow (prot)		3413		1770	3539						4712	1362
Flt Permitted		1.00		0.95	1.00						0.98	1.00
Satd. Flow (perm)		3413		1770	3539						4712	1362
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	1185	370	54	761	0	0	0	0	793	1196	717
RTOR Reduction (vph)	0	33	0	0	0	0	0	0	0	0	0	52
Lane Group Flow (vph)	0	1522	0	54	761	0	0	0	0	0	1989	665
Turn Type		NA		Prot	NA					Perm	NA	Perm
Protected Phases		2		1	6						4	
Permitted Phases										4		4
Actuated Green, G (s)		31.5		3.4	37.6						40.4	40.4
Effective Green, g (s)		29.7		3.8	37.5						39.5	41.8
Actuated g/C Ratio		0.33		0.04	0.42						0.44	0.46
Clearance Time (s)		4.9		4.4	6.6						5.4	5.4
Vehicle Extension (s)		1.0		2.0	1.0						1.0	1.0
Lane Grp Cap (vph)		1126		74	1474						2068	632
v/s Ratio Prot		c0.45		c0.03	0.22							
v/s Ratio Perm											0.42	c0.49
v/c Ratio		1.35		0.73	0.52						1.08dl	1.05
Uniform Delay, d1		30.1		42.6	19.5						24.5	24.1
Progression Factor		1.00		1.00	1.00						1.00	1.00
Incremental Delay, d2		164.2		26.0	1.3						12.0	50.3
Delay (s)		194.4		68.6	20.8						36.5	74.4
Level of Service		F		E	C						D	E
Approach Delay (s)		194.4			24.0			0.0			46.6	
Approach LOS		F			C			A			D	

Intersection Summary			
HCM 2000 Control Delay	88.2	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.19		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	17.0
Intersection Capacity Utilization	93.4%	ICU Level of Service	F
Analysis Period (min)	15		

dl Defacto Left Lane. Recode with 1 though lane as a left lane.

c Critical Lane Group

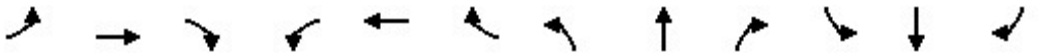
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	330	1280	1700	1270	1180	130
Future Volume (vph)	330	1280	1700	1270	1180	130
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	0.88	0.97	0.91	0.91	1.00
Frpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	0.99
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected	0.95	1.00	0.95	1.00	1.00	1.00
Satd. Flow (prot)	1770	2787	3433	5085	5085	1566
Flt Permitted	0.95	1.00	0.95	1.00	1.00	1.00
Satd. Flow (perm)	1770	2787	3433	5085	5085	1566
Peak-hour factor, PHF	0.92	0.95	0.95	0.95	0.92	0.92
Adj. Flow (vph)	359	1347	1789	1337	1283	141
RTOR Reduction (vph)	0	0	0	0	0	5
Lane Group Flow (vph)	359	1347	1789	1337	1283	136
Confl. Peds. (#/hr)			3			3
Turn Type	Prot	pm+ov	Prot	NA	NA	pm+ov
Protected Phases	5	7	7	4	8	5
Permitted Phases		5				8
Actuated Green, G (s)	23.0	88.0	65.0	99.0	30.0	53.0
Effective Green, g (s)	23.0	88.0	65.0	99.0	30.0	53.0
Actuated g/C Ratio	0.18	0.68	0.50	0.76	0.23	0.41
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	313	1972	1716	3872	1173	686
v/s Ratio Prot	c0.20	0.34	c0.52	0.26	c0.25	0.04
v/s Ratio Perm		0.14				0.05
v/c Ratio	1.15	0.68	1.04	0.35	1.09	0.20
Uniform Delay, d1	53.5	12.6	32.5	5.0	50.0	24.8
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	96.8	1.0	33.7	0.2	55.7	0.1
Delay (s)	150.3	13.6	66.2	5.3	105.7	25.0
Level of Service	F	B	E	A	F	C
Approach Delay (s)	42.4			40.2	97.7	
Approach LOS	D			D	F	

Intersection Summary			
HCM 2000 Control Delay	53.9	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	1.08		
Actuated Cycle Length (s)	130.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	99.6%	ICU Level of Service	F
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	SEL	SET	SER	NWL	NWT	NWR
Lane Configurations												
Traffic Volume (vph)	250	580	0	0	1000	640	40	0	120	250	30	420
Future Volume (vph)	250	580	0	0	1000	640	40	0	120	250	30	420
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.5	4.0			4.4	4.4		6.4		4.0	4.0	
Lane Util. Factor	1.00	0.95			0.95	1.00		1.00		0.91	0.91	
Frt	1.00	1.00			1.00	0.85		0.90		1.00	0.87	
Flt Protected	0.95	1.00			1.00	1.00		0.99		0.95	1.00	
Satd. Flow (prot)	1770	3539			3539	1583		1653		1610	2933	
Flt Permitted	0.95	1.00			1.00	1.00		0.99		0.95	1.00	
Satd. Flow (perm)	1770	3539			3539	1583		1653		1610	2933	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	272	630	0	0	1087	696	43	0	130	272	33	457
RTOR Reduction (vph)	0	0	0	0	0	427	0	111	0	0	397	0
Lane Group Flow (vph)	272	630	0	0	1087	269	0	62	0	245	120	0
Turn Type	Prot	NA			NA	Perm	Split	NA		Split	NA	
Protected Phases	5	2			6		8	8		7	7	
Permitted Phases						6						
Actuated Green, G (s)	10.6	49.2			33.7	33.7		12.6		11.1	11.1	
Effective Green, g (s)	10.6	49.2			33.7	33.7		12.6		11.1	11.1	
Actuated g/C Ratio	0.12	0.56			0.39	0.39		0.14		0.13	0.13	
Clearance Time (s)	4.5	4.0			4.4	4.4		6.4		4.0	4.0	
Vehicle Extension (s)	3.5	2.0			3.5	3.5		2.0		2.0	2.0	
Lane Grp Cap (vph)	214	1994			1366	611		238		204	372	
v/s Ratio Prot	c0.15	0.18			c0.31			c0.04		c0.15	0.04	
v/s Ratio Perm						0.17						
v/c Ratio	1.27	0.32			0.80	0.44		0.26		1.20	0.32	
Uniform Delay, d1	38.4	10.1			23.8	19.8		33.2		38.1	34.7	
Progression Factor	1.00	1.00			1.00	1.00		1.00		1.00	1.00	
Incremental Delay, d2	153.3	0.4			4.9	2.3		0.2		127.8	0.2	
Delay (s)	191.7	10.5			28.6	22.1		33.4		165.9	34.9	
Level of Service	F	B			C	C		C		F	C	
Approach Delay (s)		65.2			26.1			33.4			77.0	
Approach LOS		E			C			C			E	

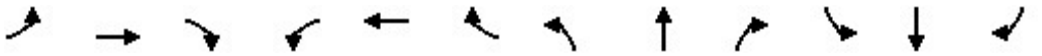
Intersection Summary			
HCM 2000 Control Delay	46.9	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.83		
Actuated Cycle Length (s)	87.3	Sum of lost time (s)	19.3
Intersection Capacity Utilization	81.6%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group



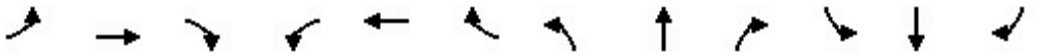
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	410	70	660	670	0	0	0	0	350	40	370
Future Volume (vph)	0	410	70	660	670	0	0	0	0	350	40	370
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0		5.9	5.9					1.8	1.8	1.8
Lane Util. Factor		0.95		1.00	1.00					0.95	0.95	1.00
Frpb, ped/bikes		1.00		1.00	1.00					1.00	1.00	1.00
Flpb, ped/bikes		1.00		1.00	1.00					1.00	1.00	1.00
Frt		0.98		1.00	1.00					1.00	1.00	0.85
Flt Protected		1.00		0.95	1.00					0.95	0.96	1.00
Satd. Flow (prot)		3453		1770	1863					1681	1701	1583
Flt Permitted		1.00		0.95	1.00					0.95	0.96	1.00
Satd. Flow (perm)		3453		1770	1863					1681	1701	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	446	76	717	728	0	0	0	0	380	43	402
RTOR Reduction (vph)	0	18	0	0	0	0	0	0	0	0	0	72
Lane Group Flow (vph)	0	504	0	717	728	0	0	0	0	201	222	330
Confl. Peds. (#/hr)	5		5	5		10						
Turn Type		NA		Split	NA					Split	NA	custom
Protected Phases		7		8	8					6	6	6
Permitted Phases												7
Actuated Green, G (s)		14.3		30.7	30.7					10.7	10.7	25.0
Effective Green, g (s)		14.3		31.0	31.0					12.9	12.9	29.4
Actuated g/C Ratio		0.20		0.44	0.44					0.18	0.18	0.42
Clearance Time (s)		4.0		6.2	6.2					4.0	4.0	4.0
Vehicle Extension (s)		3.0		2.0	2.0					3.0	3.0	3.0
Lane Grp Cap (vph)		706		784	826					310	313	706
v/s Ratio Prot		c0.15		c0.41	0.39					0.12	c0.13	0.09
v/s Ratio Perm												0.12
v/c Ratio		0.71		0.91	0.88					0.65	0.71	0.47
Uniform Delay, d1		25.9		18.2	17.8					26.4	26.7	14.6
Progression Factor		1.00		1.00	1.00					1.00	1.00	1.00
Incremental Delay, d2		3.4		14.9	10.6					4.6	7.2	0.5
Delay (s)		29.3		33.1	28.4					31.0	33.9	15.1
Level of Service		C		C	C					C	C	B
Approach Delay (s)		29.3			30.7			0.0			24.0	
Approach LOS		C			C			A			C	

Intersection Summary			
HCM 2000 Control Delay	28.5	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.81		
Actuated Cycle Length (s)	69.9	Sum of lost time (s)	11.7
Intersection Capacity Utilization	72.5%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			



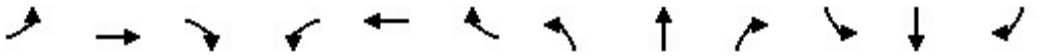
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	40	150	30	380	40	230	30	1590	360	250	530	20
Future Volume (vph)	40	150	30	380	40	230	30	1590	360	250	530	20
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.3	4.3		4.0	4.0		6.2	4.0	
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	0.91		1.00	0.91	
Frpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Flpb, ped/bikes	1.00	1.00		0.99	1.00		1.00	1.00		1.00	1.00	
Frt	1.00	0.97		1.00	0.87		1.00	0.97		1.00	0.99	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1770	1809		1757	1624		1770	4945		1770	5052	
Flt Permitted	0.43	1.00		0.55	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (perm)	805	1809		1020	1624		1770	4945		1770	5052	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	43	163	33	413	43	250	33	1728	391	272	576	22
RTOR Reduction (vph)	0	6	0	0	162	0	0	30	0	0	3	0
Lane Group Flow (vph)	43	190	0	413	131	0	33	2089	0	272	595	0
Confl. Peds. (#/hr)			9	9			2					2
Turn Type	Perm	NA		Perm	NA		Prot	NA		Prot	NA	
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4			8								
Actuated Green, G (s)	43.1	43.1		42.4	42.4		3.6	46.1		19.0	60.8	
Effective Green, g (s)	43.1	43.1		42.8	42.8		3.6	47.5		16.8	62.9	
Actuated g/C Ratio	0.35	0.35		0.35	0.35		0.03	0.39		0.14	0.52	
Clearance Time (s)	4.0	4.0		4.7	4.7		4.0	5.4		4.0	6.1	
Vehicle Extension (s)	2.0	2.0		3.0	3.0		2.0	4.8		2.0	3.7	
Lane Grp Cap (vph)	285	641		359	571		52	1931		244	2613	
v/s Ratio Prot		0.11			0.08		0.02	c0.42		c0.15	0.12	
v/s Ratio Perm	0.05			c0.40								
v/c Ratio	0.15	0.30		1.15	0.23		0.63	1.08		1.11	0.23	
Uniform Delay, d1	26.8	28.3		39.4	27.8		58.3	37.0		52.4	16.1	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	0.1	0.1		95.0	0.2		17.1	46.6		91.9	0.2	
Delay (s)	26.9	28.4		134.4	28.0		75.4	83.6		144.3	16.3	
Level of Service	C	C		F	C		E	F		F	B	
Approach Delay (s)		28.1			90.2			83.5			56.3	
Approach LOS		C			F			F			E	

Intersection Summary			
HCM 2000 Control Delay	75.4	HCM 2000 Level of Service	E
HCM 2000 Volume to Capacity ratio	1.11		
Actuated Cycle Length (s)	121.6	Sum of lost time (s)	14.5
Intersection Capacity Utilization	102.4%	ICU Level of Service	G
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	620	1050	290	240	950	160	450	1050	240	210	700	330
Future Volume (vph)	620	1050	290	240	950	160	450	1050	240	210	700	330
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	4.0
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00	0.91		1.00	0.91	1.00
Frpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	0.99
Flpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	1.00
Frt	1.00	0.97		1.00	0.98		1.00	0.97		1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1770	3424		1770	3454		1770	4930		1770	5085	1569
Flt Permitted	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)	1770	3424		1770	3454		1770	4930		1770	5085	1569
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	674	1141	315	261	1033	174	489	1141	261	228	761	359
RTOR Reduction (vph)	0	17	0	0	9	0	0	25	0	0	0	50
Lane Group Flow (vph)	674	1439	0	261	1198	0	489	1377	0	228	761	309
Confl. Peds. (#/hr)	4					4	5		1	1		5
Turn Type	Prot	NA		Prot	NA		Prot	NA		Prot	NA	pm+ov
Protected Phases	7	4		3	8		5	2		1	6	7
Permitted Phases												6
Actuated Green, G (s)	38.6	58.2		22.2	41.2		28.6	42.1		8.6	22.0	60.6
Effective Green, g (s)	39.0	59.4		22.6	43.0		29.0	43.0		9.0	23.0	61.4
Actuated g/C Ratio	0.26	0.40		0.15	0.29		0.19	0.29		0.06	0.15	0.41
Clearance Time (s)	4.4	5.2		4.4	5.8		4.4	4.9		4.4	5.0	4.4
Vehicle Extension (s)	2.0	3.9		2.0	2.7		2.0	3.3		2.0	4.1	2.0
Lane Grp Cap (vph)	460	1355		266	990		342	1413		106	779	642
v/s Ratio Prot	c0.38	0.42		0.15	c0.35		c0.28	c0.28		c0.13	0.15	0.13
v/s Ratio Perm												0.07
v/c Ratio	1.47	1.06		0.98	1.21		1.43	0.97		2.15	0.98	0.48
Uniform Delay, d1	55.5	45.3		63.5	53.5		60.5	53.0		70.5	63.2	32.6
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	221.0	42.8		49.6	103.9		209.6	18.6		547.9	27.1	0.2
Delay (s)	276.5	88.1		113.1	157.4		270.1	71.6		618.4	90.3	32.8
Level of Service	F	F		F	F		F	E		F	F	C
Approach Delay (s)		147.7			149.6			122.9			164.3	
Approach LOS		F			F			F			F	

Intersection Summary			
HCM 2000 Control Delay	144.5	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.34		
Actuated Cycle Length (s)	150.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	119.0%	ICU Level of Service	H
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	160	910	290	230	370	100	270	240	630	70	110	70
Future Volume (vph)	160	910	290	230	370	100	270	240	630	70	110	70
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	5.5	5.5	4.0	5.4	5.4
Lane Util. Factor	1.00	0.95	0.88	0.97	0.95	1.00	0.97	1.00	1.00	1.00	0.91	1.00
Frpb, ped/bikes	1.00	1.00	0.97	1.00	1.00	0.71	1.00	1.00	0.98	1.00	1.00	0.97
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1770	3539	2709	3433	3539	1131	3433	1863	1555	1770	5085	1537
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1770	3539	2709	3433	3539	1131	3433	1863	1555	1770	5085	1537
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	174	989	315	250	402	109	293	261	685	76	120	76
RTOR Reduction (vph)	0	0	172	0	0	70	0	0	58	0	0	58
Lane Group Flow (vph)	174	989	143	250	402	39	293	261	627	76	120	18
Confl. Peds. (#/hr)			27	27		170	23		15	15		23
Turn Type	Prot	NA	pm+ov	Prot	NA	Perm	Prot	NA	pm+ov	Prot	NA	Perm
Protected Phases	5	2	3	1	6		3	8	1	7	4	
Permitted Phases			2			6			8			4
Actuated Green, G (s)	11.0	33.2	41.1	10.1	32.3	32.3	7.9	24.0	34.1	6.6	22.7	22.7
Effective Green, g (s)	11.4	34.1	41.9	10.5	33.2	33.2	8.3	23.4	31.9	7.0	22.2	22.2
Actuated g/C Ratio	0.12	0.37	0.45	0.11	0.36	0.36	0.09	0.25	0.34	0.08	0.24	0.24
Clearance Time (s)	4.4	4.9	4.4	4.4	4.9	4.9	4.4	4.9	4.4	4.4	4.9	4.9
Vehicle Extension (s)	2.0	2.1	2.0	2.0	2.3	2.3	2.0	4.5	2.0	2.0	4.5	4.5
Lane Grp Cap (vph)	218	1304	1227	389	1270	405	308	471	536	133	1220	368
v/s Ratio Prot	0.10	c0.28	0.01	0.07	0.11		c0.09	0.14	c0.11	0.04	0.02	
v/s Ratio Perm			0.04			0.03			0.29			0.01
v/c Ratio	0.80	0.76	0.12	0.64	0.32	0.10	0.95	0.55	1.17	0.57	0.10	0.05
Uniform Delay, d1	39.4	25.6	14.6	39.2	21.4	19.7	41.9	30.0	30.3	41.3	27.4	27.0
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	17.0	4.2	0.0	2.7	0.7	0.5	38.0	2.1	95.3	3.6	0.1	0.1
Delay (s)	56.5	29.8	14.6	41.9	22.1	20.2	79.9	32.1	125.6	44.9	27.4	27.1
Level of Service	E	C	B	D	C	C	E	C	F	D	C	C
Approach Delay (s)		29.7			28.3			95.1			32.2	
Approach LOS		C			C			F			C	

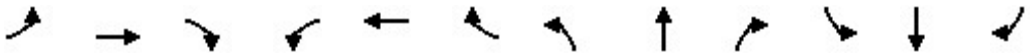
Intersection Summary			
HCM 2000 Control Delay	51.2	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.97		
Actuated Cycle Length (s)	92.5	Sum of lost time (s)	19.0
Intersection Capacity Utilization	82.3%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	580	300	70	20	160	150	90	100	110	20	20	40
Future Volume (vph)	580	300	70	20	160	150	90	100	110	20	20	40
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0			4.0			4.0			4.0	
Lane Util. Factor		1.00			1.00			1.00			1.00	
Frpb, ped/bikes		1.00			0.99			0.99			0.99	
Flpb, ped/bikes		1.00			1.00			1.00			1.00	
Frt		0.99			0.94			0.95			0.93	
Flt Protected		0.97			1.00			0.99			0.99	
Satd. Flow (prot)		1784			1727			1722			1698	
Flt Permitted		0.62			0.92			0.86			0.79	
Satd. Flow (perm)		1147			1592			1495			1365	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	630	326	76	22	174	163	98	109	120	22	22	43
RTOR Reduction (vph)	0	3	0	0	17	0	0	19	0	0	32	0
Lane Group Flow (vph)	0	1029	0	0	342	0	0	308	0	0	55	0
Confl. Peds. (#/hr)	1		3	3		1	1		4	4		1
Turn Type	pm+pt	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases	5	2			6			8			4	
Permitted Phases	2			6			8			4		
Actuated Green, G (s)		79.2			79.2			21.0			21.0	
Effective Green, g (s)		80.1			80.1			21.9			21.9	
Actuated g/C Ratio		0.73			0.73			0.20			0.20	
Clearance Time (s)		4.9			4.9			4.9			4.9	
Vehicle Extension (s)		2.0			2.0			2.0			2.0	
Lane Grp Cap (vph)		835			1159			297			271	
v/s Ratio Prot												
v/s Ratio Perm		c0.90			0.22			c0.21			0.04	
v/c Ratio		1.23			0.30			1.04			0.20	
Uniform Delay, d1		15.0			5.2			44.0			36.8	
Progression Factor		1.00			1.00			1.00			1.00	
Incremental Delay, d2		115.1			0.6			62.0			0.1	
Delay (s)		130.0			5.8			106.0			36.9	
Level of Service		F			A			F			D	
Approach Delay (s)		130.0			5.8			106.0			36.9	
Approach LOS		F			A			F			D	

Intersection Summary			
HCM 2000 Control Delay	96.5	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.24		
Actuated Cycle Length (s)	110.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	104.7%	ICU Level of Service	G
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	1100	510	240	500	200	270
Future Volume (vph)	1100	510	240	500	200	270
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0		4.0	4.9	4.0	4.0
Lane Util. Factor	0.91		1.00	0.95	1.00	1.00
Frpb, ped/bikes	0.97		1.00	1.00	1.00	1.00
Flpb, ped/bikes	1.00		1.00	1.00	1.00	1.00
Frt	0.95		1.00	1.00	1.00	0.85
Flt Protected	1.00		0.95	1.00	0.95	1.00
Satd. Flow (prot)	4677		1770	3539	1770	1583
Flt Permitted	1.00		0.95	1.00	0.95	1.00
Satd. Flow (perm)	4677		1770	3539	1770	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	1196	554	261	543	217	293
RTOR Reduction (vph)	94	0	0	0	0	227
Lane Group Flow (vph)	1656	0	261	543	217	66
Confl. Peds. (#/hr)		53	53		46	81
Turn Type	NA		Prot	NA	Prot	Prot
Protected Phases	2		1	6	8	8
Permitted Phases						
Actuated Green, G (s)	29.2		12.9	46.5	15.3	15.3
Effective Green, g (s)	31.1		13.3	46.5	16.2	16.2
Actuated g/C Ratio	0.43		0.19	0.65	0.23	0.23
Clearance Time (s)	4.9		4.4	4.9	4.9	4.9
Vehicle Extension (s)	2.9		2.0	2.0	2.0	2.0
Lane Grp Cap (vph)	2031		328	2298	400	358
v/s Ratio Prot	c0.35		c0.15	0.15	c0.12	0.04
v/s Ratio Perm						
v/c Ratio	0.82		0.80	0.24	0.54	0.19
Uniform Delay, d1	17.7		27.9	5.2	24.4	22.4
Progression Factor	1.00		1.00	1.00	1.00	1.00
Incremental Delay, d2	3.7		11.8	0.2	0.8	0.1
Delay (s)	21.5		39.6	5.4	25.2	22.5
Level of Service	C		D	A	C	C
Approach Delay (s)	21.5			16.5	23.6	
Approach LOS	C			B	C	

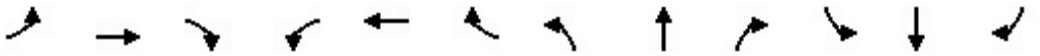
Intersection Summary			
HCM 2000 Control Delay	20.5	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.74		
Actuated Cycle Length (s)	71.6	Sum of lost time (s)	11.0
Intersection Capacity Utilization	68.3%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Traffic Volume (vph)	20	20	20	30	20	60	40	130	30	90	190	70
Future Volume (vph)	20	20	20	30	20	60	40	130	30	90	190	70
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	22	22	22	33	22	65	43	141	33	98	207	76

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total (vph)	66	120	217	381
Volume Left (vph)	22	33	43	98
Volume Right (vph)	22	65	33	76
Hadj (s)	-0.10	-0.24	-0.02	-0.03
Departure Headway (s)	5.4	5.2	4.9	4.7
Degree Utilization, x	0.10	0.17	0.29	0.49
Capacity (veh/h)	576	614	701	743
Control Delay (s)	9.0	9.3	9.9	12.1
Approach Delay (s)	9.0	9.3	9.9	12.1
Approach LOS	A	A	A	B

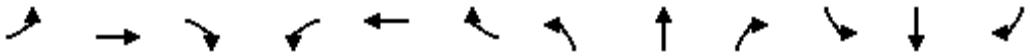
Intersection Summary				
Delay	10.8			
Level of Service	B			
Intersection Capacity Utilization	48.4%	ICU Level of Service	A	
Analysis Period (min)	15			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Traffic Volume (vph)	40	20	20	30	40	20	30	130	30	40	130	70
Future Volume (vph)	40	20	20	30	40	20	30	130	30	40	130	70
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	43	22	22	33	43	22	33	141	33	43	141	76

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total (vph)	87	98	207	260
Volume Left (vph)	43	33	33	43
Volume Right (vph)	22	22	33	76
Hadj (s)	-0.02	-0.03	-0.03	-0.11
Departure Headway (s)	5.1	5.1	4.7	4.5
Degree Utilization, x	0.12	0.14	0.27	0.33
Capacity (veh/h)	630	635	732	753
Control Delay (s)	8.9	8.9	9.4	9.7
Approach Delay (s)	8.9	8.9	9.4	9.7
Approach LOS	A	A	A	A

Intersection Summary				
Delay	9.4			
Level of Service	A			
Intersection Capacity Utilization	34.8%	ICU Level of Service	A	
Analysis Period (min)	15			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Traffic Volume (vph)	20	20	20	70	30	30	20	220	400	10	160	20
Future Volume (vph)	20	20	20	70	30	30	20	220	400	10	160	20
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	22	22	22	76	33	33	22	239	435	11	174	22

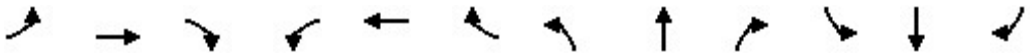
Direction, Lane #	EB 1	WB 1	NB 1	NB 2	SB 1
Volume Total (vph)	66	142	261	435	207
Volume Left (vph)	22	76	22	0	11
Volume Right (vph)	22	33	0	435	22
Hadj (s)	-0.10	0.00	0.08	-0.67	-0.02
Departure Headway (s)	6.0	5.9	5.5	4.7	5.4
Degree Utilization, x	0.11	0.23	0.40	0.57	0.31
Capacity (veh/h)	531	555	645	747	638
Control Delay (s)	9.7	10.7	16.5	12.6	10.7
Approach Delay (s)	9.7	10.7	16.5		10.7
Approach LOS	A	B	C		B

Intersection Summary				
Delay	16.1			
Level of Service	C			
Intersection Capacity Utilization	54.5%	ICU Level of Service		A
Analysis Period (min)	15			

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Sign Control	Stop			Stop	Stop	
Traffic Volume (vph)	40	40	60	50	60	110
Future Volume (vph)	40	40	60	50	60	110
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	43	43	65	54	65	120

Direction, Lane #	EB 1	WB 1	NB 1
Volume Total (vph)	86	119	185
Volume Left (vph)	0	65	65
Volume Right (vph)	43	0	120
Hadj (s)	-0.27	0.14	-0.28
Departure Headway (s)	4.2	4.5	4.1
Degree Utilization, x	0.10	0.15	0.21
Capacity (veh/h)	818	751	840
Control Delay (s)	7.6	8.3	8.2
Approach Delay (s)	7.6	8.3	8.2
Approach LOS	A	A	A

Intersection Summary			
Delay	8.1		
Level of Service	A		
Intersection Capacity Utilization	34.3%	ICU Level of Service	A
Analysis Period (min)	15		



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Traffic Volume (vph)	30	30	30	50	30	20	80	160	140	20	70	20
Future Volume (vph)	30	30	30	50	30	20	80	160	140	20	70	20
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	33	33	33	54	33	22	87	174	152	22	76	22

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total (vph)	99	109	413	120
Volume Left (vph)	33	54	87	22
Volume Right (vph)	33	22	152	22
Hadj (s)	-0.10	0.01	-0.14	-0.04
Departure Headway (s)	5.2	5.3	4.5	4.9
Degree Utilization, x	0.14	0.16	0.51	0.16
Capacity (veh/h)	612	605	776	676
Control Delay (s)	9.1	9.3	12.1	8.9
Approach Delay (s)	9.1	9.3	12.1	8.9
Approach LOS	A	A	B	A

Intersection Summary				
Delay	10.8			
Level of Service	B			
Intersection Capacity Utilization	50.7%	ICU Level of Service	A	
Analysis Period (min)	15			

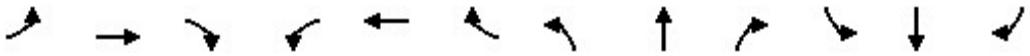
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	270	40	110	20	60	50	120	300	30	20	70	170
Future Volume (vph)	270	40	110	20	60	50	120	300	30	20	70	170
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0			4.0		4.0	4.0		4.0	4.0	
Lane Util. Factor		1.00			1.00		1.00	1.00		1.00	1.00	
Frpb, ped/bikes		1.00			0.99		1.00	1.00		1.00	0.98	
Flpb, ped/bikes		1.00			1.00		1.00	1.00		1.00	1.00	
Frt		0.96			0.95		1.00	0.99		1.00	0.89	
Flt Protected		0.97			0.99		0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1737			1742		1765	1833		1764	1637	
Flt Permitted		0.76			0.92		0.57	1.00		0.47	1.00	
Satd. Flow (perm)		1357			1608		1068	1833		873	1637	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	293	43	120	22	65	54	130	326	33	22	76	185
RTOR Reduction (vph)	0	26	0	0	32	0	0	4	0	0	104	0
Lane Group Flow (vph)	0	430	0	0	109	0	130	355	0	22	157	0
Confl. Peds. (#/hr)	5					5	3		4	4		3
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		8			4			6			2	
Permitted Phases	8			4			6			2		
Actuated Green, G (s)		20.7			20.7		22.5	22.5		22.5	22.5	
Effective Green, g (s)		20.7			20.7		22.5	22.5		22.5	22.5	
Actuated g/C Ratio		0.40			0.40		0.44	0.44		0.44	0.44	
Clearance Time (s)		4.0			4.0		4.0	4.0		4.0	4.0	
Vehicle Extension (s)		2.0			2.0		2.1	2.1		2.1	2.1	
Lane Grp Cap (vph)		548			650		469	805		383	719	
v/s Ratio Prot								c0.19			0.10	
v/s Ratio Perm		c0.32			0.07		0.12			0.03		
v/c Ratio		0.79			0.17		0.28	0.44		0.06	0.22	
Uniform Delay, d1		13.3			9.7		9.2	10.0		8.3	8.9	
Progression Factor		1.00			1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2		6.7			0.0		1.5	1.7		0.3	0.7	
Delay (s)		20.1			9.8		10.6	11.7		8.5	9.6	
Level of Service		C			A		B	B		A	A	
Approach Delay (s)		20.1			9.8			11.4			9.5	
Approach LOS		C			A			B			A	

Intersection Summary			
HCM 2000 Control Delay	13.7	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.61		
Actuated Cycle Length (s)	51.2	Sum of lost time (s)	8.0
Intersection Capacity Utilization	64.6%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	70	1060	240	300	590	20	130	20	220	30	20	20
Future Volume (vph)	70	1060	240	300	590	20	130	20	220	30	20	20
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0			4.0			4.0	
Lane Util. Factor	1.00	0.91		1.00	0.95			1.00			1.00	
Frpb, ped/bikes	1.00	0.99		1.00	1.00			0.99			1.00	
Flpb, ped/bikes	1.00	1.00		1.00	1.00			1.00			1.00	
Frt	1.00	0.97		1.00	1.00			0.92			0.96	
Flt Protected	0.95	1.00		0.95	1.00			0.98			0.98	
Satd. Flow (prot)	1765	4904		1770	3517			1668			1744	
Flt Permitted	0.40	1.00		0.15	1.00			0.86			0.77	
Satd. Flow (perm)	743	4904		284	3517			1466			1372	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	76	1152	261	326	641	22	141	22	239	33	22	22
RTOR Reduction (vph)	0	47	0	0	3	0	0	84	0	0	16	0
Lane Group Flow (vph)	76	1366	0	326	660	0	0	318	0	0	61	0
Confl. Peds. (#/hr)	13		12	12		13	6		2	2		6
Turn Type	pm+pt	NA		pm+pt	NA		Perm	NA		Perm	NA	
Protected Phases	5	2		1	6			8			4	
Permitted Phases	2			6			8			4		
Actuated Green, G (s)	24.4	21.7		36.5	29.4			16.6			16.6	
Effective Green, g (s)	25.2	22.7		36.9	30.3			17.5			17.5	
Actuated g/C Ratio	0.40	0.36		0.59	0.48			0.28			0.28	
Clearance Time (s)	4.4	5.0		4.4	4.9			4.9			4.9	
Vehicle Extension (s)	2.0	3.3		2.0	3.3			2.0			2.0	
Lane Grp Cap (vph)	348	1769		419	1694			407			381	
v/s Ratio Prot	0.01	0.28		c0.13	0.19							
v/s Ratio Perm	0.08			c0.32				c0.22			0.04	
v/c Ratio	0.22	0.77		0.78	0.39			0.78			0.16	
Uniform Delay, d1	11.8	17.8		11.9	10.4			20.9			17.1	
Progression Factor	1.00	1.00		1.00	1.00			1.00			1.00	
Incremental Delay, d2	0.1	3.3		8.1	0.7			8.7			0.1	
Delay (s)	11.9	21.2		20.0	11.1			29.6			17.2	
Level of Service	B	C		C	B			C			B	
Approach Delay (s)		20.7			14.0			29.6			17.2	
Approach LOS		C			B			C			B	

Intersection Summary			
HCM 2000 Control Delay	19.6	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.81		
Actuated Cycle Length (s)	62.9	Sum of lost time (s)	12.0
Intersection Capacity Utilization	78.9%	ICU Level of Service	D
Analysis Period (min)	15		

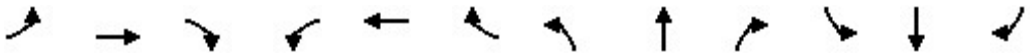
c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Traffic Volume (vph)	110	20	30	10	20	20	20	110	30	40	160	90
Future Volume (vph)	110	20	30	10	20	20	20	110	30	40	160	90
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	120	22	33	11	22	22	22	120	33	43	174	98

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total (vph)	175	55	175	315
Volume Left (vph)	120	11	22	43
Volume Right (vph)	33	22	33	98
Hadj (s)	0.06	-0.17	-0.05	-0.13
Departure Headway (s)	5.2	5.2	4.9	4.6
Degree Utilization, x	0.25	0.08	0.24	0.40
Capacity (veh/h)	631	608	692	739
Control Delay (s)	10.0	8.6	9.4	10.7
Approach Delay (s)	10.0	8.6	9.4	10.7
Approach LOS	A	A	A	B

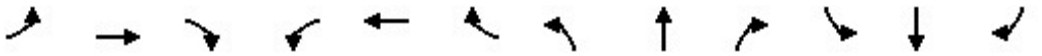
Intersection Summary				
Delay	10.1			
Level of Service	B			
Intersection Capacity Utilization	45.4%	ICU Level of Service	A	
Analysis Period (min)	15			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Traffic Volume (vph)	40	20	60	10	20	20	40	100	20	20	150	50
Future Volume (vph)	40	20	60	10	20	20	40	100	20	20	150	50
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	43	22	65	11	22	22	43	109	22	22	163	54

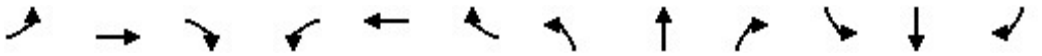
Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total (vph)	130	55	174	239
Volume Left (vph)	43	11	43	22
Volume Right (vph)	65	22	22	54
Hadj (s)	-0.20	-0.17	0.01	-0.08
Departure Headway (s)	4.7	4.9	4.7	4.5
Degree Utilization, x	0.17	0.07	0.22	0.30
Capacity (veh/h)	692	660	734	761
Control Delay (s)	8.7	8.3	9.0	9.4
Approach Delay (s)	8.7	8.3	9.0	9.4
Approach LOS	A	A	A	A

Intersection Summary				
Delay	9.0			
Level of Service	A			
Intersection Capacity Utilization	37.0%	ICU Level of Service	A	
Analysis Period (min)	15			



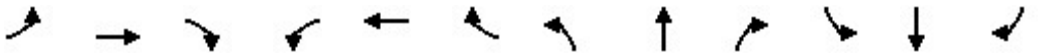
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	580	670	60	30	580	160	0	0	30	220	150	330
Future Volume (vph)	580	670	60	30	580	160	0	0	30	220	150	330
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0				4.0	4.0	4.0	4.0
Lane Util. Factor	0.97	0.95		1.00	0.95				1.00	0.95	0.95	1.00
Frpb, ped/bikes	1.00	1.00		1.00	1.00				1.00	1.00	1.00	0.99
Flpb, ped/bikes	1.00	1.00		1.00	1.00				1.00	1.00	1.00	1.00
Frt	1.00	0.99		1.00	0.97				0.86	1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00				1.00	0.95	0.98	1.00
Satd. Flow (prot)	3433	3487		1770	3412				1611	1681	1734	1561
Flt Permitted	0.95	1.00		0.95	1.00				1.00	0.95	0.98	1.00
Satd. Flow (perm)	3433	3487		1770	3412				1611	1681	1734	1561
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	630	728	65	33	630	174	0	0	33	239	163	359
RTOR Reduction (vph)	0	7	0	0	28	0	0	0	0	0	0	259
Lane Group Flow (vph)	630	786	0	33	776	0	0	0	33	127	275	100
Confl. Peds. (#/hr)	5		4	4		5						3
Turn Type	Prot	NA		Prot	NA				Free	Split	NA	Perm
Protected Phases	5	2		1	6					4	4	
Permitted Phases									Free			4
Actuated Green, G (s)	13.5	36.6		2.0	25.1				71.1	17.9	17.9	17.9
Effective Green, g (s)	13.9	37.5		2.4	26.0				71.1	19.2	19.2	19.2
Actuated g/C Ratio	0.20	0.53		0.03	0.37				1.00	0.27	0.27	0.27
Clearance Time (s)	4.4	4.9		4.4	4.9					5.3	5.3	5.3
Vehicle Extension (s)	2.0	3.3		2.0	3.8					4.4	4.4	4.4
Lane Grp Cap (vph)	671	1839		59	1247				1611	453	468	421
v/s Ratio Prot	c0.18	0.23		0.02	c0.23					0.08	c0.16	
v/s Ratio Perm									0.02			0.06
v/c Ratio	0.94	0.43		0.56	0.62				0.02	0.28	0.59	0.24
Uniform Delay, d1	28.2	10.3		33.8	18.5				0.0	20.5	22.5	20.2
Progression Factor	1.00	1.00		1.00	1.00				1.00	1.00	1.00	1.00
Incremental Delay, d2	20.6	0.7		6.4	2.3				0.0	0.6	2.5	0.5
Delay (s)	48.8	11.0		40.2	20.9				0.0	21.1	25.0	20.7
Level of Service	D	B		D	C				A	C	C	C
Approach Delay (s)		27.7			21.6			0.0			22.3	
Approach LOS		C			C			A			C	

Intersection Summary			
HCM 2000 Control Delay	24.4	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.69		
Actuated Cycle Length (s)	71.1	Sum of lost time (s)	12.0
Intersection Capacity Utilization	59.3%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	60	1440	110	70	1010	60	120	110	140	40	90	20
Future Volume (vph)	60	1440	110	70	1010	60	120	110	140	40	90	20
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0		4.0	4.0			4.0	
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00	1.00			1.00	
Frpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	0.99			1.00	
Flpb, ped/bikes	1.00	1.00		1.00	1.00		0.99	1.00			1.00	
Frt	1.00	0.99		1.00	0.99		1.00	0.92			0.98	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00			0.99	
Satd. Flow (prot)	1678	3403		1671	3405		1646	1575			1704	
Flt Permitted	0.95	1.00		0.95	1.00		0.49	1.00			0.44	
Satd. Flow (perm)	1678	3403		1671	3405		852	1575			764	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	65	1565	120	76	1098	65	130	120	152	43	98	22
RTOR Reduction (vph)	0	3	0	0	3	0	0	34	0	0	4	0
Lane Group Flow (vph)	65	1682	0	76	1160	0	130	238	0	0	159	0
Confl. Peds. (#/hr)	4		3	3		4	6		5	5		6
Confl. Bikes (#/hr)			3			2			4			
Bus Blockages (#/hr)	13	13	13	14	14	14	16	16	16	13	13	13
Turn Type	Prot	NA		Prot	NA		Perm	NA		Perm	NA	
Protected Phases	5	2		1	6			4			4	
Permitted Phases							4			4		
Actuated Green, G (s)	9.3	94.7		10.0	95.4		26.1	26.1			26.1	
Effective Green, g (s)	9.7	95.6		10.4	96.3		27.0	27.0			27.0	
Actuated g/C Ratio	0.07	0.66		0.07	0.66		0.19	0.19			0.19	
Clearance Time (s)	4.4	4.9		4.4	4.9		4.9	4.9			4.9	
Vehicle Extension (s)	2.0	2.1		2.0	2.1		2.0	2.0			2.0	
Lane Grp Cap (vph)	112	2243		119	2261		158	293			142	
v/s Ratio Prot	0.04	c0.49		c0.05	0.34			0.15				
v/s Ratio Perm							0.15				c0.21	
v/c Ratio	0.58	0.75		0.64	0.51		0.82	0.81			1.12	
Uniform Delay, d1	65.7	16.6		65.5	12.4		56.7	56.6			59.0	
Progression Factor	1.00	1.00		1.00	0.82		1.00	1.00			1.00	
Incremental Delay, d2	4.9	2.4		3.0	0.3		26.8	14.8			111.1	
Delay (s)	70.5	19.0		68.7	10.5		83.5	71.4			170.1	
Level of Service	E	B		E	B		F	E			F	
Approach Delay (s)		20.9			14.1			75.3			170.1	
Approach LOS		C			B			E			F	

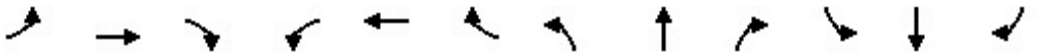
Intersection Summary			
HCM 2000 Control Delay	31.5	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.82		
Actuated Cycle Length (s)	145.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	86.7%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	440	1410	160	220	840	220	100	430	240	310	220	160
Future Volume (vph)	440	1410	160	220	840	220	100	430	240	310	220	160
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0		4.0	4.0	4.0	4.0	4.0	
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00	0.95	1.00	1.00	0.95	
Frpb, ped/bikes	1.00	0.99		1.00	0.99		1.00	1.00	0.96	1.00	0.96	
Flpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	
Frt	1.00	0.98		1.00	0.97		1.00	1.00	0.85	1.00	0.94	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)	1770	3464		1770	3380		1770	3539	1526	1770	3180	
Flt Permitted	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (perm)	1770	3464		1770	3380		1770	3539	1526	1770	3180	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	478	1533	174	239	913	239	109	467	261	337	239	174
RTOR Reduction (vph)	0	6	0	0	16	0	0	0	62	0	90	0
Lane Group Flow (vph)	478	1701	0	239	1136	0	109	467	199	337	323	0
Confl. Peds. (#/hr)	26		26	26		26	41		25	25		41
Confl. Bikes (#/hr)			8			2			13			8
Turn Type	Prot	NA		Prot	NA		Prot	NA	pm+ov	Prot	NA	
Protected Phases	5	2		1	6		3	8	1	7	4	
Permitted Phases									8			
Actuated Green, G (s)	31.6	59.1		15.6	42.6		12.5	25.9	41.5	25.7	39.2	
Effective Green, g (s)	32.0	60.0		16.0	44.0		12.9	26.9	42.3	26.1	40.1	
Actuated g/C Ratio	0.22	0.41		0.11	0.30		0.09	0.19	0.29	0.18	0.28	
Clearance Time (s)	4.4	4.9		4.4	5.4		4.4	5.0	4.4	4.4	4.9	
Vehicle Extension (s)	2.0	4.2		2.0	3.0		2.0	4.0	2.0	2.0	2.6	
Lane Grp Cap (vph)	390	1433		195	1025		157	656	445	318	879	
v/s Ratio Prot	c0.27	c0.49		0.14	0.34		0.06	c0.13	0.05	c0.19	0.10	
v/s Ratio Perm									0.08			
v/c Ratio	1.23	1.19		1.23	1.11		0.69	0.71	0.45	1.06	0.37	
Uniform Delay, d1	56.5	42.5		64.5	50.5		64.1	55.4	41.8	59.5	42.2	
Progression Factor	1.07	0.95		1.10	0.93		1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	118.8	90.2		133.9	61.0		10.2	3.9	0.3	67.1	0.2	
Delay (s)	179.3	130.7		204.7	107.7		74.4	59.3	42.1	126.6	42.4	
Level of Service	F	F		F	F		E	E	D	F	D	
Approach Delay (s)		141.4			124.4			55.9			80.2	
Approach LOS		F			F			E			F	

Intersection Summary			
HCM 2000 Control Delay	114.1	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.09		
Actuated Cycle Length (s)	145.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	105.8%	ICU Level of Service	G
Analysis Period (min)	15		

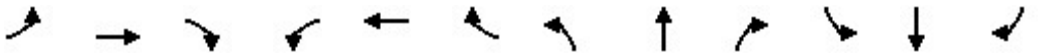
c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	10	1940	100	160	1280	60	100	20	220	50	20	20
Future Volume (vph)	10	1940	100	160	1280	60	100	20	220	50	20	20
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0			4.0	4.0		4.0	
Lane Util. Factor	1.00	0.91		1.00	0.95			1.00	1.00		1.00	
Frpb, ped/bikes	1.00	1.00		1.00	1.00			1.00	0.98		0.99	
Flpb, ped/bikes	1.00	1.00		1.00	1.00			1.00	1.00		1.00	
Frt	1.00	0.99		1.00	0.99			1.00	0.85		0.97	
Flt Protected	0.95	1.00		0.95	1.00			0.96	1.00		0.97	
Satd. Flow (prot)	1770	5039		1770	3512			1788	1553		1742	
Flt Permitted	0.95	1.00		0.95	1.00			0.67	1.00		0.63	
Satd. Flow (perm)	1770	5039		1770	3512			1248	1553		1126	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	11	2109	109	174	1391	65	109	22	239	54	22	22
RTOR Reduction (vph)	0	3	0	0	2	0	0	0	202	0	8	0
Lane Group Flow (vph)	11	2215	0	174	1454	0	0	131	37	0	90	0
Confl. Peds. (#/hr)			3	3								
Confl. Bikes (#/hr)			11			1			5			20
Turn Type	Prot	NA		Prot	NA		Perm	NA	Perm	Perm	NA	
Protected Phases	5	2		1	6			8			4	
Permitted Phases							8		8	4		
Actuated Green, G (s)	2.0	90.1		18.6	106.7			21.7	21.7		21.7	
Effective Green, g (s)	2.4	91.4		19.0	108.0			22.6	22.6		22.6	
Actuated g/C Ratio	0.02	0.63		0.13	0.74			0.16	0.16		0.16	
Clearance Time (s)	4.4	5.3		4.4	5.3			4.9	4.9		4.9	
Vehicle Extension (s)	2.0	4.4		2.0	4.4			2.0	2.0		2.0	
Lane Grp Cap (vph)	29	3176		231	2615			194	242		175	
v/s Ratio Prot	0.01	c0.44		c0.10	0.41							
v/s Ratio Perm								c0.10	0.02		0.08	
v/c Ratio	0.38	0.70		0.75	0.56			0.68	0.15		0.52	
Uniform Delay, d1	70.6	17.7		60.7	8.1			57.7	52.9		56.2	
Progression Factor	0.86	1.19		1.00	1.00			1.00	1.00		1.00	
Incremental Delay, d2	0.3	0.1		11.6	0.9			7.1	0.1		1.1	
Delay (s)	61.0	21.2		72.4	8.9			64.8	53.0		57.3	
Level of Service	E	C		E	A			E	D		E	
Approach Delay (s)		21.4			15.7			57.2			57.3	
Approach LOS		C			B			E			E	

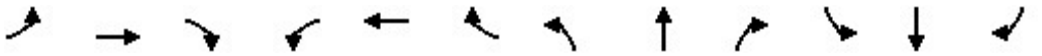
Intersection Summary			
HCM 2000 Control Delay	23.1	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.70		
Actuated Cycle Length (s)	145.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	70.3%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group



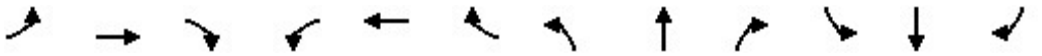
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	0	0	380	2040	0	0	0	0	0	350	190
Future Volume (vph)	0	0	0	380	2040	0	0	0	0	0	350	190
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)					4.0						4.0	
Lane Util. Factor					0.91						0.91	
Frpb, ped/bikes					1.00						0.99	
Flpb, ped/bikes					1.00						1.00	
Frt					1.00						0.95	
Flt Protected					0.99						1.00	
Satd. Flow (prot)					5038						4778	
Flt Permitted					0.99						1.00	
Satd. Flow (perm)					5038						4778	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	413	2217	0	0	0	0	0	380	207
RTOR Reduction (vph)	0	0	0	0	13	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	0	0	0	2617	0	0	0	0	0	587	0
Confl. Peds. (#/hr)				6								7
Turn Type				Perm	NA						NA	
Protected Phases					6						4	
Permitted Phases				6								
Actuated Green, G (s)					61.8						18.0	
Effective Green, g (s)					63.1						18.9	
Actuated g/C Ratio					0.70						0.21	
Clearance Time (s)					5.3						4.9	
Vehicle Extension (s)					0.2						0.2	
Lane Grp Cap (vph)					3532						1003	
v/s Ratio Prot											c0.12	
v/s Ratio Perm					0.52							
v/c Ratio					0.74						0.59	
Uniform Delay, d1					8.4						32.0	
Progression Factor					1.00						0.91	
Incremental Delay, d2					1.4						0.1	
Delay (s)					9.8						29.3	
Level of Service					A						C	
Approach Delay (s)		0.0			9.8			0.0			29.3	
Approach LOS		A			A			A			C	

Intersection Summary			
HCM 2000 Control Delay	13.4	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.71		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	68.8%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			



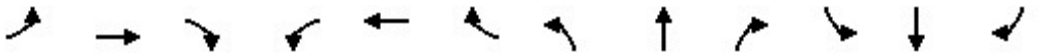
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	1640	150	0	0	0	0	0	0	310	420	0
Future Volume (vph)	0	1640	150	0	0	0	0	0	0	310	420	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0									4.0	
Lane Util. Factor		0.91									0.91	
Frpb, ped/bikes		1.00									1.00	
Flpb, ped/bikes		1.00									0.99	
Frt		0.99									1.00	
Flt Protected		1.00									0.98	
Satd. Flow (prot)		5011									4938	
Flt Permitted		1.00									0.98	
Satd. Flow (perm)		5011									4938	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	1783	163	0	0	0	0	0	0	337	457	0
RTOR Reduction (vph)	0	10	0	0	0	0	0	0	0	0	16	0
Lane Group Flow (vph)	0	1936	0	0	0	0	0	0	0	0	778	0
Confl. Peds. (#/hr)			9							14		
Turn Type		NA								Perm	NA	
Protected Phases		2									4	
Permitted Phases										4		
Actuated Green, G (s)		59.1									21.9	
Effective Green, g (s)		59.1									22.9	
Actuated g/C Ratio		0.66									0.25	
Clearance Time (s)		4.0									5.0	
Vehicle Extension (s)		3.0									3.0	
Lane Grp Cap (vph)		3290									1256	
v/s Ratio Prot		c0.39										
v/s Ratio Perm											0.16	
v/c Ratio		0.59									0.62	
Uniform Delay, d1		8.6									29.7	
Progression Factor		0.39									0.76	
Incremental Delay, d2		0.5									0.8	
Delay (s)		3.9									23.4	
Level of Service		A									C	
Approach Delay (s)		3.9			0.0			0.0			23.4	
Approach LOS		A			A			A			C	

Intersection Summary			
HCM 2000 Control Delay	9.5	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.60		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	58.9%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	240	1270	120	150	1410	120	120	50	130	80	80	210
Future Volume (vph)	240	1270	120	150	1410	120	120	50	130	80	80	210
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.97	0.95		1.00	0.95	1.00	1.00	1.00	1.00	0.97	1.00	1.00
Frpb, ped/bikes	1.00	1.00		1.00	1.00	0.98	1.00	1.00	1.00	1.00	1.00	0.99
Flpb, ped/bikes	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.99		1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	3494		1770	3539	1557	1770	1863	1583	3433	1863	1563
Flt Permitted	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	3494		1770	3539	1557	1770	1863	1583	3433	1863	1563
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	261	1380	130	163	1533	130	130	54	141	87	87	228
RTOR Reduction (vph)	0	6	0	0	0	121	0	0	118	0	0	136
Lane Group Flow (vph)	261	1504	0	163	1533	9	130	54	23	87	87	92
Confl. Peds. (#/hr)	1					1	1					1
Turn Type	Prot	NA		Prot	NA	custom	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases						7			8			4
Actuated Green, G (s)	7.0	40.8		9.0	42.9	5.7	7.0	12.2	12.2	5.7	11.8	11.8
Effective Green, g (s)	7.0	42.3		9.0	44.3	5.7	7.0	14.0	14.0	5.7	12.7	12.7
Actuated g/C Ratio	0.08	0.49		0.10	0.51	0.07	0.08	0.16	0.16	0.07	0.15	0.15
Clearance Time (s)	4.0	5.5		4.0	5.4	4.0	4.0	5.8	5.8	4.0	4.9	4.9
Vehicle Extension (s)	2.0	3.7		2.0	4.0	2.0	2.0	2.0	2.0	2.0	3.0	3.0
Lane Grp Cap (vph)	276	1698		183	1802	102	142	299	254	224	271	228
v/s Ratio Prot	0.08	0.43		c0.09	c0.43		c0.07	0.03		0.03	0.05	
v/s Ratio Perm						0.01			0.01			c0.06
v/c Ratio	0.95	0.89		0.89	0.85	0.08	0.92	0.18	0.09	0.39	0.32	0.40
Uniform Delay, d1	39.8	20.2		38.5	18.5	38.2	39.7	31.5	31.1	39.0	33.3	33.7
Progression Factor	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	39.0	7.2		36.8	5.3	0.1	49.8	0.1	0.1	0.4	0.7	1.2
Delay (s)	78.8	27.4		75.3	23.8	38.3	89.5	31.6	31.1	39.4	34.0	34.9
Level of Service	E	C		E	C	D	F	C	C	D	C	C
Approach Delay (s)		35.0			29.4			54.6			35.7	
Approach LOS		C			C			D			D	

Intersection Summary			
HCM 2000 Control Delay	34.1	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.80		
Actuated Cycle Length (s)	87.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	70.6%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	0	0	200	1800	220	340	570	0	0	350	120
Future Volume (vph)	0	0	0	200	1800	220	340	570	0	0	350	120
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)					4.9		4.4	4.9			5.4	
Lane Util. Factor					0.86		1.00	0.95			0.95	
Frpb, ped/bikes					1.00		1.00	1.00			1.00	
Flpb, ped/bikes					1.00		1.00	1.00			1.00	
Frt					0.99		1.00	1.00			0.96	
Flt Protected					1.00		0.95	1.00			1.00	
Satd. Flow (prot)					6258		1770	3539			3389	
Flt Permitted					1.00		0.95	1.00			1.00	
Satd. Flow (perm)					6258		1770	3539			3389	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	0	0	0	211	1895	232	358	600	0	0	368	126
RTOR Reduction (vph)	0	0	0	0	16	0	0	0	0	0	31	0
Lane Group Flow (vph)	0	0	0	0	2322	0	358	600	0	0	463	0
Confl. Peds. (#/hr)	4		13	13		4	2		2	2		2
Confl. Bikes (#/hr)												1
Turn Type				Perm	NA		Prot	NA			NA	
Protected Phases					6		3	8			4	
Permitted Phases				6								
Actuated Green, G (s)					51.4		25.7	48.8			18.2	
Effective Green, g (s)					51.4		25.7	48.8			18.2	
Actuated g/C Ratio					0.47		0.23	0.44			0.17	
Clearance Time (s)					4.9		4.4	4.9			5.4	
Vehicle Extension (s)					2.4		3.0	3.3			2.4	
Lane Grp Cap (vph)					2924		413	1570			560	
v/s Ratio Prot							c0.20	0.17			c0.14	
v/s Ratio Perm					0.37							
v/c Ratio					0.79		0.87	0.38			0.83	
Uniform Delay, d1					24.8		40.5	20.5			44.4	
Progression Factor					1.00		1.00	1.00			1.00	
Incremental Delay, d2					2.3		17.1	0.2			9.5	
Delay (s)					27.1		57.6	20.7			53.9	
Level of Service					C		E	C			D	
Approach Delay (s)		0.0			27.1			34.5			53.9	
Approach LOS		A			C			C			D	

Intersection Summary			
HCM 2000 Control Delay	32.5	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.82		
Actuated Cycle Length (s)	110.0	Sum of lost time (s)	14.7
Intersection Capacity Utilization	77.5%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

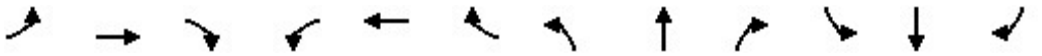
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	120	1210	100	0	0	0	0	800	420	140	330	0
Future Volume (vph)	120	1210	100	0	0	0	0	800	420	140	330	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0	4.0					4.9		4.0	4.9	
Lane Util. Factor		0.91	1.00					0.91		1.00	0.91	
Frpb, ped/bikes		1.00	0.97					0.99		1.00	1.00	
Flpb, ped/bikes		1.00	1.00					1.00		1.00	1.00	
Frt		1.00	0.85					0.95		1.00	1.00	
Flt Protected		1.00	1.00					1.00		0.95	1.00	
Satd. Flow (prot)		5061	1532					4775		1770	5085	
Flt Permitted		1.00	1.00					1.00		0.95	1.00	
Satd. Flow (perm)		5061	1532					4775		1770	5085	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	130	1315	109	0	0	0	0	870	457	152	359	0
RTOR Reduction (vph)	0	0	65	0	0	0	0	85	0	0	0	0
Lane Group Flow (vph)	0	1445	44	0	0	0	0	1242	0	152	359	0
Confl. Peds. (#/hr)	5		25				6		12	12		6
Turn Type	Perm	NA	Perm					NA		Prot	NA	
Protected Phases		2						8		7	4	
Permitted Phases	2		2									
Actuated Green, G (s)		35.1	35.1					25.1		15.6	45.1	
Effective Green, g (s)		36.0	36.0					25.1		16.0	45.1	
Actuated g/C Ratio		0.40	0.40					0.28		0.18	0.50	
Clearance Time (s)		4.9	4.9					4.9		4.4	4.9	
Vehicle Extension (s)		4.4	4.4					3.3		2.0	3.3	
Lane Grp Cap (vph)		2024	612					1331		314	2548	
v/s Ratio Prot								c0.26		c0.09	0.07	
v/s Ratio Perm		0.29	0.03									
v/c Ratio		0.71	0.07					0.93		0.48	0.14	
Uniform Delay, d1		22.7	16.7					31.6		33.3	12.1	
Progression Factor		1.00	1.00					1.00		1.00	1.00	
Incremental Delay, d2		2.2	0.2					13.1		5.3	0.1	
Delay (s)		24.9	16.9					44.8		38.5	12.2	
Level of Service		C	B					D		D	B	
Approach Delay (s)		24.3			0.0			44.8			20.0	
Approach LOS		C			A			D			C	

Intersection Summary			
HCM 2000 Control Delay	31.7	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.74		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	12.9
Intersection Capacity Utilization	77.5%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	1430	750	510	1490	460	260
Future Volume (vph)	1430	750	510	1490	460	260
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.5	4.0	4.0	4.0
Lane Util. Factor	0.95	1.00	0.97	0.95	0.97	0.91
Frpb, ped/bikes	1.00	0.99	1.00	1.00	1.00	0.98
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected	1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (prot)	3539	1569	3433	3539	3433	1418
Flt Permitted	1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (perm)	3539	1569	3433	3539	3433	1418
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	1554	815	554	1620	500	283
RTOR Reduction (vph)	0	2	0	0	0	217
Lane Group Flow (vph)	1554	813	554	1620	500	66
Confl. Peds. (#/hr)						1
Confl. Bikes (#/hr)		6				3
Turn Type	NA	pm+ov	Prot	NA	Prot	Perm
Protected Phases	2	8	1	6	8	
Permitted Phases		2				8
Actuated Green, G (s)	40.6	60.1	15.8	61.6	19.5	19.5
Effective Green, g (s)	42.8	64.5	15.7	63.0	21.7	21.7
Actuated g/C Ratio	0.46	0.70	0.17	0.68	0.23	0.23
Clearance Time (s)	6.2	6.2	4.4	5.4	6.2	6.2
Vehicle Extension (s)	4.0	2.0	2.0	5.2	2.0	2.0
Lane Grp Cap (vph)	1633	1159	581	2405	803	331
v/s Ratio Prot	c0.44	c0.16	c0.16	0.46	0.15	
v/s Ratio Perm		0.35				0.05
v/c Ratio	0.95	0.70	0.95	0.67	0.62	0.20
Uniform Delay, d1	24.0	8.4	38.1	8.8	31.8	28.5
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	13.4	1.6	25.9	1.5	1.1	0.1
Delay (s)	37.4	10.0	64.0	10.3	32.9	28.6
Level of Service	D	A	E	B	C	C
Approach Delay (s)	27.9			24.0	31.4	
Approach LOS	C			C	C	

Intersection Summary			
HCM 2000 Control Delay	26.8	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.91		
Actuated Cycle Length (s)	92.7	Sum of lost time (s)	12.5
Intersection Capacity Utilization	80.6%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	1080	330	360	350	0	0	0	0	400	0	1190
Future Volume (vph)	0	1080	330	360	350	0	0	0	0	400	0	1190
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0	4.0	4.0	4.0					4.0		3.4
Lane Util. Factor		0.95	1.00	0.97	0.95					1.00		1.00
Frpb, ped/bikes		1.00	0.99	1.00	1.00					1.00		1.00
Flpb, ped/bikes		1.00	1.00	1.00	1.00					1.00		1.00
Frt		1.00	0.85	1.00	1.00					1.00		0.85
Flt Protected		1.00	1.00	0.95	1.00					0.95		1.00
Satd. Flow (prot)		3539	1560	3433	3539					1770		1583
Flt Permitted		1.00	1.00	0.95	1.00					0.95		1.00
Satd. Flow (perm)		3539	1560	3433	3539					1770		1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	1174	359	391	380	0	0	0	0	435	0	1293
RTOR Reduction (vph)	0	0	230	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	1174	129	391	380	0	0	0	0	435	0	1293
Confl. Peds. (#/hr)			2	2								
Turn Type		NA	Perm	Prot	NA					Prot		Free
Protected Phases		2		1	6					4		
Permitted Phases			2									Free
Actuated Green, G (s)		25.9	25.9	13.4	43.5					21.9		75.0
Effective Green, g (s)		26.9	26.9	13.6	44.5					22.5		75.0
Actuated g/C Ratio		0.36	0.36	0.18	0.59					0.30		1.00
Clearance Time (s)		5.0	5.0	4.2	5.0					4.6		
Vehicle Extension (s)		0.2	0.2	0.2	0.2					0.2		
Lane Grp Cap (vph)		1269	559	622	2099					531		1583
v/s Ratio Prot		0.33		0.11	0.11					0.25		
v/s Ratio Perm			0.08									c0.82
v/c Ratio		0.93	0.23	0.63	0.18					0.82		0.82
Uniform Delay, d1		23.1	16.8	28.4	6.9					24.4		0.0
Progression Factor		1.00	1.00	0.86	1.39					1.00		1.00
Incremental Delay, d2		12.7	1.0	0.8	0.1					9.1		4.8
Delay (s)		35.8	17.8	25.2	9.7					33.5		4.8
Level of Service		D	B	C	A					C		A
Approach Delay (s)		31.6			17.6			0.0			12.0	
Approach LOS		C			B			A			B	

Intersection Summary			
HCM 2000 Control Delay	20.5	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.97		
Actuated Cycle Length (s)	75.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	79.7%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	870	720	0	0	590	500	190	20	450	0	0	0
Future Volume (vph)	870	720	0	0	590	500	190	20	450	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	5.0			5.0			4.0	4.0			
Lane Util. Factor	0.97	0.95			0.95			1.00	1.00			
Frpb, ped/bikes	1.00	1.00			0.99			1.00	1.00			
Flpb, ped/bikes	1.00	1.00			1.00			1.00	1.00			
Frt	1.00	1.00			0.93			1.00	0.85			
Flt Protected	0.95	1.00			1.00			0.96	1.00			
Satd. Flow (prot)	3433	3539			3272			1782	1583			
Flt Permitted	0.95	1.00			1.00			0.96	1.00			
Satd. Flow (perm)	3433	3539			3272			1782	1583			
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	946	783	0	0	641	543	207	22	489	0	0	0
RTOR Reduction (vph)	0	0	0	0	185	0	0	0	231	0	0	0
Lane Group Flow (vph)	946	783	0	0	999	0	0	229	258	0	0	0
Confl. Peds. (#/hr)	3		1	1		3						
Turn Type	Prot	NA			NA		Split	NA	Perm			
Protected Phases	5	2			6		4	4				
Permitted Phases									4			
Actuated Green, G (s)	20.8	54.5			29.5			10.4	10.4			
Effective Green, g (s)	21.0	55.0			30.0			11.0	11.0			
Actuated g/C Ratio	0.28	0.73			0.40			0.15	0.15			
Clearance Time (s)	4.2	5.5			5.5			4.6	4.6			
Vehicle Extension (s)	0.2	0.2			0.2			0.2	0.2			
Lane Grp Cap (vph)	961	2595			1308			261	232			
v/s Ratio Prot	c0.28	0.22			c0.31			0.13				
v/s Ratio Perm									c0.16			
v/c Ratio	0.98	0.30			0.76			0.88	1.11			
Uniform Delay, d1	26.8	3.4			19.4			31.3	32.0			
Progression Factor	1.40	0.66			1.00			1.00	1.00			
Incremental Delay, d2	18.8	0.2			4.3			25.8	92.1			
Delay (s)	56.5	2.4			23.7			57.1	124.1			
Level of Service	E	A			C			E	F			
Approach Delay (s)		32.0			23.7			102.7			0.0	
Approach LOS		C			C			F			A	

Intersection Summary			
HCM 2000 Control Delay	43.3	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.90		
Actuated Cycle Length (s)	75.0	Sum of lost time (s)	13.0
Intersection Capacity Utilization	79.7%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	230	200	150	870	890	180
Future Volume (vph)	230	200	150	870	890	180
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.5		4.5	4.5	4.5	
Lane Util. Factor	1.00		1.00	0.95	0.95	
Frt	0.94		1.00	1.00	0.97	
Flt Protected	0.97		0.95	1.00	1.00	
Satd. Flow (prot)	1700		1770	3539	3450	
Flt Permitted	0.97		0.95	1.00	1.00	
Satd. Flow (perm)	1700		1770	3539	3450	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	250	217	163	946	967	196
RTOR Reduction (vph)	26	0	0	0	11	0
Lane Group Flow (vph)	441	0	163	946	1152	0
Turn Type	Prot		Prot	NA	NA	
Protected Phases	7		1	6	2	
Permitted Phases						
Actuated Green, G (s)	37.9		16.0	83.1	62.6	
Effective Green, g (s)	37.9		16.0	83.1	62.6	
Actuated g/C Ratio	0.29		0.12	0.64	0.48	
Clearance Time (s)	4.5		4.5	4.5	4.5	
Vehicle Extension (s)	3.0		3.0	3.0	3.0	
Lane Grp Cap (vph)	495		217	2262	1661	
v/s Ratio Prot	c0.26		c0.09	0.27	c0.33	
v/s Ratio Perm						
v/c Ratio	0.89		0.75	0.42	0.69	
Uniform Delay, d1	44.1		55.1	11.5	26.2	
Progression Factor	1.00		1.04	1.26	1.00	
Incremental Delay, d2	18.0		12.5	0.5	2.4	
Delay (s)	62.1		69.6	15.0	28.6	
Level of Service	E		E	B	C	
Approach Delay (s)	62.1			23.0	28.6	
Approach LOS	E			C	C	

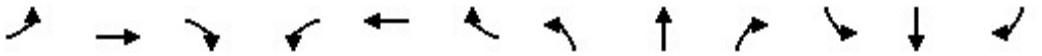
Intersection Summary			
HCM 2000 Control Delay	32.1	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.77		
Actuated Cycle Length (s)	130.0	Sum of lost time (s)	13.5
Intersection Capacity Utilization	74.9%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	0	430	0	0	360	160
Future Volume (Veh/h)	0	430	0	0	360	160
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	467	0	0	391	174
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage veh)						
Upstream signal (ft)				897	1285	
pX, platoon unblocked						
vC, conflicting volume	478	282	565			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	478	282	565			
tC, single (s)	6.8	6.9	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	100	35	100			
cM capacity (veh/h)	516	714	1003			

Direction, Lane #	EB 1	SB 1	SB 2
Volume Total	467	261	304
Volume Left	0	0	0
Volume Right	467	0	174
cSH	714	1700	1700
Volume to Capacity	0.65	0.15	0.18
Queue Length 95th (ft)	122	0	0
Control Delay (s)	19.0	0.0	0.0
Lane LOS	C		
Approach Delay (s)	19.0	0.0	
Approach LOS	C		

Intersection Summary			
Average Delay	8.6		
Intersection Capacity Utilization	48.4%	ICU Level of Service	A
Analysis Period (min)	15		



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	30	260	320	290	0	0	0	0	50	720	70
Future Volume (vph)	0	30	260	320	290	0	0	0	0	50	720	70
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0		4.0	4.0						4.0	
Lane Util. Factor		1.00		1.00	1.00						0.95	
Frt		0.88		1.00	1.00						0.99	
Flt Protected		1.00		0.95	1.00						1.00	
Satd. Flow (prot)		1638		1770	1863						3485	
Flt Permitted		1.00		0.50	1.00						1.00	
Satd. Flow (perm)		1638		931	1863						3485	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	33	283	348	315	0	0	0	0	54	783	76
RTOR Reduction (vph)	0	33	0	0	0	0	0	0	0	0	9	0
Lane Group Flow (vph)	0	283	0	348	315	0	0	0	0	0	904	0
Turn Type		NA		Perm	NA					Perm	NA	
Protected Phases		4			8						6	
Permitted Phases				8						6		
Actuated Green, G (s)		26.1		26.1	26.1						25.6	
Effective Green, g (s)		26.1		26.1	26.1						25.6	
Actuated g/C Ratio		0.44		0.44	0.44						0.43	
Clearance Time (s)		4.0		4.0	4.0						4.0	
Vehicle Extension (s)		3.0		3.0	3.0						3.0	
Lane Grp Cap (vph)		716		407	814						1494	
v/s Ratio Prot		0.17			0.17							
v/s Ratio Perm				c0.37							0.26	
v/c Ratio		0.40		0.86	0.39						0.61	
Uniform Delay, d1		11.4		15.1	11.4						13.2	
Progression Factor		1.00		1.00	1.00						1.00	
Incremental Delay, d2		0.4		15.9	0.3						1.8	
Delay (s)		11.8		31.0	11.7						15.0	
Level of Service		B		C	B						B	
Approach Delay (s)		11.8			21.8			0.0			15.0	
Approach LOS		B			C			A			B	

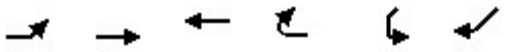
Intersection Summary			
HCM 2000 Control Delay	16.9	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.73		
Actuated Cycle Length (s)	59.7	Sum of lost time (s)	8.0
Intersection Capacity Utilization	58.9%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	120	200	180	370	480	220
Future Volume (vph)	120	200	180	370	480	220
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0			4.0	4.0	
Lane Util. Factor	1.00			1.00	1.00	
Frt	0.92			1.00	0.96	
Flt Protected	0.98			0.98	1.00	
Satd. Flow (prot)	1674			1833	1784	
Flt Permitted	0.98			0.51	1.00	
Satd. Flow (perm)	1674			942	1784	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	130	217	196	402	522	239
RTOR Reduction (vph)	89	0	0	0	22	0
Lane Group Flow (vph)	258	0	0	598	739	0
Turn Type	Prot		Perm	NA	NA	
Protected Phases	4			2	6	
Permitted Phases			2			
Actuated Green, G (s)	13.9			47.0	47.0	
Effective Green, g (s)	13.9			47.0	47.0	
Actuated g/C Ratio	0.20			0.68	0.68	
Clearance Time (s)	4.0			4.0	4.0	
Vehicle Extension (s)	3.0			3.0	3.0	
Lane Grp Cap (vph)	337			642	1216	
v/s Ratio Prot	c0.15				0.41	
v/s Ratio Perm				c0.63		
v/c Ratio	0.77			0.93	0.61	
Uniform Delay, d1	26.0			9.5	5.9	
Progression Factor	1.00			1.00	1.00	
Incremental Delay, d2	10.0			22.2	2.3	
Delay (s)	36.0			31.7	8.2	
Level of Service	D			C	A	
Approach Delay (s)	36.0			31.7	8.2	
Approach LOS	D			C	A	

Intersection Summary			
HCM 2000 Control Delay	22.1	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.89		
Actuated Cycle Length (s)	68.9	Sum of lost time (s)	8.0
Intersection Capacity Utilization	97.0%	ICU Level of Service	F
Analysis Period (min)	15		

c Critical Lane Group



Movement	EBL	EBT	WBT	WBR	SWL	SWR
Lane Configurations						
Traffic Volume (vph)	60	1090	1200	60	160	240
Future Volume (vph)	60	1090	1200	60	160	240
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0		4.0	
Lane Util. Factor	1.00	0.95	0.95		1.00	
Frt	1.00	1.00	0.99		0.92	
Flt Protected	0.95	1.00	1.00		0.98	
Satd. Flow (prot)	1770	3539	3514		1678	
Flt Permitted	0.13	1.00	1.00		0.98	
Satd. Flow (perm)	237	3539	3514		1678	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	65	1185	1304	65	174	261
RTOR Reduction (vph)	0	0	6	0	27	0
Lane Group Flow (vph)	65	1185	1363	0	408	0
Turn Type	Perm	NA	NA		Prot	
Protected Phases		4	8		6	
Permitted Phases	4					
Actuated Green, G (s)	31.5	31.5	31.5		22.1	
Effective Green, g (s)	31.5	31.5	31.5		22.1	
Actuated g/C Ratio	0.51	0.51	0.51		0.36	
Clearance Time (s)	4.0	4.0	4.0		4.0	
Vehicle Extension (s)	3.0	3.0	3.0		3.0	
Lane Grp Cap (vph)	121	1809	1796		602	
v/s Ratio Prot		0.33	c0.39		c0.24	
v/s Ratio Perm	0.27					
v/c Ratio	0.54	0.66	0.76		0.68	
Uniform Delay, d1	10.1	11.1	12.0		16.7	
Progression Factor	1.00	1.00	1.00		1.00	
Incremental Delay, d2	4.5	0.9	1.9		6.0	
Delay (s)	14.7	11.9	13.9		22.8	
Level of Service	B	B	B		C	
Approach Delay (s)		12.1	13.9		22.8	
Approach LOS		B	B		C	

Intersection Summary			
HCM 2000 Control Delay	14.4	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.73		
Actuated Cycle Length (s)	61.6	Sum of lost time (s)	8.0
Intersection Capacity Utilization	72.0%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	130	20	90	60	110	280	160	480	370	210	500	160
Future Volume (vph)	130	20	90	60	110	280	160	480	370	210	500	160
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.5			4.5		4.5	4.5		4.5	4.5	
Lane Util. Factor		1.00			1.00		1.00	0.95		1.00	0.95	
Frt		0.95			0.92		1.00	0.93		1.00	0.96	
Flt Protected		0.97			0.99		0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1722			1699		1770	3308		1770	3410	
Flt Permitted		0.97			0.99		0.95	1.00		0.95	1.00	
Satd. Flow (perm)		1722			1699		1770	3308		1770	3410	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	1.00	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	141	22	98	65	120	280	174	522	402	228	543	174
RTOR Reduction (vph)	0	22	0	0	55	0	0	138	0	0	30	0
Lane Group Flow (vph)	0	239	0	0	410	0	174	786	0	228	687	0
Turn Type	Split	NA		Split	NA		Prot	NA		Prot	NA	
Protected Phases	8	8		4	4		5	2		1	6	
Permitted Phases												
Actuated Green, G (s)		15.4			25.5		12.8	24.9		14.2	26.3	
Effective Green, g (s)		15.4			25.5		12.8	24.9		14.2	26.3	
Actuated g/C Ratio		0.16			0.26		0.13	0.25		0.14	0.27	
Clearance Time (s)		4.5			4.5		4.5	4.5		4.5	4.5	
Vehicle Extension (s)		3.0			3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)		270			442		231	840		256	915	
v/s Ratio Prot		c0.14			c0.24		0.10	c0.24		c0.13	0.20	
v/s Ratio Perm												
v/c Ratio		0.89			0.93		0.75	0.94		0.89	0.75	
Uniform Delay, d1		40.4			35.4		41.1	35.8		41.1	32.8	
Progression Factor		1.00			1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2		27.2			25.6		13.0	17.3		29.5	3.5	
Delay (s)		67.7			61.0		54.1	53.1		70.6	36.4	
Level of Service		E			E		D	D		E	D	
Approach Delay (s)		67.7			61.0			53.2			44.6	
Approach LOS		E			E			D			D	

Intersection Summary			
HCM 2000 Control Delay	53.0	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.91		
Actuated Cycle Length (s)	98.0	Sum of lost time (s)	18.0
Intersection Capacity Utilization	88.4%	ICU Level of Service	E
Analysis Period (min)	15		

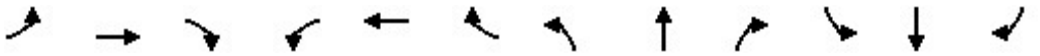
c Critical Lane Group

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	180	260	190	140	270	320
Future Volume (vph)	180	260	190	140	270	320
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0			4.0	4.0	
Lane Util. Factor	1.00			1.00	1.00	
Frt	0.92			1.00	0.93	
Flt Protected	0.98			0.97	1.00	
Satd. Flow (prot)	1680			1811	1726	
Flt Permitted	0.98			0.42	1.00	
Satd. Flow (perm)	1680			776	1726	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	196	283	207	152	293	348
RTOR Reduction (vph)	82	0	0	0	63	0
Lane Group Flow (vph)	397	0	0	359	578	0
Turn Type	Prot		Perm	NA	NA	
Protected Phases	4			2	6	
Permitted Phases			2			
Actuated Green, G (s)	17.4			38.1	38.1	
Effective Green, g (s)	17.4			38.1	38.1	
Actuated g/C Ratio	0.27			0.60	0.60	
Clearance Time (s)	4.0			4.0	4.0	
Vehicle Extension (s)	3.0			3.0	3.0	
Lane Grp Cap (vph)	460			465	1035	
v/s Ratio Prot	c0.24				0.33	
v/s Ratio Perm				c0.46		
v/c Ratio	0.86			0.77	0.56	
Uniform Delay, d1	21.9			9.5	7.6	
Progression Factor	1.00			1.00	1.00	
Incremental Delay, d2	15.3			11.8	2.2	
Delay (s)	37.2			21.2	9.8	
Level of Service	D			C	A	
Approach Delay (s)	37.2			21.2	9.8	
Approach LOS	D			C	A	

Intersection Summary			
HCM 2000 Control Delay	21.5	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.80		
Actuated Cycle Length (s)	63.5	Sum of lost time (s)	8.0
Intersection Capacity Utilization	87.6%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group

Peak Hour Intersection Calculation Worksheets - Mitigation



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	60	1140	400	160	1330	180	480	400	150	580	280	120
Future Volume (vph)	60	1140	400	160	1330	180	480	400	150	580	280	120
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	3.1	4.0	4.0	1.6	4.0	4.0	3.6	4.0	4.0	
Lane Util. Factor	1.00	0.91	1.00	0.97	0.91	1.00	0.97	1.00	1.00	0.97	1.00	
Frpb, ped/bikes	1.00	1.00	0.99	1.00	1.00	0.97	1.00	1.00	0.99	1.00	1.00	
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.96	
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)	1770	5085	1571	3433	5085	1531	3433	1863	1565	3433	1771	
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (perm)	1770	5085	1571	3433	5085	1531	3433	1863	1565	3433	1771	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	65	1239	435	174	1446	196	522	435	163	630	304	130
RTOR Reduction (vph)	0	0	123	0	0	65	0	0	35	0	12	0
Lane Group Flow (vph)	65	1239	312	174	1446	131	522	435	128	630	422	0
Confl. Peds. (#/hr)	8					8			3	3		
Confl. Bikes (#/hr)			1			5						3
Turn Type	Prot	NA	pm+ov	Prot	NA	pm+ov	Prot	NA	pm+ov	Prot	NA	
Protected Phases	5	2	3	1	6	7	3	8	1	7	4	
Permitted Phases			2			6			8			
Actuated Green, G (s)	6.2	43.6	69.1	11.2	48.5	76.4	25.5	34.8	46.0	27.9	35.4	
Effective Green, g (s)	6.6	44.9	71.7	11.6	49.9	79.2	25.9	35.6	47.6	26.9	36.6	
Actuated g/C Ratio	0.05	0.33	0.53	0.09	0.37	0.59	0.19	0.26	0.35	0.20	0.27	
Clearance Time (s)	4.4	5.3	4.4	4.4	5.4	3.0	4.4	4.8	4.4	3.0	5.2	
Vehicle Extension (s)	2.0	4.4	2.0	2.0	4.4	2.0	2.0	3.8	2.0	2.0	2.0	
Lane Grp Cap (vph)	86	1691	870	294	1879	916	658	491	593	684	480	
v/s Ratio Prot	0.04	0.24	0.07	c0.05	c0.28	0.03	0.15	0.23	0.02	c0.18	c0.24	
v/s Ratio Perm			0.13			0.05			0.06			
v/c Ratio	0.76	0.73	0.36	0.59	0.77	0.14	0.79	0.89	0.22	0.92	0.88	
Uniform Delay, d1	63.4	39.8	18.3	59.4	37.5	12.6	52.0	47.7	30.6	53.0	47.1	
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	27.9	2.9	0.1	2.1	3.1	0.0	6.1	17.6	0.1	17.6	16.0	
Delay (s)	91.3	42.6	18.4	61.5	40.6	12.6	58.1	65.4	30.7	70.6	63.1	
Level of Service	F	D	B	E	D	B	E	E	C	E	E	
Approach Delay (s)		38.4			39.6			56.9			67.5	
Approach LOS		D			D			E			E	

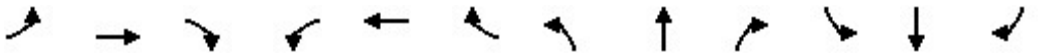
Intersection Summary			
HCM 2000 Control Delay	47.8	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.85		
Actuated Cycle Length (s)	135.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	80.7%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	550	1190	370	0	0	650
Future Volume (vph)	550	1190	370	0	0	650
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	7.0	7.0	7.0			7.0
Lane Util. Factor	0.97	0.76	0.95			0.95
Frt	1.00	0.85	1.00			1.00
Flt Protected	0.95	1.00	1.00			1.00
Satd. Flow (prot)	3433	3610	3539			3539
Flt Permitted	0.95	1.00	1.00			1.00
Satd. Flow (perm)	3433	3610	3539			3539
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	598	1293	402	0	0	707
RTOR Reduction (vph)	0	475	0	0	0	0
Lane Group Flow (vph)	598	818	402	0	0	707
Turn Type	Prot	Perm	NA			NA
Protected Phases	4		2			6
Permitted Phases		4				
Actuated Green, G (s)	11.0	11.0	12.2			12.2
Effective Green, g (s)	11.0	11.0	12.2			12.2
Actuated g/C Ratio	0.30	0.30	0.33			0.33
Clearance Time (s)	7.0	7.0	7.0			7.0
Vehicle Extension (s)	0.2	0.2	0.2			0.2
Lane Grp Cap (vph)	1015	1067	1160			1160
v/s Ratio Prot	0.17		0.11			c0.20
v/s Ratio Perm		c0.23				
v/c Ratio	0.59	0.77	0.35			0.61
Uniform Delay, d1	11.2	11.9	9.5			10.5
Progression Factor	1.00	1.00	1.00			1.00
Incremental Delay, d2	0.6	3.0	0.1			0.6
Delay (s)	11.7	15.0	9.5			11.1
Level of Service	B	B	A			B
Approach Delay (s)	13.9		9.5			11.1
Approach LOS	B		A			B

Intersection Summary			
HCM 2000 Control Delay	12.7	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.68		
Actuated Cycle Length (s)	37.2	Sum of lost time (s)	14.0
Intersection Capacity Utilization	49.6%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

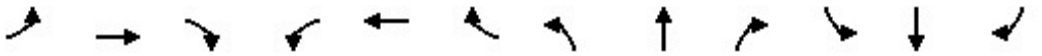


Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	440	300	270	30	140	290	190	460	50	440	520	240
Future Volume (vph)	440	300	270	30	140	290	190	460	50	440	520	240
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.1	4.0	3.1	3.0	4.0	4.0	3.1	4.0		3.1	4.0	4.0
Lane Util. Factor	0.97	1.00	1.00	1.00	0.95	1.00	0.97	0.95		0.97	0.95	1.00
Frpb, ped/bikes	1.00	1.00	0.99	1.00	1.00	0.99	1.00	1.00		1.00	1.00	0.99
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.99		1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	3433	1863	1565	1770	3539	1572	3433	3482		3433	3539	1565
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)	3433	1863	1565	1770	3539	1572	3433	3482		3433	3539	1565
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	478	326	293	33	152	315	207	500	54	478	565	261
RTOR Reduction (vph)	0	0	63	0	0	45	0	6	0	0	0	127
Lane Group Flow (vph)	478	326	230	33	152	270	207	548	0	478	565	134
Confl. Peds. (#/hr)			4			3			5			8
Turn Type	Prot	NA	pm+ov	Prot	NA	pm+ov	Prot	NA		Prot	NA	pm+ov
Protected Phases	5	2	3	1	6	7	3	8		7	4	5
Permitted Phases			2			6						4
Actuated Green, G (s)	20.8	36.9	49.2	3.2	19.2	40.0	12.3	22.7		20.8	31.2	52.0
Effective Green, g (s)	21.7	37.8	51.0	4.2	20.2	40.0	13.2	23.6		21.7	32.1	52.0
Actuated g/C Ratio	0.21	0.37	0.50	0.04	0.20	0.39	0.13	0.23		0.21	0.32	0.51
Clearance Time (s)	4.0	4.9	4.0	4.0	5.0	4.0	4.0	4.9		4.0	4.9	4.0
Vehicle Extension (s)	3.0	0.2	3.0	3.0	8.0	3.0	3.0	3.1		3.0	5.5	3.0
Lane Grp Cap (vph)	734	694	787	73	705	620	446	810		734	1120	802
v/s Ratio Prot	c0.14	c0.18	0.04	0.02	0.04	0.09	0.06	c0.16		c0.14	0.16	0.03
v/s Ratio Perm			0.11			0.08						0.05
v/c Ratio	0.65	0.47	0.29	0.45	0.22	0.44	0.46	0.68		0.65	0.50	0.17
Uniform Delay, d1	36.4	24.2	14.7	47.5	34.0	22.4	40.8	35.4		36.4	28.2	13.2
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	2.1	0.2	0.2	4.4	0.7	0.5	0.8	2.3		2.1	0.9	0.1
Delay (s)	38.5	24.4	14.9	51.9	34.6	22.9	41.6	37.7		38.5	29.1	13.3
Level of Service	D	C	B	D	C	C	D	D		D	C	B
Approach Delay (s)		28.0			28.4			38.8			29.3	
Approach LOS		C			C			D			C	

Intersection Summary			
HCM 2000 Control Delay	30.8	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.64		
Actuated Cycle Length (s)	101.4	Sum of lost time (s)	16.0
Intersection Capacity Utilization	62.9%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	220	1460	170	340	1800	300	120	330	210	230	280	180
Future Volume (vph)	220	1460	170	340	1800	300	120	330	210	230	280	180
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0	4.4	4.0	4.0	3.5	4.0	4.0	3.5
Lane Util. Factor	0.97	0.86		0.97	0.86	1.00	1.00	0.95	1.00	0.97	0.95	1.00
Frpb, ped/bikes	1.00	1.00		1.00	1.00	0.98	1.00	1.00	0.98	1.00	1.00	0.98
Flpb, ped/bikes	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.98		1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	6280		3433	6408	1544	1770	3539	1545	3433	3539	1554
Flt Permitted	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	6280		3433	6408	1544	1770	3539	1545	3433	3539	1554
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	239	1587	185	370	1957	326	130	359	228	250	304	196
RTOR Reduction (vph)	0	17	0	0	0	77	0	0	74	0	0	80
Lane Group Flow (vph)	239	1755	0	370	1957	249	130	359	154	250	304	116
Confl. Peds. (#/hr)	14		25	25		14	18		27	27		14
Turn Type	Prot	NA		Prot	NA	pm+ov	Prot	NA	pm+ov	Prot	NA	pm+ov
Protected Phases	5	2		1	6	7	3	8	1	7	4	5
Permitted Phases						6			8			4
Actuated Green, G (s)	8.8	39.3		13.4	44.0	53.5	9.5	24.0	37.4	9.5	24.0	32.8
Effective Green, g (s)	9.2	40.4		13.8	45.0	53.5	9.9	24.9	39.2	9.9	24.9	34.6
Actuated g/C Ratio	0.09	0.38		0.13	0.43	0.51	0.09	0.24	0.37	0.09	0.24	0.33
Clearance Time (s)	4.4	5.1		4.4	5.0	4.4	4.4	4.9	4.4	4.4	4.9	4.4
Vehicle Extension (s)	2.0	3.5		2.0	3.7	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lane Grp Cap (vph)	300	2416		451	2746	786	166	839	628	323	839	512
v/s Ratio Prot	0.07	c0.28		0.11	c0.31	0.03	c0.07	c0.10	0.03	c0.07	0.09	0.02
v/s Ratio Perm						0.13			0.07			0.05
v/c Ratio	0.80	0.73		0.82	0.71	0.32	0.78	0.43	0.25	0.77	0.36	0.23
Uniform Delay, d1	47.0	27.6		44.4	24.7	15.1	46.5	34.0	22.7	46.5	33.4	25.5
Progression Factor	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	12.8	1.9		10.9	1.6	0.1	19.6	0.1	0.1	10.1	0.1	0.1
Delay (s)	59.8	29.5		55.3	26.3	15.2	66.1	34.1	22.8	56.5	33.5	25.6
Level of Service	E	C		E	C	B	E	C	C	E	C	C
Approach Delay (s)		33.1			29.0			36.3			39.1	
Approach LOS		C			C			D			D	

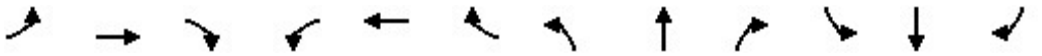
Intersection Summary			
HCM 2000 Control Delay	32.4	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.70		
Actuated Cycle Length (s)	105.0	Sum of lost time (s)	16.4
Intersection Capacity Utilization	73.4%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	350	190	540	520	0	0	0	0	280	360	410
Future Volume (vph)	0	350	190	540	520	0	0	0	0	280	360	410
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0	4.0	4.0	4.0					4.0	4.0	4.0
Lane Util. Factor		0.95	1.00	0.97	0.95					0.91	0.91	0.88
Frt		1.00	0.85	1.00	1.00					1.00	1.00	0.85
Flt Protected		1.00	1.00	0.95	1.00					0.95	0.99	1.00
Satd. Flow (prot)		3539	1583	3433	3539					1610	3358	2787
Flt Permitted		1.00	1.00	0.95	1.00					0.95	0.99	1.00
Satd. Flow (perm)		3539	1583	3433	3539					1610	3358	2787
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	380	207	587	565	0	0	0	0	304	391	446
RTOR Reduction (vph)	0	0	90	0	0	0	0	0	0	0	0	332
Lane Group Flow (vph)	0	380	117	587	565	0	0	0	0	213	482	114
Turn Type		NA	Perm	Prot	NA					Perm	NA	Perm
Protected Phases		2		1	6						4	
Permitted Phases			2							4		4
Actuated Green, G (s)		30.2	30.2	16.1	50.7					19.5	19.5	19.5
Effective Green, g (s)		31.1	31.1	16.5	51.6					20.4	20.4	20.4
Actuated g/C Ratio		0.39	0.39	0.21	0.65					0.25	0.25	0.25
Clearance Time (s)		4.9	4.9	4.4	4.9					4.9	4.9	4.9
Vehicle Extension (s)		3.8	3.8	2.0	4.2					2.0	2.0	2.0
Lane Grp Cap (vph)		1375	615	708	2282					410	856	710
v/s Ratio Prot		c0.11		c0.17	0.16							
v/s Ratio Perm			0.07							0.13	0.14	0.04
v/c Ratio		0.28	0.19	0.83	0.25					0.52	0.56	0.16
Uniform Delay, d1		16.7	16.1	30.4	6.0					25.6	25.9	23.1
Progression Factor		1.00	1.00	1.00	1.00					1.00	1.00	1.00
Incremental Delay, d2		0.5	0.7	7.6	0.3					0.5	0.5	0.0
Delay (s)		17.2	16.8	38.0	6.3					26.1	26.4	23.2
Level of Service		B	B	D	A					C	C	C
Approach Delay (s)		17.1			22.4			0.0			25.1	
Approach LOS		B			C			A			C	

Intersection Summary			
HCM 2000 Control Delay	22.4	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.50		
Actuated Cycle Length (s)	80.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	49.2%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

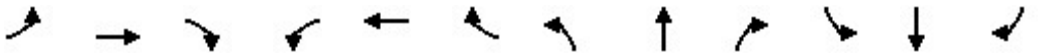


Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	660	80	40	540	0	0	0	0	540	340	510
Future Volume (vph)	0	660	80	40	540	0	0	0	0	540	340	510
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		6.7		4.0	6.7						6.3	4.0
Lane Util. Factor		0.91		1.00	0.95						0.86	0.86
Frt		0.98		1.00	1.00						1.00	0.85
Flt Protected		1.00		0.95	1.00						0.97	1.00
Satd. Flow (prot)		5003		1770	3539						4663	1362
Flt Permitted		1.00		0.95	1.00						0.97	1.00
Satd. Flow (perm)		5003		1770	3539						4663	1362
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	717	87	43	587	0	0	0	0	587	370	554
RTOR Reduction (vph)	0	23	0	0	0	0	0	0	0	0	0	106
Lane Group Flow (vph)	0	781	0	43	587	0	0	0	0	0	957	448
Turn Type		NA		Prot	NA					Perm	NA	Perm
Protected Phases		2		1	6						4	
Permitted Phases										4		4
Actuated Green, G (s)		22.1		2.8	27.6						25.4	25.4
Effective Green, g (s)		20.3		3.2	27.5						24.5	26.8
Actuated g/C Ratio		0.31		0.05	0.42						0.38	0.41
Clearance Time (s)		4.9		4.4	6.6						5.4	5.4
Vehicle Extension (s)		1.0		2.0	1.0						1.0	1.0
Lane Grp Cap (vph)		1562		87	1497						1757	561
v/s Ratio Prot		c0.16		0.02	c0.17							
v/s Ratio Perm											0.21	c0.33
v/c Ratio		0.50		0.49	0.39						0.93dl	0.80
Uniform Delay, d1		18.2		30.1	13.0						15.9	16.7
Progression Factor		1.00		1.32	0.84						1.00	1.00
Incremental Delay, d2		1.1		1.5	0.7						0.2	7.3
Delay (s)		19.4		41.2	11.6						16.1	24.0
Level of Service		B		D	B						B	C
Approach Delay (s)		19.4			13.6			0.0			19.0	
Approach LOS		B			B			A			B	

Intersection Summary			
HCM 2000 Control Delay	17.9	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.69		
Actuated Cycle Length (s)	65.0	Sum of lost time (s)	17.0
Intersection Capacity Utilization	75.1%	ICU Level of Service	D
Analysis Period (min)	15		

dl Defacto Left Lane. Recode with 1 though lane as a left lane.

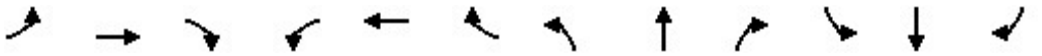
c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	20	30	30	440	110	160	40	1330	210	140	740	130
Future Volume (vph)	20	30	30	440	110	160	40	1330	210	140	740	130
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.3	4.3		4.0	4.0		4.0	4.0	
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	0.91		0.97	0.91	
Frpb, ped/bikes	1.00	0.99		1.00	1.00		1.00	1.00		1.00	1.00	
Flpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Frt	1.00	0.93		1.00	0.91		1.00	0.98		1.00	0.98	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1770	1710		1764	1697		1770	4981		3433	4955	
Flt Permitted	0.47	1.00		0.71	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (perm)	868	1710		1326	1697		1770	4981		3433	4955	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	22	33	33	478	120	174	43	1446	228	152	804	141
RTOR Reduction (vph)	0	21	0	0	59	0	0	23	0	0	26	0
Lane Group Flow (vph)	22	45	0	478	235	0	43	1651	0	152	919	0
Confl. Peds. (#/hr)			4	4			1					1
Turn Type	Perm	NA		Perm	NA		Prot	NA		Prot	NA	
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4			8								
Actuated Green, G (s)	33.8	33.8		33.1	33.1		3.5	33.3		8.6	38.2	
Effective Green, g (s)	33.8	33.8		33.5	33.5		3.5	34.7		9.1	40.3	
Actuated g/C Ratio	0.38	0.38		0.37	0.37		0.04	0.39		0.10	0.45	
Clearance Time (s)	4.0	4.0		4.7	4.7		4.0	5.4		4.5	6.1	
Vehicle Extension (s)	2.0	2.0		3.0	3.0		2.0	4.8		3.0	3.7	
Lane Grp Cap (vph)	327	645		495	634		69	1929		348	2228	
v/s Ratio Prot		0.03			0.14		0.02	c0.33		c0.04	0.19	
v/s Ratio Perm	0.03			c0.36								
v/c Ratio	0.07	0.07		0.97	0.37		0.62	0.86		0.44	0.41	
Uniform Delay, d1	17.8	17.8		27.5	20.4		42.4	25.2		37.8	16.7	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	0.0	0.0		31.5	0.4		11.9	5.1		0.9	0.6	
Delay (s)	17.9	17.9		59.0	20.8		54.3	30.3		38.7	17.2	
Level of Service	B	B		E	C		D	C		D	B	
Approach Delay (s)		17.9			44.4			30.9			20.2	
Approach LOS		B			D			C			C	

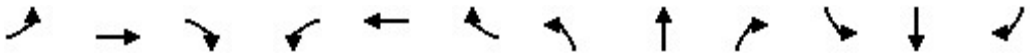
Intersection Summary			
HCM 2000 Control Delay	30.2	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.85		
Actuated Cycle Length (s)	89.6	Sum of lost time (s)	12.3
Intersection Capacity Utilization	75.7%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group



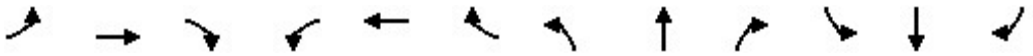
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	650	560	140	150	730	170	300	690	100	110	710	250
Future Volume (vph)	650	560	140	150	730	170	300	690	100	110	710	250
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0		4.0	4.0	4.9	4.0	4.0	4.0
Lane Util. Factor	0.97	0.91		1.00	0.91		0.97	0.91	1.00	1.00	0.91	1.00
Frpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00	0.99	1.00	1.00	0.99
Flpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.97		1.00	0.97		1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	4933		1770	4926		3433	5085	1562	1770	5085	1568
Flt Permitted	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	4933		1770	4926		3433	5085	1562	1770	5085	1568
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	707	609	152	163	793	185	326	750	109	120	772	272
RTOR Reduction (vph)	0	35	0	0	30	0	0	0	80	0	0	52
Lane Group Flow (vph)	707	726	0	163	948	0	326	750	29	120	772	220
Confl. Peds. (#/hr)	4					4	5		1	1		5
Turn Type	Prot	NA		Prot	NA		Prot	NA	Perm	Prot	NA	pm+ov
Protected Phases	7	4		3	8		5	2		1	6	7
Permitted Phases									2			6
Actuated Green, G (s)	28.3	42.1		14.4	27.6		14.9	30.0	30.0	9.3	24.3	52.6
Effective Green, g (s)	28.7	43.3		14.8	29.4		15.3	30.9	30.0	9.7	25.3	53.4
Actuated g/C Ratio	0.25	0.38		0.13	0.26		0.13	0.27	0.26	0.08	0.22	0.47
Clearance Time (s)	4.4	5.2		4.4	5.8		4.4	4.9	4.9	4.4	5.0	4.4
Vehicle Extension (s)	2.0	3.9		2.0	2.7		2.0	3.3	3.3	2.0	4.1	2.0
Lane Grp Cap (vph)	858	1862		228	1262		457	1369	408	149	1121	730
v/s Ratio Prot	c0.21	0.15		0.09	c0.19		c0.09	0.15		0.07	c0.15	0.08
v/s Ratio Perm									0.02			0.06
v/c Ratio	0.82	0.39		0.71	0.75		0.71	0.55	0.07	0.81	0.69	0.30
Uniform Delay, d1	40.6	26.1		47.9	39.3		47.6	35.9	31.9	51.6	41.1	19.1
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	6.2	0.2		8.5	2.5		4.4	1.6	0.3	24.9	3.5	0.1
Delay (s)	46.8	26.2		56.5	41.8		52.0	37.5	32.2	76.5	44.5	19.1
Level of Service	D	C		E	D		D	D	C	E	D	B
Approach Delay (s)		36.1			43.9			41.0			41.9	
Approach LOS		D			D			D			D	

Intersection Summary			
HCM 2000 Control Delay	40.4	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.75		
Actuated Cycle Length (s)	114.7	Sum of lost time (s)	16.0
Intersection Capacity Utilization	74.4%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	140	230	70	20	140	210	50	180	250	20	20	30
Future Volume (vph)	140	230	70	20	140	210	50	180	250	20	20	30
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		3.1	4.0			4.0			4.0	
Lane Util. Factor	1.00	1.00		1.00	1.00			1.00			1.00	
Frpb, ped/bikes	1.00	0.99		1.00	1.00			0.98			1.00	
Flpb, ped/bikes	1.00	1.00		1.00	1.00			1.00			1.00	
Frt	1.00	0.97		1.00	0.91			0.93			0.94	
Flt Protected	0.95	1.00		0.95	1.00			0.99			0.99	
Satd. Flow (prot)	1770	1787		1770	1695			1690			1728	
Flt Permitted	0.95	1.00		0.95	1.00			0.96			0.81	
Satd. Flow (perm)	1770	1787		1770	1695			1633			1412	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	152	250	76	22	152	228	54	196	272	22	22	33
RTOR Reduction (vph)	0	13	0	0	66	0	0	53	0	0	23	0
Lane Group Flow (vph)	152	313	0	22	314	0	0	469	0	0	54	0
Confl. Peds. (#/hr)			3	3					8	8		
Turn Type	Prot	NA		Prot	NA		Perm	NA		Perm	NA	
Protected Phases	5	2		1	6			8			4	
Permitted Phases							8			4		
Actuated Green, G (s)	11.5	36.4		1.5	26.0			22.4			22.4	
Effective Green, g (s)	11.9	37.3		2.4	26.9			23.3			23.3	
Actuated g/C Ratio	0.16	0.50		0.03	0.36			0.31			0.31	
Clearance Time (s)	4.4	4.9		4.0	4.9			4.9			4.9	
Vehicle Extension (s)	1.0	2.0		3.0	2.0			2.0			2.0	
Lane Grp Cap (vph)	284	899		57	615			513			443	
v/s Ratio Prot	c0.09	0.17		0.01	c0.19							
v/s Ratio Perm								c0.29			0.04	
v/c Ratio	0.54	0.35		0.39	0.51			0.91			0.12	
Uniform Delay, d1	28.6	11.1		35.1	18.5			24.4			18.1	
Progression Factor	1.00	1.00		1.00	1.00			1.00			1.00	
Incremental Delay, d2	1.0	1.1		4.3	3.0			20.4			0.0	
Delay (s)	29.5	12.1		39.4	21.5			44.8			18.2	
Level of Service	C	B		D	C			D			B	
Approach Delay (s)		17.7			22.5			44.8			18.2	
Approach LOS		B			C			D			B	

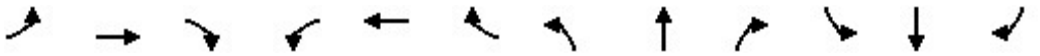
Intersection Summary			
HCM 2000 Control Delay	28.6	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.67		
Actuated Cycle Length (s)	74.1	Sum of lost time (s)	12.0
Intersection Capacity Utilization	73.0%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	190	660	90	170	1240	70	70	130	110	260	380	250
Future Volume (vph)	190	660	90	170	1240	70	70	130	110	260	380	250
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0		4.0	4.0	4.0	4.0	4.0	
Lane Util. Factor	0.97	0.91		1.00	0.91		1.00	0.95	1.00	1.00	0.95	
Frpb, ped/bikes	1.00	0.99		1.00	1.00		1.00	1.00	0.98	1.00	0.98	
Flpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	
Frt	1.00	0.98		1.00	0.99		1.00	1.00	0.85	1.00	0.94	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)	3433	4963		1770	5030		1770	3539	1550	1770	3267	
Flt Permitted	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (perm)	3433	4963		1770	5030		1770	3539	1550	1770	3267	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	207	717	98	185	1348	76	76	141	120	283	413	272
RTOR Reduction (vph)	0	14	0	0	5	0	0	0	45	0	91	0
Lane Group Flow (vph)	207	801	0	185	1419	0	76	141	75	283	594	0
Confl. Peds. (#/hr)	23		24	24		23	19		14	14		19
Confl. Bikes (#/hr)			9			5			12			6
Turn Type	Prot	NA		Prot	NA		Prot	NA	pm+ov	Prot	NA	
Protected Phases	5	2		1	6		3	8	1	7	4	
Permitted Phases									8			
Actuated Green, G (s)	10.1	39.6		16.3	45.3		7.6	21.4	37.7	24.0	37.9	
Effective Green, g (s)	10.5	40.5		16.7	46.7		8.0	22.4	38.5	24.4	38.8	
Actuated g/C Ratio	0.09	0.34		0.14	0.39		0.07	0.19	0.32	0.20	0.32	
Clearance Time (s)	4.4	4.9		4.4	5.4		4.4	5.0	4.4	4.4	4.9	
Vehicle Extension (s)	2.0	4.2		2.0	3.0		2.0	4.0	2.0	2.0	2.6	
Lane Grp Cap (vph)	300	1675		246	1957		118	660	497	359	1056	
v/s Ratio Prot	0.06	0.16		c0.10	c0.28		c0.04	0.04	0.02	c0.16	c0.18	
v/s Ratio Perm									0.03			
v/c Ratio	0.69	0.48		0.75	0.73		0.64	0.21	0.15	0.79	0.56	
Uniform Delay, d1	53.2	31.4		49.7	31.2		54.6	41.3	29.1	45.3	33.6	
Progression Factor	1.26	0.72		1.05	0.79		1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	4.9	0.9		9.0	1.9		8.7	0.2	0.1	10.1	0.6	
Delay (s)	71.9	23.6		61.2	26.4		63.3	41.6	29.1	55.5	34.2	
Level of Service	E	C		E	C		E	D	C	E	C	
Approach Delay (s)		33.4			30.4			42.0			40.4	
Approach LOS		C			C			D			D	

Intersection Summary			
HCM 2000 Control Delay	34.4	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.72		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	73.0%	ICU Level of Service	D
Analysis Period (min)	15		

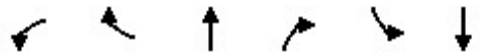
c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	90	1670	560	120	1160	360	460	350	180	300	260	40
Future Volume (vph)	90	1670	560	120	1160	360	460	350	180	300	260	40
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	3.1	4.0	4.0	1.6	4.0	4.0	3.6	4.0	4.0	
Lane Util. Factor	1.00	0.91	1.00	0.97	0.91	1.00	0.97	1.00	1.00	0.97	1.00	
Frpb, ped/bikes	1.00	1.00	0.99	1.00	1.00	0.96	1.00	1.00	0.98	1.00	1.00	
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.98	
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)	1770	5085	1567	3433	5085	1527	3433	1863	1558	3433	1822	
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (perm)	1770	5085	1567	3433	5085	1527	3433	1863	1558	3433	1822	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	98	1815	609	130	1261	391	500	380	196	326	283	43
RTOR Reduction (vph)	0	0	70	0	0	90	0	0	60	0	4	0
Lane Group Flow (vph)	98	1815	539	130	1261	301	500	380	136	326	322	0
Confl. Peds. (#/hr)	6		1	1		6			6	6		
Confl. Bikes (#/hr)			1			5						3
Turn Type	Prot	NA	pm+ov	Prot	NA	pm+ov	Prot	NA	pm+ov	Prot	NA	
Protected Phases	5	2	3	1	6	7	3	8	1	7	4	
Permitted Phases			2			6			8			
Actuated Green, G (s)	12.2	67.0	91.9	8.6	63.3	84.5	24.9	35.7	44.3	21.2	30.2	
Effective Green, g (s)	12.6	68.3	94.5	9.0	64.7	87.3	25.3	36.5	45.9	20.2	31.4	
Actuated g/C Ratio	0.08	0.46	0.63	0.06	0.43	0.58	0.17	0.24	0.31	0.13	0.21	
Clearance Time (s)	4.4	5.3	4.4	4.4	5.4	3.0	4.4	4.8	4.4	3.0	5.2	
Vehicle Extension (s)	2.0	4.4	2.0	2.0	4.4	2.0	2.0	3.8	2.0	2.0	2.0	
Lane Grp Cap (vph)	148	2315	987	205	2193	888	579	453	476	462	381	
v/s Ratio Prot	c0.06	c0.36	0.10	0.04	0.25	0.05	0.15	c0.20	0.02	0.09	c0.18	
v/s Ratio Perm			0.25			0.15			0.07			
v/c Ratio	0.66	0.78	0.55	0.63	0.58	0.34	0.86	0.84	0.28	0.71	0.85	
Uniform Delay, d1	66.6	34.6	15.7	68.9	32.3	16.3	60.7	54.0	39.6	62.1	57.0	
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	8.3	2.7	0.3	4.6	1.1	0.1	12.3	13.2	0.1	4.0	15.1	
Delay (s)	75.0	37.3	16.0	73.5	33.4	16.4	72.9	67.2	39.7	66.0	72.1	
Level of Service	E	D	B	E	C	B	E	E	D	E	E	
Approach Delay (s)		33.7			32.6			64.9			69.1	
Approach LOS		C			C			E			E	

Intersection Summary			
HCM 2000 Control Delay	42.7	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.82		
Actuated Cycle Length (s)	150.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	78.3%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	830	1790	930	0	0	870
Future Volume (vph)	830	1790	930	0	0	870
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	7.0	7.0	7.0			7.0
Lane Util. Factor	0.97	0.76	0.95			0.95
Frt	1.00	0.85	1.00			1.00
Flt Protected	0.95	1.00	1.00			1.00
Satd. Flow (prot)	3433	3610	3539			3539
Flt Permitted	0.95	1.00	1.00			1.00
Satd. Flow (perm)	3433	3610	3539			3539
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	902	1946	1011	0	0	946
RTOR Reduction (vph)	0	7	0	0	0	0
Lane Group Flow (vph)	902	1939	1011	0	0	946
Turn Type	Prot	Perm	NA			NA
Protected Phases	4		2			6
Permitted Phases		4				
Actuated Green, G (s)	71.1	71.1	41.5			41.5
Effective Green, g (s)	71.1	71.1	41.5			41.5
Actuated g/C Ratio	0.56	0.56	0.33			0.33
Clearance Time (s)	7.0	7.0	7.0			7.0
Vehicle Extension (s)	0.2	0.2	0.2			0.2
Lane Grp Cap (vph)	1928	2027	1160			1160
v/s Ratio Prot	0.26		c0.29			0.27
v/s Ratio Perm		c0.54				
v/c Ratio	0.47	0.96	0.87			0.82
Uniform Delay, d1	16.5	26.3	40.0			39.0
Progression Factor	1.00	1.00	1.00			1.00
Incremental Delay, d2	0.1	11.3	7.2			4.3
Delay (s)	16.6	37.5	47.2			43.3
Level of Service	B	D	D			D
Approach Delay (s)	30.9		47.2			43.3
Approach LOS	C		D			D

Intersection Summary			
HCM 2000 Control Delay	36.8	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.92		
Actuated Cycle Length (s)	126.6	Sum of lost time (s)	14.0
Intersection Capacity Utilization	79.1%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	380	420	310	80	540	700	460	510	130	420	700	390
Future Volume (vph)	380	420	310	80	540	700	460	510	130	420	700	390
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.9	4.0	4.0		4.0	4.0	4.9
Lane Util. Factor	0.97	1.00	1.00	1.00	0.95	1.00	0.97	0.95		0.97	0.95	1.00
Frpb, ped/bikes	1.00	1.00	0.99	1.00	1.00	0.99	1.00	1.00		1.00	1.00	0.99
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.97		1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	3433	1863	1568	1770	3539	1569	3433	3432		3433	3539	1562
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)	3433	1863	1568	1770	3539	1569	3433	3432		3433	3539	1562
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	413	457	337	87	587	761	500	554	141	457	761	424
RTOR Reduction (vph)	0	0	47	0	0	45	0	17	0	0	0	51
Lane Group Flow (vph)	413	457	290	87	587	716	500	678	0	457	761	373
Confl. Peds. (#/hr)	6		3	3		6	6					6
Turn Type	Prot	NA	pm+ov	Prot	NA	pm+ov	Prot	NA		Prot	NA	pm+ov
Protected Phases	5	2	3	1	6	7	3	8		7	4	5
Permitted Phases			2			6						4
Actuated Green, G (s)	18.1	42.2	67.1	8.0	32.1	70.5	24.9	31.7		38.4	45.2	63.3
Effective Green, g (s)	19.0	43.1	68.9	9.0	33.1	70.5	25.8	32.6		39.3	46.1	63.3
Actuated g/C Ratio	0.14	0.31	0.49	0.06	0.24	0.50	0.18	0.23		0.28	0.33	0.45
Clearance Time (s)	4.9	4.9	4.9	5.0	5.0	4.9	4.9	4.9		4.9	4.9	4.9
Vehicle Extension (s)	0.2	0.2	3.1	8.0	8.0	5.5	3.1	3.1		5.5	5.5	0.2
Lane Grp Cap (vph)	465	573	816	113	836	845	632	799		963	1165	706
v/s Ratio Prot	0.12	c0.25	0.07	0.05	0.17	c0.23	0.15	c0.20		0.13	0.22	0.07
v/s Ratio Perm			0.12			0.22						0.17
v/c Ratio	0.89	0.80	0.36	0.77	0.70	0.85	0.79	0.85		0.47	0.65	0.53
Uniform Delay, d1	59.5	44.4	21.9	64.5	48.9	30.1	54.5	51.3		41.8	40.1	27.6
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	17.8	11.0	0.3	37.4	4.9	8.9	6.7	8.4		0.9	2.0	0.3
Delay (s)	77.3	55.5	22.2	101.9	53.8	39.0	61.3	59.8		42.7	42.1	27.9
Level of Service	E	E	C	F	D	D	E	E		D	D	C
Approach Delay (s)		53.6			48.9			60.4			38.6	
Approach LOS		D			D			E			D	

Intersection Summary			
HCM 2000 Control Delay	49.3	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.89		
Actuated Cycle Length (s)	140.0	Sum of lost time (s)	17.8
Intersection Capacity Utilization	84.3%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			

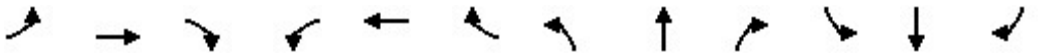
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	380	1870	200	510	1550	390	230	640	410	350	530	290
Future Volume (vph)	380	1870	200	510	1550	390	230	640	410	350	530	290
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0	4.4	4.0	4.0	3.5	4.0	4.0	3.5
Lane Util. Factor	0.97	0.86		0.97	0.86	1.00	1.00	0.95	1.00	0.97	0.95	1.00
Frpb, ped/bikes	1.00	0.99		1.00	1.00	0.93	1.00	1.00	0.96	1.00	1.00	0.96
Flpb, ped/bikes	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.99		1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	6238		3433	6408	1468	1770	3539	1526	3433	3539	1520
Flt Permitted	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	6238		3433	6408	1468	1770	3539	1526	3433	3539	1520
Peak-hour factor, PHF	0.92	0.95	0.92	0.92	0.95	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	413	1968	217	554	1632	424	250	696	446	380	576	315
RTOR Reduction (vph)	0	13	0	0	0	39	0	0	52	0	0	56
Lane Group Flow (vph)	413	2172	0	554	1632	385	250	696	394	380	576	259
Confl. Peds. (#/hr)	48		65	65		48	42		40	40		42
Turn Type	Prot	NA		Prot	NA	pm+ov	Prot	NA	pm+ov	Prot	NA	pm+ov
Protected Phases	5	2		1	6	7	3	8	1	7	4	5
Permitted Phases						6			8			4
Actuated Green, G (s)	21.2	52.6		24.0	55.5	74.4	20.9	30.7	54.7	18.9	28.7	49.9
Effective Green, g (s)	21.6	53.7		24.4	56.5	74.4	21.3	31.6	56.5	19.3	29.6	51.7
Actuated g/C Ratio	0.15	0.37		0.17	0.39	0.51	0.15	0.22	0.39	0.13	0.20	0.36
Clearance Time (s)	4.4	5.1		4.4	5.0	4.4	4.4	4.9	4.4	4.4	4.9	4.4
Vehicle Extension (s)	2.0	3.5		2.0	3.7	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lane Grp Cap (vph)	511	2310		577	2496	753	260	771	631	456	722	541
v/s Ratio Prot	0.12	c0.35		c0.16	0.25	0.07	0.14	c0.20	0.11	0.11	c0.16	0.07
v/s Ratio Perm						0.20			0.15			0.10
v/c Ratio	0.81	0.94		0.96	0.65	0.51	0.96	0.90	0.62	0.83	0.80	0.48
Uniform Delay, d1	59.7	44.1		59.8	36.2	23.3	61.4	55.2	35.7	61.3	54.9	36.2
Progression Factor	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	8.6	9.2		27.5	0.7	0.2	44.8	13.6	1.4	11.8	5.7	0.2
Delay (s)	68.3	53.3		87.3	36.9	23.5	106.2	68.8	37.1	73.1	60.6	36.4
Level of Service	E	D		F	D	C	F	E	D	E	E	D
Approach Delay (s)		55.7			45.4			65.3			58.3	
Approach LOS		E			D			E			E	

Intersection Summary			
HCM 2000 Control Delay	54.4	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.93		
Actuated Cycle Length (s)	145.0	Sum of lost time (s)	16.4
Intersection Capacity Utilization	94.6%	ICU Level of Service	F
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	720	290	430	480	0	0	0	0	400	550	1020
Future Volume (vph)	0	720	290	430	480	0	0	0	0	400	550	1020
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0	4.0	4.0	4.0					4.0	4.0	4.0
Lane Util. Factor		0.95	1.00	0.97	0.95					0.91	0.91	0.88
Frt		1.00	0.85	1.00	1.00					1.00	1.00	0.85
Flt Protected		1.00	1.00	0.95	1.00					0.95	1.00	1.00
Satd. Flow (prot)		3539	1583	3433	3539					1610	3390	2787
Flt Permitted		1.00	1.00	0.95	1.00					0.95	1.00	1.00
Satd. Flow (perm)		3539	1583	3433	3539					1610	3390	2787
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	783	315	467	522	0	0	0	0	435	598	1109
RTOR Reduction (vph)	0	0	148	0	0	0	0	0	0	0	0	182
Lane Group Flow (vph)	0	783	167	467	522	0	0	0	0	435	598	927
Turn Type		NA	Perm	Prot	NA					Perm	NA	Perm
Protected Phases		2		1	6						4	
Permitted Phases			2							4		4
Actuated Green, G (s)		35.9	35.9	16.0	56.3					53.9	53.9	53.9
Effective Green, g (s)		36.8	36.8	16.4	57.2					54.8	54.8	54.8
Actuated g/C Ratio		0.31	0.31	0.14	0.48					0.46	0.46	0.46
Clearance Time (s)		4.9	4.9	4.4	4.9					4.9	4.9	4.9
Vehicle Extension (s)		3.8	3.8	2.0	4.2					2.0	2.0	2.0
Lane Grp Cap (vph)		1085	485	469	1686					735	1548	1272
v/s Ratio Prot		c0.22		c0.14	0.15							
v/s Ratio Perm			0.11							0.27	0.18	c0.33
v/c Ratio		0.72	0.34	1.00	0.31					0.59	0.39	0.73
Uniform Delay, d1		37.0	32.3	51.8	19.3					24.3	21.5	26.5
Progression Factor		1.00	1.00	1.00	1.00					1.00	1.00	1.00
Incremental Delay, d2		4.2	1.9	40.1	0.5					0.9	0.1	1.8
Delay (s)		41.2	34.2	91.9	19.8					25.1	21.6	28.3
Level of Service		D	C	F	B					C	C	C
Approach Delay (s)		39.2			53.8			0.0			25.8	
Approach LOS		D			D			A			C	

Intersection Summary			
HCM 2000 Control Delay	35.8	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.77		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	60.1%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	1090	340	50	700	0	0	0	0	730	1100	660
Future Volume (vph)	0	1090	340	50	700	0	0	0	0	730	1100	660
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		6.7		4.0	6.7						6.3	4.0
Lane Util. Factor		0.91		1.00	0.95						0.86	0.86
Frt		0.96		1.00	1.00						1.00	0.85
Flt Protected		1.00		0.95	1.00						0.98	1.00
Satd. Flow (prot)		4904		1770	3539						4712	1362
Flt Permitted		1.00		0.95	1.00						0.98	1.00
Satd. Flow (perm)		4904		1770	3539						4712	1362
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	1185	370	54	761	0	0	0	0	793	1196	717
RTOR Reduction (vph)	0	34	0	0	0	0	0	0	0	0	0	51
Lane Group Flow (vph)	0	1521	0	54	761	0	0	0	0	0	1989	666
Turn Type		NA		Prot	NA					Perm	NA	Perm
Protected Phases		2		1	6						4	
Permitted Phases										4		4
Actuated Green, G (s)		30.7		3.4	36.8						41.2	41.2
Effective Green, g (s)		28.9		3.8	36.7						40.3	42.6
Actuated g/C Ratio		0.32		0.04	0.41						0.45	0.47
Clearance Time (s)		4.9		4.4	6.6						5.4	5.4
Vehicle Extension (s)		1.0		2.0	1.0						1.0	1.0
Lane Grp Cap (vph)		1574		74	1443						2109	644
v/s Ratio Prot		c0.31		0.03	c0.22							
v/s Ratio Perm											0.42	c0.49
v/c Ratio		0.97		0.73	0.53						1.05dl	1.03
Uniform Delay, d1		30.1		42.6	20.1						23.8	23.7
Progression Factor		1.00		1.00	1.00						1.00	1.00
Incremental Delay, d2		16.0		26.0	1.4						9.3	44.5
Delay (s)		46.1		68.6	21.5						33.0	68.2
Level of Service		D		E	C						C	E
Approach Delay (s)		46.1			24.6			0.0			42.3	
Approach LOS		D			C			A			D	

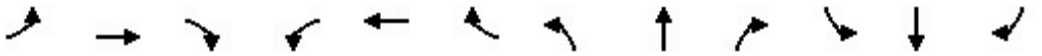
Intersection Summary			
HCM 2000 Control Delay	40.6	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	1.02		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	17.0
Intersection Capacity Utilization	87.1%	ICU Level of Service	E
Analysis Period (min)	15		

dl Defacto Left Lane. Recode with 1 though lane as a left lane.

c Critical Lane Group

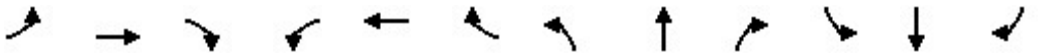
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	40	150	30	380	40	230	30	1590	360	250	530	20
Future Volume (vph)	40	150	30	380	40	230	30	1590	360	250	530	20
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.3	4.3		4.0	4.0		6.2	4.0	
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	0.91		0.97	0.91	
Frpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Flpb, ped/bikes	1.00	1.00		0.99	1.00		1.00	1.00		1.00	1.00	
Frt	1.00	0.97		1.00	0.87		1.00	0.97		1.00	0.99	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1770	1809		1757	1624		1770	4945		3433	5052	
Flt Permitted	0.45	1.00		0.56	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (perm)	842	1809		1042	1624		1770	4945		3433	5052	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	43	163	33	413	43	250	33	1728	391	272	576	22
RTOR Reduction (vph)	0	6	0	0	99	0	0	30	0	0	3	0
Lane Group Flow (vph)	43	190	0	413	194	0	33	2089	0	272	595	0
Confl. Peds. (#/hr)			9	9			2					2
Turn Type	Perm	NA		Perm	NA		Prot	NA		Prot	NA	
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4			8								
Actuated Green, G (s)	46.6	46.6		45.9	45.9		3.6	49.6		12.0	57.3	
Effective Green, g (s)	46.6	46.6		46.3	46.3		3.6	51.0		9.8	59.4	
Actuated g/C Ratio	0.38	0.38		0.38	0.38		0.03	0.42		0.08	0.49	
Clearance Time (s)	4.0	4.0		4.7	4.7		4.0	5.4		4.0	6.1	
Vehicle Extension (s)	2.0	2.0		3.0	3.0		2.0	4.8		2.0	3.7	
Lane Grp Cap (vph)	322	693		396	618		52	2073		276	2467	
v/s Ratio Prot		0.10			0.12		0.02	c0.42		c0.08	0.12	
v/s Ratio Perm	0.05			c0.40								
v/c Ratio	0.13	0.27		1.04	0.31		0.63	1.01		0.99	0.24	
Uniform Delay, d1	24.4	25.8		37.6	26.5		58.3	35.3		55.8	18.0	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	0.1	0.1		56.8	0.3		17.1	21.6		49.6	0.2	
Delay (s)	24.4	25.9		94.5	26.8		75.4	56.9		105.5	18.3	
Level of Service	C	C		F	C		E	E		F	B	
Approach Delay (s)		25.7			66.4			57.2			45.5	
Approach LOS		C			E			E			D	

Intersection Summary			
HCM 2000 Control Delay	54.4	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	1.02		
Actuated Cycle Length (s)	121.6	Sum of lost time (s)	14.5
Intersection Capacity Utilization	96.4%	ICU Level of Service	F
Analysis Period (min)	15		
c Critical Lane Group			



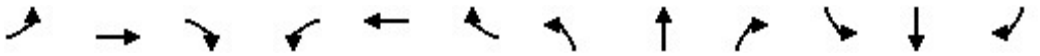
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	620	1050	290	240	950	160	450	1050	240	210	700	330
Future Volume (vph)	620	1050	290	240	950	160	450	1050	240	210	700	330
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0		4.0	4.0	4.9	4.0	4.0	4.0
Lane Util. Factor	0.97	0.91		1.00	0.91		0.97	0.91	1.00	1.00	0.91	1.00
Frpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00	0.99	1.00	1.00	0.99
Flpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.97		1.00	0.98		1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	4920		1770	4964		3433	5085	1562	1770	5085	1566
Flt Permitted	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	4920		1770	4964		3433	5085	1562	1770	5085	1566
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	674	1141	315	261	1033	174	489	1141	261	228	761	359
RTOR Reduction (vph)	0	46	0	0	21	0	0	0	203	0	0	42
Lane Group Flow (vph)	674	1410	0	261	1186	0	489	1141	58	228	761	317
Confl. Peds. (#/hr)	4					4	5		1	1		5
Turn Type	Prot	NA		Prot	NA		Prot	NA	Perm	Prot	NA	pm+ov
Protected Phases	7	4		3	8		5	2		1	6	7
Permitted Phases									2			6
Actuated Green, G (s)	21.1	34.8		16.8	29.9		16.3	24.3	24.3	14.1	22.0	43.1
Effective Green, g (s)	21.5	36.0		17.2	31.7		16.7	25.2	24.3	14.5	23.0	43.9
Actuated g/C Ratio	0.20	0.33		0.16	0.29		0.15	0.23	0.22	0.13	0.21	0.40
Clearance Time (s)	4.4	5.2		4.4	5.8		4.4	4.9	4.9	4.4	5.0	4.4
Vehicle Extension (s)	2.0	3.9		2.0	2.7		2.0	3.3	3.3	2.0	4.1	2.0
Lane Grp Cap (vph)	677	1626		279	1444		526	1176	348	235	1073	631
v/s Ratio Prot	c0.20	c0.29		0.15	0.24		c0.14	c0.22		0.13	0.15	0.10
v/s Ratio Perm									0.04			0.10
v/c Ratio	1.00	0.87		0.94	0.82		0.93	0.97	0.17	0.97	0.71	0.50
Uniform Delay, d1	43.7	34.2		45.3	36.0		45.5	41.5	34.1	47.0	39.8	24.3
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	33.2	5.3		36.3	3.8		22.6	20.0	1.0	49.9	4.0	0.2
Delay (s)	76.9	39.5		81.6	39.8		68.1	61.5	35.2	96.9	43.8	24.5
Level of Service	E	D		F	D		E	E	D	F	D	C
Approach Delay (s)		51.4			47.2			59.6			47.7	
Approach LOS		D			D			E			D	

Intersection Summary			
HCM 2000 Control Delay	52.0	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.97		
Actuated Cycle Length (s)	108.9	Sum of lost time (s)	16.0
Intersection Capacity Utilization	85.4%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	580	300	70	20	160	150	90	100	110	20	20	40
Future Volume (vph)	580	300	70	20	160	150	90	100	110	20	20	40
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		3.1	4.0			4.0			4.0	
Lane Util. Factor	1.00	1.00		1.00	1.00			1.00			1.00	
Frpb, ped/bikes	1.00	0.99		1.00	0.99			0.99			0.99	
Flpb, ped/bikes	1.00	1.00		1.00	1.00			1.00			1.00	
Frt	1.00	0.97		1.00	0.93			0.95			0.93	
Flt Protected	0.95	1.00		0.95	1.00			0.99			0.99	
Satd. Flow (prot)	1770	1800		1770	1709			1724			1696	
Flt Permitted	0.95	1.00		0.95	1.00			0.88			0.84	
Satd. Flow (perm)	1770	1800		1770	1709			1538			1437	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	630	326	76	22	174	163	98	109	120	22	22	43
RTOR Reduction (vph)	0	8	0	0	35	0	0	24	0	0	33	0
Lane Group Flow (vph)	630	394	0	22	302	0	0	303	0	0	54	0
Confl. Peds. (#/hr)	1		3	3		1	1		4	4		1
Turn Type	Prot	NA		Prot	NA		Perm	NA		Perm	NA	
Protected Phases	5	2		1	6			8			4	
Permitted Phases							8			4		
Actuated Green, G (s)	32.0	53.8		1.5	22.9			18.7			18.7	
Effective Green, g (s)	32.4	54.7		2.4	23.8			19.6			19.6	
Actuated g/C Ratio	0.37	0.62		0.03	0.27			0.22			0.22	
Clearance Time (s)	4.4	4.9		4.0	4.9			4.9			4.9	
Vehicle Extension (s)	1.0	2.0		3.0	2.0			2.0			2.0	
Lane Grp Cap (vph)	653	1121		48	463			343			320	
v/s Ratio Prot	c0.36	0.22		0.01	c0.18							
v/s Ratio Perm								c0.20			0.04	
v/c Ratio	0.96	0.35		0.46	0.65			0.88			0.17	
Uniform Delay, d1	27.1	8.0		42.1	28.3			33.0			27.5	
Progression Factor	1.00	1.00		1.00	1.00			1.00			1.00	
Incremental Delay, d2	26.3	0.9		6.8	7.0			21.9			0.1	
Delay (s)	53.5	8.9		48.9	35.3			54.9			27.6	
Level of Service	D	A		D	D			D			C	
Approach Delay (s)		36.1			36.1			54.9			27.6	
Approach LOS		D			D			D			C	

Intersection Summary			
HCM 2000 Control Delay	39.1	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.85		
Actuated Cycle Length (s)	87.8	Sum of lost time (s)	12.0
Intersection Capacity Utilization	83.6%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	440	1410	160	220	840	220	100	430	240	310	220	160
Future Volume (vph)	440	1410	160	220	840	220	100	430	240	310	220	160
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0		4.0	4.0	4.0	4.0	4.0	
Lane Util. Factor	0.97	0.91		1.00	0.91		1.00	0.95	1.00	1.00	0.95	
Frpb, ped/bikes	1.00	0.99		1.00	0.99		1.00	1.00	0.97	1.00	0.96	
Flpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	
Frt	1.00	0.98		1.00	0.97		1.00	1.00	0.85	1.00	0.94	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)	3433	4976		1770	4857		1770	3539	1533	1770	3180	
Flt Permitted	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (perm)	3433	4976		1770	4857		1770	3539	1533	1770	3180	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	478	1533	174	239	913	239	109	467	261	337	239	174
RTOR Reduction (vph)	0	10	0	0	31	0	0	0	38	0	89	0
Lane Group Flow (vph)	478	1697	0	239	1121	0	109	467	223	337	324	0
Confl. Peds. (#/hr)	26		26	26		26	41		25	25		41
Confl. Bikes (#/hr)			8			2			13			8
Turn Type	Prot	NA		Prot	NA		Prot	NA	pm+ov	Prot	NA	
Protected Phases	5	2		1	6		3	8	1	7	4	
Permitted Phases									8			
Actuated Green, G (s)	22.6	51.9		20.2	49.0		13.0	25.1	45.3	29.1	41.3	
Effective Green, g (s)	23.0	52.8		20.6	50.4		13.4	26.1	46.1	29.5	42.2	
Actuated g/C Ratio	0.16	0.36		0.14	0.35		0.09	0.18	0.32	0.20	0.29	
Clearance Time (s)	4.4	4.9		4.4	5.4		4.4	5.0	4.4	4.4	4.9	
Vehicle Extension (s)	2.0	4.2		2.0	3.0		2.0	4.0	2.0	2.0	2.6	
Lane Grp Cap (vph)	544	1811		251	1688		163	637	487	360	925	
v/s Ratio Prot	0.14	c0.34		c0.14	0.23		0.06	c0.13	0.07	c0.19	0.10	
v/s Ratio Perm									0.08			
v/c Ratio	0.88	0.94		0.95	0.66		0.67	0.73	0.46	0.94	0.35	
Uniform Delay, d1	59.6	44.5		61.7	40.1		63.7	56.2	39.5	56.8	40.6	
Progression Factor	1.02	0.90		0.91	1.00		1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	12.1	9.0		39.2	1.8		7.8	4.6	0.3	30.9	0.2	
Delay (s)	73.0	49.3		95.3	42.1		71.4	60.8	39.7	87.7	40.8	
Level of Service	E	D		F	D		E	E	D	F	D	
Approach Delay (s)		54.5			51.2			55.6			61.8	
Approach LOS		D			D			E			E	

Intersection Summary			
HCM 2000 Control Delay	54.9	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.90		
Actuated Cycle Length (s)	145.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	92.6%	ICU Level of Service	F
Analysis Period (min)	15		

c Critical Lane Group

Queuing Reports

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	65	1239	435	174	1446	196	522	435	163	630	434
v/c Ratio	1.14	0.84	0.59	0.61	1.21	0.33	0.65	0.93	0.33	1.38	0.87
Control Delay	218.4	51.2	8.5	70.2	139.5	13.5	52.1	76.4	12.2	223.4	63.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	218.4	51.2	8.5	70.2	139.5	13.5	52.1	76.4	12.2	223.4	63.0
Queue Length 50th (ft)	~66	368	21	78	~810	41	215	371	21	~741	349
Queue Length 95th (ft)	#166	427	115	#127	#950	105	#309	#566	80	#976	455
Internal Link Dist (ft)		2325			484			648			1369
Turn Bay Length (ft)											
Base Capacity (vph)	57	1533	752	284	1200	592	808	480	499	456	589
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	1.14	0.81	0.58	0.61	1.21	0.33	0.65	0.91	0.33	1.38	0.74

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Lane Group	WBL	WBR	NBT	SBT
Lane Group Flow (vph)	598	1293	402	707
v/c Ratio	0.42	0.88	0.41	0.72
Control Delay	11.0	17.0	15.5	20.3
Queue Delay	0.0	0.0	0.0	0.0
Total Delay	11.0	17.0	15.5	20.3
Queue Length 50th (ft)	52	92	50	96
Queue Length 95th (ft)	106	#290	79	143
Internal Link Dist (ft)	810		406	1779
Turn Bay Length (ft)				
Base Capacity (vph)	1634	1598	1837	1837
Starvation Cap Reductn	0	0	0	0
Spillback Cap Reductn	0	0	0	0
Storage Cap Reductn	0	0	0	0
Reduced v/c Ratio	0.37	0.81	0.22	0.38

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT	SBR
Lane Group Flow (vph)	478	326	293	33	152	315	207	554	478	565	261
v/c Ratio	1.04	0.45	0.31	0.32	0.28	0.46	0.72	0.75	1.04	0.52	0.26
Control Delay	97.7	31.2	8.2	67.6	46.7	20.5	64.0	51.4	97.7	37.8	2.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	97.7	31.2	8.2	67.6	46.7	20.5	64.0	51.4	97.7	37.8	2.5
Queue Length 50th (ft)	~381	193	60	24	54	122	148	204	~381	184	0
Queue Length 95th (ft)	#781	316	120	68	94	227	273	307	#781	301	44
Internal Link Dist (ft)		611			563			507		730	
Turn Bay Length (ft)											
Base Capacity (vph)	458	875	1012	103	949	680	384	1085	458	1246	988
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	1.04	0.37	0.29	0.32	0.16	0.46	0.54	0.51	1.04	0.45	0.26

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT	SBR
Lane Group Flow (vph)	120	120	120	98	109	185	87	402	98	446	98
v/c Ratio	0.48	0.45	0.29	0.40	0.42	0.49	0.43	0.25	0.52	0.24	0.11
Control Delay	50.8	49.7	6.7	48.9	49.4	9.9	61.5	22.6	73.0	14.7	4.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	50.8	49.7	6.7	48.9	49.4	9.9	61.5	22.6	73.0	14.7	4.3
Queue Length 50th (ft)	93	93	0	73	81	0	34	83	81	38	0
Queue Length 95th (ft)	127	126	39	102	112	54	#63	193	m#178	231	m72
Internal Link Dist (ft)		644			610			685		849	
Turn Bay Length (ft)											
Base Capacity (vph)	502	529	419	514	541	582	201	1640	187	1837	870
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.24	0.23	0.29	0.19	0.20	0.32	0.43	0.25	0.52	0.24	0.11

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.

Lane Group	EBT	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	77	88	65	815	33	620
v/c Ratio	0.20	0.21	0.10	0.34	0.06	0.28
Control Delay	11.1	10.2	5.4	6.9	5.5	8.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	11.1	10.2	5.4	6.9	5.5	8.1
Queue Length 50th (ft)	6	6	4	33	2	24
Queue Length 95th (ft)	40	42	26	171	16	127
Internal Link Dist (ft)	218	191		927		475
Turn Bay Length (ft)						
Base Capacity (vph)	1017	1004	638	2807	559	2821
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.08	0.09	0.10	0.29	0.06	0.22

Intersection Summary

Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	239	1772	370	1957	326	130	359	228	250	304	196
v/c Ratio	0.79	0.85	1.05	0.89	0.38	0.87	0.43	0.37	0.80	0.35	0.32
Control Delay	67.5	33.8	108.6	35.5	7.1	93.7	34.2	11.0	67.5	32.7	9.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	67.5	33.8	108.6	35.5	7.1	93.7	34.2	11.0	67.5	32.7	9.7
Queue Length 50th (ft)	83	423	~146	~488	47	88	96	42	87	81	31
Queue Length 95th (ft)	#157	#541	#241	#605	93	#198	136	93	#164	117	77
Internal Link Dist (ft)		286		607			736			927	
Turn Bay Length (ft)											
Base Capacity (vph)	301	2087	352	2193	869	150	1108	616	312	1085	607
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.79	0.85	1.05	0.89	0.38	0.87	0.32	0.37	0.80	0.28	0.32

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Lane Group	WBL	NBT	SBL	SBT
Lane Group Flow (vph)	163	739	163	750
v/c Ratio	0.52	0.41	0.54	0.29
Control Delay	25.5	13.0	29.5	4.4
Queue Delay	0.0	0.0	0.0	0.0
Total Delay	25.5	13.0	29.5	4.4
Queue Length 50th (ft)	46	92	53	45
Queue Length 95th (ft)	95	165	107	87
Internal Link Dist (ft)	266	258		736
Turn Bay Length (ft)				
Base Capacity (vph)	497	1821	374	2581
Starvation Cap Reductn	0	0	0	0
Spillback Cap Reductn	0	0	0	0
Storage Cap Reductn	0	0	0	0
Reduced v/c Ratio	0.33	0.41	0.44	0.29

Intersection Summary

Lane Group	EBT	WBT	WBR	SBL	SBR
Lane Group Flow (vph)	891	1402	717	457	185
v/c Ratio	0.48	0.76	0.45	0.62	0.38
Control Delay	11.1	16.1	5.5	28.6	7.9
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	11.1	16.1	5.5	28.6	7.9
Queue Length 50th (ft)	70	136	14	62	0
Queue Length 95th (ft)	247	#517	114	#224	57
Internal Link Dist (ft)	776	812		135	
Turn Bay Length (ft)					
Base Capacity (vph)	2402	2402	1598	738	485
Starvation Cap Reductn	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.37	0.58	0.45	0.62	0.38

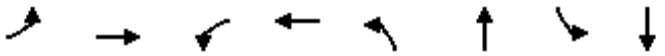
Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Lane Group	WBL	WBR	NBT	SBL	SBT
Lane Group Flow (vph)	33	54	522	141	717
v/c Ratio	0.16	0.23	0.16	0.67	0.17
Control Delay	39.8	10.5	22.1	61.3	4.4
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	39.8	10.5	22.1	61.3	4.4
Queue Length 50th (ft)	23	0	79	97	21
Queue Length 95th (ft)	36	26	m157	156	117
Internal Link Dist (ft)	700		918		563
Turn Bay Length (ft)					
Base Capacity (vph)	645	611	3247	331	4173
Starvation Cap Reductn	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.05	0.09	0.16	0.43	0.17

Intersection Summary

m Volume for 95th percentile queue is metered by upstream signal.



Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	87	174	174	282	217	555	130	685
v/c Ratio	0.36	0.56	0.53	0.81	0.79	0.37	0.17	0.52
Control Delay	44.8	24.6	49.0	58.6	64.9	28.4	33.6	27.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	44.8	24.6	49.0	58.6	64.9	28.4	33.6	27.3
Queue Length 50th (ft)	59	49	112	171	146	97	37	176
Queue Length 95th (ft)	88	96	#217	#371	#269	153	72	317
Internal Link Dist (ft)		610		1546		668		918
Turn Bay Length (ft)								
Base Capacity (vph)	497	542	328	347	294	1516	756	1314
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.18	0.32	0.53	0.81	0.74	0.37	0.17	0.52

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Lane Group	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	87	76	76	33	717	98	826
v/c Ratio	0.28	0.31	0.27	0.18	0.56	0.14	0.45
Control Delay	25.7	37.1	18.9	40.2	26.5	28.8	17.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	25.7	37.1	18.9	40.2	26.5	28.8	17.9
Queue Length 50th (ft)	24	24	7	11	82	14	93
Queue Length 95th (ft)	81	103	61	58	227	55	342
Internal Link Dist (ft)	465		807		727		668
Turn Bay Length (ft)							
Base Capacity (vph)	1104	924	894	227	2666	1792	2763
Starvation Cap Reductn	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.08	0.08	0.09	0.15	0.27	0.05	0.30

Intersection Summary

Lane Group	EBT	EBR	WBT	WBR	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	44	54	44	43	65	717	43	836
v/c Ratio	0.20	0.14	0.23	0.11	0.34	0.21	0.22	0.26
Control Delay	20.6	0.7	22.0	0.6	23.2	3.6	25.4	7.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	20.6	0.7	22.0	0.6	23.2	3.6	25.4	7.2
Queue Length 50th (ft)	13	0	14	0	25	10	13	47
Queue Length 95th (ft)	30	0	31	0	m47	51	38	98
Internal Link Dist (ft)	286		160			994		727
Turn Bay Length (ft)								
Base Capacity (vph)	411	587	384	587	193	3403	196	3236
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.11	0.09	0.11	0.07	0.34	0.21	0.22	0.26

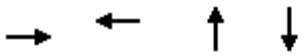
Intersection Summary

m Volume for 95th percentile queue is metered by upstream signal.

Lane Group	EBL	EBT	EBR2	WBT	WBR	NBR2	SBL2	SBL	SBT	SBR	NWL	NWR
Lane Group Flow (vph)	217	1652	195	2337	446	109	179	228	234	109	207	218
v/c Ratio	0.74	0.59	0.23	0.96	0.47	0.11	0.73	0.97	0.96	0.35	0.98	0.49
Control Delay	65.1	15.3	2.2	38.2	7.3	0.2	56.6	93.8	91.1	12.0	106.2	23.0
Queue Delay	0.0	0.0	0.0	43.9	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	65.1	15.3	2.2	82.1	7.5	0.2	56.6	93.8	91.1	12.0	106.2	23.0
Queue Length 50th (ft)	78	266	0	561	68	0	129	179	182	0	148	32
Queue Length 95th (ft)	#131	313	34	#694	108	0	#236	#349	#357	46	#298	74
Internal Link Dist (ft)		607		437					994		422	
Turn Bay Length (ft)												
Base Capacity (vph)	293	2792	862	2450	946	1037	246	235	243	315	211	447
Starvation Cap Reductn	0	0	0	404	103	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.74	0.59	0.23	1.14	0.53	0.11	0.73	0.97	0.96	0.35	0.98	0.49

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.



Lane Group	EBT	WBT	NBT	SBT
Lane Group Flow (vph)	272	272	228	88
v/c Ratio	0.58	0.70	0.26	0.09
Control Delay	16.5	23.2	5.9	4.9
Queue Delay	0.0	0.0	0.0	0.0
Total Delay	16.5	23.2	5.9	4.9
Queue Length 50th (ft)	48	55	19	6
Queue Length 95th (ft)	103	118	63	27
Internal Link Dist (ft)	271	339	940	771
Turn Bay Length (ft)				
Base Capacity (vph)	989	834	889	928
Starvation Cap Reductn	0	0	0	0
Spillback Cap Reductn	0	0	0	0
Storage Cap Reductn	0	0	0	0
Reduced v/c Ratio	0.28	0.33	0.26	0.09

Intersection Summary

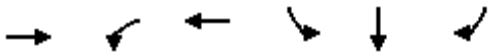
Lane Group	NBL	NBT	SBT	SEL	SER
Lane Group Flow (vph)	304	663	728	217	207
v/c Ratio	0.79	0.17	0.28	0.73	0.47
Control Delay	66.3	0.8	20.1	60.7	8.9
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	66.3	0.8	20.1	60.7	8.9
Queue Length 50th (ft)	214	6	145	161	0
Queue Length 95th (ft)	218	9	202	229	61
Internal Link Dist (ft)		764	913	479	
Turn Bay Length (ft)					
Base Capacity (vph)	575	3886	2578	545	631
Starvation Cap Reductn	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.53	0.17	0.28	0.40	0.33

Intersection Summary

Lane Group	EBL	EBR	WBL	WBT	SBT
Lane Group Flow (vph)	33	109	500	533	87
v/c Ratio	0.16	0.27	0.48	0.69	0.27
Control Delay	19.1	6.3	3.4	19.8	20.4
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	19.1	6.3	3.4	19.8	20.4
Queue Length 50th (ft)	8	0	0	110	20
Queue Length 95th (ft)	27	31	53	#322	57
Internal Link Dist (ft)				363	564
Turn Bay Length (ft)					
Base Capacity (vph)	372	661	1125	899	693
Starvation Cap Reductn	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.09	0.16	0.44	0.59	0.13

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.



Lane Group	EBT	WBL	WBT	SBL	SBT	SBR
Lane Group Flow (vph)	1794	500	2620	352	333	163
v/c Ratio	0.90	1.09	0.60	0.81	0.74	0.36
Control Delay	45.1	94.7	1.0	61.3	55.3	27.9
Queue Delay	46.8	2.9	1.8	0.4	0.2	0.0
Total Delay	91.8	97.7	2.8	61.7	55.5	27.9
Queue Length 50th (ft)	521	~499	18	307	284	78
Queue Length 95th (ft)	590	m#546	m18	397	368	132
Internal Link Dist (ft)	437		346		833	
Turn Bay Length (ft)						
Base Capacity (vph)	2070	457	4374	535	557	540
Starvation Cap Reductn	447	32	1522	0	0	0
Spillback Cap Reductn	0	0	0	23	23	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	1.11	1.18	0.92	0.69	0.62	0.30

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

Lane Group	EBT	WBL	WBT	NBL	NBR	SBL	SBT
Lane Group Flow (vph)	468	174	261	152	174	250	261
v/c Ratio	0.30	0.33	0.13	0.66	0.21	0.74	0.73
Control Delay	23.1	16.4	14.0	67.3	4.8	61.8	60.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.2
Total Delay	23.1	16.4	14.0	67.3	4.8	61.8	60.8
Queue Length 50th (ft)	116	65	50	124	0	199	206
Queue Length 95th (ft)	204	130	90	189	52	274	282
Internal Link Dist (ft)	422		400				360
Turn Bay Length (ft)							
Base Capacity (vph)	1576	592	2073	364	818	447	469
Starvation Cap Reductn	0	0	0	0	0	0	21
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.30	0.29	0.13	0.42	0.21	0.56	0.58

Intersection Summary

Lane Group	EBL	NBL	NBT	SBT
Lane Group Flow (vph)	316	380	500	685
v/c Ratio	0.82	0.81	0.13	0.32
Control Delay	51.5	53.8	7.4	23.6
Queue Delay	0.0	0.0	0.0	0.0
Total Delay	51.5	53.8	7.4	23.6
Queue Length 50th (ft)	180	292	51	115
Queue Length 95th (ft)	262	395	86	190
Internal Link Dist (ft)	648		913	1745
Turn Bay Length (ft)				
Base Capacity (vph)	511	775	3759	2142
Starvation Cap Reductn	0	0	0	0
Spillback Cap Reductn	0	0	0	0
Storage Cap Reductn	0	0	0	0
Reduced v/c Ratio	0.62	0.49	0.13	0.32

Intersection Summary

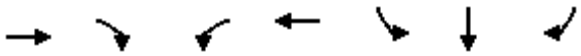
Lane Group	EBL	EBT	WBT	WBR	NBT
Lane Group Flow (vph)	54	2152	3033	696	652
v/c Ratio	0.34	0.64	1.08	0.69	0.69
Control Delay	48.6	13.6	72.1	18.0	46.0
Queue Delay	0.0	0.5	10.4	0.0	0.2
Total Delay	48.6	14.1	82.5	18.0	46.2
Queue Length 50th (ft)	36	257	~1217	294	245
Queue Length 95th (ft)	m47	342	#1295	471	309
Internal Link Dist (ft)		346	988		517
Turn Bay Length (ft)					
Base Capacity (vph)	183	3361	2819	1012	1129
Starvation Cap Reductn	0	657	0	0	0
Spillback Cap Reductn	0	0	143	0	75
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.30	0.80	1.13	0.69	0.62

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

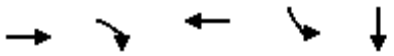
m Volume for 95th percentile queue is metered by upstream signal.



Lane Group	EBT	EBR	WBL	WBT	SBL	SBT	SBR
Lane Group Flow (vph)	380	207	587	565	213	482	446
v/c Ratio	0.28	0.29	0.83	0.25	0.52	0.56	0.71
Control Delay	18.8	7.9	42.4	7.1	29.3	27.8	14.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	18.8	7.9	42.4	7.1	29.3	27.8	14.7
Queue Length 50th (ft)	70	19	140	54	101	115	58
Queue Length 95th (ft)	111	69	#229	96	156	148	146
Internal Link Dist (ft)	269			774		2836	
Turn Bay Length (ft)							
Base Capacity (vph)	1381	708	722	2284	521	1087	718
Starvation Cap Reductn	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.28	0.29	0.81	0.25	0.41	0.44	0.62

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.



Lane Group	EBT	EBR	WBT	SBL	SBT
Lane Group Flow (vph)	207	174	609	511	1771
v/c Ratio	0.30	0.28	0.62	0.57	0.69
Control Delay	16.1	11.3	20.1	14.2	12.6
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	16.1	11.3	20.1	14.2	12.6
Queue Length 50th (ft)	57	31	101	130	163
Queue Length 95th (ft)	103	72	151	214	211
Internal Link Dist (ft)	458		806		986
Turn Bay Length (ft)					
Base Capacity (vph)	687	619	986	898	2574
Starvation Cap Reductn	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.30	0.28	0.62	0.57	0.69

Intersection Summary

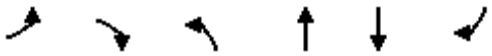
Lane Group	EBT	WBL	WBT	SBT	SBR
Lane Group Flow (vph)	804	43	587	957	554
v/c Ratio	0.66	0.31	0.39	0.94dl	0.84
Control Delay	22.3	43.5	11.6	17.6	25.4
Queue Delay	0.0	0.0	0.2	0.5	0.0
Total Delay	22.3	43.5	11.9	18.1	25.4
Queue Length 50th (ft)	151	19	60	110	146
Queue Length 95th (ft)	#214	m44	77	152	#368
Internal Link Dist (ft)	458		157	1023	
Turn Bay Length (ft)					
Base Capacity (vph)	1218	139	1519	1738	663
Starvation Cap Reductn	0	0	345	0	0
Spillback Cap Reductn	1	0	0	366	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.66	0.31	0.50	0.70	0.84

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

dl Defacto Left Lane. Recode with 1 though lane as a left lane.



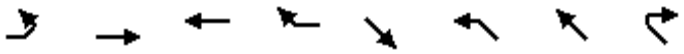
Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Group Flow (vph)	141	1207	1978	826	717	141
v/c Ratio	0.65	0.68	1.13	0.20	0.53	0.21
Control Delay	63.2	15.2	78.4	1.8	32.3	21.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	63.2	15.2	78.4	1.8	32.3	21.3
Queue Length 50th (ft)	106	272	~930	28	205	98
Queue Length 95th (ft)	166	345	m#1068	m58	248	144
Internal Link Dist (ft)	812			696	764	
Turn Bay Length (ft)						
Base Capacity (vph)	354	1769	1750	4117	1356	792
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.40	0.68	1.13	0.20	0.53	0.18

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

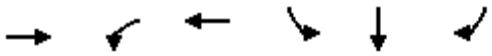
m Volume for 95th percentile queue is metered by upstream signal.



Lane Group	EBL	EBT	WBT	WBR	SET	NWL	NWT	NWR
Lane Group Flow (vph)	109	337	739	348	130	147	147	196
v/c Ratio	0.59	0.20	0.61	0.45	0.47	0.70	0.64	0.37
Control Delay	42.5	10.9	22.6	4.9	10.9	40.9	35.6	5.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	42.5	10.9	22.6	4.9	10.9	40.9	35.6	5.9
Queue Length 50th (ft)	38	37	127	0	0	48	47	0
Queue Length 95th (ft)	#110	69	#231	57	37	#136	#128	43
Internal Link Dist (ft)		323	269		463		382	
Turn Bay Length (ft)								
Base Capacity (vph)	186	1685	1214	771	472	250	270	585
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.59	0.20	0.61	0.45	0.28	0.59	0.54	0.34

Intersection Summary

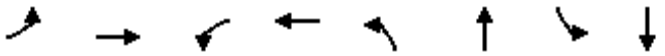
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.



Lane Group	EBT	WBL	WBT	SBL	SBT	SBR
Lane Group Flow (vph)	293	391	663	100	118	261
v/c Ratio	0.47	0.84	0.81	0.31	0.36	0.34
Control Delay	24.4	35.5	26.0	27.8	28.6	8.1
Queue Delay	0.0	0.0	0.9	0.0	0.0	0.0
Total Delay	24.4	35.5	27.0	27.8	28.6	8.1
Queue Length 50th (ft)	51	127	210	38	46	34
Queue Length 95th (ft)	92	#333	#469	87	100	81
Internal Link Dist (ft)	435		323		512	
Turn Bay Length (ft)						
Base Capacity (vph)	924	593	1042	501	509	888
Starvation Cap Reductn	0	0	161	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.32	0.66	0.75	0.20	0.23	0.29

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.



Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	22	66	478	294	43	1674	152	945
v/c Ratio	0.07	0.10	0.95	0.42	0.39	0.89	0.78	0.41
Control Delay	18.1	10.8	58.8	15.5	50.7	33.4	66.1	16.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	18.1	10.8	58.8	15.5	50.7	33.4	66.1	16.7
Queue Length 50th (ft)	8	12	256	78	24	319	85	131
Queue Length 95th (ft)	24	37	#453	146	57	#401	#184	168
Internal Link Dist (ft)		526		458		1888		582
Turn Bay Length (ft)								
Base Capacity (vph)	341	694	518	721	120	1876	199	2311
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.06	0.10	0.92	0.41	0.36	0.89	0.76	0.41

Intersection Summary

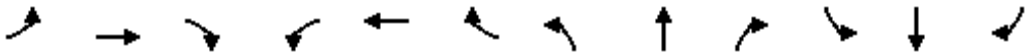
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT	SBR
Lane Group Flow (vph)	707	761	163	978	326	859	120	772	272
v/c Ratio	1.27	0.49	0.75	1.11	1.26	0.72	0.92	0.93	0.34
Control Delay	171.6	26.4	76.0	109.4	190.4	48.9	120.1	72.1	13.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	171.6	26.4	76.0	109.4	190.4	48.9	120.1	72.1	13.0
Queue Length 50th (ft)	~749	228	134	~489	~344	241	102	238	80
Queue Length 95th (ft)	#987	298	209	#625	#533	291	#225	#319	141
Internal Link Dist (ft)		403		458		623		529	
Turn Bay Length (ft)									
Base Capacity (vph)	558	1544	262	880	258	1186	130	829	802
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	1.27	0.49	0.62	1.11	1.26	0.72	0.92	0.93	0.34

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

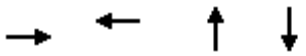
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	141	467	163	359	435	120	250	130	228	87	163	109
v/c Ratio	0.69	0.35	0.11	0.83	0.32	0.17	0.81	0.31	0.30	0.50	0.15	0.26
Control Delay	59.8	23.3	3.2	58.2	22.7	5.7	64.0	31.4	4.9	51.0	27.2	6.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	59.8	23.3	3.2	58.2	22.7	5.7	64.0	31.4	4.9	51.0	27.2	6.3
Queue Length 50th (ft)	70	85	0	93	78	0	65	63	9	43	27	0
Queue Length 95th (ft)	#192	176	21	#221	164	40	#168	114	54	106	43	36
Internal Link Dist (ft)		731			423			1745			245	
Turn Bay Length (ft)									100			
Base Capacity (vph)	223	1330	1504	432	1370	686	308	669	748	235	2050	704
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.63	0.35	0.11	0.83	0.32	0.17	0.81	0.19	0.30	0.37	0.08	0.15

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.



Lane Group	EBT	WBT	NBT	SBT
Lane Group Flow (vph)	478	402	522	77
v/c Ratio	0.58	0.40	0.94	0.17
Control Delay	12.5	7.5	47.2	12.5
Queue Delay	0.0	0.0	0.0	0.0
Total Delay	12.5	7.5	47.2	12.5
Queue Length 50th (ft)	114	63	184	13
Queue Length 95th (ft)	199	116	#369	42
Internal Link Dist (ft)	342	520	255	125
Turn Bay Length (ft)				
Base Capacity (vph)	825	1001	575	467
Starvation Cap Reductn	0	0	0	0
Spillback Cap Reductn	0	0	0	0
Storage Cap Reductn	0	0	0	0
Reduced v/c Ratio	0.58	0.40	0.91	0.16

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

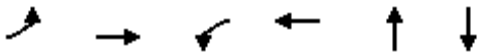
Lane Group	EBT	WBL	WBT	NBL	NBR
Lane Group Flow (vph)	750	261	739	163	163
v/c Ratio	0.38	0.79	0.34	0.39	0.33
Control Delay	13.9	47.0	7.8	20.7	5.0
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	13.9	47.0	7.8	20.7	5.0
Queue Length 50th (ft)	52	81	45	49	0
Queue Length 95th (ft)	115	#246	133	91	35
Internal Link Dist (ft)	423		279	871	
Turn Bay Length (ft)					
Base Capacity (vph)	1960	329	2163	749	764
Starvation Cap Reductn	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.38	0.79	0.34	0.22	0.21

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

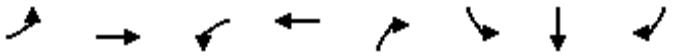
Lane Group	EBT	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	511	76	283	336	22	141
v/c Ratio	0.86	0.11	0.52	0.42	0.06	0.18
Control Delay	29.3	7.1	18.4	14.4	12.9	6.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	29.3	7.1	18.4	14.4	12.9	6.7
Queue Length 50th (ft)	138	10	66	70	4	10
Queue Length 95th (ft)	251	28	166	164	19	46
Internal Link Dist (ft)	520	293		203		240
Turn Bay Length (ft)						
Base Capacity (vph)	846	1008	541	804	393	776
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.60	0.08	0.52	0.42	0.06	0.18

Intersection Summary



Lane Group	EBL	EBT	WBL	WBT	NBT	SBT
Lane Group Flow (vph)	54	782	250	881	435	66
v/c Ratio	0.16	0.44	0.54	0.52	0.79	0.15
Control Delay	9.7	12.5	12.5	13.9	21.7	9.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	9.7	12.5	12.5	13.9	21.7	9.5
Queue Length 50th (ft)	7	49	37	113	81	8
Queue Length 95th (ft)	29	109	105	223	174	31
Internal Link Dist (ft)		279		609	1265	205
Turn Bay Length (ft)						
Base Capacity (vph)	341	1766	549	1698	834	737
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.16	0.44	0.46	0.52	0.52	0.09

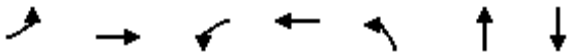
Intersection Summary



Lane Group	EBL	EBT	WBL	WBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	435	326	11	990	22	113	267	348
v/c Ratio	0.74	0.16	0.09	0.76	0.01	0.24	0.55	0.53
Control Delay	37.0	8.5	35.0	23.7	0.0	19.5	24.9	7.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	37.0	8.5	35.0	23.7	0.0	19.5	24.9	7.4
Queue Length 50th (ft)	86	24	4	166	0	37	98	17
Queue Length 95th (ft)	#186	80	21	#349	0	73	163	72
Internal Link Dist (ft)		609		486			881	
Turn Bay Length (ft)								
Base Capacity (vph)	615	2023	118	1298	1590	786	812	896
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.71	0.16	0.09	0.76	0.01	0.14	0.33	0.39

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.



Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBT
Lane Group Flow (vph)	33	870	76	1598	250	109	152
v/c Ratio	0.43	0.46	0.66	0.75	0.88	0.24	0.41
Control Delay	73.2	16.7	55.5	28.8	71.7	12.6	36.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	73.2	16.7	55.5	28.8	71.7	12.6	36.8
Queue Length 50th (ft)	25	211	61	522	183	19	91
Queue Length 95th (ft)	#72	268	m66	m366	#294	61	147
Internal Link Dist (ft)		624		906		244	377
Turn Bay Length (ft)							
Base Capacity (vph)	77	1912	116	2123	341	535	439
Starvation Cap Reductn	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.43	0.46	0.66	0.75	0.73	0.20	0.35

Intersection Summary

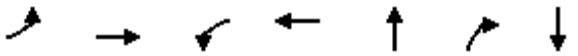
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	207	815	185	1424	76	141	120	283	685
v/c Ratio	0.98	0.66	0.75	1.08	0.58	0.21	0.22	0.87	0.61
Control Delay	116.3	29.2	67.4	78.8	71.3	39.9	6.9	74.3	30.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	116.3	29.2	67.4	78.8	71.3	39.9	6.9	74.3	30.6
Queue Length 50th (ft)	~192	295	118	~650	57	45	16	~246	190
Queue Length 95th (ft)	#368	387	194	#773	110	73	37	#421	255
Internal Link Dist (ft)		906		1436		1074			606
Turn Bay Length (ft)									
Base Capacity (vph)	211	1236	314	1318	146	884	608	327	1156
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.98	0.66	0.59	1.08	0.52	0.16	0.20	0.87	0.59

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

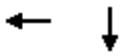
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.



Lane Group	EBL	EBT	WBL	WBT	NBT	NBR	SBT
Lane Group Flow (vph)	11	1163	348	1598	98	163	120
v/c Ratio	0.14	0.48	0.82	0.61	0.43	0.40	0.53
Control Delay	48.1	35.2	58.9	10.2	47.8	8.8	48.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	48.1	35.2	58.9	10.2	47.8	8.8	48.0
Queue Length 50th (ft)	9	278	257	318	63	0	73
Queue Length 95th (ft)	m16	329	335	494	115	55	133
Internal Link Dist (ft)		1436		2539	649		441
Turn Bay Length (ft)							
Base Capacity (vph)	77	2447	604	2615	305	487	302
Starvation Cap Reductn	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.14	0.48	0.58	0.61	0.32	0.33	0.40

Intersection Summary

m Volume for 95th percentile queue is metered by upstream signal.



Lane Group	WBT	SBT
Lane Group Flow (vph)	3706	326
v/c Ratio	1.04	0.33
Control Delay	42.5	31.3
Queue Delay	0.0	0.0
Total Delay	42.5	31.3
Queue Length 50th (ft)	~843	58
Queue Length 95th (ft)	#932	84
Internal Link Dist (ft)	692	1330
Turn Bay Length (ft)		
Base Capacity (vph)	3557	1364
Starvation Cap Reductn	0	0
Spillback Cap Reductn	0	0
Storage Cap Reductn	0	0
Reduced v/c Ratio	1.04	0.24

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Lane Group	EBT	SBT
Lane Group Flow (vph)	1087	533
v/c Ratio	0.35	0.38
Control Delay	4.0	19.1
Queue Delay	0.0	0.0
Total Delay	4.0	19.1
Queue Length 50th (ft)	42	59
Queue Length 95th (ft)	50	88
Internal Link Dist (ft)	496	288
Turn Bay Length (ft)		
Base Capacity (vph)	3146	1853
Starvation Cap Reductn	0	0
Spillback Cap Reductn	0	0
Storage Cap Reductn	0	0
Reduced v/c Ratio	0.35	0.29

Intersection Summary

Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	261	1228	130	848	207	54	43	98	87	87	228
v/c Ratio	0.65	0.72	0.76	0.52	0.67	0.45	0.15	0.28	0.34	0.26	0.48
Control Delay	41.5	20.1	65.0	17.3	18.4	49.6	27.1	4.8	39.8	28.0	7.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	41.5	20.1	65.0	17.3	18.4	49.6	27.1	4.8	39.8	28.0	7.6
Queue Length 50th (ft)	58	216	58	136	0	24	17	0	19	36	0
Queue Length 95th (ft)	#131	#467	#185	272	#93	#81	42	22	49	72	51
Internal Link Dist (ft)		445		606			613			390	
Turn Bay Length (ft)											
Base Capacity (vph)	426	1713	171	1644	309	122	688	665	255	688	720
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.61	0.72	0.76	0.52	0.67	0.44	0.06	0.15	0.34	0.13	0.32

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Lane Group	WBT	NBL	NBT	SBT
Lane Group Flow (vph)	3463	316	305	316
v/c Ratio	0.97	0.95	0.25	0.80
Control Delay	32.5	84.4	26.6	58.7
Queue Delay	43.1	1.6	0.0	0.0
Total Delay	75.7	86.0	26.6	58.7
Queue Length 50th (ft)	650	223	80	104
Queue Length 95th (ft)	#787	#397	115	#167
Internal Link Dist (ft)	485		269	645
Turn Bay Length (ft)				
Base Capacity (vph)	3575	331	1225	411
Starvation Cap Reductn	448	3	0	0
Spillback Cap Reductn	0	0	0	0
Storage Cap Reductn	0	0	0	0
Reduced v/c Ratio	1.11	0.96	0.25	0.77

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

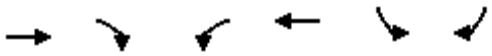
Lane Group	EBT	EBR	NBT	SBL	SBT
Lane Group Flow (vph)	859	76	804	76	750
v/c Ratio	0.39	0.10	0.53	0.46	0.34
Control Delay	14.7	2.7	19.3	41.9	14.3
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	14.7	2.7	19.3	41.9	14.3
Queue Length 50th (ft)	94	0	91	34	80
Queue Length 95th (ft)	124	17	127	75	107
Internal Link Dist (ft)	183		353		269
Turn Bay Length (ft)					
Base Capacity (vph)	2230	735	1516	165	2237
Starvation Cap Reductn	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.39	0.10	0.53	0.46	0.34

Intersection Summary

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Group Flow (vph)	1283	576	304	978	402	152
v/c Ratio	0.79	0.48	0.76	0.43	0.49	0.34
Control Delay	21.9	4.5	44.5	7.7	21.7	5.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	21.9	4.5	44.5	7.7	21.7	5.8
Queue Length 50th (ft)	212	62	61	82	66	0
Queue Length 95th (ft)	#464	101	#151	204	101	39
Internal Link Dist (ft)	216			273	735	
Turn Bay Length (ft)						
Base Capacity (vph)	1620	1496	401	2274	1498	708
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.79	0.39	0.76	0.43	0.27	0.21

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.



Lane Group	EBT	EBR	WBL	WBT	SBL	SBR
Lane Group Flow (vph)	1152	152	413	359	370	728
v/c Ratio	0.77	0.20	0.83	0.16	0.88	0.46
Control Delay	20.7	3.4	42.1	5.3	46.7	1.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	20.7	3.4	42.1	5.3	46.7	1.0
Queue Length 50th (ft)	206	0	82	27	136	0
Queue Length 95th (ft)	283	30	#144	43	#266	0
Internal Link Dist (ft)	139			450		
Turn Bay Length (ft)						
Base Capacity (vph)	1504	750	544	2244	476	1583
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.77	0.20	0.76	0.16	0.78	0.46

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Lane Group	EBL	EBT	WBT	NBT	NBR
Lane Group Flow (vph)	967	707	1315	207	326
v/c Ratio	0.94	0.27	0.86	0.88	0.67
Control Delay	44.8	3.4	23.9	70.1	11.9
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	44.8	3.4	23.9	70.1	11.9
Queue Length 50th (ft)	236	45	245	102	3
Queue Length 95th (ft)	#350	62	#390	#217	76
Internal Link Dist (ft)		450	517	531	
Turn Bay Length (ft)					
Base Capacity (vph)	1080	2665	1523	249	497
Starvation Cap Reductn	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.90	0.27	0.86	0.83	0.66

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Lane Group	EBL	NBL	NBT	SBT
Lane Group Flow (vph)	456	120	543	881
v/c Ratio	0.85	0.62	0.24	0.51
Control Delay	49.9	64.6	9.8	23.5
Queue Delay	0.0	0.0	0.0	0.0
Total Delay	49.9	64.6	9.8	23.5
Queue Length 50th (ft)	299	97	70	233
Queue Length 95th (ft)	382	151	211	364
Internal Link Dist (ft)	72		849	507
Turn Bay Length (ft)				
Base Capacity (vph)	707	229	2255	1723
Starvation Cap Reductn	0	0	0	0
Spillback Cap Reductn	0	0	0	0
Storage Cap Reductn	0	0	0	0
Reduced v/c Ratio	0.64	0.52	0.24	0.51

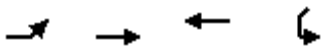
Intersection Summary

Lane Group	EBT	WBT	SBT
Lane Group Flow (vph)	131	163	293
v/c Ratio	0.15	0.21	0.22
Control Delay	3.5	10.5	14.0
Queue Delay	0.0	0.0	0.0
Total Delay	3.5	10.5	14.0
Queue Length 50th (ft)	4	35	39
Queue Length 95th (ft)	28	67	64
Internal Link Dist (ft)	272	260	893
Turn Bay Length (ft)			
Base Capacity (vph)	857	774	1320
Starvation Cap Reductn	0	0	0
Spillback Cap Reductn	0	0	0
Storage Cap Reductn	0	0	0
Reduced v/c Ratio	0.15	0.21	0.22

Intersection Summary

Lane Group	EBL	NBT	SBT
Lane Group Flow (vph)	217	511	370
v/c Ratio	0.60	0.47	0.27
Control Delay	14.5	5.7	3.7
Queue Delay	0.0	0.0	0.0
Total Delay	14.5	5.7	3.7
Queue Length 50th (ft)	17	52	29
Queue Length 95th (ft)	67	146	80
Internal Link Dist (ft)	339	648	504
Turn Bay Length (ft)			
Base Capacity (vph)	550	1089	1356
Starvation Cap Reductn	0	0	0
Spillback Cap Reductn	0	0	0
Storage Cap Reductn	0	0	0
Reduced v/c Ratio	0.39	0.47	0.27

Intersection Summary



Lane Group	EBL	EBT	WBT	SWL
Lane Group Flow (vph)	54	728	1586	435
v/c Ratio	0.52	0.36	0.92	0.75
Control Delay	56.7	9.1	29.2	28.4
Queue Delay	0.0	0.0	0.0	0.0
Total Delay	56.7	9.1	29.2	28.4
Queue Length 50th (ft)	27	88	372	150
Queue Length 95th (ft)	#76	121	#542	#292
Internal Link Dist (ft)		1988	776	623
Turn Bay Length (ft)				
Base Capacity (vph)	103	2175	1759	583
Starvation Cap Reductn	0	0	0	0
Spillback Cap Reductn	0	0	0	0
Storage Cap Reductn	0	0	0	0
Reduced v/c Ratio	0.52	0.33	0.90	0.75

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Lane Group	EBT	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	185	478	239	565	272	696
v/c Ratio	0.64	0.95	0.94	0.82	0.83	0.82
Control Delay	30.9	59.1	83.2	40.6	56.3	36.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	30.9	59.1	83.2	40.6	56.3	36.7
Queue Length 50th (ft)	55	216	125	135	136	160
Queue Length 95th (ft)	119	#452	#289	#236	#291	#270
Internal Link Dist (ft)	623	665		411		690
Turn Bay Length (ft)						
Base Capacity (vph)	440	501	253	728	338	900
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.42	0.95	0.94	0.78	0.80	0.77

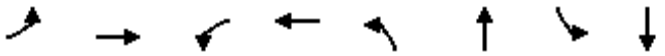
Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Lane Group	EBL	NBT	SBT
Lane Group Flow (vph)	250	577	316
v/c Ratio	0.62	0.68	0.24
Control Delay	12.5	11.7	3.2
Queue Delay	0.0	0.0	0.0
Total Delay	12.5	11.7	3.2
Queue Length 50th (ft)	10	77	19
Queue Length 95th (ft)	63	#332	60
Internal Link Dist (ft)	665	479	940
Turn Bay Length (ft)			
Base Capacity (vph)	592	843	1295
Starvation Cap Reductn	0	0	0
Spillback Cap Reductn	0	0	0
Storage Cap Reductn	0	0	0
Reduced v/c Ratio	0.42	0.68	0.24

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.



Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	54	76	217	359	76	2663	87	1837
v/c Ratio	0.46	0.16	0.98	0.45	0.54	0.97	0.74	0.66
Control Delay	66.1	19.1	108.8	26.1	67.2	38.0	74.3	20.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	66.1	19.1	108.8	26.1	67.2	38.0	74.3	20.2
Queue Length 50th (ft)	41	7	170	73	57	698	65	387
Queue Length 95th (ft)	84	31	#329	123	109	#851	m#122	424
Internal Link Dist (ft)		306		551		569		696
Turn Bay Length (ft)								
Base Capacity (vph)	132	468	221	806	162	2749	118	2768
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.41	0.16	0.98	0.45	0.47	0.97	0.74	0.66

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

Lane Group	EBL	NBL	NBT
Lane Group Flow (vph)	120	217	761
v/c Ratio	0.17	0.31	0.54
Control Delay	8.6	9.7	10.9
Queue Delay	0.0	0.0	0.0
Total Delay	8.6	9.7	10.9
Queue Length 50th (ft)	16	31	63
Queue Length 95th (ft)	38	65	101
Internal Link Dist (ft)	260		609
Turn Bay Length (ft)			
Base Capacity (vph)	708	708	1415
Starvation Cap Reductn	0	0	0
Spillback Cap Reductn	0	0	0
Storage Cap Reductn	0	0	0
Reduced v/c Ratio	0.17	0.31	0.54

Intersection Summary

Lane Group	EBL	EBT	WBT	NBT	NBR
Lane Group Flow (vph)	446	859	641	380	22
v/c Ratio	0.59	0.69	0.47	0.61	0.06
Control Delay	25.1	11.8	13.4	28.5	0.3
Queue Delay	0.0	29.5	0.0	0.0	0.0
Total Delay	25.1	41.3	13.4	28.5	0.3
Queue Length 50th (ft)	93	194	73	74	0
Queue Length 95th (ft)	142	319	126	104	0
Internal Link Dist (ft)		157	779	808	
Turn Bay Length (ft)					
Base Capacity (vph)	761	1247	1369	1119	583
Starvation Cap Reductn	0	425	0	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.59	1.05	0.47	0.34	0.04

Intersection Summary

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	98	1815	609	130	1261	391	500	380	196	326	326
v/c Ratio	0.92	0.88	0.70	0.55	0.86	0.50	0.93	0.91	0.44	0.96	0.68
Control Delay	138.1	46.9	16.1	76.1	46.4	11.0	87.6	82.6	21.9	98.3	57.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	138.1	46.9	16.1	76.1	46.4	11.0	87.6	82.6	21.9	98.3	57.2
Queue Length 50th (ft)	98	583	162	64	567	73	~267	362	58	~350	284
Queue Length 95th (ft)	#223	669	320	99	665	165	#384	#541	137	#551	398
Internal Link Dist (ft)		2325			484			648			1369
Turn Bay Length (ft)											
Base Capacity (vph)	106	2071	875	297	1526	804	535	432	454	340	482
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.92	0.88	0.70	0.44	0.83	0.49	0.93	0.88	0.43	0.96	0.68

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Lane Group	WBL	WBR	NBT	SBT
Lane Group Flow (vph)	902	1946	1011	946
v/c Ratio	0.42	1.11	1.02	0.96
Control Delay	14.9	86.7	86.5	72.5
Queue Delay	0.0	0.0	0.0	0.0
Total Delay	14.9	86.7	86.5	72.5
Queue Length 50th (ft)	219	~1233	~550	481
Queue Length 95th (ft)	263	#1380	#687	#618
Internal Link Dist (ft)	810		699	1779
Turn Bay Length (ft)				
Base Capacity (vph)	2151	1751	990	990
Starvation Cap Reductn	0	0	0	0
Spillback Cap Reductn	0	0	0	0
Storage Cap Reductn	0	0	0	0
Reduced v/c Ratio	0.42	1.11	1.02	0.96

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT	SBR
Lane Group Flow (vph)	413	457	337	87	587	761	500	695	457	761	424
v/c Ratio	1.17	0.72	0.36	0.62	0.75	1.02	1.21	0.88	1.05	0.90	0.59
Control Delay	152.4	50.9	12.8	94.8	42.7	75.9	163.0	67.6	109.3	69.6	16.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	152.4	50.9	12.8	94.8	42.7	75.9	163.0	67.6	109.3	69.6	16.5
Queue Length 50th (ft)	~479	391	121	64	165	~658	~595	334	~507	383	116
Queue Length 95th (ft)	#694	525	183	#156	260	#1012	#823	412	#729	#492	171
Internal Link Dist (ft)		614			571			545		730	
Turn Bay Length (ft)											
Base Capacity (vph)	354	634	931	141	780	745	413	836	436	847	719
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	1.17	0.72	0.36	0.62	0.75	1.02	1.21	0.83	1.05	0.90	0.59

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT	SBR
Lane Group Flow (vph)	174	195	185	76	174	98	261	772	163	793	185
v/c Ratio	0.54	0.58	0.32	0.24	0.52	0.27	0.78	0.56	0.81	0.55	0.25
Control Delay	52.0	53.4	5.0	44.3	52.1	8.8	73.6	36.7	98.7	23.9	3.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	52.0	53.4	5.0	44.3	52.1	8.8	73.6	36.7	98.7	23.9	3.1
Queue Length 50th (ft)	146	166	0	58	141	0	109	239	147	86	0
Queue Length 95th (ft)	196	218	47	91	186	44	#189	#489	m#219	#447	m30
Internal Link Dist (ft)		644			610			685		811	
Turn Bay Length (ft)											
Base Capacity (vph)	464	483	581	475	500	487	336	1370	211	1448	732
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.38	0.40	0.32	0.16	0.35	0.20	0.78	0.56	0.77	0.55	0.25

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.

Lane Group	EBT	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	119	185	98	1358	65	1076
v/c Ratio	0.49	0.86	0.26	0.54	0.23	0.43
Control Delay	49.5	97.5	6.3	11.4	6.7	10.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	49.5	97.5	6.3	11.4	6.7	10.6
Queue Length 50th (ft)	83	148	19	294	12	210
Queue Length 95th (ft)	140	180	44	453	32	328
Internal Link Dist (ft)	218	191		926		474
Turn Bay Length (ft)						
Base Capacity (vph)	344	306	413	2503	349	2501
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.35	0.60	0.24	0.54	0.19	0.43

Intersection Summary

Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	413	2250	554	1685	424	250	696	446	380	576	315
v/c Ratio	0.87	1.10	1.15	0.80	0.52	1.24	0.90	0.73	0.93	0.73	0.51
Control Delay	79.9	91.6	144.3	41.1	12.3	192.8	71.2	37.8	92.1	58.6	26.6
Queue Delay	0.0	0.0	0.0	0.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	79.9	91.6	144.3	42.0	12.3	192.8	71.2	37.8	92.1	58.6	26.6
Queue Length 50th (ft)	198	~878	~317	513	111	~291	335	278	~189	267	156
Queue Length 95th (ft)	#276	#968	#436	576	163	#472	#431	405	#299	337	245
Internal Link Dist (ft)		286		607			727			926	
Turn Bay Length (ft)											
Base Capacity (vph)	497	2052	480	2104	810	202	805	608	410	790	622
Starvation Cap Reductn	0	0	0	183	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.83	1.10	1.15	0.88	0.52	1.24	0.86	0.73	0.93	0.73	0.51

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Lane Group	WBL	NBT	SBL	SBT
Lane Group Flow (vph)	456	967	435	946
v/c Ratio	0.92	0.88	0.90	0.41
Control Delay	44.1	33.7	49.8	6.6
Queue Delay	0.0	0.0	0.0	0.0
Total Delay	44.1	33.7	49.8	6.6
Queue Length 50th (ft)	123	204	178	90
Queue Length 95th (ft)	#292	#322	#336	123
Internal Link Dist (ft)	633	267		727
Turn Bay Length (ft)				
Base Capacity (vph)	512	1103	499	2301
Starvation Cap Reductn	0	0	0	0
Spillback Cap Reductn	0	0	0	0
Storage Cap Reductn	0	0	0	0
Reduced v/c Ratio	0.89	0.88	0.87	0.41

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Lane Group	EBT	WBT	WBR	SBL	SBR
Lane Group Flow (vph)	1359	1054	935	391	326
v/c Ratio	0.70	0.54	0.48	0.59	0.57
Control Delay	14.1	11.3	1.9	29.6	8.7
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	14.1	11.3	1.9	29.6	8.7
Queue Length 50th (ft)	124	84	0	58	0
Queue Length 95th (ft)	#484	304	36	#188	76
Internal Link Dist (ft)	621	812		135	
Turn Bay Length (ft)					
Base Capacity (vph)	2372	2372	2159	679	574
Starvation Cap Reductn	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.57	0.44	0.43	0.58	0.57

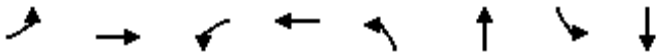
Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Lane Group	WBL	WBR	NBT	SBL	SBT
Lane Group Flow (vph)	76	283	1261	141	1054
v/c Ratio	0.53	0.73	0.35	0.73	0.24
Control Delay	78.2	17.9	14.2	87.1	2.7
Queue Delay	0.0	0.1	0.0	0.0	0.0
Total Delay	78.2	18.1	14.2	87.1	2.7
Queue Length 50th (ft)	73	0	405	139	24
Queue Length 95th (ft)	123	93	455	m166	m164
Internal Link Dist (ft)	835		918		571
Turn Bay Length (ft)					
Base Capacity (vph)	448	597	3610	325	4368
Starvation Cap Reductn	0	0	0	0	0
Spillback Cap Reductn	0	33	248	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.17	0.50	0.38	0.43	0.24

Intersection Summary

m Volume for 95th percentile queue is metered by upstream signal.



Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	76	304	130	184	261	1347	217	1054
v/c Ratio	0.22	0.85	0.73	0.75	0.88	0.58	0.47	0.70
Control Delay	51.0	72.8	87.4	52.4	89.8	17.5	57.6	48.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	51.0	72.8	87.4	52.4	89.8	17.5	57.6	48.9
Queue Length 50th (ft)	63	256	125	91	264	428	100	418
Queue Length 95th (ft)	108	364	197	178	#386	66	139	606
Internal Link Dist (ft)		610		1517		668		918
Turn Bay Length (ft)								
Base Capacity (vph)	401	411	212	273	330	2450	464	1501
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	17
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.19	0.74	0.61	0.67	0.79	0.55	0.47	0.71

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Lane Group	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	174	163	185	54	1435	130	1261
v/c Ratio	0.70	0.79	0.60	0.56	0.53	0.43	0.62
Control Delay	66.7	89.3	28.3	96.3	24.9	44.6	10.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.1
Total Delay	66.7	89.3	28.3	96.3	24.9	44.6	10.7
Queue Length 50th (ft)	144	157	50	56	243	58	182
Queue Length 95th (ft)	199	234	131	#95	472	m84	378
Internal Link Dist (ft)	465		811		724		668
Turn Bay Length (ft)							
Base Capacity (vph)	429	260	351	107	2734	318	2032
Starvation Cap Reductn	0	0	0	0	0	0	99
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.41	0.63	0.53	0.50	0.52	0.41	0.65

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.

Lane Group	EBT	EBR	WBT	WBR	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	65	76	153	217	152	1240	43	1369
v/c Ratio	0.59	0.29	0.77	0.14	0.42	0.33	0.45	0.48
Control Delay	95.0	26.8	87.9	0.2	49.0	6.7	76.5	27.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	95.0	26.8	87.9	0.2	49.0	6.7	76.5	27.1
Queue Length 50th (ft)	64	12	148	0	132	101	41	299
Queue Length 95th (ft)	113	63	214	0	m165	m225	m72	460
Internal Link Dist (ft)	286		160			995		724
Turn Bay Length (ft)								
Base Capacity (vph)	217	437	397	1583	361	3744	160	2879
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.30	0.17	0.39	0.14	0.42	0.33	0.27	0.48

Intersection Summary

m Volume for 95th percentile queue is metered by upstream signal.

Lane Group	EBL	EBT	EBR2	WBT	WBR	NBR2	SBL2	SBL	SBT	SBR	NWL	NWR
Lane Group Flow (vph)	326	2278	255	2217	761	174	243	341	351	228	217	413
v/c Ratio	0.83	0.87	0.30	0.99	0.80	0.22	0.66	0.96	0.97	0.52	0.97	0.95
Control Delay	82.8	31.8	6.1	56.4	20.4	0.6	52.7	85.3	86.9	13.5	116.6	81.5
Queue Delay	0.0	20.9	0.0	40.6	6.7	0.0	21.5	43.9	0.0	0.0	0.0	2.9
Total Delay	82.8	52.6	6.1	97.0	27.1	0.6	74.2	129.3	86.9	13.5	116.6	84.4
Queue Length 50th (ft)	163	707	39	820	475	0	175	390	401	25	215	181
Queue Length 95th (ft)	#236	785	97	#920	314	0	212	#564	#580	96	#385	#298
Internal Link Dist (ft)		607		437					995		195	
Turn Bay Length (ft)												
Base Capacity (vph)	398	2625	840	2244	957	806	369	354	361	438	224	435
Starvation Cap Reductn	0	430	0	720	154	0	0	0	0	0	0	0
Spillback Cap Reductn	0	351	0	0	0	0	118	113	0	0	0	8
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.82	1.04	0.30	1.45	0.95	0.22	0.97	1.41	0.97	0.52	0.97	0.97

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Lane Group	EBT	WBT	NBT	SBT
Lane Group Flow (vph)	565	456	304	337
v/c Ratio	0.82	0.84	0.46	0.51
Control Delay	19.8	27.5	13.9	15.7
Queue Delay	0.0	0.0	0.0	0.0
Total Delay	19.8	27.5	13.9	15.7
Queue Length 50th (ft)	102	113	49	62
Queue Length 95th (ft)	208	211	148	179
Internal Link Dist (ft)	633	311	949	790
Turn Bay Length (ft)				
Base Capacity (vph)	1009	855	659	655
Starvation Cap Reductn	0	2	0	0
Spillback Cap Reductn	0	0	0	0
Storage Cap Reductn	0	0	0	0
Reduced v/c Ratio	0.56	0.53	0.46	0.51

Intersection Summary

Lane Group	NBL	NBT	SBT	SEL	SER
Lane Group Flow (vph)	315	1424	978	54	500
v/c Ratio	0.80	0.34	0.33	0.31	0.82
Control Delay	59.4	3.0	9.0	51.9	16.2
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	59.4	3.0	9.0	51.9	16.2
Queue Length 50th (ft)	232	56	145	41	0
Queue Length 95th (ft)	311	150	m221	72	102
Internal Link Dist (ft)		763	913	452	
Turn Bay Length (ft)					
Base Capacity (vph)	531	4242	2924	575	851
Starvation Cap Reductn	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.59	0.34	0.33	0.09	0.59

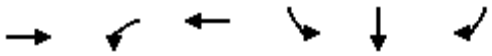
Intersection Summary

m Volume for 95th percentile queue is metered by upstream signal.

Lane Group	EBL	EBR	WBL	WBT	SBT
Lane Group Flow (vph)	109	152	402	500	174
v/c Ratio	0.31	0.40	0.41	0.65	0.42
Control Delay	19.7	8.0	3.0	16.1	12.4
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	19.7	8.0	3.0	16.1	12.4
Queue Length 50th (ft)	25	0	0	85	18
Queue Length 95th (ft)	64	39	44	#253	63
Internal Link Dist (ft)				439	658
Turn Bay Length (ft)					
Base Capacity (vph)	751	724	1086	904	787
Starvation Cap Reductn	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.15	0.21	0.37	0.55	0.22

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.



Lane Group	EBT	WBL	WBT	SBL	SBT	SBR
Lane Group Flow (vph)	2185	315	2630	661	676	348
v/c Ratio	1.00	1.33	0.69	1.13	1.10	0.60
Control Delay	50.9	208.9	2.1	122.3	112.4	39.0
Queue Delay	37.4	0.0	47.0	0.8	0.8	0.1
Total Delay	88.3	208.9	49.2	123.1	113.2	39.1
Queue Length 50th (ft)	~653	~394	37	~786	~788	242
Queue Length 95th (ft)	m#887	m#352	m34	#1043	#1046	352
Internal Link Dist (ft)	437		346		820	
Turn Bay Length (ft)						
Base Capacity (vph)	2185	236	3802	585	613	581
Starvation Cap Reductn	284	0	1166	0	0	0
Spillback Cap Reductn	1	0	1415	57	60	10
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	1.15	1.33	1.10	1.25	1.22	0.61

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

Lane Group	EBT	WBL	WBT	NBL	NBR	SBL	SBT
Lane Group Flow (vph)	1109	196	424	196	326	424	413
v/c Ratio	0.89	0.91	0.25	0.82	0.42	0.99	0.92
Control Delay	36.1	61.5	14.0	64.5	4.2	76.0	60.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	36.1	61.5	14.0	64.5	4.2	76.0	60.6
Queue Length 50th (ft)	296	62	71	109	0	240	229
Queue Length 95th (ft)	#423	#193	101	#220	53	#429	#404
Internal Link Dist (ft)	152		265				360
Turn Bay Length (ft)							
Base Capacity (vph)	1248	216	1723	247	778	430	451
Starvation Cap Reductn	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.89	0.91	0.25	0.79	0.42	0.99	0.92

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Lane Group	EBL	NBL	NBT	SBT
Lane Group Flow (vph)	761	522	957	598
v/c Ratio	1.04	0.98	0.36	0.66
Control Delay	74.1	76.1	20.6	47.1
Queue Delay	0.0	0.0	0.0	0.0
Total Delay	74.1	76.1	20.6	47.1
Queue Length 50th (ft)	~590	412	146	150
Queue Length 95th (ft)	#832	#635	276	194
Internal Link Dist (ft)	585		913	1745
Turn Bay Length (ft)				
Base Capacity (vph)	735	539	2669	906
Starvation Cap Reductn	0	0	0	0
Spillback Cap Reductn	0	0	0	0
Storage Cap Reductn	0	0	0	0
Reduced v/c Ratio	1.04	0.97	0.36	0.66

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

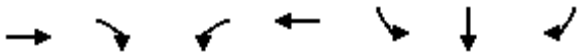
Lane Group	EBL	EBT	WBT	WBR	NBT
Lane Group Flow (vph)	141	2739	2804	761	804
v/c Ratio	0.59	0.81	1.09	0.88	0.87
Control Delay	50.4	12.7	82.5	37.2	62.7
Queue Delay	0.0	6.9	0.0	0.0	0.0
Total Delay	50.4	19.6	82.5	37.2	62.7
Queue Length 50th (ft)	121	385	~1165	540	384
Queue Length 95th (ft)	m117	m372	#1242	#837	467
Internal Link Dist (ft)		346	988		236
Turn Bay Length (ft)					
Base Capacity (vph)	238	3397	2577	867	987
Starvation Cap Reductn	0	634	0	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.59	0.99	1.09	0.88	0.81

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

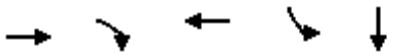


Lane Group	EBT	EBR	WBL	WBT	SBL	SBT	SBR
Lane Group Flow (vph)	783	315	467	522	435	598	1109
v/c Ratio	0.96	0.60	1.06	0.38	0.50	0.33	1.17
Control Delay	69.7	18.6	109.9	27.0	19.8	15.9	113.4
Queue Delay	24.7	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	94.5	18.6	109.9	27.0	19.8	15.9	113.4
Queue Length 50th (ft)	317	65	~205	150	223	135	~958
Queue Length 95th (ft)	#445	165	#312	196	321	175	#1219
Internal Link Dist (ft)	321			774		2836	
Turn Bay Length (ft)							
Base Capacity (vph)	813	528	440	1386	872	1836	944
Starvation Cap Reductn	72	2	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	1.06	0.60	1.06	0.38	0.50	0.33	1.17

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.



Lane Group	EBT	EBR	WBT	SBL	SBT
Lane Group Flow (vph)	478	283	305	435	1468
v/c Ratio	0.60	0.39	0.33	0.55	0.64
Control Delay	18.0	11.5	13.5	16.5	12.5
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	18.0	11.5	13.5	16.5	12.5
Queue Length 50th (ft)	139	54	40	120	123
Queue Length 95th (ft)	226	108	67	199	167
Internal Link Dist (ft)	451		806		986
Turn Bay Length (ft)					
Base Capacity (vph)	802	719	937	789	2304
Starvation Cap Reductn	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.60	0.39	0.33	0.55	0.64

Intersection Summary

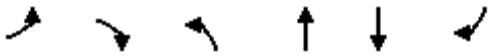
Lane Group	EBT	WBL	WBT	SBT	SBR
Lane Group Flow (vph)	1555	54	761	1989	717
v/c Ratio	1.30	0.60	0.52	1.08dl	1.05
Control Delay	170.8	69.9	21.1	38.1	70.6
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	170.8	69.9	21.1	38.1	70.6
Queue Length 50th (ft)	~618	31	164	413	~483
Queue Length 95th (ft)	#755	#86	218	#544	#738
Internal Link Dist (ft)	458		38	1023	
Turn Bay Length (ft)					
Base Capacity (vph)	1192	90	1474	2067	684
Starvation Cap Reductn	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	1.30	0.60	0.52	0.96	1.05

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

dl Defacto Left Lane. Recode with 1 though lane as a left lane.



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Group Flow (vph)	359	1347	1789	1337	1283	141
v/c Ratio	1.15	0.68	1.04	0.35	1.09	0.22
Control Delay	144.1	13.0	66.0	5.3	102.2	22.4
Queue Delay	0.0	0.0	23.4	0.0	0.0	0.0
Total Delay	144.1	13.0	89.4	5.3	102.2	22.4
Queue Length 50th (ft)	~354	329	~839	115	~446	68
Queue Length 95th (ft)	#550	409	#976	134	#543	114
Internal Link Dist (ft)	812			667	763	
Turn Bay Length (ft)						
Base Capacity (vph)	313	1972	1716	3872	1173	643
Starvation Cap Reductn	0	0	125	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	1.15	0.68	1.12	0.35	1.09	0.22

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

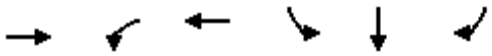
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Lane Group	EBL	EBT	WBT	WBR	SET	NWL	NWT
Lane Group Flow (vph)	272	630	1087	696	173	245	517
v/c Ratio	1.27	0.32	0.80	0.67	0.50	1.20	0.67
Control Delay	187.5	12.3	31.4	5.8	14.8	163.1	11.6
Queue Delay	0.0	0.6	8.2	0.3	0.0	0.0	0.0
Total Delay	187.5	12.9	39.6	6.1	14.8	163.1	11.6
Queue Length 50th (ft)	~167	73	237	0	21	~158	15
Queue Length 95th (ft)	#399	168	#480	88	74	#396	73
Internal Link Dist (ft)		269	321		401		767
Turn Bay Length (ft)							
Base Capacity (vph)	214	1990	1359	1036	588	205	770
Starvation Cap Reductn	0	937	242	57	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	1.27	0.60	0.97	0.71	0.29	1.20	0.67

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

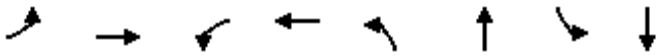
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.



Lane Group	EBT	WBL	WBT	SBL	SBT	SBR
Lane Group Flow (vph)	522	717	728	201	222	402
v/c Ratio	0.72	0.92	0.88	0.65	0.71	0.52
Control Delay	31.9	37.5	32.8	39.9	43.2	12.7
Queue Delay	0.0	25.1	22.2	0.0	0.0	0.0
Total Delay	31.9	62.7	55.0	39.9	43.2	12.7
Queue Length 50th (ft)	113	292	290	92	104	86
Queue Length 95th (ft)	165	#511	#502	#186	#211	164
Internal Link Dist (ft)	435		269		2903	
Turn Bay Length (ft)						
Base Capacity (vph)	817	873	920	321	325	774
Starvation Cap Reductn	0	179	208	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.64	1.03	1.02	0.63	0.68	0.52

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.



Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	43	196	413	293	33	2119	272	598
v/c Ratio	0.15	0.30	1.13	0.40	0.40	1.10	1.10	0.23
Control Delay	27.9	27.8	125.5	7.1	69.8	89.8	134.8	16.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	27.9	27.8	125.5	7.1	69.8	89.8	134.8	16.1
Queue Length 50th (ft)	22	103	~372	22	25	~676	~239	93
Queue Length 95th (ft)	51	164	#570	86	60	#773	#411	119
Internal Link Dist (ft)		480		451		1866		540
Turn Bay Length (ft)								
Base Capacity (vph)	289	655	364	740	88	1920	247	2650
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.15	0.30	1.13	0.40	0.38	1.10	1.10	0.23

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

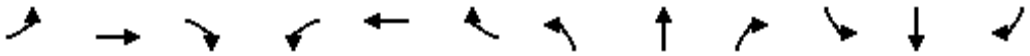
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT	SBR
Lane Group Flow (vph)	674	1456	261	1207	489	1402	228	761	359
v/c Ratio	1.47	1.06	0.98	1.21	1.43	0.97	2.15	0.98	0.52
Control Delay	259.9	84.5	113.0	147.9	251.8	69.8	578.1	89.7	25.7
Queue Delay	0.0	0.0	0.0	0.4	0.0	0.0	0.0	0.0	0.0
Total Delay	259.9	84.5	113.0	148.3	251.8	69.8	578.1	89.7	25.7
Queue Length 50th (ft)	~900	~813	258	~753	~645	490	~355	275	188
Queue Length 95th (ft)	#1146	#955	#444	#894	#870	#597	#531	#367	284
Internal Link Dist (ft)		403		458		623		529	
Turn Bay Length (ft)									
Base Capacity (vph)	460	1373	266	999	342	1438	106	779	697
Starvation Cap Reductn	0	0	0	79	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	1.47	1.06	0.98	1.31	1.43	0.97	2.15	0.98	0.52

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

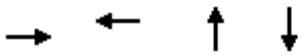


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	174	989	315	250	402	109	293	261	685	76	120	76
v/c Ratio	0.79	0.75	0.22	0.64	0.31	0.24	0.94	0.55	1.13	0.48	0.10	0.17
Control Delay	68.3	31.7	2.5	49.5	24.1	6.6	82.8	34.5	103.5	53.4	26.0	2.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	68.3	31.7	2.5	49.5	24.1	6.6	82.8	34.5	103.5	53.4	26.0	2.8
Queue Length 50th (ft)	95	243	0	69	82	0	85	135	~357	41	19	0
Queue Length 95th (ft)	#245	#441	26	#140	153	39	#201	214	#578	97	34	15
Internal Link Dist (ft)		865			423			1745			245	
Turn Bay Length (ft)									100			
Base Capacity (vph)	223	1317	1420	391	1282	460	311	691	604	198	1999	669
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.78	0.75	0.22	0.64	0.31	0.24	0.94	0.38	1.13	0.38	0.06	0.11

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.



Lane Group	EBT	WBT	NBT	SBT
Lane Group Flow (vph)	1032	359	327	87
v/c Ratio	1.23	0.31	1.03	0.29
Control Delay	134.1	5.0	100.8	24.5
Queue Delay	0.0	0.0	0.0	0.0
Total Delay	134.1	5.0	100.8	24.5
Queue Length 50th (ft)	~906	61	~234	28
Queue Length 95th (ft)	#1160	97	#414	74
Internal Link Dist (ft)	342	520	255	125
Turn Bay Length (ft)				
Base Capacity (vph)	837	1175	316	303
Starvation Cap Reductn	0	0	0	0
Spillback Cap Reductn	0	0	0	0
Storage Cap Reductn	0	0	0	0
Reduced v/c Ratio	1.23	0.31	1.03	0.29

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Lane Group	EBT	WBL	WBT	NBL	NBR
Lane Group Flow (vph)	1750	261	543	217	293
v/c Ratio	0.83	0.80	0.24	0.54	0.50
Control Delay	22.3	49.3	6.6	29.1	6.1
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	22.3	49.3	6.6	29.1	6.1
Queue Length 50th (ft)	205	103	38	84	0
Queue Length 95th (ft)	#391	#254	92	144	53
Internal Link Dist (ft)	423		279	871	
Turn Bay Length (ft)					
Base Capacity (vph)	2119	348	2297	623	747
Starvation Cap Reductn	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.83	0.75	0.24	0.35	0.39

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

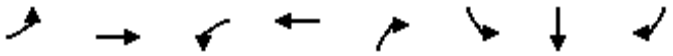
Lane Group	EBT	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	456	141	130	359	22	261
v/c Ratio	0.80	0.21	0.28	0.45	0.06	0.32
Control Delay	22.8	6.5	14.7	14.7	13.0	5.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	22.8	6.5	14.7	14.7	13.0	5.9
Queue Length 50th (ft)	101	15	23	66	3	12
Queue Length 95th (ft)	187	39	81	190	20	68
Internal Link Dist (ft)	520	293		203		240
Turn Bay Length (ft)						
Base Capacity (vph)	963	1142	466	805	381	819
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.47	0.12	0.28	0.45	0.06	0.32

Intersection Summary

Lane Group	EBL	EBT	WBL	WBT	NBT	SBT
Lane Group Flow (vph)	76	1413	326	663	402	77
v/c Ratio	0.19	0.83	0.77	0.38	0.80	0.19
Control Delay	9.4	25.5	25.9	12.7	26.8	13.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	9.4	25.5	25.9	12.7	26.8	13.4
Queue Length 50th (ft)	11	172	66	88	100	16
Queue Length 95th (ft)	33	#310	#203	152	196	43
Internal Link Dist (ft)		279		609	1265	205
Turn Bay Length (ft)						
Base Capacity (vph)	408	1703	487	1746	679	584
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.19	0.83	0.67	0.38	0.59	0.13

Intersection Summary

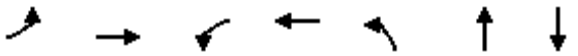
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.



Lane Group	EBL	EBT	WBL	WBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	630	793	33	804	33	127	275	359
v/c Ratio	0.90	0.41	0.23	0.68	0.02	0.27	0.56	0.52
Control Delay	46.8	12.1	36.2	23.2	0.0	19.8	25.3	5.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	46.8	12.1	36.2	23.2	0.0	19.8	25.3	5.2
Queue Length 50th (ft)	129	73	13	136	0	43	102	1
Queue Length 95th (ft)	#282	214	43	253	0	82	168	51
Internal Link Dist (ft)		609		486			881	
Turn Bay Length (ft)								
Base Capacity (vph)	699	1919	148	1182	1611	776	800	911
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.90	0.41	0.22	0.68	0.02	0.16	0.34	0.39

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.



Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBT
Lane Group Flow (vph)	65	1685	76	1163	130	272	163
v/c Ratio	0.58	0.75	0.63	0.51	0.82	0.83	1.12
Control Delay	85.0	20.9	74.4	11.3	91.7	68.1	160.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	85.0	20.9	74.4	11.3	91.7	68.1	160.1
Queue Length 50th (ft)	60	543	75	173	119	214	~172
Queue Length 95th (ft)	#152	743	m87	m75	188	300	#280
Internal Link Dist (ft)		624		906		244	377
Turn Bay Length (ft)							
Base Capacity (vph)	112	2245	129	2272	211	422	193
Starvation Cap Reductn	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.58	0.75	0.59	0.51	0.62	0.64	0.84

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

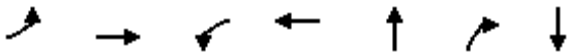
Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	478	1707	239	1152	109	467	261	337	413
v/c Ratio	1.23	1.19	1.23	1.11	0.69	0.71	0.51	1.06	0.43
Control Delay	167.8	126.3	189.4	102.6	86.2	61.5	18.8	122.4	31.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	167.8	126.3	189.4	102.6	86.2	61.5	18.8	122.4	31.5
Queue Length 50th (ft)	~547	~1020	~276	~646	101	214	85	~385	117
Queue Length 95th (ft)	m#787	#1147	#466	#617	168	276	143	#583	173
Internal Link Dist (ft)		906		1436		1074			606
Turn Bay Length (ft)									
Base Capacity (vph)	390	1439	195	1041	189	732	513	318	969
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	1.23	1.19	1.23	1.11	0.58	0.64	0.51	1.06	0.43

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.



Lane Group	EBL	EBT	WBL	WBT	NBT	NBR	SBT
Lane Group Flow (vph)	11	2218	174	1456	131	239	98
v/c Ratio	0.17	0.70	0.75	0.54	0.68	0.54	0.54
Control Delay	59.1	23.7	79.9	9.2	73.6	10.5	60.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	59.1	23.7	79.9	9.2	73.6	10.5	60.3
Queue Length 50th (ft)	10	524	161	270	113	0	75
Queue Length 95th (ft)	m12	m331	233	412	186	75	136
Internal Link Dist (ft)		1436		2539	649		441
Turn Bay Length (ft)							
Base Capacity (vph)	64	3178	339	2686	244	496	228
Starvation Cap Reductn	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.17	0.70	0.51	0.54	0.54	0.48	0.43

Intersection Summary

m Volume for 95th percentile queue is metered by upstream signal.

Lane Group	WBT	SBT
Lane Group Flow (vph)	2630	587
v/c Ratio	0.74	0.59
Control Delay	9.9	29.7
Queue Delay	0.0	0.0
Total Delay	9.9	29.7
Queue Length 50th (ft)	287	129
Queue Length 95th (ft)	342	m127
Internal Link Dist (ft)	692	1330
Turn Bay Length (ft)		
Base Capacity (vph)	3544	2888
Starvation Cap Reductn	0	0
Spillback Cap Reductn	0	0
Storage Cap Reductn	0	0
Reduced v/c Ratio	0.74	0.20

Intersection Summary

m Volume for 95th percentile queue is metered by upstream signal.

Lane Group	EBT	SBT
Lane Group Flow (vph)	1946	794
v/c Ratio	0.59	0.63
Control Delay	4.0	23.9
Queue Delay	0.1	0.0
Total Delay	4.1	23.9
Queue Length 50th (ft)	78	90
Queue Length 95th (ft)	m113	109
Internal Link Dist (ft)	496	288
Turn Bay Length (ft)		
Base Capacity (vph)	3300	1495
Starvation Cap Reductn	221	0
Spillback Cap Reductn	0	0
Storage Cap Reductn	0	0
Reduced v/c Ratio	0.63	0.53

Intersection Summary

m Volume for 95th percentile queue is metered by upstream signal.

Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	261	1510	163	1533	130	130	54	141	87	87	228
v/c Ratio	0.94	0.89	0.89	0.85	0.57	0.92	0.18	0.38	0.39	0.32	0.63
Control Delay	84.2	29.3	84.7	25.8	18.3	99.4	32.0	8.5	46.0	35.5	19.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	84.2	29.3	84.7	25.8	18.3	99.4	32.0	8.5	46.0	35.5	19.5
Queue Length 50th (ft)	72	351	87	340	0	70	26	0	23	43	34
Queue Length 95th (ft)	#177	#678	#241	#664	55	#210	57	45	53	83	101
Internal Link Dist (ft)		445		509			613			390	
Turn Bay Length (ft)											
Base Capacity (vph)	277	1701	183	1799	232	142	577	588	237	556	578
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.94	0.89	0.89	0.85	0.56	0.92	0.09	0.24	0.37	0.16	0.39

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Lane Group	WBT	NBL	NBT	SBT
Lane Group Flow (vph)	2338	358	600	494
v/c Ratio	0.80	0.86	0.38	0.84
Control Delay	27.9	61.3	20.7	54.2
Queue Delay	0.2	17.6	1.2	0.0
Total Delay	28.2	78.9	21.9	54.2
Queue Length 50th (ft)	417	238	136	163
Queue Length 95th (ft)	476	#371	176	225
Internal Link Dist (ft)	485		269	645
Turn Bay Length (ft)				
Base Capacity (vph)	2938	460	1708	635
Starvation Cap Reductn	136	95	844	0
Spillback Cap Reductn	0	0	0	0
Storage Cap Reductn	0	0	0	0
Reduced v/c Ratio	0.83	0.98	0.69	0.78

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Lane Group	EBT	EBR	NBT	SBL	SBT
Lane Group Flow (vph)	1445	109	1327	152	359
v/c Ratio	0.71	0.16	0.94	0.48	0.14
Control Delay	25.1	4.3	42.6	39.2	12.2
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	25.1	4.3	42.6	39.2	12.2
Queue Length 50th (ft)	246	0	248	79	38
Queue Length 95th (ft)	300	31	#343	139	54
Internal Link Dist (ft)	183		353		269
Turn Bay Length (ft)					
Base Capacity (vph)	2025	678	1416	314	2548
Starvation Cap Reductn	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.71	0.16	0.94	0.48	0.14

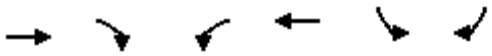
Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Group Flow (vph)	1554	815	554	1620	500	283
v/c Ratio	0.95	0.75	0.95	0.67	0.62	0.52
Control Delay	39.4	11.8	67.1	11.4	35.2	7.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	39.4	11.8	67.1	11.4	35.2	7.1
Queue Length 50th (ft)	443	210	167	257	135	0
Queue Length 95th (ft)	#698	328	#301	424	185	65
Internal Link Dist (ft)	216			273	735	
Turn Bay Length (ft)						
Base Capacity (vph)	1630	1221	582	2403	1084	641
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.95	0.67	0.95	0.67	0.46	0.44

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.



Lane Group	EBT	EBR	WBL	WBT	SBL	SBR
Lane Group Flow (vph)	1174	359	391	380	435	1293
v/c Ratio	0.93	0.46	0.63	0.18	0.82	0.82
Control Delay	38.8	4.5	30.3	11.4	36.8	5.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	38.8	4.5	30.3	11.4	36.8	5.1
Queue Length 50th (ft)	275	0	88	61	186	0
Queue Length 95th (ft)	#437	55	m#138	m87	249	0
Internal Link Dist (ft)	222			450		
Turn Bay Length (ft)						
Base Capacity (vph)	1267	789	624	2099	755	1583
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.93	0.46	0.63	0.18	0.58	0.82

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.

Lane Group	EBL	EBT	WBT	NBT	NBR
Lane Group Flow (vph)	946	783	1184	229	489
v/c Ratio	0.98	0.30	0.79	0.88	1.06
Control Delay	57.8	2.5	19.1	65.8	74.7
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	57.8	2.5	19.1	65.8	74.7
Queue Length 50th (ft)	223	33	184	106	~134
Queue Length 95th (ft)	m#297	m42	267	#227	#315
Internal Link Dist (ft)		450	517	531	
Turn Bay Length (ft)					
Base Capacity (vph)	961	2595	1493	261	463
Starvation Cap Reductn	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.98	0.30	0.79	0.88	1.06

Intersection Summary

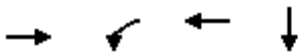
~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

Lane Group	EBL	NBL	NBT	SBT
Lane Group Flow (vph)	467	163	946	1163
v/c Ratio	0.90	0.75	0.42	0.70
Control Delay	60.9	76.2	16.1	30.1
Queue Delay	0.0	0.0	0.0	0.9
Total Delay	60.9	76.2	16.1	31.0
Queue Length 50th (ft)	347	119	90	402
Queue Length 95th (ft)	471	206	317	528
Internal Link Dist (ft)	112		811	545
Turn Bay Length (ft)				
Base Capacity (vph)	592	251	2261	1672
Starvation Cap Reductn	0	0	0	245
Spillback Cap Reductn	0	0	0	0
Storage Cap Reductn	0	0	0	0
Reduced v/c Ratio	0.79	0.65	0.42	0.81

Intersection Summary



Lane Group	EBT	WBL	WBT	SBT
Lane Group Flow (vph)	316	348	315	913
v/c Ratio	0.42	0.86	0.39	0.61
Control Delay	10.4	36.2	12.1	17.2
Queue Delay	0.0	0.0	0.0	0.0
Total Delay	10.4	36.2	12.1	17.2
Queue Length 50th (ft)	57	104	71	130
Queue Length 95th (ft)	106	#243	119	238
Internal Link Dist (ft)	276		303	817
Turn Bay Length (ft)				
Base Capacity (vph)	1057	589	1179	1499
Starvation Cap Reductn	0	0	0	0
Spillback Cap Reductn	0	0	0	0
Storage Cap Reductn	0	0	0	0
Reduced v/c Ratio	0.30	0.59	0.27	0.61

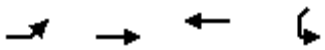
Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Lane Group	EBL	NBT	SBT
Lane Group Flow (vph)	347	598	761
v/c Ratio	0.82	0.93	0.61
Control Delay	34.2	36.3	8.5
Queue Delay	0.0	0.0	0.0
Total Delay	34.2	36.3	8.5
Queue Length 50th (ft)	93	205	146
Queue Length 95th (ft)	#212	#447	245
Internal Link Dist (ft)	311	585	567
Turn Bay Length (ft)			
Base Capacity (vph)	474	643	1239
Starvation Cap Reductn	0	0	0
Spillback Cap Reductn	0	0	0
Storage Cap Reductn	0	0	0
Reduced v/c Ratio	0.73	0.93	0.61

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.



Lane Group	EBL	EBT	WBT	SWL
Lane Group Flow (vph)	65	1185	1369	435
v/c Ratio	0.54	0.66	0.76	0.69
Control Delay	30.6	13.0	15.1	23.5
Queue Delay	0.0	0.0	0.0	0.0
Total Delay	30.6	13.0	15.1	23.5
Queue Length 50th (ft)	15	156	194	134
Queue Length 95th (ft)	#71	214	267	#262
Internal Link Dist (ft)		2143	621	511
Turn Bay Length (ft)				
Base Capacity (vph)	135	2021	2012	629
Starvation Cap Reductn	0	0	0	0
Spillback Cap Reductn	0	0	0	0
Storage Cap Reductn	0	0	0	0
Reduced v/c Ratio	0.48	0.59	0.68	0.69

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Lane Group	EBT	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	261	465	174	924	228	717
v/c Ratio	0.89	0.94	0.76	0.94	0.89	0.76
Control Delay	69.2	58.3	62.8	48.0	77.6	37.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	69.2	58.3	62.8	48.0	77.6	37.9
Queue Length 50th (ft)	149	247	108	253	145	213
Queue Length 95th (ft)	#293	#439	#203	#386	#283	283
Internal Link Dist (ft)	511	686		327		774
Turn Bay Length (ft)						
Base Capacity (vph)	303	518	249	978	258	945
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.86	0.90	0.70	0.94	0.88	0.76

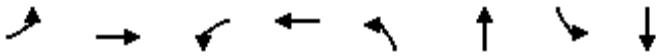
Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Lane Group	EBL	NBT	SBT
Lane Group Flow (vph)	479	359	641
v/c Ratio	0.88	0.77	0.58
Control Delay	37.2	24.9	8.6
Queue Delay	0.0	0.0	0.0
Total Delay	37.2	24.9	8.6
Queue Length 50th (ft)	136	97	102
Queue Length 95th (ft)	#295	#259	189
Internal Link Dist (ft)	686	452	949
Turn Bay Length (ft)			
Base Capacity (vph)	582	465	1098
Starvation Cap Reductn	0	0	0
Spillback Cap Reductn	0	0	0
Storage Cap Reductn	0	0	0
Reduced v/c Ratio	0.82	0.77	0.58

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.



Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	109	326	109	196	109	3294	217	2456
v/c Ratio	1.03	0.82	1.03	0.46	0.73	1.03	1.32	0.75
Control Delay	161.5	72.9	161.5	38.3	93.0	52.7	227.9	20.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.8
Total Delay	161.5	72.9	161.5	38.3	93.0	52.7	227.9	23.5
Queue Length 50th (ft)	~113	144	~113	52	105	~1261	~273	592
Queue Length 95th (ft)	#245	#218	#245	95	#185	#1327	#445	649
Internal Link Dist (ft)		253		576		2903		667
Turn Bay Length (ft)								
Base Capacity (vph)	106	399	106	429	165	3188	165	3255
Starvation Cap Reductn	0	0	0	0	0	0	0	662
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	1.03	0.82	1.03	0.46	0.66	1.03	1.32	0.95

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Lane Group	EBL	NBL	NBT
Lane Group Flow (vph)	109	435	674
v/c Ratio	0.15	0.61	0.48
Control Delay	8.4	14.2	10.3
Queue Delay	0.0	0.0	0.0
Total Delay	8.4	14.2	10.3
Queue Length 50th (ft)	15	72	54
Queue Length 95th (ft)	36	139	88
Internal Link Dist (ft)	303		541
Turn Bay Length (ft)			
Base Capacity (vph)	708	708	1415
Starvation Cap Reductn	0	0	0
Spillback Cap Reductn	0	0	0
Storage Cap Reductn	0	0	0
Reduced v/c Ratio	0.15	0.61	0.48

Intersection Summary

Appendix F
PEQE Calculation Worksheets

Roadway	To	From	Horizontal Buffer North/East	Lighting	Clear Zone	Posted Speed Limit	Score		Horizontal Buffer	Lighting	Clear Zone South/West	Posted Speed Limit	Score		Horizontal Buffer	Lighting	Clear Zone	Posted Speed Limit	Horizontal Buffer	Lighting	Clear Zone	Posted Speed Limit
Midway/Pacific Highway Corridor																						
Lytton Street/ Barnett Avenue	Rosecrans St	Midway Dr	0	Standard	No Obstructions	40	4	Fair	0	Standard	No Obstructions	40	4	Fair	0	1	2	1	0	1	2	1
	Midway Dr	Pacific Hwy	15	Exceed Standard	No Obstructions	40	7	Good	15	Exceed Standard	No Obstructions	40	7	Good	2	2	2	1	2	2	2	1
W. Mission Bay Dr	I-8 WB Ramps	I-8 EB Ramps	0	Standard	No Obstructions	35	4	Fair	0	Standard	No Obstructions	35	4	Fair	0	1	2	1	0	1	2	1
Midway Dr	W. Point Loma Blvd/Sports Arena Blvd	Kemper St	15	Exceed Standard	No Obstructions	35	7	Good	15	Exceed Standard	No Obstructions	35	7	Good	2	2	2	1	2	2	2	1
	Kemper St	East Dr	15	Exceed Standard	No Obstructions	35	7	Good	15	Exceed Standard	No Obstructions	35	7	Good	2	2	2	1	2	2	2	1
	East Dr	Rosecrans St	15	Exceed Standard	No Obstructions	35	7	Good	15	Exceed Standard	No Obstructions	35	7	Good	2	2	2	1	2	2	2	1
	Rosecrans St	Barnett Ave	15	Exceed Standard	No Obstructions	35	7	Good	15	Exceed Standard	No Obstructions	35	7	Good	2	2	2	1	2	2	2	1
Sports Arena Blvd	I-8 EB Ramps	W. Point Loma Blvd/Sports Arena Blvd	15	Standard	No Obstructions	35	6	Fair	15	Exceed Standard	No Obstructions	35	7	Good	2	1	2	1	2	2	2	1
	W. Point Loma Blvd/Midway	Kemper St	8	Standard	No Obstructions	35	5	Fair	8	Standard	No Obstructions	35	5	Fair	1	1	2	1	1	1	2	1
	Kemper St	East Dr	7	Standard	No Obstructions	35	5	Fair	7	Standard	No Obstructions	35	5	Fair	1	1	2	1	1	1	2	1
	East Dr	Rosecrans St	7	Standard	No Obstructions	35	5	Fair	7	Standard	No Obstructions	35	5	Fair	1	1	2	1	1	1	2	1
	Rosecrans St	Pacific Hwy	13	Exceed Standard	No Obstructions	35	6	Fair	13	Standard	No Obstructions	35	5	Fair	1	2	2	1	1	1	2	1
Kurtz St	Hancock St	Rosecrans St	8	Standard	No Obstructions	30	6	Fair	8	Standard	No Obstructions	30	6	Fair	1	1	2	2	1	1	2	2
	Rosecrans St	Pacific Hwy	0	Standard	No Obstructions	30	4	Fair	0	Standard	No Obstructions	30	4	Fair	0	0	2	2	0	0	2	2
Hancock St	Sports Arena Blvd	Kurtz St	0	Standard	Obstructed	30	3	Poor	8	Standard	No Obstructions	30	6	Fair	0	1	0	2	1	1	2	2
	Kurtz St	Camino Del Rio West	8	Standard	Obstructed	30	4	Fair	8	Standard	No Obstructions	30	6	Fair	1	1	0	2	1	1	2	2
	Camino Del Rio West	Rosecrans St	0	Standard	No Obstructions	30	5	Fair	0	Standard	No Obstructions	30	5	Fair	0	1	2	2	0	1	2	2
	Old Town Ave	Witherby St	0	Standard	Obstructed	30	2	Poor	0	Standard	Obstructed	30	2	Poor	0	0	0	2	0	0	0	2
	Witherby St	Washington St	8	Standard	No Obstructions	30	6	Fair	16	Standard	No Obstructions	30	7	Good	1	1	2	2	2	1	2	2
Kettner Blvd	Washington St	Vine St	0	Exceed Standard	Obstructed	40	3	Poor	0	Exceed Standard	No Obstructions	40	5	Fair	0	2	0	1	0	2	2	1
	Vine St	Sassafras St	0	Standard	Obstructed	40	1	Poor	8	Standard	No Obstructions	40	5	Fair	0	0	0	1	1	1	2	1
	Sassafras St	Laurel St	8	Standard	No Obstructions	40	5	Fair	8	Standard	No Obstructions	40	5	Fair	1	1	2	1	1	1	2	1
Pacific Hwy	Sea World Dr	Taylor St	17	Standard	No Obstructions	45	5	Fair	17	Standard	No Obstructions	45	5	Fair	2	1	2	0	2	1	2	0
	Taylor St	Kurtz St	17	Exceed Standard	No Obstructions	45	6	Standard	17	Exceed Standard	No Obstructions	45	6	Fair	2	2	2	0	2	2	2	0
	Kurtz St	Sports Arena Blvd	17	Exceed Standard	No Obstructions	45	6	Standard	17	Exceed Standard	No Obstructions	45	6	Fair	2	2	2	0	2	2	2	0
	Sports Arena Blvd	Barnett Ave	17	Exceed Standard	No Obstructions	45	6	Standard	17	Exceed Standard	No Obstructions	45	6	Fair	2	2	2	0	2	2	2	0
	Barnett Ave	Harney Washington St	17	Exceed Standard	No Obstructions	55	6	Standard	17	Exceed Standard	No Obstructions	55	6	Fair	2	2	2	0	2	2	2	0
	Washington St	Sassafras St	17	Exceed Standard	No Obstructions	45	6	Standard	17	Exceed Standard	No Obstructions	45	6	Fair	2	2	2	0	2	2	2	0
	Sassafras St	Laurel St	17	Exceed Standard	No Obstructions	45	6	Standard	17	Exceed Standard	No Obstructions	45	6	Fair	2	2	2	0	2	2	2	0
Old Town								Poor						Poor								
Congress St	Taylor St	Twiggs St	8	Standard	No Obstructions	25	6	Fair	8	Standard	No Obstructions	25	6	Fair	1	1	2	2	1	1	2	2
	Twiggs St	Harney St	8	Standard	No Obstructions	25	6	Fair	8	Standard	No Obstructions	25	6	Fair	1	1	2	2	1	1	2	2
	Harney St	San Diego Ave/ Ampudia St	8	Standard	No Obstructions	25	6	Fair	8	Standard	No Obstructions	25	6	Fair	1	1	2	2	1	1	2	2
San Diego Ave	Twiggs St	Harney St	8	Standard	No Obstructions	25	6	Fair	8	Standard	No Obstructions	25	6	Fair	1	1	2	2	1	1	2	2
	Harney St	Ampudia St	8	Standard	No Obstructions	25	6	Fair	8	Standard	No Obstructions	25	6	Fair	1	1	2	2	1	1	2	2
	Ampudia St	Old Town Ave	8	Standard	No Obstructions	25	6	Fair	8	Standard	No Obstructions	25	6	Fair	1	1	2	2	1	1	2	2
	Old Town Ave	Hortensia St	13	Standard	No Obstructions	25	6	Fair	13	Standard	No Obstructions	25	6	Fair	1	1	2	2	1	1	2	2
Juan St	Taylor St	Twiggs St	8	Standard	No Obstructions	30	6	Fair	8	Standard	No Obstructions	30	6	Fair	1	1	2	2	1	1	2	2
	Twiggs St	Harney St	8	Standard	No Obstructions	30	6	Fair	8	Standard	No Obstructions	30	6	Fair	1	1	2	2	1	1	2	2
	Harney St	San Juan Rd	8	Standard	No Obstructions	30	6	Fair	8	Standard	No Obstructions	30	6	Fair	1	1	2	2	1	1	2	2
East-West								Poor						Poor								
Midway/Pacific Highway Corridor								Poor						Poor								
Channel Wy	W. Mission Bay Dr	Hancock St	8	Standard	No Obstructions	25	6	Fair	8	Standard	No Obstructions	25	6	Fair	1	1	2	2	1	1	2	2
Kemper St	Kenyon St	Midway Dr	8	Below Standard	No Obstructions	25	5	Fair	0	Standard	No Obstructions	25	5	Fair	1	0	2	2	0	1	2	2
	Midway Dr	Sports Arena Blvd	8	Standard	No Obstructions	25	6	Fair	8	Standard	No Obstructions	25	6	Fair	1	1	2	2	1	1	2	2
Camino Del Rio West	Rosecrans St	I-5/I-8 Ramps	0	Standard	No Obstructions	35	4	Fair	0	Standard	No Obstructions	35	4	Fair	0	1	2	1	0	1	2	1
Rosecrans St	Lytton St	Midway Dr	9	Exceed Standard	No Obstructions	35	6	Fair	10	Exceed Standard	No Obstructions	35	6	Fair	1	2	2	1	1	2	2	1
	Midway Dr	Sports Arena Blvd	15	Exceed Standard	No Obstructions	35	7	Good	15	Exceed Standard	No Obstructions	35	7	Good	2	2	2	1	2	2	2	1
	Sports Arena Blvd	Pacific Hwy/Taylor St	15	Exceed Standard	No Obstructions	35	7	Good	15	Exceed Standard	No Obstructions	35	7	Good	2	2	2	1	2	2	2	1
Washington St	Frontage Rd	Pacific St	0	Standard	No Obstructions	25	5	Fair	0	Standard	No Obstructions	25	5	Fair	0	1	2	2	0	1	2	2
	Pacific St	Hancock St	8	Standard	No Obstructions	25	6	Fair	0	Standard	No Obstructions	25	5	Fair	1	1	2	2	0	1	2	2
Vine St	California St	Kettner Blvd	16	Standard	No Obstructions	25	7	Good	0	Standard	No Obstructions	25	5	Fair	2	1	2	2	0	1	2	2
Sassafras St	Pacific Hwy	Kettner Blvd	0	Standard	No Obstructions	25	5	Fair	0	Standard	No Obstructions	25	5	Fair	0	1	2	2	0	1	2	2
Laurel St	Pacific Hwy	Kettner Blvd	0	Standard	No Obstructions	25	5	Fair	0	Standard	No Obstructions	25	5	Fair	0	1	2	2	0	1	2	2
Old Town								Poor						Poor								
Taylor St	Pacific Hwy/ Rosecrans St	Congress St	0	Standard	No Obstructions	35	4	Fair	0	Standard	No Obstructions	35	4	Fair	0	1	2	1	0	1	2	1
	Congress St	Juan St	0	Standard	No Obstructions	35	4	Fair	0	Standard	No Obstructions	35	4	Fair	0	1	2	1	0	1	2	1
	Juan St	Morena Blvd	0	Standard	No Obstructions	35	4	Fair	0	Standard	No Obstructions	35	4	Fair	0	1	2	1	0	1	2	1
	Morena Blvd	I-8 EB Ramps	0	Below Standard	Obstructed	35	1	Poor	0	Below Standard	Obstructed	35	1	Poor	0	0	0	1	0	0	0	1
Twiggs St	Congress St	San Diego Ave	0	Standard	No Obstructions	25	5	Fair	0	Standard	No Obstructions	25	5	Fair	0	1	2	2	0	1	2	2
	San Diego Ave	Juan St	8	Standard	No Obstructions	25	6	Fair	8	Standard	No Obstructions	25	6	Fair	1	1	2	2	1	1	2	2
Harney St	Congress St	San Diego Ave	8	Standard	No Obstructions	25	6	Fair	8	Standard	No Obstructions	25	6	Fair	1	1	2	2	1	1	2	2
	San Diego Ave	Juan St	8	Standard	No Obstructions	25	6	Fair	0	Standard	No Obstructions	25	5	Fair	1	1	2	2	0	1	2	2
Old Town Ave	Hancock St	Moore St	0	Standard	No Obstructions	25	5	Fair	0	Standard	No Obstructions	25	5	Fair	0	1	2	2	0	1	2	2
	Moore St	San Diego Ave	0	Standard	No Obstructions	25	5	Fair	0	Standard	No Obstructions	25	5	Fair	0	1	2	2	0	1	2	2

Features 3.1 7.1
Grade 3.1 6.1

Intersection

#	Intersection	Control	Physical	Ops	ADA	Legs	Score	Grade	Control	Physical	Ops	ADA	Control	Physical	Ops	ADA	Legs	Score	Grade	Control	Physical	Ops	ADA
1	1: Barnett Ave/Lytton St & Rosecrans St.	Signal	0	0	No	4	2	Poor	2	0	0	0	Signal	8		Yes	4	6	Fair	2	2	0	2
2	2: Midway Dr/W Mission Bay Dr & I-8 WB Off Ramp	Signal	0	0	Yes	3	4	Fair	2	0	0	2	Signal	6		Yes	3	6	Fair	2	2	0	2
3	3: W Mission Bay Dr & Channel Way	SSSC	0	0	No	3	1	Poor	1	0	0	0	SSSC	6		Yes	3	5	Fair	1	2	0	2
4	4: Midway Dr/W Mission Bay Dr & Sports Arena	Signal	0	0	No	4	2	Poor	2	0	0	0	Signal	8		Yes	4	6	Fair	2	2	0	2
	Midway Dr & Duke Street	Signal	0	0	No	3	2	Poor	2	0	0	0	Signal	6		Yes	3	6	Fair	2	2	0	2
5	5: Midway Dr & Kemper St/Kemper Street	Signal	3	0	No	4	2	Poor	2	0	0	0	Signal	8		Yes	4	6	Fair	2	2	0	2
	Midway Dr & Fodam Street	Signal	0	0	No	4	2	Poor	2	0	0	0	Signal	8		Yes	4	6	Fair	2	2	0	2
	Midway Dr & Wing Street	Signal	0	0	No	3	2	Poor	2	0	0	0	Signal	6		Yes	3	6	Fair	2	2	0	2
6	6: Midway Dr & East Drive	Signal	0	0	No	3	2	Poor	2	0	0	0	Signal	6		Yes	3	6	Fair	2	2	0	2
	Midway Drive & Riely Street	SSSC	0	0	No	3	1	Poor	1	0	0	0	SSSC	6		Yes	3	5	Fair	1	2	0	2
	Midway Drive & Gaines Street	SSSC	0	0	No	3	1	Poor	1	0	0	0	SSSC	6		Yes	3	5	Fair	1	2	0	2
7	7: Midway Dr & Rosecrans St.	Signal	0	0	No	4	2	Poor	2	0	0	0	Signal	8		Yes	4	6	Fair	2	2	0	2
8	8: Midway Dr & Charles Lindbergh Parkway	Signal	N/A				4	Fair	2	2	0	0	Signal	8		Yes	4	6	Fair	2	2	0	2
9	9: Midway Dr & Enterprise St	SSSC	0	0	No	3	1	Poor	1	0	0	0	SSSC	8		Yes	3	5	Fair	1	2	0	2
10	10: Barnett Ave & Midway Dr	Signal	3	0	No	3	3	Poor	2	1	0	0	Signal	8		Yes	3	6	Fair	2	2	0	2
11	11: Sports Arena & Hancock Street	Signal	2	0	Yes	3	4	Fair	2	0	0	2	Signal	8		Yes	3	6	Fair	2	2	0	2
12	12: Sports Arena & Kemper Street	Signal	0	0	No	4	2	Poor	2	0	0	0	Signal	8		Yes	4	6	Fair	2	2	0	2
13	13: Sports Arena & Ralphs Driveway/Frontier Street	Signal	1	0	No	4	2	Poor	2	0	0	0	Signal	8		Yes	4	6	Fair	2	2	0	2
#VALUE!	Sports Arena Drive / Target Driveway	SSSC	0	0	No	3	1	Poor	1	0	0	0	SSSC	6		Yes	3	5	Fair	1	2	0	2
14	14: Sports Arena & East Drive/Greenwood Street	Signal	0	0	No	3	2	Poor	2	0	0	0	Signal	6		Yes	3	6	Fair	2	2	0	2
15	15: Rosecrans St/Sports Arena & Rosecrans St./Camino Del Rio W	Signal	0	0	No	5	2	Poor	2	0	0	0	Signal	10		Yes	5	6	Fair	2	2	0	2
16	16: Sports Arena Bl & Charles Lindbergh Parkway	Signal	N/A				4	Fair	2	2	0	0	Signal	8		Yes	4	6	Fair	2	2	0	2
17	17: Pacific Highway & Sports Arena Bl	Signal	N/A				4	Fair	2	2	0	0	Signal	8		Yes	4	6	Fair	2	2	0	2
18	18: Kemper Street & Kurtz St & Hancock/Hancock St	SSSC	0	0	No	3	1	Poor	1	0	0	0	SSSC	6		Yes	3	5	Fair	1	2	0	2
#VALUE!	Kurtz Street / Sherman Street	AWSC	0	0	No	3	1	Poor	1	0	0	0	AWSC	6		Yes	3	5	Fair	1	2	0	2
#VALUE!	Kurtz Street / Greenwood Street	SSSC	0	0	No	3	1	Poor	1	0	0	0	SSSC	6		Yes	3	5	Fair	1	2	0	2
#VALUE!	Kurtz Street / Riely Street	SSSC	0	0	No	3	1	Poor	1	0	0	0	SSSC	6		Yes	3	5	Fair	1	2	0	2
19	19: Kurtz/Kurtz St & Camino Del Rio W	Signal	0	0	No	4	2	Poor	2	0	0	0	Signal	8		Yes	4	6	Fair	2	2	0	2
20	20: Kurtz St/Kurtz & Rosecrans St	Signal	2	0	No	4	2	Poor	2	0	0	0	Signal	8		Yes	4	6	Fair	2	2	0	2
#VALUE!	Kurtz Street / Smith Street	SSSC	0	0	No	3	1	Poor	1	0	0	0	SSSC	6		Yes	3	5	Fair	1	2	0	2
21	21: Pacific Highway & Kurtz St	SSSC	0	0	Yes	3	3	Poor	1	0	0	2	Signal	6		Yes	3	6	Fair	2	2	0	2
22	22: Hancock & Channel Way	SSSC	0	0	No	3	1	Poor	1	0	0	0	SSSC	6		Yes	3	5	Fair	1	2	0	2
#VALUE!	Hancock Street / Hicock Street	SSSC	0	0	No	3	1	Poor	1	0	0	0	SSSC	6		Yes	3	5	Fair	1	2	0	2
#VALUE!	Hancock Street / Sherman Street	AWSC	0	0	No	4	1	Poor	1	0	0	0	AWSC	6		Yes	4	4	Poor	1	1	0	2
#VALUE!	Hancock Street / Greenwood Street	SSSC	1	0	Yes	4	3	Poor	1	0	0	2	SSSC	8		Yes	4	5	Fair	1	2	0	2
23	23: Hancock St & Camino Del Rio W	Signal	0	0	No	5	2	Poor	2	0	0	0	Signal	10		Yes	5	6	Fair	2	2	0	2
#VALUE!	Hancock Street & Gains Street	SSSC	0	0	No	4	1	Poor	1	0	0	0	SSSC	8		Yes	4	5	Fair	1	2	0	2
24	24: Rosecrans St & Hanccok Street	SSSC	0	0	No	3	1	Poor	1	0	0	0	SSSC	6		Yes	3	5	Fair	1	2	0	2
25	25: Hancock St & Old Town St	AWSC	0	0	No	3	1	Poor	1	0	0	0	AWSC	6		Yes	3	5	Fair	1	2	0	2
26	26: Hancock St & Witherby St	AWSC	0	0	No	3	1	Poor	1	0	0	0	AWSC	6		Yes	3	5	Fair	1	2	0	2
#VALUE!	Hancock Street & Noell Street	AWSC	0	0	No	4	1	Poor	1	0	0	0	AWSC	8		Yes	4	5	Fair	1	2	0	2
#VALUE!	Hancock Street & I-5 SB Ramp	SSSC	0	0	No	3	1	Poor	1	0	0	0	SSSC	6		Yes	3	5	Fair	1	2	0	2
27	27: Hancock St & Washington St	Signal	0	0	No	4	2	Poor	2	0	0	0	Signal	8		Yes	4	6	Fair	2	2	0	2
#VALUE!	Hancock Street & Emory Street	SSSC	0	0	Yes	3	3	Poor	1	0	0	2	SSSC	6		Yes	3	5	Fair	1	2	0	2
#VALUE!	Hancock Street & California Street	SSSC	0	0	Yes	3	3	Poor	1	0	0	2	SSSC	6		Yes	3	5	Fair	1	2	0	2
#VALUE!	Hancock Street & Chalmers Street	SSSC	0	0	Yes	3	3	Poor	1	0	0	2	SSSC	6		Yes	3	5	Fair	1	2	0	2
#VALUE!	Hancock Street & Walnut Avenue	SSSC	0	0	No	3	1	Poor	1	0	0	0	SSSC	6		Yes	3	5	Fair	1	2	0	2
28	28: Kettner Bl/Hancock St & Vine St	SSSC	0	0	No	3	1	Poor	1	0	0	0	SSSC	6		Yes	3	5	Fair	1	2	0	2
29	29: Kettner Blvd/Kettner Bl & Sassafras St	Signal	0	0	No	4	2	Poor	2	0	0	0	Signal	8		Yes	4	6	Fair	2	2	0	2
#VALUE!	Kettner Boulevard / Redwood Street	SSSC	0	0	No	3	1	Poor	1	0	0	0	SSSC	6		Yes	3	5	Fair	1	2	0	2
#VALUE!	Kettner Boulevard / Palm Street	SSSC	0	0	No	3	1	Poor	1	0	0	0	SSSC	6		Yes	3	5	Fair	1	2	0	2
#VALUE!	Kettner Boulevard / Olive Street	SSSC	0	0	No	4	1	Poor	1	0	0	0	SSSC	8		Yes	4	5	Fair	1	2	0	2
#VALUE!	Kettner Boulevard / Maple Street	SSSC	0	0	No	3	1	Poor	1	0	0	0	SSSC	6		Yes	3	5	Fair	1	2	0	2
30	30: Kettner Blvd & W Laurel St	Signal	0	0	No	4	2	Poor	2	0	0	0	Signal	8		Yes	4	6	Fair	2	2	0	2
31	31: Pacific Highway & Barnett Ave	Signal	N/A				4	Fair	2	2	0	0	Signal	6		Yes	3	6	Fair	2	2	0	2
#VALUE!	Pacific Highway & Witherby Street	SSSC	0	0	No	4	1	Poor	1	0	0	0	SSSC	8		Yes	4	5	Fair	1	2	0	2
32	32: Pacific Highway NB Frontage Road & Washington St	Signal	0	0	No	4	2	Poor	2	0	0	0	Signal	8		Yes	4	6	Fair	2	2	0	2
33	33: Washington St & Pacific Highway SB	Signal	0	0	No	4	2	Poor	2	0	0	0	Signal	8		Yes	4	6	Fair	2	2	0	2
34	34: Pacific Highway & Sassafras St	Signal	1	0	No	4	2	Poor	2	0	0	0	Signal	8		Yes	4	6	Fair	2	2	0	2
#VALUE!	Pacific Highway & Palm Street	Signal	0	0	No	4	2	Poor	2	0	0	0	Signal	8		Yes	4	6	Fair	2	2	0	2
35	35: Pacific Highway & W Laurel St	Signal	0	1	Yes	4	4	Fair	2	0	0	2	Signal	8		Yes	4	6	Fair	2	2	0	2
36	36: Pacific Highway & Rosecrans St/Taylor St	Signal	0	0	Yes	4	4	Fair	2	0	0	2	Signal	8		Yes	4	6	Fair	2	2	0	2
37	37: Moore St & Old Town St	Signal	0	0	No	4	2	Poor	2	0	0	0	Signal	8		Yes	4	6	Fair	2	2	0	2
38	38: Congress St & Taylor St	Signal	0	0	Yes	3	4	Fair	2	0	0	2	Signal	6		Yes	3	6	Fair	2	2	0	2
#VALUE!	Congress Street & Old Town Station Entrance	SSSC	0	0	No	3	1	Poor	1	0	0	0	SSSC	6		Yes	3	5	Fair	1	2	0	2
#VALUE!	Congress Street & Old Town Station Exit	Signal	1	0	No	3	2	Poor	2	0	0	0	Signal	8		Yes	3	6	Fair	2	2	0	2
#VALUE!	Congress Street & Mason Street	SSSC	0	0	No	3	1	Poor	1	0	0	0	SSSC	6		Yes	3	5	Fair	1	2	0	2
39	39: Congress St & Twiggs St	AWSC	0	0	No	4	1	Poor	1	0	0	0	AWSC	8		Yes	4	5	Fair	1	2	0	2
40	40: Congress St & Harney St	AWSC	0	0	No	4	1	Poor	1	0	0	0	AWSC	8		Yes	4	5	Fair	1	2	0	2
#VALUE!	Congress Street & Conde Street	SSSC	5	0	No	4	2	Poor	1	1	0	0	SSSC	8		Yes	4	5	Fair	1	2	0	2
#VALUE!	Congress Street & Arista Street	SSSC	0	0	No	3	1	Poor	1	0	0	0	SSSC	6		Yes	3	5	Fair	1	2	0	2
41	41: San Diego Ave & Congress St	SSSC	0	0	No	5	1	Poor	1	0	0	0	SSSC	10		Yes	5	5	Fair	1	2	0	2
#VALUE!	San Diego Avenue & Arista	SSSC	1	0	No	3	1	Poor	1	0	0	0	SSSC	8		Yes	3	5	Fair	1	2	0	2
#VALUE!	San Diego Avenue & Linwood Street	SSSC	0	0	No	3	1	Poor	1	0	0	0	SSSC	6		Yes	3	5	Fair	1	2	0	2
#VALUE!	San Diego Avenue & Conde Street	AWSC	0	0	No	4	1	Poor	1	0	0	0	AWSC	8		Yes	4	5	Fair	1	2	0	2
42	42: San Diego Ave & Twiggs St	AWSC	0	0	No	3	1	Poor	1	0	0	0	AWSC	6		Yes	3	5	Fair	1	2	0	2
43	43: San Diego Ave & Harney St	AWSC	1	0	No	4	1	Poor	1	0	0	0	AWSC	9		Yes	4	5	Fair	1	2	0	2
44	44: San Diego Ave & Old Town St	Signal	0	0	No	4	2	Poor	2	0	0	0	Signal	8		Yes	4	6	Fair	2	2	0	2
45	45: Juan St & Taylor St	Signal	1	0	Yes	3	4	Fair	2	0	0	2	Signal			Yes	3	4	Poor	2	0	0	2
46	46: Juan St & Twiggs St	AWSC	0	0	No	4	1	Poor	1	0	0	0	AWSC	8		Yes	4	5	Fair	1	2	0	2

47	47: Juan St & Harney St	AWSC	1	0 No	4	1 Poor	1	0	0	0	AWSC	8	Yes	4	5 Fair	1	2	0	2
48		Signal	1	0 Yes	3	4 Fair	2	0	0	2	Signal	8	Yes	3	6 Fair	2	2	0	2
61	61: Kurtz St & Frontier Street	SSSC	0		4	1 Poor	1	0	0	0	SSSC	8	Yes	4	5 Fair	1	2	0	2
63	63: Kurtz St & Charles Lindbergh Parkway	Signal	0		4	2 Poor	2	0	0	0	Signal	8	Yes	4	6 Fair	2	2	0	2
64	64: Barnett Ave & Dutch Flats Parkway	Signal	0		4	2 Poor	2	0	0	0	Signal	8	Yes	4	6 Fair	2	2	0	2
65	65: Midway Dr & Dutch Flats Parkway	Signal	0		4	2 Poor	2	0	0	0	Signal	8	Yes	4	6 Fair	2	2	0	2
66	66: Dutch Flats Parkway & Sports Arena Bl	Signal	0		4	2 Poor	2	0	0	0	Signal	8	Yes	4	6 Fair	2	2	0	2

Appendix G
Peak Hour Arterial Analysis Worksheets

Arterial Level of Service: EB Camino Del Rio West

Cross Street	Arterial Class	Flow Speed	Running Time	Signal Delay	Travel Time (s)	Dist (mi)	Arterial Speed	Arterial LOS
Kurtz	IV	35	16.2	45.1	61.3	0.10	5.8	F
Hancock St	IV	35	13.3	13.6	26.9	0.08	10.8	D
Total	IV		29.5	58.7	88.2	0.18	7.3	E

Arterial Level of Service: WB Camino Del Rio West

Cross Street	Arterial Class	Flow Speed	Running Time	Signal Delay	Travel Time (s)	Dist (mi)	Arterial Speed	Arterial LOS
Hancock St	III	35	24.3	72.1	96.4	0.20	7.6	F
Kurtz St	III	35	10.9	1.0	11.9	0.08	24.4	B
Sports Arena Blvd	III	35	13.2	38.2	51.4	0.10	6.9	F
Total	III		48.4	111.3	159.7	0.38	8.6	F

Arterial Level of Service: NB Midway Drive

Cross Street	Arterial Class	Flow Speed	Running Time	Signal Delay	Travel Time (s)	Dist (mi)	Arterial Speed	Arterial LOS
Dutch Flats Parkway	III	35	17.1	40.6	57.7	0.13	8.3	F
Charles Lindbergh Pa	III	35	25.2	13.0	38.2	0.21	19.8	C
Rosecrans St	III	35	19.8	34.2	54.0	0.15	10.3	E
East Drive	III	35	22.9	6.9	29.8	0.19	23.0	C
Kemper Street	III	35	39.9	22.6	62.5	0.33	19.1	C
Duke Street	III	35	21.1	9.8	30.9	0.18	20.5	C
Sports Arena Blvd	III	35	15.0	51.4	66.4	0.11	6.0	F
Total	III		161.0	178.5	339.5	1.31	13.9	E

Arterial Level of Service: SB Midway Drive

Cross Street	Arterial Class	Flow Speed	Running Time	Signal Delay	Travel Time (s)	Dist (mi)	Arterial Speed	Arterial LOS
Duke Street	III	35	15.0	23.5	38.5	0.11	10.4	E
Kemper St	III	35	21.1	14.7	35.8	0.18	17.7	D
East Drive	III	35	39.9	8.1	48.0	0.33	24.9	B
Rosecrans St	III	35	22.9	32.7	55.6	0.19	12.3	E
Charles Lindbergh Pa	III	35	19.8	4.4	24.2	0.15	23.0	C
Dutch Flats Parkway	III	35	25.2	36.7	61.9	0.21	12.2	E
Barnett Ave	III	35	17.1	28.6	45.7	0.13	10.5	E
Total	III		161.0	148.7	309.7	1.31	15.2	D

Arterial Level of Service: NB Pacific Highway

Cross Street	Arterial Class	Flow Speed	Running Time	Signal Delay	Travel Time (s)	Dist (mi)	Arterial Speed	Arterial LOS
Grape St	II	30	11.6	19.3	30.9	0.08	9.6	F
Hawthorne St	II	30	10.2	26.6	36.8	0.07	6.5	F
W Laurel St	II	32	34.3	48.9	83.2	0.27	11.7	F
Sassafras St	II	45	43.0	33.4	76.4	0.49	23.0	C
Witherby St	II	47	43.1	38.0	81.1	0.56	24.9	C
Barnett Ave	II	55	14.3	1.8	16.1	0.15	32.9	B
Sports Arena Blvd	II	45	17.4	0.8	18.2	0.16	31.6	B
Kurtz St	II	45	20.5	7.4	27.9	0.19	24.3	C
Taylor St	II	45	33.2	31.4	64.6	0.35	19.3	D
Total	II		227.6	207.6	435.2	2.31	19.1	D

Arterial Level of Service: SB Pacific Highway

Cross Street	Arterial Class	Flow Speed	Running Time	Signal Delay	Travel Time (s)	Dist (mi)	Arterial Speed	Arterial LOS
Rosecrans St	II	45	38.8	27.2	66.0	0.41	22.5	C
Kurtz St	II	45	33.2	23.6	56.8	0.35	21.9	D
Sports Arena Blvd	II	45	20.5	20.1	40.6	0.19	16.7	E
Barnett Ave	II	45	17.4	32.3	49.7	0.16	11.6	F
Witherby St	II	55	14.3	20.2	34.5	0.15	15.3	E
Washington St	II	49	41.4	28.6	70.0	0.56	28.9	B
Sassafras St	II	43	40.6	16.7	57.3	0.45	28.0	B
W Laurel St	II	45	43.0	72.1	115.1	0.49	15.3	E
Hawthorne St	II	32	34.3	58.7	93.0	0.27	10.5	F
Grape St	II	30	10.2	14.3	24.5	0.07	9.7	F
Total	II		293.7	313.8	607.5	3.09	18.3	D

Arterial Level of Service: EB Rosecrans St

Cross Street	Arterial Class	Flow Speed	Running Time	Signal Delay	Travel Time (s)	Dist (mi)	Arterial Speed	Arterial LOS
Hugo St	II	35	16.7	16.1	32.8	0.13	14.6	E
Nimitz Blvd	II	35	23.3	30.1	53.4	0.19	12.6	F
Laning Rd	II	40	29.3	35.3	64.6	0.29	16.0	E
Barnett Ave	II	40	85.6	51.2	136.8	0.95	25.0	C
Midway Drive	II	40	45.5	33.8	79.3	0.49	22.2	C
Sports Arena Blvd	II	40	15.0	0.0	15.0	0.13	31.2	B
Kurtz St	II	35	11.9	23.1	35.0	0.10	9.8	F
Pacific Highway	II	35	29.1	23.3	52.4	0.24	16.8	E
Total	II		256.4	212.9	469.3	2.52	19.3	D

Arterial Level of Service: WB Rosecrans St

Cross Street	Arterial Class	Flow Speed	Running Time	Signal Delay	Travel Time (s)	Dist (mi)	Arterial Speed	Arterial LOS
Kurtz	II	35	29.1	14.0	43.1	0.24	20.4	D
Camino Del Rio West	II	35	11.9	106.2	118.1	0.10	2.9	F
Midway Drive	II	40	15.0	35.5	50.5	0.13	9.3	F
Lytton St	II	40	45.5	139.5	185.0	0.49	9.5	F
Laning Rd	II	40	85.6	10.2	95.8	0.95	35.8	A
Lowell St	II	40	29.3	78.8	108.1	0.29	9.6	F
Hugo St	II	35	23.3	27.7	51.0	0.19	13.2	E
Total	II		239.7	411.9	651.6	2.38	13.2	E

Arterial Level of Service: NB Sports Arena Blvd

Cross Street	Arterial Class	Flow Speed	Running Time	Signal Delay	Travel Time (s)	Dist (mi)	Arterial Speed	Arterial LOS
Dutch Flats Parkway	III	25	23.3	11.7	35.0	0.11	10.9	E
Charles Lindbergh Pa	III	25	31.9	5.9	37.8	0.19	18.4	C
Greenwood Street	III	35	24.4	3.6	28.0	0.20	26.2	B
Frontier Street	III	35	19.6	26.5	46.1	0.15	11.9	E
Kemper Street	III	35	18.1	28.4	46.5	0.14	11.0	E
Hancock Street	III	35	22.7	22.1	44.8	0.19	15.2	D
Sports Arena Blvd	III	35	16.4	20.5	36.9	0.12	11.9	E
I-8 WB Off Ramp	III	35	36.1	15.5	51.6	0.30	21.0	C
Total	III		192.5	134.2	326.7	1.41	15.5	D

Arterial Level of Service: SB Sports Arena Blvd

Cross Street	Arterial Class	Flow Speed	Running Time	Signal Delay	Travel Time (s)	Dist (mi)	Arterial Speed	Arterial LOS
Sports Arena	III	35	36.1	97.7	133.8	0.30	8.1	F
Hancock Street	III	35	16.4	4.4	20.8	0.12	21.1	C
Kemper Street	III	35	22.7	27.3	50.0	0.19	13.6	E
Ralphs Driveway	III	35	18.1	17.9	36.0	0.14	14.2	D
East Drive	III	35	19.6	7.2	26.8	0.15	20.5	C
Rosecrans St	III	35	24.4	91.1	115.5	0.20	6.3	F
Charles Lindbergh Pa	III	25	29.0	4.9	33.9	0.16	17.1	D
Dutch Flats Parkway	III	25	31.9	3.2	35.1	0.19	19.8	C
Pacific Highway	III	25	23.3	60.7	84.0	0.11	4.5	F
Total	III		221.5	314.4	535.9	1.57	10.5	E

Arterial Level of Service: EB Taylor St

Cross Street	Arterial Class	Flow Speed	Running Time	Signal Delay	Travel Time (s)	Dist (mi)	Arterial Speed	Arterial LOS
Congress St	IV	35	15.7	13.9	29.6	0.10	11.6	D
Juan St	IV	35	11.2	12.4	23.6	0.07	10.4	D
	IV	35	18.3	8.5	26.8	0.13	17.5	C
Total	IV		45.2	34.8	80.0	0.29	13.2	C

Arterial Level of Service: WB Taylor St

Cross Street	Arterial Class	Flow Speed	Running Time	Signal Delay	Travel Time (s)	Dist (mi)	Arterial Speed	Arterial LOS
Morena Blvd	IV	35	17.7	23.7	41.4	0.11	9.3	D
	IV	35	18.3	13.8	32.1	0.13	14.6	C
Congress St	IV	35	11.2	7.8	19.0	0.07	12.9	D
Pacific Highway	IV	35	15.7	22.7	38.4	0.10	8.9	E
Total	IV		62.9	68.0	130.9	0.40	11.0	D

Arterial Level of Service: EB Camino Del Rio West

Cross Street	Arterial Class	Flow Speed	Running Time	Signal Delay	Travel Time (s)	Dist (mi)	Arterial Speed	Arterial LOS
Kurtz	IV	35	16.2	50.9	67.1	0.10	5.3	F
Hancock St	IV	35	13.3	12.7	26.0	0.08	11.2	D
Total	IV		29.5	63.6	93.1	0.18	6.9	F

Arterial Level of Service: WB Camino Del Rio West

Cross Street	Arterial Class	Flow Speed	Running Time	Signal Delay	Travel Time (s)	Dist (mi)	Arterial Speed	Arterial LOS
Hancock St	III	35	24.3	82.5	106.8	0.20	6.8	F
Kurtz St	III	35	10.9	2.1	13.0	0.08	22.3	C
Sport Arena Blvd	III	35	13.2	56.4	69.6	0.10	5.1	F
Total	III		48.4	141.0	189.4	0.38	7.2	F

Arterial Level of Service: NB Midway Drive

Cross Street	Arterial Class	Flow Speed	Running Time	Signal Delay	Travel Time (s)	Dist (mi)	Arterial Speed	Arterial LOS
Dutch Flats Parkway	III	35	15.9	48.0	63.9	0.12	6.6	F
Charles Lindbergh Pa	III	35	27.3	33.7	61.0	0.23	13.4	E
Rosecrans St	III	35	19.6	71.2	90.8	0.15	6.1	F
East Drive	III	35	22.9	11.4	34.3	0.19	20.0	C
Kemper Street	III	35	39.9	36.7	76.6	0.33	15.6	D
	III	35	21.6	16.1	37.7	0.17	16.1	D
Sport Arena Blvd	III	35	16.0	67.6	83.6	0.12	5.1	F
Total	III		163.2	284.7	447.9	1.31	10.5	E

Arterial Level of Service: SB Midway Drive

Cross Street	Arterial Class	Flow Speed	Running Time	Signal Delay	Travel Time (s)	Dist (mi)	Arterial Speed	Arterial LOS
	III	35	16.0	30.1	46.1	0.12	9.2	F
Kemper St	III	35	21.6	23.9	45.5	0.17	13.4	E
East Drive	III	35	39.9	10.6	50.5	0.33	23.7	C
Rosecrans St	III	35	22.9	58.6	81.5	0.19	8.4	F
Charles Lindbergh Pa	III	35	19.6	6.6	26.2	0.15	21.0	C
Dutch Flats Parkway	III	35	27.3	37.9	65.2	0.23	12.6	E
Barnett Ave	III	35	15.9	29.6	45.5	0.12	9.3	F
Total	III		163.2	197.3	360.5	1.31	13.1	E

Arterial Level of Service: NB Pacific Highway

Cross Street	Arterial Class	Flow Speed	Running Time	Signal Delay	Travel Time (s)	Dist (mi)	Arterial Speed	Arterial LOS
Grape St	II	30	11.6	42.6	54.2	0.08	5.4	F
Hawthorne St	II	30	10.2	20.7	30.9	0.07	7.7	F
W Laurel St	II	30	34.3	69.8	104.1	0.27	9.4	F
Sassafras St	II	45	42.6	89.8	132.4	0.48	13.2	E
Witherby St.	II	55	37.0	52.7	89.7	0.56	22.7	C
Barnett Ave	II	55	13.7	5.3	19.0	0.14	26.8	C
Sport Arena Blvd	II	45	17.4	3.0	20.4	0.16	28.2	B
Kurtz St	II	45	20.5	20.6	41.1	0.19	16.5	E
Taylor St	II	45	33.2	34.5	67.7	0.35	18.4	D
Total	II		220.5	339.0	559.5	2.30	14.8	E

Arterial Level of Service: SB Pacific Highway

Cross Street	Arterial Class	Flow Speed	Running Time	Signal Delay	Travel Time (s)	Dist (mi)	Arterial Speed	Arterial LOS
Rosecrans St	II	45	38.8	26.0	64.8	0.41	22.9	C
Kurtz St	II	45	33.2	47.1	80.3	0.35	15.5	E
Sport Arena Blvd	II	45	20.5	9.0	29.5	0.19	23.0	C
Barnett Ave	II	45	17.4	102.2	119.6	0.16	4.8	F
Witherby St.	II	55	13.7	20.7	34.4	0.14	14.8	E
Washington St	II	55	37.0	43.2	80.2	0.56	25.4	C
Sassafras St	II	45	39.7	16.1	55.8	0.44	28.1	B
W Laurel St	II	45	42.6	89.7	132.3	0.48	13.2	E
Hawthorne St	II	30	34.3	54.2	88.5	0.27	11.0	F
Grape St	II	30	10.2	12.2	22.4	0.07	10.6	F
Total	II		287.4	420.4	707.8	3.07	15.6	E

Arterial Level of Service: EB Rosecrans St

Cross Street	Arterial Class	Flow Speed	Running Time	Signal Delay	Travel Time (s)	Dist (mi)	Arterial Speed	Arterial LOS
Hugo St	II	35	16.7	20.9	37.6	0.13	12.8	F
Nimitz Blvd	II	35	23.3	126.3	149.6	0.19	4.5	F
Laning Rd	II	40	29.3	23.4	52.7	0.29	19.6	D
Barnett Ave	II	40	85.6	46.9	132.5	0.95	25.9	C
Midway Drive	II	40	45.5	91.6	137.1	0.49	12.9	F
Sport Arena Blvd	II	40	15.0	0.0	15.0	0.13	31.2	B
Kurtz St	II	35	12.0	36.1	48.1	0.10	7.2	F
Pacific Highway	II	35	29.1	31.7	60.8	0.24	14.5	E
Total	II		256.5	376.9	633.4	2.52	14.3	E

Arterial Level of Service: WB Rosecrans St

Cross Street	Arterial Class	Flow Speed	Running Time	Signal Delay	Travel Time (s)	Dist (mi)	Arterial Speed	Arterial LOS
Kurtz	II	35	29.1	14.0	43.1	0.24	20.4	D
Camino Del Rio West	II	35	12.0	116.6	128.6	0.10	2.7	F
Midway Drive	II	40	15.0	41.1	56.1	0.13	8.3	F
Lytton St	II	40	45.5	46.4	91.9	0.49	19.2	D
Laning Rd	II	40	85.6	9.2	94.8	0.95	36.1	A
Lowell St	II	40	29.3	102.7	132.0	0.29	7.8	F
Hugo St	II	35	23.3	11.3	34.6	0.19	19.4	D
Total	II		239.8	341.3	581.1	2.39	14.8	E

Arterial Level of Service: NB Sport Arena Blvd

Cross Street	Arterial Class	Flow Speed	Running Time	Signal Delay	Travel Time (s)	Dist (mi)	Arterial Speed	Arterial LOS
Dutch Flats Parkway	III	25	22.2	24.9	47.1	0.10	7.7	F
Charles Lindbergh Pa	III	25	32.2	13.8	46.0	0.19	15.3	D
Greenwood Street	III	35	24.4	6.7	31.1	0.20	23.6	C
Frontier Drive	III	35	19.5	24.9	44.4	0.15	12.3	E
Kemper Street	III	35	18.1	17.5	35.6	0.14	14.3	D
Hancock St.	III	35	22.7	14.2	36.9	0.19	18.4	C
Sport Arena Blvd	III	35	16.6	75.9	92.5	0.12	4.8	F
I-8 WB Off Ramp	III	35	36.1	86.5	122.6	0.30	8.8	F
Total	III		191.8	264.4	456.2	1.41	11.1	E

Arterial Level of Service: SB Sport Arena Blvd

Cross Street	Arterial Class	Flow Speed	Running Time	Signal Delay	Travel Time (s)	Dist (mi)	Arterial Speed	Arterial LOS
W Point Loma Blvd	III	35	36.1	109.3	145.4	0.30	7.5	F
Hancock St.	III	35	16.6	2.7	19.3	0.12	23.0	C
Kemper Street	III	35	22.7	48.8	71.5	0.19	9.5	F
Frontier Drive	III	35	18.1	10.6	28.7	0.14	17.8	D
East Drive	III	35	19.5	27.1	46.6	0.15	11.8	E
Rosecrans St	III	35	24.4	86.9	111.3	0.20	6.6	F
Charles Lindbergh Pa	III	25	29.7	15.6	45.3	0.16	13.1	E
Dutch Flats Parkway	III	25	32.2	8.6	40.8	0.19	17.2	D
Pacific Highway	III	25	22.2	51.9	74.1	0.10	4.9	F
Total	III		221.5	361.5	583.0	1.57	9.7	F

Arterial Level of Service: EB Taylor St

Cross Street	Arterial Class	Flow Speed	Running Time	Signal Delay	Travel Time (s)	Dist (mi)	Arterial Speed	Arterial LOS
Congress St	IV	35	15.7	22.3	38.0	0.10	9.0	D
Juan St	IV	35	11.2	25.1	36.3	0.07	6.7	F
	IV	35	18.3	12.1	30.4	0.13	15.5	C
Total	IV		45.2	59.5	104.7	0.29	10.1	D

Arterial Level of Service: WB Taylor St

Cross Street	Arterial Class	Flow Speed	Running Time	Signal Delay	Travel Time (s)	Dist (mi)	Arterial Speed	Arterial LOS
Morena Blvd	IV	35	17.7	23.2	40.9	0.11	9.4	D
	IV	35	18.3	12.5	30.8	0.13	15.3	C
Congress St	IV	35	11.2	6.6	17.8	0.07	13.8	C
Pacific Highway	IV	35	15.7	24.1	39.8	0.10	8.6	E
Total	IV		62.9	66.4	129.3	0.40	11.2	D