Euclid Avenue Corridor Master Plan

Future Multi-Modal Conditions Report

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MIG

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EXECUTIVE SUMMARY

The Euclid Avenue Corridor Master Plan seeks to improve the quality of life and support the economic vitality of the Euclid Avenue project area by promoting a multi-modal transportation system that is integrated with land use planning and urban design. This Corridor Master Plan is being developed in coordination with the Encanto Community Plan update and is an integral feature of that process.

This report describes the recommended transportation-related improvements for enhancing the safety and efficiency of moving pedestrians, bicyclists, transit, and vehicles. It also provides the technical analysis of the recommended improvements to the circulation system and documents the potential effects on circulation as a result of implementation of the Corridor Master Plan.

PROJECT SETTING

Euclid Avenue is a major corridor located within the Encanto Community Planning Area in the City of San Diego. The Encanto Neighborhoods are located east of Downtown, and bounded by Mid-City to the north, Southeastern San Diego Community Planning Area to the west, the City of Lemon Grove to the east, Skyline-Paradise Hills to the southeast, and National City to the South. For the purposes of this Master Plan development, the project area for this corridor is identified as Euclid Avenue between State Route 94 and Guymon Street, and the study area extends from Federal Boulevard to Market Street.

The Euclid Avenue Corridor has excellent local and regional transportation access via the freeway and public transportation. However, the current design and characteristics of Euclid Avenue favor vehicles. It is a busy four-lane roadway that presently has segments that do not adequately accommodate pedestrians and bicyclists. The travel conditions and deficiencies of these facilities are described below to provide context for the proposed improvements recommended to complement the high degree of existing regional transportation access.

The multi-modal Euclid Transit Station located on the southwest quadrant of the intersection of Euclid Avenue and Market is within a ½-mile walk of the Hilltop Drive/Euclid Avenue intersection and includes light rail access and serves as a hub for several MTS bus routes in the area. The Euclid Transit Station is among the busiest stops of the Orange Line Trolley line which connects the Santa Fe Depot in downtown San Diego to the City of El Cajon.

GOALS AND OBJECTIVES

As described by the goals and policies of the San Diego General Plan that apply to the study area, a major aspect of the Master Plan is to create a comprehensive and interconnected multi-modal circulation system that supports the convenient and efficient movement of all modes (pedestrians, bicyclists, transit and vehicles) that travel along the corridor and to enhance safety and community mobility. Specifically, the recommended transportation-related improvements were based on the following mobility objectives:

- Establish a comprehensive and interconnected mobility network that shifts the project area's predominately auto-oriented character to be more accommodating of pedestrians, bicyclists, and transit riders.
- Maximize the utilization of the existing curb-to-curb geometry as an interim solution
- Expand the curb-to-curb geometry as a long-term solution and as underutilized and vacant parcels on the west side of Euclid Avenue are developed
- Provide enhanced pedestrian crossing points along Euclid Avenue at every intersection with treatments based on applicable warrants
- Provide additional safety measures (i.e. shorter crossing distances, reduction in conflict points, signal installations, etc.) in areas projected to have a high level of pedestrian activity or across high-volume and/or high-speed roadways
- Ensure adequate pedestrian access to the numerous transit stops/stations throughout the corridor
- Ensure a safer and more comfortable environment for waiting transit patrons by providing additional amenities at transit stops/stations throughout the corridor
- Implement facilities and amenities to encourage bicycle ridership along the corridor

These guiding principles and objectives were used during the Master Plan planning process where numerous geometric alternatives were developed, analyzed on a preliminary basis and vetted by the project team, City staff, and the community. Through this process, the Preferred Interim Mobility Option and Preferred Long-term Mobility Option were developed for the Euclid Avenue Corridor Master Plan.

ELEMENTS OF THE MASTER PLAN

To improve walkability, bicycling, and transit integration into the street network and still accommodate the future needs of vehicles, the Master Plan proposes the following main streetscape improvements:

- Re-size and widen the existing roadway to provide a balanced right-of-way with designated facilities for each mode. This includes the construction of wider sidewalks, a landscaped parkway and buffered bicycle lanes along the corridor.
- Provide a more complete and interconnected network by implementing the Hilltop Drive connection. This connection will help overcome the existing local mobility barrier by formally providing direct access to the western side of Hilltop Drive from Euclid Avenue.
- Direct traffic associated with future development along Euclid Avenue toward side-streets and alley ways, whenever possible. Future improvements to parking on the side streets and site design will influence the flow of traffic and should be considered with all future development applications.

The final locations, design, and timing of all the proposed street network improvements will depend on future development, community needs, further engineering study, and available funding.

MOBILITY ASSESSMENT FINDINGS

Various methodologies were used to evaluate the travel experience along the corridor with the proposed land use and roadway network changes. A level of service (LOS) rating was determined for each mode of travel based on specific evaluation criteria established for each of the modes along the study corridor. In general, roadway and intersection LOS is based on the facility operations, while LOS evaluations for pedestrian, bicycle, and transit facilities are based on user perception of the traveling experience on the subject facilities. **Table ES-1** summarizes the results of the multimodal level of service analysis conducted for the future year conditions along the corridor.

Table ES-1: Summary of Future Conditions
Euclid Avenue Corridor LOS Analysis

	AM				PM			
	***Intersection*[3]**	***Transit NB/SB***	***Pedestrian NB/SB***	***Bicycle NB/SB***	***Intersection***	***Transit NB/SB***	***Pedestrian NB/SB***	***Bicycle NB/SB***
Federal Avenue to SR-94 WB Ramps[1]		A/C	C/D	D/**E**[2]		A/C	C/D	D/**E**[2]
@SR-94 WB Ramps[1]	A				A			
SR-94 WB Ramps to SR-94 EB Ramps[1]		A/A	C/C	C/C		A/A	D/C	C/C
@SR-94 EB Ramps[1]	C				C			
SR-94 EB Ramps to Hilltop Drive[1]		A/B	C/B	**E**[2]/C		A/B	C/C	**E**[2]/C
@Hilltop Drive	B				B			
Hilltop Drive to Lise Avenue		C/A	B/B	C/C		C/A	C/C	C/C
@Lise Avenue[4]	A				A			
Lise Avenue to Guymon Street		A/C	B/B	D/C		A/C	B/C	D/C
@Guymon Street	A				A			
Guymon Street to Market Street		B/A	B/C	D/C		B/A	C/C	D/D
@Market Street	**E**[2]				**E**[2]			

1. Portions or the entire intersection or segment area is part of Caltrans right-of-way. Therefore, any proposed changes or enhancements at this location are subject for review and approval by Caltrans.
2. Bold letter indicates unacceptable LOS E or F.
3. All study intersections are assumed to be signalized in the future.
4. In the future, intersection meets peak hour traffic signal warrants and is therefore assumed to be signalized.

Source: Fehr & Peers, February 2014

Overall, these recommended improvements will create a more desirable pedestrian and bicycle environment while still balancing the needs of moving and parked vehicles. The intersection of Euclid Avenue and Market Street is forecast to operate at deficient LOS during the peak hours, which is a result of the trolley operations at the Euclid Avenue crossing. By 2030, trolley frequency will double with headways reducing from 15 minutes between trains to 7.5 minutes between trains. Although the

increased frequency will benefit transit passengers on the Orange Line, the increased gate closures at Euclid Avenue and Market Street will affect the level of service of the intersection.

LOS E conditions also occur for bicycle along the corridor approaching the SR-94 interchange in both the northbound and southbound direction. The LOS E condition is primarily a result of high peak hour traffic and speeds at these segments, as well as increased conflicts with other modes.

As future development occurs in the corridor, it is recommended that the City of San Diego continue to monitor the pedestrian and vehicular volumes to determine the correct time to implement the proposed enhanced crosswalk and traffic signal improvements. The City should also work with SANDAG and MTS to monitor transit ridership throughout the Euclid Avenue corridor to determine the appropriate time to increase bus frequencies and whether or not additional transit service is needed.

INTRODUCTION

The Euclid Avenue Corridor Master Plan seeks to improve the quality of life and support the economic vitality of the Euclid Avenue project area by promoting a multi-modal transportation system that is integrated with land use planning and urban design. This Corridor Master Plan is being developed in coordination with the Encanto Community Plan update and is an integral feature of that process.

This report describes the recommended transportation-related improvements for enhancing the safety and efficiency of moving pedestrians, bicyclists, transit, and vehicles. It also provides the technical analysis of the recommended improvements to the circulation system and documents the potential effects on circulation as a result of implementation of the Corridor Master Plan.

MULTI-MODAL CONTEXT AND CONDITIONS

Euclid Avenue is a major corridor located within the Encanto Community Planning Area in the City of San Diego. The Encanto Neighborhoods are located east of Downtown, and bounded by Mid-City to the north, Southeastern San Diego Community Planning Area to the west, the City of Lemon Grove to the east, Skyline-Paradise Hills to the southeast, and National City to the South. For the purposes of this Master Plan development, the project area for this corridor is identified as Euclid Avenue between State Route 94 and Guymon Street (where changes to land uses and infrastructure are proposed), and the study area extends from Federal Boulevard to Market Street, where the overall impacts of the project are evaluated.

The Euclid Avenue Corridor has excellent local and regional transportation access via the freeway and public transportation. However, the current design and characteristics of Euclid Avenue favor vehicles. It is a busy four-lane roadway that presently has segments that do not adequately accommodate pedestrians and bicyclists. The travel conditions and deficiencies of these facilities are described below to provide context for the proposed improvements recommended to complement the high degree of existing regional transportation access. (For a complete account of existing conditions, see the April 2013 *Euclid Avenue Corridor Master Plan Existing Conditions Report*.)

STREET NETWORK

The corridor's network of streets serves as the foundation for regional and local circulation. Euclid Avenue is classified as a Major Roadway in the Southeastern San Diego Community Plan (City of San Diego, 1987, amended 2009) with a posted speed limit of 35 mph. The right-of-way width is approximately 80 to 100 feet and the curb to curb width ranges from 65 to 70 feet. Within the project area, Euclid Avenue provides direct access to adjacent land uses, freeway access to State Route 94, and local north-south connectivity for inter-community trips. Additionally, the existing daily traffic volumes along Euclid Avenue range between 25,500 and 33,800 vehicles per day (vpd).

East-west local inter-community connectivity is provided by Market Street, a Major roadway in the Southeastern San Diego Community Plan (City of San Diego, 1987, am. 2009).

State Route 94 (SR-94) that traverses the project area provides regional and citywide access. The eight-lane freeway generally extends east-west through the City of San Diego and connects to the City of Lemon Grove and the community of Spring Valley in the County of San Diego. East of Spring Valley, SR-

94 becomes a two-lane rural highway extending southeast towards the US-Mexico border and intersecting Interstate 8 near the community of Boulevard. In the vicinity of the project area, SR-94 includes a full-access interchange at Euclid Avenue and includes direct and loop ramps.

PUBLIC TRANSIT

The Euclid Avenue Corridor includes several public transit options for local and regional mobility. Public transit for the project area is provided by the San Diego Metropolitan Transit System (MTS) and consists of public bus, trolley, and paratransit.

The Master Plan project area is served by MTS Bus Routes 916/917 and 955. Route 916/917 provides service in a circular pattern between the Euclid Trolley and College Grove, with stops in Oak Park, City Heights, Lemon Grove, and North Encanto. Route 916 provides clockwise service on weekdays, while Route 917 serves patrons in the opposite direction on weekdays. Route 916/917 operates at 30-minute headways before 7:00 pm and at 60-minute headways thereafter. On Saturdays, Route 916/917 operates at 60-minute headways all day, but no Sunday service is provided by these routes.

Route 955 extends between the 8th Street Trolley Station in National City and San Diego State University with weekday headways of approximately 15 minutes before 7:30 pm and 30 minutes thereafter. On Saturdays, Route 955 operates at 20- to 30-minute headways and Sunday service is provided at 30-minute headways.

The multi-modal Euclid Transit Station located on the southwest quadrant of the intersection of Euclid Avenue and Market is within a ½-mile walk of the Hilltop Drive/Euclid Avenue intersection and includes light rail access and serves as a hub for several MTS bus routes in the area. The Euclid Transit Station is among the busiest stops of the Orange Line Trolley line which connects the Santa Fe Depot in downtown San Diego to the City of El Cajon. The Orange Line Trolley operates at headways of approximately 15 minutes before 8:30 pm and 30 minutes thereafter on weekdays. On Saturdays and Sundays, the Orange Line operates at 30-minute headways.

Bus and trolley ridership is relatively high in the project area. According to 2010 transit passenger load information obtained from SANDAG, 6,741 boardings and 6,630 alightings occurred daily at all transit stops between the Euclid Trolley Station and Federal Boulevard. The Euclid Trolley Station stop at Euclid Avenue and Market Street has the highest boarding and alighting activity with 12,705 total boardings and alightings related to the Orange Line Trolley and local buses. The Euclid Avenue and Federal Boulevard bus stop has the highest bus passenger load at 451 daily alighting/boardings.

BICYCLE FACILITIES

Bicycling is an environmentally-friendly mode of transportation that enhances both personal and social well-being. Bicycling is recognized as an integral component of the Encanto Neighborhood Community's transportation system, today and in the future. It is an important travel mode and a key component of a seamless multi-modal transportation system. In addition to mobility, this mode of travel provides many public access, health, and economic benefits.

Based upon the City of San Diego's *Bicycle Master Plan Update* (City of San Diego, 2011), no existing bicycle facilities were identified on Euclid Avenue. However, field observations conducted in 2013 revealed bike route signage and "Share the Road" signage along Euclid Avenue between Federal Avenue and Market Street. Reflective of the lack of designated facilities, existing bicycle data collected at all of the project area intersections during the AM and PM peak periods showed that existing bicycle usage along Euclid Avenue is very low, with fewer than five bicyclists traveling along the corridor during each of the peak hours.

PEDESTRIAN FACILITIES

As described in the City of San Diego's *Pedestrian Master Plan* (City of San Diego, 2006), there is a broad range of benefits for making more walkable communities that, when combined all together create a compelling reason for improving the City's walking environment through the implementation of new or enhanced pedestrian projects. For instance, walking is another environmentally friendly mode of transportation that enhances both personal and social well-being. In addition to mobility, this mode of travel also provides many public access, health and economic benefits. Safe, convenient, attractive, and well-designed pedestrian facilities are essential if this mode is to be properly accommodated and encouraged. Additionally, the *Pedestrian Master Plan* also identified that 0.75% of residents living in the Encanto Neighborhoods walk to work as their primary means of transportation (City of San Diego, 2006).

The existing land uses, neighborhood density and scale, as well as the street configuration along the southern portion of Euclid Avenue near Market Street are conducive to pedestrian activity. Within or adjacent to the Euclid Avenue Corridor are land uses, such as a transit hub, storefronts, and public uses (i.e. a school and library), that all generate pedestrian traffic.

Frontage along both sides of the project area is primarily residential with sidewalk widths that range between approximately five feet to eight feet. Under existing conditions, Euclid Avenue south of Guymon

Street includes sidewalks and several amenities for pedestrians and transit patrons. North of Guymon Street, Euclid Avenue has contiguous sidewalks that are five feet wide on both sides of the street and on-street parking, which provides a buffer between pedestrians and motorists. At the Hilltop Drive/Euclid Avenue intersection, there is an informal path linking Euclid Avenue to the western section of Hilltop Drive (at Hal Street) that students use as a shortcut to access Gompers Preparatory Academy, a charter high school.

Existing pedestrian data were collected at all of the project area intersections during the AM/PM peak periods. In the project area, pedestrian intersection counts are the highest at Euclid Avenue and Guymon Street, which provides access to Horton Elementary School and is less than a ¼ -mile walk from the Euclid Trolley Station, as well as the commercial and institutional uses located around the Euclid Avenue/Market Street intersection. Lower pedestrian activity exists along Euclid Avenue segments north of Guymon, where land uses are predominantly lower-density residential single-family dwelling units or vacant parcels.

All the intersections along Euclid Avenue are controlled by traffic signals or stop signs on the side-street. There no marked crosswalks at the signalized intersection of Euclid Avenue and Federal Boulevard, while all the other remaining signalized study intersections along Euclid Avenue have marked crosswalks provided across all legs. These include:

- Market Street (with marked crosswalks at all approaches)
- Guymon Street (with marked crosswalks at all approaches)
- Hilltop Drive (with marked crosswalks at all approaches)

All of the remaining intersections on Euclid Avenue in the project area are side-street stop controlled, with vehicular traffic on Euclid Avenue uncontrolled and marked crosswalks not provided across Euclid, including:

- Lise Avenue
- SR-94 Eastbound Ramps
- SR-94 Westbound Ramps

PARKING

An inventory of all on-street parking spaces within the project area was conducted in April 2013. The area consisted of Euclid Avenue between Market Street and Federal Boulevard. Free on-street parallel parking with no time restrictions is provided on both sides of the roadway between Market Street and Hilltop Drive and is permitted on the east side of the roadway between Hilltop and Geneva Avenue. Parking is prohibited on the west side of the street on this segment because of the merging activity by vehicles exiting eastbound SR-94 and traveling south on Euclid Avenue. Approximately 58 on-street parking spaces are provided on Euclid Avenue in the project area.

On-street parking demand observations were conducted on April 3, 2013 during the AM and PM peak commute periods. Observations showed that existing on-street parking is underutilized as parking occupancy on segments between streets during both the AM and PM peak periods was relatively low (0% to 15%) and most segments had no cars parked or at most two cars.

The City of San Diego's *Street Design Manual* (City of San Diego, 2002) suggests that angled parking may be implemented on one side of the road along residential local streets or commercial streets if the curb to curb width is 44 feet or greater. Angled parking may be implemented on both sides of the street if the curb to curb width is 52 feet or greater. The Master Plan for Euclid Avenue will remove the on-street parking along the west side of the corridor. Although current parking demand is low, it is possible that future demands for parking could increase. Therefore, as improvements along the corridor are implemented, considerations should be made for restriping the intersecting streets to provide additional parking where feasible or providing an appropriate supply with new development.

MULTI-MODAL STRATEGY AND IMPROVEMENTS

As described by the goals and policies of the San Diego General Plan that apply to the study area, a major aspect of the Master Plan is to create a comprehensive and interconnected multi-modal circulation system that supports the convenient and efficient movement of all modes (pedestrians, bicyclists, transit and vehicles) that travel along the corridor and to enhance safety and community mobility. Specifically, the recommended transportation-related improvements were based on the following mobility objectives:

- Establish a comprehensive and interconnected transportation network that shifts the pre-dominantly auto-oriented character of the project area to other modes
- Maximize the utilization of the existing curb-to-curb geometry as an interim solution
- Expand the curb-to-curb geometry as a long-term solution and as underutilized and vacant parcels on the west side of Euclid Avenue are developed
- Provide enhanced pedestrian crossing points along Euclid Avenue at every intersection with treatments based on applicable warrants
- Provide additional safety measures (i.e. shorter crossing distances, reduction in conflict points, signal installations, etc.) in areas projected to have a high level of pedestrian activity or across high-volume and/or high-speed roadways
- Ensure adequate pedestrian access to the numerous transit stops/stations throughout the corridor
- Ensure a safer and more comfortable environment for waiting transit patrons by providing additional amenities at transit stops/stations throughout the corridor
- Implement facilities and amenities to encourage bicycle ridership along the corridor

These guiding principles and objectives were used during the Master Plan planning process where numerous geometric alternatives were developed, analyzed on a preliminary basis and vetted by the project team, City staff, and the community. Through this process, the Preferred Interim Mobility Option and Preferred Long-term Mobility Option were developed for the Euclid Avenue Corridor Master Plan and the details of their concepts, by mode, are described in this section. The corresponding graphics illustrating these proposed mobility concepts and recommendations are provided in **Appendix A.**

It should be noted that the timing of all recommended improvements will be contingent on future development within the corridor, and will be subject to further engineering study prior to implementation. Additionally, as development occurs along Euclid Avenue, the movements of all modes (auto, pedestrian,

bicycle and transit) should be monitored to determine the appropriate time to implement each of the recommended improvements.

KEY IMPROVEMENTS

STREET NETWORK

The Euclid Avenue Corridor was originally designed to favor automobiles given the current right-of-way allocation, and one of the major issues along this busy major street is the limited accommodation for other mobility choices. Under existing conditions, the wide curb-to-curb width makes it difficult for pedestrian crossings in the project area, especially at uncontrolled intersections including the SR-94 ramps and Lise Avenue. It can be difficult for pedestrians to identify appropriate gaps in traffic to cross the entire width of Euclid Avenue because of the relatively high traffic speeds and volumes. Additionally, no separate right-of-way is reserved and designated for bicyclists, and so bicyclists traversing through the corridor are forced to share the road with vehicles. This limits the number of cyclists, especially those riders that are not as confident and are more risk averse than experienced commuter cyclists. Accordingly, one of the main objectives of the Master Plan is to establish a comprehensive and interconnected mobility network that shifts the project area's predominately auto-oriented character to be more accommodating of pedestrians, bicyclists, and transit riders.

To improve walkability, bicycling, and transit integration into the street network and still accommodate the future needs of vehicles, the Master Plan proposes the following streetscape improvements:

- Re-size and widen the existing roadway to provide a balanced right-of-way with designated facilities for each mode.
- Provide a more complete and interconnected network by implementing the Hilltop Drive connection. This connection will help overcome the existing local mobility barrier by formally providing direct access to the western side of Hilltop Drive from Euclid Avenue.
- Direct traffic associated with future development along Euclid Avenue to take access from side-streets and alley ways, whenever possible.

The final locations, design, and timing of all the proposed street network improvements will depend on future development, community needs, further engineering study, and available funding.

MULTI-MODAL ENHANCEMENTS

The focused mixed-use development anticipated within the project area, especially along the west side of Euclid, is expected to increase bicycle and pedestrian activity along the corridor. This, in association with the projected increase in vehicular traffic, would likely increase the potential for conflicts with various modes of travel, resulting in a higher potential for conflicts and collisions.

Therefore, the Master Plan includes facility enhancements within the Euclid Avenue project area to provide a safer environment and interaction amongst the transportation modes. As illustrated in the Euclid Avenue Mobility Concept diagrams in **Appendix A**, these enhancements include:

- Curb bulb-outs at intersections to reduce the effective crossing distance and curb-to-curb width
- Enhanced crosswalks to improve their visibility
- Implementation of a traffic signal at Lise Avenue
- Reduced travel lane widths to moderate vehicle speeds and accommodate bicycle facilities
- Restriction of driveway access along Euclid Avenue to reduce curb cuts and turning movements
- Installation of buffers between pedestrian, bicycle, and vehicular rights-of-way to distinguish between designated pedestrian, bicycle, and vehicular zones

Specific details of the safety enhancements listed above are described in respective sub-sections to follow.

Additionally, the City of San Diego and Caltrans are currently evaluating options to improve operations of the SR-94 interchange, which will also include safety enhancements for motorists, bicyclists, and pedestrians. These options include short-term restriping, signalization, ramp alignment modifications plus long-term reconfiguration of the interchange that will further address safety and provide acceptable vehicle LOS.

PUBLIC TRANSIT

Under existing conditions the project area is well served by transit. It is expected that as the area continues to develop per the buildout of the Master Plan, the demand for transit use will continue to increase.

The *2050 SANDAG Regional Transportation Plan (RTP)* (SANDAG, 2011) does not mention any specific planned improvements to the bus routes servicing the Corridor, but does mention general frequency

enhancements for key local bus routes of 15-minute headways all day by 2020 and 10-minute headways all day by 2035. The RTP also listed as a planned project, the increased frequency and a reduction in peak period headways along the Orange Line Trolley from 15 minutes to 7.5 minutes in 2030. There is the potential for future bus service modifications that would complement the proposed 47th Street BRT station; however, as part of this Master Plan, it is assumed that that no changes in the project area's bus operations between existing and future buildout of the Master Plan other than the frequency enhancements previously mentioned. It is recommended that that a standard set of amenities (i.e. benches, shelters, trash receptacles, and pedestrian-scale lighting) be provided at all bus stops along Euclid Avenue project area. These recommended improvements accommodate the projected increase in ridership and improve the safety and comfort for transit patrons at stops.

Additionally, as the resident and employee population within the corridor increases, it is recommended that the City of San Diego work with MTS to determine if any additional improvements (i.e. increasing headways and/or implementation of a new bus route) are necessary to provide better connectivity and more efficient travel between the Planning Area and other neighborhoods.

BICYCLE FACILITIES

To ensure connectivity to both the local and regional area and to close gaps in the system, future bicycle facilities are proposed along Euclid Avenue Master Plan Corridor, which is consistent with the City of San Diego's *Bicycle Master Plan Update* (City of San Diego, 2011). Thus, the Interim Mobility Option proposes to remove on-street parking along the west side of Euclid Avenue and to slightly reduce the width of the vehicle travel lanes and left-turn lane/median to accommodate the addition of Class II bicycle lanes along both sides of the Euclid Avenue and within its existing curb-to-curb width. The Interim Mobility Option specifically proposes the installation of northbound and southbound five-foot bicycle lanes along Euclid Avenue between Market Street and Geneva Avenue. North of Geneva Avenue, the bicycle facilities will transition to Class III bicycle facilities enhanced with clear signage and sharrows.

Safe, convenient, attractive and well-designed bicycle facilities are essential if this mode is to be properly accommodated and encouraged along the Euclid Avenue Corridor with buildout of the Master Plan. The Long-term Mobility Option proposes the expansion of the street cross-section which would provide an extra five feet in the curb-to-curb width that can be used to buffer the Class II facilities from vehicular traffic. Under the Long-term Mobility Option, all the bicycle facilities within the entire project area are proposed to be designated as Class II with a two-foot buffer between the travel lane and the bicycle lane, as an extra safety measure and to facilitate convenient bicycle travel.

Secure bicycle parking is essential to ensuring that bicycling is a convenient travel mode. This includes both on-street bicycle parking to provide access to public facilities, stores, and services, as well as off-street bicycle parking within housing developments and offices for residents and employees/visitors, respectively. The Master Plan recommends that as part of the public right-of-way and streetscape improvements, public bicycle racks be installed at key points along the Euclid Avenue Corridor (i.e. near commercial uses, at transit stops, and other public gathering places) and adequate private bicycle parking will be required within any non-residential developments based on the bicycle parking standards included in the City of San Diego's Municipal Code.

PEDESTRIAN FACILITIES

Presently the sidewalks along the Euclid Avenue Master Plan Corridor appear uninviting as they lack enticing landscape and other pedestrian enhancements. To achieve a vibrant, walkable environment and a multi-modal corridor in the future, a pleasant, uniform streetscape and public realm with safe and convenient access to transit and uses needs to be established. Based on projected land uses, transit stop locations, and projected volumes the Master Plan recommends the following pedestrian-related improvements, which are illustrated in the Euclid Avenue Mobility Concept diagrams for the interim and long-term conditions:

- Interim Enhancements
    - Installation of a high visibility crosswalk and a Rectangular Rapid Flash Beacon (RRFB) along the south leg of Euclid Avenue and Lise Avenue as an interim pedestrian connectivity improvement provided applicable warrants are met; alternatively, install a high visibility crosswalk across the north leg of the intersection and construct a pedestrian refuge area using raised medians in the center of the roadway. With either configuration, a curb extension could be constructed on the east side of Euclid Avenue as long it does not conflict with an existing driveway.
    - Enhance existing paved crosswalks by painting the borders of each crosswalk at the Euclid Avenue/Hilltop Drive and Euclid Avenue/Guymon Street intersections to increase visibility of the pedestrian facilities.
- Long Term Enhancements
    - The expanded right-of-way under the buildout of the Master Plan allows for opportunities for widened sidewalks and the inclusion of urban parkways, which provide greater pedestrian comfort and an additional buffer.
    - Curb bulb-outs at all study intersections where feasible (i.e. on the east side of Euclid and side-streets only) to reduce the effective crossing distance for pedestrians, improve

in calming traffic and reducing cut through traffic on either side of the corridor. Streets with curb to curb width of 44 feet or greater should be considered for angled parking modifications.

LIGHTING

Street lighting is an important part of mobility infrastructure by increasing the visibility of pedestrians, bicyclists and automobiles along the corridor. Based on a preliminary review of existing lighting on Euclid Avenue, improvements could be made to street lighting especially near intersections where numerous conflicting movements occur among the various travel modes. The existing light locations and proposed new light locations are indicated on the mobility concept diagrams (see **Appendix A**), and the future enhancements are proposed to meet the following general requirements:

1. Fulfill the recommendations of the San Diego Street Design Manual, Street Lighting Chapter, which includes specific requirements for intersection lights and mid-block lights.
2. In general, for Euclid Avenue, the current requirement per the Street Design Manual is for four lights per intersection (two lights at 250-watt and two lights at 150-watt high pressure sodium).
3. Mid-block lighting for Euclid Avenue is intended to occur at intervals not to exceed 150 feet on both sides of the street per the Street Design Manual.
4. Mid-block block lighting is currently prescribed to be Type III cutoff, 250-watt high pressure sodium.
5. Proposed lighting is based on a review of the spacing of existing lights and where new light poles are generally needed. Future lighting plans will need to assess overall wattage and condition of existing lights and overall levels of illumination needed throughout the street corridor.
6. Future lighting plans will need to be verified with any subsequent Street Design Manual Updates.

PLANNING-LEVEL COST ESTIMATE

A planning-level cost estimate was prepared based on the improvements and enhancements described in the Preferred Long-term Mobility Option for the Euclid Avenue Corridor Master Plan (see **Appendix J**). The unit costs for improvements used in the cost estimate are comparable to the unit costs used in similar projects in the San Diego area. It is estimated that intersection-level improvements would total approximately $743,000 and segment-level improvements would total approximately $232,000 for a subtotal of $975,000. After an application of a 30% contingency and additional budget for design-related expenses (another 30% of subtotal) the grand total for the improvements and enhancements of the Preferred Long-term Mobility Option is approximately $1.6 million dollars.

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3. Mid-block lighting for Euclid Avenue is intended to occur at intervals not to exceed 150 feet on both sides of the street per the Street Design Manual.
4. Mid-block block lighting is currently prescribed to be Type III cutoff, 250-watt high pressure sodium.
5. Proposed lighting is based on a review of the spacing of existing lights and where new light poles are generally needed. Future lighting plans will need to assess overall wattage and condition of existing lights and overall levels of illumination needed throughout the street corridor.
6. Future lighting plans will need to be verified with any subsequent Street Design Manual Updates.

PLANNING-LEVEL COST ESTIMATE

A planning-level cost estimate was prepared based on the improvements and enhancements described in the Preferred Long-term Mobility Option for the Euclid Avenue Corridor Master Plan (see **Appendix J**). The unit costs for improvements used in the cost estimate are comparable to the unit costs used in similar projects in the San Diego area. It is estimated that intersection-level improvements would total approximately $690,000 and segment-level improvements would total approximately $197,000 for a subtotal of $887,000. After an application of a 15% contingency and additional budget for design-related expenses (another 15% of subtotal) the grand total for the improvements and enhancements of the Preferred Long-term Mobility Option is approximately $1.2 million dollars.

FUTURE YEAR VOLUMES

A refined SANDAG Series 12 traffic model was prepared for the Encanto Community Plan update by Chen-Ryan Associates and SANDAG. This model provided future daily traffic volumes which were used to assess traffic and circulation outcomes for the Euclid Avenue study and reflect traffic conditions resulting from the full implementation of the Master Plan under Future Year 2035 conditions. This section reviews and documents the sources and methodologies utilized to develop the future year transportation volumes, for all modes, under buildout of the proposed Corridor Master Plan.

STREET NETWORK

Future Year traffic volumes for roadway and intersection locations were derived from the SANDAG Series 12 Transportation Forecast per the City of San Diego's *Small Study Area Traffic Modeling Process* (April 2012). The forecasting task was performed by another consultant (Chen-Ryan Associates) in conjunction with SANDAG, and the adjusted forecast results were provided to Fehr & Peers for use in this study. As part of the modeling process, a thorough review of model inputs was completed for the Base Year and Future Year scenarios. This review included the following:

- Circulation network
- Number of lanes on roadways and approach lanes at signalized intersections
- Traffic controls
- Street classification
- Base year traffic volumes
- Roadway speed limits
- Zone connector locations and granularity
- Traffic Analysis Zones
- City approved model land use and trip generation inputs (land use description, unit type, quantity, and City of San Diego trip generation rates)

Using the input data outlined above, SANDAG calibrated/validated the base year model to meet the standards set forth by the City of San Diego.

The model assumed the 2035 Revenue Constrained RTP Highway Network, which includes network changes associated with the SR-94 redesign along with other planned regional highway and transit service improvements. The Future Year Model was developed based on the calibrated Base Year Model with the following assumptions:

- Buildout of the proposed Master Plan land uses within the project study area (Master Plan land use assumptions are provided in **Appendix B)**.
- Reasonably expected roadway network with the SR-94 Alternative 1
- Year 2035 land uses outside of the study area that may affect circulation in the corridor
- Year 2035 roadway/transit network outside of the study area

The land use information contained within the model reflects the proposed future uses for the entire Encanto Community Plan area. The model inputs described above were reviewed by Chen-Ryan Associates and approved by City staff prior to running the model forecasts used to derive Future Year volumes.

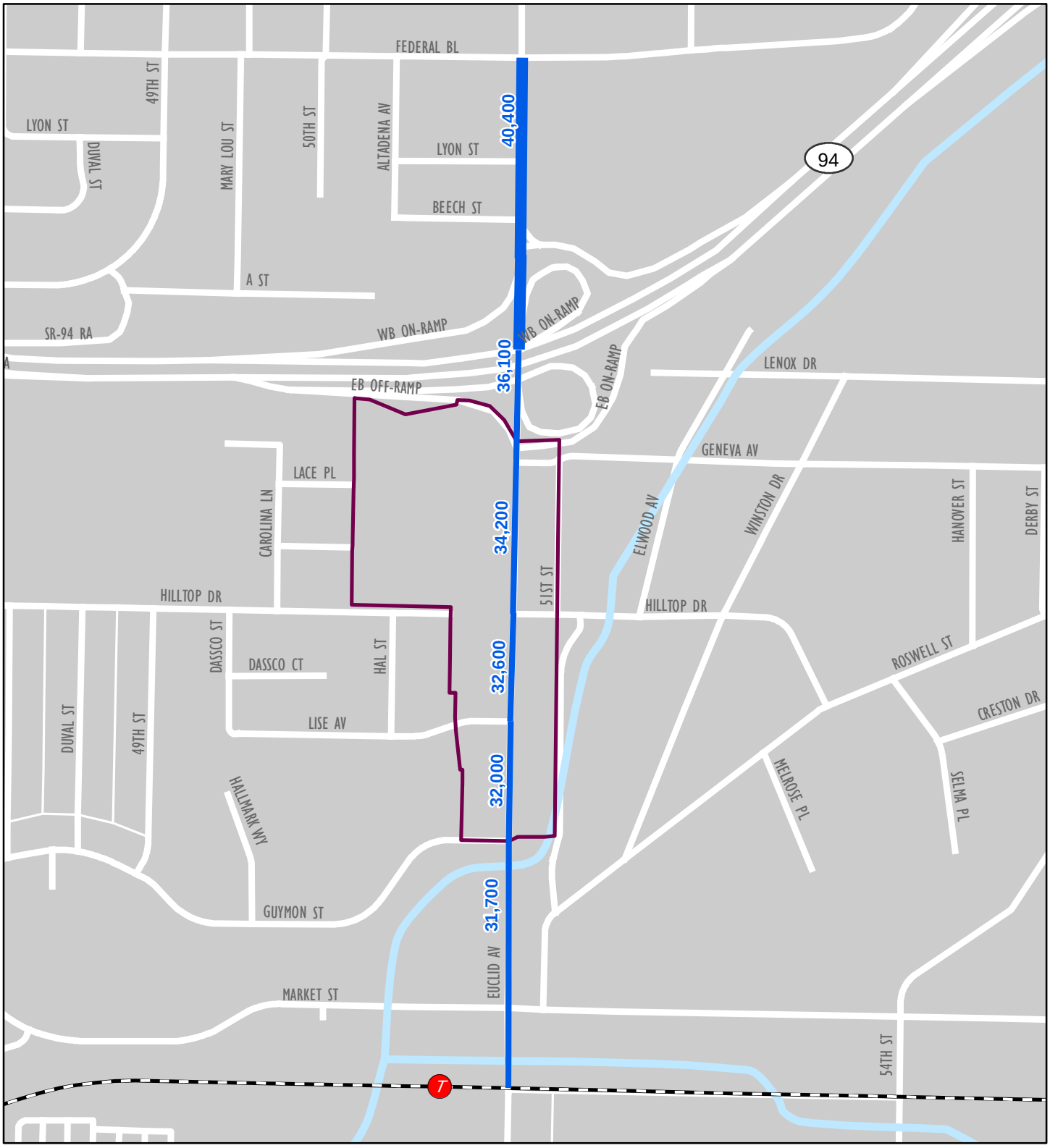
The Future Year forecast daily volumes were reviewed and adjusted by the project team based on existing travel patterns, anticipated growth within the study area, projected access points, and overall regional growth. In general, the daily volumes from the model were used directly for this analysis. Due to the regional nature of the traffic model, many of the local streets that intersect the Euclid Avenue corridor are not included in the model network. As such, future volumes for these facilities were forecasted by applying a growth factor to existing volumes where the growth factor was determined from data on adjacent roadway segments. The final adjusted forecast daily traffic volumes along Euclid Avenue are illustrated in **Figure 1**, and the associated volumes and adjustments are included in **Appendix C**.

Using the Furness Method, the forecasted ADT volumes were then used to calculate peak hour intersection turning movement volumes under buildout conditions of the Master Plan, which are displayed in **Figure 2**. The Furness Method balances the inbound and outbound traffic flows on each approach to the intersection based on existing conditions peak hour volumes, existing daily volumes and future daily volumes. Intersection volumes were then reviewed and adjustments were made to ensure reasonable growth on all legs of the intersection and that inbound and outbound volumes were balanced within 10% of the total link volume. Peak hour volume calculations and adjustment process spreadsheets for each intersection are included in **Appendix D**.

Figure 1: Projected Roadway Geometrics & Daily Traffic Volumes Under Buildout of the Preferred Plan

Euclid Ave

February 2014



4-Lane Roadway
5-Lane Roadway
X,XXX Daily Traffic Volumes

Project Area

Trolley

Trolley Station

FEHR & PEERS

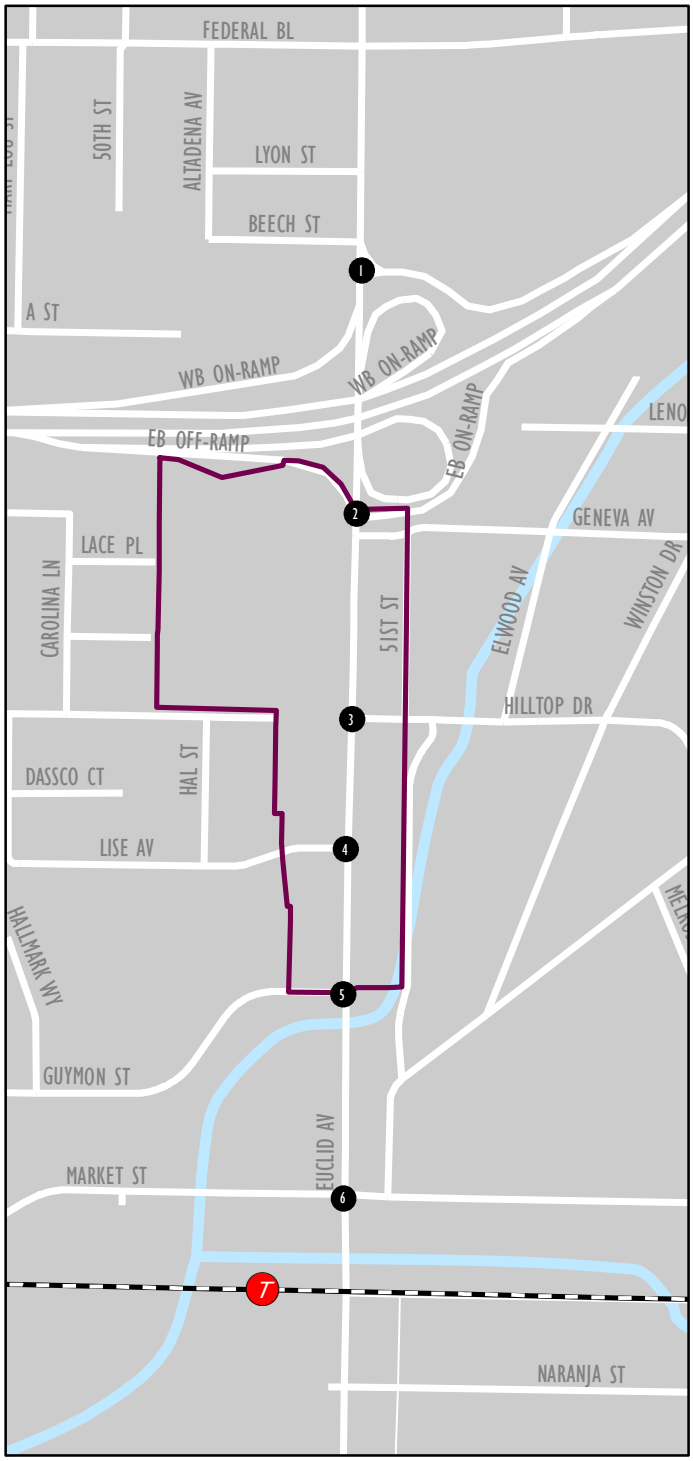
N

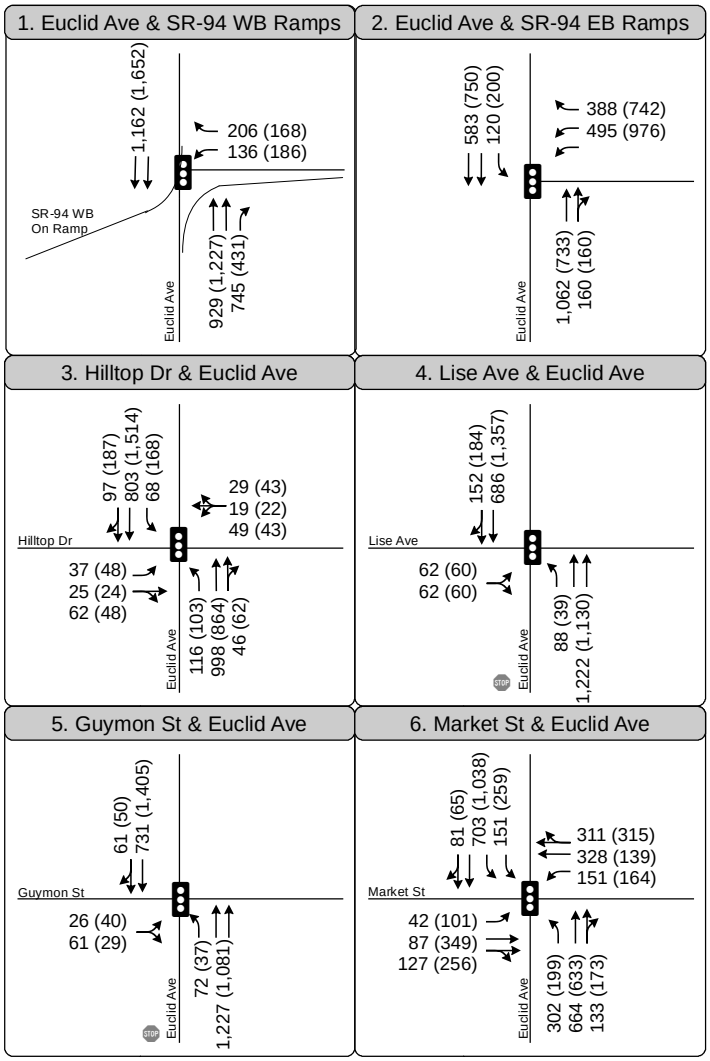
0 0.05 0.1 Miles

Source:
Fehr & Peers (2014)

Figure 2: Projected Lane Configurations and Traffic Volumes Under Buildout of the Preferred Plan
Euclid Ave

February 2014





XX **Study Intersection**

Turn Lane

AM (PM) **Peak Hour Traffic Volume**

Project Area

Trolley

T **Trolley Station**

FEHR & PEERS

N

0 0.05 0.1 Miles

Source:
Fehr & Peers (2014)

TRANSIT RIDERSHIP

The projected future transit ridership at stops within the Project Area was developed by applying a growth factor to existing boarding and alighting data provided in the *Euclid Avenue Corridor Master Plan Existing Conditions Report*. While projecting increases in multi-modal trips requires some level of judgment and is dependent on numerous factors, some quantitative methods are available to assist in this process. The transit ridership growth factor was developed utilizing the mixed-use development (MXD) tool to estimate the specific transit ridership associated with the Project Area under both existing and buildout conditions of the Master Plan. MXD is an analysis tool, developed in partnership with the Environmental Protection Agency (EPA), which quantifies relationships between characteristics of MXDs and the likelihood that trips generated by those MXDs will stay internal to a site or area and use modes of transportation other than the private vehicle. The tool provides estimates of external transit and pedestrian trips and all land uses within approximately 1/3-mile of the study corridor including dwelling units, schools, retail uses, etc.

The ridership estimates for each model year were then compared to calculate the transit ridership growth factor within the Study Area. Overall, the existing transit daily ridership is estimated to increase by 129%. This projected increase in ridership is due to the planned increase in land use density throughout the corridor, the proposed transit oriented nature and design of the proposed land uses, and the projected increase in traffic activity.

Table 1 summarizes the results for forecasting the future transit daily boardings and alightings. The MXD model results, as well as existing transit boarding data, are provided in **Appendix E**.

Table 1: Existing and Future Transit Daily Boardings and Alightings Summary

		Existing[1]			Future[2]		
Transit Stop	**Route**	**Boardings**	**Alightings**	**Total**	**Boardings**	**Alightings**	**Total**
Euclid Avenue & Guymon Street	916/917	6	7	69	15	15	160
	955	28	28		65	65	
Euclid Avenue & Hilltop Drive	916/917	12	8	146	25	20	335
	955	59	67		135	155	
Euclid Avenue & Federal Boulevard	916/917	57	35	451	130	80	1035
	955	179	180		410	410	
Euclid Trolley Station	Orange Line Trolley	2,576	2,732	12,705	5,900	6,255	29,095
	3	358	448		820	1,025	
	4	418	347		955	795	
	5	566	457		1,295	1,045	
	13	1,048	970		2,400	2,220	
	916	171	66		390	150	
	917	113	257		260	590	
	955	1,068	969		2,445	2,220	
	960	82	59		190	135	
	Total	**6,741**	**6,630**	**13,371**	**15,435**	**15,180**	**30,625**

1. Source: SANDAG Assistance to Transit Operations and Planning Program, 2010
2. Existing ridership information obtained from SANDAG Assistance Transit Assistance Transit Operations and planning program was increased by 129% to reflect future ridership under buildout conditions of the Master Plan.

PEDESTRIAN VOLUMES

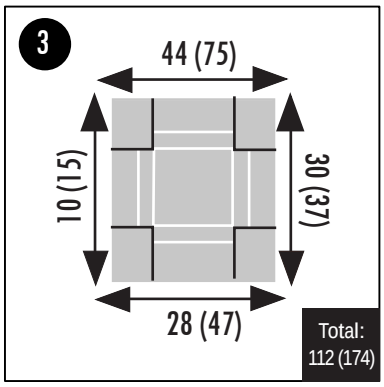
Similar to the projection of transit ridership discussed above, the MXD tool was used to estimate the change in pedestrian trips between existing and future conditions in 2035. MXD provides a specific estimate of external pedestrian trips (vs. those that are captured within the study area) and estimates the change in pedestrian activity between existing and future conditions. The results of the MXD analysis show that the existing external pedestrian trips will increase by approximately 80% in the AM peak hour and 117% in the PM peak hour simply based on land use changes and implementation of the Master Plan. Since there are already continuous sidewalks through the project area, the changes to pedestrian infrastructure are expected to include wider sidewalks where feasible and the recommended installation of a traffic signal at Lise Avenue to enhance pedestrian access and walkability.

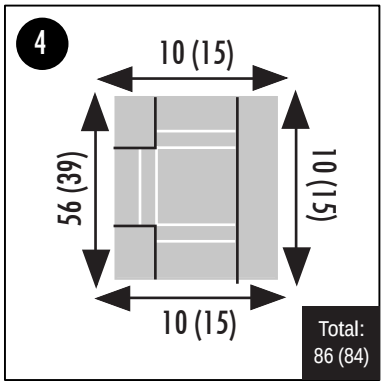
When considering both the pedestrian enhancements and the mixed-use nature of the future land use as described above, it is anticipated that existing pedestrian volumes will effectively double under buildout of the Master Plan. In addition to applying a 2.0 growth factor to existing pedestrian volumes, it is assumed that the change in land use and corridor improvements would also generate additional pedestrian traffic through and across the Euclid Avenue corridor. Therefore, all pedestrian crossings that show minimal or no pedestrian activity under existing conditions will serve, at a minimum, 10 additional pedestrians in the AM peak hour and 15 additional pedestrians in the PM peak hour using the facility, which is reflective of the increased pedestrian activity under buildout conditions of the Master Plan.

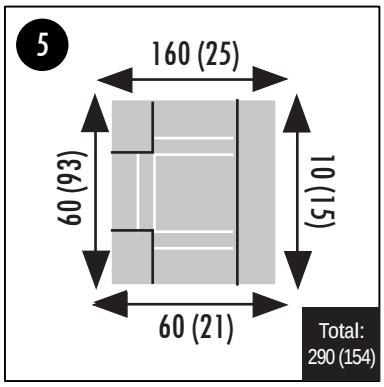
Due to the level of accuracy this projection provides, pedestrian volumes were summarized for the total intersection instead of by the individual movement.

Figure 3 displays the projected pedestrian volumes under buildout of the Master Plan.

Figure 3: Future Pedestrian Peak Hour Volumes
Euclid Ave







XX (XX) AM (PM) Count Totals

Intersection Leg

Crosswalk

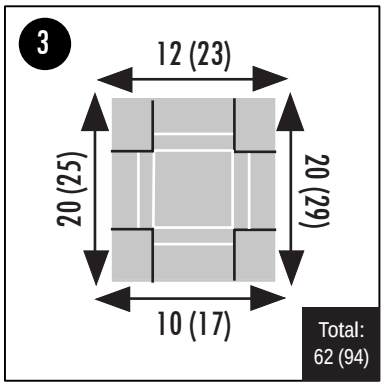
BICYCLE VOLUMES

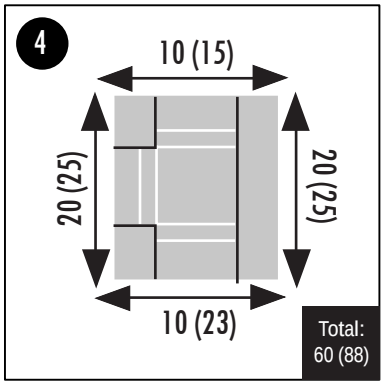
Similar to the projection of transit ridership and pedestrian volumes previously discussed, the MXD tool was used to estimate the increase in bicycle trips between existing and future conditions. MXD does not provide a specific estimate of bicycle trips, but the amount of growth projected for pedestrian trips was used as a proxy for increased bicycle usage. As noted in the previous section, the results of the MXD analysis show that the existing external pedestrian trips will increase by approximately 80% in the AM peak hour and 117% in the PM peak hour simply based on land use changes and implementation of the Master Plan. Based on these results, the projection of future bicycle volumes along the corridor was initially estimated by doubling the existing bicycle volumes or applying a growth factor of two (2).

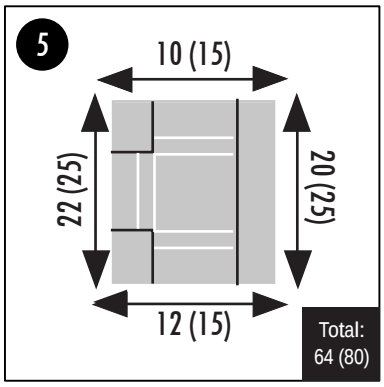
In addition to applying a growth factor to existing bicycle volumes that would be generated by new uses in the corridor, it is assumed that the installation of dedicated bicycle infrastructure in the form of Class II bike lanes in this corridor will generate new bicycle trips through and across Euclid Avenue. Based on the projected growth and enhanced facilities, an additional 20 bicyclists in the AM peak hour and 25 bicyclists in the PM peak hour are anticipated in each direction of Euclid Avenue. Along each side of the streets crossing Euclid Avenue in the project area, it is assumed that an additional 10 bicyclists and 15 bicyclists in the AM and PM peak hour, respectively, will be generated beyond the growth factored volumes. **Figure 4** displays the total projected bicycle volumes under buildout of the Master Plan.

This evaluation of future bicycle volumes displays the magnitude of bicycle ridership throughout the corridor and indicates key locations in which ridership is projected to be prevalent. These key locations should be the focus of any additional bicycle improvements such as the provision of bike racks. As the corridor develops and bicycle ridership within the study area increases, bicycle racks should be placed in areas with the highest demand. These areas may include transit stops and core commercial areas.

Figure 4: Future Bicycle Peak Hour Volumes
Euclid Ave







XX (XX) AM (PM) Count Totals

Intersection Leg

Crosswalk

LEVEL OF SERVICE ANALYSIS

On September 30, 2008, the State of California approved Assembly Bill 1358 – The Complete Streets Act. This act required, commencing January 1, 2011, that the legislative body of a city or county, plan for a balanced, multimodal transportation network that meets the needs of all users of streets, roads, and highways, defined to include motorists, pedestrians, bicyclists, children, persons with disabilities, seniors, movers of commercial goods, and users of public transportation, in a manner that is suitable to the rural, suburban, or urban context of the general plan.

METHODOLOGY

Various methodologies were used for the level of service (LOS) evaluation of the modes along the study corridor under buildout of the Master Plan. The respective analysis methodologies for each mode of travel are described in this section. In general, roadway and intersection LOS is based on the facility operations, while LOS evaluations for pedestrian, bicycle, and transit facilities are based on user perception of the traveling experience on the subject facilities.

AUTOMOBILE

Level of service (LOS) is a quantitative measure describing operational conditions within a traffic stream, and the motorist's and/or passenger's perception of operations. LOS is based on these conditions in terms of such factors as delay, speed, travel time, freedom to maneuver, interruptions in traffic flow, queuing, comfort, and convenience. **Table 2** describes generalized definitions of the various LOS categories (A, best, through F, worst) as applied to roadway operations.

Table 2: Level of Service Definitions

LOS Category	Definition of Operation
A	This LOS represents a completely free-flow condition, where the operation of vehicles is virtually unaffected by the presence of other vehicles and only constrained by the geometric features of the highway and by driver preferences.
B	This LOS represents a relatively free-flow condition, although the presence of other vehicles becomes noticeable. Average travel speeds are the same as in LOS A, but drivers have slightly less freedom to maneuver.
C	At this LOS the influence of traffic density on operations becomes marked. The ability to maneuver within the traffic stream is clearly affected by other vehicles.
D	At this LOS, the ability to maneuver is notably restricted due to traffic congestion, and only minor disruptions can be absorbed without extensive queues forming and the service deteriorating.
E	This LOS represents operations at or near capacity. LOS E is an unstable level, with vehicles operating with minimum spacing for maintaining uniform flow. At LOS E, disruptions cannot be dissipated readily thus causing deterioration down to LOS F.
F	At this LOS, forced or breakdown of traffic flow occurs, although operations appear to be at capacity, queues form behind these breakdowns. Operations within queues are highly unstable, with vehicles experiencing brief periods of movement followed by stoppages.

Source: Highway Capacity Manual 2000.

Roadway Segment LOS Volume Thresholds

Roadway segment LOS volume thresholds provide the basis for evaluation of arterial roadway segment performance. The analysis of roadway segment LOS is based on the functional classification of the roadway, the maximum capacity, roadway geometrics, and existing or forecast Average Daily Traffic (ADT) volumes. **Table 3** presents the roadway segment capacity and LOS standards utilized to analyze arterial roadways. This table was developed based on similar standards currently utilized by jurisdictions throughout the San Diego region, and has been approved for use in the City of San Diego.

These standards are generally used as long-range planning guidelines to determine the functional classification of roadways. The actual capacity of a roadway facility varies according to its physical and operational attributes. Typically, the performance and LOS of a roadway segment is heavily influenced by the ability of the arterial intersections to accommodate peak hour volumes. For the purposes of this traffic analysis, LOS D is considered acceptable for Circulation Element roadway segments.

Table 3: City of San Diego Circulation Element Roadway Classifications and LOS Standards

Roadway Functional Classification	LOS A	LOS B	LOS C	LOS D	LOS 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
Secondary Arterial/Collector (4-lane w/ center lane)	< 10,000	< 14,000	< 20,000	< 25,000	< 30,000
Collector (4-lane w/o center lane)	< 5,000	< 7,000	< 10,000	< 13,000	< 15,000
Collector (2-lane w/continuous left-turn lane)	< 5,000	< 7,000	< 10,000	< 13,000	< 15,000
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)	< 2,500	< 3,500	< 5,000	< 6,500	< 8,000
Sub-Collector (2-lane single-family)	-	-	< 2,200	-	-

Source: SANTEC/ITE Guidelines for Traffic Impact Studies in the San Diego Region, February 2004

Intersection Level of Service Standards and Thresholds

This section presents the methodologies used to perform peak hour intersection capacity analysis, including both signalized and unsignalized intersections.

Signalized Intersection Analysis

The analysis of signalized intersections utilized the operational analysis procedure as outlined in the *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. Delay is a measure of driver and/or passenger discomfort, frustration, fuel consumption and lost travel time. This technique uses 1,900 vehicles per hour per lane (VPHPL) as the maximum saturation volume of an intersection. This saturation volume is adjusted to account for lane width, on-street parking, pedestrians, traffic composition (i.e., percentage trucks) and shared lane movements (i.e., through and right-turn movements originating from the same lane). At the intersection of Euclid Avenue & Market Street, the maximum saturation volume was reduced to 1,400 VPHPL on lanes affected by trolley operations to account for signal pre-emption delay

from the Orange Line trolley. The LOS criteria used for this technique are described in **Table 4**. The computerized analysis of intersection operations was performed utilizing the *SYNCHRO 8.0* traffic analysis software.

Table 4: Signalized Intersection Level of Service Criteria

Average Control Delay Per Vehicle (seconds)	Level of Service (LOS) Characteristics
<10.0	*LOS A* describes operations with very low delay. This occurs when progression is extremely favorable, and most vehicles do not stop at all. Short cycle lengths may also contribute to low delay.
10.1 – 20.0	*LOS B* describes operations with generally good progression and/or short cycle lengths. More vehicles stop than for LOS A, causing higher levels of average delay.
20.1 – 35.0	*LOS C* describes operations with higher delays, which may result from fair progression and/or longer cycle lengths. Individual cycle failures may begin to appear at this level. The number of vehicles stopping is significant at this level, although many still pass through the intersection without stopping.
35.1 – 55.0	*LOS D* describes operations with high delay, resulting from some combination of unfavorable progression, long cycle lengths, or high volumes. The influence of congestion becomes more noticeable, and individual cycle failures are noticeable.
55.1 – 80.0	*LOS E* is considered the limit of acceptable delay. Individual cycle failures are frequent occurrences.
>80.0	*LOS F* describes a condition of excessively high delay, considered unacceptable to most drivers. This condition often occurs when arrival flow rates exceed the LOS D capacity of the intersection. Poor progression and long cycle lengths may also be major contributing causes to such delay.

Source: Highway Capacity Manual 2000, TRB Special Report 209.

Unsignalized Intersection Analysis

Unsignalized intersections, including two-way and all-way stop controlled intersections were analyzed using the 2000 Highway Capacity Manual (Section 10) unsignalized intersection analysis methodology. The *SYNCHRO 8.0* Traffic Analysis 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 control delay and is defined for each minor movement. **Table 5** summarizes the LOS criteria for unsignalized intersections.

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

Table 5: Unsignalized Intersection Level of Service Criteria

Average Control Delay (sec/veh)	Level of Service (LOS)
≤10	A
>10 and ≤15	B
>15 and ≤25	C
>25 and ≤35	D
>35 and ≤50	E
>50	F

Source: Highway Capacity Manual 2000, TRB Special Report 209.

MULTI-MODAL LEVEL OF SERVICE

Multi-Modal Level of Service (MMLOS) is a method for assessing how well an urban street serves the needs of all non-automobile users (pedestrians, transit passengers, motorists and bicyclists). The multi-modal LOS analysis method used herein for transit, bicycle and pedestrian was required by the City of San Diego and based on research sponsored by the Transportation Research Board (TRB), through the National Cooperative Highway Research Program (NCHRP) Project 3-70, *Multimodal Level of Service Analysis for Urban Streets*. The method that NCHRP 3-70 developed evaluates, by mode, the feel, comfort, accessibility and safety of an urban street based upon the design, control and operations of the roadway. MMLOS uses Quality of Service (QOS) as an indicator of the traveler's perceived degree of satisfaction with the traveling experience provided within the urban street.

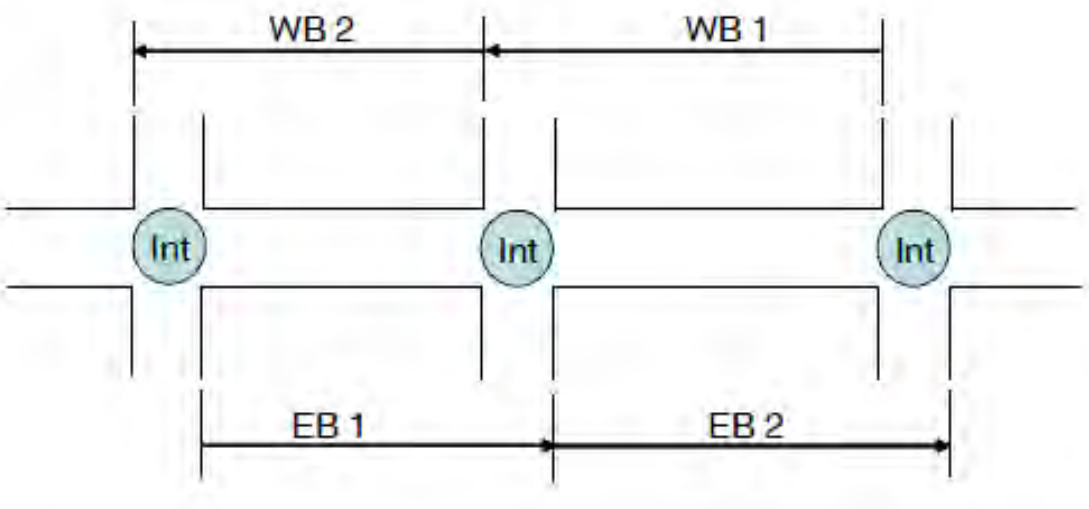
The computerized analysis of MMLOS for all modes was performed utilizing the *Complete Streets LOS, A Multimodal Level of Service Toolkit, Version 3* analysis software developed by Dowling Associates, Inc. This software outputs numerical ratings of the mode of travel, and these rating are then converted into the traditional A-F letter grade system. *Complete Streets LOS* (CSLOS) uses methodologies outlined in the *2010 Highway Capacity Manual (HCM)* to simultaneously determine the LOS for each of the four primary modes along a street: auto, transit, pedestrian, and bicycle. **Table 6** displays the LOS letter grade numerical equivalents for pedestrian, bicycle and transit facilities.

Table 6: Multi-Modal LOS Letter Grade Numerical Equivalents

LOS Model Outputs	LOS Letter Grade
Model $\leq$ 2.00	A
2.00 < Model $\leq$ 2.75	B
2.75 < Model $\leq$ 3.50	C
3.50 < Model $\leq$ 4.25	D
4.25 < Model $\leq$ 5.00	E
Model > 5.00	F

Source: Transportation Research Board NCHRP Project 3-70.

Transit, bicycle, and pedestrian LOS analysis were performed for Euclid Avenue study area. The corridor was divided into analysis segments, with each **segment** consisting of a length of street (link) plus the downstream intersection at the end of the link. Cross section measurements of a segment (i.e. widths for travel lanes, on-street parking, buffers, and medians) were taken at locations that predominately reflected approximately 75% of a segment's characteristics. In most cases, such segment characteristics were represented and measured at the center of the segment length. An **intersection** is any point on the street where through traffic is subject to signal control, stop-sign control, or yield-sign control.



The sub-sections below provide a more detailed description of the specific analysis methodologies and data inputs for each mode.

Transit

The transit LOS is based on a combination of the access experience, the waiting experience, and the ride experience. The access experience is represented by the pedestrian LOS score (to be discussed later in this section) for pedestrian access to bus stops in the direction of travel along the street. The waiting and riding experiences are combined into a transit wait/ride score. The transit wait/ride score is a function of the average headway between transit vehicles and the perceived travel time.

The following six variables are used to determine the transit LOS:

- Frequency of service
- Mean speed
- Reliability of service
- Load factors
- Quality of pedestrian access to transit stops
- Transit stop amenities

Bicycle

The bicycle LOS is a weighted combination of the bicyclists' experiences at intersections and on street links in between the intersections. Bicycle LOS is a function of the following five variables:

- Lateral separation between bicycles and vehicular traffic
- Speed and makeup of the vehicular traffic
- Pavement conditions
- Directional vehicular traffic volumes
- Intersection crossing distance

Pedestrian

The pedestrian LOS is a measure of the pedestrians' experiences walking along the roadway/sidewalk on the street segment in between the intersections. Pedestrian LOS is a function of the following number of variables:

- Lateral separation between pedestrians and vehicular traffic
- Width of sidewalk
- Speed and makeup of the vehicular traffic
- Difficulty of crossing arterial
- Directional vehicular traffic volumes
- Right-turn on red
- Left-turn during "Walk" phase
- Delay waiting to cross at signal
- Intersection crossing distance
- Cross-street vehicular traffic volume and speed
- Pedestrian density

LEVEL OF SERVICE EVALUATION

The projected MMLOS analysis results under buildout conditions of the Master Plan are documented below.

ROADWAY LEVEL OF SERVICE

Table 7 displays the LOS analysis results for the key project area roadway segments under both existing conditions and buildout of the Master Plan. As shown in the table, all of the roadway segments are projected to operate at LOS D or better with the exception of the following:

- Euclid Avenue between Federal Avenue and the SR-94 WB Ramps (LOS E)
- Euclid Avenue between the SR-94 WB Ramps and the SR-94 EB Ramps (LOS E)

Table 7: Existing and Future Roadway Segment LOS Results

	Existing Conditions				***Future Conditions***			
Euclid Ave Roadway Segment	***Cross-Section***	***Average Daily Traffic (ADT)***	***LOS D Threshold***	***LOS***	***Cross-Section***	***Average Daily Traffic (ADT)***	***LOS D Threshold***	***LOS***
Federal Avenue to SR-94 WB Ramps[1]	4-Ln	33,760	35,000	D	5-Ln	40,400	40,000[2]	**E**[3]
SR-94 WB Ramps to SR-94 EB Ramps[1]	4-Ln w/ raised median	28,950	35,000	C	4-Ln, divided	36,100	35,000	**E**[3]
SR-94 EB Ramps to Hilltop Drive[1]	4-Ln	27,410	35,000	C	4-Ln, divided	34,200	35,000	D
Hilltop Drive to Lise Avenue	4-Ln w/ Center lane	25,485	25,000	**E**[3]	4-Ln, divided	32,600	35,000	D
Lise Avenue to Guymon Street	4-Ln w/ Center lane	26,156	25,000	**E**[3]	4-Ln, divided	32,000	35,000	D
Guymon Street to Market Street	4-Ln w/ Center lane	26,198	25,000	**E**[3]	4-Ln, divided	31,700	35,000	D

1. Portions or the entire segment is part of Caltrans right-of-way. Therefore, any proposed changes or enhancements at this location are subject for review and approval by Caltrans.
2. Interpolated the LOS D threshold for a 5-lane major arterial using the LOS D threshold of a 4-lane major arterial and a 6 lane major arterial.
3. Bold letter indicates unacceptable LOS E or F.

Source: Fehr & Peers, February 2014

From a planning perspective, this result would indicate that additional capacity is required on the Euclid Avenue bridge over the freeway. While the roadway evaluation is one indication of possible operational issues in a corridor, it is also important to review the results of the intersection analysis, where intersections typically represent the constraints of the roadway system. The intersection analysis is presented in the next section.

Under buildout conditions of the Master Plan, the cross-section along Euclid Avenue between Hilltop and Market Street changes from a 4-lane major roadway with center lane to a 4-lane major roadway with raised median (divided). The following change in cross-section of these segments and corresponding change in facility type increases the LOS D volume threshold. Accordingly, operations on these segments are projected to improve under future conditions despite the overall increase in average daily traffic (ADT) volumes.

INTERSECTION LEVEL OF SERVICE

Table 8 displays intersection LOS and average vehicle delay results for the key intersections under the buildout of the Master Plan. The existing intersection LOS is also displayed to show the projected change between the buildout of the Master Plan and current operations. Intersection LOS calculation worksheets are provided in **Appendix F**.

As shown in the table, all of the study intersections are projected to operate at LOS D or better under buildout of the Master Plan with the exception of the following:

- Euclid Avenue & Market Street (LOS E in the AM and PM peak hours): It is important to note that operations at this intersection are directly affected by the signal pre-emption delay caused by the gates being down at the Euclid Trolley Station at-grade crossing located immediately south of the intersection. Thus, the maximum saturation flow rate was reduced to 1,400 vehicles per hour per lane (VPHPL) from 1,900 VPHPL on lanes affected by trolley operations to account for the delay caused by the trolley gates.

Figure 5 displays the future LOS for both the Project Area roadway segments and intersections.

TABLE 8: EXISTING AND FUTURE INTERSECTION LOS RESULTS

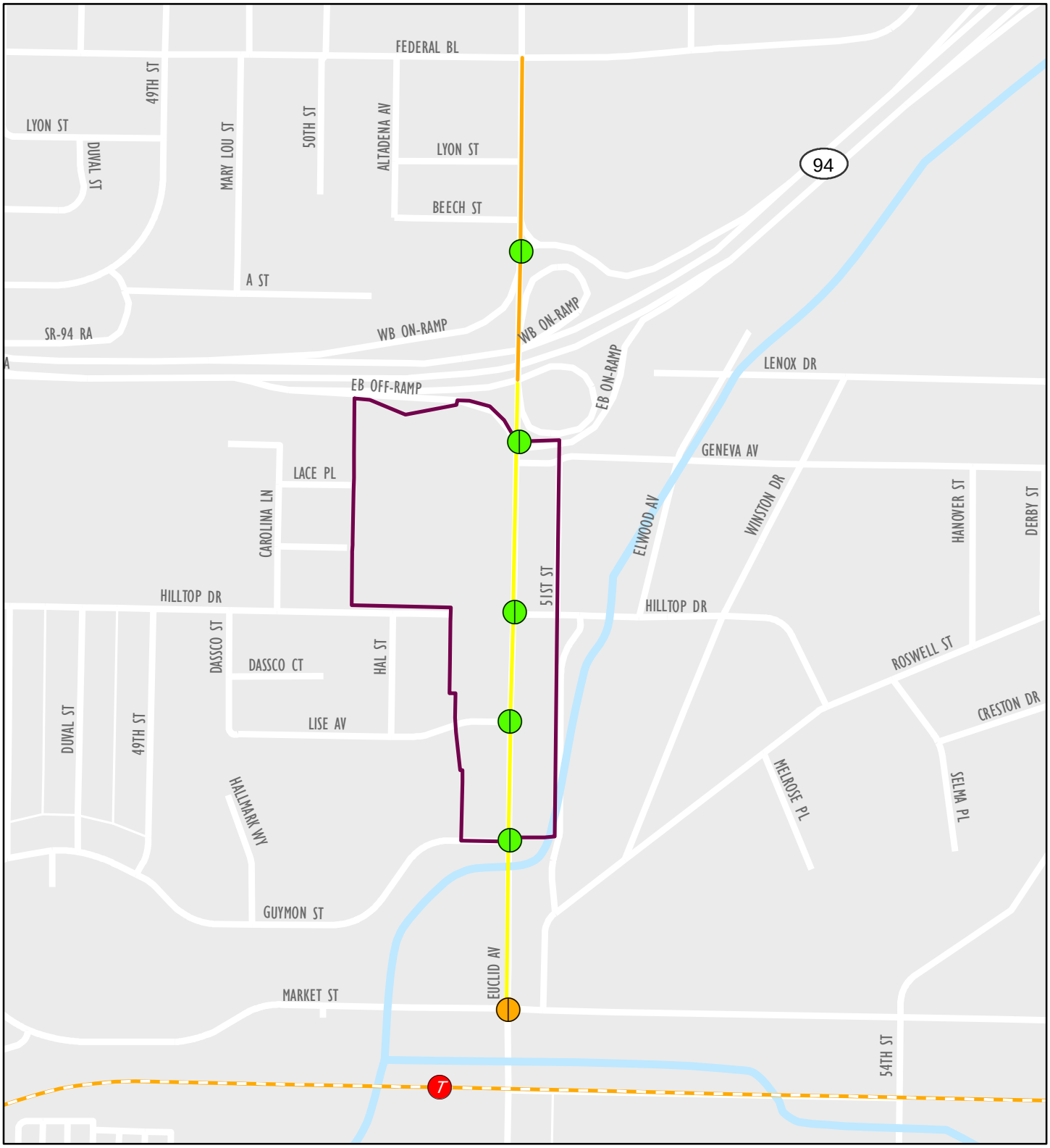
Intersection	Existing			Future				
		LOS			AM Peak Hour		PM Peak Hour	
	Control	AM	PM	Control	Average Delay (sec)	LOS	Average Delay (sec)	LOS
1. Euclid Avenue & SR-94 WB Ramps [1,3]	SSSC	**E[2]**	**F[2]**	Signal	7.3	A	9.4	A
2. Euclid Avenue & SR-94 EB Ramps [1,3,4]	SSSC	B	**E[2]**	Signal	22.9	C	30.5	C
3. Euclid Avenue & Hilltop Drive	Signal	A	A	Signal	10.5	B	11.4	B
4. Euclid Avenue & Lise Avenue[3]	SSSC	C	D	Signal	5.2	A	5.9	A
5. Euclid Avenue & Guymon Street	Signal	A	A	Signal	7.2	A	8.1	A
6. Euclid Avenue & Market Street[5]	Signal	C	C	Signal	58.7	**E[2]**	78.5	**E[2]**

1. Portions or the entire intersection area is part of Caltrans right-of-way. Therefore, any proposed changes or enhancements at this location are subject for review and approval by Caltrans.
2. Bold letter indicates unacceptable LOS E or F.
3. Intersections are one or two-way stop controlled under existing conditions and LOS is based on the worst delay experienced by any of the approaches. Under future conditions, these intersections will be signalized. For the intersection at Euclid Avenue and Lise Avenue, intersection meets peak hour traffic signal warrants in the future. **Appendix F** includes the signal warrant analysis worksheet for this location.
4. When the pedestrian phase is actuated for the south leg pedestrian crossing, the intersection conditions could degrade to unacceptable levels. **Appendix F** includes the LOS calculation worksheets for the condition when the pedestrian phase is actuated.
5. The intersection is located immediately north of the Euclid Trolley Station at-grade crossing. Under existing conditions, field observations confirmed that with 15-minute headways the gate is down for about eight minutes over the course of an hour, while for future conditions with headways of 7.5 minutes the gate is assumed to be down for approximately 16 minutes over the course of an hour. Thus, to account for signal pre-emption delay experienced at this intersection, proportionality was used to calculate the saturation flow rate adjustment for movements affected by the gate being down. Based on the fieldwork and information regarding future Orange Line Trolley operations, it is estimated that the saturation flow rate for the affected movements should be reduced from 1,900 VPHPL to 1,400 VPHPL.

Source: Fehr & Peers, February 2014

Figure 5: Future Roadway and Intersection LOS
Euclid Ave

February 2014



Roadway Segment Level of Service
- A - C
- D
- E
- F

Intersection Level of Service

AM/PM

- Project Area
- Trolley Station
- Orange Line Trolley

FEHR & PEERS

N

0 0.03 0.06 0.12 Miles

Source:
Fehr & Peers (2014)

TRANSIT LEVEL OF SERVICE

Table 9 and **Figure 6** display the projected transit AM peak hour LOS along the Euclid Avenue study corridor under buildout of the Master Plan. The existing Transit LOS is also displayed **in Table 9** to show the change between current conditions and the Master Plan. MMLOS calculation worksheets are provided in **Appendix G**.

Table 9: Existing and Future Transit AM Peak Hour LOS Results

Euclid Avenue Segment	***Existing***		***Future***			
	LOS		***Northbound (NB)***		***Southbound (SB)***	
	NB	***SB***	***LOS Score***	***Transit LOS***	***LOS Score***	***Transit LOS***
Federal Avenue to SR-94 WB Ramps[1]	A	C	1.25	A	3.01	C
SR-94 WB Ramps to SR-94 EB Ramps[1]	A	A	1.61	A	1.46	A
SR-94 EB Ramps to Hilltop Drive[1]	A	B	1.77	A	2.46	B
Hilltop Drive to Lise Avenue	C	A	2.83	C	1.72	A
Lise Avenue to Guymon Street	A	C	1.55	A	2.88	C
Guymon Street to Market Street	B	A	2.43	B	1.53	A

1. Portions or the entire segment is part of Caltrans right-of-way. Therefore, any proposed changes or enhancements at this location are subject for review and approval by Caltrans.
2. Bold letter indicates unacceptable LOS E or F.

Source: Fehr & Peers, February 2014

Table 10 and **Figure 7** each display the projected PM peak hour transit LOS in the project area under buildout of the Master Plan. The existing Transit LOS is also displayed in the table to show the change from current conditions and the Master Plan. MMLOS calculation worksheets are provided in **Appendix G**.

Table 10: Existing and Future Transit PM Peak Hour LOS Results

Euclid Avenue Segment	*Existing*		*Future*			
	LOS		*Northbound (NB)*		*Southbound (SB)*	
	NB	*SB*	*LOS Score*	*Transit LOS*	*LOS Score*	*Transit LOS*
Federal Avenue to SR-94 WB Ramps[1]	A	C	1.25	A	3.14	C
SR-94 WB Ramps to SR-94 EB Ramps[1]	A	A	1.67	A	1.53	A
SR-94 EB Ramps to Hilltop Drive[1]	A	C	1.69	A	2.73	B
Hilltop Drive to Lise Avenue	C	B	2.88	C	1.88	A
Lise Avenue to Guymon Street	A	C	1.53	A	3.06	C
Guymon Street to Market Street	B	B	2.46	B	1.64	A

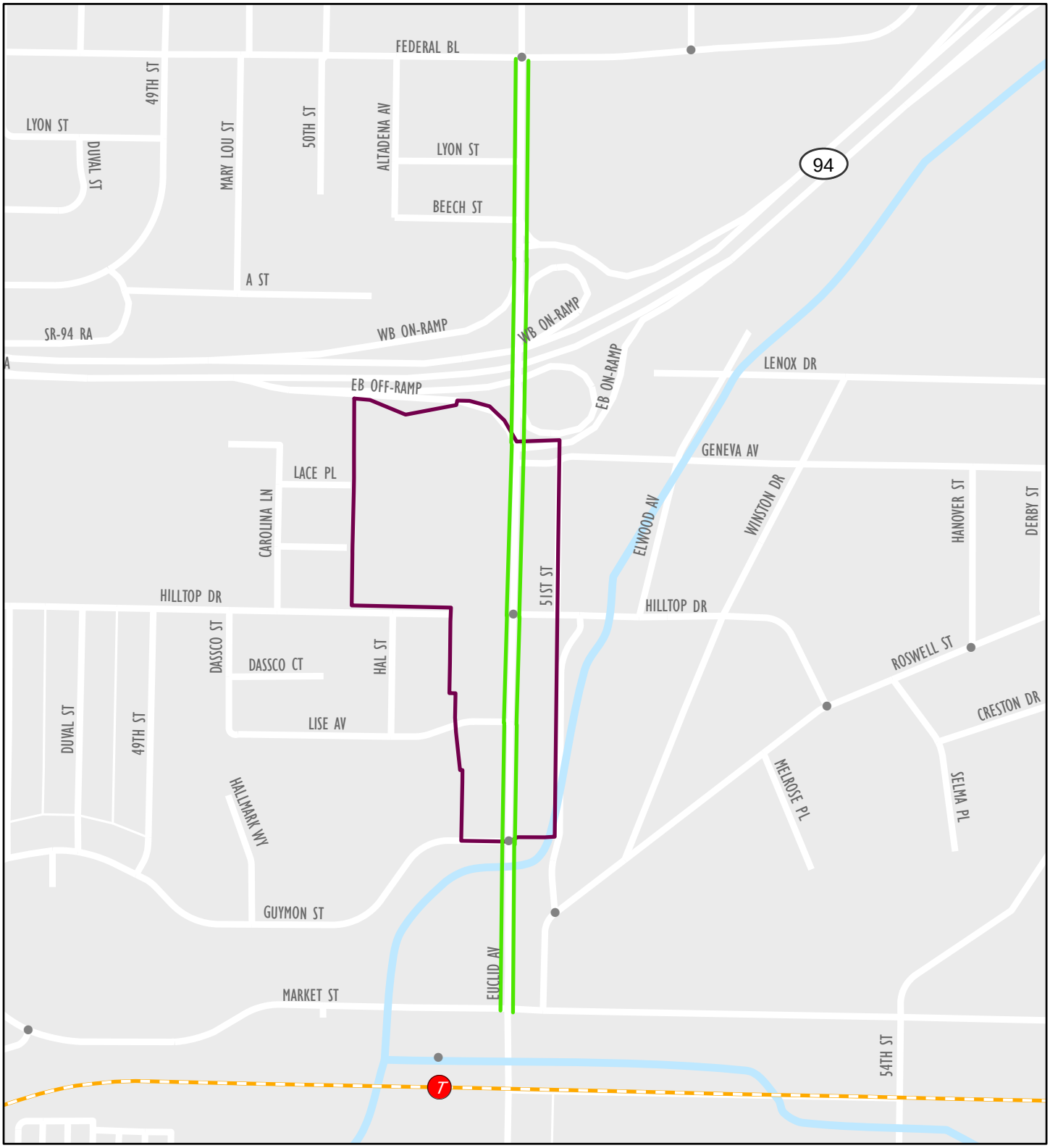
1. Portions or the entire segment is part of Caltrans right-of-way. Therefore, any proposed changes or enhancements at this location are subject for review and approval by Caltrans.
2. Bold letter indicates unacceptable LOS E or F.

Source: Fehr & Peers, February 2014

The CSLOS program that was used to calculate the transit LOS incorporates bus stop information within a segment to estimate the transit LOS. As shown, the Euclid Avenue Corridor provides good transit service (LOS C or better) to transit patrons traveling both directions during both the AM and PM peak hour. However, it should also be noted that the increased future vehicle delay reported at the Euclid Avenue and Market Street intersection could potentially slow buses traversing through the area during peak periods. Still, it is anticipated that any additional vehicle delay experienced would be temporary and the overall transit service quality would be good, based on the notion that project area transit will continue to provide frequent service and patrons will have good access to existing transit stops during both peak hours.

Figure 6: Future Transit LOS (AM Peak)
Euclid Ave

February 2014



Transit Level of Service
- A - C
- D
- E
- F

- Orange Line Trolley
- Bus Stop
- Project Area
- Trolley Station

FEHR & PEERS

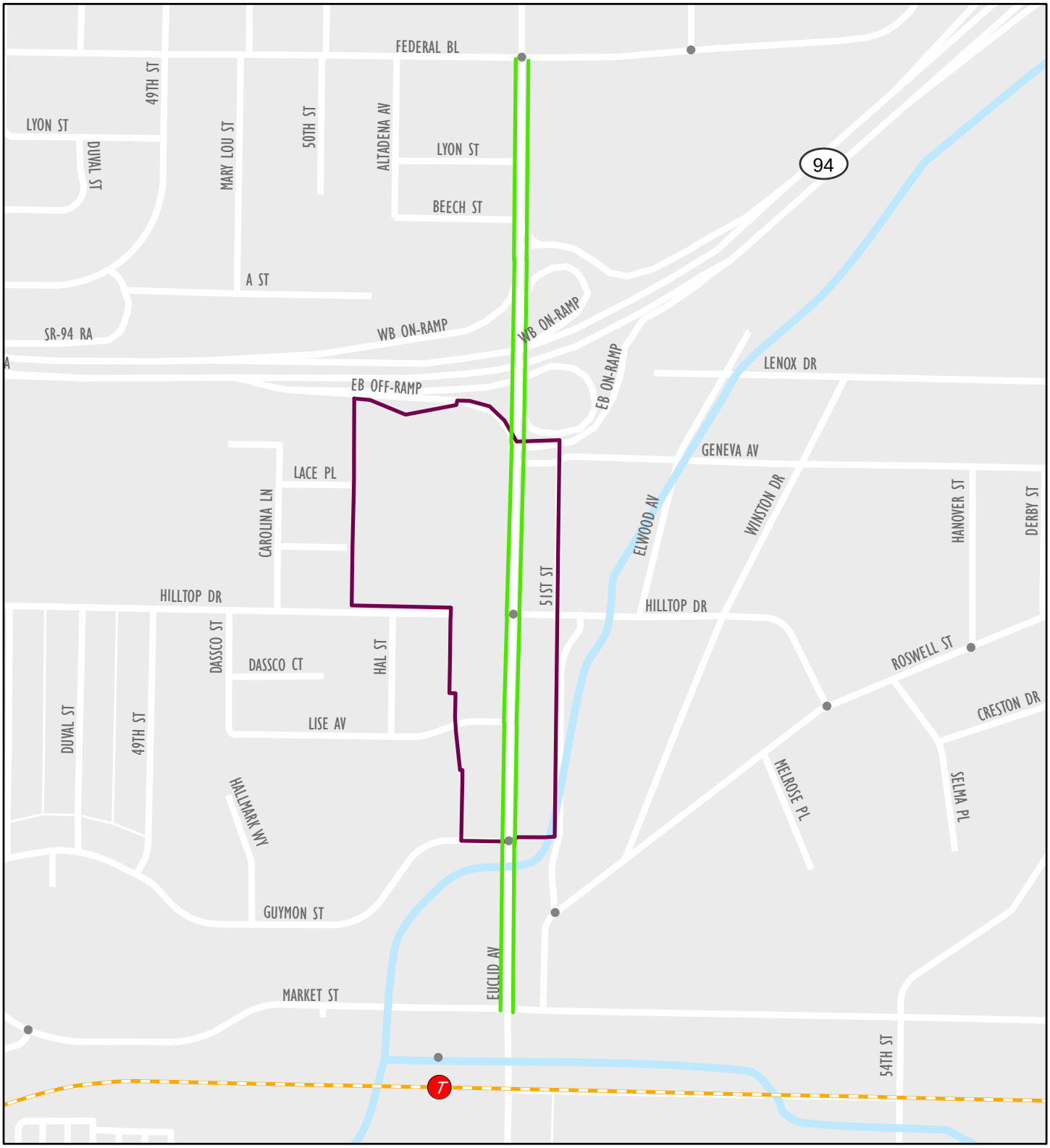
N

0 0.03 0.06 0.12 Miles

Source:
Fehr & Peers (2014)

Figure 7: Future Transit LOS (PM Peak)
Euclid Ave

February 2014



Transit Level of Service
- A - C
- D
- E
- F

- Orange Line Trolley
- Bus Stop
- Project Area
- Trolley Station

FEHR & PEERS

N

0 0.03 0.06 0.12 Miles

Source:
Fehr & Peers (2014)

BICYCLE LEVEL OF SERVICE

Table 11 and **Table 12** display Bicycle LOS in the project area under buildout conditions of the Master Plan for the AM and PM peak hours, respectively. **Figure 8** and **Figure 9** illustrate the corresponding Future Bicycle LOS for each of peak hours along the Euclid Avenue corridor. The existing Bicycle LOS is also displayed in each table to show the projected change between current conditions and the Master Plan. MMLOS calculation worksheets are provided in **Appendix H**.

Table 11: Existing and Future Bicycle AM Peak Hour LOS Results

Euclid Avenue Segment	*Existing*		*Future*			
	LOS		*Northbound (NB)*		*Southbound (SB)*	
	NB	*SB*	*LOS Score*	*Bicycle LOS*	*LOS Score*	*Bicycle LOS*
Federal Avenue to SR-94 WB Ramps[1]	D	**E**[2]	3.82	D	4.61	**E**[2]
SR-94 WB Ramps to SR-94 EB Ramps[1,3]	C	C	3.22	C	3.15	C
SR-94 EB Ramps to Hilltop Drive[1,3]	**E**[2]	C	4.75	**E**[2]	3.15	C
Hilltop Drive to Lise Avenue[3]	D	C	3.48	C	3.08	C
Lise Avenue to Guymon Street[3]	C	C	3.52	D	3.09	C
Guymon Street to Market Street[3]	C	D	3.54	D	3.49	C

1. Portions or the entire segment is part of Caltrans right-of-way. Therefore, any proposed changes or enhancements at this location are subject for review and approval by Caltrans.
2. Bold letter indicates unacceptable LOS E or F.
3. Buffered bicycle lanes assumed on both sides of the segment.

Source: Fehr & Peers, February 2014

Table 12: Existing and Future Bicycle PM Peak Hour LOS Results

Euclid Avenue Segment	***Existing***		***Future***			
	LOS		***Northbound (NB)***		***Southbound (SB)***	
	NB	***SB***	***LOS Score***	***Bicycle LOS***	***LOS Score***	***Bicycle LOS***
Federal Avenue to SR-94 WB Ramps[1]	D	**E**[2]	3.82	D	4.62	**E**[2]
SR-94 WB Ramps to SR-94 EB Ramps[1,3]	C	D	3.26	C	3.2	C
SR-94 EB Ramps to Hilltop Drive[1,3]	**E**[2]	C	4.79	**E**[2]	3.25	C
Hilltop Drive to Lise Avenue[3]	D	C	3.47	C	3.17	C
Lise Avenue to Guymon Street[3]	C	D	3.51	D	3.16	C
Guymon Street to Market Street[3]	C	D	3.53	D	3.55	D

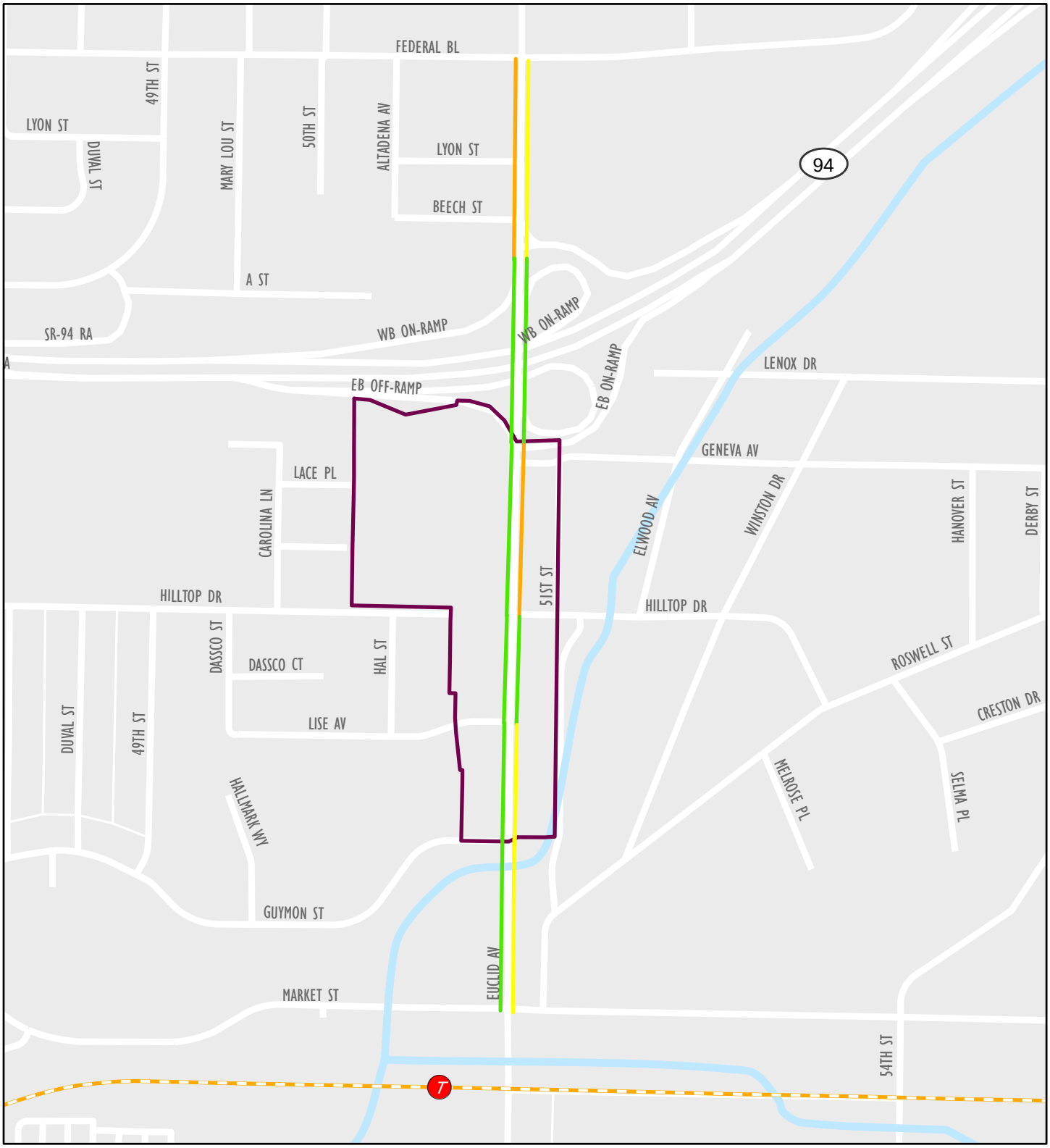
1. Portions or the entire segment is part of Caltrans right-of-way. Therefore, any proposed changes or enhancements at this location are subject for review and approval by Caltrans.
2. Bold letter indicates unacceptable LOS E or F.
3. Buffered bicycle lanes assumed on both sides of the segment.

Source: Fehr & Peers, February 2014

According to the CSLOS results, bicyclists will generally experience good to fair LOS (LOS C or D) when riding along the majority of the segments within the Euclid Avenue Master Plan corridor during both the AM and PM peak hours. Bicyclists traveling northbound between Hilltop Drive and the SR-94 EB Ramps and bicyclists traveling southbound along Euclid Avenue between Federal Avenue and the SR-94 Ramps are projected to experience lower than desirable peak hour levels of service (LOS E). Factors that influence the poor CLOS calculation at these select locations include the relatively high peak hour traffic and speeds at these segments. In the case of the poor calculated operating level (LOS E) for northbound bicyclists between the freeway and Hilltop Drive, the vehicle turns associated with the gas station driveways and the unsignalized intersection of Euclid Avenue and Geneva Avenue along the east side of Euclid Avenue also contribute to the poor LOS because of potential bicycle-vehicle conflicts. While the lack of buffered Class II bicycle facilities along Euclid Avenue between Federal Avenue and the SR-94 Ramps contribute to the segment's poor calculated operating level (LOS E), in addition to the high segment volumes and speed.

Figure 8: Future Bicycle LOS (AM Peak)
Euclid Ave

February 2014



Bicycle Level of Service
- A - C
- D
- E
- F

- Project Area
- Trolley Station
- Orange Line Trolley

FEHR & PEERS

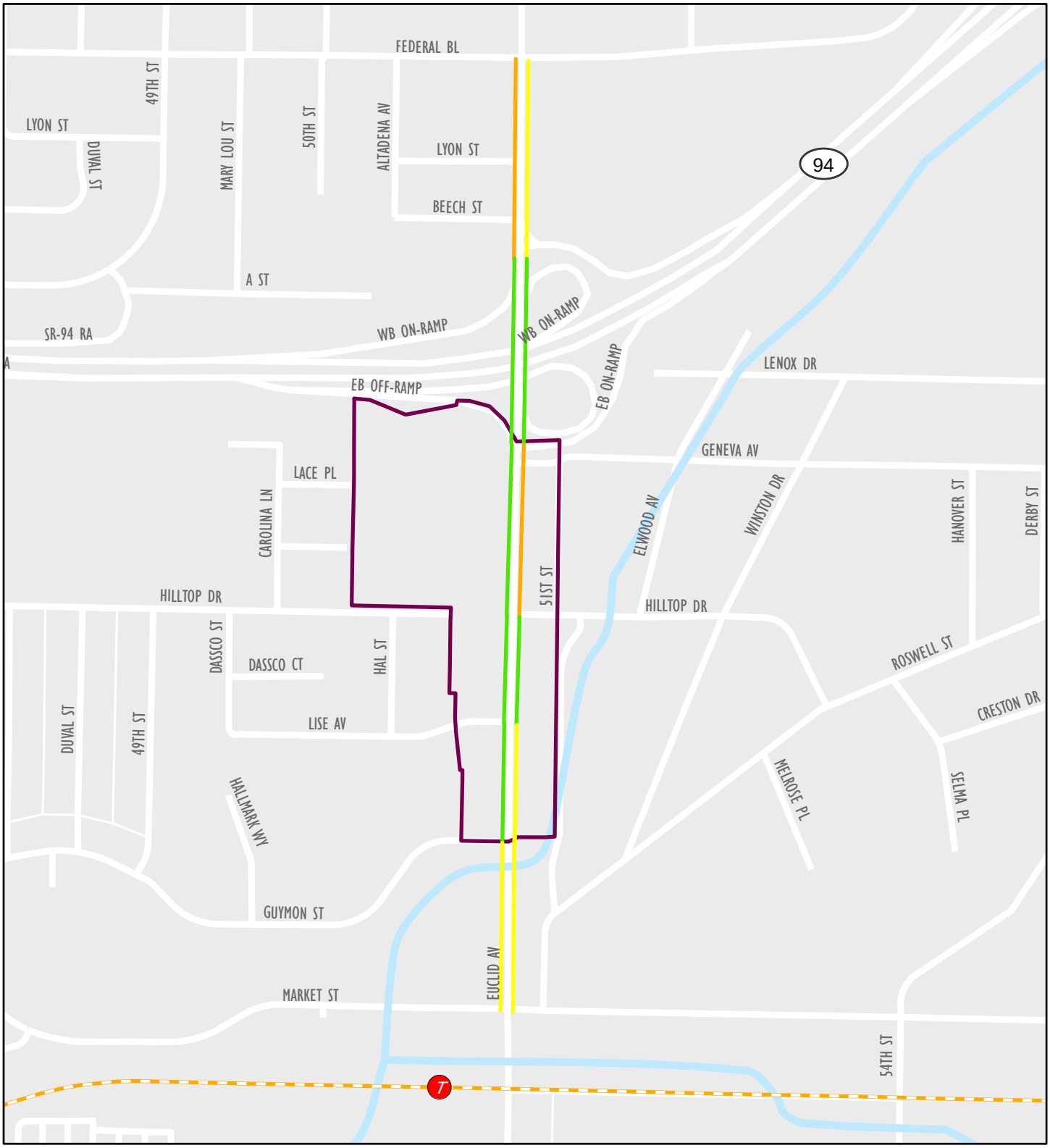
N

0 0.03 0.06 0.12 Miles

Source:
Fehr & Peers (2014)

Figure 9: Future Bicycle LOS (PM Peak)
Euclid Ave

February 2014



Bicycle Level of Service
- A - C
- D
- E
- F

- Project Area
- Trolley Station
- Orange Line Trolley

FEHR & PEERS

N

0 0.03 0.06 0.12 Miles

Source:
Fehr & Peers (2014)

PEDESTRIAN LEVEL OF SERVICE

Table 13 and **Table 14** display Pedestrian Segment LOS in the project area under buildout conditions of the Master Plan during the AM and PM peak hours, respectively. **Figure 10** and **Figure 11** illustrate the Future Pedestrian LOS for each of peak hours along the Euclid Avenue corridor. The existing Pedestrian LOS is also displayed in each table to show the projected change between current conditions and the Master Plan. MMLOS calculation worksheets are provided in **Appendix I**.

Table 13: Existing and Future Pedestrian AM Peak Hour LOS Results

Euclid Avenue Segment	***Existing***		***Future***			
	LOS		***Northbound (NB)***		***Southbound (SB)***	
	NB	***SB***	***LOS Score***	***Pedestrian LOS***	***LOS Score***	***Pedestrian LOS***
Federal Avenue to SR-94 WB Ramps[1]	C	C	3.39	C	3.67	D
SR-94 WB Ramps to SR-94 EB Ramps[1]	C	C	3.45	C	3.31	C
SR-94 EB Ramps to Hilltop Drive[1]	C	B	3.08	C	2.54	B
Hilltop Drive to Lise Avenue	B	C	2.42	B	2.48	B
Lise Avenue to Guymon Street	C	B	2.48	B	2.57	B
Guymon Street to Market Street	B	C	2.57	B	3.34	C

1. Portions or the entire segment is part of Caltrans right-of-way. Therefore, any proposed changes or enhancements at this location are subject for review and approval by Caltrans.
2. Bold letter indicates unacceptable LOS E or F.

Source: Fehr & Peers, February 2014

Table 14: Existing and Future Pedestrian PM Peak Hour LOS Results

Euclid Avenue Segment	***Existing***		***Future***			
	Existing LOS		***Northbound (NB)***		***Southbound (SB)***	
	NB	***SB***	***LOS Score***	***Pedestrian LOS***	***LOS Score***	***Pedestrian LOS***
Federal Avenue to SR-94 WB Ramps[1]	C	C	3.39	C	3.79	D
SR-94 WB Ramps to SR-94 EB Ramps[1]	C	C	3.57	D	3.46	C
SR-94 EB Ramps to Hilltop Drive[1]	C	B	3.05	C	3.27	C
Hilltop Drive to Lise Avenue	B	C	2.88	C	2.92	C
Lise Avenue to Guymon Street	C	B	2.71	B	2.98	C
Guymon Street to Market Street	B	C	2.8	C	3.50	C

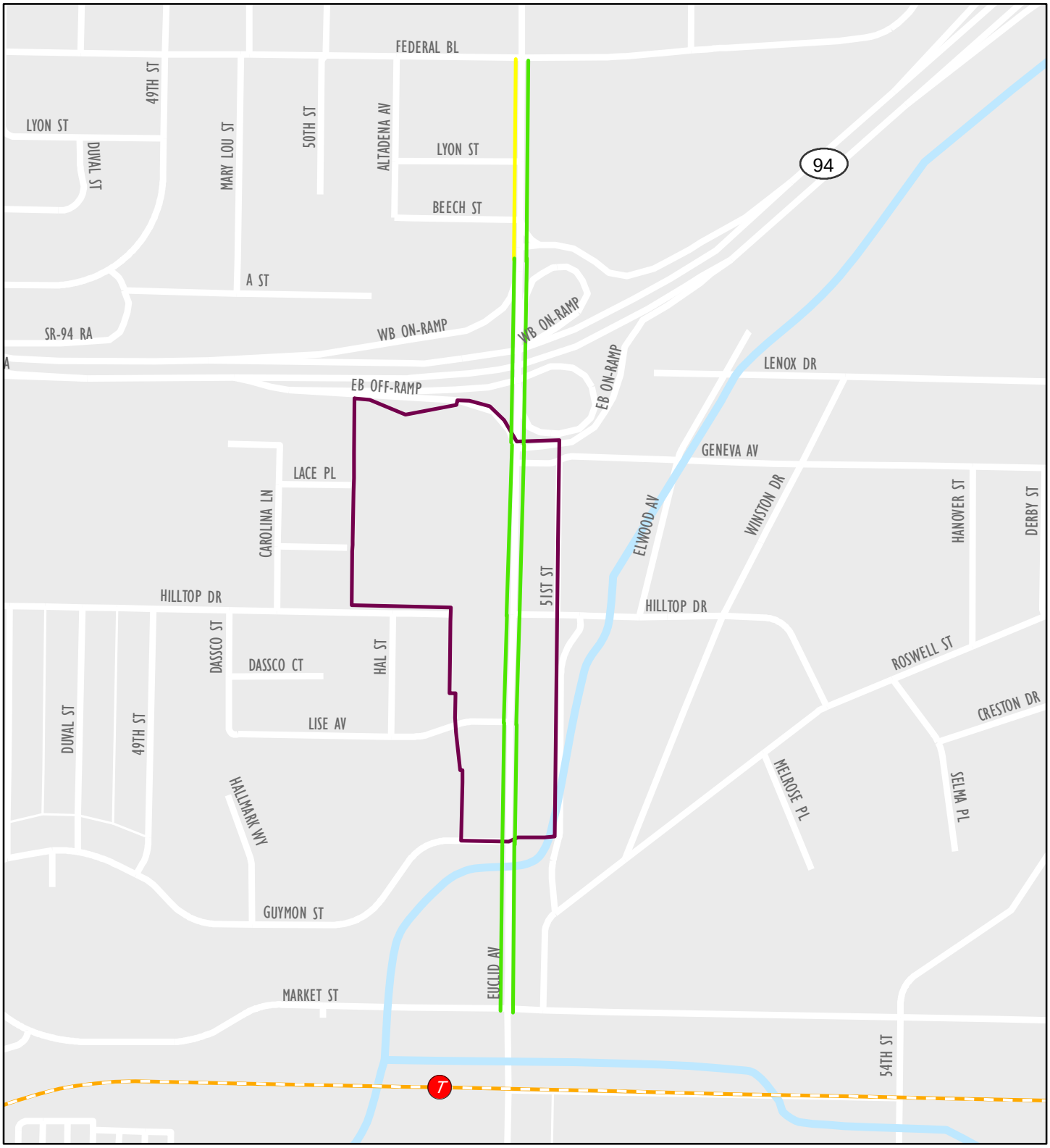
1. Portions or the entire segment is part of Caltrans right-of-way. Therefore, any proposed changes or enhancements at this location are subject for review and approval by Caltrans.
2. Bold letter indicates unacceptable LOS E or F.

Source: Fehr & Peers, February 2014

As shown in the tables, pedestrians are projected to experience good to fair LOS (D or better) when walking on Euclid Avenue under the buildout of the Master Plan. The Pedestrian LOS degrades slightly along Euclid Avenue segments from Federal Avenue and Hilltop Drive between existing conditions and buildout conditions due to the increase in vehicular traffic throughout the corridor. However, the Pedestrian LOS does improve at some locations because of the proposed new eight-foot sidewalks that will include a landscaped parkway buffer along the corridor.

Figure 10: Future Pedestrian LOS (AM Peak)
Euclid Ave

February 2014



Pedestrian Level of Service
- A - C
- D
- E
- F

- Project Area
- Trolley Station
- Orange Line Trolley

FEHR & PEERS

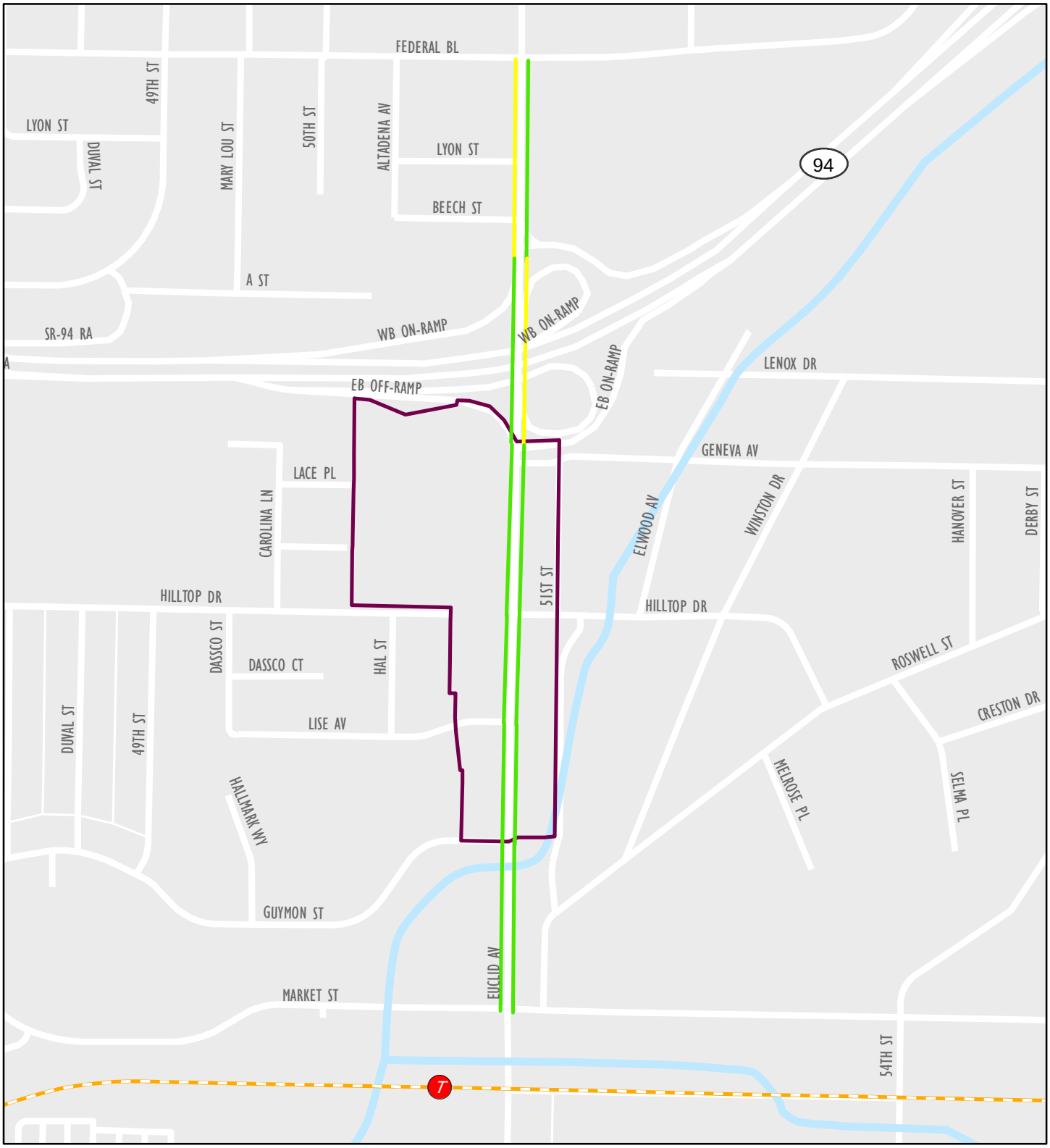
N

0 0.03 0.06 0.12 Miles

Source:
Fehr & Peers (2014)

Figure 11: Future Pedestrian LOS (PM Peak)
Euclid Ave

February 2014



Pedestrian Level of Service
- A - C
- D
- E
- F

- Project Area
- Trolley Station
- Orange Line Trolley

FEHR & PEERS

N

0 0.03 0.06 0.12 Miles

Source:
Fehr & Peers (2014)

CONCLUSION

The proposed land uses within the Master Plan are expected to increase vehicle traffic within the Euclid Avenue corridor. However, due to the mixed-use nature and village-style land uses that are proposed within key parts of the study area, it is anticipated that there will be a better balance between various modes of travel and the project design, coupled with enhancements to pedestrian, bicycle and transit infrastructure, will minimize the number of vehicle trips. While it is anticipated that vehicular travel within the corridor will increase, it is projected that the volumes of active mode travel (pedestrian and bike) will more than double, and transit demand is expected to increase by 129% by 2035.

To help accommodate the projected increase in travel demand throughout the study area, the Master Plan includes a series of multi-modal improvements within the Euclid Avenue corridor, as displayed in **Appendix A**. The mobility option figures illustrate locations for curb bulb-outs, signalization, and high visibility crosswalks under the interim condition and the long-term conditions of the Master Plan. Bicycle lanes can be installed as part of the interim plan. Widening Euclid Avenue in the long term would permit the installation of buffered bike lanes and improved pedestrian facilities. Overall, these recommended improvements will create a more desirable pedestrian and bicycle environment and while still balancing the needs of moving and parked vehicles.

As future development occurs in the corridor, it is recommended that the City of San Diego continue to monitor the pedestrian and vehicular volumes to determine the correct time to implement the proposed enhanced crosswalk and traffic signal improvements. The City should also work with SANDAG and MTS to monitor transit ridership throughout the Euclid Avenue corridor to determine the appropriate time to increase bus frequencies and whether or not additional transit service is needed.

APPENDIX A: PROPOSED MOBILITY CONCEPT FIGURES

Existing intersection conditions: Euclid at WB SR-94 offramp

Brighton Place
San Diego

SR-94

LENOX

Existing intersection conditions: Euclid at EB SR-94 offramp

GENEVA

LACE

Bike facilities transition from Class II (south of Geneva) to Class III (north of Geneva)

CAROLINA

51st

ELWOOD

Accommodate bike lanes by removing existing on-street parking from west side of Euclid and narrowing vehicle travel / turn lanes

HILLTOP

HILLTOP

Chollas Creek

Existing intersection conditions: Euclid at Hilltop

HAL

LISE

Existing intersection conditions: Euclid at Lise

WINSTON

ROSWELL

Horton Elementary School

GUYMON

Chollas Creek

5′ 10′ 10′ 10′ 10′ 10′ 6′ 7′

EUCLID

Existing intersection conditions: Euclid at Guymon

LEGEND*

- Vehicle Travel Lane
- Center Turn Lane / Median
- On-Street Parallel Parking (existing)
- Class II Bike Lane (new)
- Class III Bike Route (new)
- Existing Traffic Signal
- Side Street Stop Controlled
- High-Visibility Crosswalk (School)
- Standard Crosswalk
- Existing Bus Stop
- RRFB Installation (new)
- Paint Borders of Existing Crosswalks to Increase Visibility
- Existing Street Light
- Proposed Street Light

** This plan is conceptual: right-of-way / lane widths are under evaluation (including warrant studies), and final design and dimensions are to be determined and subject to change*

EUCLID AVENUE MOBILITY CONCEPT: INTERIM (remove west side parking, add bike lanes)

Feb. 28, 2014

Data Source: City of San Diego

0 50 100 200 Feet

N

Existing intersection conditions: Euclid at WB SR-94 offramp

Brighton Place
San Diego

SR 94 WB OFF-RAMP
200' POCKET

SR-94

LENOX

SR 94 EB OFF-RAMP
360' POCKET

SR-94 EB on-ramp and off-ramp to be consolidated on east side of overpass; traffic control at signalized intersection with Euclid

SR 94 EB ON-RAMP

GENEVA

Existing intersection conditions: Euclid at EB SR-94 offramp

LACE

Begin transition from alignment south of Geneva to alignment on SR-94 overpass

CAROLINA

51st

ELWOOD

HILLTOP

HILLTOP

Chollas Creek

Existing intersection conditions: Euclid at Hilltop

HAL

LISE

Existing intersection conditions: Euclid at Lise

WINSTON

ROSWELL

Horton Elementary School

GUYMON

7′ 11′ 10′ 10′ 10′ 11′ 7′ 7′

Chollas Creek

EUCLID

Existing intersection conditions: Euclid at Guymon

LEGEND*

- Vehicle Travel Lane
- Center Turn Lane / Median
- On-Street Parallel Parking
- Class II Bike Lane - buffered (5′ + 2′)
- Landscaped Parkway Strip
- New Sidewalk
- High-Visibility Crosswalk
- High-Visibility Crosswalk (School)
- Standard Crosswalk
- Hilltop Drive Connection
- Existing Traffic Signal
- Proposed Traffic Signal
- Side Street Stop Controlled
- Existing Bus Stop
- New Intersection Improvements: ADA ramps, countdown signals, and bulb-outs where possible (east side of Euclid Avenue and side streets only)
- Existing Street Light
- Proposed Street Light

** This plan is conceptual: right-of-way / lane widths are under evaluation (including warrant studies), and final design and dimensions are to be determined and subject to change*

EUCLID AVENUE MOBILITY CONCEPT: LONG TERM (with redevelopment of all corridor parcels: expand ROW to west, improve intersections, install parkway strip between street and sidewalk both sides, connect Hilltop Drive)

Feb. 28, 2014

Data Source: City of San Diego

0 50 100 200 Feet

N

APPENDIX B: LAND USE ASSUMPTIONS

Land Use Summary

Code	Name	Person Trips	Activity DUs	Activity Acres	Trip Rate du	Trip Rate acre	Trip Rate employee	Employment
111	SINGLE FAMILY	26.	2.	0.	12.9	0.0	0.0	0.
112	SINGLE FAMILY	192004.	14884.	0.	12.9	0.0	0.0	0.
121	MULTI-FAMILY	61229.	5371.	0.	11.4	0.0	0.0	0.
122	MULTI-FAMILY	63176.	7346.	0.	8.6	0.0	0.0	0.
131	MOBILE HOME PARK	4575.	610.	0.	7.5	0.0	0.0	0.
1411	CONGREGATE CARE FACILITY	77.	0.	18.	0.0	4.3	0.0	0.
1421	CORRECTIONAL FACILITY	840.	0.	300.	0.0	2.8	0.0	0.
1511	MOTEL	1329.	0.	91.	0.0	14.6	0.0	0.
2111	INDUSTRIAL PARK	476.	0.	26.	0.0	18.3	0.0	0.
2113	LIGHT INDUSTRY GENERAL	41422.	0.	2227.	0.0	18.6	0.0	0.
2114	WAREHOUSING	639.	0.	105.	0.0	6.1	0.0	0.
2311	SCRAP YARD/LANDFILL	48.	0.	6.	0.0	7.4	0.0	0.
4112	RIGHT-OF-WAY	0.	0.	1907.	0.0	0.0	0.0	0.
4113	COMMUNICATION OR UTILITY	199.	0.	62.	0.0	3.2	0.0	0.
4114	PARKING	0.	0.	11.	0.0	0.0	0.0	0.
4121	RAIL/TRANSIT CENTER	2089.	0.	5.	0.0	392.8	0.0	0.
4129	OTHER TRANSPORTATION	18.	0.	2.	0.0	7.9	0.0	0.
5010	VACANT COMMERCIAL	0.	0.	13.	0.0	0.0	0.0	0.
5011	HIGH TURNOVER RESTAURANT	2228.	0.	12.	0.0	178.8	0.0	0.
5013	SUPERMARKET	908.	0.	4.	0.0	206.3	0.0	0.
5014	CONVENIENCE MARKET CHAIN	29904.	0.	43.	0.0	687.8	0.0	0.
5024	CAR WASH	550.	0.	4.	0.0	137.6	0.0	0.
5025	SERVICE STATION FOOD MART	7839.	0.	38.	0.0	206.3	0.0	0.
5027	SERVICE STATION CAR WASH	4264.	0.	20.	0.0	213.2	0.0	0.
5028	AUTO PARTS	490.	0.	6.	0.0	85.3	0.0	0.
5029	AUTO REPAIR	1418.	0.	52.	0.0	27.5	0.0	0.
5030	AUTO TIRES	317.	0.	9.	0.0	34.4	0.0	0.

5131	WHOLESALE TRADE	1986.	0.	20.	0.	0.0	98.9
5133	COMMUNITY SHOP CENTER	84075.	0.	779.	0.	0.0	107.9
5134	NEIGHBORHOOD SHOP CENTER	18656.	0.	110.	0.	0.0	169.5
5136	AUTO DEALERSHIP	89.	0.	0.	0.	0.0	423.8
5137	ARTERIAL COMMERCIAL	59701.	0.	1085.	0.	0.0	55.0
5138	SERVICE STATION	2971.	0.	16.	0.	0.0	185.7
5139	OTHER RETAIL TRADE	1453.	0.	26.	0.	0.0	55.1
6012	LOW RISE OFFICE A	16755.	0.	314.	0.	0.0	53.4
6013	GOV'T /CIVIC CENTER	2832.	0.	71.	0.	0.0	39.9
6014	GOV'T OFFICE	881.	0.	22.	0.	0.0	39.9
6111	CEMETERY	1026.	0.	168.	0.	0.0	6.1
6112	RELIGIOUS FACILITY	6082.	0.	936.	0.	0.0	6.5
6113	LIBRARY	2273.	0.	31.	0.	0.0	73.6
6115	FIRE OR POLICE STATION	1715.	0.	42.	0.	0.0	40.7
6114	POST OFFICE	1680.	0.	6.	0.	0.0	287.3
6119	OTHER PUBLIC SERVICE	393.	0.	28.	0.	0.0	13.8
6129	MEETING ROOM FACILITY	1981.	0.	48.	0.	0.0	41.5
6511	CLINIC	12686.	0.	188.	0.	0.0	67.3
6519	OTHER HEALTH CARE	3527.	0.	52.	0.	0.0	67.3
6810	DAY CARE CENTER	1549.	0.	254.	0.	0.0	6.1
6812	UNIVERSITY OR COLLEGE	15334.	0.	7667.	0.	0.0	2.0
6814	SENIOR HIGH SCHOOL	13132.	0.	3283.	0.	0.0	4.0
6815	JUNIOR HIGH OR MIDDLE SCHOOL	6902.	0.	3001.	0.	0.0	2.3
6816	ELEMENTARY SCHOOL	39331.	0.	11568.	0.	0.0	3.4
6819	OTHER SCHOOL	1317.	0.	60.	0.	0.0	21.8
7200	COMMERCIAL RECREATION	395.	0.	9.	0.	0.0	44.0
7220	OTHER RECREATION-HIGH	643.	0.	9.	0.	0.0	73.4
7611	OPEN SPACE PARK	1828.	0.	237.	0.	0.0	7.7
7613	ACTIVE PARK	10249.	0.	133.	0.	0.0	77.0
9101	INACTIVE USE	0.	0.	3.	0.	0.0	0.0
	total	727508.	28213.	35132.	0.		

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Zone	Code	Name	Type	Amount	Trips Person	Trips Vehicle
3554	111	SINGLE FAMILY	du	1.0	13.	9.
3554	112	SINGLE FAMILY	du	550.0	7095.	4952.
3554	121	MULTI-FAMILY	du	3.0	34.	24.
3554	1411	CONGREGATE CARE FACILITY	other	6.0	26.	18.
3554	4112	RIGHT-OF-WAY	acre	32.3	0.	0.
3554	7611	OPEN SPACE PARK	acre	2.3	18.	12.
3554		TOTAL			7186.	5015.
3574	2113	LIGHT INDUSTRY GENERAL	ksf	152.7	2840.	2349.
3574	4112	RIGHT-OF-WAY	acre	9.1	0.	0.
3574		TOTAL			2840.	2349.
3594	4112	RIGHT-OF-WAY	acre	21.2	0.	0.
3594		TOTAL			0.	0.
3602	112	SINGLE FAMILY	du	226.0	2915.	2035.
3602	4112	RIGHT-OF-WAY	acre	28.8	0.	0.
3602	4113	COMMUNICATION OR UTILITY	acre	31.3	100.	78.
3602	6112	RELIGIOUS FACILITY	ksf	14.0	91.	70.
3602	6816	ELEMENTARY SCHOOL	other	357.0	1214.	678.
3602	7611	OPEN SPACE PARK	acre	70.6	543.	358.
3602	7613	ACTIVE PARK	acre	9.4	725.	477.
3602		TOTAL			5589.	3696.
3627	112	SINGLE FAMILY	du	295.0	3805.	2656.
3627	121	MULTI-FAMILY	du	25.0	285.	200.
3627	4112	RIGHT-OF-WAY	acre	23.0	0.	0.
3627		TOTAL			4090.	2856.
3696	112	SINGLE FAMILY	du	170.0	2193.	1531.
3696	121	MULTI-FAMILY	du	23.0	262.	184.
3696	122	MULTI-FAMILY	du	13.0	112.	78.
3696	4112	RIGHT-OF-WAY	acre	8.4	0.	0.
3696	6112	RELIGIOUS FACILITY	ksf	5.7	37.	28.
3696	6816	ELEMENTARY SCHOOL	other	713.0	2424.	1355.
3696	7611	OPEN SPACE PARK	acre	0.7	5.	4.
3696		TOTAL			5033.	3180.
3720	112	SINGLE FAMILY	du	337.0	4347.	3034.
3720	121	MULTI-FAMILY	du	3.0	34.	24.
3720	4112	RIGHT-OF-WAY	acre	13.3	0.	0.
3720	6112	RELIGIOUS FACILITY	ksf	16.6	108.	83.
3720	7611	OPEN SPACE PARK	acre	7.2	56.	37.
3720		TOTAL			4545.	3178.
3744	112	SINGLE FAMILY	du	278.0	3586.	2503.
3744	121	MULTI-FAMILY	du	91.0	1037.	728.
3744	122	MULTI-FAMILY	du	13.0	112.	78.
3744	2114	WAREHOUSING	ksf	1.7	10.	9.
3744	4112	RIGHT-OF-WAY	acre	29.7	0.	0.
3744	6111	CEMETERY	acre	44.7	273.	223.
3744	6112	RELIGIOUS FACILITY	ksf	22.0	143.	110.
3744		TOTAL			5161.	3652.

Zone	Land Use Code	Name	Type	Amount	Trips Person	Trips Vehicle
3745	112	SINGLE FAMILY	du	284.0	3664.	2557.
3745	121	MULTI-FAMILY	du	224.0	2554.	1793.
3745	122	MULTI-FAMILY	du	65.0	559.	392.
3745	4112	RIGHT-OF-WAY	acre	67.8	0.	0.
3745	6112	RELIGIOUS FACILITY	ksf	4.3	28.	21.
3745		TOTAL			6804.	4764.
3764	112	SINGLE FAMILY	du	346.0	4463.	3115.
3764	4112	RIGHT-OF-WAY	acre	18.2	0.	0.
3764	6814	SENIOR HIGH SCHOOL	other	950.0	3800.	1710.
3764	6815	JUNIOR HIGH OR MIDDLE SCHOOL	other	420.0	966.	593.
3764	7613	ACTIVE PARK	acre	4.7	365.	240.
3764		TOTAL			9594.	5658.
3766	112	SINGLE FAMILY	du	13.0	168.	117.
3766	121	MULTI-FAMILY	du	9.0	103.	72.
3766	122	MULTI-FAMILY	du	3.0	26.	18.
3766	2113	LIGHT INDUSTRY GENERAL	ksf	410.3	7631.	6310.
3766	2114	WAREHOUSING	ksf	30.3	185.	155.
3766	4112	RIGHT-OF-WAY	acre	39.4	0.	0.
3766	4113	COMMUNICATION OR UTILITY	acre	15.6	50.	39.
3766	7611	OPEN SPACE PARK	acre	0.7	6.	4.
3766		TOTAL			8168.	6715.
3767	2113	LIGHT INDUSTRY GENERAL	ksf	596.5	11095.	9174.
3767	4112	RIGHT-OF-WAY	acre	8.0	0.	0.
3767	5133	COMMUNITY SHOP CENTER	ksf	127.6	13768.	9743.
3767	6511	CLINIC	ksf	31.9	2148.	1595.
3767	7611	OPEN SPACE PARK	acre	0.1	1.	1.
3767	7613	ACTIVE PARK	acre	5.6	434.	285.
3767		TOTAL			27446.	20798.
3817	112	SINGLE FAMILY	du	270.0	3483.	2431.
3817	121	MULTI-FAMILY	du	45.0	513.	360.
3817	122	MULTI-FAMILY	du	83.0	714.	501.
3817	4112	RIGHT-OF-WAY	acre	29.2	0.	0.
3817	4113	COMMUNICATION OR UTILITY	acre	0.3	1.	1.
3817	6112	RELIGIOUS FACILITY	ksf	15.0	98.	75.
3817	7611	OPEN SPACE PARK	acre	0.1	1.	0.
3817	7613	ACTIVE PARK	acre	5.0	387.	255.
3817		TOTAL			5196.	3623.
3831	112	SINGLE FAMILY	du	9.0	116.	81.
3831	121	MULTI-FAMILY	du	7.0	80.	56.
3831	122	MULTI-FAMILY	du	69.0	593.	417.
3831	2113	LIGHT INDUSTRY GENERAL	ksf	29.2	543.	449.
3831	4112	RIGHT-OF-WAY	acre	17.0	0.	0.
3831	4113	COMMUNICATION OR UTILITY	acre	2.9	9.	7.
3831	5137	ARTERIAL COMMERCIAL	ksf	24.4	1342.	975.
3831	6012	LOW RISE OFFICE A	ksf	51.7	2760.	2125.
3831	6112	RELIGIOUS FACILITY	ksf	13.8	90.	69.
3831	6119	OTHER PUBLIC SERVICE	ksf	8.1	111.	80.

Zone	Code	Name	Type	Amount	Person Vehicle	
3831	6815	JUNIOR HIGH OR MIDDLE SCHOOL	other	212.0	488.	300.
3831		TOTAL			6132.	4559.
3854	112	SINGLE FAMILY	du	21.0	271.	189.
3854	121	MULTI-FAMILY	du	3.0	34.	24.
3854	122	MULTI-FAMILY	du	126.0	1084.	761.
3854	4112	RIGHT-OF-WAY	acre	24.2	0.	0.
3854	5137	ARTERIAL COMMERCIAL	ksf	4.8	264.	192.
3854	6112	RELIGIOUS FACILITY	ksf	15.7	102.	78.
3854	6816	ELEMENTARY SCHOOL	other	273.0	928.	519.
3854		TOTAL			2683.	1763.
3855	112	SINGLE FAMILY	du	150.0	1935.	1351.
3855	121	MULTI-FAMILY	du	122.0	1391.	976.
3855	2113	LIGHT INDUSTRY GENERAL	ksf	14.4	268.	222.
3855	4112	RIGHT-OF-WAY	acre	30.0	0.	0.
3855	4113	COMMUNICATION OR UTILITY	acre	0.3	1.	1.
3855	4114	PARKING	acre	2.8	0.	0.
3855	5025	SERVICE STATION FOOD MART	other	10.0	2063.	1498.
3855	5137	ARTERIAL COMMERCIAL	ksf	58.7	3230.	2346.
3855	6014	GOV'T OFFICE	ksf	22.1	881.	662.
3855	6112	RELIGIOUS FACILITY	ksf	3.4	22.	17.
3855	6810	DAY CARE CENTER	other	75.0	457.	378.
3855	6816	ELEMENTARY SCHOOL	other	737.0	2506.	1400.
3855	7611	OPEN SPACE PARK	acre	0.4	3.	2.
3855		TOTAL			12758.	8854.
3857	112	SINGLE FAMILY	du	240.0	3096.	2161.
3857	121	MULTI-FAMILY	du	241.0	2747.	1929.
3857	122	MULTI-FAMILY	du	27.0	232.	163.
3857	2113	LIGHT INDUSTRY GENERAL	ksf	265.3	4934.	4080.
3857	4112	RIGHT-OF-WAY	acre	52.7	0.	0.
3857	5137	ARTERIAL COMMERCIAL	ksf	34.8	1916.	1392.
3857	6012	LOW RISE OFFICE A	ksf	46.1	2464.	1897.
3857	6112	RELIGIOUS FACILITY	ksf	28.7	186.	143.
3857		TOTAL			15576.	11765.
3858	112	SINGLE FAMILY	du	20.0	258.	180.
3858	121	MULTI-FAMILY	du	33.0	376.	264.
3858	122	MULTI-FAMILY	du	67.0	576.	405.
3858	4112	RIGHT-OF-WAY	acre	5.3	0.	0.
3858	5137	ARTERIAL COMMERCIAL	ksf	20.1	1107.	804.
3858	6012	LOW RISE OFFICE A	ksf	7.0	372.	287.
3858		TOTAL			2690.	1939.
3860	112	SINGLE FAMILY	du	67.0	864.	603.
3860	121	MULTI-FAMILY	du	3.0	34.	24.
3860	4112	RIGHT-OF-WAY	acre	6.9	0.	0.
3860	5137	ARTERIAL COMMERCIAL	ksf	11.1	609.	442.
3860	6816	ELEMENTARY SCHOOL	other	526.0	1788.	999.
3860	7611	OPEN SPACE PARK	acre	4.8	37.	24.
3860		TOTAL			3332.	2093.

---------- Land Use ---------- -----Trips-----
Zone Code Name Type Amount Person Vehicle

3861	112	SINGLE FAMILY	du	195.0	2515.	1756.
3861	121	MULTI-FAMILY	du	86.0	980.	688.
3861	122	MULTI-FAMILY	du	350.0	3010.	2113.
3861	4112	RIGHT-OF-WAY	acre	19.0	0.	0.
3861	4121	RAIL/TRANSIT CENTER	acre	1.7	669.	511.
3861	5139	OTHER RETAIL TRADE	ksf	11.4	627.	457.
3861	6012	LOW RISE OFFICE A	ksf	3.3	174.	134.
3861	6112	RELIGIOUS FACILITY	ksf	7.0	45.	35.
3861		TOTAL			8022.	5694.
3902	112	SINGLE FAMILY	du	71.0	916.	639.
3902	121	MULTI-FAMILY	du	38.0	433.	304.
3902	122	MULTI-FAMILY	du	200.0	1720.	1208.
3902	2113	LIGHT INDUSTRY GENERAL	ksf	5.7	106.	88.
3902	4112	RIGHT-OF-WAY	acre	51.0	0.	0.
3902	4129	OTHER TRANSPORTATION	acre	1.3	10.	8.
3902	5137	ARTERIAL COMMERCIAL	ksf	7.4	408.	296.
3902	6112	RELIGIOUS FACILITY	ksf	8.9	58.	44.
3902		TOTAL			3651.	2588.
3904	112	SINGLE FAMILY	du	1.0	13.	9.
3904	121	MULTI-FAMILY	du	14.0	160.	112.
3904	4112	RIGHT-OF-WAY	acre	18.8	0.	0.
3904	5137	ARTERIAL COMMERCIAL	ksf	3.2	174.	126.
3904	6111	CEMETERY	acre	116.4	710.	582.
3904	6112	RELIGIOUS FACILITY	ksf	1.5	9.	7.
3904	7220	OTHER RECREATION-HIGH	acre	6.0	438.	299.
3904		TOTAL			1504.	1135.
3905	112	SINGLE FAMILY	du	25.0	322.	225.
3905	121	MULTI-FAMILY	du	11.0	125.	88.
3905	122	MULTI-FAMILY	du	42.0	361.	254.
3905	4112	RIGHT-OF-WAY	acre	4.5	0.	0.
3905	5137	ARTERIAL COMMERCIAL	ksf	3.6	198.	144.
3905	6112	RELIGIOUS FACILITY	ksf	4.8	31.	24.
3905	6511	CLINIC	ksf	153.6	10337.	7676.
3905		TOTAL			11375.	8410.
3920	112	SINGLE FAMILY	du	31.0	400.	279.
3920	121	MULTI-FAMILY	du	26.0	296.	208.
3920	122	MULTI-FAMILY	du	29.0	249.	175.
3920	4112	RIGHT-OF-WAY	acre	6.6	0.	0.
3920	6112	RELIGIOUS FACILITY	ksf	5.3	35.	27.
3920	6816	ELEMENTARY SCHOOL	other	808.0	2747.	1535.
3920		TOTAL			3727.	2224.
3921	112	SINGLE FAMILY	du	22.0	284.	198.
3921	121	MULTI-FAMILY	du	18.0	205.	144.
3921	122	MULTI-FAMILY	du	101.0	869.	610.
3921	4112	RIGHT-OF-WAY	acre	6.1	0.	0.
3921	6816	ELEMENTARY SCHOOL	other	458.0	1557.	870.
3921		TOTAL			2915.	1822.

Zone	Code	Name	Type	Amount	Trips Person	Trips Vehicle
3922	112	SINGLE FAMILY	du	290.0	3741.	2611.
3922	121	MULTI-FAMILY	du	75.0	855.	600.

3922	122	MULTI-FAMILY	du	45.0	387.	272.
3922	131	MOBILE HOME PARK	du	250.0	1875.	1243.
3922	4112	RIGHT-OF-WAY	acre	25.6	0.	0.
3922	5137	ARTERIAL COMMERCIAL	ksf	13.2	728.	528.
3922	6012	LOW RISE OFFICE A	ksf	11.1	595.	458.
3922	6112	RELIGIOUS FACILITY	ksf	40.0	260.	200.
3922	7611	OPEN SPACE PARK	acre	0.3	2.	1.
3922		TOTAL			8443.	5914.
3924	112	SINGLE FAMILY	du	7.0	90.	63.
3924	4112	RIGHT-OF-WAY	acre	4.1	0.	0.
3924	4113	COMMUNICATION OR UTILITY	acre	0.2	1.	0.
3924	4114	PARKING	acre	0.4	0.	0.
3924	5025	SERVICE STATION FOOD MART	other	8.0	1650.	1199.
3924	5137	ARTERIAL COMMERCIAL	ksf	30.6	1683.	1223.
3924	6112	RELIGIOUS FACILITY	ksf	5.9	38.	30.
3924		TOTAL			3463.	2514.
3926	112	SINGLE FAMILY	du	4.0	52.	36.
3926	121	MULTI-FAMILY	du	9.0	103.	72.
3926	122	MULTI-FAMILY	du	35.0	301.	211.
3926	2113	LIGHT INDUSTRY GENERAL	ksf	116.4	2165.	1790.
3926	4112	RIGHT-OF-WAY	acre	4.2	0.	0.
3926	6112	RELIGIOUS FACILITY	ksf	2.4	16.	12.
3926	6129	MEETING ROOM FACILITY	ksf	8.0	331.	239.
3926		TOTAL			2967.	2361.
3927	112	SINGLE FAMILY	du	18.0	232.	162.
3927	121	MULTI-FAMILY	du	9.0	103.	72.
3927	122	MULTI-FAMILY	du	100.0	860.	604.
3927	2111	INDUSTRIAL PARK	ksf	26.0	476.	395.
3927	2113	LIGHT INDUSTRY GENERAL	ksf	96.3	1791.	1481.
3927	4112	RIGHT-OF-WAY	acre	10.0	0.	0.
3927	4114	PARKING	acre	0.4	0.	0.
3927	5137	ARTERIAL COMMERCIAL	ksf	13.6	748.	544.
3927	7611	OPEN SPACE PARK	acre	5.9	46.	30.
3927		TOTAL			4256.	3288.
3929	4112	RIGHT-OF-WAY	acre	2.7	0.	0.
3929	5137	ARTERIAL COMMERCIAL	ksf	20.0	1100.	799.
3929	6013	GOV'T /CIVIC CENTER	ksf	18.5	740.	556.
3929	6819	OTHER SCHOOL	ksf	9.8	213.	176.
3929		TOTAL			2053.	1531.
3944	112	SINGLE FAMILY	du	1.0	13.	9.
3944	121	MULTI-FAMILY	du	141.0	1607.	1128.
3944	131	MOBILE HOME PARK	du	265.0	1988.	1318.
3944	4112	RIGHT-OF-WAY	acre	12.4	0.	0.
3944	4121	RAIL/TRANSIT CENTER	acre	1.1	422.	322.
3944	6112	RELIGIOUS FACILITY	ksf	5.1	33.	25.

Zone	Code	Name	Type	Amount	Trips Person	Trips Vehicle
3944	7611	OPEN SPACE PARK	acre	3.5	27.	17.
3944		TOTAL			4089.	2821.
3945	4112	RIGHT-OF-WAY	acre	0.6	0.	0.
3945	6012	LOW RISE OFFICE A	ksf	64.0	3418.	2632.

3945	6129	MEETING ROOM FACILITY	ksf	16.0	664.	480.
3945		TOTAL			4082.	3112.
3946	112	SINGLE FAMILY	du	299.0	3857.	2692.
3946	4112	RIGHT-OF-WAY	acre	23.4	0.	0.
3946	6112	RELIGIOUS FACILITY	ksf	14.0	91.	70.
3946	6816	ELEMENTARY SCHOOL	other	614.0	2088.	1167.
3946	7611	OPEN SPACE PARK	acre	14.6	112.	74.
3946		TOTAL			6148.	4002.
3947	112	SINGLE FAMILY	du	112.0	1445.	1008.
3947	121	MULTI-FAMILY	du	13.0	148.	104.
3947	122	MULTI-FAMILY	du	44.0	378.	266.
3947	2113	LIGHT INDUSTRY GENERAL	ksf	7.2	133.	110.
3947	2311	SCRAP YARD/LANDFILL	acre	0.4	3.	2.
3947	4112	RIGHT-OF-WAY	acre	13.4	0.	0.
3947	4114	PARKING	acre	0.3	0.	0.
3947	5131	WHOLESALE TRADE	ksf	4.4	433.	307.
3947	5137	ARTERIAL COMMERCIAL	ksf	4.0	220.	160.
3947	6112	RELIGIOUS FACILITY	ksf	11.5	75.	58.
3947	7611	OPEN SPACE PARK	acre	1.9	15.	10.
3947		TOTAL			2849.	2024.
3949	112	SINGLE FAMILY	du	346.0	4463.	3115.
3949	121	MULTI-FAMILY	du	240.0	2736.	1921.
3949	122	MULTI-FAMILY	du	374.0	3216.	2258.
3949	131	MOBILE HOME PARK	du	95.0	712.	472.
3949	4112	RIGHT-OF-WAY	acre	27.2	0.	0.
3949	5137	ARTERIAL COMMERCIAL	ksf	5.0	273.	198.
3949	5138	SERVICE STATION	other	8.0	1486.	1082.
3949	6112	RELIGIOUS FACILITY	ksf	25.6	166.	128.
3949	6816	ELEMENTARY SCHOOL	other	270.0	918.	513.
3949	7611	OPEN SPACE PARK	acre	1.0	8.	5.
3949		TOTAL			13979.	9693.
3958	112	SINGLE FAMILY	du	58.0	748.	522.
3958	121	MULTI-FAMILY	du	21.0	239.	168.
3958	122	MULTI-FAMILY	du	41.0	353.	248.
3958	2114	WAREHOUSING	ksf	1.5	9.	8.
3958	4112	RIGHT-OF-WAY	acre	4.5	0.	0.
3958	4114	PARKING	acre	0.1	0.	0.
3958	5011	HIGH TURNOVER RESTAURANT	ksf	5.6	1002.	728.
3958	5137	ARTERIAL COMMERCIAL	ksf	5.7	312.	227.
3958		TOTAL			2663.	1900.
3959	112	SINGLE FAMILY	du	128.0	1651.	1153.
3959	121	MULTI-FAMILY	du	8.0	91.	64.

Zone	Code	Name	Type	Amount	Trips Person	Trips Vehicle
3959	122	MULTI-FAMILY	du	53.0	456.	320.
3959	2113	LIGHT INDUSTRY GENERAL	ksf	4.0	75.	62.
3959	4112	RIGHT-OF-WAY	acre	6.5	0.	0.
3959	4114	PARKING	acre	0.2	0.	0.
3959	5011	HIGH TURNOVER RESTAURANT	ksf	1.5	268.	195.
3959	5014	CONVENIENCE MARKET CHAIN	ksf	3.0	2063.	1499.
3959	5137	ARTERIAL COMMERCIAL	ksf	50.4	2774.	2015.
3959	7613	ACTIVE PARK	acre	0.2	12.	8.

3959		TOTAL			7390.	5314.
3960	112	SINGLE FAMILY	du	53.0	684.	477.
3960	121	MULTI-FAMILY	du	6.0	68.	48.
3960	122	MULTI-FAMILY	du	110.0	946.	664.
3960	4112	RIGHT-OF-WAY	acre	7.2	0.	0.
3960	5029	AUTO REPAIR	ksf	2.0	55.	40.
3960	5137	ARTERIAL COMMERCIAL	ksf	8.0	440.	320.
3960		TOTAL			2193.	1549.
3961	112	SINGLE FAMILY	du	43.0	555.	387.
3961	121	MULTI-FAMILY	du	16.0	182.	128.
3961	122	MULTI-FAMILY	du	59.0	507.	356.
3961	4112	RIGHT-OF-WAY	acre	4.0	0.	0.
3961	4114	PARKING	acre	0.0	0.	0.
3961	6112	RELIGIOUS FACILITY	ksf	20.0	130.	100.
3961		TOTAL			1374.	971.
3962	4112	RIGHT-OF-WAY	acre	1.1	0.	0.
3962		TOTAL			0.	0.
3969	112	SINGLE FAMILY	du	28.0	361.	252.
3969	121	MULTI-FAMILY	du	44.0	502.	352.
3969	122	MULTI-FAMILY	du	406.0	3492.	2451.
3969	4112	RIGHT-OF-WAY	acre	8.4	0.	0.
3969	5010	VACANT COMMERCIAL	ksf	8.7	0.	0.
3969	5014	CONVENIENCE MARKET CHAIN	ksf	3.2	2186.	1588.
3969	5024	CAR WASH	other	4.0	550.	400.
3969	5029	AUTO REPAIR	ksf	6.1	167.	121.
3969	5134	NEIGHBORHOOD SHOP CENTER	ksf	28.8	4874.	3450.
3969	6012	LOW RISE OFFICE A	ksf	71.8	3833.	2951.
3969	6112	RELIGIOUS FACILITY	ksf	3.5	23.	17.
3969	6115	FIRE OR POLICE STATION	ksf	14.5	590.	435.
3969	7200	COMMERCIAL RECREATION	ksf	9.0	395.	269.
3969		TOTAL			16972.	12287.
3974	112	SINGLE FAMILY	du	123.0	1587.	1108.
3974	121	MULTI-FAMILY	du	33.0	376.	264.
3974	122	MULTI-FAMILY	du	25.0	215.	151.
3974	4112	RIGHT-OF-WAY	acre	10.4	0.	0.
3974	4129	OTHER TRANSPORTATION	acre	0.9	7.	6.
3974	5013	SUPERMARKET	ksf	4.4	908.	659.
3974	5027	SERVICE STATION CAR WASH	other	12.0	2558.	1858.
3974		TOTAL			5651.	4046.

Zone	Code	Name	Type	Amount	Trips Person	Trips Vehicle
3977	112	SINGLE FAMILY	du	99.0	1277.	891.
3977	121	MULTI-FAMILY	du	13.0	148.	104.
3977	122	MULTI-FAMILY	du	30.0	258.	181.
3977	2113	LIGHT INDUSTRY GENERAL	ksf	24.4	454.	376.
3977	2311	SCRAP YARD/LANDFILL	acre	1.5	11.	9.
3977	4112	RIGHT-OF-WAY	acre	9.5	0.	0.
3977	4114	PARKING	acre	0.1	0.	0.
3977	5029	AUTO REPAIR	ksf	11.9	327.	237.
3977	6119	OTHER PUBLIC SERVICE	ksf	2.0	28.	20.
3977		TOTAL			2503.	1819.

3979	112	SINGLE FAMILY	du	79.0	1019.	711.
3979	121	MULTI-FAMILY	du	64.0	730.	512.
3979	122	MULTI-FAMILY	du	23.0	198.	139.
3979	4112	RIGHT-OF-WAY	acre	21.2	0.	0.
3979	6112	RELIGIOUS FACILITY	ksf	4.9	32.	24.
3979	7611	OPEN SPACE PARK	acre	1.9	15.	10.
3979		TOTAL			1993.	1396.
3980	112	SINGLE FAMILY	du	105.0	1354.	945.
3980	121	MULTI-FAMILY	du	75.0	855.	600.
3980	122	MULTI-FAMILY	du	84.0	722.	507.
3980	4112	RIGHT-OF-WAY	acre	20.9	0.	0.
3980	6112	RELIGIOUS FACILITY	ksf	14.5	94.	72.
3980	6115	FIRE OR POLICE STATION	ksf	9.6	391.	288.
3980		TOTAL			3417.	2413.
3984	112	SINGLE FAMILY	du	114.0	1471.	1026.
3984	121	MULTI-FAMILY	du	18.0	205.	144.
3984	122	MULTI-FAMILY	du	24.0	206.	145.
3984	2113	LIGHT INDUSTRY GENERAL	ksf	22.1	412.	340.
3984	2311	SCRAP YARD/LANDFILL	acre	0.4	3.	2.
3984	4112	RIGHT-OF-WAY	acre	9.6	0.	0.
3984	5029	AUTO REPAIR	ksf	2.8	77.	56.
3984	5030	AUTO TIRES	ksf	1.0	34.	25.
3984	5137	ARTERIAL COMMERCIAL	ksf	10.8	596.	433.
3984	6012	LOW RISE OFFICE A	ksf	2.2	118.	91.
3984	6112	RELIGIOUS FACILITY	ksf	4.5	29.	22.
3984	9101	INACTIVE USE	acre	0.1	0.	0.
3984		TOTAL			3151.	2285.
3985	112	SINGLE FAMILY	du	69.0	890.	621.
3985	121	MULTI-FAMILY	du	9.0	103.	72.
3985	122	MULTI-FAMILY	du	21.0	181.	127.
3985	2113	LIGHT INDUSTRY GENERAL	ksf	23.5	438.	362.
3985	2114	WAREHOUSING	ksf	21.0	128.	107.
3985	4112	RIGHT-OF-WAY	acre	12.2	0.	0.
3985	4114	PARKING	acre	0.6	0.	0.
3985	5029	AUTO REPAIR	ksf	1.2	33.	24.
3985	6112	RELIGIOUS FACILITY	ksf	11.0	72.	55.
3985	6816	ELEMENTARY SCHOOL	other	78.0	265.	148.
3985		TOTAL			2109.	1517.

Zone	Code	Name	Type	Amount	Trips Person	Trips Vehicle
3988	112	SINGLE FAMILY	du	275.0	3547.	2476.
3988	4112	RIGHT-OF-WAY	acre	19.3	0.	0.
3988	6815	JUNIOR HIGH OR MIDDLE SCHOOL	other	1127.0	2592.	1592.
3988		TOTAL			6140.	4069.
3989	112	SINGLE FAMILY	du	36.0	464.	324.
3989	121	MULTI-FAMILY	du	31.0	353.	248.
3989	122	MULTI-FAMILY	du	36.0	310.	217.
3989	2113	LIGHT INDUSTRY GENERAL	ksf	41.0	762.	630.
3989	4112	RIGHT-OF-WAY	acre	14.4	0.	0.
3989	6112	RELIGIOUS FACILITY	ksf	74.2	483.	371.
3989		TOTAL			2372.	1791.

3990	112	SINGLE FAMILY	du	108.0	1393.	972.
3990	121	MULTI-FAMILY	du	78.0	889.	624.
3990	122	MULTI-FAMILY	du	47.0	404.	284.
3990	2113	LIGHT INDUSTRY GENERAL	ksf	5.8	108.	90.
3990	4112	RIGHT-OF-WAY	acre	11.4	0.	0.
3990	5137	ARTERIAL COMMERCIAL	ksf	6.8	377.	274.
3990	6111	CEMETERY	acre	7.0	42.	35.
3990	6112	RELIGIOUS FACILITY	ksf	5.2	34.	26.
3990		TOTAL			3248.	2304.
3991	112	SINGLE FAMILY	du	172.0	2219.	1549.
3991	121	MULTI-FAMILY	du	49.0	559.	392.
3991	122	MULTI-FAMILY	du	44.0	378.	266.
3991	4112	RIGHT-OF-WAY	acre	9.2	0.	0.
3991	5137	ARTERIAL COMMERCIAL	ksf	27.8	1529.	1111.
3991	6012	LOW RISE OFFICE A	ksf	3.2	171.	131.
3991	6112	RELIGIOUS FACILITY	ksf	3.2	21.	16.
3991	6129	MEETING ROOM FACILITY	ksf	3.2	134.	97.
3991		TOTAL			5011.	3562.
3992	112	SINGLE FAMILY	du	177.0	2283.	1594.
3992	121	MULTI-FAMILY	du	99.0	1129.	792.
3992	122	MULTI-FAMILY	du	214.0	1840.	1292.
3992	4112	RIGHT-OF-WAY	acre	19.3	0.	0.
3992	6012	LOW RISE OFFICE A	ksf	3.8	206.	158.
3992	6013	GOV'T /CIVIC CENTER	ksf	50.7	2024.	1521.
3992	6112	RELIGIOUS FACILITY	ksf	14.6	95.	73.
3992	7611	OPEN SPACE PARK	acre	5.6	43.	29.
3992	7613	ACTIVE PARK	acre	3.7	284.	187.
3992		TOTAL			7905.	5646.
3993	4112	RIGHT-OF-WAY	acre	4.2	0.	0.
3993	5133	COMMUNITY SHOP CENTER	ksf	360.9	38937.	27553.
3993		TOTAL			38937.	27553.
3994	112	SINGLE FAMILY	du	81.0	1045.	729.
3994	121	MULTI-FAMILY	du	74.0	844.	592.
3994	122	MULTI-FAMILY	du	8.0	69.	48.
3994	4112	RIGHT-OF-WAY	acre	20.3	0.	0.

Zone	Code	Name	Type	Amount	Trips Person	Trips Vehicle
3994	5137	ARTERIAL COMMERCIAL	ksf	7.9	434.	315.
3994	7611	OPEN SPACE PARK	acre	7.9	61.	40.
3994		TOTAL			2452.	1725.
3995	112	SINGLE FAMILY	du	274.0	3535.	2467.
3995	121	MULTI-FAMILY	du	17.0	194.	136.
3995	122	MULTI-FAMILY	du	104.0	894.	628.
3995	4112	RIGHT-OF-WAY	acre	42.9	0.	0.
3995	5137	ARTERIAL COMMERCIAL	ksf	45.4	2496.	1813.
3995	6112	RELIGIOUS FACILITY	ksf	52.2	340.	261.
3995	6519	OTHER HEALTH CARE	ksf	22.6	1523.	1131.
3995	6814	SENIOR HIGH SCHOOL	other	2333.0	9332.	4199.
3995	6816	ELEMENTARY SCHOOL	other	759.0	2581.	1442.
3995	7611	OPEN SPACE PARK	acre	0.8	6.	4.
3995	7613	ACTIVE PARK	acre	4.1	319.	210.

3995		TOTAL			21220.	12291.
3996	112	SINGLE FAMILY	du	684.0	8824.	6159.
3996	4112	RIGHT-OF-WAY	acre	38.7	0.	0.
3996	5029	AUTO REPAIR	ksf	1.0	26.	19.
3996	5136	AUTO DEALERSHIP	acre	0.1	39.	28.
3996	6112	RELIGIOUS FACILITY	ksf	18.9	123.	94.
3996		TOTAL			9012.	6300.
3998	112	SINGLE FAMILY	du	144.0	1858.	1297.
3998	121	MULTI-FAMILY	du	122.0	1391.	976.
3998	122	MULTI-FAMILY	du	148.0	1273.	894.
3998	4112	RIGHT-OF-WAY	acre	27.2	0.	0.
3998	5139	OTHER RETAIL TRADE	ksf	2.4	132.	96.
3998	6112	RELIGIOUS FACILITY	ksf	19.3	125.	96.
3998	6114	POST OFFICE	ksf	5.8	1680.	1168.
3998		TOTAL			6459.	4527.
3999	112	SINGLE FAMILY	du	151.0	1948.	1360.
3999	121	MULTI-FAMILY	du	166.0	1892.	1329.
3999	122	MULTI-FAMILY	du	240.0	2064.	1449.
3999	4112	RIGHT-OF-WAY	acre	24.7	0.	0.
3999	5137	ARTERIAL COMMERCIAL	ksf	6.3	349.	253.
3999	6112	RELIGIOUS FACILITY	ksf	33.6	219.	168.
3999	6519	OTHER HEALTH CARE	ksf	26.0	1750.	1300.
3999	6816	ELEMENTARY SCHOOL	other	384.0	1306.	730.
3999	7613	ACTIVE PARK	acre	0.2	13.	8.
3999		TOTAL			9540.	6596.
4002	112	SINGLE FAMILY	du	143.0	1845.	1288.
4002	121	MULTI-FAMILY	du	157.0	1790.	1257.
4002	122	MULTI-FAMILY	du	160.0	1376.	966.
4002	4112	RIGHT-OF-WAY	acre	23.0	0.	0.
4002	4114	PARKING	acre	0.3	0.	0.
4002	5137	ARTERIAL COMMERCIAL	ksf	17.6	967.	702.
4002	6112	RELIGIOUS FACILITY	ksf	50.6	329.	253.
4002	6113	LIBRARY	ksf	3.3	244.	166.

Zone	Code	Name	Type	Amount	Trips Person	Trips Vehicle
4002	6119	OTHER PUBLIC SERVICE	ksf	3.5	49.	35.
4002	6815	JUNIOR HIGH OR MIDDLE SCHOOL	other	1242.0	2857.	1755.
4002	6816	ELEMENTARY SCHOOL	other	619.0	2105.	1176.
4002	7613	ACTIVE PARK	acre	18.0	1384.	911.
4002		TOTAL			12945.	8508.
4007	112	SINGLE FAMILY	du	488.0	6295.	4394.
4007	4112	RIGHT-OF-WAY	acre	32.7	0.	0.
4007	6112	RELIGIOUS FACILITY	ksf	29.3	191.	147.
4007	6816	ELEMENTARY SCHOOL	other	589.0	2003.	1119.
4007		TOTAL			8488.	5660.
4008	112	SINGLE FAMILY	du	57.0	735.	513.
4008	121	MULTI-FAMILY	du	75.0	855.	600.
4008	122	MULTI-FAMILY	du	117.0	1006.	706.
4008	1421	CORRECTIONAL FACILITY	other	300.0	840.	609.
4008	4112	RIGHT-OF-WAY	acre	12.2	0.	0.
4008	5133	COMMUNITY SHOP CENTER	ksf	134.3	14495.	10257.

4008	5138	SERVICE STATION	other	8.0	1486.	1082.
4008	6112	RELIGIOUS FACILITY	ksf	24.1	156.	120.
4008	6119	OTHER PUBLIC SERVICE	ksf	3.6	49.	36.
4008	6816	ELEMENTARY SCHOOL	other	481.0	1635.	914.
4008	7613	ACTIVE PARK	acre	0.2	12.	8.
4008		TOTAL			21270.	14845.
4009	112	SINGLE FAMILY	du	219.0	2825.	1972.
4009	121	MULTI-FAMILY	du	112.0	1277.	896.
4009	122	MULTI-FAMILY	du	124.0	1066.	749.
4009	4112	RIGHT-OF-WAY	acre	17.8	0.	0.
4009	5137	ARTERIAL COMMERCIAL	ksf	13.7	755.	549.
4009	5139	OTHER RETAIL TRADE	ksf	0.9	51.	37.
4009	6112	RELIGIOUS FACILITY	ksf	18.4	120.	92.
4009	6115	FIRE OR POLICE STATION	ksf	3.4	139.	103.
4009		TOTAL			6234.	4398.
4010	112	SINGLE FAMILY	du	328.0	4231.	2953.
4010	4112	RIGHT-OF-WAY	acre	28.2	0.	0.
4010	6112	RELIGIOUS FACILITY	ksf	8.5	55.	42.
4010	7613	ACTIVE PARK	acre	34.6	2662.	1752.
4010	9101	INACTIVE USE	acre	0.1	0.	0.
4010		TOTAL			6948.	4747.
4013	112	SINGLE FAMILY	du	178.0	2296.	1603.
4013	121	MULTI-FAMILY	du	63.0	718.	504.
4013	122	MULTI-FAMILY	du	40.0	344.	242.
4013	4112	RIGHT-OF-WAY	acre	16.6	0.	0.
4013	5137	ARTERIAL COMMERCIAL	ksf	4.0	222.	161.
4013	6112	RELIGIOUS FACILITY	ksf	2.3	15.	11.
4013		TOTAL			3595.	2521.
4018	112	SINGLE FAMILY	du	589.0	7598.	5303.
4018	4112	RIGHT-OF-WAY	acre	33.2	0.	0.

Zone	Code	Name	Type	Amount	Trips Person	Trips Vehicle
4018	6112	RELIGIOUS FACILITY	ksf	5.0	32.	25.
4018	7611	OPEN SPACE PARK	acre	8.6	66.	44.
4018		TOTAL			7697.	5372.
4024	112	SINGLE FAMILY	du	404.0	5212.	3638.
4024	121	MULTI-FAMILY	du	389.0	4435.	3113.
4024	122	MULTI-FAMILY	du	322.0	2769.	1944.
4024	4112	RIGHT-OF-WAY	acre	50.2	0.	0.
4024	5029	AUTO REPAIR	ksf	1.8	49.	36.
4024	5134	NEIGHBORHOOD SHOP CENTER	ksf	33.2	5629.	3984.
4024	5137	ARTERIAL COMMERCIAL	ksf	37.5	2065.	1500.
4024	5139	OTHER RETAIL TRADE	ksf	1.2	64.	47.
4024	6112	RELIGIOUS FACILITY	ksf	6.0	39.	30.
4024	6810	DAY CARE CENTER	other	70.0	427.	352.
4024	6816	ELEMENTARY SCHOOL	other	549.0	1867.	1043.
4024	7220	OTHER RECREATION-HIGH	acre	2.8	205.	140.
4024		TOTAL			22760.	15826.
4027	112	SINGLE FAMILY	du	43.0	555.	387.
4027	121	MULTI-FAMILY	du	52.0	593.	416.
4027	122	MULTI-FAMILY	du	88.0	757.	531.

4027	2113	LIGHT INDUSTRY GENERAL	ksf	66.2	1230.	1017.
4027	2114	WAREHOUSING	ksf	25.3	154.	129.
4027	4112	RIGHT-OF-WAY	acre	22.0	0.	0.
4027	4113	COMMUNICATION OR UTILITY	acre	2.8	9.	7.
4027	5137	ARTERIAL COMMERCIAL	ksf	45.4	2496.	1813.
4027	6112	RELIGIOUS FACILITY	ksf	7.1	46.	35.
4027	7611	OPEN SPACE PARK	acre	2.8	22.	14.
4027		TOTAL			5862.	4351.
4028	112	SINGLE FAMILY	du	73.0	942.	657.
4028	121	MULTI-FAMILY	du	51.0	581.	408.
4028	122	MULTI-FAMILY	du	86.0	740.	519.
4028	2114	WAREHOUSING	ksf	4.6	28.	23.
4028	4112	RIGHT-OF-WAY	acre	22.1	0.	0.
4028	5137	ARTERIAL COMMERCIAL	ksf	103.0	5664.	4114.
4028	6012	LOW RISE OFFICE A	ksf	4.2	226.	174.
4028	6112	RELIGIOUS FACILITY	ksf	11.5	75.	57.
4028	6129	MEETING ROOM FACILITY	ksf	2.7	111.	80.
4028		TOTAL			8367.	6034.
4035	112	SINGLE FAMILY	du	182.0	2348.	1639.
4035	121	MULTI-FAMILY	du	223.0	2542.	1785.
4035	122	MULTI-FAMILY	du	360.0	3096.	2174.
4035	4112	RIGHT-OF-WAY	acre	75.9	0.	0.
4035	4113	COMMUNICATION OR UTILITY	acre	0.1	0.	0.
4035	5137	ARTERIAL COMMERCIAL	ksf	13.2	724.	526.
4035	6112	RELIGIOUS FACILITY	ksf	24.5	159.	122.
4035	7613	ACTIVE PARK	acre	16.9	1302.	857.
4035		TOTAL			10171.	7102.
4038	112	SINGLE FAMILY	du	148.0	1909.	1333.

Zone	Code	Name	Type	Amount	Trips Person	Trips Vehicle
4038	121	MULTI-FAMILY	du	87.0	992.	696.
4038	122	MULTI-FAMILY	du	89.0	765.	537.
4038	4112	RIGHT-OF-WAY	acre	39.3	0.	0.
4038	5137	ARTERIAL COMMERCIAL	ksf	22.1	1213.	881.
4038	6112	RELIGIOUS FACILITY	ksf	3.6	23.	18.
4038	6816	ELEMENTARY SCHOOL	other	760.0	2584.	1444.
4038	7611	OPEN SPACE PARK	acre	2.9	23.	15.
4038	9101	INACTIVE USE	acre	0.1	0.	0.
4038		TOTAL			7509.	4924.
4039	112	SINGLE FAMILY	du	162.0	2090.	1459.
4039	121	MULTI-FAMILY	du	96.0	1094.	768.
4039	122	MULTI-FAMILY	du	107.0	920.	646.
4039	4112	RIGHT-OF-WAY	acre	18.2	0.	0.
4039	5137	ARTERIAL COMMERCIAL	ksf	8.4	465.	338.
4039	5139	OTHER RETAIL TRADE	ksf	10.5	578.	421.
4039	6012	LOW RISE OFFICE A	ksf	2.9	154.	119.
4039	6112	RELIGIOUS FACILITY	ksf	27.4	178.	137.
4039	6816	ELEMENTARY SCHOOL	other	173.0	588.	329.
4039	7611	OPEN SPACE PARK	acre	1.1	9.	6.
4039		TOTAL			6076.	4221.
4040	112	SINGLE FAMILY	du	83.0	1071.	747.
4040	121	MULTI-FAMILY	du	103.0	1174.	824.

4040	122	MULTI-FAMILY	du	14.0	120.	85.
4040	4112	RIGHT-OF-WAY	acre	12.4	0.	0.
4040	5137	ARTERIAL COMMERCIAL	ksf	30.8	1694.	1231.
4040	6012	LOW RISE OFFICE A	ksf	13.5	723.	557.
4040	6112	RELIGIOUS FACILITY	ksf	50.6	329.	253.
4040	7613	ACTIVE PARK	acre	17.5	1348.	887.
4040	9101	INACTIVE USE	acre	0.0	0.	0.
4040		TOTAL			6459.	4583.
4044	4112	RIGHT-OF-WAY	acre	0.1	0.	0.
4044		TOTAL			0.	0.
4047	112	SINGLE FAMILY	du	456.0	5882.	4106.
4047	4112	RIGHT-OF-WAY	acre	23.2	0.	0.
4047	4113	COMMUNICATION OR UTILITY	acre	3.8	12.	9.
4047	7611	OPEN SPACE PARK	acre	0.8	6.	4.
4047		TOTAL			5901.	4120.
4050	4112	RIGHT-OF-WAY	acre	0.4	0.	0.
4050	5133	COMMUNITY SHOP CENTER	ksf	75.3	8130.	5753.
4050	5134	NEIGHBORHOOD SHOP CENTER	ksf	48.1	8153.	5770.
4050		TOTAL			16284.	11524.
4057	112	SINGLE FAMILY	du	140.0	1806.	1261.
4057	121	MULTI-FAMILY	du	140.0	1596.	1120.
4057	122	MULTI-FAMILY	du	119.0	1023.	718.
4057	4112	RIGHT-OF-WAY	acre	21.6	0.	0.
4057	5137	ARTERIAL COMMERCIAL	ksf	2.8	151.	110.

Land Use					Trips	
Zone	Code	Name	Type	Amount	Person	Vehicle
4057	6112	RELIGIOUS FACILITY	ksf	5.3	35.	27.
4057	7611	OPEN SPACE PARK	acre	7.2	56.	37.
4057	9101	INACTIVE USE	acre	0.0	0.	0.
4057		TOTAL			4667.	3273.
4058	112	SINGLE FAMILY	du	132.0	1703.	1189.
4058	121	MULTI-FAMILY	du	152.0	1733.	1217.
4058	122	MULTI-FAMILY	du	44.0	378.	266.
4058	4112	RIGHT-OF-WAY	acre	19.4	0.	0.
4058	5137	ARTERIAL COMMERCIAL	ksf	3.6	197.	143.
4058	6112	RELIGIOUS FACILITY	ksf	9.1	59.	45.
4058	6119	OTHER PUBLIC SERVICE	ksf	2.7	37.	26.
4058	6816	ELEMENTARY SCHOOL	other	543.0	1846.	1032.
4058	7611	OPEN SPACE PARK	acre	0.5	4.	3.
4058	7613	ACTIVE PARK	acre	0.2	12.	8.
4058		TOTAL			5969.	3928.
4061	112	SINGLE FAMILY	du	19.0	245.	171.
4061	121	MULTI-FAMILY	du	54.0	616.	432.
4061	122	MULTI-FAMILY	du	347.0	2984.	2095.
4061	4112	RIGHT-OF-WAY	acre	16.0	0.	0.
4061	5137	ARTERIAL COMMERCIAL	ksf	1.8	98.	71.
4061		TOTAL			3943.	2769.
4079	112	SINGLE FAMILY	du	147.0	1896.	1324.
4079	121	MULTI-FAMILY	du	147.0	1676.	1177.
4079	122	MULTI-FAMILY	du	110.0	946.	664.

4079	1511	MOTEL	room	64.0	934.	575.
4079	4112	RIGHT-OF-WAY	acre	28.9	0.	0.
4079	5027	SERVICE STATION CAR WASH	other	8.0	1706.	1239.
4079	5137	ARTERIAL COMMERCIAL	ksf	8.2	452.	328.
4079	6112	RELIGIOUS FACILITY	ksf	4.2	27.	21.
4079	6816	ELEMENTARY SCHOOL	other	707.0	2404.	1343.
4079	9101	INACTIVE USE	acre	0.6	0.	0.
4079		TOTAL			10041.	6671.
4080	112	SINGLE FAMILY	du	161.0	2077.	1450.
4080	121	MULTI-FAMILY	du	174.0	1984.	1393.
4080	122	MULTI-FAMILY	du	137.0	1178.	827.
4080	4112	RIGHT-OF-WAY	acre	22.5	0.	0.
4080	5137	ARTERIAL COMMERCIAL	ksf	3.7	205.	149.
4080	6112	RELIGIOUS FACILITY	ksf	15.3	100.	77.
4080	7611	OPEN SPACE PARK	acre	0.8	6.	4.
4080	9101	INACTIVE USE	acre	2.1	0.	0.
4080		TOTAL			5549.	3899.
4683	112	SINGLE FAMILY	du	22.0	284.	198.
4683	121	MULTI-FAMILY	du	10.0	114.	80.
4683	122	MULTI-FAMILY	du	34.0	292.	205.
4683	2113	LIGHT INDUSTRY GENERAL	ksf	38.9	724.	599.
4683	4112	RIGHT-OF-WAY	acre	13.4	0.	0.
4683	4113	COMMUNICATION OR UTILITY	acre	3.9	12.	10.

Zone	Code	Name	Type	Amount	Trips Person	Trips Vehicle
4683	4114	PARKING	acre	3.0	0.	0.
4683	4121	RAIL/TRANSIT CENTER	acre	2.5	998.	763.
4683	5010	VACANT COMMERCIAL	ksf	4.2	0.	0.
4683	6129	MEETING ROOM FACILITY	ksf	13.9	576.	416.
4683		TOTAL			3001.	2271.
4684	4112	RIGHT-OF-WAY	acre	1.4	0.	0.
4684	5133	COMMUNITY SHOP CENTER	ksf	81.0	8745.	6188.
4684		TOTAL			8745.	6188.
4685	112	SINGLE FAMILY	du	97.0	1251.	873.
4685	121	MULTI-FAMILY	du	17.0	194.	136.
4685	122	MULTI-FAMILY	du	59.0	507.	356.
4685	2113	LIGHT INDUSTRY GENERAL	ksf	41.6	774.	640.
4685	2311	SCRAP YARD/LANDFILL	acre	1.8	13.	11.
4685	4112	RIGHT-OF-WAY	acre	8.8	0.	0.
4685	6112	RELIGIOUS FACILITY	ksf	5.2	34.	26.
4685		TOTAL			2773.	2042.
4686	112	SINGLE FAMILY	du	71.0	916.	639.
4686	121	MULTI-FAMILY	du	12.0	137.	96.
4686	122	MULTI-FAMILY	du	23.0	198.	139.
4686	2113	LIGHT INDUSTRY GENERAL	ksf	0.5	9.	8.
4686	4112	RIGHT-OF-WAY	acre	5.2	0.	0.
4686		TOTAL			1260.	882.
4687	112	SINGLE FAMILY	du	4.0	52.	36.
4687	121	MULTI-FAMILY	du	6.0	68.	48.
4687	122	MULTI-FAMILY	du	12.0	103.	72.
4687	2113	LIGHT INDUSTRY GENERAL	ksf	34.8	648.	536.

4687	2311	SCRAP YARD/LANDFILL	acre	0.2	2.	1.
4687	4112	RIGHT-OF-WAY	acre	2.7	0.	0.
4687	5137	ARTERIAL COMMERCIAL	ksf	5.3	289.	210.
4687		TOTAL			1162.	904.
4688	112	SINGLE FAMILY	du	3.0	39.	27.
4688	121	MULTI-FAMILY	du	5.0	57.	40.
4688	122	MULTI-FAMILY	du	6.0	52.	36.
4688	2113	LIGHT INDUSTRY GENERAL	ksf	55.5	1032.	854.
4688	4112	RIGHT-OF-WAY	acre	0.3	0.	0.
4688	4114	PARKING	acre	0.5	0.	0.
4688	5137	ARTERIAL COMMERCIAL	ksf	7.5	412.	299.
4688		TOTAL			1591.	1256.
4689	112	SINGLE FAMILY	du	32.0	413.	288.
4689	121	MULTI-FAMILY	du	22.0	251.	176.
4689	122	MULTI-FAMILY	du	24.0	206.	145.
4689	4112	RIGHT-OF-WAY	acre	3.6	0.	0.
4689	6012	LOW RISE OFFICE A	ksf	12.6	675.	520.
4689	6112	RELIGIOUS FACILITY	ksf	28.2	183.	141.
4689	6810	DAY CARE CENTER	other	109.0	665.	549.
4689		TOTAL			2393.	1819.

Zone	Code	Name	Type	Amount	Trips Person	Trips Vehicle
4690	112	SINGLE FAMILY	du	16.0	206.	144.
4690	121	MULTI-FAMILY	du	9.0	103.	72.
4690	122	MULTI-FAMILY	du	6.0	52.	36.
4690	2113	LIGHT INDUSTRY GENERAL	ksf	2.3	43.	35.
4690	2311	SCRAP YARD/LANDFILL	acre	0.9	7.	6.
4690	4112	RIGHT-OF-WAY	acre	1.2	0.	0.
4690	4114	PARKING	acre	0.1	0.	0.
4690	5029	AUTO REPAIR	ksf	9.0	248.	180.
4690	5030	AUTO TIRES	ksf	3.5	120.	87.
4690	5137	ARTERIAL COMMERCIAL	ksf	4.0	220.	160.
4690	6012	LOW RISE OFFICE A	ksf	2.3	124.	95.
4690		TOTAL			1122.	816.
4691	112	SINGLE FAMILY	du	8.0	103.	72.
4691	2113	LIGHT INDUSTRY GENERAL	ksf	13.9	259.	214.
4691	2114	WAREHOUSING	ksf	1.0	6.	5.
4691	2311	SCRAP YARD/LANDFILL	acre	0.9	7.	6.
4691	4112	RIGHT-OF-WAY	acre	2.6	0.	0.
4691	5011	HIGH TURNOVER RESTAURANT	ksf	2.2	399.	290.
4691	5136	AUTO DEALERSHIP	acre	0.1	50.	36.
4691	5137	ARTERIAL COMMERCIAL	ksf	4.0	219.	159.
4691		TOTAL			1044.	782.
4692	112	SINGLE FAMILY	du	27.0	348.	243.
4692	122	MULTI-FAMILY	du	68.0	585.	411.
4692	2113	LIGHT INDUSTRY GENERAL	ksf	29.5	548.	453.
4692	4112	RIGHT-OF-WAY	acre	7.9	0.	0.
4692	5137	ARTERIAL COMMERCIAL	ksf	1.0	55.	40.
4692		TOTAL			1536.	1147.
4693	112	SINGLE FAMILY	du	3.0	39.	27.
4693	121	MULTI-FAMILY	du	2.0	23.	16.

4693	122	MULTI-FAMILY	du	12.0	103.	72.
4693	2113	LIGHT INDUSTRY GENERAL	ksf	4.9	91.	75.
4693	2114	WAREHOUSING	ksf	19.5	119.	100.
4693	2311	SCRAP YARD/LANDFILL	acre	0.1	1.	1.
4693	4112	RIGHT-OF-WAY	acre	1.2	0.	0.
4693	5029	AUTO REPAIR	ksf	1.6	45.	33.
4693	5137	ARTERIAL COMMERCIAL	ksf	8.0	441.	320.
4693	6012	LOW RISE OFFICE A	ksf	8.5	454.	350.
4693		TOTAL			1316.	994.
4694	112	SINGLE FAMILY	du	8.0	103.	72.
4694	121	MULTI-FAMILY	du	6.0	68.	48.
4694	2113	LIGHT INDUSTRY GENERAL	ksf	50.2	933.	771.
4694	4112	RIGHT-OF-WAY	acre	1.5	0.	0.
4694	4114	PARKING	acre	0.8	0.	0.
4694	5011	HIGH TURNOVER RESTAURANT	ksf	1.8	315.	229.
4694	5028	AUTO PARTS	ksf	5.7	490.	356.
4694	5137	ARTERIAL COMMERCIAL	ksf	70.5	3878.	2816.
4694		TOTAL			5787.	4292.

Zone	Code	Name	Type	Amount	Trips Person	Trips Vehicle
4695	112	SINGLE FAMILY	du	25.0	322.	225.
4695	122	MULTI-FAMILY	du	12.0	103.	72.
4695	2113	LIGHT INDUSTRY GENERAL	ksf	0.8	15.	12.
4695	4112	RIGHT-OF-WAY	acre	4.9	0.	0.
4695		TOTAL			441.	310.
4696	112	SINGLE FAMILY	du	116.0	1496.	1044.
4696	121	MULTI-FAMILY	du	15.0	171.	120.
4696	122	MULTI-FAMILY	du	111.0	955.	670.
4696	4112	RIGHT-OF-WAY	acre	8.7	0.	0.
4696	5029	AUTO REPAIR	ksf	1.8	48.	35.
4696	5030	AUTO TIRES	ksf	2.5	86.	62.
4696	5137	ARTERIAL COMMERCIAL	ksf	1.4	79.	58.
4696		TOTAL			2836.	1990.
4697	112	SINGLE FAMILY	du	38.0	490.	342.
4697	121	MULTI-FAMILY	du	12.0	137.	96.
4697	122	MULTI-FAMILY	du	65.0	559.	392.
4697	4112	RIGHT-OF-WAY	acre	3.1	0.	0.
4697	5025	SERVICE STATION FOOD MART	other	12.0	2476.	1798.
4697	5137	ARTERIAL COMMERCIAL	ksf	8.2	453.	329.
4697	6112	RELIGIOUS FACILITY	ksf	5.5	36.	28.
4697		TOTAL			4150.	2985.
4698	112	SINGLE FAMILY	du	56.0	722.	504.
4698	121	MULTI-FAMILY	du	11.0	125.	88.
4698	122	MULTI-FAMILY	du	25.0	215.	151.
4698	4112	RIGHT-OF-WAY	acre	4.3	0.	0.
4698	4114	PARKING	acre	0.2	0.	0.
4698	5014	CONVENIENCE MARKET CHAIN	ksf	17.5	12036.	8742.
4698	5137	ARTERIAL COMMERCIAL	ksf	18.7	1028.	747.
4698	6112	RELIGIOUS FACILITY	ksf	0.6	4.	3.
4698		TOTAL			14132.	10236.
4699	112	SINGLE FAMILY	du	54.0	697.	486.

4699	121	MULTI-FAMILY	du	8.0	91.	64.
4699	122	MULTI-FAMILY	du	30.0	258.	181.
4699	4112	RIGHT-OF-WAY	acre	4.7	0.	0.
4699	5137	ARTERIAL COMMERCIAL	ksf	17.5	960.	697.
4699	6112	RELIGIOUS FACILITY	ksf	11.8	77.	59.
4699		TOTAL			2083.	1488.
4700	112	SINGLE FAMILY	du	17.0	219.	153.
4700	121	MULTI-FAMILY	du	18.0	205.	144.
4700	122	MULTI-FAMILY	du	19.0	163.	115.
4700	2113	LIGHT INDUSTRY GENERAL	ksf	11.8	219.	181.
4700	4112	RIGHT-OF-WAY	acre	1.8	0.	0.
4700	4114	PARKING	acre	0.9	0.	0.
4700	5011	HIGH TURNOVER RESTAURANT	ksf	1.4	244.	177.
4700	5014	CONVENIENCE MARKET CHAIN	ksf	14.0	9629.	6994.
4700	5029	AUTO REPAIR	ksf	4.5	123.	89.
4700	5030	AUTO TIRES	ksf	1.6	54.	39.

Zone	Code	Name	Type	Amount	Trips Person	Trips Vehicle
4700	5137	ARTERIAL COMMERCIAL	ksf	21.8	1199.	871.
4700	6013	GOV'T /CIVIC CENTER	ksf	1.7	68.	51.
4700	6112	RELIGIOUS FACILITY	ksf	4.5	29.	22.
4700	6115	FIRE OR POLICE STATION	ksf	14.6	596.	439.
4700		TOTAL			12748.	9276.
4701	112	SINGLE FAMILY	du	5.0	64.	45.
4701	121	MULTI-FAMILY	du	14.0	160.	112.
4701	122	MULTI-FAMILY	du	4.0	34.	24.
4701	2113	LIGHT INDUSTRY GENERAL	ksf	15.7	292.	242.
4701	4112	RIGHT-OF-WAY	acre	1.1	0.	0.
4701	5029	AUTO REPAIR	ksf	8.0	219.	159.
4701	5137	ARTERIAL COMMERCIAL	ksf	21.8	1201.	872.
4701	6112	RELIGIOUS FACILITY	ksf	1.8	12.	9.
4701		TOTAL			1983.	1463.
4702	112	SINGLE FAMILY	du	22.0	284.	198.
4702	122	MULTI-FAMILY	du	4.0	34.	24.
4702	2113	LIGHT INDUSTRY GENERAL	ksf	13.8	256.	212.
4702	2311	SCRAP YARD/LANDFILL	acre	0.2	2.	2.
4702	4112	RIGHT-OF-WAY	acre	2.0	0.	0.
4702	5014	CONVENIENCE MARKET CHAIN	ksf	5.8	3989.	2897.
4702	5030	AUTO TIRES	ksf	0.6	22.	16.
4702	5137	ARTERIAL COMMERCIAL	ksf	0.6	31.	22.
4702	6129	MEETING ROOM FACILITY	ksf	4.0	166.	120.
4702		TOTAL			4785.	3492.
4703	111	SINGLE FAMILY	du	1.0	13.	9.
4703	112	SINGLE FAMILY	du	182.0	2348.	1639.
4703	4112	RIGHT-OF-WAY	acre	19.0	0.	0.
4703	6113	LIBRARY	ksf	27.6	2029.	1375.
4703	6819	OTHER SCHOOL	ksf	14.5	316.	261.
4703	7611	OPEN SPACE PARK	acre	32.6	251.	165.
4703		TOTAL			4956.	3449.
4704	4112	RIGHT-OF-WAY	acre	1.4	0.	0.
4704	6812	UNIVERSITY OR COLLEGE	other	7667.0	15334.	12465.
4704		TOTAL			15334.	12465.

4705	112	SINGLE FAMILY	du	256.0	3302.	2305.
4705	4112	RIGHT-OF-WAY	acre	17.6	0.	0.
4705	7611	OPEN SPACE PARK	acre	25.4	195.	128.
4705		TOTAL			3498.	2433.
4706	112	SINGLE FAMILY	du	326.0	4205.	2935.
4706	1411	CONGREGATE CARE FACILITY	other	12.0	52.	36.
4706	4112	RIGHT-OF-WAY	acre	18.6	0.	0.
4706		TOTAL			4257.	2972.
4707	112	SINGLE FAMILY	du	153.0	1974.	1378.
4707	4112	RIGHT-OF-WAY	acre	9.0	0.	0.
4707	4113	COMMUNICATION OR UTILITY	acre	0.6	2.	1.

Zone	Code	Name	Type	Amount	Trips Person	Trips Vehicle
4707	7611	OPEN SPACE PARK	acre	0.8	6.	4.
4707	7613	ACTIVE PARK	acre	3.0	234.	154.
4707		TOTAL			2215.	1537.
4708	112	SINGLE FAMILY	du	351.0	4528.	3160.
4708	121	MULTI-FAMILY	du	17.0	194.	136.
4708	4112	RIGHT-OF-WAY	acre	31.6	0.	0.
4708	7611	OPEN SPACE PARK	acre	0.2	2.	1.
4708		TOTAL			4723.	3298.
4709	112	SINGLE FAMILY	du	209.0	2696.	1882.
4709	121	MULTI-FAMILY	du	188.0	2143.	1505.
4709	122	MULTI-FAMILY	du	119.0	1023.	718.
4709	4112	RIGHT-OF-WAY	acre	20.2	0.	0.
4709	5137	ARTERIAL COMMERCIAL	ksf	2.2	119.	86.
4709	6112	RELIGIOUS FACILITY	ksf	17.0	110.	85.
4709	6519	OTHER HEALTH CARE	ksf	3.8	253.	188.
4709	6816	ELEMENTARY SCHOOL	other	483.0	1642.	918.
4709	7613	ACTIVE PARK	acre	6.6	510.	335.
4709		TOTAL			8497.	5717.
4710	112	SINGLE FAMILY	du	25.0	322.	225.
4710	121	MULTI-FAMILY	du	23.0	262.	184.
4710	122	MULTI-FAMILY	du	171.0	1471.	1032.
4710	4112	RIGHT-OF-WAY	acre	5.9	0.	0.
4710	5137	ARTERIAL COMMERCIAL	ksf	10.1	557.	404.
4710	6119	OTHER PUBLIC SERVICE	ksf	8.7	120.	87.
4710	7613	ACTIVE PARK	acre	0.1	9.	6.
4710		TOTAL			2741.	1939.
4711	112	SINGLE FAMILY	du	12.0	155.	108.
4711	121	MULTI-FAMILY	du	10.0	114.	80.
4711	122	MULTI-FAMILY	du	80.0	688.	483.
4711	2113	LIGHT INDUSTRY GENERAL	ksf	8.0	149.	123.
4711	4112	RIGHT-OF-WAY	acre	2.9	0.	0.
4711	6012	LOW RISE OFFICE A	ksf	5.4	288.	222.
4711		TOTAL			1394.	1016.
4712	112	SINGLE FAMILY	du	24.0	310.	216.
4712	121	MULTI-FAMILY	du	15.0	171.	120.
4712	122	MULTI-FAMILY	du	134.0	1152.	809.

4712	4112	RIGHT-OF-WAY	acre	3.8	0.	0.
4712	6511	CLINIC	ksf	3.0	201.	149.
4712		TOTAL			1834.	1294.
4713	112	SINGLE FAMILY	du	11.0	142.	99.
4713	121	MULTI-FAMILY	du	6.0	68.	48.
4713	122	MULTI-FAMILY	du	25.0	215.	151.
4713	4112	RIGHT-OF-WAY	acre	1.3	0.	0.
4713	5137	ARTERIAL COMMERCIAL	ksf	6.5	359.	261.
4713		TOTAL			784.	559.

Zone	Code	Land Use Name	Type	Amount	Trips Person	Trips Vehicle
4714	112	SINGLE FAMILY	du	5.0	64.	45.
4714	121	MULTI-FAMILY	du	13.0	148.	104.
4714	122	MULTI-FAMILY	du	9.0	77.	54.
4714	4112	RIGHT-OF-WAY	acre	3.6	0.	0.
4714	5137	ARTERIAL COMMERCIAL	ksf	30.4	1672.	1214.
4714		TOTAL			1962.	1417.
4715	112	SINGLE FAMILY	du	25.0	322.	225.
4715	121	MULTI-FAMILY	du	17.0	194.	136.
4715	122	MULTI-FAMILY	du	54.0	464.	326.
4715	4112	RIGHT-OF-WAY	acre	4.1	0.	0.
4715	7611	OPEN SPACE PARK	acre	0.0	0.	0.
4715	7613	ACTIVE PARK	acre	2.7	204.	134.
4715		TOTAL			1185.	822.
4716	112	SINGLE FAMILY	du	29.0	374.	261.
4716	121	MULTI-FAMILY	du	4.0	46.	32.
4716	122	MULTI-FAMILY	du	20.0	172.	121.
4716	4112	RIGHT-OF-WAY	acre	2.0	0.	0.
4716	4114	PARKING	acre	0.2	0.	0.
4716	5137	ARTERIAL COMMERCIAL	ksf	9.4	518.	376.
4716		TOTAL			1109.	790.
4717	112	SINGLE FAMILY	du	39.0	503.	351.
4717	121	MULTI-FAMILY	du	34.0	388.	272.
4717	122	MULTI-FAMILY	du	37.0	318.	223.
4717	4112	RIGHT-OF-WAY	acre	2.5	0.	0.
4717	5137	ARTERIAL COMMERCIAL	ksf	1.6	90.	65.
4717		TOTAL			1298.	912.
4718	112	SINGLE FAMILY	du	36.0	464.	324.
4718	121	MULTI-FAMILY	du	21.0	239.	168.
4718	122	MULTI-FAMILY	du	10.0	86.	60.
4718	4112	RIGHT-OF-WAY	acre	8.1	0.	0.
4718	4113	COMMUNICATION OR UTILITY	acre	0.5	1.	1.
4718	5131	WHOLESALE TRADE	ksf	15.7	1553.	1101.
4718	5137	ARTERIAL COMMERCIAL	ksf	15.9	876.	637.
4718	6819	OTHER SCHOOL	ksf	36.1	787.	650.
4718	7613	ACTIVE PARK	acre	0.2	18.	12.
4718		TOTAL			4025.	2953.
4719	112	SINGLE FAMILY	du	48.0	619.	432.
4719	121	MULTI-FAMILY	du	45.0	513.	360.
4719	122	MULTI-FAMILY	du	31.0	267.	187.

4719	4112	RIGHT-OF-WAY	acre	3.8	0.	0.
4719	5137	ARTERIAL COMMERCIAL	ksf	1.5	84.	61.
4719		TOTAL			1483.	1041.
4720	112	SINGLE FAMILY	du	20.0	258.	180.
4720	121	MULTI-FAMILY	du	22.0	251.	176.
4720	122	MULTI-FAMILY	du	8.0	69.	48.
4720	1511	MOTEL	room	27.0	394.	243.

Zone	Code	Name	Type	Amount	Trips Person	Trips Vehicle
4720	4112	RIGHT-OF-WAY	acre	5.5	0.	0.
4720	5137	ARTERIAL COMMERCIAL	ksf	27.0	1485.	1079.
4720		TOTAL			2457.	1726.
4721	112	SINGLE FAMILY	du	24.0	310.	216.
4721	121	MULTI-FAMILY	du	24.0	274.	192.
4721	122	MULTI-FAMILY	du	13.0	112.	78.
4721	4112	RIGHT-OF-WAY	acre	6.4	0.	0.
4721	5137	ARTERIAL COMMERCIAL	ksf	14.5	796.	578.
4721	6816	ELEMENTARY SCHOOL	other	333.0	1132.	633.
4721		TOTAL			2624.	1698.
4722	112	SINGLE FAMILY	du	101.0	1303.	909.
4722	121	MULTI-FAMILY	du	81.0	923.	648.
4722	122	MULTI-FAMILY	du	52.0	447.	314.
4722	2113	LIGHT INDUSTRY GENERAL	ksf	23.7	441.	365.
4722	4112	RIGHT-OF-WAY	acre	14.4	0.	0.
4722	5137	ARTERIAL COMMERCIAL	ksf	2.3	127.	92.
4722	7611	OPEN SPACE PARK	acre	2.6	20.	13.
4722	7613	ACTIVE PARK	acre	0.2	17.	11.
4722		TOTAL			3279.	2354.
4723	112	SINGLE FAMILY	du	15.0	193.	135.
4723	121	MULTI-FAMILY	du	19.0	217.	152.
4723	122	MULTI-FAMILY	du	150.0	1290.	906.
4723	4112	RIGHT-OF-WAY	acre	14.2	0.	0.
4723	5137	ARTERIAL COMMERCIAL	ksf	30.7	1689.	1227.
4723		TOTAL			3389.	2419.
4724	112	SINGLE FAMILY	du	38.0	490.	342.
4724	121	MULTI-FAMILY	du	59.0	673.	472.
4724	122	MULTI-FAMILY	du	120.0	1032.	725.
4724	4112	RIGHT-OF-WAY	acre	4.1	0.	0.
4724		TOTAL			2195.	1539.
4725	112	SINGLE FAMILY	du	32.0	413.	288.
4725	121	MULTI-FAMILY	du	44.0	502.	352.
4725	122	MULTI-FAMILY	du	20.0	172.	121.
4725	4112	RIGHT-OF-WAY	acre	5.7	0.	0.
4725	5137	ARTERIAL COMMERCIAL	ksf	2.1	113.	82.
4725	6816	ELEMENTARY SCHOOL	other	354.0	1204.	673.
4725		TOTAL			2403.	1516.
4726	112	SINGLE FAMILY	du	120.0	1548.	1081.
4726	121	MULTI-FAMILY	du	10.0	114.	80.
4726	4112	RIGHT-OF-WAY	acre	16.7	0.	0.
4726	5025	SERVICE STATION FOOD MART	other	8.0	1650.	1199.

4726	5137	ARTERIAL COMMERCIAL	ksf	1.4	76.	55.
4726	7611	OPEN SPACE PARK	acre	6.3	49.	32.
4726		TOTAL			3437.	2446.
4727	112	SINGLE FAMILY	du	108.0	1393.	972.

Zone	Code	Name	Type	Amount	Trips Person	Trips Vehicle
4727	4112	RIGHT-OF-WAY	acre	13.3	0.	0.
4727	7611	OPEN SPACE PARK	acre	8.6	67.	44.
4727		TOTAL			1460.	1016.
4728	112	SINGLE FAMILY	du	220.0	2838.	1981.
4728	121	MULTI-FAMILY	du	22.0	251.	176.
4728	122	MULTI-FAMILY	du	12.0	103.	72.
4728	4112	RIGHT-OF-WAY	acre	13.2	0.	0.
4728	6112	RELIGIOUS FACILITY	ksf	7.7	50.	38.
4728	7611	OPEN SPACE PARK	acre	5.8	45.	29.
4728		TOTAL			3286.	2297.

Land Use Summary

Code	Name	Person Trips	Activity DUs	Activity Acres	Trip Rate du	Trip Rate acre	Trip Rate employee	Employment
111	SINGLE FAMILY	26.	2.	0.	12.9	0.0	0.0	0.
112	SINGLE FAMILY	202814.	15722.	0.	12.9	0.0	0.0	0.
121	MULTI-FAMILY	60944.	5346.	0.	11.4	0.0	0.0	0.
122	MULTI-FAMILY	157638.	18330.	0.	8.6	0.0	0.0	0.
131	MOBILE HOME PARK	1875.	250.	0.	7.5	0.0	0.0	0.
1411	CONGREGATE CARE FACILITY	77.	0.	18.	0.0	4.3	0.0	0.
1421	CORRECTIONAL FACILITY	840.	0.	300.	0.0	2.8	0.0	0.
1511	MOTEL	1329.	0.	91.	0.0	14.6	0.0	0.
2111	INDUSTRIAL PARK	4858.	0.	265.	0.0	18.3	0.0	0.
2113	LIGHT INDUSTRY GENERAL	49196.	0.	2645.	0.0	18.6	0.0	0.
2114	WAREHOUSING	466.	0.	76.	0.0	6.1	0.0	0.
4112	RIGHT-OF-WAY	0.	0.	1903.	0.0	0.0	0.0	0.
4113	COMMUNICATION OR UTILITY	180.	0.	56.	0.0	3.2	0.0	0.
4114	PARKING	0.	0.	4.	0.0	0.0	0.0	0.
4121	RAIL/TRANSIT CENTER	1090.	0.	3.	0.0	392.8	0.0	0.
5011	HIGH TURNOVER RESTAURANT	4802.	0.	27.	0.0	178.8	0.0	0.
5013	SUPERMARKET	908.	0.	4.	0.0	206.3	0.0	0.
5014	CONVENIENCE MARKET CHAIN	27718.	0.	40.	0.0	687.8	0.0	0.
5025	SERVICE STATION FOOD MART	7839.	0.	38.	0.0	206.3	0.0	0.
5027	SERVICE STATION CAR WASH	4264.	0.	20.	0.0	213.2	0.0	0.
5028	AUTO PARTS	490.	0.	6.	0.0	85.3	0.0	0.
5029	AUTO REPAIR	1173.	0.	43.	0.0	27.5	0.0	0.
5030	AUTO TIRES	260.	0.	8.	0.0	34.4	0.0	0.
5131	WHOLESALE TRADE	1553.	0.	16.	0.0	98.9	0.0	0.
5133	COMMUNITY SHOP CENTER	117740.	0.	1091.	0.0	107.9	0.0	0.
5134	NEIGHBORHOOD SHOP CENTER	17061.	0.	101.	0.0	169.5	0.0	0.
5136	AUTO DEALERSHIP	89.	0.	0.	0.0	423.8	0.0	0.

5137	ARTERIAL COMMERCIAL	124385.	0.	2262.	0.	0.0	55.0	0.0
5138	SERVICE STATION	2971.	0.	16.	0.	0.0	185.7	0.0
5139	OTHER RETAIL TRADE	1323.	0.	24.	0.	0.0	55.1	0.0
6012	LOW RISE OFFICE A	5946.	0.	111.	0.	0.0	53.4	0.0
6022	LOW RISE OFFICE B	526.	0.	12.	0.	0.0	44.3	0.0
6042	LOW RISE OFFICE D	1504.	0.	46.	0.	0.0	32.6	0.0
6052	LOW RISE OFFICE E	1349.	0.	52.	0.	0.0	26.1	0.0
6072	LOW RISE OFFICE E	1640.	0.	66.	0.	0.0	24.8	0.0
6082	LOW RISE OFFICE H	3103.	0.	125.	0.	0.0	24.8	0.0
6013	GOV'T /CIVIC CENTER	2092.	0.	52.	0.	0.0	39.9	0.0
6014	GOV'T OFFICE	881.	0.	22.	0.	0.0	39.9	0.0
6111	CEMETERY	1000.	0.	164.	0.	0.0	6.1	0.0
6112	RELIGIOUS FACILITY	6034.	0.	928.	0.	0.0	6.5	0.0
6113	LIBRARY	3745.	0.	51.	0.	0.0	73.6	0.0
6115	FIRE OR POLICE STATION	1715.	0.	42.	0.	0.0	40.7	0.0
6114	POST OFFICE	1680.	0.	6.	0.	0.0	287.3	0.0
6119	OTHER PUBLIC SERVICE	317.	0.	23.	0.	0.0	13.8	0.0
6129	MEETING ROOM FACILITY	1301.	0.	31.	0.	0.0	41.5	0.0
6511	CLINIC	14546.	0.	216.	0.	0.0	67.3	0.0
6519	OTHER HEALTH CARE	2004.	0.	30.	0.	0.0	67.3	0.0
6810	DAY CARE CENTER	1549.	0.	254.	0.	0.0	6.1	0.0
6812	UNIVERSITY OR COLLEGE	15334.	0.	7667.	0.	0.0	2.0	0.0
6814	SENIOR HIGH SCHOOL	13132.	0.	3283.	0.	0.0	4.0	0.0
6815	JUNIOR HIGH OR MIDDLE SCHOOL	6902.	0.	3001.	0.	0.0	2.3	0.0
6816	ELEMENTARY SCHOOL	39331.	0.	11568.	0.	0.0	3.4	0.0
6819	OTHER SCHOOL	1103.	0.	51.	0.	0.0	21.8	0.0
7220	OTHER RECREATION-HIGH	438.	0.	6.	0.	0.0	73.4	0.0
7611	OPEN SPACE PARK	1870.	0.	243.	0.	0.0	7.7	0.0
7613	ACTIVE PARK	10961.	0.	142.	0.	0.0	77.0	0.0
9101	INACTIVE USE	0.	0.	15.	0.	0.0	0.0	0.0
	total	933916.	39650.	37264.	0.			

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Zone	Land Use Code	Name	Type	Amount	Trips Person	Trips Vehicle
3554	111	SINGLE FAMILY	du	1.0	13.	9.
3554	112	SINGLE FAMILY	du	564.0	7276.	5078.
3554	121	MULTI-FAMILY	du	3.0	34.	24.
3554	1411	CONGREGATE CARE FACILITY	other	6.0	26.	18.
3554	4112	RIGHT-OF-WAY	acre	32.3	0.	0.
3554	7611	OPEN SPACE PARK	acre	2.3	18.	12.
3554		TOTAL			7367.	5141.
3574	2113	LIGHT INDUSTRY GENERAL	ksf	143.4	2668.	2206.
3574	4112	RIGHT-OF-WAY	acre	9.1	0.	0.
3574	5137	ARTERIAL COMMERCIAL	ksf	43.9	2415.	1754.
3574		TOTAL			5083.	3960.
3594	4112	RIGHT-OF-WAY	acre	21.2	0.	0.
3594		TOTAL			0.	0.
3602	112	SINGLE FAMILY	du	227.0	2928.	2044.
3602	4112	RIGHT-OF-WAY	acre	28.8	0.	0.
3602	4113	COMMUNICATION OR UTILITY	acre	31.3	100.	78.
3602	6112	RELIGIOUS FACILITY	ksf	14.0	91.	70.
3602	6816	ELEMENTARY SCHOOL	other	357.0	1214.	678.
3602	7611	OPEN SPACE PARK	acre	70.6	543.	358.
3602	7613	ACTIVE PARK	acre	9.4	725.	477.
3602		TOTAL			5602.	3705.
3627	112	SINGLE FAMILY	du	315.0	4063.	2836.
3627	121	MULTI-FAMILY	du	25.0	285.	200.
3627	4112	RIGHT-OF-WAY	acre	23.0	0.	0.
3627		TOTAL			4348.	3036.
3696	112	SINGLE FAMILY	du	175.0	2257.	1576.
3696	121	MULTI-FAMILY	du	23.0	262.	184.
3696	122	MULTI-FAMILY	du	13.0	112.	78.
3696	4112	RIGHT-OF-WAY	acre	8.4	0.	0.
3696	6112	RELIGIOUS FACILITY	ksf	5.7	37.	28.
3696	6816	ELEMENTARY SCHOOL	other	713.0	2424.	1355.
3696	7611	OPEN SPACE PARK	acre	0.7	5.	4.
3696		TOTAL			5098.	3225.
3720	112	SINGLE FAMILY	du	343.0	4425.	3088.
3720	121	MULTI-FAMILY	du	3.0	34.	24.
3720	4112	RIGHT-OF-WAY	acre	13.3	0.	0.
3720	6112	RELIGIOUS FACILITY	ksf	16.6	108.	83.
3720	7611	OPEN SPACE PARK	acre	7.2	56.	37.
3720		TOTAL			4622.	3232.
3744	112	SINGLE FAMILY	du	518.0	6682.	4664.
3744	121	MULTI-FAMILY	du	66.0	752.	528.
3744	122	MULTI-FAMILY	du	13.0	112.	78.
3744	4112	RIGHT-OF-WAY	acre	29.7	0.	0.
3744	6111	CEMETERY	acre	40.5	247.	202.
3744	6112	RELIGIOUS FACILITY	ksf	22.0	143.	110.
3744		TOTAL			7936.	5583.

Zone	Land Use Code	Name	Type	Amount	Trips Person	Trips Vehicle
3745	112	SINGLE FAMILY	du	315.0	4063.	2836.
3745	121	MULTI-FAMILY	du	228.0	2599.	1825.
3745	122	MULTI-FAMILY	du	65.0	559.	392.
3745	4112	RIGHT-OF-WAY	acre	67.8	0.	0.
3745	6112	RELIGIOUS FACILITY	ksf	4.3	28.	21.
3745		TOTAL			7250.	5075.
3764	112	SINGLE FAMILY	du	349.0	4502.	3142.
3764	121	MULTI-FAMILY	du	142.0	1619.	1136.
3764	122	MULTI-FAMILY	du	302.0	2597.	1823.
3764	4112	RIGHT-OF-WAY	acre	18.2	0.	0.
3764	5137	ARTERIAL COMMERCIAL	ksf	60.8	3346.	2430.
3764	6814	SENIOR HIGH SCHOOL	other	950.0	3800.	1710.
3764	6815	JUNIOR HIGH OR MIDDLE SCHOOL	other	420.0	966.	593.
3764	7613	ACTIVE PARK	acre	4.7	365.	240.
3764		TOTAL			17194.	11075.
3766	112	SINGLE FAMILY	du	13.0	168.	117.
3766	121	MULTI-FAMILY	du	6.0	68.	48.
3766	2113	LIGHT INDUSTRY GENERAL	ksf	511.6	9516.	7869.
3766	2114	WAREHOUSING	ksf	30.3	185.	155.
3766	4112	RIGHT-OF-WAY	acre	39.4	0.	0.
3766	4113	COMMUNICATION OR UTILITY	acre	15.6	50.	39.
3766	6082	LOW RISE OFFICE H	ksf	125.1	3103.	2390.
3766	7611	OPEN SPACE PARK	acre	0.7	6.	4.
3766		TOTAL			13096.	10621.
3767	2113	LIGHT INDUSTRY GENERAL	ksf	596.5	11095.	9174.
3767	4112	RIGHT-OF-WAY	acre	8.0	0.	0.
3767	5133	COMMUNITY SHOP CENTER	ksf	127.6	13768.	9743.
3767	6511	CLINIC	ksf	31.9	2148.	1595.
3767	7611	OPEN SPACE PARK	acre	0.1	1.	1.
3767	7613	ACTIVE PARK	acre	5.6	434.	285.
3767		TOTAL			27446.	20798.
3817	112	SINGLE FAMILY	du	283.0	3651.	2548.
3817	121	MULTI-FAMILY	du	45.0	513.	360.
3817	122	MULTI-FAMILY	du	88.0	757.	531.
3817	4112	RIGHT-OF-WAY	acre	29.2	0.	0.
3817	4113	COMMUNICATION OR UTILITY	acre	0.3	1.	1.
3817	6112	RELIGIOUS FACILITY	ksf	15.0	98.	75.
3817	7611	OPEN SPACE PARK	acre	0.1	1.	0.
3817	7613	ACTIVE PARK	acre	5.8	449.	296.
3817		TOTAL			5469.	3812.
3831	112	SINGLE FAMILY	du	10.0	129.	90.
3831	121	MULTI-FAMILY	du	4.0	46.	32.
3831	122	MULTI-FAMILY	du	46.0	396.	278.
3831	2113	LIGHT INDUSTRY GENERAL	ksf	29.2	543.	449.
3831	4112	RIGHT-OF-WAY	acre	17.0	0.	0.
3831	4113	COMMUNICATION OR UTILITY	acre	2.9	9.	7.
3831	5137	ARTERIAL COMMERCIAL	ksf	63.2	3477.	2525.

Zone	Code	Name	Type	Amount	Person Trips	Vehicle Trips
3831	6052	LOW RISE OFFICE E	ksf	51.7	1349.	1039.
3831	6112	RELIGIOUS FACILITY	ksf	27.7	180.	138.
3831	6119	OTHER PUBLIC SERVICE	ksf	8.1	111.	80.
3831	6815	JUNIOR HIGH OR MIDDLE SCHOOL	other	212.0	488.	300.
3831		TOTAL			6727.	4939.
3854	112	SINGLE FAMILY	du	21.0	271.	189.
3854	121	MULTI-FAMILY	du	3.0	34.	24.
3854	122	MULTI-FAMILY	du	126.0	1084.	761.
3854	4112	RIGHT-OF-WAY	acre	24.2	0.	0.
3854	5137	ARTERIAL COMMERCIAL	ksf	4.8	264.	192.
3854	6112	RELIGIOUS FACILITY	ksf	15.7	102.	78.
3854	6816	ELEMENTARY SCHOOL	other	273.0	928.	519.
3854		TOTAL			2683.	1763.
3855	112	SINGLE FAMILY	du	297.0	3831.	2674.
3855	121	MULTI-FAMILY	du	86.0	980.	688.
3855	122	MULTI-FAMILY	du	107.0	920.	646.
3855	2113	LIGHT INDUSTRY GENERAL	ksf	12.1	225.	186.
3855	4112	RIGHT-OF-WAY	acre	30.0	0.	0.
3855	4113	COMMUNICATION OR UTILITY	acre	0.3	1.	1.
3855	4114	PARKING	acre	0.3	0.	0.
3855	5025	SERVICE STATION FOOD MART	other	10.0	2063.	1498.
3855	5134	NEIGHBORHOOD SHOP CENTER	ksf	8.7	1473.	1042.
3855	5137	ARTERIAL COMMERCIAL	ksf	92.1	5066.	3680.
3855	6014	GOV'T OFFICE	ksf	22.1	881.	662.
3855	6112	RELIGIOUS FACILITY	ksf	3.4	22.	17.
3855	6810	DAY CARE CENTER	other	75.0	457.	378.
3855	6816	ELEMENTARY SCHOOL	other	737.0	2506.	1400.
3855	7611	OPEN SPACE PARK	acre	0.4	3.	2.
3855		TOTAL			18430.	12875.
3857	112	SINGLE FAMILY	du	252.0	3251.	2269.
3857	121	MULTI-FAMILY	du	276.0	3146.	2209.
3857	122	MULTI-FAMILY	du	124.0	1066.	749.
3857	2113	LIGHT INDUSTRY GENERAL	ksf	364.0	6770.	5598.
3857	4112	RIGHT-OF-WAY	acre	51.0	0.	0.
3857	5137	ARTERIAL COMMERCIAL	ksf	59.3	3262.	2369.
3857	6042	LOW RISE OFFICE D	ksf	46.1	1504.	1158.
3857	6112	RELIGIOUS FACILITY	ksf	28.7	186.	143.
3857		TOTAL			19186.	14495.
3858	112	SINGLE FAMILY	du	20.0	258.	180.
3858	121	MULTI-FAMILY	du	33.0	376.	264.
3858	122	MULTI-FAMILY	du	67.0	576.	405.
3858	4112	RIGHT-OF-WAY	acre	5.3	0.	0.
3858	5137	ARTERIAL COMMERCIAL	ksf	20.1	1107.	804.
3858	6012	LOW RISE OFFICE A	ksf	7.0	372.	287.
3858	9101	INACTIVE USE	acre	0.3	0.	0.
3858		TOTAL			2690.	1939.
3860	112	SINGLE FAMILY	du	83.0	1071.	747.

Zone	Code	Name	Type	Amount	Person Trips	Vehicle Trips
3860	122	MULTI-FAMILY	du	68.0	585.	411.

3860	4112	RIGHT-OF-WAY	acre	6.9	0.	0.
3860	5137	ARTERIAL COMMERCIAL	ksf	27.2	1499.	1089.
3860	6816	ELEMENTARY SCHOOL	other	526.0	1788.	999.
3860	7611	OPEN SPACE PARK	acre	4.8	37.	24.
3860		TOTAL			4980.	3270.
3861	112	SINGLE FAMILY	du	190.0	2451.	1711.
3861	121	MULTI-FAMILY	du	96.0	1094.	768.
3861	122	MULTI-FAMILY	du	468.0	4025.	2826.
3861	4112	RIGHT-OF-WAY	acre	19.0	0.	0.
3861	4121	RAIL/TRANSIT CENTER	acre	1.7	669.	511.
3861	5139	OTHER RETAIL TRADE	ksf	11.4	627.	457.
3861	6112	RELIGIOUS FACILITY	ksf	7.0	45.	35.
3861		TOTAL			8912.	6307.
3902	112	SINGLE FAMILY	du	75.0	967.	675.
3902	121	MULTI-FAMILY	du	55.0	627.	440.
3902	122	MULTI-FAMILY	du	227.0	1952.	1371.
3902	2113	LIGHT INDUSTRY GENERAL	ksf	40.7	758.	627.
3902	4112	RIGHT-OF-WAY	acre	51.0	0.	0.
3902	6112	RELIGIOUS FACILITY	ksf	8.9	58.	44.
3902		TOTAL			4362.	3157.
3904	112	SINGLE FAMILY	du	4.0	52.	36.
3904	121	MULTI-FAMILY	du	34.0	388.	272.
3904	4112	RIGHT-OF-WAY	acre	18.6	0.	0.
3904	6111	CEMETERY	acre	116.4	710.	582.
3904	6112	RELIGIOUS FACILITY	ksf	1.5	9.	7.
3904	7220	OTHER RECREATION-HIGH	acre	6.0	438.	299.
3904	9101	INACTIVE USE	acre	0.7	0.	0.
3904		TOTAL			1597.	1196.
3905	112	SINGLE FAMILY	du	25.0	322.	225.
3905	121	MULTI-FAMILY	du	11.0	125.	88.
3905	122	MULTI-FAMILY	du	42.0	361.	254.
3905	4112	RIGHT-OF-WAY	acre	4.5	0.	0.
3905	5137	ARTERIAL COMMERCIAL	ksf	3.6	198.	144.
3905	6112	RELIGIOUS FACILITY	ksf	4.8	31.	24.
3905	6511	CLINIC	ksf	153.6	10337.	7676.
3905		TOTAL			11375.	8410.
3920	112	SINGLE FAMILY	du	33.0	426.	297.
3920	121	MULTI-FAMILY	du	27.0	308.	216.
3920	122	MULTI-FAMILY	du	29.0	249.	175.
3920	4112	RIGHT-OF-WAY	acre	6.6	0.	0.
3920	6112	RELIGIOUS FACILITY	ksf	5.3	35.	27.
3920	6816	ELEMENTARY SCHOOL	other	808.0	2747.	1535.
3920		TOTAL			3765.	2250.
3921	112	SINGLE FAMILY	du	22.0	284.	198.
3921	121	MULTI-FAMILY	du	18.0	205.	144.

Zone	Code	Name	Type	Amount	Trips Person	Trips Vehicle
3921	122	MULTI-FAMILY	du	101.0	869.	610.
3921	4112	RIGHT-OF-WAY	acre	6.1	0.	0.
3921	6816	ELEMENTARY SCHOOL	other	458.0	1557.	870.
3921		TOTAL			2915.	1822.

3922	112	SINGLE FAMILY	du	285.0	3676.	2566.
3922	121	MULTI-FAMILY	du	80.0	912.	640.
3922	122	MULTI-FAMILY	du	306.0	2632.	1848.
3922	131	MOBILE HOME PARK	du	250.0	1875.	1243.
3922	4112	RIGHT-OF-WAY	acre	25.6	0.	0.
3922	6112	RELIGIOUS FACILITY	ksf	40.0	260.	200.
3922	7611	OPEN SPACE PARK	acre	0.3	2.	1.
3922	9101	INACTIVE USE	du	0.5	0.	0.
3922		TOTAL			9357.	6499.
3924	122	MULTI-FAMILY	du	163.0	1402.	984.
3924	4112	RIGHT-OF-WAY	acre	4.1	0.	0.
3924	4113	COMMUNICATION OR UTILITY	acre	0.2	1.	0.
3924	5025	SERVICE STATION FOOD MART	other	8.0	1650.	1199.
3924	5137	ARTERIAL COMMERCIAL	ksf	43.3	2383.	1731.
3924	6112	RELIGIOUS FACILITY	ksf	4.0	26.	20.
3924		TOTAL			5462.	3934.
3926	121	MULTI-FAMILY	du	74.0	844.	592.
3926	122	MULTI-FAMILY	du	324.0	2786.	1956.
3926	2113	LIGHT INDUSTRY GENERAL	ksf	179.4	3337.	2760.
3926	4112	RIGHT-OF-WAY	acre	4.2	0.	0.
3926	5137	ARTERIAL COMMERCIAL	ksf	35.5	1955.	1420.
3926		TOTAL			8922.	6728.
3927	112	SINGLE FAMILY	du	18.0	232.	162.
3927	121	MULTI-FAMILY	du	118.0	1345.	944.
3927	122	MULTI-FAMILY	du	305.0	2623.	1841.
3927	2111	INDUSTRIAL PARK	ksf	152.0	2781.	2310.
3927	2113	LIGHT INDUSTRY GENERAL	ksf	153.4	2854.	2360.
3927	4112	RIGHT-OF-WAY	acre	10.0	0.	0.
3927	5137	ARTERIAL COMMERCIAL	ksf	24.2	1332.	968.
3927	7611	OPEN SPACE PARK	acre	6.4	49.	32.
3927		TOTAL			11217.	8618.
3929	122	MULTI-FAMILY	du	244.0	2098.	1473.
3929	4112	RIGHT-OF-WAY	acre	2.7	0.	0.
3929	5137	ARTERIAL COMMERCIAL	ksf	60.9	3349.	2433.
3929		TOTAL			5448.	3906.
3944	112	SINGLE FAMILY	du	1.0	13.	9.
3944	122	MULTI-FAMILY	du	1294.0	11128.	7813.
3944	4112	RIGHT-OF-WAY	acre	12.4	0.	0.
3944	4121	RAIL/TRANSIT CENTER	acre	1.1	422.	322.
3944	5137	ARTERIAL COMMERCIAL	ksf	30.4	1670.	1213.
3944	6112	RELIGIOUS FACILITY	ksf	5.1	33.	25.
3944	7611	OPEN SPACE PARK	acre	3.5	27.	17.
3944		TOTAL			13292.	9400.

Zone	Code	Name	Type	Amount	Trips Person	Trips Vehicle
3945	122	MULTI-FAMILY	du	147.0	1264.	888.
3945	4112	RIGHT-OF-WAY	acre	0.6	0.	0.
3945	5137	ARTERIAL COMMERCIAL	ksf	29.4	1615.	1173.
3945	6012	LOW RISE OFFICE A	ksf	64.0	3418.	2632.
3945	6129	MEETING ROOM FACILITY	ksf	16.0	664.	480.

3945	7611	OPEN SPACE PARK	acre	3.8	30.	19.
3945		TOTAL			6991.	5192.
3946	112	SINGLE FAMILY	du	309.0	3986.	2782.
3946	121	MULTI-FAMILY	du	61.0	695.	488.
3946	122	MULTI-FAMILY	du	218.0	1875.	1316.
3946	4112	RIGHT-OF-WAY	acre	23.4	0.	0.
3946	5137	ARTERIAL COMMERCIAL	ksf	48.9	2691.	1954.
3946	6112	RELIGIOUS FACILITY	ksf	2.7	17.	13.
3946	6816	ELEMENTARY SCHOOL	other	614.0	2088.	1167.
3946	7611	OPEN SPACE PARK	acre	14.6	112.	74.
3946		TOTAL			11464.	7795.
3947	112	SINGLE FAMILY	du	116.0	1496.	1044.
3947	121	MULTI-FAMILY	du	13.0	148.	104.
3947	122	MULTI-FAMILY	du	191.0	1643.	1153.
3947	4112	RIGHT-OF-WAY	acre	13.4	0.	0.
3947	4114	PARKING	acre	0.3	0.	0.
3947	5137	ARTERIAL COMMERCIAL	ksf	25.6	1410.	1024.
3947	6112	RELIGIOUS FACILITY	ksf	11.5	75.	58.
3947	7611	OPEN SPACE PARK	acre	1.9	15.	10.
3947	9101	INACTIVE USE	du	0.0	0.	0.
3947		TOTAL			4786.	3393.
3949	112	SINGLE FAMILY	du	572.0	7379.	5150.
3949	121	MULTI-FAMILY	du	58.0	661.	464.
3949	122	MULTI-FAMILY	du	1098.0	9443.	6629.
3949	4112	RIGHT-OF-WAY	acre	27.2	0.	0.
3949	5137	ARTERIAL COMMERCIAL	ksf	19.7	1085.	788.
3949	5138	SERVICE STATION	other	8.0	1486.	1082.
3949	6112	RELIGIOUS FACILITY	ksf	25.6	166.	128.
3949	6816	ELEMENTARY SCHOOL	other	270.0	918.	513.
3949	7611	OPEN SPACE PARK	acre	1.0	8.	5.
3949		TOTAL			21145.	14760.
3958	112	SINGLE FAMILY	du	58.0	748.	522.
3958	121	MULTI-FAMILY	du	21.0	239.	168.
3958	122	MULTI-FAMILY	du	41.0	353.	248.
3958	2114	WAREHOUSING	ksf	1.5	9.	8.
3958	4112	RIGHT-OF-WAY	acre	4.5	0.	0.
3958	4114	PARKING	acre	0.1	0.	0.
3958	5011	HIGH TURNOVER RESTAURANT	ksf	5.6	1002.	728.
3958	5137	ARTERIAL COMMERCIAL	ksf	5.7	312.	227.
3958		TOTAL			2663.	1900.
3959	112	SINGLE FAMILY	du	125.0	1612.	1126.
3959	121	MULTI-FAMILY	du	19.0	217.	152.

	Land Use				Trips	
Zone	Code	Name	Type	Amount	Person	Vehicle
3959	122	MULTI-FAMILY	du	50.0	430.	302.
3959	2113	LIGHT INDUSTRY GENERAL	ksf	3.1	57.	47.
3959	4112	RIGHT-OF-WAY	acre	6.5	0.	0.
3959	4114	PARKING	acre	0.2	0.	0.
3959	5011	HIGH TURNOVER RESTAURANT	ksf	1.5	268.	195.
3959	5014	CONVENIENCE MARKET CHAIN	ksf	3.0	2063.	1499.
3959	5137	ARTERIAL COMMERCIAL	ksf	58.2	3200.	2324.
3959	7613	ACTIVE PARK	acre	0.2	12.	8.

3959		TOTAL			7860.	5652.
3960	112	SINGLE FAMILY	du	53.0	684.	477.
3960	121	MULTI-FAMILY	du	6.0	68.	48.
3960	122	MULTI-FAMILY	du	110.0	946.	664.
3960	4112	RIGHT-OF-WAY	acre	7.2	0.	0.
3960	5029	AUTO REPAIR	ksf	2.0	55.	40.
3960	5137	ARTERIAL COMMERCIAL	ksf	8.0	440.	320.
3960		TOTAL			2193.	1549.
3961	112	SINGLE FAMILY	du	43.0	555.	387.
3961	121	MULTI-FAMILY	du	7.0	80.	56.
3961	122	MULTI-FAMILY	du	85.0	731.	513.
3961	4112	RIGHT-OF-WAY	acre	4.0	0.	0.
3961	4114	PARKING	acre	0.0	0.	0.
3961	5137	ARTERIAL COMMERCIAL	ksf	2.7	146.	106.
3961	6112	RELIGIOUS FACILITY	ksf	20.0	130.	100.
3961		TOTAL			1641.	1162.
3962	4112	RIGHT-OF-WAY	acre	1.1	0.	0.
3962		TOTAL			0.	0.
3969	122	MULTI-FAMILY	du	965.0	8299.	5826.
3969	4112	RIGHT-OF-WAY	acre	8.4	0.	0.
3969	5011	HIGH TURNOVER RESTAURANT	ksf	14.4	2575.	1870.
3969	5029	AUTO REPAIR	ksf	6.1	167.	121.
3969	5134	NEIGHBORHOOD SHOP CENTER	ksf	28.8	4874.	3450.
3969	5137	ARTERIAL COMMERCIAL	ksf	30.3	1668.	1211.
3969	6012	LOW RISE OFFICE A	ksf	4.8	258.	199.
3969	6072	LOW RISE OFFICE E	ksf	66.1	1640.	1263.
3969	6112	RELIGIOUS FACILITY	ksf	3.5	23.	17.
3969	6115	FIRE OR POLICE STATION	ksf	14.5	590.	435.
3969	7613	ACTIVE PARK	acre	0.1	7.	5.
3969		TOTAL			20100.	14397.
3974	122	MULTI-FAMILY	du	483.0	4154.	2916.
3974	4112	RIGHT-OF-WAY	acre	10.4	0.	0.
3974	5013	SUPERMARKET	ksf	4.4	908.	659.
3974	5027	SERVICE STATION CAR WASH	other	12.0	2558.	1858.
3974	9101	INACTIVE USE	du	0.6	0.	0.
3974		TOTAL			7620.	5434.
3977	112	SINGLE FAMILY	du	100.0	1290.	900.
3977	121	MULTI-FAMILY	du	16.0	182.	128.

Zone	Code	Name	Type	Amount	Trips Person	Trips Vehicle
3977	122	MULTI-FAMILY	du	30.0	258.	181.
3977	2113	LIGHT INDUSTRY GENERAL	ksf	77.8	1447.	1196.
3977	4112	RIGHT-OF-WAY	acre	9.5	0.	0.
3977	4114	PARKING	acre	0.1	0.	0.
3977	5029	AUTO REPAIR	ksf	11.9	327.	237.
3977		TOTAL			3504.	2643.
3979	112	SINGLE FAMILY	du	84.0	1084.	756.
3979	121	MULTI-FAMILY	du	64.0	730.	512.
3979	122	MULTI-FAMILY	du	23.0	198.	139.
3979	4112	RIGHT-OF-WAY	acre	21.2	0.	0.

3979	6112	RELIGIOUS FACILITY	ksf	4.9	32.	24.
3979	7611	OPEN SPACE PARK	acre	1.9	15.	10.
3979	9101	INACTIVE USE	du	0.2	0.	0.
3979		TOTAL			2057.	1441.
3980	112	SINGLE FAMILY	du	108.0	1393.	972.
3980	121	MULTI-FAMILY	du	76.0	866.	608.
3980	122	MULTI-FAMILY	du	84.0	722.	507.
3980	4112	RIGHT-OF-WAY	acre	20.9	0.	0.
3980	6112	RELIGIOUS FACILITY	ksf	14.5	94.	72.
3980	6115	FIRE OR POLICE STATION	ksf	9.6	391.	288.
3980		TOTAL			3467.	2448.
3984	112	SINGLE FAMILY	du	92.0	1187.	828.
3984	121	MULTI-FAMILY	du	10.0	114.	80.
3984	122	MULTI-FAMILY	du	136.0	1170.	821.
3984	2113	LIGHT INDUSTRY GENERAL	ksf	22.1	412.	340.
3984	4112	RIGHT-OF-WAY	acre	9.6	0.	0.
3984	5029	AUTO REPAIR	ksf	2.0	55.	40.
3984	5137	ARTERIAL COMMERCIAL	ksf	26.8	1471.	1069.
3984	6012	LOW RISE OFFICE A	ksf	2.2	118.	91.
3984	6112	RELIGIOUS FACILITY	ksf	4.5	29.	22.
3984	9101	INACTIVE USE	du	0.1	0.	0.
3984		TOTAL			4556.	3292.
3985	112	SINGLE FAMILY	du	64.0	826.	576.
3985	122	MULTI-FAMILY	du	86.0	740.	519.
3985	2113	LIGHT INDUSTRY GENERAL	ksf	23.5	438.	362.
3985	2114	WAREHOUSING	ksf	21.0	128.	107.
3985	4112	RIGHT-OF-WAY	acre	12.2	0.	0.
3985	4114	PARKING	acre	0.6	0.	0.
3985	5137	ARTERIAL COMMERCIAL	ksf	20.0	1101.	800.
3985	6112	RELIGIOUS FACILITY	ksf	11.0	72.	55.
3985	6816	ELEMENTARY SCHOOL	other	78.0	265.	148.
3985		TOTAL			3570.	2568.
3988	112	SINGLE FAMILY	du	303.0	3909.	2728.
3988	121	MULTI-FAMILY	du	7.0	80.	56.
3988	4112	RIGHT-OF-WAY	acre	19.3	0.	0.
3988	6815	JUNIOR HIGH OR MIDDLE SCHOOL	other	1127.0	2592.	1592.
3988		TOTAL			6581.	4377.

Zone	Code	Name	Type	Amount	Trips Person	Trips Vehicle
3989	112	SINGLE FAMILY	du	36.0	464.	324.
3989	121	MULTI-FAMILY	du	22.0	251.	176.
3989	122	MULTI-FAMILY	du	114.0	980.	688.
3989	2113	LIGHT INDUSTRY GENERAL	ksf	41.0	762.	630.
3989	4112	RIGHT-OF-WAY	acre	14.4	0.	0.
3989	5137	ARTERIAL COMMERCIAL	ksf	31.0	1706.	1239.
3989	6112	RELIGIOUS FACILITY	ksf	68.8	447.	344.
3989		TOTAL			4611.	3401.
3990	112	SINGLE FAMILY	du	109.0	1406.	981.
3990	121	MULTI-FAMILY	du	78.0	889.	624.
3990	122	MULTI-FAMILY	du	47.0	404.	284.
3990	4112	RIGHT-OF-WAY	acre	11.4	0.	0.

3990	5137	ARTERIAL COMMERCIAL	ksf	37.4	2055.	1492.
3990	6111	CEMETERY	acre	7.0	42.	35.
3990	6112	RELIGIOUS FACILITY	ksf	5.2	34.	26.
3990		TOTAL			4831.	3443.
3991	112	SINGLE FAMILY	du	175.0	2257.	1576.
3991	121	MULTI-FAMILY	du	66.0	752.	528.
3991	122	MULTI-FAMILY	du	37.0	318.	223.
3991	4112	RIGHT-OF-WAY	acre	9.2	0.	0.
3991	5137	ARTERIAL COMMERCIAL	ksf	38.5	2118.	1538.
3991	6012	LOW RISE OFFICE A	ksf	3.2	171.	131.
3991	6112	RELIGIOUS FACILITY	ksf	3.2	21.	16.
3991	6129	MEETING ROOM FACILITY	ksf	3.2	134.	97.
3991		TOTAL			5771.	4110.
3992	112	SINGLE FAMILY	du	178.0	2296.	1603.
3992	121	MULTI-FAMILY	du	103.0	1174.	824.
3992	122	MULTI-FAMILY	du	285.0	2451.	1721.
3992	4112	RIGHT-OF-WAY	acre	19.3	0.	0.
3992	5137	ARTERIAL COMMERCIAL	ksf	8.5	470.	341.
3992	6012	LOW RISE OFFICE A	ksf	3.8	206.	158.
3992	6013	GOV'T /CIVIC CENTER	ksf	50.7	2024.	1521.
3992	6112	RELIGIOUS FACILITY	ksf	14.6	95.	73.
3992	7611	OPEN SPACE PARK	acre	5.6	43.	29.
3992	7613	ACTIVE PARK	acre	3.7	284.	187.
3992	9101	INACTIVE USE	du	2.8	0.	0.
3992		TOTAL			9044.	6457.
3993	4112	RIGHT-OF-WAY	acre	4.2	0.	0.
3993	5133	COMMUNITY SHOP CENTER	ksf	360.9	38937.	27553.
3993		TOTAL			38937.	27553.
3994	112	SINGLE FAMILY	du	82.0	1058.	738.
3994	121	MULTI-FAMILY	du	109.0	1243.	872.
3994	122	MULTI-FAMILY	du	23.0	198.	139.
3994	4112	RIGHT-OF-WAY	acre	20.3	0.	0.
3994	7611	OPEN SPACE PARK	acre	7.9	61.	40.
3994		TOTAL			2559.	1789.

Zone	Code	Name	Type	Amount	Trips Person	Trips Vehicle
3995	112	SINGLE FAMILY	du	212.0	2735.	1909.
3995	121	MULTI-FAMILY	du	3.0	34.	24.
3995	122	MULTI-FAMILY	du	679.0	5839.	4100.
3995	4112	RIGHT-OF-WAY	acre	42.9	0.	0.
3995	5137	ARTERIAL COMMERCIAL	ksf	33.5	1841.	1337.
3995	6112	RELIGIOUS FACILITY	ksf	52.2	340.	261.
3995	6814	SENIOR HIGH SCHOOL	other	2333.0	9332.	4199.
3995	6816	ELEMENTARY SCHOOL	other	759.0	2581.	1442.
3995	7611	OPEN SPACE PARK	acre	0.8	6.	4.
3995	7613	ACTIVE PARK	acre	4.1	319.	210.
3995		TOTAL			23026.	13485.
3996	112	SINGLE FAMILY	du	706.0	9107.	6357.
3996	4112	RIGHT-OF-WAY	acre	38.7	0.	0.
3996	5029	AUTO REPAIR	ksf	1.0	26.	19.
3996	5136	AUTO DEALERSHIP	acre	0.1	39.	28.

3996	6112	RELIGIOUS FACILITY	ksf	18.9	123.	94.
3996	7613	ACTIVE PARK	acre	0.5	38.	25.
3996		TOTAL			9334.	6523.
3998	112	SINGLE FAMILY	du	144.0	1858.	1297.
3998	121	MULTI-FAMILY	du	111.0	1265.	888.
3998	122	MULTI-FAMILY	du	168.0	1445.	1014.
3998	4112	RIGHT-OF-WAY	acre	27.2	0.	0.
3998	5137	ARTERIAL COMMERCIAL	ksf	6.7	370.	269.
3998	5139	OTHER RETAIL TRADE	ksf	1.2	66.	48.
3998	6112	RELIGIOUS FACILITY	ksf	19.3	125.	96.
3998	6114	POST OFFICE	ksf	5.8	1680.	1168.
3998		TOTAL			6810.	4781.
3999	112	SINGLE FAMILY	du	189.0	2438.	1702.
3999	121	MULTI-FAMILY	du	160.0	1824.	1281.
3999	122	MULTI-FAMILY	du	326.0	2804.	1968.
3999	4112	RIGHT-OF-WAY	acre	24.7	0.	0.
3999	5137	ARTERIAL COMMERCIAL	ksf	30.0	1650.	1199.
3999	6112	RELIGIOUS FACILITY	ksf	33.6	219.	168.
3999	6519	OTHER HEALTH CARE	ksf	26.0	1750.	1300.
3999	6816	ELEMENTARY SCHOOL	other	384.0	1306.	730.
3999	7613	ACTIVE PARK	acre	0.2	13.	8.
3999	9101	INACTIVE USE	du	0.1	0.	0.
3999		TOTAL			12003.	8355.
4002	112	SINGLE FAMILY	du	151.0	1948.	1360.
4002	121	MULTI-FAMILY	du	150.0	1710.	1201.
4002	122	MULTI-FAMILY	du	189.0	1625.	1141.
4002	4112	RIGHT-OF-WAY	acre	23.0	0.	0.
4002	4114	PARKING	acre	0.3	0.	0.
4002	5137	ARTERIAL COMMERCIAL	ksf	20.0	1100.	799.
4002	6112	RELIGIOUS FACILITY	ksf	50.6	329.	253.
4002	6113	LIBRARY	ksf	3.3	244.	166.
4002	6815	JUNIOR HIGH OR MIDDLE SCHOOL	other	1242.0	2857.	1755.
4002	6816	ELEMENTARY SCHOOL	other	619.0	2105.	1176.

	Land Use				Trips	
Zone	Code	Name	Type	Amount	Person	Vehicle
4002	7613	ACTIVE PARK	acre	18.0	1384.	911.
4002	9101	INACTIVE USE	du	0.1	0.	0.
4002		TOTAL			13302.	8760.
4007	112	SINGLE FAMILY	du	489.0	6308.	4403.
4007	121	MULTI-FAMILY	du	10.0	114.	80.
4007	4112	RIGHT-OF-WAY	acre	32.7	0.	0.
4007	6112	RELIGIOUS FACILITY	ksf	29.3	191.	147.
4007	6816	ELEMENTARY SCHOOL	other	589.0	2003.	1119.
4007		TOTAL			8615.	5749.
4008	112	SINGLE FAMILY	du	57.0	735.	513.
4008	121	MULTI-FAMILY	du	103.0	1174.	824.
4008	122	MULTI-FAMILY	du	187.0	1608.	1129.
4008	1421	CORRECTIONAL FACILITY	other	300.0	840.	609.
4008	4112	RIGHT-OF-WAY	acre	12.2	0.	0.
4008	5133	COMMUNITY SHOP CENTER	ksf	134.3	14495.	10257.
4008	5137	ARTERIAL COMMERCIAL	ksf	32.1	1767.	1283.
4008	5138	SERVICE STATION	other	8.0	1486.	1082.

4008	6112	RELIGIOUS FACILITY	ksf	24.1	156.	120.
4008	6119	OTHER PUBLIC SERVICE	ksf	3.6	49.	36.
4008	6816	ELEMENTARY SCHOOL	other	481.0	1635.	914.
4008	7613	ACTIVE PARK	acre	0.2	12.	8.
4008		TOTAL			23958.	16775.
4009	112	SINGLE FAMILY	du	226.0	2915.	2035.
4009	121	MULTI-FAMILY	du	100.0	1140.	800.
4009	122	MULTI-FAMILY	du	141.0	1213.	851.
4009	4112	RIGHT-OF-WAY	acre	17.8	0.	0.
4009	5137	ARTERIAL COMMERCIAL	ksf	13.7	755.	549.
4009	5139	OTHER RETAIL TRADE	ksf	0.9	51.	37.
4009	6112	RELIGIOUS FACILITY	ksf	18.4	120.	92.
4009	6115	FIRE OR POLICE STATION	ksf	3.4	139.	103.
4009	9101	INACTIVE USE	du	0.1	0.	0.
4009		TOTAL			6334.	4467.
4010	112	SINGLE FAMILY	du	360.0	4644.	3242.
4010	121	MULTI-FAMILY	du	23.0	262.	184.
4010	4112	RIGHT-OF-WAY	acre	28.2	0.	0.
4010	6112	RELIGIOUS FACILITY	ksf	8.5	55.	42.
4010	7613	ACTIVE PARK	acre	34.6	2662.	1752.
4010	9101	INACTIVE USE	du	0.1	0.	0.
4010		TOTAL			7623.	5220.
4013	112	SINGLE FAMILY	du	178.0	2296.	1603.
4013	121	MULTI-FAMILY	du	63.0	718.	504.
4013	122	MULTI-FAMILY	du	40.0	344.	242.
4013	4112	RIGHT-OF-WAY	acre	16.6	0.	0.
4013	5137	ARTERIAL COMMERCIAL	ksf	4.0	222.	161.
4013	6112	RELIGIOUS FACILITY	ksf	2.3	15.	11.
4013		TOTAL			3595.	2521.

Zone	Code	Name	Type	Amount	Trips Person	Trips Vehicle
4018	112	SINGLE FAMILY	du	613.0	7908.	5520.
4018	4112	RIGHT-OF-WAY	acre	33.2	0.	0.
4018	6112	RELIGIOUS FACILITY	ksf	5.0	32.	25.
4018	7611	OPEN SPACE PARK	acre	8.6	66.	44.
4018	7613	ACTIVE PARK	acre	0.2	11.	7.
4018		TOTAL			8018.	5596.
4024	112	SINGLE FAMILY	du	368.0	4747.	3314.
4024	121	MULTI-FAMILY	du	58.0	661.	464.
4024	122	MULTI-FAMILY	du	1319.0	11343.	7964.
4024	4112	RIGHT-OF-WAY	acre	50.2	0.	0.
4024	5134	NEIGHBORHOOD SHOP CENTER	ksf	33.2	5629.	3984.
4024	5137	ARTERIAL COMMERCIAL	ksf	75.2	4136.	3004.
4024	6112	RELIGIOUS FACILITY	ksf	6.0	39.	30.
4024	6810	DAY CARE CENTER	other	70.0	427.	352.
4024	6816	ELEMENTARY SCHOOL	other	549.0	1867.	1043.
4024		TOTAL			28849.	20155.
4027	112	SINGLE FAMILY	du	54.0	697.	486.
4027	121	MULTI-FAMILY	du	127.0	1448.	1016.
4027	122	MULTI-FAMILY	du	29.0	249.	175.
4027	2111	INDUSTRIAL PARK	ksf	113.5	2077.	1726.

4027	2113	LIGHT INDUSTRY GENERAL	ksf	27.2	506.	419.
4027	4112	RIGHT-OF-WAY	acre	19.9	0.	0.
4027	5137	ARTERIAL COMMERCIAL	ksf	89.1	4902.	3561.
4027	6112	RELIGIOUS FACILITY	ksf	7.1	46.	35.
4027	7611	OPEN SPACE PARK	acre	1.9	14.	9.
4027	7613	ACTIVE PARK	acre	7.7	593.	390.
4027		TOTAL			10533.	7818.
4028	112	SINGLE FAMILY	du	75.0	967.	675.
4028	121	MULTI-FAMILY	du	175.0	1995.	1401.
4028	122	MULTI-FAMILY	du	70.0	602.	423.
4028	2114	WAREHOUSING	ksf	4.0	24.	20.
4028	4112	RIGHT-OF-WAY	acre	22.1	0.	0.
4028	5137	ARTERIAL COMMERCIAL	ksf	150.7	8290.	6022.
4028	6112	RELIGIOUS FACILITY	ksf	11.5	75.	57.
4028	6129	MEETING ROOM FACILITY	ksf	2.7	111.	80.
4028		TOTAL			12065.	8678.
4035	112	SINGLE FAMILY	du	181.0	2335.	1630.
4035	121	MULTI-FAMILY	du	208.0	2371.	1665.
4035	122	MULTI-FAMILY	du	444.0	3818.	2681.
4035	4112	RIGHT-OF-WAY	acre	75.9	0.	0.
4035	4113	COMMUNICATION OR UTILITY	acre	0.1	0.	0.
4035	5137	ARTERIAL COMMERCIAL	ksf	13.6	746.	542.
4035	6112	RELIGIOUS FACILITY	ksf	24.5	159.	122.
4035	7613	ACTIVE PARK	acre	16.9	1302.	857.
4035		TOTAL			10732.	7496.
4038	112	SINGLE FAMILY	du	153.0	1974.	1378.
4038	121	MULTI-FAMILY	du	90.0	1026.	720.

Zone	Code	Name	Type	Amount	Trips Person	Trips Vehicle
4038	122	MULTI-FAMILY	du	146.0	1256.	882.
4038	4112	RIGHT-OF-WAY	acre	39.3	0.	0.
4038	5137	ARTERIAL COMMERCIAL	ksf	41.9	2304.	1673.
4038	6112	RELIGIOUS FACILITY	ksf	3.6	23.	18.
4038	6816	ELEMENTARY SCHOOL	other	760.0	2584.	1444.
4038	7611	OPEN SPACE PARK	acre	2.9	23.	15.
4038	9101	INACTIVE USE	du	0.4	0.	0.
4038		TOTAL			9189.	6129.
4039	112	SINGLE FAMILY	du	168.0	2167.	1513.
4039	121	MULTI-FAMILY	du	90.0	1026.	720.
4039	122	MULTI-FAMILY	du	173.0	1488.	1045.
4039	4112	RIGHT-OF-WAY	acre	18.2	0.	0.
4039	5137	ARTERIAL COMMERCIAL	ksf	8.4	465.	338.
4039	5139	OTHER RETAIL TRADE	ksf	10.5	578.	421.
4039	6112	RELIGIOUS FACILITY	ksf	27.4	178.	137.
4039	6816	ELEMENTARY SCHOOL	other	173.0	588.	329.
4039	7611	OPEN SPACE PARK	acre	1.1	9.	6.
4039	9101	INACTIVE USE	du	0.4	0.	0.
4039		TOTAL			6499.	4507.
4040	112	SINGLE FAMILY	du	83.0	1071.	747.
4040	121	MULTI-FAMILY	du	100.0	1140.	800.
4040	122	MULTI-FAMILY	du	156.0	1342.	942.
4040	4112	RIGHT-OF-WAY	acre	12.4	0.	0.

4040	5137	ARTERIAL COMMERCIAL	ksf	69.1	3801.	2760.
4040	6012	LOW RISE OFFICE A	ksf	3.9	210.	161.
4040	6022	LOW RISE OFFICE B	ksf	5.4	239.	184.
4040	6112	RELIGIOUS FACILITY	ksf	50.6	329.	253.
4040	7613	ACTIVE PARK	acre	17.5	1348.	887.
4040	9101	INACTIVE USE	acre	0.0	0.	0.
4040		TOTAL			9478.	6735.
4044	4112	RIGHT-OF-WAY	acre	0.1	0.	0.
4044		TOTAL			0.	0.
4047	112	SINGLE FAMILY	du	458.0	5908.	4124.
4047	4112	RIGHT-OF-WAY	acre	23.2	0.	0.
4047	4113	COMMUNICATION OR UTILITY	acre	3.8	12.	9.
4047	7611	OPEN SPACE PARK	acre	0.8	6.	4.
4047		TOTAL			5927.	4138.
4050	121	MULTI-FAMILY	du	187.0	2132.	1497.
4050	4112	RIGHT-OF-WAY	acre	0.4	0.	0.
4050	5133	COMMUNITY SHOP CENTER	ksf	176.7	19062.	13489.
4050		TOTAL			21194.	14986.
4057	112	SINGLE FAMILY	du	147.0	1896.	1324.
4057	121	MULTI-FAMILY	du	131.0	1493.	1048.
4057	122	MULTI-FAMILY	du	133.0	1144.	803.
4057	4112	RIGHT-OF-WAY	acre	21.6	0.	0.
4057	5137	ARTERIAL COMMERCIAL	ksf	2.8	151.	110.

Land Use					Trips	
Zone	Code	Name	Type	Amount	Person	Vehicle
4057	6112	RELIGIOUS FACILITY	ksf	5.3	35.	27.
4057	7611	OPEN SPACE PARK	acre	7.2	56.	37.
4057	9101	INACTIVE USE	du	2.9	0.	0.
4057		TOTAL			4775.	3348.
4058	112	SINGLE FAMILY	du	135.0	1741.	1216.
4058	121	MULTI-FAMILY	du	120.0	1368.	960.
4058	122	MULTI-FAMILY	du	174.0	1496.	1051.
4058	4112	RIGHT-OF-WAY	acre	19.4	0.	0.
4058	5137	ARTERIAL COMMERCIAL	ksf	16.6	913.	663.
4058	6112	RELIGIOUS FACILITY	ksf	9.1	59.	45.
4058	6119	OTHER PUBLIC SERVICE	ksf	2.7	37.	26.
4058	6816	ELEMENTARY SCHOOL	other	543.0	1846.	1032.
4058	7611	OPEN SPACE PARK	acre	0.5	4.	3.
4058	7613	ACTIVE PARK	acre	0.2	12.	8.
4058		TOTAL			7477.	5004.
4061	112	SINGLE FAMILY	du	19.0	245.	171.
4061	121	MULTI-FAMILY	du	12.0	137.	96.
4061	122	MULTI-FAMILY	du	422.0	3629.	2548.
4061	4112	RIGHT-OF-WAY	acre	16.0	0.	0.
4061	5137	ARTERIAL COMMERCIAL	ksf	1.8	98.	71.
4061		TOTAL			4109.	2886.
4079	112	SINGLE FAMILY	du	150.0	1935.	1351.
4079	121	MULTI-FAMILY	du	147.0	1676.	1177.
4079	122	MULTI-FAMILY	du	110.0	946.	664.
4079	1511	MOTEL	room	64.0	934.	575.

4079	4112	RIGHT-OF-WAY	acre	28.9	0.	0.
4079	5027	SERVICE STATION CAR WASH	other	8.0	1706.	1239.
4079	5137	ARTERIAL COMMERCIAL	ksf	13.3	732.	532.
4079	6112	RELIGIOUS FACILITY	ksf	4.2	27.	21.
4079	6816	ELEMENTARY SCHOOL	other	707.0	2404.	1343.
4079	9101	INACTIVE USE	du	0.7	0.	0.
4079		TOTAL			10360.	6901.
4080	112	SINGLE FAMILY	du	168.0	2167.	1513.
4080	121	MULTI-FAMILY	du	178.0	2029.	1425.
4080	122	MULTI-FAMILY	du	137.0	1178.	827.
4080	4112	RIGHT-OF-WAY	acre	22.5	0.	0.
4080	5137	ARTERIAL COMMERCIAL	ksf	3.7	205.	149.
4080	6112	RELIGIOUS FACILITY	ksf	15.3	100.	77.
4080	7611	OPEN SPACE PARK	acre	0.8	6.	4.
4080	9101	INACTIVE USE	du	2.2	0.	0.
4080		TOTAL			5685.	3994.
4683	121	MULTI-FAMILY	du	4.0	46.	32.
4683	122	MULTI-FAMILY	du	1444.0	12418.	8718.
4683	4112	RIGHT-OF-WAY	acre	13.4	0.	0.
4683	4113	COMMUNICATION OR UTILITY	acre	0.8	3.	2.
4683	5133	COMMUNITY SHOP CENTER	ksf	145.4	15693.	11105.
4683	5137	ARTERIAL COMMERCIAL	ksf	103.2	5676.	4123.

Land Use					Trips	
Zone	Code	Name	Type	Amount	Person	Vehicle
4683	6129	MEETING ROOM FACILITY	ksf	5.4	226.	163.
4683	6511	CLINIC	ksf	27.6	1861.	1382.
4683	7611	OPEN SPACE PARK	acre	2.0	15.	10.
4683		TOTAL			35938.	25535.
4684	122	MULTI-FAMILY	du	368.0	3165.	2222.
4684	4112	RIGHT-OF-WAY	acre	1.4	0.	0.
4684	5133	COMMUNITY SHOP CENTER	ksf	145.8	15735.	11135.
4684		TOTAL			18900.	13357.
4685	112	SINGLE FAMILY	du	99.0	1277.	891.
4685	121	MULTI-FAMILY	du	17.0	194.	136.
4685	122	MULTI-FAMILY	du	59.0	507.	356.
4685	2113	LIGHT INDUSTRY GENERAL	ksf	87.3	1623.	1342.
4685	4112	RIGHT-OF-WAY	acre	8.8	0.	0.
4685	6112	RELIGIOUS FACILITY	ksf	5.2	34.	26.
4685		TOTAL			3635.	2752.
4686	112	SINGLE FAMILY	du	74.0	955.	666.
4686	122	MULTI-FAMILY	du	83.0	714.	501.
4686	2113	LIGHT INDUSTRY GENERAL	ksf	0.5	9.	8.
4686	4112	RIGHT-OF-WAY	acre	5.2	0.	0.
4686	5137	ARTERIAL COMMERCIAL	ksf	12.7	696.	506.
4686		TOTAL			2374.	1681.
4687	112	SINGLE FAMILY	du	4.0	52.	36.
4687	121	MULTI-FAMILY	du	21.0	239.	168.
4687	122	MULTI-FAMILY	du	4.0	34.	24.
4687	2113	LIGHT INDUSTRY GENERAL	ksf	61.2	1139.	941.
4687	4112	RIGHT-OF-WAY	acre	2.7	0.	0.
4687	5137	ARTERIAL COMMERCIAL	ksf	6.2	343.	249.

4687		TOTAL			1807.	1419.
4688	112	SINGLE FAMILY	du	2.0	26.	18.
4688	121	MULTI-FAMILY	du	2.0	23.	16.
4688	122	MULTI-FAMILY	du	50.0	430.	302.
4688	2113	LIGHT INDUSTRY GENERAL	ksf	57.2	1065.	880.
4688	4112	RIGHT-OF-WAY	acre	0.3	0.	0.
4688	4114	PARKING	acre	0.5	0.	0.
4688	5137	ARTERIAL COMMERCIAL	ksf	10.5	576.	418.
4688		TOTAL			2119.	1635.
4689	112	SINGLE FAMILY	du	32.0	413.	288.
4689	121	MULTI-FAMILY	du	16.0	182.	128.
4689	122	MULTI-FAMILY	du	48.0	413.	290.
4689	4112	RIGHT-OF-WAY	acre	3.6	0.	0.
4689	5133	COMMUNITY SHOP CENTER	ksf	0.5	49.	35.
4689	5137	ARTERIAL COMMERCIAL	ksf	1.3	73.	53.
4689	6012	LOW RISE OFFICE A	ksf	12.6	675.	520.
4689	6112	RELIGIOUS FACILITY	ksf	28.2	183.	141.
4689	6810	DAY CARE CENTER	other	109.0	665.	549.
4689		TOTAL			2653.	2003.

Zone	Code	Name	Type	Amount	Trips Person	Trips Vehicle
4690	112	SINGLE FAMILY	du	10.0	129.	90.
4690	121	MULTI-FAMILY	du	19.0	217.	152.
4690	122	MULTI-FAMILY	du	2.0	17.	12.
4690	2113	LIGHT INDUSTRY GENERAL	ksf	37.0	687.	568.
4690	4112	RIGHT-OF-WAY	acre	1.2	0.	0.
4690	4114	PARKING	acre	0.1	0.	0.
4690	5029	AUTO REPAIR	ksf	6.0	165.	120.
4690	5030	AUTO TIRES	ksf	3.5	120.	87.
4690	5137	ARTERIAL COMMERCIAL	ksf	10.9	599.	435.
4690	6012	LOW RISE OFFICE A	ksf	2.3	124.	95.
4690		TOTAL			2058.	1560.
4691	112	SINGLE FAMILY	du	8.0	103.	72.
4691	121	MULTI-FAMILY	du	10.0	114.	80.
4691	2113	LIGHT INDUSTRY GENERAL	ksf	37.0	687.	568.
4691	4112	RIGHT-OF-WAY	acre	2.6	0.	0.
4691	5011	HIGH TURNOVER RESTAURANT	ksf	2.2	399.	290.
4691	5136	AUTO DEALERSHIP	acre	0.1	50.	36.
4691	5137	ARTERIAL COMMERCIAL	ksf	11.6	639.	464.
4691		TOTAL			1993.	1510.
4692	112	SINGLE FAMILY	du	27.0	348.	243.
4692	122	MULTI-FAMILY	du	68.0	585.	411.
4692	2113	LIGHT INDUSTRY GENERAL	ksf	29.5	548.	453.
4692	4112	RIGHT-OF-WAY	acre	7.9	0.	0.
4692	5137	ARTERIAL COMMERCIAL	ksf	1.0	55.	40.
4692		TOTAL			1536.	1147.
4693	112	SINGLE FAMILY	du	3.0	39.	27.
4693	121	MULTI-FAMILY	du	2.0	23.	16.
4693	2113	LIGHT INDUSTRY GENERAL	ksf	4.9	91.	75.
4693	2114	WAREHOUSING	ksf	19.5	119.	100.
4693	4112	RIGHT-OF-WAY	acre	1.2	0.	0.

4693	5029	AUTO REPAIR	ksf	1.6	45.	33.
4693	5137	ARTERIAL COMMERCIAL	ksf	28.7	1576.	1145.
4693	6012	LOW RISE OFFICE A	ksf	2.0	107.	82.
4693	6022	LOW RISE OFFICE B	ksf	6.5	288.	222.
4693		TOTAL			2288.	1700.
4694	112	SINGLE FAMILY	du	8.0	103.	72.
4694	121	MULTI-FAMILY	du	2.0	23.	16.
4694	122	MULTI-FAMILY	du	21.0	181.	127.
4694	2113	LIGHT INDUSTRY GENERAL	ksf	48.9	909.	751.
4694	4112	RIGHT-OF-WAY	acre	1.5	0.	0.
4694	4114	PARKING	acre	0.8	0.	0.
4694	5011	HIGH TURNOVER RESTAURANT	ksf	1.8	315.	229.
4694	5028	AUTO PARTS	ksf	5.7	490.	356.
4694	5134	NEIGHBORHOOD SHOP CENTER	ksf	30.0	5085.	3599.
4694	5137	ARTERIAL COMMERCIAL	ksf	7.6	419.	305.
4694		TOTAL			7524.	5454.
4695	112	SINGLE FAMILY	du	27.0	348.	243.

Zone	Code	Name	Type	Amount	Trips Person	Trips Vehicle
4695	121	MULTI-FAMILY	du	17.0	194.	136.
4695	122	MULTI-FAMILY	du	165.0	1419.	996.
4695	4112	RIGHT-OF-WAY	acre	4.9	0.	0.
4695	5137	ARTERIAL COMMERCIAL	ksf	19.4	1067.	775.
4695		TOTAL			3028.	2150.
4696	112	SINGLE FAMILY	du	113.0	1458.	1017.
4696	121	MULTI-FAMILY	du	6.0	68.	48.
4696	122	MULTI-FAMILY	du	131.0	1127.	791.
4696	4112	RIGHT-OF-WAY	acre	8.7	0.	0.
4696	5029	AUTO REPAIR	ksf	1.8	48.	35.
4696	5030	AUTO TIRES	ksf	2.5	86.	62.
4696	5137	ARTERIAL COMMERCIAL	ksf	7.6	415.	301.
4696		TOTAL			3202.	2256.
4697	112	SINGLE FAMILY	du	38.0	490.	342.
4697	121	MULTI-FAMILY	du	21.0	239.	168.
4697	122	MULTI-FAMILY	du	61.0	525.	368.
4697	4112	RIGHT-OF-WAY	acre	3.1	0.	0.
4697	5025	SERVICE STATION FOOD MART	other	12.0	2476.	1798.
4697	5137	ARTERIAL COMMERCIAL	ksf	10.9	597.	434.
4697	6112	RELIGIOUS FACILITY	ksf	5.5	36.	28.
4697		TOTAL			4363.	3138.
4698	112	SINGLE FAMILY	du	50.0	645.	450.
4698	121	MULTI-FAMILY	du	9.0	103.	72.
4698	122	MULTI-FAMILY	du	55.0	473.	332.
4698	4112	RIGHT-OF-WAY	acre	4.3	0.	0.
4698	4114	PARKING	acre	0.2	0.	0.
4698	5014	CONVENIENCE MARKET CHAIN	ksf	17.5	12036.	8742.
4698	5137	ARTERIAL COMMERCIAL	ksf	21.7	1195.	868.
4698	6112	RELIGIOUS FACILITY	ksf	0.6	4.	3.
4698		TOTAL			14456.	10468.
4699	112	SINGLE FAMILY	du	55.0	709.	495.
4699	121	MULTI-FAMILY	du	11.0	125.	88.

4699	122	MULTI-FAMILY	du	28.0	241.	169.
4699	4112	RIGHT-OF-WAY	acre	4.7	0.	0.
4699	5137	ARTERIAL COMMERCIAL	ksf	18.1	995.	723.
4699	6112	RELIGIOUS FACILITY	ksf	11.8	77.	59.
4699		TOTAL			2148.	1535.
4700	112	SINGLE FAMILY	du	17.0	219.	153.
4700	121	MULTI-FAMILY	du	4.0	46.	32.
4700	122	MULTI-FAMILY	du	94.0	808.	568.
4700	2113	LIGHT INDUSTRY GENERAL	ksf	11.8	219.	181.
4700	4112	RIGHT-OF-WAY	acre	1.8	0.	0.
4700	4114	PARKING	acre	0.1	0.	0.
4700	5011	HIGH TURNOVER RESTAURANT	ksf	1.4	244.	177.
4700	5014	CONVENIENCE MARKET CHAIN	ksf	14.0	9629.	6994.
4700	5029	AUTO REPAIR	ksf	4.5	123.	89.
4700	5030	AUTO TIRES	ksf	1.6	54.	39.

Zone	Code	Name	Type	Amount	Trips Person	Trips Vehicle
4700	5137	ARTERIAL COMMERCIAL	ksf	42.5	2340.	1699.
4700	6013	GOV'T /CIVIC CENTER	ksf	1.7	68.	51.
4700	6112	RELIGIOUS FACILITY	ksf	4.5	29.	22.
4700	6115	FIRE OR POLICE STATION	ksf	14.6	596.	439.
4700		TOTAL			14375.	10446.
4701	112	SINGLE FAMILY	du	5.0	64.	45.
4701	121	MULTI-FAMILY	du	6.0	68.	48.
4701	122	MULTI-FAMILY	du	55.0	473.	332.
4701	2113	LIGHT INDUSTRY GENERAL	ksf	14.5	270.	223.
4701	4112	RIGHT-OF-WAY	acre	1.1	0.	0.
4701	5029	AUTO REPAIR	ksf	5.9	161.	117.
4701	5137	ARTERIAL COMMERCIAL	ksf	34.2	1883.	1368.
4701	6112	RELIGIOUS FACILITY	ksf	1.8	12.	9.
4701		TOTAL			2932.	2142.
4702	112	SINGLE FAMILY	du	21.0	271.	189.
4702	122	MULTI-FAMILY	du	18.0	155.	109.
4702	2113	LIGHT INDUSTRY GENERAL	ksf	13.8	256.	212.
4702	4112	RIGHT-OF-WAY	acre	2.0	0.	0.
4702	5014	CONVENIENCE MARKET CHAIN	ksf	5.8	3989.	2897.
4702	5137	ARTERIAL COMMERCIAL	ksf	8.2	452.	329.
4702	6129	MEETING ROOM FACILITY	ksf	4.0	166.	120.
4702		TOTAL			5290.	3856.
4703	111	SINGLE FAMILY	du	1.0	13.	9.
4703	112	SINGLE FAMILY	du	220.0	2838.	1981.
4703	4112	RIGHT-OF-WAY	acre	19.0	0.	0.
4703	6113	LIBRARY	ksf	27.6	2029.	1375.
4703	6819	OTHER SCHOOL	ksf	14.5	316.	261.
4703	7611	OPEN SPACE PARK	acre	32.6	251.	165.
4703		TOTAL			5447.	3791.
4704	4112	RIGHT-OF-WAY	acre	1.4	0.	0.
4704	6113	LIBRARY	ksf	20.0	1472.	998.
4704	6812	UNIVERSITY OR COLLEGE	other	7667.0	15334.	12465.
4704		TOTAL			16806.	13463.
4705	112	SINGLE FAMILY	du	257.0	3315.	2314.

4705	4112	RIGHT-OF-WAY	acre	17.6	0.	0.
4705	7611	OPEN SPACE PARK	acre	25.4	195.	128.
4705		TOTAL			3510.	2442.
4706	112	SINGLE FAMILY	du	327.0	4218.	2944.
4706	1411	CONGREGATE CARE FACILITY	other	12.0	52.	36.
4706	4112	RIGHT-OF-WAY	acre	18.6	0.	0.
4706		TOTAL			4270.	2981.
4707	112	SINGLE FAMILY	du	170.0	2193.	1531.
4707	4112	RIGHT-OF-WAY	acre	9.0	0.	0.
4707	4113	COMMUNICATION OR UTILITY	acre	0.6	2.	1.
4707	7611	OPEN SPACE PARK	acre	0.8	6.	4.

	Land Use				Trips	
Zone	Code	Name	Type	Amount	Person	Vehicle
4707	7613	ACTIVE PARK	acre	3.0	234.	154.
4707		TOTAL			2434.	1690.
4708	112	SINGLE FAMILY	du	394.0	5083.	3548.
4708	121	MULTI-FAMILY	du	17.0	194.	136.
4708	4112	RIGHT-OF-WAY	acre	31.6	0.	0.
4708	7611	OPEN SPACE PARK	acre	0.2	2.	1.
4708		TOTAL			5278.	3685.
4709	112	SINGLE FAMILY	du	213.0	2748.	1918.
4709	121	MULTI-FAMILY	du	186.0	2120.	1489.
4709	122	MULTI-FAMILY	du	136.0	1170.	821.
4709	4112	RIGHT-OF-WAY	acre	20.2	0.	0.
4709	5137	ARTERIAL COMMERCIAL	ksf	2.2	119.	86.
4709	6112	RELIGIOUS FACILITY	ksf	17.0	110.	85.
4709	6519	OTHER HEALTH CARE	ksf	3.8	253.	188.
4709	6816	ELEMENTARY SCHOOL	other	483.0	1642.	918.
4709	7613	ACTIVE PARK	acre	6.6	510.	335.
4709		TOTAL			8672.	5840.
4710	112	SINGLE FAMILY	du	25.0	322.	225.
4710	121	MULTI-FAMILY	du	23.0	262.	184.
4710	122	MULTI-FAMILY	du	171.0	1471.	1032.
4710	4112	RIGHT-OF-WAY	acre	5.9	0.	0.
4710	5137	ARTERIAL COMMERCIAL	ksf	10.1	557.	404.
4710	6119	OTHER PUBLIC SERVICE	ksf	8.7	120.	87.
4710	7613	ACTIVE PARK	acre	0.1	9.	6.
4710		TOTAL			2741.	1939.
4711	112	SINGLE FAMILY	du	12.0	155.	108.
4711	121	MULTI-FAMILY	du	10.0	114.	80.
4711	122	MULTI-FAMILY	du	80.0	688.	483.
4711	2113	LIGHT INDUSTRY GENERAL	ksf	8.0	149.	123.
4711	4112	RIGHT-OF-WAY	acre	2.9	0.	0.
4711	6012	LOW RISE OFFICE A	ksf	5.4	288.	222.
4711		TOTAL			1394.	1016.
4712	112	SINGLE FAMILY	du	24.0	310.	216.
4712	121	MULTI-FAMILY	du	15.0	171.	120.
4712	122	MULTI-FAMILY	du	134.0	1152.	809.
4712	4112	RIGHT-OF-WAY	acre	3.8	0.	0.
4712	6511	CLINIC	ksf	3.0	201.	149.

4712		TOTAL			1834.	1294.
4713	112	SINGLE FAMILY	du	14.0	181.	126.
4713	121	MULTI-FAMILY	du	2.0	23.	16.
4713	122	MULTI-FAMILY	du	74.0	636.	447.
4713	4112	RIGHT-OF-WAY	acre	1.3	0.	0.
4713	5137	ARTERIAL COMMERCIAL	ksf	18.3	1006.	730.
4713	9101	INACTIVE USE	acre	0.1	0.	0.
4713		TOTAL			1845.	1319.

Zone	Code	Name	Type	Amount	Trips Person	Trips Vehicle
4714	112	SINGLE FAMILY	du	3.0	39.	27.
4714	121	MULTI-FAMILY	du	13.0	148.	104.
4714	122	MULTI-FAMILY	du	88.0	757.	531.
4714	4112	RIGHT-OF-WAY	acre	3.6	0.	0.
4714	5137	ARTERIAL COMMERCIAL	ksf	32.1	1767.	1283.
4714	9101	INACTIVE USE	acre	0.2	0.	0.
4714		TOTAL			2710.	1945.
4715	112	SINGLE FAMILY	du	25.0	322.	225.
4715	121	MULTI-FAMILY	du	17.0	194.	136.
4715	122	MULTI-FAMILY	du	54.0	464.	326.
4715	4112	RIGHT-OF-WAY	acre	4.1	0.	0.
4715	7611	OPEN SPACE PARK	acre	0.0	0.	0.
4715	7613	ACTIVE PARK	acre	2.7	204.	134.
4715	9101	INACTIVE USE	du	0.1	0.	0.
4715		TOTAL			1185.	822.
4716	112	SINGLE FAMILY	du	24.0	310.	216.
4716	122	MULTI-FAMILY	du	88.0	757.	531.
4716	4112	RIGHT-OF-WAY	acre	2.0	0.	0.
4716	5137	ARTERIAL COMMERCIAL	ksf	20.5	1129.	820.
4716		TOTAL			2196.	1568.
4717	112	SINGLE FAMILY	du	42.0	542.	378.
4717	121	MULTI-FAMILY	du	34.0	388.	272.
4717	122	MULTI-FAMILY	du	37.0	318.	223.
4717	4112	RIGHT-OF-WAY	acre	2.5	0.	0.
4717	5137	ARTERIAL COMMERCIAL	ksf	1.6	90.	65.
4717		TOTAL			1337.	939.
4718	112	SINGLE FAMILY	du	49.0	632.	441.
4718	121	MULTI-FAMILY	du	21.0	239.	168.
4718	122	MULTI-FAMILY	du	134.0	1152.	809.
4718	4112	RIGHT-OF-WAY	acre	8.1	0.	0.
4718	4113	COMMUNICATION OR UTILITY	acre	0.5	1.	1.
4718	5131	WHOLESALE TRADE	ksf	15.7	1553.	1101.
4718	5137	ARTERIAL COMMERCIAL	ksf	61.5	3381.	2455.
4718	6819	OTHER SCHOOL	ksf	36.1	787.	650.
4718	7613	ACTIVE PARK	acre	0.2	18.	12.
4718		TOTAL			7764.	5637.
4719	112	SINGLE FAMILY	du	49.0	632.	441.
4719	121	MULTI-FAMILY	du	45.0	513.	360.
4719	122	MULTI-FAMILY	du	31.0	267.	187.
4719	4112	RIGHT-OF-WAY	acre	3.8	0.	0.

4719	5137	ARTERIAL COMMERCIAL	ksf	1.5	84.	61.
4719	9101	INACTIVE USE	acre	0.1	0.	0.
4719		TOTAL			1496.	1050.
4720	112	SINGLE FAMILY	du	22.0	284.	198.
4720	121	MULTI-FAMILY	du	46.0	524.	368.
4720	122	MULTI-FAMILY	du	4.0	34.	24.

Land Use					Trips	
Zone	Code	Name	Type	Amount	Person	Vehicle
4720	1511	MOTEL	room	27.0	394.	243.
4720	4112	RIGHT-OF-WAY	acre	5.5	0.	0.
4720	5137	ARTERIAL COMMERCIAL	ksf	37.2	2048.	1488.
4720		TOTAL			3285.	2321.
4721	112	SINGLE FAMILY	du	23.0	297.	207.
4721	121	MULTI-FAMILY	du	28.0	319.	224.
4721	122	MULTI-FAMILY	du	13.0	112.	78.
4721	4112	RIGHT-OF-WAY	acre	6.4	0.	0.
4721	5137	ARTERIAL COMMERCIAL	ksf	20.8	1144.	831.
4721	6816	ELEMENTARY SCHOOL	other	333.0	1132.	633.
4721		TOTAL			3004.	1973.
4722	112	SINGLE FAMILY	du	89.0	1148.	801.
4722	121	MULTI-FAMILY	du	73.0	832.	584.
4722	122	MULTI-FAMILY	du	169.0	1453.	1020.
4722	2113	LIGHT INDUSTRY GENERAL	ksf	8.4	156.	129.
4722	4112	RIGHT-OF-WAY	acre	14.4	0.	0.
4722	5137	ARTERIAL COMMERCIAL	ksf	42.9	2360.	1714.
4722	7611	OPEN SPACE PARK	acre	2.6	20.	13.
4722	7613	ACTIVE PARK	acre	0.2	17.	11.
4722	9101	INACTIVE USE	du	1.8	0.	0.
4722		TOTAL			5987.	4274.
4723	112	SINGLE FAMILY	du	11.0	142.	99.
4723	121	MULTI-FAMILY	du	12.0	137.	96.
4723	122	MULTI-FAMILY	du	308.0	2649.	1860.
4723	4112	RIGHT-OF-WAY	acre	14.2	0.	0.
4723	5137	ARTERIAL COMMERCIAL	ksf	43.6	2398.	1741.
4723		TOTAL			5325.	3796.
4724	112	SINGLE FAMILY	du	38.0	490.	342.
4724	121	MULTI-FAMILY	du	41.0	467.	328.
4724	122	MULTI-FAMILY	du	156.0	1342.	942.
4724	4112	RIGHT-OF-WAY	acre	4.1	0.	0.
4724	5137	ARTERIAL COMMERCIAL	ksf	1.7	93.	68.
4724		TOTAL			2392.	1680.
4725	112	SINGLE FAMILY	du	34.0	439.	306.
4725	121	MULTI-FAMILY	du	26.0	296.	208.
4725	122	MULTI-FAMILY	du	43.0	370.	260.
4725	4112	RIGHT-OF-WAY	acre	5.7	0.	0.
4725	5137	ARTERIAL COMMERCIAL	ksf	2.1	113.	82.
4725	6816	ELEMENTARY SCHOOL	other	354.0	1204.	673.
4725		TOTAL			2422.	1529.
4726	112	SINGLE FAMILY	du	190.0	2451.	1711.
4726	121	MULTI-FAMILY	du	10.0	114.	80.

4726	122	MULTI-FAMILY	du	26.0	224.	157.
4726	4112	RIGHT-OF-WAY	acre	16.7	0.	0.
4726	5025	SERVICE STATION FOOD MART	other	8.0	1650.	1199.
4726	5137	ARTERIAL COMMERCIAL	ksf	22.5	1239.	900.

Zone	Code	Name	Type	Amount	Trips Person	Trips Vehicle
4726	7611	OPEN SPACE PARK	acre	6.3	49.	32.
4726		TOTAL			5727.	4079.
4727	112	SINGLE FAMILY	du	123.0	1587.	1108.
4727	4112	RIGHT-OF-WAY	acre	13.3	0.	0.
4727	7611	OPEN SPACE PARK	acre	8.6	67.	44.
4727		TOTAL			1653.	1151.
4728	112	SINGLE FAMILY	du	222.0	2864.	1999.
4728	121	MULTI-FAMILY	du	22.0	251.	176.
4728	122	MULTI-FAMILY	du	12.0	103.	72.
4728	4112	RIGHT-OF-WAY	acre	13.2	0.	0.
4728	6112	RELIGIOUS FACILITY	ksf	7.7	50.	38.
4728	7611	OPEN SPACE PARK	acre	5.8	45.	29.
4728	9101	INACTIVE USE	du	0.4	0.	0.
4728		TOTAL			3312.	2315.

APPENDIX C: MODEL VOLUMES

SANDAG Series 12
City of San Diego
Community Plan Update
Traffic Analysis Zones

SOUTHEAST SAN DIEGO

Zones and MGRAs:

- Traffic Analysis Zones
- Master Geographic Reference Areas
- Background Base Year Network
- City and County Community Planning Areas

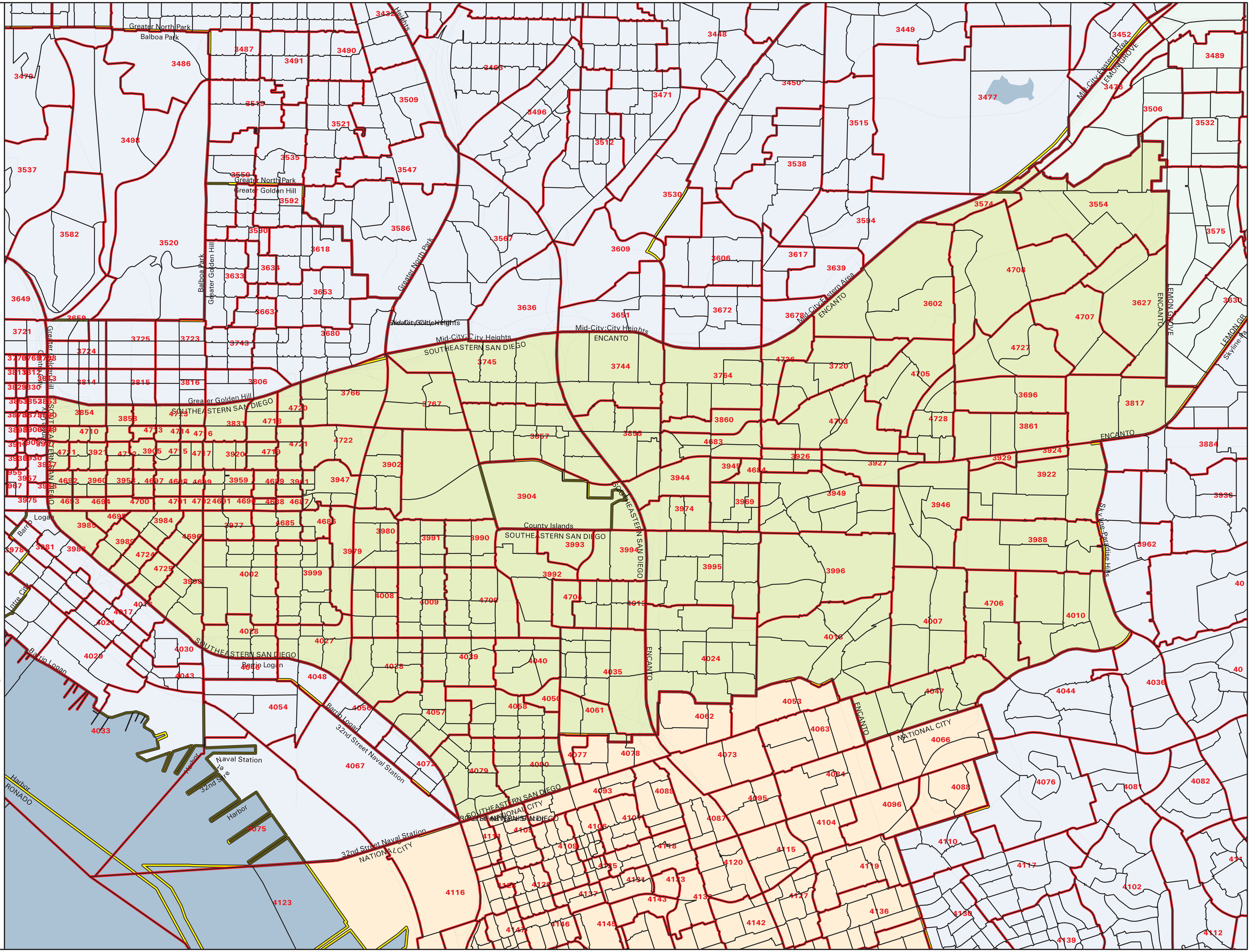
Proposed Study Area:

- CPA-Defined Study Area
- One-TAZ Buffered Study Area

Feet 0 800 1,600
Meters 96 288 480

SANDAG
San Diego's Regional Planning Agency

August 1, 2013



SANDAG Series 12 2035
Revenue Constrained
2011 RTP Highway Network
Forecasted Daily Volumes

SOUTHEAST SAN DIEGO

Model Run 01/30/14
2035rc11C - Proposed Land Use
Reasonably Expected Network with SR-94 Alt 1
with Connection Deletions

Forecasted Volumes:

- # Adjusted Volume
- # Unadjusted Volume
- # Traffic Analysis Zone

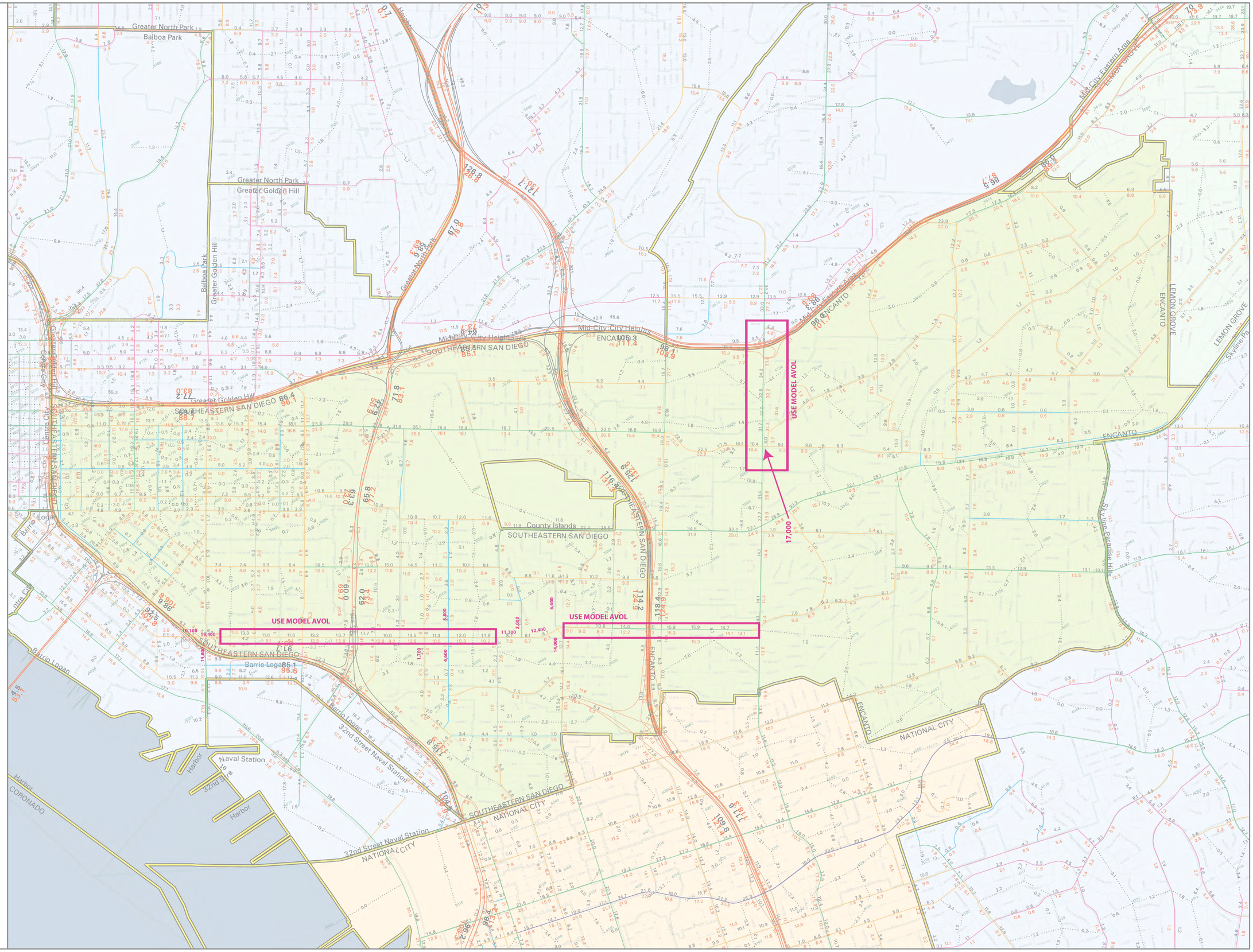
MODEL WITH ADJUSTMENT FOR NATIONAL / EUCLID PROJECT ONLY VOLUME IN THE NATIONAL/EUCLID STUDY AREA HAVE BEENVERIFIED

02/10/2014

Feet 0 800 1,600
Meters 96 288 480

SANDAG
San Diego's Regional Planning Agency

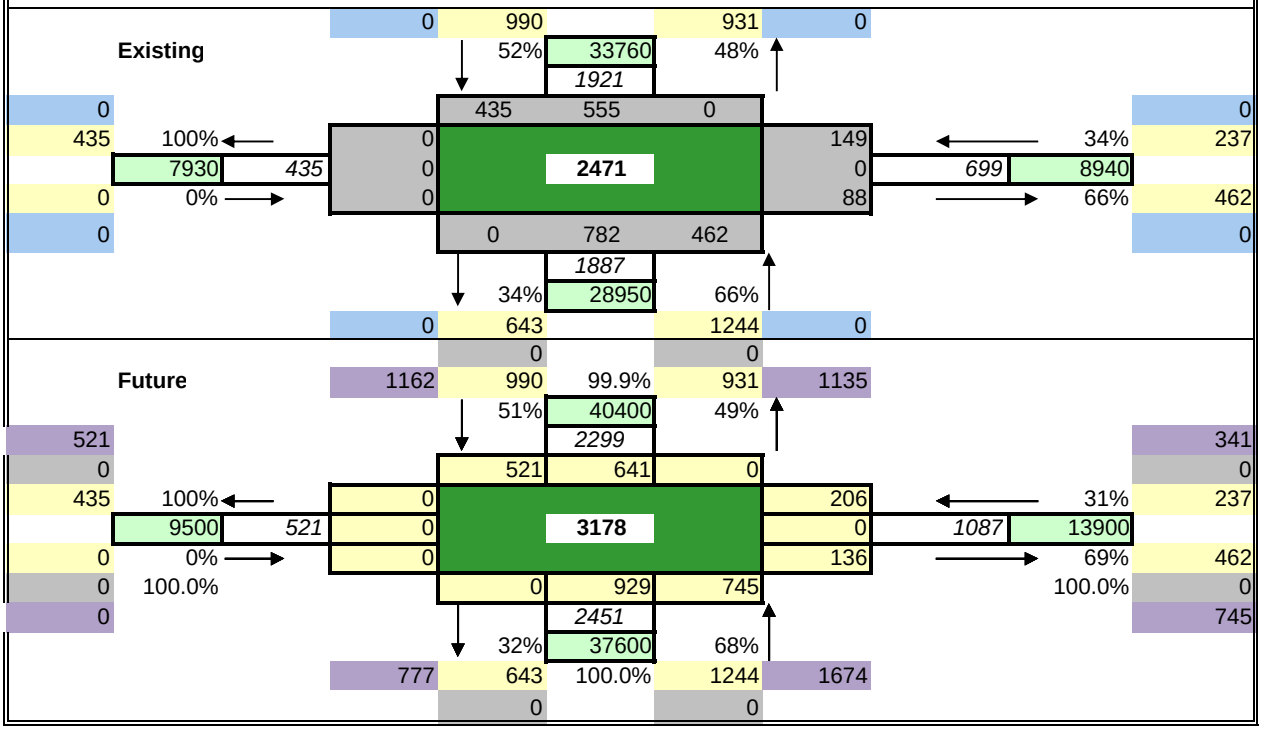
January 31, 2014



APPENDIX D: POST-PROCESSOR SPREADSHEETS

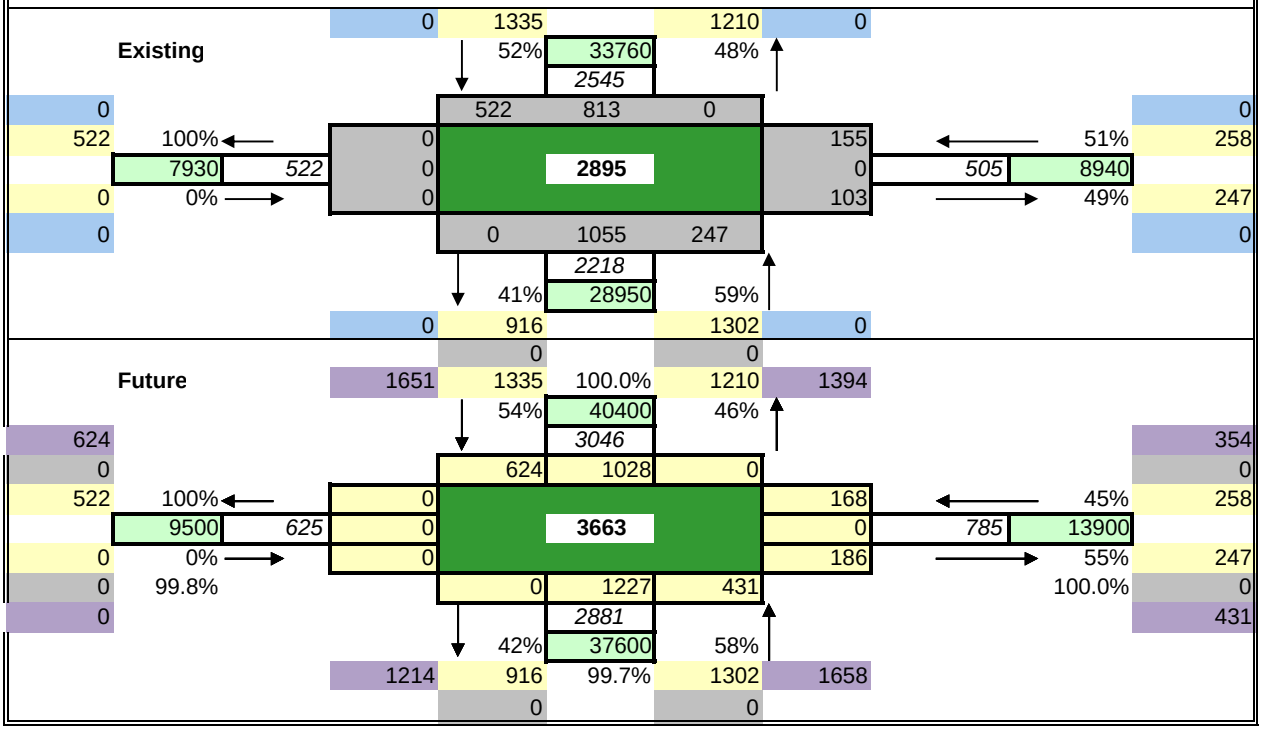
Future Turning Movement Calculation Sheet

N/S Street	Euclid	Time Period	AM
E/W Street	SR-94 WB	Date	2/13/2014
Project	Euclid Corridor Study		



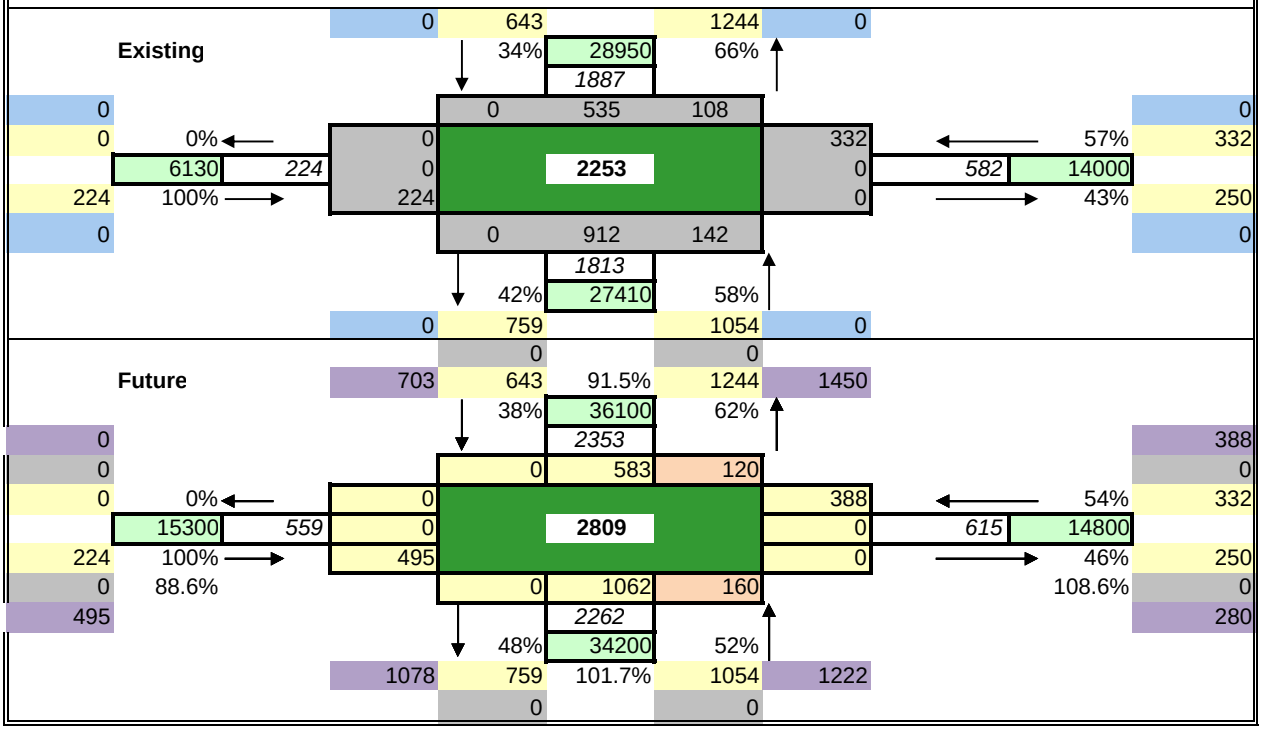
Future Turning Movement Calculation Sheet

N/S Street	Euclid	Time Period	PM
E/W Street	SR-94 WB	Date	2/13/2014
Project	Euclid Corridor Study		



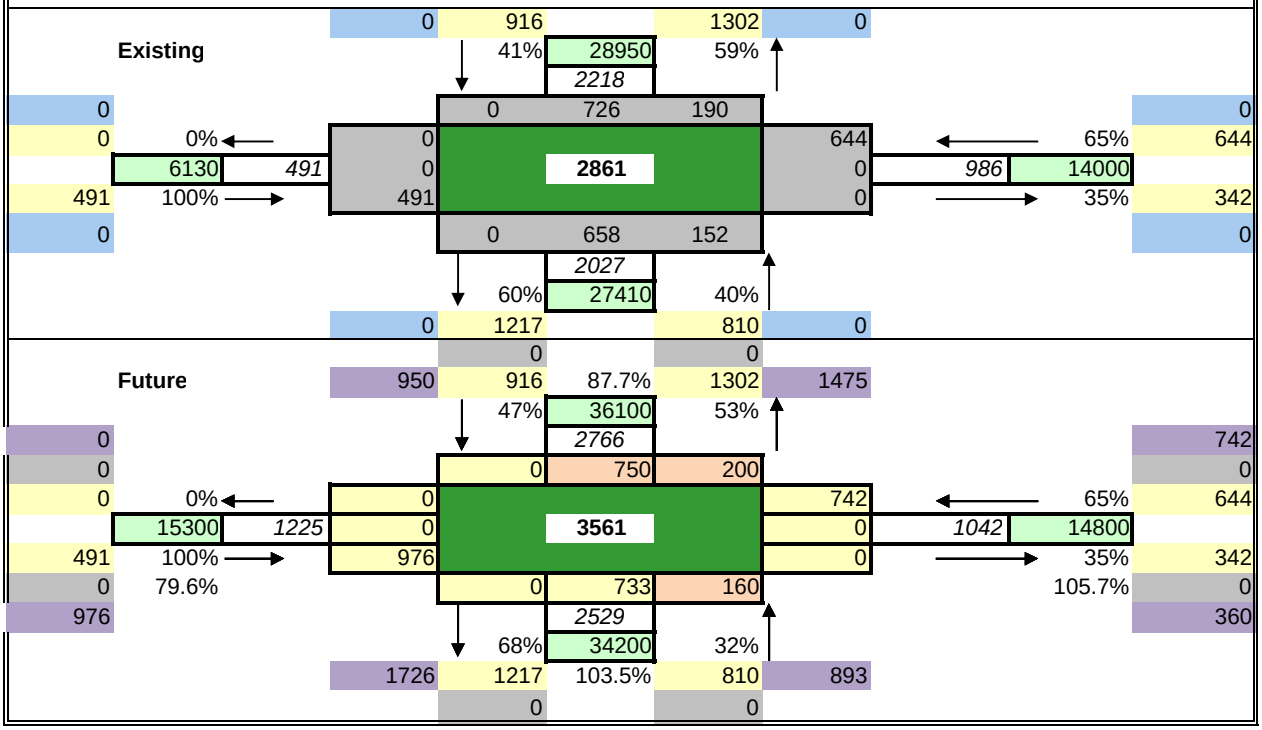
Future Turning Movement Calculation Sheet

N/S Street	Euclid	Time Period	AM
E/W Street	SR-94 EB	Date	2/13/2014
Project	Euclid Corridor Study		



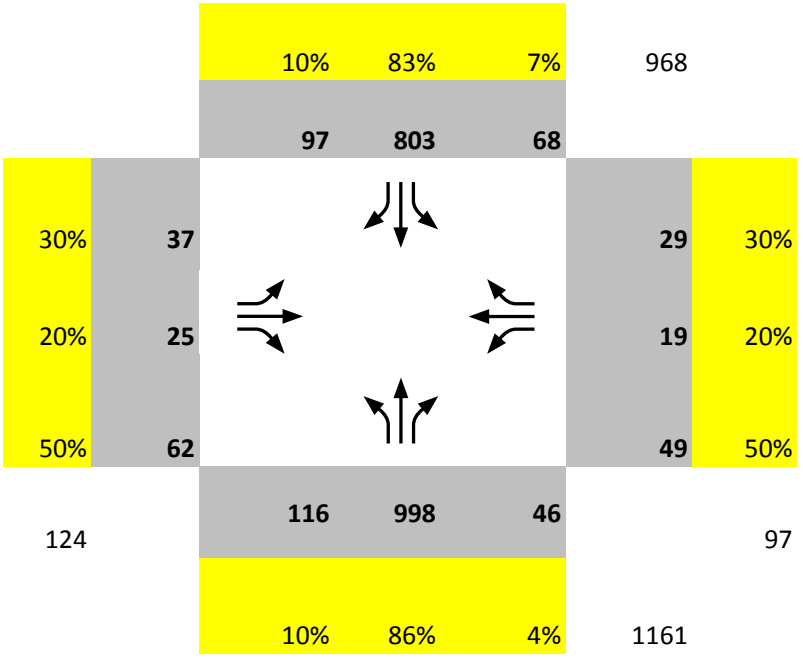
Future Turning Movement Calculation Sheet

N/S Street	Euclid	Time Period	PM
E/W Street	SR-94 EB	Date	2/13/2014
Project	Euclid Corridor Study		

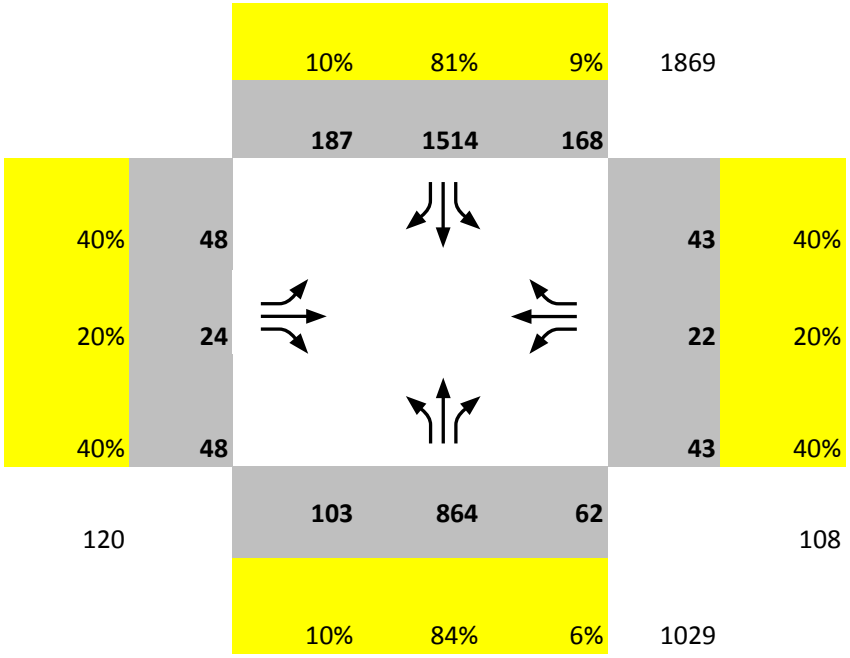


Future Turning Movement Calculation Sheet

Euclid & Hilltop (AM)



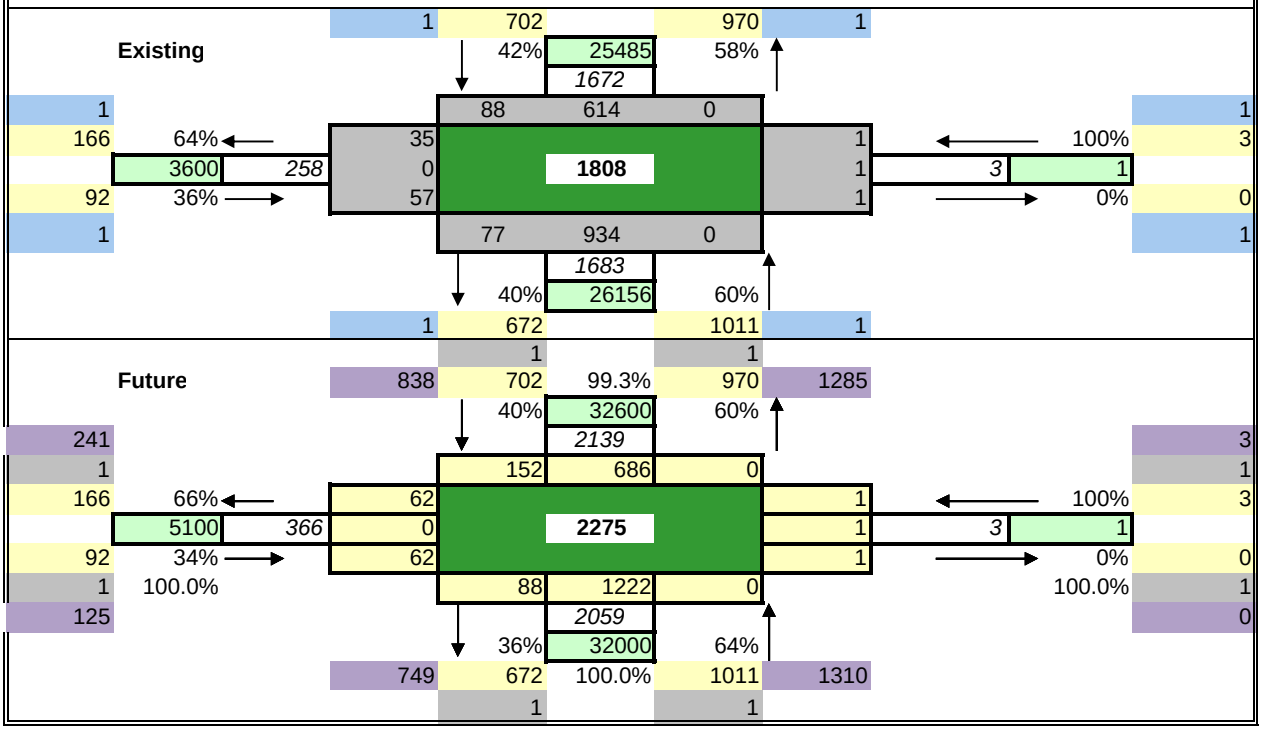
Euclid & Hilltop (PM)



Note: Approach percentage distribution for Euclid and Market were used to inform the percentage distribution of the new movements on Euclid and Hilltop in the future.

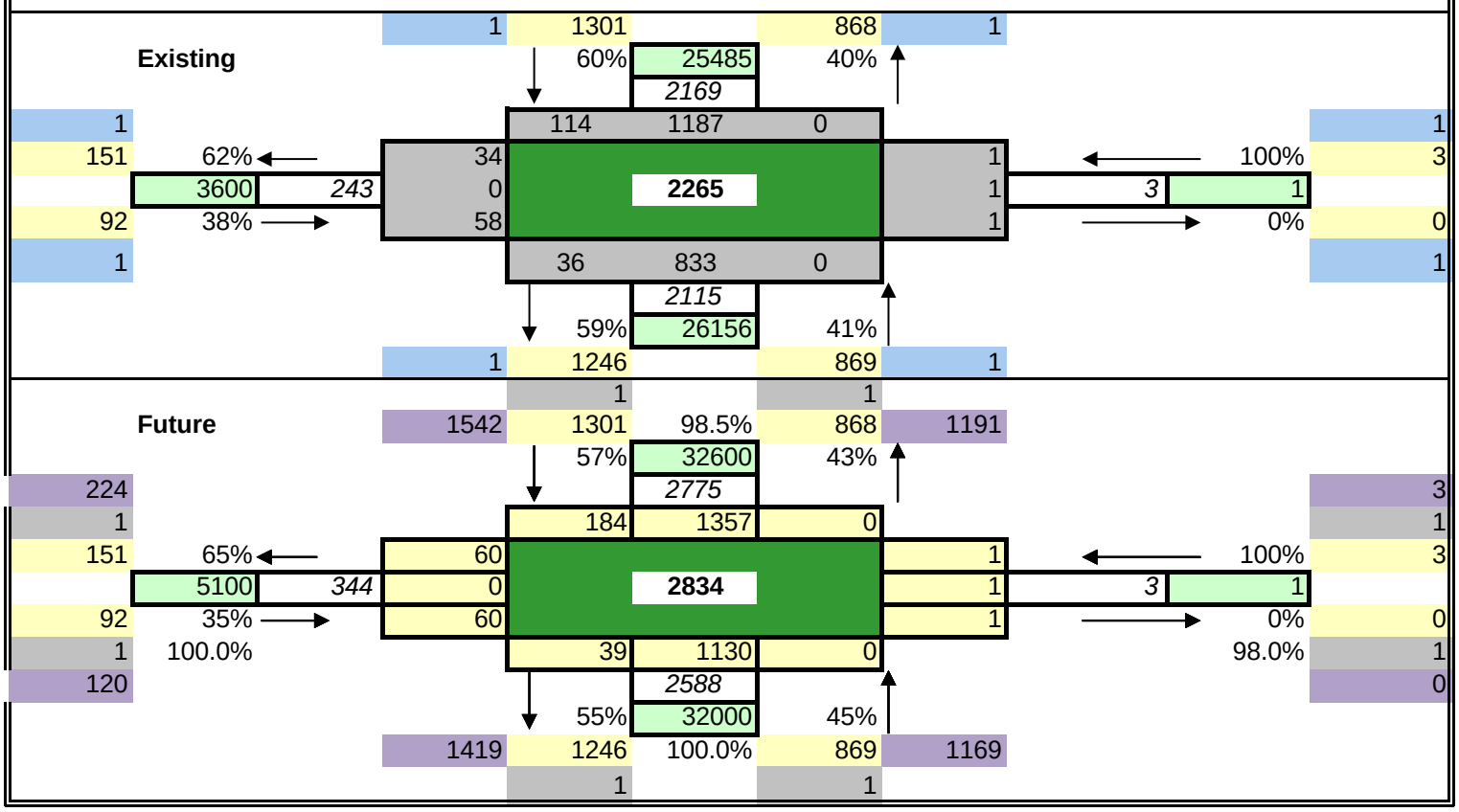
Future Turning Movement Calculation Sheet

N/S Street	Euclid	Time Period	AM
E/W Street	Lise	Date	2/13/2014
Project	Euclid Corridor Study		



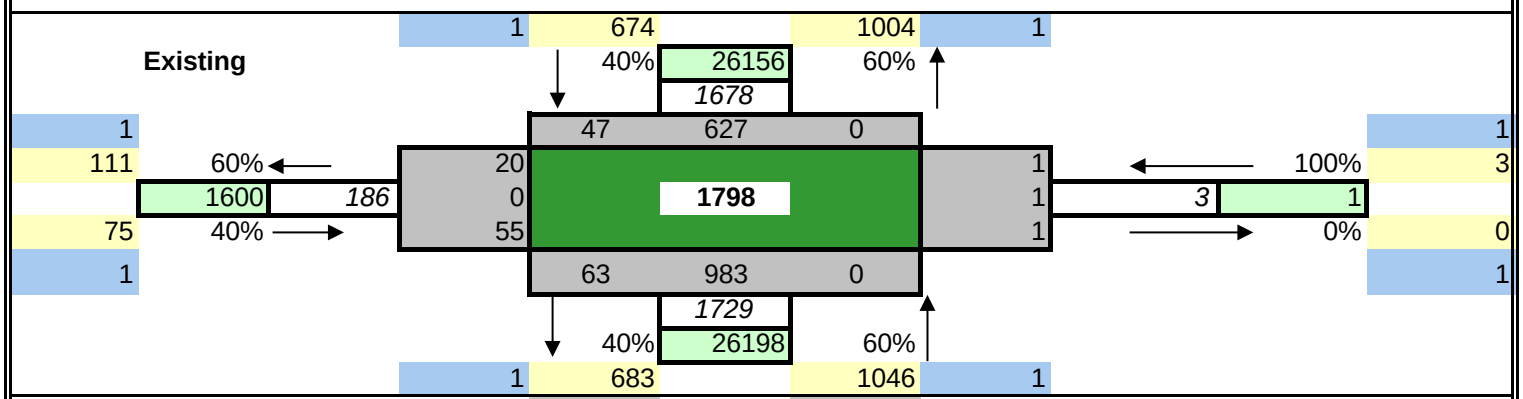
Future Turning Movement Calculation Sheet

N/S Street	Euclid	Time Period	PM
E/W Street	Lise	Date	2/13/2014
Project	Euclid Corridor Study		



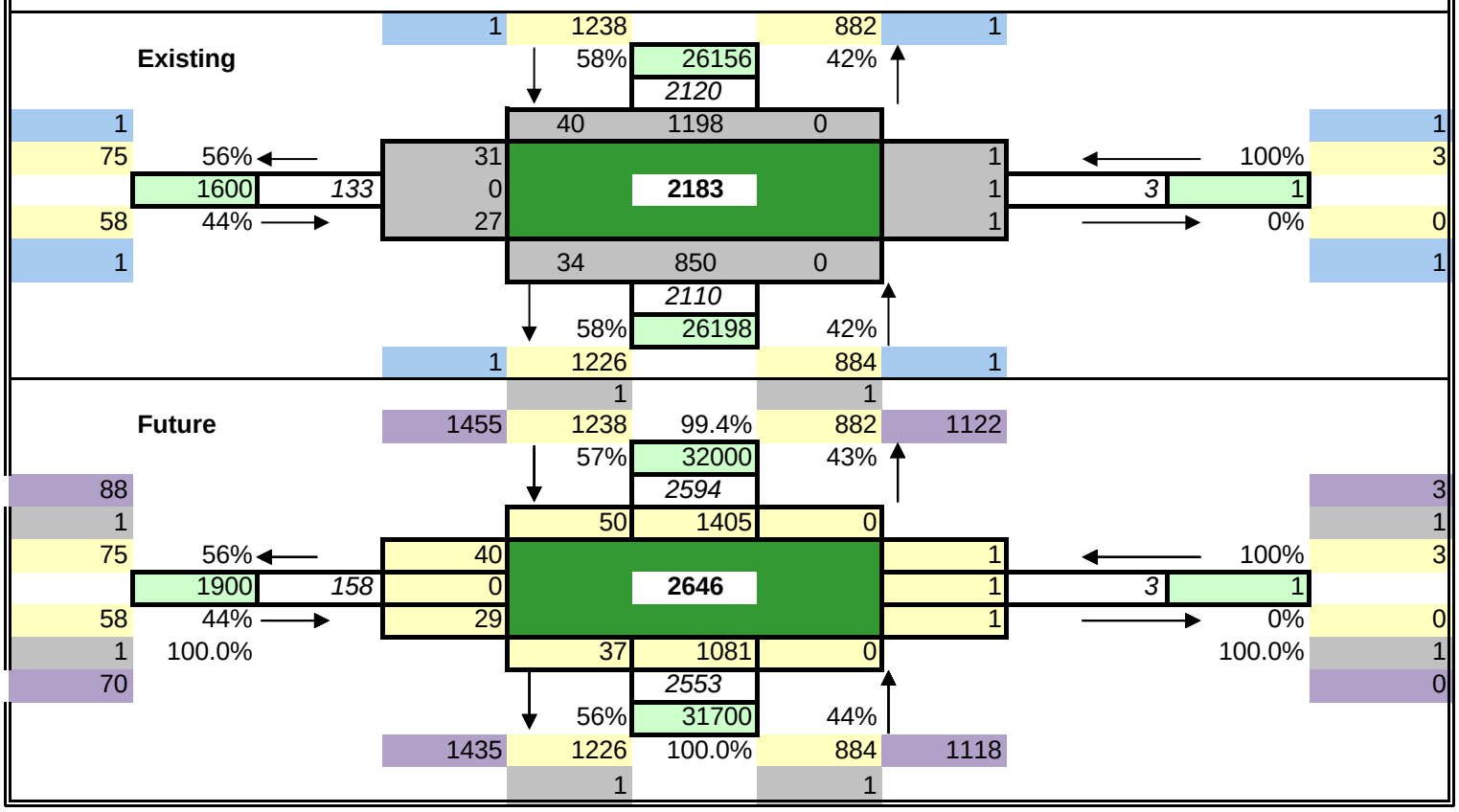
Future Turning Movement Calculation Sheet

N/S Street	Euclid	Time Period	AM
E/W Street	Guymon	Date	2/13/2014
Project	Euclid Corridor Study		



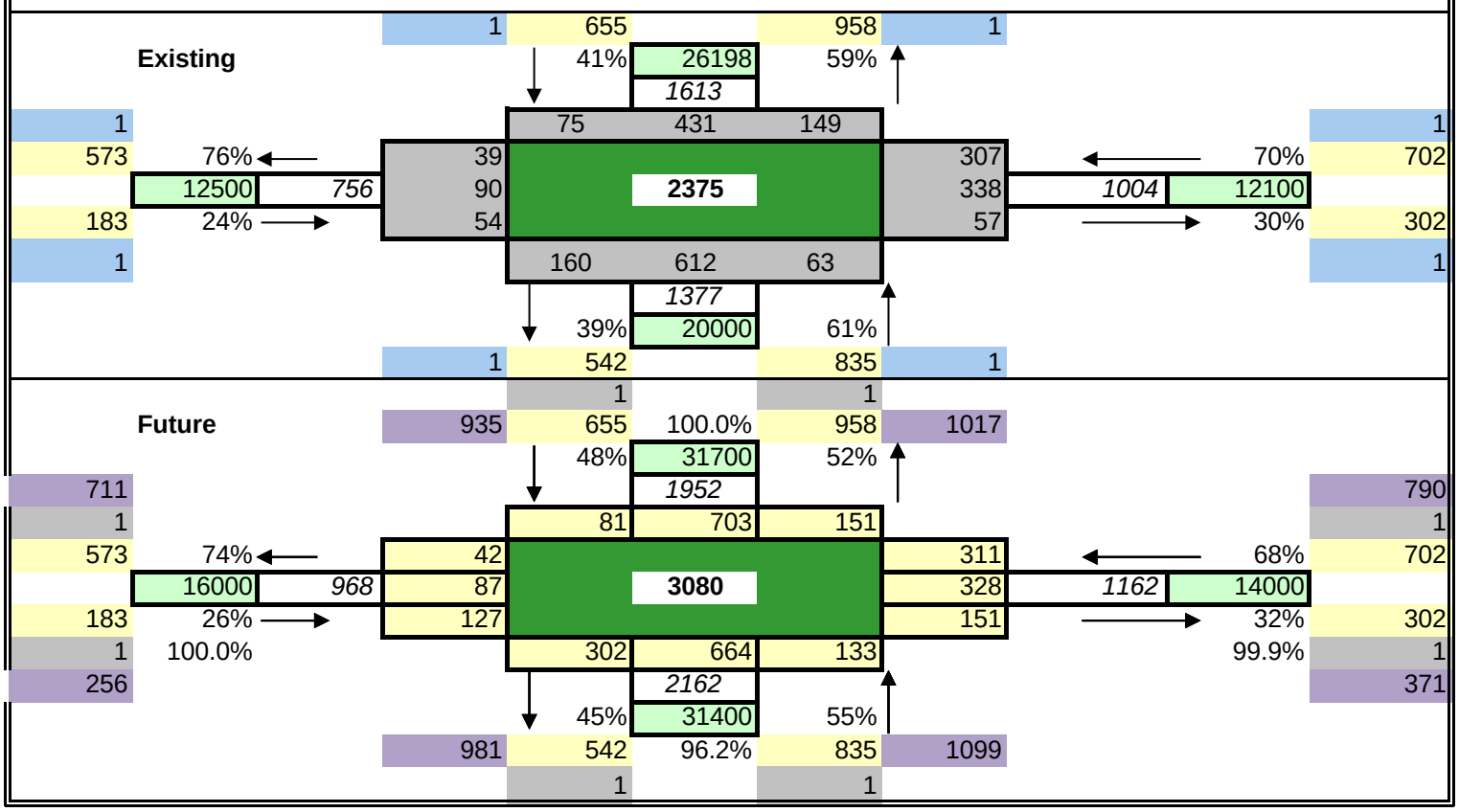
Future Turning Movement Calculation Sheet

N/S Street	Euclid	Time Period	PM
E/W Street	Guymon	Date	2/13/2014
Project	Euclid Corridor Study		



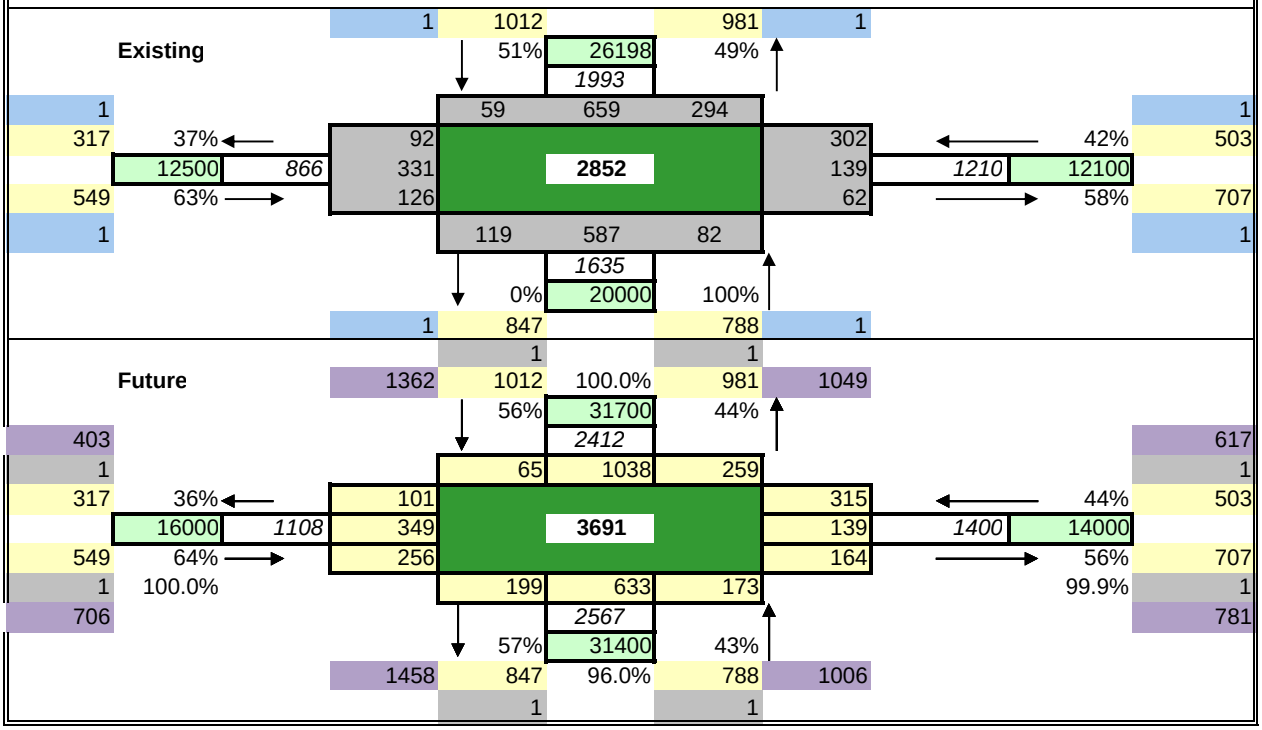
Future Turning Movement Calculation Sheet

N/S Street	Euclid	Time Period	AM
E/W Street	Market	Date	2/13/2014
Project	Euclid Corridor Study		



Future Turning Movement Calculation Sheet

N/S Street	Euclid	Time Period	PM
E/W Street	Market	Date	2/13/2014
Project	Euclid Corridor Study		



APPENDIX E: MXD MODEL RESULTS

MIXED USE TRIP GENERATION MODEL - BASIC INPUT

All shaded cells are inputs
Regular inputs (project-specific)
Inputs that may depend on regional values from census data, travel demand model, etc…
Treat like other inputs, but please send values and source to Mackenzie Watten so that a library of values can be compiled in future versions!

Section 1 - General Site Information

Site Name	Euclid Avenue Corrido *Existing Conditions*	int/sq mi 99
Geographic		**Notes / Instructions**
Developed Area (in acres)	25.96	Include streets, ROW, parking lots, pocket parks. Do not include open space, vacant lots.
Number of Intersections	4	Count intersections either within or on the perimeter of the MXD. Check resulting intersections per square mile in blue above
Is Transit (bus or rail) present within the site or across the street	Yes	Note: This is only used as a way to zero out the probability of external trips if no transit is present.
Proportion of households within 1/4 mile of a transit sto	100%	Enter as a percentage
Land Use - Surrounding Area		
Is the site in a Central Business District and/or TOD?	No	Answering "Yes" will reduce the HBO and NHB purpose splits for retail use to those found in smaller stores. The nature of the stores (large vs. small) should be the primary factor in the selection here.
Employment within one mile of the MXD	5,000	Do not include employment within the MXD itself
Employment within a 30 minute Transit Trip (Door-to-door)	100,000	Include employment within the MXD itself
Total Regional Employment	1,752,630	Employment at MPO or similar level
Site Demographics		
Enter Population Directly?	No	If "No", will apply average HH size factors (immediately below) to dwelling unit totals in section 2
Population		You do not need to enter population here. It will be calculated based on dwelling units below and average HH sizes.
Average HH Size by type within MXD		
Single Family	3.2	These HH size inputs by dwelling type are used to calculate population if it is not entered above, and are also used for average HH size if block group average HH size option is "No" below
Multi-Family	2.5	
Townhouse	2.5	
High Rise Condo	2.5	
Average Vehicles Owned per Dwelling Unit within sit	2.70	
Use Surrounding Area (Block Group) Demographics for On-Site Average HH Size	Yes	If no project-specific information exists, can use block group average HH size (see belo
Use Surrounding Area (Block Group) Demographics for On-Site Average Veh Owr	Yes	If no project-specific information exists, can use block group average veh owned (see belo
Surrounding Area (Block Group) Demographics		
Average HH size near Site	3.42	
Average Vehicles Owned per Dwelling Unit near Site	1.72	

Section 2 - Trip Generation

			Trip Equation Method			Trips			NHB Trips Outside of Project		
	Quantity	Units	Daily	AM Peak Hour	PM Peak Hour	Daily	AM Peak Hour	PM Peak Hour	Daily	AM Peak Hour	PM Peak Hour
Number of Dwelling Units											
Single Family	250	DU	Log Equation	Linear Equation	Log Equation	2,440	185	240	503	8	46
Multi-Family	0	DU	Linear Equation	Linear Equation	Linear Equation	0	0	0	0	0	0
Townhouse		DU	Log Equation	Log Equation	Log Equation	0	0	0	0	0	0
High Rise Condo		DU	Linear Equation	Linear Equation	Linear Equation	0	0	0	0	0	0
Retail (note: if you use job units for retail, the spreadsheet will convert before applying trip rates, using the rate in section 2 which you can change)											
General Retail other than those listed below	25	ksf	Log Equation	Log Equation	Log Equation	2,758	67	237			
Supermarket		ksf	Average Rate	Average Rate	Average Rate	0	0	0			
Bank		ksf	Average Rate	Average Rate	Average Rate	0	0	0			
Health Club		ksf	Average Rate	Average Rate	Average Rate	0	0	0			
Restaurant (non-fast food)	0	ksf	Average Rate	Average Rate	Average Rate	0	0	0			
Fast-Food Restaurant		ksf	Average Rate	Average Rate	Average Rate	0	0	0			
Gas Station		ksf	Average Rate	Average Rate	Average Rate	0	0	0			
Auto Repair		ksf	Average Rate	Average Rate	Average Rate	0	0	0			
Home Improvement Superstore		ksf	Average Rate	Average Rate	Average Rate	0	0	0			
Free-Standing Discount		ksf	Average Rate	Average Rate	Average Rate	0	0	0			
Office											
Non-Medical		ksf	Log Equation	Log Equation	Linear Equation	0	0	0			
Medical		ksf	Average Rate	Average Rate	Average Rate	0	0	0			
Industrial											
Light Industrial	0	ksf	Average Rate	Average Rate	Average Rate	0	0	0			
Manufacturing	0	ksf	Average Rate	Average Rate	Average Rate	0	0	0			
Warehousing / Self-Storage	0	ksf	Average Rate	Average Rate	Average Rate	0	0	0			
Hotel (including restaurant, facilities, etc…)		Rooms	Average Rate	Average Rate	Average Rate	0	0	0			
Motel		Rooms	Average Rate	Average Rate	Average Rate	0	0	0			
Movie Theater (Theater with Matinee)			Average Rate	Average Rate	Average Rate	0	0	0			
Movie Theater (Multiplex)		Screens	Average Rate	Average Rate	Average Rate	0	0	0			
School											
University		Students	Linear Equation	Average Rate	Average Rate	0	0	0			
High School	835	Students	Average Rate	Average Rate	Average Rate	1,428	359	109			
Middle School		Students	Average Rate	Average Rate	Average Rate	0	0	0			
Elementary	500	Students	Average Rate	Average Rate	Average Rate	645	225	75			
Trips from Land uses not covered above ==>											
Daily											
AM Peak Hour											
PM Peak Hour											
Jobs in those Land Uses	0										

	Daily	AM Peak Hour	PM Peak Hour
Total "Raw" ITE Trips	**7,271**	**836**	**660**

MIXED USE TRIP GENERATION MODEL - ADVANCED OUTPUT

MODEL APPLICATION - ALL TRIPS

	Daily				AM Peak Hour				PM Peak Hour			
	HBW	HBO	NHB	Total	HBW	HBO	NHB	Total	HBW	HBO	NHB	Total
Number of "Raw" ITE Trips Subject to Model												
Productions	551	1475	658	2683	85	83	79	246	75	126	61	262
Attractions	482	3299	806	4588	77	431	81	590	51	269	77	398
Total	1033	4774	1464	7271	162	514	160	836	126	396	138	660
Predicted Probabilities:												
Productions												
Internal Capture	6.11%	5.17%	4.81%	7.08%	8.42%	7.00%	6.50%	12.19%	11.87%	9.87%	9.15%	12.60%
Walking External	4.95%	10.45%	1.75%	7.13%	6.54%	13.80%	1.77%	7.08%	4.95%	10.45%	1.75%	6.73%
Transit External	2.29%	3.77%	5.52%	3.90%	3.25%	8.11%	11.86%	7.64%	3.54%	7.55%	11.03%	7.21%
Attractions												
Internal Capture	6.11%	5.17%	4.81%	4.14%	8.42%	7.00%	6.50%	5.09%	11.87%	9.87%	9.15%	8.29%
Walking External	4.95%	10.45%	1.75%	8.36%	6.54%	13.80%	1.77%	11.25%	4.95%	10.45%	1.75%	8.09%
Transit External	2.29%	3.77%	5.52%	3.93%	3.25%	8.11%	11.86%	8.01%	3.54%	7.55%	11.03%	7.74%
Total												
Internal Capture	6.20%	5.15%	4.78%	5.23%	8.64%	7.01%	6.24%	7.18%	11.12%	10.11%	8.67%	10.00%
Walking External	4.95%	10.45%	1.75%	7.92%	6.54%	13.80%	1.77%	10.08%	4.95%	10.45%	1.75%	7.56%
Transit External	2.29%	3.77%	5.52%	3.92%	3.25%	8.11%	11.86%	7.91%	3.54%	7.55%	11.03%	7.54%
Number of Trips:												
Productions												
Internal Capture	32	123	35	190	7	18	5	30	7	20	6	33
Walking External	26	141	11	178	5	9	1	15	3	11	1	15
Transit External	12	51	34	97	3	5	9	17	2	8	6	16
Attractions												
Internal Capture	32	123	35	190	7	18	5	30	7	20	6	33
Walking External	22	332	13	368	5	57	1	63	2	26	1	30
Transit External	10	120	43	173	2	34	9	45	2	19	8	28
Total												
Internal Capture	64	246	70	380	14	36	10	60	14	40	12	66
Walking External	48	473	24	546	10	66	3	78	6	37	2	45
Transit External	22	171	77	270	5	39	18	61	4	27	14	45
Internal Capture including Site Specific Internal	64	246	70	380	14	36	10	60	14	40	12	66
Net Number of IXXI Vehicle Trips	**899**	**3884**	**1293**	**6075**	**133**	**373**	**130**	**636**	**102**	**292**	**110**	**504**

	External Vehicle Trips			VMT		
Results	Raw	Net	Reduction %	Raw	Net	Reduction %
Daily	7,271	6,075	16%	27,319	23,041	16%
AM Peak Hour	836	636	24%	3,277	2,542	22%
PM Peak Hour	660	504	24%	2,582	2,009	22%

NOTE: External trips are attributed half to project site uses,
internal trips all to site uses for purposes of VMT allocation.
NHB Trips by households that start and end outside the site are not included.

MODEL APPLICATION - TRIP ENDS ASSOCIATED WITH HOUSES IN THE PROJECT ONLY

	Daily				AM Peak Hour				PM Peak Hour			
	HBW	HBO	NHB	Total	HBW	HBO	NHB	Total	HBW	HBO	NHB	Total
Number of "Raw" ITE Trips Subject to Model												
Productions	551	1475	0	2025	85	83	0	167	75	126	0	201
Attractions	0	267	148	415	0	15	3	17	0	23	16	39
Total	551	1741	148	2440	85	97	3	185	75	149	16	240
Predicted Probabilities:												
Productions												
Internal Capture	6.11%	5.17%	4.81%	7.08%	8.42%	7.00%	6.50%	12.19%	11.87%	9.87%	9.15%	12.60%
Walking External	4.95%	10.45%	1.75%	7.13%	6.54%	13.80%	1.77%	7.08%	4.95%	10.45%	1.75%	6.73%
Transit External	2.29%	3.77%	5.52%	3.90%	3.25%	8.11%	11.86%	7.64%	3.54%	7.55%	11.03%	7.21%
Attractions												
Internal Capture	6.11%	5.17%	4.81%	4.14%	8.42%	7.00%	6.50%	5.09%	11.87%	9.87%	9.15%	8.29%
Walking External	4.95%	10.45%	1.75%	8.36%	6.54%	13.80%	1.77%	11.25%	4.95%	10.45%	1.75%	8.09%
Transit External	2.29%	3.77%	5.52%	3.93%	3.25%	8.11%	11.86%	8.01%	3.54%	7.55%	11.03%	7.74%
Total												
Internal Capture	0.00%	5.17%	0.00%	3.69%	0.00%	6.16%	0.00%	3.25%	0.00%	9.39%	0.00%	5.84%
Walking External	4.95%	10.45%	1.75%	8.62%	6.54%	13.80%	1.77%	10.19%	4.95%	10.45%	1.75%	8.02%
Transit External	2.29%	3.77%	5.52%	3.54%	3.25%	8.11%	11.86%	5.86%	3.54%	7.55%	11.03%	6.47%
Number of Trips:												
Productions												
Internal Capture	0	45	0	45	0	3	0	3	0	7	0	7
Walking External	27	149	0	177	6	11	0	17	4	12	0	16
Transit External	13	54	0	67	3	6	0	9	3	9	0	12
Attractions												
Internal Capture	0	45	0	45	0	3	0	3	0	7	0	7
Walking External	0	23	3	26	0	2	0	2	0	2	0	2
Transit External	0	8	8	17	0	1	0	1	0	1	2	3
Total												
Internal Capture	0	90	0	90	0	6	0	6	0	14	0	14
Walking External	27	173	3	202	6	13	0	18	4	14	0	18
Transit External	13	62	8	83	3	7	0	10	3	10	2	15
Internal Capture including Site Specific Internal	0	90	0	90	0	6	0	6	0	14	0	14
NHB trips occuring outside the project			503				8				46	
Non-XX NHB trips based on MXD model			24				1				4	
NHB trips still occuring outside the project			479				7				42	
Net Number of IXXI Vehicle Trips generated by Project Residences	**511**	**1416**	**137**	**2064**	**76**	**71**	**2**	**150**	**68**	**111**	**14**	**193**

	External Vehicle Trips			VMT			VMT Per Household	
Results	Raw	Net	Reduction %	Raw	Net	Reduction %	Raw	Net
Daily	2,440	2,064	15%	22,968	20,187	12%	91.9	80.7
AM Peak Hour	185	150	19%	1,807	1,526	16%	7.2	6.1
PM Peak Hour	240	193	19%	2,366	2,008	15%	9.5	8.0

NOTE: all trips generated by project households (either produced or attracted or both)
are counted 100%. This cannot be compared directly to the VMT in the section above.

MIXED USE TRIP GENERATION MODEL - BASIC INPUT

All shaded cells are inputs
Regular inputs (project-specific)
Inputs that may depend on regional values from census data, travel demand model, etc…
Treat like other inputs, but please send values and source to Mackenzie Watten so that a library of values can be compiled in future versions!

Section 1 - General Site Information

Site Name	Euclid Avenue Corrido	int/sq mi	99
	Future Conditions with LU Updates		

Geographic — **Notes / Instructions**

Developed Area (in acres)	25.96	Include streets, ROW, parking lots, pocket parks. Do not include open space, vacant lots.
Number of Intersections	4	Count intersections either within or on the perimeter of the MXD. Check resulting intersections per square mile in blue above
Is Transit (bus or rail) present within the site or across the street	Yes	Note: This is only used as a way to zero out the probability of external trips if no transit is present.
Proportion of households within 1/4 mile of a transit sto	100%	Enter as a percentage

Land Use - Surrounding Area

Is the site in a Central Business District and/or TOD?	No	Answering "Yes" will reduce the HBO and NHB purpose splits for retail use to those found in smaller stores. The nature of the stores (large vs. small) should be the primary factor in the selection here.
Employment within one mile of the MXD	5,000	Do not include employment within the MXD itself
Employment within a 30 minute Transit Trip (Door-to-door)	100,000	Include employment within the MXD itself
Total Regional Employment	1,752,630	Employment at MPO or similar level

Site Demographics

Enter Population Directly?	No	If "No", will apply average HH size factors (immediately below) to dwelling unit totals in section 2
Population		You do not need to enter population here. It will be calculated based on dwelling units below and average HH sizes.

Average HH Size by type within MXD

Single Family	3.2	These HH size inputs by dwelling type are used to calculate population if it is not entered above, and are also used for average HH size if block group average HH size option is "No" below
Multi-Family	2.5	
Townhouse	2.5	
High Rise Condo	2.5	
Average Vehicles Owned per Dwelling Unit within sit	2.70	

Use Surrounding Area (Block Group) Demographics for On-Site Average HH Size	Yes	If no project-specific information exists, can use block group average HH size (see belo
Use Surrounding Area (Block Group) Demographics for On-Site Average Veh Owr	Yes	If no project-specific information exists, can use block group average veh owned (see belo

Surrounding Area (Block Group) Demographics

Average HH size near Site	3.42	See http://factfinder2.census.gov/
Average Vehicles Owned per Dwelling Unit near Site	1.72	See http://factfinder2.census.gov/

Section 2 - Trip Generation

			Trip Equation Method			Trips			NHB Trips Outside of Project		
	Quantity	Units	Daily	AM Peak Hour	PM Peak Hour	Daily	AM Peak Hour	PM Peak Hour	Daily	AM Peak Hour	PM Peak Hour
Number of Dwelling Units											
Single Family	300	DU	Log Equation	Linear Equation	Log Equation	2,886	220	282	604	9	56
Multi-Family	200	DU	Linear Equation	Linear Equation	Linear Equation	1,336	102	128	403	6	37
Townhouse		DU	Log Equation	Log Equation	Log Equation	0	0	0	0	0	0
High Rise Condo		DU	Linear Equation	Linear Equation	Linear Equation	0	0	0	0	0	0
Retail (note: if you use job units for retail, the spreadsheet will convert before applying trip rates, using the rate in section 2 which you can change)											
General Retail other than those listed below	80	ksf	Log Equation	Log Equation	Log Equation	5,874	136	516			
Supermarket		ksf	Average Rate	Average Rate	Average Rate	0	0	0			
Bank		ksf	Average Rate	Average Rate	Average Rate	0	0	0			
Health Club		ksf	Average Rate	Average Rate	Average Rate	0	0	0			
Restaurant (non-fast food)	20	ksf	Average Rate	Average Rate	Average Rate	2,543	216	197			
Fast-Food Restaurant		ksf	Average Rate	Average Rate	Average Rate	0	0	0			
Gas Station		ksf	Average Rate	Average Rate	Average Rate	0	0	0			
Auto Repair		ksf	Average Rate	Average Rate	Average Rate	0	0	0			
Home Improvement Superstore		ksf	Average Rate	Average Rate	Average Rate	0	0	0			
Free-Standing Discount		ksf	Average Rate	Average Rate	Average Rate	0	0	0			
Office											
Non-Medical		ksf	Log Equation	Log Equation	Linear Equation	0	0	0			
Medical		ksf	Average Rate	Average Rate	Average Rate	0	0	0			
Industrial											
Light Industrial	0	ksf	Average Rate	Average Rate	Average Rate	0	0	0			
Manufacturing	0	ksf	Average Rate	Average Rate	Average Rate	0	0	0			
Warehousing / Self-Storage	0	ksf	Average Rate	Average Rate	Average Rate	0	0	0			
Hotel (including restaurant, facilities, etc…)		Rooms	Average Rate	Average Rate	Average Rate	0	0	0			
Motel		Rooms	Average Rate	Average Rate	Average Rate	0	0	0			
Movie Theater (Theater with Matinee)			Average Rate	Average Rate	Average Rate	0	0	0			
Movie Theater (Multiplex)		Screens	Average Rate	Average Rate	Average Rate	0	0	0			
School											
University		Students	Linear Equation	Average Rate	Average Rate	0	0	0			
High School	835	Students	Average Rate	Average Rate	Average Rate	1,428	359	109			
Middle School		Students	Average Rate	Average Rate	Average Rate	0	0	0			
Elementary	500	Students	Average Rate	Average Rate	Average Rate	645	225	75			

Trips from Land uses not covered above ==>

Daily	
AM Peak Hour	
PM Peak Hour	
Jobs in those Land Uses	0

	Daily	AM Peak Hour	PM Peak Hour
Total "Raw" ITE Trips	**14,711**	**1,258**	**1,307**

MIXED USE TRIP GENERATION MODEL - ADVANCED OUTPUT

MODEL APPLICATION - ALL TRIPS

	Daily				AM Peak Hour				PM Peak Hour			
	HBW	HBO	NHB	Total	HBW	HBO	NHB	Total	HBW	HBO	NHB	Total
Number of "Raw" ITE Trips Subject to Model												
Productions	952	2551	1455	4959	148	144	91	382	128	216	136	480
Attractions	1046	6994	1712	9752	157	623	96	875	118	546	164	827
Total	1999	9546	3167	14711	305	766	187	1258	245	761	300	1307
Predicted Probabilities:												
Productions												
Internal Capture	6.11%	5.18%	5.41%	7.95%	9.03%	7.66%	8.04%	13.34%	17.95%	15.22%	15.97%	21.68%
Walking External	4.96%	12.73%	2.18%	8.05%	6.54%	16.80%	2.21%	9.00%	4.96%	12.73%	2.18%	7.40%
Transit External	2.29%	4.55%	5.52%	4.40%	3.25%	9.78%	11.86%	7.67%	3.54%	9.10%	11.03%	8.11%
Attractions												
Internal Capture	6.11%	5.18%	5.41%	4.04%	9.03%	7.66%	8.04%	5.83%	17.95%	15.22%	15.97%	12.58%
Walking External	4.96%	12.73%	2.18%	10.08%	6.54%	16.80%	2.21%	13.47%	4.96%	12.73%	2.18%	9.66%
Transit External	2.29%	4.55%	5.52%	4.48%	3.25%	9.78%	11.86%	8.86%	3.54%	9.10%	11.03%	8.74%
Total												
Internal Capture	6.10%	5.18%	5.43%	5.36%	9.19%	7.57%	8.56%	8.11%	17.95%	15.23%	16.00%	15.92%
Walking External	4.96%	12.73%	2.18%	9.41%	6.54%	16.80%	2.21%	12.19%	4.96%	12.73%	2.18%	8.89%
Transit External	2.29%	4.55%	5.52%	4.45%	3.25%	9.78%	11.86%	8.52%	3.54%	9.10%	11.03%	8.52%
Number of Trips:												
Productions												
Internal Capture	61	247	86	394	14	29	8	51	22	58	24	104
Walking External	44	293	30	367	9	19	2	30	5	20	2	28
Transit External	20	105	76	201	4	11	10	25	4	14	12	30
Attractions												
Internal Capture	61	247	86	394	14	29	8	51	22	58	24	104
Walking External	49	859	35	943	9	100	2	111	5	62	3	70
Transit External	23	307	90	419	5	58	10	73	3	44	15	63
Total												
Internal Capture	122	494	172	788	28	58	16	102	44	116	48	208
Walking External	93	1152	65	1311	18	119	4	141	10	82	6	98
Transit External	43	412	165	620	9	69	20	98	7	59	28	94
Internal Capture including Site Specific Internal	122	494	172	788	28	58	16	102	44	116	48	208
Net Number of IXXI Vehicle Trips	**1741**	**7488**	**2764**	**11993**	**250**	**520**	**147**	**916**	**184**	**505**	**219**	**907**

	External Vehicle Trips			VMT		
Results	Raw	Net	Reduction %	Raw	Net	Reduction %
Daily	14,711	11,993	18%	55,004	45,406	17%
AM Peak Hour	1,258	916	27%	5,120	3,844	25%
PM Peak Hour	1,307	907	31%	5,101	3,639	29%

NOTE: External trips are attributed half to project site uses,
internal trips all to site uses for purposes of VMT allocation.
NHB Trips by households that start and end outside the site are not included.

MODEL APPLICATION - TRIP ENDS ASSOCIATED WITH HOUSES IN THE PROJECT ONLY

	Daily				AM Peak Hour				PM Peak Hour			
	HBW	HBO	NHB	Total	HBW	HBO	NHB	Total	HBW	HBO	NHB	Total
Number of "Raw" ITE Trips Subject to Model												
Productions	952	2551	0	3504	148	144	0	291	128	216	0	344
Attractions	0	461	256	717	0	26	4	30	0	39	28	67
Total	952	3012	256	4221	148	170	4	321	128	255	28	410
Predicted Probabilities:												
Productions												
Internal Capture	6.11%	5.18%	5.41%	7.95%	9.03%	7.66%	8.04%	13.34%	17.95%	15.22%	15.97%	21.68%
Walking External	4.96%	12.73%	2.18%	8.05%	6.54%	16.80%	2.21%	9.00%	4.96%	12.73%	2.18%	7.40%
Transit External	2.29%	4.55%	5.52%	4.40%	3.25%	9.78%	11.86%	7.67%	3.54%	9.10%	11.03%	8.11%
Attractions												
Internal Capture	6.11%	5.18%	5.41%	4.04%	9.03%	7.66%	8.04%	5.83%	17.95%	15.22%	15.97%	12.58%
Walking External	4.96%	12.73%	2.18%	10.08%	6.54%	16.80%	2.21%	13.47%	4.96%	12.73%	2.18%	9.66%
Transit External	2.29%	4.55%	5.52%	4.48%	3.25%	9.78%	11.86%	8.86%	3.54%	9.10%	11.03%	8.74%
Total												
Internal Capture	0.00%	5.18%	0.00%	3.70%	0.00%	7.08%	0.00%	3.73%	0.00%	14.90%	0.00%	9.27%
Walking External	4.96%	12.73%	2.18%	10.24%	6.54%	16.80%	2.21%	11.71%	4.96%	12.73%	2.18%	9.28%
Transit External	2.29%	4.55%	5.52%	4.08%	3.25%	9.78%	11.86%	6.69%	3.54%	9.10%	11.03%	7.33%
Number of Trips:												
Productions												
Internal Capture	0	78	0	78	0	6	0	6	0	19	0	19
Walking External	47	315	0	362	10	23	0	33	6	25	0	31
Transit External	22	112	0	134	5	13	0	18	5	18	0	22
Attractions												
Internal Capture	0	78	0	78	0	6	0	6	0	19	0	19
Walking External	0	49	6	54	0	3	0	3	0	3	1	3
Transit External	0	17	14	32	0	2	1	2	0	2	3	5
Total												
Internal Capture	0	156	0	156	0	12	0	12	0	38	0	38
Walking External	47	364	6	416	10	26	0	36	6	28	1	35
Transit External	22	130	14	166	5	15	1	21	5	20	3	27
Internal Capture including Site Specific Internal	0	156	0	156	0	12	0	12	0	38	0	38
NHB trips occuring outside the project			1007				16				93	
Non-XX NHB trips based on MXD model			54				1				15	
NHB trips still occuring outside the project			952				15				78	
Net Number of IXXI Vehicle Trips generated by Project Residences	**883**	**2363**	**237**	**3483**	**133**	**116**	**4**	**253**	**117**	**170**	**24**	**310**

	External Vehicle Trips			VMT			VMT Per Household	
Results	Raw	Net	Reduction %	Raw	Net	Reduction %	Raw	Net
Daily	4,221	3,483	17%	40,652	35,216	13%	81.3	70.4
AM Peak Hour	321	253	21%	3,158	2,612	17%	6.3	5.2
PM Peak Hour	410	310	24%	4,139	3,374	18%	8.3	6.7

NOTE: all trips generated by project households (either produced or attracted or both)
are counted 100%. This cannot be compared directly to the VMT in the section above.

Existing Transit Daily Boardings and Alightings Summary

Transit Stop	Route	Boardings	Alightings	Total
Euclid Avenue & Guymon Street	916/917	6	7	69
	955	28	28	
Euclid Avenue & Hilltop Drive	916/917	12	8	146
	955	59	67	
Euclid Avenue & Federal Boulevard	916/917	57	35	451
	955	179	180	
Euclid Trolley Station	Orange Line Trolley	2,576	2,732	12,705
	3	358	448	
	4	418	347	
	5	566	457	
	13	1,048	970	
	916	171	66	
	917	113	257	
	955	1,068	969	
	960	82	59	
Total		**6,741**	**6,630**	**13,371**

Source: SANDAG Assistance to Transit Operations and Planning Program, 2010

APPENDIX F: INTERSECTION LEVEL OF SERVICE WORKSHEETS & SIGNAL WARRANTS

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (vph)	136	206	929	745	0	1162
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	1.00	0.95	1.00		0.95
Frt	1.00	0.85	1.00	0.85		1.00
Flt Protected	0.95	1.00	1.00	1.00		1.00
Satd. Flow (prot)	1770	1583	3539	1583		3539
Flt Permitted	0.95	1.00	1.00	1.00		1.00
Satd. Flow (perm)	1770	1583	3539	1583		3539
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	148	224	1010	810	0	1263
RTOR Reduction (vph)	0	137	0	175	0	0
Lane Group Flow (vph)	148	87	1010	635	0	1263
Turn Type	NA	Perm	NA	Perm		NA
Protected Phases	8		2			6
Permitted Phases		8		2		
Actuated Green, G (s)	13.6	13.6	78.4	78.4		78.4
Effective Green, g (s)	13.6	13.6	78.4	78.4		78.4
Actuated g/C Ratio	0.14	0.14	0.78	0.78		0.78
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)	240	215	2774	1241		2774
v/s Ratio Prot	c0.08		0.29			0.36
v/s Ratio Perm		0.05		c0.40		
v/c Ratio	0.62	0.40	0.36	0.51		0.46
Uniform Delay, d1	40.7	39.5	3.3	3.9		3.6
Progression Factor	1.00	1.00	0.69	0.14		1.00
Incremental Delay, d2	4.7	1.2	0.3	1.2		0.5
Delay (s)	45.4	40.7	2.5	1.8		4.2
Level of Service	D	D	A	A		A
Approach Delay (s)	42.6		2.2			4.2
Approach LOS	D		A			A

Intersection Summary			
HCM 2000 Control Delay	7.3	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.53		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	49.5%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (vph)	495	388	1062	160	120	583
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	0.97	1.00	0.95		1.00	0.95
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)	3433	1583	3475		1770	3539
Flt Permitted	0.95	1.00	1.00		0.95	1.00
Satd. Flow (perm)	3433	1583	3475		1770	3539
Peak-hour factor, PHF	0.92	0.92	0.92	1.00	0.92	0.92
Adj. Flow (vph)	538	422	1154	160	130	634
RTOR Reduction (vph)	0	25	9	0	0	0
Lane Group Flow (vph)	538	397	1305	0	130	634
Turn Type	NA	pm+ov	NA		Prot	NA
Protected Phases	8	1	2		1	6
Permitted Phases		8				
Actuated Green, G (s)	20.4	33.1	54.9		12.7	71.6
Effective Green, g (s)	20.4	33.1	54.9		12.7	71.6
Actuated g/C Ratio	0.20	0.33	0.55		0.13	0.72
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)	700	587	1907		224	2533
v/s Ratio Prot	c0.16	c0.09	c0.38		0.07	0.18
v/s Ratio Perm		0.17				
v/c Ratio	0.77	0.68	0.68		0.58	0.25
Uniform Delay, d1	37.6	28.8	16.3		41.1	4.9
Progression Factor	1.00	1.00	1.00		1.09	0.82
Incremental Delay, d2	5.1	3.1	2.0		3.5	0.2
Delay (s)	42.7	31.9	18.3		48.2	4.3
Level of Service	D	C	B		D	A
Approach Delay (s)	37.9		18.3			11.7
Approach LOS	D		B			B

Intersection Summary			
HCM 2000 Control Delay	22.9	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.72		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	65.2%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

HCM Signalized Intersection Capacity Analysis
2: Euclid Ave & SR-94 EB Ramps

2/28/14

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (vph)	495	388	1062	160	120	583
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	0.97	1.00	0.95		1.00	0.95
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)	3433	1583	3475		1770	3539
Flt Permitted	0.95	1.00	1.00		0.95	1.00
Satd. Flow (perm)	3433	1583	3475		1770	3539
Peak-hour factor, PHF	0.92	0.92	0.92	1.00	0.92	0.92
Adj. Flow (vph)	538	422	1154	160	130	634
RTOR Reduction (vph)	0	300	11	0	0	0
Lane Group Flow (vph)	538	122	1303	0	130	634
Turn Type	NA	pm+ov	NA		Prot	NA
Protected Phases	8	1	2		1	6
Permitted Phases		8				
Actuated Green, G (s)	20.4	29.0	31.0		8.6	43.6
Effective Green, g (s)	20.4	29.0	31.0		8.6	43.6
Actuated g/C Ratio	0.20	0.29	0.31		0.09	0.44
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)	700	522	1077		152	1543
v/s Ratio Prot	c0.16	0.02	c0.37		c0.07	0.18
v/s Ratio Perm		0.06				
v/c Ratio	0.77	0.23	1.21		0.86	0.41
Uniform Delay, d1	37.6	27.0	34.5		45.1	19.4
Progression Factor	1.00	1.00	1.00		0.99	0.91
Incremental Delay, d2	5.1	0.2	103.2		32.9	0.8
Delay (s)	42.7	27.3	137.7		77.3	18.3
Level of Service	D	C	F		E	B
Approach Delay (s)	35.9		137.7			28.3
Approach LOS	D		F			C

Intersection Summary			
HCM 2000 Control Delay	78.0	HCM 2000 Level of Service	E
HCM 2000 Volume to Capacity ratio	0.72		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	65.2%	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)	37	25	62	49	19	29	116	998	46	68	803	97
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	
Lane Util. Factor	1.00	1.00			1.00		1.00	0.95		1.00	0.95	
Frpb, ped/bikes	1.00	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	1.00	
Frt	1.00	0.89			0.96		1.00	0.99		1.00	0.98	
Flt Protected	0.95	1.00			0.98		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1770	1664			1729		1770	3511		1769	3480	
Flt Permitted	0.69	1.00			0.79		0.21	1.00		0.21	1.00	
Satd. Flow (perm)	1287	1664			1407		393	3511		394	3480	
Peak-hour factor, PHF	0.92	0.92	0.92	0.96	0.92	0.96	0.92	0.96	0.96	0.96	0.96	0.92
Adj. Flow (vph)	40	27	67	51	21	30	126	1040	48	71	836	105
RTOR Reduction (vph)	0	53	0	0	24	0	0	4	0	0	13	0
Lane Group Flow (vph)	40	41	0	0	78	0	126	1084	0	71	928	0
Confl. Peds. (#/hr)				9		17			10	10		
Confl. Bikes (#/hr)						1						
Turn Type	Perm	NA		Perm	NA		pm+pt	NA		pm+pt	NA	
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)	9.5	9.5			8.6		22.0	19.0		20.6	18.5	
Effective Green, g (s)	9.5	9.5			8.6		22.0	20.4		21.4	19.9	
Actuated g/C Ratio	0.21	0.21			0.19		0.50	0.46		0.48	0.45	
Clearance Time (s)	4.0	4.0			4.9		4.0	5.4		4.4	5.4	
Vehicle Extension (s)	3.0	3.0			2.0		3.0	4.1		2.0	4.0	
Lane Grp Cap (vph)	275	356			272		287	1613		267	1559	
v/s Ratio Prot		0.02					c0.03	c0.31		0.01	0.27	
v/s Ratio Perm	0.03				c0.06		0.19			0.11		
v/c Ratio	0.15	0.12			0.29		0.44	0.67		0.27	0.60	
Uniform Delay, d1	14.2	14.1			15.3		6.6	9.4		6.8	9.2	
Progression Factor	1.00	1.00			1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	0.2	0.1			0.2		1.1	1.2		0.2	0.7	
Delay (s)	14.4	14.2			15.5		7.6	10.6		7.0	9.9	
Level of Service	B	B			B		A	B		A	A	
Approach Delay (s)		14.3			15.5			10.3			9.7	
Approach LOS		B			B			B			A	

Intersection Summary			
HCM 2000 Control Delay	10.5	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.55		
Actuated Cycle Length (s)	44.4	Sum of lost time (s)	12.9
Intersection Capacity Utilization	58.7%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (vph)	62	62	88	1222	686	152
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	
Frpb, ped/bikes	1.00		1.00	1.00	0.99	
Flpb, ped/bikes	1.00		0.99	1.00	1.00	
Frt	0.93		1.00	1.00	0.97	
Flt Protected	0.98		0.95	1.00	1.00	
Satd. Flow (prot)	1695		1758	3539	3416	
Flt Permitted	0.98		0.30	1.00	1.00	
Satd. Flow (perm)	1695		549	3539	3416	
Peak-hour factor, PHF	0.93	0.93	0.93	0.93	0.93	0.93
Adj. Flow (vph)	67	67	95	1314	738	163
RTOR Reduction (vph)	55	0	0	0	18	0
Lane Group Flow (vph)	79	0	95	1314	883	0
Confl. Peds. (#/hr)			23			23
Turn Type	NA		Perm	NA	NA	
Protected Phases	4			2	6	
Permitted Phases			2			
Actuated Green, G (s)	8.8		32.5	32.5	32.5	
Effective Green, g (s)	8.8		32.5	32.5	32.5	
Actuated g/C Ratio	0.18		0.66	0.66	0.66	
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)	302		361	2333	2251	
v/s Ratio Prot	c0.05			c0.37	0.26	
v/s Ratio Perm			0.17			
v/c Ratio	0.26		0.26	0.56	0.39	
Uniform Delay, d1	17.4		3.5	4.6	3.9	
Progression Factor	1.00		1.00	1.00	1.00	
Incremental Delay, d2	0.5		0.4	0.3	0.1	
Delay (s)	17.9		3.9	4.9	4.0	
Level of Service	B		A	A	A	
Approach Delay (s)	17.9			4.8	4.0	
Approach LOS	B			A	A	

Intersection Summary			
HCM 2000 Control Delay	5.2	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.50		
Actuated Cycle Length (s)	49.3	Sum of lost time (s)	8.0
Intersection Capacity Utilization	47.7%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (vph)	26	61	72	1227	731	61
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	
Frpb, ped/bikes	0.98		1.00	1.00	1.00	
Flpb, ped/bikes	1.00		1.00	1.00	1.00	
Frt	0.91		1.00	1.00	0.99	
Flt Protected	0.99		0.95	1.00	1.00	
Satd. Flow (prot)	1631		1770	3539	3485	
Flt Permitted	0.99		0.95	1.00	1.00	
Satd. Flow (perm)	1631		1770	3539	3485	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	28	66	78	1334	795	66
RTOR Reduction (vph)	56	0	0	0	8	0
Lane Group Flow (vph)	38	0	78	1334	853	0
Confl. Peds. (#/hr)	75	25	25			25
Confl. Bikes (#/hr)		1				1
Turn Type	NA		Prot	NA	NA	
Protected Phases	4		5	2	6	
Permitted Phases						
Actuated Green, G (s)	5.1		5.9	26.1	15.8	
Effective Green, g (s)	6.0		6.3	27.6	17.3	
Actuated g/C Ratio	0.14		0.15	0.66	0.42	
Clearance Time (s)	4.9		4.4	5.5	5.5	
Vehicle Extension (s)	2.0		2.0	4.1	3.6	
Lane Grp Cap (vph)	235		268	2347	1449	
v/s Ratio Prot	c0.02		0.04	c0.38	0.24	
v/s Ratio Perm						
v/c Ratio	0.16		0.29	0.57	0.59	
Uniform Delay, d1	15.6		15.7	3.8	9.4	
Progression Factor	1.00		1.00	1.00	1.00	
Incremental Delay, d2	0.1		0.2	0.4	0.7	
Delay (s)	15.7		15.9	4.2	10.1	
Level of Service	B		B	A	B	
Approach Delay (s)	15.7			4.8	10.1	
Approach LOS	B			A	B	

Intersection Summary			
HCM 2000 Control Delay	7.2	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.56		
Actuated Cycle Length (s)	41.6	Sum of lost time (s)	12.0
Intersection Capacity Utilization	54.9%	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)	42	87	127	151	328	311	302	664	133	151	703	81
Ideal Flow (vphpl)	1900	1900	1400	1400	1900	1900	1400	1400	1400	1900	1400	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		1.00	0.95		1.00	0.95		0.97	0.95	
Frt	1.00	0.91		1.00	0.93		1.00	0.97		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	3225		1304	3281		1304	2542		3433	2567	
Flt Permitted	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (perm)	1770	3225		1304	3281		1304	2542		3433	2567	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	46	95	138	164	357	338	328	722	145	164	764	88
RTOR Reduction (vph)	0	120	0	0	170	0	0	14	0	0	8	0
Lane Group Flow (vph)	46	113	0	164	525	0	328	853	0	164	844	0
Turn Type	Prot	NA		Prot	NA		Prot	NA		Prot	NA	
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases												
Actuated Green, G (s)	4.0	12.1		16.9	24.4		21.5	41.2		8.6	27.5	
Effective Green, g (s)	4.4	13.0		17.3	25.9		21.9	42.1		9.0	29.2	
Actuated g/C Ratio	0.05	0.13		0.18	0.27		0.22	0.43		0.09	0.30	
Clearance Time (s)	4.4	4.9		4.4	5.5		4.4	4.9		4.4	5.7	
Vehicle Extension (s)	2.0	3.2		2.0	4.5		2.0	5.3		2.0	5.0	
Lane Grp Cap (vph)	79	430		231	872		293	1098		317	769	
v/s Ratio Prot	c0.03	0.04		c0.13	c0.16		c0.25	0.34		0.05	c0.33	
v/s Ratio Perm												
v/c Ratio	0.58	0.26		0.71	0.60		1.12	0.78		0.52	1.10	
Uniform Delay, d1	45.6	37.9		37.7	31.3		37.8	23.6		42.1	34.1	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	6.9	0.4		7.9	1.6		88.7	4.2		0.6	62.6	
Delay (s)	52.5	38.3		45.6	32.8		126.4	27.9		42.7	96.7	
Level of Service	D	D		D	C		F	C		D	F	
Approach Delay (s)		40.6			35.2			54.9			87.9	
Approach LOS		D			D			D			F	

Intersection Summary			
HCM 2000 Control Delay	58.7	HCM 2000 Level of Service	E
HCM 2000 Volume to Capacity ratio	0.92		
Actuated Cycle Length (s)	97.4	Sum of lost time (s)	16.0
Intersection Capacity Utilization	88.3%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (vph)	186	168	1227	431	0	1652
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	1.00	0.95	1.00		0.95
Frt	1.00	0.85	1.00	0.85		1.00
Flt Protected	0.95	1.00	1.00	1.00		1.00
Satd. Flow (prot)	1770	1583	3539	1583		3539
Flt Permitted	0.95	1.00	1.00	1.00		1.00
Satd. Flow (perm)	1770	1583	3539	1583		3539
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	202	183	1334	468	0	1796
RTOR Reduction (vph)	0	73	0	115	0	0
Lane Group Flow (vph)	202	110	1334	353	0	1796
Turn Type	NA	Perm	NA	Perm		NA
Protected Phases	8		2			6
Permitted Phases		8		2		
Actuated Green, G (s)	16.5	16.5	75.5	75.5		75.5
Effective Green, g (s)	16.5	16.5	75.5	75.5		75.5
Actuated g/C Ratio	0.16	0.16	0.76	0.76		0.76
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)	292	261	2671	1195		2671
v/s Ratio Prot	c0.11		0.38			c0.51
v/s Ratio Perm		0.07		0.22		
v/c Ratio	0.69	0.42	0.50	0.30		0.67
Uniform Delay, d1	39.4	37.5	4.8	3.9		6.1
Progression Factor	1.00	1.00	0.85	0.57		1.00
Incremental Delay, d2	6.9	1.1	0.5	0.5		1.4
Delay (s)	46.3	38.6	4.6	2.7		7.5
Level of Service	D	D	A	A		A
Approach Delay (s)	42.6		4.1			7.5
Approach LOS	D		A			A

Intersection Summary			
HCM 2000 Control Delay	9.4	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.68		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	62.6%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (vph)	976	742	733	160	200	750
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	0.97	1.00	0.95		1.00	0.95
Frt	1.00	0.85	0.97		1.00	1.00
Flt Protected	0.95	1.00	1.00		0.95	1.00
Satd. Flow (prot)	3433	1583	3444		1770	3539
Flt Permitted	0.95	1.00	1.00		0.95	1.00
Satd. Flow (perm)	3433	1583	3444		1770	3539
Peak-hour factor, PHF	0.98	0.98	0.98	0.98	0.98	0.98
Adj. Flow (vph)	996	757	748	163	204	765
RTOR Reduction (vph)	0	19	17	0	0	0
Lane Group Flow (vph)	996	738	894	0	204	765
Turn Type	NA	pm+ov	NA		Prot	NA
Protected Phases	8	1	2		1	6
Permitted Phases		8				
Actuated Green, G (s)	32.0	51.1	36.9		19.1	60.0
Effective Green, g (s)	32.0	51.1	36.9		19.1	60.0
Actuated g/C Ratio	0.32	0.51	0.37		0.19	0.60
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)	1098	872	1270		338	2123
v/s Ratio Prot	c0.29	c0.16	c0.26		0.12	0.22
v/s Ratio Perm		0.30				
v/c Ratio	0.91	0.85	0.70		0.60	0.36
Uniform Delay, d1	32.6	21.1	26.9		37.0	10.2
Progression Factor	1.00	1.00	1.00		1.13	1.16
Incremental Delay, d2	10.7	7.6	3.3		2.3	0.4
Delay (s)	43.3	28.7	30.2		44.2	12.2
Level of Service	D	C	C		D	B
Approach Delay (s)	37.0		30.2			18.9
Approach LOS	D		C			B

Intersection Summary			
HCM 2000 Control Delay	30.5	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.83		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	78.0%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

HCM Signalized Intersection Capacity Analysis
2: Euclid Ave & SR-94 EB Ramps

2/28/14

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (vph)	976	742	733	160	200	750
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	0.97	1.00	0.95		1.00	0.95
Frt	1.00	0.85	0.97		1.00	1.00
Flt Protected	0.95	1.00	1.00		0.95	1.00
Satd. Flow (prot)	3433	1583	3444		1770	3539
Flt Permitted	0.95	1.00	1.00		0.95	1.00
Satd. Flow (perm)	3433	1583	3444		1770	3539
Peak-hour factor, PHF	0.98	0.98	0.98	0.98	0.98	0.98
Adj. Flow (vph)	996	757	748	163	204	765
RTOR Reduction (vph)	0	355	18	0	0	0
Lane Group Flow (vph)	996	402	893	0	204	765
Turn Type	NA	pm+ov	NA		Prot	NA
Protected Phases	8	1	2		1	6
Permitted Phases		8				
Actuated Green, G (s)	28.0	37.0	23.0		9.0	36.0
Effective Green, g (s)	28.0	37.0	23.0		9.0	36.0
Actuated g/C Ratio	0.28	0.37	0.23		0.09	0.36
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)	961	649	792		159	1274
v/s Ratio Prot	c0.29	0.06	c0.26		c0.12	0.22
v/s Ratio Perm		0.20				
v/c Ratio	1.04	0.62	1.13		1.28	0.60
Uniform Delay, d1	36.0	25.8	38.5		45.5	26.1
Progression Factor	1.00	1.00	1.00		1.06	1.09
Incremental Delay, d2	38.9	1.8	72.9		158.3	1.6
Delay (s)	74.9	27.5	111.4		206.7	30.1
Level of Service	E	C	F		F	C
Approach Delay (s)	54.4		111.4			67.3
Approach LOS	D		F			E

Intersection Summary			
HCM 2000 Control Delay	72.1	HCM 2000 Level of Service	E
HCM 2000 Volume to Capacity ratio	0.79		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	78.0%	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)	48	24	48	43	22	43	103	864	62	168	1514	187
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	4.0		4.0	4.0	
Lane Util. Factor	1.00	1.00			1.00		1.00	0.95		1.00	0.95	
Frpb, ped/bikes	1.00	1.00			0.98		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	
Frt	1.00	0.90			0.95		1.00	0.99		1.00	0.98	
Flt Protected	0.95	1.00			0.98		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1770	1675			1686		1770	3493		1768	3482	
Flt Permitted	0.70	1.00			0.84		0.11	1.00		0.22	1.00	
Satd. Flow (perm)	1310	1675			1439		197	3493		408	3482	
Peak-hour factor, PHF	0.98	0.98	0.98	0.96	0.98	0.96	0.98	0.96	0.96	0.96	0.96	0.98
Adj. Flow (vph)	49	24	49	45	22	45	105	900	65	175	1577	191
RTOR Reduction (vph)	0	43	0	0	31	0	0	5	0	0	8	0
Lane Group Flow (vph)	49	30	0	0	81	0	105	960	0	175	1760	0
Confl. Peds. (#/hr)				16		30			11	11		
Confl. Bikes (#/hr)						4			2			
Turn Type	Perm	NA		Perm	NA		pm+pt	NA		pm+pt	NA	
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)	8.5	8.5			8.5		41.2	37.8		48.7	41.5	
Effective Green, g (s)	8.5	8.5			8.5		41.2	39.2		49.5	42.9	
Actuated g/C Ratio	0.13	0.13			0.13		0.61	0.58		0.73	0.63	
Clearance Time (s)	4.5	4.5			4.5		4.5	5.4		4.4	5.4	
Vehicle Extension (s)	3.0	3.0			3.0		3.0	4.1		2.0	4.0	
Lane Grp Cap (vph)	164	209			180		198	2019		450	2203	
v/s Ratio Prot		0.02					0.03	0.27		c0.04	c0.51	
v/s Ratio Perm	0.04				c0.06		0.29			0.24		
v/c Ratio	0.30	0.14			0.45		0.53	0.48		0.39	0.80	
Uniform Delay, d1	26.9	26.4			27.5		9.2	8.3		4.0	9.2	
Progression Factor	1.00	1.00			1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	1.0	0.3			1.8		2.7	0.3		0.2	2.2	
Delay (s)	28.0	26.7			29.2		11.9	8.6		4.2	11.5	
Level of Service	C	C			C		B	A		A	B	
Approach Delay (s)		27.2			29.2			8.9			10.8	
Approach LOS		C			C			A			B	

Intersection Summary			
HCM 2000 Control Delay	11.4	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.73		
Actuated Cycle Length (s)	67.8	Sum of lost time (s)	13.0
Intersection Capacity Utilization	81.1%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (vph)	60	60	39	1130	1357	184
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	
Frpb, ped/bikes	1.00		1.00	1.00	1.00	
Flpb, ped/bikes	1.00		1.00	1.00	1.00	
Frt	0.93		1.00	1.00	0.98	
Flt Protected	0.98		0.95	1.00	1.00	
Satd. Flow (prot)	1695		1768	3539	3460	
Flt Permitted	0.98		0.10	1.00	1.00	
Satd. Flow (perm)	1695		185	3539	3460	
Peak-hour factor, PHF	0.91	0.91	0.91	0.91	0.91	0.91
Adj. Flow (vph)	66	66	43	1242	1491	202
RTOR Reduction (vph)	18	0	0	0	8	0
Lane Group Flow (vph)	114	0	43	1242	1685	0
Confl. Peds. (#/hr)			12			12
Confl. Bikes (#/hr)						4
Turn Type	NA		Perm	NA	NA	
Protected Phases	4			2	6	
Permitted Phases			2			
Actuated Green, G (s)	10.2		46.0	46.0	46.0	
Effective Green, g (s)	10.2		46.0	46.0	46.0	
Actuated g/C Ratio	0.16		0.72	0.72	0.72	
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)	269		132	2535	2479	
v/s Ratio Prot	c0.07			0.35	c0.49	
v/s Ratio Perm			0.23			
v/c Ratio	0.43		0.33	0.49	0.68	
Uniform Delay, d1	24.4		3.4	4.0	5.0	
Progression Factor	1.00		1.00	1.00	1.00	
Incremental Delay, d2	1.1		1.4	0.1	0.8	
Delay (s)	25.4		4.8	4.1	5.8	
Level of Service	C		A	A	A	
Approach Delay (s)	25.4			4.1	5.8	
Approach LOS	C			A	A	

Intersection Summary			
HCM 2000 Control Delay	5.9	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.63		
Actuated Cycle Length (s)	64.2	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						
Volume (vph)	40	29	37	1081	1405	50
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	
Frpb, ped/bikes	0.99		1.00	1.00	1.00	
Flpb, ped/bikes	1.00		1.00	1.00	1.00	
Frt	0.94		1.00	1.00	0.99	
Flt Protected	0.97		0.95	1.00	1.00	
Satd. Flow (prot)	1698		1770	3539	3511	
Flt Permitted	0.97		0.95	1.00	1.00	
Satd. Flow (perm)	1698		1770	3539	3511	
Peak-hour factor, PHF	0.96	0.96	0.96	0.96	0.96	0.96
Adj. Flow (vph)	42	30	39	1126	1464	52
RTOR Reduction (vph)	26	0	0	0	3	0
Lane Group Flow (vph)	46	0	39	1126	1513	0
Confl. Peds. (#/hr)	5	3	39			39
Turn Type	NA		Prot	NA	NA	
Protected Phases	4		5	2	6	
Permitted Phases						
Actuated Green, G (s)	5.5		4.8	38.1	28.9	
Effective Green, g (s)	6.4		5.2	39.6	30.4	
Actuated g/C Ratio	0.12		0.10	0.73	0.56	
Clearance Time (s)	4.9		4.4	5.5	5.5	
Vehicle Extension (s)	2.0		2.0	4.1	3.6	
Lane Grp Cap (vph)	201		170	2595	1976	
v/s Ratio Prot	c0.03		0.02	c0.32	c0.43	
v/s Ratio Perm						
v/c Ratio	0.23		0.23	0.43	0.77	
Uniform Delay, d1	21.6		22.5	2.8	9.1	
Progression Factor	1.00		1.00	1.00	1.00	
Incremental Delay, d2	0.2		0.3	0.2	1.9	
Delay (s)	21.8		22.8	3.0	11.0	
Level of Service	C		C	A	B	
Approach Delay (s)	21.8			3.6	11.0	
Approach LOS	C			A	B	

Intersection Summary			
HCM 2000 Control Delay	8.1	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.66		
Actuated Cycle Length (s)	54.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	52.8%	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)	101	349	256	164	139	315	199	633	173	259	1038	65
Ideal Flow (vphpl)	1900	1900	1400	1400	1900	1900	1400	1400	1400	1900	1400	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		1.00	0.95		1.00	0.95		0.97	0.95	
Frt	1.00	0.94		1.00	0.90		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	3315		1304	3171		1304	2524		3433	2585	
Flt Permitted	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (perm)	1770	3315		1304	3171		1304	2524		3433	2585	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	110	379	278	178	151	342	216	688	188	282	1128	71
RTOR Reduction (vph)	0	90	0	0	257	0	0	16	0	0	3	0
Lane Group Flow (vph)	110	567	0	178	236	0	216	860	0	282	1196	0
Turn Type	Prot	NA		Prot	NA		Prot	NA		Prot	NA	
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases												
Actuated Green, G (s)	13.1	28.5		17.6	32.4		21.6	68.3		14.6	60.5	
Effective Green, g (s)	13.5	29.4		18.0	33.9		22.0	69.2		15.0	62.2	
Actuated g/C Ratio	0.09	0.20		0.12	0.23		0.15	0.47		0.10	0.42	
Clearance Time (s)	4.4	4.9		4.4	5.5		4.4	4.9		4.4	5.7	
Vehicle Extension (s)	2.0	3.2		2.0	4.5		2.0	5.3		2.0	5.0	
Lane Grp Cap (vph)	161	660		159	728		194	1183		348	1089	
v/s Ratio Prot	0.06	c0.17		c0.14	0.07		c0.17	0.34		0.08	c0.46	
v/s Ratio Perm												
v/c Ratio	0.68	0.86		1.12	0.32		1.11	0.73		0.81	1.10	
Uniform Delay, d1	65.0	57.1		64.8	47.3		62.8	31.6		64.9	42.7	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	9.2	10.8		107.0	0.5		98.3	2.9		12.7	58.3	
Delay (s)	74.1	67.9		171.8	47.8		161.1	34.5		77.6	101.0	
Level of Service	E	E		F	D		F	C		E	F	
Approach Delay (s)		68.8			80.7			59.5			96.5	
Approach LOS		E			F			E			F	

Intersection Summary			
HCM 2000 Control Delay	78.5	HCM 2000 Level of Service	E
HCM 2000 Volume to Capacity ratio	1.05		
Actuated Cycle Length (s)	147.6	Sum of lost time (s)	16.0
Intersection Capacity Utilization	100.2%	ICU Level of Service	G
Analysis Period (min)	15		
c Critical Lane Group			

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Sheet No 1 of 2

Project: Euclid Ave Corridor Master Plan

Major Street: Euclid Avenue
Minor Street: Lise Avenue

Scenario: FutureVolumes Under Buildout of Preferred Plan
Peak Hour: AM

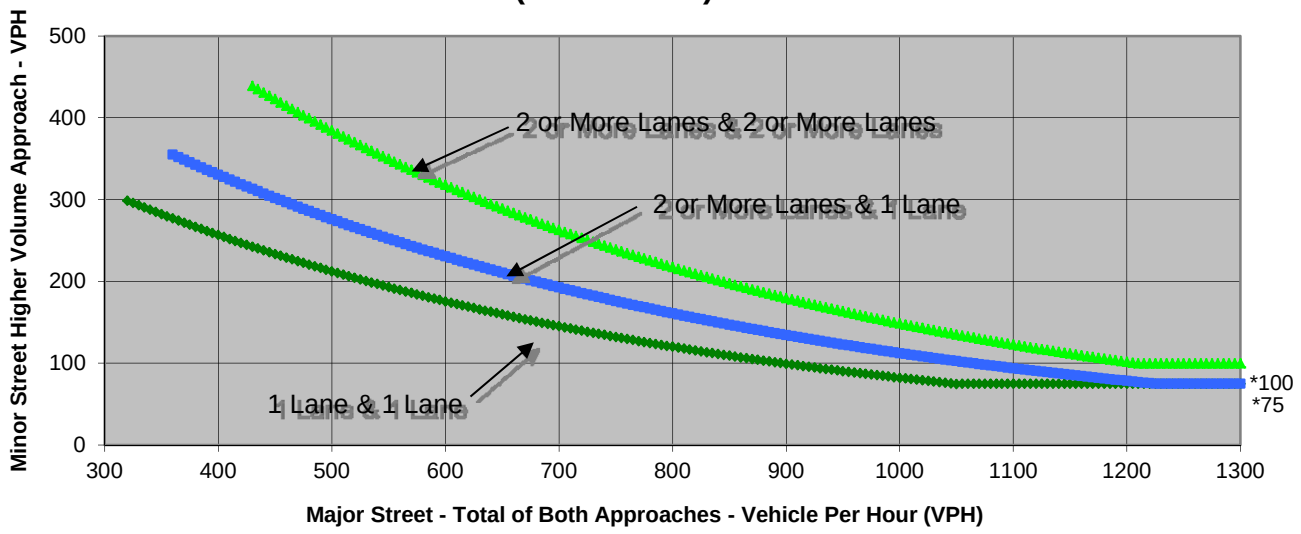
Turn Movement Volumes

	NB	SB	EB	WB
Left	88	0	62	0
Through	1,222	686	0	0
Right	0	152	62	0
Total	1,310	838	124	0

Major Street Direction

X	North/South
	East/West

Figure 4C-4
Warrant 3, Peak Hour (70% Factor)
(Rural Areas)



* Note: 100 VPH APPLIES AS THE LOWER THRESHOLD VOLUME FOR A MINOR STREET APPROACH WITH TWO OR MORE LANES AND 75 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

	Major Street Euclid Avenue	Minor Street Lise Avenue	Warrant Met
Number of Approach Lanes	2	1	YES
Traffic Volume (VPH) *	2,148	124	

* Note: Traffic Volume for Major Street is Total Volume of Both Approches.
Traffic Volume for Minor Street is the Volume of High Volume Approach.

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Sheet No 2 of 2

Project: Euclid Ave Corridor Master Plan

Major Street: Euclid Avenue
Minor Street: Lise Avenue

Scenario: FutureVolumes Under Buildout of Preferred Plan
Peak Hour: PM

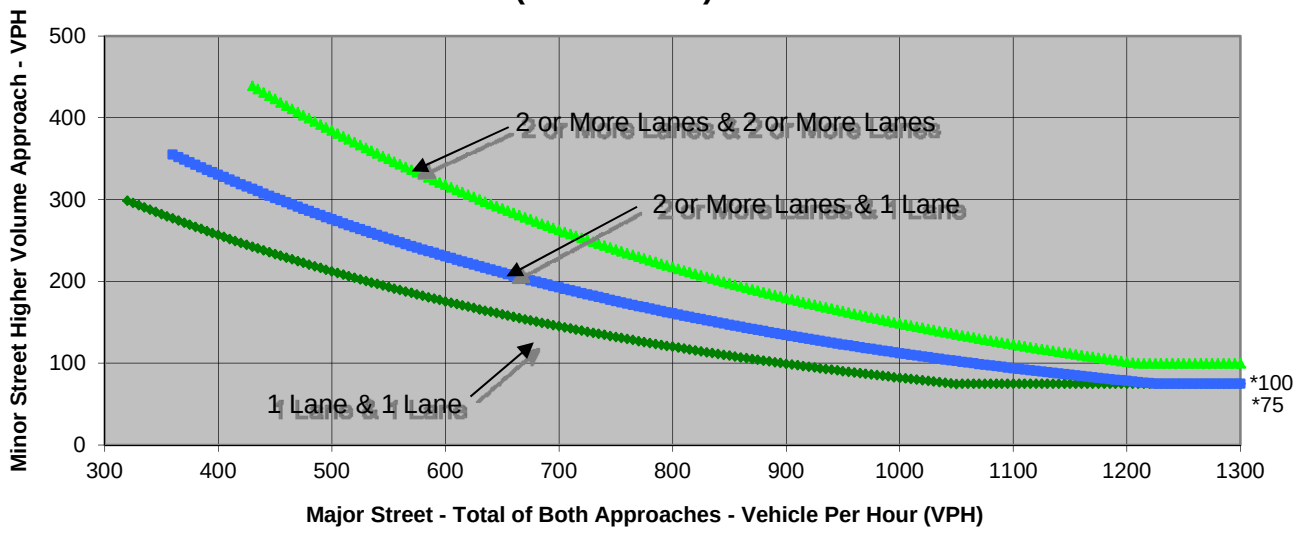
Turn Movement Volumes

	NB	SB	EB	WB
Left	39	0	60	0
Through	1,130	1,357	0	0
Right	0	184	60	0
Total	1,169	1,541	120	0

Major Street Direction

X	North/South
	East/West

Figure 4C-4
Warrant 3, Peak Hour (70% Factor)
(Rural Areas)



* Note: 100 VPH APPLIES AS THE LOWER THRESHOLD VOLUME FOR A MINOR STREET APPROACH WITH TWO OR MORE LANES AND 75 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

	Major Street Euclid Avenue	Minor Street Lise Avenue	Warrant Met
Number of Approach Lanes	2	1	YES
Traffic Volume (VPH) *	2,710	120	

* Note: Traffic Volume for Major Street is Total Volume of Both Approches.
Traffic Volume for Minor Street is the Volume of High Volume Approach.

APPENDIX G: TRANSIT LEVEL OF SERVICE WORKSHEETS

C. Compute Transit LOS

Street: Euclid Ave

1. Input Data

Segment	Bus Stops (#)	Transit Frequency (bus/hr)	On-Time Performance (%)	Stops with Shelter (%)	Stops with Bench (%)	Pk Load Factor (p/seat)	Central Business District
1	1	6	82%	100%	100%	0.71	No
2	0	6	82%	0%	0%	0.71	No
3	1	6	82%	100%	100%	0.78	No
4	0	6	82%	0%	0%	0.78	No
5	0	6	82%	0%	0%	0.78	No
6	0	6	82%	0%	0%	0.78	No

Population 5 million or more: No

2. Compute Average Transit Travel Speed

Segment	Segment Length (ft)	Transit Running Speed (mph)	Accel Decel Delay (sec)	Passenger Service Delay (sec)	Re-entry Delay (sec)	Total Stop Delay (sec)	Transit Running Time (sec)	Delay at Intrsctn (sec)	Transit Travel Speed (mph)
1	719	20.9	5.1	13.2	5.0	23.3	46.7	8.2	8.9
2	502	24.5	9.0	0.0	0.0	9.0	13.9	5.7	17.4
3	469	10.9	1.8	9.2	5.0	16.0	45.4	5.3	6.3
4	704	21.1	7.7	0.0	0.0	7.7	22.8	8.0	15.6
5	617	27.4	10.1	0.0	0.0	10.1	15.3	7.0	18.8
6	948	33.6	12.3	0.0	0.0	12.3	19.3	10.8	21.5
Total/Avg	3959								13.0

3. Compute Transit Level of Service

Segment	Headway Factor	Perceived Trvl Time Factor	Transit Wait-Ride Score	Pedestrian Link LOS Score	Transit LOS Score	Transit LOS
1	3.1498	0.8151	2.5675	1.84	2.43	B
2	3.1498	0.9979	3.1433	1.79	1.55	A
3	3.1498	0.7187	2.2638	1.50	2.83	C
4	3.1498	0.9605	3.0252	2.03	1.77	A
5	3.1498	1.0248	3.2280	3.01	1.61	A
6	3.1498	1.0716	3.3752	2.12	1.25	A
Average					1.84	A

C. Compute Transit LOS

Street: Euclid Ave

1. Input Data

Segment	Bus Stops (#)	Transit Frequency (bus/hr)	On-Time Performance (%)	Stops with Shelter (%)	Stops with Bench (%)	Pk Load Factor (p/seat)	Central Business District
1	1	5	86%	100%	100%	0.66	No
2	0	5	86%	0%	0%	0.66	No
3	1	5	86%	100%	100%	0.76	No
4	0	5	86%	0%	0%	0.76	No
5	1	5	86%	100%	100%	0.77	No
6	0	5	86%	0%	0%	0.77	No

Population 5 million or more: No

2. Compute Average Transit Travel Speed

Segment	Segment Length (ft)	Transit Running Speed (mph)	Accel Decel Delay (sec)	Passenger Service Delay (sec)	Re-entry Delay (sec)	Total Stop Delay (sec)	Transit Running Time (sec)	Delay at Intrsctn (sec)	Transit Travel Speed (mph)
1	742	21.7	7.9	20.0	5.0	32.9	56.3	8.4	7.8
2	888	32.8	12.0	0.0	0.0	12.0	18.5	10.1	21.2
3	700	20.3	3.4	9.0	5.0	17.4	40.8	8.0	9.8
4	466	23.5	8.6	0.0	0.0	8.6	13.5	5.3	16.9
5	500	12.4	1.9	8.4	5.0	15.3	42.9	5.7	7.0
6	671	28.7	3.2	0.0	0.0	3.2	15.9	7.6	19.4
Total/Avg	3967								11.6

3. Compute Transit Level of Service

Segment	Headway Factor	Perceived Trvl Time Factor	Transit Wait-Ride Score	Pedestrian Link LOS Score	Transit LOS Score	Transit LOS
1	3.0028	0.7840	2.3543	3.58	3.01	C
2	3.0028	1.0956	3.2898	2.63	1.46	A
3	3.0028	0.8559	2.5701	2.09	2.46	B
4	3.0028	1.0102	3.0335	1.79	1.72	A
5	3.0028	0.7532	2.2619	1.80	2.88	C
6	3.0028	1.0620	3.1890	2.09	1.53	A
Average					2.15	B

C. Compute Transit LOS

Street: Euclid Ave

1. Input Data

Segment	Bus Stops (#)	Transit Frequency (bus/hr)	On-Time Performance (%)	Stops with Shelter (%)	Stops with Bench (%)	Pk Load Factor (p/seat)	Central Business District
1	1	6	82%	100%	100%	0.71	No
2	0	6	82%	0%	0%	0.71	No
3	1	6	82%	100%	100%	0.78	No
4	0	6	82%	0%	0%	0.78	No
5	0	6	82%	0%	0%	0.78	No
6	0	6	82%	0%	0%	0.78	No

Population 5 million or more: No

2. Compute Average Transit Travel Speed

Segment	Segment Length (ft)	Transit Running Speed (mph)	Accel Decel Delay (sec)	Passenger Service Delay (sec)	Re-entry Delay (sec)	Total Stop Delay (sec)	Transit Running Time (sec)	Delay at Intrsctn (sec)	Transit Travel Speed (mph)
1	719	20.9	5.6	14.6	5.0	25.2	48.6	8.2	8.6
2	502	24.6	9.0	0.0	0.0	9.0	13.9	5.7	17.5
3	469	10.9	2.3	11.6	5.0	18.9	48.3	5.3	6.0
4	704	22.3	8.2	0.0	0.0	8.2	21.5	8.0	16.3
5	617	27.2	10.0	0.0	0.0	10.0	15.5	7.0	18.7
6	948	33.6	12.3	0.0	0.0	12.3	19.3	10.8	21.5
Total/Avg	3959								12.7

3. Compute Transit Level of Service

Segment	Headway Factor	Perceived Trvl Time Factor	Transit Wait-Ride Score	Pedestrian Link LOS Score	Transit LOS Score	Transit LOS
1	3.1498	0.8046	2.5343	1.72	2.46	B
2	3.1498	0.9987	3.1457	1.69	1.53	A
3	3.1498	0.7054	2.2219	1.40	2.88	C
4	3.1498	0.9747	3.0702	1.96	1.69	A
5	3.1498	1.0225	3.2207	3.32	1.67	A
6	3.1498	1.0716	3.3752	2.12	1.25	A
Average					1.84	A

C. Compute Transit LOS

Street: Euclid Ave

1. Input Data

Segment	Bus Stops (#)	Transit Frequency (bus/hr)	On-Time Performance (%)	Stops with Shelter (%)	Stops with Bench (%)	Pk Load Factor (p/seat)	Central Business District
1	1	5	86%	100%	100%	0.66	No
2	0	5	86%	0%	0%	0.66	No
3	1	5	86%	100%	100%	0.76	No
4	0	5	86%	0%	0%	0.76	No
5	1	5	86%	100%	100%	0.77	No
6	0	5	86%	0%	0%	0.77	No

Population 5 million or more: No

2. Compute Average Transit Travel Speed

Segment	Segment Length (ft)	Transit Running Speed (mph)	Accel Decel Delay (sec)	Passenger Service Delay (sec)	Re-entry Delay (sec)	Total Stop Delay (sec)	Transit Running Time (sec)	Delay at Intrsctn (sec)	Transit Travel Speed (mph)
1	742	17.1	6.3	20.0	5.0	31.3	60.9	8.4	7.3
2	888	32.4	11.9	0.0	0.0	11.9	18.7	10.1	21.1
3	700	20.3	4.7	12.6	5.0	22.3	45.8	8.0	8.9
4	466	22.9	8.4	0.0	0.0	8.4	13.9	5.3	16.6
5	500	12.4	2.5	11.2	5.0	18.7	46.3	5.7	6.6
6	671	27.6	4.3	0.0	0.0	4.3	16.6	7.6	18.9
Total/Avg	3967								10.9

3. Compute Transit Level of Service

Segment	Headway Factor	Perceived Trvl Time Factor	Transit Wait-Ride Score	Pedestrian Link LOS Score	Transit LOS Score	Transit LOS
1	3.0028	0.7640	2.2943	3.89	3.14	C
2	3.0028	1.0930	3.2820	3.01	1.53	A
3	3.0028	0.8238	2.4736	2.91	2.73	B
4	3.0028	1.0033	3.0126	2.66	1.88	A
5	3.0028	0.7348	2.2066	2.49	3.06	C
6	3.0028	1.0520	3.1589	2.50	1.64	A
Average					2.30	B

APPENDIX H: BICYCLE LEVEL OF SERVICE WORKSHEETS

D. Compute Bicycle LOS

Street: Euclid Ave

1. Geometric Input Data

Segment & Downstream Signal	Outside Lane Width (ft)	Bike/Shldr Lane Width (ft)	Segment Through Lanes (One-Dir)	Intrsctn Through Lanes (One-Dir)	Divided/ Undivided (D / UD)	Signal I/S Cross Dist (ft)	Unsig Conf Per Mile (conf/mi)	Shldr Width (ft)	Bike Lane Width (ft)
1	11.0	14.5	2	2	D	39.0	0.0	7.5	7.0
2	11.0	14.5	2	2	D	44.0	0.0	7.5	7.0
3	11.0	14.5	2	2	D	49.0	0.0	7.5	7.0
4	11.0	14.5	2	2	D	14.0	0.0	7.5	7.0
5	10.0	7.0	2	2	D	46.0	0.0	0.0	7.0
6	13.0	0.0	3	2	D	84.0	0.0	0.0	0.0

2. Performance and Other Input Data

Segment & Downstream Signal	Traffic Volume (vph pk 15)	Heavy Vehicle (%)	Percent On-street Parking	Pavement Rating (#)
1	1247	2%	90%	4.0
2	1294	2%	90%	4.0
3	1057	2%	90%	4.0
4	1559	2%	90%	4.0
5	1126	2%	0%	4.0
6	0	0%	0%	3.0

Pavement Rating: 1=Poor, 5=Excellent
Mid-segment traffic speed = average of auto free-flow speed, and mean auto speed with intersection delay.

3. HCM 2010 Bicycle LOS

Segment & Downstream Intrsctn	Bicycle Running Speed (mph)	Bicycle Delay at Intrsctn (sec)	Bicycle Running Time (sec)	Bicycle Travel Speed (mph)	Bicycle Intrsctn LOS Score	Bicycle Intrsctn LOS
1	15.0	3.8	32.7	13.5	1.8990	A
2	15.0	3.5	22.8	13.0	2.0143	B
3	15.0	8.7	21.3	10.6	1.8946	A
4	15.0	10.1	32.0	11.4	1.7739	A
5	15.0	2.4	28.0	13.8	2.1200	B
6	15.0	50.0	43.1	6.9	2.6304	B
Average				10.4		

Segment & Downstream Intrsctn	Outside Lane Width (ft)	Paved Shoulder Wos (ft)	Outside Th+BL+Shldr Wt (ft)	Tot Width Th+BL+Shldr Wv (ft)	Eff Width OS Thru We (ft)	Adjstd HV % (%)	Thru Cntrl Delay (sec)	Link LOS Score	Link LOS	Segment LOS Score	Segment LOS
1	11.0	6.0	18.0	18.0	13.0	2.0%	6.3	3.8778	D	3.5439	D
2	11.0	6.0	18.0	18.0	13.0	2.0%	6.0	3.6624	D	3.5184	D
3	11.0	6.0	18.0	18.0	13.0	2.0%	13.0	3.4815	C	3.4802	C
4	11.0	6.0	18.0	18.0	13.0	2.0%	13.0	3.2838	C	4.7527	E
5	10.0	0.0	17.0	17.0	24.0	2.0%	0.2	1.7171	A	3.2164	C
6	13.0	0.0	13.0	13.0	13.0	0.0%	NaN	1.4422	A	3.8182	D
Average										3.7627	D

D. Compute Bicycle LOS

Street: Euclid Ave

1. Geometric Input Data

Segment & Downstream Signal	Outside Lane Width (ft)	Bike/Shldr Lane Width (ft)	Segment Through Lanes (One-Dir)	Intrsctn Through Lanes (One-Dir)	Divided/ Undivided (D / UD)	Signal I/S Cross Dist (ft)	Unsig Conf Per Mile (conf/mi)	Shldr Width (ft)	Bike Lane Width (ft)
1	14.0	0.0	2	2	D	14.0	0.0	0.0	0.0
2	10.0	7.0	2	2	D	14.0	0.0	0.0	7.0
3	11.0	7.0	2	2	D	49.0	0.0	0.0	7.0
4	11.0	7.0	2	2	D	44.0	0.0	0.0	7.0
5	11.0	7.0	2	2	D	39.0	0.0	0.0	7.0
6	11.0	7.0	2	2	D	89.0	0.0	0.0	7.0

2. Performance and Other Input Data

Segment & Downstream Signal	Traffic Volume (vph pk 15)	Heavy Vehicle (%)	Percent On-street Parking	Pavement Rating (#)
1	1516	2%	0%	3.0
2	680	2%	0%	4.0
3	996	2%	0%	4.0
4	828	2%	0%	4.0
5	815	2%	0%	4.0
6	998	2%	0%	4.0

Pavement Rating: 1=Poor, 5=Excellent
Mid-segment traffic speed = average of auto free-flow speed, and mean auto speed with intersection delay.

3. HCM 2010 Bicycle LOS

Segment & Downstream Intrsctn	Bicycle Running Speed (mph)	Bicycle Delay at Intrsctn (sec)	Bicycle Running Time (sec)	Bicycle Travel Speed (mph)	Bicycle Intrsctn LOS Score	Bicycle Intrsctn LOS
1	15.0	2.4	33.7	14.0	2.5955	B
2	15.0	3.9	40.4	13.7	1.2627	A
3	15.0	9.1	31.8	11.7	1.8442	A
4	15.0	3.5	21.2	12.9	1.6292	A
5	15.0	10.9	22.7	10.1	1.5427	A
6	15.0	27.0	30.5	8.0	2.4586	B
Average				11.4		

Segment & Downstream Intrsctn	Outside Lane Width (ft)	Paved Shoulder Wos (ft)	Outside Th+BL+Shldr Wt (ft)	Tot Width Th+BL+Shldr Wv (ft)	Eff Width OS Thru We (ft)	Adjstd HV % (%)	Thru Cntrl Delay (sec)	Link LOS Score	Link LOS	Segment LOS Score	Segment LOS
1	14.0	0.0	14.0	14.0	14.0	2.0%	0.8	3.8716	D	4.6131	E
2	10.0	0.0	17.0	17.0	24.0	2.0%	1.0	1.6370	A	3.1508	C
3	11.0	0.0	18.0	18.0	25.0	2.0%	12.9	1.4521	A	3.1519	C
4	11.0	0.0	18.0	18.0	25.0	2.0%	4.6	1.0745	A	3.0780	C
5	11.0	0.0	18.0	18.0	25.0	2.0%	15.0	1.1696	A	3.0886	C
6	11.0	0.0	18.0	18.0	25.0	2.0%	37.7	1.4623	A	3.4879	C
Average										3.4651	C

D. Compute Bicycle LOS

Street: Euclid Ave

1. Geometric Input Data

Segment & Downstream Signal	Outside Lane Width (ft)	Bike/Shldr Lane Width (ft)	Segment Through Lanes (One-Dir)	Intrsctn Through Lanes (One-Dir)	Divided/ Undivided (D / UD)	Signal I/S Cross Dist (ft)	Unsig Conf Per Mile (conf/mi)	Shldr Width (ft)	Bike Lane Width (ft)
1	11.0	14.5	2	2	D	39.0	0.0	7.5	7.0
2	11.0	14.5	2	2	D	44.0	0.0	7.5	7.0
3	11.0	14.5	2	2	D	49.0	0.0	7.5	7.0
4	11.0	14.5	2	2	D	14.0	0.0	7.5	7.0
5	10.0	7.0	2	2	D	46.0	0.0	0.0	7.0
6	13.0	0.0	3	2	D	84.0	0.0	0.0	0.0

2. Performance and Other Input Data

Segment & Downstream Signal	Traffic Volume (vph pk 15)	Heavy Vehicle (%)	Percent On-street Parking	Pavement Rating (#)
1	1133	2%	90%	4.0
2	1202	2%	90%	4.0
3	960	2%	90%	4.0
4	1479	2%	90%	4.0
5	1402	2%	0%	4.0
6	0	0%	0%	3.0

Pavement Rating: 1=Poor, 5=Excellent
Mid-segment traffic speed = average of auto free-flow speed, and mean auto speed with intersection delay.

3. HCM 2010 Bicycle LOS

Segment & Downstream Intrsctn	Bicycle Running Speed (mph)	Bicycle Delay at Intrsctn (sec)	Bicycle Running Time (sec)	Bicycle Travel Speed (mph)	Bicycle Intrsctn LOS Score	Bicycle Intrsctn LOS
1	15.0	2.9	32.7	13.8	1.8050	A
2	15.0	2.9	22.8	13.3	1.9378	A
3	15.0	7.9	21.3	10.9	1.8150	A
4	15.0	19.8	32.0	9.3	1.7078	A
5	15.0	2.9	28.0	13.6	2.3477	B
6	15.0	50.0	43.1	6.9	2.6304	B
Average				10.1		

Segment & Downstream Intrsctn	Outside Lane Width (ft)	Paved Shoulder Wos (ft)	Outside Th+BL+Shldr Wt (ft)	Tot Width Th+BL+Shldr Wv (ft)	Eff Width OS Thru We (ft)	Adjstd HV % (%)	Thru Cntrl Delay (sec)	Link LOS Score	Link LOS	Segment LOS Score	Segment LOS
1	11.0	6.0	18.0	18.0	13.0	2.0%	4.7	3.8332	D	3.5302	D
2	11.0	6.0	18.0	18.0	13.0	2.0%	4.9	3.6302	D	3.5072	D
3	11.0	6.0	18.0	18.0	13.0	2.0%	10.8	3.4393	C	3.4678	C
4	11.0	6.0	18.0	18.0	13.0	2.0%	40.3	3.5115	D	4.7850	E
5	10.0	0.0	17.0	17.0	24.0	2.0%	0.4	1.8165	A	3.2557	C
6	13.0	0.0	13.0	13.0	13.0	0.0%	NaN	1.4422	A	3.8182	D
Average										3.7692	D

D. Compute Bicycle LOS

Street: Euclid Ave

1. Geometric Input Data

Segment & Downstream Signal	Outside Lane Width (ft)	Bike/Shldr Lane Width (ft)	Segment Through Lanes (One-Dir)	Intrsctn Through Lanes (One-Dir)	Divided/ Undivided (D / UD)	Signal I/S Cross Dist (ft)	Unsig Conf Per Mile (conf/mi)	Shldr Width (ft)	Bike Lane Width (ft)
1	14.0	0.0	2	2	D	14.0	0.0	0.0	0.0
2	10.0	7.0	2	2	D	14.0	0.0	0.0	7.0
3	11.0	7.0	2	2	D	49.0	0.0	0.0	7.0
4	11.0	7.0	2	2	D	44.0	0.0	0.0	7.0
5	11.0	7.0	2	2	D	39.0	0.0	0.0	7.0
6	11.0	7.0	2	2	D	89.0	0.0	0.0	7.0

2. Performance and Other Input Data

Segment & Downstream Signal	Traffic Volume (vph pk 15)	Heavy Vehicle (%)	Percent On-street Parking	Pavement Rating (#)
1	1888	2%	0%	3.0
2	1021	2%	0%	4.0
3	1738	2%	0%	4.0
4	1599	2%	0%	4.0
5	1429	2%	0%	4.0
6	1379	2%	0%	4.0

Pavement Rating: 1=Poor, 5=Excellent
Mid-segment traffic speed = average of auto free-flow speed, and mean auto speed with intersection delay.

3. HCM 2010 Bicycle LOS

Segment & Downstream Intrsctn	Bicycle Running Speed (mph)	Bicycle Delay at Intrsctn (sec)	Bicycle Running Time (sec)	Bicycle Travel Speed (mph)	Bicycle Intrsctn LOS Score	Bicycle Intrsctn LOS
1	15.0	2.9	33.7	13.8	2.9025	C
2	15.0	8.0	40.4	12.5	1.5445	A
3	15.0	6.2	31.8	12.6	2.4571	B
4	15.0	2.9	21.2	13.2	2.2659	B
5	15.0	7.7	22.7	11.2	2.0489	B
6	15.0	25.2	30.5	8.2	2.7728	C
Average				11.6		

Segment & Downstream Intrsctn	Outside Lane Width (ft)	Paved Shoulder Wos (ft)	Outside Th+BL+Shldr Wt (ft)	Tot Width Th+BL+Shldr Wv (ft)	Eff Width OS Thru We (ft)	Adjstd HV % (%)	Thru Cntrl Delay (sec)	Link LOS Score	Link LOS	Segment LOS Score	Segment LOS
1	14.0	0.0	14.0	14.0	14.0	2.0%	1.5	3.5704	D	4.6179	E
2	10.0	0.0	17.0	17.0	24.0	2.0%	6.4	1.8347	A	3.1951	C
3	11.0	0.0	18.0	18.0	25.0	2.0%	11.4	1.7020	A	3.2507	C
4	11.0	0.0	18.0	18.0	25.0	2.0%	5.6	1.3468	A	3.1715	C
5	11.0	0.0	18.0	18.0	25.0	2.0%	14.5	1.4193	A	3.1624	C
6	11.0	0.0	18.0	18.0	25.0	2.0%	38.3	1.5825	A	3.5546	D
Average										3.5250	D

APPENDIX I: PEDESTRIAN LEVEL OF SERVICE WORKSHEETS

B. Pedestrian LOS

Street: Euclid Ave

1. Pedestrian Flow and Density

Segment	Sidewalk Width (ft)	Ped Flow (pph)	Glogal Growth Factor	Segment Growth Factor	Adj'd Ped Flow (pph)	Space Per Ped (sqft/ped)
1	8	0	1.000	1.000	0	Infinity
2	8	0	1.000	1.000	0	Infinity
3	8	0	1.000	1.000	0	Infinity
4	8	0	1.000	1.000	0	Infinity
5	5	0	1.000	1.000	0	Infinity
6	5	0	1.000	1.000	0	Infinity

2. Compute Pedestrian Intersection LOS

Segment	Free-Flow Walk Speed (ft/sec)	Effective SW Width (ft)	Ped Walk Speed (ft/s)	Pedestrian Delay at Intersection: Parallel Path (sec)	Nearest Sig-Cntrl (sec)	Mid-Seg Crossing (sec)	Ped Travel Speed (ft/s)	Ped Intrsctn Cross Street Xing Score	Ped Intrsctn Cross Street Xing LOS	Ped Intrsctn Segment Xing Score	Ped Intrsctn Segment Xing LOS
1	4.40	8.00	4.40	25.9	25.9	141.7	3.80	1.70	A	2.29	B
2	4.40	8.00	4.40	23.4	23.4	158.7	3.65	1.70	A	2.28	B
3	4.40	8.00	4.40	23.4	23.4	106.9	3.61	1.70	A	2.28	B
4	4.40	8.00	4.40	43.2	43.2	282.8	3.46	1.43	A	2.31	B
5	4.40	3.50	4.40	43.2	50.0	47755.9	3.36	1.43	A	2.15	B
6	4.40	3.50	4.40	50.0	50.0	0.0	3.57	2.47	B	2.47	B

3. Compute Pedestrian Link LOS

Segment	Outside lane (ft)	Wos (ft)	Wv (ft)	W1 BL+Shldr (ft)	Barrier (ft/tree)	Fw	Fs	Fv	Ped Link LOS Score	Ped Link LOS
1	11.0	6.0	18.0	10.0	0.0	-5.9661	0.3442	1.4190	1.84	A
2	11.0	6.0	18.0	10.0	0.0	-5.9661	0.2409	1.4724	1.79	A
3	11.0	6.0	18.0	10.0	0.0	-5.9661	0.2223	1.2019	1.50	A
4	11.0	6.0	18.0	10.0	0.0	-5.9661	0.1774	1.7738	2.03	B
5	10.0	0.0	17.0	7.0	0.0	-4.6172	0.3013	1.2803	3.01	C
6	13.0	0.0	13.0	0.0	0.0	-4.3820	0.4503	0.0000	2.12	B

4. Compute Pedestrian Segment LOS

Segment & Downstream Intrsctn	RCDF	Ped Segment LOS Score	Ped Segment LOS
1	1.00	2.57	B
2	0.97	2.48	B
3	0.98	2.42	B
4	1.20	3.08	C
5	1.20	3.45	C
6	1.20	3.39	C
Average		2.97	C

5. Non-signalized Pedestrian Crossing Calculations

Segment	Two-stage Crossing	Stage 1: Crossing Length (ft)	Through Lanes (#)	Critical Headway (sec)	Veh Flow Rate (veh/sec)	Prob of Delayed Crossing	Avg Ped Gap Delay (sec)	Non-zero Gap Delay (sec)	Veh Yield Reduction (sec)

1	Yes	35.5	2	11.07	0.347	0.9784	119.7	122.3	119.7
2	Yes	35.5	2	11.07	0.360	0.9813	134.9	137.5	134.9
3	Yes	35.5	2	11.07	0.294	0.9612	73.3	76.2	73.3
4	Yes	35.5	2	11.07	0.433	0.9917	265.6	267.8	265.6
5	No	58	4	16.18	0.638	1.0000	47755.9	47757.4	47757.4
6	Yes	38	3	11.64	0.000	0.0000	NaN	0.0	0.0

	Motorist	Stage 2							
Segment	Yield Rate	Crossing Length (ft)	Through Lanes (#)	Critical Headway (sec)	Veh Flow Rate (veh/sec)	Prob of Delayed Crossing	Avg Ped Gap Delay (sec)	Non-zero Gap Delay (sec)	Veh Yield Reduction (sec)
1	0.000	28	2	9.36	0.222	0.8744	22.0	25.2	22.0
2	0.000	28	2	9.36	0.230	0.8838	23.7	26.8	23.7
3	0.000	28	2	9.36	0.271	0.9209	33.6	36.5	33.6
4	0.000	28	2	9.36	0.195	0.8383	17.3	20.6	17.3
5	0.000	0	0	0.00	0.000	0.0000	0.0	0.0	0.0
6	0.000	26	2	8.91	0.000	0.0000	0.0	0.0	0.0

6. Non-signalized Pedestrian Crossing LOS

Downstream Intrsctn	Average Ped Delay (sec)	Pedestrian Intrsectn LOS
1	141.7	F
2	158.7	F
3	106.9	F
4	282.8	F
5	47755.9	F
6	0.0	A

B. Pedestrian LOS

Street: Euclid Ave

1. Pedestrian Flow and Density

Segment	Sidewalk Width (ft)	Ped Flow (pph)	Glogal Growth Factor	Segment Growth Factor	Adj'd Ped Flow (pph)	Space Per Ped (sqft/ped)
1	5	0	1.000	1.000	0	Infinity
2	5	0	1.000	1.000	0	Infinity
3	8	0	1.000	1.000	0	Infinity
4	8	0	1.000	1.000	0	Infinity
5	8	0	1.000	1.000	0	Infinity
6	8	0	1.000	1.000	0	Infinity

2. Compute Pedestrian Intersection LOS

Segment	Free-Flow Walk Speed (ft/sec)	Effective SW Width (ft)	Ped Walk Speed (ft/s)	Pedestrian Delay at Intersection: Parallel Path (sec)	Nearest Sig-Cntrl (sec)	Mid-Seg Crossing (sec)	Ped Travel Speed (ft/s)	Ped Intrsctn Cross Street Xing Score	Ped Intrsctn Cross Street Xing LOS	Ped Intrsctn Segment Xing Score	Ped Intrsctn Segment Xing LOS
1	4.40	3.50	4.40	50.0	50.0	349.4	3.39	1.44	A	2.47	B
2	4.40	3.50	4.40	50.0	50.0	31335.9	3.53	1.44	A	2.15	B
3	4.40	8.00	4.40	23.4	23.4	112.7	3.84	1.70	A	2.28	B
4	4.40	8.00	4.40	23.4	23.4	158.6	3.60	1.70	A	2.28	B
5	4.40	8.00	4.40	25.9	25.9	151.6	3.58	1.70	A	2.29	B
6	4.40	8.00	4.40	48.2	48.2	113.6	3.34	2.31	B	2.31	B

3. Compute Pedestrian Link LOS

Segment	Outside lane (ft)	Wos (ft)	Wv (ft)	W1 BL+Shldr (ft)	Barrier (ft/tree)	Fw	Fs	Fv	Ped Link LOS Score	Ped Link LOS
1	14.0	0.0	14.0	0.0	0.0	-4.4161	0.2220	1.7241	3.58	D
2	10.0	0.0	17.0	7.0	0.0	-4.6172	0.4296	0.7733	2.63	B
3	11.0	0.0	18.0	7.0	0.0	-5.4174	0.3244	1.1324	2.09	B
4	11.0	0.0	18.0	7.0	0.0	-5.4174	0.2216	0.9414	1.79	A
5	11.0	0.0	18.0	7.0	0.0	-5.4174	0.2470	0.9276	1.80	A
6	11.0	0.0	18.0	7.0	0.0	-5.4174	0.3296	1.1357	2.09	B

4. Compute Pedestrian Segment LOS

Segment & Downstream Intrsctn	RCDF	Ped Segment LOS Score	Ped Segment LOS
1	1.20	3.67	D
2	1.20	3.31	C
3	0.96	2.54	B
4	0.97	2.48	B
5	1.00	2.57	B
6	1.20	3.34	C
Average		3.05	C

5. Non-signalized Pedestrian Crossing Calculations

Segment	Two-stage Crossing	Stage 1: Crossing Length (ft)	Stage 1: Through Lanes (#)	Stage 1: Critical Headway (sec)	Stage 1: Veh Flow Rate (veh/sec)	Stage 1: Prob of Delayed Crossing	Stage 1: Avg Ped Gap Delay (sec)	Stage 1: Non-zero Gap Delay (sec)	Stage 1: Veh Yield Reduction (sec)

1	Yes	26	2	8.91	0.421	0.9765	89.8	92.0	89.8
2	No	58	4	16.18	0.609	0.9999	31335.9	31337.5	31337.5
3	Yes	28	2	9.36	0.277	0.9249	35.2	38.0	35.2
4	Yes	28	2	9.36	0.230	0.8838	23.7	26.8	23.7
5	Yes	28	2	9.36	0.227	0.8801	23.0	26.2	23.0
6	Yes	28	2	9.36	0.277	0.9255	35.4	38.3	35.4

	Motorist	Stage 2							
Segment	Yield Rate	Crossing Length (ft)	Through Lanes (#)	Critical Headway (sec)	Veh Flow Rate (veh/sec)	Prob of Delayed Crossing	Avg Ped Gap Delay (sec)	Non-zero Gap Delay (sec)	Veh Yield Reduction (sec)
1	0.000	38	3	11.64	0.405	0.9910	259.6	261.9	259.6
2	0.000	0	0	0.00	0.000	0.0000	0.0	0.0	0.0
3	0.000	35.5	2	11.07	0.300	0.9637	77.5	80.4	77.5
4	0.000	35.5	2	11.07	0.360	0.9813	134.9	137.5	134.9
5	0.000	35.5	2	11.07	0.354	0.9802	128.5	131.1	128.5
6	0.000	35.5	2	11.07	0.300	0.9640	78.1	81.1	78.1

6. Non-signalized Pedestrian Crossing LOS

Downstream Intrsctn	Average Ped Delay (sec)	Pedestrian Intrsectn LOS
1	349.4	F
2	31335.9	F
3	112.7	F
4	158.6	F
5	151.6	F
6	113.6	F

B. Pedestrian LOS

Street: Euclid Ave

1. Pedestrian Flow and Density

Segment	Sidewalk Width (ft)	Ped Flow (pph)	Glogal Growth Factor	Segment Growth Factor	Adj'd Ped Flow (pph)	Space Per Ped (sqft/ped)
1	8	0	1.000	1.000	0	Infinity
2	8	0	1.000	1.000	0	Infinity
3	8	0	1.000	1.000	0	Infinity
4	8	0	1.000	1.000	0	Infinity
5	5	0	1.000	1.000	0	Infinity
6	5	0	1.000	1.000	0	Infinity

2. Compute Pedestrian Intersection LOS

Segment	Free-Flow Walk Speed (ft/sec)	Effective SW Width (ft)	Ped Walk Speed (ft/s)	Pedestrian Delay at Intersection: Parallel Path (sec)	Nearest Sig-Cntrl (sec)	Mid-Seg Crossing (sec)	Ped Travel Speed (ft/s)	Ped Intrsctn Cross Street Xing Score	Ped Intrsctn Cross Street Xing LOS	Ped Intrsctn Segment Xing Score	Ped Intrsctn Segment Xing LOS
1	4.40	8.00	4.40	33.3	33.3	183.8	3.66	1.71	A	2.30	B
2	4.40	8.00	4.40	30.8	30.8	220.4	3.46	1.71	A	2.29	B
3	4.40	8.00	4.40	38.3	38.3	291.8	3.24	1.72	A	2.30	B
4	4.40	8.00	4.40	43.2	43.2	247.7	3.46	1.43	A	2.31	B
5	4.40	3.50	4.40	43.2	50.0	1048499.0	3.36	1.43	A	2.15	B
6	4.40	3.50	4.40	50.0	50.0	0.0	3.57	2.47	B	2.47	B

3. Compute Pedestrian Link LOS

Segment	Outside lane (ft)	Wos (ft)	Wv (ft)	W1 BL+Shldr (ft)	Barrier (ft/tree)	Fw	Fs	Fv	Ped Link LOS Score	Ped Link LOS
1	11.0	6.0	18.0	10.0	0.0	-5.9661	0.3469	1.2893	1.72	A
2	11.0	6.0	18.0	10.0	0.0	-5.9661	0.2424	1.3669	1.69	A
3	11.0	6.0	18.0	10.0	0.0	-5.9661	0.2236	1.0922	1.40	A
4	11.0	6.0	18.0	10.0	0.0	-5.9661	0.1992	1.6826	1.96	A
5	10.0	0.0	17.0	7.0	0.0	-4.6172	0.2955	1.5943	3.32	C
6	13.0	0.0	13.0	0.0	0.0	-4.3820	0.4503	0.0000	2.12	B

4. Compute Pedestrian Segment LOS

Segment & Downstream Intrsctn	RCDF	Ped Segment LOS Score	Ped Segment LOS
1	1.11	2.80	C
2	1.08	2.71	B
3	1.19	2.88	C
4	1.20	3.05	C
5	1.20	3.57	D
6	1.20	3.39	C
Average		3.10	C

5. Non-signalized Pedestrian Crossing Calculations

Segment	Two-stage	Stage 1: Crossing Length	Stage 1: Through Lanes	Stage 1: Critical Headway	Stage 1: Veh Flow Rate	Stage 1: Prob of Delayed	Stage 1: Avg Ped Gap Delay	Stage 1: Non-zero Gap Delay	Stage 1: Veh Yield Reduction

	Crossing	(ft)	(#)	(sec)	(veh/sec)	Crossing	(sec)	(sec)	(sec)
1	Yes	35.5	2	11.07	0.315	0.9693	89.3	92.2	89.3
2	Yes	35.5	2	11.07	0.334	0.9751	106.4	109.2	106.4
3	Yes	35.5	2	11.07	0.267	0.9478	57.0	60.1	57.0
4	Yes	35.5	2	11.07	0.411	0.9894	216.3	218.6	216.3
5	No	58	4	16.18	0.846	1.0000	1048499.0	1048501.0	1048501.0
6	Yes	38	3	11.64	0.000	0.0000	NaN	0.0	0.0

	Motorist	Stage 2							
Segment	Yield Rate	Crossing Length (ft)	Through Lanes (#)	Critical Headway (sec)	Veh Flow Rate (veh/sec)	Prob of Delayed Crossing	Avg Ped Gap Delay (sec)	Non-zero Gap Delay (sec)	Veh Yield Reduction (sec)
1	0.000	28	2	9.36	0.401	0.9765	94.5	96.7	94.5
2	0.000	28	2	9.36	0.425	0.9813	114.0	116.1	114.0
3	0.000	28	2	9.36	0.518	0.9922	234.9	236.7	234.9
4	0.000	28	2	9.36	0.263	0.9145	31.4	34.3	31.4
5	0.000	0	0	0.00	0.000	0.0000	0.0	0.0	0.0
6	0.000	26	2	8.91	0.000	0.0000	0.0	0.0	0.0

6. Non-signalized Pedestrian Crossing LOS

Downstream Intrsctn	Average Ped Delay (sec)	Pedestrian Intrsectn LOS
1	183.8	F
2	220.4	F
3	291.8	F
4	247.7	F
5	1048499.0	F
6	0.0	A

B. Pedestrian LOS

Street: Euclid Ave

1. Pedestrian Flow and Density

Segment	Sidewalk Width (ft)	Ped Flow (pph)	Glogal Growth Factor	Segment Growth Factor	Adj'd Ped Flow (pph)	Space Per Ped (sqft/ped)
1	5	0	1.000	1.000	0	Infinity
2	5	0	1.000	1.000	0	Infinity
3	8	0	1.000	1.000	0	Infinity
4	8	0	1.000	1.000	0	Infinity
5	8	0	1.000	1.000	0	Infinity
6	8	0	1.000	1.000	0	Infinity

2. Compute Pedestrian Intersection LOS

Segment	Free-Flow Walk Speed (ft/sec)	Effective SW Width (ft)	Ped Walk Speed (ft/s)	Pedestrian Delay at Intersection: Parallel Path (sec)	Nearest Sig-Cntrl (sec)	Mid-Seg Crossing (sec)	Ped Travel Speed (ft/s)	Ped Intrsctn Cross Street Xing Score	Ped Intrsctn Cross Street Xing LOS	Ped Intrsctn Segment Xing Score	Ped Intrsctn Segment Xing LOS
1	4.40	3.50	4.40	50.0	50.0	584.1	3.39	1.44	A	2.47	B
2	4.40	3.50	4.40	50.0	50.0	178138.2	3.53	1.44	A	2.15	B
3	4.40	8.00	4.40	38.3	38.3	227.1	3.55	1.72	A	2.30	B
4	4.40	8.00	4.40	30.8	30.8	255.1	3.41	1.71	A	2.29	B
5	4.40	8.00	4.40	33.3	33.3	178.7	3.40	1.71	A	2.30	B
6	4.40	8.00	4.40	68.2	68.2	160.9	3.04	2.33	B	2.33	B

3. Compute Pedestrian Link LOS

Segment	Outside lane (ft)	Wos (ft)	Wv (ft)	W1 BL+Shldr (ft)	Barrier (ft/tree)	Fw	Fs	Fv	Ped Link LOS Score	Ped Link LOS
1	14.0	0.0	14.0	0.0	0.0	-4.4161	0.1164	2.1474	3.89	D
2	10.0	0.0	17.0	7.0	0.0	-4.6172	0.4209	1.1619	3.01	C
3	11.0	0.0	18.0	7.0	0.0	-5.4174	0.3062	1.9775	2.91	C
4	11.0	0.0	18.0	7.0	0.0	-5.4174	0.2103	1.8193	2.66	B
5	11.0	0.0	18.0	7.0	0.0	-5.4174	0.2374	1.6256	2.49	B
6	11.0	0.0	18.0	7.0	0.0	-5.4174	0.3050	1.5689	2.50	B

4. Compute Pedestrian Segment LOS

Segment & Downstream Intrsctn	RCDF	Ped Segment LOS Score	Ped Segment LOS
1	1.20	3.79	D
2	1.20	3.46	C
3	1.12	3.27	C
4	1.03	2.92	C
5	1.07	2.98	C
6	1.20	3.50	C
Average		3.37	C

5. Non-signalized Pedestrian Crossing Calculations

Segment	Two-stage Crossing	Stage 1: Crossing Length (ft)	Through Lanes (#)	Critical Headway (sec)	Veh Flow Rate (veh/sec)	Prob of Delayed Crossing	Avg Ped Gap Delay (sec)	Non-zero Gap Delay (sec)	Veh Yield Reduction (sec)

1	Yes	26	2	8.91	0.524	0.9906	193.0	194.9	193.0
2	No	58	4	16.18	0.728	1.0000	178138.2	178139.5	178139.5
3	Yes	28	2	9.36	0.483	0.9891	179.1	181.0	179.1
4	Yes	28	2	9.36	0.444	0.9844	132.6	134.7	132.6
5	Yes	28	2	9.36	0.397	0.9757	91.8	94.1	91.8
6	Yes	28	2	9.36	0.383	0.9723	82.4	84.7	82.4

	Motorist	Stage 2							
Segment	Yield Rate	Crossing Length (ft)	Through Lanes (#)	Critical Headway (sec)	Veh Flow Rate (veh/sec)	Prob of Delayed Crossing	Avg Ped Gap Delay (sec)	Non-zero Gap Delay (sec)	Veh Yield Reduction (sec)
1	0.000	38	3	11.64	0.447	0.9945	391.1	393.2	391.1
2	0.000	0	0	0.00	0.000	0.0000	0.0	0.0	0.0
3	0.000	35.5	2	11.07	0.249	0.9363	48.0	51.3	48.0
4	0.000	35.5	2	11.07	0.349	0.9790	122.5	125.1	122.5
5	0.000	35.5	2	11.07	0.312	0.9683	86.9	89.8	86.9
6	0.000	35.5	2	11.07	0.301	0.9643	78.6	81.5	78.6

6. Non-signalized Pedestrian Crossing LOS

Downstream Intrsctn	Average Ped Delay (sec)	Pedestrian Intrsectn LOS
1	584.1	F
2	178138.2	F
3	227.1	F
4	255.1	F
5	178.7	F
6	160.9	F

APPENDIX J: PLANNING-LEVEL COST ESTIMATES

Planning-Level Estimate of Improvement Costs

Project: Euclid Avenue Corridor Master Plan (Long-Term Mobility Concept)
Location: San Diego, CA
Date: 2/28/2014
Project #: SD12-0070

SUBTOTAL	$974,460
30% CONTINGENCY	$292,338
30% DESIGN BUDGET	$292,338
TOTAL COST ESTIMATE	$1,559,136

Intersection	Improvement	Unit	Unit Cost	Quantity	Total
Euclid Avenue & Guymon Street	Stripe/Restripe Marked Crosswalk	EA	$750	3	$2,250
	Install ADA Compliant Curb Ramps	EA	$5,000	2	$10,000
	Construct Curb Extensions	CORNER	$15,000	1	$15,000
				Subtotal:	*$27,250*
Euclid Avenue & Lise Street	Stripe/Restripe Marked Crosswalk	EA	$750	3	$2,250
	Install ADA Compliant Curb Ramps	EA	$5,000	4	$20,000
	Construct Curb Extensions	CORNER	$15,000	2	$30,000
	New Traffic Signal	SIGNAL	$275,000	1	$275,000
				Subtotal:	*$327,250*
Euclid Avenue & Hilltop Drive	Stripe/Restripe Marked Crosswalk	EA	$750	4	$3,000
	Install ADA Compliant Curb Ramps	EA	$5,000	8	$40,000
	Construct Curb Extensions	CORNER	$15,000	4	$60,000
	Modify Traffic Signal Equipment (Major)	CORNER	$100,000	1	$100,000
	Cost for Hilltop Drive Connection[1]	N/A	N/A	N/A	$185,000
				Subtotal:	*$388,000*
				Total Intersection Improvement Cost:	**$742,500**

Segments	Improvement	Unit	Unit Cost	Quantity	Total
Euclid Avenue from Guymon Street to south leg of SR-94 EB Ramps	Installation of Class II Bike Lanes with 2' Buffer	LF	$5	6,072	$30,360
Euclid Avenue from Guymon Street to Lise Avenue	Type B-2 Median Curb & Gutter for Raised Median	LF	$30	1,120	$33,600
	Planting and Irrigation for Landscaped Raised Median	SF	$9	3,000	$27,000
Euclid Avenue from Lise Avenue to Hilltop Drive	Type B-2 Median Curb & Gutter for Raised Median	LF	$30	1,120	$33,600
	Planting and Irrigation for Landscaped Raised Median	SF	$9	2,700	$24,300
Euclid Avenue from Hilltop Drive to SR-94 EB Ramps	Type B-2 Median Curb & Gutter for Raised Median	LF	$30	1,120	$33,600
	Planting and Irrigation for Landscaped Raised Median	SF	$9	5,500	$49,500
				Total Segment Improvement Cost:	**$231,960**

Source: Fehr & Peers, 2014.

Notes:

1. The cost estimate for this roadway connection only reflects construction costs and does not account for the costs such as drainage and any major structure conditions.