The City of SAN DIEGO

2016 LINDA VISTA

LINDA VISTA

COMPREHENSIVE ACTIVE TRANSPORTATION STRATEGY (CATS)

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1. PROJECT PURPOSE

INTRODUCTION AND PROJECT PURPOSE

The City of San Diego (City) initiated the Comprehensive Active Transportation Strategy (CATS) as a plan to improve and promote active transportation options in each community. "Active transportation" represents any non-motorized mode of travel - most frequently involving pedestrians and bicyclists, including those en route to utilizing public transportation. Providing safe, adequate, continuous active transportation facilities that connect people to places are key components in supporting and encouraging people to walk and bike. Whether walking or biking is by choice or necessity, active transportation provides several benefits to a community, including:

- **Health Benefits** – active transportation provides an opportunity to be physically active on a regular basis.
- **Environmental Benefits** – active transportation reduces greenhouse gas emissions and improves air quality.
- **Transportation Benefits** – active transportation reduces road congestion.
- **Economic Benefits** – active transportation requires spending less money on automobile expenses, gas, and parking.
- **Social Benefits** – active transportation increases opportunities for social interactions.

The City of San Diego strives to endorse active transportation by providing a variety of measures:

- Providing dedicated sidewalks, bicycle lanes, and continuous routes;
- Advocating for sharing the road with cyclists;
- Adopting measures to ensure the safe integration of pedestrians, cyclists, and other active users among motorists;
- Maintaining pedestrian and bicycle facilities;
- Providing storage for bicycles;
- Integrating public transit with pedestrian and cycling facilities;
- Engaging in discussions with the community.

The CATS is intended to serve as a tool for identifying active transportation projects for each community. Funded by an Active Transportation Grant from the San Diego Association of Governments (SANDAG), the CATS sets forth a methodology for developing an active transportation network that provides direct and convenient connections for residential areas, schools, employment centers, transit stations, public places, retail, and other community destinations. This methodology can be replicated in developing active transportation plans for other communities throughout the City.

The Linda Vista Community is located in central San Diego and comprises about 2,400 acres. The community is generally bounded by Tecolote Canyon to the north, Friars Road to the south, State Route 163 to the east, and Interstate 5 to the west. Adjacent communities include Clairemont to the north, Birdland to the east, Mission Valley to the south, and Bay Park to the west.

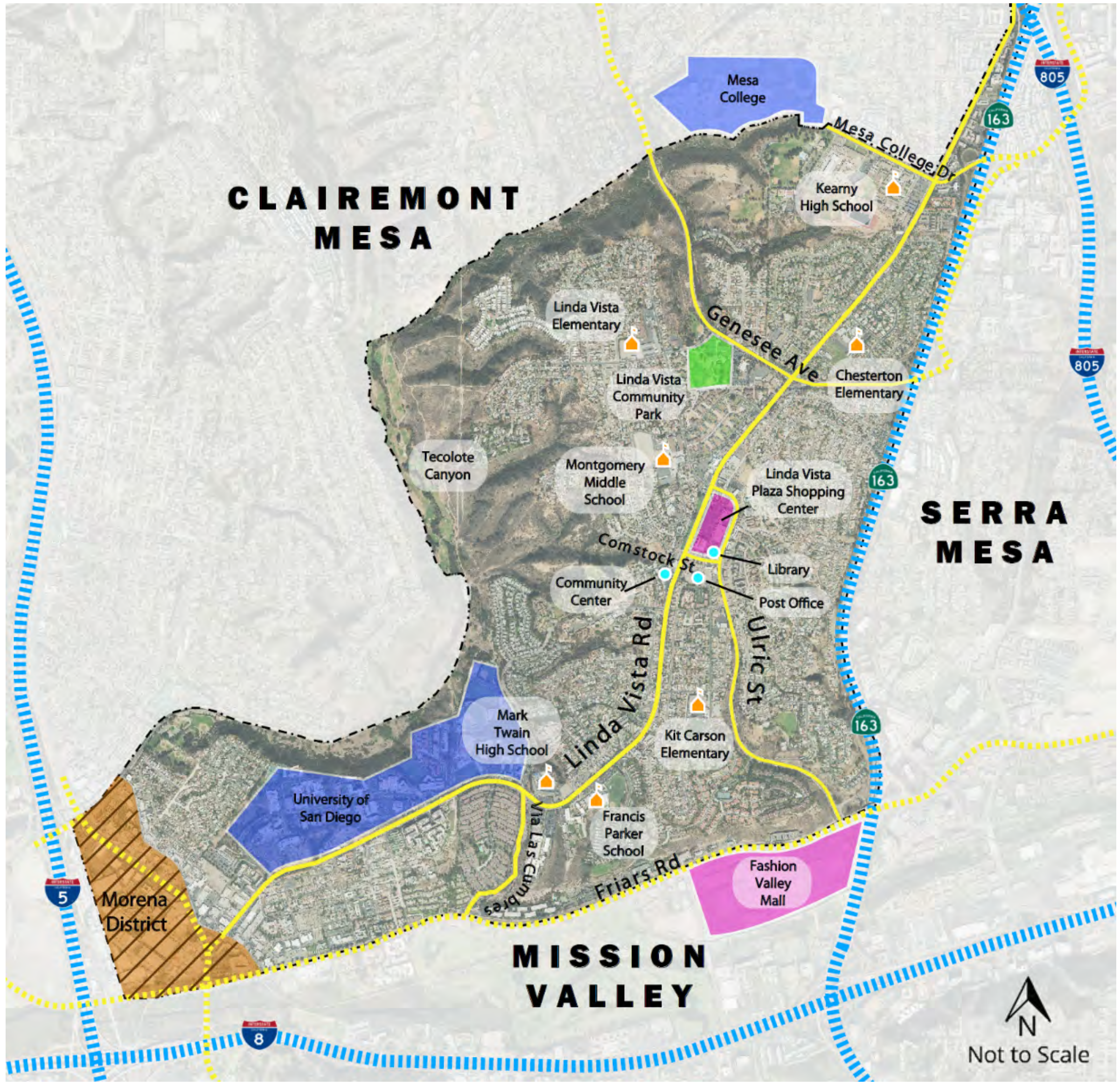


Figure 1-1 – CATS Study Area

The Morena Boulevard corridor was excluded from the CATS study area due to the concurrent effort of the Morena Boulevard Station Area Planning Study (MBAP) by the City of San Diego. The MBAP is inclusive of the areas adjacent to the Mid-Coast trolley stations at Tecolote Road and Clairemont Drive.

The Linda Vista community has a population of approximately 22,000 people and an average population density of 7,144 people per square mile, which is much higher than the density of the City of San Diego as a whole at 4,180 people per square mile. The percent of the population living below the poverty level is 26.1%, which is 10.3% higher than that of the City of San Diego. Based on 2016 population estimates from SANDAG, a large percentage of the Linda Vista community is comprised of White (39%), Hispanic (32%), and Asian (20%) residents.

To accommodate the community's diverse population, all outreach materials were provided in English, Vietnamese, and Spanish. Additionally, a Spanish translator was made available at all community outreach workshops.

Linda Vista is characterized as a mixed suburban environment. A variety of community and retail centers are provided along the central corridors, surrounded by residential neighborhoods. Several schools are located within the community, including Chesterton Elementary, Carson Elementary, Linda Vista Elementary, Montgomery Middle, Kearny High, Mark Twain High, San Diego Cooperative Charter, and Francis Parker Schools. The University of San Diego, Mesa College, and the Fashion Valley shopping center are also adjacent to the study area.

Local and regional roadway connections are provided to connect Linda Vista to adjacent communities and regional destinations throughout San Diego. While pedestrian and bicycle facilities are provided, many gaps in the sidewalk and bike route networks exist.

Goals and Objectives

Goals

The goals of the CATS Plan are to:

- **Create a methodology** for identifying active transportation facility needs at a community and regional level in collaboration with community members and data analyses.
- **Solicit and utilize community input** through a transparent project process to understand the needs of the residents and business owners who best know the community. This includes providing outreach and input opportunities for all members of the community.
- **Collect and analyze existing conditions data** to understand where facilities are provided, missing, or in need of improvement.
- **Work with various departments at the City of San Diego** to seek project opportunities or understand feasibility issues or restrictions.
- **Develop a strategic plan** that can be incorporated into Community Plans and applied to other communities in the City of San Diego.

The CATS plan is not intended to be a final design for implementation, but to serve as a series of recommendations for facility types and concepts for which a detailed engineering and construction process will follow once funds become available.

Objectives

Objectives of the CATS plan are to:

- Follow the methodology process to **identify active transportation needs**.
- Incorporate various community outreach tools to **maximize opportunities for community members to provide input and feedback.**
- Utilize data analyses methods to **determine existing pedestrian and bicycle facilities, gaps, and needs.**
- Create concepts that will **provide thorough biking, walking, and transit connections that best serve the community.**

> "Cities that are more *bikeable*, that are more *walkable*, are cities that are more *liveable*."
> -Aldermanic Present Lewis Reed, St. Louis, MO

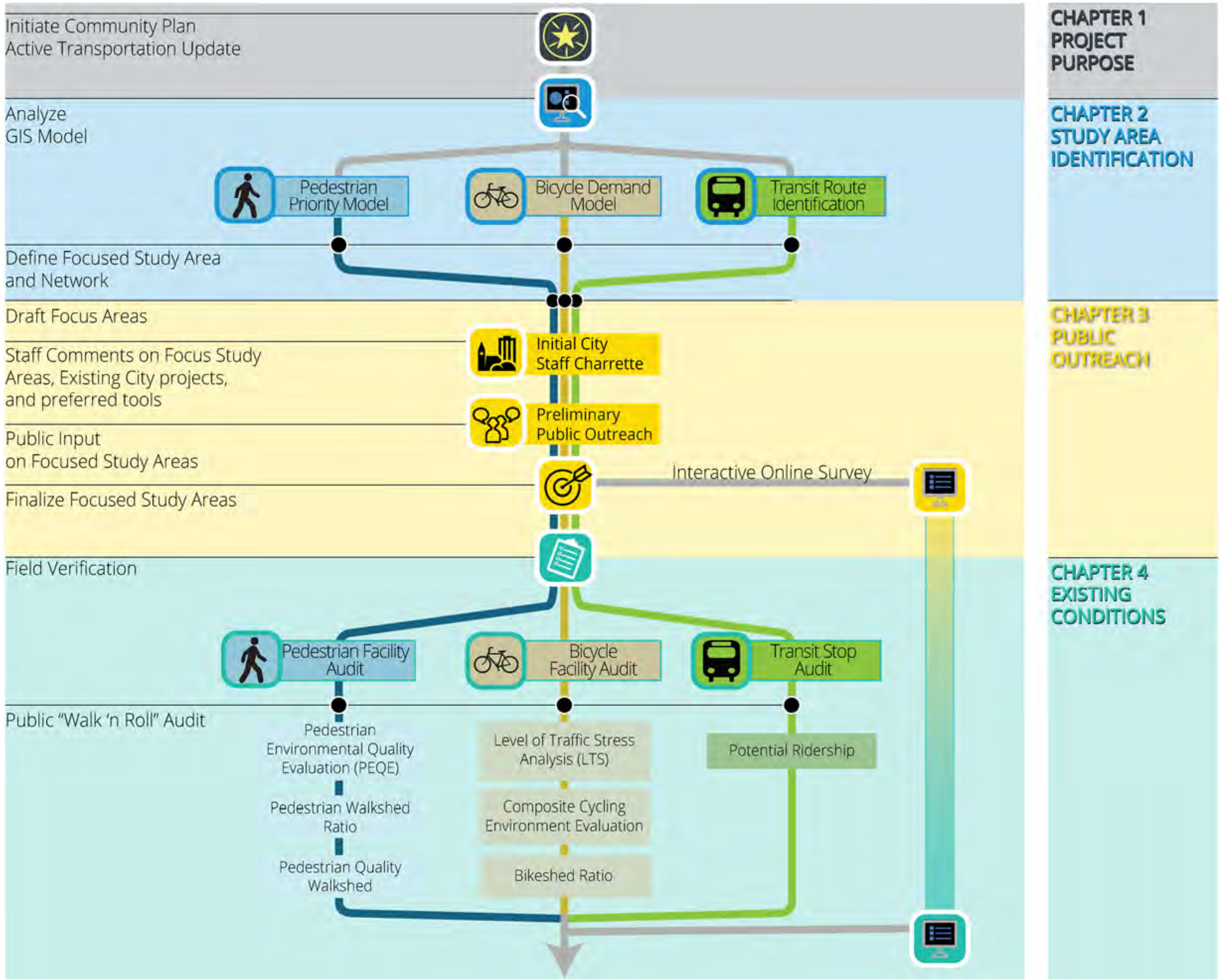
Project Process and Report Organization

The CATS project process follows six basic steps to fulfill the goals and objectives described in the previous section. The process flowchart is shown to the right, to help the user visualize the actions taken throughout the CATS plan development.

Similarly, the report is organized with chapters representing phases of the project:

- **Chapter 1: Introduction and Project Purpose** Introduces the project and establishing the goals and objectives of the plan
- **Chapter 2: Study Area Identification** Focuses the study to the areas within the community with the most need
- **Chapter 3: Public Outreach** Outlines the public and city staff involvement in the CATS plan
- **Chapter 4: Existing Conditions** Involves the collection of data for segments that are within the focused study area and analyzes the quality of the available facilities
- **Chapter 5: Concept Development** Takes comments from city staff and the public to determine appropriate measures to recommend that would benefit the active transportation system
- **Chapter 6: Proposed Concept Implementation** Creates a prioritization and phased approach to implementation, funding, and ultimately constructing projects

It is expected that a similar process would be followed for future active transportation plans in other City of San Diego communities.


Initiate Community Plan
Active Transportation Update
CHAPTER 1
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PURPOSE
Analyze
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Bicycle Demand
Model
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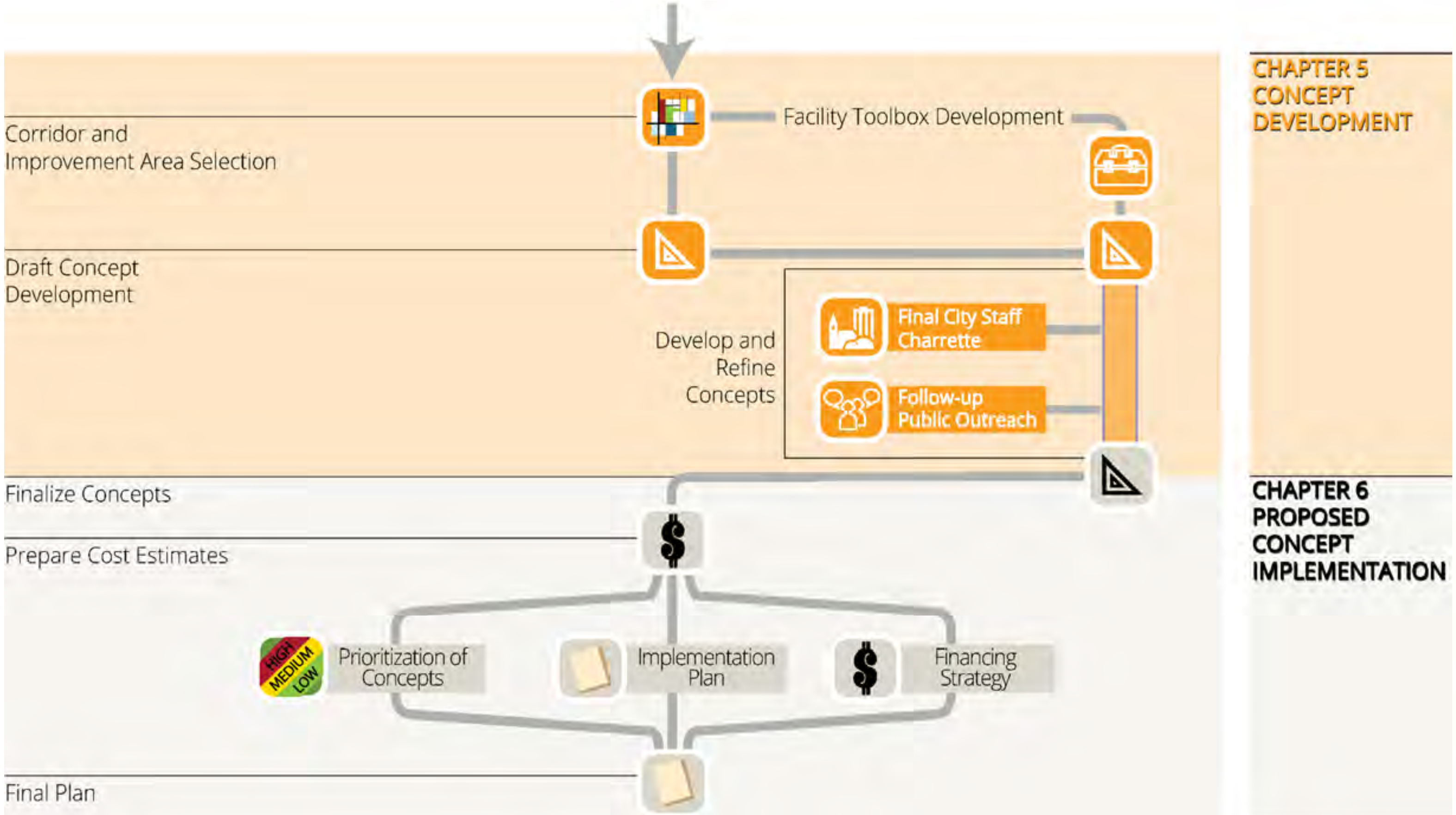
Pedestrian Walkshed
Ratio
Pedestrian Quality
Walkshed
Level of Traffic Stress
Analysis (LTS)
Composite Cycling
Environment Evaluation
Bikeshed Ratio
Potential Ridership


Corridor and Improvement Area Selection
Facility Toolbox Development
Draft Concept Development
Develop and Refine Concepts
Final City Staff Charrette
Follow-up Public Outreach
Finalize Concepts
Prepare Cost Estimates
HIGH
MEDIUM
LOW
Prioritization of Concepts
Implementation Plan
Financing Strategy
Final Plan
CHAPTER 5 CONCEPT DEVELOPMENT
CHAPTER 6 PROPOSED CONCEPT IMPLEMENTATION

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2. STUDY AREA IDENTIFICATION

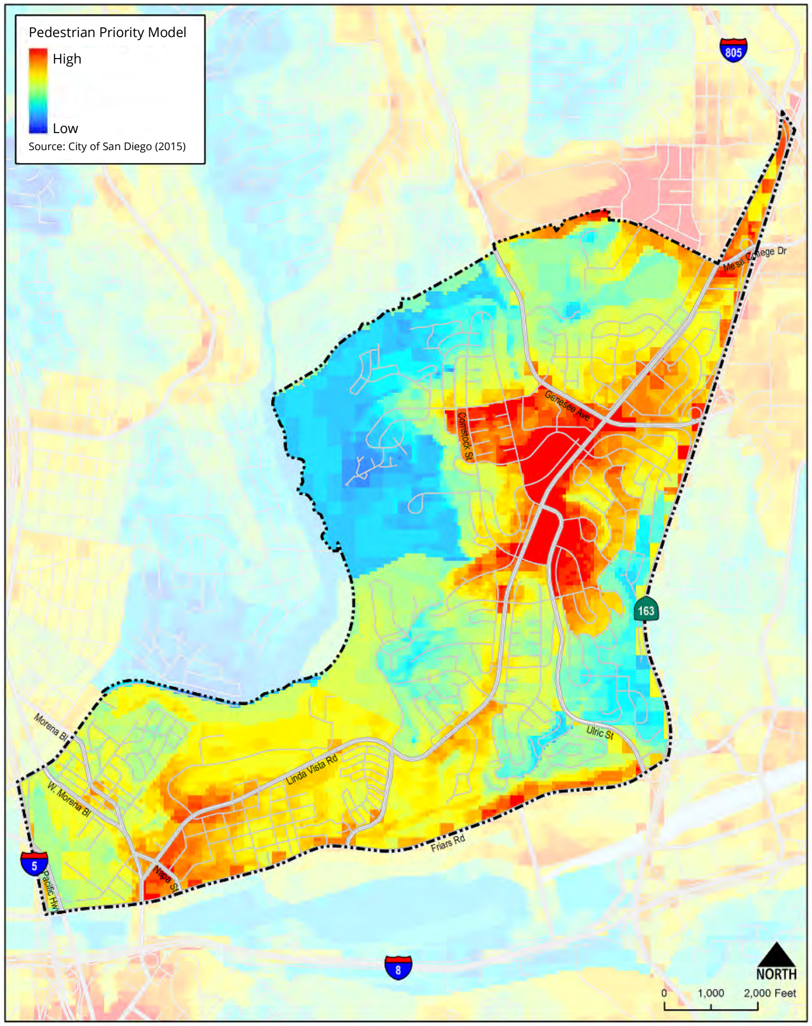
STUDY AREA IDENTIFICATION

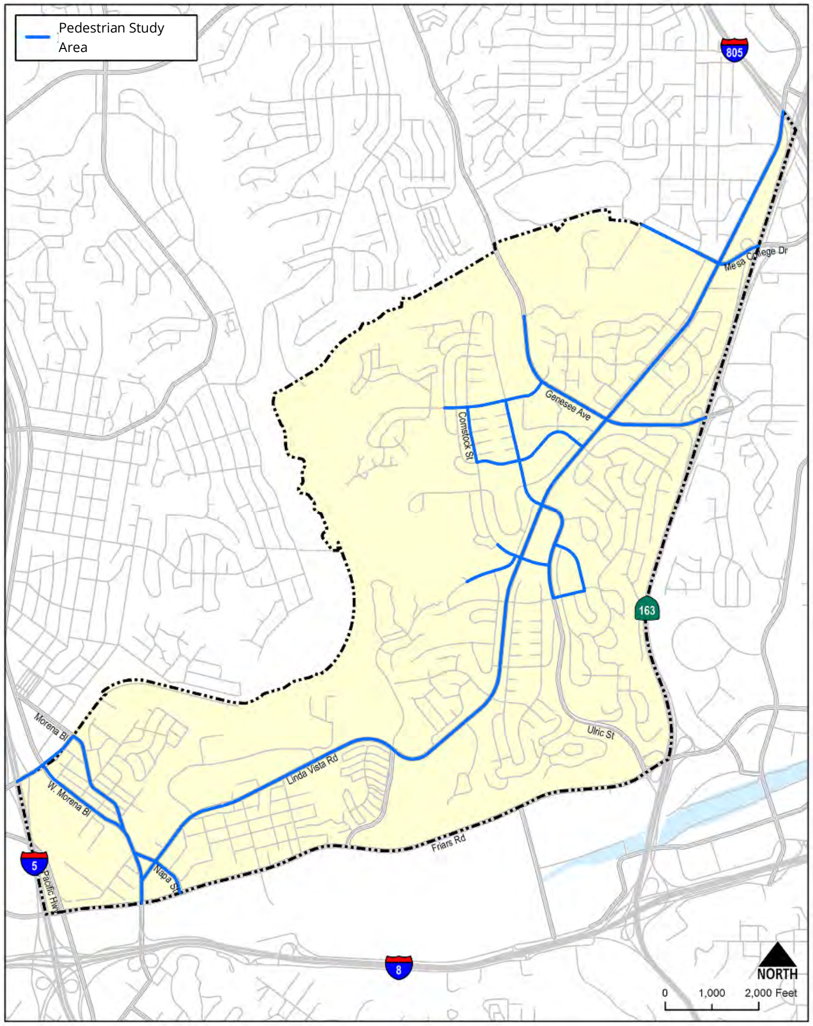
To accomplish the objectives of improving and encouraging more bicycle and pedestrian activity, the project needs to identify the barriers in the travel environment that need to be eliminated and find opportunities that can be used to create a better active transportation network. Logic tells us that not every roadway or connection can be retrofitted to be an ideal pedestrian or bicycle facility. The City is constrained by financial and environmental realities that makes it challenging, if not impossible, to build anything and everything that the community may desire. The data collection phase of the project would also be too cumbersome if every roadway and connection was evaluated at a detailed level.

The process of focusing the efforts to generate the most benefit requires narrowing the sights to the areas of the neighborhood with the highest propensity for pedestrian and bicycle activity. Starting with the Linda Vista Community Planning Area, the Linda Vista CATS study area can be filtered down to a much smaller subset of network roadways.

Developing Focused Study Segments

The team utilized City of San Diego Geographic Information Systems (GIS) models to analyze where the majority of the pedestrian and bicycling activity was in demand. First, the Pedestrian Priority Model heat map illustrated the latent pedestrian demand based upon attractor and generator land uses in the area. This, combined with transit stop location information and available pedestrian collision data, was used to generate a subset of pedestrian connections that would be further evaluated for possible improvements. The pedestrian study area is defined as the set of roadways scoring greater than one standard deviation above the community-wide mean of the City of San Diego's Pedestrian Priority Model. Figures 2-1 and 2-2 show the heat map for Linda Vista and ultimately, the focused pedestrian study segments.





Figures 2-1 and 2-2 – Focused Pedestrian Study Segments

The Bicycle Demand Model is able to generate a community-wide depiction of the bicycle demand for all roadways in the community. The segments with the highest need are shown in dark blue in Figure 2-3.

The resulting focus areas were presented to city staff and to the public as a means of validating these initial modelling efforts. Roadways that were previously overlooked were added at that time. The segments that remained through this screening process were used for the interactive online survey. They were used as a way to focus comments on these identified primary community routes. Users of the survey also had the opportunity to add other points of interest outside of the focus areas.

Concurrent with the online survey, fieldwork was performed. Information was gathered and used in the Existing Conditions analysis of these focused study segments and eventually to identify project opportunities and was also used later in the project prioritization process.

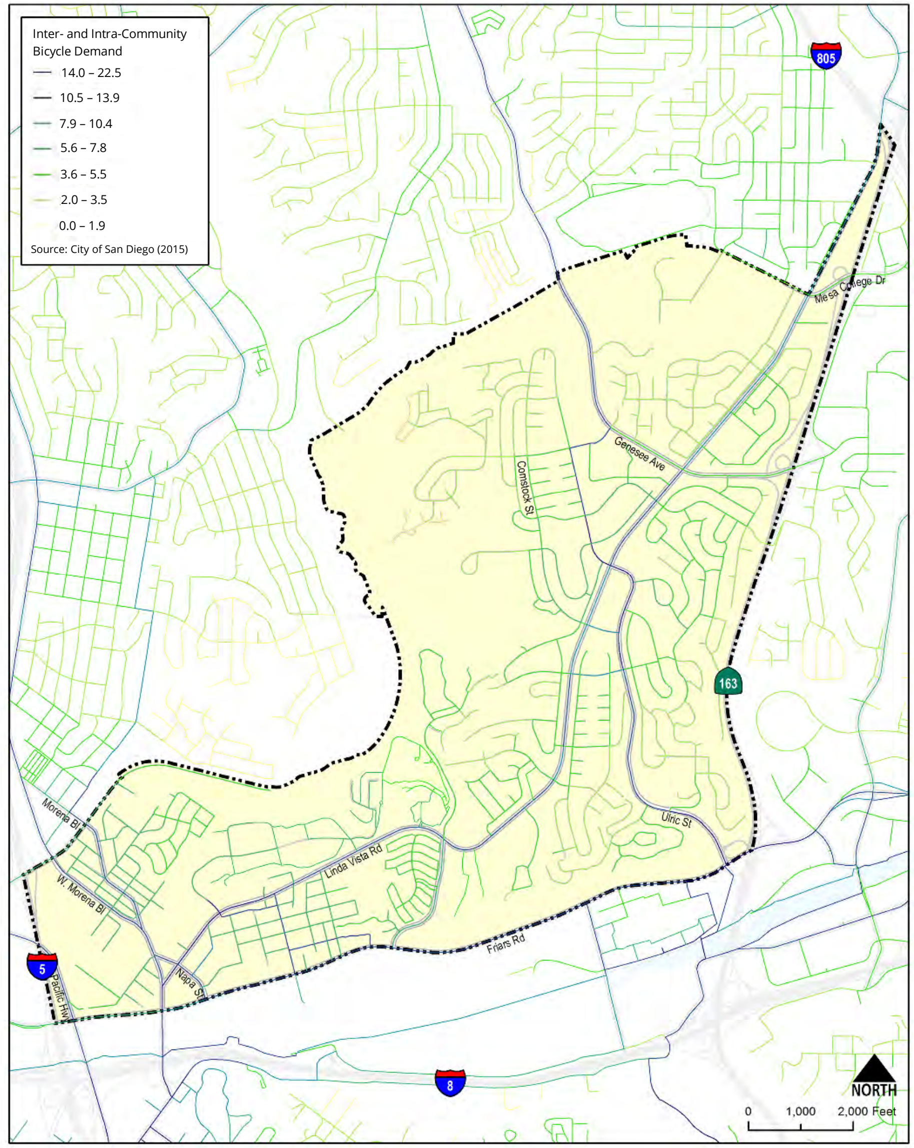


Figure 2-3 – Bicycle Demand Model Results

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3. PUBLIC OUTREACH

PUBLIC OUTREACH & CITY COORDINATION

Collaborative and consistent public outreach with the community was a keystone to the success of the CATS project. Outreach to the community and continuous discussions with city staff were instrumental in developing a plan that was both functional in serving the community at large and feasible for the City to implement once funds become available.

Stakeholder Outreach

The project team conducted a series of outreach and engagement activities throughout the course of the project, including: two Community Workshops, a Walk n' Roll Audit, an interactive online survey, and two City Staff Charrettes. Most outreach materials were provided in English, Spanish, and Vietnamese. Flyers for events were posted at each major community center. Translators were also made available at each workshop.

Community stakeholders were invited to the project workshops and to participate in the online survey. Stakeholders included:

- Linda Vista Community Planning Group
- County of San Diego Health & Human Services
- San Diego County Bicycle Coalition
- Linda Vista Collaborative
- Bike San Diego Bayside Resident Leadership Academy
- Circulate San Diego
- Local Schools
- Morena Business Association
- Linda Vista Town Council
- University of San Diego
- Clairemont Times Newsletter
- SANDAG
- Boys and Girls Club – Roberts Family Branch

Representatives from each stakeholder group were asked to share the invitation to the workshop and online survey to their members. In addition, members of the project team met with several stakeholder groups and made presentations about the project to garner additional interest and collect feedback.

Community Workshop #1

Community Workshop #1 was held on October 9, 2014 to introduce the project to the community and provide the community with an initial opportunity to express issues, concerns, and ideas regarding pedestrian and bicycle accessibility in and around their neighborhood. The workshop was the first attempt to collect input for the issues and improvements most important to the community.

The meeting engaged the participants in a presentation covering the following topics:

- An overview of the project and its anticipated final product;
- Results of data collection efforts, including bicycle and pedestrian demand and propensity models; and,
- How this data was used to identify the project's preliminary focus corridors

The presentation was followed by a series of group exercises, which were used to gather information about the community, the attendees' experience walking, bicycling, and using transit in Linda Vista, and their concerns and ideas for improvement. The exercises were as follows:

- **Where Do You Live?**
  Upon arrival to the workshop, a community-wide map was displayed and participants were asked to place a dot over the area where they live and another dot where they walk/bike to. This exercise was useful in understanding which neighborhoods the attendees represented and potential linkages to focus on. The results of this exercise revealed a wide-range of attendees and destinations from different parts of Linda Vista

- **Post-It Note Exercise**
  Participants were asked to provide individual responses to the question "What would encourage you to walk or bike more?" Post-It notes and pens were provided at each table for writing individual responses. Once all notes were collected and placed on the wall, project team members clustered the notes with similar comments to show and discuss common themes, such as "add street lighting", "wider sidewalks", and "slower traffic". The Post-It Note Exercise provides an additional opportunity for all attendees to voice their opinions in a simple and anonymous fashion and reveals several common needs of the community members.
- **Tabletop Maps: Share Your Ideas and Concerns**
  Participants were asked to share their walking and bicycling concerns in the area and any ideas for addressing walking/bicycling issues with other participants at the table. Large maps of the project areas

and markers were placed on tables for groups of participants to review, discuss, and label areas of concern or ideas for improvement.

See Appendix D for the results of the group exercises.

"Walk 'n Roll" Audit

Following the first community workshop, a **"Walk 'n Roll" Audit** was organized to encourage members of the public to interact with the focus corridors in their community and record any hindrances to bicycling and walking. Participants of the audit noted opportunities for improvement and general usage trends, including pavement replacement, ramp and crosswalk upgrades, high activity intersections, bicycle lane improvements, traffic speeds, and gaps in the facility network. See Appendix E for audit maps and a full list of observations.

Interactive Online Survey

To supplement public outreach efforts, an **interactive online survey** (developed by MetroQuest) was available from October 24, 2014 to January 24, 2015. The survey included a general introduction to the project, user priority rankings, brief polls on walking and bicycling habits, and interactive maps to identify barriers and recommended improvements for walking and bicycling in the community. The survey received 90 participants, who contributed over 330 spatial comments. The three most prevalent priorities were to:

- Add or improve bike lanes/bike paths;
- Add or improve sidewalks and crosswalks; and,
- Provide new street lights.

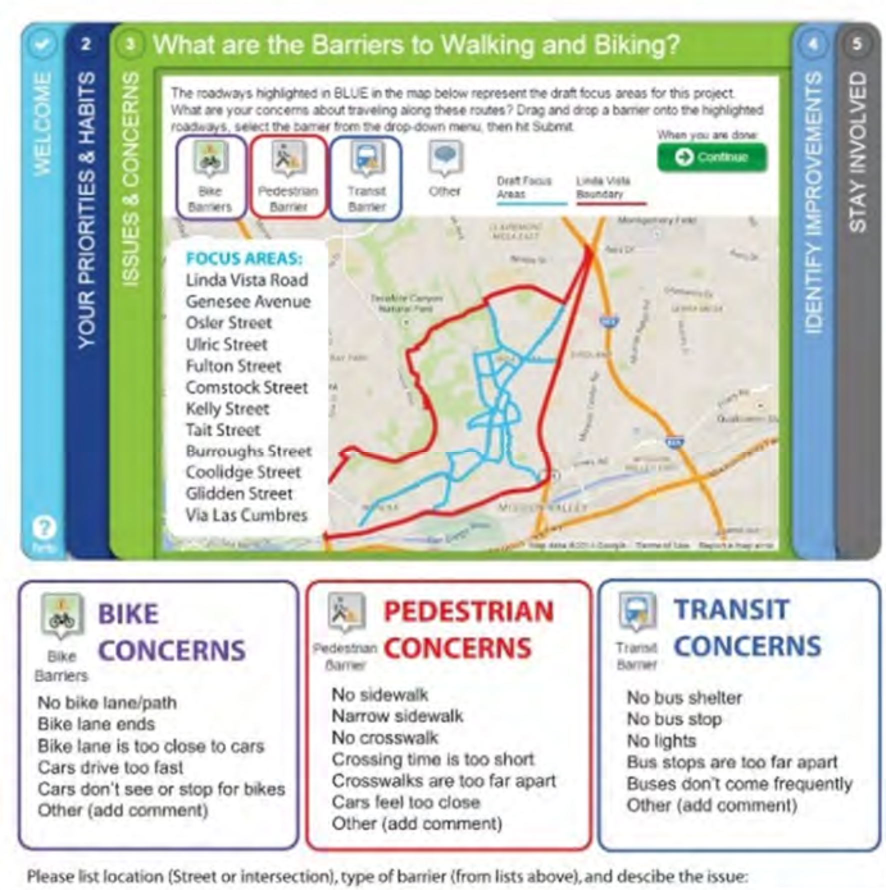
Most of the respondents who walk stated they walked to enjoy the outdoors or to go to a specific place (i.e., a utilitarian trip) and they walk daily. Most survey participants who bike responded they are "Comfortable and Enthusiastic" bicyclists who thought the high speed of traffic was the largest barrier to bicycling.

Community members were asked to identify the largest barriers to walking, bicycling and taking transit in their community. They were also provided an opportunity to suggest improvements they would like to see that might encourage them to walk, bike, and take transit more frequently. The most chosen answers for each item were:

- Walking Barrier: "No sidewalk"
- Transit Barrier: "No bus shelter/shade"
- Bicycling Improvement: "Provide buffer from cars"
- Walking Improvement: "Intersection Improvements"
- Crosswalk Improvement: "Add new crosswalk"
- Intersection Improvement: "New/Improved crosswalk"
- Sidewalk Improvement: "Provide more shading/landscaping"

A detailed report of the survey results is provided in Appendix F.

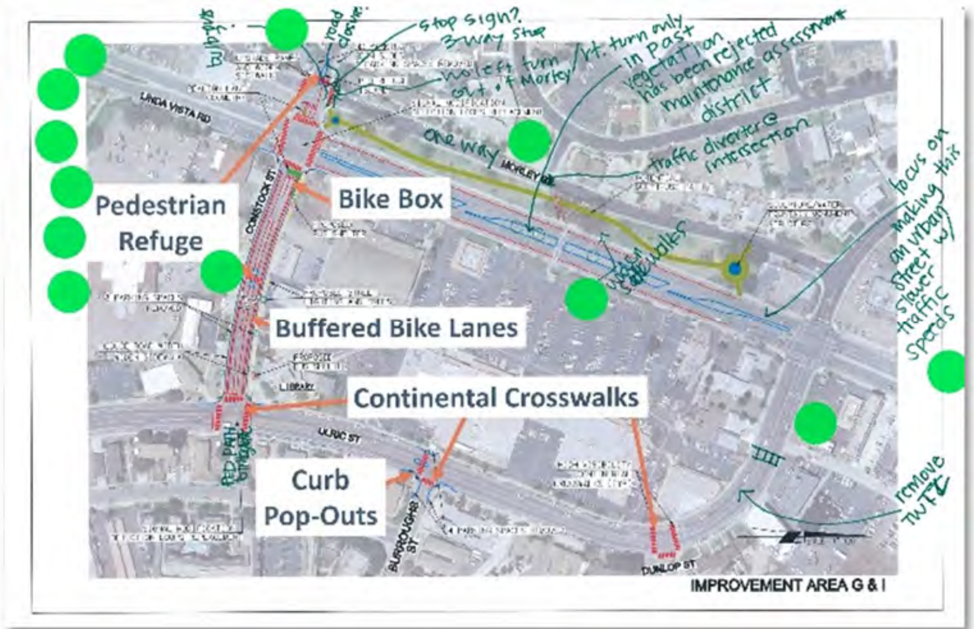
The input collected from the community from the first workshop, "Walk 'n Roll" audit, and online survey were used in creating the draft improvements.



Community Workshop #2

Community Workshop #2 was held on June 21st, 2016 at the Linda Vista Branch Public Library to provide an overview of the project milestones to-date and present the proposed draft pedestrian and bicycle facility improvements. The community members in attendance were presented information about the pedestrian, bicycle, and transit facilities that are proposed in the recommended draft concepts through an in-depth presentation. After an explanation of the 15 draft concepts, participants were encouraged to move around the room looking critically at each concept sheet and providing feedback and suggestions for improvements where necessary.

Over 25 distinct comments were received from the participants. The group was also asked to place colored dots on the concepts that they preferred or those that were of highest priority to them. The highest priority Improvement Area (concept) was for the Linda Vista Shopping Center area. See Appendix D for the resulting priority of all concepts, a full list of community comments, and an explanation of how these comments were addressed and incorporated into the final concepts.



City Staff Charrettes

Two **city staff charrettes** were held to inform additional staff at the City of San Diego about the project and receive their feedback. The first was held on October 22nd, 2014 and the second was held on June 3rd, 2016.

At the first charrette, an overview of the project was presented to representatives from various City departments. The project team inquired about other ongoing or upcoming City projects, planned improvements, preferred traffic calming measures, concurrent processes, and maintenance issues to be considered prior to drafting recommended improvements.

At the second charrette, the draft improvement concepts were presented and staff members from various departments provided feedback on the feasibility of each plan and specifications to ensure that all concepts were in line with City standards.

Modifications to the draft improvements were made based on input from city staff prior to finalizing the recommended concepts.

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4. EXISTING CONDITIONS

EXISTING CONDITIONS STUDY

Study Background and Purpose

This Existing Conditions Study summarizes the physical and operational conditions of the Linda Vista Community's bicycle and pedestrian networks, support facilities, transit facilities, and other multimodal transportation infrastructure.

The report presents existing conditions analyses of pedestrian and bicycle facilities, demand, network quality and connectivity, and safety, as well as amenities present at transit facilities. The report also describes key terms and methodologies utilized for conducting these analyses, and identifies current deficiencies across the multimodal transportation networks. These analyses provide a foundation for developing and prioritizing recommendations for future network improvements.

The remainder of the Existing Conditions Study is organized into the following sections:

- **Pedestrian Assessment** describes the pedestrian environment in Linda Vista through assessments of demand, network quality, connectivity, and safety.
- **Bicycle Assessment** summarizes the cycling environment in Linda Vista through assessments of demand, network quality, connectivity, and safety.
- **Transit Assessment** provides an analysis of Linda Vista's transit environment, including stop amenities and station quality, collision frequency near transit stops, and the base of potential transit riders within a half-mile pedestrian network buffer.
- **Multimodal Evaluation** presents a summary of currently deficient facilities within the community, identified by the analyses performed in throughout this chapter, that do not presently meet identified thresholds targets.

Pedestrian Assessment

This section provides an overview of existing pedestrian facilities, safety, quality, and connectivity in the Linda Vista Community. Data sources supporting this analysis include geographic information system (GIS) files accessed via SANDAG, existing planning documents, satellite imagery, mapping analyses, and confirmation through field review.

Pedestrian Priority Model

The Pedestrian Priority Model (PPM) was developed to identify locations across the City of San Diego with high "pedestrian need" or places that warrant relatively higher consideration for pedestrian infrastructure improvement. The model included three key sub-models to identify these locations: 1) pedestrian trip generation 2) pedestrian trip attraction, and 3) pedestrian trip detractors. The overarching concept is that locations with high demand for walking (as reflected by pedestrian trip generation and attraction) and high pedestrian detractors warrant higher consideration for pedestrian improvements.

A recent update to the PPM, The *Pedestrian Priority Model Update and Data Documentation, Multimodal Planning Research Project,* was undertaken in 2015 by the Planning Department. The documentation related to this most recent PPM update details the methodologies, inputs, weights, and scoring categories used to derive each of the three sub-models and composite raster.

Figure 4-1 displays the final 2015 Pedestrian Priority composite model for the Linda Vista community within the City of San Diego, combining the attractors, generators, and detractors. As shown, a relatively high propensity for pedestrian travel exists along Linda Vista Road in the center of the community, bounded to the north by Genesee Avenue and to the south by Comstock Street.

Pedestrian Safety

Collision data is a valuable source of information for identifying potential pedestrian deficiencies. An analysis of collision data from the six-year period between 2008 and 2013 reveals trends and patterns in collision locations, causes, time of collision, party-at-fault, and victim age. Data was obtained from the City of San Diego's Collision Database, and showed a total of 50 pedestrian collisions within the community over the six-year period.

Figure 4-2 displays pedestrian collisions in Linda Vista. Half of the recorded pedestrian collisions, or 25 collisions, occurred along Linda Vista Road.

Appendix A displays and discusses trends and patterns in collision locations, causes, time of collision, party-at-fault, and victim age.

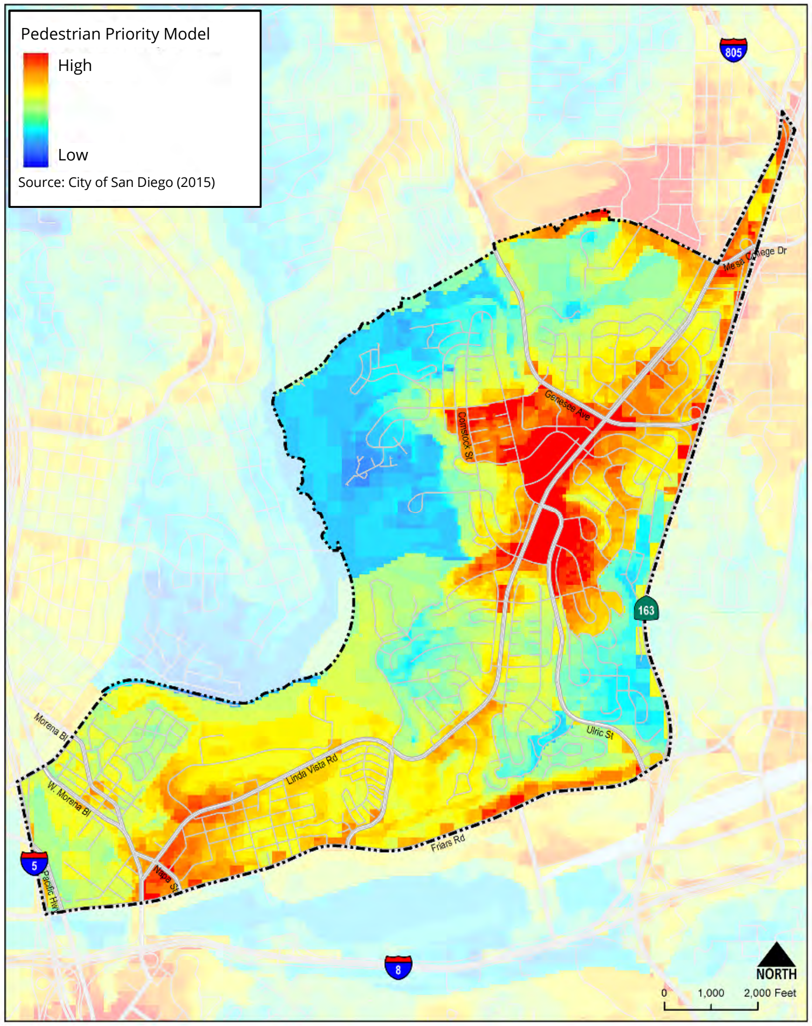


Figure 4-1 - Pedestrian Priority Model (PPM)

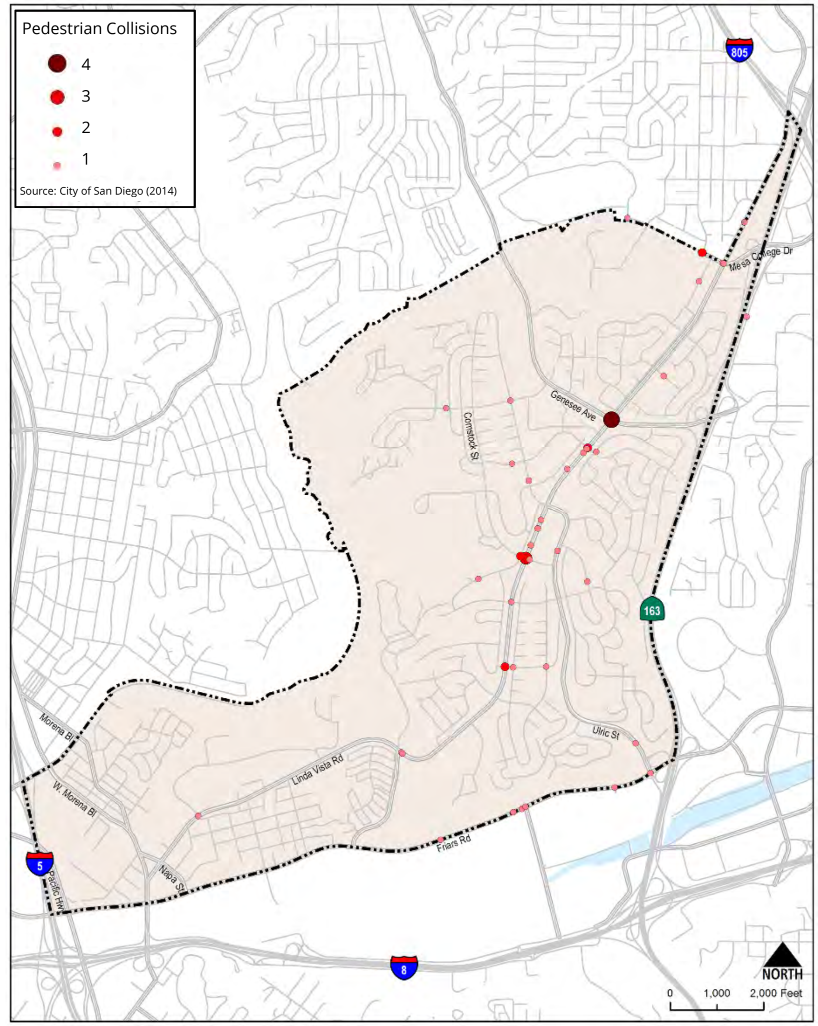


Figure 4-2 - Pedestrian Collisions (2008-2013)

Pedestrian Network Quality and Connectivity

This section outlines methodologies for developing the Pedestrian Study Area network, and then evaluating the study area network using the Pedestrian Environment Quality Evaluation (PEQE) and Quality Walkshed Ratio analyses.[1]

Developing the Pedestrian Study Area

The Pedestrian Study Area is intended to reflect overlapping areas of high pedestrian need and high pedestrian collisions. These areas were established using the Pedestrian Priority Model (PPM), historic collision data and transit ridership data. The Pedestrian Study Area incorporates all pedestrian facilities meeting the following criteria:

- Areas with PPM scores that are one standard deviation or more above the Linda Vista community mean PPM score.
- Areas with two or more pedestrian collisions over the previous 6-year period.
- Areas within a half-mile of major transit stops, defined as stops/stations serving rail transit, ferry terminals served by either bus or rail transit service, or the intersection of two or more major bus routes with service frequencies of 15-minutes or less during the morning and afternoon peak commute periods.

Figure 4-3 presents the resulting Pedestrian Study Area within Linda Vista.

Pedestrian Environmental Quality Index (PEQE)

The quality of Pedestrian Study Area roadway segments, intersections, and mid-block crossings was analyzed with the Pedestrian Environment Quality Evaluation (PEQE) tool. Table 4-1 outlines the evaluation system used to develop the PEQE scores.

Figure 4-4 displays results of the PEQE analysis. As shown, segments with a "high" ranking are generally found along Linda Vista Road north of Mesa College Drive, as well as along a short segment of Ulric Street. Generally, most roadway segments in Linda Vista are rated as "medium," whereas most crosswalks receive a "low" rating.

Of the 97 total roadway segments, 25 received a "low" rating along at least one side of the roadway. Appendix A includes a full list of segments that received a "low" rating and a table of the rating of both sides of each segment.

Of the 87 total study intersections, a majority received a "low" rating for at least one leg (65 intersections). In addition, a total of 15 intersections received a "low" rating at all four legs. Appendix A lists includes a full list of intersections that received a "low" rating and a table of the rating of all intersection within the study area.

Two mid-block crossings are located within the Pedestrian Study Area, both along Linda Vista Road. The first crossing is located along the roadway segment between Fulton Street and Ulric Street, whereas the second crossing is located along the roadway segment between Ulric Street and Comstock Street. Both mid-block crossings have a "high" rating.

[1] The Pedestrian Environment Quality Evaluation (PEQE) analysis was originally developed in the white paper *Active Travel Assessments – Integrating Bicycle and Pedestrian Evaluation in Long Range Planning – Task A and B of the Multimodal Planning Research Project.*

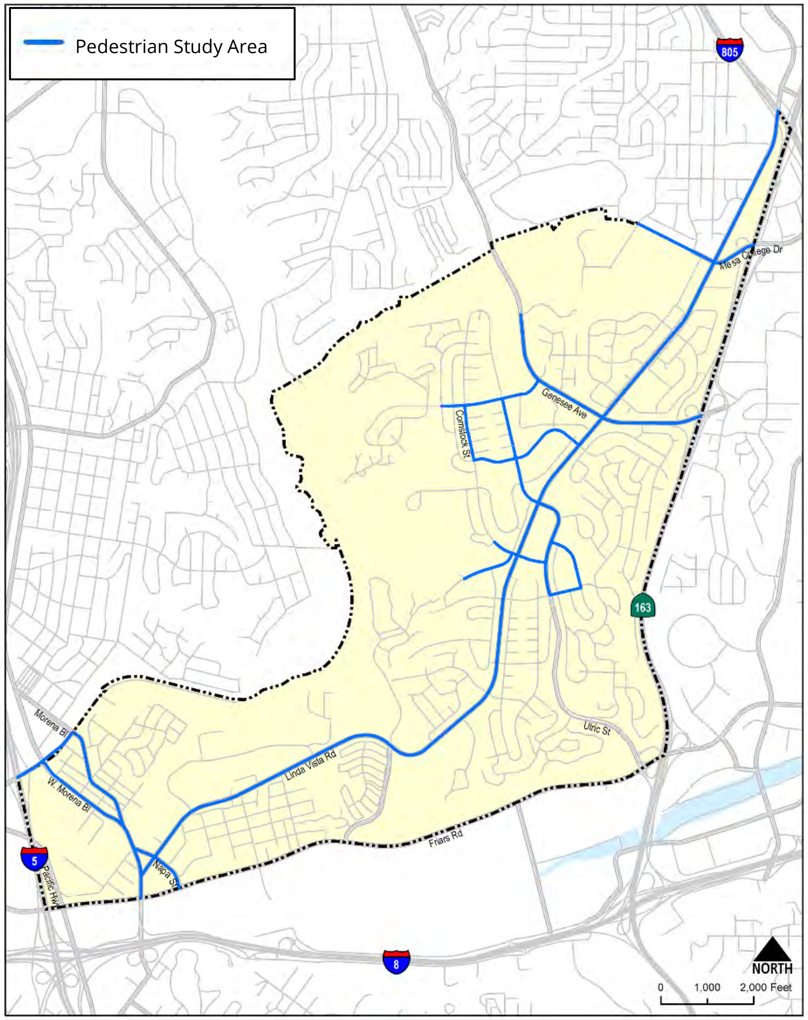


Figure 4-3 - Pedestrian Study Area

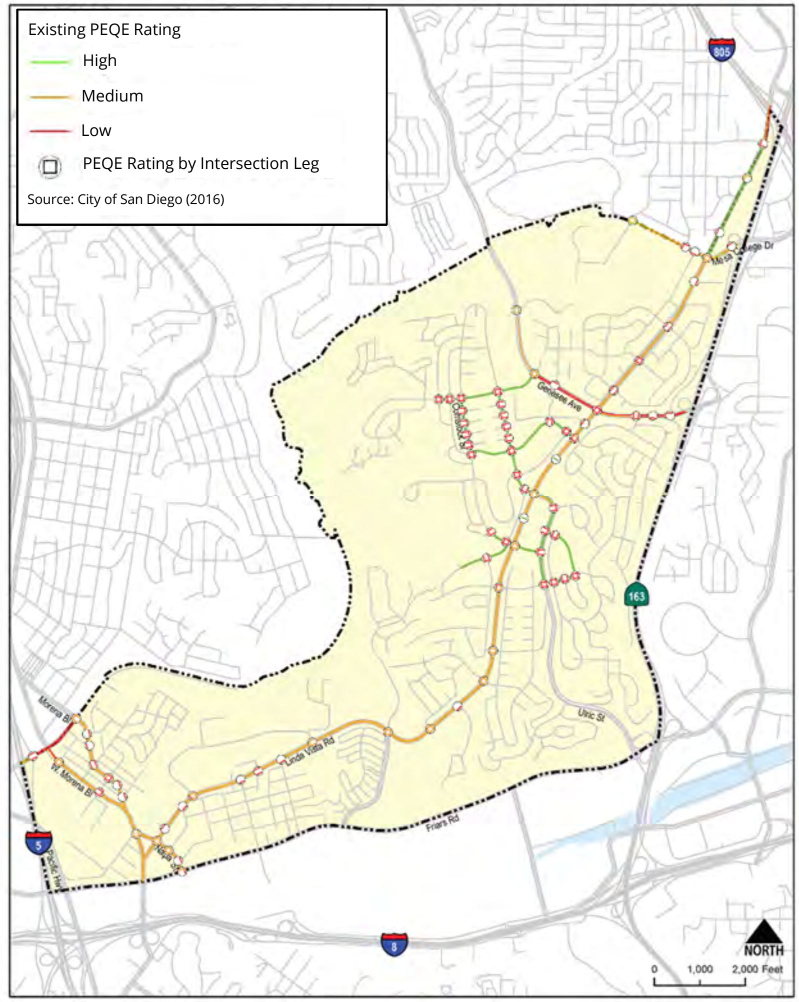


Figure 4-4 – Pedestrian Environmental Quality Evaluation (PEQE)

Table 4-1 Pedestrian Environmental Quality Evaluation (PEQE) Rating System

Facility Type	Measure	Description/Feature	Scoring 0 points	Scoring 1 point	Scoring 2 points
Segment (between two intersections)	Horizontal Buffer	Between the edge of auto travelway and the edge of clear pedestrian zone	< 6 feet	6 – 14 feet	> 14 feet
	Lighting	--	Below standard/ requirement	Meets standard/ requirement	Exceeds standard/ requirement
	Clear Pedestrian Zone	5' minimum	Has obstructions	--	No obstructions
	Posted Speed Limit	--	> 40 mph	30 – 40 mph	< 30 mph
	Maximum Points: 8 points				
Intersection	Physical Feature	Enhanced/High Visibility Crosswalk Raised Crosswalk/Speed Table Advanced Stop Bar Bulb out/Curb Extension	< 1 feature per ped crossing	1 – 2 features per ped crossing	> 2 features per ped crossing
	Operational Feature	Pedestrian Countdown Signal Pedestrian Lead Interval No-Turn On Red Sign/Signal Additional Pedestrian Signage	< 1 feature per ped crossing	1 – 2 features per ped crossing	> 2 features per ped crossing
	ADA Curb Ramp	--	Below standard/ requirement	--	Meets standard/ requirement
	Traffic Control	--	No control	Stop sign controlled	Signal/Roundabout/ Traffic Circle
	Maximum Points: 8 points				
Mid-block Crossing	Visibility	--	w/o high visibility crosswalk	--	with high visibility crosswalk
	Crossing Distance	--	No treatment and/or > 30 feet	--	< 30 feet, or with bulbout/pedestrian refuge
	ADA Curb Ramp	--	Below standard/ requirement	--	Meets standard/ requirement
	Traffic Control	--	No control	Flashing Beacon	Signal/Pedestrian Hybrid Beacon
	Maximum Points: 8 points				
Final PEQE Scoring: Low: < 4 points; Medium: 4-6 points; High: > 7 points Source: City of San Diego, 2013; Chen Ryan Associates, August 2016					

Pedestrian Walkshed Ratio

A travelshed analysis was used to assess the level of pedestrian connectivity at each study intersection. A 0.5-mile pedestrian network buffer was created for each intersection. That area was then compared to the area of a 0.5-mile buffer to calculate a Pedestrian Walkshed Ratio for the intersection. The higher the Pedestrian Walkshed Ratio, the better the overall walking connectivity from the intersection. Figure 4-5 presents the Pedestrian Walkshed Ratio for all intersections in the community of Linda Vista. As shown, the central portion of the community, generally along Linda Vista Road, has the highest walkshed ratios. Portions of the community located further away from major roadways, such as along canyon rims, have a comparatively lower ratio.

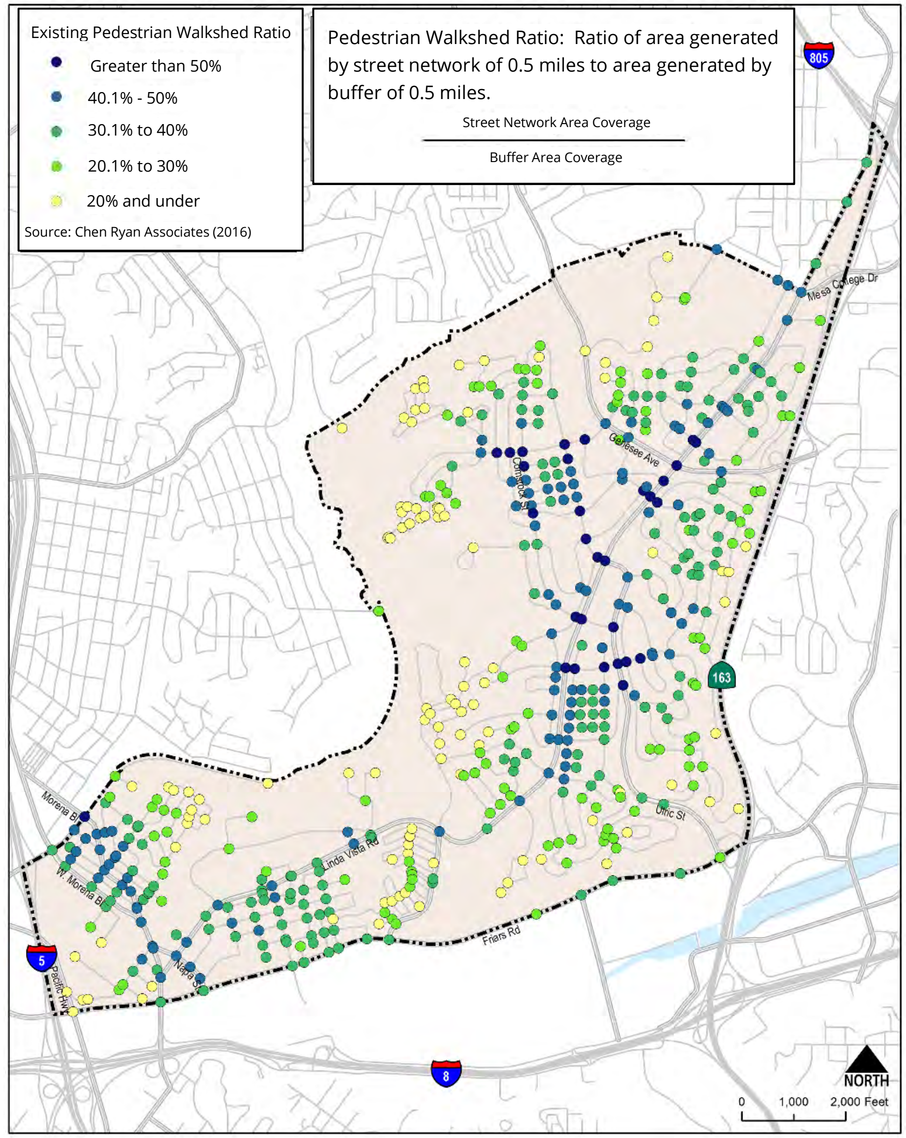


Figure 4-5 – Existing Pedestrian Walkshed Ratio

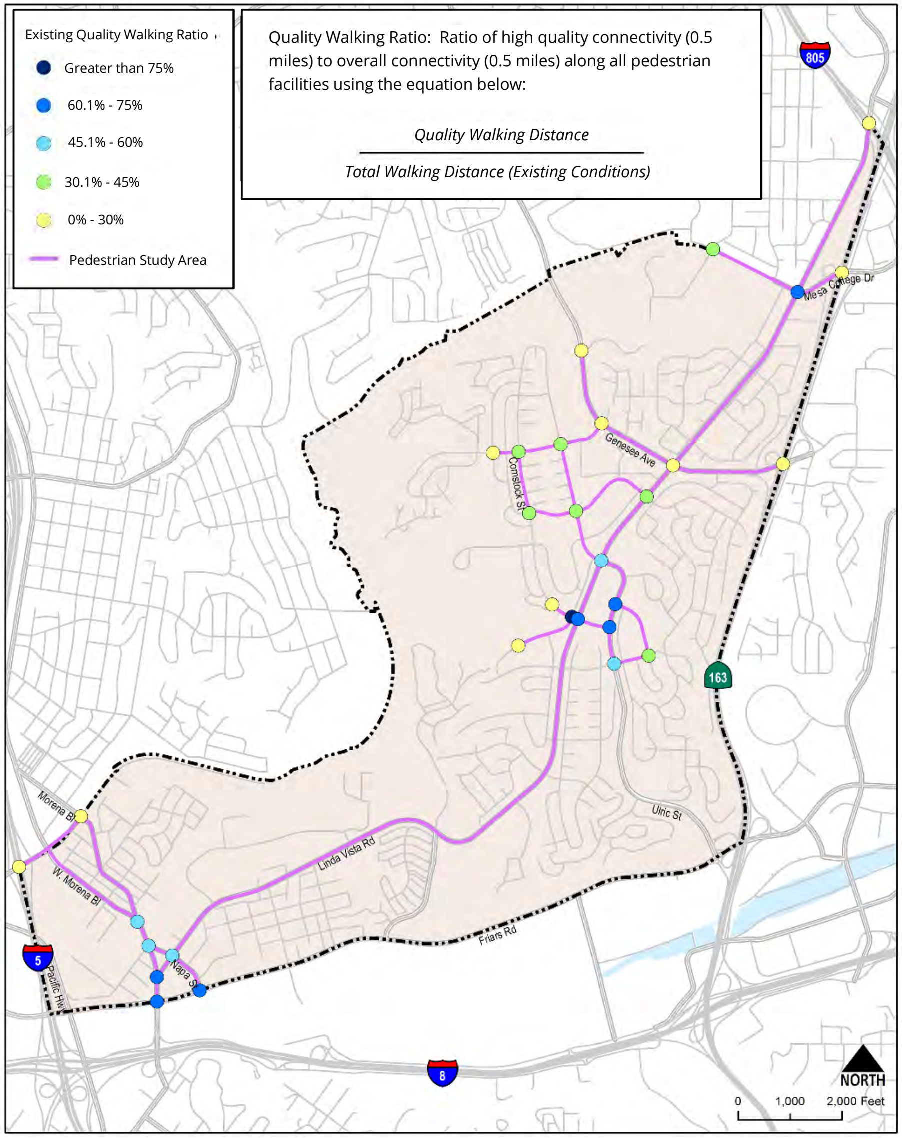


Figure 4-6 – Existing Quality Walkshed Ratio

Quality Walkshed

Pedestrian network connectivity and quality is assessed using a combination of the pedestrian travelshed and quality assessment previously described. The following steps outline the evaluation process:

- **Total Walking Distance** – a 0.5-mile pedestrian network buffer is created for each study intersection, regardless of PEQE score.
- **Quality Walking Distance** – a 0.5-mile pedestrian network buffer is created for each study intersection, using only pedestrian facilities with a PEQE ranking of medium or high (including roadway links and intersections, and not including mid-block crossings). PEQE scores on each side of the roadway segment are added together and assigned a quality rating using the following scale (Low: 0-7, Medium: 8-12, High: 13+), to get a single quality measure for the roadway segment. Segments with a "High" rating are considered quality segments.
- **Quality Walk Ratio** – The ratio of high quality connectivity to overall connectivity along pedestrian facilities is determined using the following equation:

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

Figure 4-6 presents the quality walkshed ratio in the Linda Vista community. As shown, intersections with the highest quality connectivity are generally located along Linda Vista Road. Roadways further from Linda Vista Road, particularly toward the edges of the community near canyon rims, show relatively lower quality connectivity.

Bicycle Assessment

The *California Highway Design Manual* defines a "Bikeway" as a facility primarily for bicycle travel. The Linda Vista community's existing bicycle network is comprised of Class I, II, and III facilities. The four standard bicycle facilities as recognized by the California Department of Transportation (Caltrans) are identified below.

Class I: Multi-Use Path

Also referred to as shared-use paths, Class I facilities are completely separated from vehicular traffic. Multi-use paths are exclusively for non-motorized use, such as bicycles and pedestrians. Bike paths can provide connections where roadways are non-existent or unable to support bicycle travel.

Class II: Bike Lane

Provides a striped lane for one-way travel on streets and highways. The striped lane creates a defined space exclusively for bicycle use. Desired widths are 5 to 6 feet and minimum widths are 4 feet.

Class III: Bike Route

Provides shared use of traffic lanes with motor vehicles, identified by signage and street markings such as "sharrows". Bike Routes provide connections to other bicycle facilities or to designate preferred routes for bicycle travel.

Class IV: Cycle Track

Also referred to as separated bikeways, cycle tracks provide a right-of-way designated exclusively for bicycle travel within the roadway and physically separated from vehicular traffic. Types of separation include, but are not limited to, grade separation, flexible post (also known as delineators), or on-street parking.

Class I: Multi-Use Path ↓

Class II: Bike Lane ↓

Class III: Bike Route ↓

Class IV: Cycle Track ↓

Figure 4-7 displays the existing bicycle network by facility type in Linda Vista. As shown, Class II bike lanes are found on many of Linda Vista's major roadways, such as Linda Vista Road, Genesee Avenue, Ulric Street, and Morena Boulevard. Class III bike routes can be found along Napa Street, Tecolote Road, and the SR-163 Overpass segment of Genesee Avenue.

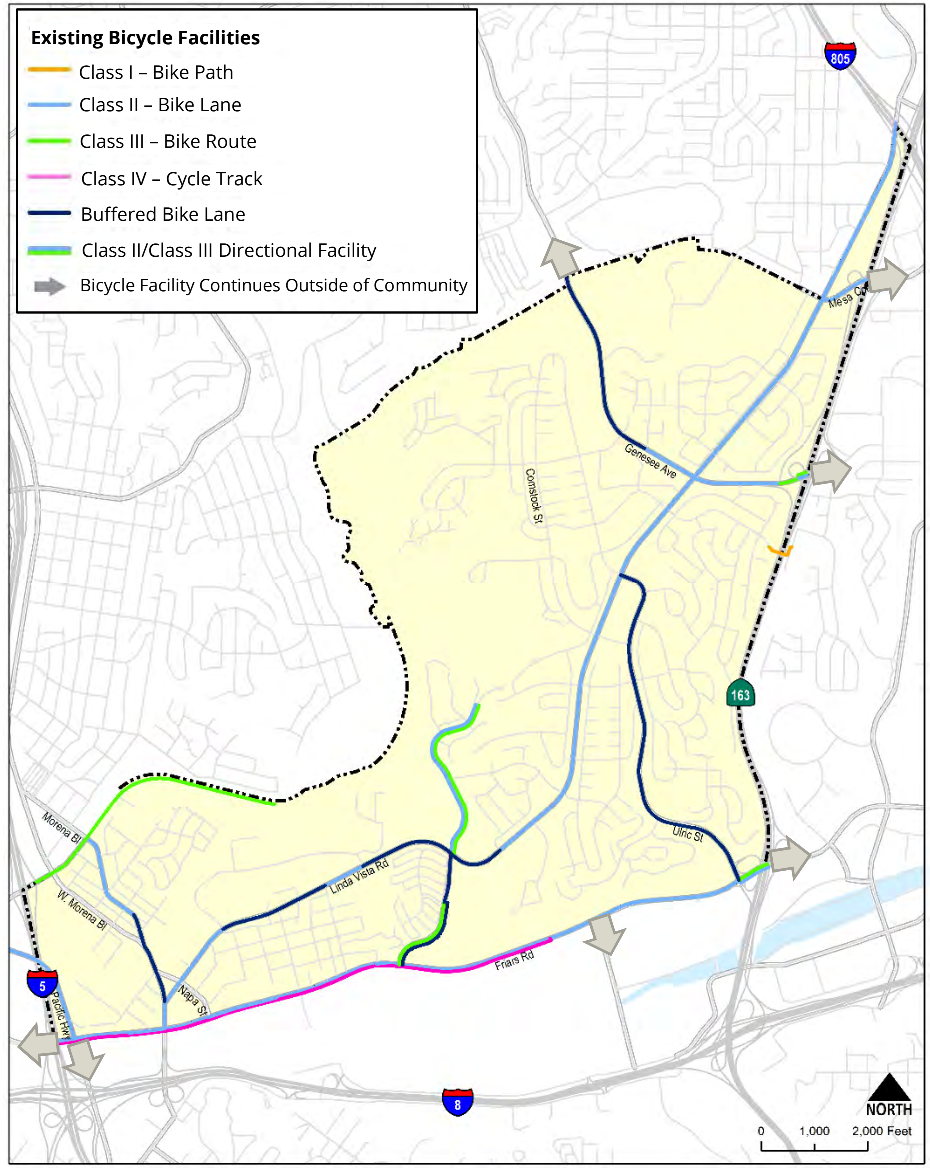


Figure 4-7 – Linda Vista Bicycle Network

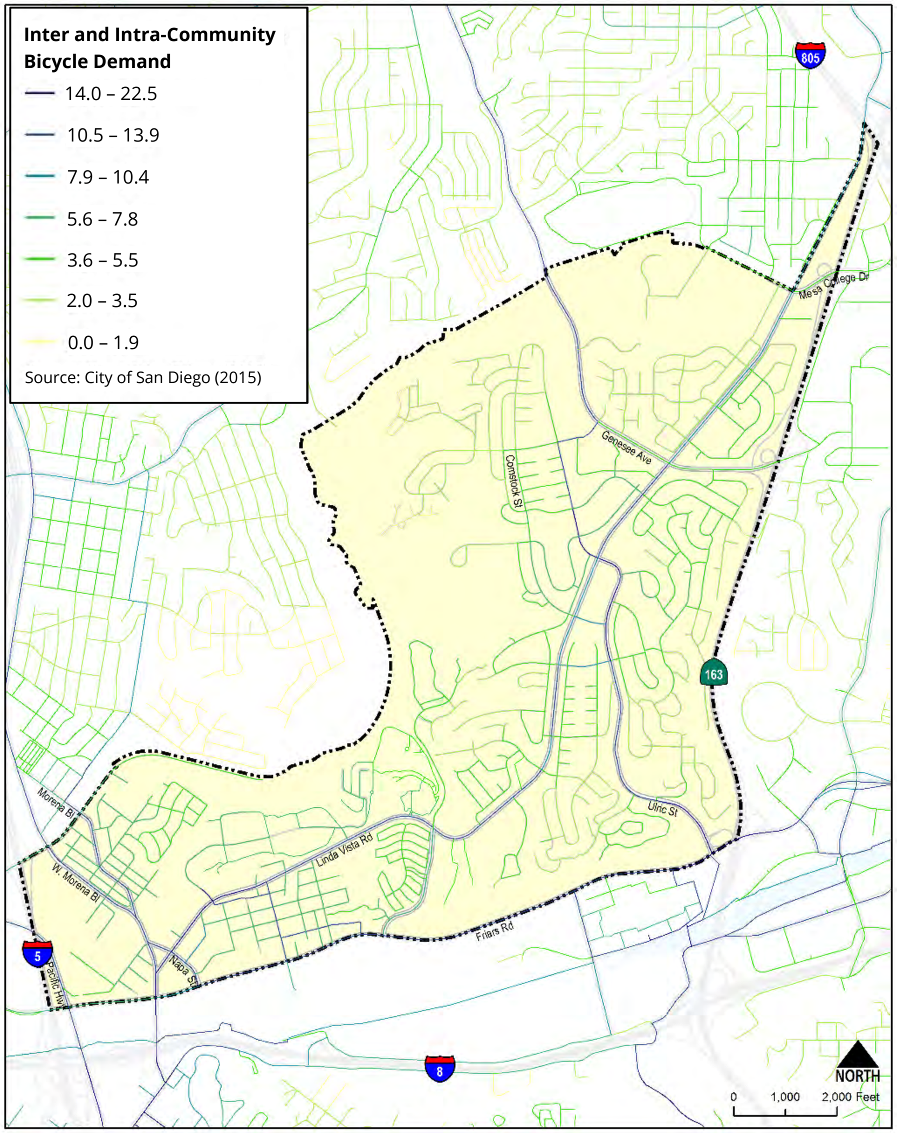


Figure 4-8 – Bicycle Demand Model (BDM)

Bicycle Demand Model (BDM)

The BDM was originally developed in 2010 during the Bicycle Master Plan update process to assist with prioritization of bicycle facility improvement corridors across the City. The BDM was used to identify locations across the City of San Diego with high bicycle demand or places warranting relatively higher consideration for bicycle infrastructure improvements. The BDM was recently updated in 2015.

Figure 4-8 displays the BDM results within the Linda Vista community. As shown, a relatively higher propensity for bicycle trip generation exists along the Linda Vista Road corridor, in addition to major roadways, such as Genesee Avenue, Ulric Street, Via Las Cumbres, Napa Street, and Morena Boulevard.

Bicycle Safety

Figure 4-9 displays bicycle collisions that occurred within the Linda Vista community during the six-year period between 2008 and 2013. As shown, a total of 64 bicycle collisions were recorded, with higher frequencies at the intersection of Genesee Avenue and Linda Vista Road, as well as near the intersection of Ulric Street and Linda Vista Road, and near the closely spaced and irregular intersections at Morena Boulevard, Linda Vista Road, and Napa Street.

Appendix A includes a breakdown of bicycle collisions by party-at-fault, cause, age group, and time.

Bicycle Facility Quality

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

Table 4-2 displays the four LTS categories with descriptions of traffic stress experienced by the cyclist and the cycling conditions associated with each category.

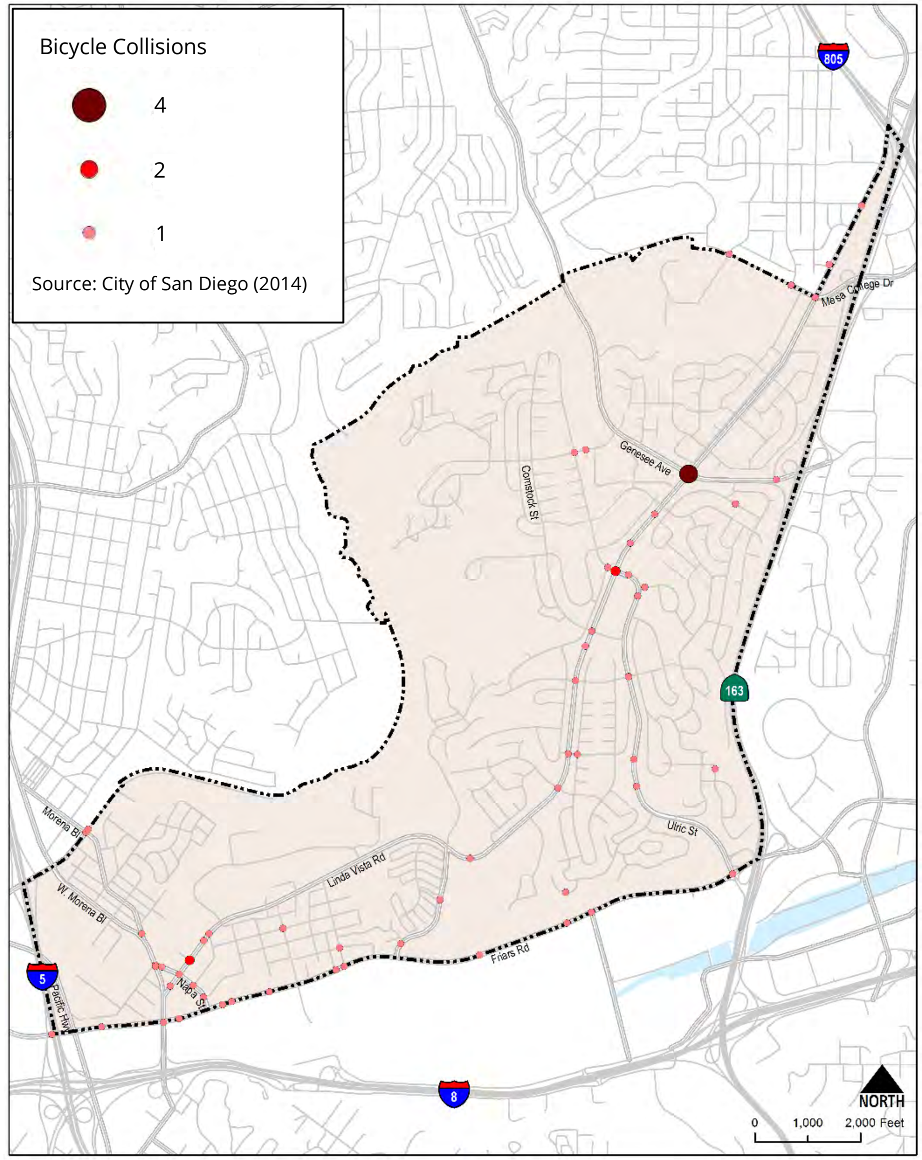


Figure 4-9 –Bicycle Collisions (2008-2013)

Table 4-2 Level of Traffic Stress (LTS) Classifications and Descriptions

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

Source: Mekuria, et al. (2012)

Figure 4-10 displays the results of the LTS analysis within the Linda Vista community. As shown, LTS 4 conditions are commonly found along the community's major roadways, such as portions of Linda Vista Road, Mesa College Drive, Genesee Avenue, portions of Ulric Street, portions of Via Las Cumbres, and portions of Morena Boulevard and West Morena Boulevard. By contrast, LTS 1 and 2 conditions are generally found along residential roadways and collectors throughout the community.

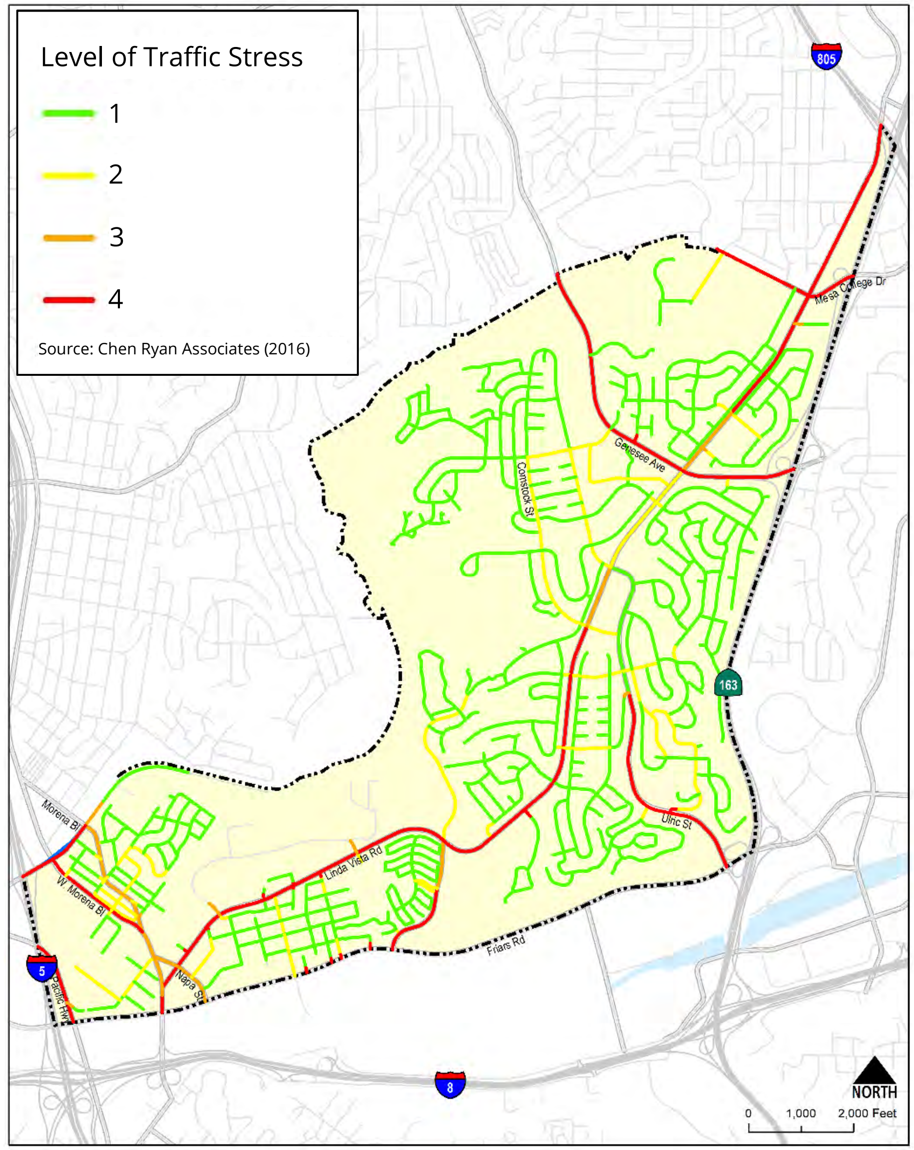


Figure 4-10 –Bicycle Level of Traffic Stress (LTS)

Bicycle Network Connectivity

A bicycle travelshed analysis was used to assess the level of connectivity from each study intersection, similar to the previously presented pedestrian travelshed analysis. A 1-mile bicycle network buffer was drawn around each intersection. That area was compared to the area of a 1-mile buffer to develop a Bikeshed Ratio for the intersection. The higher the Bikeshed Ratio at each intersection, the better the overall cycling connectivity from the intersection. Figure 4-11 presents the Bikeshed Ratio for the community of Linda Vista. As shown, portions of the community near Linda Vista Road, particularly between Ulric Street and Genesee Avenue, have a relatively high Bikeshed Ratio, indicating a higher degree of bicycle connectivity. By contrast, portions of the community away from major roadways, and where street networks are curvilinear, such as near canyon rims, have relatively lower Bikeshed Ratios.

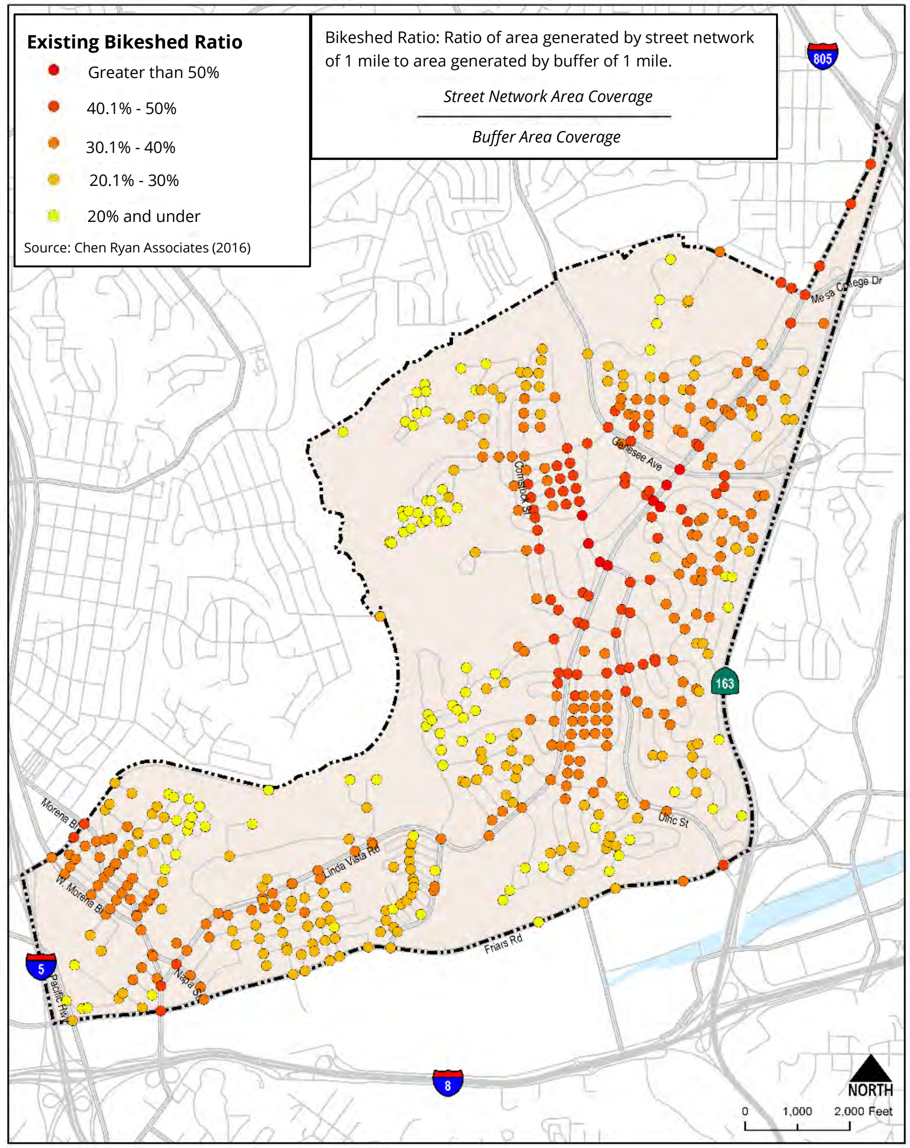


Figure 4-11 –Existing Bikeshed Ratio

Composite Cycling Environment Evaluation

A composite evaluation of the cycling environment in the Linda Vista community was assessed using a combination of the bicycle facility quality and connectivity assessments, similar to the previously described pedestrian composite measure. The following steps outline the evaluation process used:

- **Facility Quality** – roadways with an LTS 1 or 2 score were selected from the roadway network to represent the Quality Bicycle Network.
- **Quality Cycling Distance** – the shortest cycling distance between the centroid of each Traffic Analysis Zone (TAZ) within and adjacent to the Linda Vista Community Planning Area border, and all other study TAZs, was calculated along the Quality Bicycle Network, as well as along all possible roadways.
- **Quality Walk Ratio** – The ratio of high quality opportunity (along LTS 1 or 2 facilities) to overall connectivity (along all roadways, independent of LTS score) is determined using the following equation:

$$\text{Quality Ratio} = \frac{\text{High Quality Bicycle Network}}{\text{All Bicycle Network}}$$

Figure 4-12 presents the quality connectivity analysis for the Linda Vista community. As shown, the strongest intra-community access along Quality Bicycle Network is generally found in TAZs near the central portion of the community, whereas weak intra-community access along Quality Bicycle Network generally exists near the periphery of the community.

Transit Assessment

Station Quality

Each transit station/stop was reviewed for the presence of the following amenities, based on a combination of MTS data and field verification:

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

Table 4-1 in Appendix A displays the standard amenities that should be provided at transit stops/stations based on daily passenger boardings across all routes.

Table 4-2 in Appendix A displays the existing amenities at each transit stop in the Linda Vista community. A red cell indicates missing amenities that are deemed to be below standard, based on the amenity standards presented in Table 4-1. As shown, a total of nine (9) transit stops are deficient in terms of amenities currently provided and their ridership level.

Safety Near Transit Stops

Figure 4-13 displays pedestrian and bicycle collisions that occurred within five hundred (500) feet of a transit stop in Linda Vista, during the six-year period between 2008 and 2013. As shown, higher collision frequencies are present near the intersection of Genesee Avenue and Linda Vista Road, where 8 collisions were recorded near the 5 bus stops at that intersection, as well as near the intersection of Comstock Street and Linda Vista Road, where 9 collisions were recorded near the 4 bus stops at that intersection.

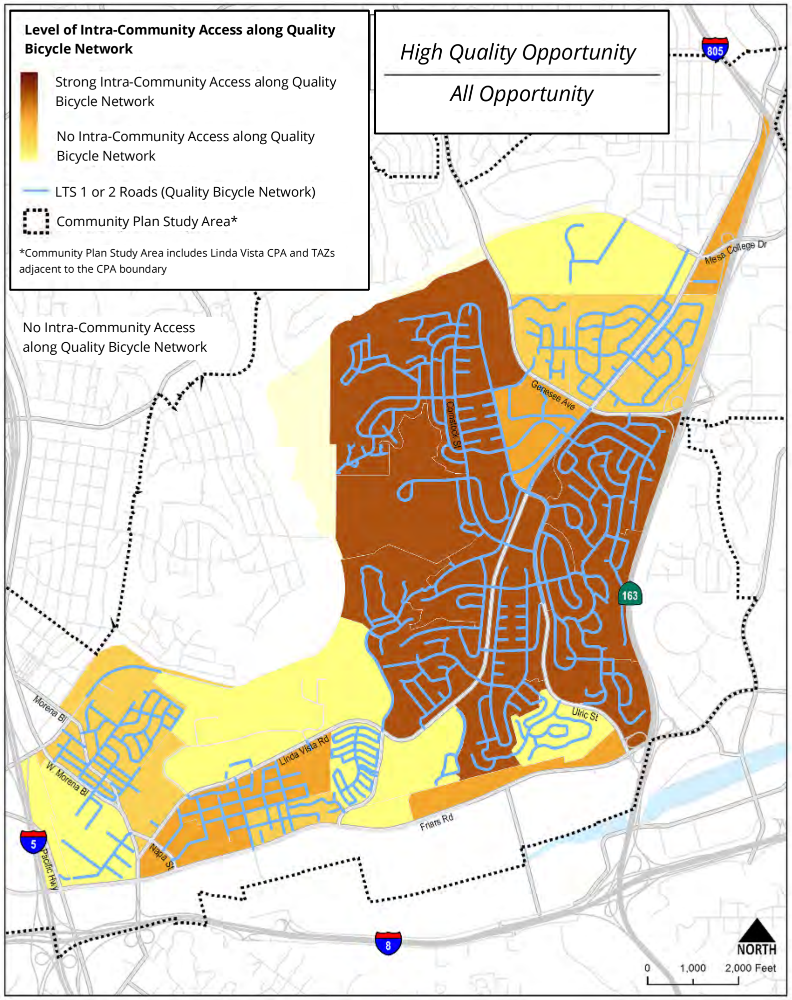


Figure 4-12 –High Quality Bicycle Connectivity Analysis

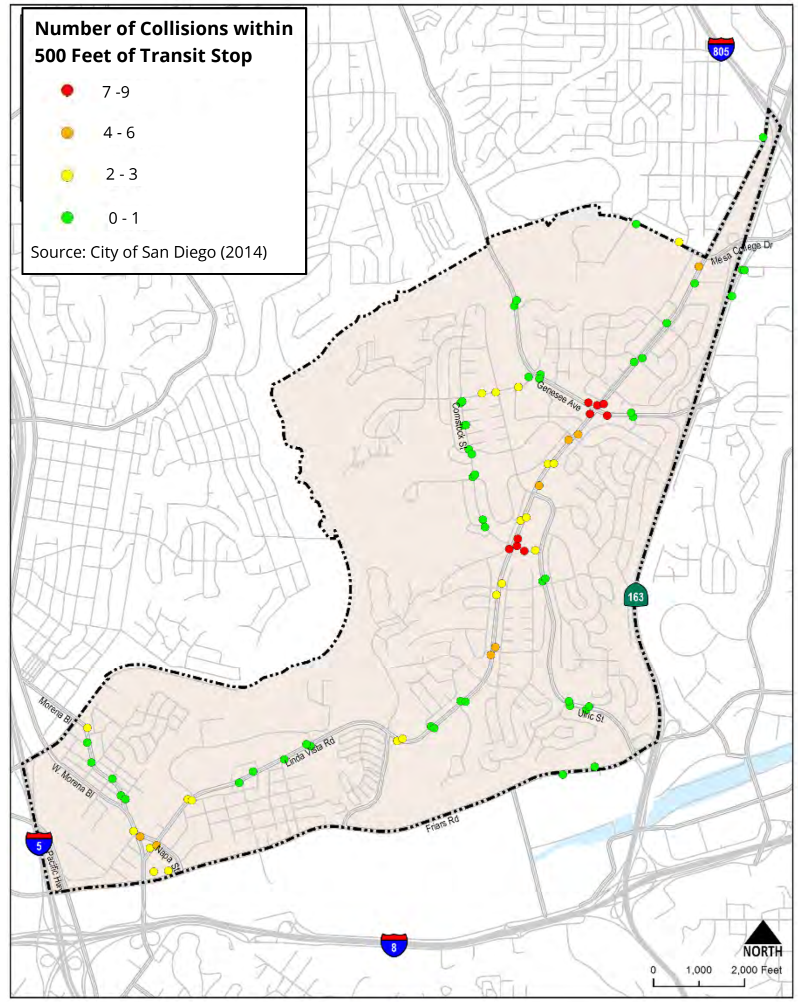


Figure 4-13 – Pedestrian and Bicycle Collisions within 500 Feet of Transit Stops (2008-2013)

Potential Transit Ridership

Potential transit ridership was assessed through examination of total housing units and jobs located within walking distance (a 0.5-mile network buffer) of the transit stop. This data is summarized in Table 4-3 in Appendix A. As shown, the five transit stops with the largest number of jobs and dwelling units within a half-mile radius are:

- Linda Vista Road & Alcala Knolls Drive eastbound (7,741 total jobs and dwelling units),
- Linda Vista Road & Alcala Knolls Drive westbound (7,734 total jobs and dwelling units),
- Linda Vista Road & Via Las Cumbres eastbound (7,307 total jobs and dwelling units),
- Linda Vista Road & Northrim Court southbound (7,222 total jobs and dwelling units), and
- Linda Vista Road & Via Las Cumbres westbound (7,181 total jobs and dwelling units).

Multimodal Evaluation

This section presents evaluation thresholds developed by the City of San Diego to define deficiencies in terms of network quality and connectivity for walking and cycling, as well as station quality, for the transit system.

Evaluation Thresholds

Table 4-3 displays thresholds for the quality and connectivity metrics evaluated throughout this chapter.

The goal for all modes is to achieve the "high" threshold; however, "medium" conditions are acceptable along all facilities within the City. Improvements should be considered for all modes that are either currently performing or anticipated to perform in the low range. A summary of roadway facilities that fall below the target threshold for each evaluation metric is presented in the next section for walking, cycling, and transit, respectively.

Pedestrian Deficiencies

Intersections and roadway segments that received a "low" PEQE rating are summarized in Table 5-2 and Table 5-3 in Appendix A, respectively. As shown, a total of 9 segments are deficient along one or both sides of the roadway. Similarly, a total of 62 intersections are deficient along one or more leg.

Bicycle Deficiencies

Roadway segments that received a rating of LTS 4 are presented in Table 4-4. Nine segments were found to be deficient within the Study Area, primarily along large, heavily travelled roadways.

In addition to deficient segments, certain roadway network locations adjacent to major intersections received an LTS 4 rating. Although LTS is primarily a segment-specific analysis, an intersection's impact on traffic stress is considered when one or more legs are unsignalized. Table 4-5 summarizes these 10 additional deficient locations. As shown, roadway network features adjacent to side-street stop controlled intersections along Linda Vista Road, Friars Road, and Ulric Street are ranked with an LTS 4 rating.

Table 4-3 Multimodal Analysis and Evaluation Thresholds

Mode	Analysis	Type	High	Medium	Low
Pedestrian	PEQE	Quality	7+ Points	4-6 Points	3 or fewer points
	Travelshed	Connectivity	50%+ coverage	30% - 49% coverage	< 30% coverage
	Quality Ratio	Network Evaluation	0.90+	0.70-0.89	< 0.70
Bicycle	LTS	Quality	LTS 1&2	LTS 3	LTS 4
	Travelshed	Connectivity	50%+ coverage	30% - 49% coverage	< 30% coverage
	Quality Paths	Network Evaluation	> 50%+ of BLUs are accessible	30% to 49% of BLUs are accessible	< 30% of BLUs are accessible
Transit	Station Amenities	Quality	Meets Standards	N/A	Does Not Meet Standards

Source: Chen Ryan Associates; August 2016

Table 4-4 Deficient LTS Roadway Segments

No.	Roadway	Segment
1	Mesa College Dr	All segments within community boundary
2	Genesee Ave	All segments within community boundary
3	Linda Vista Rd	I-805 to Wheatley St
4	Linda Vista Rd	Comstock St to Morena Blvd
5	Ulric St	David St to Friars Rd
6	Via Las Cumbres	Camino Costanero to Friars Rd
7	W. Morena Blvd	Tecolote Rd to Morena Blvd
8	W. Morena Blvd	Friars Road Over-Cross to approximately 300 feet north of Friars Road Over-Cross
9	Tecolote Rd	I-5 to Morena Blvd

Source: Chen Ryan Associates; August 2016

Table 4-5 Deficient LTS Intersections

No.	Roadway	Cross Street
1	Metro St	Linda Vista Rd
2	Josephine St	Linda Vista Rd
3	Brunner St	Linda Vista Rd
4	Goshen St	Linda Vista Rd
5	Northrim Ct	Linda Vista Rd
6	Linbrook Dr	Ulric St
7	Donahue St	Friars Rd
8	Fresno St	Friars Rd
9	Goshen St	Friars Rd
10	Gaines St	Friars Rd

Source: Chen Ryan Associates; August 2016

Transit Deficiencies

Table 4-6 summarizes the 11 transit stops within the Study Area that currently lack one or more amenities required by MTS' 1993 *Design for Transit Manual*, based on stop-specific ridership level. As shown, a lack of ADA compliance is the most common deficiency.

Table 4-6 Deficient Transit Stops

No.	Stop ID	Intersection	Direction of Travel	Far or Near Side	Deficiencies
1	11230	Genesee Av / Linda Vista Rd	N/B	F	Shelter, Route Map, Lighting
2	11611	Comstock St / Langmuir St	S/B	F	ADA Compliance
3	11617	Genesee Av / Park Mesa Way	S/B	Mid-Block	ADA Compliance
4	11978	Comstock St / Osler St	S/B	F	ADA Compliance
5	11979	Comstock St / Valjean Ct	S/B	F	ADA Compliance
6	12046	Linda Vista Rd / Mesa College Dr	S/B	F	Lighting
7	12362	Linda Vista Rd / Napa St	E/B	N	Shelter, Route Map, Lighting
8	12392	Comstock St / Fulton St	N/B	N	ADA Compliance
9	12394	Genesee Av / Osler St	W/B	N	ADA Compliance
10	12732	Linda Vista Rd / Ulric St	N/B	F	Seating
11	13389	Friars Rd / Avenida De Las Tiendas	W/B	F	ADA Compliance

Source: MTS Design for Transit Manual (1993), Chen Ryan Associates; August 2016

Summary

In summary, the deficiencies identified in the study set the stage for defining a set of project study areas – both roadway segments and intersections – that will become a focal point of near-terms implementation. The selection of these project study areas will also incorporate considerations of other factors such as the following:

- Locations receiving comments for needing improvement during the public outreach process,
- Locations adjacent to schools (also including the University of San Diego),
- Locations adjacent to parks, and
- Locations adjacent to freeways where high speed transitions and other pedestrian and bicycle conflicts occur.

5. CONCEPT DEVELOPMENT

Recommended Projects

This chapter presents recommended facility improvements ("projects") and explains how the features address the identified mobility needs. An in-depth review of need was determined through PEQE and LTS analyses (discussed in Chapter 4) and public comments received through the two community outreach workshops, public "walk 'n roll" (pedestrian and bicycle) audits, and an interactive online survey. Preliminary planning-level cost estimates are also provided for each project concept. Appendix H has the full breakdowns of cost estimates. Preliminary cost estimates are based on typical engineering and construction costs at the time of print and should be used for reference purposes only.

Each concept was developed to **address pedestrian and/or bicycle facility deficiencies and barriers** as identified through technical analysis or as perceived by members of the community. It is intended that the recommended concepts will **create an improved active transportation network** to serve the Linda Vista community and better support and promote walking and biking.

Project Prioritization

Two types of project areas were identified for the CATS plan: **project corridors**, which represent modifications to roadway cross-sections; and **project improvement areas**, which are focused on improvements to intersections or small districts. Table 5-1 shows the five project corridor extents that were considered for prioritization.

Table 5-1. Refined Project Corridors

#	Corridor
1	Linda Vista Road from Mesa College Drive to north of Baltic Street (community limits)
2	Mesa College Drive from Armstrong Street to Linda Vista Road
3	Genesee Avenue from Linda Vista Road to Whitney Street
4	Ulric Street from Tait Street to Friars Road
5	Via Las Cumbres from Linda Vista Road to Friars Road

Source: Chen Ryan Associates (July, 2016)

Project Identification

Five project corridors identified in this study for "Corridor Improvements" determined to have the most need and which most benefit the community are:

- Linda Vista Road
- Mesa College Drive
- Genesee Avenue
- Ulric Street
- Via Las Cumbres

Ten individual locations called "Improvement Areas", in this plan, selected with the intent that they would be the optimal locations to best serve the needs of the community are:

- Area A: Mesa College Drive at SR-163 Interchange
- Area B: Linda Vista Road at Mesa College Drive Intersection
- Area C: Linda Vista Road at Korink Avenue
- Area D: Ulric Street at Osler Street / Eastman Street / and Fulton Street
- Area E: Linda Vista Road at Genesee Avenue

- Area F: Genesee Avenue at SR-163 Interchange
- Area G: Community Core: Linda Vista Road, Ulric Street, Comstock Street, and Morley Street
- Area I: (Part of Area G)
- Area J: Linda Vista Road between Brunner Street and Goshen Street
- Area L: Kramer Street and Coolidge Street

Note that Area H (Kelly Street Park) and Area K (Via Las Cumbres/Linda Vista Road) were initially considered for improvements but eliminated from the scope of the project as a result of the prioritization process.

Active Transportation Toolbox

Once the project corridors and improvement areas were defined, the existing mobility issues and opportunities were reviewed in more detail. Potential treatments were envisioned to address specific concerns raised by the public, while other treatments were suggested to take advantage of opportunities identified in other Planning efforts, superfluous physical space (e.g., wide roadway or vehicular lanes), or unused road capacity (e.g., excess number of vehicular travel lanes).

A list of potential treatments under consideration was shared with City staff for input. In some cases, the suggested traffic calming or active transportation treatments may not have been installed successfully yet in the region. The City weighed in as to whether these newer treatments would be appropriate to consider as possible future enhancements. These elements were avoided in the project recommendations.

The Active Transportation Toolbox was formed from the treatments found in other similar studies that would be used on this project, such as the Traffic Calming Handbook.

NEED
+
OPPORTUNITY
=
RECOMMENDATION

Cost Estimation

For linear-type corridor improvements, the cost estimates were created using a template that calculates the improvement cost per foot and multiplies it by the corridor length.

For improvement areas, traditional quantities were calculated based on the anticipated items of construction and multiplied by the expected unit price of each item.

These cost estimates were used to create the financing strategy in Chapter 6.

Although planning-level costs are shown within this section, Appendix I includes a detailed breakdown of all estimated costs for corridors and improvement areas.

Summary Of Recommendations And Toolbox Applications

Table 5-2 summarizes the key issues, recommendations, and toolbox applications developed for each Corridor and Improvement Area. Complete details and concept sheets for each Corridor and Improvement Area are provided in the remainder of this chapter.

The recommendations include those sourced from other regional or City of San Diego Planning efforts, including concurrent planning documents and improvement plans.

Table 5-2. Summary of Recommendations and Toolbox Applications

Corridor or Improvement Area	Identified Issues	Source: Technical Analysis	Source: Public Feedback	Source: City/ Planning	Recommendations	Toolbox Application
CORRIDOR 1: **Linda Vista Rd**	High speed traffic and long crossing distances		•		Increase separation between cars, bikes, and pedestrians along Linda Vista Rd to improve the walking and bicycling environments. The SANDAG Regional Bike Plan recommends an Enhanced Class II Bike Lane for Linda Vista Rd from Genesee Ave to Ulric St.	• Install a buffered bike lane on both sides of the street between Alcala Knolls and Baltic St • The buffered bike lane will also increase the space between cars and pedestrians • Additional improvements along Linda Vista Rd are detailed in Improvement Areas B, C, E, G, and I
	Bike Level of Traffic Stress (LTS) 3-4	•				
	"Medium" PEQE score	•				
	Incomplete or damaged sidewalks		•			
	Insufficient separation between cars and bike facilities		•			
	Bike facility additions/improvements			•		
CORRIDOR 2: **Mesa College Dr**	Sidewalks need improvement		•		Provide adequate bike facilities on both sides of the street. Where feasible, increase separation between cars, bicycles, and pedestrians. The City of San Diego Bicycle Master Plan recommends a Class II bike lane for Mesa College Rd from Linda Vista Rd to Ashford St and a Class III bike route west of Ashford St.	• Install new bike lanes on both sides of the street. • Install a buffered bike lane, where feasible • Install continental crosswalks at Mesa College Dr and Armstrong St • Install continental crosswalks on the north and west legs of Mesa College Dr and Ashford St • Additional improvements along Mesa College Dr are detailed in Improvement Areas A and B.
	Bike LTS 4	•				
	"Medium" PEQE score east of Linda Vista Road	•				
	No existing bike facilities west of Linda Vista Rd		•			
	Bike facility additions/improvements			•		
CORRIDOR 3: **Genesee Ave**	Insufficient separation between cars and bike facilities, particularly crossing the SR-163 ramps		•		Increase separation between cars, bikes, and pedestrians on both sides of the street. The SANDAG Regional Bike Plan recommends an Enhanced Class II Bike Lane north of Linda Vista Rd.	• Add buffers to the existing bike lanes between the northern community boundary and SR-163 • Install continental crosswalks at Genesee Ave and Richland St • Additional improvements along Genesee Ave are detailed in Improvement Areas E and F.
	Insufficient lighting		•			
	Bike LTS 4	•				
	Mostly Low" PEQE score	•				
CORRIDOR 4: **Ulric St**	Insufficient separation between cars and bike facilities, including existing buffered bike lanes		•		Increase separation between cars, bikes, and pedestrians on both sides of the street. Improve visibility of pedestrians and biyclists. Install more street lights. Upgrade bus shelters. Modify signal phasing to include bicycles The SANDAG Regional Bike Plan recommends an Enhanced Class II Bike Lane south of Linda Vista Rd.	• Install a two-way separated cycle track on the west or southbound side from Tait St to Friars Rd and a bike lane on the northbound side • Install continental crosswalks at Ulric St and Fashion Hills Blvd • Additional improvements along Ulric St are detailed in Improvement Areas D, G, and I.
	Bike LTS 1 (Linda Vista Rd to David St)	•				
	Bike LTS 4 (David St to Friars Rd)	•				
	"Medium" to "High" PEQE score	•				
CORRIDOR 5: **Via Las Cumbres**	Bike LTS 3-4 (south of Linda Vista Rd)	•			Close the existing sidewalk gap in the pedestrian network.	• Install a sidewalk on the east side of the street from Linda Vista Rd to Friars Rd
	Missing sidewalk on the east side		•			
	PEQE score not assessed for this corridor					

Table 5-2, continued

Corridor or Improvement Area	Identified Issues	Source: Technical Analysis	Source: Public Feedback	Source: City/ Planning	Recommendations	Toolbox Application
IMPROVEMENT AREA A: Mesa College Dr at SR-163 On-Ramps	High speed traffic, safety concerns, and difficulty transitioning across the SR-163 on-ramps	•	•		Improve the pedestrian and bike environments utilizing signage, adding buffers, and installing new features. Increase separation between users.	• Reduce the turning radius of the SR-163 on-ramps to slow vehicular speeds and reduce crossing distance • Add continental crosswalk striping to the SR-163 southbound on-ramp • Install buffered bike lanes with delineators on both sides of street • Add green paint to the bike lanes before and after conflict areas to gain driver awareness • Install a fence on the south side of the overpass to protect bicyclists
	Pedestrians walk on south side of street where no sidewalk or pedestrian facilities are provided		•			
IMPROVEMENT AREA B: Mesa College Dr & Linda Vista Rd	Pedestrian crossing and sidewalk improvements needed		•		Improve the pedestrian and bike facilities by modifying the intersection to accommodate crossing and turning movements by all modes.	• Install a proteted intersection with continental crosswalks to allow bicycles to complete all turning movements without weaving from the roadway • Reduce curb radius of northeast corner • Upgrade traffic signals with ADA push buttons, countdown pedestrian signals, and bike detection • Restripe bike lanes • Install/Continue separated buffered bike lanes
	Bicyclists identified it as difficult to make left turns at the intersection		•			
	Intersection of Corridors 1 and 2	•				
	History of pedestrian and bicycle collisions	•				
IMPROVEMENT AREA C: Linda Vista Rd & Korink Ave/Daniel Ave	Inadequate facilities to access transit stop		•		Improve pedestrian facilities surrounding and serving the transit stop.	• Reduce travel lanes to accommodate bike buffers for existing bike lanes on both sides of street • Upgrade surrounding pedestrian ramps to be ADA compliant • Install pedestrian refuge island to improve crossing
	Sidewalks and bus shelter are not provided		•			
IMPROVEMENT AREA D: Ulric St & Osler St/Eastman St/ Fulton St	Insufficient crosswalk facilities for pedestrians at the intersections		•		Modify and enhance pedestrian facilities at the intersections to improve walking, biking, and crossing conditions. Utilize tools to increase safety and visibility.	• Install curb pop-outs and high-visibility continental crosswalks at Ulric St/Osler St, Ulric St/Eastman St, and Ulric St/Fulton St • Evaluate potential for a fully signalized intersection at Ulric St/Osler St
	Narrow sidewalks		•			
IMPROVEMENT AREA E: Linda Vista Rd & Genesee Ave	Inadequate facilities in and surrounding the intersection to accommodate pedestrians and the transit stop on the north side of Genesee Avenue west of Linda Vista Rd		•		Modify and enhance pedestrian facilities at the intersections to improve walking, biking, and crossing conditions.	• Install a protected intersection • Install high-visibility continental crosswalks • Widen the sidewalks around the intersection • Modify traffic signals/Add countdown timers and bike detection • Add bus shelter serving the transit stop • Add green paint to the bike lanes in conflict areas
	Wide and busy intersection, difficult to cross for pedestrians and bicyclists		•			
	No bus shelter provided		•			
	Intersection of Corridors 1 and 3	•				

Table 5-2, continued

Corridor or Improvement Area	Identified Issues	Source			Recommendations	Toolbox Application
		Technical Analysis	Public Feedback	City/ Planning		
IMPROVEMENT AREA F: Genesee Ave at SR-163 On-Ramps	Difficulty for pedestrians and bicyclists to cross SR-163 on- and off-ramps	•	•	•	Make improvements to the roadway at the SR-163 ramps to improve safety and visibility of pedestrians and bicyclists The City of San Diego Bicycle Master Plan recommends a Class II bike lane in this vicinity	• Add green paint to the bike lanes around conflict areas to gain driver awareness • Widen the sidewalk to 10' for shared pedestrian and bike use on the eastbound approach to SR-163 on-ramp transition area • Relocate the crosswalk on the ramp, add continental striping • Remove a traffic lane to provide a buffered bike lane (additional analysis required)
IMPROVEMENT AREA G & I: Linda Vista Shopping Center	Core commercial area of the community, includes the library, post office, and shopping hub		•		Improve the pedestrian and bicycle facilities surrounding the shopping center and connections to adjacent neighborhoods Add raised landscaped median along Linda Vista Rd between Comstock St and Ulric St. Transform Comstock St into a Main Street between Linda Vista Rd and Ulric St. Install street lighting and landscaping. Evaluate a mid-block crossing on Ulric Street between Dunlop St and Linda Vista Rd where jaywalking is prevalent.	**Linda Vista Rd** • Add buffer to existing bike lanes • Widen sidewalks on both sides of street **Morley St** • Add speed humps to calm traffic speeds • Upgrade pedestrian ramps and add pedestrian refuge island on west side of Linda Vista Rd/Morley St • Add continental crosswalks at Linda Vista Rd/Morley St **Comstock St** • Widen sidewalks and reduce road width • Add continental crosswalks at Linda Vista Rd and Ulric St • Modify signals and replace detection loops at intersection • Add bus shelters along Comstock between Linda Vista Rd and Ulric St • Install mid-block crossing with Rectangular Rapid Flashing • Beacon and pedestrian refuge island between Linda Vista Rd and Ulric St • Add bike lanes **Ulric St** • Add pop-out on east side of intersection of Ulric St at Linda Vista Rd to provide larger landing for pedestrians • Add continental crosswalk, pop-outs, access ramps, and a pedestrian refuge at Ulric St/Burroughs St • Add continental crosswalk at Linda Vista Rd/Ulric St and install a median on the southwest side of the intersection
	Lack of adequate street lighting		•			
	Narrow sidewalks		•			
	Need for more crossings/jaywalking prevalent		•			
	Bike lanes (roadway surface) are not maintained		•			
	Speed/need for traffic calming		•			
	Intersection of Corridors 1 and 4	•				

Table 5-2, continued

Corridor or Improvement Area	Identified Issues	Source: Technical Analysis	Source: Public Feedback	Source: City/Planning	Recommendations	Toolbox Application
IMPROVEMENT AREA J: USD Stairway	Prevalence for jaywalking to access the existing stairway		•		Improve the pedestrian and bike facilities to provide better crossing access and greater awareness of bicyclists	• Add a mid-block continental crosswalk with pedestrian refuge island, access ramps, and HAWK signal between Goshen St and Brunner St, direcly adjacent to the stairway (additional analysis and signal warrant required) • Alternatively, a signalized crossing may be installed at Goshen St and/or Brunner St, if warranted
	Increased awareness of bicyclists is needed along the roadway		•			
IMPROVEMENT AREA L: Kramer St & Coolidge St	Lack of adequate street lighting		•		Improve the intersection to better accomodate all users and slow traffic speeds	• Install pop-outs and high-visibility continental crosswalks at the intersection of Kramer St/Coolidge St • Install a raised mid-block crossing with curb pop-outs and high-visibility continental crosswalks fronting the elementary school along Coolidge St • Add street light to mid-block crossing • Evaluate potential for a 30-foot diameter traffic circle
	Speed/need for traffic calming		•			
	New or improved crosswalk needed		•			

CORRIDOR 1: LINDA VISTA ROAD

The Linda Vista Road corridor connects the Linda Vista community with the Morena District to the southwest and the Kearny Mesa Community Planning Area to the northeast. This road is the north-south backbone of the community, providing access to the main commercial center in the community and many of the schools, including Kearny Senior High School, Mark Twain High School, Francis Parker School, and the University of San Diego.

Existing Conditions & Need

The road is classified as a four-lane major street in the 1998 Linda Vista Community Plan. It has Class II bike lanes along its entire length.

Linda Vista Road has on-street parking on the following segments:

- Southbound side between Ulric Street and Fulton Street, and
- Both sides north of Markham Road to the study area boundary.

The average daily traffic (ADT) ranges from approximately 14,000 to 23,000 vehicles per day, according to counts from the City of San Diego.

Linda Vista Road looking north at Korink Ave

Technical Analysis

The PEQE and LTS analyses concluded that Linda Vista Road from the northern community plan boundary to Napa Street has a mostly "medium" PEQE score and mostly poor LTS score of LTS 4. The technical analysis suggests a need for improved pedestrian facilities, such as buffering from vehicles and sidewalk improvements as well as enhanced bicycling facilities.

Public Feedback

Walking Barriers and Improvements

The comments related to walking issues and improvements for this corridor generally included sidewalks and medians being in need of repair, traffic calming, narrowing crossing distances, wider sidewalks, and enhanced crosswalks.

Bicycling Barriers and Improvements

The comments related to bicycling issues and improvements for this corridor generally included the need for separation between people bicycling and vehicles moving at a high speed or addition of buffered or green lanes. There was also mention of conflicts from vehicles queuing to turn at major intersections that could be addressed.

Transit Barriers and Improvements

The comments related to transit issues and improvements for this corridor generally included the need for additional bus shelters and sidewalks to provide access to bus stops.

Other City/Planning Efforts

A portion of the road between Genesee Avenue and Ulric Street is shown as a proposed regional "Enhanced Class II Bike Lane" within SANDAG's "Riding to 2050: San Diego Regional Bike Plan."

Recommended Improvements

The Linda Vista Road corridor project was studied from Alcala Knolls north to 600 feet north of Baltic Street. The recommendation for Linda Vista Road is to add buffered areas to the existing bicycle facilities to create more separation between the vehicular travel lanes and the bike lanes and sidewalk. The buffer would be placed along the vehicle travel side of the pre-existing bike lane. Travel lanes would be reduced to accomplish this. Additional sidewalk, crosswalk, and transit recommendations can be found along Linda Vista Road in Improvement Areas B, C, E, G, and I.

Project Cost Estimate

The estimated cost for the recommended improvements on this corridor is **$311,000**.

Corridor 1: Linda Vista Rd

Key Map

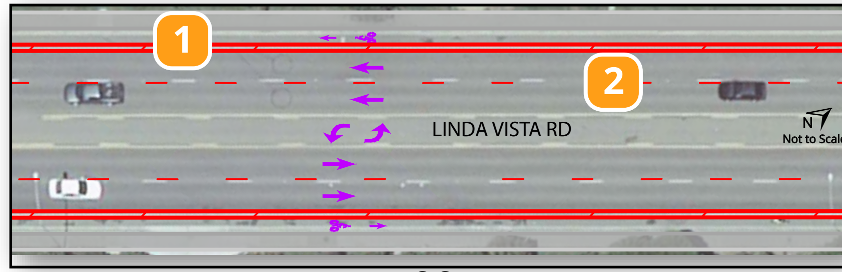
1 Add Buffer to Bike Lane

2 Lane Diet/ Lane Width Reduction

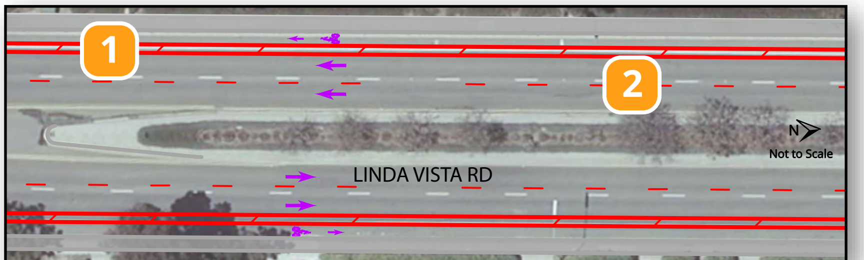
3 Linda Vista Rd between Comstock St and Ulric St detail provided as part of Improvement Area G & I

Note that all concept plans are provided to demonstrate general feasibility of the subject proposal only.
Actual improvements will require additional engineering studies and design work to the satisfaction of the City Engineer.

A_A
From Alcala Knolls Dr to Kramer St

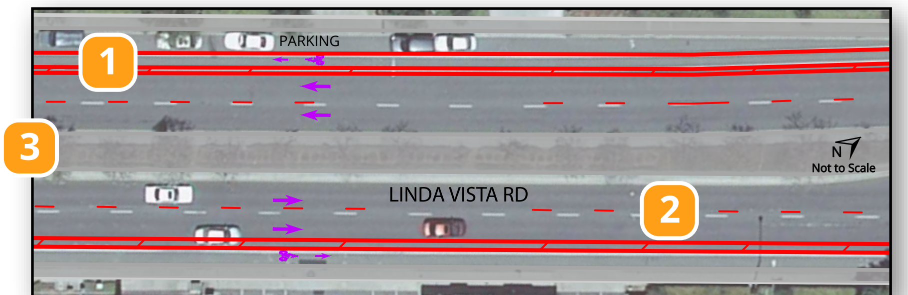


B_B
From Kramer to Tait St

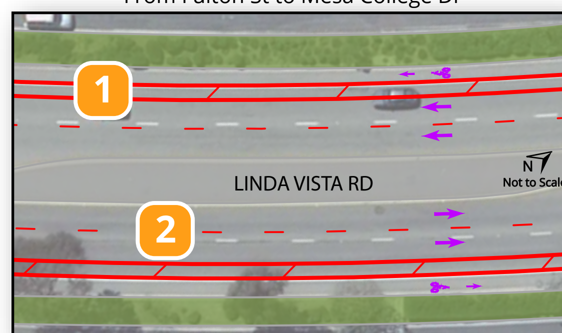


C_C
From Tait to Comstock St

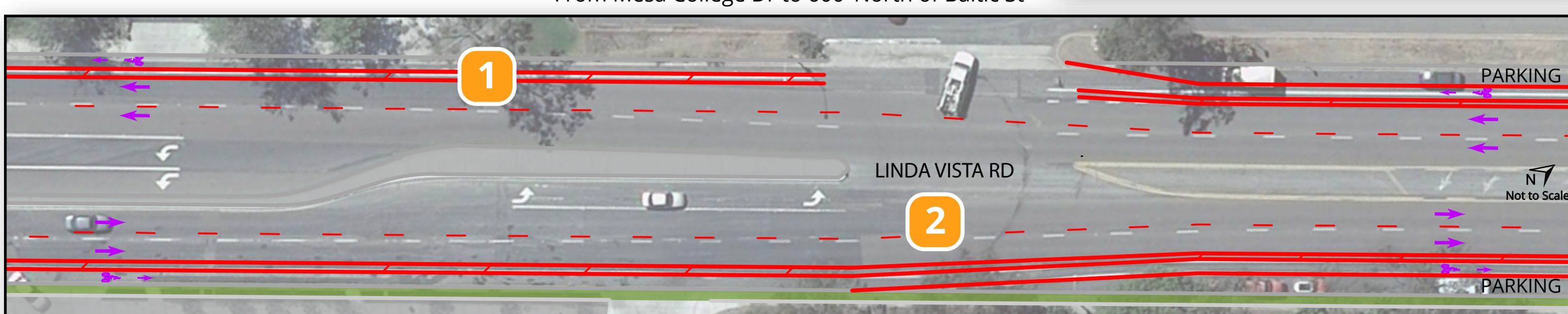
D_D
From Ulric St to Fulton St



E_E
From Fulton St to Mesa College Dr



F_F
From Mesa College Dr to 600' North of Baltic St



CORRIDOR 2: MESA COLLEGE DRIVE

The Mesa College Drive corridor connects the Linda Vista community with the Clairemont Mesa community plan area to the northwest and the Serra Mesa Community Planning Area to the east. Mesa College Drive runs east/west and is the primary entrance to Mesa College. The roadway also provides connections to Kearny High School, State Route 163, and Interstate 805.

Existing Conditions & Need

The road is classified as a four-lane major street in the 1998 Linda Vista Community Plan. There are no existing bicycle facilities on Mesa College Drive west of Linda Vista Road.

Mesa College Drive has on-street parking on the following segments:

- Both sides between Ashford Street to Armstrong Street.

The average daily traffic (ADT) ranges from approximately 17,000 to 25,000 vehicles per day according to counts taken between 2009 and 2013 available through the SANDAG website.

Technical Analysis

The PEQE and LTS analyses concluded that Mesa College Drive from Armstrong Street to the eastern community plan area boundary had a "medium" PEQE score and the poorest LTS score of LTS 4. This score suggests an extremely high need for improved bicycling facilities. Transit analysis identified the stop at Mesa College Dr/Ashford St as in need for an expanded sidewalk.

Public Feedback

Walking Barriers and Improvements

The comments related to walking issues and improvements for this corridor generally included the need for improved sidewalks.

Bicycling Barriers and Improvements

No comments were received related to bicycling barriers and improvements for this corridor.

Transit Barriers and Improvements

No comments were received related to transit barriers and improvements for this corridor.

Other City/Planning Efforts

The City of San Diego Bicycle Master Plan identifies Mesa College Drive between Linda Vista Road and Ashford Street as a proposed Class II bike lane. West of Ashford Street, Mesa College Drive is proposed as a Class III bike route.

Recommended Improvements

The Mesa College Drive corridor was studied from Armstrong to Linda Vista Road. The recommendation is to create dedicated bike lanes to make a connection from Linda Vista Road to the Mesa College campus. Where possible, buffers were added to bike lanes. To create the width for the new bike lanes, parking would be removed from the south side of the street, lane widths would be reduced, and the median would be relocated, and narrowed. Enhanced crosswalks are also proposed for the signalized intersections along this corridor.

A proposal to widen the sidewalk in the area to the north of Kearny High School was considered but rejected due to the multiple utilities that would require relocation.

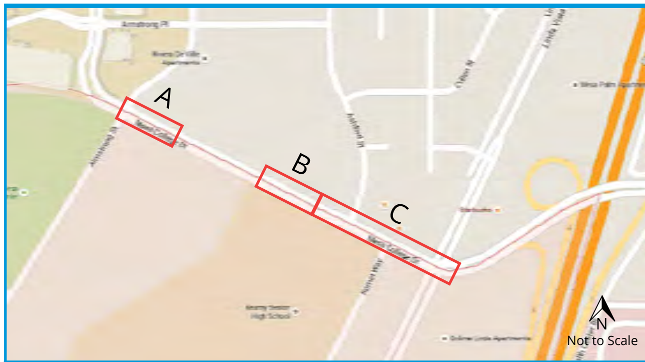
It is also suggested that further analysis be conducted to consider a road diet or reduction of travel lanes for traffic calming purposes and to retain parking.

Additional intersection, bicycle, and sidewalk recommendations can be found in Improvement Areas A and B.

Project Cost Estimate

The estimated cost for the recommended improvements on this corridor is **$460,000**.

Corridor 2: Mesa College Dr

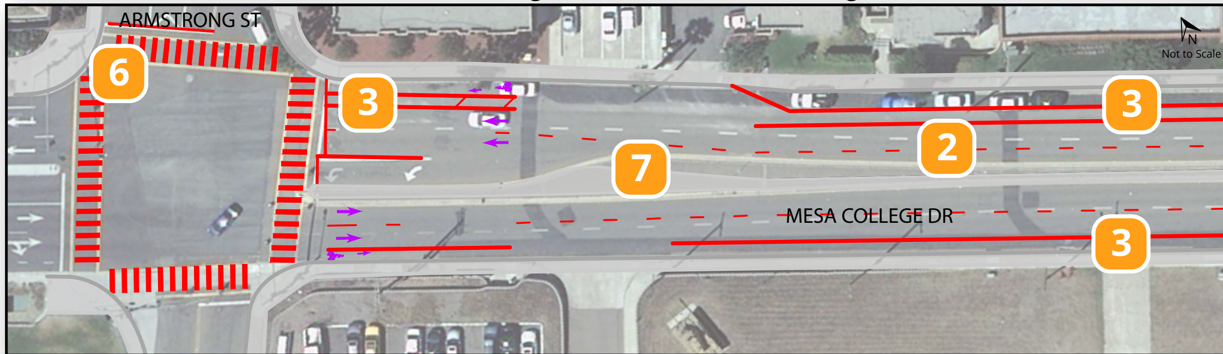


Key Map

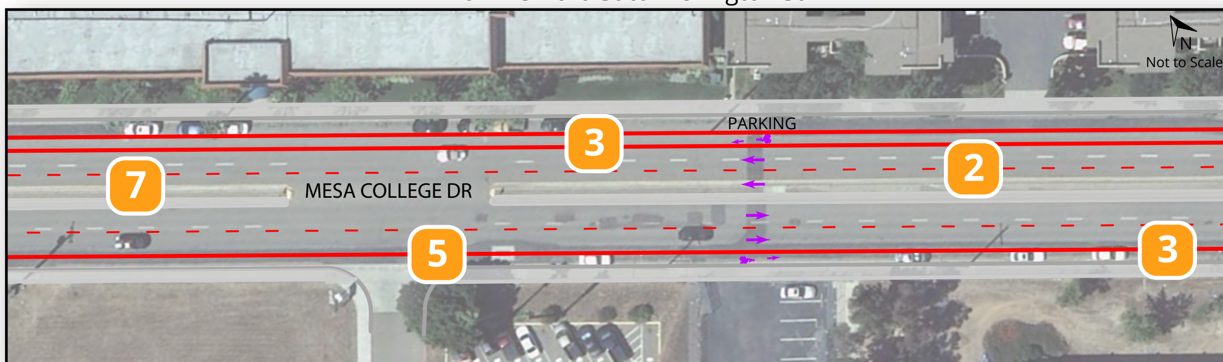
1. Add Buffer to Bike Lane
2. Lane Diet/ Lane Width Reduction
3. Proposed Bike Lane
4. Protected Intersection
5. Parking Loss (24 Spaces)
6. Continental Crosswalk
7. Remove and Replace Median

Note that all concept plans are provided to demonstrate general feasibility of the subject proposal only.
Actual improvements will require additional engineering studies and design work to the satisfaction of the City Engineer.

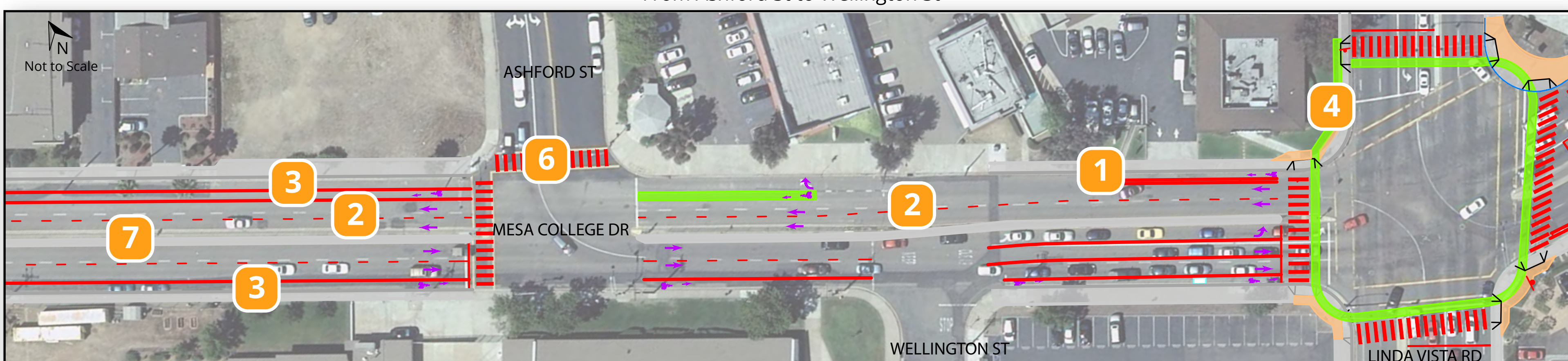
A_A
From Armstrong St to 100’ East of Armstrong St



B_B
From Ashford St to Wellington St



C_C
From Ashford St to Wellington St



CORRIDOR 3: GENESEE AVENUE

The Genesee Avenue corridor connects the Linda Vista community with the Clairemont Mesa community plan area to the northwest, and the Serra Mesa Community Planning Area to the east. This road runs west/east, and connects to State Route 163, and Linda Vista Community Park.

Existing Conditions & Need

Genesee Avenue is classified as a four-lane primary arterial from SR-163 to Osler Street, and a two-lane major street from Osler to the northern community boundary in the 1998 Linda Vista Community Plan. Existing buffered bike lanes are fragmented along the segment.

There is no on-street parking in this area.

The average daily traffic (ADT) is approximately 18,000 vehicles per day west of Linda Vista Road, and approximately 36,000 vehicles per day east of Linda Vista Road to SR-163, according to counts taken between 2009, and 2013 available through the SANDAG website.

Technical Analysis

The PEQE and LTS analyses concluded that Genesee Avenue from the northern community plan area boundary to the SR-163 Ramps had a "low" PEQE score and the poorest LTS score of LTS 4. This score suggests an extremely high need for improved facilities for people bicycling and walking.

Public Feedback

Walking Barriers and Improvements

The comments received related to walking issues and improvements for this corridor generally included the need for improvements to crossing at the SR-163 on and off ramps as well as the addition of lighting in this area.

Bicycling Barriers and Improvements

The comments related to bicycling issues and improvements for this corridor generally included the need for improvements to safety while crossing the freeway on ramp and improvements to bike lanes near the northern community plan boundary.

Transit Barriers and Improvements

No comments were received related to transit barriers, and improvements for this corridor.

Other City/Planning Efforts

Genesee Avenue is identified in the SANDAG "Riding to 2050: San Diego Regional Bike Plan" as an enhanced Class II Bike Lane.

Recommended Improvements

The Genesee Avenue corridor was studied from the northern community plan boundary to the SR-163 ramps.

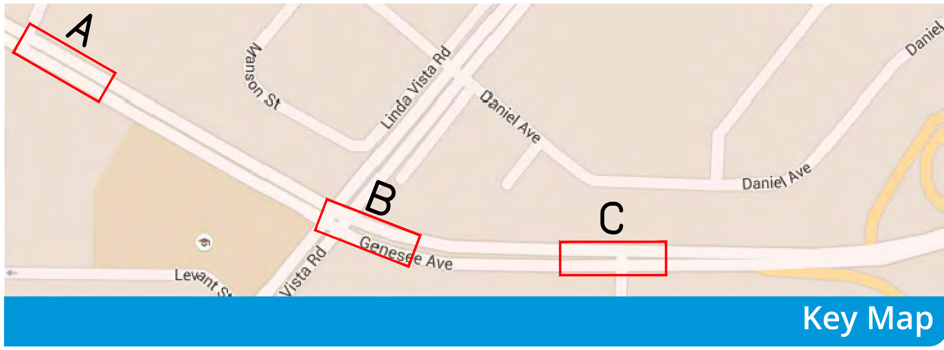
The primary improvement proposed for this corridor is buffers for pre-existing bike lanes on both sides of the street. These buffered bike lanes will connect with the buffered bike lanes already in place near the northwestern community plan area boundary.

Continental crosswalks are recommended at the intersection of Genesee Avenue and Richland Street. Additional recommendations can be found in Improvement Area E and F, including a protected intersection at Genesee Avenue and Linda Vista Road and sidewalk widening at the transit stop.

A cycle track was considered on westbound Genesee Avenue near Richland Street with a transit stop treatment. Ultimately, the cycle track was excluded due to anticipated impacts to traffic operations.

Project Cost Estimate

The estimated cost for the recommended improvements on this corridor is **$33,000**.

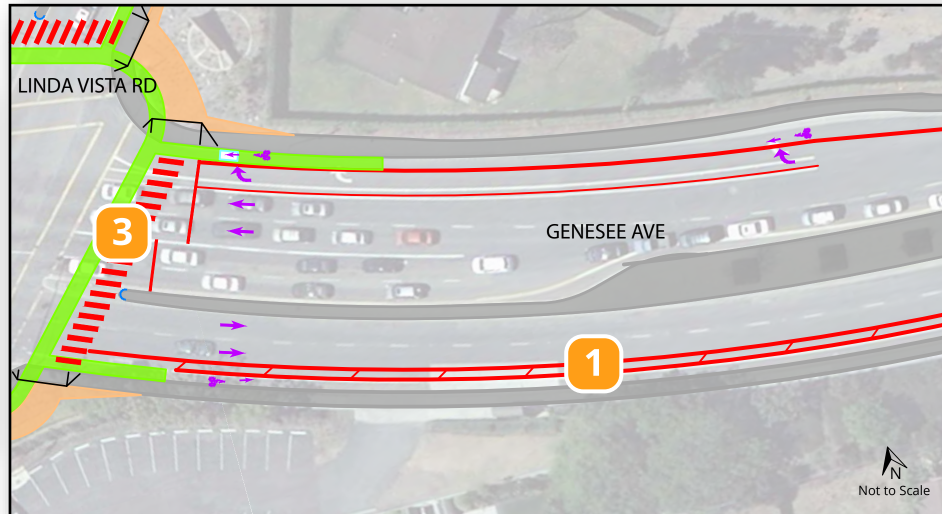


Corridor 3: Genesee Ave

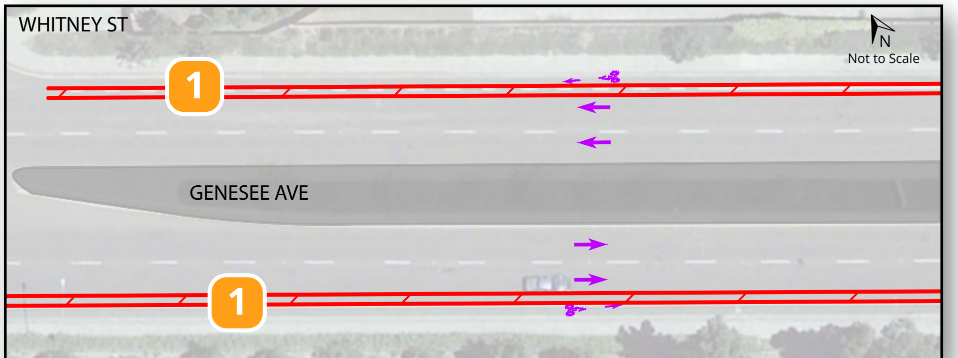
1. Add Buffer to Bike Lane
2. Lane Diet/ Lane Width Reduction
3. Add Continental Crosswalk

Note that all concept plans are provided to demonstrate general feasibility of the subject proposal only. Actual improvements will require additional engineering studies and design work to the satisfaction of the City Engineer.

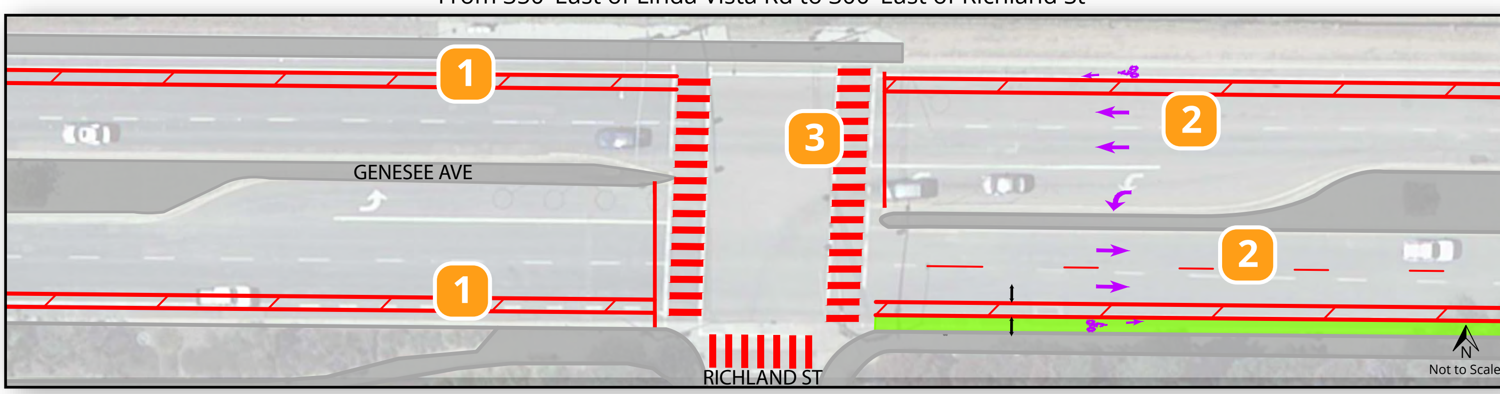
B_B
From Linda Vista Rd to 350' East of Linda Vista Rd



A_A
From Whitney St to 300' West of Linda Vista Rd



C_C
From 350' East of Linda Vista Rd to 300' East of Richland St



CORRIDOR 4: ULRIC STREET

The Ulric Street corridor connects the Linda Vista community with the Mission Valley community plan area to the south. Ulric Street generally runs north/south, and connects Friars Road, the Linda Vista Shopping Center, Library, Post Office, Linda Vista Elementary School, and Montgomery Middle School.

Existing Conditions & Need

Ulric Street is classified as a four-lane major street from Friars Road to Tait Street; a two-lane collector with a center turn lane from Tait Street to Linda Vista Road; and, a two-lane collector street from Linda Vista Road to Osler Street in the 1998 Linda Vista Community Plan.

Buffered bike lanes exist on both sides of the roadway along the Ulric Street south of Linda Vista Rd. In the southbound direction, the bike lane terminates prior to the intersection with Friars Road.

Ulric Street has on-street parking on the following segments:

- Northbound side between Linda Vista Road and Dunlop Street
- Both sides between Dunlop Street, and Tait Street and from Morley street to terminus (north of Osler St)

The average daily traffic (ADT) ranges from approximately 5,000 to 9,000 vehicles per day north of Comstock Street, and approximately 15,000 to 20,000 vehicles per day south of Comstock Street, according to counts taken between 2009 and 2013 available through the SANDAG website and the City of San Diego.

Technical Analysis

The PEQE and LTS analyses concluded that Ulric Street from Tait Street to Friars Road had a “medium” PEQE score and the poorest LTS score of LTS 4. This score suggests an extremely high need for improved facilities for people bicycling. All transit stops along this corridor have the required features according to their ridership level.

Public Feedback

Walking Barriers and Improvements

The comments related to walking issues and improvements for this corridor generally included the need for additional sidewalk facilities and lighting.

Bicycling Barriers and Improvements

The comments related to bicycling issues and improvements for this corridor generally included improvement of bike lane condition, speed calming, and improvements to the intersection at Friars Road. Also mentioned was the need to improve the freeway merging area near the south of the road.

Transit Barriers and Improvements

The comments related to transit issues and improvements for this corridor generally included the addition of facilities, such as curb ramps and crosswalks, to make it easier to get to transit stops.

Other City/Planning Efforts

Ulric Street south of Linda Vista Road is identified as a proposed regional "Enhanced Class II Bike Lane" within SANDAG's "Riding to 2050: San Diego Regional Bike Plan." This connection will eventually have to traverse Friars Road to reach Fashion Valley Mall and the San Diego River Trail to the south as part of the regional corridor planning efforts.

There is also a City of San Diego Capital Improvement Project planned for Ulric Street from Friars Road to Tait Street, which will add K-rail to the centerline of the roadway to prevent head-on collisions. Construction is set to begin in 2016.

Caltrans will be reconstructing the interchange of Friars Road and SR-163, which includes some modifications to Ulric Street and its intersection with Friars Road. Construction is slated for late 2016 or early 2017.

Recommended Improvements

The Ulric Street corridor was studied from Tait Street to Friars Road. The primary improvement proposed for this corridor is a two-way separated cycle track on the west side of the road with a bike lane provided in the uphill direction on the northbound side of the roadway. These upgrades were considered to provide greater separation of the bicycle and pedestrian facilities from higher-speed motorists on Ulric Street on this regional bikeway facility. The west side of the road was chosen to protect cyclists from the freeway interchange near Friars Road.

Other features include special bicycle signal phasing modifications at traffic signals, upgraded bus shelters, and rerouted cycle track behind the new southbound bus stop.

A buffer is provided where possible for the northbound bike lanes in the roadway to separate slower-moving bicycles from vehicles in the uphill direction.

Pedestrian improvements include the addition of street lighting on the west side of the street and additional separation from vehicles provided by the cycle track.

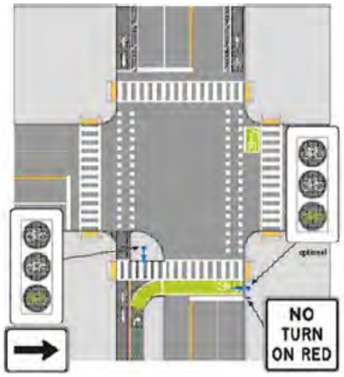
Pedestrian improvements were considered on the east side but it was decided that a sidewalk and lighting would not be an effective treatment due to conflicts with vehicles at the SR-163 interchange near the intersection of Ulric St and Friars Rd.

Additional recommendations can be found in Improvement Areas D, G, and I.

Project Cost Estimate

The estimated cost for the recommended improvements on this corridor is **$1,833,000**.

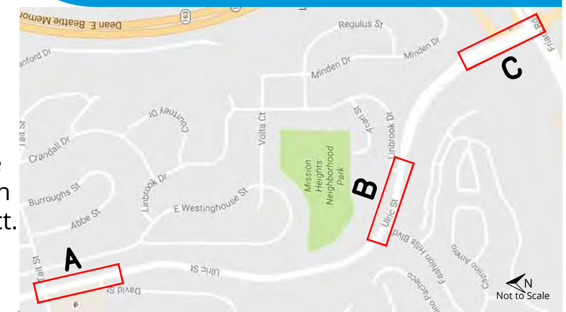
Corridor 4: Ulric St



Alternative Intersection Treatment At Tait St/Ulric St

Alternative Bus Stop Treatment at Fashion Hills Blvd/ Ulric St

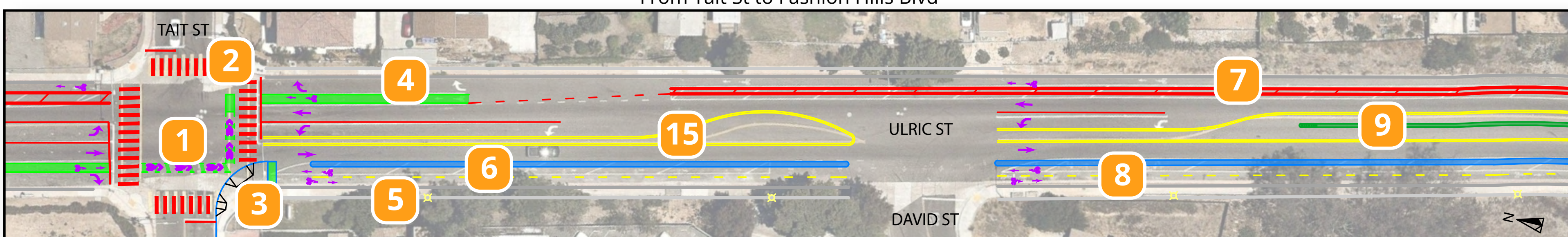
Note that all concept plans are provided to demonstrate general feasibility of the subject proposal only. Actual improvements will require additional engineering studies and design work to the satisfaction of the City Engineer. Decorative Street Lights may require additional funding mechanisms, such as a maintenance assessment district.



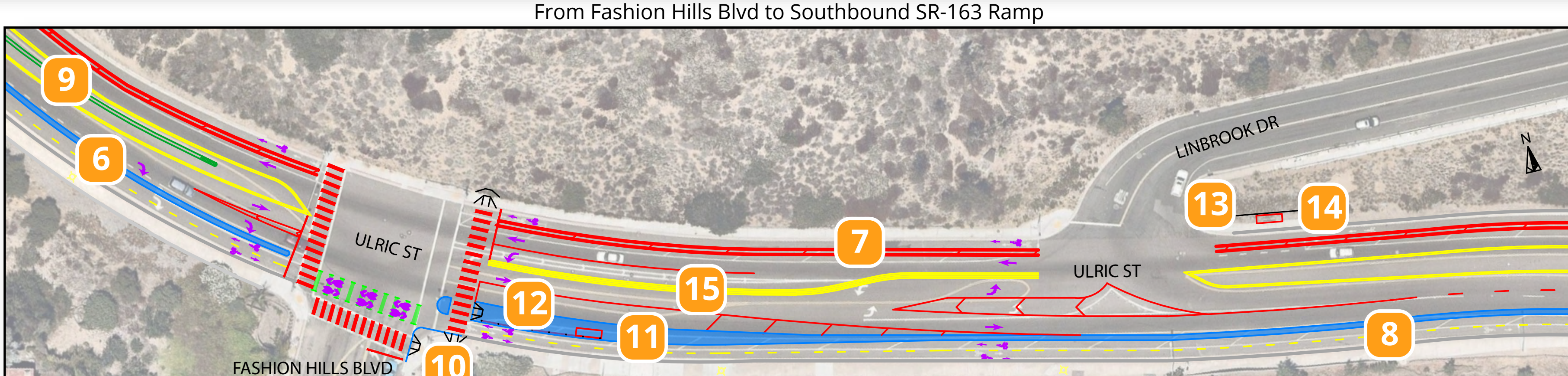
Key Map

1 Add Bike Crossing and Modify Signal for the Bike Crossing
2 Install Continental Crosswalks
3 Install Pedestrian and Bike Ramps
4 Install Green Bike Lane
5 Install Pedestrian Level Decorative Street Lighting
6 Install Physical Barrier for Cycle Track Separation
7 Install Buffered Bike Lane
8 Install Two-Way Cycle Track
9 K-Rail Relocation
10 Reduce Curb Radius and Update Curb Ramps
11 Relocate Bus Stop, add Shelter
12 Install Pedestrian Railing
13 Add Retaining Wall
14 Add Bus Shelter, Widen Sidewalk to provide adequate facilities for consolidated stops
15 Re-striping for Entire Segment

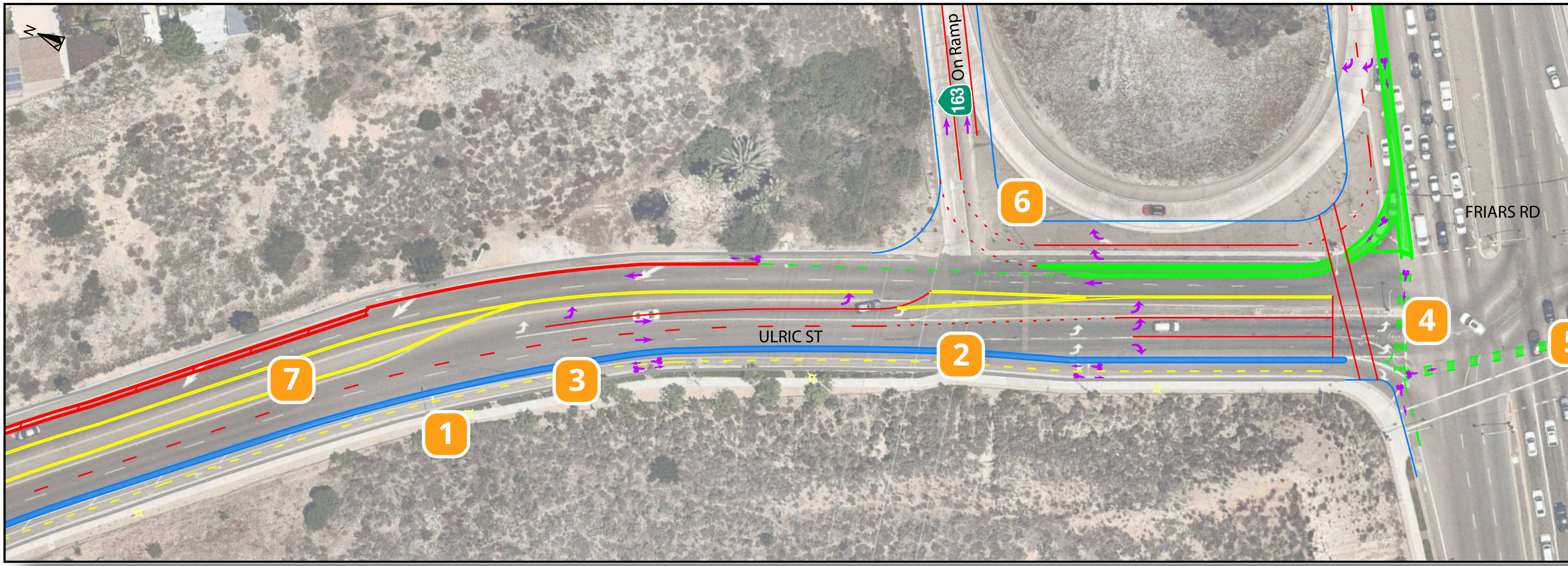
A_A
From Tait St to Fashion Hills Blvd



B_B
From Fashion Hills Blvd to Southbound SR-163 Ramp



Corridor 4: Ulric St



1 Install Decorative Street Lighting

2 Install Physical Barrier for Cycle Track Separation

3 Install Two-Way Cycle Track

4 Add Bike Crossing and Modify Signal for the Bike Crossing

5 Refer to Regional Bikeway Plan for Bikeway Connection

6 Refer to SR-163 Interchange Improvements

7 Re-stripe Entire Segment

Note that all concept plans are provided to demonstrate general feasibility of the subject proposal only.
Actual improvements will require additional engineering studies and design work to the satisfaction of the City Engineer.
Decorative Street Lights may require additional funding mechanisms, such as a maintenance assessment district.

CORRIDOR 5: VIA LAS CUMBRES

The Via Las Cumbres corridor connects the Linda Vista community with the Mission Valley community plan area to the south. This road generally runs north/south and connects to Friars Road, Mark Twain High School, and the University of San Diego.

Existing Conditions & Need

Via Las Cumbres is classified as a three-lane collector street (two lanes northbound and one lane southbound) from Friars Road to Linda Vista Road in the 1998 Linda Vista Community Plan.

A buffered bike lane in the northbound (uphill) direction is provided while a sharrow exists for the southbound (downhill) direction.

Parking is allowed on both sides of the roadway from Linda Vista Road to Friars Road.

The average daily traffic (ADT) ranges from approximately 9,000 vehicles per day according to counts taken between 2009, and 2013 available through the SANDAG website.

Technical Analysis

The LTS analyses concluded that Via Las Cumbres from Linda Vista Road to Friars Road had the poorest LTS score of LTS 4. This score suggests an extremely high need for improved facilities for people bicycling. A PEQE score was not assessed for this corridor.

Public Feedback

Walking Barriers and Improvements

The comments related to walking issues and improvements for this corridor generally included the need for the addition of a sidewalk on the east side of the street.

Bicycling Barriers and Improvements

There were no comments related to bicycling issues and improvements for this corridor.

Transit Barriers and Improvements

There were no comments related to transit issues and improvements for this corridor as there are no transit routes that run along Via Las Cumbres.

Other City/Planning Efforts

Via Las Cumbres is shown as a proposed Class III bike route in the City of San Diego Bicycle Master Plan. This roadway will serve as a connection to a new interchange with Interstate 8 as described within the Interstate 8 Corridor Plan. Future traffic volumes are likely to increase as a result.

Recommended Improvements

The Via Las Cumbres corridor was studied from Linda Vista Road to Friars Road. A new sidewalk is recommended to fill in the existing gap on the east side of the roadway.

Project Cost Estimate

The estimated cost for the recommended improvements on this corridor is **$351,000**.

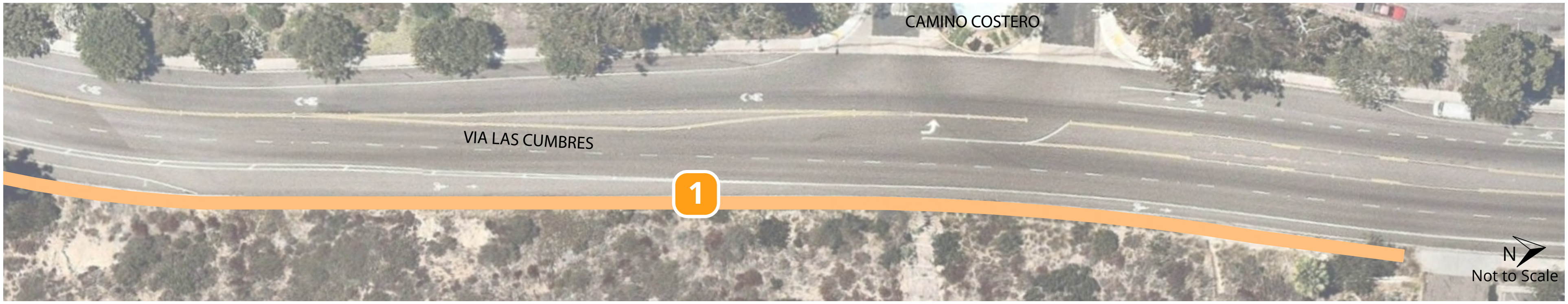
Corridor 5: Via Las Cumbres

Key Map

A_A
From 650’ South of Linda Vista Rd to 450’ North of Friars Rd

1 Proposed Sidewalk

B_B
From 450’ North of Friars Rd to Friars Rd



Note that all concept plans are provided to demonstrate general feasibility of the subject proposal only.
Actual improvements will require additional engineering studies and design work to the satisfaction of the City Engineer.

IMPROVEMENT AREA A: MESA COLLEGE DRIVE AT SR-163 ON-RAMPS

This improvement area is focused on Mesa College Drive between Linda Vista Road and the SR-163 on-ramps. This portion of Mesa College Drive connects the Serra Mesa community plan area to Kearny High School and commercial centers in Linda Vista.

Existing Conditions & Need

This part of Mesa College Drive is classified as a four-lane major street with Class II bike lanes in the 1998 Linda Vista Community Plan.

This improvement area was identified due to public comments and identified conflicts with high-speed freeway transitions.

Public Feedback

Walking Barriers and Improvements

The comments related to walking issues and concerns for this improvement area generally included improving the sidewalk and ramps near and at the SR-163 on-ramps. The comments included ideas to realign the ramps to standard 90-degree approaches.

Bicycling Barriers and Improvements

There were no comments related to bicycling issues and improvements for this improvement area.

Transit Barriers and Improvements

There were no comments related to transit issues and improvements for this improvement area.

Other City/Planning Efforts

No other planning efforts were identified in this area.

Recommended Improvements

Improvements proposed for this area include signage indicating that pedestrians should use the sidewalk on the north side of Mesa College Drive. A sidewalk was considered for the south side of the road; however, given that no sidewalks are provided along the south side of the roadway immediately east of the overpass and also unavailable on the I-805 overpass, it was determined that the addition of a sidewalk would be insufficient in providing a comprehensive pedestrian connection.

To reduce vehicular speeds and reduce the crossing distance for pedestrians and bikes, a reduction to the approach angle of the SR-163 on-ramps is recommended. Also recommended are a high-visibility continental crosswalk across the SR-163 on-ramp and improved curb ramps.

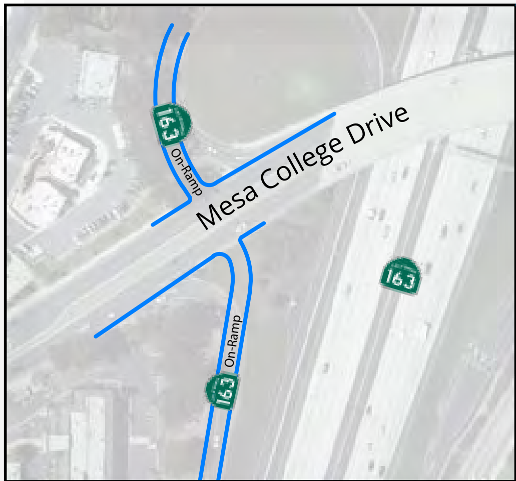
Bicycle improvements include buffered bike lanes with delineators to provide a physical obstruction between the bicyclists and vehicular traffic. The separated bike lanes are proposed along the approaching side of the SR-163 on-ramps and will help enforce slower traffic entering SR-163 by making the on-ramp entrance more acute. Green paint is recommended before and after the conflict areas to gain driver attention. Lastly, a fence is recommended on the south side of the overpass for safety of the bicyclists next to the short bridge rail.

An alternative to realign the southbound SR-163 freeway ramp is proposed to eliminate the high-speed turns onto the freeway on-ramps. More analysis should be completed to understand the benefits and feasibility of reconstructing the southbound SR-163 freeway ramp before progressing with this alternative.

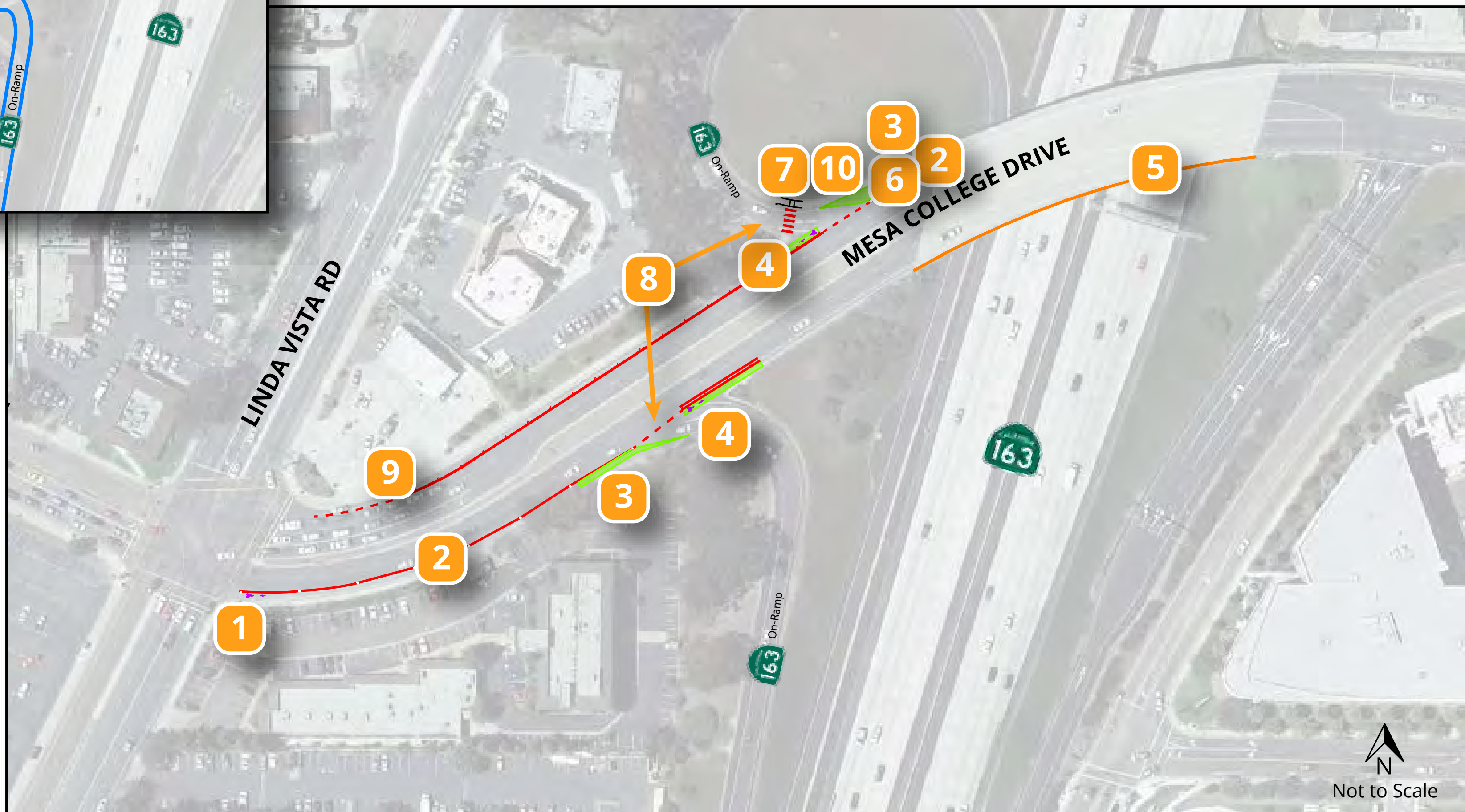
Project Cost Estimate

The estimated cost for the recommended improvements for this plan area is **$152,000**. An alternative to realign the interchange ramps is roughly estimated at **$3,600,000**.

Improvement Area A



ALTERNATIVE:
Realign Ramps Perpendicular to Mesa College Drive
(With Recommended Striping Pattern)



1. "Pedestrians Use Other Side of Street" Sign
2. Protected Bike Lane with Stripe/Hatch/Delineator
3. "Yield to Bikes" Sign (MUTCD R4-4)
4. Green Paint at Conflict Zones (Typical)
5. Add Fence Similar to Fence on North Side
6. "Yield Here to Pedestrians" Sign (MUTCD R1-5a)
7. New Pedestrian Ramp
8. Reduce On-Ramp Angle
9. Add Buffers and Extend Bike Lane to Intersection
10. Bike Lane with delineators for separation

Note that all concept plans are provided to demonstrate general feasibility of the subject proposal only.
Actual improvements will require additional engineering studies and design work to the satisfaction of the City Engineer.

IMPROVEMENT AREA B: MESA COLLEGE DRIVE & LINDA VISTA ROAD

This improvement area is centered at the intersection of Mesa College Drive and Linda Vista Road. This intersection abuts Kearny High School and various commercial centers.

Existing Conditions & Need

This part of Mesa College Drive is classified as a four-lane major street with Class II bike lanes in the 1998 Linda Vista Community Plan.

The intersection has dual left turns on Linda Vista road and free right turns for both approaches. Mesa College Drive has single left turn lanes and free right turns. The intersection is skewed due to a curve in the road on the eastern leg of Mesa College Drive.

This improvement area was identified due to public comments, its proximity to schools, specifically Kearny High School, commercial centers, and a history of pedestrian and bicycle collisions.

Public Feedback

Walking Barriers and Improvements

The comments related to walking issues and improvements for this improvement area generally included the need for improved pedestrian crossings and sidewalks.

Bicycling Barriers and Improvements

The comments related to bicycling issues and improvements for this improvement area generally included that it is very dangerous to cross the street to make a left turn.

Transit Barriers and Improvements

There were no comments related to transit issues and improvements for this improvement area.

Other City/Planning Efforts

No other planning efforts were identified in this area.

Recommended Improvements

A protected intersection is recommended to separate each mode of travel and allow bicycles to complete all turning movements without leaving a dedicated facility. A protected intersection addresses the public concern that it is difficult to cross traffic lanes to make a left turn on a bicycle. Bicycle improvements proposed for this area include the installation of bike loops for signal detection, re-striping of bike lanes, and the continuation of the separated and buffered bike lanes discussed in Improvement Area A.

Pedestrian and traffic calming improvements include a reduction to the curb radius on the northeast corner of the intersection, conversion to a perpendicular crossing on the northern leg of the intersection, high visibility continental crosswalks, and signal upgrades, including countdown signals.

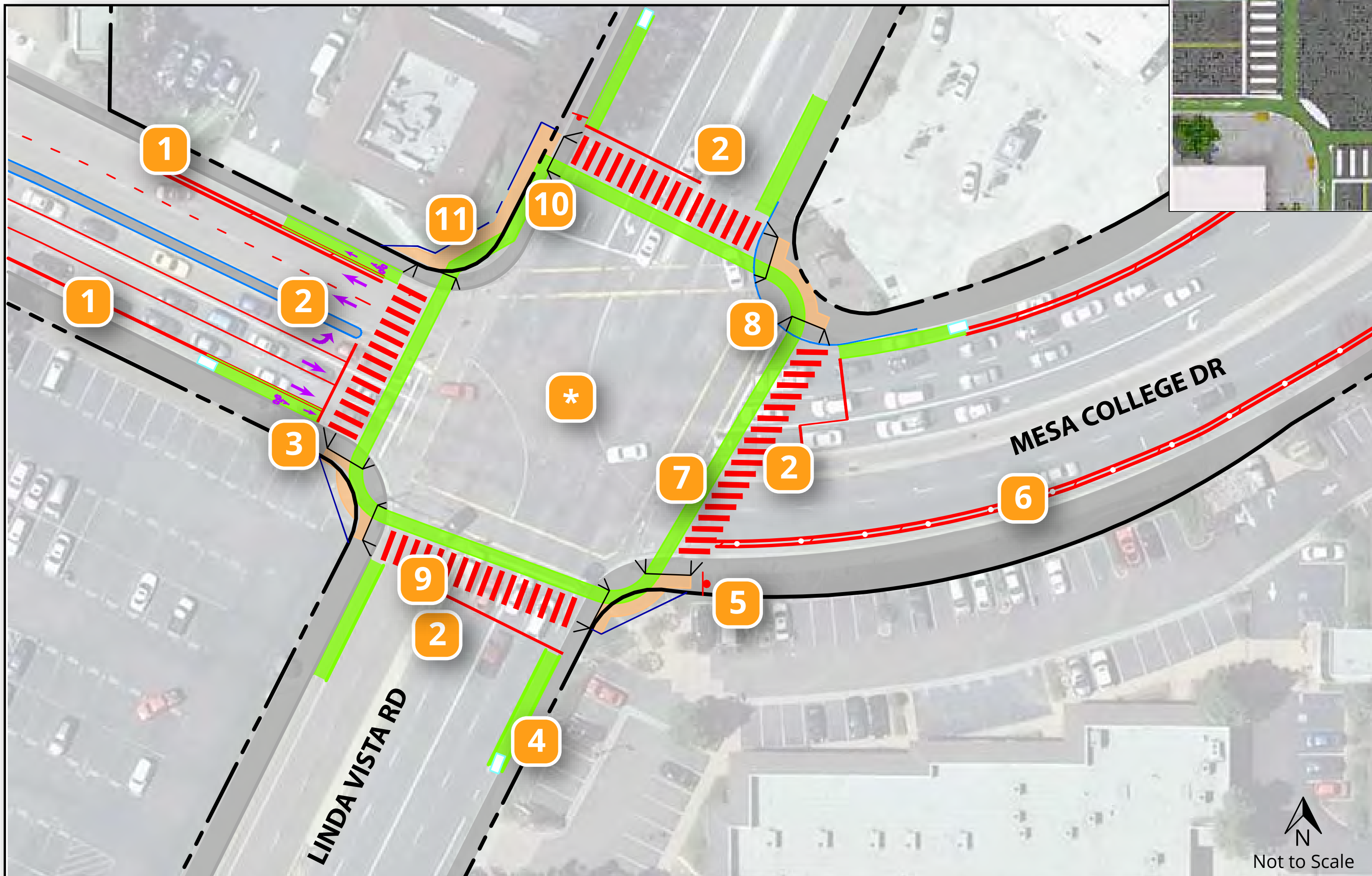
Prior to the installation of a protected intersection, a detailed analysis should be completed to verify its benefits and feasibility.

Project Cost Estimate

The estimated cost for the recommended improvements for this plan area is **$520,000**.

Improvement Area B

Alternative Treatment for
Protected Intersection



1 Proposed Bike Lanes

2 Reduced Median Noses (Typical)

3 Install New Wider Ramp for Pedestrians and Bicyclists

4 New Bike Loops (Detection)

5 "Pedestrians Use Other Side of Street" Sign (MUTCD R9-10)

6 Bike Lane with Buffer, Hatch, and Delineators

7 Protected Intersection for Bicycles and Pedestrians

8 Reduce Curb Radius

9 Continental Crosswalks (Typical)

10 Perpendicular Crosswalk, New Ramps, "No Turn on Red" Sign (MUTCD R10-11)

11 Right-of-way Acquistion Needed

***** Upgrade Traffic Signals: Upgrade ADA Push Buttons, Countdown Pedestrian Signals, and Bike Detection

Note that all concept plans are provided to demonstrate general feasibility of the subject proposal only.
Actual improvements will require additional engineering studies and design work to the satisfaction of the City Engineer.

IMPROVEMENT AREA C: LINDA VISTA ROAD & KORINK AVENUE

This improvement area is centered at the intersection of Linda Vista Road and Korink Avenue. It includes a bus stop on the west side.

Existing Conditions & Need

This portion of Linda Vista Road is considered a four-lane major street with Class II bike lanes in the 1998 Linda Vista Community Plan. Korink Ave/Daniel Avenue is classified as a local street in the Community Plan.

This improvement area was identified due to public comments, its proximity to schools, specifically Kearny High School and Chesterton Elementary School, and its importance as a transit stop on an identified regional bicycle facility.

Public Feedback

Walking Barriers and Improvements

The comments related to walking issues and improvements for this corridor generally included the need for a safe crossing to the bus stop. A comment was made that a signalized intersection was preferred at this location.

Bicycling Barriers and Improvements

There were no comments related to bicycling issues and improvements for this improvement area.

Transit Barriers and Improvements

The comments related to transit issues and improvements for this improvement area generally included the need for a bus shelter and sidewalks connecting to the bus stop.

Other City/Planning Efforts

Linda Vista Road is an identified regional bicycle facility at this location, as illustrated in the "Riding to 2050: San Diego Regional Bike Plan."

Recommended Improvements

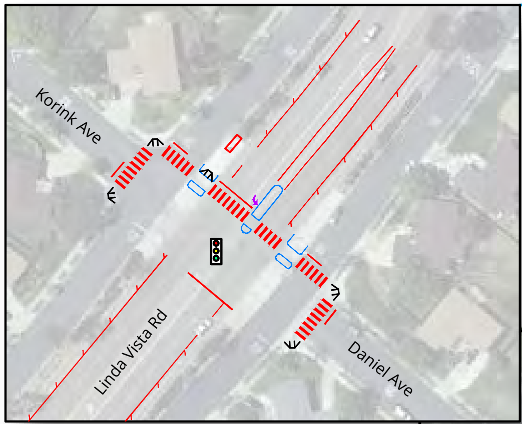
The recommended improvements for this area focus on increasing accessibility and serving the transit stop. Recommended pedestrian and transit improvements include a pedestrian refuge island, curb cuts in the refuge islands, pedestrian ramps to provide ADA access to the bus stop and adjacent sidewalks, and a bus shelter.

Bicycle improvements proposed for this area include buffered bike lanes on both sides of the street by reducing the width of the travel lanes in each direction.

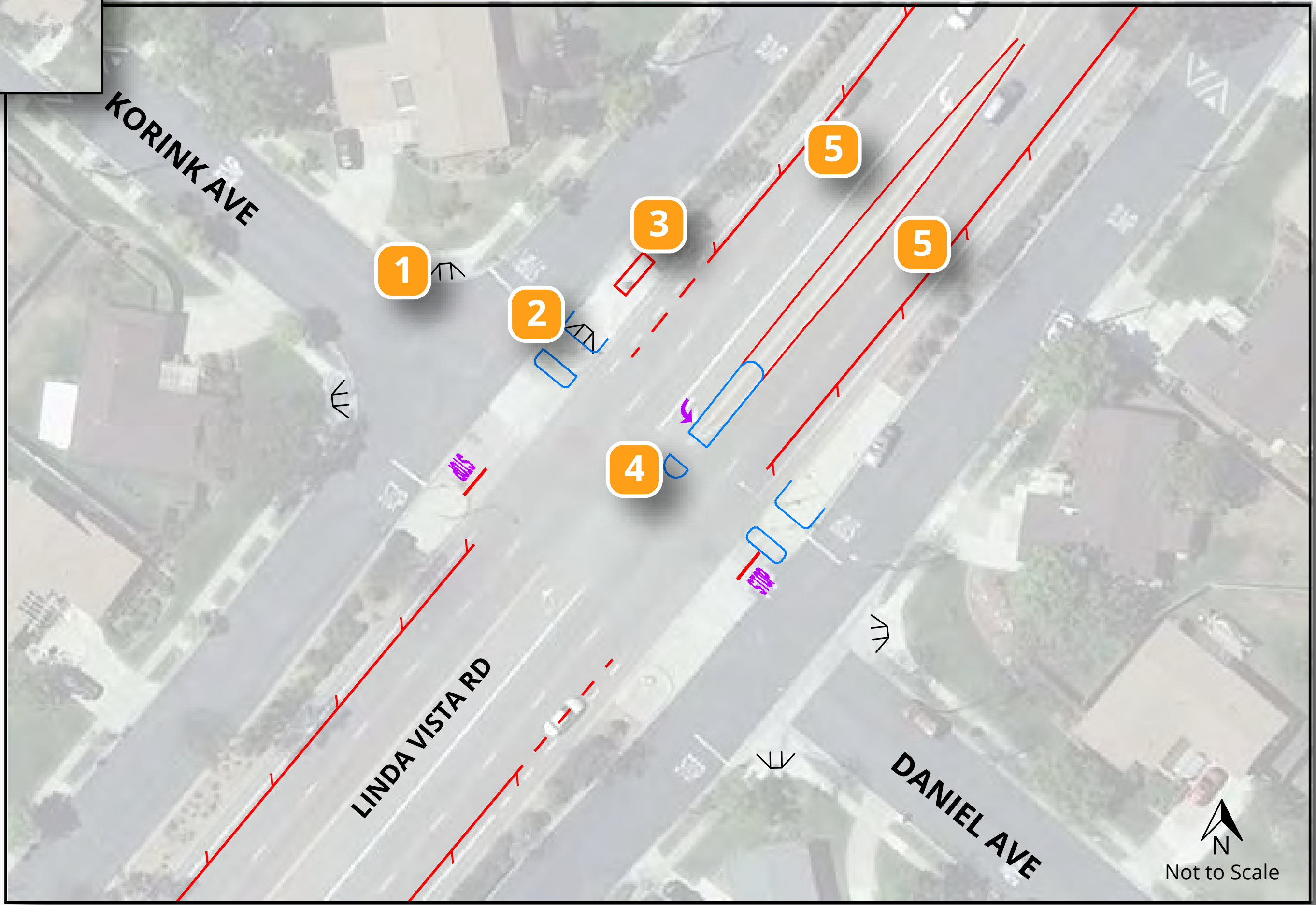
Project Cost Estimate

The estimated cost for the recommended improvements for this plan area is **$83,000**. An alternative to install a full traffic signal is estimated at **$317,000**.

Improvement Area C



Alternative:
Full Signalized Intersection
This alternative is currently being analyzed. Does not meet requirements for a crosswalk.



1 Upgrade Pedestrian Ramps (Typical)

2 Modified Median Nose to Provide ADA Access to Bus Stop

3 Proposed Bus Shelter

4 Pedestrian Refuge Island

5 Proposed Buffer to Existing Bike Lanes

Note that all concept plans are provided to demonstrate general feasibility of the subject proposal only.
Actual improvements will require additional engineering studies and design work to the satisfaction of the City Engineer.

IMPROVEMENT AREA D: ULRIC STREET AT OSLER, EASTMAN, & FULTON

This improvement area runs along Ulric Street north of Linda Vista Road. It includes intersection improvements at Osler Street, Fulton Street, and Eastman Street.

Existing Conditions & Need

This portion of Ulric Street is considered a two-lane collector street from Linda Vista Road to Osler Street in the 1998 Linda Vista Community Plan.

This improvement area was identified due to public comments and its proximity to schools and parks, specifically Linda Vista Elementary School, Montgomery Middle School, and Linda Vista Community Park.

Public Feedback

Walking Barriers and Improvements

The comments related to walking issues and improvements for this corridor generally included the need for improvements to crossings and wider sidewalks.

Bicycling Barriers and Improvements

As part of an initial concept, the public preferred the recommendation of traffic circles along Ulric Street at the three study intersections in this area.

Transit Barriers and Improvements

There are no transit stops along this portion of Ulric Street. However, there is a stop on Osler Street near Ulric Street and possibly school buses utilizing the roadway.

Other City/Planning Efforts

North of Linda Vista Road to Osler Street, Ulric Street is classified as a proposed Class III bike route in the City of San Diego Bicycle Master Plan.

Recommended Improvements

This improvement area is focused on three intersections along Ulric Street north of Linda Vista Road. The intersections are at Eastman Street, Fulton Street, and Osler Street.

Curb pop-outs and high-visibility continental crosswalks are proposed at all three intersections. Traffic circles were considered for several intersections, but they failed to meet basic requirements within City guidelines. A possible alternative for the Ulric Street and Osler Street intersection is a fully signalized intersection, which is recommended for future evaluation to see if it meets warrant criteria.

A mural is planned for the intersection of Ulric Street and Eastman Street in the near future. The mural would be a traffic calming feature aimed at drawing attention to the significance of the intersection and the pedestrians using it near Montgomery Middle School.

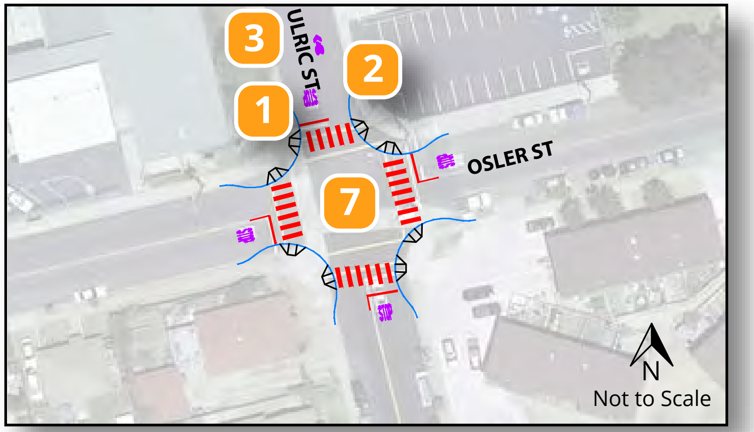
A Class III bike facility is proposed for this corridor, which includes sharrows to indicate that bicycles share the full lane.

Addition of any curb pop-outs or traffic circles would result in the localized loss of parking adjacent to those intersections.

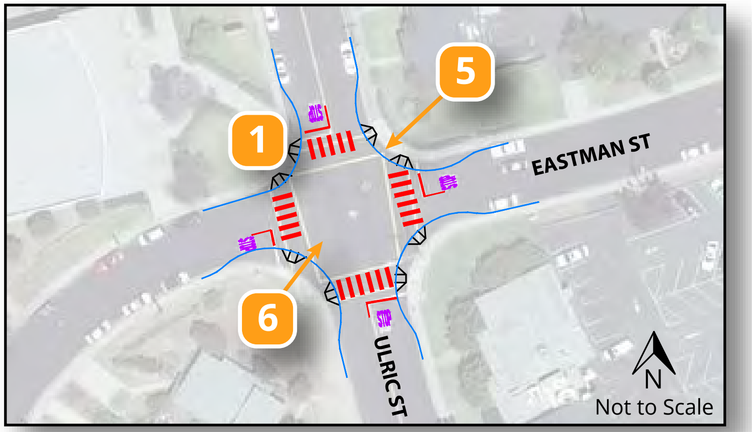
Project Cost Estimate

The estimated cost for the recommended improvements for this plan area is **$474,000**. An alternative to install a full traffic signal instead of curb pop-outs at Ulric and Osler Streets (in addition to the other base improvements along Ulric Street) is estimated at **$522,000**.

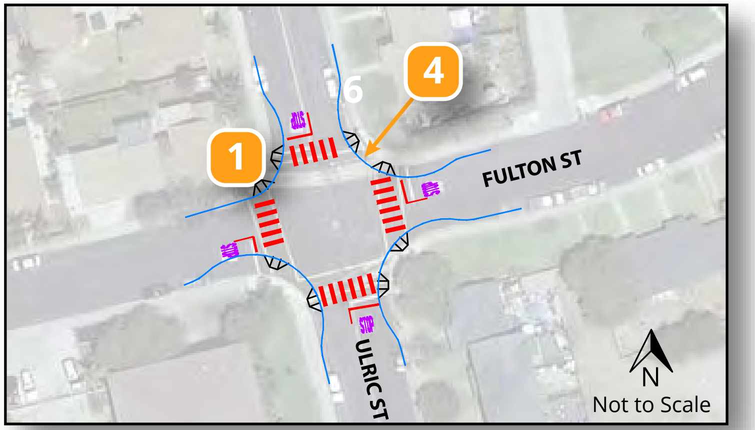
Improvement Area D



Ulric St/ Osler St



Ulric St/ Eastman St



Ulric St/ Fulton St

1. High Visibility Continental Crosswalk
2. Add Pop-outs with New Pedestrian Ramps at all four corners of the intersection
   3 Parking Spaces Removed
3. Sharrows proposed to be added north of Osler St along Ulric in accordance with a Class III Bike Route facility
4. Add Pop-outs with New Pedestrian Ramps at all four corners of the intersection
   4 Parking Spaces Removed
5. Add Pop-outs with New Pedestrian Ramps at all four corners of the intersection
   7 Parking Spaces Removed
6. Mural May Be Added to Intersection for Traffic Calming/Aesthetic Purposes
7. Alternative: Intersection Being Analysed for Traffic Signal

Note that all concept plans are provided to demonstrate general feasibility of the subject proposal only.
Actual improvements will require additional engineering studies and design work to the satisfaction of the City Engineer.

IMPROVEMENT AREA E: LINDA VISTA ROAD & GENESEE AVENUE

This improvement area is centered at the intersection of Linda Vista Road and Genesee Avenue.

Existing Conditions & Programmed Improvements

This location is where a four-lane major street (Linda Vista Road) and a 4-lane primary arterial street (Genesee Avenue) intersect within the Linda Vista community. Class II bike lane facilities along both roadways also intersect at this location.

This improvement area was identified due to public comments, its proximity to schools, specifically San Diego Cooperative Charter School and Chesterton Elementary School, and its relevance as a conjunction point on the regional bicycle system.

Public Feedback

Walking Barriers and Improvements

The comments related to walking issues and improvements for this improvement area include the desire for curb pop-outs and widening of sidewalks around the transit stop on the west leg of the intersection.

Bicycling Barriers and Improvements

There were no comments submitted specifically relating to bicycling barriers and improvements for this intersection.

Transit Barriers and Improvements

The comments related to transit issues and improvements for this intersection include the need for bus shelters at the bus stop on Genesee, west of the intersection. The sidewalk around the stop was said to need widening.

Other City/Planning Efforts

The City of San Diego has planned improvements to include a right-turn-lane pocket on the northbound approach of Linda Vista Road and the extension of the dual left turn pockets on the east leg. The planned improvements are included in the concept drawings for this location.

This intersection is also where the regional corridor identified within the “Riding to 2050: San Diego Regional Bike Plan” changes direction/roadways. The proposed regional bicycle facility is identified as Genesee Avenue west of this intersection and Linda Vista Road south of this intersection in the “Riding to 2050: San Diego Regional Bike Plan.”

Recommended Improvements

Pedestrian and transit improvements include widening the sidewalk around the intersection, particularly at and near bus stops, installing high-visibility continental crosswalks, modifying traffic signal operations (including adding countdown timers), and adding a bus shelter with a wider landing at the bus stop on the northwest corner of the intersection. A protected intersection is proposed for this intersection and will improve pedestrian safety by placing a buffer (bike lane) between the pedestrian crosswalk and the center of intersection.

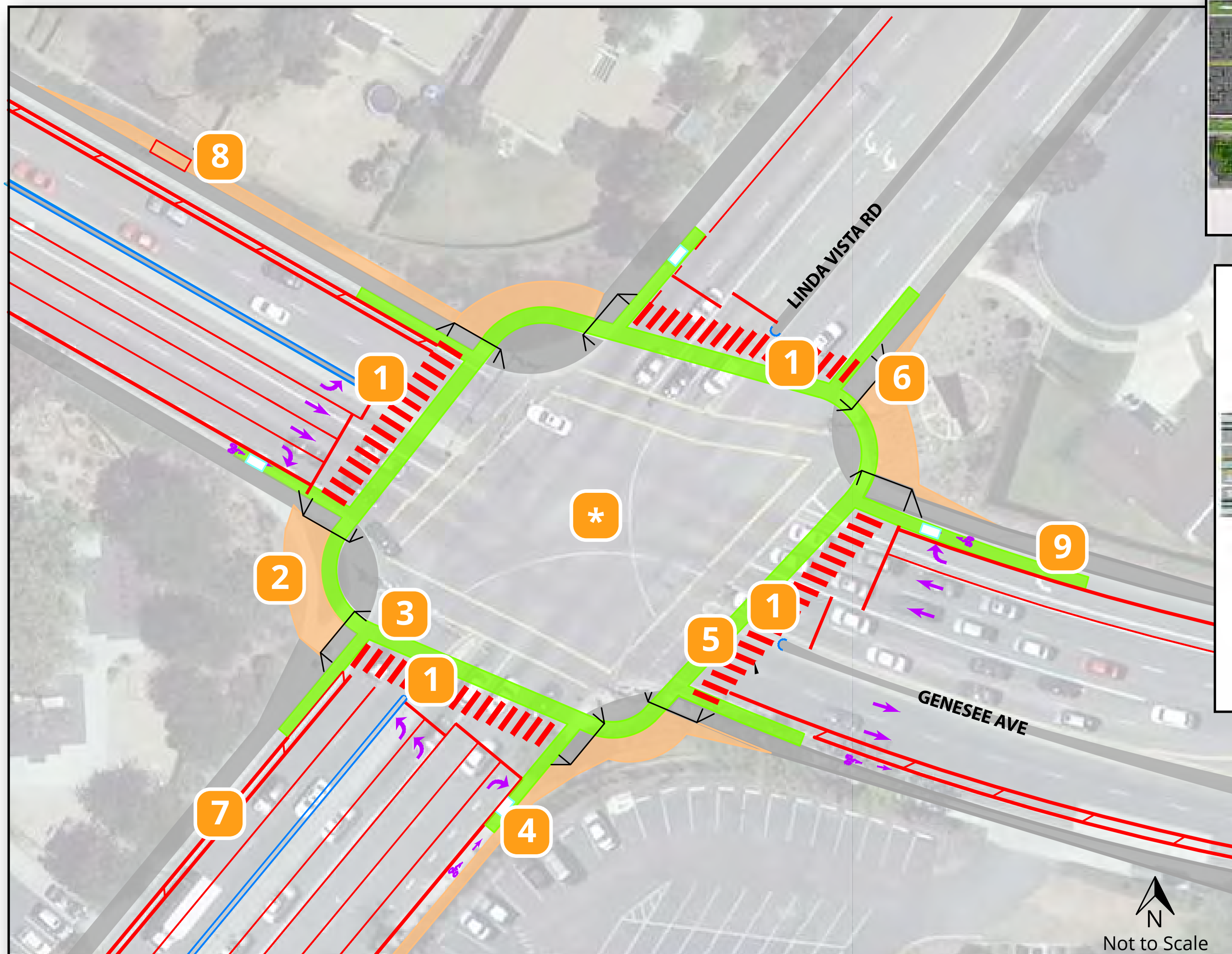
Bicycle improvements for this intersection include a protected intersection that will connect with bike lanes in all directions. The protected intersection would allow people riding bicycles to utilize a widened sidewalk in order to complete all turning movements within a dedicated facility.

A two-lane roundabout alternative is also considered for this location. Prior to the installation of either of these facilities, a detailed analysis should be completed to understand the benefits and feasibility of each.

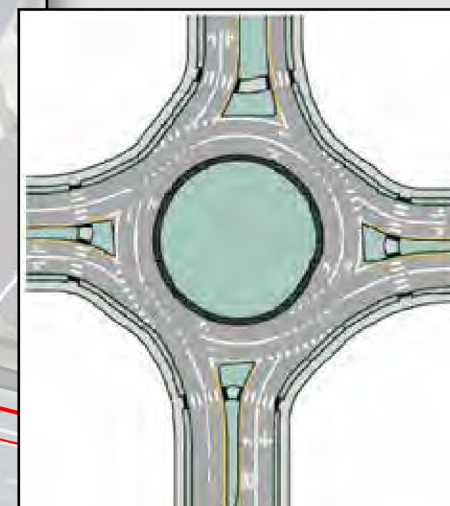
Project Cost Estimate

The estimated cost for the recommended improvements for this plan area is **$532,000**. An alternative to install a 2-lane roundabout at this intersection is roughly estimated at **$2,400,000**.

Improvement Area E



Alternative Layout for Protected Intersection



Alternative: 2-Lane Roundabout

Note that all concept plans are provided to demonstrate general feasibility of the subject proposal only. Actual improvements will require additional engineering studies and design work to the satisfaction of the City Engineer.

1 Reduce Median Noses

2 Widen Sidewalk

3 Install Protected Intersection

4 New Bike Detection (Typical)

5 High Visibility Continental Crosswalks (Typical)

6 Bike and Pedestrian Crossings Together with Larger Shared-use Ramps

7 Proposed Buffered Bike Lane

8 Widen Sidewalk to accommodate Bus Landing and Shelter

9 Green Bike Lane Paint

* Modify Traffic Signals: Relocate Poles, Upgrade Push Buttons, Add Countdown Pedestrian Signals, Add Bike Detection

IMPROVEMENT AREA F: GENESEE AVENUE AT SR-163 ON-RAMPS

This improvement area is centered at the intersection of Genesee Avenue and the SR-163 on-ramps.

Existing Conditions & Need

This portion of Genesee Avenue is a four-lane primary arterial in the 1998 Linda Vista Community Plan. The SR-163 is currently a four-lane freeway in the southbound direction.

This improvement area was identified due to public comments and its conflict with high-speed freeway transitions.

Public Feedback

Walking Barriers and Improvements

The comments related to walking issues and improvements for this improvement area include the need for improved crosswalks to facilitate crossing at the on-ramp.

Bicycling Barriers and Improvements

The comments related to bicycling issues and improvements for this improvement area include the need for an improvement to bicycle facilities near the freeway on-ramp. The comments included ideas to realign the ramps to standard 90-degree approaches, and continue bike improvements on the north side of Genesee Avenue.

Transit Barriers and Improvements

There were no comments related to transit for this improvement area from the public.

Other City/Planning Efforts

The City of San Diego Bicycle Master Plan shows a proposed upgrade of the existing Class III bicycle facility under the SR-163 ramps to a Class II bike lane.

Recommended Improvements

Pedestrian improvements include a new sidewalk, sidewalk widening along the south side of Genesee Avenue, east and west of the SR-163 southbound on-ramp to provide space for bicycles to share the facility, new ramps and a high-visibility crosswalk across the freeway southbound on-ramp.

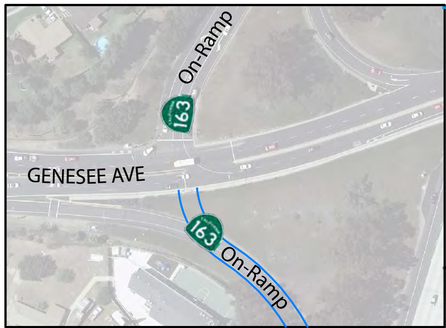
Bicycle improvements for this improvement area include multiple opportunities for people bicycling to transition onto the sidewalk, green paint for the bike lane around the on-ramp conflict zone, and a road diet (removal of one vehicle travel lane) to provide room for a buffered bike lane.

An alternative to realign the southbound SR-163 freeway ramps is proposed to eliminate the high-speed turns onto the freeway southbound on-ramps. More analysis should be completed to understand the benefits and feasibility of reconstructing the southbound SR-163 freeway ramp before progressing with this alternative.

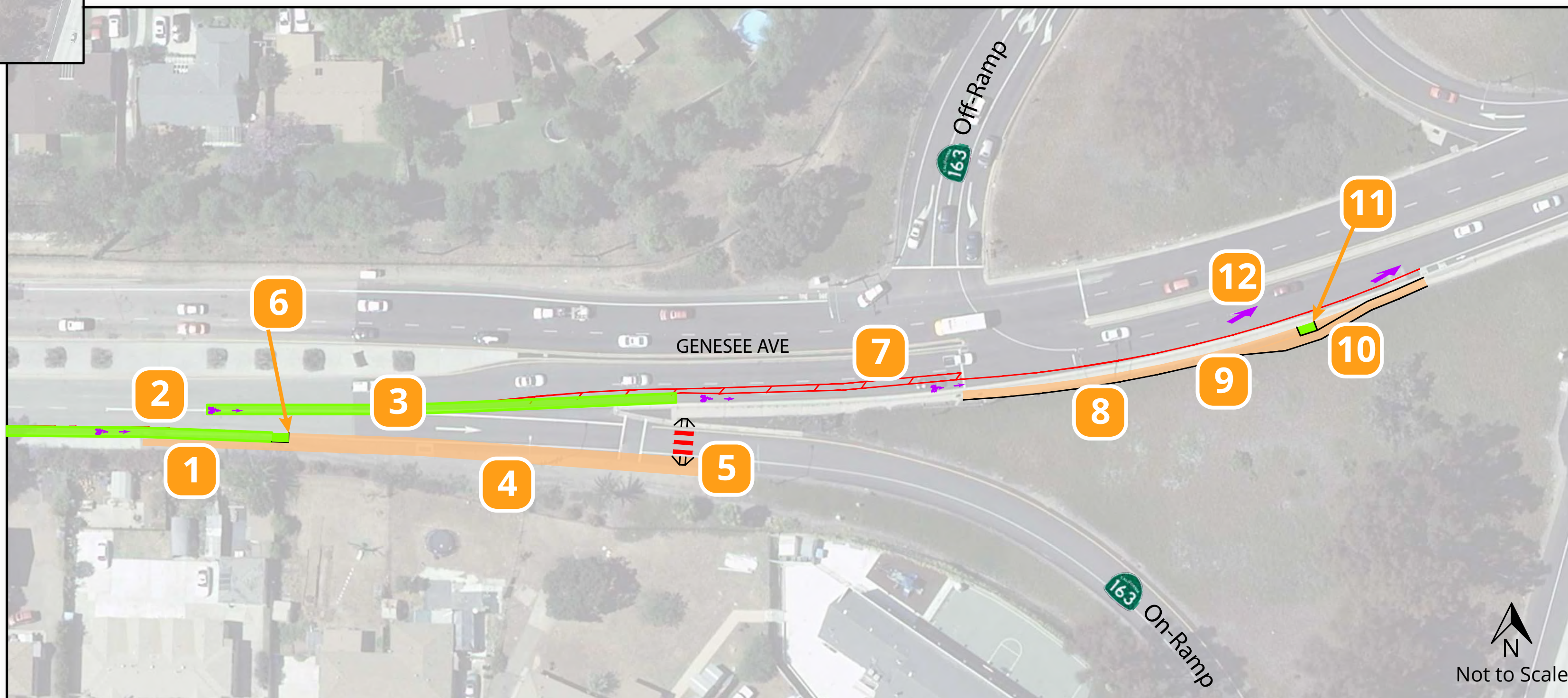
Project Cost Estimate

The estimated cost for the recommended improvements for this area is **$257,000**. An alternative to realign the interchange ramps is roughly estimated at **$1,800,000**.

Improvement Area F



Alternative:
Realign SR-163 On-ramp Perpendicular to Genesee Ave
Same Proposed Striping Pattern Applies



1. Extend Sidewalk
2. Green Paint on Bike Lanes at Conflict Zones
3. Proposed Bike Lane
4. Proposed Wide Sidewalk
5. Add Pedestrian Ramps and High Visibility Crosswalks (Typical)
6. Create Bike Exit Ramp onto Sidewalk
7. Remove #2 Lane at Traffic Signal (Traffic Analysis Required)
8. Retaining Wall
9. Widen Roadway, Shift Sidewalk Back
10. Bike Ramp and Sidewalk Split
11. Bike Re-Entry Ramp
12. Add Lane Drop Arrows

Note that all concept plans are provided to demonstrate general feasibility of the subject proposal only.
Actual improvements will require additional engineering studies and design work to the satisfaction of the City Engineer.

IMPROVEMENT AREAS G & I: LINDA VISTA SHOPPING CENTER

These improvement areas are centered at the Linda Vista Shopping Center, which is bounded by Comstock Street, Ulric Street, and Linda Vista Road, which includes the Linda Vista Public Branch Library and the community Post Office.

Existing Conditions & Need

This portion of Linda Vista Road is currently a four-lane major street with Class II bike lanes. Ulric Street is an existing two-lane collector, and Comstock Street is a currently two-lane collector street with on-street parking in the 1998 Linda Vista Community Plan.

This improvement area was identified due to public comments, proximity to a neighborhood shopping center, and its location as the confluence of several important multimodal corridors.

Public Feedback

Walking Barriers and Improvements

The comments related to walking issues and improvements for this improvement area include the need for brighter lighting, wider sidewalks, better crossings, more signage, and midblock crossings to help abate jaywalking.

Bicycling Barriers and Improvements

The comments related to bicycling issues and improvements for this improvement area include the need for road resurfacing and traffic calming.

Transit Barriers and Improvements

There were no comments related to transit for this improvement area from the public.

Other City/Planning Efforts

Linda Vista Road and Ulric Street are identified as proposed regional "Enhanced Class II Bike Lane" facilities in the "Riding to 2050: San Diego Regional Bike Plan." Morley Street is also proposed as a Class III bike route in the City of San Diego Master Plan.

Recommended Improvements

Due to the location as the central commercial hub of the Linda Vista Community, improvements for this area include transforming Comstock Street into a "main street" between Ulric Street and Linda Vista Road. The transformation would entail reducing the road width to widen the sidewalk, adding buffered bike lanes and bus shelters, installing street lighting and landscaping, and adding a mid-block crosswalk with a pedestrian refuge island. Other recommended improvements on Comstock Street include adding continental crossings, realigning lane geometry at Linda Vista Road to accommodate bike facilities, and adding a pedestrian pop-out on the east side of the Comstock Street/Ulric Street intersection to provide a larger landing leading to a pedestrian path that leads into the residential community. Altogether, these improvements would unify Comstock Street to be more pedestrian and bicycle friendly with improved connections for the surrounding uses. This would result in the loss of the limited on-street parking currently available on Comstock Street.

Recommended improvements on Ulric Street include adding curb pop-outs, continental crosswalks, and a pedestrian refuge at the Ulric Street/Burroughs Street intersection, and evaluating a mid-block crossing between Dunlop Street and Linda Vista Road where community members indicated jaywalking was prevalent. Analysis would be required to justify a new uncontrolled crossing in this area.

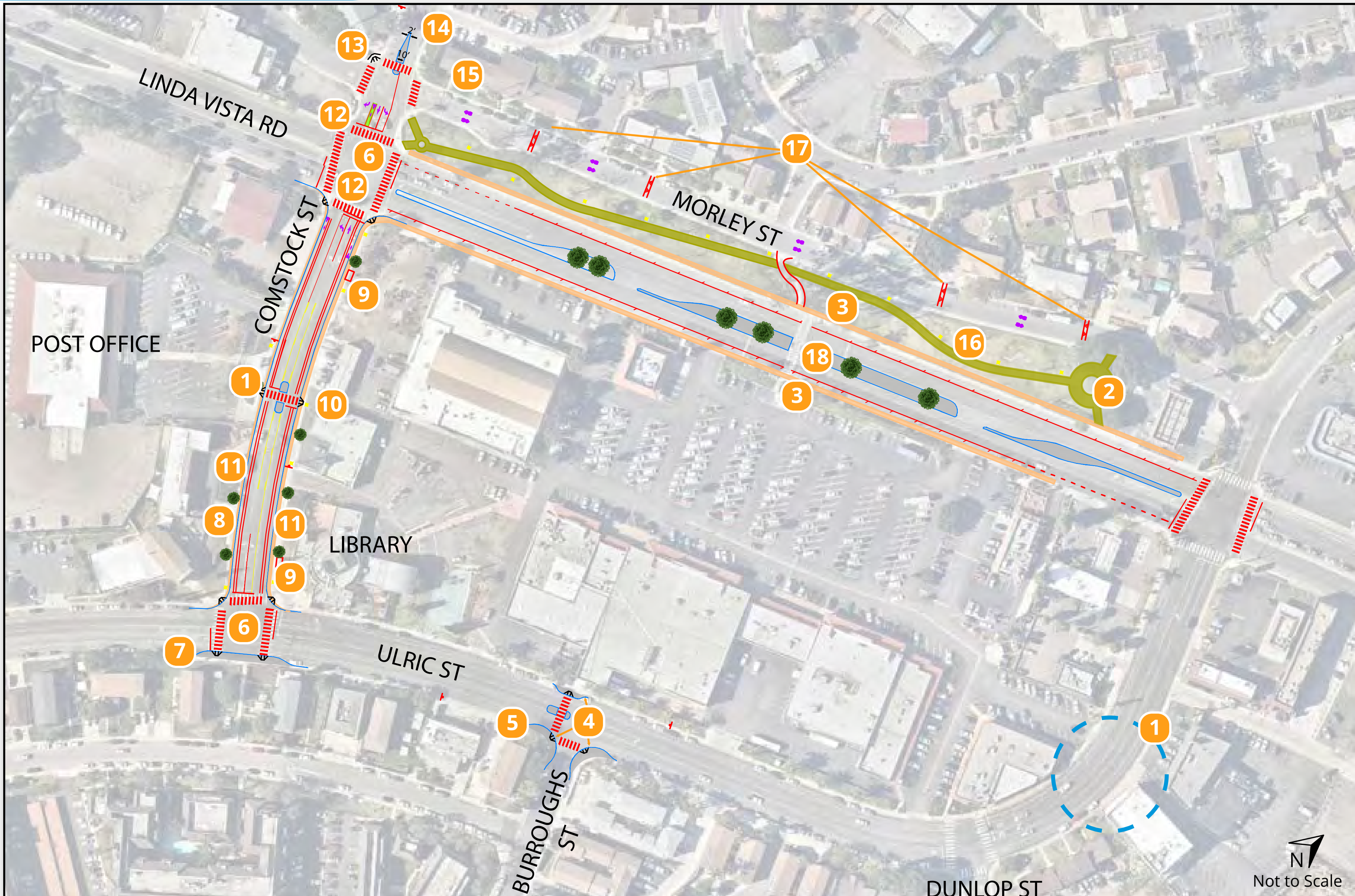
Improvements on Linda Vista Road include adding a landscaped center median from Ulric Street to Comstock Street to limit left-hand turns into and out of the shopping center, provide traffic calming, and generally improve the aesthetics in the heart of the community where activity is highest. Widened sidewalks on both sides of the road are proposed. Utility relocation is not recommended. A buffer to the existing bike lane on both sides of street is also recommended as part of the corridor improvements.

Along Morley Street, the concept shows the addition of a multi-use path through the linear park between Linda Vista Road and Morley Street to activate the space and provide alternative area for walking and bicycling. Speed humps are proposed on Morley Street to provide traffic calming along the street. Alternatively, a partial (one-way) street closure is proposed for the south end of Morley Street for traffic calming and to prevent cut-through traffic and turns at Morley and Comstock Streets. A street closure requires involvement by the City Council and would be subject to further detailed analysis before proceeding.

Project Cost Estimate

The estimated cost for the recommended improvements for this plan area is **$1,514,000**. An alternative to create a one-way street along Morley Street north of Comstock Street instead of traffic calming devices (in addition to the other base improvements for this improvement area) is estimated at **$1,554,000**.

Improvement Area G + I



1 Potential location for crosswalk Requires evaluation

2 Public Art/ Monument Structure

3 Widen Sidewalk

4 4 Parking Spaces Removed

5 Add Pop-Outs with New Pedestrian Ramps

6 Signal, Signal Heads and Mast Arm Modification: Detection Loops Replacement

7 Add Pop-out to Provide Larger Landing for Pedestrian Pathway

8 Reduce Road Width and Widen Sidewalks

9 Proposed Bus Shelter

10 Proposed Decorative Street Lighting and Trees

11 Installation of Bike Lanes: 8 Parking Spaces Removed

12 Realign Lane Geometry

13 Upgrade Pedestrian Ramp at Southeast corner and Widen Sidewalks

14 "No Parking" Signs and Curbs 6 Parking Spaces Removed

15 Pedestrian Refuge Island

16 Potential Multi-use Path

17 Traffic Calming, Speed Humps Along Morley St (Typical)

18 Proposed Landscaped Median

Non-standard items such as street trees, decorative lighting, monuments/public art and other landscaping may require additional funding mechanisms in place, such as a maintenance assessment district.

IMPROVEMENT AREA J: USD STAIRWAY

This improvement area is located near a stairway on the north side of Linda Vista Road that is used by USD students to access the campus.

Existing Conditions & Need

This portion of Linda Vista Road is considered a four-lane major street with Class II bike lanes in the 1998 Linda Vista Community Plan.

This improvement area was identified due to public comments, accident history related to pedestrian crossings, and its proximity to a university.

Public Feedback

Walking Barriers and Improvements

The comments related to walking issues and improvements for this improvement area include the need for a mid-block crossing or bridge to abate jaywalking to the stairway.

Bicycling Barriers and Improvements

The comments related to bicycling issues and improvements for this corridor included a suggestion to add bicycle sensors or green paint to alert drivers to bicycles in the area.

Transit Barriers and Improvements

There were no comments related to transit for this improvement area.

Other City/Planning Efforts

No other planning were identified in this area.

Recommended Improvements

The recommended improvements in this location focus on providing crossing facilities for pedestrians accessing USD. Proposed improvements for this area include adding a continental crosswalk with pedestrian refuge and HAWK signal mid-block between Goshen Street and Brunner Street, directly adjacent to the USD stairway. With the understanding that warrants must be met prior to installing a Pedestrian Hybrid Signal (also referred to as a HAWK signal), another alternative would be to provide a signalized crossing at the intersections of Goshen Street and/or Brunner Street provided either or both of these intersections also meet the appropriate warrants.

No recommendations for improvements specific to bicyclists were offered due to existing buffered bicycle facilities along Linda Vista Road.

Project Cost Estimate

The estimated cost for the recommended improvements for this plan area is **$111,000**.

Improvement Area J

1 Intersections being Analyzed for Full Traffic Signal, If Approved Crossings Will Be Included in the Signal Design

2 Proposed Hawk Signal

3 Existing Bus Stop

4 Existing Stairway

IMPROVEMENT AREA L: KRAMER STREET, & COOLIDGE STREET

This improvement area is located at the intersection of Kramer Street and Coolidge Street, as well as south of Kramer Street on Coolidge Street.

Existing Conditions & Need

Both streets are considered local streets in the 1998 Linda Vista Community Plan. There are currently road humps along Kramer and David Street.

This improvement area was identified due to public comments and its proximity to Carson Elementary School, located at the southwest corner of the intersection.

Public Feedback

Walking Barriers and Improvements

The comments related to walking issues and improvements for this area include the need for additional traffic calming, lighting at intersections, and a new or improved crosswalk. The public preferred a recommendation of a traffic circle. Staff at Carson Elementary were in favor of the midblock crossing and either the pop-outs or the traffic circle.

Bicycling Barriers and Improvements

As previously mentioned, the public preferred the recommendation of a traffic circle at Kramer Street and Coolidge Street to improve the pedestrian and bicycle environments.

Transit Barriers and Improvements

There are no transit routes traversing this intersection other than the buses to Kit Carson elementary school, which load and unload on the west side of Coolidge Street, south of Kramer Street, and therefore no comments were received relating to transit for this area.

Other City/Planning Efforts

The San Diego Unified School District has identified the gravel lot east of Coolidge Street as a joint-use facility. If funding becomes available the gravel field may be improved and the current parking uses would cease.

Recommended Improvements

Located directly in front of Carson Elementary School, the recommended improvements for this area focus on maximizing safety and visibility of the crosswalks. The recommended improvements include a raised mid-block crossing with curb pop-outs to directly serve the school and the adjacent parking lot that is currently used for staff parking and for pick up and drop off of students.

Curb pop-outs at the intersection of Coolidge Street and Kramer Street with high-visibility continental crosswalks are recommended to shorten crossing distances at the intersections and improve visibility of pedestrians at the intersection.

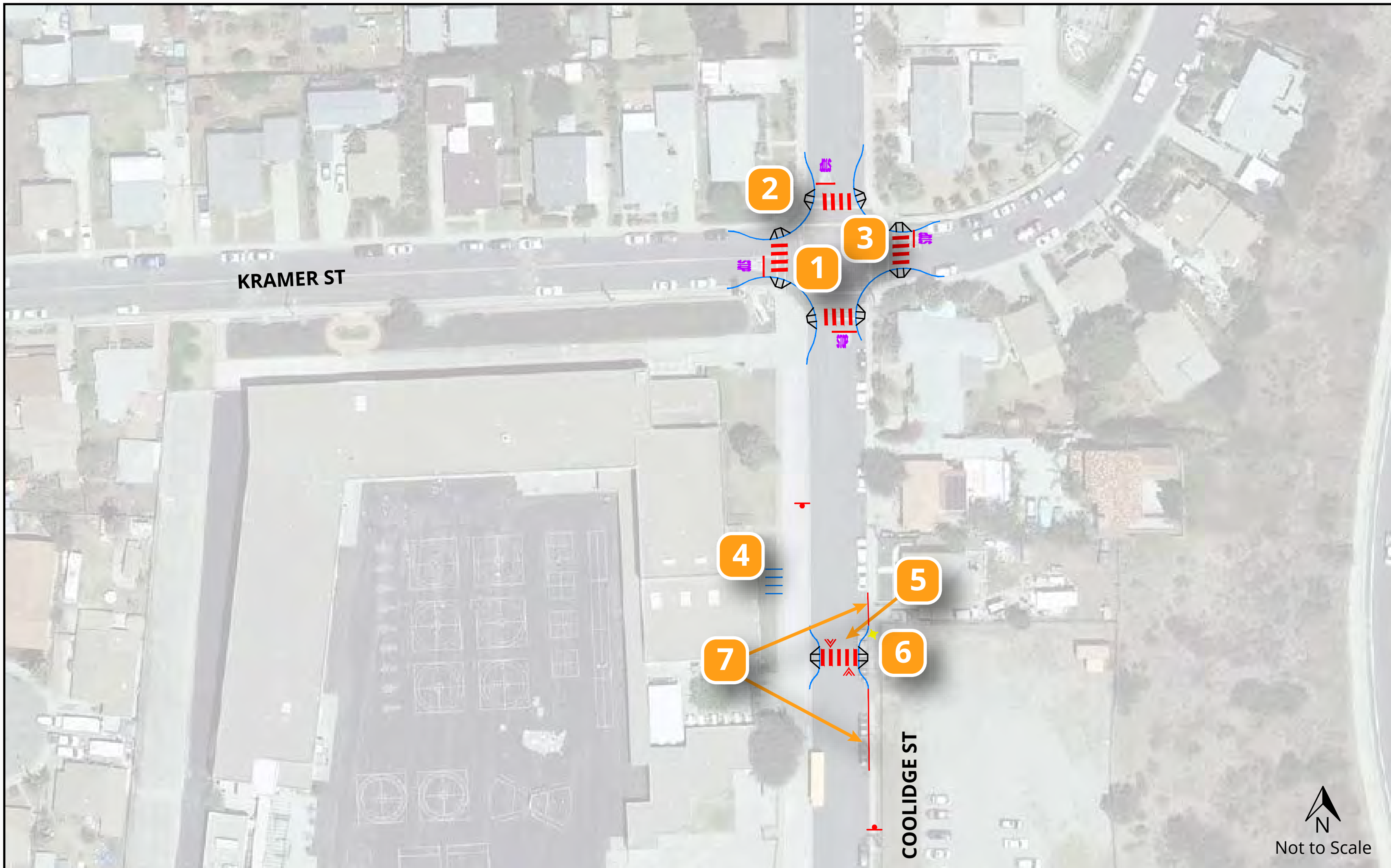
A traffic circle is identified as an alternative for the intersection of Kramer Street and Coolidge Street.

Curb pop outs, a raised mid-block crossing, and a traffic circle would all potentially have localized parking impacts.

Project Cost Estimate

The estimated cost for the recommended improvements for this plan area is **$176,000**. An Alternative to create a traffic circle at Kramer Street and Coolidge Street instead of curb pop-outs (in addition to the other base improvements for this improvement area) is estimated at **$173,000**.

Improvement Area L



1 Add Pop-outs With New ADA Compliant Ramps

2 High Visibility Continental Crosswalks

3 4 Parking Spaces Removed

4 Add Bike Racks

5 Raised Crosswalk with Bulbouts and High Visibility Continental Crosswalks

6 Proposed Street Lighting

7 Red Curb: 6 Parking Spaces Removed

Note that all concept plans are provided to demonstrate general feasibility of the subject proposal only.
Actual improvements will require additional engineering studies and design work to the satisfaction of the City Engineer.

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6. PROPOSED CONCEPT IMPLEMENTATION

IMPLEMENTATION STRATEGY

Overview

This implementation strategy supports the recommendations identified in the CATS by providing the following information:

- Project prioritization overview and results;
- Project phasing;
- Cost estimates; and,
- An overview of potential funding sources.

Project Prioritization

Two types of project areas were identified for the CATS plan: **project corridors**, which represent modifications to roadway cross-sections; and **project improvement areas**, which are focused on improvements to intersections or small districts. Table 6-1 shows the five project corridor extents that were considered for prioritization.

Table 6-1. Refined Project Corridors

#	Corridor
1	Linda Vista Road from north of Baltic Street (community limit) to Alcala Knolls Drive
2	Mesa College Drive from Armstrong Street to Linda Vista Road
3	Genesee Avenue from Linda Vista Road to Whitney Street
4	Ulric Street from Tait Street to Friars Road
5	Via Las Cumbres from Linda Vista Road to Friars Road

Source: Chen Ryan Associates (July, 2016)

The selection of project improvement areas was based on the following considerations:

- Locations receiving comments for needing improvement during the public outreach process;
- Pedestrian and bicycle generating and attracting land uses, such as neighborhood commercial centers, parks, and schools (also including University of San Diego); and,
- Locations adjacent to freeways where high speed transitions and other pedestrian and bicycle conflicts occur.

Table 6-2 shows the ten project improvement areas identified using the above criteria.

Table 6-2: Project Improvement Areas

#	Improvement Area	Reason(s) for Consideration
A	Mesa College Dr from Linda Vista Rd to SR-163 On-Ramps	Received Public Comment, Conflicts with high speed freeway transitions
B	Linda Vista Road and Mesa College Drive	Received Public Comment, Proximity to Schools
C	Linda Vista Road and Korink Avenue	Received Public Comment, Proximity to Schools
D	Ulric St at intersection of Osler St; Eastman St and Fulton St	Received Public Comment, Proximity to Schools and Park
E	Linda Vista Road and Genesee Avenue	Received Public Comment, Proximity to Schools
F	Genesee Avenue and SR-163 SB On-Ramp	Received Pubic Comment, Conflicts with high speed freeway transitions
G & I	Area bound by Morley St, Ulric St and Comstock St	Received Public Comment, Neighborhood Commercial Center
J	Linda Vista Road between Brunner St and Goshen St	Received Public Comment, Proximity to University
K	Via Las Cumbres and Linda Vista Road	Received Public Comment, Proximity to Schools
L	Kramer St and Coolidge St Intersection; Coolidge St south of intersection east of school	Received Public Comment, Proximity to Schools

Source: Chen Ryan Associates (July, 2016)

Prioritization scoring was applied to the five project corridors and ten project improvement areas. The prioritization process utilized seven key criteria: four criteria are need based, and three criteria are based on project readiness. The need-based criteria consist of traffic collisions per mile, pedestrian and bicycle demand, average daily vehicular traffic volumes and public workshop preference. The project-readiness criteria include curb impacts, right-of-way impacts, and potential utility relocation.

Need-Based Prioritization Criteria

Table 6-3 describes the need-based prioritization criteria and associated point assignments. The need-based prioritization criteria are generally indicative of high levels of use and conflict among multiple transportation modes. As shown, the traffic collisions per mile criteria received a maximum of six points, making it the highest weighted of the need-based criteria. These inputs capture demand from automobile, pedestrian and bicyclist use.

Table 6-4 shows the need-based points earned from each criteria for the project corridors and improvement areas. Project Improvement Areas G&I (area bound by Morley Street, Ulric Street, and Comstock Street) and Area E (Linda Vista Road and Genesee Avenue) scored the highest in the need-based criteria, each receiving 10 points.

Table 6-3: Need-Based Prioritization Criteria and Associated Points

Traffic Collisions per Mile	Highest Traffic Collisions per Mile along Project Segment	Category	Prioritization Points
All traffic collisions in the Community Planning Area, including vehicular-vehicular, vehicular-bicyclist, vehicular-pedestrian collisions, between 2008 and 2013 were summarized by project segment. Project segment length was used to determine collisions per mile. More points were awarded to project corridors with higher collisions per mile. Collision records were obtained from City of San Diego.	300 per mile or greater	Very High	6
	250-299 per mile	High	5
	200-249 per mile	Medium-High	4
	150-199 per mile	Medium	3
	100-149 per mile	Medium-Low	2
	50-99 per mile	Low	1
	Less than 50 per mile	Very Low	0
Pedestrian and Bicycle Demand	**Average Weighted Pedestrian and Bicycle Demand Model Score along Project Segment**	**Category**	**Prioritization Points**
This input is a composite of the Pedestrian Priority Model from the City's Pedestrian Master Plan and the Inter- and Intra-Community Demand Model from the City's Bicycle Master Plan. For each project segment, an average weighted score was calculated along the extent of the project segment. The six ranges were determined by the natural breaks of the average weighted scores of all the projects.	66 points or greater	Very High	5
	61-66 points	High	4
	53-61 points	Medium-High	3
	45-52 points	Medium-Low	2
	41-45 points	Low	1
	Less than 41 points	Very Low	0
Average Daily Vehicular Traffic Volumes	**Highest Average Daily Traffic (ADT) Volumes along Project Segment**	**Category**	**Prioritization Points**
Points were awarded based on the highest average daily vehicular traffic (ADT) volume along a project segment. Higher vehicular traffic volumes are indicative of being more stressful facilities for non-motorized users. ADTs were obtained from SANDAG's regional traffic count database (2010).	50,000 ADT or greater	Very High	3
	25,000-50,000 ADT	High	2
	5,000-24,999 ADT	Medium	1
	Less than 5,000 ADT	Low	0
Public Workshop Preference	**Workshop Participants Assigning Weighted Preference Votes to Project Areas**	**Category**	**Prioritization Points**
Members of the public who attended the Linda Vista CATS workshops were each assigned 5 votes to allocate to voting on which improvement areas were of the highest priority. Voting was weighted, meaning participants could decide to assign as many or as few or their 5 votes to an improvement area as they preferred.	10 or more votes	Very High	3
	6-9 votes	High	2
	2-5 votes	Medium	1
	0-1 votes	Low	0

Source: Chen Ryan Associates (July, 2016)

Table 6-4: Need-Based Prioritization Points

Project ID	Project Extents	Traffic Collisions per Mile Points	Average Pedestrian and Bicycle Demand Points	Average Daily Traffic Volumes Points	Public Workshop Preference	Need-Based Prioritization Points
Project Improvement Areas						
G & I	Area bound by Morley Street, Ulric Street and Comstock Street	1	5	1	3	**10**
E	Linda Vista Road and Genesee Avenue	3	4	2	1	**10**
B	Linda Vista Road and Mesa College Drive	2	4	1	1	**8**
D	Ulric Street at intersections of Osler Street; Eastman Street; and Fulton Street	0	4	1	2	**7**
J	Linda Vista Road between Brunner Street and Goshen Street	0	4	1	1	**6**
A	Mesa College Drive from Linda Vista Road to SR-163 Ramps	1	2	2	0	**5**
F	SR-163 On-Ramp and Genesee Avenue	2	1	2	0	**5**
C	Linda Vista Road and Korink Avenue	0	2	1	1	**4**
L	Coolidge Street from Kramer Street to Howe Court	0	0	0	2	**2**
Project Corridors						
1	Linda Vista Road from Mesa College Drive to Alcala Knolls Road	0	5	2	n/a	**7**
3	Genesee Avenue from Whitney Street to Linda Vista Road	3	2	1	n/a	**6**
4	Ulric Street from Tait Street to Friars Road	1	4	1	n/a	**6**
2	Mesa College Drive from Armstrong Street to Linda Vista Road	1	2	1	n/a	**4**
5	Via Las Cumbres from Linda Vista Road to Friars Road	1	0	1	n/a	**2**

Source: Chen Ryan Associates (July, 2016)

Project-Readiness-Based Prioritization

Table 6-5 describes the project-readiness-based prioritization criteria and associated point assignment. Project-readiness-based prioritization considers right-of-way impacts, curb line reconfiguration or construction impacts, and utility conflicts. There are a total possible 12 project-readiness-based prioritization points.

Prioritization points are assigned if the proposed project dimensions do not exceed the right-of-way width of the roadway. Likewise, prioritization points are assigned if projects have no curb reconfiguration impacts, meaning the project does not differ from the existing curb-to-curb width or result in the removal or construction of a median.   Project improvements which require additional right-of-way were examined for utility conflicts. Table 6-6 shows the project-readiness-based points assigned to each of the project improvement areas and corridors.

Table 6-5: Project-Readiness Prioritization Criteria and Associated Points

Right-of-Way Impact	**Category**	**Prioritization Points**
The dimension of the proposed project was compared to the available right-of-way to determine the potential need for right-of-way acquisition.	No Impact – Right-of-way is sufficient to construct proposed project	4
	Impact – Right-of-way will need to be acquired	0
Curb Impact	**Category**	**Prioritization Points**
The dimension of the proposed project was compared to the existing curb lines to determine the potential need for curb line reconfiguration or project requires new curb construction.	No Impact – No curb line reconfiguration required	4
	Impact – Curb line reconfiguration is required	0
Utility Conflict	**Category**	**Prioritization Points**
The project imposes impacts to any of the following utilities: ▪ Traffic Lights ▪ Street Lights ▪ Transformers ▪ Vaults ▪ Storm Drains ▪ Fire Hydrants ▪ Cable/Phone Risers ▪ Bus Stops ▪ Water Meters ▪ Power Poles	No Impact – No relocation of utility infrastructure is required	4
	Impact – Relocation of utility infrastructure is required	0

Source: Chen Ryan Associates (July, 2016)

Table 6-6: Project-Readiness-Based Prioritization Points

Project ID	Project Extents	Right-of-Way Impacts	Curb Impacts	Utility Conflicts	Need-Based Prioritization Points
	Project Improvement Areas				
A	Mesa College Drive from Linda Vista Road to SR-163 Ramps	4	0	4	**8**
B	Linda Vista Road and Mesa College Drive	4	0	4	**8**
C	Linda Vista Road and Korink Avenue	4	0	4	**8**
D	Ulric Street at intersections of Osler Street; Eastman Street; and Fulton Street	4	0	4	**8**
F	SR-163 On-Ramp and Genesee Avenue	4	0	4	**8**
G & I	Area bound by Morley Street, Ulric Street and Comstock Street	4	0	4	**8**
J	Linda Vista Road between Brunner Street and Goshen Street	4	0	4	**8**
L	Coolidge Street from Kramer Street to Howe Court	4	0	4	**8**
E	Linda Vista Road and Genesee Avenue	0	0	0	**0**
	Project Corridors				
1	Linda Vista Road from Mesa College Drive to Alcala Knolls Road	4	4	4	**12**
2	Mesa College Drive from Armstrong Street to Linda Vista Road	4	4	4	**12**
3	Genesee Avenue from Whitney Street to Linda Vista Road	4	4	4	**12**
4	Ulric Street from Tait Street to Friars Road	4	0	4	**8**
5	Via Las Cumbres from Linda Vista Road to Friars Road	4	0	0	**4**

Source: Chen Ryan Associates (July, 2016)

Combined Need-Based and Project-Readiness-Based Prioritization

Table 6-7 presents the combined need-based and project-readiness-based prioritization scoring by project segment to establish the final prioritization results. The project improvement areas and project corridors are sorted from highest to lowest priority. The resulting projects were categorized as priority level 1, 2, or 3 based on the top third, middle third, and bottom third scores. Due to the large disparity in project corridor scores, the three highest scoring project corridors were categorized as priority level 1, one project corridor as priority level 2, and one project corridor as priority level 3.

Project Improvement Area G & I (the area bound by Morley Street, Ulric Street, and Comstock Street) scored the highest, receiving 18 combined points. Project Improvement Area B (Linda Vista Road and Mesa College Drive) was the next highest scoring location, with 16 points. In terms of project corridors, Linda Vista Road, between Mesa College Drive and Alcala Knolls Road, scored the highest of the five project corridors.

Table 6-7: Final Prioritization Points

		POINTS			
Project ID	Project Extents	Need-Based Prioritization	Project-Readiness Prioritization	Total Prioritization	Priority Level
	Project Improvement Areas				
G & I	Area bound by Morley St, Ulric St, and Comstock St	10	8	18	1
B	Linda Vista Rd and Mesa College Dr	8	8	16	1
D	Ulric St at intersections of Osler St, Eastman St, and Fulton St	7	8	15	1
J	Linda Vista Rd between Brunner St and Goshen St	6	8	14	2
A	Mesa College Dr from Linda Vista Rd to SR-163 Ramps	5	8	13	2
F	SR-163 On-Ramp and Genesee Ave	5	8	13	2
C	Linda Vista Rd and Korink Ave	4	8	12	3
E	Linda Vista Rd and Genesee Ave	10	0	10	3
L	Coolidge St from Kramer St to Howe Ct	2	8	10	3
	Project Corridors				
1	Linda Vista Rd from Mesa College Dr to Alcala Knolls Rd	7	12	19	1
2	Mesa College Dr from Armstrong St to Linda Vista Rd	6	12	18	1
3	Genesee Ave from Whitney St to Linda Vista Rd	6	12	18	1
4	Ulric St from Tait St to Friars Rd	4	8	12	2
5	Via Las Cumbres from Linda Vista Rd to Friars Rd	2	0	2	3

Source: Chen Ryan Associates (July, 2016)

Phasing Plan

The previous section described the process used to prioritize the project improvement areas and project corridors. The prioritization results were broken into thirds based on total prioritization points for the project improvement areas and the project corridors to identify a priority level. The priority level is used in Table 6-8 to identify which projects to target for near-term (0-5 years), mid-term (5-10 years), and long-term (more than 10 years) implementation.

Cost Estimates

Table 6-9 presents cost estimates for each of the project improvement areas and the project corridors. The estimates were performed at the planning level and include design, engineering, construction and 20% contingency.

As shown, implementation of near-term project areas and corridors is estimated to cost approximately $3.3 million, while Mid-term projects would cost about $2.4 million, and Long-term projects would cost approximately $1.1 million. In total, implementation of all projects would cost approximately $6.8 million.

Appendix H includes a detailed breakdown of the cost estimates, identifying the various components, quantities, and unit costs included in the estimations.

Table 6-8: Project Phasing

Project ID	Project Type	Project Extents	Priority Level	Phase
G & I	Improvement Area	Area bound by Morley Street, Ulric Street and Comstock Street	1	Near Term 0-5 years
B	Improvement Area	Linda Vista Road and Mesa College Drive	1	
D	Improvement Area	Ulric Street at intersections of Osler Street; Eastman Street; and Fulton Street	1	
1	Corridor	Linda Vista Road from Mesa College Drive to Alcala Knolls Road	1	
2	Corridor	Mesa College Drive from Armstrong Street to Linda Vista Road	1	
3	Corridor	Genesee Avenue from Whitney Street to Linda Vista Road	1	
J	Improvement Area	Linda Vista Road between Brunner Street and Goshen Street	2	Mid-Term 5-10 years
A	Improvement Area	Mesa College Drive from Linda Vista Road to SR-163 Ramps	2	
F	Improvement Area	SR-163 On-Ramp and Genesee Avenue	2	
4	Corridor	Ulric Street from Tait Street to Friars Road	2	
C	Improvement Area	Linda Vista Road and Korink Avenue	3	Long-Term > 10 years
E	Improvement Area	Linda Vista Road and Genesee Avenue	3	
L	Improvement Area	Coolidge Street from Kramer Street to Howe Court	3	
5	Corridor	Via Las Cumbres from Linda Vista Road to Friars Road	3	

Source: Chen Ryan Associates (August, 2016)

Table 6-9: Project Cost Estimates

Project ID	Project Type	Project Extents	Phase	Cost Estimate
G & I	Improvement Area	Area bound by Morley Street, Ulric Street and Comstock Street	Near Term 0-5 years	$1,514,000[1]
B	Improvement Area	Linda Vista Road and Mesa College Drive		$520,000
D	Improvement Area	Ulric Street at intersections of Osler Street; Eastman Street; and Fulton Street		$474,000[2]
1	Corridor	Linda Vista Road from Mesa College Drive to Alcala Knolls Road		$311,000
2	Corridor	Mesa College Drive from Armstrong Street to Linda Vista Road		$460,000
3	Corridor	Genesee Avenue from Whitney Street to Linda Vista Road		$33,000
			Near-term Cost Estimates	**$3,312,000**
J	Improvement Area	Linda Vista Road between Brunner Street and Goshen Street	Mid-Term 5-10 years	$111,000
A	Improvement Area	Mesa College Drive from Linda Vista Road to SR-163 Ramps		$152,000[3]
F	Improvement Area	SR-163 On-Ramp and Genesee Avenue		$257,000[4]
4	Corridor	Ulric Street from Tait Street to Friars Road		$1,833,000
			Mid-term Cost Estimates	**$2,353,000**
C	Improvement Area	Linda Vista Road and Korink Avenue	Long-Term > 10 years	$83,000[5]
E	Improvement Area	Linda Vista Road and Genesee Avenue		$532,000[6]
L	Improvement Area	Coolidge Street from Kramer Street to Howe Court		$176,000[7]
5	Corridor	Via Las Cumbres from Linda Vista Road to Friars Road		$351,000
			Long-term Cost Estimates	**$1,142,000**
			Total Project Area and Corridor Cost Estimates	**$6,758,000**

Source: Michael Baker International (September, 2016)

Notes:

1. An alternative design for Improvement Areas G & I proposes a partial closure for one-way travel along Morley Street, with an estimated cost of $1,554,000.
2. An alternative design for Improvement Area D proposes a full traffic signal at the Ulric Street and Osler Street intersection, with an estimated cost of $522,000.
3. An alternative design for Improvement Area A proposes to realign the ramps, with an estimated cost of $3,600,000.
4. An alternative design for Improvement Area F proposes to realign the ramp, with an estimated cost of $1,800,000.
5. An alternative design for Improvement Area C proposes full signal, with an estimated cost of $317,000.
6. An alternative design for Improvement Area E proposes a 2-lane roundabout, with an estimated cost of $2,400,000.
7. An alternative design for Improvement Area L proposes a traffic circle at the intersection of Kramer Street and Coolidge Street, with an estimated cost of $173,000.

Funding Sources

Potential funding sources to help implement infrastructure recommendations can be found at all levels of government. Many funding sources are highly competitive, making it necessary for local governments to stay informed about available funds and associated requirements so they are prepared to pursue when applications are open. This is not intended to be a fully comprehensive list, but rather a summary of potential funding sources to explore.

Active Transportation Program – Caltrans

The Active Transportation Program (ATP) was created to encourage increased use of bicycling and walking. Caltrans administers the ATP to fund capital improvements, including the environmental, design, right-of-way acquisition, and construction phases of a capital improvement project. Program funding is separated into three components, 1) 50% to the state for a statewide competitive program; 2) 10% to small urban and rural regions; and 3) 40% to Metropolitan Planning Organizations (MPO) in urban areas.

The Caltrans ATP is available once a year, with applications generally due in June. A local match is not required for the statewide competitive program.

Sustainable Transportation Planning Grant Program – Caltrans

The Sustainable Transportation Planning Grant Program was created to support Caltrans' current Mission: **Provide a safe, sustainable, integrated and efficient transportation system to enhance California's economy and livability.** The grants serve to promote a balanced, comprehensive multimodal transportation system with an emphasis on transportation planning efforts that promote sustainability. Some of the eligible activities/costs include data gathering and analysis, planning consultants; conceptual drawings and design; and community surveys, meetings, charrettes, and focus groups.

TransNet Active Transportation Grant Program – SANDAG

SANDAG administers the Active Transportation Grant Program for the San Diego region, funded by TransNet sales tax revenue. Eligible activities include bicycle facilities and connectivity improvements, pedestrian and walkable community projects, bicycle and pedestrian safety projects, and traffic calming projects. All applications must include a Resolution passed by the local city council or governing board, detailing source(s) of matching funds. SANDAG anticipates the Active Transportation Grant Program fourth cycle call for projects will be held in the fall/winter of 2017/2018, with grant awards made in the summer of 2018.

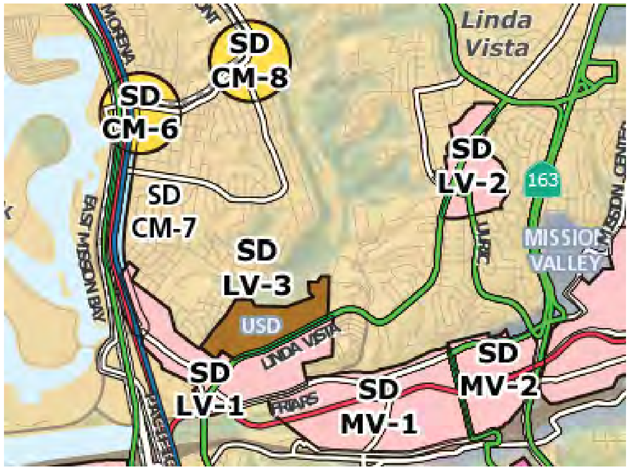

Image from Smart Growth Concept Map

TransNet Smart Growth Incentive Program – SANDAG

SANDAG administers the Smart Growth Incentive program, funded by TransNet sales tax revenue. Funds may be used within designated Smart Growth Opportunity Areas to fund local agency salaries, professional services, preliminary engineering, right-of-way acquisition, construction, project management costs, and other direct expenses incurred on behalf of the projects. Three Smart Growth Opportunity Areas are identified within the Linda Vista community. A description of each of these areas is provided in Table 6-10, as presented in SANDAG's *Smart Growth Concept Map Site Descriptions* (May 5, 2016).

Table 6-10: Linda Vista Smart Growth Concept Map Site Descriptions

Area	Location	Smart Growth Place Type	Land Use Description
SD-LV-1	Morena Boulevard from Tecolote Road to Linda Vista Road and between Linda Vista Road and Friars Road	Town Center	This town center spans the Linda Vista and Clairemont Mesa communities. The Linda Vista Community Plan designates this area for medium-high density residential (30 to 43 dwelling units per acre), office commercial, community commercial, and general commercial and industrial uses and encourages mixed-use developments adjacent to the light rail station at Napa Street.
SD-LV-2	Linda Vista Road from Tait Street to Fulton Street	Town Center	The Linda Vista Community Plan designates this area for community and office commercial and high-density residential (43 to 75 dwelling units per acre).
SD-LV-3	University of San Diego	Special Use Center	University of San Diego

Source: SANDAG Smart Growth Concept Map Site Descriptions (May 5, 2016)

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APPENDIX A

Technical Memorandum #1: Methodology

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Existing Conditions Report

Linda Vista
Comprehensive Active Transportation Strategy (CATS)

<u>DRAFT Report</u>

September 26, 2016

Prepared for:

City of San Diego
202 C Street
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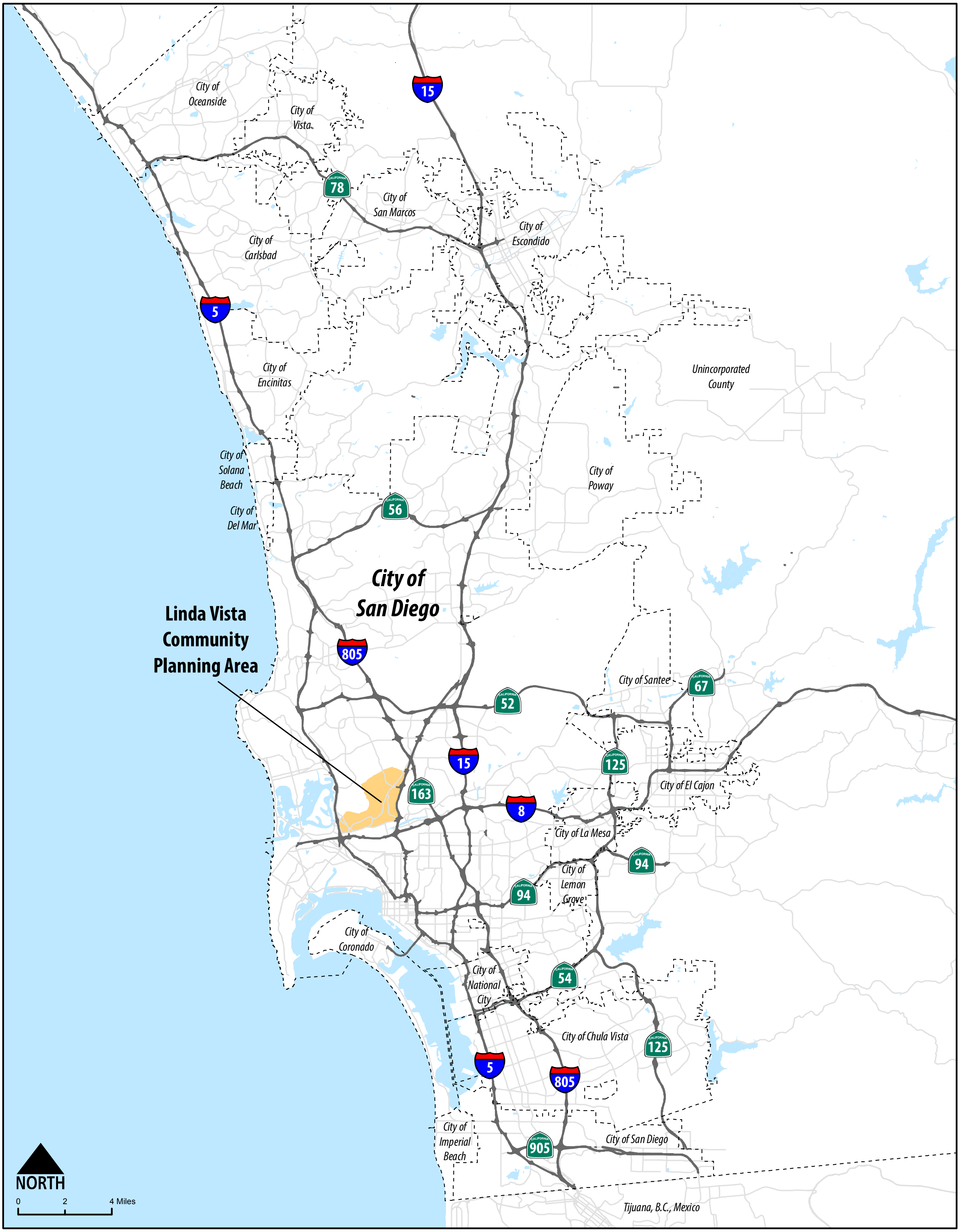
1.0 Introduction

1.1 Study Background and Purpose

This Existing Conditions Report summarizes the physical and operational conditions of the Linda Vista Community's bicycle and pedestrian networks, support facilities, transit facilities, and other multimodal transportation infrastructure. The report presents existing conditions analyses of pedestrian and bicycle facilities, demand, network quality and connectivity, and safety, as well as amenities present at transit facilities. The report also describes key terms and methodologies utilized for conducting these analyses, and identifies current deficiencies across the multimodal transportation networks. These analyses provide a foundation for developing and prioritizing recommendations for future network improvements which will be developed in upcoming study tasks.

1.2 Study Location

The community of Linda Vista occupies approximately 4.3 square miles and is located roughy 4 miles north of downtown San Diego. It is bounded by Interstate 5 to the west, Tecolote Canyon and Mesa College Drive to the north, State Route 163 to the east, and Friars Road to the south. Linda Vista is bisected in the north-south direction by major roadways such as Morena Boulevard, Via Las Cumbres, and Ulric Street, and traversed by Linda Vista Road in a northeasterly and southwesterly direction. **Figure 1-1** displays the community of Linda Vista within the region.



Linda Vista
Comprehensive Active Transportation Strategy

CHEN RYAN

Figure 1-1
Linda Vista within the Region

1.3 Organization of the Report

Following this introductory chapter, the remainder of the Existing Conditions Report is organized into the following chapters:

- ***Chapter 2*** describes the pedestrian environment in Linda Vista through assessments of demand, network quality, connectivity, and safety***.***
- ***Chapter 3*** summarizes the cycling environment in Linda Vista through assessments of demand, network quality, connectivity, and safety.
- ***Chapter 4*** provides an analysis of Linda Vista's transit environment, including stop amenities and station quality, collision frequency near transit stops, and the base of potential transit riders within a half-mile pedestrian network buffer.
- ***Chapter 5*** presents a summary of currently deficient facilities within the community, identified by the analyses performed in Chapters 2 through 4, that do not presently meet identified thresholds targets.

2.0 Pedestrian Assessment

This chapter provides an overview of existing pedestrian facilities, safety, quality, and connectivity in the Linda Vista Community. Data sources supporting this analysis include geographic information system (GIS) files accessed via SANDAG, existing planning documents, satellite imagery, mapping analyses, and confirmation through field review.

2.1 Pedestrian Priority Model

The Pedestrian Priority Model (PPM) was developed to identify locations across the City of San Diego with high “pedestrian need” or places that warrant relatively higher consideration for pedestrian infrastructure improvement. The model included three key sub-models to identify these locations: 1) pedestrian trip generation 2) pedestrian trip attraction, and 3) pedestrian trip detractors. The overarching concept is that locations with high demand for walking (as reflected by pedestrian trip generation and attraction) and high pedestrian detractors warrant higher consideration for pedestrian improvements.

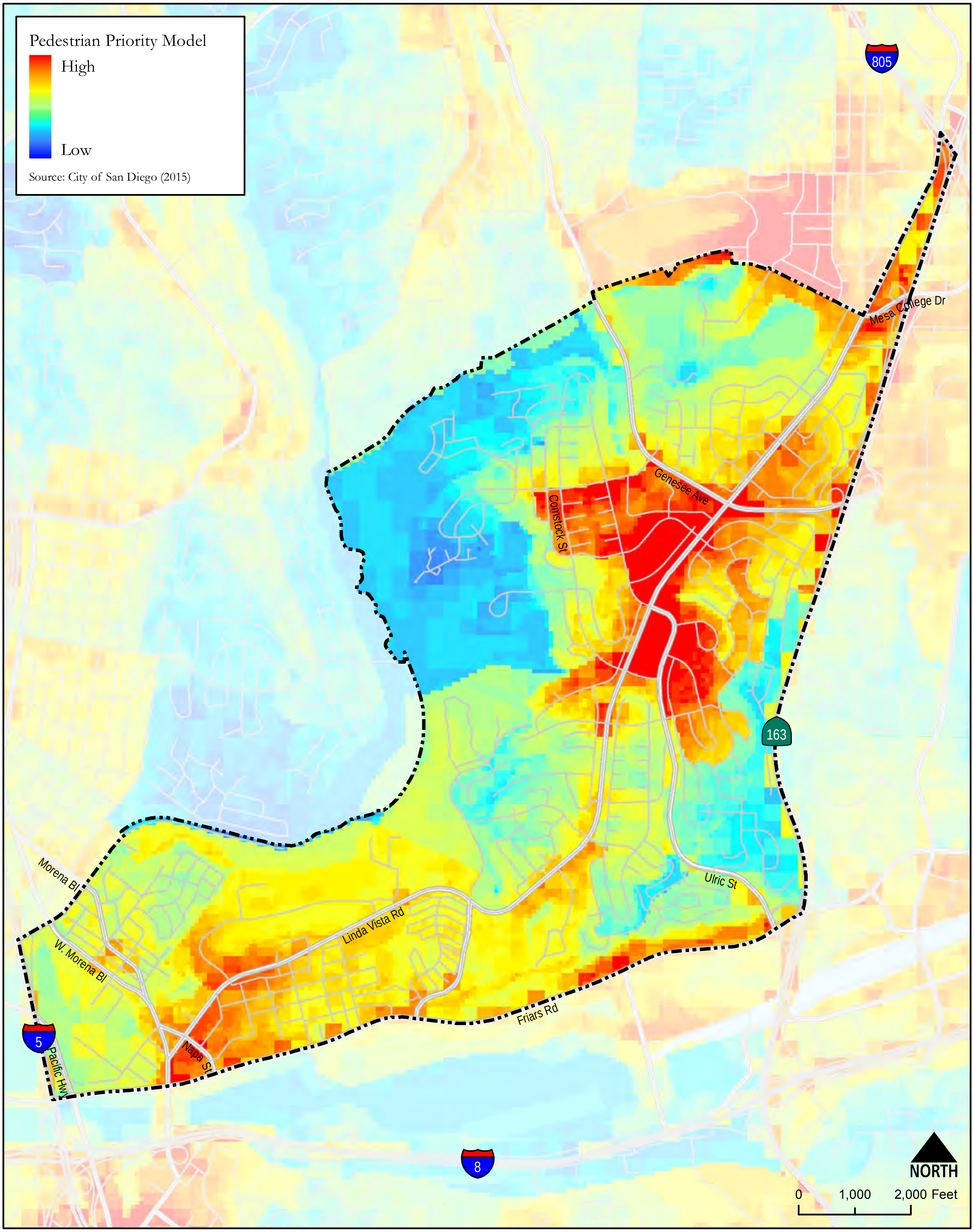
A recent update to the PPM, *Pedestrian Priority Model Update and Data Documentation, Multimodal Planning Research Project*, was undertaken in 2015. The documentation related to this most recent PPM update details the methodologies, inputs, weights, and scoring categories used to derive each of the three sub-models and composite raster.

Figure 2-1 displays the final 2015 Pedestrian Priority composite model for the Linda Vista community within the City of San Diego, combining the attractors, generators, and detractors. As shown, a relatively high propensity for pedestrian travel exists along Linda Vista Road in the center of the community, bounded to the north by Genesee Avenue and to the south by Comstock Street.

2.2 Pedestrian Safety

Collision data is a valuable source of information for identifying potential pedestrian deficiencies. An analysis of collision data from the six-year period between 2008 and 2013 reveals trends and patterns in collision locations, causes, time of collision, party-at-fault, and victim age. Data was obtained from the City of San Diego’s Collision Database, and showed a total of 50 pedestrian collisions within the community over the six-year period.

Figure 2-2 displays pedestrian collisions in Linda Vista. Half of the recorded pedestrian collisions, or 25 collisions, occurred along Linda Vista Road. **Chart 2-1** displays pedestrian collisions by party-at-fault. Approximately 50 percent of collisions are attributed to motor vehicle’s fault, whereas the remaining 50 percent of collisions are attributed to the pedestrian’s fault. **Table 2-1** presents the distribution of collision cause across this six-year period. As shown, violation of a pedestrian’s right-of-way was the most common single cause of pedestrian collisions (28%), followed by unknown factors (22%), and violation of a vehicle’s right-of-way (14%).



Linda Vista
Comprehensive Active Transportation Strategy
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Figure 2-1
Pedestrian Priority Model (PPM)

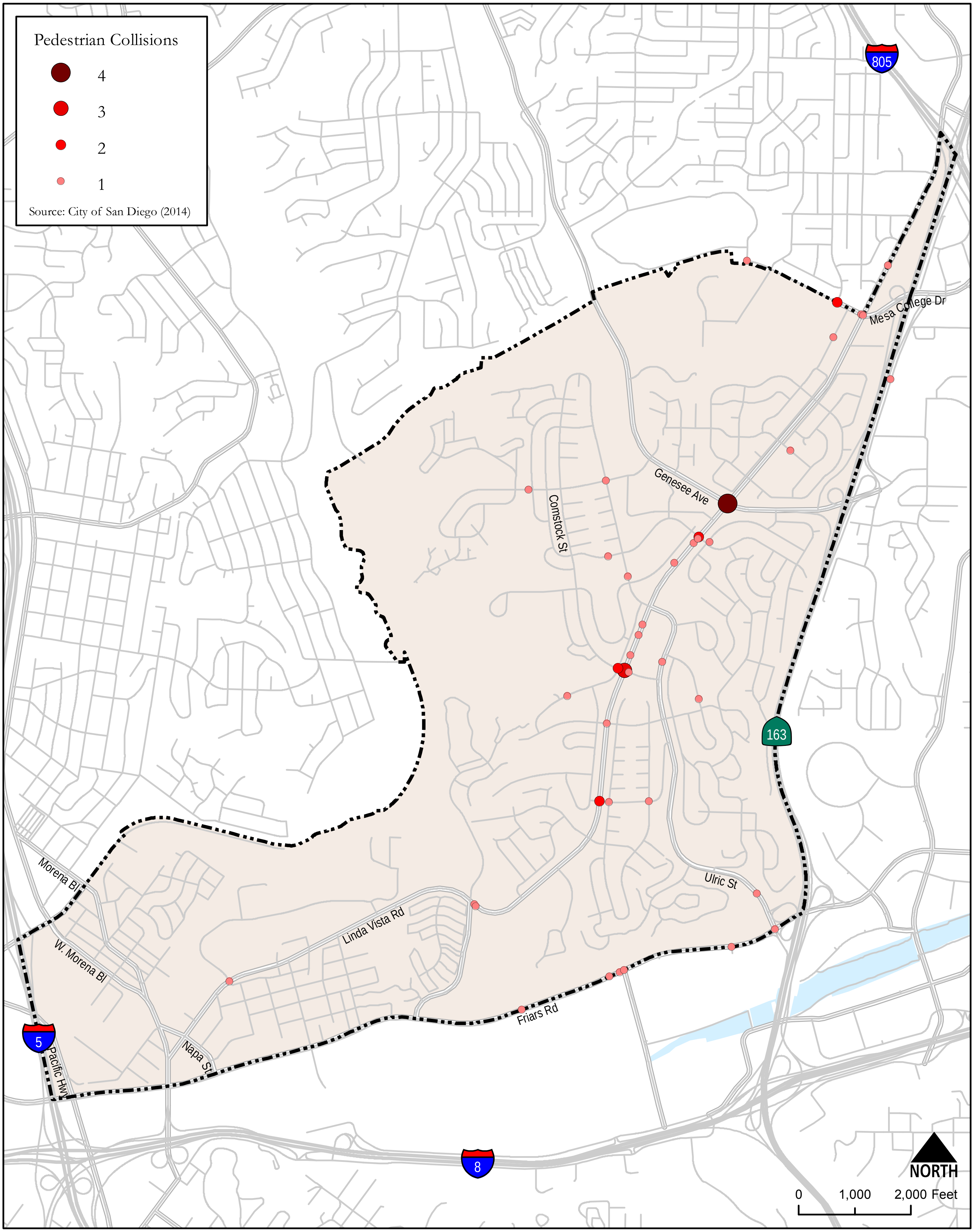
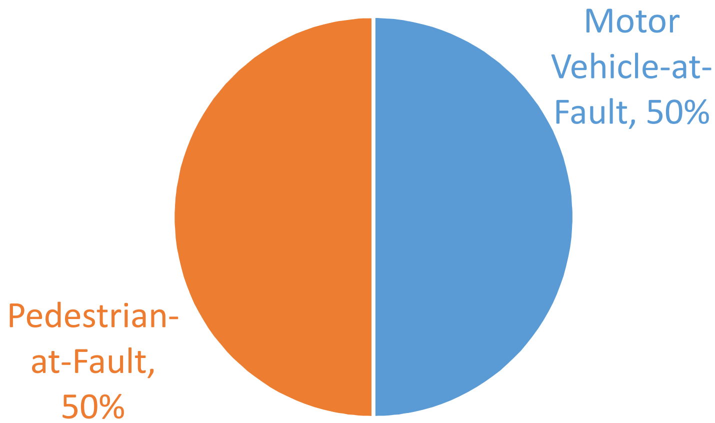


Figure 2-2
Pedestrian Collisions (2008-2013)

Chart 2-1 Pedestrian Collisions by Party-at-Fault (2008-2013)



Source: City of San Diego, 2013; Chen Ryan Associates, August 2016

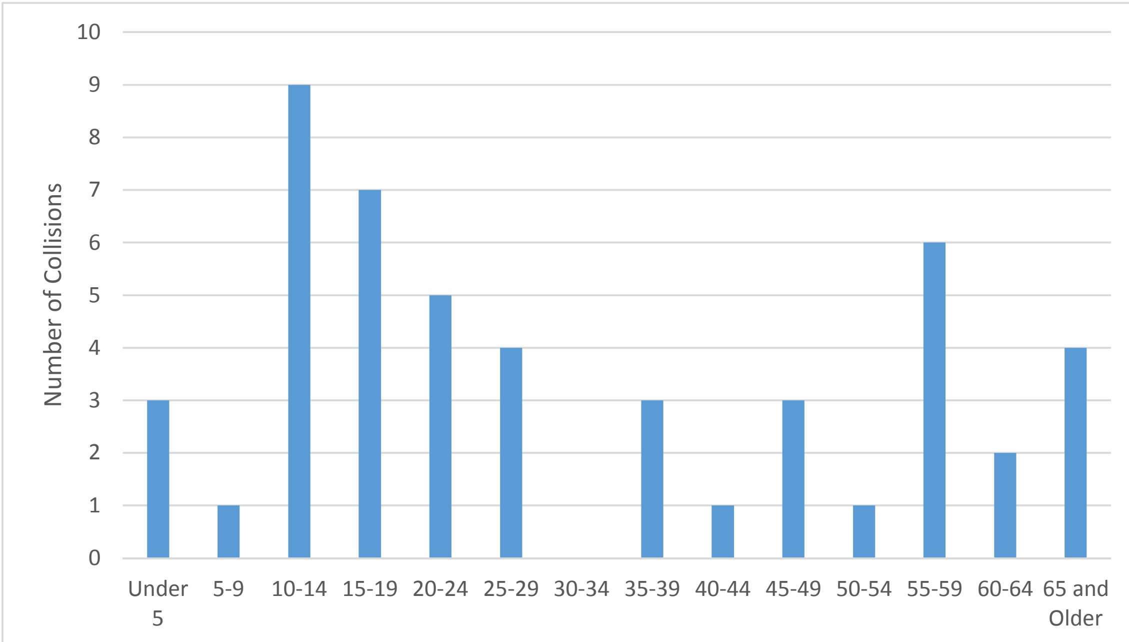
Table 2-1 Primary Pedestrian Collision Factor Categories (2008-2013)

Primary Collision Factor	Number of Collisions	Percent of Total Collisions
Violated Pedestrian's Right-of-Way	14	28%
Unknown	11	22%
Violated Vehicle's Right-of-Way	7	14%
Not Paying Attention	4	8%
Visibility Issue	3	6%
Unknown	3	6%
Speed Too Fast for Conditions	2	4%
Ran Traffic Signal	1	2%
Left Place of Safety	1	2%
Didn't Yield to Emergency Vehicle	1	2%
Stopped in Right-of-Way	1	2%
Violation of Signs	1	2%
Other Causes	1	2%
Total	50	**100%**

Source: City of San Diego, 2013; Chen Ryan Associates, August 2016

Chart 2-2 presents the fifty pedestrian collisions by age group. Each age group experienced pedestrian collisions, with the exception of pedestrians ages 30-34 years. Pedestrians aged 10-14 years recorded higher numbers of collision when compared to other age groups. Thirty of the 50 pedestrian collisions, or 60%, were under the age of 30.

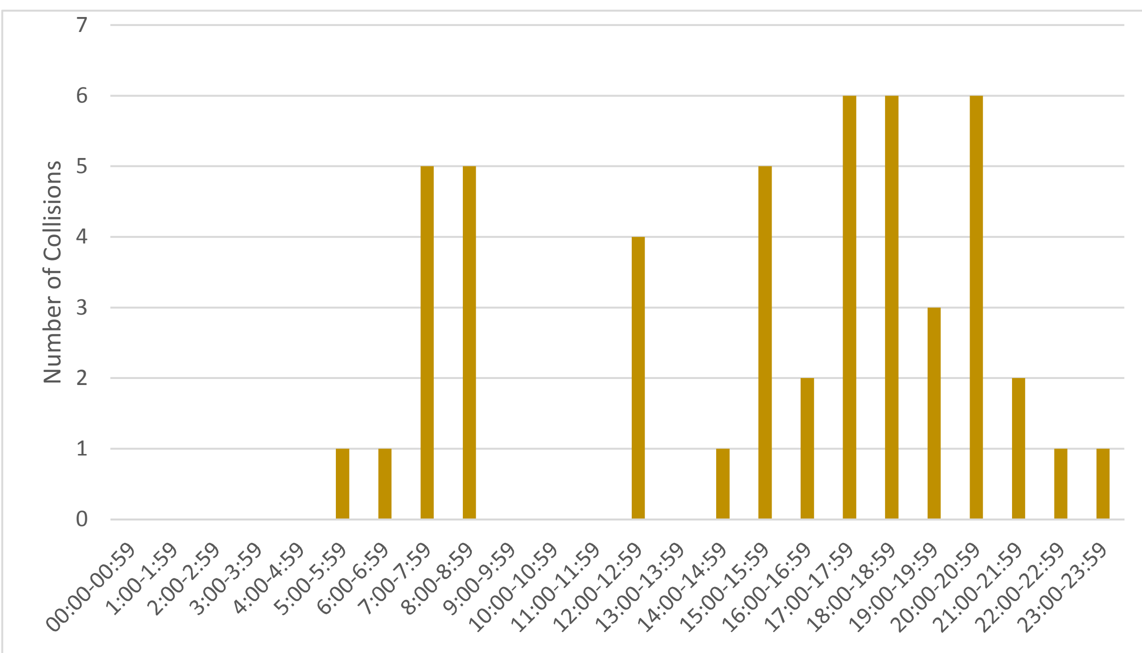
Chart 2-2 Pedestrian Collisions by Age Group (2008-2013)



Source: City of San Diego, 2013; Chen Ryan Associates, August 2016

Chart 2-3 displays pedestrian collisions distributed by time of day over the six-year period from 2008 to 2013. The timeframe with the most pedestrian collisions recorded was between 5:00PM and 9:00PM, with 21 collisions. This timeframe partly falls within the PM peak period (4:00PM to 6:00 PM), potentially indicating pedestrians traveling for commute-related purposes rather than for recreation.

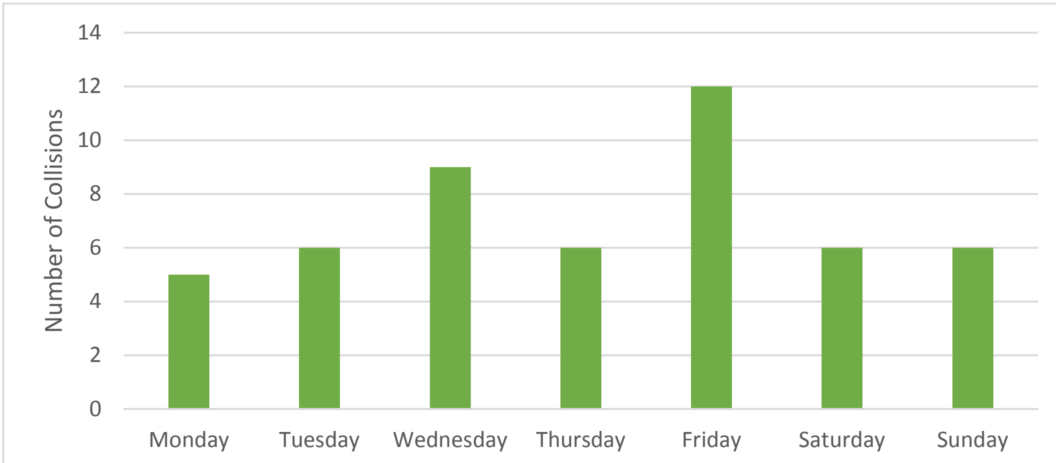
Chart 2-3 Pedestrian Collisions by Time of Day (2008-2013)



Source: City of San Diego, 2013; Chen Ryan Associates, August 2016

Chart 2-4 displays pedestrian collisions by day of week. The distribution of collisions shows relatively higher collision rates on Wednesdays and Fridays, with 9 collisions recorded on Wednesdays and 12 collisions recorded on Fridays. On other days of the week, the number of collisions was relatively consistent.

Chart 2-4 Pedestrian Collisions by Day of Week (2008-2013)



Source: City of San Diego, 2013; Chen Ryan Associates, August 2016

2.3 Pedestrian Network Quality and Connectivity

This section outlines methodologies for developing the Pedestrian Study Area network, and then evaluating the study area network using the Pedestrian Environment Quality Evaluation (PEQE) and Quality Walkshed Ratio analyses[1].

2.3.1 Developing the Pedestrian Study Area

The Pedestrian Study Area is intended to reflect overlapping areas of high pedestrian need and high pedestrian collisions. These areas were established using the Pedestrian Priority Model (PPM), historic collision data and transit ridership data. The Pedestrian Study Area incorporates all pedestrian facilities meeting the following criteria:

a) Areas with PPM scores that are one standard deviation or more above the Linda Vista community mean PPM score.

b) Areas with two or more pedestrian collisions over the previous 6-year period.

c) Areas within a half-mile of major transit stops, defined as stops/stations serving rail transit, ferry terminals served by either bus or rail transit service, or the intersection of two or more major bus routes with service frequencies of 15-minutes or less during the morning and afternoon peak commute periods.

Figure 2-3 presents the resulting Pedestrian Study Area within Linda Vista.

[1] The Pedestrian Environment Quality Evaluation (PEQE) analysis was originally developed in the white paper *Active Travel Assessments – Integrating Bicycle and Pedestrian Evaluation in Long Range Planning – Task A and B of the Multimodal Planning Research Project.*

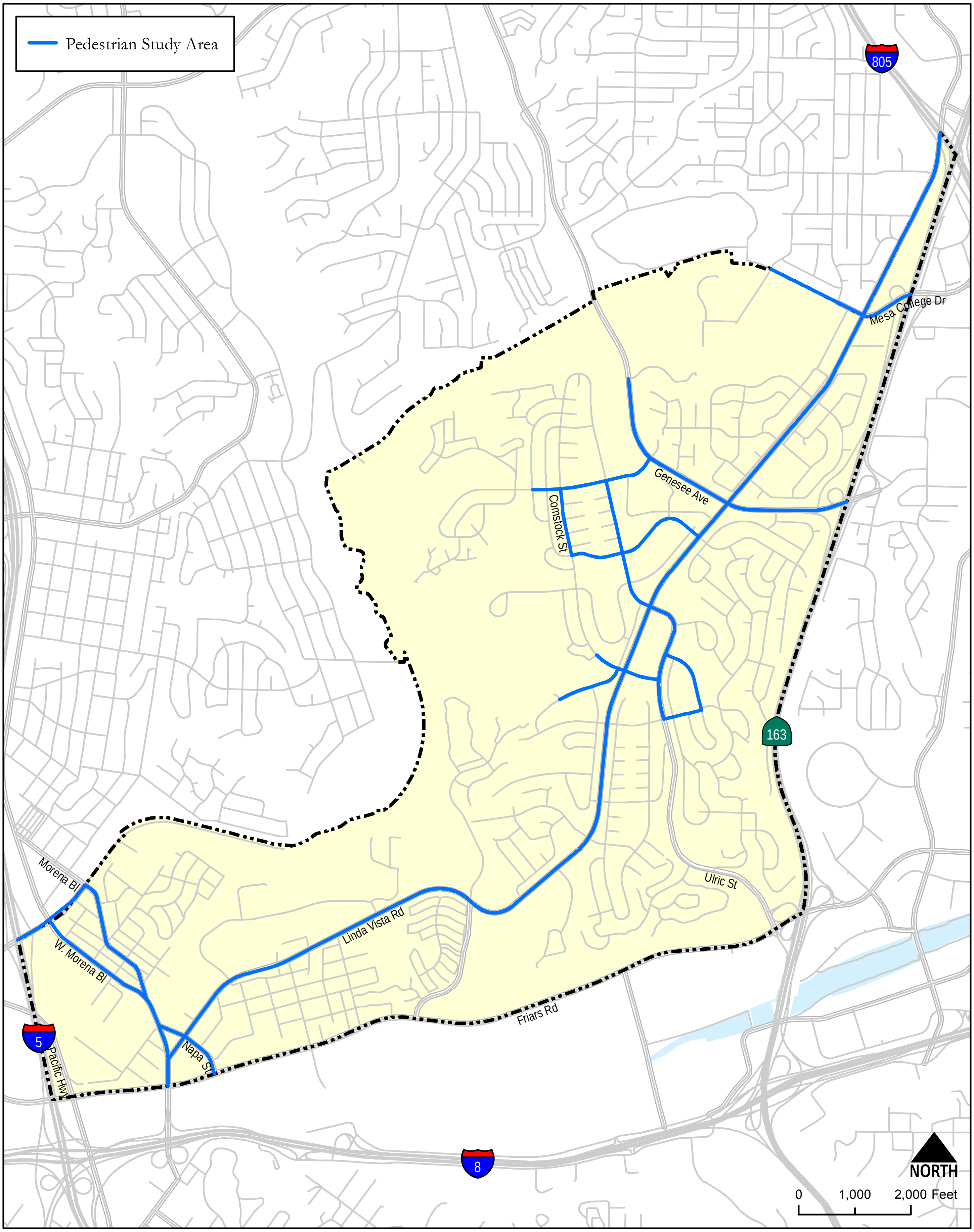


Figure 2-3
Pedestrian Study Area

2.3.2 Pedestrian Environmental Quality Index (PEQE)

The quality of Pedestrian Study Area roadway segments, intersections, and mid-block crossings was analyzed with the Pedestrian Environment Quality Evaluation (PEQE) tool. **Table 2-2** outlines the evaluation system used to develop the PEQE scores.

Table 2-2 Pedestrian Environment Quality Evaluation Rating System

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

Source: Chen Ryan Associates, May 2016

Table 2-3 and **Figure 2-4** displays results of the PEQE analysis. As shown, segments with a "High" ranking are generally found along Linda Vista Road north of Mesa College Drive, as well as along a short segment of Ulric Street. Generally, most roadway segments in Linda Vista are rated as "Medium," whereas most crosswalks receive a "Low" rating.

Of the 95 total roadway segments, 9 received a "Low" rating along at least one side of the roadway. Deficient segments include:

- Linda Vista Road from study area boundary to Stalmer Street (east side),
- Genesee Avenue from Osler Street to Whitney Street (both sides),
- Genesee Avenue from Whitney Street to Linda Vista Road (both sides),
- Genesee Avenue from Linda Vista Road to Richland Street (east side),
- Genesee Avenue from Richland Street to SR-163 SB On-Ramp (EB approach) (both sides),
- Genesee Avenue from SR-163 SB On-Ramp (EB approach) to SR-163 SB Off-Ramp (both sides),
- Genesee Avenue from SR-163 SB Off-Ramp to SR-163 SB On-Ramp (WB approach) (both sides),
- West Morena Boulevard from Tecolote Road Under-Cross to Vega Street (east side),
- Tecolote Road from I-5 NB Ramps to Morena Boulevard (both sides).

Table 2-3 PEQE Segment Results

Roadway	To	From	Northside / Eastside		Southside / Westside	
			Score	Grade	Score	Grade
Linda Vista Road	Study Area Boundary	Stalmer Street	**3**	**Low**	6	Medium
Linda Vista Road	Stalmer Street	Baltic Street	7	High	7	High
Linda Vista Road	Baltic Street	Markham Street	7	High	7	High
Linda Vista Road	Markham Street	Mesa College Drive	7	High	7	High
Linda Vista Road	Mesa College Drive	Family Circle	5	Medium	5	Medium
Linda Vista Road	Family Circle	Korink Avenue	6	Medium	6	Medium
Linda Vista Road	Korink Avenue	Wheatley Street	5	Medium	5	Medium
Linda Vista Road	Wheatley Street	Korink Avenue	5	Medium	5	Medium
Linda Vista Road	Korink Avenue	Genesee Avenue	5	Medium	5	Medium
Linda Vista Road	Genesee Avenue	Levant Street	5	Medium	5	Medium
Linda Vista Road	Levant Street	Fulton Street	5	Medium	5	Medium
Linda Vista Road	Fulton Street	Ulric Street	5	Medium	5	Medium
Linda Vista Road	Ulric Street	Comstock Street	5	Medium	5	Medium
Linda Vista Road	Comstock Street	Tait Street	5	Medium	5	Medium
Linda Vista Road	Tait Street	Kramer Street	5	Medium	5	Medium
Linda Vista Road	Kramer Street	Glidden Street	5	Medium	5	Medium
Linda Vista Road	Glidden Street	Northrim Court	5	Medium	5	Medium
Linda Vista Road	Northrim Court	Alcala Knolls Drive	5	Medium	5	Medium
Linda Vista Road	Alcala Knolls Drive	Via Las Cumbres	6	Medium	6	Medium
Linda Vista Road	Via Las Cumbres	Alcala Park Way	6	Medium	6	Medium
Linda Vista Road	Alcala Park Way	Goshen Street	6	Medium	6	Medium
Linda Vista Road	Goshen Street	Brunner Street	6	Medium	6	Medium
Linda Vista Road	Brunner Street	Colusa Street	6	Medium	6	Medium
Linda Vista Road	Colusa Street	Marian Way	6	Medium	6	Medium
Linda Vista Road	Marian Way	Mollie Street	5	Medium	5	Medium
Linda Vista Road	Mollie Street	Metro Street	5	Medium	5	Medium
Linda Vista Road	Metro Street	Napa Street	5	Medium	5	Medium
Linda Vista Road	Napa Street	Morena Boulevard	5	Medium	5	Medium
Mesa College Drive	Armstrong Street	Ashford Street	4	Medium	4	Medium
Mesa College Drive	Ashford Street	Komet Way	4	Medium	4	Medium
Mesa College Drive	Wellington Street/Komet Way	Linda Vista Road	4	Medium	4	Medium
Mesa College Drive	Linda Vista Road	SR-163 SB Onramp (EB)	4	Medium	4	Medium
Mesa College Drive	SR-163 SB Onramp (EB)	SR-163 SB Onramp (WB)	4	Medium	4	Medium
Genesee Avenue	Park Mesa Way	Osler Street	5	Medium	N/A	
Genesee Avenue	Osler Street	Whitney Street	**3**	**Low**	**3**	**Low**
Genesee Avenue	Whitney Street	Linda Vista Road	**3**	**Low**	**3**	**Low**
Genesee Avenue	Linda Vista Road	Richland Street	**3**	**Low**	4	Medium

Table 2-3 PEQE Segment Results

Roadway	To	From	Northside / Eastside		Southside / Westside	
			Score	Grade	Score	Grade
Genesee Avenue	Richland Street	SR-163 SB Onramp (EB)	**1**	**Low**	**3**	**Low**
Genesee Avenue	SR-163 SB Onramp (EB)	SR-163 SB Offramp	**1**	**Low**	**3**	**Low**
Genesee Avenue	SR-163 SB Offramp	SR-163 SB Onramp (WB)	**1**	**Low**	**3**	**Low**
Osler Street	Preece Street	Nye Street	7	High	7	High
Osler Street	Nye Street	Comstock Street	7	High	7	High
Osler Street	Comstock Street	Ulric Street	7	High	7	High
Osler Street	Ulric Street	Genesee Avenue	7	High	7	High
Ulric Street	Osler Street	Zane Court	7	High	7	High
Ulric Street	Zane Court	Waterman Court	7	High	7	High
Ulric Street	Waterman Court	Upton Court	7	High	7	High
Ulric Street	Upton Court	Savage Court	7	High	7	High
Ulric Street	Savage Court	Fulton Street	7	High	7	High
Ulric Street	Fulton Street	Jewett Street/Eastman Street	7	High	7	High
Ulric Street	Jewett Street/Eastman Street	Morley Street	7	High	7	High
Ulric Street	Morley Street	Linda Vista Road	5	Medium	5	Medium
Ulric Street	Linda Vista Road	Dunlop Street	7	High	6	Medium
Ulric Street	Dunlop Street	Burroughs Street	7	High	7	High
Ulric Street	Burroughs Street	Comstock Street	7	High	7	High
Ulric Street	Comstock Street	Tait Street	7	High	7	High
Comstock Street	Osler Street	Comstock Court	7	High	7	High
Comstock Street	Comstock Court	Valjean Court	7	High	7	High
Comstock Street	Valjean Court	Thomson Court	7	High	7	High
Comstock Street	Thomson Court	Roeblin Court	7	High	7	High
Comstock Street	Roeblin Court	Fulton Street	7	High	7	High
Comstock Street	Gifford Way	Morley Street/Kelly Street	7	High	7	High
Comstock Street	Morley Street	Linda Vista Road	7	High	7	High
Comstock Street	Linda Vista Road	Ulric Street	7	High	7	High
Fulton Street	Comstock Street	Ulric Street	7	High	7	High
Fulton Street	Ulric Street	Levant Street	7	High	7	High
Fulton Street	Levant Street	Eastman Street	7	High	7	High
Fulton Street	Eastman Street	Linda Vista Road	7	High	7	High
Kelly Street	Kelly Street Neighborhood Park Access	Drescher Street	7	High	7	High
Kelly Street	Drescher Street	Comstock Street	7	High	7	High
Tait Street	Ulric Street	Westinghouse Street	7	High	7	High
Tait Street	Westinghouse Street	Abbe Street	7	High	7	High
Tait Street	Abbe Street	Burroughs Street	7	High	7	High
Burroughs Street	Ulric Street	Westinghouse Street	7	High	7	High
Burroughs Street	Westinghouse Street	Tait Street	7	High	7	High
Napa Street	Morena Boulevard	Linda Vista Road	5	Medium	5	Medium
Napa Street	Linda Vista Road	Riley Street	5	Medium	5	Medium

Table 2-3 PEQE Segment Results

Roadway	To	From	Northside / Eastside		Southside / Westside	
			Score	Grade	Score	Grade
Napa Street	Riley Street	Gaines Street	5	Medium	5	Medium
Napa Street	Gaines Street	Friars Road	5	Medium	5	Medium
Morena Boulevard	Tecolote Road	Viola Street	4	Medium	6	Medium
Morena Boulevard	Viola Street	Savannah Street	6	Medium	6	Medium
Morena Boulevard	Savannah Street	Naples Street/Dorcas Street	6	Medium	6	Medium
Morena Boulevard	Naples Street/Dorcas Street	Buenos Avenue	6	Medium	6	Medium
Morena Boulevard	Buenos Avenue	Morena Place	6	Medium	6	Medium
Morena Boulevard	Morena Place	Cushman Avenue	5	Medium	5	Medium
Morena Boulevard	Cushman Avenue	West Morena Boulevard	4	Medium	4	Medium
Morena Boulevard	West Morena Boulevard	Napa Street/Sherman Street	6	Medium	5	Medium
Morena Boulevard	Napa Steet/Sherman Street	Grant Street/Linda Vista Road	5	Medium	5	Medium
Morena Boulevard	Grant Street/Linda Vista Road	Friars Road Overcross	5	Medium	4	Medium
West Morena Boulevard	Tecolote Road Undercross	Vega Street	**3**	**Low**	5	Medium
West Morena Boulevard	Vega Street	Dorcas Street	5	Medium	5	Medium
West Morena Boulevard	Dorcas Street	Buenos Avenue	5	Medium	5	Medium
West Morena Boulevard	Buenos Avenue	Morena Boulevard	5	Medium	5	Medium
Tecolote Road	Study Area Boundary	I-5 NB Ramps	4	Medium	4	Medium
Tecolote Road	I-5 NB Ramps	Morena Boulevard	**3**	**Low**	**3**	**Low**

Source: Chen Ryan Associates, August 2016

Note: Roadway segments with a “Low” rating are noted in **bold** text.

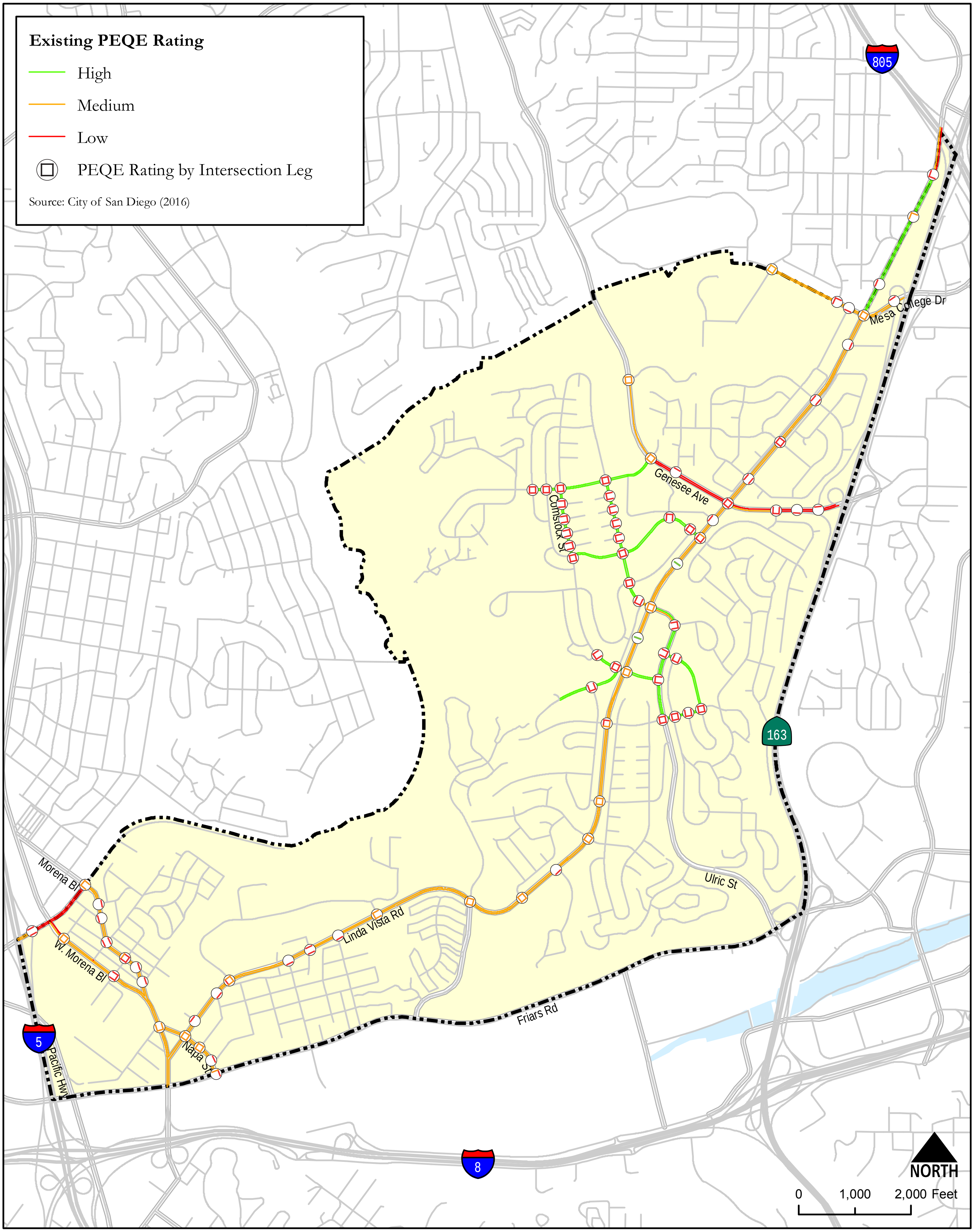


Figure 2-4
Pedestrian Environmental Quality Evaluation (PEQE)

Table 2-4 summarizes PEQE intersection results. As shown, of the 84 total study intersections, a majority received a "Low" rating for at least one leg (62 intersections). In addition, a total of 15 intersections received a "Low" rating at all four legs, including:

- Linda Vista Road and Wheatley Street,
- Linda Vista Road and Genesee Avenue,
- Osler Street and Preece Street,
- Osler Street and Nye Street,
- Osler Street and Comstock Street,
- Osler Street and Ulric Street,
- Ulric Street and Fulton Street,
- Ulric Street and Jewett Street/Eastman Street,
- Ulric Street and Tait Street,
- Comstock Street and Fulton Street,
- Comstock Street and Morley Street/Kelly Street,
- Fulton Street and Eastman Street,
- Tait Street and Westinghouse Street,
- Tait Street and Burroughs Street, and
- I-5 NB Ramps and Tecolote Road.

Table 2-4 PEQE Intersection Results

#	Intersection	North Leg		South Leg		East Leg		West Leg	
		Score	Rating	Score	Rating	Score	Rating	Score	Rating
1	Linda Vista Road and Stalmer Street	N/A	N/A	**2**	**Low**	N/A	N/A	**2**	**Low**
2	Linda Vista Road and Baltic Street	4	Medium	N/A	N/A	N/A	N/A	4	Medium
3	Linda Vista Road and Markham Street	N/A	N/A	N/A	N/A	N/A	N/A	**1**	**Low**
4	Linda Vista Road and Mesa College Drive	4	Medium	4	Medium	4	Medium	4	Medium
5	Linda Vista Road and Family Circle	N/A	N/A	N/A	N/A	**1**	**Low**	N/A	N/A
6	Linda Vista Road and Korink Avenue	N/A	N/A	N/A	N/A	**1**	**Low**	**1**	**Low**
7	Linda Vista Road and Wheatley Street	**2**	**Low**	**2**	**Low**	**2**	**Low**	**2**	**Low**
8	Linda Vista Road and Korink Avenue	N/A	N/A	N/A	N/A	**1**	**Low**	**1**	**Low**
9	Linda Vista Road and Genesee Avenue	**2**	**Low**	**2**	**Low**	**2**	**Low**	**2**	**Low**
10	Linda Vista Road and Levant Street	N/A	N/A	N/A	N/A	N/A	N/A	**1**	**Low**
11	Linda Vista Road and Fulton Street	4	Medium	**2**	**Low**	**2**	**Low**	**2**	**Low**
12	Linda Vista Road and Ulric Street	4	Medium	4	Medium	4	Medium	4	Medium
13	Linda Vista Road and Comstock Street	5	Medium	5	Medium	5	Medium	5	Medium
14	Linda Vista Road and Tait Street	**2**	**Low**	5	Medium	5	Medium	**2**	**Low**
15	Linda Vista Road and Kramer Street	5	Medium	5	Medium	4	Medium	4	Medium
16	Linda Vista Road and Glidden Street	6	Medium	6	Medium	5	Medium	5	Medium

Table 2-4 PEQE Intersection Results

#	Intersection	North Leg		South Leg		East Leg		West Leg	
		Score	Rating	Score	Rating	Score	Rating	Score	Rating
17	Linda Vista Road and Northrim Court	N/A	N/A	N/A	N/A	3	**Low**	N/A	N/A
18	Linda Vista Road and Alcala Knolls Drive	5	Medium	5	Medium	5	Medium	5	Medium
19	Linda Vista Road and Via Las Cumbres	5	Medium	5	Medium	4	Medium	4	Medium
20	Linda Vista Road and Alcala Park Way	4	Medium	4	Medium	N/A	N/A	4	Medium
21	Linda Vista Road and Goshen Street	N/A	N/A	**3**	**Low**	N/A	N/A	N/A	N/A
22	Linda Vista Road and Brunner Street	3	**Low**	**3**	**Low**	N/A	N/A	N/A	N/A
23	Linda Vista Road and Colusa Street	N/A	N/A	**3**	**Low**	N/A	N/A	N/A	N/A
24	Linda Vista Road and Marian Way	4	Medium	4	Medium	4	Medium	**2**	**Low**
25	Linda Vista Road and Mollie Street	N/A	N/A	**3**	**Low**	N/A	N/A	N/A	N/A
26	Linda Vista Road and Metro Street	**3**	**Low**	N/A	N/A	N/A	N/A	N/A	N/A
27	Linda Vista Road and Napa Street	4	Medium	4	Medium	4	Medium	4	Medium
28	Linda Vista Road and Morena Boulevard	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
29	Mesa College Drive and Armstrong Street	4	Medium	4	Medium	4	Medium	4	Medium
30	Mesa College Drive and Ashford Street	**2**	**Low**	N/A	N/A	N/A	N/A	**2**	**Low**
31	Mesa College Drive and Komet Way	N/A	N/A	1	**Low**	N/A	N/A	N/A	N/A
32	Mesa College Drive and SR-163 SB On-Ramp (EB)	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
33	Mesa College Drive and SR-163 SB On-Ramp (WB)	**2**	**Low**	N/A	N/A	N/A	N/A	N/A	N/A
34	Genesee Avenue and Park Mesa Way	5	Medium	5	Medium	4	Medium	N/A	N/A
35	Genesee Avenue and Osler Street	4	Medium	4	Medium	5	Medium	5	Medium
36	Genesee Avenue and Whitney Street	**3**	**Low**	N/A	N/A	N/A	N/A	N/A	N/A
37	Genesee Avenue and Richland Street	N/A	N/A	**2**	**Low**	**2**	**Low**	**2**	**Low**
38	Genesee Avenue and SR-163 SB On-Ramp (EB)	N/A	N/A	**2**	**Low**	N/A	N/A	N/A	N/A
39	Genesee Avenue and SR-163 SB Off-Ramp	**2**	**Low**	N/A	N/A	N/A	N/A	N/A	N/A
40	Genesee Avenue and SR-163 SB On-Ramp (WB)	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
41	Osler Street and Preece Street	**3**	**Low**	**3**	**Low**	**2**	**Low**	**2**	**Low**
42	Osler Street and Nye Street	**3**	**Low**	**3**	**Low**	**2**	**Low**	**2**	**Low**
43	Osler Street and Comstock Street	**3**	**Low**	**3**	**Low**	**3**	**Low**	**3**	**Low**
44	Osler Street and Ulric Street	**3**	**Low**	**3**	**Low**	**3**	**Low**	**3**	**Low**
45	Ulric Street and Zane Court	**0**	**Low**	**2**	**Low**	N/A	N/A	**3**	**Low**
46	Ulric Street and Waterman Court	**0**	**Low**	**2**	**Low**	N/A	N/A	**3**	**Low**
47	Ulric Street and Upton Court	**0**	**Low**	**0**	**Low**	N/A	N/A	**3**	**Low**

Table 2-4 PEQE Intersection Results

#	Intersection	North Leg		South Leg		East Leg		West Leg	
		Score	Rating	Score	Rating	Score	Rating	Scor e	Rating
48	Ulric Street and Savage Court	**0**	**Low**	**0**	**Low**	N/A	N/A	**3**	**Low**
49	Ulric Street and Fulton Street	**3**	**Low**	**3**	**Low**	**3**	**Low**	**3**	**Low**
50	Ulric Street and Jewett Street/Eastman Street	**3**	**Low**	**3**	**Low**	**3**	**Low**	**3**	**Low**
51	Ulric Street and Morley Street	N/A	N/A	**3**	**Low**	**2**	**Low**	**2**	**Low**
52	Ulric Street and Dunlop Street	**3**	**Low**	**3**	**Low**	**3**	**Low**	N/A	N/A
53	Ulric Street and Burroughs Street	**0**	**Low**	**0**	**Low**	**3**	**Low**	N/A	N/A
54	Ulric Street and Comstock Street	**3**	**Low**	**3**	**Low**	N/A	N/A	**3**	**Low**
55	Ulric Street and Tait Street	**3**	**Low**	**3**	**Low**	**3**	**Low**	**3**	**Low**
56	Comstock Street and Comstock Court	**0**	**Low**	**0**	**Low**	**3**	**Low**	N/A	N/A
57	Comstock Street and Valjean Court	**0**	**Low**	**0**	**Low**	**3**	**Low**	N/A	N/A
58	Comstock Street and Thomson Court	**0**	**Low**	**0**	**Low**	**3**	**Low**	N/A	N/A
59	Comstock Street and Roeblin Court	**0**	**Low**	**0**	**Low**	**3**	**Low**	N/A	N/A
60	Comstock Street and Fulton Street	**2**	**Low**	**2**	**Low**	**3**	**Low**	**3**	**Low**
61	Comstock Street and Gifford Way	N/A	N/A	**3**	**Low**	**0**	**Low**	**0**	**Low**
62	Comstock Street and Morley Street/Kelly Street	**3**	**Low**	**3**	**Low**	**2**	**Low**	**2**	**Low**
63	Fulton Street and Levant Street	**3**	**Low**	N/A	N/A	**2**	**Low**	**2**	**Low**
64	Fulton Street and Eastman Street	**3**	**Low**	**3**	**Low**	**3**	**Low**	**3**	**Low**
65	Kelly Street and Drescher Street	N/A	N/A	**1**	**Low**	**0**	**Low**	**0**	**Low**
66	Tait Street and Westinghouse Street	**3**	**Low**	**3**	**Low**	**2**	**Low**	**2**	**Low**
67	Tait Street and Abbe Street	N/A	N/A	**3**	**Low**	**0**	**Low**	**0**	**Low**
68	Tait Street and Burroughs Street	**3**	**Low**	**3**	**Low**	**3**	**Low**	**3**	**Low**
69	Burroughs Street and Westinghouse Street	N/A	N/A	**3**	**Low**	**0**	**Low**	**0**	**Low**
70	Napa Street and Morena Boulevard	N/A	N/A	4	Medium	4	Medium	4	Medium
71	Napa Street and Riley Street	4	Medium	4	Medium	4	Medium	4	Medium
72	Napa Street and Gaines Street	N/A	N/A	N/A	N/A	**3**	**Low**	N/A	N/A
73	Napa Street and Friars Road	4	Medium	N/A	N/A	**2**	**Low**	N/A	N/A
74	Morena Boulevard and Tecolote Road	4	Medium	N/A	N/A	4	Medium	4	Medium
75	Morena Boulevard and Viola Street	N/A	N/A	N/A	N/A	**3**	**Low**	N/A	N/A
76	Morena Boulevard and Savannah Street	N/A	N/A	N/A	N/A	N/A	N/A	**3**	**Low**
77	Morena Boulevard and Naples Street/Dorcas Street	N/A	N/A	N/A	N/A	**3**	**Low**	**3**	**Low**
78	Morena Boulevard and Buenos Avenue	4	Medium	**0**	**Low**	**2**	**Low**	**2**	**Low**
79	Morena Boulevard and Morena Place	**1**	**Low**	N/A	N/A	N/A	N/A	N/A	N/A
80	Morena Boulevard and Cushman Avenue	N/A	N/A	N/A	N/A	**1**	**Low**	N/A	N/A

Table 2-4 PEQE Intersection Results

#	Intersection	North Leg		South Leg		East Leg		West Leg	
		Score	Rating	Score	Rating	Score	Rating	Scor e	Rating
81	Morena Boulevard and West Morena Boulevard	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
82	West Morena Boulevard and Vega Street	4	Medium	4	Medium	4	Medium	4	Medium
83	West Morena Boulevard and Buenos Ave	**2**	**Low**	**2**	**Low**	**2**	**Low**	N/A	N/A
84	I-5 NB Ramps and Tecolote Road	**2**	**Low**	**2**	**Low**	N/A	N/A	N/A	N/A

Source: Chen Ryan Associates, August 2016

Note: Intersection legs with with a "Low" rating are noted in **bold** text.

Two mid-block crossings are located within the Pedestrian Study Area, both along Linda Vista Road. The first crossing is located along the roadway segment between Fulton Street and Ulric Street, whereas the second crossing is located along the roadway segment between Ulric Street and Comstock Street. **Table 2-5** reflects the PEQE results of the two mid-block crossings. Both mid-block crossings have a "High" rating.

Table 2-5 PEQE Mid-Block Segment Results

#	Intersection	Score	Rating
1	Linda Vista Road between Fulton and Ulric	7	High
2	Linda Vista Road between Ulric and Comstock	7	High

Source: Chen Ryan Associates, August 2016

2.3.3 Pedestrian Walkshed Ratio

A travelshed analysis was used to assess the level of pedestrian connectivity at each study intersection. A 0.5-mile pedestrian network buffer was created for each intersection. That area was then compared to the area of a 0.5-mile buffer to calculate a Pedestrian Walkshed Ratio for the intersection. The higher the Pedestrian Walkshed Ratio, the better the overall walking connectivity from the intersection. **Figure 2-5** presents the Pedestrian Walkshed Ratio for all intersections in the community of Linda Vista. As shown, the central portion of the community, generally along Linda Vista Road, has the highest walkshed ratios. Portions of the community located further away from major roadways, such as along canyon rims, have a comparatively lower ratio.

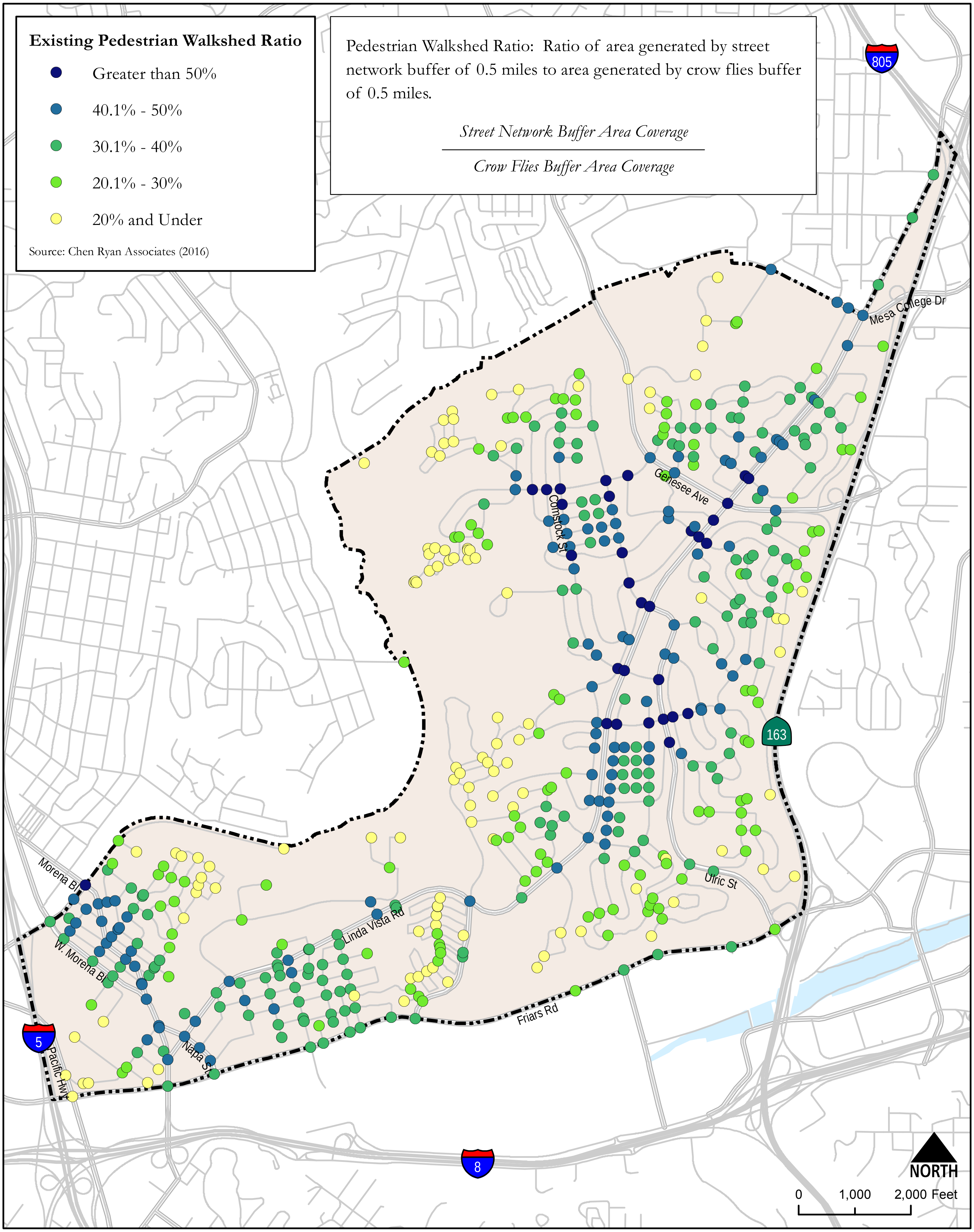


Figure 2-5
Existing Pedestrian Walkshed Ratio

2.3.4 Quality Walkshed

Pedestrian network connectivity and quality is assessed using a combination of the pedestrian travelshed and quality assessment previously described. The following steps outline the evaluation process:

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

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

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

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

Figure 2-6 presents the quality walkshed ratio in the Linda Vista community. As shown, intersections with the highest quality connectivity are generally located along Linda Vista Road. Roadways further from Linda Vista Road, particularly toward the edges of the community near canyon rims, show relatively lower quality connectivity.

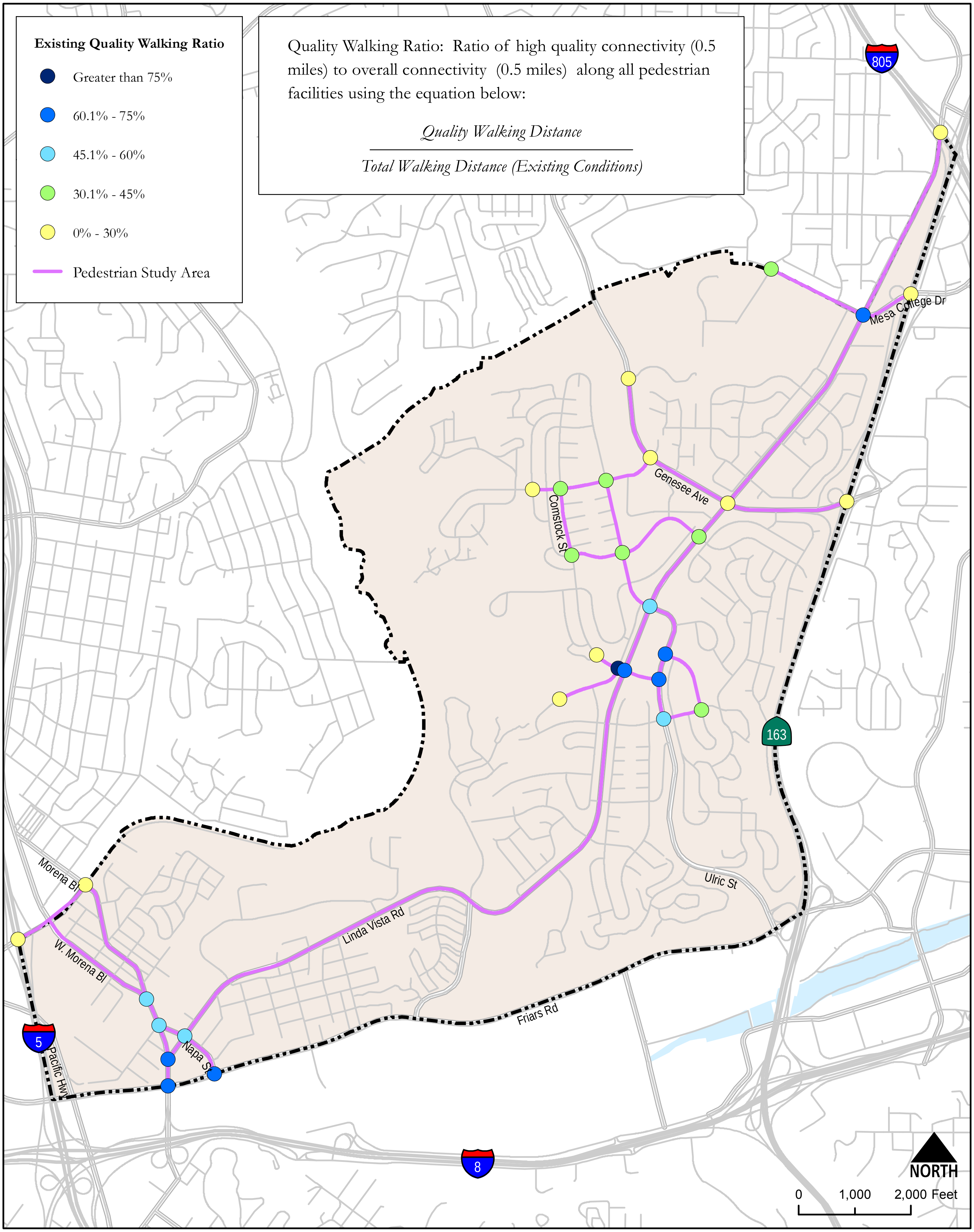


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Figure 2-6
Existing Quality Walkshed Ratio

3.0 Bicycle Assessment

The *California Highway Design Manual* defines a "Bikeway" as a facility primarily for bicycle travel. **Table 3-1** identifies the four standard bicycle facilities as recognized by the California Department of Transportation (Caltrans). The Linda Vista community's existing bicycle network is comprised of Class I, II, III, and IV facilities. **Figure 3-1** displays the existing bicycle network by facility type in Linda Vista. As shown, Class II bike lanes are found on many of Linda Vista's major roadways, such as Linda Vista Road, Genesee Avenue, Ulric Street, and Morena Boulevard. Class III bike routes can be found along Napa Street, Tecolote Road, and the SR-163 Overpass segment of Genesee Avenue.

3.1 Bicycle Demand Model (BDM)

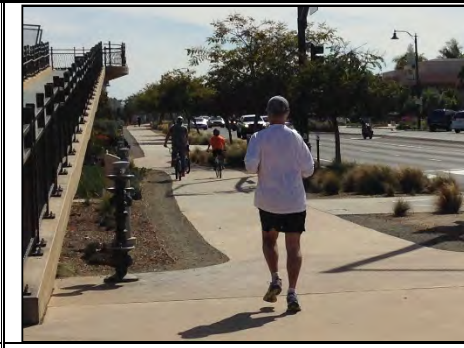
The BDM was originally developed in 2010 during the Bicycle Master Plan update process to assist with prioritization of bicycle facility improvement corridors across the City. The BDM was used to identify locations across the City of San Diego with high bicycle demand or places warranting relatively higher consideration for bicycle infrastructure improvements. The BDM was recently updated in 2015.

Figure 3-2 displays the BDM results within the Linda Vista community. As shown, a relatively higher propensity for bicycle trip generation exists along the Linda Vista Road corridor, in addition to major roadways, such as Genesee Avenue, Ulric Street, Via Las Cumbres, Napa Street, and Morena Boulevard.

3.2 Bicycle Safety

Figure 3-3 displays bicycle collisions that occurred within the Linda Vista community during the six-year period between 2008 and 2013. As shown, a total of 64 bicycle collisions were recorded, with higher frequencies at the intersection of Genesee Avenue and Linda Vista Road, as well as near the intersection of Ulric Street and Linda Vista Road, and near the closely spaced and irregular intersections at Morena Boulevard, Linda Vista Road, and Napa Street.

Table 3-1 California Bikeway Classification

Class Description	Example
Class I Bikeway (Multi-Use Path) – Also referred to as shared-use paths or multi-use paths, Class I facilities are completely separated from vehicular traffic. Multi-use paths are exclusively for non-motorized use, such as bicycles and pedestrians. Bike paths can provide connections where roadways are non-existent or unable to support bicycle travel.	
Class II Bikeway (Bike Lane) – Provides a striped lane for one-way travel on streets and highways. The striped lane creates a defined space exclusively for bicycle use. Desired widths are 5 to 6 feet.	
Class III Bikeway (Bike Route) – Provides shared use of traffic lanes with motor vehicles, identified only by signage and street markings such as "sharrows". Bike Routes provide connections to other bicycle facilities or to designate preferred routes for bicycle travel.	
Class IV Bikeway (Cycle Track) – Also referred to as separated bikeways, cycle tracks provide a right-of-way designated exclusively for bicycle travel within the roadway and physically protected from vehicular traffic. Types of separation include, but are not limited to, grade separation, flexible posts, or on-street parking.	

Source: California Highway Design Manual, 2012; Chen Ryan Associates, May 2016

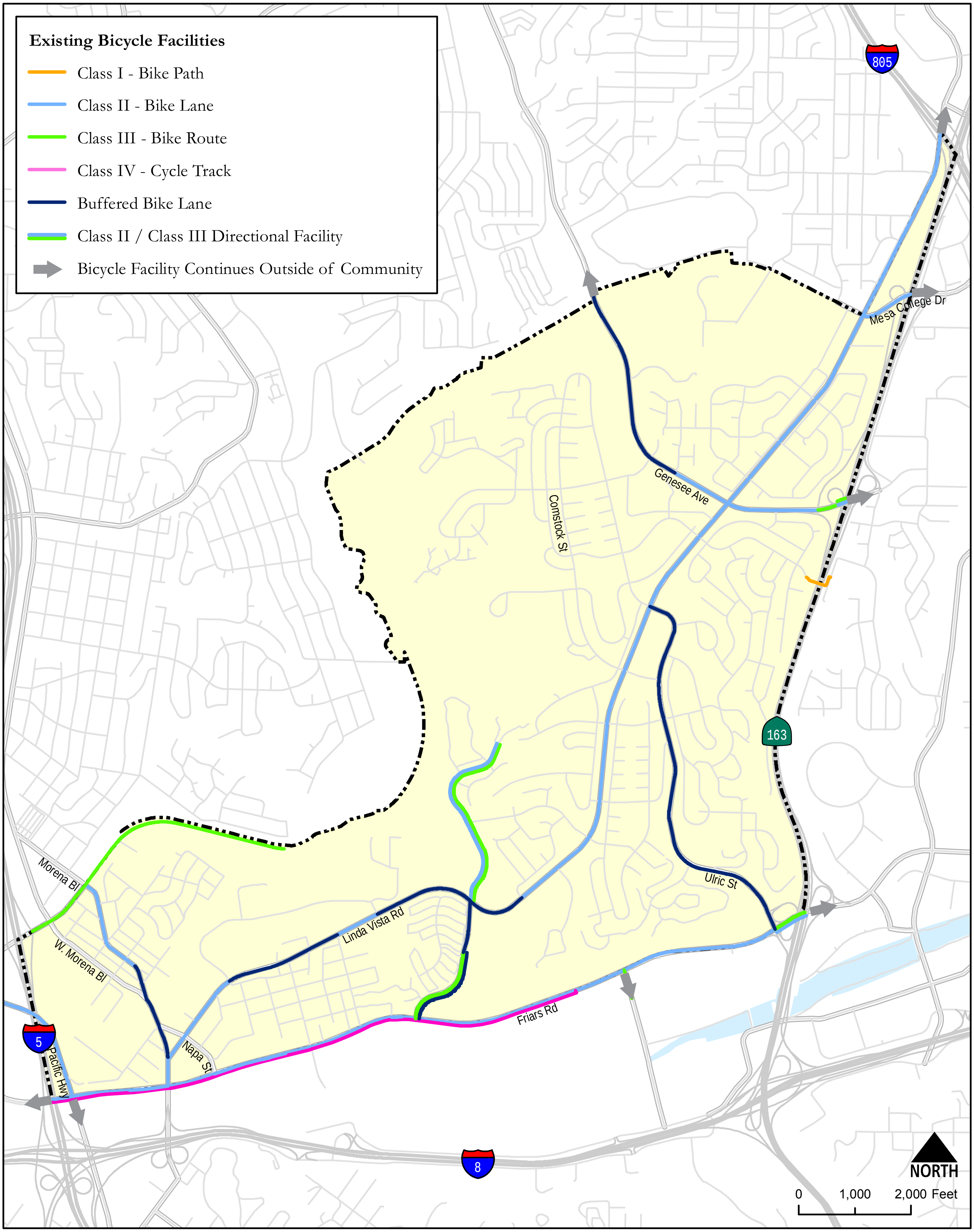


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Figure 3-1
Linda Vista Bicycle Network

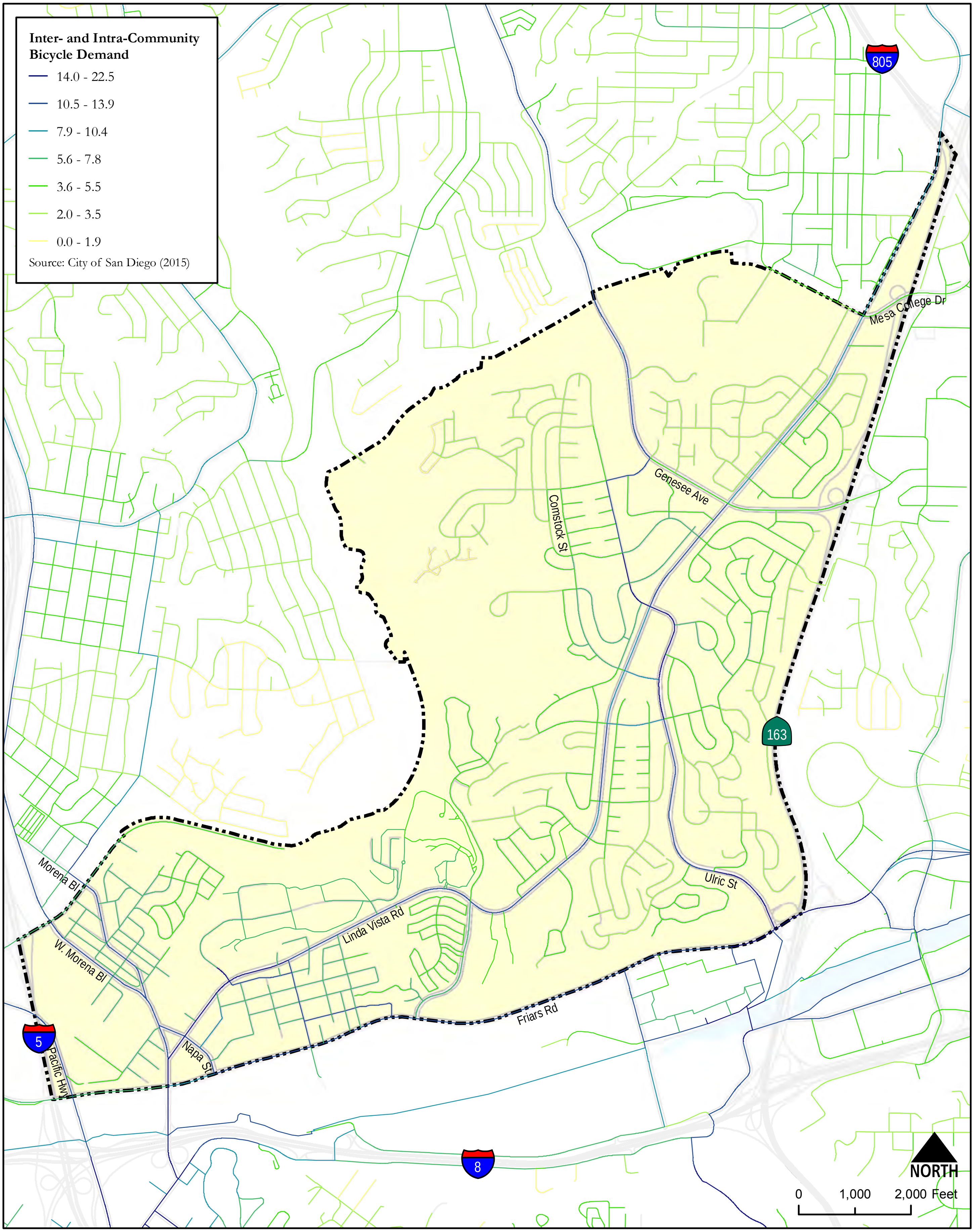


Figure 3-2
Bicycle Demand Model (BDM)

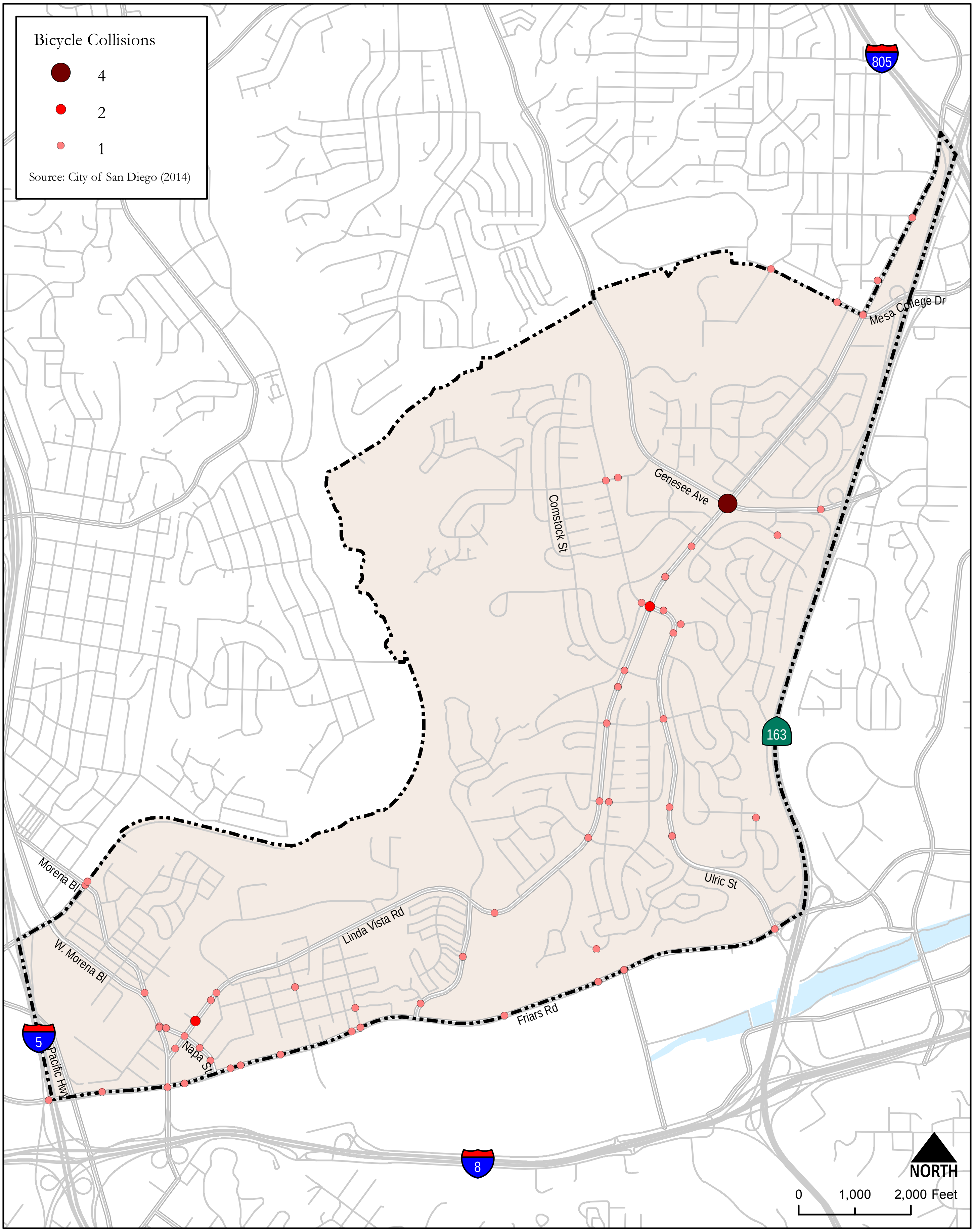
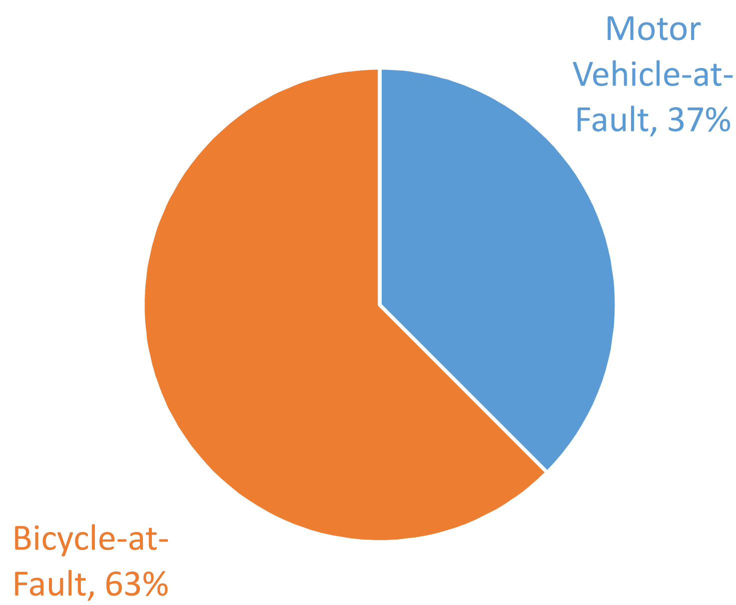


Figure 3-3
Bicycle Collisions (2008-2013)

Chart 3-1 displays bicycle collisions by party-at-fault. Approximately 63 percent of collisions are attributed to the bicyclist's fault, whereas the remaining 37 percent of collisions are attributed to motor vehicles' fault.

Collisions are organized by cause in **Table 3-2**. Violation of a vehicle's right-of-way was the most common single cause of bicycle collisions (23%), followed by not paying attention (14%), and unknown factors (12%).

Chart 3-1 Bicycle Collisions by Party-at-Fault (2008-2013)



Source: City of San Diego, 2013; Chen Ryan Associates, August 2016

Table 3-2 Primary Bicycle Collision Factor Categories

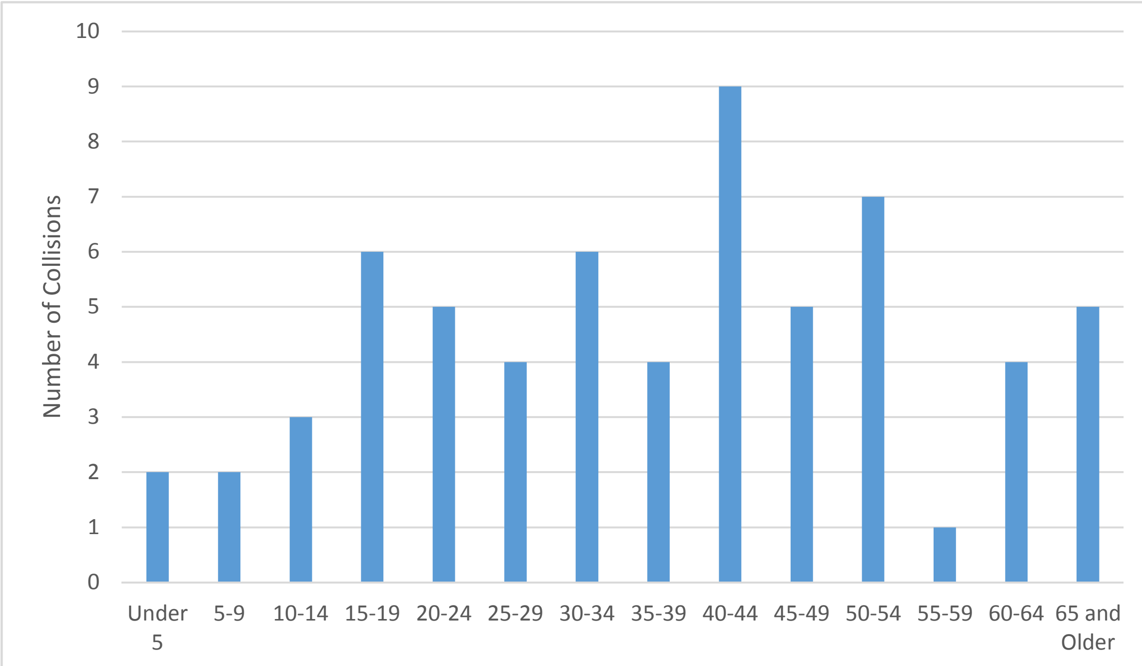
Primary Collision Factor Category	Number of Collisions	Percent of Total Collisions
Violated Vehicle's Right-of-Way	15	23%
Not Paying Attention	9	14%
Unknown	8	12%
Speed Too Fast for Conditions	6	9%
Ran Stop Sign	5	8%
Ran Traffic Signal	4	6%
Fell Out/Off Vehicle	4	6%
Improper Start	3	4%
Lost Control of Vehicle	3	4%
DUI	1	2%
Wrong Side of Road	1	2%
Distraction in Vehicle	1	2%
Fell Asleep	1	2%
Stopped in Right-of Way	1	2%
Unsafe Movement	1	2%
Wrong Way	1	2%
Total	64	**100%**

Source: City of San Diego, 2013; Chen Ryan Associates, August 2016

Chart 3-2 presents the fifty bicycle collisions by age group. All age groups are shown to have experienced bicycle collisions. Bicyclists aged 40 to 44 years recorded higher collisions when compared to other age groups.

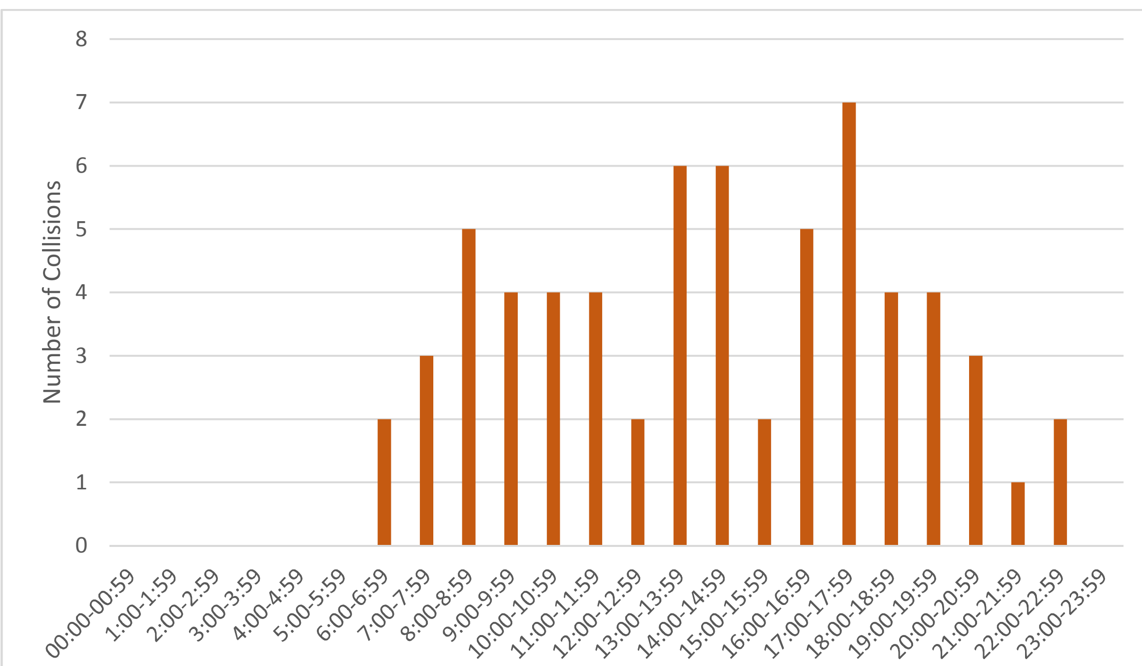
Chart 3-3 displays bicycle collisions distributed by time of day over the six-year period from 2008 to 2013. The timeframe with the most bicycle collisions recorded was between 5:00PM and 6:00PM, with 7 collisions. This timeframe partly falls within the PM peak period (4:00PM to 6:00 PM), potentially indicating bicyclists traveling for commute-related purposes, rather than for recreation.

Chart 3-2 Bicycle Collisions by Age Group (2008-2013)



Source: City of San Diego, 2013; Chen Ryan Associates, August 2016

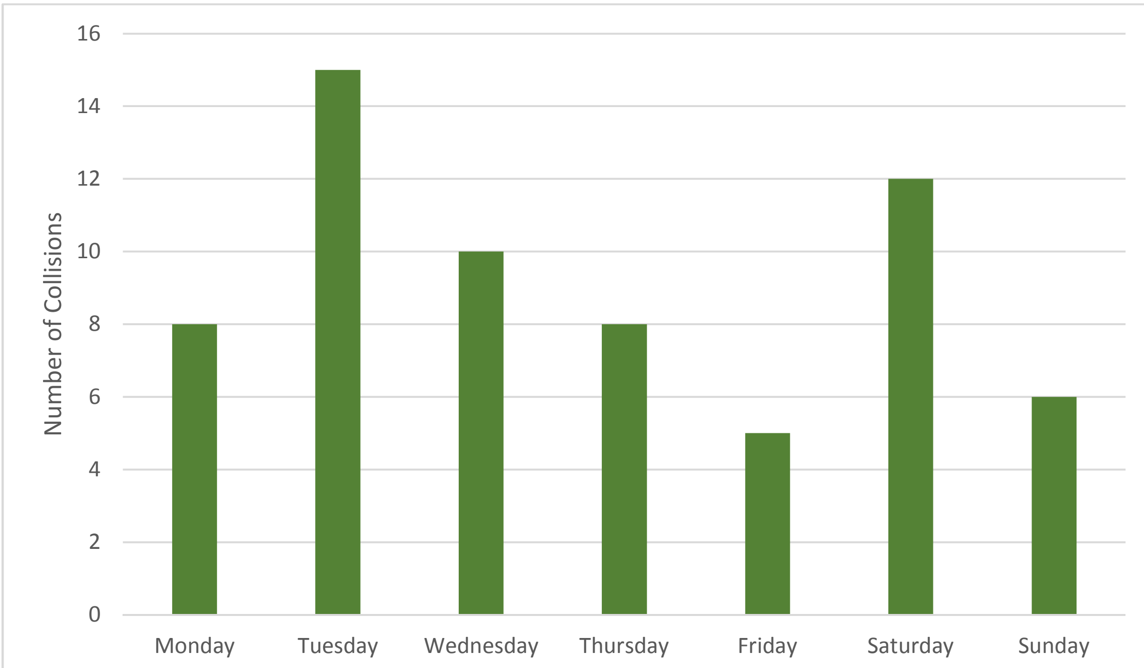
Chart 3-3 Bicycle Collisions by Time of Day (2008-2013)



Source: City of San Diego, 2013; Chen Ryan Associates, August 2016

Chart 3-4 displays bicycle collisions by day of week. The distribution of collisions shows relatively higher collision rates on Tuesdays and Saturdays, with 15 collisions recorded on Tuesdays and 12 collisions recorded on Saturdays. On other days of the week, collisions varied between 5 collisions (Fridays) and 10 collisions (Wednesdays).

Chart 3-4 Bicycle Collisions by Day of Week (2008-2013)



Source: City of San Diego, 2013; Chen Ryan Associates, August 2016

3.3 Bicycle Facility Quality

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

Table 3-3 displays the four LTS categories with descriptions of traffic stress experienced by the cyclist and the cycling conditions associated with each category.

Table 3-3 Level of Traffic Stress Classifications and Descriptions

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

Source: Mekuria, et al. (2012)

Figure 3-4 displays the results of the LTS analysis within the Linda Vista community. As shown, LTS 4 conditions are commonly found along the community's major roadways, such as portions of Linda Vista Road, Mesa College Drive, Genesee Avenue, portions of Ulric Street, portions of Via Las Cumbres, and portions of Morena Boulevard and West Morena Boulevard. By contrast, LTS 1 and 2 conditions are generally found along residential roadways and collectors throughout the community.

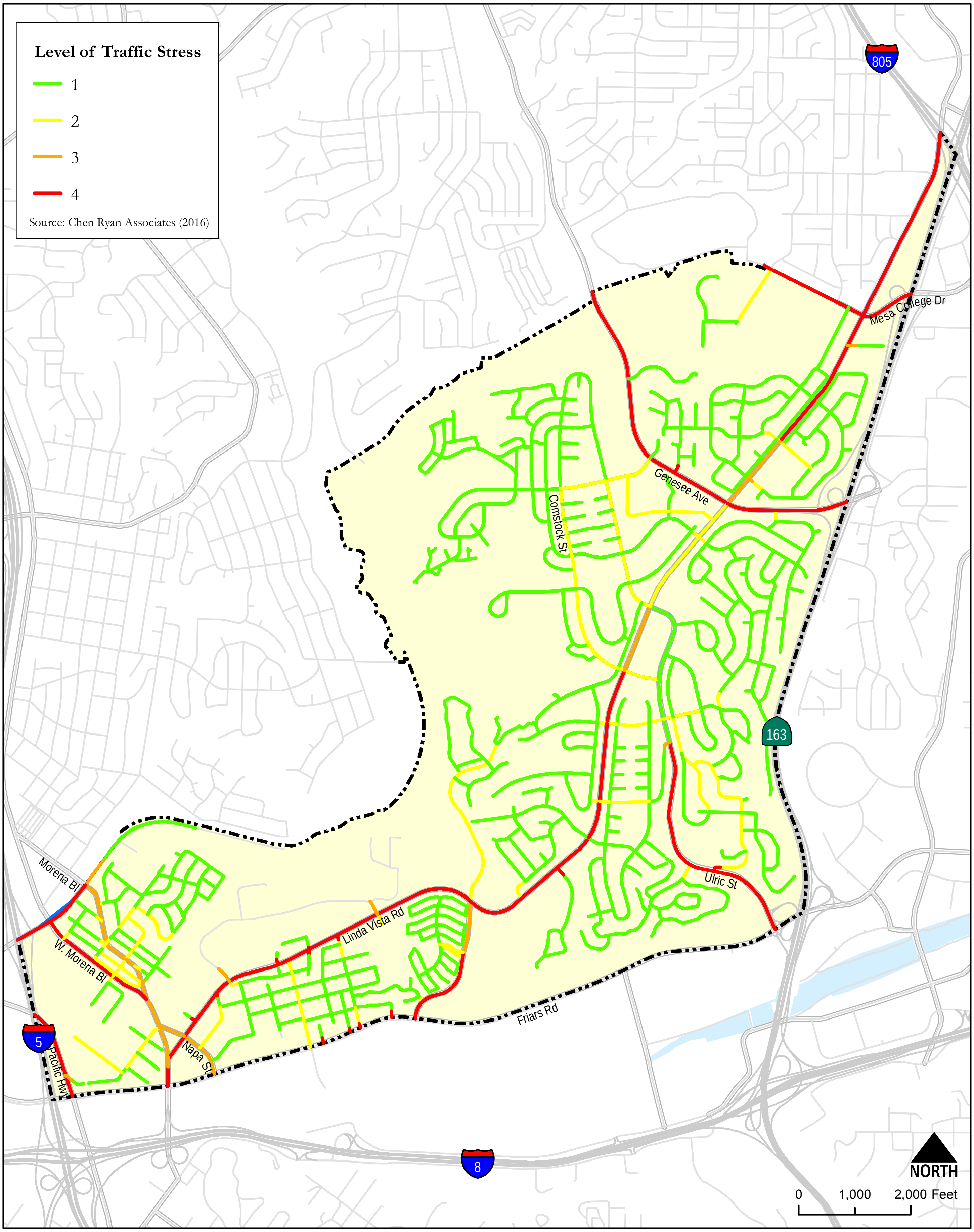


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Figure 3-4
Bicycle Level of Traffic Stress (LTS)

3.4 Bicycle Network Connectivity

A bicycle travelshed analysis was used to assess the level of connectivity from each study intersection, similar to the previously presented pedestrian travelshed analysis. A 1-mile bicycle network buffer was drawn around each intersection. That area was compared to the area of a 1-mile buffer to develop a Bikeshed Ratio for the intersection. The higher the Bikeshed Ratio at each intersection, the better the overall cycling connectivity from the intersection. **Figure 3-5** presents the Bikeshed Ratio for the community of Linda Vista. As shown, portions of the community near Linda Vista Road, particularly between Ulric Street and Genesee Avenue, have a relatively high Bikeshed Ratio, indicating a higher degree of bicycle connectivity. By contrast, portions of the community away from major roadways, and where street networks are curvilinear, such as near canyon rims, have relatively lower Bikeshed Ratios.

3.5 Composite Cycling Environment Evaluation

A composite evaluation of the cycling environment in the Linda Vista community was assessed using a combination of the bicycle facility quality and connectivity assessments, similar to the previously described pedestrian composite measure. The following steps outline the evaluation process used:

a. *Facility Quality* – roadways with an LTS 1 or 2 score were selected from the roadway network to represent the Quality Bicycle Network.
b. *Quality Cycling Distance* – the shortest cycling distance between the centroid of each Traffic Analysis Zone (TAZ) within and adjacent to the Linda Vista Community Planning Area border, and all other study TAZs, was calculated along the Quality Bicycle Network, as well as along all possible roadways.
c. *Quality Walk Ratio* – The ratio of high quality opportunity (along LTS 1 or 2 facilities) to overall connectivity (along all roadways, independent of LTS score) is determined using the following equation:

$$\text{Quality Ratio} = \frac{\textit{High Quality Bicycle Network}}{\textit{All Bicycle Network}}$$

Figure 3-6 presents the quality connectivity analysis for the Linda Vista community. As shown, the strongest intra-community access along Quality Bicycle Network is generally found in TAZs near the central portion of the community, whereas weak intra-community access along Quality Bicycle Network generally exists near the periphery of the community.

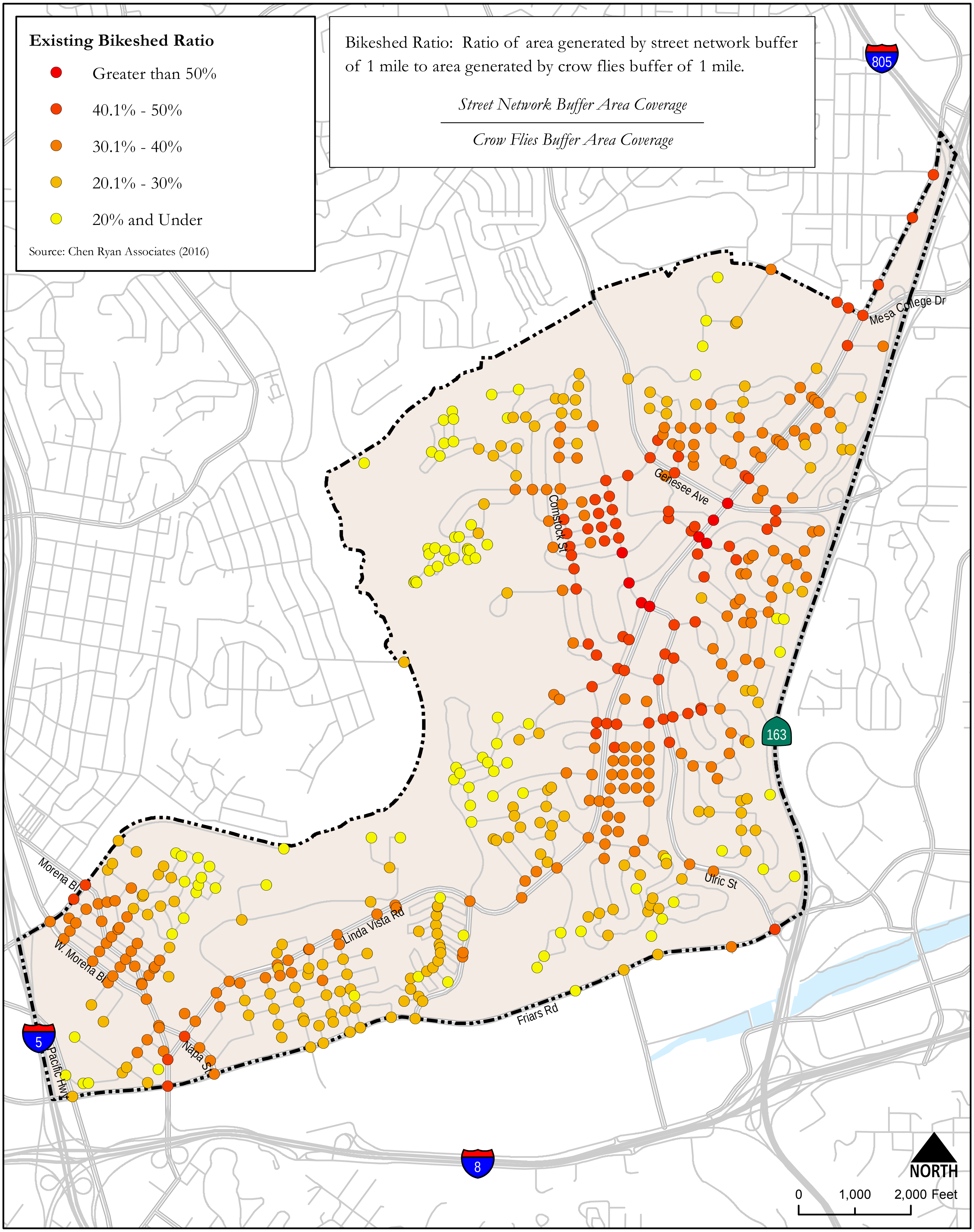

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Figure 3-5
Existing Bikeshed Ratio

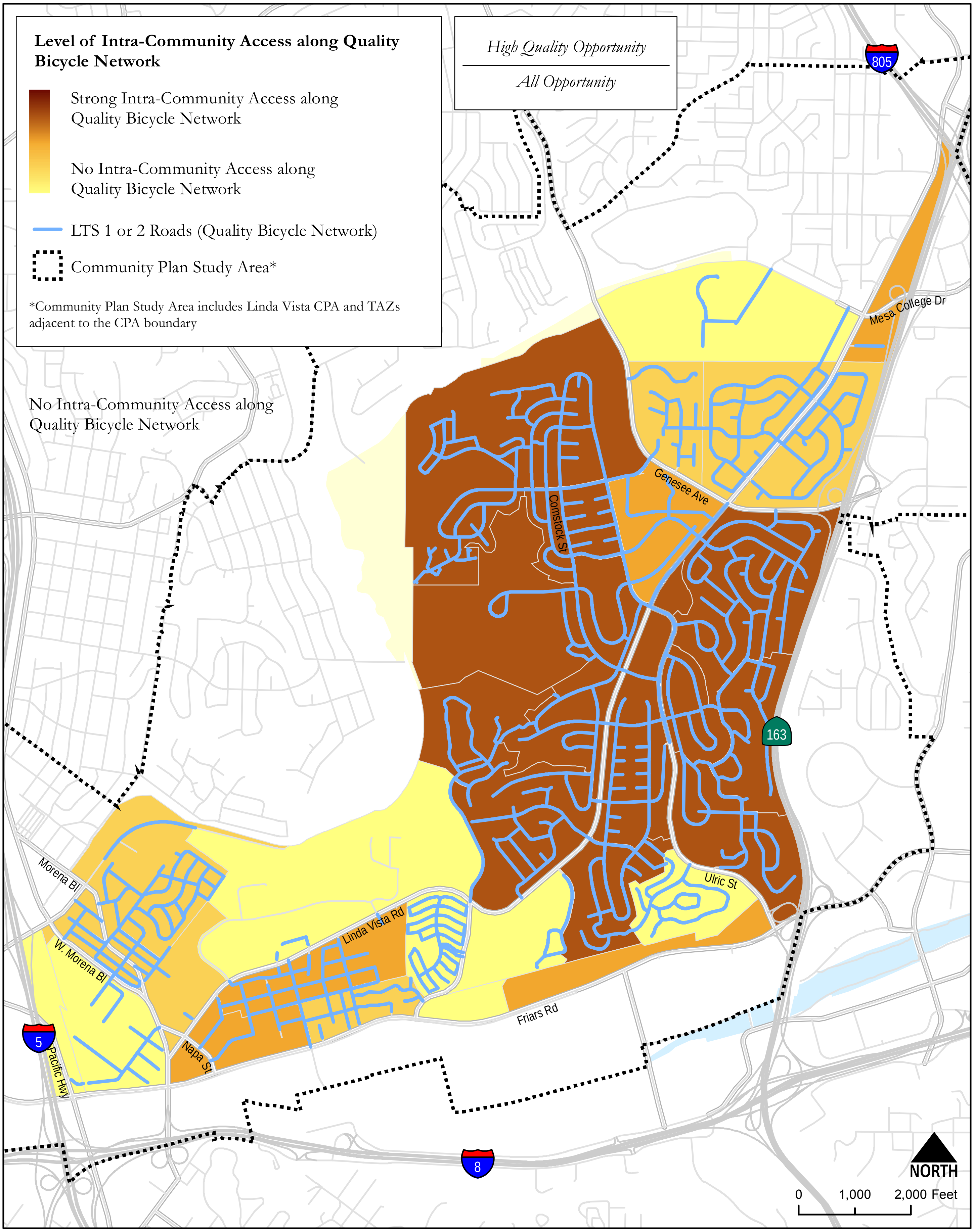


Figure 3-6
High Quality Bicycle Connectivity Analysis

4.0 Transit Assessment

This chapter provides an overview of existing transit facilities, quality of amenities, safety, and transit ridership potential in the Linda Vista Community. Data sources supporting this analysis include MTS databases, geographic information system (GIS) files accessed via SANDAG, satellite imagery, mapping analyses, and confirmation through field review.

4.1 Station Quality

Each transit station/stop was reviewed for the presence of the following amenities, based on a combination of MTS data and field verification:

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

Table 4-1 displays the standard amenities that should be provided at transit stops/stations based on daily passenger boardings across all routes.

Table 4-1 Transit Amenity Standards by Ridership Levels

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

Source: MTS Design for Transit (1993)

Table 4-2 displays the existing amenities at each transit stop in the Linda Vista community. A red cell indicates missing amenities that are deemed to be below standard, based on the amenity standards presented in Table 4-1. As shown, a total of eleven (11) transit stops are deficient in terms of amenities currently provided and their ridership level.

Table 4-2 Linda Vista Transit Stop Amenities by Ridership Level

Stop ID	Intersection	Direction of Travel	Far Side / Near Side	Daily Boardings	Sign and Pole	Built-in Sign	Expanded Sidewalk	Bench	Shelter	Route Designations	Time Table	Route Map	System Map	Trash Receptacle	Lighting	ADA Compliant
10062	Linda Vista Rd / Colusa St	E/B	N	7	✓					✓						✓
10082	Osler St / Ulric St	E/B	N	2	✓					✓						✓
10084	Osler St / Genesee Av	E/B	N	1	✓					✓						✓
10093	Genesee Av / Richland St	E/B	N	14	✓		✓	✓		✓					Street	✓
10434	Linda Vista Rd / Goshen St	E/B	F	8	✓		✓	✓		✓					Street	✓
10442	Linda Vista Rd / Via Las Cumbres	E/B	F	15	✓		✓	✓		✓						✓
10461	Genesee Av / Linda Vista Rd	E/B	F	47	✓		✓	✓		✓	✓			✓	✓	✓
10467	Mesa College Dr / Armstrong St	E/B	F	24	✓			✓		✓						✓
10476	Mesa College Dr / Ashford St	W/B	F	18	✓					✓						✓
10806	Morena Bl / Buenos Av	N/B	N	3	✓					✓					Street	✓
10824	Linda Vista Rd / Via Las Cumbres	W/B	N	31	✓		✓	✓	✓	✓	✓	✓		✓	✓	✓
10831	Comstock St / Linda Vista Rd	W/B	N	4	✓			✓		✓						✓
11195	Linda Vista Rd / Brunner St	W/B	F	12	✓					✓					Street	✓
11219	Osler St / Ulric St	W/B	F	1	✓					✓						✓
11230	Genesee Av / Linda Vista Rd	N/B	F	121	✓		✓	✓		✓						✓
11238	Genesee Av / Richland St	W/B	Mid-Block	38	✓			✓		✓					Street	✓
11578	Morena Bl / Savannah St	S/B	N	15	✓			✓		✓						✓
11579	Morena Bl / Naples St	S/B	N	14	✓			✓		✓						✓

Table 4-2 Linda Vista Transit Stop Amenities by Ridership Level

Stop ID	Intersection	Direction of Travel	Far Side / Near Side	Daily Boardings	Sign and Pole	Built-in Sign	Expanded Sidewalk	Bench	Shelter	Route Designations	Time Table	Route Map	System Map	Trash Receptacle	Lighting	ADA Compliant
11583	Morena Bl / W Morena Bl	S/B	N	6	✓		✓	✓		✓						✓
11603	Linda Vista Rd / Alcala Knolls Dr	W/B	N	12	✓		✓	✓		✓					Street	✓
11606	Linda Vista Rd / Northrim Ct	S/B	N	42	✓		✓	✓	✓	✓	✓	✓		✓	✓	✓
11608	Comstock St / Nye St	S/B	N	1	✓					✓						✓
11609	Comstock St / Lanston St	S/B	N	3	✓					✓					Street	✓
11611	Comstock St / Langmuir St	S/B	F	1	✓					✓						
11617	Genesee Av / Park Mesa Wy	S/B	Mid-Block	2	✓					✓					Street	
11618	Linda Vista Rd / Morley Way	S/B	N	160	✓		✓	✓	✓	✓	✓	✓		✓	✓	✓
11620	Linda Vista Rd / Ulric St	S/B	N	40	✓		✓	✓	✓	✓	✓	✓			✓	✓
11622	Ulric St / Tait St	S/B	N	33	✓					✓						✓
11630	Linda Vista Rd / Genesee Av	S/B	N	27	✓		✓	✓	✓	✓	✓	✓		✓		✓
11648	Linda Vista Rd / Korink Av (N)	S/B	N	1	✓		✓			✓				✓		✓
11949	Linda Vista Rd / Napa St	S/B	F	18	✓					✓					Street	✓
11952	Linda Vista Rd / Mildred St	S/B	F	11	✓			✓		✓					Street	✓
11978	Comstock St / Osler St	S/B	F	8	✓					✓						
11979	Comstock St / Valjean Ct	S/B	F	1	✓					✓						
11983	Linda Vista Rd / Kramer St	S/B	F	16	✓		✓	✓		✓					Street	✓
11984	Linda Vista Rd / Tait St	S/B	F	44	✓		✓	✓	✓	✓	✓	✓		✓		✓

Table 4-2 Linda Vista Transit Stop Amenities by Ridership Level

Stop ID	Intersection	Direction of Travel	Far Side / Near Side	Daily Boardings	Sign and Pole	Built-in Sign	Expanded Sidewalk	Bench	Shelter	Route Designations	Time Table	Route Map	System Map	Trash Receptacle	Lighting	ADA Compliant
11990	Linda Vista Rd / Comstock St	S/B	F	52	✓		✓	✓		✓					Street	✓
11999	Osler St / Genesee Av	W/B	F	4	✓					✓						✓
12006	Ulric St / Fashion Hills Bl	S/B	F	7	✓		✓	✓		✓					Street	✓
12007	Linda Vista Rd / Fulton St	S/B	F	116	✓		✓	✓	✓	✓	✓	✓		✓	✓	✓
12008	Ulric St / Linbrook Dr	S/B	F	4	✓		✓	✓		✓					Street	✓
12021	Linda Vista Rd / Wheatley St	S/B	F	4	✓		✓	✓		✓					Street	✓
12046	Linda Vista Rd / Mesa College Dr	S/B	F	122	✓		✓	✓	✓	✓	✓	✓		✓		✓
12359	Morena Bl / Cushman Av	N/B	N	3	✓		✓	✓		✓					Street	✓
12360	Morena Bl / Napa St	N/B	N	32	✓		✓	✓		✓				✓	Street	✓
12362	Linda Vista Rd / Napa St	E/B	N	143	✓		✓	✓		✓						✓
12363	Linda Vista Rd / Mildred St	N/B	N	12	✓			✓		✓						✓
12390	Comstock St / Osler St	N/B	N	3	✓					✓						✓
12392	Comstock St / Valjean Ct	N/B	N	1	✓					✓						
12394	Comstock St / Fulton St	N/B	N	1	✓					✓						
12403	Genesee Av / Osler St	W/B	N	76	✓		✓	✓	✓	✓	✓	✓		✓		✓
12410	Ulric St / Linbrook Dr	N/B	N	3	✓					✓						✓
12437	Linda Vista Rd / Family Cr	N/B	Mid-Block	9	✓		✓	✓		✓						✓
12680	Morena Bl / Viola St	N/B	F	5	✓		✓	✓		✓						✓

Table 4-2 Linda Vista Transit Stop Amenities by Ridership Level

Stop ID	Intersection	Direction of Travel	Far Side / Near Side	Daily Boardings	Sign and Pole	Built-in Sign	Expanded Sidewalk	Bench	Shelter	Route Designations	Time Table	Route Map	System Map	Trash Receptacle	Lighting	ADA Compliant
12707	Linda Vista Rd / Alcala Knolls Dr	N/B	F	3	✓		✓	✓		✓					Street	✓
12710	Linda Vista Rd / Northrim Ct	N/B	F	32	✓		✓	✓		✓				✓		✓
12712	Comstock St / W Jewett St	N/B	F	3	✓					✓						✓
12714	Comstock St / Langmuir St	N/B	F	2	✓					✓						✓
12719	Linda Vista Rd / Kramer St	N/B	F	22	✓		✓	✓		✓					Street	✓
12721	Linda Vista Rd / Tait St	N/B	F	32	✓		✓	✓		✓					Street	✓
12724	Linda Vista Rd / Comstock St	N/B	F	65	✓		✓	✓	✓	✓	✓	✓		✓		✓
12727	Genesee Av / Park Mesa Wy	N/B	F	2	✓			✓		✓						✓
12730	Linda Vista Rd / Morley Way	N/B	F	105	✓		✓	✓	✓	✓	✓	✓		✓	✓	✓
12732	Linda Vista Rd / Ulric St	N/B	F	67	✓		✓			✓					✓	✓
12736	Comstock St / Ulric St	W/B	F	8	✓		✓	✓		✓						✓
12738	Ulric St / Tait St	N/B	F	12	✓					✓						✓
12743	Linda Vista Rd / Fulton St	N/B	F	63	✓		✓	✓		✓				✓	Street	✓
12747	Linda Vista Rd / Genesee Av	N/B	F	55	✓		✓	✓		✓					Street	✓
12761	Linda Vista Rd / Wheatley St	N/B	F	3	✓		✓	✓		✓					Street	✓
13174	Comstock St / Linda Vista Rd	E/B	F	53	✓		✓	✓		✓				✓		✓
13175	Genesee Av / Osler St	E/B	F	23	✓		✓	✓		✓						✓
13389	Friars Rd / Avenida De Las Tiendas	W/B	F	4	✓		✓			✓						

Table 4-2 Linda Vista Transit Stop Amenities by Ridership Level

Stop ID	Intersection	Direction of Travel	Far Side / Near Side	Daily Boardings	Sign and Pole	Built-in Sign	Expanded Sidewalk	Bench	Shelter	Route Designations	Time Table	Route Map	System Map	Trash Receptacle	Lighting	ADA Compliant
13435	Linda Vista Rd / USD Main Drwy	E/B	N	10	✓		✓	✓	✓	✓	✓	✓		✓	✓	✓
13436	Linda Vista Rd / USD Main Entrance	W/B	F	35	✓		✓	✓	✓	✓	✓	✓		✓	✓	✓
75044	Morena/Linda Vista Trolley Station	W/B	N/A	453		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
75045	Morena/Linda Vista Trolley Station	W/B	N/A	564		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
94059	Ulric St / Fashion Hills Bl	N/B	N	3												
99100	Linda Vista Rd / Genesee Av	S/B	F	8	✓					✓					Street	✓
99386	Linda Vista Rd / Stalmer St	S/B	N	12	✓					✓						✓
99853	Morena Bl / Sherman St	S/B	N	33	✓		✓	✓		✓					Street	✓

Source: FY2014 SANDAG Passenger Counting Program, MTS Design for Transit Manual (1993), Chen Ryan Associates; August 2016

Notes:
1) A red cell indicates missing amenities required by the MTS Design for Transit Manual, based on average daily boardings.
2) A gray cell denotes amenities that are not required by the MTS Design for Transit Manual, based on average daily boardings.

4.2 Safety Near Transit Stops

Figure 4-1 displays pedestrian and bicycle collisions that occurred within five hundred (500) feet of a transit stop in Linda Vista, during the six-year period between 2008 and 2013. As shown, higher collision frequencies are present near the intersection of Genesee Avenue and Linda Vista Road, where 8 collisions were recorded near the 5 bus stops at that intersection, as well as near the intersection of Comstock Street and Linda Vista Road, where 9 collisions were recorded near the 4 bus stops at that intersection.

4.3 Potential Transit Ridership

Potential transit ridership was assessed through examination of total housing units and jobs located within walking distance (a 0.5-mile network buffer) of the transit stop. This data is summarized in **Table 4-3**. As shown, the five transit stops with the largest number of jobs and dwelling units within a half-mile radius are:

- Linda Vista Road & Alcala Knolls Drive eastbound (7,741 total jobs and dwelling units),
- Linda Vista Road & Alcala Knolls Drive westbound (7,734 total jobs and dwelling units),
- Linda Vista Road & Via Las Cumbres eastbound (7,307 total jobs and dwelling units),
- Linda Vista Road & Northrim Court southbound (7,222 total jobs and dwelling units), and
- Linda Vista Road & Via Las Cumbres westbound (7,181 total jobs and dwelling units).

Table 4-3 Jobs and Dwelling Units Within 0.5 Mile of Transit

Stop ID	Intersection	Jobs	Dwelling Units	Total Jobs and Dwelling Units
12727	Genesee Av & Park Mesa Way (NB)	74	224	298
11617	Genesee Av & Park Mesa Way (SB)	78	231	309
12390	Comstock St & Osler St (NB)	127	852	979
11978	Comstock St & Osler St (SB)	129	866	995
94059	Ulric St & Fashion Hills Bl (NB)	145	852	997
12006	Ulric St & Fashion Hills Bl (SB)	154	848	1,002
12410	Ulric St & Linbrook Dr (NB)	190	814	1,004
12761	Linda Vista Rd & Wheatley St (NB)	267	780	1,047
12008	Ulric St & Linbrook Dr (SB)	226	852	1,078
11648	Linda Vista Rd & Korink Av	349	743	1,092
12021	Linda Vista Rd & Wheatley St (SB)	281	815	1,096
11999	Osler St & Genesee Av (WB)	217	882	1,099
12403	Genesee Av & Osler St (NB)	264	841	1,105
13175	Genesee Av & Osler St (SB)	272	848	1,120
12392	Comstock St & Valjean Ct (NB)	174	950	1,124
11979	Comstock St & Valjean Ct (SB)	174	951	1,125

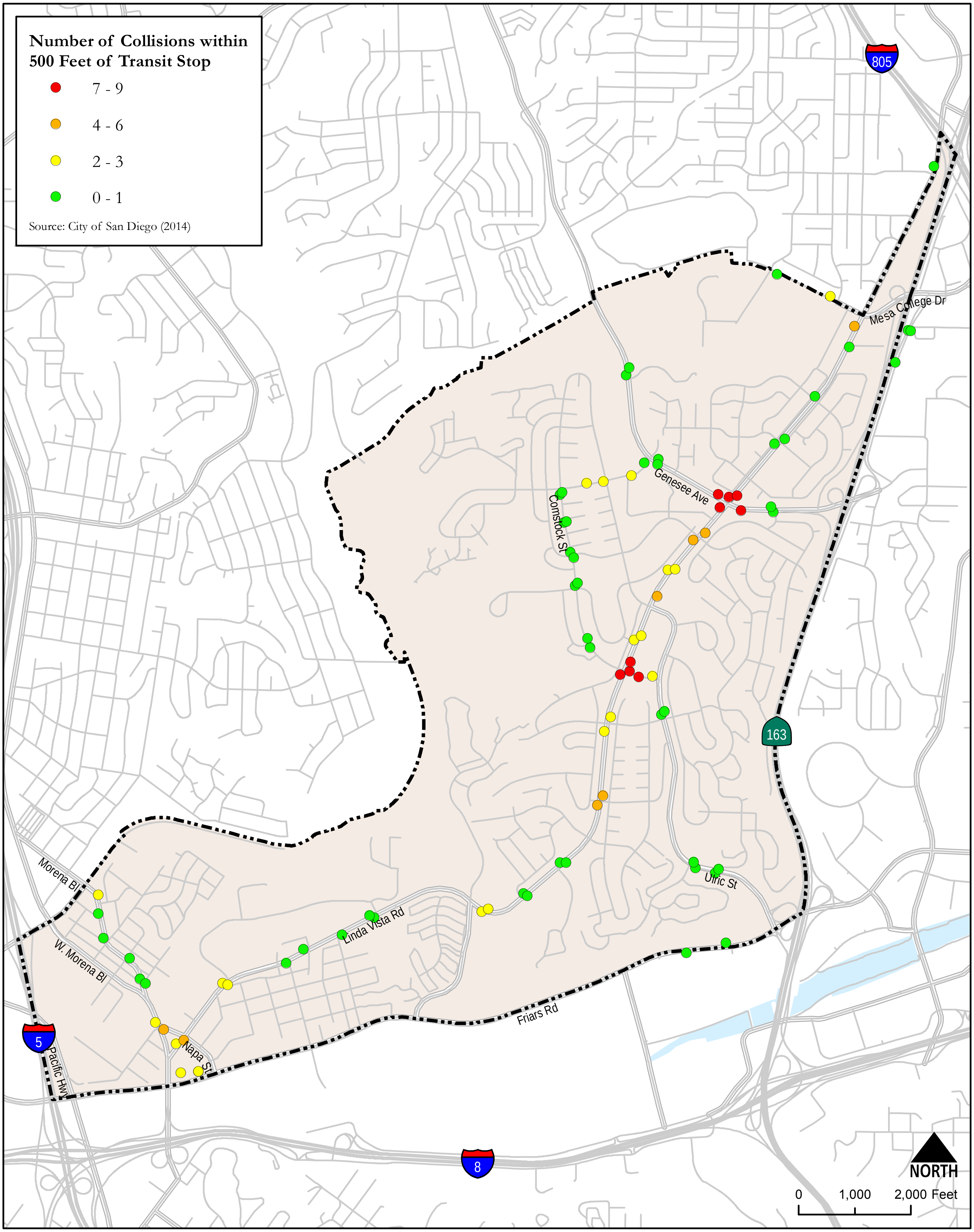
Table 4-3 Jobs and Dwelling Units Within 0.5 Mile of Transit

Stop ID	Intersection	Jobs	Dwelling Units	Total Jobs and Dwelling Units
11219	Osler St & Ulric St (WB)	172	962	1,134
11609	Comstock St & Lanston St	229	973	1,202
12712	Comstock St & W Jewett St	233	988	1,221
10084	Osler St & Genesee Av (EB)	218	1,029	1,247
10082	Osler St & Ulric St (EB)	220	1,067	1,287
12714	Comstock St & Langmuir St (NB)	363	1,070	1,433
12394	Comstock St & Fulton St	303	1,185	1,488
11608	Comstock St & Nye St	304	1,192	1,496
10093	Genesee Av & Richland St (EB)	495	1,015	1,510
11238	Genesee Av & Richland St (WB)	484	1,028	1,512
11611	Comstock St & Langmuir St (SB)	418	1,181	1,599
12437	Linda Vista Rd & Family Cir	661	961	1,622
75045	Morena/Linda Vista Station (WB)	1,095	711	1,806
10461	Genesee Av & Linda Vista Rd (EB)	508	1,389	1,897
11984	Linda Vista Rd & Tait St (SB)	325	1,576	1,901
11230	Genesee Av & Linda Vista Rd (WB)	513	1,416	1,929
12747	Linda Vista Rd & Genesee Av (NB)	520	1,485	2,005
12046	Linda Vista Rd & Mesa College Dr	922	1,128	2,050
12721	Linda Vista Rd & Tait St (NB)	405	1,654	2,059
10467	Mesa College Dr & Armstrong St	1,200	895	2,095
11630	Linda Vista Rd & Genesee Av (SB - near side)	558	1,540	2,098
10476	Mesa College Dr & Ashford St	1,082	1,095	2,177
11990	Linda Vista Rd & Comstock St (SB)	550	1,690	2,240
75044	Morena/Linda Vista Station (EB)	1,343	902	2,245
99100	Linda Vista Rd & Genesee Av (SB - far side)	626	1,625	2,251
12736	Comstock St & Ulric St	566	1,688	2,254
99386	Linda Vista Rd & Stalmer St	1,205	1,061	2,266
11618	Linda Vista Rd & Morley Way (SB)	624	1,662	2,286
12730	Linda Vista Rd & Morley Way (NB)	628	1,667	2,295
13174	Comstock St & Linda Vista Rd (EB)	571	1,731	2,302
12724	Linda Vista Rd & Comstock St (NB)	582	1,721	2,303
10831	Comstock St & Linda Vista Rd (WB)	571	1,759	2,330
12738	Ulric St & Tait St (NB)	507	1,824	2,331
11622	Ulric St & Tait St (SB)	506	1,837	2,343
11620	Linda Vista Rd & Ulric St (SB)	733	1,655	2,388

Table 4-3 Jobs and Dwelling Units Within 0.5 Mile of Transit

Stop ID	Intersection	Jobs	Dwelling Units	Total Jobs and Dwelling Units
12732	Linda Vista Rd & Ulric St (NB)	710	1,775	2,485
12743	Linda Vista Rd & Fulton St (NB)	767	1,775	2,542
12007	Linda Vista Rd & Fulton St (SB)	809	1,778	2,587
11983	Linda Vista Rd & Kramer St (SB)	1,819	1,413	3,232
12719	Linda Vista Rd & Kramer St (NB)	1,813	1,427	3,240
13436	Linda Vista Rd & USD Main Entrance (WB)	2,552	968	3,520
13435	Linda Vista Rd & USD Main Drwy (EB)	2,653	947	3,600
12680	Morena Bl & Viola St	3,184	498	3,682
10434	Linda Vista Rd & Goshen St	2,587	1,135	3,722
11578	Morena Bl & Savannah St	3,269	479	3,748
11949	Linda Vista Rd & Napa St (SB)	2,909	938	3,847
11579	Morena Bl & Naples St	3,393	484	3,877
10806	Morena Bl & Buenos Av	3,488	558	4,046
12359	Morena Bl & Cushman Av	3,521	672	4,193
11583	Morena Bl & W Morena Bl	3,570	670	4,240
11195	Linda Vista Rd & Brunner St	2,951	1,358	4,309
12362	Linda Vista Rd & Napa St (NB)	3,310	1,002	4,312
10062	Linda Vista Rd & Colusa St	2,995	1,424	4,419
11952	Linda Vista Rd & Mildred St (SB)	3,268	1,232	4,500
12363	Linda Vista Rd & Mildred St (NB)	3,313	1,262	4,575
13390	Friars Rd & Via De La Moda	3,736	878	4,614
13389	Friars Rd & Avenida De Las Tiendas	4,006	817	4,823
99853	Morena Bl & Sherman St	4,210	908	5,118
12360	Morena Bl & Napa St	4,177	953	5,130
12710	Linda Vista Rd & Northrim Ct (NB)	5,575	1,459	7,034
10824	Linda Vista Rd & Via Las Cumbres (WB)	6,017	1,164	7,181
11606	Linda Vista Rd & Northrim Ct (SB)	5,772	1,450	7,222
10442	Linda Vista Rd & Via Las Cumbres (EB)	6,094	1,213	7,307
11603	Linda Vista Rd & Alcala Knolls Dr (WB)	6,556	1,178	7,734
12707	Linda Vista Rd & Alcala Knolls Dr (EB)	6,559	1,182	7,741

Source: Chen Ryan Associates, August 2016



Linda Vista
Comprehensive Active Transportation Strategy

CHEN RYAN

Figure 4-1
Pedestrian and Bicycle Collisions within 500 Feet of Transit Stops (2008-2013)

5.0 Multimodal Evaluation

This chapter presents evaluation thresholds developed by the City of San Diego to define deficiencies in terms of network quality and connectivity for walking and cycling, as well as station quality for the transit system.

5.1 Evaluation Thresholds

Table 5-1 displays thresholds for the quality and connectivity metrics evaluated in Sections 2.0, 3.0, and 4.0.

Table 5-1 Multimodal Analysis and Evaluation Thresholds

Mode	Analysis	Type	High	Medium	Low
Pedestrian	**PEQE**	Quality	7+ Points	4-6 Points	3 or fewer points
	Travelshed	Connectivity	50%+ coverage	30% - 49% coverage	< 30% coverage
	Quality Ratio	Network Evaluation	0.90+	0.70-0.89	< 0.70
Bicycle	**LTS**	Quality	LTS 1&2	LTS 3	LTS 4
	Travelshed	Connectivity	50%+ coverage	30% - 49% coverage	< 30% coverage
	Quality Paths	Network Evaluation	> 50%+ of BLUs are accessible	30% to 49% of BLUs are accessible	< 30% of BLUs are accessible
Transit	**Station Amenities**	Quality	Meets Standards	N/A	Does Not Meet Standards

Source: Chen Ryan Associates, August 2016

The goal for all modes is to achieve the "High" threshold; however, "Medium" conditions are acceptable along all facilities within the City. Improvements should be considered for all modes that are either currently performing or anticipated to perform in the Low range. A summary of roadway facilities that fall below the target threshold for each evaluation metric is presented in the next section for walking, cycling, and transit, respectively.

5.2 Pedestrian Deficiencies

Intersections and roadway segments that received a "Low" PEQE rating are summarized in **Table 5-2** and **Table 5-3**, respectively. As shown, a total of 9 segments are deficient along one or both sides of the roadway. Similarly, a total of 62 intersections are deficient along one or more leg.

Table 5-2 Deficient PEQE Roadway Segments

No.	Roadway	From	To	Side of Roadway
1	Linda Vista Rd	Study Area Boundary	Stalmer St	East
2	Genesee Ave	Osler St	Whitney St	Both
3	Genesee Ave	Whitney St	Linda Vista Rd	Both
4	Genesee Ave	Linda Vista Rd	Richland St	North
5	Genesee Ave	Richland St	SR-163 SB On-Ramp (EB Approach)	Both
6	Genesee Ave	SR-163 SB On-Ramp (EB Approach)	SR-163 SB Off-Ramp	Both
7	Genesee Ave	SR-163 SB Off-Ramp	SR-163 SB On-Ramp (WB Approach)	Both
8	West Morena Blvd	Tecolote Rd Under-Cross	Vega St	East
9	Tecolote Rd	I-5 NB Ramps	Morena Blvd	Both

Source: Chen Ryan Associates; August 2016

Table 5-3 Deficient PEQE Intersections

No.	Intersection	PEQE Rating			
		North Leg	South Leg	East Leg	West Leg
1	Linda Vista Road and Stalmer Street	N/A	**Low**	**Low**	**Low**
2	Linda Vista Road and Markham Street	N/A	N/A	N/A	**Low**
3	Linda Vista Road and Family Circle	N/A	N/A	**Low**	N/A
4	Linda Vista Road and Korink Avenue	N/A	N/A	**Low**	**Low**
5	Linda Vista Road and Wheatley Street	**Low**	**Low**	**Low**	**Low**
6	Linda Vista Road and Korink Avenue	N/A	N/A	**Low**	**Low**
7	Linda Vista Road and Genesee Avenue	**Low**	**Low**	**Low**	**Low**
8	Linda Vista Road and Levant Street	N/A	N/A	N/A	**Low**
9	Linda Vista Road and Fulton Street	Medium	**Low**	**Low**	**Low**
10	Linda Vista Road and Tait Street	**Low**	Medium	Medium	**Low**
11	Linda Vista Road and Northrim Court	N/A	N/A	**Low**	N/A
12	Linda Vista Road and Goshen Street	N/A	**Low**	N/A	N/A
13	Linda Vista Road and Brunner Street	**Low**	**Low**	N/A	N/A
14	Linda Vista Road and Colusa Street	N/A	**Low**	N/A	N/A
15	Linda Vista Road and Marian Way	Medium	Medium	Medium	**Low**
16	Linda Vista Road and Mollie Street	N/A	**Low**	N/A	N/A
17	Linda Vista Road and Metro Street	**Low**	N/A	N/A	N/A
18	Mesa College Drive and Ashford Street	**Low**	N/A	N/A	**Low**
19	Mesa College Drive and Komet Way	N/A	**Low**	N/A	N/A

Table 5-3 Deficient PEQE Intersections

No.	Intersection	PEQE Rating North Leg	South Leg	East Leg	West Leg
20	Mesa College Drive and SR-163 SB On-Ramp (WB)	**Low**	N/A	N/A	N/A
21	Genesee Avenue and Whitney Street	**Low**	N/A	N/A	N/A
2	Genesee Avenue and Richland Street	N/A	**Low**	**Low**	**Low**
23	Genesee Avenue and I-805 SB On-Ramp (EB)	N/A	**Low**	N/A	N/A
24	Genesee Avenue and I-805 SB Off-Ramp	**Low**	N/A	N/A	N/A
25	Osler Street and Preece Street	**Low**	**Low**	**Low**	**Low**
26	Osler Street and Nye Street	**Low**	**Low**	**Low**	**Low**
27	Osler Street and Comstock Street	**Low**	**Low**	**Low**	**Low**
28	Osler Street and Ulric Street	**Low**	**Low**	**Low**	**Low**
29	Ulric Street and Zane Court	**Low**	**Low**	N/A	**Low**
30	Ulric Street and Waterman Court	**Low**	**Low**	N/A	**Low**
31	Ulric Street and Upton Court	**Low**	**Low**	N/A	**Low**
32	Ulric Street and Savage Court	**Low**	**Low**	N/A	**Low**
33	Ulric Street and Fulton Street	**Low**	**Low**	**Low**	**Low**
34	Ulric Street and Jewett Street/Eastman Street	**Low**	**Low**	**Low**	**Low**
35	Ulric Street and Morley Street	N/A	**Low**	**Low**	**Low**
36	Ulric Street and Dunlop Street	**Low**	**Low**	**Low**	N/A
37	Ulric Street and Burroughs Street	**Low**	**Low**	**Low**	N/A
38	Ulric Street and Comstock Street	**Low**	**Low**	N/A	**Low**
39	Ulric Street and Tait Street	**Low**	**Low**	**Low**	**Low**
40	Comstock Street and Comstock Court	**Low**	**Low**	**Low**	N/A
41	Comstock Street and Valjean Court	**Low**	**Low**	**Low**	N/A
42	Comstock Street and Thomson Court	**Low**	**Low**	**Low**	N/A
43	Comstock Street and Roeblin Court	**Low**	**Low**	**Low**	N/A
44	Comstock Street and Fulton Street	**Low**	**Low**	**Low**	**Low**
45	Comstock Street and Gifford Way	N/A	**Low**	**Low**	**Low**
46	Comstock Street and Morley Street/Kelly Street	**Low**	**Low**	**Low**	**Low**
47	Fulton Street and Levant Street	**Low**	N/A	**Low**	**Low**
48	Fulton Street and Eastman Street	**Low**	**Low**	**Low**	**Low**
49	Kelly Street and Drescher Street	N/A	**Low**	**Low**	**Low**
50	Tait Street and Westinghouse Street	**Low**	**Low**	**Low**	**Low**
51	Tait Street and Abbe Street	N/A	**Low**	**Low**	**Low**
52	Tait Street and Burroughs Street	**Low**	**Low**	**Low**	**Low**
53	Burroughs Street and Westinghouse Street	N/A	**Low**	**Low**	**Low**

Table 5-3 Deficient PEQE Intersections

No.	Intersection	PEQE Rating North Leg	South Leg	East Leg	West Leg
54	Napa Street and Gaines Street	N/A	N/A	**Low**	N/A
55	Napa Street and Friars Road	Medium	N/A	**Low**	N/A
56	Morena Boulevard and Viola Street	N/A	N/A	**Low**	N/A
57	Morena Boulevard and Savannah Street	N/A	N/A	N/A	**Low**
58	Morena Boulevard and Naples Street/Dorcas Street	N/A	N/A	**Low**	**Low**
59	Morena Boulevard and Buenos Avenue	Medium	**Low**	**Low**	**Low**
60	Morena Boulevard and Morena Place	**Low**	N/A	N/A	N/A
61	Morena Boulevard and Cushman Avenue	N/A	N/A	**Low**	N/A
62	West Morena Boulevard and Buenos Ave	**Low**	**Low**	**Low**	N/A
63	I-5 NB Ramps and Tecolote Road	**Low**	**Low**	**Low**	**Low**

Source: Chen Ryan Associates; August 2016

5.3 Bicycle Deficiencies

Roadway segments that received a rating of LTS 4 are presented in **Table 5-4**. Nine segments were found to be deficient within the Study Area, primarily along large, heavily travelled roadways.

Table 5-4 Deficient LTS Roadway Segments

No.	Roadway	Segment
1	Mesa College Dr	All segments within community boundary
2	Genesee Ave	All segments within community boundary
3	Linda Vista Rd	I-805 to Wheatley St
4	Linda Vista Rd	Comstock St to Morena Blvd
5	Ulric St	David St to Friars Rd
6	Via Las Cumbres	Camino Costanero to Friars Rd
7	W. Morena Blvd	Tecolote Rd to Morena Blvd
8	W. Morena Blvd	Friars Road Over-Cross to approximately 300 feet north of Friars Road Over-Cross
9	Tecolote Rd	I-5 to Morena Blvd

Source: Chen Ryan Associates; August 2016

In addition to deficient segments, certain roadway network locations adjacent to major intersections received an LTS 4 rating. Although LTS is primarily a segment-specific analysis, an intersection's impact on traffic stress is considered when one or more legs are unsignalized. **Table 5-5** summarizes these 10 additional deficient locations. As shown, roadway network features adjacent to side-street stop controlled intersections along Linda Vista Road, Friars Road, and Ulric Street are ranked with an LTS 4 rating.

Table 5-5 Deficient LTS Intersections

No.	Roadway	Cross Street
1	Metro St	Linda Vista Rd
2	Josephine St	Linda Vista Rd
3	Brunner St	Linda Vista Rd
4	Goshen St	Linda Vista Rd
5	Northrim Ct	Linda Vista Rd
6	Linbrook Dr	Ulric St
7	Donahue St	Friars Rd
8	Fresno St	Friars Rd
9	Goshen St	Friars Rd
10	Gaines St	Friars Rd

Source: Chen Ryan Associates; August 2016

5.4 Transit Deficiencies

Table 5-6 summarizes the 11 transit stops within the Study Area that currently lack one or more amenities required by MTS' 1993 *Design for Transit Manual*, based on stop-specific ridership level. As shown, a lack of ADA compliance is the most common deficiency.

Table 5-6 Deficient Transit Stops

No.	Stop ID	Intersection	Direction of Travel	Far Side / Near Side	Deficiency(ies)
1	11230	Genesee Av / Linda Vista Rd	N/B	F	Shelter, Route Map, Lighting
2	11611	Comstock St / Langmuir St	S/B	F	ADA Compliance
3	11617	Genesee Av / Park Mesa Way	S/B	Mid-Block	ADA Compliance
4	11978	Comstock St / Osler St	S/B	F	ADA Compliance
5	11979	Comstock St / Valjean Ct	S/B	F	ADA Compliance
6	12046	Linda Vista Rd / Mesa College Dr	S/B	F	Lighting
7	12362	Linda Vista Rd / Napa St	E/B	N	Shelter, Route Map, Lighting
8	12392	Comstock St / Fulton St	N/B	N	ADA Compliance
9	12394	Genesee Av / Osler St	W/B	N	ADA Compliance
10	12732	Linda Vista Rd / Ulric St	N/B	F	Seating
11	13389	Friars Rd / Avenida De Las Tiendas	W/B	F	ADA Compliance

Source: MTS Design for Transit Manual (1993), Chen Ryan Associates; August 2016

In summary, the deficiencies identified in the study set the stage for defining a set of project study areas – both roadway segments and intersections – that will become a focal point of near-terms implementation. The selection of these project study areas will also incorporate considerations of other factors such as the following:

- Locations receiving comments for needing improvement during the public outreach process,
- Locations adjacent to schools (also including the University of San Diego),
- Locations adjacent to parks, and
- Locations adjacent to freeways where high speed transitions and other pedestrian and bicycle conflicts occur.

APPENDIX B

Technical Memorandum #2: Project Selection

LINDA VISTA

Comprehensive Active Transportation Strategy

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MEMORANDUM

TO: Melissa Garcia, City of San Diego

FROM: Sherry Ryan and Sasha Jovanovic, Chen Ryan Associates

DATE: July 21, 2016

RE: Linda Vista CATS Project Area Identification (T4) and Project Prioritization (T6)

1.0 Introduction

This memorandum documents the process used to first identify project areas for the Linda Vista CATS plan, and second, to prioritize these project areas. After this introductory section, the memorandum is organized as follows:

- **Section 2.0 Project Area Identification** explains how project corridors and project improvement areas were chosen and subsequently refined by the consultant team.
- **Section 3.0 Project Prioritization** presents a project prioritization process utilizing needs-based and project-readiness-based criteria. The process was applied to the project corridors and improvement areas to rank them in support of the development of an implementation strategy in Task 6.

2.0 Project Area Identification

Two types of project areas were identified for the Linda Vista CATS plan: *project corridors*, which represent modifications to roadway cross-sections; and *project improvement areas*, which are focused on improvements to intersections or small districts. The quality of the pedestrian and cycling environments was a key factor in identifying project corridor locations. Factors used to identify project improvement areas included proximity to key land uses, freeway transition conflicts, and public preference. Processes used to identify project corridors and project improvement areas are described in the sections that follow.

2.1 Identification of Project Corridors

As a part of the existing conditions analysis, Pedestrian Environmental Quality Analysis (PEQE) evaluations were conducted on a subset of roadways and Bicycle Level of Traffic Stress (LTS) scoring was conducted on all roadways within the Linda Vista community. Roadways with scores considered below adequate conditions for PEQE and LTS were identified as potential project corridors. For PEQE, roadways scoring in the 'low' category were included; and for LTS, roadways receiving an LTS score of 3 or 4 were included.

Figure 1 shows the Linda Vista community pedestrian study area containing the subset of roadways where PEQE analysis was performed. The pedestrian study area is defined as the set of roadways scoring greater than one standard deviation above the community-wide mean of the City of San Diego's Pedestrian Priority Model. Also included in the pedestrian study area are locations with multiple pedestrian collisions and locations within one-quarter mile of a transit stop serving two high frequency transit routes.

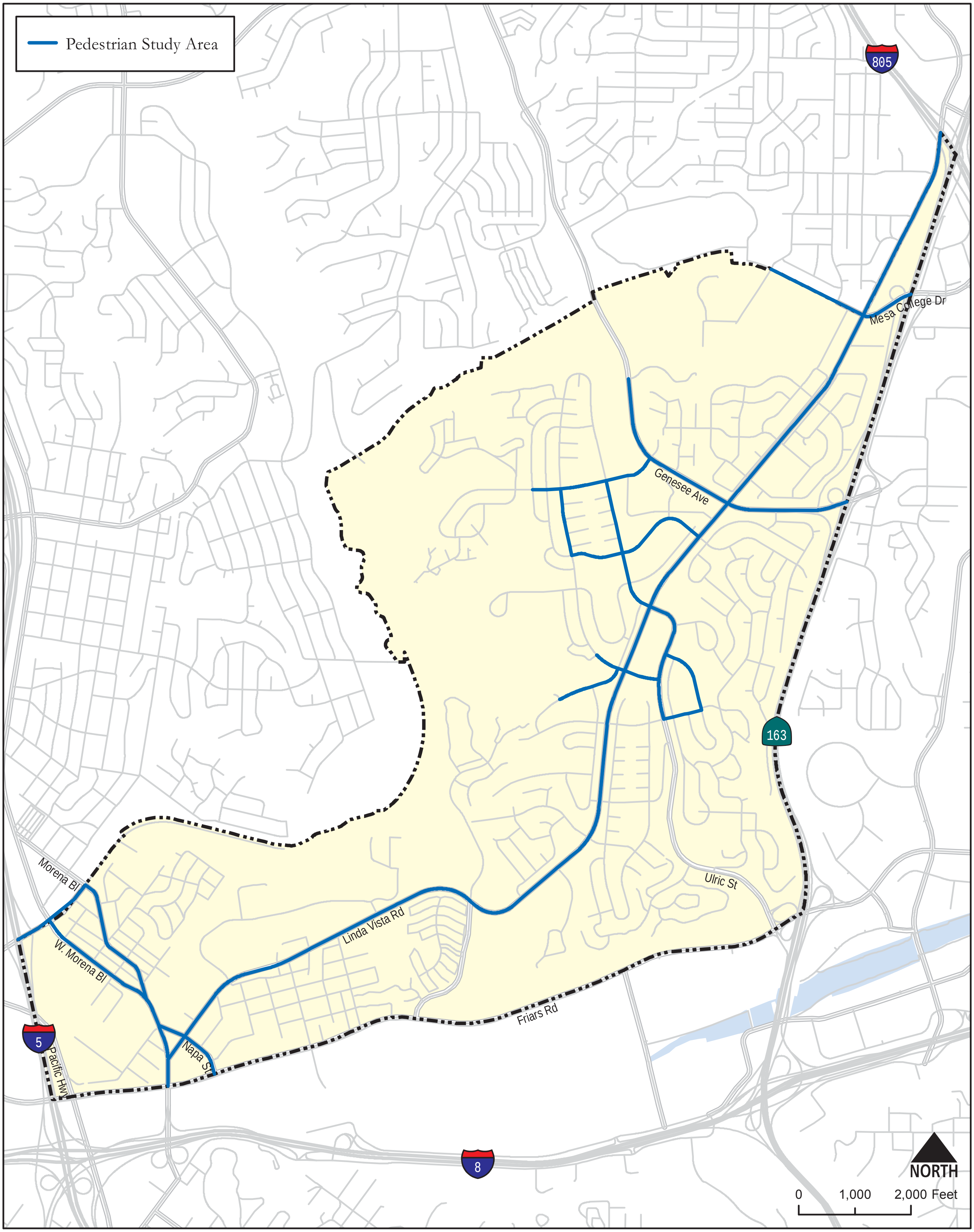

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Figure 1
Pedestrian Study Area

Figure 2 shows the PEQE results for Linda Vista. Corridors with low PEQE, such as Genesee Avenue or portions of Linda Vista Road, were included among the project corridors.

Figure 3 shows the LTS results throughout the community. Locations with LTS scores worse than 2, were included among the project corridors. These corridors include Linda Vista Road, Mesa College Drive, Genesee Avenue, Ulric Street and Via Las Cumbres.

Table 1 shows the original corridor extents identified based on PEQE and LTS scores. **Table 2** shows the corridor extents which were refined slightly from the original extents based upon engineering review of these study areas.

Table 1: Linda Vista CATS Corridors Identified using PEQE and LTS

#	Corridor	From	To	PEQE Results	LTS Results
1	Linda Vista Road	Northern Boundary	Napa Street	Low PEQE	LTS 4
2	Mesa College Drive	Armstrong Street	Eastern Boundary	-	LTS 4
3	Genesee Avenue	Northern Boundary	SR-163 Ramps	Low PEQE	LTS 4
4	Ulric Street	Tait Street	Friars Road	-	LTS 4
5	Via Las Cumbres	Linda Vista Road	Friars Road	-	LTS 4

Source: Chen Ryan Associates (July, 2016)

Table 2: Linda Vista CATS Refined Project Corridors

#	Corridor	From	To
1	Linda Vista Road	Mesa College Drive	Alcala Knolls Drive
2	Mesa College Drive	Armstrong Street	Linda Vista Road
3	Genesee Avenue	Linda Vista Road	Whitney Street
4	Ulric Street	Tait Street	Friars Road
5	Via Las Cumbres	Linda Vista Road	Friars Road

Source: Chen Ryan Associates (July, 2016)

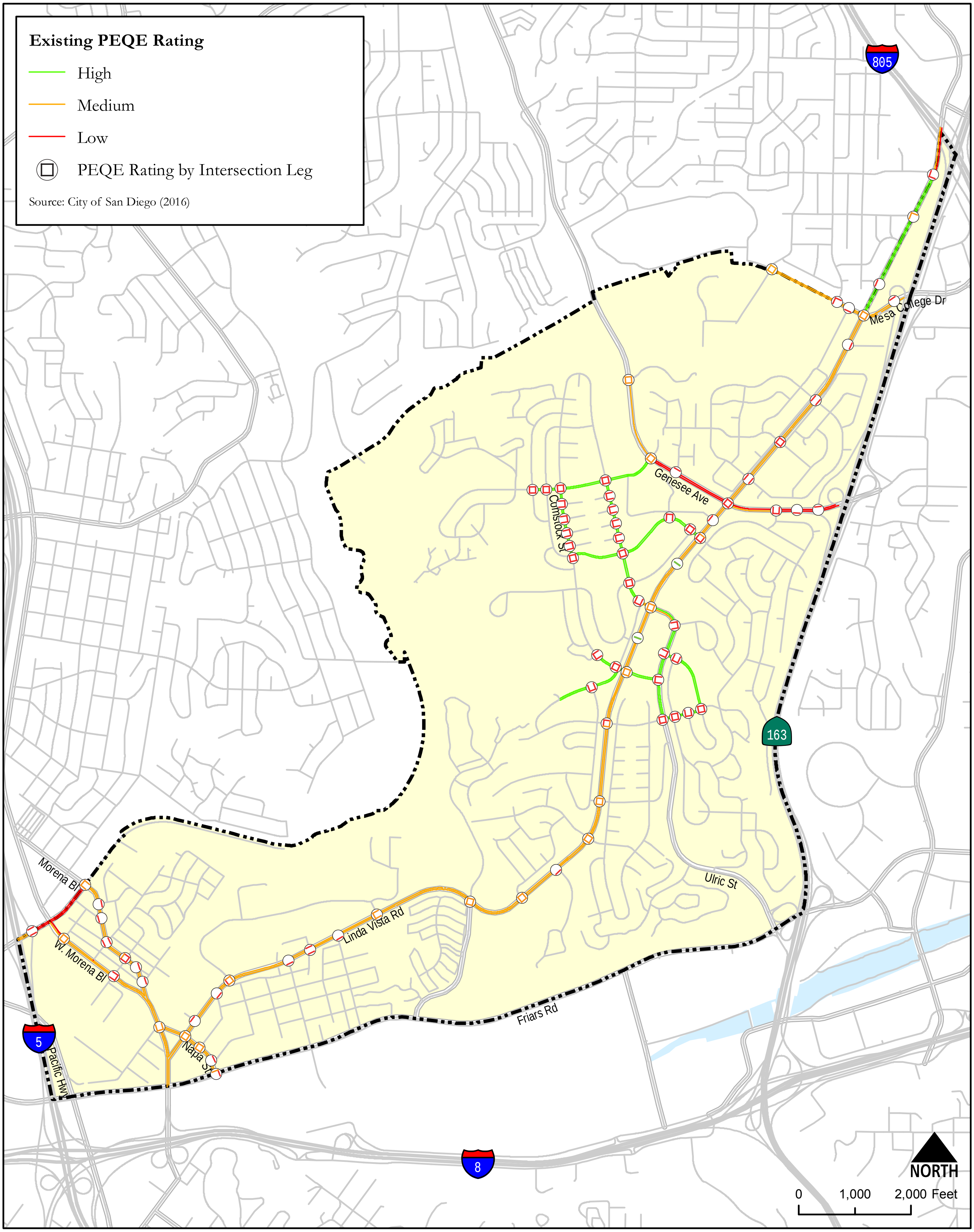

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Figure 2
Pedestrian Environmental Quality Evaluation (PEQE)

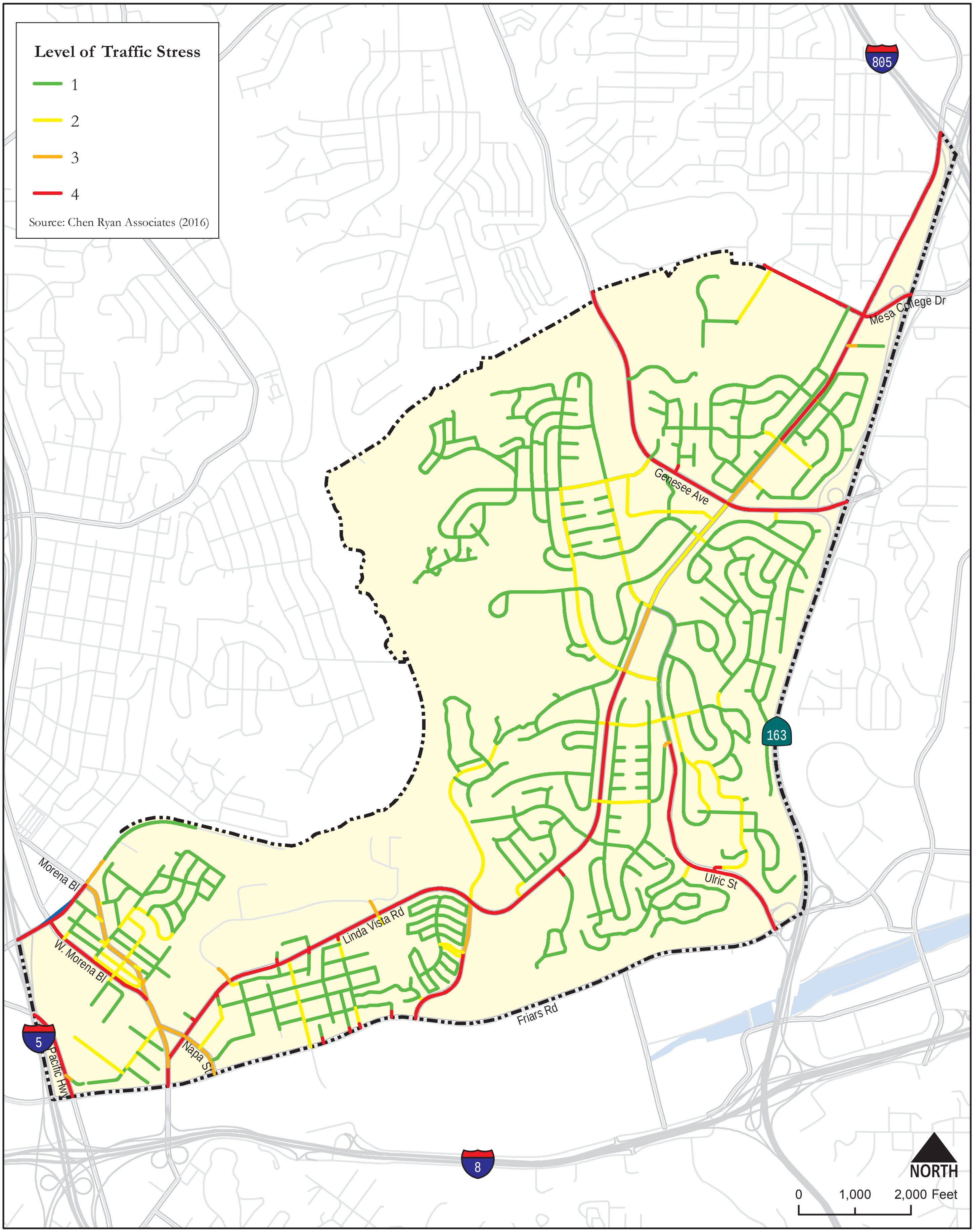

Figure 3
Bicycle Level of Traffic Stress (LTS)

2.2 Identification of Project Improvement Areas

The selection of project improvement areas was based on the following considerations:

- Locations receiving comments for needing improvement during the public outreach process
- Locations adjacent to schools (also including University of San Diego)
- Locations adjacent to parks
- Locations adjacent to freeways where high speed transitions and other pedestrian and bicycle conflicts occur

Table 3 shows the 10 project improvement areas identified using the criteria listed above.

Table 3: Linda Vista CATS Project Improvement Areas

#	Improvement Area	Reason(s) for Consideration
A	Mesa College Dr from Linda Vista Rd to SR-163 On-Ramps	Received Public Comment, Conflicts with high speed freeway transitions
B	Linda Vista Road and Mesa College Drive	Received Public Comment, Proximity to Schools
C	Linda Vista Road and Korink Avenue	Received Public Comment, Proximity to Schools
D	Ulric St at intersection of Osler St; Eastman St and Fulton St	Received Public Comment, Proximity to Schools and Park
E	Linda Vista Road and Genesee Avenue	Received Public Comment, Proximity to Schools
F	Genesee Avenue and SR-163 SB On-Ramp	Received Pubic Comment, Conflicts with high speed freeway transitions
G & I	Area bound by Morley St, Ulric St and Comstock St	Received Public Comment, Neighborhood Commercial Center
J	Linda Vista Road between Brunner St and Goshen St	Received Public Comment, Proximity to University
K	Via Las Cumbres and Linda Vista Road	Received Public Comment, Proximity to Schools
L	Kramer St and Coolidge St Intersection; Coolidge St south of intersection east of school	Received Public Comment, Proximity to Schools

Source: Chen Ryan Associates (July, 2016)

Figure 4 shows the locations of the five corridors and 10 project improvement areas resulting from the Task 4 efforts described in this section.

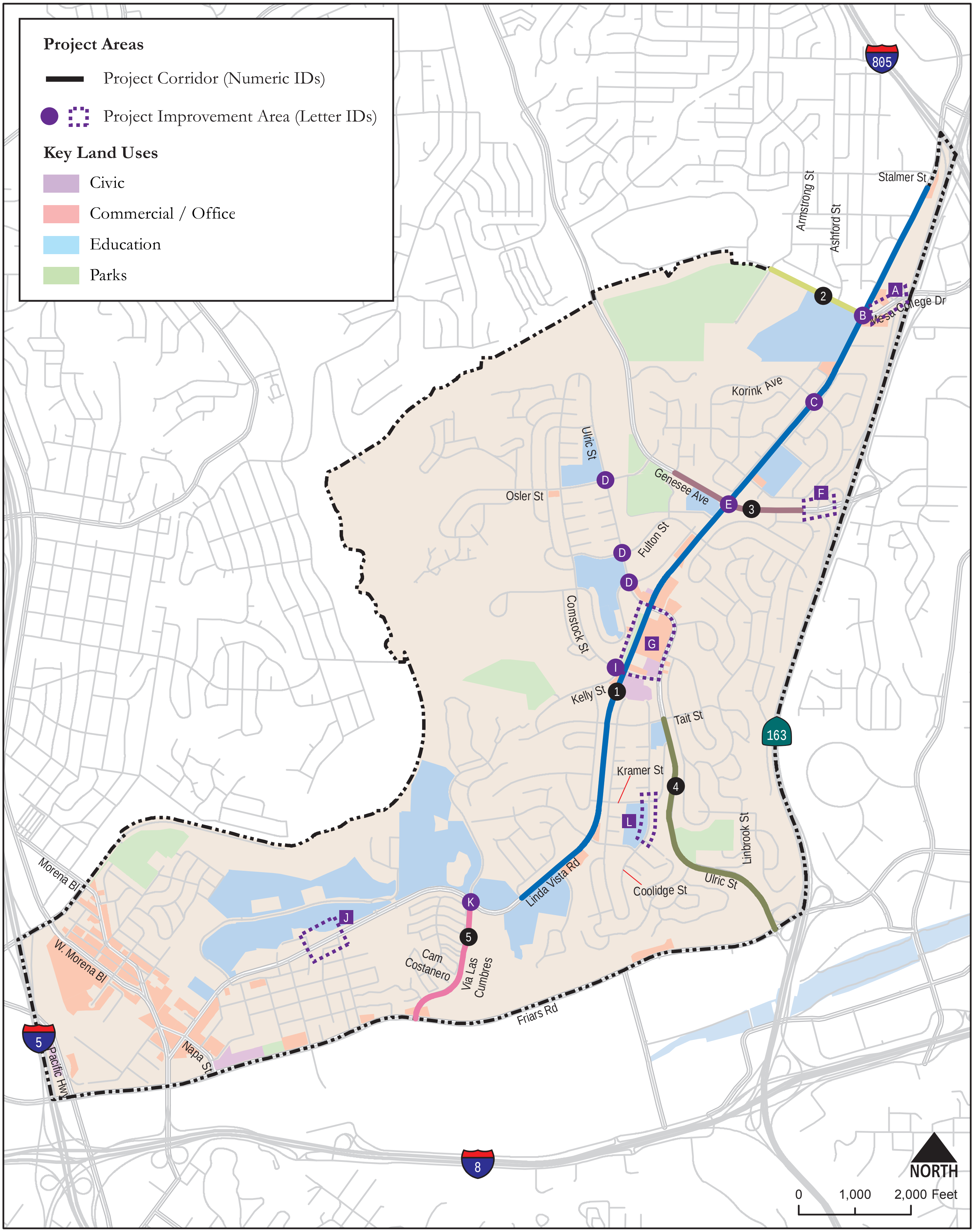

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Figure 4
Project Improvement Areas and Project Corridors

3.0 Project Prioritization

Prioritization scoring was applied to the five project corridors and 10 project improvements areas. The prioritization process utilized seven key criteria – four are need-based and four criteria are based on project-readiness. The need-based criteria consist of traffic collisions per mile, pedestrian and bicycle demand, average daily vehicular traffic volumes and public workshop preference; while the project-readiness criteria include curb impacts, right-of-way impacts, and potential utility relocation.

3.1 Needs-Based Prioritization Criteria

Table 4 describes the need-based prioritization criteria and associated point assignments. The need-based prioritization criteria are generally indicative of high levels of use and conflict among multiple transportation modes. As shown, the traffic collisions per mile criteria received a maximum of six points, making it the highest weighted of the need-based criteria. These inputs capture demand from automobile, pedestrian and bicyclist use.

Table 5 shows the need-based points earned from each criteria for the project corridors and improvements areas. Project Improvement Areas G&I (area bound by Morley Street, Ulric Street and Comstock Street) and E (Linda Vista Road and Genesee Avenue) scored the highest in the needs-based criteria, each receiving 10 points.

3.2 Project-Readiness-Based Prioritization

Table 6 describes the project-readiness-based prioritization criteria and associated point assignment. Project-readiness-based prioritization considers right-of-way impacts, curb line reconfiguration or construction impacts, and utility conflicts. There are a total possible 12 project-readiness-based prioritization points.

Prioritization points are assigned if the proposed project dimensions do not exceed the right-of-way width of the roadway. Likewise, prioritization points are assigned if projects have no curb reconfiguration impacts, meaning the project does not differ from the existing curb-to-curb width or result in the removal or construction of a median. Project improvements which require additional right-of-way were examined for utility conflicts. **Table 7** shows the project-readiness-based points assigned to each of the project improvement areas and corridors.

3.3 Combined Needs-Based and Project-Readiness-Based Prioritization

Table 8 presents the combined need and project-readiness-based prioritization scoring by project segment. The project improvement areas and project corridors are sorted from highest to lowest priority.

Project Improvement Area G & I (the area bound by Morley Street, Ulric Street and Comstock Street) scored the highest, receiving 18 combined points. Project Improvement Area B (Linda Vista Road and Mesa College Drive) was the next highest scoring location, with 16 points. In terms of project corridors, Linda Vista Road, between Mesa College Drive and Alcala Knolls Road, scored the highest of the five project corridors.

Table 4: Need-Based Prioritization Criteria and Associated Points

Traffic Collisions per Mile	Highest Traffic Collisions per Mile along Project Segment	Category	Prioritization Points
All traffic collisions in the Community Planning Area, including vehicular-vehicular, vehicular-bicyclist, vehicular-pedestrian collisions, between 2008 and 2013 were summarized by project segment. Project segment length was used to determine collisions per mile. More points were awarded to project corridors with higher collisions per mile. Collision records were obtained from City of San Diego.	300 per mile or greater	Very High	6
	250-299 per mile	High	5
	200-249 per mile	Medium-High	4
	150-199 per mile	Medium	3
	100-149 per mile	Medium-Low	2
	50-99 per mile	Low	1
	Less than 50 per mile	Very Low	0
Pedestrian and Bicycle Demand	**Average Weighted Pedestrian and Bicycle Demand Model Score along Project Segment**	**Category**	**Prioritization Points**
This input is a composite of the Pedestrian Priority Model from the City's Pedestrian Master Plan and the Inter- and Intra-Community Demand Model from the City's Bicycle Master Plan. For each project segment, an average weighted score was calculated along the extent of the project segment. The six ranges were determined by the natural breaks of the average weighted scores of all the projects.	66 points or greater	Very High	5
	61-66 points	High	4
	53-61 points	Medium-High	3
	45-52 points	Medium-Low	2
	41-45 points	Low	1
	Less than 41 points	Very Low	0
Average Daily Vehicular Traffic Volumes	**Highest Average Daily Traffic (ADT) Volumes along Project Segment**	**Category**	**Prioritization Points**
Points were awarded based on the highest average daily vehicular traffic (ADT) volume along a project segment. Higher vehicular traffic volumes are indicative of being more stressful facilities for non-motorized users. ADTs were obtained from SANDAG's regional traffic count database (2010).	50,000 ADT or greater	Very High	3
	25,000-50,000 ADT	High	2
	5,000-24,999 ADT	Medium	1
	Less than 5,000 ADT	Low	0
Public Workshop Preference	**Workshop Participants Assigning Weighted Preference Votes to Project Areas**	**Category**	**Prioritization Points**
Members of the public who attended the Linda Vista CATS workshops were each assigned 5 votes to allocate to voting on which improvement areas were of the highest priority. Voting was weighted, meaning participants could decide to assign as many or as few of their 5 votes to an improvement area as they preferred.	10 or more votes	Very High	3
	6-9 votes	High	2
	2-5 votes	Medium	1
	0-1 votes	Low	0

Source: Chen Ryan Associates (July, 2016)

Table 5: Need-Based Prioritization Points

Project ID	Project Extents	Traffic Collisions per Mile Points	Average Pedestrian and Bicycle Demand Points	Average Daily Traffic Volumes Points	Public Workshop Preference	Need-Based Prioritization Points
Project Improvement Areas						
G & I	Area bound by Morley Street, Ulric Street and Comstock Street	1	5	1	3	10
E	Linda Vista Road and Genesee Avenue	3	4	2	1	10
B	Linda Vista Road and Mesa College Drive	2	4	1	1	8
D	Ulric Street at intersections of Osler Street; Eastman Street; and Fulton Street	0	4	1	2	7
J	Linda Vista Road between Brunner Street and Goshen Street	0	4	1	1	6
A	Mesa College Drive from Linda Vista Road to SR-163 Ramps	1	2	2	0	5
F	SR-163 On-Ramp and Genesee Avenue	2	1	2	0	5
C	Linda Vista Road and Korink Avenue	0	2	1	1	4
L	Coolidge Street from Kramer Street to Howe Court	0	0	0	2	2
Project Corridors						
1	Linda Vista Road from Mesa College Drive to Alcala Knolls Road	0	5	2	n/a	7
3	Genesee Avenue from Whitney Street to Linda Vista Road	3	2	1	n/a	6
4	Ulric Street from Tait Street to Friars Road	1	4	1	n/a	6
2	Mesa College Drive from Armstrong Street to Linda Vista Road	1	2	1	n/a	4
5	Via Las Cumbres from Linda Vista Road to Friars Road	1	0	1	n/a	2

Source: Chen Ryan Associates (July, 2016)

Table 6: Project-Readiness Prioritization Criteria and Associated Points

Right-of-Way Impact	**Category**	**Prioritization Points**
The dimension of the proposed project was compared to the available right-of-way to determine the potential need for right-of-way acquisition.	No Impact – Right-of-way is sufficient to construct proposed project	4
	Impact – Right-of-way will need to be acquired	0
Curb Impact	**Category**	**Prioritization Points**
The dimension of the proposed project was compared to the existing curb lines to determine the potential need for curb line reconfiguration or project requires new curb construction.	No Impact – No curb line reconfiguration required	4
	Impact – Curb line reconfiguration is required	0
Utility Conflict	**Category**	**Prioritization Points**
The project imposes impacts to any of the following utilities: ▪ Traffic Lights ▪ Street Lights ▪ Transformers ▪ Vaults ▪ Storm Drains ▪ Fire Hydrants ▪ Cable/Phone Risers ▪ Bus Stops ▪ Water Meters ▪ Power Poles	No Impact – No relocation of utility infrastructure is required	4
	Impact – Relocation of utility infrastructure is required	0

Source: Chen Ryan Associates (July, 2016)

Table 7: Project-Readiness-Based Prioritization Points

Project ID	Project Extents	Right-of-Way Impacts	Curb Impacts	Utility Conflicts	Need-Based Prioritization Points
Project Improvement Areas					
A	Mesa College Drive from Linda Vista Road to SR-163 Ramps	4	0	4	8
B	Linda Vista Road and Mesa College Drive	4	0	4	8
C	Linda Vista Road and Korink Avenue	4	0	4	8
D	Ulric Street at intersections of Osler Street; Eastman Street; and Fulton Street	4	0	4	8
F	SR-163 On-Ramp and Genesee Avenue	4	0	4	8
G & I	Area bound by Morley Street, Ulric Street and Comstock Street	4	0	4	8
J	Linda Vista Road between Brunner Street and Goshen Street	4	0	4	8
L	Coolidge Street from Kramer Street to Howe Court	4	0	4	8
E	Linda Vista Road and Genesee Avenue	0	0	0	0
Project Corridors					
1	Linda Vista Road from Mesa College Drive to Alcala Knolls Road	4	4	4	12
2	Mesa College Drive from Armstrong Street to Linda Vista Road	4	4	4	12
3	Genesee Avenue from Whitney Street to Linda Vista Road	4	4	4	12
4	Ulric Street from Tait Street to Friars Road	4	0	4	8
5	Via Las Cumbres from Linda Vista Road to Friars Road	0	0	0	0

Source: Chen Ryan Associates (July, 2016)

Table 8: Final Prioritization Points

Project ID	Project Extents	Need-Based Prioritization Points	Project-Readiness Prioritization Points	Total Prioritization Points
Project Improvement Areas				
G & I	Area bound by Morley Street, Ulric Street and Comstock Street	10	8	18
B	Linda Vista Road and Mesa College Drive	8	8	16
D	Ulric Street at intersections of Osler Street; Eastman Street; and Fulton Street	7	8	15
J	Linda Vista Road between Brunner Street and Goshen Street	6	8	14
A	Mesa College Drive from Linda Vista Road to SR-163 Ramps	5	8	13
F	SR-163 On-Ramp and Genesee Avenue	5	8	13
C	Linda Vista Road and Korink Avenue	4	8	12
E	Linda Vista Road and Genesee Avenue	10	0	10
L	Coolidge Street from Kramer Street to Howe Court	2	8	10
Project Corridors				
1	Linda Vista Road from Mesa College Drive to Alcala Knolls Road	7	12	19
2	Mesa College Drive from Armstrong Street to Linda Vista Road	6	12	18
3	Genesee Avenue from Whitney Street to Linda Vista Road	6	12	18
4	Ulric Street from Tait Street to Friars Road	4	8	12
5	Via Las Cumbres from Linda Vista Road to Friars Road	2	0	2

Source: Chen Ryan Associates (July, 2016)

APPENDIX C

Technical Memorandum #3: Project Prioritization and Implementation

LINDA VISTA

Comprehensive Active Transportation Strategy

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CHEN RYAN

TO: Ryan Zellers, Michael Baker International; and Melissa Garcia, City of San Diego

FROM: Sherry Ryan, Chen Ryan Associates

DATE: 9/16/2016

RE: Linda Vista CATS Implementation Strategy

Overview

This implementation strategy is intended to support the recommendations identified in the Linda Vista CATS by providing the following information:

- Project prioritization overview and results
- Project phasing
- Cost estimates
- An overview of potential funding sources

Project Prioritization

Two types of project areas were identified for the Linda Vista CATS plan: *project corridors*, which represent modifications to roadway cross-sections; and *project improvement areas*, which are focused on improvements to intersections or small districts. **Table 1** shows the five project corridor extents that were considered for prioritization.

Table 1: Linda Vista CATS Refined Project Corridors

#	Corridor	From	To
1	Linda Vista Road	Mesa College Drive	Alcala Knolls Drive
2	Mesa College Drive	Armstrong Street	Linda Vista Road
3	Genesee Avenue	Linda Vista Road	Whitney Street
4	Ulric Street	Tait Street	Friars Road
5	Via Las Cumbres	Linda Vista Road	Friars Road

Source: Chen Ryan Associates (July, 2016)

The selection of project improvement areas was based on the following considerations:

- Locations receiving comments for needing improvement during the public outreach process;
- Pedestrian and bicycle generating and attracting land uses, such as neighborhood commercial centers, parks, and schools (also including University of San Diego); and
- Locations adjacent to freeways where high speed transitions and other pedestrian and bicycle conflicts occur.

Table 2 shows the 10 project improvement areas identified using the criteria listed above.

Table 2: Linda Vista CATS Project Improvement Areas

#	Improvement Area	Reason(s) for Consideration
A	Mesa College Dr from Linda Vista Rd to SR-163 On-Ramps	Received Public Comment, Conflicts with high speed freeway transitions
B	Linda Vista Road and Mesa College Drive	Received Public Comment, Proximity to Schools
C	Linda Vista Road and Korink Avenue	Received Public Comment, Proximity to Schools
D	Ulric St at intersection of Osler St; Eastman St and Fulton St	Received Public Comment, Proximity to Schools and Park
E	Linda Vista Road and Genesee Avenue	Received Public Comment, Proximity to Schools
F	Genesee Avenue and SR-163 SB On-Ramp	Received Pubic Comment, Conflicts with high speed freeway transitions
G & I	Area bound by Morley St, Ulric St and Comstock St	Received Public Comment, Neighborhood Commercial Center
J	Linda Vista Road between Brunner St and Goshen St	Received Public Comment, Proximity to University
K	Via Las Cumbres and Linda Vista Road	Received Public Comment, Proximity to Schools
L	Kramer St and Coolidge St Intersection; Coolidge St south of intersection east of school	Received Public Comment, Proximity to Schools

Source: Chen Ryan Associates (July, 2016)

Prioritization scoring was applied to the five project corridors and 10 project improvements areas. The prioritization process utilized seven key criteria – four are need-based and four criteria are based on project-readiness. The need-based criteria consists of traffic collisions per mile, pedestrian and bicycle demand, average daily vehicular traffic volumes and public workshop preference; the project-readiness criteria include curb impacts, right-of-way impacts, and potential utility relocation.

Needs-Based Prioritization Criteria

Table 3 describes the need-based prioritization criteria and associated point assignments. The need-based prioritization criteria are generally indicative of high levels of use and conflict among multiple transportation modes. As shown, the traffic collisions per mile criteria received a maximum of six points, making it the highest weighted of the need-based criteria. These inputs capture demand from automobile, pedestrian and bicyclist use.

Table 4 shows the need-based points earned from each criteria for the project corridors and improvements areas. Project Improvement Areas G&I (area bound by Morley Street, Ulric Street and Comstock Street) and E (Linda Vista Road and Genesee Avenue) scored the highest in the needs-based criteria, each receiving 10 points.

Table 3: Need-Based Prioritization Criteria and Associated Points

Traffic Collisions per Mile	Highest Traffic Collisions per Mile along Project Segment	Category	Prioritization Points
All traffic collisions in the Community Planning Area, including vehicular-vehicular, vehicular-bicyclist, vehicular-pedestrian collisions, between 2008 and 2013 were summarized by project segment. Project segment length was used to determine collisions per mile. More points were awarded to project corridors with higher collisions per mile. Collision records were obtained from City of San Diego.	300 per mile or greater	Very High	6
	250-299 per mile	High	5
	200-249 per mile	Medium-High	4
	150-199 per mile	Medium	3
	100-149 per mile	Medium-Low	2
	50-99 per mile	Low	1
	Less than 50 per mile	Very Low	0
Pedestrian and Bicycle Demand	**Average Weighted Pedestrian and Bicycle Demand Model Score along Project Segment**	**Category**	**Prioritization Points**
This input is a composite of the Pedestrian Priority Model from the City's Pedestrian Master Plan and the Inter- and Intra-Community Demand Model from the City's Bicycle Master Plan. For each project segment, an average weighted score was calculated along the extent of the project segment. The six ranges were determined by the natural breaks of the average weighted scores of all the projects.	66 points or greater	Very High	5
	61-66 points	High	4
	53-61 points	Medium-High	3
	45-52 points	Medium-Low	2
	41-45 points	Low	1
	Less than 41 points	Very Low	0
Average Daily Vehicular Traffic Volumes	**Highest Average Daily Traffic (ADT) Volumes along Project Segment**	**Category**	**Prioritization Points**
Points were awarded based on the highest average daily vehicular traffic (ADT) volume along a project segment. Higher vehicular traffic volumes are indicative of being more stressful facilities for non-motorized users. ADTs were obtained from SANDAG's regional traffic count database (2010).	50,000 ADT or greater	Very High	3
	25,000-50,000 ADT	High	2
	5,000-24,999 ADT	Medium	1
	Less than 5,000 ADT	Low	0
Public Workshop Preference	**Workshop Participants Assigning Weighted Preference Votes to Project Areas**	**Category**	**Prioritization Points**
Members of the public who attended the Linda Vista CATS workshops were each assigned 5 votes to allocate to voting on which improvement areas were of the highest priority. Voting was weighted, meaning participants could decide to assign as many or as few or their 5 votes to an improvement area as they preferred.	10 or more votes	Very High	3
	6-9 votes	High	2
	2-5 votes	Medium	1
	0-1 votes	Low	0

Source: Chen Ryan Associates (July, 2016)

Table 4: Need-Based Prioritization Points

Project ID	Project Extents	Traffic Collisions per Mile Points	Average Pedestrian and Bicycle Demand Points	Average Daily Traffic Volumes Points	Public Workshop Preference	Need-Based Prioritization Points
Project Improvement Areas						
G & I	Area bound by Morley Street, Ulric Street and Comstock Street	1	5	1	3	10
E	Linda Vista Road and Genesee Avenue	3	4	2	1	10
B	Linda Vista Road and Mesa College Drive	2	4	1	1	8
D	Ulric Street at intersections of Osler Street; Eastman Street; and Fulton Street	0	4	1	2	7
J	Linda Vista Road between Brunner Street and Goshen Street	0	4	1	1	6
A	Mesa College Drive from Linda Vista Road to SR-163 Ramps	1	2	2	0	5
F	SR-163 On-Ramp and Genesee Avenue	2	1	2	0	5
C	Linda Vista Road and Korink Avenue	0	2	1	1	4
L	Coolidge Street from Kramer Street to Howe Court	0	0	0	2	2
Project Corridors						
1	Linda Vista Road from Mesa College Drive to Alcala Knolls Road	0	5	2	n/a	7
3	Genesee Avenue from Whitney Street to Linda Vista Road	3	2	1	n/a	6
4	Ulric Street from Tait Street to Friars Road	1	4	1	n/a	6
2	Mesa College Drive from Armstrong Street to Linda Vista Road	1	2	1	n/a	4
5	Via Las Cumbres from Linda Vista Road to Friars Road	1	0	1	n/a	2

Source: Chen Ryan Associates (July, 2016)

Project-Readiness-Based Prioritization

Table 5 describes the project-readiness-based prioritization criteria and associated point assignment. Project-readiness-based prioritization considers right-of-way impacts, curb line reconfiguration or construction impacts, and utility conflicts. There are a total possible 12 project-readiness-based prioritization points.

Table 5: Project-Readiness Prioritization Criteria and Associated Points

Right-of-Way Impact	Category	Prioritization Points
The dimension of the proposed project was compared to the available right-of-way to determine the potential need for right-of-way acquisition.	No Impact – Right-of-way is sufficient to construct proposed project	4
	Impact – Right-of-way will need to be acquired	0
Curb Impact	**Category**	**Prioritization Points**
The dimension of the proposed project was compared to the existing curb lines to determine the potential need for curb line reconfiguration or project requires new curb construction.	No Impact – No curb line reconfiguration required	4
	Impact – Curb line reconfiguration is required	0
Utility Conflict	**Category**	**Prioritization Points**
The project imposes impacts to any of the following utilities: ▪ Traffic Lights ▪ Street Lights ▪ Transformers ▪ Vaults ▪ Storm Drains ▪ Fire Hydrants ▪ Cable/Phone Risers ▪ Bus Stops ▪ Water Meters ▪ Power Poles	No Impact – No relocation of utility infrastructure is required	4
	Impact – Relocation of utility infrastructure is required	0

Source: Chen Ryan Associates (July, 2016)

Prioritization points are assigned if the proposed project dimensions do not exceed the right-of-way width of the roadway. Likewise, prioritization points are assigned if projects have no curb reconfiguration impacts, meaning the project does not differ from the existing curb-to-curb width or result in the removal or construction of a median. Project improvements which require additional right-of-way were examined for utility conflicts. **Table 6** shows the project-readiness-based points assigned to each of the project improvement areas and corridors.

Table 6: Project-Readiness-Based Prioritization Points

Project ID	Project Extents	Right-of-Way Impacts	Curb Impacts	Utility Conflicts	Need-Based Prioritization Points
Project Improvement Areas					
A	Mesa College Drive from Linda Vista Road to SR-163 Ramps	4	0	4	8
B	Linda Vista Road and Mesa College Drive	4	0	4	8
C	Linda Vista Road and Korink Avenue	4	0	4	8
D	Ulric Street at intersections of Osler Street; Eastman Street; and Fulton Street	4	0	4	8
F	SR-163 On-Ramp and Genesee Avenue	4	0	4	8
G & I	Area bound by Morley Street, Ulric Street and Comstock Street	4	0	4	8
J	Linda Vista Road between Brunner Street and Goshen Street	4	0	4	8
L	Coolidge Street from Kramer Street to Howe Court	4	0	4	8
E	Linda Vista Road and Genesee Avenue	0	0	0	0
Project Corridors					
1	Linda Vista Road from Mesa College Drive to Alcala Knolls Road	4	4	4	12
2	Mesa College Drive from Armstrong Street to Linda Vista Road	4	4	4	12
3	Genesee Avenue from Whitney Street to Linda Vista Road	4	4	4	12
4	Ulric Street from Tait Street to Friars Road	4	0	4	8
5	Via Las Cumbres from Linda Vista Road to Friars Road	4	0	0	4

Source: Chen Ryan Associates (July, 2016)

Combined Needs-Based and Project-Readiness-Based Prioritization

Table 7 presents the combined need and project-readiness-based prioritization scoring by project segment to establish the final prioritization results. The project improvement areas and project corridors are sorted from highest to lowest priority. The resulting projects were categorized as priority level 1, 2, or 3 based on the top third, middle third, and bottom third scores. Due to the large disparity in project corridor scores, the three highest scoring project corridors were categorized as priority level 1, one project corridor as priority level 2, and one project corridor as priority level 3.

Project Improvement Area G & I (the area bound by Morley Street, Ulric Street and Comstock Street) scored the highest, receiving 18 combined points. Project Improvement Area B (Linda Vista Road and Mesa College Drive) was the next highest scoring location, with 16 points. In terms of project corridors, Linda Vista Road, between Mesa College Drive and Alcala Knolls Road, scored the highest of the five project corridors.

Table 7: Final Prioritization Points

Project ID	Project Extents	Need-Based Prioritization Points	Project-Readiness Prioritization Points	Total Prioritization Points	Priority Level
Project Improvement Areas					
G & I	Area bound by Morley Street, Ulric Street and Comstock Street	10	8	18	1
B	Linda Vista Road and Mesa College Drive	8	8	16	1
D	Ulric Street at intersections of Osler Street; Eastman Street; and Fulton Street	7	8	15	1
J	Linda Vista Road between Brunner Street and Goshen Street	6	8	14	2
A	Mesa College Drive from Linda Vista Road to SR-163 Ramps	5	8	13	2
F	SR-163 On-Ramp and Genesee Avenue	5	8	13	2
C	Linda Vista Road and Korink Avenue	4	8	12	3
E	Linda Vista Road and Genesee Avenue	10	0	10	3
L	Coolidge Street from Kramer Street to Howe Court	2	8	10	3
Project Corridors					
1	Linda Vista Road from Mesa College Drive to Alcala Knolls Road	7	12	19	1
2	Mesa College Drive from Armstrong Street to Linda Vista Road	6	12	18	1
3	Genesee Avenue from Whitney Street to Linda Vista Road	6	12	18	1
4	Ulric Street from Tait Street to Friars Road	4	8	12	2
5	Via Las Cumbres from Linda Vista Road to Friars Road	2	0	2	3

Source: Chen Ryan Associates (July, 2016)

Phasing Plan

The previous section described the process used to prioritize the project improvement areas and project corridors. The prioritization results were broken into thirds based on total prioritization points for the project improvement areas and the project corridors to identify a priority level. The priority level is used in Table 8 to identify which projects to target for near-term (0-5 years), mid-term (5-10 years), and long-term (more than 10 years) implementation.

Table 8: Project Phasing

Project ID	Project Type	Project Extents	Priority Level	Phase
G & I	Improvement Area	Area bound by Morley Street, Ulric Street and Comstock Street	1	Near Term 0-5 years
B	Improvement Area	Linda Vista Road and Mesa College Drive	1	
D	Improvement Area	Ulric Street at intersections of Osler Street; Eastman Street; and Fulton Street	1	
1	Corridor	Linda Vista Road from Mesa College Drive to Alcala Knolls Road	1	
2	Corridor	Mesa College Drive from Armstrong Street to Linda Vista Road	1	
3	Corridor	Genesee Avenue from Whitney Street to Linda Vista Road	1	
J	Improvement Area	Linda Vista Road between Brunner Street and Goshen Street	2	Mid-Term 5-10 years
A	Improvement Area	Mesa College Drive from Linda Vista Road to SR-163 Ramps	2	
F	Improvement Area	SR-163 On-Ramp and Genesee Avenue	2	
4	Corridor	Ulric Street from Tait Street to Friars Road	2	
C	Improvement Area	Linda Vista Road and Korink Avenue	3	Long-Term > 10 years
E	Improvement Area	Linda Vista Road and Genesee Avenue	3	
L	Improvement Area	Coolidge Street from Kramer Street to Howe Court	3	
5	Corridor	Via Las Cumbres from Linda Vista Road to Friars Road	3	

Source: Chen Ryan Associates (August, 2016)

Cost Estimates

Table 9 presents cost estimates for each of the project improvement areas and the project corridors. The estimates were performed at the planning level and include design, engineering, construction and 20% contingency.

As shown, implementation of Near Term project areas and corridors is estimated to cost approximately \$3.3 million, while Mid Term projects would cost about \$2.3 million, and Long Terms projects would cost approximately \$1.1 million. In total, implementation of all projects would cost approximately \$6.8 million.

A detailed breakdown of the cost estimates can be found in **Attachment 1**, identifying the various components, quantities, and unit costs included in the estimations.

Table 9: Project Cost Estimates

Project ID	Project Type	Project Extents	Phase	Cost Estimate
G & I	Improvement Area	Area bound by Morley Street, Ulric Street and Comstock Street	Near Term 0-5 years	$1,514,000[1]
B	Improvement Area	Linda Vista Road and Mesa College Drive		$520,000
D	Improvement Area	Ulric Street at intersections of Osler Street; Eastman Street; and Fulton Street		$474,000[2]
1	Corridor	Linda Vista Road from Mesa College Drive to Alcala Knolls Road		$311,000
2	Corridor	Mesa College Drive from Armstrong Street to Linda Vista Road		$460,000
3	Corridor	Genesee Avenue from Whitney Street to Linda Vista Road		$33,000
			Near Term Cost Estimates	$3,312,000
J	Improvement Area	Linda Vista Road between Brunner Street and Goshen Street	Mid-Term 5-10 years	$111,000
A	Improvement Area	Mesa College Drive from Linda Vista Road to SR-163 Ramps		$152,000[3]
F	Improvement Area	SR-163 On-Ramp and Genesee Avenue		$257,000[4]
4	Corridor	Ulric Street from Tait Street to Friars Road		$1,784,000
			Mid Term Cost Estimates	$2,304,000
C	Improvement Area	Linda Vista Road and Korink Avenue	Long-Term > 10 years	$83,000[5]
E	Improvement Area	Linda Vista Road and Genesee Avenue		$532,000[6]
L	Improvement Area	Coolidge Street from Kramer Street to Howe Court		$176,000[7]
5	Corridor	Via Las Cumbres from Linda Vista Road to Friars Road		$351,000
			Long Term Cost Estimates	$1,142,000
			Total Project Area and Corridor Cost Estimates	$6,758,000

Source: Michael Baker International (September, 2016)

Notes:
1. An alternative design for Improvement Areas G & I proposes a partial closure for one-way travel along Morley Street, with an estimated cost of $1,554,000.
2. An alternative design for Improvement Area D proposes a full traffic signal at the Ulric Street and Osler Street intersection, with an estimated cost of $522,000.
3. An alternative design for Improvement Area A proposes to realign the ramps, with an estimated cost of $3,600,000.
4. An alternative design for Improvement Area F proposes to realign the ramp, with an estimated cost of $1,800,000.
5. An alternative design for Improvement Area C proposes full signal, with an estimated cost of $317,000.
6. An alternative design for Improvement Area E proposes a 2-lane roundabout, with an estimated cost of $2,400,000.
7. An alternative design for Improvement Area L proposes a traffic circle at the intersection of Kramer Street and Coolidge Street, with an estimated cost of $173,000.

Funding Sources

Potential funding sources to help implement infrastructure recommendations can be found at all levels of government. Many funding sources are highly competitive, making it necessary for local governments to stay informed about available funds and associated requirements so they are prepared to pursue when applications are open. This is not intended to be a fully comprehensive list, but rather a summary of potential funding sources to explore.

Active Transportation Program – Caltrans

The Active Transportation Program (ATP) was created to encourage increased use of biking and walking. Caltrans administers the ATP to fund capital improvements, including the environmental, design, right-of-way acquisition, and construction phases of a capital improvement project. Program funding is separated into three components, 1) 50% to the state for a statewide competitive program; 2) 10% to small urban and rural regions; and 3) 40% to Metropolitan Planning Organizations (MPO) in urban areas. The Caltrans Active Transportation Program is available once a year, with applications generally due in June. A local match is not required for the statewide competitive program.

Sustainable Transportation Planning Grant Program – Caltrans

The Sustainable Transportation Planning Grant Program was created to support Caltrans' current Mission: *Provide a safe, sustainable, integrated and efficient transportation system to enhance California's economy and livability.* The grants serve to promote a balanced, comprehensive multimodal transportation system with an emphasis on transportation planning efforts that promote sustainability. Some of the eligible activities/costs include data gathering and analysis, planning consultants; conceptual drawings and design; and community surveys, meetings, charrettes, and focus groups.

TransNet Active Transportation Grant Program – SANDAG

SANDAG administers the Active Transportation Grant Program for the San Diego region, funded by TransNet sales tax revenue. Eligible activities include bicycle facilities and connectivity improvements, pedestrian and walkable community projects, bicycle and pedestrian safety projects, and traffic calming projects. All applications must include a Resolution passed by the local city council or governing board, detailing source(s) of matching funds. SANDAG anticipates the Active Transportation Grant Program fourth cycle call for projects will be held in the fall/winter of 2017/2018, with grant awards made in the summer of 2018.

TransNet Smart Growth Incentive Program – SANDAG

SANDAG administers the Smart Growth Incentive program, funded by TransNet sales tax revenue. Funds may be used within designated Smart Growth Opportunity Area to fund local agency salaries, professional services, preliminary engineering, right-of-way acquisition, construction, project management costs, and other direct expenses incurred on behalf of the project. Three Smart Growth Opportunity Areas are identified within the Linda Vista community. A description of each of these areas is provided in **Table 10**, as presented in SANDAG's *Smart Growth Concept Map Site Descriptions* (May 5, 2016).

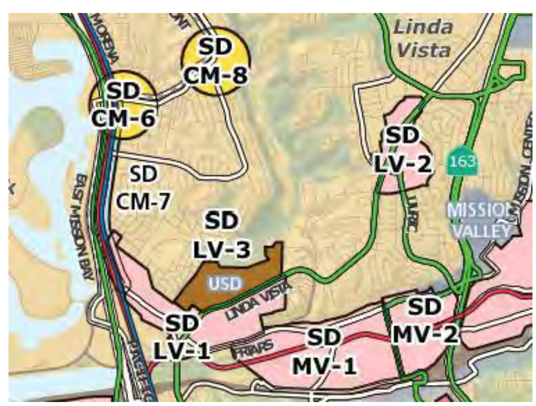

Image from Smart Growth Concept Map

CHEN RYAN

Table 10: Linda Vista Smart Growth Concept Map Site Descriptions

Area	Location	Smart Growth Place Type	Land Use Description
SD-LV-1	Morena Boulevard from Tecolote Road to Linda Vista Road and between Linda Vista Road and Friars Road	Town Center	This town center spans the Linda Vista and Clairemont Mesa communities. The Linda Vista Community Plan designates this area for medium-high density residential (30 to 43 dwelling units per acre), office commercial, community commercial, and general commercial and industrial uses and encourages mixed-use developments adjacent to the light rail station at Napa Street.
SD-LV-2	Linda Vista Road from Tait Street to Fulton Street	Town Center	The Linda Vista Community Plan designates this area for community and office commercial and high-density residential (43 to 75 dwelling units per acre).
SD-LV-3	University of San Diego	Special Use Center	University of San Diego

Source: SANDAG *Smart Growth Concept Map Site Descriptions* (May 5, 2016)

APPENDIX D

Public Outreach: Workshop Summaries

LINDA VISTA
Comprehensive Active Transportation Strategy

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LINDA VISTA COMPREHENSIVE ACTIVE TRANSPORTATION STRATEGY
October 9, 2014 WORKSHOP #1 SUMMARY REPORT

The first of two community workshops for the Linda Vista Comprehensive Active Transportation Strategy (LVCATS) project was held on Thursday, October 9, 2014 from 6:00 to 8:00 p.m. at the Linda Vista Library Community Room. Approximately 20 community members, City staff, and members of the Community Planning Group were in attendance. Prior to the workshop, the project team contacted the following stakeholders to inform the public about the project and to invite the community to attend the workshop:

Linda Vista Community Planning Group	County of San Diego Health & Human Services
San Diego County Bicycle Coalition	Linda Vista Collaborative
Bike San Diego	Bayside Resident Leadership Academy
Circulate San Diego	Local Schools
Morena Business Association	UCSD
Linda Vista Town Council	USD
Councilmember Scott Sherman's Office	Clairemont Times Newsletter
SANDAG	Boys and Girls Club – Roberts Family Branch

I. WORKSHOP PURPOSE

The purpose of this workshop was to introduce the project and concept of pedestrian and bicycle improvements and provide an opportunity for community members to express local issues, concerns, and ideas regarding pedestrian and bicycle accessibility in their neighborhoods.

II. PRESENTATION

City of San Diego Project Manager Melissa Garcia welcomed and thanked the participants for their attendance and involvement. Ms. Garcia provided a few words to introduce the project and introduced the project team members. Ryan Zellers, project manager from the City's consultant team (RBF Consulting) gave a presentation that included an overview of the project, a discussion about how the project approach and process, and the intent to develop a Master Plan that will be used as a tool for implementation. Sherry Ryan of Chen Ryan Associates presented the results of the data collection efforts, including bicycle and pedestrian demand and propensity models. The following data was collected and analyzed as part of this project:

- Bicycle demand and propensity
- Pedestrian demand and propensity
- Transit locations
- Accident data

Ms. Ryan explained how the data was layered to determine the preliminary focus corridors for the project. Display boards containing pedestrian, bicycle, transit, traffic data, and the draft focus corridors were displayed around the room for participants to view at their leisure.

III. GROUP EXERCISES

<u>Where Do You Live?</u>

Upon arrival to the workshop, a community-wide map was displayed and participants were asked to place a dot over the area where they live and another dot over where they walk/bike to. This exercise allowed participants and members of the project team to understand what parts of the community were represented at the workshop and what areas were popular walking/biking attractors. The result of the exercise illustrated that participants attended from various parts of the community and the highest attractors was the retail core along the middle of Linda Vista Road.

<u>Post-It Note Exercise</u>

For the first group exercise, participants were asked to provide individual responses to the question "What would encourage you to walk or bike more?" Post-It notes and pens were provided at each table to write down individual responses. After all input was received, similar responses were clustered to develop the common themes, including:

- More/Safer crosswalks
- More/Safer sidewalks
- More shade
- Curb ramps at all intersections for strollers, wheelchairs, etc.
- Community art and walking/biking events
- More lights
- Slower traffic
- Overall more safety
- Medians
- Bike racks
- Better striping for bike lanes
- Improved visibility of bike lanes/Green bike lanes

Tabletop Maps: Share Your Ideas and Concerns

Community maps were divided into three geographic areas: north of Genesee, Genesee to Via Las Cumbres, and south/west of Via Las Cumbres. Large maps for each section were laid on each table to coordinate with the colored sections. The purpose of dividing the maps was to allow participants to consolidate conversations by specific area. A computer was projected onto a screen in real-time that allowed the participants to zoom into particular areas on Google maps and street view. Handouts with images showing examples of pedestrian, bicycle, and multi-modal improvements were provided as a reference. Participants were asked to share their walking and bicycling concerns in the area and any ideas for addressing walking/biking issues with other participants at the table. The tables contained maps of the area and markers for participants to provide any comments or concerns. The comments are summarized below.

Area 1: Genesee to Convoy

- Trash Cans
- Bus stop at Genesee needs a shelter (near Linda Vista Rd.)
- Can't turn left from Linda Vista at Wheatley and Mesa
- Mesa college Dr. crossing over 163 need improvements
- Better sidewalks on Mesa College from Armstrong to Linda Vista Rd.
- Sidewalk gap on Linda Vista Rd. from Stalmer St to Aero Dr.
- Need a midblock crossing on Linda Vista Rd. near Kearny High, (a lot jaywalking from students)
- Pedestrian underpass on Genesee has no lights and narrow sidewalk. (163 ramps)
- Genesee and SR163, 3 lanes need to be 4.
- Need of sidewalk on both sides of Genesee from Marlesta Dr. to Park Mesa Way (bikers and pedestrian use daily.)
- Linda Vista at Korink very difficult to cross from the side street
- Need wider sidewalks on Linda Vista from Genesee to Mesa College this area need better signage and traffic calming facilities to slow down cars
- Better crossing at Linda Vista and Mesa College (pedestrian refuges, sidewalk)
- On Linda Vista Rd., make the bike lane more visible, repaint it and/or add the green bike lanes
- Buffered or green bike lanes on Genesee from Mesa College to Linda Vista Rd.
- Difficult to turn right from Mesa College to Armstrong
- Osler and Ulric pedestrian crossing needs to be control during school in/out times. Pedestrians keep on crossing without letting the vehicular traffic flow. (Rapid flash crosswalk w/lights, controlled crosswalk)
- Light post on the middle of sidewalk on NB Linda Vista near Levant

Area 2: Via Las Cumbres to Genesee

- Better defined bike lanes on Linda Vista Rd. (green bike lanes)

- More lighting to walk on Ulric from Friars Rd to Tait St
- Sidewalk on Tait St from Linda Vista to Burroughs need improvements
- Coolidge from Kramer to Glidden St no traffic calming by Kit Carson Elementary and very unsafe for kids getting out of school and crossing street to walk home, speed bumps, crosswalks or guard are needed.
- Tecolote Canyon, trail needs markers/signs for entrances
- Kelly Street Park needs more lighting and light bulb replacement. Road connections to Kelly Street Park need more lighting. Kelly St is run down, need sidewalk, lighting, and speed humps. Kelly St Park is full with homeless, need more trash cans.

- Crosswalk needed near the post office to cross to the shopping center
- Linda Vista from Ulric to Glidden very popular walking corridor, the sidewalks are satisfactory but could be improved esthetically, for example anti-graffiti treatments.
- Street Lighting needed on Genesee
- If road were better would bike more , Comstock St., Linda Vista and Ulric St near the library shopping center
- A lot jaywalking from shopping Center to shopping center on Ulric St. from Dunlop St to Linda Vista Rd,
- Jaywalking on Comstock to bus stop near the library
- Tait has existing crosswalks but need guards for schools
- Via Las Cumbres has a missing sidewalk on the east side of the street
- Street lights needed on Via Las Cumbres
- Crossings near Linda Vista Elementary could be improve, be safer, need pedestrian education and/or crossing guards
- Pedestrian activation button on Fulton and Linda Vista needs to be replace (stick being used)
- A lot of trash near the health center

- Shopping area near (Rite Aid) lots of trash and infested with roaches
- Linda Vista Rd. needs more visible limit lines for vehicles to stop
- Better crossing around the Rite Aid shopping center, a lot of jaywalking
- Better crossing on Kelly and Comstock, it is confusing for drivers, needs curb extensions, more signage
- Fulton and Ulric better crossings
- Dark on Fulton and Comstock, need street lighting
- Overall more bike routes throughout the neighborhood
- Ulric has a trash problem, the south end has a sewer smell
- Via de Las Cumbres and Linda Vista Rd, very wide intersection, and no warning for light going EB
- Linda Plazita trash receptacle needs to be change; currently it has a lid that has to be lift to put the trash; suggestion will be to get the ones that have openings.
- Bike parking along Marley St, currently bikes are tied to light post
- Trash can at all bus stops
- Burroughs missing ramps, not accessible for people on a wheelchair
- Bus shelter and bench needed at Linda Vista Rd between Ulric and Fulton
- Complicated marking for crosswalk near the Bayside community Center, confusing for driver and pedestrian.

Area 3: Morena to Via Las Cumbres

- Sidewalks in the Morena area need work also better crossings (Morena and Napa Intersections with Linda Vista Rd)
- Midblock crossing to access USD on Linda Vista Rd (there is a set of stairs that many students already jaywalk to, the access point are spread too far apart)
- Linda Vista Rd, bike facilities need improvement better striping or green lanes
- More sign that guide and educate people, not enough knowledge in the community about the Tecolote Nature Center

- Keep the Canyon clean and conserve the flora and fauna
- In the Morena area homeless are intimidating to pedestrians
- Jaywalking on Friars Rd near the YMCA

IV. NEXT STEPS

Following the first workshop, the project team will be hosting walk and bicycle audits. An interactive online survey will be available from late October through December, which will allow all members of the community to provide detailed feedback and input. Field investigations, data collection, data analysis, and mapping efforts will also be as the focus areas become finalized. The focus corridors will be determined based on the input received by the community, field investigations, and data collection efforts. Based on the priority areas and data, a draft LVCATS Master Plan will be developed and presented at the second workshop, scheduled for Spring 2015. The Master Plan will be presented to the community, with a goal to finalize the Master Plan by the end of 2015.

V. PROJECT WEBSITE

All materials from the workshop are available on the project website at:

http://www.sandiego.gov/planning/community/profiles/lindavista/cats.shtml

LINDA VISTA

Comprehensive Active Transportation Strategy

LINDA VISTA COMPREHENSIVE ACTIVE TRANSPORTATION STRATEGY
JUNE 21, 2016 WORKSHOP #2 SUMMARY REPORT

The second of two community workshops for the Linda Vista Comprehensive Active Transportation Strategy (LVCATS) project was held on Tuesday, June 21, 2016 from 6:00 to 8:00 p.m. at the Linda Vista Branch Library Community Room. Approximately 10 community members, City staff, and members of the Community Planning Group were in attendance.

I. WORKSHOP PURPOSE

The purpose of this workshop was to re-introduce the project, provide an overview of previous project work (including past community outreach and data analyses), review pedestrian and bicycle facility improvement recommendations and draft concepts for corridors and intersections. The community members in attendance were given an opportunity to provide feedback on local issues, concerns, and ideas regarding the draft concepts.

II. PRESENTATION

City of San Diego Project Manager Melissa Garcia welcomed and thanked the participants for their attendance and involvement. Ms. Garcia provided a few words to introduce the project and introduced the project team members. Jenna Tourje, project member from the City's consultant team (Michael Baker International) gave a presentation that included an overview of the project, a summary of previous community feedback, an informational review of the types of improvements suggested, and an overview of the 15 concepts for corridors and intersections in the community. Throughout the presentation, members of the community were encouraged to ask questions and provide feedback about the concepts.

Ms. Tourje reviewed the suggested facility improvements which included:

- Intersection Improvements
  - Neighborhood Traffic Circles
  - Protected Intersections
- Bicycle Facilities
  - Buffered Bike Lanes
  - Protected Bike Lanes

- Cycle Tracks
    - Sharrows
    - Bike Boxes
- Pedestrian Facilities
    - Crosswalks (Continental and Raised)
    - Bulb-outs/Curb Extensions
    - Pedestrian Refuges
    - HAWK Signals

She also provided an overview of the suggested concepts or improvement plans for those areas that previous data analyses and community feedback indicated were of highest need. She emphasized the locations at which each of the previously discusses facility improvements were located. The concepts and community feedback gathered at the meeting are further discussed below.

III. FEEDBACK EXERCISE

The community participants were asked to review the concepts in-depth in an open house style break-out session. The concepts were divided into four groups of "focus zones" that were placed at different tables. Community members were encouraged to work their way around the room reviewing each concept closely, asking questions of the Team, and adding Post-It notes to the concepts to indicate things that were missed or could be changed to make the design more effective. The feedback provided on each concept and specific facility upgrades are summarized below.

Corridor 1: Linda Vista Road

- Recommended Facility Improvements
    - ***Complete buffered bike lanes*** along Linda Vista Road

Corridor 2: Mesa College Dr

- Recommended Facility Improvements
    - ***Add buffered bike lanes*** west of Armstrong St and from Ashford to the SR-163 overpass
    - ***Widen sidewalk*** in front of Kearny High School

Corridor 3: Genesee Ave

- Recommended Facility Improvements
    - ***Add buffer*** to bike lane from Linda Vista Rd to Whitney Rd

Corridor 4: Ulric St

- Recommended Facility Improvements
    - ***Add lighting*** from Tait St to SR 163 Ramp
    - ***Add two-way cycle track with bike lanes*** from David St to Friars Rd
- Community Feedback
    - The merging area on Ulric St near Friars Rd is very dangerous and should be modified

Corridor 5: Via Las Cumbres

- Recommended Facility Improvements
    - ***Add sidewalk*** to east side of street from Linda Vista Rd to Friars Rd

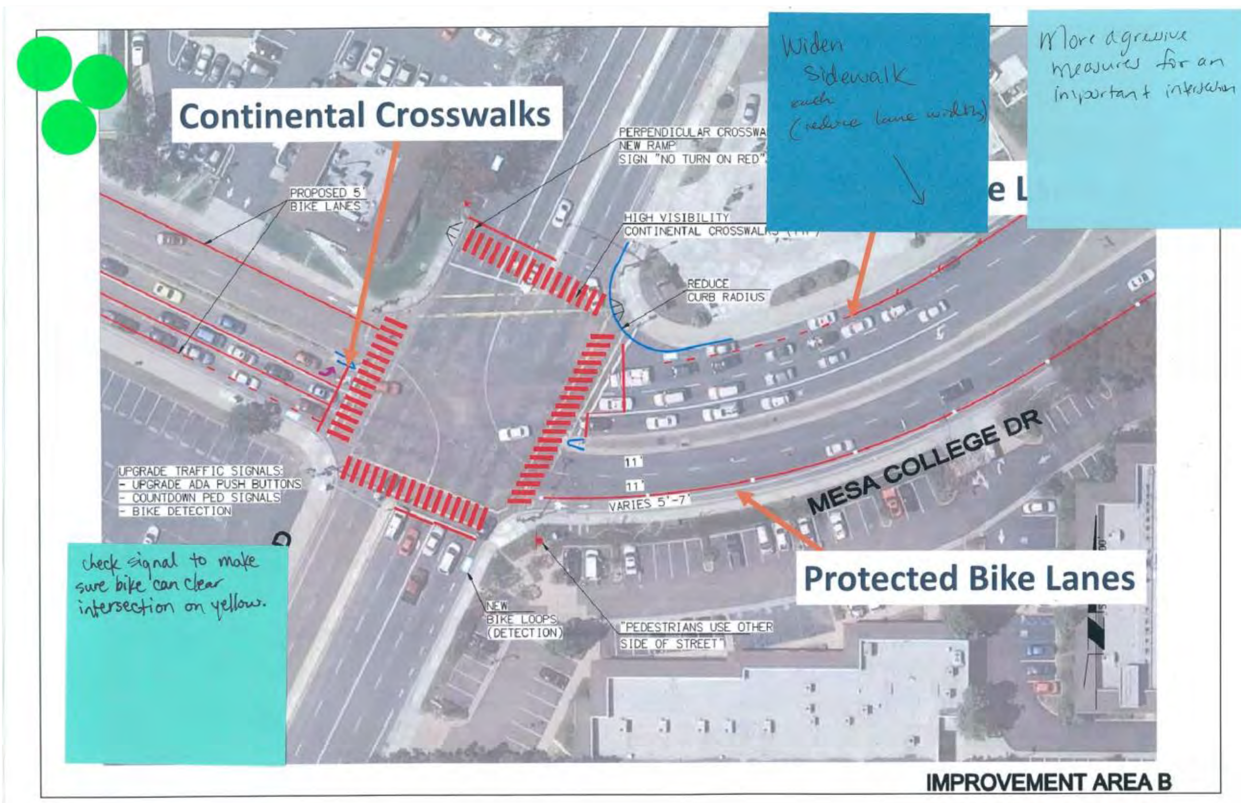
Improvement Area A: Mesa College Drive from Linda Vista Rd to SR-163 Ramp

- Recommended Facility Improvements
    - ***Add buffered bike lane*** on north side of Mesa College Dr to provide separation between bicyclists and vehicles

- *Provide green paint in the bike lane and a protected bike lane* (protected with a 1 foot buffer and delineators) on south side of Mesa College and around conflict zones for both SR-163 on-ramps to provide separation and visibility for bicyclists.

- Community Feedback
    - Provide a wider sidewalk on the north side of Mesa College Dr to make the street more pleasant to walk on
    - Convert free right turn at SR-163 on-ramp to 90 degree turn in accordance with Caltrans policy DD-64

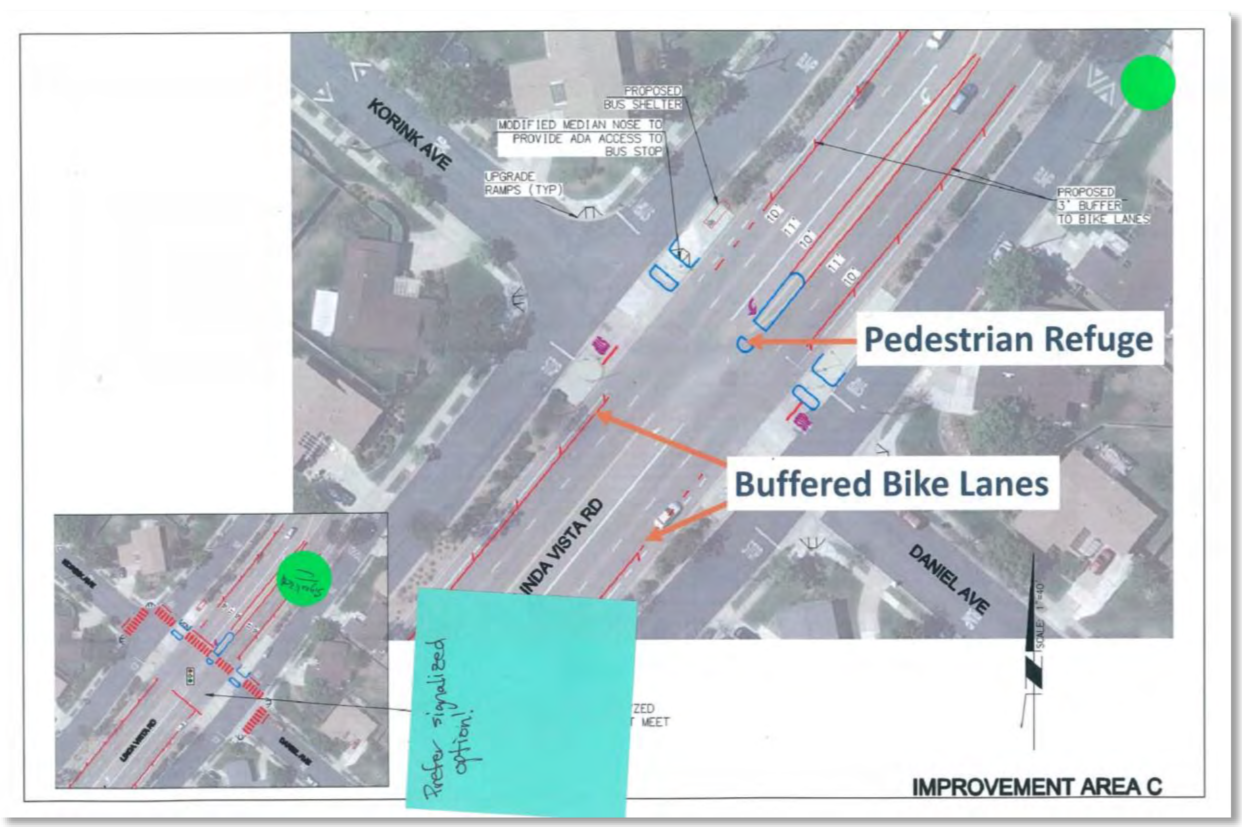
Improvement Area B: Linda Vista Road and Mesa College Drive Intersection



- Recommended Facility Improvements
    - ***Add continental crosswalks*** to all crosswalks provided at the intersection
    - ***Create a perpendicular crosswalk*** to the northern crosswalk on Linda Vista Rd
    - ***Continue buffered bike lanes and protected bike lanes*** from Improvement Area A to the intersection

-
    - ***Reduce curb radius*** to northeast corner of intersection in order to reduce right turn speeds and create a safer bicycling environment
- Community Feedback
    - Check traffic signal to ensure that bikes can clear the intersection before the light turns red
    - Widen sidewalks on Mesa College Dr east of the intersection and reduce lane width where necessary
    - Provide more aggressive measures for this important intersection

<u>Improvement Area C: Linda Vista Road and Korink Ave</u>

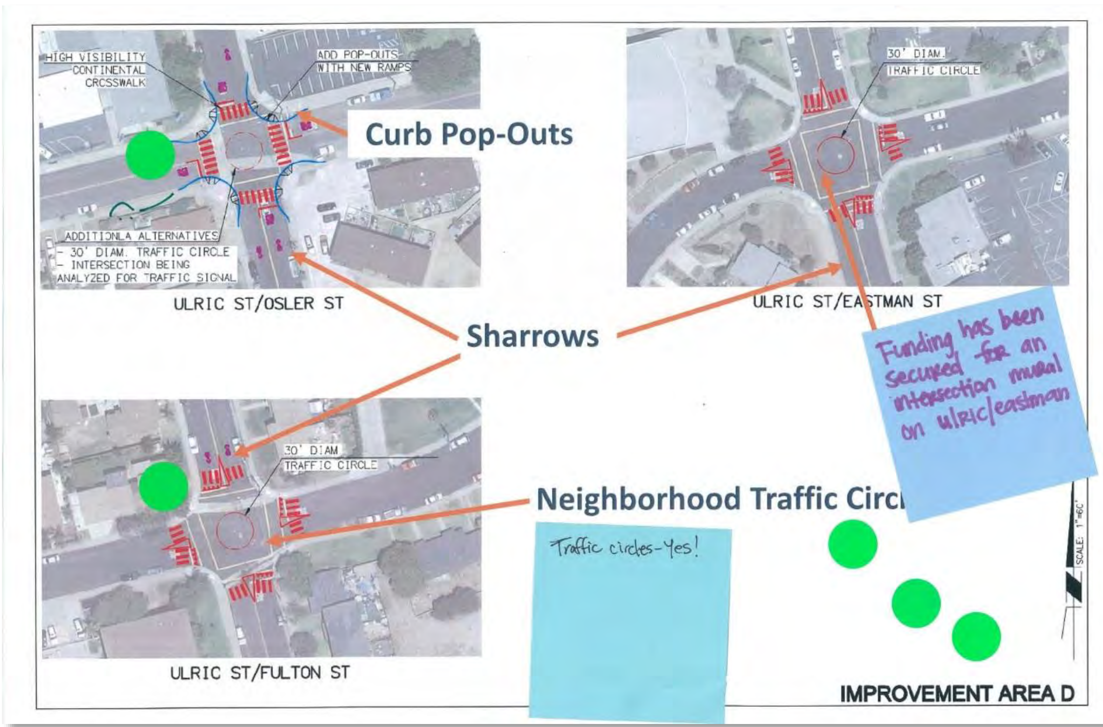


- Recommended Facility Improvements
    - ***Add a pedestrian refuge*** to provide pedestrians a safe place to wait for on-coming traffic to pass
    - ***Upgrade sidewalk ramps to be ADA compliant*** allowing handicapped pedestrian movement throughout the intersection and onto to bus landing
    - ***Add a bus shelter***

- Alternatively, ***provide a fully-signalized intersection with continental crosswalks*** if the City finds that the intersection meets the necessary warrants

- Community Feedback
  - One person indicated that they prefer the signalized intersection alternative.

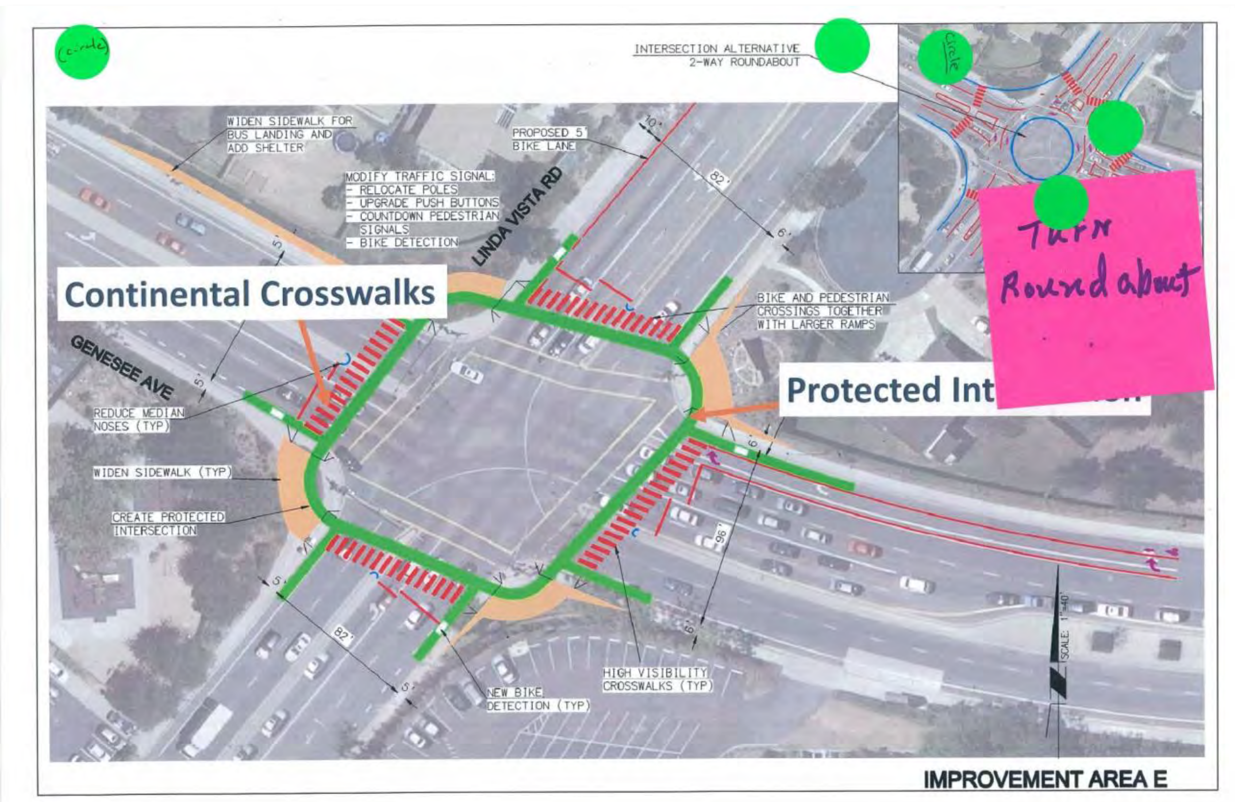
Improvement Area D: Ulric St



- Recommended Facility Improvements
  - ***Add neighborhood traffic circles*** at Ulric St/Eastman St intersection, and Ulric St/Fulton St intersection, and as a possible alternative at Ulric St/Osler St intersection to allow for unimpeded bicycle movements and a study flow of traffic while applying traffic calming measures
  - ***Add curb pop-outs and continental crosswalks*** at Ulric St/Osler St intersection to provide traffic calming by Linda Vista Elementary School and increased safety for students and pedestrians crossing the street.
  - ***Add Sharrows*** to the entirety of the Ulric St Corridor north of Linda Vista Rd to create a bicycle boulevard connecting two schools (Linda Vista Elementary and Montgomery Middle School) and the commercial district to the residential community

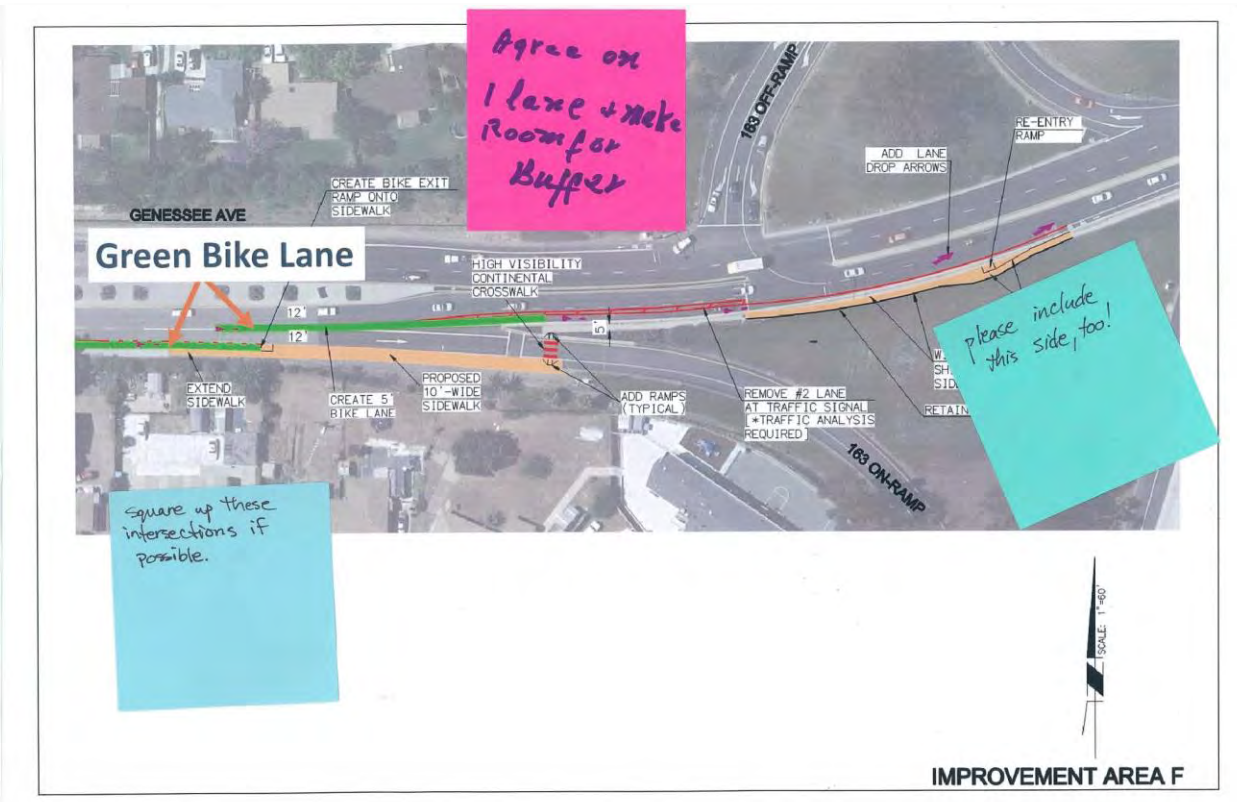
- Community Feedback
    - The workshop attendees were in support of traffic circles
    - It was shared that funding has been secured for an intersection mural (as a traffic calming measure) at the Ulric St/Eastman St intersection

Improvement Area E: Linda Vista Rd and Genesee Ave



- Recommended Facility Improvements
    - ***Add continental crosswalks*** to increase visibility of pedestrians
    - ***Add protected intersection*** which allows bicyclists to execute left-hand turns without having to merge with dense, high-speed traffic
    - ***Widen sidewalks*** to increase the landing for the bus bench on the northwest side of Genesee Ave and provide additional space for pedestrians to navigate the intersection
    - Alternatively, ***create a two-lane roundabout***
- Community Feedback
    - The workshop attendees were in support of the two-lane roundabout

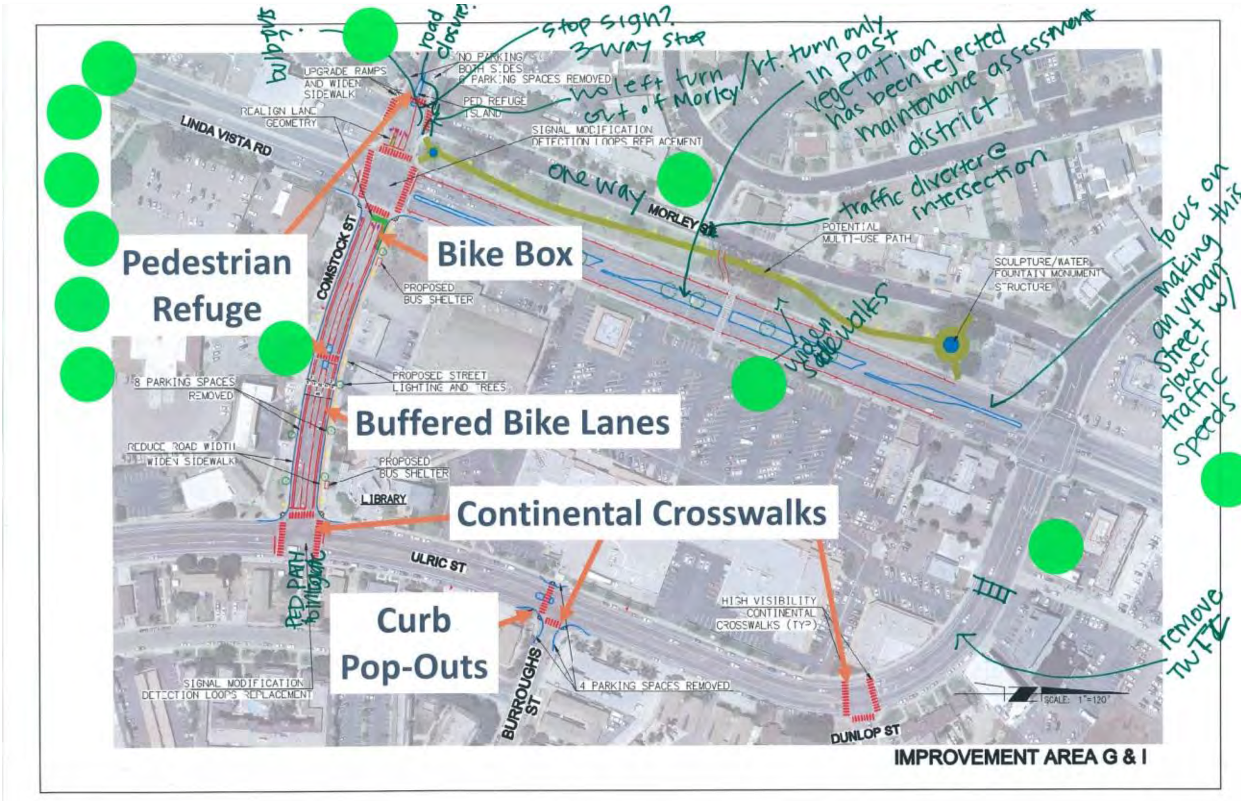
Improvement Area F: Genesee Avenue at SR-163 On-Ramp



- Recommended Facility Improvements
  - ***Add and widen sidewalk*** on the south side of Genesee Ave to provide a safe facility for pedestrians and enough room for bikes to utilize the sidewalk if needed
  - ***Add green paint on bike lane*** around the on-ramp conflict zone to provide additional visibility for bicycle traffic
  - ***Add continental crosswalk and add ADA ramps*** for crosswalk across on-ramp lanes
  - ***Remove one lane of vehicular traffic and add a buffered bike lane***
  - ***Add bike ramps*** to allow bicycle traffic to merge onto sidewalk in order to safely and comfortably cross the on-ramp lanes
- Community Feedback
  - Change alignment of on-ramps to 90 degrees and make square
  - Include bicycle improvements on the north side of Genesee
  - Continue lane diet past on-ramp intersection and make room for bicycle lane buffer

LINDA VISTA
Comprehensive Active Transportation Strategy

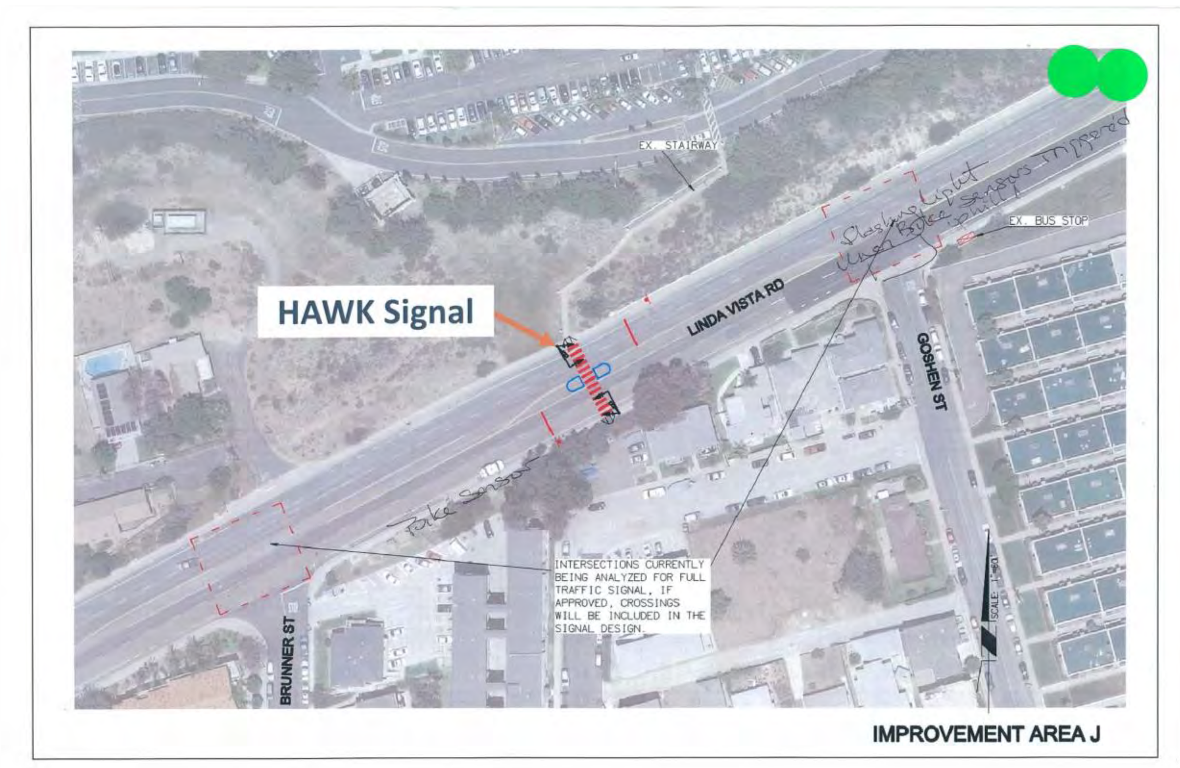
Improvement Area G & I: Linda Vista Shopping Center



- Recommended Facility Improvements
  - On Comstock Street
    - Create a "Main Street" between Ulric St and Linda Vista Rd by ***adding buffered bike lanes, reducing the road width to widen the sidewalk, adding bus shelters, street lighting and landscaping, and adding a mid-block crosswalk with pedestrian refuge.***
    - ***Add a bike box*** to facilitate left-hand turns from Comstock St onto Linda Vista Rd
    - ***Add continental crossings*** where needed
    - ***Realign lane geometry***
    - ***Add a pedestrian refuge*** at Comstock St/Morley St intersection
  - On Ulric St
    - ***Add curb pop-outs, continental crosswalks, and a pedestrian refuge*** at Ulric St/Burroughs St intersection
    - ***Add continental crosswalks*** at Ulric St/Dunlop St intersection
  - On Linda Vista Rd

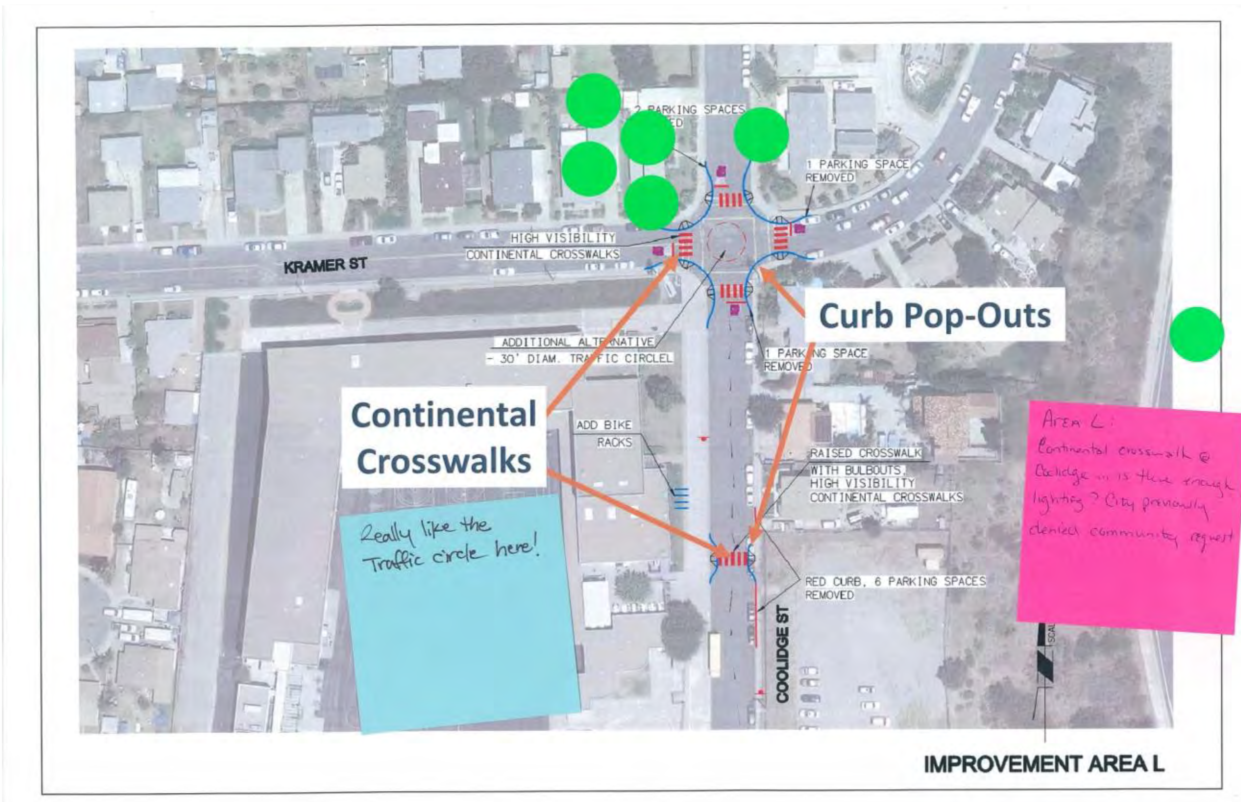
        - ***Add landscaped center median*** from Ulric St to Comstock St to limit free left-hand turns and provide traffic calming
        - ***Add buffer to preexisting bike lane*** on both sides of street
        - ***Add multi-use path*** through linear park between Linda Vista Rd and Morley St to activate space and provide alternative space for walking and biking
- Community Feedback
    - Large issue with cut-through traffic on Morley St and potential conflicts with pedestrians at Morley St/Comstock St intersection
        - Is it possible to close the road, create bulb-outs, make intersection a 3-way stop, limit left-hand turns out of Morley St, place a diverter to force traffic towards school half-way down Morley St, or make Morley St a one-way to only allow north-bound traffic?
    - Widen sidewalks on both sides of Linda Vista Rd
    - In the past, the request for the addition of vegetation to a center median on Linda Vista Rd by the Maintenance Assessment District (MAD) had been rejected
    - Focus on making Linda Vista Rd an urban street with lower traffic speeds
    - Add mid-block crossing on Ulric St half-way between Dunlop St and Linda Vista Rd; there has been one fatality at this location and in an hour a community member counted 43 people jay-walking
    - Remove two-way left-turn lane on Ulric St between Dunlop St and Linda Vista Rd
    - Integrate pedestrian path that connects the residential community to the Ulric St/Comstock St intersection into design

Improvement Area J: Linda Vista Rd at USD Stairwell



- Recommended Facility Improvements
  - ***Add a continental crosswalk with pedestrian refuge and HAWK signal*** mid-way on the block between Goshen St and Brunner St
- Community Feedback
  - Add bike sensors or green paint to roadway to alert drivers to bicycles in the area

Improvement Area L: Kramer St and Coolidge St



- Recommended Facility Improvements
    - ***Add curb pop-outs and continental crosswalks*** at Kramer St/Coolidge St intersection to improve student and pedestrian safety while crossing
    - Alternatively, ***add a traffic circle*** at Kramer St/Coolidge St intersection
    - ***Add a raised continental crosswalk and curb pop-outs*** south of Kramer St on Coolidge St to provide safe crossing from parking area on the east side of Coolidge St and increased visibility of pedestrians
- Community Feedback
    - Really liked the traffic circle in this area
    - Is there enough lighting in proximity to the raised crosswalk? The City previously denied community request

Prioritization Exercise

The attendees were each given five green dots to place on the concepts that they preferred. A summary of where the dots were placed is below.

Projects as Prioritized by Community Members Present at Workshop #2	
1	Improvement Area G & I: *Linda Vista Shopping Center* (12 dots)
2	Improvement Area L: *Kramer St and Coolidge St* (7 dots)
3	Improvement Area D: *Ulric St* (6 dots)
4	Improvement Area E: *Genesee Ave and Linda Vista Rd* (5 dots – most preferred the roundabout)
5	Improvement Area B: *Linda Vista Rd and Mesa College Dr* (3 dots)
6	Improvement Area J: *Linda Vista Rd at USD Stairwell* (3 dots)
7	Improvement Area C: *Korink Ave and Linda Vista Rd* (2 dots)
8	Improvement Area A: *Mesa College Dr at SR-163 On-Ramps* (1 dot)
9	Improvement Area F: *Genesee Ave at SR-163 On-Ramps* (0 dots)

IV. NEXT STEPS

Following the second workshop, the project team will finalize the concepts by incorporating community and additional City feedback. The team will begin to finalize the draft LV CATS Master Plan, which will include a detailed summary of the project, associated analyses, and finalized concepts. The Master Plan is expected to be complete by the end of September 2016.

V. PROJECT WEBSITE

All materials from the workshop are available on the project website at:

http://www.sandiego.gov/planning/community/profiles/lindavista/cats.shtml

VI. INCORPORATION OF PUBLIC FEEDBACK INTO CONCEPTS

The table below explains how the public feedback received at Workshop #2 was incorporated into the final plans.

Improvement Area/Concept	***Public Feedback***	***Incorporation***
Corridor 4 *Ulric St*	The merging area on Ulric St near Friars Rd is very dangerous and should be modified	The current project which is set to begin construction in August 2016 will be modifying the Ulric St corridor and may address this merging issue.

Improvement Area A *Mesa College Drive from Linda Vista Rd to SR-163 Ramp*	Provide a wider sidewalk on the north side of Mesa College Dr to make the street more pleasant to walk on	The sidewalk is quite wide on the north side of Mesa College Dr, where it is not wider than 5 feet it is in good condition. The comment was considered and best practices determined that a wider sidewalk and initial landscaping should not be added.
	Convert free right turn at SR-163 on-ramp to 90 degree turn in accordance with Caltrans policy DD-64	This comment was considered and an alternative concept that includes a realignment of the on-ramps was added as an alternative design.
Improvement Area B *Linda Vista Rd and Mesa College Dr*	Check traffic signal to ensure that bikes can clear the intersection before the light turns red	All traffic signals will be evaluated for timing during final engineering.
	Widen sidewalks on Mesa College Dr east of the intersection and reduce lane width where necessary	The sidewalk is quite wide on the north side of Mesa College Dr, where it is not wider than 5 feet it is in good condition. The comment was considered and best practices determined that a wider sidewalk and initial landscaping should not be added.
	Provide more aggressive measures for this important intersection	A design for a protected intersection has been added as an alternative for this intersection.
Improvement Area C *Linda Vista Rd and Korink Ave*	One person indicated that they prefer the signalized intersection alternative.	The signalized alternative for this intersection will be further developed if the City determines that it meets the warrants for a signal to be installed.
Improvement Area D *Ulric St*	The workshop attendees were in support of traffic circles	Neighborhood traffic circles will continue to be recommended for these intersections.

Improvement Area D Ulric St (cont.)	It was shared that funding has been secured for an intersection mural (as a traffic-calming measure) at the Ulric St/Eastman St intersection	Thank you for the comment. Coordination between installation of the mural and the neighborhood traffic circle will be included in the plan
Improvement Area E Linda Vista Rd and Genesee Ave	The workshop attendees were in support of the two-lane roundabout	The proposed design of a two-lane roundabout is included as an improvement area alternative.
Improvement Area F Genesee Ave at SR-163 On-Ramp	Change alignment of on-ramps to 90 degrees and make square	This comment was considered and an alternative concept that includes a realignment of the on-ramps was added as a long-term design.
	Include bicycle improvements on the north side of Genesee	Due to space constraints and the limits of the Linda Vista community planning area, bicycle improvements on the north side of Genesee could not be included at this time.
	Continue lane diet past on-ramp intersection and make room for bicycle lane buffer	Due to Caltrans constraints, two lanes must remain in order to accommodate the two off-ramp turn lanes.

Improvement Area G & I *Linda Vista Shopping Center*	Large issue with cut-through traffic on Morley St and potential conflicts with pedestrians at Morley St/Comstock St intersection • Is it possible to close the road, create bulb-outs, make intersection a 3-way stop, limit left-hand turns out of Morley St, place a diverter to force traffic towards school half-way down Morley St, or make Morley St a one-way to only allow north-bound traffic?	Speed humps to control speed have been recommended along Morley St. A diverter on the south end of Morley St at Comstock St has been recommended as an alternative.
	Widen sidewalks on both sides of Linda Vista Rd	A recommendation to widen sidewalks on both side of Linda Vista Rd between Comstock St and Ulric St has been added to this concept.
	In the past, the request for the addition of vegetation to a center median on Linda Vista Rd by the Maintenance Assessment District (MAD) had been rejected	This comment has been noted. The project team believes that landscaping in the center median of Linda Vista Road will add to the aesthetics of the area and will act as mild traffic calming. This landscaping will remain in the concept as a recommendation.

Improvement Area G & I Linda Vista Shopping Center (cont.)	Focus on making Linda Vista Rd an urban street with lower traffic speeds	This comment has been noted. The project team recognizes the community's desire to turn this road into a more urban street with slower speeds. The team believes that the addition of a landscaped median, as well as, bicycle lane buffer and widened sidewalks and any resulting lane width reductions will serve to lower traffic speeds.
	Add mid-block crossing on Ulric St half-way between Dunlop St and Linda Vista Rd; there has been one fatality at this location and in an hour a community member counted 43 people jay-walking	This mid-block crossing did not meet the requirements of the City of San Diego's Crosswalk Policy and will not be included with the proposed improvements.
	Remove two-way left-turn lane on Ulric St between Dunlop St and Linda Vista Rd	This comment was considered and as a result of a review of best practices the existing two-way left turn lane will remain.
	Integrate pedestrian path that connects the residential community to the Ulric St/Comstock St intersection into design	A curb pop-out has been recommended that will run the length of eastern side of the intersection at Comstock St and Ulric St. This curb pop-out is intended to provide a larger landing for access to the pedestrian path.
Improvement Area J Linda Vista Rd at USD Stairwell	Add bike sensors or green paint to roadway to alert drivers to bicycles in the area	This comment has been considered. This will be addressed by the City at time of final engineering.
Improvement Area L Kramer St and Coolidge St	Really liked the traffic circle in this area	This neighborhood traffic circle will remain in the concept as an alternative and will be further considered if the intersection meets the necessary warrants.

Improvement Area L Kramer St and Coolidge St (cont.)	Is there enough lighting in proximity to the raised crosswalk? The City previously denied community request	A recommended street light on the east side of Coolidge St to light the raised crosswalk will be added to the concept.
Miscellaneous Comments	Rough crossing at Ulric St/Tait St intersection; needs to be repaved; the pedestrian activation buttons should be moved	The City will look into the roughness of the road and move the pedestrian activation buttons if needed.

APPENDIX E

Public Outreach: "Walk and Roll" Audit

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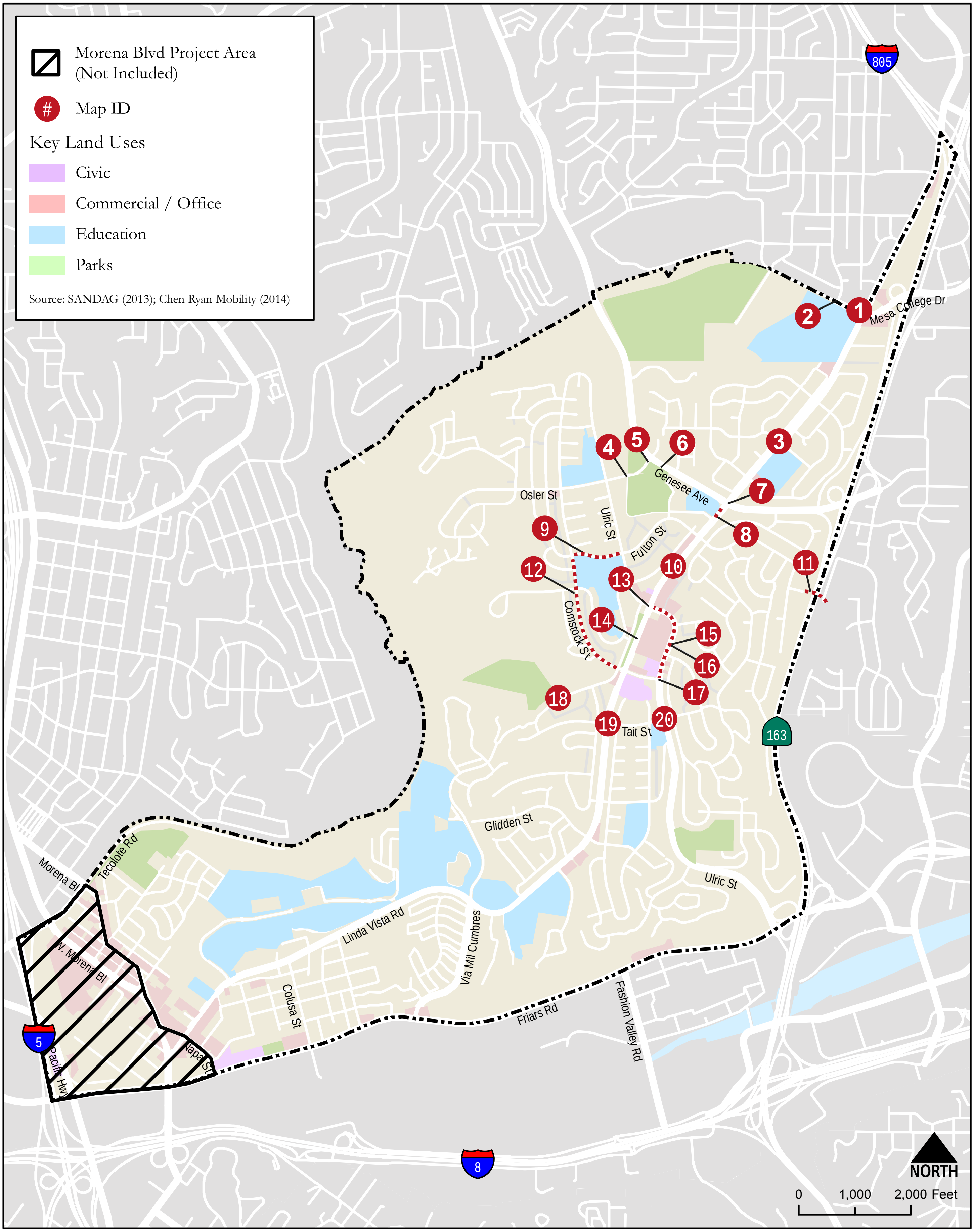


Linda Vista CATS

Pedestrian Field Review

CHEN RYAN

Table E-1: Pedestrian Field Review

Map ID	Description	Image
1	**Linda Vista Road and Mesa College Road** • High pedestrian activity intersection • Observed crossing phase short for crossing time (east-west on north leg)	
2	**Ashford Street and Mesa College Drive** • Median is an ADA-obstruction in the north-south crosswalk	
3	**Linda Vista Road and Wheatley Street** • High pedestrian activity intersection • Non-ADA curb ramps (all corners) • "Cars speed and blow through the light [when red]." – Chesterton Elementary School crossing guard • Observed vehicle speeds appear to exceed posted speed (35 mph, 25 mph when children are present)	
4	**Osler Street (west side of Linda Vista Community Park)** • Non-ADA curb ramp on south side of Osler Street entering the park • Sidewalk section on south side of Osler Street at bus stop is asphalt	

Table E-1 cont.: Pedestrian Field Review

Map ID	Description	Image
5	**Osler Street and Genesee Avenue** • Non-ADA curb ramps (all corners) • No sidewalk on Genesee Avenue, west of Osler Street (south side)	
6	**Genesee Avenue between Osler Street and Linda Vista Road** • Landscaping on south side of Genesee Avenue extends over sidewalk, reducing effective sidewalk width	
7	**Linda Vista Road and Genesee Avenue** • Non-ADA curb ramps (all corners) • Sidewalk obstructions: south leg heading northbound (pictured) and northeast corner of intersection	
8	**Linda Vista Road (from Genesee Avenue to Levant Street)** • Multiple damaged/hazardous sidewalk sections on west side of Linda Vista Road	

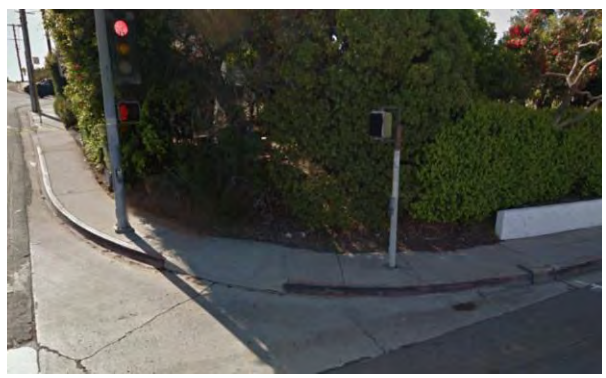
Table E-1 cont.: Pedestrian Field Review

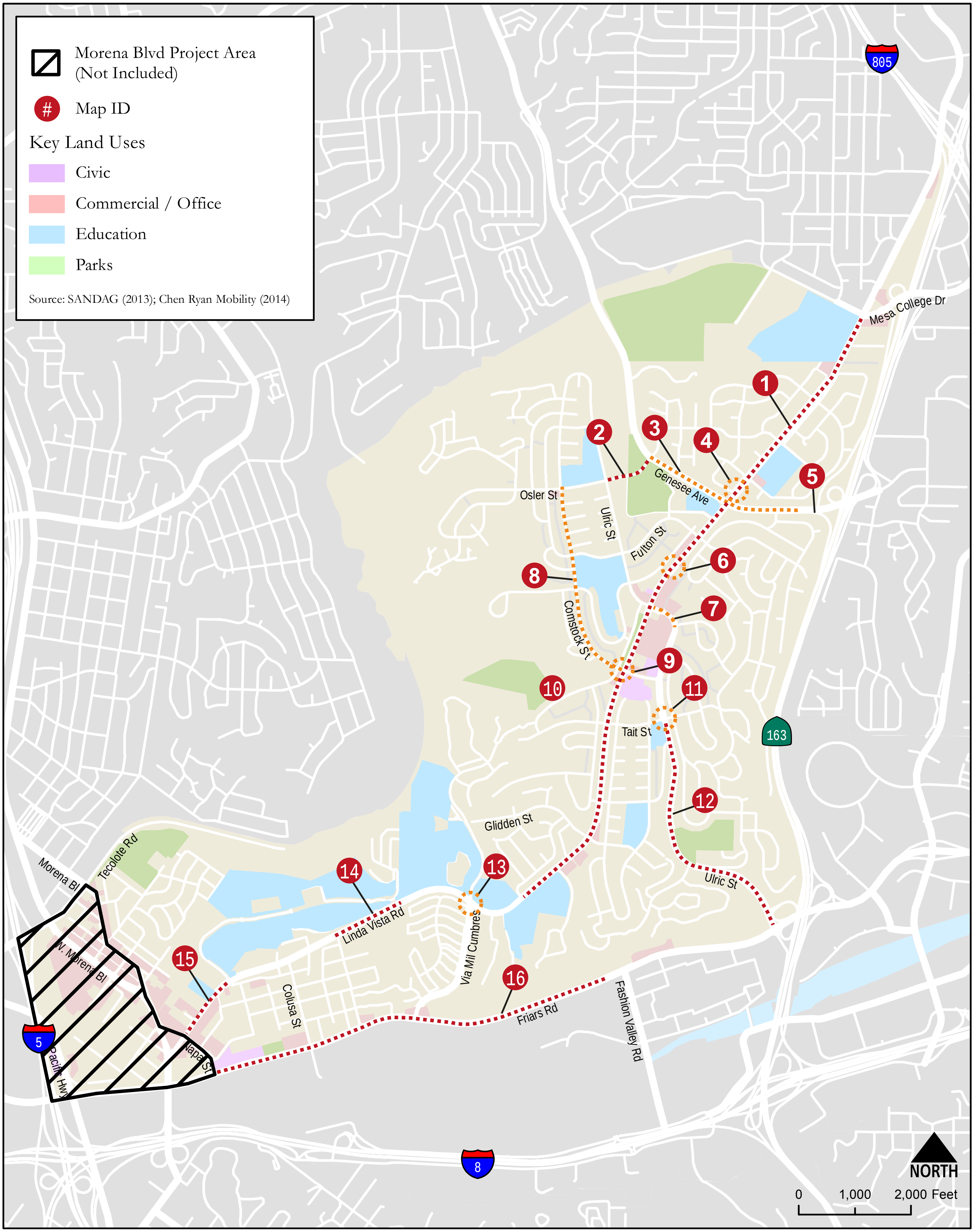
Map ID	Description	Image
9	**Fulton Street (from Comstock Street to Ulric Street)** • "Few working street lights" (resident)	
10	**Mid-Block Crossing on Linda Vista Road between Ulric Street and Fulton Street** • Long wait for pedestrian signal may increase the volume of prohibited crossings	
11	**Pedestrian Bridge over SR-163 at Fulton Street eastern terminus** • Pedestrian bridge provides only crossing additional to Mesa College Road over SR-163, however, bridge is at the end of a street indicating "NO OUTLET" with no signs for additional pedestrian connections • Bridge might see more use if wayfinding signage is provided	
12	**Comstock Street (from Morley Street to Fulton Street)** • "Few working street lights" (resident)	

Table E-1 cont.: Pedestrian Field Review

Map ID	Description	Image
13	**Linda Vista Road and Ulric Street** • High pedestrian activity intersection • Poorly marked crosswalks • Observed crossing phase short for crossing time (east-west on north leg)	
14	**Linda Vista Road Mid-Block Crossing (btwn Comstock Street and Ulric Street)** • When the bus is at northbound bus stop it blocks pedestrian vision of the pedestrian signal head (shown)	
15	**Ulric Street (from Linda Vista Road to Comstock Street)** • High pedestrian activity corridor • Many different groups of pedestrians observed not using designated crossings • Existing roadway width potentially has room for continuous refuge	
16	**Ulric Street (from Linda Vista Road to Comstock Street)** • West side of Ulric Street sidewalk is in very bad shape: damaged, obstructions, temporary asphalt patches on concrete • “Open utilities and hoses have been ignored for years” (resident)	

Table E-1 cont.: Pedestrian Field Review

Map ID	Description	Image
17	**Ulric Street and Comstock Street** • Non-ADA ramps (all corners) • Poor crosswalk condition • Poor road condition	
18	**Kelley Street by Kelley Street Park** • Non-ADA curb ramp on north side of Kelley Street, leading to Kelley Street Neighborhood Park • Damaged, cracked sidewalk and temporary asphalt patches on Kelley Street just east of the Park	
19	**Linda Vista Road and Tait Street** • Unmarked sidewalks • Non-ADA curb ramps (all corners) • Sidewalk obstructions (all corners)	
20	**Ulric Street and Tait Street** • Non-ADA curb ramps (all corners) • Sidewalk obstructions (all corners) • Poor crosswalk condition • Poor road condition	



Linda Vista CATS

Bicycle Field Review

CHEN RYAN

Table E-2: Bicycle Field Review

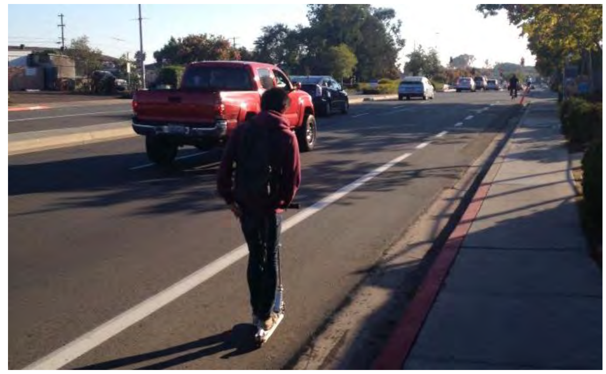
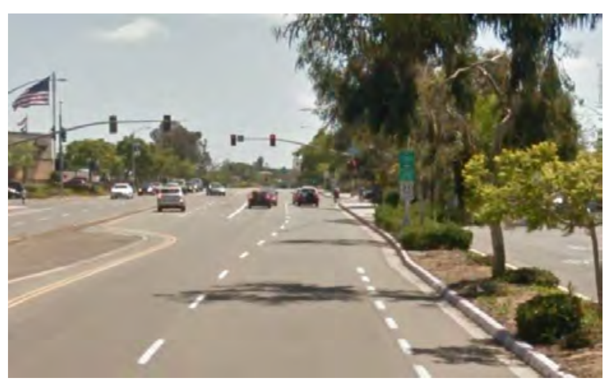
Map ID	Description	Image
1	**Linda Vista Road from Mesa College Drive to Alcala Knolls Drive** • Bike lane is adjacent to fast moving traffic (observed speeds seem higher than posted) • Increased separation (buffer or physical barrier) would improve cycling environment	
2	**Osler Street from Ulric Street to Genesee Avenue** • Parked cars, horizontal and vertical curves reduce cyclist visibility in eastbound direction • Additionally, observed speeding cars combined with slower, uphill climb create uncomfortable cycling environment	
3	**Genesee Avenue from Osler Street to West of SR-163 Southbound On-Ramp** • Effective width of bike lane is very narrow (approximately 3.5 feet) due to the gutter pan • Cyclists would benefit from increased separation due to high speed vehicles	
4	**Linda Vista Road between Korink Avenue / Daniel Avenue and Genesee Avenue** • Bike lane drops in southbound direction approximately 300 feet before Genesee Avenue intersection	

Table E-2 cont.: Bicycle Field Review

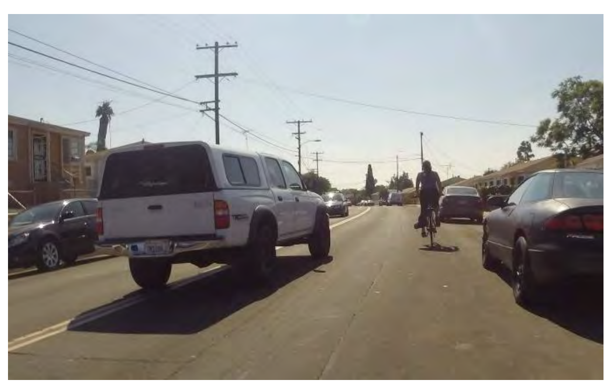
Map ID	Description	Image
5	**Genesee Avenue and SR-163 Southbound On-Ramp** • Eastbound bike lane ends abruptly at SR-163 southbound on-ramp	
6	**Mid-Block Crossing on Linda Vista Road between Ulric Street and Fulton Street** • Long wait for mid-block signal may increase the volume of prohibited bicycle and pedestrian crossings	
7	**Ulric Street between Linda Vista Road and Dunlop Street** • Bike lane paint is very faded throughout this segment • Bike lane drops in northbound direction approximately 200 feet before Linda Vista Road intersection • Horizontal curve reduces driver's visibility of cyclists	
8	**Comstock Street from Osler Street to Linda Vista Road** • High-speed residential roadway with parking on both sides. Very limited space for cyclists • Cyclists must ride within full travel lane • Traffic calming would benefit cyclist and pedestrian safety	

Table E-2 cont.: Bicycle Field Review

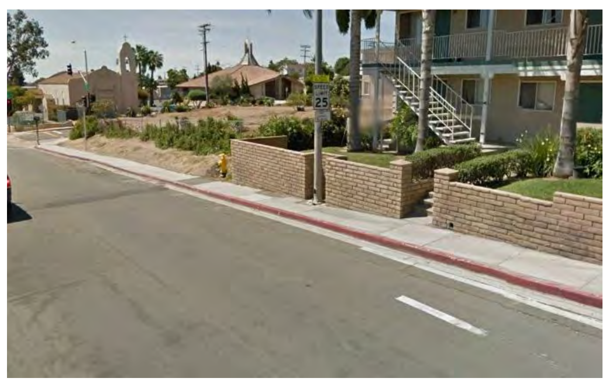
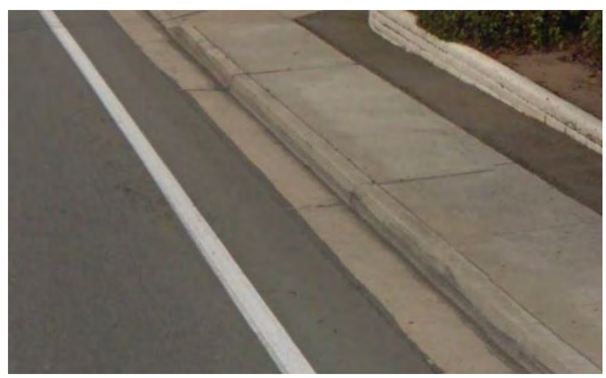
Map ID	Description	Image
9	**Linda Vista Road and Comstock Street** • Closely spaced intersections and vertical/horizontal curves impede driver's visibility of cyclists	
10	**Kelley Street by Kelley Street Park** • No bike parking at park	
11	**Ulric Street and Tait Street** • Bike lane on Ulric Street drops in southbound direction approximately 180 feet before the intersection • Bike lane on Ulric Street in northbound direction does not begin until approximately 110 feet after the intersection	
12	**Ulric Street from Tait Street to southern community boundary** • Effective width of bike lane is very narrow (approximately 3.5 feet) due to the gutter pan • Narrow bike lane heading uphill (northbound direction) is dangerous for cyclists • Cyclists would benefit from increased separation due to high speed vehicles	

Table E-2 cont.: Bicycle Field Review

Map ID	Description	Image
13	**Linda Vista Road at Via Las Cumbres** • Vertical and horizontal curves combined with width of roadway and high vehicle speeds make this intersection and approach segments dangerous for cyclists • Increased warning signage, traffic calming measures, and separation for cyclists would be beneficial	
14	**Linda Vista Road from Goshen Street to Edward Tyler Cramer Park** • Buffered bike lane is present in downhill (southbound) direction, and bike lane without buffer in uphill (northbound) direction • Buffer is more necessary in uphill direction where cyclists' speed is much slower	
15	**Linda Vista Road from Mildred Street to Napa Street** • Fast moving traffic with little separation from bike lane creates an uncomfortable cycling environment • Effective width of bike lane is very narrow (approximately 3 – 3.5 feet) due to the gutter pan	
16	**Cycle Track on Friars Road from Napa Street to Fashion Valley Road** • Cycle track needs regularly scheduled maintenance to clear vegetative debris and overhanging branches • Surface asphalt cracked intermittently, creating potentially hazardous riding conditions	

APPENDIX F

Public Outreach: Interactive Online Survey

LINDA VISTA

Comprehensive Active Transportation Strategy

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Linda Vista Comprehensive Active Transportation Strategy
Online Survey Summary Report

I. Introduction

To supplement the public outreach efforts, an interactive online survey was developed in support of the Linda Vista Comprehensive Active Transportation Strategy (LVCATS) project. The survey was developed by MetroQuest, an online community engagement platform for projects utilizing software that enables the public to learn about the project and provide meaningful feedback. The online survey provided an accessible outlet to collect information from the community regarding walking and bicycling concerns. The platform is particularly helpful in reaching a broader audience, including those unable to attend the in-person workshops.

The online survey was available to the public for three months, from October 24, 2014 to January 24, 2015 via a publicly available website URL: www.lvcats.metroquest.com. The survey included a general introduction to explain the project and survey intent, user priority rankings, brief polls on walking and biking habits, interactive maps to identify barriers and recommended improvements for walking and biking in the community, and a general comment screen.

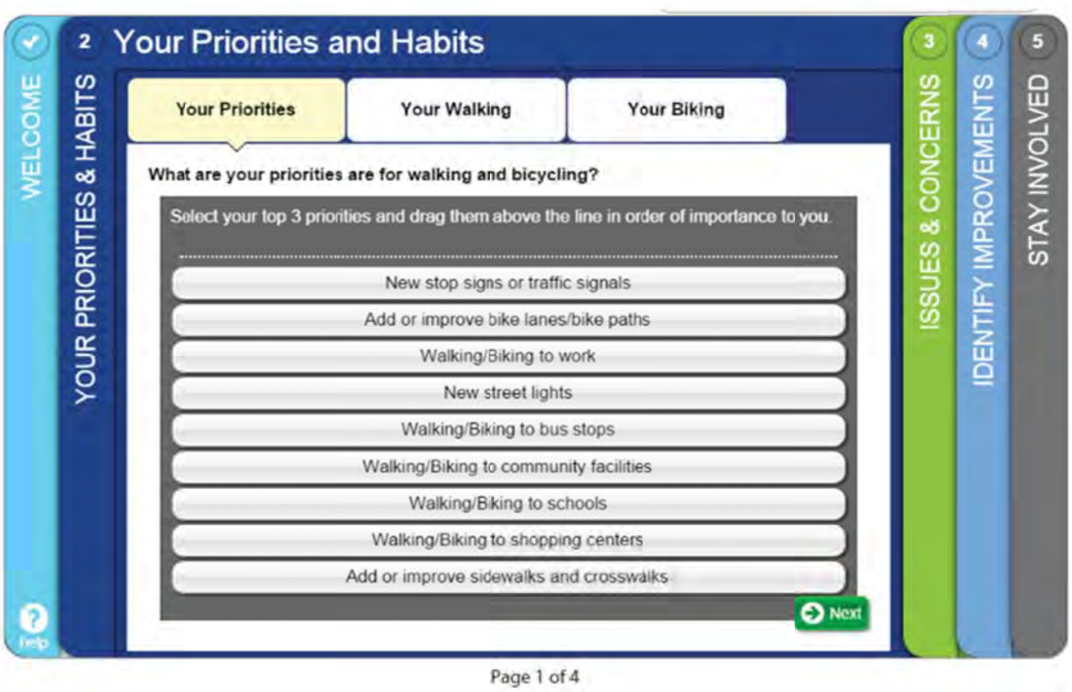
Members of the community were informed and invited to take the survey through a variety of outreach methods, including links posted on the City's project website, posts on social media, and presentations to stakeholder groups, including the Linda Vista Community Planning Group, the Linda Vista Town Council, local schools, and select community groups from the Bayside Community Center. Representatives from each of the key project stakeholder groups were communicated with via email to disperse the information to their respective organizations, members, and websites including:

a) San Diego County Bicycle Coalition
b) Circulate San Diego
c) County of San Diego Health and Human Services
d) Morena Business Association
e) Bike San Diego
f) SANDAG
g) Linda Vista Town Council
h) University of California, San Diego (UCSD)
i) University of San Diego (USD)
j) Boys and Girls Club
k) Councilmember Scott Sherman's office
l) Linda Vista Community Planning Group
m) Local Schools
n) Bayside Community Center

Printed information about the survey was posted at the Linda Vista library, local establishments, and within the Clairemont Times and USD Newsletters. In addition, hard copies of the survey were distributed to local schools in English and Spanish. A consultant team member who is fluent in Vietnamese dispersed the survey to local Vietnamese church groups and manually entered their responses.

II. Survey Content

The survey contained a series of five screens providing general information on the project while allowing the user to provide feedback on specific locations of barriers and needed improvements. The survey asked participants to identify priorities, mobility habits, and barriers to active transportation or opportunities for improvement. Images of the online survey are provided below.



WELCOME
2 YOUR PRIORITIES & HABITS
Your Priorities and Habits

Your Priorities | Your Walking | Your Biking

Tell us about your walking habits.

Why do you walk? Check all that apply.

- Walk my dog
- Going to bus stop
- Walk to work
- Walk with kids to school/park/other
- Exercise
- Going to a specific place (store, post office, etc.)
- Enjoy the outdoors
- I do not walk
- Other (please specify below)

Other...

How often do you walk instead of other modes (driving, bicycling, or bus)?

Daily | A few times a week | A few times a month | Rarely | Never | Not sure/ do not know

How long are you willing to walk?

Less than 10 minutes | 10-19 minutes | 20-29 minutes | 30 minutes or more

Next

3 ISSUES & CONCERNS
4 IDENTIFY IMPROVEMENTS
5 STAY INVOLVED

help

WELCOME
2 YOUR PRIORITIES & HABITS
Your Priorities and Habits

Your Priorities | Your Walking | Your Biking

What kind of biker are you? Click the option that describes you best.

Bold and confident – I will ride my bike regardless of roadway conditions- I can bike anywhere!

Comfortable and enthusiastic – I am comfortable biking on the street but prefer designated bike lanes or paths.

Interested but concerned for safety- I enjoy biking on trails or paths, but am afraid to ride on the streets.

No way, no how - I do not bike and/or I am not interested in biking.

Next

3 ISSUES & CONCERNS
4 IDENTIFY IMPROVEMENTS
5 STAY INVOLVED

help

Page 2 of 4

LINDA VISTA
Comprehensive Active Transportation Strategy

Bike Barriers

BIKE CONCERNS

No bike lane/path
Bike lane ends
Bike lane is too close to cars
Cars drive too fast
Cars don't see or stop for bikes
Other (add comment)

Pedestrian Barrier

PEDESTRIAN CONCERNS

No sidewalk
Narrow sidewalk
No crosswalk
Crossing time is too short
Crosswalks are too far apart
Cars feel too close
Other (add comment)

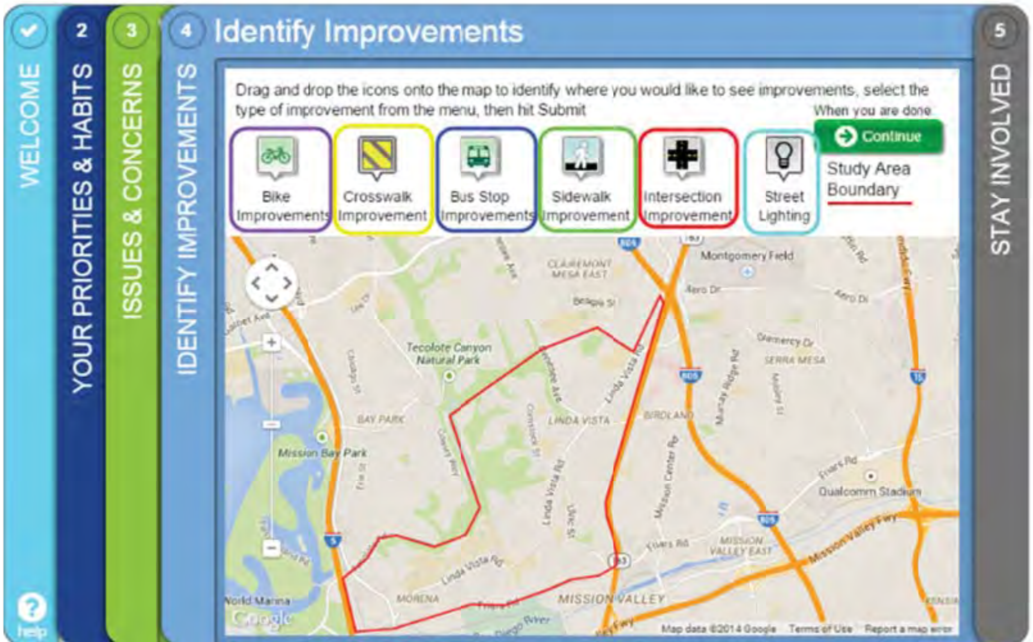
Transit Barrier

TRANSIT CONCERNS

No bus shelter
No bus stop
No lights
Bus stops are too far apart
Buses don't come frequently
Other (add comment)

Please list location (Street or intersection), type of barrier (from lists above), and descibe the issue:

Page 3 of 4



Bike Improvements
Add bike lane
Widen bike lane
Provide buffer from cars
Paint the bike lane green
Other (please comment)

Crosswalk Improvements
Add new crosswalk
Increase crossing time
Provide curb ramp
Install median
Other (please comment)

Intersection Improvements
New traffic signal
New stop sign
New crosswalk
Improve crosswalk
Extend crossing time
Install center median
Other (please comment)

Sidewalk Improvements
Add sidewalk
Widen sidewalk
Add curb ramps
Provide more shade
Add buffer between cars
Other (please comment)

Bus Stop Improvements
New bus stop
New bus shelter/shade
Other (please comment)

Street Lighting
Provide street lights
Other (please comment)

Please list location (Street or intersection) and recommended improvement:

Page 4 of 4

III. Survey Results

The survey site had approximately 200 visitors, with 90 participants providing feedback by answering at least one question. Through the interactive map portion of the survey, over 330 spatial comments were provided and saved to the database. The following sections summarize the survey results from screens 2 through 4. Screens 1 and 5 consisted of project-related information and did not include survey questions.

Screen 2: Your Priorities and Habits

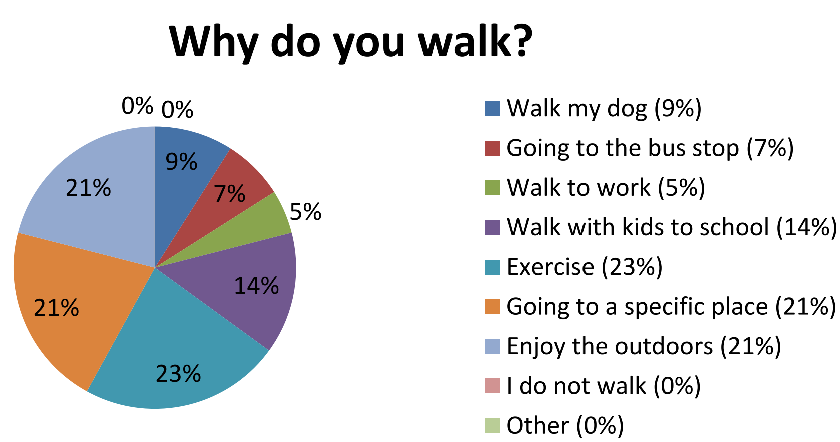
(Screen 2 Question 1) What are your priorities for walking and bicycling*? Select your top 3 priorities and drag them above the line in order of importance to you. Results are summarized in Table 1 below.*

Table 1: Survey Results for Walking and Biking Priorities

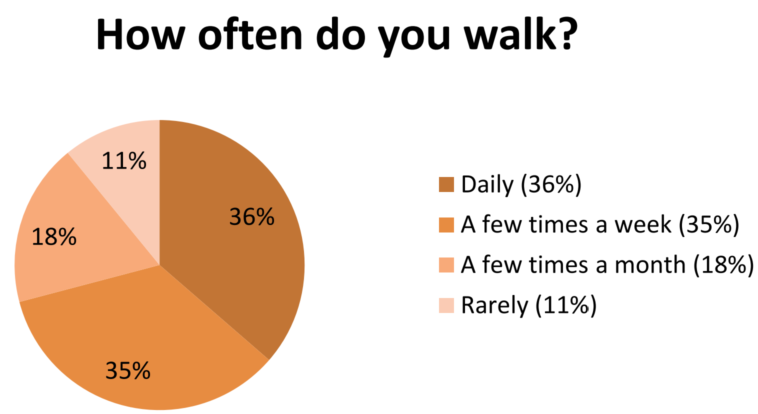
Overall Rank	Average Ranked Position	Time Ranked	Item
1	1.50	32	Add or improve bike lanes/bike paths
2	1.73	22	Add or improve sidewalks and crosswalks
3	1.90	10	New street lights
4	2.00	18	Walking/biking to work
5	2.06	16	Walking/biking to school
6	2.17	6	New stop signs or traffic signals
7	2.27	15	Walking/biking to community facilities
8	2.56	16	Walking/biking to shopping centers
9	2.67	6	Walking/biking to bus stops

(Screen 2 Question 2) Why do you walk? *Check all that apply.*

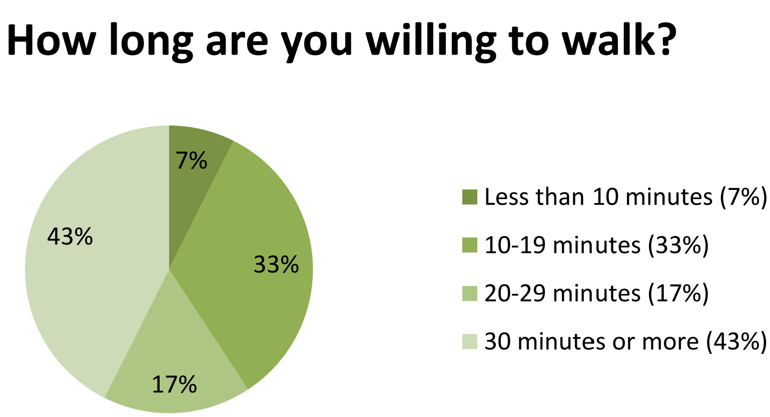
Most participants answered “Exercise”, with “Going to Specific Places” and “Enjoy the Outdoors” tied as the second most frequently chosen. The results indicate that residents of Linda Vista value walking for recreation almost as much as they value walking for utility.



(Screen 2 Question 3) How often do you walk instead of other modes (driving, bicycling, or bus)?
The most commonly chosen answers to the question were “Daily” (36%) and “A few times a week” (35%).



(Screen 2 Question 4) How long are you willing to walk?
43% of respondents indicated that they are willing to walk between 30 minutes or more. Respondents stating that they would be willing to walk for 20-29 minutes and those that would only be willing to walk less than 10 minutes were equally low with only 16.6% and 7.4% of responses, respectively. The second most chosen answer was walking 10-19 minutes with 33.3 % of the responses.



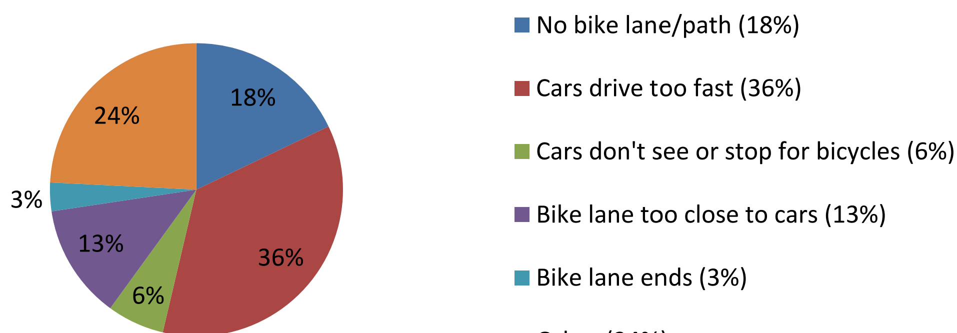
(Screen 2 Question 5) What kind of biker are you? *Click the option that describes you best.*
Approximately 53% of respondents classified themselves as “Comfortable and Enthusiastic”, followed by 11% selecting “Bold and Confident”, which may indicate that a large portion of bicycle-related comments came from avid cyclists.

What kind of biker are you?

Screen 3: What are the Barriers to Walking and Biking?

Screens 3 and 4 incorporated interactive maps and pre-defined marker icons to allow participants to provide location-specific information. Screen 3 inquired about the barriers to walking and biking in Linda Vista and provided a series of markers or options to drag and drop onto the map. The pre-defined markers for biking barriers are listed in the graph below.

Biking Barriers



Participants identified approximately 100 bicycling barriers on the interactive map. The highest ranked barrier (36% of comments) reported by participants were “cars drive too fast” or high traffic speeds. **Figure 1** (developed by Chen Ryan Associates) illustrates the locations of the bike barrier comments received. The top bicycling barriers identified in the mapping exercise include high traffic speeds, cars feel too close to the bike facility, no bike facility, and motorists do not see or yield to bicyclists. The large majority of comments were provided along the major street network, including Linda Vista Road, Genesee Avenue, and Ulric Street.

Figure 1: Survey Results for Bicycling Barriers

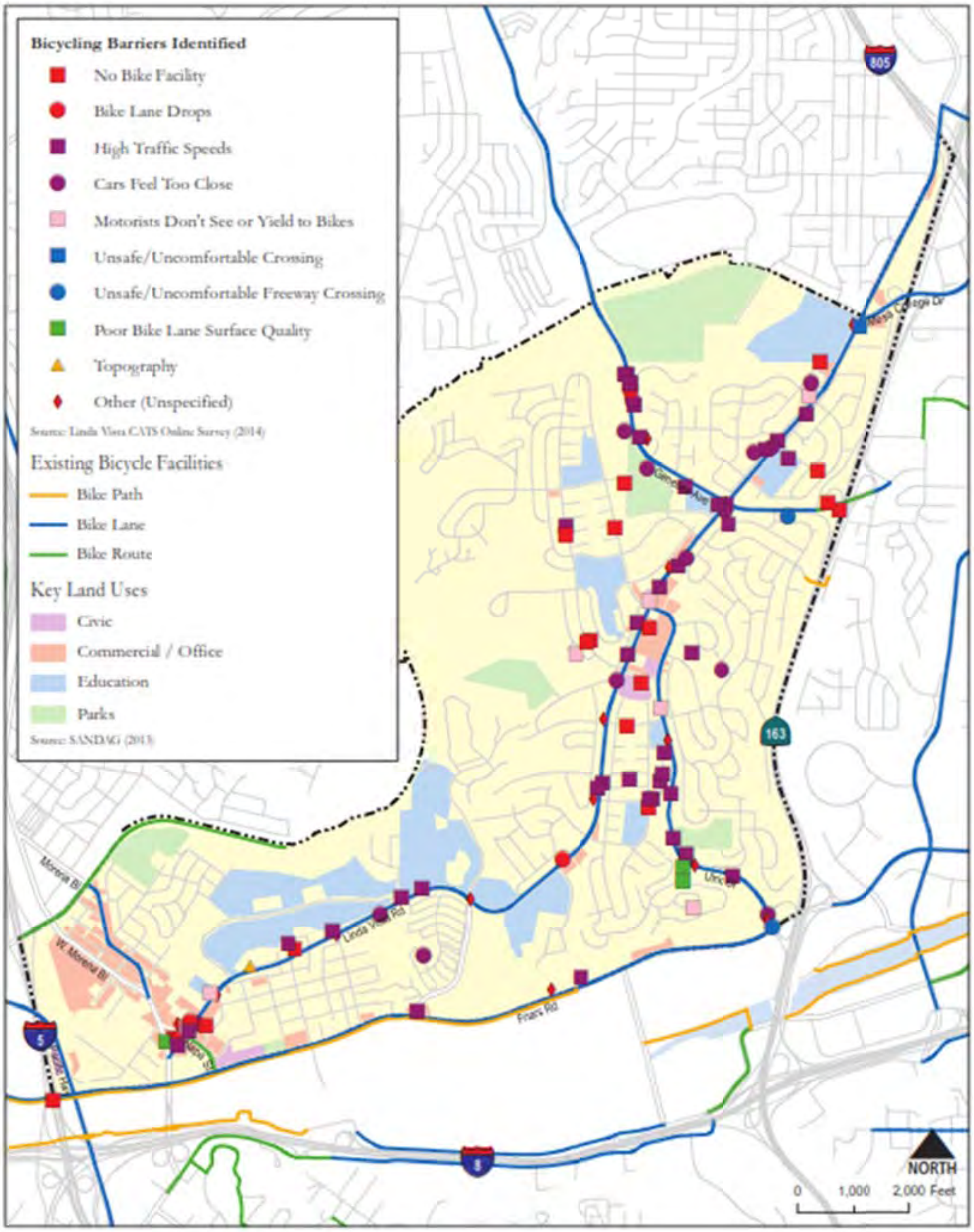
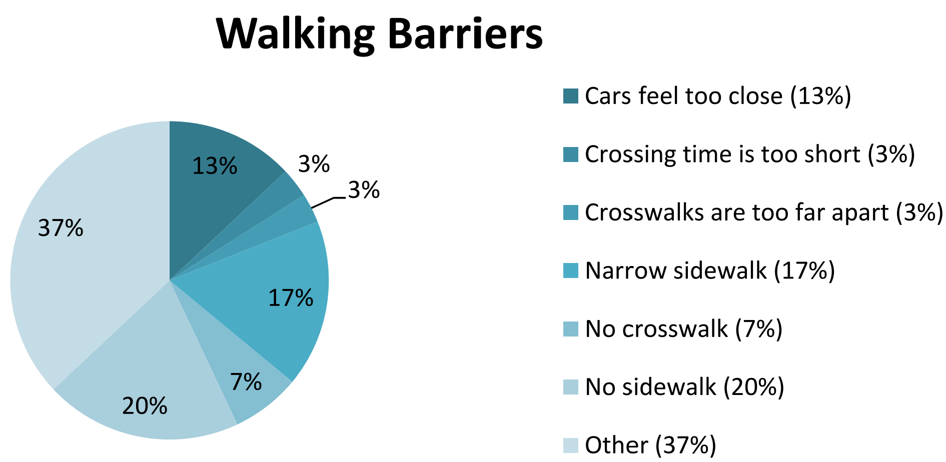


Figure 1 combines the raw data of the pre-defined marker selections and additional comments received by participants within the "Other" comment feature. "Other" category comments were consolidated into the preselected categories, if applicable, or added to the figure as additional icons in the legend.

The pre-defined markers for walking barriers are listed in the graph below.



Participants identified approximately 30 pedestrian barriers on the interactive map. The highest ranked barriers reported by participants were “no sidewalk” and “narrow sidewalk”. The largest number of responses (37%) identified with “Other” barriers. Of the participants who provided an explanatory comment, the “Other” barriers included unsafe or uncomfortable crossings, poor or unmaintained facilities (ex. surface quality of sidewalks and crossings), and topography. The most commonly reported barrier to walking (aside from “Other”) was the lack of a sidewalk (20%).

Figure 2 (prepared by Chen Ryan Associates) illustrates the locations of the pedestrian barriers as identified by survey participants. As shown, several participants noted inadequate crosswalks and crossing times along the network surrounding the Linda Vista Shopping Center along Linda Vista Road between Ulric Street and Comstock Street, and along Ulric Street between Linda Vista Road and Comstock Street. These areas were also identified by community members at the first community workshop as an area prone to high volumes of jaywalking. Other areas identified as having multiple pedestrian barriers include Ulric Street south of Tait Street and Genesee Avenue near the 163 freeway ramps. Participants commented that the area along Genesee Avenue near the 163 freeway ramps is difficult to cross and needs street lights.

Figure 2: Survey Results for Pedestrian Barriers

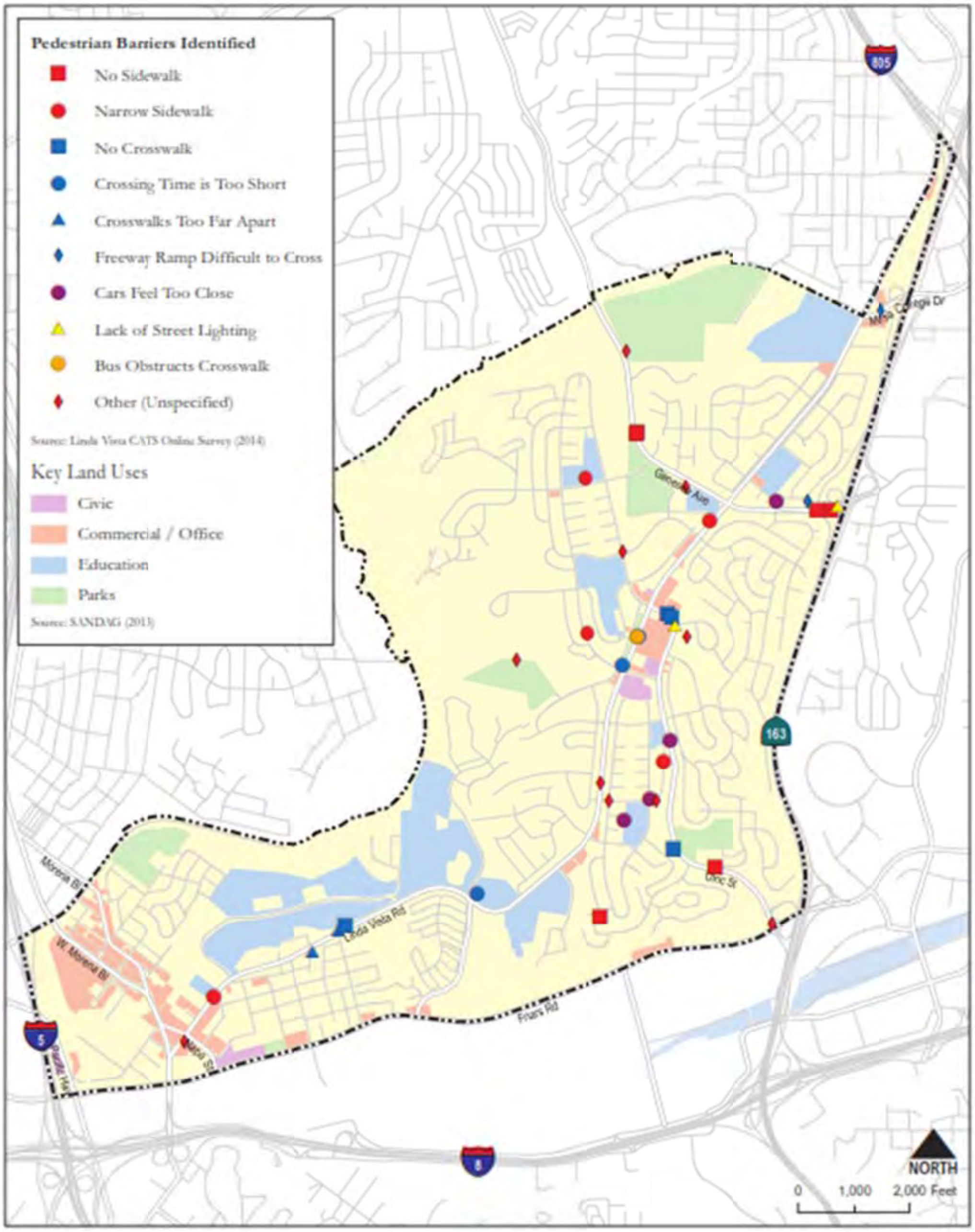
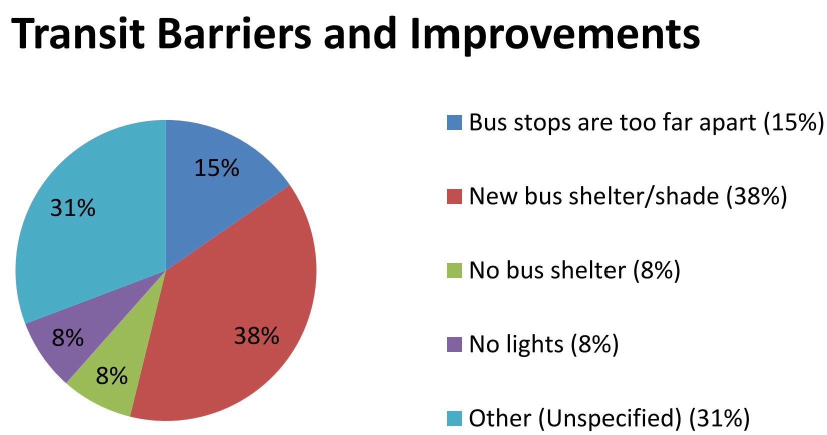


Figure 2 combines the raw data of the pre-defined marker selections and additional comments received by participants within the "Other" comment feature. "Other" category comments were consolidated into the preselected categories, if applicable, or added to the figure as additional icons in the legend.

Transit Barriers and Improvements



Only 12 comments were received about transit barriers. The main barriers to using transit were that new shelters or shading are needed and that bus stops were difficult to access or too far apart. Most of the responses indicated as “Other” were unspecified without additional comment. **Figure 3** (prepared by Chen Ryan Associates) illustrates the location of identified transit barriers. Only eight (8) comments on transit improvements were submitted. Due to the low response rates for transit, the map for transit barriers and improvements was consolidated. As shown, most transit comments were identified along Ulric Street as needing new bus shelters.

Figure 3: Survey Results for Transit Barriers and Improvements

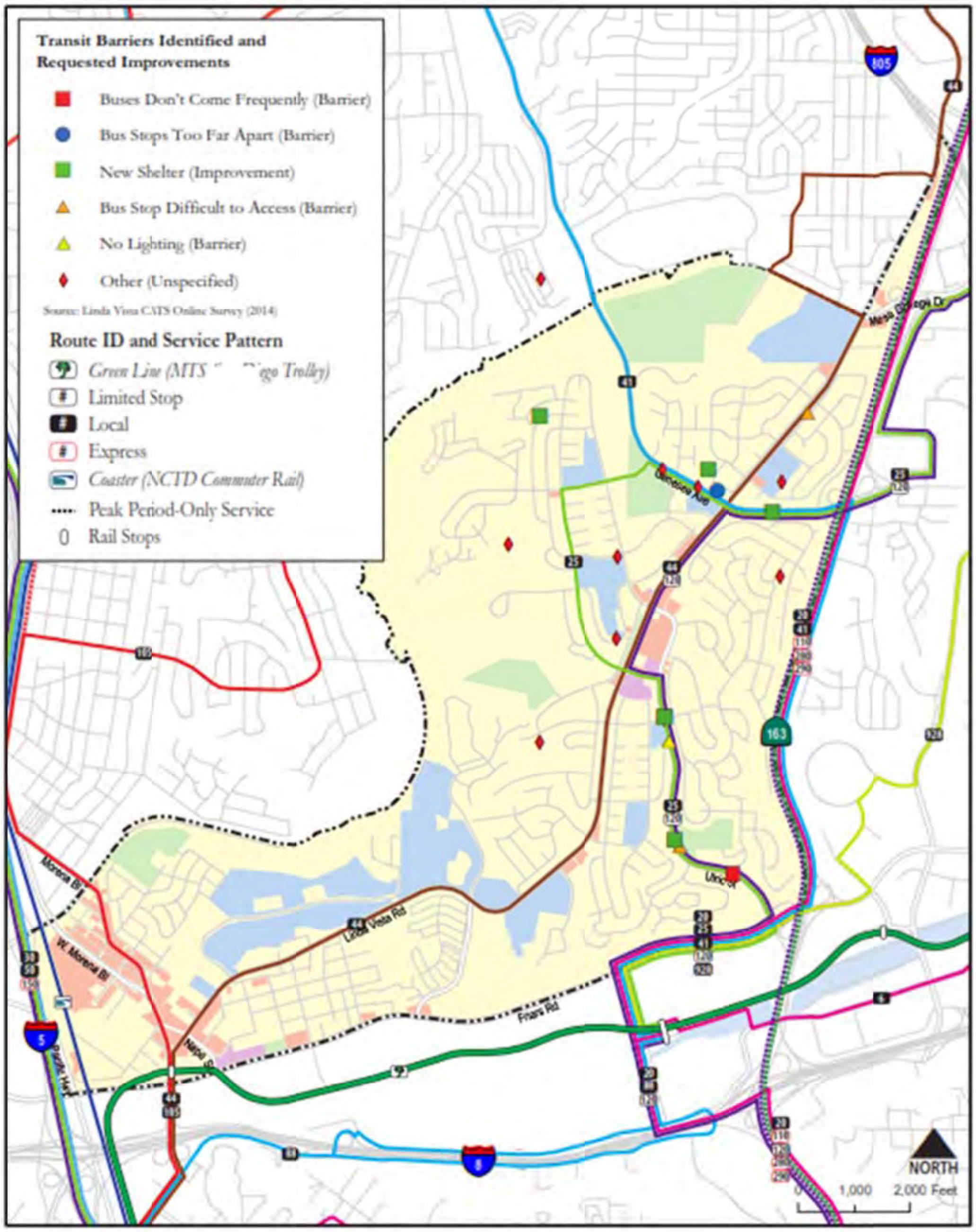


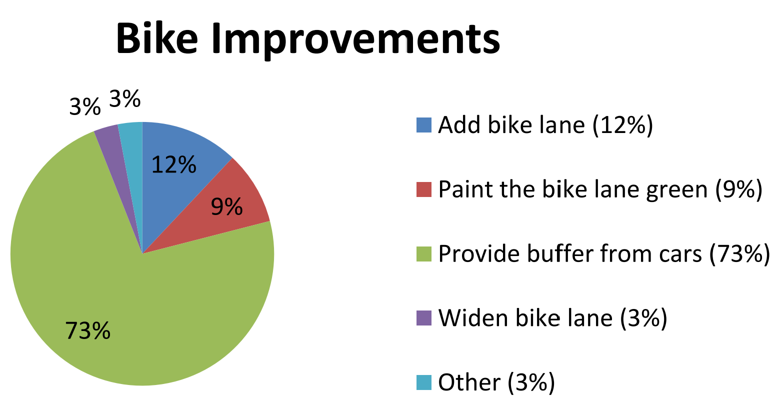
Figure 3 combines the raw data of the pre-defined marker selections and any additional comments received by participants within the "Other" comment feature. "Other" category comments were consolidated into the preselected categories, if applicable, or added to the figure as additional icons in the legend.

Screen 4: Identify Improvements

The second interactive map asked participants to indicate locations of recommended improvements. Improvement options were provided as listed below.

Bike Improvements	Crosswalk Improvements	Intersection Improvements
• Add bike lane • Widen bike lane • Provide buffer from cars • Paint the bike lane green • Other (please comment)	• Add new crosswalk • Increase crossing time • Provide curb ramp • Install median • Other (please comment)	• New traffic signal • New stop sign • New crosswalk • Improve crosswalk • Extend crossing time • Install center median • Other (please comment)
Sidewalk Improvements	**Bus Stop Improvements**	**Street Lighting**
• Add sidewalk • Widen sidewalk • Add curb ramps • Provide more shade • Add buffer between cars • Other (please comment)	• New bus stop • New bus shelter/shade • Other (please comment)	• Provide street lights • Other (please comment)

Bike Improvements



Approximately 80 responses for bike improvements were submitted on the survey. The most desired identified bicycling improvement was the addition of a buffer between bicyclists and motorists. Consistent with the top bicycling barrier identified as high traffic speeds, participants clearly identified that separation between bicyclists and drivers would greatly improve bicycling in Linda Vista. **Figure 4** (prepared by Chen Ryan Associates) illustrates the recommended bicycling improvements as identified by the survey participants. As shown, buffers from cars are desired along Genesee Avenue, Linda Vista Road, and Ulric Street.

Figure 4: Survey Results for Biking Improvements

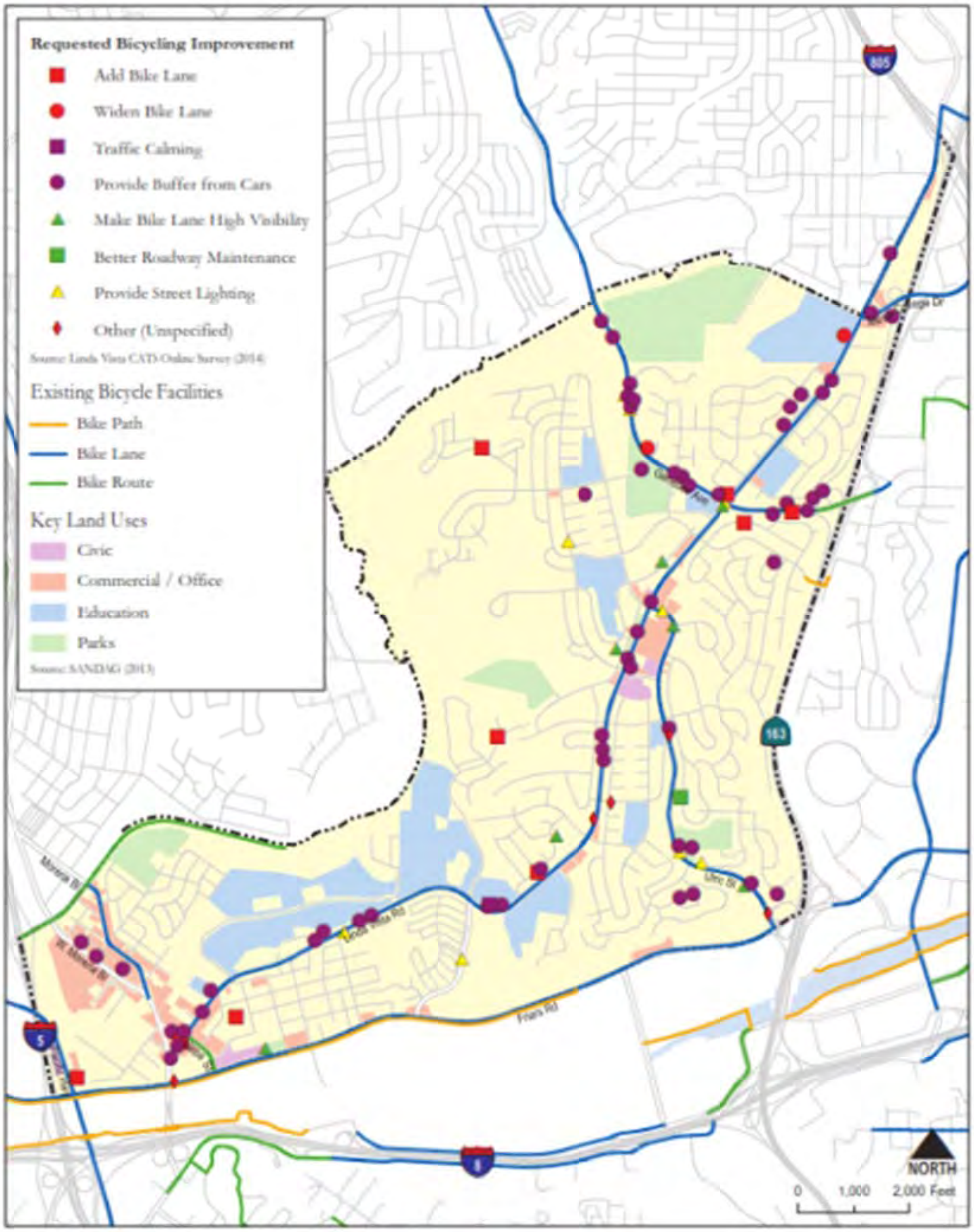


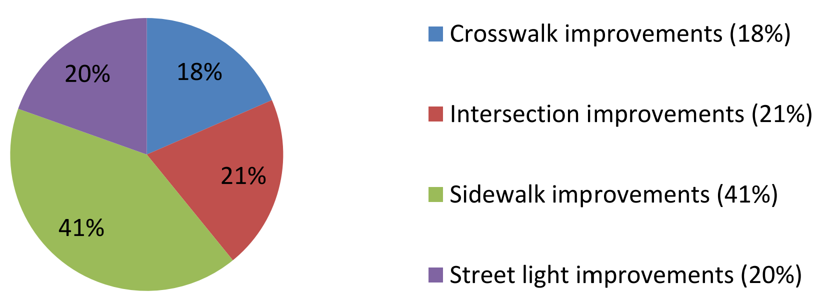
Figure 4 combines the raw data of the pre-defined marker selections and additional comments received by participants within the "Other" comment feature. "Other" category comments were consolidated into the preselected categories, if applicable, or added to the figure as additional icons in the legend.

Walking Improvements

The survey on recommended improvements included four pre-defined options, or markers, for improving pedestrian conditions, including:

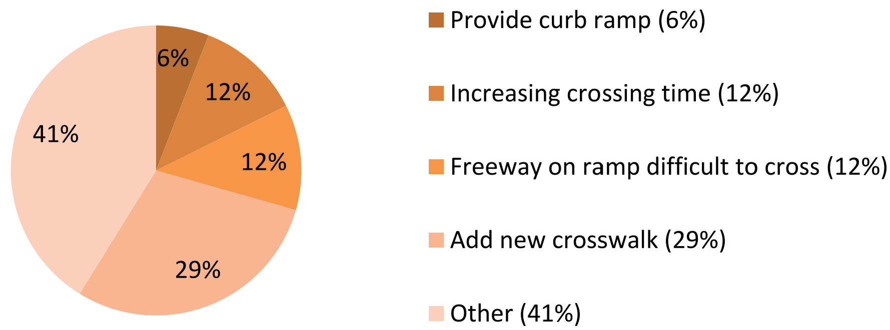
- **crosswalk improvements:** add new crosswalk, increase crossing time, provide curb ramp, install median, other (write-in)
- **intersection improvements**: new traffic signal, new stop sign, new crosswalk, improve crosswalk, extend crossing time, install center median, other (write-in)
- **sidewalk improvements**: add sidewalk, widen sidewalk, add curb ramps, provide more shade, add buffer between cars, other (write-in)
- **street lighting improvements**

Walking Improvements



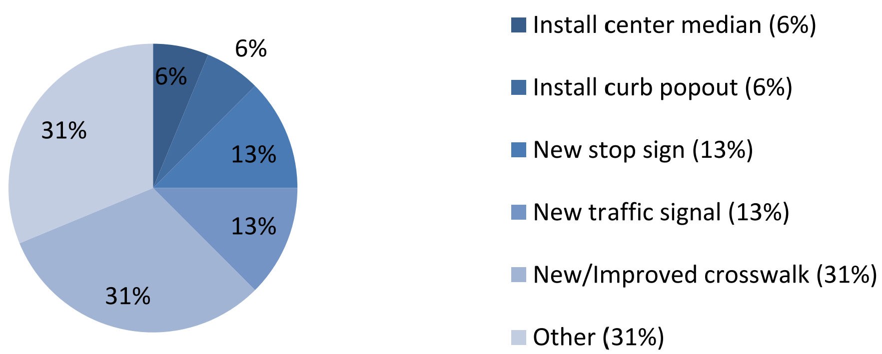
A total of 92 walking improvements were identified on the map by participants. Of these comments or markers, most were related to sidewalk improvements (34 comments). Intersection (16 comments), crosswalk (15 comments), and street lighting (16 comments) had similar amounts of comments.

Crosswalk Improvements



Approximately 17 responses were submitted for crosswalk improvements. The highest ranked crosswalk improvement (29%), with 5 comments, was to add a new crosswalk where a facility is currently not provided. Crosswalks were requested on Linda Vista Road between the USD between campus access points and behind the shopping center along Ulric Street between Linda Vista Road and Comstock Street. 41% of participants who selected crosswalk improvements indicated "Other"

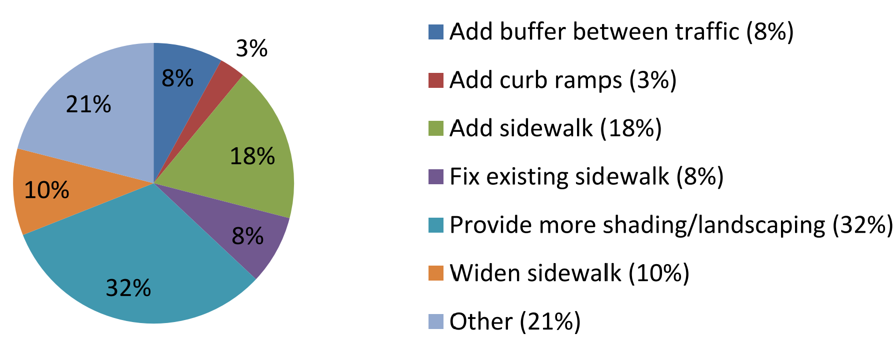
Intersection Improvements



Approximately 19 responses were submitted for intersection improvements. A new or improved crosswalk was the most desired intersection improvement and received 31% of the intersection improvement comments.

Street lighting was a popular improvement with request for street lights or lighting improvements on 18 map markers. The addition of lighting was requested along Ulric Street and on Genessee Avenue.

Sidewalk Improvements



Respondents frequently cited the addition of shade or landscaping as their most desired pedestrian improvement (12 comments).

Around the Linda Vista Shopping Center area, the most commonly requested improvements were to add street lighting and complete various crosswalk improvements, including additional crosswalks at Ulric Street and Dunlop Street and lengthening the crossing time at Comstock Street and Linda Vista Road.

Figure 5 (prepared by Chen Ryan Associates) illustrates the requested pedestrian improvements as identified by the survey participants.

Figure 5: Survey Results for Pedestrian Improvements

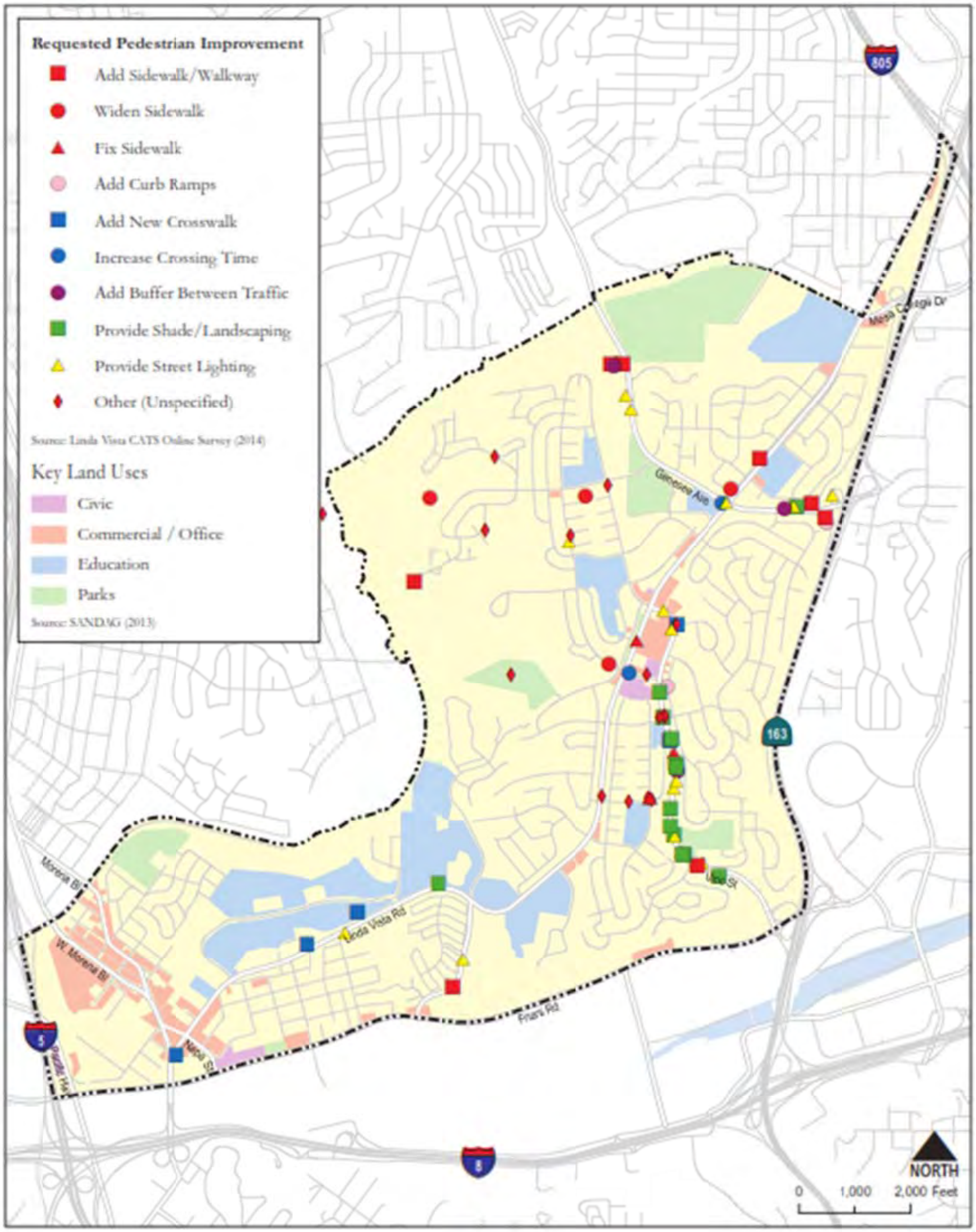


Figure 5 combines the raw data of the pre-defined marker selections and additional comments received by participants within the "Other" comment feature. "Other" category comments were consolidated into the preselected categories, if applicable, or added to the figure as additional icons in the legend.

V. Conclusion

The results from the survey allowed the team to further understand the community's walking and bicycling habits. The results of the mapping activities were extremely beneficial in identifying the areas perceived as needing improvement. The most identified barriers were high vehicular traffic speeds adjacent to bicycle facilities throughout the study area and lack of pedestrian facilities along Linda Vista Road, Genesee Avenue, and Ulric Street. Most survey participants stated that the most desired improvements in their community are providing a buffer between bicyclists and cars and to add or fix sidewalks.

The information obtained from the public survey will be considered in the recommended improvements within the project development phase. Public input will be included as part of the prioritization and scoring methodologies as the project moves forward. All comments received by survey participants are provided in Appendix A.

Appendix A: Interactive Map Comments

Latitude	Longitude	MarkerType	Comment
32.7729863461	-117.1682453156	M_BikeBarrier	Bike lane re-surfacing needed
32.7742853664	-117.1680736542	M_BikeBarrier	downhill needs speed calming
32.7985302653	-117.1605205536	M_BikeBarrier	No bike lanepath
32.7695221980	-117.1906900432	M_BikeBarrier	No bike lanepath
32.7740688633	-117.1752405193	M_BikeBarrier	A line of up to 20-25 cars sitting in bike lane.
32.7914595180	-117.1658849742	M_BikeBarrier	Cars drive too fast
32.7968708539	-117.1611642864	M_BikeBarrier	Cars dont see or stop for bicycles
32.7651196501	-117.1976423290	M_BikeBarrier	No bike lanepath
32.7828006958	-117.1721506145	M_BikeBarrier	Bike lane too close to cars
32.7649031268	-117.1981143951	M_BikeBarrier	Need quality connection to rest of network.
32.7770276804	-117.1733951569	M_BikeBarrier	Other insert comment
32.7856870646	-117.1709918976	M_BikeBarrier	Cars drive too fast
32.7946342094	-117.1629238129	M_BikeBarrier	Cars drive too fast
32.7973758962	-117.1715068817	M_BikeBarrier	Cars drive too fast
32.7657692211	-117.1974277496	M_BikeBarrier	-----
32.7712542895	-117.1857547760	M_BikeBarrier	eaastbound uphill cars too close
32.7713986288	-117.1632671356	M_BikeBarrier	Bike lane too close to cars
32.8004060832	-117.1586322784	M_BikeBarrier	-----
32.7698108832	-117.1910762787	M_BikeBarrier	heavy traffic and steep
32.7840995739	-117.1745109558	M_BikeBarrier	comstock needs a safer alternative for bikes
32.7931911824	-117.1606063843	M_BikeBarrier	No bike lanepath
32.7692335141	-117.1832656860	M_BikeBarrier	Bike lane too close to cars
32.7716873068	-117.1676445007	M_BikeBarrier	Cars dont see or stop for bicycles
32.7737080242	-117.1682453103	M_BikeBarrier	Bike lane in horrible condition
32.7672126951	-117.1951961517	M_BikeBarrier	Other insert comment
32.7937683960	-117.1623229980	M_BikeBarrier	Cars drive too fast
32.7809245076	-117.1728801727	M_BikeBarrier	-----
32.7913152123	-117.1593618393	M_BikeBarrier	No bike lanepath
32.7903591739	-117.1752405167	M_BikeBarrier	no bike lane, traffic travels FAST!
32.7799503168	-117.1691894531	M_BikeBarrier	Other insert comment
32.7884290272	-117.1691894531	M_BikeBarrier	Other insert comment
32.7966544079	-117.1715927124	M_BikeBarrier	Other insert comment
32.7947424355	-117.1709489822	M_BikeBarrier	Cars drive too fast
32.7847850848	-117.1736955643	M_BikeBarrier	No bike lanepath
32.7750792029	-117.1688032150	M_BikeBarrier	Cars drive too fast
32.7738523618	-117.1675586700	M_BikeBarrier	Other insert comment
32.7732028508	-117.1651554108	M_BikeBarrier	Other insert comment
32.7711099499	-117.1632671356	M_BikeBarrier	-----
32.7720842375	-117.1805191040	M_BikeBarrier	-----
32.7963990012	-117.1712682699	M_BikeBarrier	Cars drive too fast
32.7911167901	-117.1659386158	M_BikeBarrier	Bike lane too close to cars
32.7923433932	-117.1682989597	M_BikeBarrier	Cars drive too fast

32.7932452964	-117.1704876423	M_BikeBarrier	Bike lane too close to cars
32.7925057364	-117.1717751026	M_BikeBarrier	No bike lanepath
32.7899623247	-117.1752297878	M_BikeBarrier	No bike lanepath
32.7903230968	-117.1723330021	M_BikeBarrier	No bike lanepath
32.7960050634	-117.1613037586	M_BikeBarrier	Cars drive too fast
32.8002617910	-117.1582353115	M_BikeBarrier	too dangerous to cross street
32.7909003290	-117.1623122692	M_BikeBarrier	freeway onramp is not good for bike riders
32.7732930609	-117.1653163433	M_BikeBarrier	the hill is too steep
32.7708393126	-117.1629989147	M_BikeBarrier	this intersection makes me not ride a bike
32.7888980387	-117.1682131290	M_BikeBarrier	Bike lane too close to cars
32.7777673691	-117.1729123592	M_BikeBarrier	Cars drive too fast
32.7826744161	-117.1707236767	M_BikeBarrier	No bike lanepath
32.7847129260	-117.1739208698	M_BikeBarrier	No bike lanepath
32.7658413953	-117.1963334084	M_BikeBarrier	Bike lane too close to cars
32.7978087864	-117.1717000008	M_BikeBarrier	A physically separate bike lane please.
32.7950310378	-117.1718287468	M_BikeBarrier	Bike lane too close to cars
32.7914595191	-117.1663999557	M_BikeBarrier	Cars drive too fast
32.7773163402	-117.1689748764	M_BikeBarrier	Cars drive too fast
32.7725533351	-117.1833944321	M_BikeBarrier	Cars drive too fast
32.7874909969	-117.1697473526	M_BikeBarrier	Cars drive too fast
32.7840995739	-117.1715497971	M_BikeBarrier	Cars drive too fast
32.7775328343	-117.1731805801	M_BikeBarrier	Cars drive too fast
32.7672848659	-117.1955823898	M_BikeBarrier	Cars dont see or stop for bicycles
32.7965101095	-117.1713352203	M_BikeBarrier	bike lane also in terrible condition
32.7943456059	-117.1632671356	M_BikeBarrier	Bike lane too close to cars
32.7650474764	-117.1974277496	M_BikeBarrier	Bike lane ends
32.7647587769	-117.1974277496	M_BikeBarrier	Cars drive too fast
32.7703882485	-117.1885013580	M_BikeBarrier	Cars drive too fast
32.7978087864	-117.1718502045	M_BikeBarrier	Cars drive too fast
32.7916038257	-117.1600055695	M_BikeBarrier	No bike lanepath
32.7970873016	-117.1715068817	M_BikeBarrier	Bike lane ends
32.7975201932	-117.1610355377	M_BikeBarrier	Bike lane too close to cars
32.7866972712	-117.1703052521	M_BikeBarrier	Cars dont see or stop for bicycles
32.7676457299	-117.1757984161	M_BikeBarrier	Other insert comment
32.7814476798	-117.1695917845	M_BikeBarrier	Cars dont see or stop for bicycles
32.7656248727	-117.1969127655	M_BikeBarrier	Cars dont see or stop for bicycles
32.7942013038	-117.1636104584	M_BikeBarrier	Cars drive too fast
32.7620160849	-117.2046375275	M_BikeBarrier	No bike lanepath
32.7682231093	-117.1740818024	M_BikeBarrier	Cars drive too fast
32.7833779779	-117.1660995483	M_BikeBarrier	Bike lane too close to cars
32.7657692211	-117.1957969666	M_BikeBarrier	No bike lanepath
32.7659135694	-117.1967411041	M_BikeBarrier	Bike lane ends
32.7940570014	-117.1642971039	M_BikeBarrier	Bike lane too close to cars
32.7974480447	-117.1715712547	M_BikeBarrier	Cars drive too fast
32.7665270467	-117.1836197376	M_BikeBarrier	Cars drive too fast

32.7654805240	-117.1968162060	M_BikeBarrier	Cars drive too fast
32.7721203220	-117.1845531464	M_BikeBarrier	Cars drive too fast
32.7779297390	-117.1713781357	M_BikeBarrier	Cars drive too fast
32.7778575746	-117.1696186066	M_BikeBarrier	Cars drive too fast
32.7853984321	-117.1703052521	M_BikeBarrier	No bike lanepath
32.7969069295	-117.1860766411	M_BikeBarrier	-----
32.7765586064	-117.1702408791	M_BikeBarrier	No bike lanepath
32.7806358596	-117.1715283394	M_BikeBarrier	No bike lanepath
32.7792647688	-117.1693825722	M_BikeBarrier	Cars drive too fast
32.7770637630	-117.1700263023	M_BikeBarrier	Cars drive too fast
32.7782725188	-117.1694576740	M_BikeBarrier	Cars drive too fast
32.7770096392	-117.1702301502	M_BikeBarrier	Cars drive too fast
32.7905215208	-117.1657776833	M_BikeBarrier	Cars drive too fast
32.7729863461	-117.1682453156	Q_BikeBarriers	Other insert comment
32.7742853664	-117.1680736542	Q_BikeBarriers	Cars drive too fast
32.7740688633	-117.1752405193	Q_BikeBarriers	Bike lane ends
32.7740688633	-117.1752405193	Q_BikeBarriers	Bike lane ends
32.7649031268	-117.1981143951	Q_BikeBarriers	Other insert comment
32.7712542895	-117.1857547760	Q_BikeBarriers	Cars drive too fast
32.7698108832	-117.1910762787	Q_BikeBarriers	Cars drive too fast
32.7840995739	-117.1745109558	Q_BikeBarriers	Cars dont see or stop for bicycles
32.7737080242	-117.1682453103	Q_BikeBarriers	Other insert comment
32.7903591739	-117.1752405167	Q_BikeBarriers	No bike lanepath
32.8002617910	-117.1582353115	Q_BikeBarriers	Other insert comment
32.7909003290	-117.1623122692	Q_BikeBarriers	No bike lanepath
32.7732930609	-117.1653163433	Q_BikeBarriers	Cars drive too fast
32.7708393126	-117.1629989147	Q_BikeBarriers	No bike lanepath
32.7978087864	-117.1717000008	Q_BikeBarriers	Cars drive too fast
32.7965101095	-117.1713352203	Q_BikeBarriers	Bike lane too close to cars
32.7656248727	-117.1969127655	-----	In the intersection it is poorly marked and tight, especially when it is busy.
32.7620160849	-117.2046375275	-----	5 interchange very dangerous for bikes - Sharrows at a minimum
32.7751513695	-117.1756267548	M_BikeImprovement	Paint the bike lane green
32.7630265602	-117.1975994110	M_BikeImprovement	-----
32.7724089976	-117.1627521515	M_BikeImprovement	Provide buffer from cars
32.7887176500	-117.1630954742	M_BikeImprovement	Provide buffer from cars plus resurfacing
32.7722646599	-117.1684169769	M_BikeImprovement	Provide buffer from cars plus resurfacing
32.7855427485	-117.1689319611	M_BikeImprovement	Paint the bike lane green
32.7728420093	-117.1646404266	M_BikeImprovement	Paint the bike lane green
32.7654805240	-117.1977710724	M_BikeImprovement	Provide buffer from cars
32.7734193528	-117.1766588656	M_BikeImprovement	Add bike lane
32.7709656123	-117.1869585483	M_BikeImprovement	Provide buffer from cars
32.7887176477	-117.1696207492	M_BikeImprovement	Paint the bike lane green
32.7843882085	-117.1721956698	M_BikeImprovement	Paint the bike lane green
32.7998289105	-117.1591494052	M_BikeImprovement	Widen bike lane
32.7649031268	-117.1972560883	M_BikeImprovement	Add bike lane
32.7698108832	-117.2030925751	M_BikeImprovement	Provide buffer from cars
32.7703882485	-117.1890163422	M_BikeImprovement	Provide buffer from cars

32.7735636908	-117.1764850616	M_BikeImprovement	Provide buffer from cars
32.7839552552	-117.1715068817	M_BikeImprovement	Provide buffer from cars
32.7955000144	-117.1625804901	M_BikeImprovement	Provide buffer from cars
32.7962215121	-117.1714854240	M_BikeImprovement	Provide buffer from cars
32.7929025742	-117.1684813499	M_BikeImprovement	Provide buffer from cars
32.7760173641	-117.1733951569	M_BikeImprovement	-----
32.7920367440	-117.1658420563	M_BikeImprovement	Add bike lane
32.7714707984	-117.1632671356	M_BikeImprovement	-----
32.7771720104	-117.1684169769	M_BikeImprovement	Other please comment: fix the road
32.7724089976	-117.1676445007	M_BikeImprovement	Provide buffer from cars
32.7646144268	-117.1923637390	M_BikeImprovement	Paint the bike lane green
32.7969430039	-117.1616363525	M_BikeImprovement	Provide buffer from cars
32.7729863483	-117.1642112732	M_BikeImprovement	Provide buffer from cars
32.7974480447	-117.1715283394	M_BikeImprovement	Provide buffer from cars
32.7931551065	-117.1708416939	M_BikeImprovement	Provide buffer from cars
32.8008750315	-117.1563363075	M_BikeImprovement	Provide buffer from cars
32.7976644899	-117.1598553658	M_BikeImprovement	Provide buffer from cars
32.7789400336	-117.1728587151	M_BikeImprovement	Provide buffer from cars
32.7747905359	-117.1684813499	M_BikeImprovement	Provide buffer from cars
32.7664548731	-117.1960330009	M_BikeImprovement	Provide buffer from cars
32.7919645911	-117.1741032600	M_BikeImprovement	Provide buffer from cars
32.7924335839	-117.1680951118	M_BikeImprovement	Provide buffer from cars
32.7910265980	-117.1631598473	M_BikeImprovement	Provide buffer from cars
32.7920367440	-117.1663570404	M_BikeImprovement	Provide buffer from cars
32.7747183690	-117.1677303314	M_BikeImprovement	Provide buffer from cars
32.7916038257	-117.1624088287	M_BikeImprovement	Provide buffer from cars
32.7675013845	-117.1955394745	M_BikeImprovement	Provide buffer from cars
32.7718316454	-117.1787166595	M_BikeImprovement	Provide buffer from cars
32.7835222976	-117.1713352203	M_BikeImprovement	Provide buffer from cars
32.7996846195	-117.1725368500	M_BikeImprovement	Provide buffer from cars
32.8009832500	-117.1575593948	M_BikeImprovement	Provide buffer from cars
32.7967987060	-117.1716785431	M_BikeImprovement	Provide buffer from cars
32.7804915353	-117.1691036224	M_BikeImprovement	Provide buffer from cars
32.7794090951	-117.1729230881	M_BikeImprovement	Provide buffer from cars - bike lane too close to fast traveling cars
32.7970151528	-117.1603918076	M_BikeImprovement	Provide buffer from cars - cars travel way too fast and close to bike lane
32.7685117975	-117.2006893158	M_BikeImprovement	Provide buffer from cars
32.7647587769	-117.1974277496	M_BikeImprovement	Provide buffer from cars
32.7712542895	-117.1862697601	M_BikeImprovement	Provide buffer from cars
32.7930468785	-117.1689319611	M_BikeImprovement	Provide buffer from cars
32.8004060832	-117.1732234955	M_BikeImprovement	Provide buffer from cars
32.7918924381	-117.1608638763	M_BikeImprovement	Provide buffer from cars
32.7852541154	-117.1709918976	M_BikeImprovement	Provide buffer from cars
32.7921810496	-117.1603488922	M_BikeImprovement	Provide buffer from cars
32.7942013038	-117.1800899506	M_BikeImprovement	Add bike lane
32.7911709053	-117.1620655060	M_BikeImprovement	Add bike lane

32.7654083495	-117.1970629692	M_BikeImprovement	Provide buffer from cars - Or some other way to add more "cushion" between traffic and bikers (and walkers)
32.7631709129	-117.2032642365	M_BikeImprovement	Add bike lane
32.7718316454	-117.1794033051	M_BikeImprovement	Other please comment - Slow speed limit to 30
32.7662022651	-117.1940803528	M_BikeImprovement	Add bike lane
32.7966544079	-117.1713352203	M_BikeImprovement	Provide buffer from cars - bike lane is too close to cars and is in poor condition
32.7963658109	-117.1622371674	M_BikeImprovement	Provide buffer from cars
32.7800585608	-117.1790599823	M_BikeImprovement	Add bike lane
32.7905936748	-117.1648120880	M_BikeImprovement	Add bike lane
32.7942301660	-117.1704769135	M_BikeImprovement	Widen bike lane
32.7801668046	-117.1691250801	M_BikeImprovement	-----
32.7931551065	-117.1900248528	M_BikeImprovement	-----
32.7802028858	-117.1729660034	M_BikeImprovement	Provide buffer from cars
32.7914595191	-117.1660995483	M_BikeImprovement	Paint the bike lane green – install bike boxes
32.8039411709	-117.1564865112	M_BikeImprovement	Provide buffer from cars - Move Parked cars out and provide buffered bike lane
32.7641813751	-117.1978139877	M_BikeImprovement	Provide buffer from cars
32.7690891713	-117.2022342682	M_BikeImprovement	Provide buffer from cars
32.7768111850	-117.1724081039	M_BikeImprovement	-----
32.7867333498	-117.1701979637	M_BikeImprovement	Provide buffer from cars
32.7912610972	-117.1612179279	M_BikeImprovement	Provide buffer from cars - Paint bike lane green at onramps and off ramps of freeway
32.7931911824	-117.1670436859	M_BusStopImprovements	New bus sheltershade
32.7932272584	-117.1696400642	M_BusStopImprovements	Other please comment
32.7750070362	-117.1687602997	M_BusStopImprovements	New bus sheltershade
32.7911709053	-117.1632671356	M_BusStopImprovements	New bus sheltershade
32.7957886142	-117.1768283844	M_BusStopImprovements	New bus sheltershade – need to clean
32.7888619610	-117.1721935272	M_BusStopImprovements	-----
32.7923433932	-117.1676230431	M_BusStopImprovements	Other please comment
32.7810688313	-117.1694254875	M_BusStopImprovements	New bus sheltershade
32.7713986288	-117.1871280670	M_Crosswalk	Add new crosswalk
32.7643257259	-117.1975994110	M_Crosswalk	Add new crosswalk
32.7693778568	-117.1897029877	M_Crosswalk	over street bridge
32.7906658289	-117.1601772308	M_Crosswalk	Provide curb ramp
32.7923975076	-117.1728157997	M_Crosswalk	Other please comment
32.7832336580	-117.1715283394	M_Crosswalk	Increase crossing time
32.7916038257	-117.1661853790	M_Crosswalk	Increase crossing time
32.7917481320	-117.1612071991	M_Crosswalk	Add something to help people cross freeway onramps
32.8011275411	-117.1570873260	M_Crosswalk	Add something to help people cross on ramps
32.7830893379	-117.1783733368	M_Crosswalk	-----
32.7856149066	-117.1687817574	M_Crosswalk	Add new crosswalk – brighter lights
32.7698108832	-117.1900463104	M_Crosswalk	Add new crosswalk - USD students have crossed Linda Vista Rd. here for decades without facilitation
32.7848031244	-117.1710669994	M_Crosswalk	Other please comment – repair median
32.7771359280	-117.1703481674	M_Crosswalk	Other please comment – curve from David makes a dangerous area
32.7811770739	-117.1694469452	M_Crosswalk	-----

32.7770637630	-117.1701550484	M_Crosswalk	Other please comment – street is too narrow for parking
32.7798781541	-117.1691250801	M_Crosswalk	Add new crosswalk
32.7830171777	-117.1698117256	M_Intersections	NewImprove Crosswalk
32.7649031268	-117.1979427338	M_Intersections	No Bike Lanes, not safe
32.7912069821	-117.1597909927	M_Intersections	NewImprove Crosswalk
32.7904132896	-117.1616578102	M_Intersections	change freeway onramp.
32.7711821197	-117.1630311012	M_Intersections	Other please comment
32.8006225212	-117.1580529213	M_Intersections	New traffic signal
32.7908462136	-117.1657347679	M_Intersections	needs to be repaved
32.7923253550	-117.1668720245	M_Intersections	Install curb popout
32.7858313805	-117.1962261200	M_Intersections	-----
32.7752957025	-117.1735668182	M_Intersections	NewImprove Crosswalk – Carson students walk across Kramer with fast traffic
32.7921810496	-117.1661853790	M_Intersections	Other please comment – curb pop out with bike lane in it
32.7796255842	-117.1693396568	M_Intersections	New traffic signal
32.7770818042	-117.1698546410	M_Intersections	NewImprove Crosswalk
32.7866070747	-117.1676445007	M_Intersections	-----
32.7783266418	-117.1694684029	M_Intersections	New stop sign – too much traffic
32.7803832918	-117.1690392494	M_Intersections	Install center median
32.7769915979	-117.1714854240	M_Intersections	-----
32.7799863982	-117.1687388420	M_Intersections	New stop sign
32.7769915979	-117.1701979637	M_Intersections	NewImprove Crosswalk
32.7695221991	-117.1843814850	M_Other	over street bridge for USD students
32.7765946891	-117.1686744690	M_Other	-----
32.7732750211	-117.1666145299	M_Other	-----
32.7912250205	-117.1754336357	M_Other	-----
32.7710016951	-117.1629238129	M_Other	-----
32.7644700765	-117.1978569031	M_Other	-----
32.7693056855	-117.1809053421	M_Other	-----
32.7862643269	-117.1689319611	M_Other	pedestrian crossing and driveways
32.7838109362	-117.1721935272	M_Other	Comstock St. at Linda Vista Rd. - recent changes to the intersection(two crosswalks within 50' of each other on Comstock) have caused safety concerns to me.
32.7800946421	-117.1691679955	M_Other	Stop sign
32.7809966695	-117.1693933010	M_Other	-----
32.7770276804	-117.1702516079	M_Other	-----
32.7774245873	-117.1689426899	M_Other	Street needs trees
32.7756745755	-117.1689641476	M_Other	Street needs trees/shrubs
32.7704243337	-117.1882224083	M_PedBarrier	Crosswalks are too far apart
32.7649031268	-117.1970844269	M_PedBarrier	Other insert comment
32.7745740350	-117.1688461304	M_PedBarrier	No crosswalk
32.7849654815	-117.1681594849	M_PedBarrier	Other insert comment
32.7712182051	-117.1730089181	M_PedBarrier	No sidewalk
32.7913152123	-117.1598553658	M_PedBarrier	No sidewalk
32.7989270763	-117.1717643738	M_PedBarrier	Other insert comment
32.7835583775	-117.1718931198	M_PedBarrier	Crossing time is too short

32.7891866599	-117.1718931198	M_PedBarrier	Other insert comment
32.7709656101	-117.1630525589	M_PedBarrier	-----
32.7723368288	-117.1801757813	M_PedBarrier	The intersection is so vast - narrow things up? Crossing time is too short
32.7916932949	-117.1629907633	M_PedBarrier	Cars feel too close
32.7913152123	-117.1606492996	M_PedBarrier	No sidewalk
32.7907379828	-117.1669149399	M_PedBarrier	Narrow sidewalk
32.7950671130	-117.1711206436	M_PedBarrier	No sidewalk
32.7737080264	-117.1663999557	M_PedBarrier	No sidewalk
32.7949228120	-117.1711635590	M_PedBarrier	No sidewalk
32.7927582698	-117.1740818024	M_PedBarrier	Narrow sidewalk
32.7914595191	-117.1594905853	M_PedBarrier	This is a dark and scary place to walk.
32.7769419844	-117.1725583076	M_PedBarrier	Other insert comment
32.7855788275	-117.1688568592	M_PedBarrier	Other insert comment – sidewalk lines are faded and lighting is not bright enough
32.7671405199	-117.1954107285	M_PedBarrier	Narrow sidewalk
32.7706769298	-117.1878147125	M_PedBarrier	No crosswalk
32.7851097986	-117.1739101410	M_PedBarrier	Narrow sidewalk
32.7759812811	-117.1716785431	M_PedBarrier	Cars feel too close
32.7769555154	-117.1698331833	M_PedBarrier	-----
32.7778214924	-117.1730732918	M_PedBarrier	-----
32.7788678701	-117.1694254875	M_PedBarrier	Narrow sidewalk
32.7798961948	-117.1690714359	M_PedBarrier	Cars feel too close
32.7770096392	-117.1702086926	M_PedBarrier	Cars feel too close
32.7937683960	-117.1640396118	M_Sidewalk	Add sidewalk
32.7825120550	-117.1692752838	M_Sidewalk	Add curb ramps – need curb ramps Burroughs St
32.7752957047	-117.1688461304	M_Sidewalk	Provide more shadelandscaping
32.7738523640	-117.1674728394	M_Sidewalk	Add sidewalk – need to add sidewalk on east side
32.7677179028	-117.1815276146	M_Sidewalk	Add sidewalk
32.7909544443	-117.1602630615	M_Sidewalk	Add sidewalk
32.7983138223	-117.1720004082	M_Sidewalk	Add sidewalk
32.7899082088	-117.1750044823	M_Sidewalk	Other please comment
32.7836666170	-117.1726441383	M_Sidewalk	Widen sidewalk
32.7831254179	-117.1704983711	M_Sidewalk	Other please comment
32.7916038257	-117.1610355377	M_Sidewalk	Add sidewalk
32.7914595191	-117.1618938446	M_Sidewalk	Provide more shadelandscaping – also add curb ramps
32.7923253550	-117.1656703949	M_Sidewalk	Widen sidewalk
32.7732750189	-117.1661853790	M_Sidewalk	Provide more shadelandscaping
32.7913152123	-117.1625804901	M_Sidewalk	Add buffer between traffic bollardstrees
32.7983859700	-117.1727085114	M_Sidewalk	Add sidewalk
32.7982416745	-117.1725368500	M_Sidewalk	Add buffer between traffic bollardstrees
32.7918924381	-117.1740818024	M_Sidewalk	Widen sidewalk
32.7920367440	-117.1598339081	M_Sidewalk	Other please comment – put in lighting in underpass
32.7917481320	-117.1831798553	M_Sidewalk	Widen sidewalk
32.7937683960	-117.1794033051	M_Sidewalk	-----
32.7771539692	-117.1730089188	M_Sidewalk	-----

32.7793549728	-117.1689105034	M_Sidewalk	Fix existing sidewalk
32.7766307718	-117.1690821648	M_Sidewalk	Provide more shadelandscaping
32.7742853664	-117.1682453156	M_Sidewalk	Provide more shadelandscaping
32.7788137474	-117.1687817574	M_Sidewalk	Provide more shadelandscaping
32.7784529287	-117.1686744690	M_Sidewalk	Add buffer between traffic bollardstrees
32.7810327504	-117.1695542336	M_Sidewalk	Provide more shadelandscaping
32.7810688313	-117.1694254875	M_Sidewalk	-----
32.7810327504	-117.1697473526	M_Sidewalk	-----
32.7875631534	-117.1840381622	M_Sidewalk	Other please comment - pedestrian path between 6350 Osler St + 6317 Quillan St needs tree stumps removed and pavement put in to make it accessable to wheelchairs, elderly using walkers + public in general. This pathway has been there since the 40's but unlike other pathways in Linda Vista it has never been paved. I have made request yearly since 2011 and have been told it is on the list but nothing happens. Please consider adding this request to your list of NEEDED IMPROVEMENTS
32.7770998455	-117.1701979637	M_Sidewalk	Fix existing sidewalk
32.7800224795	-117.1690392494	M_Sidewalk	Provide more shadelandscaping
32.7786152973	-117.1687388420	M_Sidewalk	Provide more shadelandscaping
32.7756926171	-117.1690392494	M_Sidewalk	Provide more shadelandscaping
32.7742853664	-117.1683526039	M_Sidewalk	Provide more shadelandscaping
32.7822594925	-117.1697688103	M_Sidewalk	Provide more shadelandscaping
32.7770998455	-117.1702837944	M_Sidewalk	Fix existing sidewalk
32.7961493626	-117.1715283394	M_StreetLighting	Provide street lights
32.7739245293	-117.1671938896	M_StreetLighting	Provide street lights
32.7703882485	-117.1878147125	M_StreetLighting	Provide street lights
32.7744297009	-117.1684169769	M_StreetLighting	Provide street lights
32.7690891716	-117.1809697151	M_StreetLighting	Provide street lights
32.7896195899	-117.1750688553	M_StreetLighting	Provide street lights
32.7914595191	-117.1620655060	M_StreetLighting	Provide street lights
32.7967987060	-117.1718502045	M_StreetLighting	Provide street lights
32.7908822905	-117.1893596649	M_StreetLighting	-----
32.7916399023	-117.1659493446	M_StreetLighting	Provide street lights
32.7856194164	-117.1688273549	M_StreetLighting	Other please comment – more and brighter
32.7862958959	-117.1695569158	M_StreetLighting	Provide street lights
32.7853984321	-117.1691036224	M_StreetLighting	Provide street lights
32.7776140195	-117.1688783169	M_StreetLighting	Provide street lights
32.7752054944	-117.1688032150	M_StreetLighting	Provide street lights
32.7800224795	-117.1690821648	M_StreetLighting	Provide street lights
32.7769194328	-117.1714425087	M_StreetLighting	-----
32.7779297390	-117.1687388420	M_StreetLighting	Provide street lights
32.7921449732	-117.1665072441	M_TransitBarrier	Bus stops are too far apart
32.7879960914	-117.1627521515	M_TransitBarrier	Other insert comment
32.8024982950	-117.1768283844	M_TransitBarrier	-----
32.7960772130	-117.1612501144	M_TransitBarrier	Plus limited sidewalks connecting to bus stops – no bus shelter
32.7747183690	-117.1684598923	M_TransitBarrier	Also hard to reach certain bus stops – buses don't come frequently

32.7734193550	-117.1653699875	M_TransitBarrier	buses dont come frequently
32.7926139651	-117.1627092361	M_TransitBarrier	-----
32.7797699100	-117.1766567230	M_TransitBarrier	-----
32.7798781541	-117.1691250801	M_TransitBarrier	No lights
32.7810507908	-117.1694147587	M_TransitBarrier	No bus shelter
32.7809786290	-117.1694147587	M_TransitBarrier	-----
32.7849294021	-117.1722257137	M_TransitBarrier	-----

APPENDIX G

Active Transportation Toolbox

LINDA VISTA
Comprehensive Active Transportation Strategy

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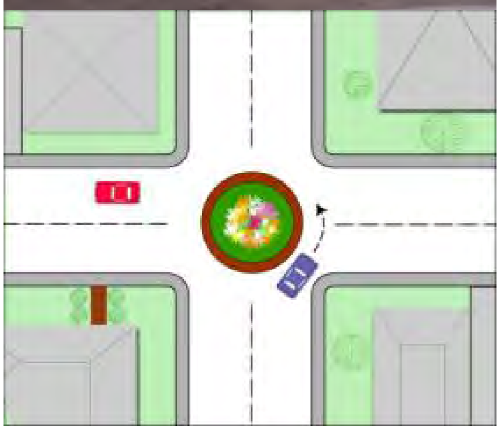
Facility Type Toolbox

The Toolbox describes each suggested pedestrian and bicycle facility improvement, clearly outlines each facility's merits and provides design guidelines.

Table of Contents

Intersection Treatments

Neighborhood Traffic Circles



Primary Purpose:	**Speed Reduction** *on Residential Streets*
Other Potential Results:	Volume Reduction
	Pedestrian Safety
	Collision Reduction

Neighborhood traffic circles are circular medians placed in the middle of the intersection, motorists travel counter-clockwise through the intersection. Drivers yield to vehicles already circulating within the intersection. Due to the horizontal deflection, vehicles must slow to maneuver around the device. The circular median can be landscaped to help beautify the neighborhood. These devices may reduce speeds through neighborhoods.

Depending on right-of-way and budget constraints, either a traffic circle or roundabout can be installed. Unlike roundabouts, traffic circles do not have splitter islands on each approach to help guide traffic around due to their smaller size. Large emergency vehicles like fire trucks are permitted to turn left in front of the circle.

MEASURED EFFECTIVENESS

Speed Reduction[1]	-11%
Volume Reduction[2]	-5%
Collision Reduction[3]	-71%

Source: Traffic Calming – State of the Practice 2000

[1]Reduction in 85th Percentile Speeds between slow points

[2]Reduction in Vehicles per Day

[3]Reduction in Average Annual Collisions

[4]ID = Insufficient Data to predict reduction effect

Advantages

- Speed reduction
- Possible opportunity for landscaping
- Possible decrease in intersection accidents compared with stop-controlled intersections

Disadvantages

- Potential loss of parking
- Restricts turning movements by larger vehicles
- Increased EMS/Fire response

Neighborhood Traffic Circles Design Guidelines

Traffic Circle Center Island Profile

Traffic circles should be designed with both a vertical inner curb and a mountable apron. The vertical inner curb prevents vehicles from driving over the circle. The apron is a shallow sloped curb extending out from the bottom of a vertical curb; the apron has a low lip at its pavement-side edge. This mountable apron facilitates easier turns for large vehicles. The lip at the apron’s edge discourages vehicles from using it unnecessarily.

Traffic Circle Turn Operations

All vehicles should circulate around the center island counter-clockwise. However, an exception can be made for large vehicles (i.e., trucks and buses) in some cases if geometric constraints require it. If a specific intersection has a high proportion of truck and/or bus traffic, alternative treatments may provide similar results without the impact to trucks or buses. All traffic circles should be designed using AutoCAD/AutoTurn software or using appropriate truck turning templates as specified in *A Policy on Geometric Design of Highways and Streets* (FHWA, 2001) to identify whether emergency response vehicles and buses can turn left around the circle.

Traffic Circles at T-Intersections

Traffic circles should have deflection on all approaches if implemented at a T-intersection. This can be implemented in both existing neighborhoods in retrofit situations and in new neighborhoods. First, a raised island can be placed at the right side of the un-deflected approach to the traffic circle to artificially introduce deflection. In new neighborhoods the street curbs can be modified to allow the center island to be located at the center of the intersection.

Signage

Traffic circle center islands will include signage symbolically indicating the permitted travel paths around the center island, yield control signs, “Share the Road” signs, and pedestrian crossing signs.

Source: City of San Diego, *Traffic Calming Program Handbook*¸2006.

Protected Intersections

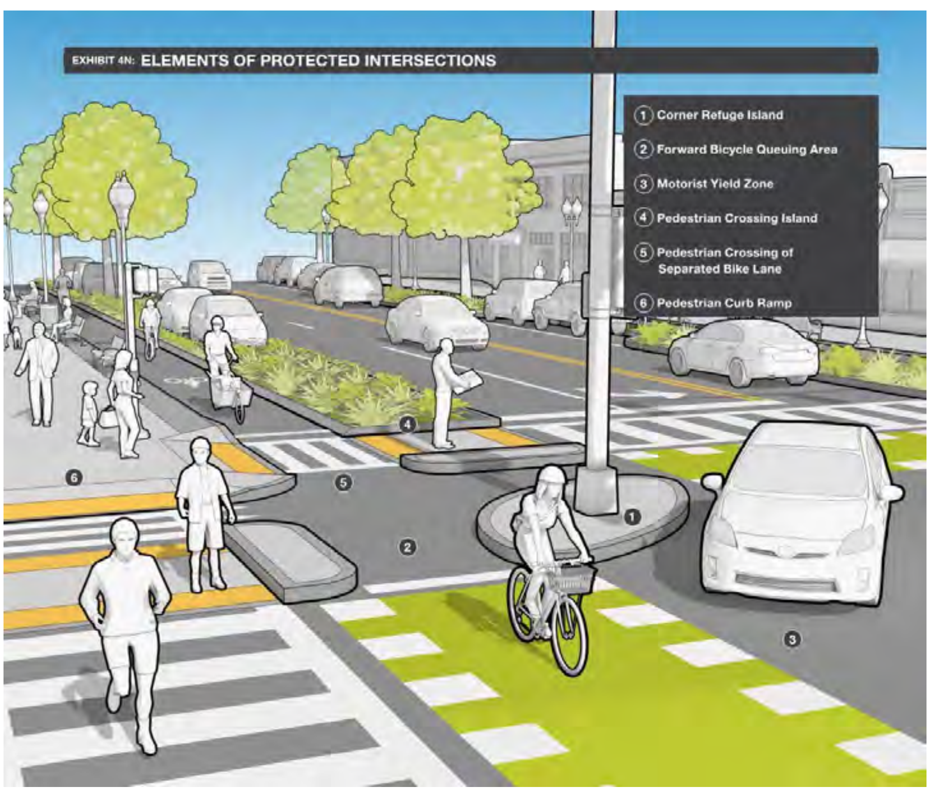
Primary Purpose:	**Bicyclist Safety** *on Major and Collector Streets*
Other Potential Results:	Collision Reduction
	Pedestrian Safety

Protected Intersections physically separate people walking, people biking, and motor vehicles. These facilities provide a continuation of a physically separated bicycle facility through an intersection by placing bicycle facilities within the curb and providing opportunities for all bicycle turning movements. Protected intersections reduce conflicts between vehicles and people biking and eliminate the need for people biking to use the crosswalk. Conflicts between people biking and vehicles may be eliminated if a bicycle signal is also installed. Turning vehicle speeds may be reduced as a result of an increased curb radius. Refer to Improvement Area E in Chapter 5 of the Linda Vista Comprehensive Active Transportation Strategy for an example of a plan of the entire intersection.

Design Guidelines

- Reduce speeds at conflict points
- Minimize curb radius
- Provide adequate sight distance
- Provide clearly marked separate facilities for pedestrians and bicyclists.
- Provide appropriate lighting for all approaches
- If deemed necessary, provide a bicycle signal

Protected Intersection Elements



1. **Corner Refuge Island**

   The corner refuge island allows the bike lane to be physically separated up to the intersection crossing point where potential conflicts with turning motorists can be controlled more easily. It serves an important purpose in protecting the bicyclist from right-turning motor vehicle traffic. The corner island also provides the following benefits:

   - Creates space for a forward bicycle queuing area.
   - Creates additional space for vehicles to wait while yielding to bicyclists and pedestrians who are crossing the road.
   - Reduces crossing distances.
   - Controls motorist turning speeds.

   The corner island geometry will vary greatly depending upon available space, location and width of buffers, and the corner radius. The corner island should be constructed with a standard vertical curb to discourage motor vehicle encroachment. Where the design vehicle exceeds an SU-30, a mountable truck apron should be considered to supplement the corner refuge island.

2. **Forward Bicycle Queuing Area**

   The forward bicycle queuing area provides an area for stopped bicyclists to wait that is fully within the view of motorists who are waiting at the stop bar, thus improving bicyclist visibility. This design enables bicyclists to enter the intersection prior to turning motorists, allowing them to establish the right-of-way in a similar manner as a leading bicycle interval. Ideally, the bicycle queuing area should be at least 6 ft. long to accommodate a typical bicycle length. The opening at the entrance and exit of the crossing to the street should typically be the same width as the bike zone, but no less than 6 ft. wide. Where stops are required, a stop line should be placed near the edge of the crossing roadway. Where feasible, the designer should consider providing additional queuing space on streets with high volumes of bicyclists.

3. **Motorist Yield Zone**

   Bicycle and pedestrian crossings set back from the intersection create space for turning motorists to yield to bicyclists and pedestrians.

4. **Pedestrian Crossing Island**

   The pedestrian crossing island is a space within the street buffer where pedestrians may wait between the street and the separated bike lane. It should be a minimum of 6 ft. wide and should include detectable warning panels. Pedestrian islands provide the following benefits:

   - Enables pedestrians to negotiate potential bicycle and motor vehicle conflicts separately.
   - Shortens pedestrian crossing distance of the street.
   - Reduces the likelihood that pedestrians will block the bike lane while waiting for the walk signal.

The crossing island path may be directly adjacent to the forward bicycle queuing area, but these spaces should not overlap unless the facility is a shared use path. Separation via a raised median improves comfort and compliance among pedestrians and bicyclists (pedestrians are less likely to wander into the bike lane zone, and vice versa). The opening in the crossing island should match the width of the pedestrian crosswalk.

5. **Pedestrian Crossing of Separated Bike Lane**

   Pedestrian crossings should be provided to indicate a preferred crossing of the separated bike lane and to communicate a clear message to bicyclists that pedestrians have the right-of-way. The crossing should typically align with crosswalks in the street. Yield lines in the bike lane in advance of the pedestrian crosswalk are typically used to emphasize pedestrian priority. It is also important to provide clear and direct paths for pedestrians to reduce the likelihood that they will step into or walk within the bike lane except at designated crossings.

6. **Pedestrian Curb Ramp**

   Pedestrian curb ramps may be required to transition pedestrians from the sidewalk to the street where there is a change in elevation between the two. It is preferable to use perpendicular or parallel curb ramps. The ramp must comply with ADA. Detectable warning panels must be provided at the edges of all street and bike zone crossings.

Protected intersections fully comply with MUTCD and other existing design standards.

Source: Massachusetts DOT, *Separated Bike Lane Planning & Design Guide*, 2015.

Bicycle Facilities

Bike Lanes

Primary Purpose:	**Bicyclist Safety** *on arterials, collectors, and residential streets*
Other Potential Results:	Speed Reduction (with lane diet)
	Collision Reduction

Bike lanes designate an exclusive space for bicyclists through the use of pavement markings and signage. The bike lane is located adjacent to motor vehicle travel lanes and flows in the same direction as motor vehicle traffic. Bike lanes are typically on the right side of the street, between the adjacent travel lane and curb, road edge, or parking lane. This facility type may be located on the left side when installed on one-way streets, or may be buffered if space permits. See contra-flow bike lanes for a discussion of alternate direction flow.

Bike lanes enable bicyclists to ride at their preferred speed without interference from prevailing traffic conditions. Bike lanes also facilitate predictable behavior and movements between bicyclists and motorists. Bicyclists may leave the bike lane to pass other bicyclists, make left turns, avoid obstacles or debris, and avoid other conflicts with other users of the street.

Advantages

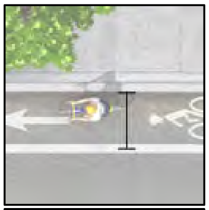
- Increases bicyclist comfort and confidence on busy streets.
- Creates separation between bicyclists and automobiles.
- Increases predictability of bicyclist and motorist positioning and interaction.
- Increases total capacities of streets carrying mixed bicycle and motor vehicle traffic.
- Visually reminds motorists of bicyclists' right to the street.

Typical Applications

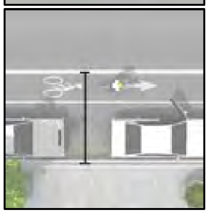
- Bike lanes are most helpful on streets with ≥ 3,000 motor vehicle average daily traffic.
- Bike lanes are most helpful on streets with a posted speed ≥ 25 mph.
- On streets with high transit vehicle volume.
- On streets with high traffic volume, regular truck traffic, high parking turnover, or speed limit > 35 mph, consider treatments that provide greater separation between bicycles and motor traffic such as:
    - Left-side bike lanes
    - Buffered bike lanes
    - Cycle tracks

Bike Lane Design Guidance

Required Features



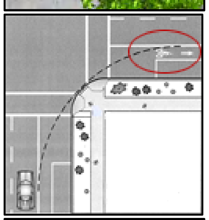
The desirable bike lane width adjacent to a curbface is 6 feet. The desired ridable surface adjacent to a street edge or longitudinal joint is 4 feet, with a minimum width of 3 feet. In cities where illegal parking in bike lanes is a concern, 5 foot wide bike lanes may be preferred.



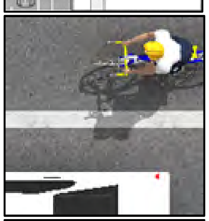
When placed adjacent to a parking lane, the desirable reach from the curb face to the edge of the bike lane (including the parking lane, bike lane, and optional buffer between them) is 14.5 feet; the absolute minimum reach is 12 feet. A bike lane next to a parking lane shall be at least 5 feet wide, unless there is a marked buffer between them. Wherever possible, minimize parking lane width in favor of increased bike lane width.

The desirable bike lane width adjacent to a guardrail or other physical barrier is 2 feet wider than otherwise in order to provide a minimum distance from the barrier.

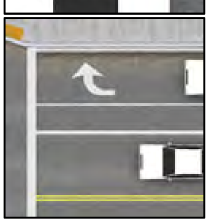
Bike lane wording and/or symbol and arrow markings (MUTCD Figure 9C-3) shall be used to define the bike lane and designate that portion of the street for preferential use by bicyclists.



Bike lane word, symbol, and/or arrow markings (MUTCD Figure 9C-3) shall be placed outside of the motor vehicle tread path at intersections, driveways, and merging areas in order to minimize wear from the motor vehicle path.



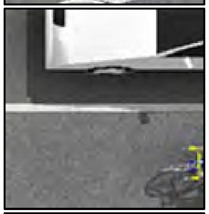
A solid white lane line marking shall be used to separate motor vehicle travel lanes from the bike lane. California Manual on Uniform Traffic Control Devices (MUTCD) recommends the use of a 6 inch line.



A through bike lane shall not be positioned to the right of a right turn only lane or to the left of a left turn only lane (MUTCD 9C.04). A bike lane may be positioned to the right of a right turn only lane if split-phase signal timing is used.

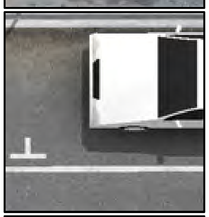
Recommended Features

Bike lanes should be made wider than minimum widths wherever possible to provide space for bicyclists to ride side-by-side and in comfort. If sufficient space exists to exceed desirable widths, see buffered bike lanes. Very wide bike lanes may encourage illegal parking or motor vehicle use of the bike lane.

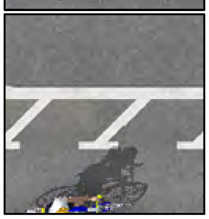


When placed adjacent to parking, a solid white line marking of 4 inch width should be used between the parking lane and the bike lane to minimize encroachment of parked cars into the bike lane.

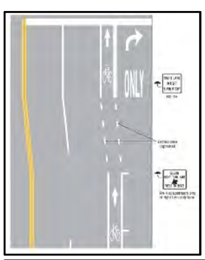
Gutter seams, drainage inlets, and utility covers should be flush with the ground and oriented to prevent conflicts with bicycle tires.



If sufficient space exists, separation should be provided between bike lane striping and parking boundary markings to reduce door zone conflicts. Providing a wide parking lane may offer similar benefits. Refer to buffered bike lanes for additional strategies.



If sufficient space exists and increased separation from motor vehicle travel is desired, a travel side buffer should be used. Refer to buffered bike lanes for additional details.



Lane striping should be dashed through high traffic merging areas.

In San Diego, where local vehicle codes require motor vehicles to merge into the bike lane in advance of a turn movement, lane striping should be dashed from 50 to 200 feet in advance of intersections to the intersection.

Optional Features

"Bike lane" signs (CA MUTCD R 81(CA)) may be located prior to the beginning of a marked bike lane to designate that portion of the street for preferential use by bicyclists. The CA MUTCD lists bike lane signs as optional.

On bike lanes adjacent to a curb, "No Parking" signs (CA MUTCDR7-9/R7-9a) may be used to discourage parking within the bike lane.

Color may be used to enhance visibility of a bike lane, especially in conflict areas.

Maintenance

- Lane lines and stencil markings should be maintained to clear and legible standards.
- Bike lanes should be maintained to be free of potholes, broken glass, and other debris.
- Utility cuts should be back-filled to the same degree of smoothness as the original surface. Take care not to leave ridges or other surface irregularities in the area where bicyclists ride.
- If chip sealing, consider providing new surfacing only to the edge of the bike lane. This results in a smoother surface for bicyclists with less debris. Sweep bike lanes clear of loose chip in the weeks following chip sealing.
- If trenching is to be done in the bike lane, the entire bike lane should be trenched so that there is not an uneven surface or longitudinal joints.

Source: NACTO, *Urban Bikeway Design Guide*, 2013.

Buffered Bike Lanes

Primary Purpose:	**Bicyclist Safety** *on arterials, collectors, and residential streets*
Other Potential Results:	Speed Reduction (with lane diet)
	Collision Reduction

Buffered bike lanes are conventional bicycle lanes paired with a designated buffer space separating the bicycle lane from the adjacent motor vehicle travel lane and/or parking lane. A buffered bike lane is allowed as per CA MUTCD (9C.04) guidelines for buffered preferential lanes.

Typical Applications

- Anywhere a standard bike lane is being considered.
- On streets with high travel speeds, high travel volumes, and/or high amounts of truck traffic.
- On streets with extra lanes or extra lane width.
- Special consideration should be given at transit stops to manage bicycle & pedestrian interactions.

Advantages

- Provides greater distance between motor vehicles and bicyclists.
- Provides space for bicyclists to pass another bicyclist without encroaching into the adjacent motor vehicle travel lane.
- Encourages bicyclists to ride outside of the door zone when buffer is between parked cars and bike lane.
- Provides a greater space for bicycling without making the bike lane appear so wide that it might be mistaken for a travel lane or a parking lane.
- Appeals to a wider cross-section of bicycle users.
- Encourages bicycling by contributing to the perception of safety among users of the bicycle network.

Buffered Bike Lane Design Guidance

Required Features

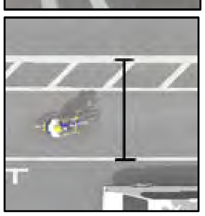
Bicycle lane word and/or symbol and arrow markings (CA MUTCD 9C.04) shall be used to define the bike lane and designate that portion of the street for preferential use by bicyclists.

The buffer shall be marked with 2 solid white lines. White lines on both edges of the buffer space indicate lanes where crossing is discouraged, though not prohibited. For clarity, consider dashing the buffer boundary where cars are expected to cross at driveways.

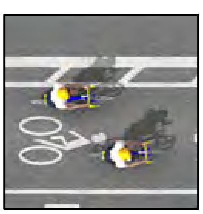
Recommended Features

The use of interior diagonal cross hatching or chevron markings should be considered. These markings should not be used if the buffer is less than 4' in width (CA MUTCD 9C.04).

If used, interior diagonal cross hatching should consist of 6" lines angled at 45 degrees and striped at intervals of 10 to 40 feet. Increased striping frequency may increase motorist compliance.

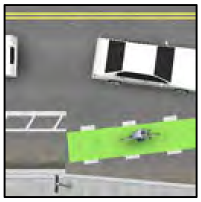


The combined width of the buffer(s) and bike lane should be considered "bike lane width" with respect to guidance given in other documents that don't recognize the existence of buffers. Where buffers are used, bike lanes can be narrower because the shy distance function is assumed by the buffer. For example, a 3 foot buffer and 4 foot bike lane next to a curb can be considered a 7 foot bike lane. For travel side buffered lanes next to on street parking, a 5 foot minimum width is recommended to encourage bicyclists to ride outside of the door zone.



Where bicyclist volumes are high, bicyclist speed differentials are significant, or where side-by-side riding is desired, the desired bicycle travel area width is 7 feet.

Buffers should be at least 18 inches wide because it is impractical to mark a zone narrower than that.

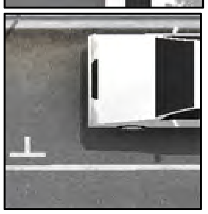


On intersection approaches with right turn only lanes, the bike lane should be transitioned to a through bike lane to the left of the right turn only lane, or a combined bike lane/turn lane should be used if available road space does not permit a dedicated bike lane.

On intersection approaches with no dedicated right turn only lane the buffer markings should transition to a conventional dashed line. Refer to Figure 9C-104CA in CA MUTCD.

Optional Features

Like a conventional bike lane, a wide (4 inch, as per CA MUTCD Figure 9C-104CA) solid white line may be used to mark the edge adjacent to a motor vehicle travel lane. For a parking side buffer, parking T's or a solid line are acceptable to mark between a parking lane and the buffer.



For travel lane buffer configurations, separation may also be provided between bike lane striping and the parking boundary to reduce door zone conflicts. This creates a type of parking-side buffer.

On wide one-way streets with buffered bike lanes, consider adding a buffer to the opposite side parking lane if the roadway appears too wide. This will further narrow the motor vehicle lanes and encourage drivers to maintain lower speeds.

The interior of the buffer area may use different paving materials to separate it from the bike lane. Textured surface materials may cause difficulties for bicyclists as surfaces may be rough. Increased maintenance requirements are likely.

Color may be used at the beginning of each block to discourage motorists from entering the buffered lane. For other uses of color in buffered bike lanes see colored bike facilities.

Maintenance

- Buffer striping may require additional maintenance when compared to a conventional bicycle lane.
- Buffered bike lanes should be maintained free of potholes, broken glass, and other debris.
- If trenching is to be done in the bicycle lane, the entire bicycle lane should be trenched so that there is not an uneven surface or longitudinal joints.

Source: NACTO, Urban Bikeway Design Guide, 2013.

Cycle Tracks (and Separated Bike Lanes)

Primary Purpose:	**Bicyclist Safety** *on arterial and collector streets*
Other Potential Results:	Speed Reduction
	Collision Reduction

A **cycle track** is an exclusive bike facility that combines the user experience of a separated path with the on-street infrastructure of a conventional bike lane. A cycle track is physically separated from motor traffic and distinct from the sidewalk. Cycle tracks have different forms but all share common elements—they provide space that is intended to be exclusively or primarily used for bicycles, and are separated from motor vehicle travel lanes, parking lanes, and sidewalks. In situations where on-street parking is allowed cycle tracks are located to the curb-side of the parking (in contrast to bike lanes).

Cycle tracks may be one-way or two-way, and may be at street level, at sidewalk level, or at an intermediate level. If at sidewalk level, a curb or median separates them from motor traffic, while different pavement color/texture separates the cycle track from the sidewalk. If at street level, they can be separated from motor traffic by raised medians, on-street parking, or bollards. By separating cyclists from motor traffic, cycle tracks can offer a higher level of security than bike lanes and are attractive to a wider spectrum of the public.

All Cycle Tracks Advantages

- Dedicates and protects space for bicyclists in order to improve perceived comfort and safety.
- Eliminates risk and fear of collisions with over-taking vehicles.
- Reduces risk of 'dooring' (when a vehicle door is opened into the bike lane and creates an unexpected hazard for bicyclists, which often results in collision) compared to a bike lane and eliminates the risk of a doored bicyclist being run over by a motor vehicle.
- Low implementation cost by making use of existing pavement and drainage and by using parking lane as a barrier.
- More attractive for bicyclists of all levels and ages

All Cycle Tracks Typical Application

- Streets on which bike lanes may cause many bicyclists to feel stress because of factors such as multiple lanes, high traffic volumes, high speed traffic, high demand for double parking, and high parking turnover.
- Streets for which conflicts at intersections can be effectively mitigated using parking lane setbacks, bicycle markings through the intersection, and other signalized intersection treatments.
- Along streets with high bicycle volumes.

- Along streets with high motor vehicle volumes and/or speeds or streets with heavy truck traffic.
- Special consideration should be given at transit stops to manage bicycle & pedestrian interactions.

One Way Separated Cycle Track (also known as a Separated Bike Lane)

One-way separated cycle tracks are bikeways that are at street level and use a variety of methods for physical protection from passing traffic. A one-way separated cycle track may be combined with a parking lane or other barrier between the cycle track and the motor vehicle travel lane.

Advantages

- Prevents double-parking, unlike a bike lane. As well as general cycle track advantage (see above).

Typical Applications

- Streets with parking lanes, as well as, general cycle track typical applications (see above).

One-Way Separated Cycle Track Design Guidance

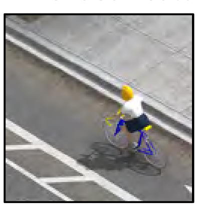
Required Features

A cycle track, like a bike lane, is a type of preferential lane as defined by the CA MUTCD.

Bike lane wording, symbol, and/or arrow markings (CA MUTCD Section 9C-3) shall be placed at the beginning of a cycle track and at periodic intervals along the facility based on engineering judgment.

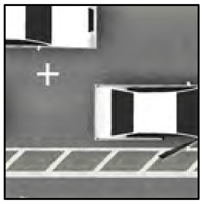
If pavement markings are used to separate motor vehicle parking lanes from the preferential bicycle lane, solid white lane line markings shall be used. Diagonal crosshatch markings may be placed in the neutral area for special emphasis. See CA MUTCD Section 9C.04. Raised medians or other barriers can also provide physical separation to the cycle track.

Recommended Features

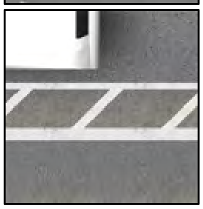


The minimum desired width for a cycle track should be 5 feet. In areas with high bicyclist volumes or uphill sections, the minimum desired width should be 7 feet to allow for bicyclists passing each other.

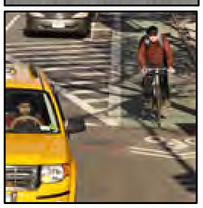
Three feet is the desired width for a parking buffer to allow for passenger loading and to prevent door collisions.



When using a parking separated pavement marking buffer, desired parking lane and buffer combined width is 11 feet to discourage motor vehicle encroachment into the cycle track.



In the absence of a raised median or curb, the minimum desired width of the painted buffer is 3 ft. The buffer space should be used to locate bollards, planters, signs or other forms of physical protection.



Driveways and minor street crossings are a unique challenge to cycle track design. A review of existing facilities and design practice has shown that the following guidance may improve safety at crossings of driveways and minor intersections:

If the cycle track is parking separated, parking should be prohibited near the intersection to improve visibility. The desirable no-parking area is 30 feet from each side of the crossing.

For motor vehicles attempting to cross the cycle track from the side street or driveway, street and sidewalk furnishings and/or other features should accommodated a sight triangle of 20 feet to the cycle track from minor street crossings and from driveway crossings.

Color, yield lines, and "Yield to Bikes" signage should be used to identify the conflict area and make it clear that the cycle track has priority over entering and exiting traffic.

Motor vehicle traffic crossing the cycle track should be constrained or channelized to make turns at sharp angles to reduce travel speed prior to the crossing.

Gutter seams, drainage inlets, and utility covers should be configured so as not to impede bicycle travel and to facilitate run-off.

Sidewalk curbs and furnishings should be used to prevent pedestrian use of the cycle zone.

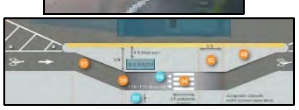
Cycle track width should be larger in locations where the gutter seam extends more than 12 inches from the curb (NACTO, Urban Bikeway Design Guide, 2013.).

Optional Features

Tubular markers (also known as delineators) may be used to protect the cycle track from the adjacent travel lane. The color of the tubular markers shall be the same color as the pavement marking they supplement.

Cycle tracks may be shifted more closely to the travel lanes on minor intersection approaches to put bicyclists clearly in the field of view of motorists

A raised median, bus bulb, or curb extension may be configured in the cycle track buffer area to accommodate transit stops. Bicyclists should yield to pedestrians crossing the roadway at these points to reach the transit stop.



At transit stops, consider wrapping the cycle track behind the transit stop zone to reduce conflicts with transit vehicles and passengers. Bicyclists should yield to pedestrians in these areas. At intersection bus stops, an extended mixing zone may be provided with signage directing bicyclists to yield to buses and loading passengers. Cycle tracks may be configured on the left side of a one-way street to avoid conflicts at transit stops.

A BIKE LANE sign (CA MUTCD R3-17) may be used to designate the portion of the street for preferential use by bicyclists. A supplemental "No Motor Vehicles" selective exclusion sign (CA MUTCD R5-3) may be added for further clarification.

A BIKE LANE legend (CA MUTCD Figure 9C-3) may be used to supplement the preferential lane wording or symbol marking.

Colored pavement may be used to further define the bicycle space.

Two-Way Cycle Tracks

Two-way cycle tracks (also known as separated bike lanes, separated bikeways, and on-street bike paths) are physically separated cycle tracks that allow bicycle movement in both directions on one side of the road. Two-way cycle tracks share some of the same design characteristics as one-way tracks, but may require additional considerations at driveway and side-street crossings.

A two-way cycle track may be configured as a separated cycle track—at street level with a parking lane or other barrier between the cycle track and the motor vehicle travel lane—and/or as a raised cycle track to provide vertical separation from the adjacent motor vehicle lane.

Advantages

- On one-way streets, reduces out of direction travel by providing contra-flow movement and typical requires less street width than separate bike facilities, as well as, general cycle track advantages (see above).

Typical Applications

- On streets with few conflicts such as driveways or cross-streets on one side of the street.
- On streets where there is not enough room for a one-way cycle track on both sides of the street.
- On one-way streets where contra-flow bicycle travel is desired.
- On streets where more destinations are on one side thereby reducing the need to cross the street.
- On streets with extra right-of-way on one side.
- To connect with another bicycle facility, such as a second cycle track on one side of the street.

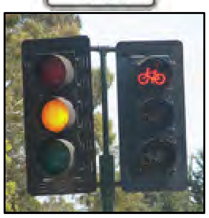
Two-Way Cycle Track Design Guidance

Required Features

Bike lane wording, symbol, and/or arrow markings (CA MUTCD Figure 9C-3) shall be placed at the beginning of a cycle track and at periodic intervals along the facility to define the bike lane direction and designate that portion of the street for preferential use by bicyclists.

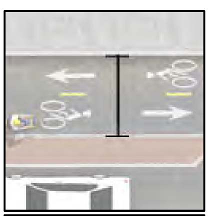
If configured on a one-way street, a "ONE WAY" sign (CA MUTCD Figure 2B-13) with "EXCEPT BIKES" plaque (MUTCD R6-2) shall be posted along the facility and at intersecting streets, alleys, and driveways informing motorists to expect two-way traffic.

A "DO NOT ENTER" sign (CA MUTCD Figure 2B-09) with "EXCEPT BIKES" plaque shall be posted along the facility to only permit use by bicycles.

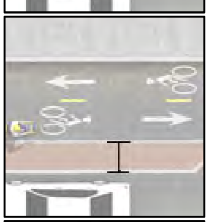


Intersection traffic controls along the street (e.g., stop signs and traffic signals) shall also be installed and oriented toward bicyclists traveling in the contra-flow direction.

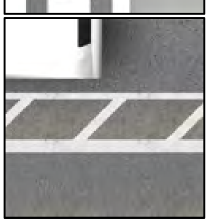
Recommended Features



The desirable two-way cycle track width is 12 feet. Minimum width in constrained locations is 8 feet.



When separated by a parking lane, 3 feet is the desired width for a parking buffer to allow for passenger loading and to prevent dooring collisions.

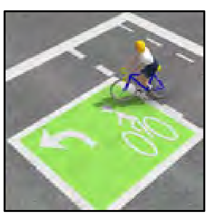


In the absence of a raised median or curb, the desired with of the painted buffer is 3 ft. The buffer space should be used to locate bollards, planters, signs or other forms of physical protection.

A dashed yellow line should be used to separate two-way bicycle traffic and to help distinguish the cycle track from any adjacent pedestrian area.

Driveways and minor street crossings are a unique challenge to cycle track design. A review of existing facilities and design practice has shown that the following guidance may improve safety at crossings of driveways and minor intersections: If the cycle track is parking separated, parking should be prohibited near the intersection to improve visibility. The desirable no-parking area is 30 feet from each side of the crossing.

- For motor vehicles attempting to cross the cycle track from a side street or driveway, street and sidewalk furnishings and/or other features should accommodate a sight triangle of 20 feet to the cycle track from minor street crossings and from driveway crossing.
- Color, yield lines, and "Yield to Bikes" signage should be used to identify the conflict area and make it clear that the cycle track has priority over entering and exiting traffic.
- Motor vehicle traffic crossing the cycle track should be constrained or channelized to make turns at sharp angles to reduce travel speed prior to the crossing.
- If configured as a raised cycle track, the crossing should be raised, in which the sidewalk and cycle track maintain their elevation through the crossing. Sharp inclines on either side from road to sidewalk level serve as a speed hump for motor vehicles.



Two-stage turn queue boxes should be provided to assist in making turns from the cycle track facility.

Optional Features

Same as One-Way separated Cycle Track (refer to page 19).

ADA/PROWAG Considerations

When providing accessible parking spaces alongside cycle tracks, the following general considerations are recommended to accommodate persons with disabilities in the design of one-way and two-way separated cycle tracks. Local parking regulations and roadway context may vary considerably.

- A widened buffer space may be used to accommodate a side mounted vehicle ramp or lift so that it will not protrude into the cycle track and become a hazard to bicyclists. Additional buffer space may be challenging to achieve with limited right-of-way.
- Mid-block curb ramps may be provided near marked accessible parking spaces, or curb ramps may be provided at a consistent interval along the cycle track to provide additional egress points

for wheelchair users to gain access to the sidewalk. Mid-block curb ramps may also offset inconveniences in curbside freight delivery crossing the cycle track.

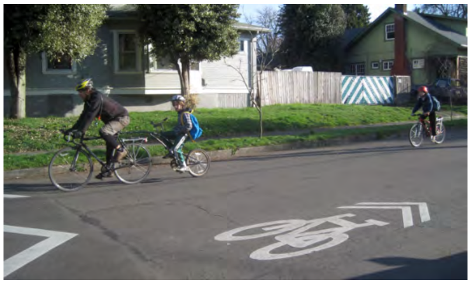
- Roadway cross-slopes should be considered across the cycle track during design as slopes exceeding two percent will create difficulty for bicyclists and some disabled users.
- If significant Taxi or Paratransit service exists along the cycle track, consider providing periodic loading zones to allow the vehicles to pull out of the travel lane.
- If used, consider placement of bollards in the buffer area so as not to impede access by disabled users. Individuals with sight-impairments may lack familiarity with this roadway configuration. Outreach and education for sight-impaired individuals is advised to ensure that these individuals have a better understanding of changes to the roadway alignment. Select design elements, such as tactile surfaces may help reinforce these measures.

Maintenance

- Cycle tracks should be maintained in order to be free of potholes, broken glass, and other debris.
- Street sweeping may have to be done more frequently than on streets, especially during the fall, because the lack of the sweeping effect of motor traffic, together with the canyon profile of a cycle track, tends to hold leaves and other debris.
- Snow removal procedures should minimize the creation of snow banks in the buffer zone, because snow melt flowing across the cycle track can freeze at night, requiring frequent salting in order to avoid hazardous conditions.
- Consider restricting parking at a regularly scheduled time of the week or day to facilitate snow removal and street cleaning.
- If trenching is to be done in the cycle track, the entire facility should be trenched so that there is not an uneven surface or latitudinal joints.

Source: NACTO, Urban Bikeway Design Guide, 2013.

Bicycle Boulevard



Primary Purpose:	**Bicyclist Safety** *on local streets*
Other Potential Results:	Speed Reduction
	Collision Reduction

Bicycle boulevards are streets with low motorized traffic volumes and speeds, designated and designed to give bicycle travel priority. Bicycle boulevards use signs, pavement markings, and speed and volume management measures to discourage through trips by motor vehicles and create safe, convenient bicycle crossings of busy arterial streets.

Signs and Pavement Markings

Signs and pavement markings create the basic elements of a bicycle boulevard. They indicate that a roadway is intended as a shared, slow street, and reinforce the intention of priority for bicyclists along a given route. Signs and pavement markings alone do not create a safe and effective bicycle boulevard, but act as reinforcements to other traffic calming and operational changes made to the roadway.

There are three applications for signing and markings on bicycle boulevards:

- Modified street signs identify and brand the route without introducing a new sign. A bicycle symbol can be placed on a standard road sign, along with the coloration associated with the bicycle boulevard network. These are commonly used in tandem with pavement markings.
- Pavement markings identify the route as a bicycle boulevard and can guide users through jogs. These vary throughout North America from small dots about a foot across to stencils that take up nearly a full lane at 30 feet by 6 feet. Several jurisdictions are using MUTCD-approved shared lane markings on bicycle boulevards for consistency with the rest of the bicycle network and because they are visible and proven to impact desired lane positioning by bicyclists.
- Wayfinding signs also guide users through jogs, help brand the network, and include information about the route by identifying intersecting bikeways and providing distance/time information to nearby or popular destinations. Since few businesses or services are typically located along local streets, wayfinding signs inform users of the direction and distance to key destinations, including neighborhoods, commercial districts, transit hubs, schools and universities, and connecting bikeways.

Advantages

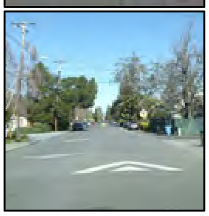
- Signs and pavement markings help users remain on the designated route as it turns.
- Signs and markings differentiate bicycle boulevards from other local streets, indicating good routes for people bicycling and reminding people driving to watch for bicyclists.
- Signs and markings brand the bicycle boulevard to raise awareness of the designated routes and to encourage new users.
- Pavement markings encourage people on bicycles to properly position themselves in the roadway and reinforce to all users where bicyclists should be riding, promoting a more comfortable shared use environment for all users.

- Wayfinding signs provide information about nearby destinations and route finding, improving confidence for people bicycling in a new area.

Required Features

Bicycle wayfinding signage and pavement markings shall be included on bicycle boulevards. Pavement markings and identification/wayfinding signs provide a strong visual identity for the street and designate the corridor as a bicycle route.

Where the bicycle boulevard turns or jogs onto another street, signs and/or markings shall be provided to indicate how users can remain on the route.



Center line stripes (if present) shall be removed or not repainted, except for short sections on intersection approaches that have a stop line or traffic circle. Drivers have an easier time passing bicyclists on roads that do not have centerline stripes. If vehicles cannot easily pass each other using the full width of the street, it is likely that there is too much traffic for the street to be a successful bicycle boulevard.

Recommended Features

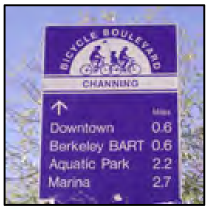
Pavement markings should be large enough to be visible to all road users; 112 inches by 40 inches (the standard size of a shared lane marking) is the minimum recommended size.

Decision and turn signs should include destinations with arrows and distance and/or bicycling times. Bicycling time should assume a typical speed of 10 mph.

Advanced crossing warning signs such as CA MUTCD sign W11-15 (combination bicycle and pedestrian crossing; may be supplemented with AHEAD plaque) should be placed on intersecting streets with more than 5,000 vpd. A non-standard sign using the coloration and style of other bicycle boulevard signs may be used with an arrow showing bi-directional cross traffic.

On narrow local streets where it can be difficult for cars traveling in opposite directions to pass, pavement markings should be applied in closer intervals near the center of the travel lane.

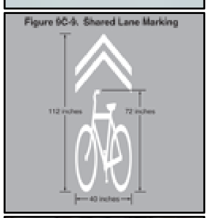
Optional Features



Signs may differ from those outlined in the CA MUTCD to highlight or brand the bicycle boulevard network. If used, signs shall be consistent in content, design, and intent; colors reserved by the CA MUTCD Section 1A.12 for regulatory and warning road signs (red, yellow, orange, etc.) are not recommended. Green, blue and purple are commonly used.

Confirmation signs may include destinations and distance and/or bicycling times.

To minimize sign clutter, a bicycle symbol may be placed on a standard street name sign, along with distinctive coloration.



Either shared lane markings or non-standard markings may be used along bicycle boulevards.

On particularly narrow streets (approximately 25 feet wide with parking), shared lane marking stencils may be placed either in the center of the lane facing each other, or with the bicycle marking in the center of the roadway and two sets of chevrons offset 1 foot in each direction or travel.

For wayfinding purposes, the orientation of the chevron marking at offset intersections may be adjusted to direct bicyclists along discontinuous routes. Alternately, an arrow may be used with the chevrons to indicate the direction of the turn.

On-street parking spaces may be delineated with paint or other materials to clearly indicate where a vehicle should be parked and to discourage motorists from parking their vehicles too far into the adjacent travel lane.

Maintenance

- Maintenance needs for bicycle signs are similar to other signs. Signs will need periodic replacement due to wear.

- The shared lane marking may be placed in the center of the lane between wheel treads to minimize wear.

Bicycle Signals

Primary Purpose:	**Bicyclist Safety** *on arterial and collector streets*
Other Potential Results:	Collision Reduction

Bicycle signals facilitate bicyclist crossings of roadways. Bicycle signals make crossing intersections safer for bicyclists by clarifying when to enter an intersection and by restricting conflicting vehicle movements. Bicycle signals are traditional three lens signal heads with green-yellow and red bicycle stenciled lenses that can be employed at standard signalized intersections. Push buttons, signage, and pavement markings may be used to highlight these facilities for both bicyclists and motorists.

Bicycle detection can be used at actuated signals to alert the signal controller of bicycle crossing demand on a particular approach. Bicycle detection occurs either through the use of push-buttons or by automated means (e.g., in-pavement loops, video, microwave, etc). Inductive loop vehicle detection at many signalized intersections is calibrated to the size or metallic mass of a vehicle. For bicycles to be detected, the loop must be adjusted for bicycle metallic mass. Otherwise, undetected bicyclists must either wait for a vehicle to arrive, dismount and push the pedestrian button (if available), or cross illegally.

Bicycle Signal Benefits

- Separates bicycle movements from conflicting motor vehicle, streetcar, light rail, or pedestrian movements.
- Provides priority to bicycle movements at intersections (e.g., a leading bicycle interval).
- Accommodates of bicycle-only movements within signalized intersections (e.g., providing a phase for a contra-flow bike lane that otherwise would not have a phase). Through bicycle travel may also occur simultaneously with parallel auto movement if conflicting automobile turns are restricted.
- Improves operation and provides appropriate information for bicyclists (as compared to pedestrian signals).
- Helps to simplify bicycle movements through complex intersections and potentially improve operations or reduce conflicts for all modes.

Typical Applications

- Where a stand-alone bike path or multi-use path crosses a street, especially where the needed bicycle clearance time differs substantially from the needed pedestrian clearance time.
- To split signal phases at intersections where a predominant bicycle movement conflicts with a main motor vehicle movement during the same green phase.
- At intersections where a bicycle facility transitions from a cycle track to a bicycle lane, if turning movements are significant.

- At intersections with contra-flow bicycle movements that otherwise would have no signal indication and where a normal traffic signal head may encourage wrong-way driving by motorists.
- To give bicyclists an advanced green (like a leading pedestrian interval), or to indicate an "all-bike" phase where bicyclist turning movements are high.
- At complex intersections that may otherwise be difficult for bicyclists to navigate.
- At intersections with high numbers of bicycle and motor vehicle crashes.
- At intersections near schools (primary, secondary, and university).

Bicycle Signal Head Required Features

The bicycle signal head shall be placed in a location clearly visible to oncoming bicycles.

If the bicycle phase is not set to recall each cycle, bicycle signals shall be installed with appropriate detection and actuation. See "Detection and Actuation Required Features" below.

An adequate clearance interval (i.e., the movement's combined time for the yellow and all-red phases) shall be provided to ensure that bicyclists entering the intersection during the green phase have sufficient time to safely clear the intersection before conflicting movements receive a green indication.

If the bicycle signal is used to separate through bicycle movements from right turning vehicles, then right turn on red shall be prohibited when the bicycle signal is active. This can be accomplished with the provision of a traffic signal with red, yellow, and green arrow displays. An active display to help emphasize this restriction is recommended.

Bicycle signal heads are generally the preferred option over installing a sign instructing bicycles to use pedestrian signals. While instructing bicyclists to use pedestrian signals is a low-cost option, the length of the pedestrian clearance interval (typically timed at 3.5 feet per second) is usually inappropriate for bicyclists. The result is that approaching bicyclists have poor information about when it is safe and legal to enter the intersection.

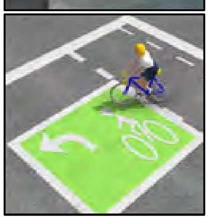
Detection and Actuation Required Features

The sensitivity of standard video and in-pavement loop detectors shall be adjusted to ensure that they detect bicyclists.

Due to magnetic field symmetry, the center of inductive loops is the most sensitive location for detection for both diagonal slashed detectors and quadrupole loop detectors (above left). Square and unmodified circle detectors are most sensitive at their edge (left).

If not provided within a dedicated bike lane, shoulder, or cycle track, bicycle signal detection shall be visible to bicyclists through signs and/or stencils so that bicyclists know that the intersection has detection and where to position their bicycle to activate the signal.

If provided, push-button activation shall be located so bicyclists can activate the signal without dismounting. If used, push buttons should have a supplemental sign facing the bicyclist's approach to increase visibility.



On streets with bike lanes or bikeable shoulders, bicycle detectors shall be located in the bike lane or shoulder. Detection shall be located where bicycles are intended to travel and/or wait. If leading signal detection is provided, it shall be located along a bike lane or in the outside travel lane. Detection at signals shall be placed where bicyclists wait, either in the center of a bike box or immediately behind the stop bar in the bike lane.

Bicycle Signal Head Required Features

A supplemental "Bicycle Signal" sign plaque should be added below the bicycle signal head to increase comprehension.

Signal timing with bicycle-only indications should consider activating the signal with each cycle prior to implementation with detection. This will increase awareness of the interval for motorists and bicyclists. In a close network of signals, the timing should consider how often a bicyclist will be stopped in the system to insure that undue delay is not a result of the bicycle-only signal.

Intersection crossing markings should be used where the bicycle travel path through the intersection is unusual (e.g., diagonal crossing) or needed to separate conflicts.

Passive actuation of bicycle signals through loops or another detection method is preferred to the use of push-buttons for actuation where practical. Passive actuation is more convenient for bicyclists. If push buttons are used, they should be mounted such that bicyclists do not have to dismount to actuate the signal.

The primary factors in choosing an appropriate clearance interval are bicyclist travel speed and intersection width. At most signalized intersections, vehicular clearance intervals will likely function well for bicyclists. Exceptions requiring consideration include signals along cycle tracks or bicycle facilities that may be likely to serve significant levels of novice cyclists.

Bicyclists typically need longer minimum green times than motor vehicles due to slower acceleration speeds. This time is usually more critical for bicyclists on minor-road approaches, since crossing distance of major roads is typically greater than that of minor roads, and crossings from minor roads are often subject to short green intervals. Bicycle minimum green time is determined using the bicycle crossing time for standing bicycles.

Maintenance

- Inductive loop detector sensitivity settings need to be monitored and adjusted over time.
- Bicycle signal heads require the same maintenance as standard traffic signal heads, such as replacing bulbs and responding to power outages.

Source: NACTO, *Urban Bikeway Design Guide*, 2013.

Pedestrian Facilities

Continental Crosswalks

Primary Purpose:	**Pedestrian Safety** *on arterial, collector, and residential streets*
Other Potential Results:	Collision Reduction

Crosswalks are marked crossings intended to indicate the preferred location for pedestrians to cross a roadway. **"Continental"** markings are crosswalk bars centered in the middle of the crossing and aligned parallel to the direction of vehicular travel. This treatment is used to offer as much comfort, visibility and protection to pedestrians as possible.

Continental crosswalks are preferable to standard parallel or dashed pavement markings. These are more visible to approaching vehicles and have been shown to improve yielding behavior. Continental striping facilitates eye contact by moving pedestrians directly into the driver's field of vision.

Design Guidelines

Critical Features

- Stripe all signalized crossings to reinforce yielding of vehicles turning during a green signal phase. The majority of vehicle-pedestrian incidents involve a driver who is turning.
- Stripe the crosswalk as wide as or wider than the walkway it connects to. This will ensure that when two groups of people meet in the crosswalk, they can comfortably pass one another. Crosswalks should be aligned as closely as possible with the pedestrian through zone. Inconvenient deviations create an unfriendly pedestrian environment.
- Street lighting should be provided at all intersections, with additional care and emphasis taken at and near crosswalks.
- Accessible curb ramps are required by the Americans with Disabilities Act (ADA) at all crosswalks.

Recommended Features

- Keep crossing distances as short as possible using tight corner radii, curb extensions, and medians. Interim curb extensions may be incorporated using flexible posts and epoxied gravel.
- An advanced stop bar should be located at least 4 feet in advance of the crosswalk to reinforce yielding to pedestrians.
- Stop bars should be perpendicular to the travel lane, not parallel to the adjacent street or crosswalk.

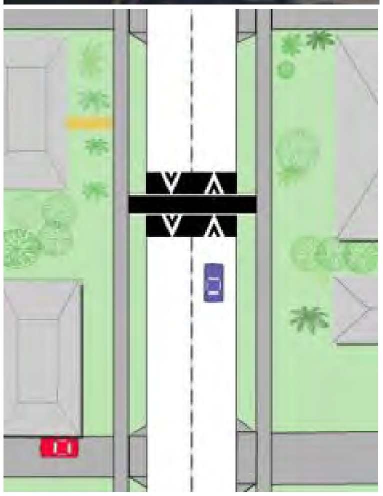
Optional Features

- Right-turn-on-red restrictions may be applied citywide or in special city districts and zones where vehicle pedestrian conflicts are frequent. Right-turn-on-red restrictions reduce conflicts between vehicles and pedestrians.

- Continental Crosswalk can also be used in conjunction with Raised Crosswalks, Pedestrian Refuge Islands, Staggered crosswalks, lighted crosswalks, and Rapid Rectangular Flashing Beacons (RRFB's). Refer to subsequent pages for more information about these facilities.

Source: NACTO, Urban Bikeway Design Guide, 2013.

Raised Crosswalks



Primary Purpose:	**Speed Reduction** *on Residential and Collector streets*
Other Potential Results:	Pedestrian Safety
	Speed Reduction

Raised Crosswalks are similar to speed tables; however, they provide a marked pedestrian crossing at a leveled pedestrian path and street crossing forcing vehicles to slow before passing the crosswalk. This device can be used at intersections or mid-block locations. Raised crosswalks are highly effective in areas with large volumes of pedestrian traffic, such as schools or downtown business districts. Raised crosswalks can be combined with bulb-outs to decrease the distance a pedestrian is in the vehicle travel way. They are also installed at alleyway and major driveway to improve the intersection of an alley/driveway with a major street.

MEASURED EFFECTIVENESS

Speed Reduction[1]	-18%
Volume Reduction[2]	-12%
Collision Reduction[3]	-45%

Source: Traffic Calming – State of the Practice 2000

[1]Reduction in 85th Percentile Speeds between slow points

[2]Reduction in Vehicles per Day

[3]Reduction in Average Annual Collisions

[4]ID = Insufficient Data to predict reduction effect

Advantages:

- Speed reduction
- Improves visibility of pedestrians and crossings
- Can provide pedestrian mid-block crossing

Disadvantages:

- Loss of parking
- EMS/Fire vehicles forced to almost stop at ramp
- May create more noise from decelerating and accelerating

Raised Crosswalk Design Guidelines

Raised Crosswalk Tapers

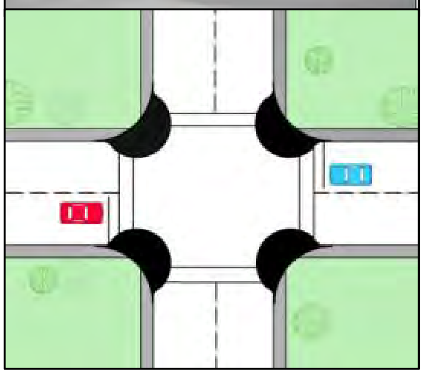
Raised crosswalks should always be designed to a height equal to the curb height, but not fully extended to the curb, as this will impede drainage. To bridge the gap between the sidewalk and raised crosswalk, a metal connector plate shall be used. The device should also include truncated domes to indicate the entrance to the crosswalk from the sidewalk. Raised crosswalks are not appropriate where curbs do not exist.

Signage

Raised crosswalks should always have pavement markings due to concerns about visibility of pedestrians to drivers.

Source: City of San Diego, *Traffic Calming Program Handbook*¸ 2006.

Bulb-Outs/Curb Extensions



Primary Purpose:	**Improve Pedestrian Safety** *on Residential, Collector, and Major streets*
Other Potential Results:	Volume Reduction
	Speed Reduction
	Collision Reduction

Bulb-outs, also known as Pop-outs and Curb Extensions, narrow the width of a street at intersection and mid-block locations by extending the curb into the parking lanes. This creates a shorter crossing distance, reducing a pedestrian's exposure time to oncoming vehicles. Bulb-outs also may slow vehicles making right turns, as the potential turning radius is greatly reduced. By placing the pedestrian at the edge of the travel lane, both the pedestrian and driver have a better view of each other. Bulb-outs are best used in locations with high pedestrian volumes and locations in need of improved visibility, such as downtown areas and near schools.

MEASURED EFFECTIVENESS	
Speed Reduction[1]	-7%
Volume Reduction[2]	-10%
Collision Reduction[3]	I/D[4]
Source: Traffic Calming – State of the Practice 2000	
[1]Reduction in 85th Percentile Speeds between slow points	
[2]Reduction in Vehicles per Day	
[3]Reduction in Average Annual Collisions	
[4]ID = Insufficient Data to predict reduction effect	

Advantages

- Creates shorter crossing distances
- Increase the visibility of pedestrians
- Speed reduction for through traffic and right turning vehicles

Disadvantages

- Difficult for emergency vehicles and larger vehicles to turn

Bulb-out Design Guidance

Drainage

Bulb-outs should be constructed to minimize or avoid blocking the flow of the gutter to reduce cost and maintenance.

Width

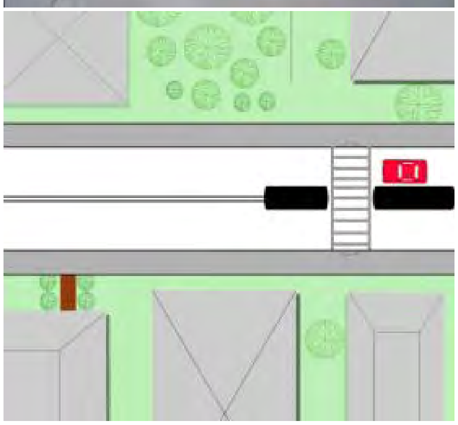
Bulb-outs should not be constructed wider than the approximate width of a parked vehicle. Extension of these devices any further than the width of a parked vehicle (or the length of a vehicle in the case of diagonal parking) could present potential safety issues to other drivers and bicyclists.

Landscaping

Aesthetic upgrades not only improve the aesthetic quality of the device but also increase the visual presence by extending the device's vertical size and introducing more varied colors. Landscaping should be low laying shrubs and plants.

Source: City of San Diego, *Traffic Calming Program Handbook*, 2006

Pedestrian Refuges



Primary Purpose:	**Pedestrian Safety** *on Residential, Collector, and Major streets*
Other Potential Results:	Collision Reduction
	Speed Reduction

Pedestrian Refuges, also known as Pedestrian Crossing islands, are raised median islands paced on a street (typically midblock) to separate crossing pedestrians from motor vehicles. They are used on wide streets to shorten a pedestrian's crossing distance and provide pedestrians with a refuge. To provide refuge, the median should have a minimum width of 6'. This also allows the pedestrian to cross one direction of traffic at a time. After a pedestrian crosses one lane of traffic, they may wait in the median area before finding a gap in traffic to safely cross to the other side of the street. These median refuges can be staggered and/or landscaped to break up the sight line of the drive and enhance the aesthetics of the neighborhood. Landscaping also increases the visibility of the tool.

MEASURED EFFECTIVENESS

Pedestrian Safety[1]	Reduce pedestrian collisions by 46%

[1]Source: Federal Highway Administration, *Medians and Pedestrian Crossing Islands in Urban and Suburban Areas* http://safety.fhwa.dot.gov/provencountermeasures/fhwa_sa_12_011.cfm

Advantages

- Provides ability for a safer pedestrian crossing
- Possible opportunity for landscaping
- Provide pedestrians a safe place to stop mid-point of the roadway to find a gap in traffic before crossing the remaining distance
- Can be used for access management for vehicles (creating right-in/right-out turning movements
- May reduce speeds of vehicles approaching the crossing
- May restrict access to driveways in vicinity of device

Disadvantages

- Potential loss of parking
- May restrict access to driveways in vicinity of device

Source: City of San Diego, *Traffic Calming Program Handbook*¸ 2006.

Rectangular Rapid Flashing Beacons (RRFB's)

Primary Purpose:	**Pedestrian Safety** *on Residential, Collector, and Major streets*
Other Potential Results:	Collision Reduction
	Speed Reduction

Rectangular Rapid Flash Beacons (RRFBs) are a type of active warning beacon that supplement warning signs at unsignalized intersections or mid-block crosswalks. RRFB's use an irregular flash pattern similar to emergency flashers on police vehicles and can be installed on either two-lane or multi-lane roadways. Active warning beacons should be used to alert drivers to yield where pedestrians and bicyclists have the right-of-way crossing a road.

Advantages

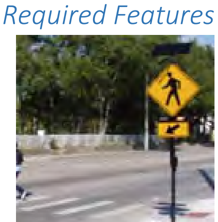
- Offers lower cost alternative to traffic signals and Hybrid Beacons.
- Significantly increases driver yielding behavior at crossings when supplementing standard crossing warning signs and markings.
- The unique nature of the stutter flash (RRFBs) elicits a greater response from drivers than traditional methods.

Typical Applications

- On multi-lane roads, where pedestrians have a longer distance to cross
- On roads where the volume of vehicles and speeds along a roadway may be a concern for pedestrians to find an adequate gap in traffic to safely cross
- Usually implemented at high-volume pedestrian crossings
- At locations where bike facilities cross roads at mid-block locations or at intersections where signals are not warranted or desired.
- At locations where driver compliance at crossings is low.

RRFB Design Guidelines

Required Features



Active warning beacons shall be installed on the side of the road. If center islands or medians exist, providing secondary installations in these locations marginally improves driver yielding behavior.

Beacons shall be unlit when not activated.

Refer to CA MUTCD for additional guidance on the use of RRFBs.

Maintenance

Depending on power supply, maintenance can be minimal. If solar power is used, RRFBs should run for years without issue.

Source: NACTO, *Urban Bikeway Design Guide*, 2013.

Pedestrian Hybrid Beacons (HAWK) Signals

Primary Purpose:	**Pedestrian Safety** *on Residential, Collector, and Major streets*
Other Potential Results:	Collision Reduction
	Speed Reduction

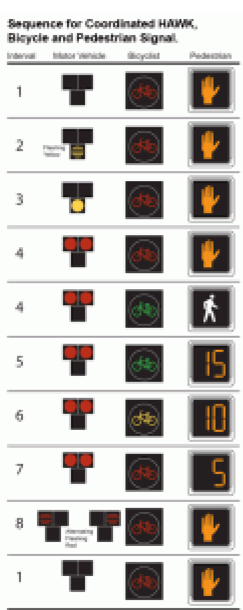
Officially known as a Pedestrian Hybrid Beacon, a **HAWK (High-Intensity Activated crossWalK)** beacon is a traffic control device used to stop traffic and allow pedestrians and cyclists to cross safely. It consists of a signal-head with two red lenses over a single yellow lens on the major street, and pedestrian and/or bicycle signal heads for the minor street. There are no signal indications for motor vehicles on the minor street approaches. Hybrid beacons were developed specifically to enhance pedestrian crossings of major streets. However, several cities have installed modified hybrid beacons that explicitly incorporate bicycle movements.

Hybrid beacons are used to improve non-motorized crossings of major streets in locations where side-street volumes do not support installation of a conventional traffic signal (or where there are concerns that a conventional signal will encourage additional motor vehicle traffic on the minor street). Hybrid beacons may also be used at mid-block crossing locations (e.g., trail crossings).

MEASURED EFFECTIVENESS

Pedestrian Safety[1]	Reduce pedestrian collisions up to 69%
	Reduce total roadway crashes up to 29%

[1]Source: Federal Highway Administration, *Pedestrian Hybrid Beacon*
http://safety.fhwa.dot.gov/provencountermeasures/fhwa_sa_12_012.cfm



Operations

Hybrid beacon operations are significantly different from the operations of standard traffic control signals. The figure below illustrates the general sequence of phases for a hybrid beacon as applied for pedestrian crossings. The primary difference compared to a standard signal is that a hybrid beacon displays no indication (i.e., it is dark) when it is not actuated. Upon actuation (by a pedestrian or bicyclist on the minor street), the beacon begins flashing yellow, changes to steady yellow, then displays a solid red indication with both red lenses. During the solid red phase, drivers must stop and remain stopped, as with a standard traffic signal.

Prior to returning to no indication, the beacon displays an alternating flashing "wig-wag" red that allows drivers to stop and proceed when clear, as they would with a stop sign.

Advantages

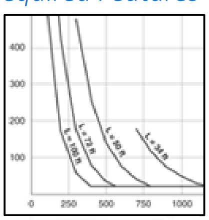
- Can be implemented when a conventional signal warrant is not met or where a conventional traffic signal is not desired due to the potential to increase traffic volumes on minor street approaches.
- Creates spaces for pedestrians and bicyclists to cross multi-lane, high volume, higher speed roads to cross busy streets.
- Is more flexible for bicyclists than a full signal as bicyclists do not have to actuate it if they find ample crossing opportunities during off-peak conditions.
- Associated with very high driver compliance (studies show greater than 95% driver compliance with red indications).
- Improves street crossing safety.

Typical Applications

- Where bike paths intersect major streets without existing signalized crossings.
- At crossing locations that do not meet traffic signal warrants, or at locations that meet signal warrants but a decision is made not to install a traffic control signal.
- At mid-block crossings of major roadways with high bicycle or pedestrian volumes.
- At locations with inadequate gaps in traffic for pedestrians to safely cross, or higher speed roads, where pedestrian delay is excessive, at locations with long crossings.

Design Guidance

Required Features



The CA MUTCD provides warrants for the use of hybrid beacons based on motor vehicle speed, crossing length, motor vehicle volumes, and pedestrian volumes.

The MUTCD provides standards related to the design and location of hybrid beacons (e.g., mounting location, height, signal timing of phases, etc.).

Recommended Features

When hybrid beacons are installed to facilitate bicycle movements, a bicycle signal head should be installed in addition to pedestrian signal heads. This allows for safer and more efficient operations that effectively account for the different clearance requirements for pedestrians and bicycles. When used, a bicycle signal head should display a flashing red indication to bicyclists when the hybrid beacon is dark (i.e., the bicycle signal should not rest in dark). This allows bicyclists to treat the intersection as a “Stop” and proceed without the requirement of activating the hybrid beacon.

Should be installed at least 100 feet from side streets or driveways that are controlled by STOP or YIELD signs (CA MUTCD).

Parking and other sight obstructions should be prohibited for at least 100 feet in advance of and at least 20 feet beyond the marked crosswalk, or site accommodations should be made through curb extensions or other techniques to provide adequate sight distance.

The installation should include suitable standard signs and pavement markings.

If installed within a signal system, the HAWK Signal should be coordinated with other signals.

Optional Features

Due to the unique operational features of hybrid beacons, communities that are installing hybrid beacons for the first time may wish to coordinate installation with a public information campaign to educate roadway users on the operations and legal requirements associated with hybrid beacons.

Maintenance

- Hybrid beacons are subject to the same maintenance needs and requirements as standard traffic signals.
- Signing and striping need to be maintained to help users understand the relatively unfamiliar traffic control.

Source: NACTO, *Urban Bikeway Design Guide*, 2013., California Department of Transportation, *California Manual on Uniform Traffic Control Devices,* 2015.

Traffic Calming Treatments

Speed Humps

Primary Purpose:	**Speed Reduction** ***on Residential and Collector* streets***
Other Potential Results:	Collision Reduction
	Volume Reduction

Speed humps are devised to encourage drivers to travel at lower speeds over the device. They are approximately 3 ½" inches high, have a parabolic-shape surface, and span the width of the road. The height causes the driver to be jolted if traveling at too high of a speed. However, due to the advance in vehicle suspension system, this device may not affect all drivers. It must be cautioned that these devices do have a severe impact on emergency response services and can create an uncomfortable situation for all passengers including those in ambulances.

*May only be used on low ADT two-lane collectors that do not have two-way left-turn lanes or dedicated left-turn pockets.

MEASURED EFFECTIVENESS	
Speed Reduction[1]	-22%
Volume Reduction[2]	-18%
Collision Reduction[3]	-13%
Source: Traffic Calming – State of the Practice 2000	
[1]Reduction in 85th Percentile Speeds between slow points	
[2]Reduction in Vehicles per Day	
[3]Reduction in Average Annual Collisions	
[4]ID = Insufficient Data to predict reduction effect	

Advantages:

- Speed reduction
- May discourage cut-through traffic
- Relatively low cost (approximately $2,000 per hump)

Disadvantages:

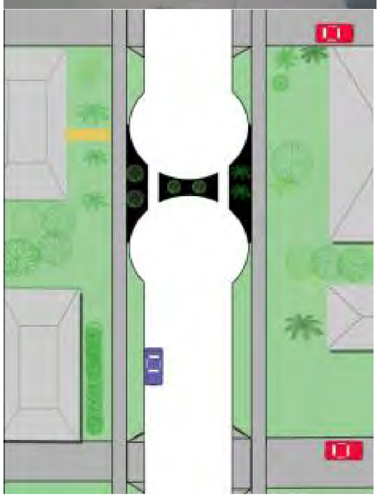
- Uncomfortable for bicyclists and vehicle passengers
- Delay of emergency response vehicles of approximately 3-5 seconds per hump for fire trucks and up to 10 seconds for ambulance with patient source. (Source: Institute of Transportation Engineers, *Traffic Calming Measures – Speed Hump,* http://www.ite.org/traffic/hump.asp)

Variation of Speed Humps – Speed Lumps

Speed lumps are similar to road humps, however, speed lumps include cut out set at a distance to allow for emergency vehicles to pass without having to slow down. This allows lumps to address the concern for delayed emergency response. This feature can also cause motorists to try to "straddle" the cut outs to avoid driving over the lump.

Source: City of San Diego, *Traffic Calming Program Handbook*, 2006.

Full Street Closure/Cul-de-sac



Primary Purpose:	**Volume Reduction** *on Residential streets*
Other Potential Results:	Collision Reduction
	Speed Reduction

Full Street Closures/Cul-de-sacs are created by constructing a barrier across the entire street, closing the street to all through traffic. This measure will have a drastic effect on local traffic circulation. They are used to force changes in travel patterns – such as preventing cut-through traffic in residential neighborhoods or to eliminate dangerous or problematic intersections. Adjacent roadways will experience an increase in traffic due to the closure and local residents will have longer travel routes. Full street closures should be constructed in a manner which maintains pedestrian, bicycle and emergency vehicle access.

MEASURED EFFECTIVENESS

Speed Reduction[1]	6-20%[4]

Source:

[1]Minnesota Department of Transportation, *Investigating the Effectiveness of Traffic Calming Strategies on Driver Behavior, Traffic Flow, and Speed*, 2001, http://nacto.org/docs/usdg/investigating_effectiveness_of_traffic_calming_strategies_corkle.pdf.

Advantages

- Eliminate cut-through traffic
- Potential landscaping opportunity
- May reduce speeds

Disadvantages

- Limits access to the neighborhood
- Will change neighborhood traffic patterns
- Will increase trip length for many residents
- Will increase traffic on adjacent roadways
- Emergency response routes may lengthen

Source: City of San Diego, *Traffic Calming Program Handbook*, 2006.

Curb Radius Reduction

Primary Purpose:	**Speed Reduction** *on Residential, Collector, and Major streets*
Other Potential Results:	Collision Reduction
	Pedestrian Safety

Curb Radius Reductions provide tighter corner radii at intersections. This treatment may reduce the right-turn speed of vehicles. By reducing right-turn speeds, some drivers may be discouraged from cutting through the neighborhood. It also will increase the visibility of pedestrians to drivers and shorten the crossing distance for pedestrians.

This treatment may cause difficulty for large vehicles. Some larger vehicles may not be able to make the turn without crossing into the opposing travel lane. This treatment may not be appropriate in areas that experience high volumes of large vehicles.

Measured Effectiveness

Insufficient Data to predict reduction effect

Advantages

- Slows right turn speeds
- Increases the visibility of pedestrian to drivers
- Shorten pedestrian crossing distance

Disadvantages

- Difficult for large vehicles to make right-turn

Design Guidelines

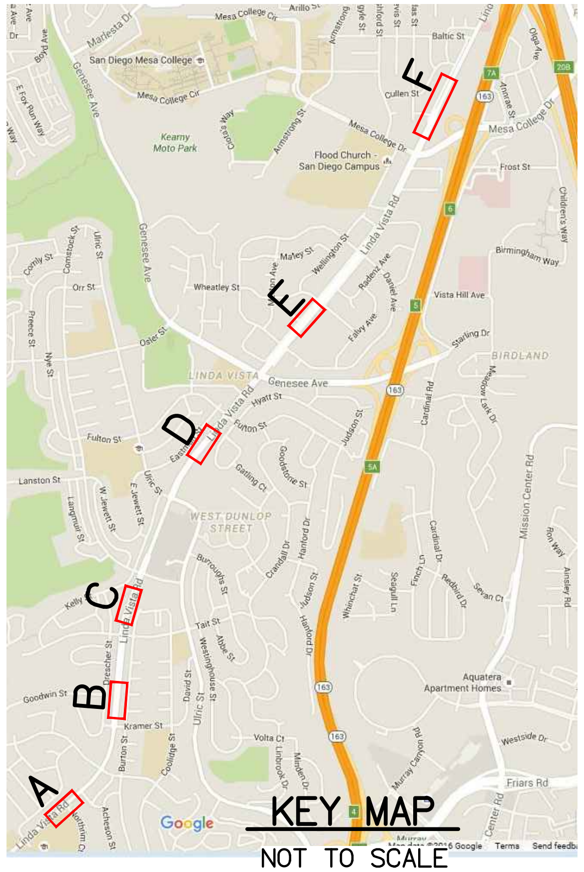
- Design radius for a turning speed of 15 mph or less for pedestrian safety
- Design for the smallest possible design vehicle
- Accommodate trucks and buses on designated bus and truck routes
- Design for emergency vehicles

Drainage Improvements may be required for streets with unique roadway alignments or pre-existing drainage problems. If the proposed traffic calming feature would fundamentally alter the drainage patterns for a roadway, improvements would be required. The price of these improvements would be dependent on size and feasibility.

Source: City of San Diego, *Traffic Calming Program Handbook*, 2006.

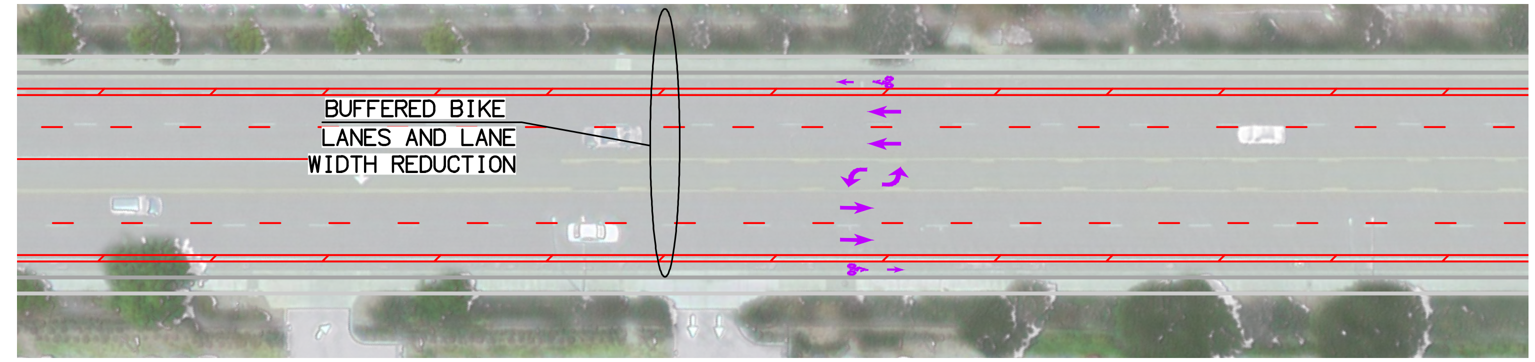
APPENDIX H

11"x17" Concept Plans

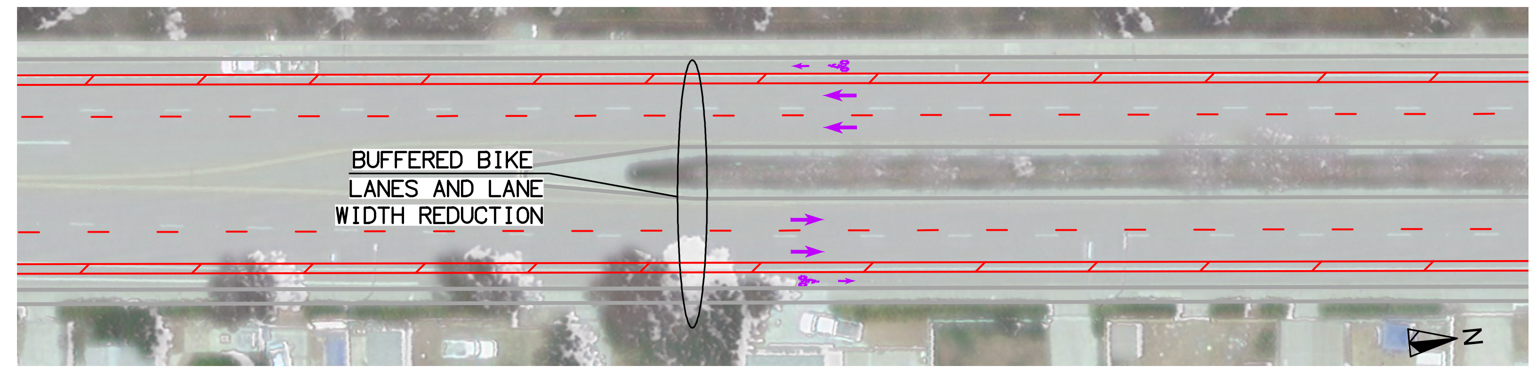


KEY MAP
NOT TO SCALE

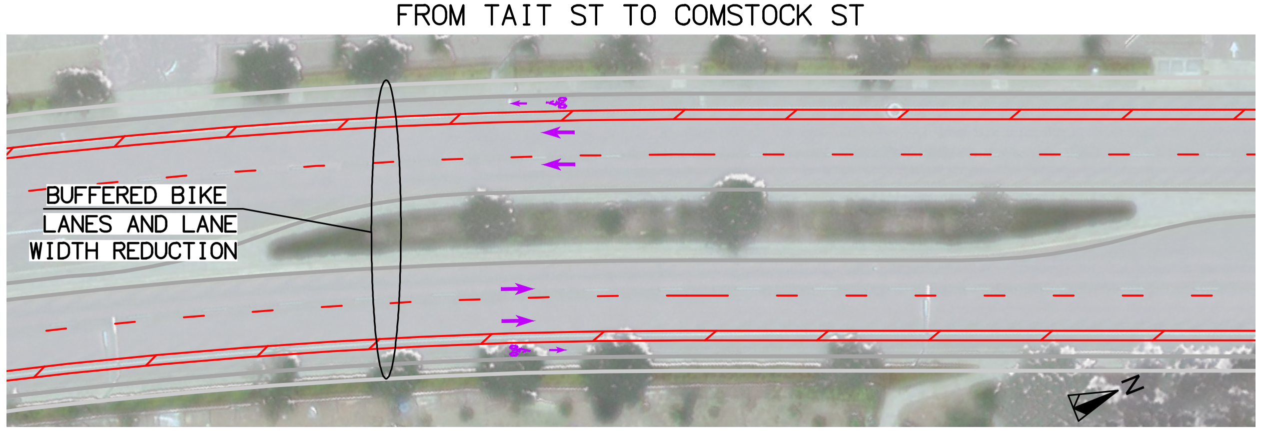
DETAIL "A"
FROM ALCALA KNOLLS DR TO KRAMER ST



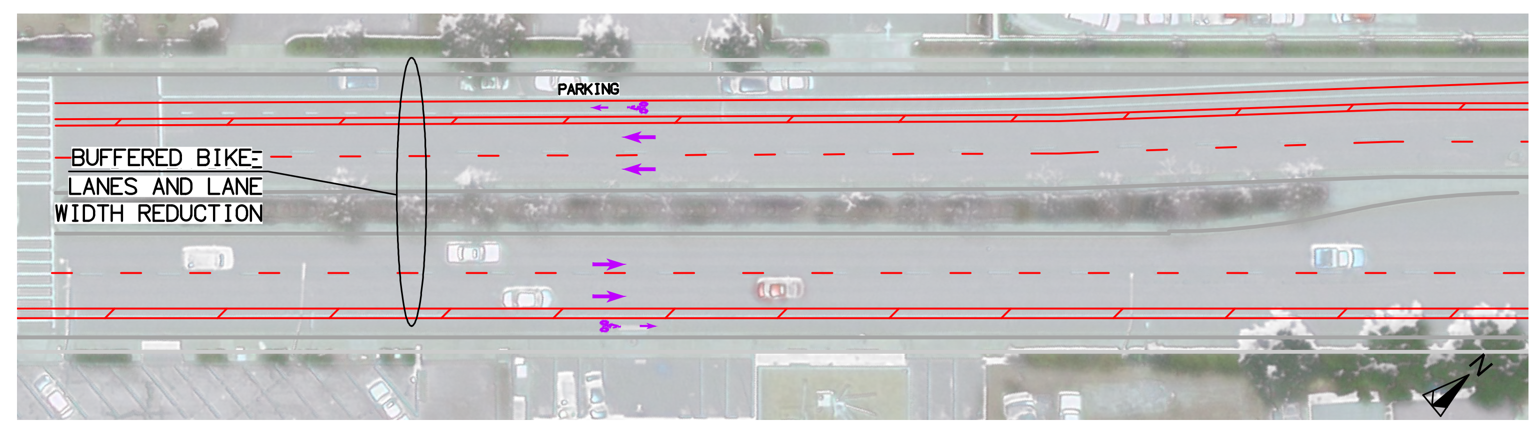
DETAIL "B"
FROM KRAMER ST TO TAIT ST



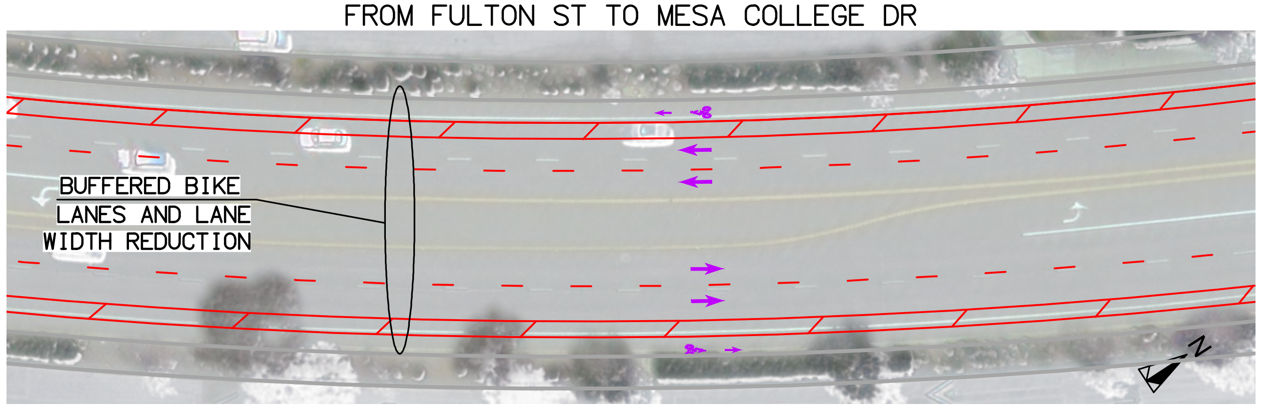
DETAIL "C"
FROM TAIT ST TO COMSTOCK ST



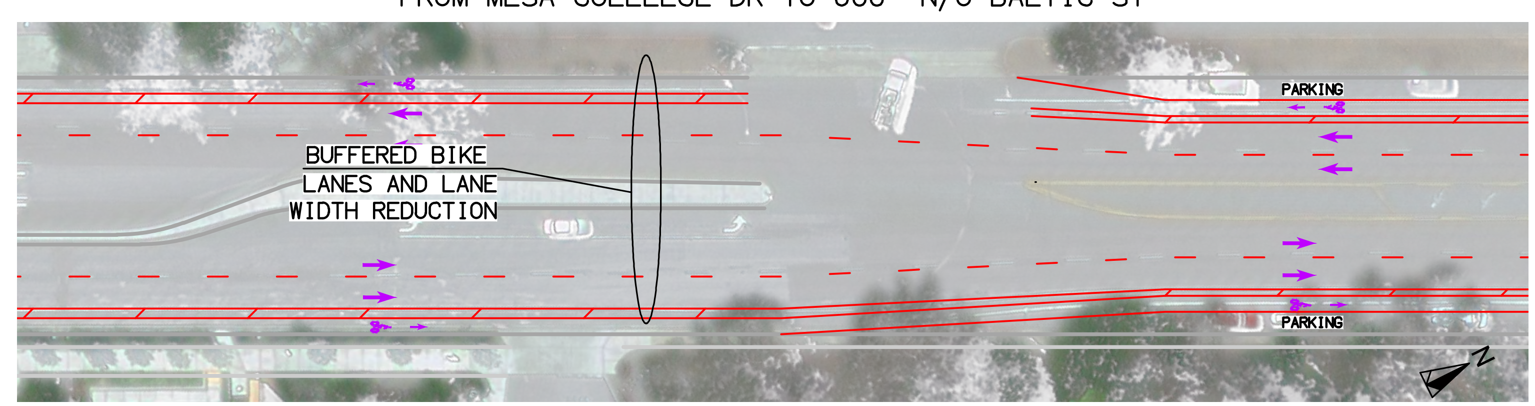
DETAIL "D"
FROM ULRIC ST TO FULTON ST



DETAIL "E"
FROM FULTON ST TO MESA COLLEGE DR

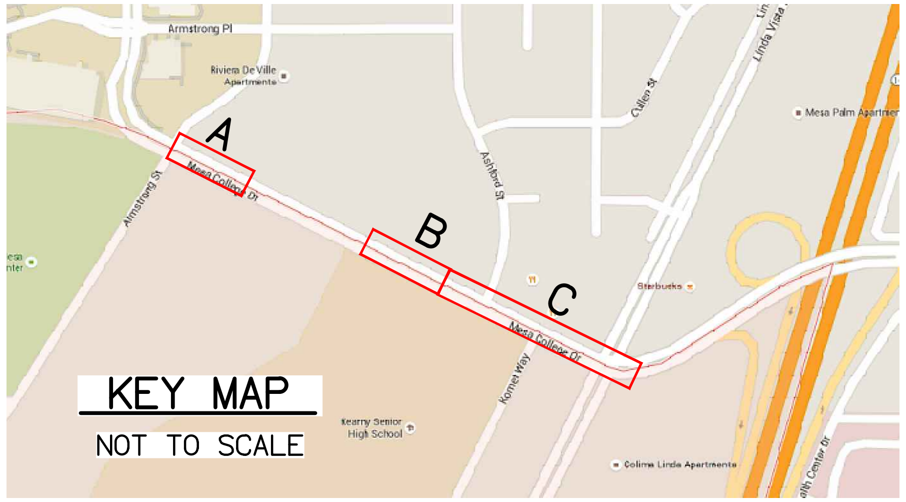


DETAIL "F"
FROM MESA COLLLEGE DR TO 600' N/O BALTIC ST



CORRIDOR 1- LINDA VISTA RD

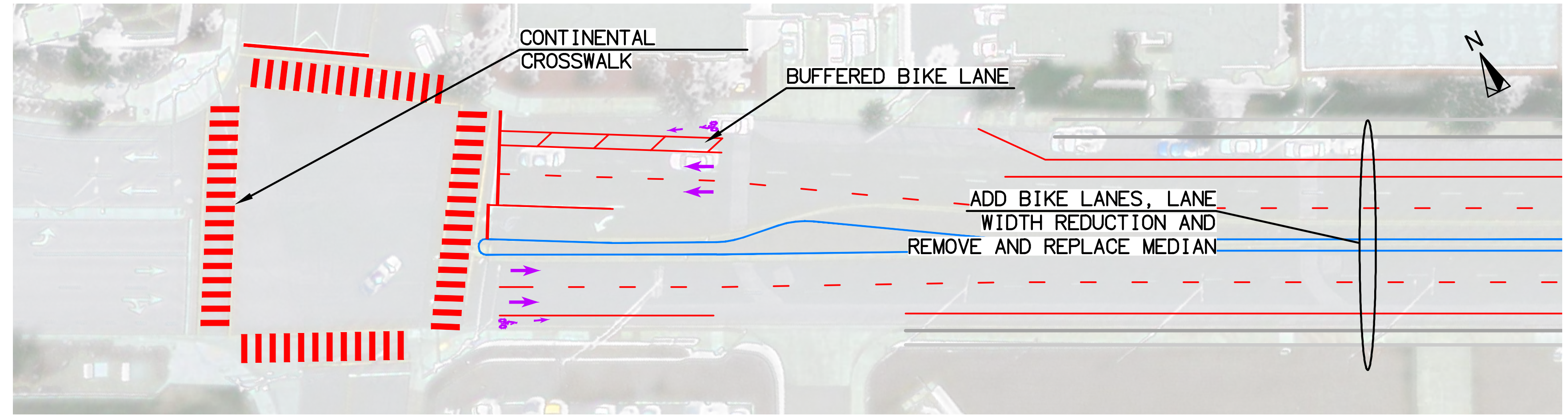
NOTE THAT ALL CONCEPT PLANS ARE PROVIDED TO DEMONSTRATE GENERAL FEASIBILITY OF THE SUBJECT PROPOSAL ONLY.
ACTUAL IMPROVEMENTS WILL REQUIRE ADDITIONAL ENGINEERING STUDIES AND DESIGN WORK TO THE SATISFACTION OF THE CITY ENGINEER.



DETAIL "A"

FROM ARMSTRONG ST TO 200' E/O ARMSTRONG ST

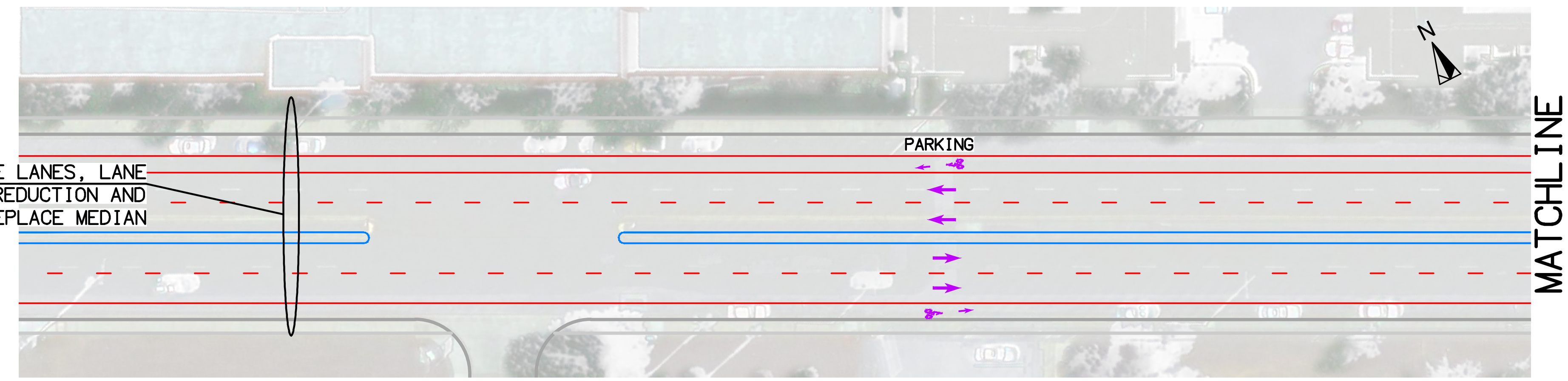
ARMSTRONG ST



DETAIL "B"

200' E/O ARMSTRONG ST ST TO ASHFORD ST

ADD BIKE LANES, LANE
WIDTH REDUCTION AND
REMOVE AND REPLACE MEDIAN



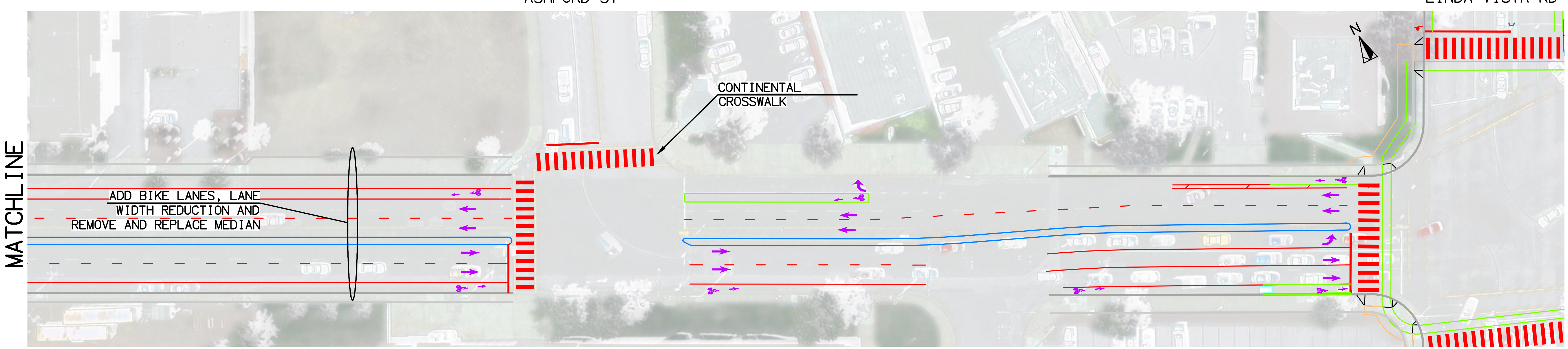
24 PARKING SPACES LOST
ASSUMED (22' PER PARKING SPACE)

DETAIL "C"

FROM ASHFORD ST TO LINDA VISTA ROAD

ASHFORD ST

LINDA VISTA RD



WELLINGTON ST

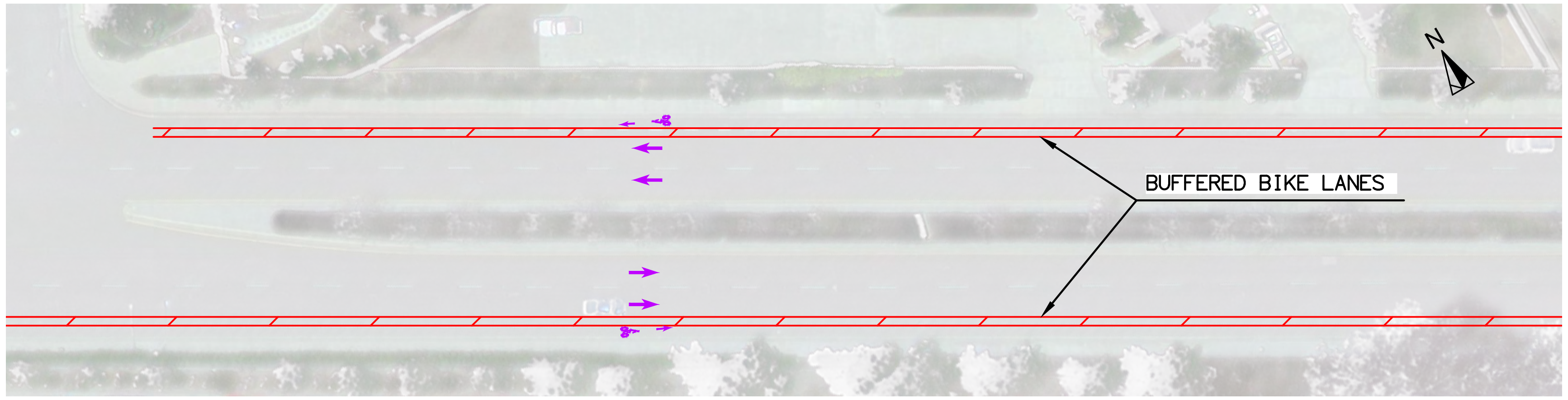
CORRIDOR 2- MESA COLLEGE DR

NOTE THAT ALL CONCEPT PLANS ARE PROVIDED TO DEMONSTRATE GENERAL FEASIBILITY OF THE SUBJECT PROPOSAL ONLY.
ACTUAL IMPROVEMENTS WILL REQUIRE ADDITIONAL ENGINEERING STUDIES AND DESIGN WORK TO THE SATISFACTION OF THE CITY ENGINEER.

DETAIL "A"

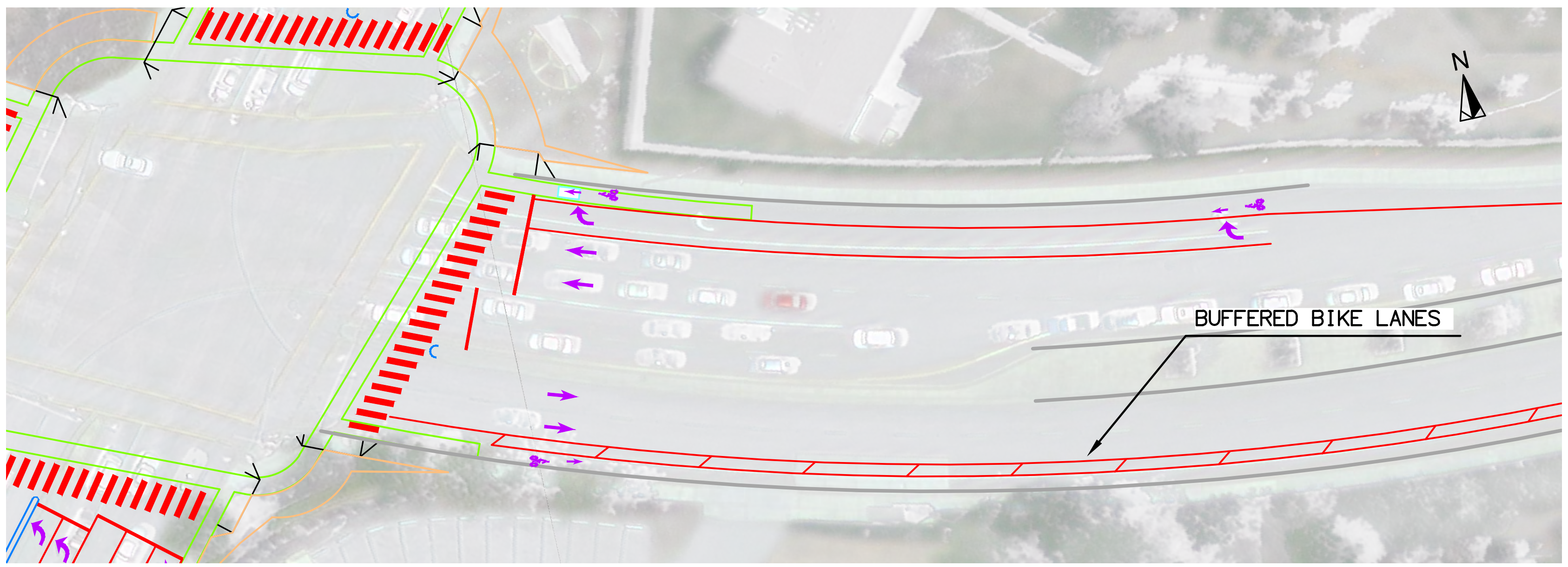
FROM WHITNEY ST TO 300' WEST OF LINDA VISTA

WHITNEY ST



DETAIL "B"

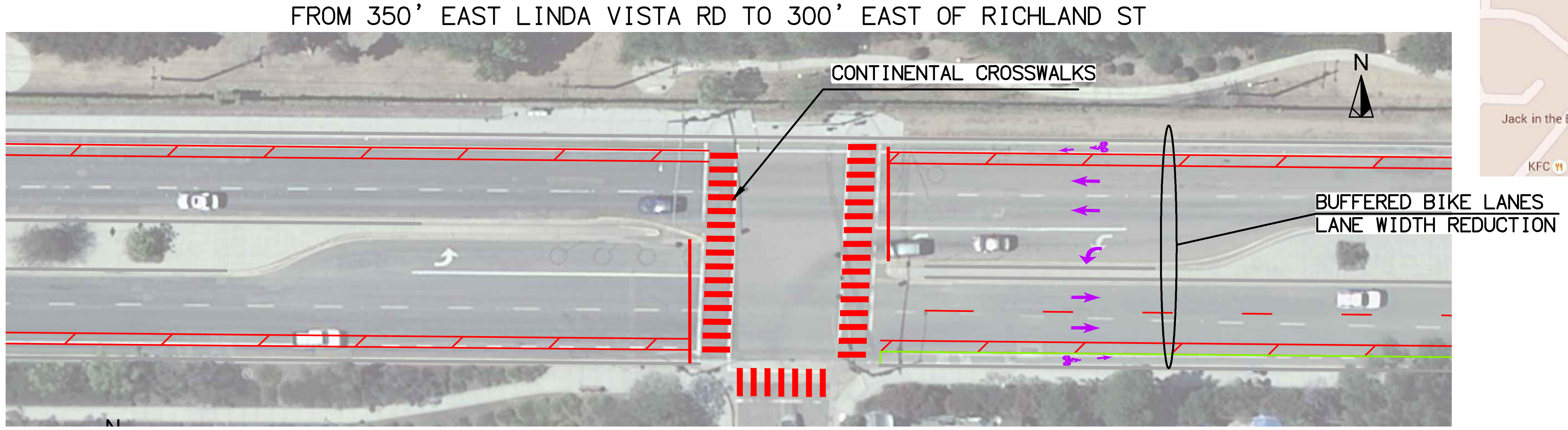
FROM LINDA VISTA RD TO 350' EAST OF LINDA VISTA



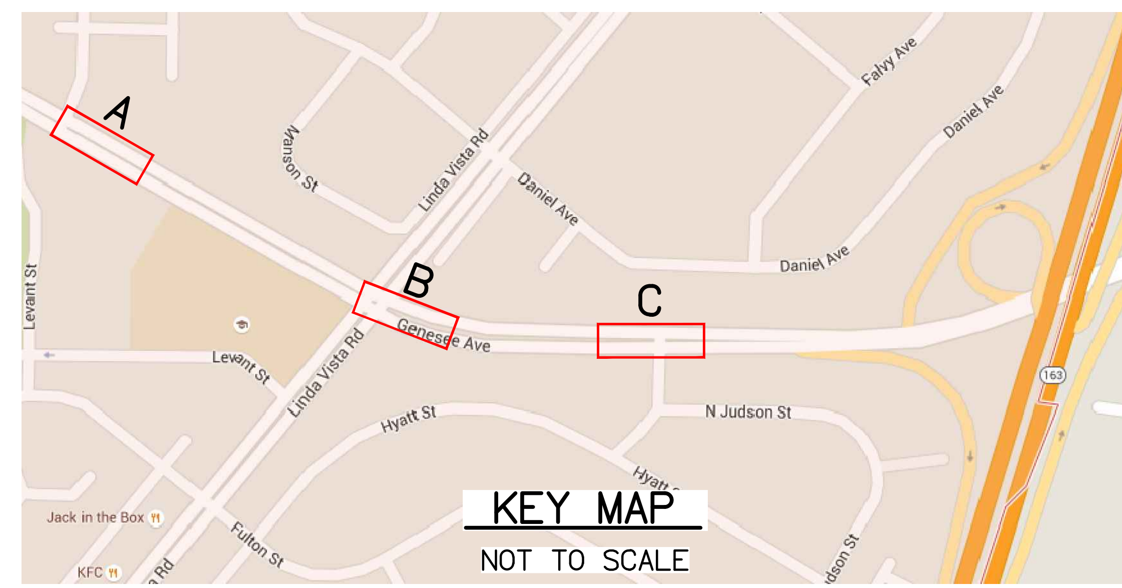
LINDA VISTA RD

DETAIL "C"

FROM 350' EAST LINDA VISTA RD TO 300' EAST OF RICHLAND ST



RICHLAND ST



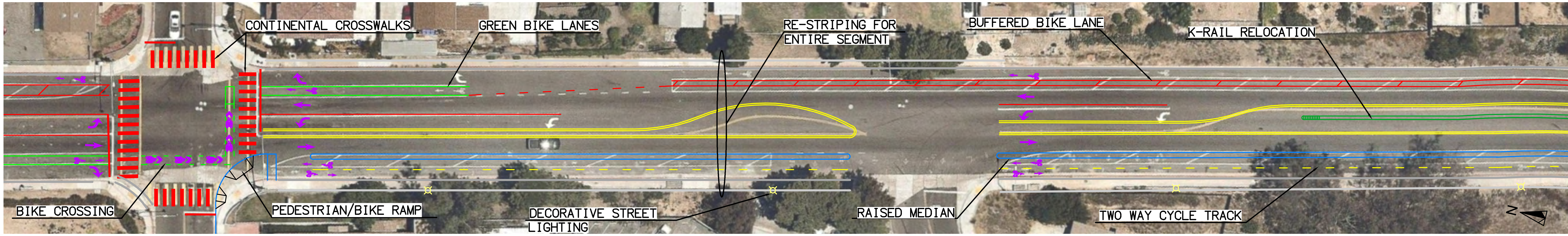
CORRIDOR 3- GENESEE AVE

NOTE THAT ALL CONCEPT PLANS ARE PROVIDED TO DEMONSTRATE GENERAL FEASIBILITY OF THE SUBJECT PROPOSAL ONLY.
ACTUAL IMPROVEMENTS WILL REQUIRE ADDITIONAL ENGINEERING STUDIES AND DESIGN WORK TO THE SATISFACTION OF THE CITY ENGINEER.

DETAIL "A"

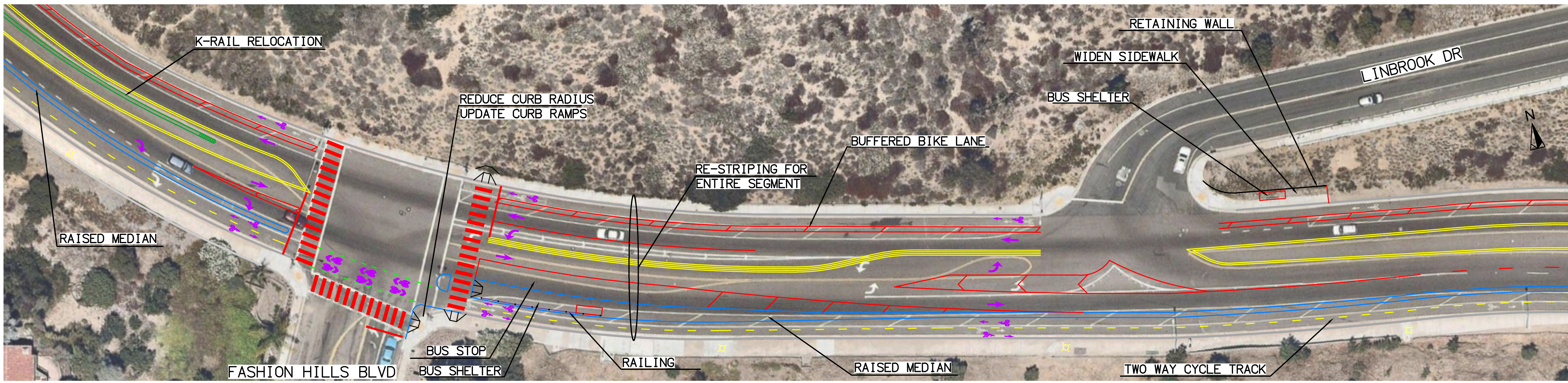
FROM TAIT ST TO FASHION HILLS BLVD

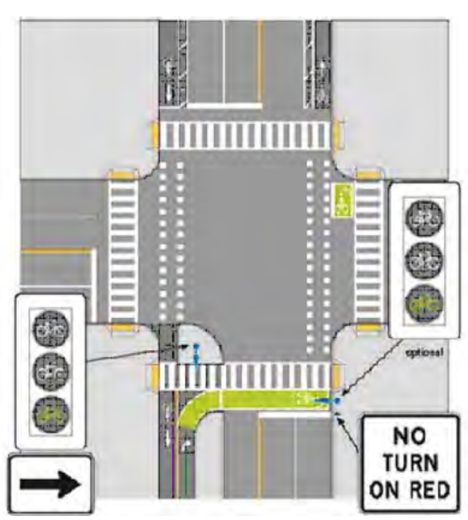
NOTE: STREET LIGHTS MAY REQUIRE ADDITIONAL FUNDING MECHANISMS, SUCH AS A MAINTENANCE ASSESSMENT DISTRICT.



DETAIL "B"

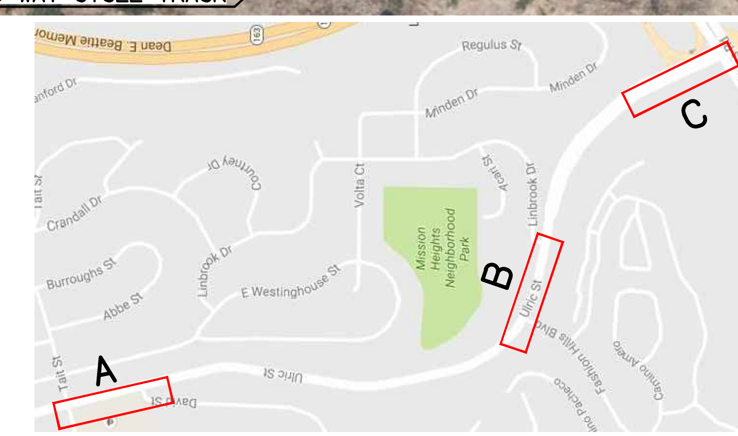
FROM FASHION HILLS BLVD TO SB 163 RAMP





ALTERNATIVE INTERSECTION TREATMENT AT TAIT ST/ULRIC ST

ALTERNATIVE BUS STOP TREATMENT AT FASHION HILLS BLVD/ULRIC ST



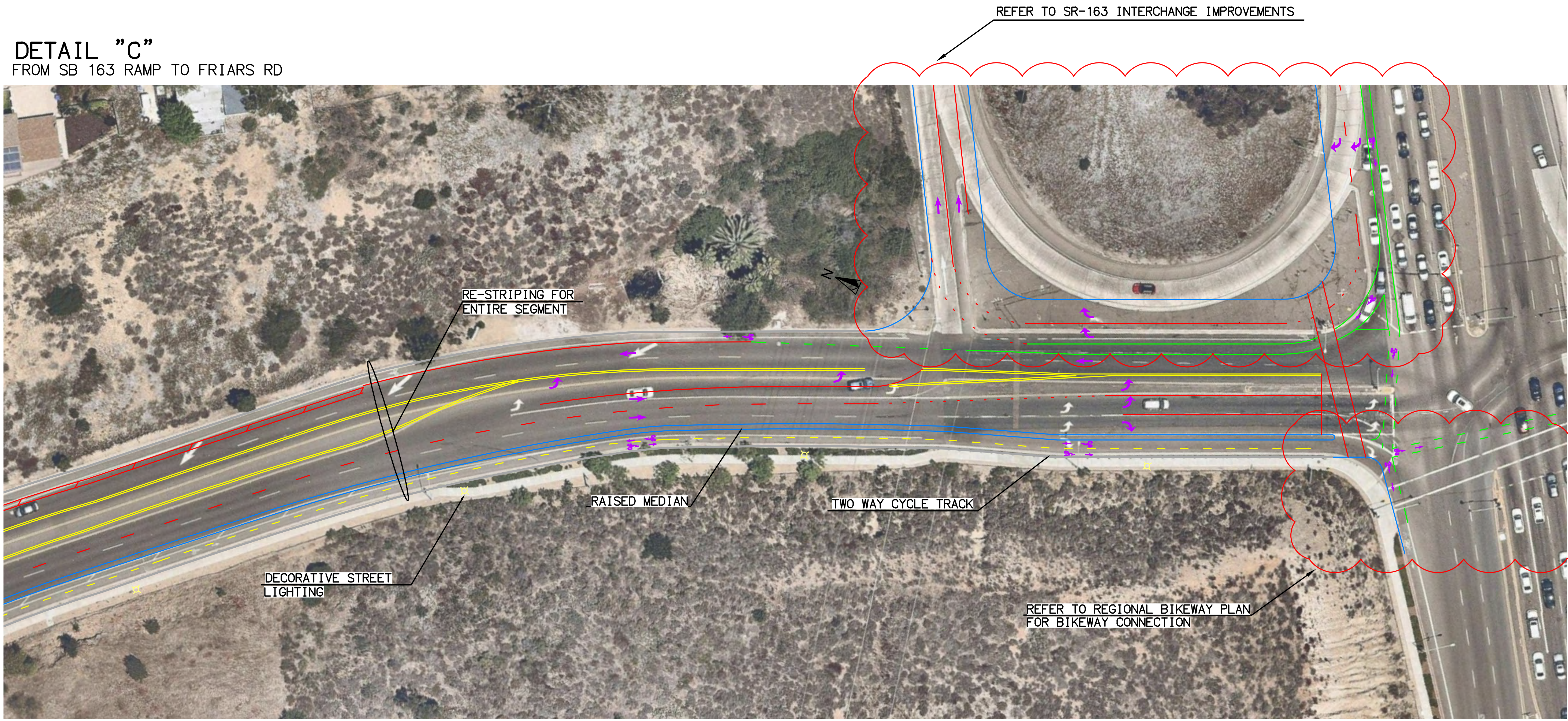
KEY MAP

NOT TO SCALE

CORRIDOR 4 - ULRIC ST

NOTE THAT ALL CONCEPT PLANS ARE PROVIDED TO DEMONSTRATE GENERAL FEASIBILITY OF THE SUBJECT PROPOSAL ONLY. ACTUAL IMPROVEMENTS WILL REQUIRE ADDITIONAL ENGINEERING STUDIES AND DESIGN WORK TO THE SATISFACTION OF THE CITY ENGINEER.

DETAIL "C"
FROM SB 163 RAMP TO FRIARS RD



NOTE: STREET LIGHTS MAY REQUIRE ADDITIONAL FUNDING MECHANISMS SUCH AS A MAINTENANCE ASSESSMENT DISTRICT.

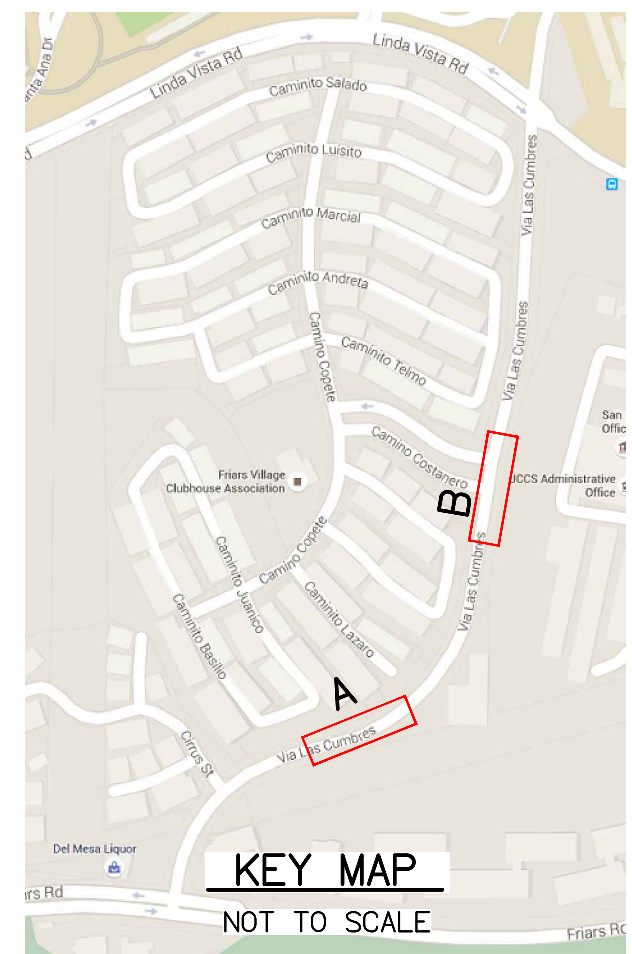
CORRIDOR 4 - ULRIC ST

NOTE THAT CONCEPT PLANS ARE PROVIDED TO DEMONSTRATE GENERAL FEASIBILITY OF THE SUBJECT PROPOSAL ONLY.
ACTUAL IMPROVEMENTS WILL REQUIRE ADDITIONAL ENGINEERING STUDIES AND DESIGN WORK SHALL BE TO THE SATISFACTION OF THE CITY ENGINEER.

DETAIL "A"
FROM 650' SOUTH OF LINDA VISTA RD TO 450' NORTH OF FRIARS RD

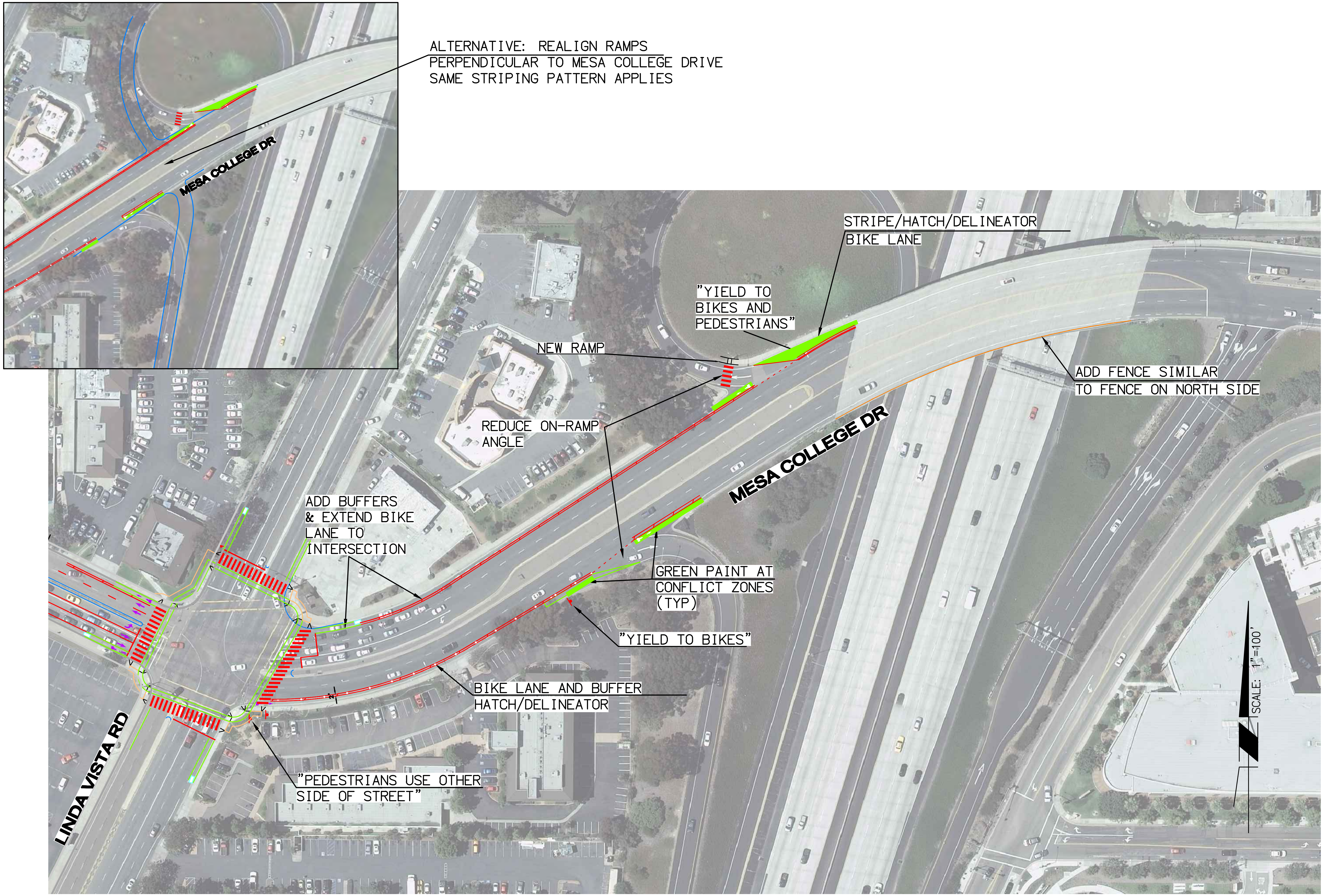
DETAIL "B"
FROM 650' SOUTH OF LINDA VISTA RD TO 450' NORTH OF FRIARS RD

CAMINO COSTERO



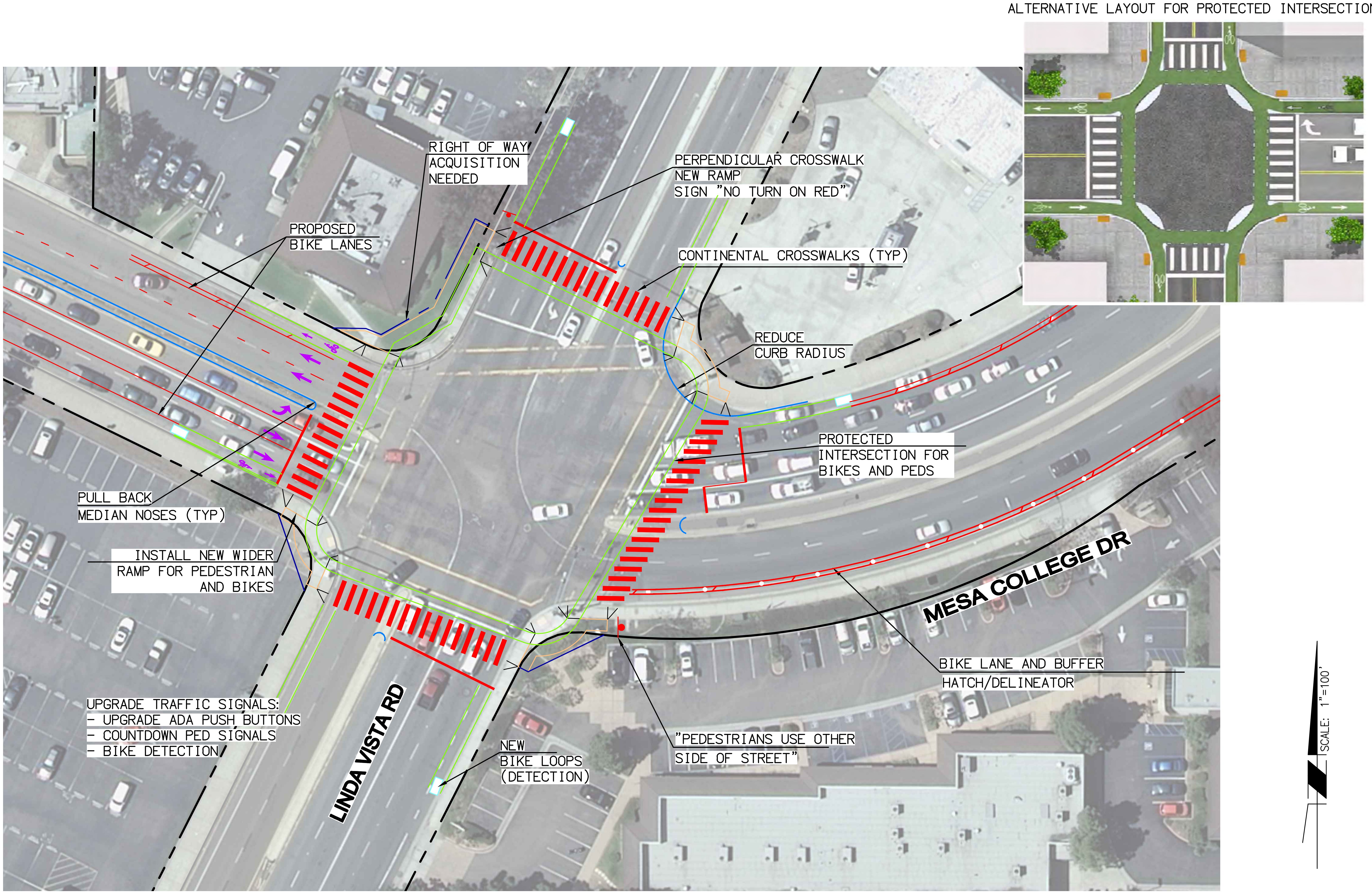
CORRIDOR 5 - VIA LAS CUMBRES

NOTE THAT ALL CONCEPT PLANS ARE PROVIDED TO DEMONSTRATE GENERAL FEASIBILITY OF THE SUBJECT PROPOSAL ONLY.
ACTUAL IMPROVEMENTS WILL REQUIRE ADDITIONAL ENGINEERING STUDIES AND DESIGN WORK TO THE SATISFACTION OF THE CITY ENGINEER.



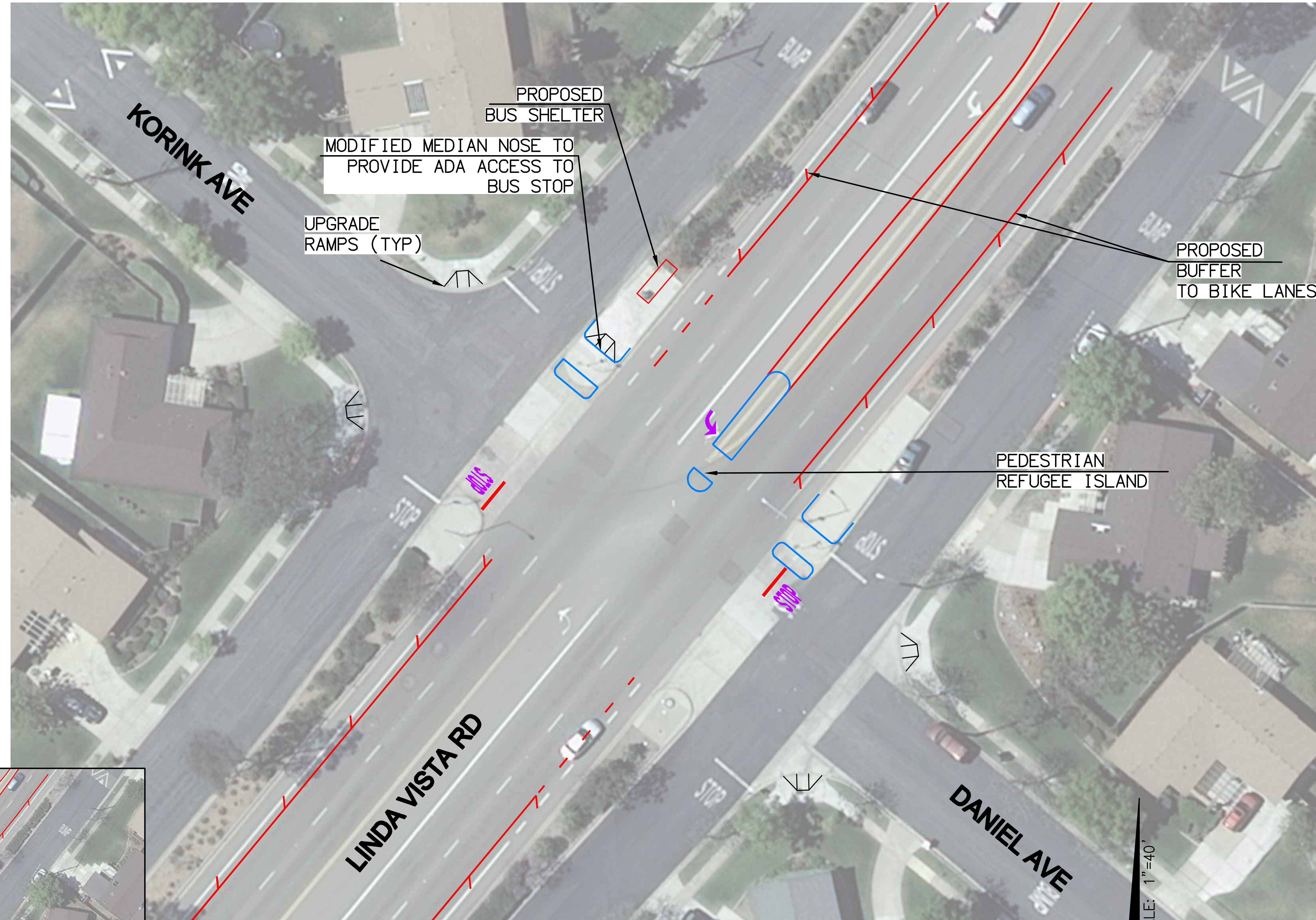
IMPROVEMENT AREA A

NOTE THAT ALL CONCEPT PLANS ARE PROVIDED TO DEMONSTRATE GENERAL FEASIBILITY OF THE SUBJECT PROPOSAL ONLY.
ACTUAL IMPROVEMENTS WILL REQUIRE ADDITIONAL ENGINEERING STUDIES AND DESIGN WORK TO THE SATISFACTION OF THE CITY ENGINEER.

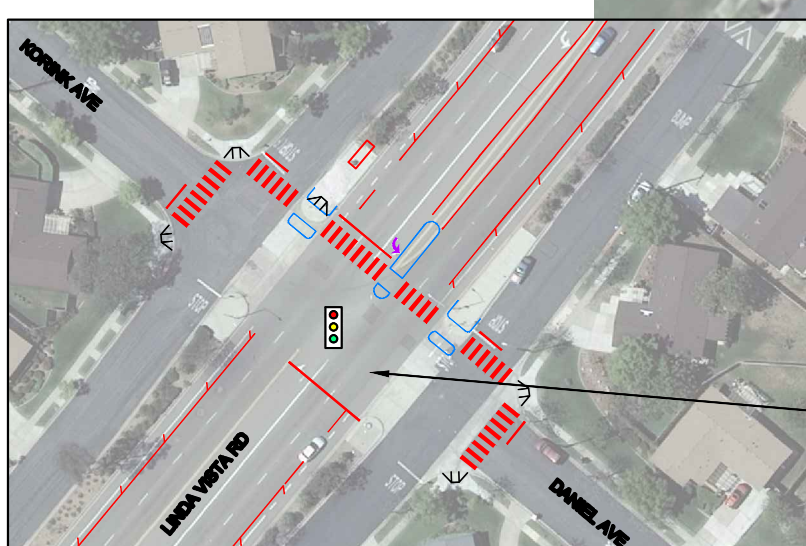


IMPROVEMENT AREA B

NOTE THAT ALL CONCEPT PLANS ARE PROVIDED TO DEMONSTRATE GENERAL FEASIBILITY OF THE SUBJECT PROPOSAL ONLY.
ACTUAL IMPROVEMENTS WILL REQUIRE ADDITIONAL ENGINEERING STUDIES AND DESIGN WORK TO THE SATISFACTION OF THE CITY ENGINEER.



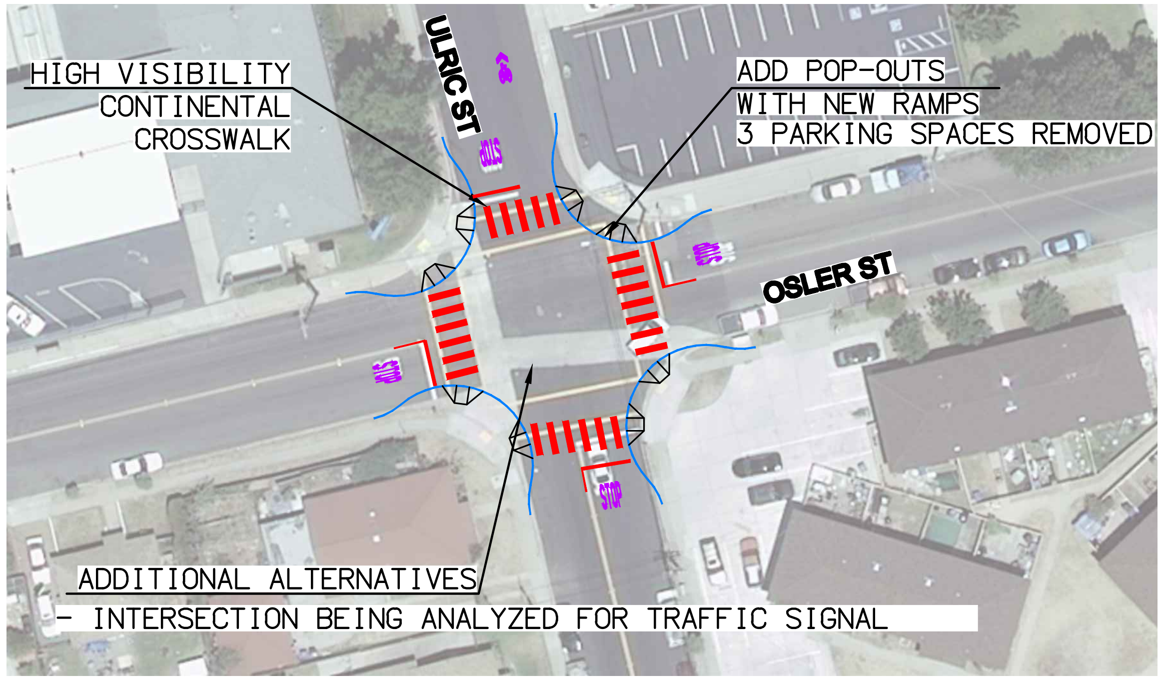
SCALE: 1"=40'



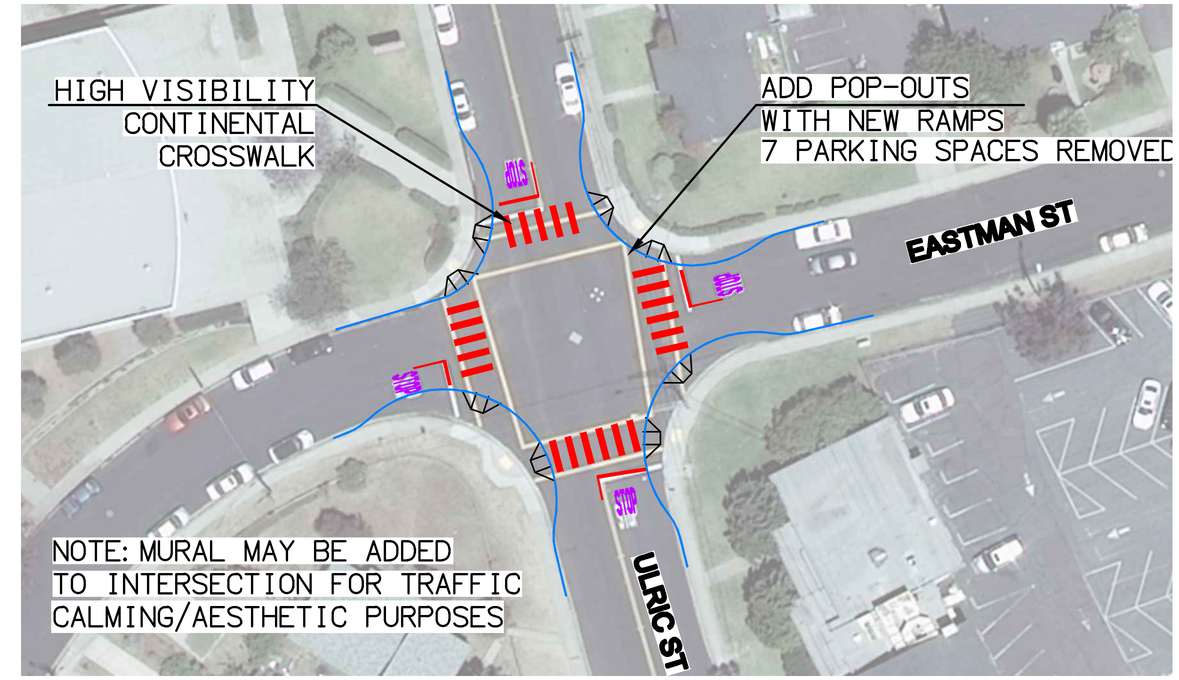
ALTERNATIVE: INTERSECTION BEING ANALYZED FOR FULL SIGNAL. DOES NOT MEET CROSSWALK WARRANT.

IMPROVEMENT AREA C

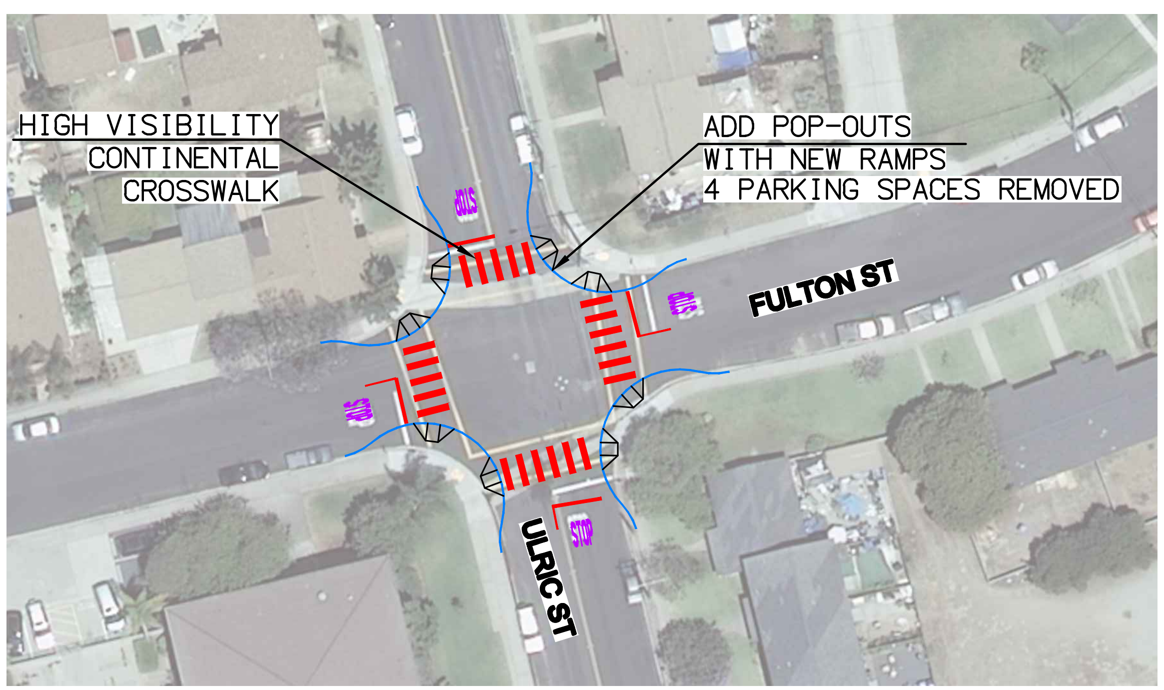
NOTE THAT ALL CONCEPT PLANS ARE PROVIDED TO DEMONSTRATE GENERAL FEASIBILITY OF THE SUBJECT PROPOSAL ONLY.
ACTUAL IMPROVEMENTS WILL REQUIRE ADDITIONAL ENGINEERING STUDIES AND DESIGN WORK TO THE SATISFACTION OF THE CITY ENGINEER.



ULRIC ST/OSLER ST



ULRIC ST/EASTMAN ST



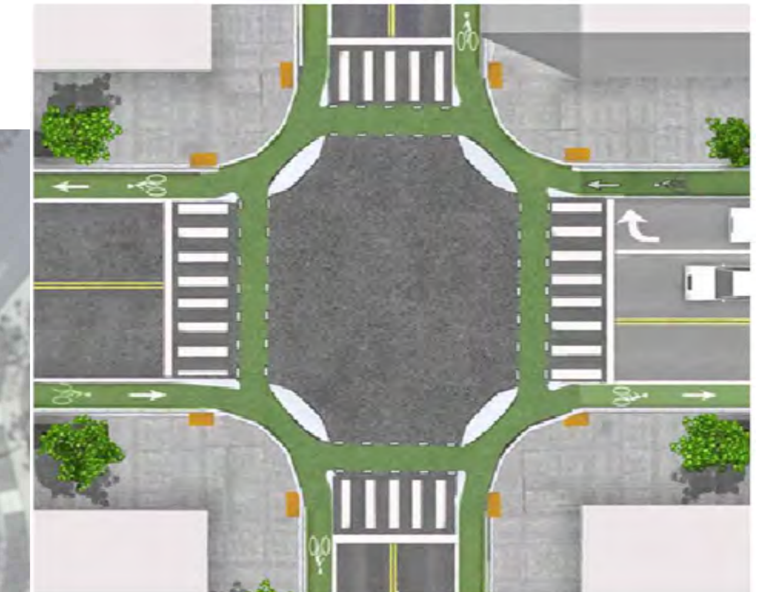
ULRIC ST/FULTON ST

SCALE: 1"=60'

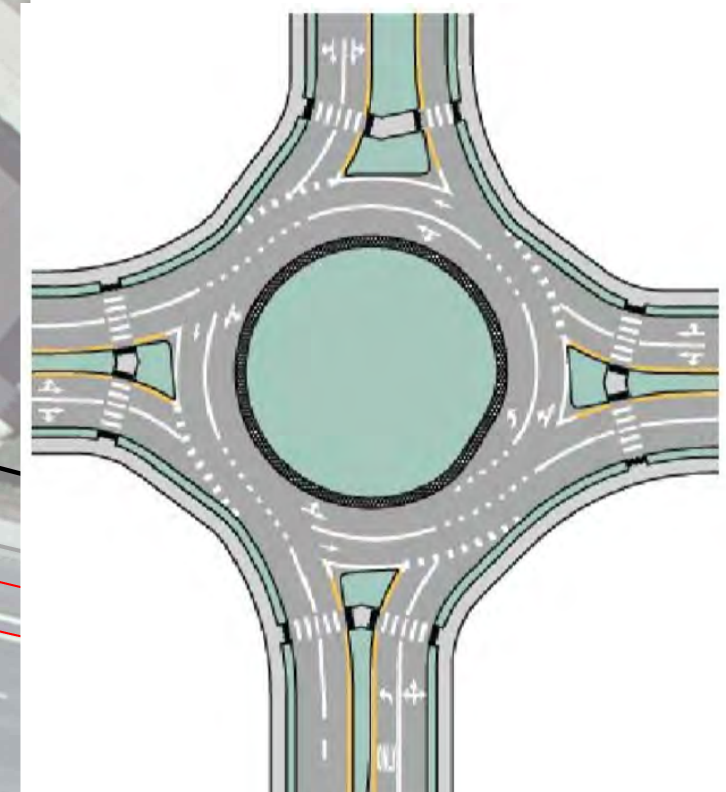
IMPROVEMENT AREA D

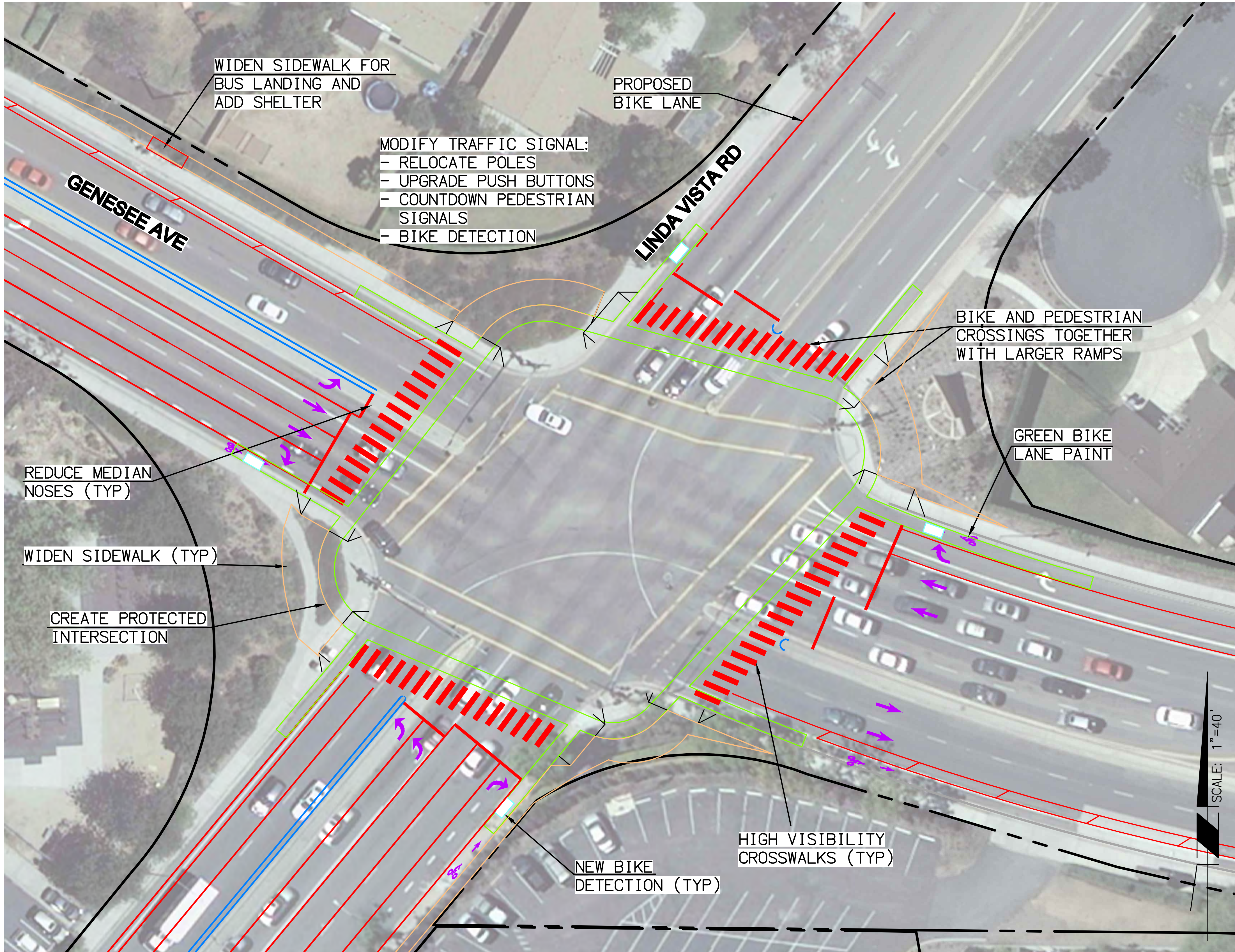
NOTE THAT ALL CONCEPT PLANS ARE PROVIDED TO DEMONSTRATE GENERAL FEASIBILITY OF THE SUBJECT PROPOSAL ONLY.
ACTUAL IMPROVEMENTS WILL REQUIRE ADDITIONAL ENGINEERING STUDIES AND DESIGN WORK TO THE SATISFACTION OF THE CITY ENGINEER.

ALTERNATIVE LAYOUT FOR PROTECTED INTERSECTION



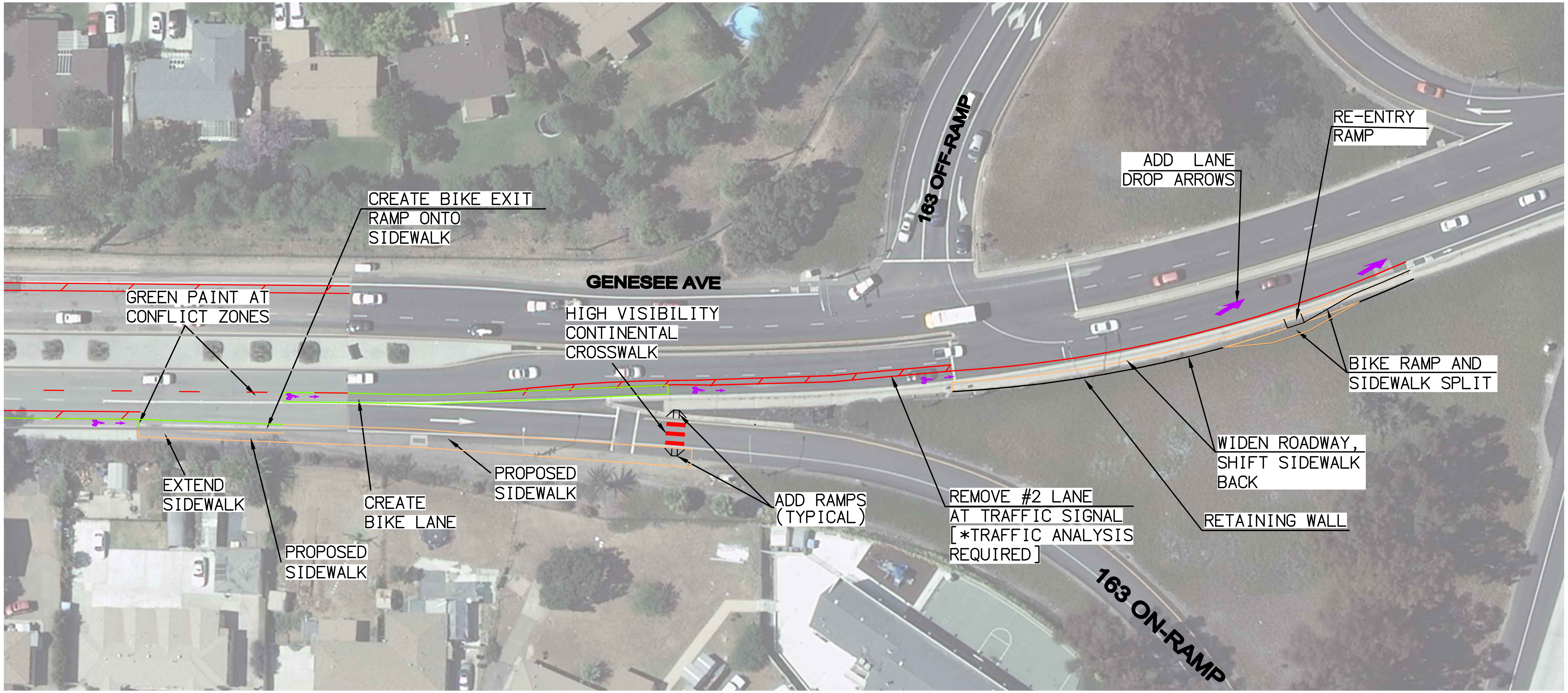
ALTERNATIVE: 2-LANE ROUNDABOUT

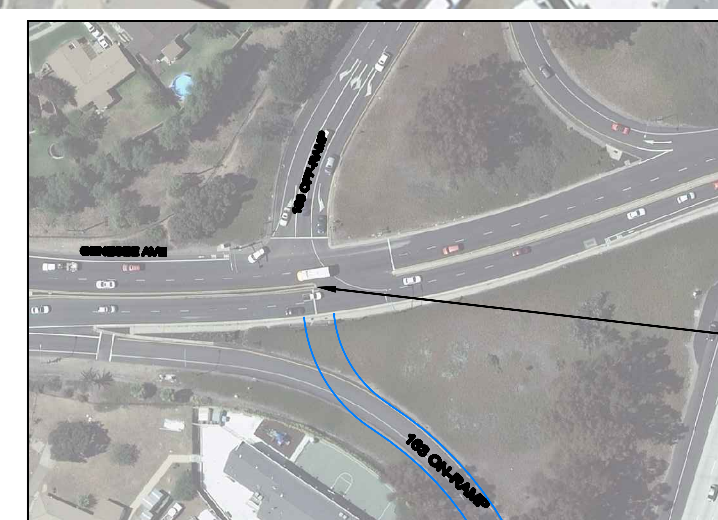




IMPROVEMENT AREA E

NOTE THAT ALL CONCEPT PLANS ARE PROVIDED TO DEMONSTRATE GENERAL FEASIBILITY OF THE SUBJECT PROPOSAL ONLY.
ACTUAL IMPROVEMENTS WILL REQUIRE ADDITIONAL ENGINEERING STUDIES AND DESIGN WORK TO THE SATISFACTION OF THE CITY ENGINEER.



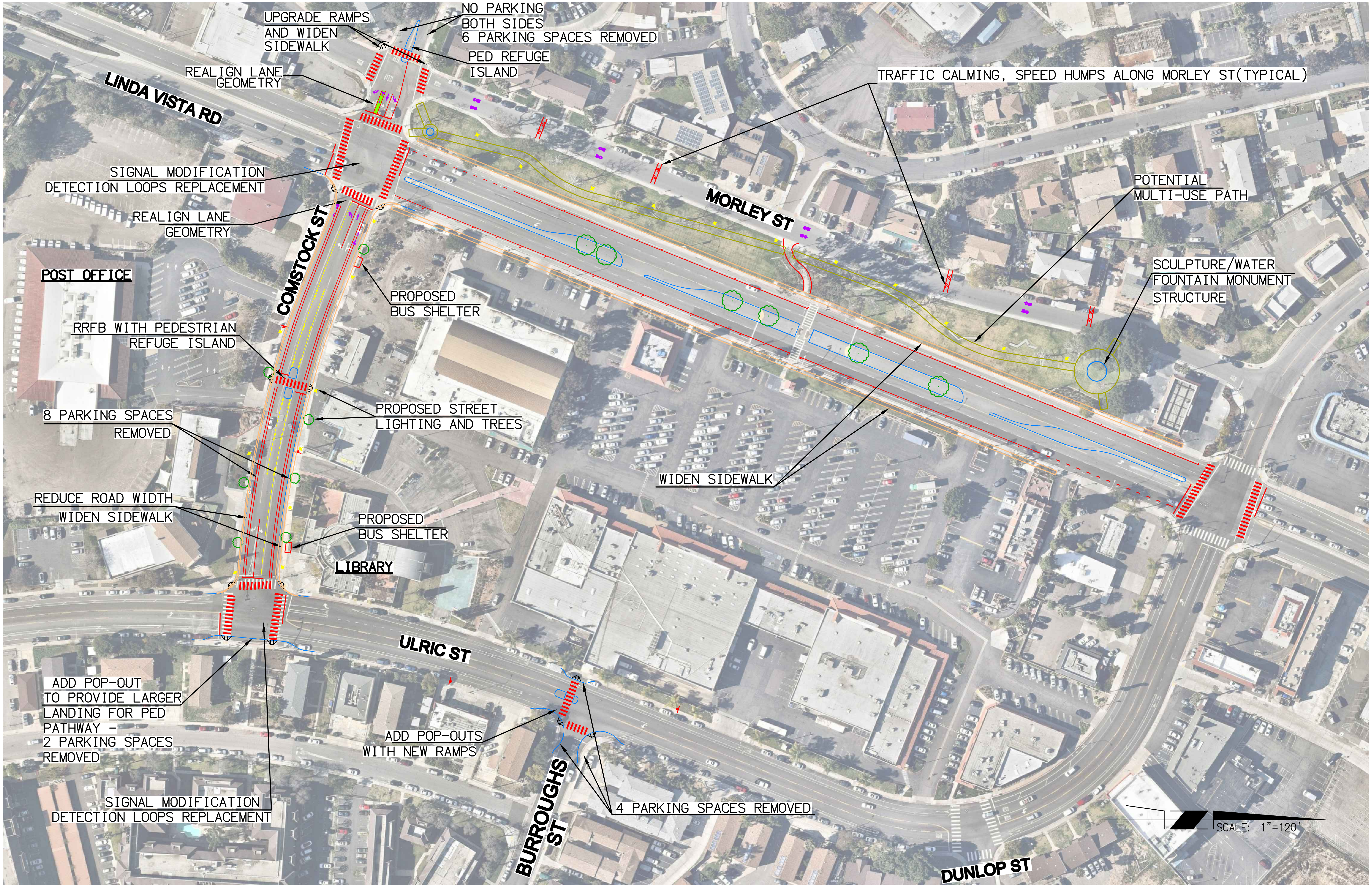


ALTERNATIVE: REALIGN RAMP
PERPENDICULAR TO GENESEE AVENUE
SAME STRIPING PATTERN APPLIES

SCALE: 1"=60'

IMPROVEMENT AREA F

NOTE THAT ALL CONCEPT PLANS ARE PROVIDED TO DEMONSTRATE GENERAL FEASIBILITY OF THE SUBJECT PROPOSAL ONLY.
ACTUAL IMPROVEMENTS WILL REQUIRE ADDITIONAL ENGINEERING STUDIES AND DESIGN WORK TO THE SATISFACTION OF THE CITY ENGINEER.



IMPROVEMENT AREA G & I

NOTE THAT ALL CONCEPT PLANS ARE PROVIDED TO DEMONSTRATE GENERAL FEASIBILITY OF THE SUBJECT PROPOSAL ONLY.
ACTUAL IMPROVEMENTS WILL REQUIRE ADDITIONAL ENGINEERING STUDIES AND DESIGN WORK TO THE SATISFACTION OF THE CITY ENGINEER.

NOTE: TREES, LANDSCAPING, DECORATIVE STREET LIGHTS AND PUBLIC ART MAY REQUIRE ADDITIONAL FUNDING MECHANISMS, SUCH AS A MAINTENANCE ASSESSMENT DISTRICT.

IMPROVEMENT AREA J

NOTE THAT ALL CONCEPT PLANS ARE PROVIDED TO DEMONSTRATE GENERAL FEASIBILITY OF THE SUBJECT PROPOSAL ONLY.
ACTUAL IMPROVEMENTS WILL REQUIRE ADDITIONAL ENGINEERING STUDIES AND DESIGN WORK TO THE SATISFACTION OF THE CITY ENGINEER.

IMPROVEMENT AREA L

NOTE THAT ALL CONCEPT PLANS ARE PROVIDED TO DEMONSTRATE GENERAL FEASIBILITY OF THE SUBJECT PROPOSAL ONLY. ACTUAL IMPROVEMENTS WILL REQUIRE ADDITIONAL ENGINEERING STUDIES AND DESIGN WORK TO THE SATISFACTION OF THE CITY ENGINEER.

NOTE: STREET LIGHTS MAY REQUIRE ADDITIONAL FUNDING MECHANISMS, SUCH AS A MAINTENANCE ASSESSMENT DISTRICT.

APPENDIX I

Planning-Level Cost Estimates

Corridor 1 - Linda Vista Road						
Item No.	Segment Length (LF)	Quantity	Unit	Item	Unit Price	Total
Alcala Knolls Dr. to Kramer St.						
1	2300	4600	LF	Demo Existing Striping	$2	$9,200
2	2300	4600	LF	Stripe bike lane and buffer	$4	$18,400
3	2300	4600	LF	Stripe travel lanes	$1	$4,600
4	2300	14	EA	Stripe bike lane symbols and arrows	$100	$1,400
					Section Subtotal	$33,600
Kramer St. to Tait St.						
1	1400	2800	LF	Demo Existing Striping	$2	$5,600
2	1400	2800	LF	Stripe bike lane and buffer	$4	$11,200
3	1400	2800	LF	Stripe travel lanes	$1	$2,800
4	1400	8	EA	Stripe bike lane symbols and arrows	$100	$800
					Section Subtotal	$20,400
Tait St. to Comstock St.						
1	1000	2000	LF	Demo Existing Striping	$2	$4,000
2	1000	2000	LF	Stripe bike lane and buffer	$4	$8,000
3	1000	2000	LF	Stripe travel lanes	$1	$2,000
4	1000	10	EA	Stripe bike lane symbols and arrows	$100	$1,000
					Section Subtotal	$15,000
Ulric St. to Fulton St.						
1	1600	8000	LF	Demo Existing Striping	$2	$16,000
2	1600	3200	LF	Stripe bike lane and buffer	$4	$12,800
3	1600	3200	LF	Stripe travel lane	$1	$3,200
4	1600	1600	LF	Stripe parking lane	$1	$1,600
5	1600	10	EA	Stripe bike lane symbols and arrows	$100	$1,000
					Section Subtotal	$34,600
Fulton St. to Mesa College Dr.						
1	5000	20000	LF	Demo Existing Striping	$2	$40,000
2	5000	10000	LF	Stripe bike lane and buffer	$4	$40,000
3	5000	10000	LF	Stripe travel lane	$1	$10,000
4	5000	30	EA	Stripe bike lane symbols and arrows	$100	$3,000
					Section Subtotal	$93,000
Mesa College Dr. to 600' N/O Baltic St.						
1	2600	15600	LF	Demo Existing Striping	$2	$31,200
2	2600	5200	LF	Stripe bike lane and buffer	$4	$20,800
3	2600	5200	LF	Stripe travel lane	$1	$5,200
4	2600	3600	LF	Stripe parking lane	$1	$3,600
5	2600	16	EA	Stripe bike lane symbols and arrows	$100	$1,600
					Section Subtotal	$62,400
					Corridor Subtotal	$259,000
					20% Contingency	$52,000
					Total	$311,000

Corridor 2 - Mesa College Drive						
Item No.	**Segment Length (LF)**	**Quantity**	**Unit**	**Item**	**Unit Price**	**Total**
Armstrong Street to 100' E/O Armstrong St. and transition zone						
1	500	1000	LF	Demo Existing Striping	$2	$2,000
2	500	1000	LF	Stripe bike lane	$2	$2,000
3	500	1000	LF	Stripe travel lane	$1	$1,000
4	500	500	LF	Stripe parking lane	$1	$500
5	500	4	EA	Stripe bike lane symbols and arrows	$100	$400
6	500	1200	SF	Stripe continental crosswalk	$5	$6,000
7	500	1100	LF	Remove existing median curb	$8	$8,800
8	500	3500	SF	Remove existing median	$6	$21,000
9	500	1100	LF	Install median curb	$15	$16,500
10	500	2000	SF	Install median	$11	$22,000
11	500	2800	SF	Install AC pavement	$10	$28,000
					Section Subtotal	$108,200
650' E/O Armstrong St. to Ashford St.						
1	700	1400	LF	Demo Existing Striping	$2	$2,800
2	700	1400	LF	Stripe bike lane	$2	$2,800
3	700	1400	LF	Stripe travel lane	$1	$1,400
4	700	700	LF	Stripe parking lane	$1	$700
5	700	6	EA	Stripe bike lane symbols and arrows	$100	$600
6	700	600	SF	Stripe continental crosswalk	$5	$3,000
7	700	1250	LF	Remove existing median curb	$8	$10,000
8	700	1900	SF	Remove existing median	$6	$11,400
8	700	1250	LF	Install median curb	$15	$18,750
9	700	1900	SF	Install median	$11	$20,900
10	700	3500	SF	Install AC pavement	$10	$35,000
					Section Subtotal	$107,350
Ashford St. to Linda Vista Rd						
1	500	1500	LF	Demo Existing Striping	$2	$3,000
2	500	1000	LF	Stripe bike lane	$2	$2,000
3	500	750	LF	Stripe travel lane	$1	$750
4	500	500	LF	Stripe turn lane	$1	$500
5	500	4	EA	Stripe bike lane symbols and arrows	$100	$400
6	500	550	SF	Green pavement paint	$5	$2,750
7	500	850	LF	Remove existing median curb	$8	$6,800
8	500	2250	SF	Remove existing median	$6	$13,500
9	500	800	LF	Install median curb	$15	$12,000
10	500	1200	SF	Install median	$11	$13,200
11	500	1200	SF	Install AC pavement	$10	$12,000
12	500	1	LS	Modify traffic signal	$100,000	$100,000
					Section Subtotal	$166,900
					Corridor Subtotal	$383,000
					20% Contingency	$77,000
					Total	$460,000

Corridor 3 - Genesee Avenue

Item No.	Segment Length (LF)	Quantity	Unit	Item	Unit Price	Total
Linda Vista Rd. to Whitney						
1	1100	2200	LF	Stripe bike lane and buffer	$4	$8,800
2	1100	8	EA	Stripe bike lane symbols and arrows	$100	$800
					Section Subtotal	$9,600
Linda Vista Rd. to 350' E/O Linda Vista						
1	350	1050	LF	Demo Existing Striping	$2	$2,100
2	350	700	LF	Stripe bike lane and buffer	$4	$2,800
3	350	350	LF	Stripe turn lane	$1	$350
4	350	4	EA	Stripe bike lane symbols and arrows	$100	$400
					Section Subtotal	$5,650
350' E/O Linda Vista Rd. to 300' E/O Richland St.						
1	770	1540	LF	Stripe bike lane and buffer	$4	$6,160
2	770	6	EA	Stripe bike lane symbols and arrows	$100	$600
2	770	800	SF	Stripe continental crosswalk	$5	$4,000
					Section Subtotal	$10,760
					Corridor Subtotal	$27,000
					20% Contingency	$6,000
					Total	$33,000

Corridor 4 - Ulric Street

Item No.	Segment Length (LF)	Quantity	Unit	Item	Unit Price	Total
Tait St. to David St.						
1	410	1	LS	Lighting	$30,000	$30,000
2	410	2460	LF	Demo Existing Striping	$2	$4,920
3	410	820	LF	Stripe bike lane and buffer	$4	$3,280
4	410	410	LF	Stripe turn lane	$1	$410
5	410	410	LF	Stripe painted median	$5	$2,050
6	410	8	EA	Stripe bike lane symbols and arrows	$100	$800
7	410	800	SF	Stripe continental crosswalk	$5	$4,000
8	410	600	SF	Green pavement paint	$5	$3,000
9	410	410	LF	Stripe cycle track	$1	$410
10	410	100	LF	Remove existing curb and gutter	$8	$800
11	410	400	SF	Remove existing sidewalk	$6	$2,400
12	410	100	LF	Install curb and gutter	$15	$1,500
13	410	800	SF	Install sidewalk	$11	$8,800
14	410	2	EA	Install curb ramp	$3,500	$7,000
15	410	650	LF	Install median curb	$15	$9,750
16	410	650	SF	Install median	$11	$7,150
17	410	1500	SF	Install AC pavement	$10	$15,000
18	410	1	LS	Modify traffic signal	$120,000	$120,000
					Section Subtotal	$221,270
David St. to Fashion Hills Blvd.						
1	2300	1	LS	Lighting	$150,000	$150,000
2	2300	13800	LF	Demo Existing Striping	$2	$27,600
3	2300	2300	LF	Stripe bike lane and buffer	$4	$9,200
4	2300	2300	LF	Stripe painted median	$5	$11,500
5	2300	28	EA	Stripe bike lane symbols and arrows	$100	$2,800
6	2300	900	SF	Stripe continental crosswalk	$5	$4,500
7	2300	2300	LF	Stripe cycle track	$1	$2,300
8	2300	4500	LF	Install median curb	$15	$67,500
9	2300	4500	SF	Install median	$11	$49,500
10	2300	9000	SF	Install AC pavement	$10	$90,000
11	2300	2300	LF	Relocate existing K-rail	$25	$57,500
12	2300	1	LS	Modify traffic signal	$120,000	$120,000
					Section Subtotal	$592,400

Corridor 4 - Ulric Street (cont.)						
Fashion Hills Blvd. to SB 163 Ramp						
1	1800	1	LS	Lighting	$120,000	$120,000
2	1800	12600	LF	Demo Existing Striping	$2	$25,200
3	1800	1800	LF	Stripe bike lane and buffer	$4	$7,200
4	1800	1800	LF	Stripe travel lane	$1	$1,800
5	1800	1800	LF	Stripe painted median	$5	$9,000
6	1800	24	EA	Stripe bike lane symbols and arrows	$100	$2,400
7	1800	1800	LF	Stripe cycle track	$1	$1,800
8	1800	60	LF	Remove existing curb and gutter	$8	$480
9	1800	60	LF	Install curb and gutter	$15	$900
10	1800	340	SF	Install sidewalk	$11	$3,740
11	1800	150	SF	Install retaining wall	$75	$11,250
12	1800	3	EA	Install curb ramp	$3,500	$10,500
13	1800	3400	LF	Install median curb	$15	$51,000
14	1800	4400	SF	Install median	$11	$48,400
15	1800	6800	SF	Install AC pavement	$10	$68,000
16	1800	70	LF	Safety Rail/Fence	$315	$22,050
17	1800	2	EA	Install bus shelter	$12,000	$24,000
					Section Subtotal	$407,720
SB 163 Ramp to Friars Rd. widening						
1	300	1800	LF	Demo Existing Striping	$2	$3,600
2	300	300	LF	Stripe cycle track	$1	$300
3	300	1200	LF	Stripe turn lane	$1	$1,200
4	300	8	EA	Stripe bike lane symbols and arrows	$100	$800
5	300	100	LF	Remove existing curb and gutter	$8	$800
6	300	650	SF	Remove existing sidewalk	$6	$3,900
7	300	100	LF	Install curb and gutter	$15	$1,500
8	300	850	SF	Install sidewalk	$11	$9,350
9	300	1	EA	Install curb ramp	$3,500	$3,500
10	300	600	LF	Install median curb	$15	$9,000
11	300	600	SF	Install median	$11	$6,600
12	300	1500	SF	Install AC pavement	$10	$15,000
13	300	1	LS	Modify traffic signal	$250,000	$250,000
					Section Subtotal	$305,550
					Corridor Subtotal	$1,527,000
					20% Contingency	$306,000
					Total	$1,833,000

Corridor 5 - Via Las Cumbres						
Item No.	**Segment Length (LF)**	**Quantity**	**Unit**	**Item**	**Unit Price**	**Total**
Linda Vista Rd. to Camino Costanero (sidewalk)						
1	200	1000	SF	Install sidewalk	$15	$15,000
2	200	450	CY	Soil excavation	$10	$4,500
3	200	800	SF	Install retaining wall	$75	$60,000
					Section Subtotal	$79,500
Camino Costanero to Friars Rd. (sidewalk)						
1	900	4500	SF	Install sidewalk	$15	$67,500
2	900	1000	CY	Soil excavation	$10	$10,000
3	900	1800	SF	Install retaining wall	$75	$135,000
					Section Subtotal	$212,500
					Corridor Subtotal	$292,000
					20% Contingency	$59,000
					Total	$351,000

Improvement Area A					
Item No.	**Quantity**	**Unit**	**Item**	**Unit Price**	**Total**
Recommended: Striping Modifications					
1	1	LS	Re-Striping & Signs	$11,300	$11,300
2	12	EA	Delineators	$45	$540
3	350	LF	Safety Rail/Fence	$315	$110,250
4	1	EA	Curb Ramp	$3,500	$3,500
				Section Subtotal	$126,000
				20% Contingency	$26,000
				Total=	$152,000
Alternative: Realign Ramps					
1	1	LS	Realign Ramps	$3,000,000	$3,000,000
				Section Subtotal	$3,000,000
				20% Contingency	$600,000
				Total=	$3,600,000

Improvement Area B					
Item No.	**Quantity**	**Unit**	**Item**	**Unit Price**	**Total**
Protected Intersection for Bikes & Pedestrians					
1	1	LS	Re-striping (crosswalks)	$10,000	$10,000
2	1	LS	Upgrade Traffic Signals	$250,000	$250,000
3	2	EA	Median Nose Adjustment	$5,000	$10,000
4	420	LF	Remove existing curb and gutter	$10	$4,200
5	3200	SF	Remove Sidewalk	$2	$6,400
6	500	SF	Full depth AC removal	$3	$1,500
7	400	LF	New curb and gutter	$25	$10,000
8	4200	SF	New sidewalk	$10	$42,000
9	2600	LF	Green Paint	$5	$13,000
10	8	EA	New large curb ramps	$7,500	$60,000
11	1	EA	Reduce Curb Radius	$25,000	$25,000
12	1600	SF	Right-of-way acquisition	$30	$48,000
				Section Subtotal	$433,000
				20% Contingency	$87,000
				Total	$520,000

Improvement Area C					
Item No.	Quantity	Unit	Item	Unit Price	Total
Recommended: No Signal Improvements					
1	1	LS	Re-striping intersection	$5,000	$5,000
2	5	EA	Curb Ramp	$3,500	$17,500
3	4	EA	Median Nose Adjustment	$5,000	$20,000
4	1	EA	Pedestrian Refugee Island	$12,000	$12,000
5	1	EA	Bus Shelter	$14,500	$14,500
				Section Subtotal	$69,000
				20% Contingency	$14,000
				Total	$83,000
Alternative: Full Signal					
1	1	LS	Re-striping intersection	$10,000	$10,000
2	5	EA	Curb Ramp	$3,500	$17,500
3	2	EA	Median Nose Adjustment	$5,000	$10,000
4	1	EA	Pedestrian Refugee Island	$12,000	$12,000
5	1	LS	New Signal	$200,000	$200,000
6	1	EA	Bus Shelter	$14,500	$14,500
				Section Subtotal	$264,000
				20% Contingency	$53,000
				Total	$317,000

Improvement Area D					
Item No.	Quantity	Unit	Item	Unit Price	Total
Ulric St / Osler St Recommended: Curb Pop-outs					
1	1	LS	Re-striping	$5,000	$5,000
2	4	EA	Curb Pop-out with Ramp	$25,000	$100,000
3	2	EA	Cross gutter	$20,000	$40,000
				Section Subtotal	$145,000
Ulric St / Osler St Alternative: Full Traffic Signal					
1	1	LS	Re-striping	$5,000	$5,000
2	1	EA	Full Traffic Signal & Striping	$180,000	$180,000
				Section Subtotal	$185,000
Ulric St / Eastman St					
1	1	LS	Re-striping	$5,000	$5,000
2	4	EA	Curb Pop-out with Ramp	$25,000	$100,000
				Section Subtotal	$105,000
Ulric St / Fulton St					
1	1	LS	Re-striping	$5,000	$5,000
2	4	EA	Curb Pop-out with Ramp	$25,000	$100,000
3	2	EA	Cross gutter	$20,000	$40,000
				Section Subtotal	$145,000
				Improvement Area Subtotal (recommended)	$395,000
				20% Contingency	$79,000
				Total (recommended)	$474,000
				Improvement Area Subtotal (alternative)	$435,000
				20% Contingency	$87,000
				Total (alternative)	$522,000

Improvement Area E					
Item No.	**Quantity**	**Unit**	**Item**	**Unit Price**	**Total**
Recommended: Protected Intersection					
1	1	LS	Re-striping	$25,000	$25,000
2	200	LF	Remove curb and gutter	$10	$2,000
3	4500	SF	Remove sidewalk	$2	$9,000
4	200	LF	New curb and gutter	$25	$5,000
5	6000	SF	New Sidewalk	$10	$60,000
6	1	EA	Traffic Signal Modification	$250,000	$250,000
7	1	EA	Bus Shelter	$12,000	$12,000
8	8	EA	New large curb ramps	$7,500	$60,000
9	4	EA	Median Nose Adjustment	$5,000	$20,000
				Section Subtotal	$443,000
				20% Contingency	$89,000
				Total	$532,000
Alternative: 2-Lane Roundabout					
1	1	LS	2-Lane Roundabout	$2,000,000.00	$2,000,000
				Section Subtotal	$2,000,000
				20% Contingency	$400,000
				Total	$2,400,000

Improvement Area F					
Item No.	Quantity	Unit	Item	Unit Price	Total
Recommended: Road Widening					
1	1	LS	Re-striping & Signage	$13,000	$13,000
2	4	EA	Curb Ramp	$3,500	$14,000
3	600	LF	Remove curb and gutter	$10	$6,000
4	500	SF	Remove sidewalk	$2	$1,000
5	4600	SF	New Sidewalk	$10	$46,000
6	1500	SF	Retaining Wall	$75	$112,500
7	600	LF	New curb and gutter	$25	$15,000
8	1	LS	AC Repair	$6,000	$6,000
				Section Subtotal	$214,000
				20% Contingency	$43,000
				Total	$257,000
Alternative: Re-Align Ramp					
1	1	LS	Re-align Ramp	$1,500,000	$1,500,000
				Section Subtotal	$1,500,000
				20% Contingency	$300,000
				Total	$1,800,000

Improvement Area G & I					
Item No.	Quantity	Unit	Item	Unit Price	Total
			Comstock St		
1	1	LS	Re-striping & Signage	$25,000	$25,000
2	6	EA	Curb Ramp	$3,500	$21,000
3	2	EA	Pedestrian Refugee Island	$12,000	$24,000
4	1	EA	Rectangular rapid flashing beacon (RRFB)	$30,000	$30,000
5	2	EA	Bus Shelters	$12,000	$24,000
6	1	LS	Street Lights (Including Service, Conduits, etc.)	$100,000	$100,000
7	1300	LF	Remove Curb and Gutter	$10	$13,000
8	7800	SF	Remove Sidewalk	$2	$15,600
9	4500	SF	Full depth AC removal	$3	$13,500
10	1300	LF	New Curb and Gutter	$25	$32,500
11	12300	SF	New Sidewalk	$10	$123,000
12	1	LS	Landscaping and Irrigation	$30,000	$30,000
				Section Subtotal	$452,000
			Ulric St		
1	1	LS	Re-striping & Signage	$10,000	$10,000
2	1	EA	Pedestrian Refugee Island	$12,000	$12,000
3	5	EA	Curb Pop-out with Ramp	$20,000	$100,000
				Section Subtotal	$122,000
			Linda Vista Rd		
1	1	LS	Re-striping & Signage	$10,000	$10,000
2	1	LS	Street Lights (Including Service, Conduits, etc.)	$120,000	$120,000
3	12000	SF	Multi-use Path	$10	$120,000
4	1	EA	Sculpture/Water Fountain/Monument	$30,000	$30,000
5	10500	SF	Remove Sidewalk	$2	$21,000
6	12200	SF	Full depth AC removal	$3	$36,600
7	21500	SF	New Sidewalk	$10	$215,000
8	2100	LF	New Median Curb and Gutter	$25	$52,500
9	1	LS	Landscaping and Irrigation	$65,000	$65,000
				Section Subtotal	$671,000

Improvement Area G & I (cont.)					
Item No.	Quantity	Unit	Item	Unit Price	Total
Morley St Recommended: Traffic Calming with Speed Humps					
1	1	LS	Re-striping & Signage	$2,000	$2,000
2	4	EA	Speed Humps	$3,500	$14,000
				Section Subtotal	$16,000
Morley St Alternative: One Way					
1	1	EA	Partial closure for one way	$50,000	$50,000
				Section Subtotal	$50,000
				Improvement Area Subtotal (recommended)	$1,261,000
				20% Contingency	$253,000
				Total (recommended)	$1,514,000
				Improvement Area Subtotal (alternative)	$1,295,000
				20% Contingency	$259,000
				Total (alternative)	$1,554,000

Improvement Area J					
Item No.	Quantity	Unit	Item	Unit Price	Total
1	1	LS	Re-striping & Signage	$3,000	$3,000
2	1	EA	Hawk Signal	$70,000	$70,000
3	2	EA	Curb Ramp	$3,500	$7,000
4	1	EA	Pedestrian Refugee Island	$12,000	$12,000
				Section Subtotal	$92,000
				20% Contingency	$19,000
				Total=	$111,000

Improvement Area L					
Item No.	Quantity	Unit	Item	Unit Price	Total
Recommended: Pop-outs at Kramer St / Coolidge St					
1	1	LS	Re-striping & Signage	$4,000	$4,000
2	4	EA	Curb Pop-out with Ramp	$20,000	$80,000
3	2	EA	Sidewalk Pop-out with Ramp	$10,000	$20,000
4	4	EA	Bike Rack	$300	$1,200
5	1	LS	Street Lights (Including Service, Conduits, etc.)	$30,000	$30,000
6	1	EA	Raised Crosswalk	$10,000	$10,000
				Section Subtotal	$146,000
				20% Contingency	$30,000
				Total=	$176,000
Alternative: Traffic Circle at Kramer St / Coolidge St					
1	1	LS	Re-striping & Signage	$4,000	$4,000
2	1	EA	30' Diameter Traffic Circle	$50,000	$50,000
3	8	EA	Curb Ramp	$3,500	$28,000
4	2	EA	Sidewalk Pop-out with Ramp	$10,000	$20,000
5	4	EA	Bike Rack	$300	$1,200
6	1	LS	Street Lights (Including Service, Conduits, etc.)	$30,000	$30,000
7	1	EA	Raised Crosswalk	$10,000	$10,000
				Section Subtotal	$144,000
				20% Contingency	$29,000
				Total=	$173,000

APPENDIX J

Crosswalk and Traffic Circle Warrants

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November 3, 2016

City of San Diego
Planning Department
1222 1st Ave MS 413
San Diego, CA 92101

Subject: Evaluation of requirements for uncontrolled pedestrian crossing on Comstock Street

Dear Melissa Garcia,

The purpose of this memo is to evaluate and identify the warrants for an uncontrolled pedestrian crossing located on Comstock Street between Linda Vista Road and Ulric Street in the City of San Diego. The warrants for an uncontrolled pedestrian crossing are outlined in the City of San Diego Council Policy 200-07. The policy highlights basic warrants which must be satisfied in order for an uncontrolled location to be considered for a marked crossing, in addition to point warrants for which a crossing location must have a set number of points to be considered for a marked crosswalk.

EXISTING CONDITIONS

The proposed crossing location is located on Comstock Street approximately 320 feet east of Linda Vista Road and approximately 320 feet west of Ulric Street (measured from the center line). The road is currently classified as a 3 lane collector per the 1998 Linda Vista Community Plan. The segment of Comstock Street at the proposed crossing currently has a posted speed of 25 mph and a prevailing 85th percentile speed of 30 mph according to an engineering and traffic survey conducted in 2004. Comstock Street currently has one lane of travel in each directions, a two-way left turn lane, and parking on both sides of the road amounting to a road width of 54 feet at the location of the proposed crossing location.

FIELD MEASUREMENTS AND OBSERVATIONS

The pedestrian volume and vehicular gaps were observed and measured on Comstock Street on Thursday, November 3, 2016 from 3:00 P.M. to 4:00 P.M.

5050 Avenida Encinas, Suite 260 | Carlsbad, CA 92008
Office: 760.476.9193 | Fax: 760.476.9198

BASIC WARRANTS

San Diego Council Policy 200-07 outlines 6 basic warrants that must be met in order for an uncontrolled crossing to be considered for a marked crosswalk. The basic warrants per the council policy are as follows;

2.1.1 Pedestrian Volume Warrant – Warrant met

- Requirement – 10 Pedestrians per hour during peak pedestrian hour or satisfied through latent pedestrian demand.
- Measured – **28 Pedestrians** per hour during peak pedestrian hour

6 (counted as **9**)	Children under age 13, disabled, elderly over age 64
19	Other Pedestrians
Total	25 (counted as **28**)

2.1.2 Approach Speed Warrant – Warrant met

- Requirement – 85th percentile speed must be equal to or lower than 40 mph
- Measured – 85th percentile speed of **30 mph**

2.1.3 Nearest Controlled Crossing – Warrant met

- Requirement – proposed crossing location must be at least 250 feet away from the nearest controlled pedestrian crossing
- Measured – proposed crossing location is **250 feet** from the controlled pedestrian crossing at Linda Vista Road.

2.1.4 Visibility Warrant – Warrant met

- Requirement – motorists must have an unrestricted view of all pedestrians in the crossing from a stopping sight distance outlines in council policy 200-07 (200 feet for 30 mph approach speed)
- Measured – the sight distance measured for the proposed crossing was **greater than 500 feet looking west** and **300 feet looking east**. In order to achieve the minimum sight distance looking east and west from the proposed crossing; existing parking will be impacted.

2.1.5 Illumination Warrant – Warrant to be met with improvements

- Requirement – The proposed crossing location must have existing lighting
- Observed – No existing illumination, however, **illumination to be installed with improvements**

2.1.6 Accessibility Warrant – Warrant to be met with improvements

- Requirement – Proposed crossing location must have ADA accessibility
- Observed – No existing ADA accessibility, however, **ADA access to be installed with improvements**

POINT WARRANTS

San Diego Council Policy 200-07 outlines 4 categories of warrants, each allocating a certain amount of points to assign a proposed uncontrolled marked crosswalk. Sixteen (16) points are required from the point warrants (in addition to the basic warrants) in order for a proposed uncontrolled crossing to be considered. The point warrants per the council policy are as follows:

T1.1a Pedestrian Volume Warrant[1] – 8 assigned points

- Number of observed pedestrians (peak hour) = 28

T1.1b Latent Pedestrian Demand Warrant (not used)

T1.2 General Condition Warrant – 9 assigned points

c. The proposed crosswalk will establish a mid-block crossing between adjacent signalized intersections.

d. A pedestrian attractor/generator is located within ¼ mile to the proposed crosswalk.

e. An existing bus stop is located within 100 feet of the proposed crosswalk.

T1.3 Gap Time Warrant – 8 assigned points

- Average number of vehicular gaps per 5-minute period = 5.25

Total Points for proposed uncontrolled crossing = **25 points**

CONCLUSION

A review of basic and point warrants result in the proposed crosswalk on Comstock Street between Linda Vista Road and Ulric Street receiving 25 points, 9 more points than the requirement. The proposed crosswalk is warranted.

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[1] Pedestrian Volume Warrant used in lieu of Latent Pedestrian Demand Warrant

July 25, 2016

City of San Diego
Planning Department
1222 1st Ave MS 413
San Diego, CA 92101

Subject: Evaluation of requirements for uncontrolled pedestrian crossing on Coolidge Street

Dear Melissa Garcia,

The purpose of this memo is to evaluate and identify the warrants for an uncontrolled pedestrian crossing located on Coolidge Street between Kramer Street / David Street and Howe Court in the City of San Diego. The warrants for an uncontrolled pedestrian crossing are outlined in the City of San Diego Council Policy 200-07. The policy highlights basic warrants which must be satisfied in order for an uncontrolled location to be considered for a marked crossing, in addition to point warrants for which a crossing location must have a set number of points to be considered for a marked crosswalk.

EXISTING CONDITIONS

The proposed crossing location is located on Coolidge Street approximately 250 feet south of Kramer Street / David Street and approximately 450 feet north of Howe Court (measured from the center line). The road is currently classified as a local street per the 1998 Linda Vista Community Plan. The segment of Coolidge Street at the proposed crossing currently has a posted speed of 25 mph. No traffic and engineering survey has been conducted on Coolidge Street therefore, for this study, a 25 mph design speed will be assumed. Coolidge Street currently has one lane of travel in each direction separated by a double yellow centerline, as well as parking on both sides of the road amounting to a road width of 37 feet at the location of the proposed crossing location.

FIELD MEASUREMENTS AND OBSERVATIONS

The pedestrian volume and vehicular gaps were observed and measured on Coolidge Street on Thursday, July 14, 2016 from 7:00 A.M. to 8:00 A.M.

5050 Avenida Encinas, Suite 260 | Carlsbad, CA 92008
Office: 760.476.9193 | Fax: 760.476.9198

BASIC WARRANTS

San Diego Council Policy 200-07 outlines 6 basic warrants that must be met in order for an uncontrolled crossing to be considered for a marked crosswalk. The basic warrants per the council policy are as follows;

2.1.1 Pedestrian Volume Warrant – Warrant met

- Requirement – 10 Pedestrians per hour during peak pedestrian hour
- Measured – **149 Pedestrians** per hour during peak pedestrian hour

47 (counted as **70**)	Children under age 13, disabled, elderly over age 64
79	Other Pedestrians
Total	126 (counted as **149**)

2.1.2 Approach Speed Warrant – Warrant met

- Requirement – 85th percentile speed must be equal to or lower than 40 mph
- Measured – assumed design speed of **25 mph**

2.1.3 Nearest Controlled Crossing – Warrant to be met with traffic circle improvements

- Requirement – proposed crossing location must be at least 250 feet away from the nearest controlled pedestrian crossing
- Measured – proposed crossing location is 210 feet from the controlled pedestrian crossing at Kramer Street / David Street, however, this warrant will be met with by replacing the existing all way stop at Kramer St / David St with a proposed traffic circle.

2.1.4 Visibility Warrant – Warrant met

- Requirement – motorists must have an unrestricted view of all pedestrians in the crossing from a stopping sight distance outlines in council policy 200-07 (150 feet for 25 mph approach speed)
- Measured – the sight distance measured for the proposed crossing was **greater than 500 feet looking north** and **330 feet looking south.** This sight distance was measured from the edge of the parking lane to account for the proposed curb pop-outs at the proposed crossing. In order to achieve the minimum sight distance looking south from the proposed crossing; existing parking will be impacted.

2.1.5 Illumination Warrant – Warrant to be met with improvements

- Requirement – The proposed crossing location must have existing lighting
- Observed – No existing illumination, however, **illumination to be installed with improvements**

2.1.6 Accessibility Warrant – Warrant to be met with improvements

- Requirement – Proposed crossing location must have ADA accessibility

- Observed – No existing ADA accessibility, however, **ADA access to be installed with improvements**

POINT WARRANTS

San Diego Council Policy 200-07 outlines 4 categories of warrants, each allocating a certain amount of points to assign a proposed uncontrolled marked crosswalk. Sixteen (16) points are required from the point warrants (in addition to the basic warrants) in order for a proposed uncontrolled crossing to be considered. The point warrants per the council policy are as follows;

T1.1a Pedestrian Volume Warrant[1] – 10 assigned points

- Number of observed pedestrians (peak hour) = 149

T1.1b Latent Pedestrian Demand Warrant (not used)

T1.2 General Condition Warrant – 6 assigned points

d. A pedestrian attractor/generator is located within ¼ mile to the proposed crosswalk.

f. This location is considered a part of a Safe Route to school.

T1.3 Gap Time Warrant – 1 assigned point

- Average number of vehicular gaps per 5-minute period = 5.08

Total Points for proposed uncontrolled crossing = **17 points**

CONCLUSION

A review of basic and point warrants result in the proposed crosswalk on Coolidge Street between Kramer Street and Howe Court receiving 17 points, 1 point more than the requirement. The proposed crosswalk is warranted. The proposed crossing is located specifically where pedestrians have been seen crossing. That is, the proposed crosswalk is located at the entrance gate leading to the school parking lot across the street. The proposed crosswalk cannot be moved further from the controlled intersection and remain effective at attracting pedestrians to it.

[1] Pedestrian Volume Warrant used in lieu of Latent Pedestrian Demand Warrant

July 25, 2016

City of San Diego
Planning Department
1222 1st Ave MS 413
San Diego, CA 92101

Subject: Evaluation of requirements for proposed traffic circle at the intersection of Coolidge Street, Kramer Street, and David Street.

Dear Melissa Garcia,

The purpose of this memo is to evaluate and identify the warrants for a traffic circle located at the intersection of Coolidge Street, Kramer Street and David Street in the City of San Diego. The warrants for a traffic circle are outlined in the City of San Diego Traffic Circle Evaluation from the Transportation Engineering Division. The document highlights screening criteria which must be satisfied in order for a traffic circle to be considered at an intersection.

EXISTING CONDITIONS

The intersection on Coolidge Street, Kramer Street and David Street currently operates as an all-way stop (4 legs). Coolidge Street has a road width of 37 feet and is the north/south leg of the intersection. Kramer Street has a road width of 36 feet and is the west leg of the intersection. David Street has a road width of 34 feet and is the east leg of the intersection. All roads have one travel lane in each direction with parking on both sides of the road.

SCREENING

The City of San Diego Traffic Circle Evaluation outlines a list of screening criteria, all of which must be satisfied in order for a traffic circle to be considered. The screening criteria is as follows;

1. None of the streets have more than one lane in each direction.
    - **Satisfied** – all streets have one lane of travel in each direction.
2. None of the streets are classified as a major street or higher in the Community Plan.
    - **Satisfied** – Coolidge Street, David Street and Kramer Street are classified as local streets per the 1998 Linda Vista Community Plan.

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3. The distance between the intersection and the nearest stop sign or traffic signal is at least 600 feet.
    - **Satisfied** – The nearest stop sign or traffic signal from the intersection is the signalized intersection of Kramer Street and Linda Vista Road (900 feet).
4. All of the streets are crowned for side-gutter drainage.
    - **Satisfied** – All streets are crowned for drainage
5. The longitudinal grade of all streets is 5% or less at the location of the circle.
    - **Not Satisfied** – the approach on the west leg (Kramer Street) of the intersection has an existing 6% grade.
6. None of the streets have roadway profile or alignment features that limit the minimum safe sight stopping distance.
    - **Satisfied** – The sight distance motorists on each leg observing the intersection exceeds the minimum requirement of 150 feet.
7. All of the streets are posted 30 mph or less.
    - **Satisfied** – All streets approaching the intersection are posted 25 mph.
8. A speed profile study confirms a speeding problem exists or the circle is intended to replace an all-way stop.
    - **Satisfied** – The traffic circle is intended to replace an all-way stop.
9. None of the streets are transit routes.
    - **Satisfied** – No transit facilities are located on these streets.
10. Fire Department Approval
    - N/A – approval has not been requested

CONCLUSION

Following the screening criteria for a traffic circle, most of the screening requirements are met except the minimum grade requirement. An exception is requested, given that the existing grade is not excessive to where it would be a safety concern. A traffic circle is recommended at this location.

July 25, 2016

City of San Diego
Planning Department
1222 1st Ave MS 413
San Diego, CA 92101

Subject: Evaluation of requirements for uncontrolled pedestrian crossing on Ulric Street

Dear Melissa Garcia,

The purpose of this memo is to evaluate and identify the warrants for an uncontrolled pedestrian crossing located on Ulric Street at the intersection with Burroughs Street in the City of San Diego. The warrants for an uncontrolled pedestrian crossing are outlined in the City of San Diego Council Policy 200-07. The policy highlights basic warrants which must be satisfied in order for an uncontrolled location to be considered for a marked crossing, in addition to point warrants for which a crossing location must have a set number of points to be considered for a marked crosswalk.

EXISTING CONDITIONS

The proposed crossing location is located on Ulric Street at the south side of the intersection with Burroughs Street. The road is currently classified as a 3 lane collector per the 1998 Linda Vista Community Plan. The segment of Ulric Street at the proposed crossing currently has a posted speed of 30 mph and a prevailing 85th percentile speed of 34 mph according to an engineering and traffic survey conducted in 2014. Ulric Street currently has one lane of travel in each direction, a two way left turn lane, buffered bike lanes in each direction and parking lanes on both sides of the road amounting to a road width of 64 feet at the location of the proposed crossing location.

FIELD MEASUREMENTS AND OBSERVATIONS

The pedestrian volume and vehicular gaps were observed and measured on Ulric Street on Thursday, July 14, 2016 from 3:00 P.M. to 4:00 P.M.

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BASIC WARRANTS

San Diego Council Policy 200-07 outlines 6 basic warrants that must be met in order for an uncontrolled crossing to be considered for a marked crosswalk. The basic warrants per the council policy are as follows;

2.1.1 Pedestrian Volume Warrant – Warrant met

- Requirement – 10 Pedestrians per hour during peak pedestrian hour
- Measured – **54 Pedestrians** per hour during peak pedestrian hour

14 (counted as **21**)	Children under age 13, disabled, elderly over age 64
33	Other Pedestrians
Total	47 (counted as **54**)

2.1.2 Approach Speed Warrant – Warrant met

- Requirement – 85^{th} percentile speed must be equal to or lower than 40 mph
- Measured – 85^{th} percentile speed of **34 mph**

2.1.3 Nearest Controlled Crossing – Warrant met

- Requirement – proposed crossing location must be at least 250 feet away from the nearest controlled pedestrian crossing
- Measured – proposed crossing location is **390 feet** from the controlled pedestrian crossing at Comstock Street

2.1.4 Visibility Warrant – Warrant met

- Requirement – motorists must have an unrestricted view of all pedestrians in the crossing from a stopping sight distance outlines in council policy 200-07 (240 feet for 34 mph approach speed)
- Measured – the sight distance measured for the proposed crossing was **greater than 500 feet looking north** and **greater than 500 feet looking south.** This sight distance was measured from the edge of the parking lane to account for the proposed curb pop-outs at the proposed crossing.

2.1.5 Illumination Warrant – Warrant met

- Requirement – The proposed crossing location must have existing lighting
- Observed – Location has existing street lighting.

2.1.6 Accessibility Warrant – Warrant to be met with improvements

- Requirement – Proposed crossing location must have ADA accessibility
- Observed – No existing ADA accessibility, however, **ADA access to be installed with improvements**

POINT WARRANTS

San Diego Council Policy 200-07 outlines 4 categories of warrants, each allocating a certain amount of points to assign a proposed uncontrolled marked crosswalk. Sixteen (16) points are required from the point warrants (in addition to the basic warrants) in order for a proposed uncontrolled crossing to be considered. The point warrants per the council policy are as follows:

T1.1a Pedestrian Volume Warrant – 10 assigned points

- Number of observed pedestrians (peak hour) = 54

T1.1b Latent Pedestrian Demand Warrant (not used)

T1.2 General Condition Warrant – 6 assigned points

a. The nearest controlled crossing is greater than 300 feet from the proposed crosswalk.

d. A pedestrian attractor/generator is located within ¼ mile to the proposed crosswalk.

T1.3 Gap Time Warrant – 8 assigned points

- Average number of vehicular gaps per 5-minute period = 2.83

Total Points for proposed uncontrolled crossing = **24 points**

CONCLUSION

A review of basic and point warrants result in the proposed crosswalk on Ulric Street on the south side of the intersection with Burroughs Street receiving 24 points, 8 more points than the requirement. The proposed crosswalk is warranted.

Michael Baker
INTERNATIONAL

We Make a Difference

July 25, 2016

City of San Diego
Planning Department
1222 1st Ave MS 413
San Diego, CA 92101

Subject: Evaluation of requirements for uncontrolled pedestrian crossing on Ulric Street

Dear Melissa Garcia,

The purpose of this memo is to evaluate and identify the warrants for an uncontrolled pedestrian crossing located on Ulric Street between Linda Vista Road and Dunlop Street in the City of San Diego. The warrants for an uncontrolled pedestrian crossing are outlined in the City of San Diego Council Policy 200-07. The policy highlights basic warrants which must be satisfied in order for an uncontrolled location to be considered for a marked crossing, in addition to point warrants for which a crossing location must have a set number of points to be considered for a marked crosswalk.

EXISTING CONDITIONS

The proposed crossing location is located on Ulric Street approximately 250 feet east of Linda Vista Road and approximately 320 feet west of Dunlop Street (measured from the center line). The road is currently classified as a 3 lane collector per the 1998 Linda Vista Community Plan. The segment of Ulric Street at the proposed crossing currently has a posted speed of 30 mph and a prevailing 85th percentile speed of 34 mph according to an engineering and traffic survey conducted in 2014. Ulric Street currently has one lane of travel in each direction, a two way left turn lane, buffered bike lanes in each direction and a parking lane on the north side of the road amounting to a road width of 64 feet at the location of the proposed crossing location.

FIELD MEASUREMENTS AND OBSERVATIONS

The pedestrian volume and vehicular gaps were observed and measured on Ulric Street on Wednesday, July 13, 2016 from 3:00 P.M. to 4:00 P.M.

BASIC WARRANTS

San Diego Council Policy 200-07 outlines 6 basic warrants that must be met in order for an uncontrolled crossing to be considered for a marked crosswalk. The basic warrants per the council policy are as follows;

2.1.1 Pedestrian Volume Warrant – Warrant met

- Requirement – 10 Pedestrians per hour during peak pedestrian hour
- Measured – **32 Pedestrians** per hour during peak pedestrian hour

5 (counted as **7**)	Children under age 13, disabled, elderly over age 64
25	Other Pedestrians
Total	30 (counted as **32**)

2.1.2 Approach Speed Warrant – Warrant met

- Requirement – 85^{th} percentile speed must be equal to or lower than 40 mph
- Measured – 85^{th} percentile speed of **34 mph**

2.1.3 Nearest Controlled Crossing – Warrant not met

- Requirement – proposed crossing location must be at least 250 feet away from the nearest controlled pedestrian crossing
- Measured – proposed crossing location is 200 feet from the controlled pedestrian crossing at Linda Vista Road

2.1.4 Visibility Warrant – Warrant met

- Requirement – motorists must have an unrestricted view of all pedestrians in the crossing from a stopping sight distance outlines in council policy 200-07 (240 feet for 34 mph approach speed)
- Measured – the sight distance measured for the proposed crossing was **260 feet looking east** and **greater than 500 feet looking west**

2.1.5 Illumination Warrant – Warrant to be met with improvements

- Requirement – The proposed crossing location must have existing lighting
- Observed – No existing illumination, however, **illumination to be installed with improvements**

2.1.6 Accessibility Warrant – Warrant to be met with improvements

- Requirement – Proposed crossing location must have ADA accessibility
- Observed – No existing ADA accessibility, however, **ADA access to be installed with improvements**

POINT WARRANTS

San Diego Council Policy 200-07 outlines 4 categories of warrants, each allocating a certain amount of points to assign a proposed uncontrolled marked crosswalk. Sixteen (16) points are required from the point warrants (in addition to the basic warrants) in order for a proposed uncontrolled crossing to be considered. The point warrants per the council policy are as follows:

T1.1a Pedestrian Volume Warrant – 8 assigned points

- Number of observed pedestrians (peak hour) = 32

T1.1b Latent Pedestrian Demand Warrant (not used)

T1.2 General Condition Warrant – 6 assigned points

d. A pedestrian attractor/generator is located within ¼ mile to the proposed crosswalk.

f. The alley to the west of the proposed crosswalk is used as a pedestrian path to connect the residential neighborhood to the northeast to the commercial uses in the vicinity of the proposed crosswalk. Jaywalking is extremely prevalent in this area due to the pseudo-pedestrian path connection that the alleyway provides. Multiple pedestrian injuries and fatalities have been reported as a result of vehicle-pedestrian accidents (a fatality in 2012, and injuries in 2006 and 2008).[1] The pseudo-connection and injuries and fatality are considered other factors that warrant the addition of the crosswalk at this location.

T1.3 Gap Time Warrant – 1 assigned point

- Average number of vehicular gaps per 5-minute period = 1.25

Total Points for proposed uncontrolled crossing = **15 points**

CONCLUSION

The crosswalk is not met for either the basic warrants or the point-value warrants, and therefore will be removed from the plan.

[1] TIMS Data, accessed 7/22/2016 from http://tims.berkeley.edu/