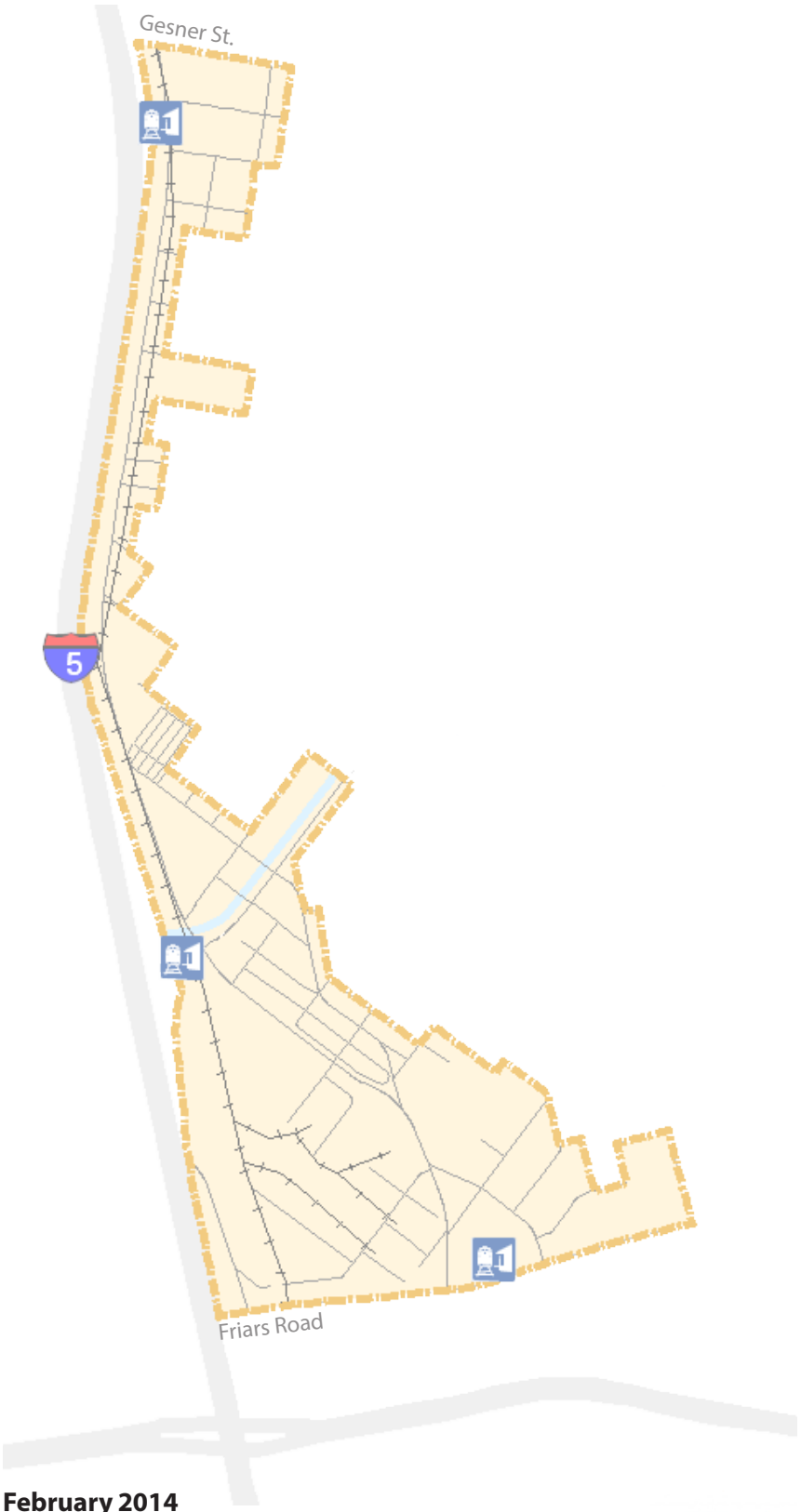
Morena Blvd Station Area Planning Study

Final Report



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The City of San Diego

KTUA Planning + Landscape Architecture

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Acronyms

Acronym	Nomenclature
ADA	Americans with Disbilities Act
ADT	Average Daily Traffic
BID	Business Improvement District
BLT	Bayview Loop Trail
BTA	Bicycle Transportation Account
CDBG	Community Development Block Grant
CEQA	California Environmental Quality Act
CFD	Community Facilities District
CMAQ	Congestion Mitigation and Air Quality
COP	Certificate of Participation
CWSRF	Clean Water State Revolving Fund
DU	dwelling units
FAR	Floor Area Ratio
HCM	Highway Capacity Manual
HUD	Department of Housing and Urban Development
IFD	Infrastructure Financing District
LID	Low Impact Development
LOS	Level of Service
LRPMP	Long Range Property Management Plan
LRT	Light Rail Transit
LTF	Local Transportation Fund
MAD	Maintenance Assessment District
MBAP	Morena Boulevard Station Area Planning Study
MOU	Memorandum of Understanding
MPH	Miles per hour
MTS	Metropolitan Transit System
NCHRP	National Cooperative Highway Research Program
NNN	triple net
NSA	New School of Architecture
OPR	Office of Planning Research
RFP	Request for Proposal
ROW	Right of Way
RV	recreational vehicle
SANDAG	San Diego Council of Governments
SCIP	Statewide Community Infrastructure Program
SHC	Streets and Highways Code
SRF	State Revolving Fund
TAZ	Traffic Analysis Zone
TDA	Transportation Development Act
TOD	Transit Oriented Development
USD	University of San Diego
UTC	University Town Center

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Foreword

The Draft Morena Boulevard Station Area Planning Study proposes land use and mobility changes adjacent to the Mid-Coast trolley stations at Tecolote Road and Clairemont Drive within the Clairemont Mesa and Linda Vista community planning areas. The Clairemont Mesa Community Planning Group, and concerned Bay Park residents and small business owners, have expressed opposition to some of the Study's recommendations. Due to a lack of community support for how the study could impact future development on certain key parcels, the Study has been revised and the following recommendations are to be carried forward through the implementation process:

- Maintain the existing Clairemont Mesa Height Limit Overlay Zone as outlined in the community plan and in Municipal Code Chapter 13, Article 2, Division 13.
- Re-evaluate recommended residential densities in light of community concerns related to traffic and view shed impacts associated with new development.
- Maintain parking along the west side of Morena Boulevard (between Napier Street and Littlefield Street), until a more permanent parking solution is identified that ensures reasonable availability of parking for businesses along the corridor.

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ES.0 Executive Summary

The Morena Boulevard Station Area Planning Study (MBAP) is a coordinated transportation and land use planning study funded by a Caltrans Community Based Transportation Grant and administered by the City of San Diego.

ES.1 Project Purpose

The MBAP is designed to address the future form of a community in the midst of change, both through the natural evolution of urban development and the introduction of a new form of transit with the Mid-Coast Light Rail Transit (LRT) Trolley extension. The findings and recommendations contained within this study will guide changes in the City's land use regulations to better compliment the investment in LRT and accommodate future growth in a balanced, sustainable manner.

ES.2 Previous Planning Efforts

The MBAP is a continuation of efforts that have been ongoing in the study area for many years. While the MBAP is an independent effort that starts with no preconceived ideas, it also recognizes the work that precedes it. Several of the previous planning efforts undertaken related to mobility and land use within the study area include:

- New School of Architecture (NSA) Student Input
- University of San Diego (USD) Real Estate Class Input /Sherm Harmer
- City of San Diego Pedestrian Master Plan
- City of San Diego Bike Master Plan
- Clairemont Ad-Hoc Community Plan Update
- Mid-Coast LRT Trolley Extension
- Linda Vista Community Plan
- Clairemont Mesa Community Plan

ES.3 Study Area

Figure ES-1 shows the boundaries and context of the study area. The MBAP study area is bounded by Gesner Street on the north, Friars Road on the south, Interstate 5 on the west, and various streets on the east which generally demarcate the boundary between the commercial and single family land uses.

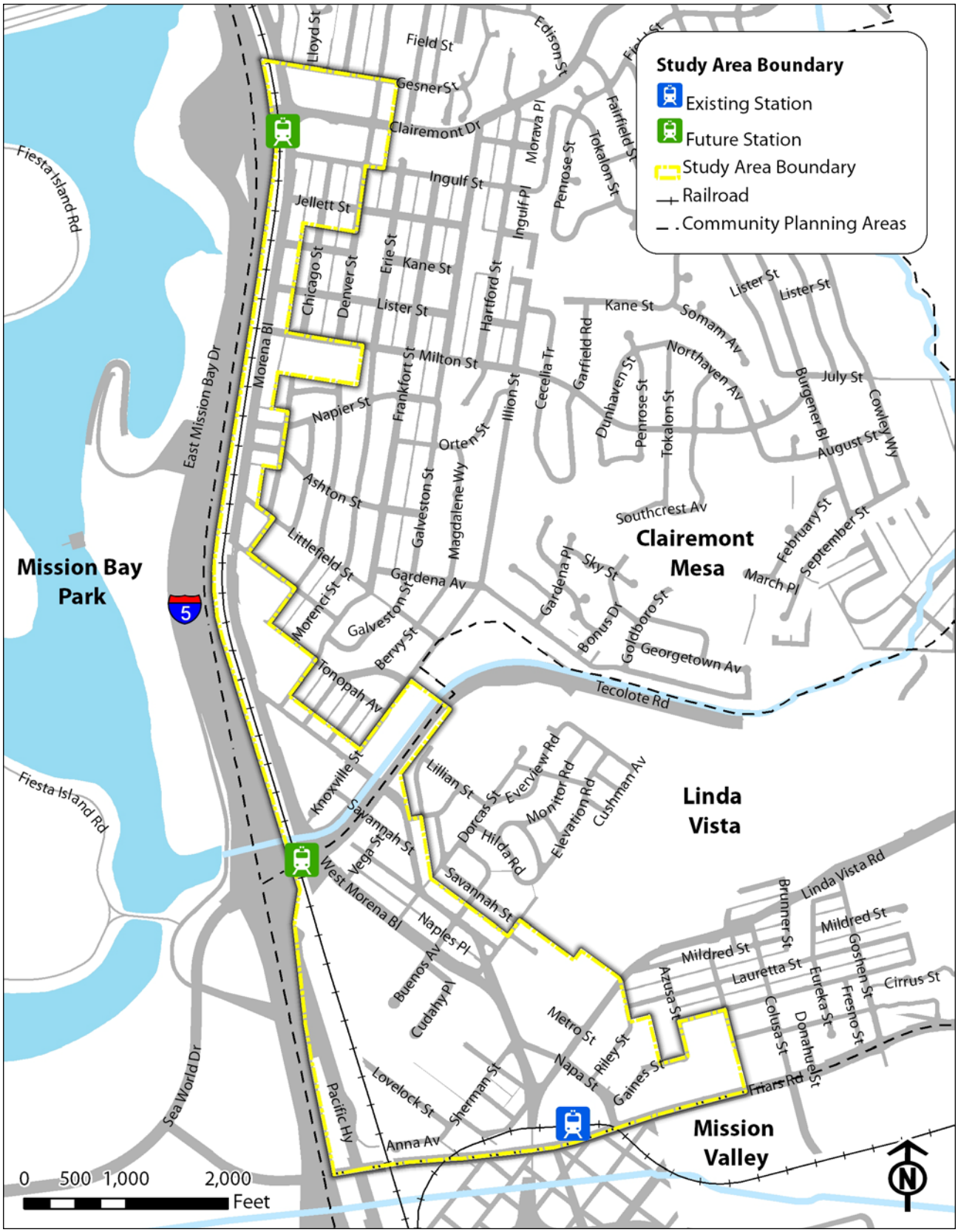

Figure ES-1: MBAP Study Area

ES.4 Community Outreach

The MBAP recognizes the importance of public input to the planning process. The planned LRT stations are being sited in existing neighborhoods, and therefore, input from the community is vital in identifying appropriate changes to land use patterns. The following interactive outreach strategies were used as a part of the multi-lingual outreach process of the study:

Stakeholder/Community Group Announcements – Representatives from the City/consultant team regularly attended stakeholder and community group meetings in order to update the community on upcoming events.

Multi-Modal Questionnaire – A questionnaire administered online that allowed participants to record their opinions on existing conditions within the study area, including mobility choices and community strengths/weaknesses.

Public Workshop 1 – Introduction: initial input on vision, goals, and objectives, as well as concerns and issues that will need to be addressed. The workshop was held at USD in Linda Vista.

Walk Audit – Two guided tours that explored various aspects of the study area. One tour explored the north end of the study area, while the other explored the south. Participants recorded their thoughts on issues/opportunities identified by the planning team, as well as their own observations.

Public Workshop 2 – Analysis: land use trends, market opportunities and constraints, mobility conditions and options, existing zoning and land use flexibility and transit supportive planning policies. The workshop was held at Canyon Ridge Baptist Church in Linda Vista.

Public Workshop 3 – Concepts: solutions for mobility issues, suggestions for land use changes and design guidelines to protect current uses and users in the area. The workshop was held at the San Diego Humane Society in Linda Vista.

All materials produced throughout the study were posted on the City's webpage and City staff and community outreach consultants recorded and responded to community comments either directly or through subsequent workshops. The Draft MBAP study was also posted to the webpage and open to public comment.

ES.5 Existing Conditions

The following sections provide an overview of the existing conditions within the study area in terms of the land use, zoning, and street network.

ES.5.1 Land Use

The study area is currently dominated by two land uses: commercial and light industrial (see Figure ES-2). The industrial is concentrated in the southern end of the study area, whereas the narrow northern extent is primarily commercial. Some multi-family and mobile home land uses occur near Clairemont Drive, near Tecolote Creek and near the Morena/WMorena northern merge and at the existing Morena Linda Vista Trolley Station.

Other miscellaneous land uses within the study area include education, institutions, transportation, communications, and utilities.

Land uses bordering the study area on the east exhibit a strongly residential character. The land falling within the Clairemont planning area is almost exclusively single family detached residential, while the land in the Linda Vista planning area is a mix of single family (attached and detached), multi-family, and mobile home, especially between Linda Vista Road and Friars Road.

Land uses to the south and west of the study area are either open space parks or recreation.

ES.5.2 Zoning

Zoning represents the land uses allowed and the development standards applied to the land use that each property must abide by in order to be in legal conformance with the City's regulations. While many properties are non-conforming, future development must adhere to these guidelines and zoning is the best indicator on what will be built on a particular property. Figure ES-3 shows the location and extent of existing zoning categories in the study area.

ES.5.3 Street Network

There are three categories of streets in the study area, each with a distinct definition and set of standards:

- Major Streets: according to the City of San Diego's street design manual, can be either four or six lane roadways. The Right of Way (ROW) for these roadways ranges from 118 feet to 130 feet and the design speed ranges from 45 miles per hour (MPH) – 55 MPH. Major streets can include travel lanes, turn lanes, medians, on-street parking (parallel), parkways, sidewalks, crosswalks, and bike lanes.
    - The Major Streets present near the study area include Pacific Highway, Friars Road, Linda Vista Road, and Clairemont Drive.
- Collector Streets: are either two or four lane roadways. The ROW for these roadways ranges from 54 feet to 122 feet and the design speed ranges from 30 MPH – 35 MPH. Collector streets can include travel lanes, turn lanes, on-street parking (parallel) parkways, sidewalks, crosswalks, and bike lanes.
    - Collectors include Morena Boulevard from Gesner Street to the split with W Morena (north), W Morena Boulevard, Morena between Linda Vista and the split with W Morena (south), and Milton Street.
- Local Streets: are two lanes. The ROW for these roadways ranges from 52 feet to 92 feet and the design speed is typically 25 MPH. Local streets can include travel lanes, on-street parking (parallel or angled), parkways, and sidewalks.
    - The majority of the roadways in the study area are local streets, and include all roadways not previously identified as collectors or major streets.

Figure ES-4 displays the classifications of the study area roadways based on existing conditions.

Figure ES-2: Existing Land Use

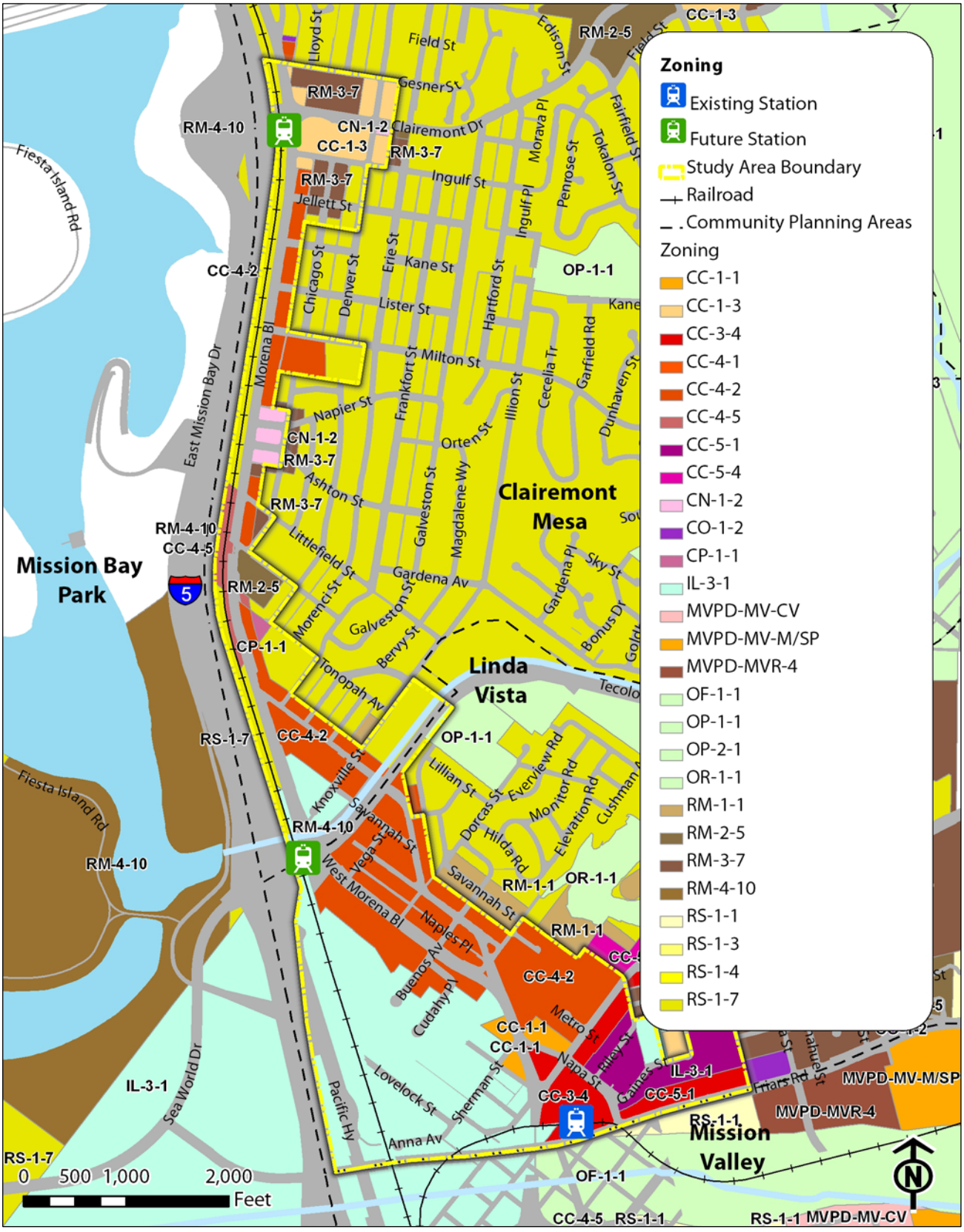

Figure ES-3 Existing Zoning

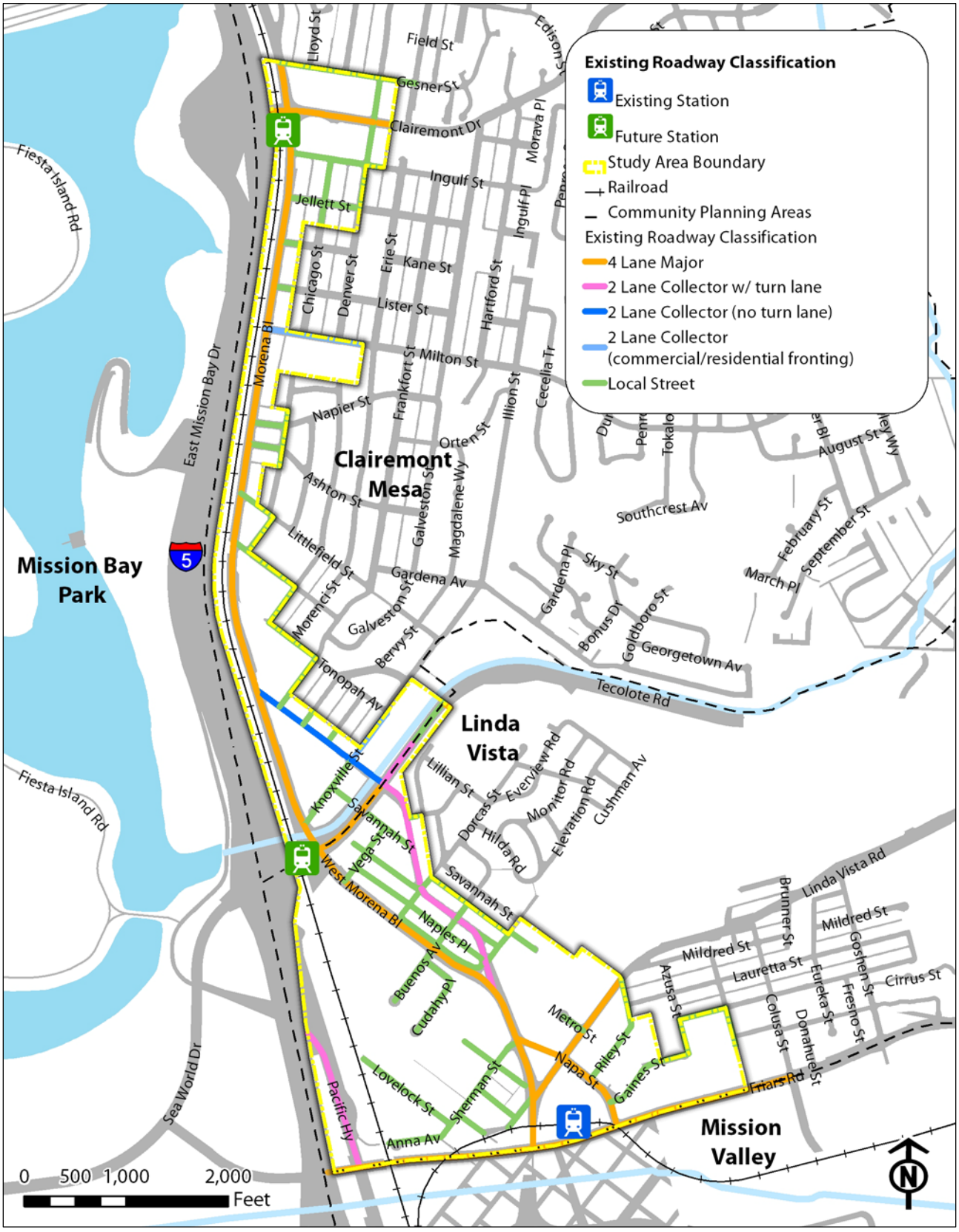

Figure ES-4: Existing Roadway Classification

ES.6 Proposed Land Use

The community provided key input that formed the vision for land use: encourage and enhance the Morena District as a mixed-use area that has a strong restaurant component, grocery store, and thoughtful density that includes affordable housing and public amenities. There were three alternatives discussed through the public outreach process, with the preferred alternative identified as a moderate growth scenario.

ES.6.1 Proposed Land Use Scenario Description

Stakeholders supported the goal of shifting some non-residential land uses to residential land uses, as long as a core of businesses were retained and enhanced to support the budding "design district" identity of the corridor. Stakeholders recognized the importance of increasing the level of development near the existing and proposed trolley stations as a means to direct growth away from established single-family neighborhoods and support long-term sustainability goals (see Figure ES-5). There were varying opinions on the appropriate level of density near the stations, however. Some workshop attendees agreed that 60' in height was appropriate in certain locations, especially if it is "stepped back" as it approaches lower density development. Other attendees were adamant that the existing 30' height limit (in the Clairemont planning area) be enforced. Of particular concern to this group were blockage of views and the introduction of too much development in an already established neighborhood.

The resulting preferred land use scenario proposed the following:

- Residential: approximately 5,800 dwelling units (Increase of approximately 4,800 from existing)
- Non-residential commercial, retail, office, and industrial uses: 2.7 million square feet (Decrease of approximately 700,000 square feet from existing)

The decrease in non-residential space could be realized over time as existing retail, commercial, or industrial properties are sold and redeveloped into residential land uses instead. The plan does not recommend demolition of any particular building/business, but rather, sets a trend for the overall study area which could be achieved with numerous combinations of existing and new development. The preferred land use scenario maintained the existing 30' height limit in the Clairemont Mesa community planning area.

The proposed land use scenario envisions a moderate amount of land use changes paired with moderate to high intensity of development on the changed parcels. The largest areas of change in the preferred scenario include:

- At the recreational vehicle (RV) park site along Tecolote Canyon, which is proposed for conversion to multi-family residential, and adherence to the existing Clairemont Mesa 30' height limit and step backs could be used to concentrate more of the development massing towards Morena Boulevard/commercially developed properties. The RV park site affords the opportunity to create visual corridors through the site towards Tecolote Creek along the Tonopah and Nashville Street alignments, which could help mitigate any new development.
- The area around the proposed Tecolote station increases residential uses between Morena and West Morena as in the conservative scenario, and further expands the mixed-use residential/retail uses west of West Morena. In this scenario, the

residential/retail includes the current sites of Toys R Us, Petco, Jerome's, and A-1 Storage. The maximum height for development in this area is 60'. This area is a key location for additional density as it borders the proposed station site and represents some of the largest individual parcels in the corridor, allowing for larger individual developments.

- The area near the existing Morena station increases both residential and mixed-use land uses. Under this scenario, two new high density residential nodes are created: one southeast of Cushman Avenue and Morena Boulevard and the other southwest of Sherman Street and Morena Boulevard. In addition to these nodes, a mixed-use residential/office node is created north of Linda Vista Road and Napa Street. These locations are ideal for higher density development because of their close proximity to the Morena station, as well as USD. The siting of additional office in this location is directly tied to the anticipated need for office near the university. The maximum height for all these nodes is 60'.
- The preferred scenario also proposes the retention of and reinvestment in existing retail uses between Morena and West Morena (between the south split and Tecolote Road) and along the east side of Morena just south of the south split. This is envisioned as the core of the "Design District" and will create continuity in the character of the neighborhood as residential uses are introduced.
- The preferred scenario also envisions the retention of existing commercial/restaurant uses along the east side of Morena Boulevard (between Linda Vista Road and Tecolote Road).
- As previously mentioned, any development proposals would still be subject to the Clairemont Mesa Height Limit Overlay Zone of 30'.

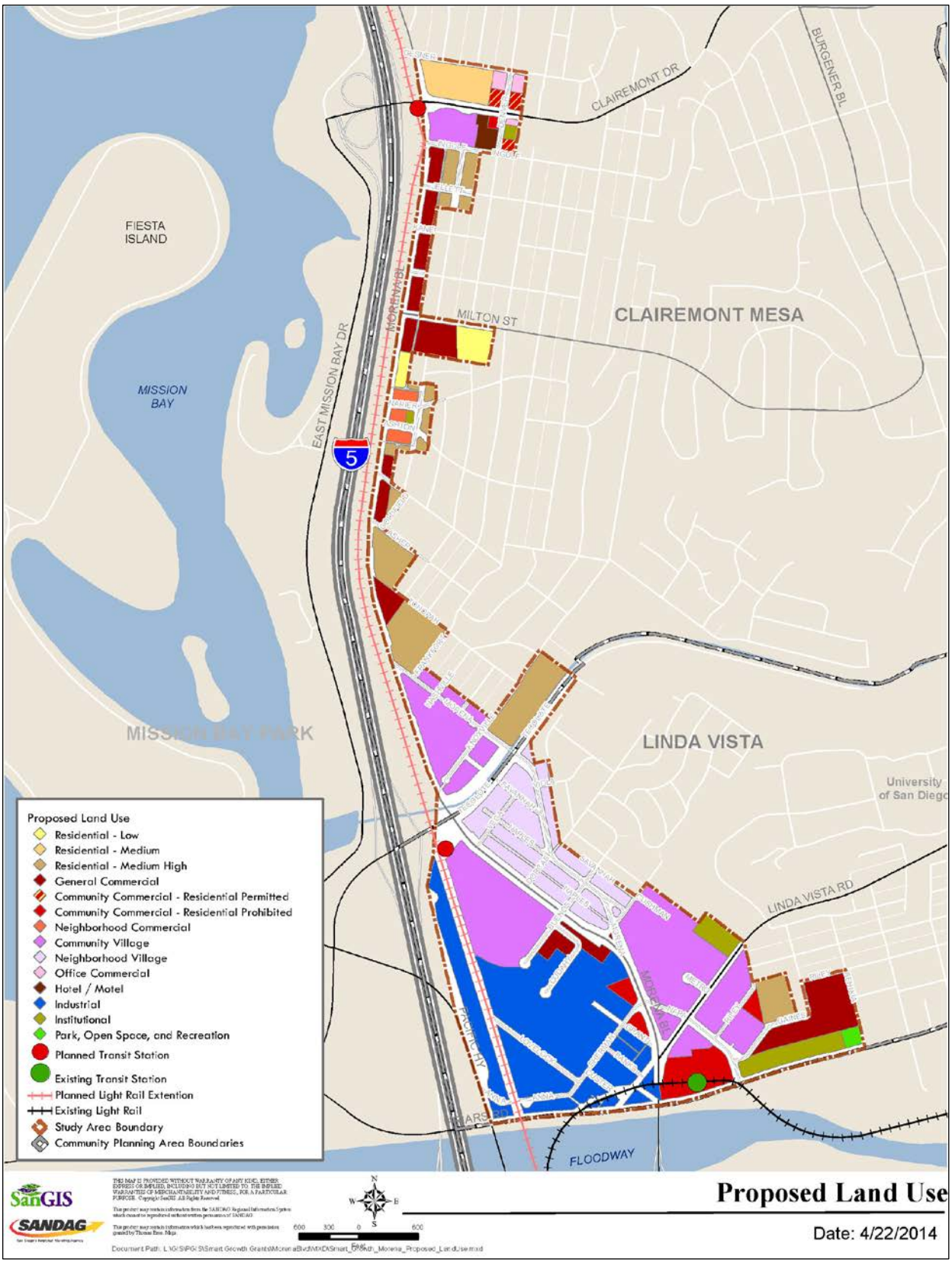

Figure ES-5: Proposed Land Use Scenario

ES.6.2 Fiscal Impact Analysis

The development program for the Project (parcels changed by the MBAP only – does not include community plan parcel loading) would result in an increase of 4,718 dwelling units of various types of residential, and a *decrease* of approximately 164,000 square feet of retail and 492,000 square feet of office space. The decrease in existing commercial space is necessary in order to create the development sites for new residential, commercial, and mixed-use development. Most of the commercial space that would be demolished is economically obsolescent, and therefore is not generating the level of fiscal revenues, employment, and other economic benefits possible based on current market trends. It is worth noting that while the study area would experience a decrease in commercial square footage, this does not impact the ability of the City to retain and increase its office-based employment and taxable retail sales; this activity would be expected to shift to other parts of the City based on the availability of sites elsewhere to accommodate these uses.

There would be a minor net negative fiscal impact (deficit) of approximately $229,000 per year at build out. While this may seem more than a minor amount, in terms of the City's $1.2 billion annual General Fund, it represents a deficit of 0.02 percent (two one-hundreds of one percent). This amount is well within the normal budgetary variation that can occur from year to year in either revenues or expenses. It is reasonable to expect that net revenues from other more intensive commercial areas of the City, such as Mission Valley and Downtown, could more than offset the negative fiscal impact that could occur in the study area at build out. The study area could be complementary to these areas by offering more housing choices to employees who work in these areas.

ES.7 Urban Design Guidelines

The urban design vision was set by the community in the Existing Conditions Workshop. The community worked together to identify key opportunities in the study area to enhance how future growth is built. The vision statement below is from the workshop and guided the creation of urban design guidelines:

> "Create an attractive and inviting mixed-use center that builds upon the current feeling of the corridor while creating a defined community identity that includes unique signage, gateways, public gathering spaces, street trees, and landscaping."

ES.7.1 Guideline Districts

The study area was divided into four districts for the purposes of developing and applying design guidelines. A district represents an area where the public realm elements are intentionally kept consistent to retain or create a specific character. There are four districts in the Morena Boulevard study area:

- Design District
- Neighborhood Retail District
- Restaurant Row District
- Residential Mixed Use District

Figure ES-6 graphically portrays the extents of the four districts. For guidelines proposed for each of these districts, please see the main document of the MBAP.

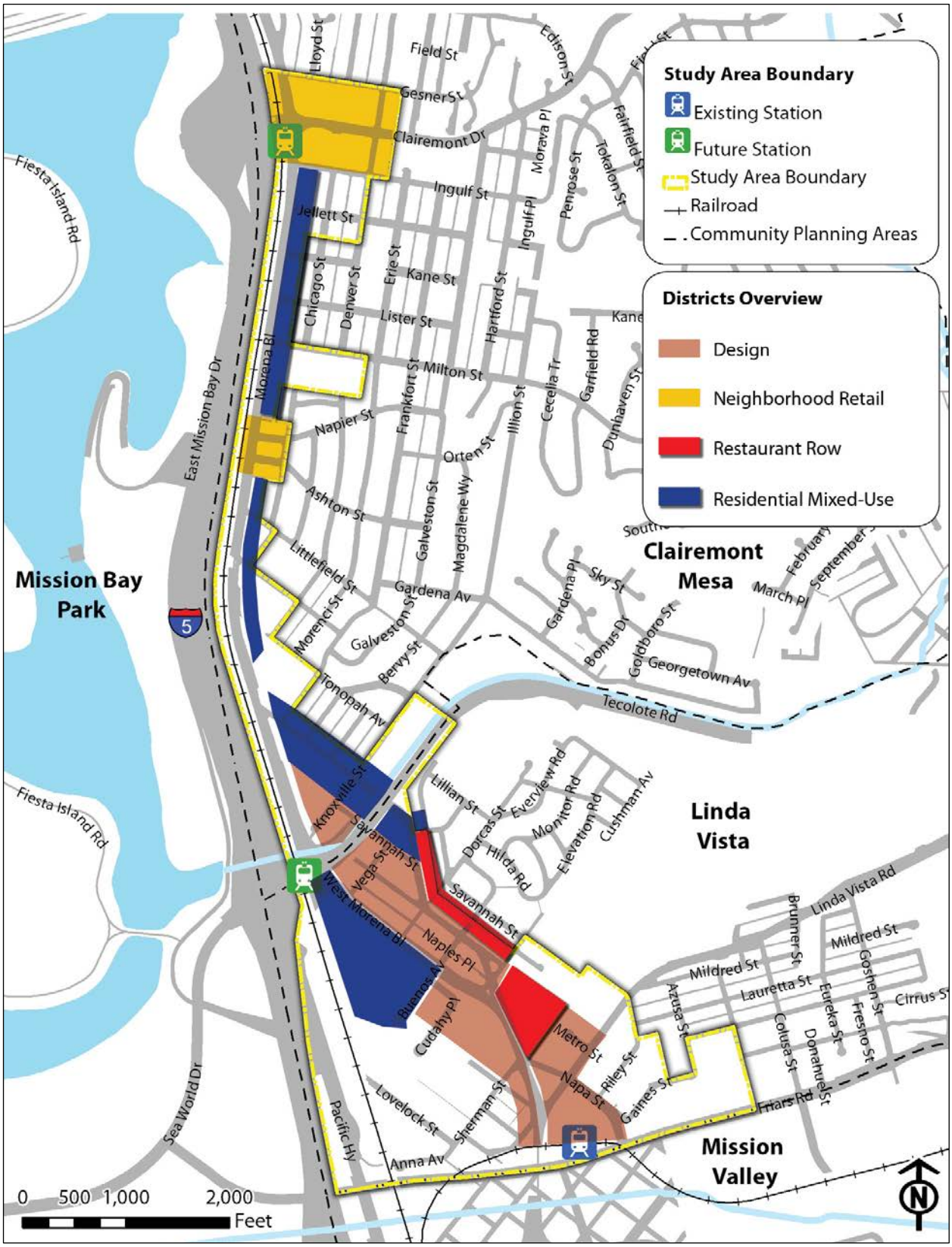

Figure ES-6: Urban Design Districts Overview

ES.8 Proposed Mobility Improvements

The vision for mobility improvements promotes a balanced approach to roadway use, recognizing the role that streets play for vehicular flow, transit access, pedestrian movement, and bicycle circulation. The vision also recognizes the role that streets provide in accommodating and promoting the adjacent land use, activating public spaces with eyes on the public realm and providing additional parking options that also buffer pedestrian and other street uses. The vision strives to identify available capacity in roadway geometry that is not needed for vehicular throughput and reassign this space for bike lanes, pedestrian improvements, on-street parking or streetscape resources that can help provide shade, pedestrian protection, reduce urban heat island affects or provide options for stormwater runoff.

An outcome of the vision is also the introduction of several new intersections and street segments to efficiently handle future traffic flow, as well as provide pedestrians and cyclists safe and comfortable streetscape environments. These streets are laid out in a more geometric manner and follow a grid pattern, which is the best way to distribute traffic on a variety of streets and provide a more even flow of traffic. A grid street network also works better for pedestrian crossings and helps to increase the overall likelihood of someone walking to destinations.

The MBAP proposed mobility scenario includes both mid-term and long-term improvements. Figures ES-7 through ES-21 provide an executive level review of the proposed improvements. Although two phases/scenarios were developed, most of the recommendations remain the same throughout the corridor, with the exception of the roadway network east/south of Buenos Avenue. Figures ES-15 and ES-16 show the differences in this area. Below is additional discussion on the universal recommendations and those that are specific to either the mid-term or long-term scenario.

ES.8.1 Proposed Scenario: Universal Recommendations

The recommendations proposed for the northern portion of the study area (defined as anything north of the new LRT Tecolote station) are not dependent on phasing and are listed below:

- Morena Boulevard is designed to have one lane southbound and two lanes northbound
- Parallel parking is provided on the eastern side of Morena Boulevard
- Buffered Class 2 bike lanes are included on both sides of Morena Boulevard
- A multi-use trail with a tree-planted parkway buffer is proposed on the west side of Morena Boulevard
- Tree pop-outs are proposed on the east side of Morena Boulevard
- A new standard “T” intersection is proposed where Knoxville Street meets West Morena Boulevard
- A trail is proposed along Tecolote Creek on the northern side of Tecolote Road between Morena Boulevard and West Morena Boulevard, providing pedestrian access
- A new walkway on the southern side of Tecolote Road between Savannah Street and West Morena Boulevard provides pedestrian access

ES.8.2 Proposed Scenario: Mid-term Phase

The mid-term design concept focuses on the re-organization of the roadway conditions around the triangular parcel of land bordered by Napa Street, Morena Boulevard, and Linda Vista Road. The following recommendations are unique to this phase and are

focused on the southern portion of the study area (defined as anything south of the new LRT Tecolote station):

- Morena Boulevard is designed to have one lane both northbound and southbound between Tecolote Road and the southern Morena split
- Morena Boulevard is designed to have two lanes southbound and one lane northbound between the southern Morena split and the southern boundary of the study area
- Left turns onto eastbound Napa Street are restricted for those traveling southbound on Morena Boulevard

ES.8.3 Proposed Scenario: Long-term Phase

The long-term design concept focuses on new street connections in the southern portion of the study area and the reorganization of roadway conditions around the triangular parcel of land bordered by Napa Street, Morena Boulevard, and Linda Vista Road. The following recommendations are unique to this phase and are focused on the southern portion of the study area (defined as anything south of the new LRT Tecolote station):

- Morena Boulevard is designed to have one lane southbound and two lanes northbound between Vega Street and the southern Morena split
- Morena Boulevard is designed to have two lanes southbound and one lane northbound between the southern Morena split and Linda Vista Road
- Angled parking is located on the east side, as well as parallel parking on west side of Morena Boulevard between Vega Street and the southern Morena split
- Parallel parking is located on the east side of Morena Boulevard between the southern Morena split and Linda Vista Road
- Tree pop-outs are proposed on the east side of Morena Boulevard between Vega Street and the southern Morena split
- Buffered Class 2 bike lanes are included along the west side of Morena Boulevard and between the southern Morena split and Linda Vista Road on the east side
- A Class 2 bike lane is included on the east side between the southern Morena split and Vega Street

New Intersections include:

- Napa Street between Linda Vista Road and Morena Boulevard is completely closed off to vehicular traffic

New Street Segments include:

- A new collector road, referred as "East Morena," is proposed between Cushman Avenue and Linda Vista Road and includes:
    - One lane northbound and southbound
    - Class 2 bike facilities
    - Curb extensions
    - Parkways and tree-planted median
- Cushman Avenue is extended westward towards West Morena Boulevard. This new standard intersection replaces the southern Morena split and includes:
    - One lane northbound and southbound
    - Class 2 bike facilities
    - Tree-planted parkways
- Sherman Street is extended eastward towards the new East Morena Boulevard and includes:
    - One lane northbound and southbound
    - Class 3 bike route
    - Planted parkway

- A dual left turn is proposed at the Morena Boulevard-Linda Vista Road intersection for motorists traveling southbound on Morena Boulevard onto Linda Vista Road
- Linda Vista Road is designed to have two lanes northbound and southbound
- Napa Street is designed to have two lanes westbound and one lane eastbound

New Intersections include:

- The southern Morena split is redesigned as a standard intersection
- The intersection between Linda Vista Road and Morena Boulevard is redesigned as a standard "T" intersection.

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Figure ES-7: Overall Mobility Infrastructure Improvement Plan

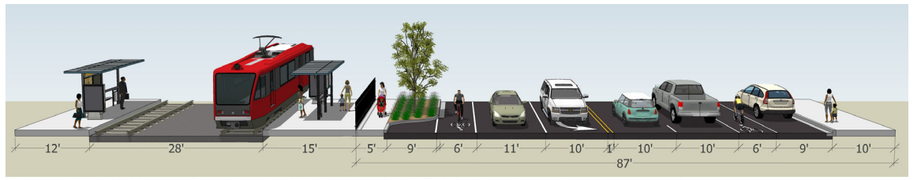


Figure ES-8: Cross Section 1: Clairemont LRT Station Area Improvements

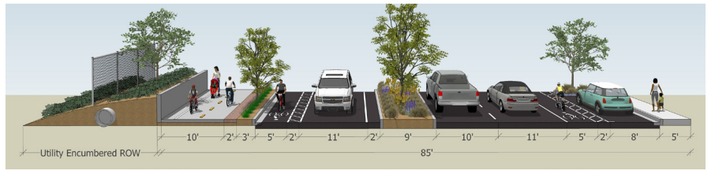


Figure ES-9: Cross Section 2: North Morena Complete Street Improvements

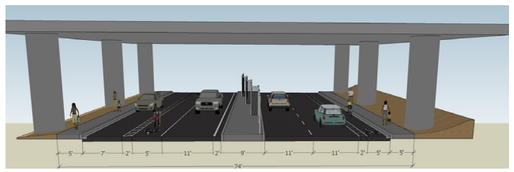


Figure ES-10: Cross Section 3: Under Tecolote Bridge

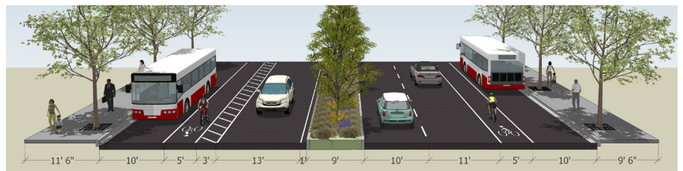


Figure ES-11: Cross Section 4: Tecolote LRT Station Area Improvements

Note: Lane configuration, widths & striping options are conceptual & will be further evaluated and finalized as part of the project design phase 2.

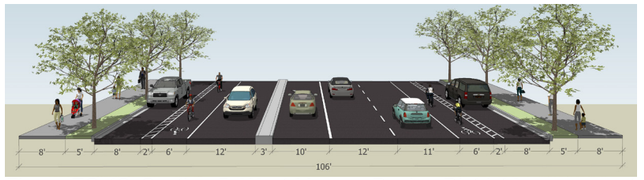


Figure ES-12: Section 5: West Morena Design District Improvements

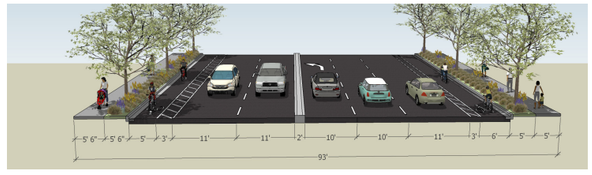


Figure ES-13: Section 6: Mid-term South Morena

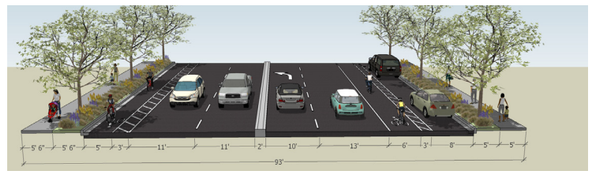


Figure ES-14: Section 6: Long-Term South Morena

Figure ES-15: Mid-term Scenario

Figure ES-16: Long-term Scenario

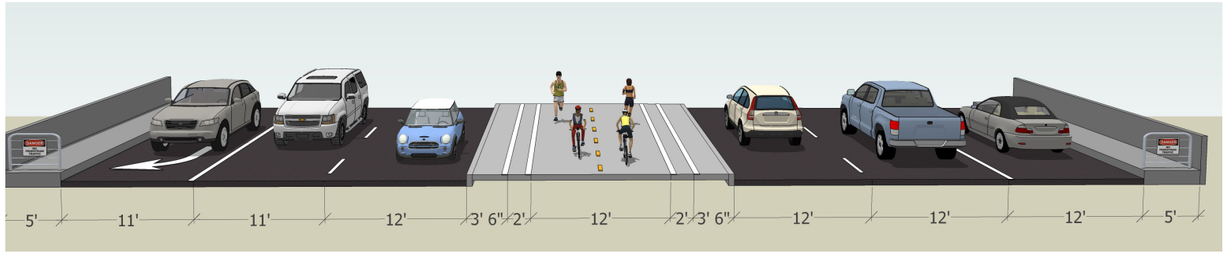


Figure ES-17: Cross Section A-1 Showing the Median Running Multi-use Buffered & Barriered Path

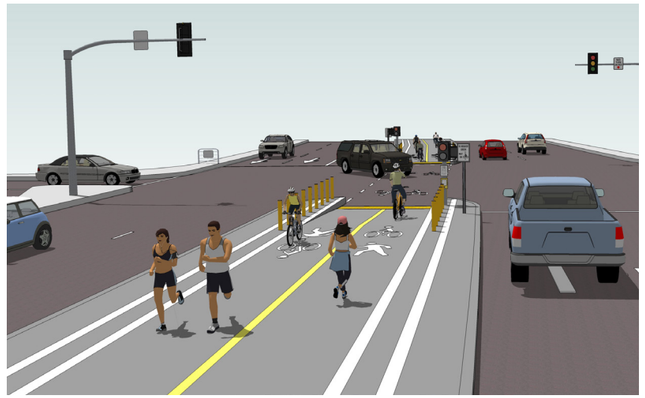


Figure ES-18: Cross Section A-2 Showing Typical Intersection

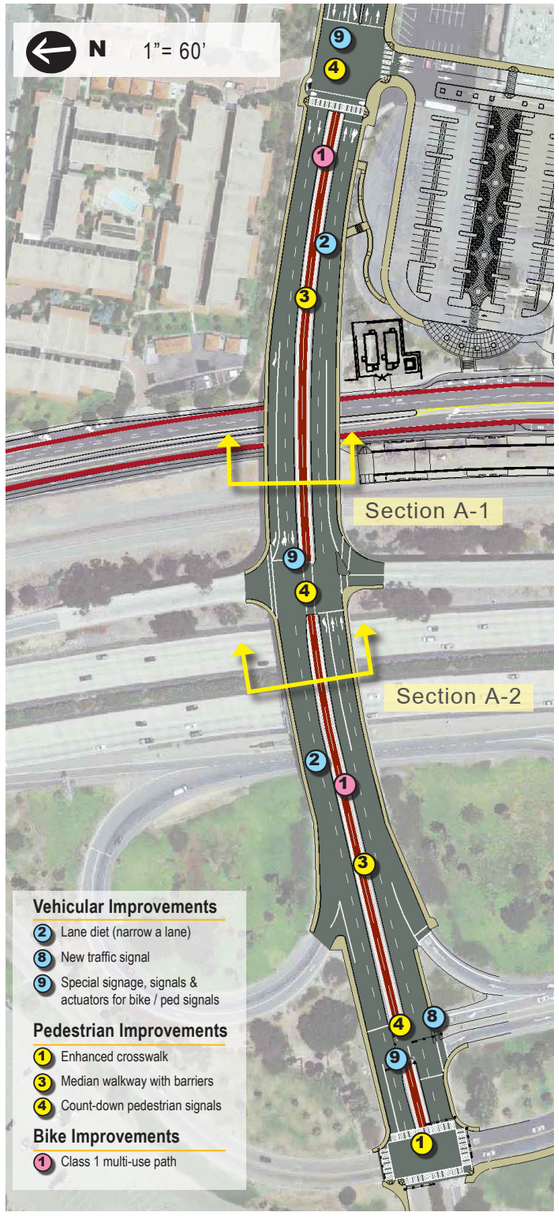


Figure ES-19: Plan view of Proposed Median Multi-use Path Across Clairemont Bridge

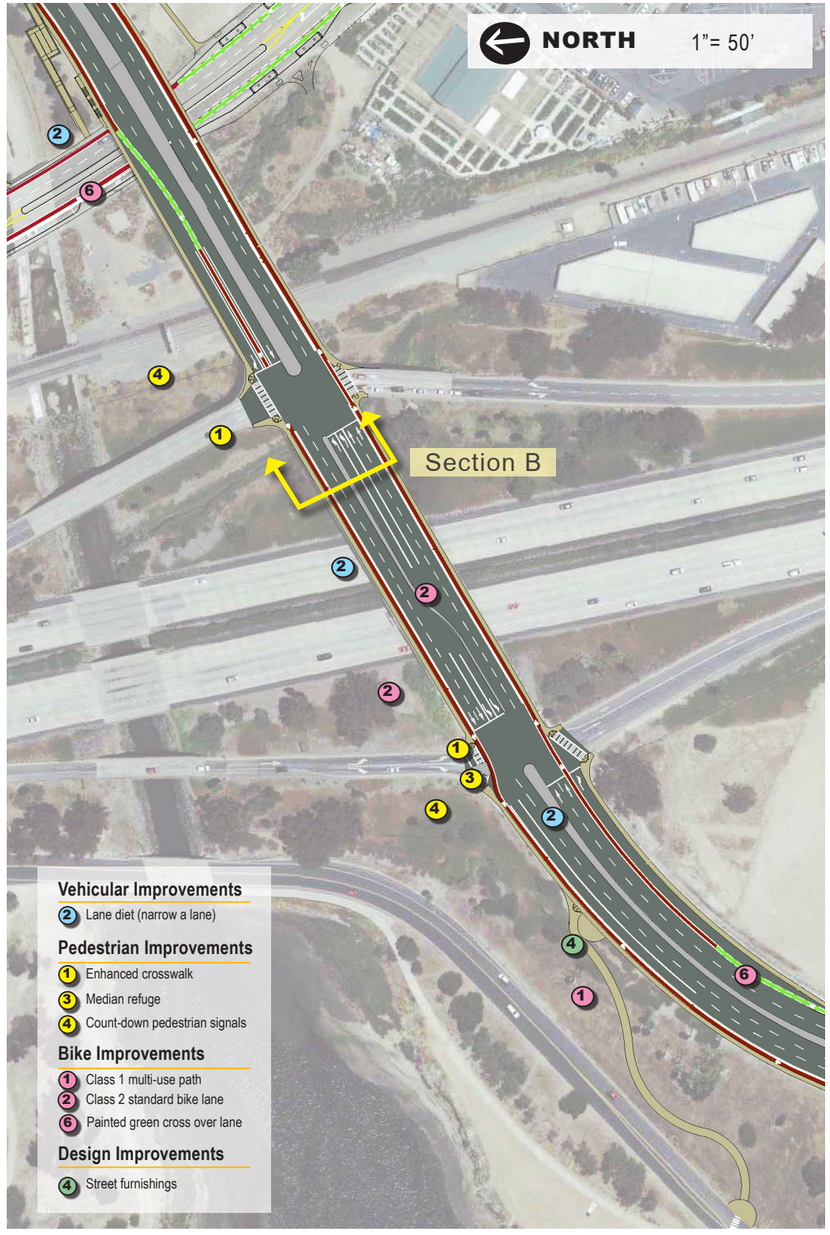
Proposed Plans and Cross Sections

Figures ES 17-thru ES-21

Morena Blvd Station Area Planning Study

Note: Lane configuration, widths & striping options are conceptual & will be further evaluated and finalized as part of the project design phase 2.

Figure ES-20: Map of Recommended Tecolote Bridge Crossing Plan



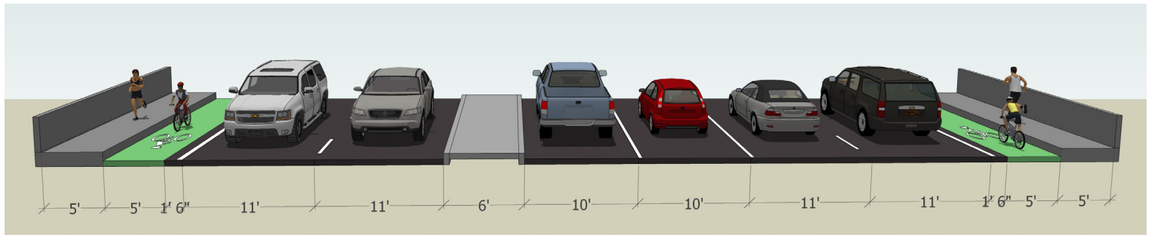


Figure ES-21: Section B Showing Buffered Bike Lanes with Crossover Bike Painted Lanes

ES.8.4 Proposed Scenario: Tecolote Bridge Crossing

The median widths and overall geometry of the Tecolote bridge will not allow for a center median running solution, nor will it allow for walkway expansions or a raised Class 2 bike lane. This is primarily due to a Caltrans restriction on bridge modification since its seismic condition is not known, resulting in a restriction on adding substantial weight to the bridge. In addition, the traffic volumes and turning motions will make any lane loss unacceptable. However, there are wide lanes on the bridge and the median is also much wider than it needs to be. The best solution for this tight bridge will be to provide full width bike lanes. These bike lanes benefit the pedestrian by providing an additional five to six feet offset of vehicles from the edge of the walkways. Please refer to Figures ES-20 and ES-21. Features included on the Tecolote Road freeway overpass include:

- Painted, buffered Class 2 bike lanes on both sides between Pacific Highway and Morena Boulevard
- Bike lane heading westbound is directed to the left of the right turn lane of the I-5 northbound on-ramp
- New signage alerts motorists wishing to merge into the right turn lane to yield to bicycles
- Two travel lanes eastbound and westbound
- On-ramps and off-ramps are “squared up” to create standard intersections and increase traffic calming
- A new path on the northwest side of Sea World Drive provides a faster connection for pedestrians and cyclists to Fiesta Island and Mission Bay Park

ES.8.5 Proposed Scenario: Clairemont Bridge Crossing

The recommended solution for the Clairemont bridge crossing plan must address the existing issues that make it difficult for pedestrians and cyclists to mix with vehicles on the freeway overpass. The proposed solutions strive to improve the overpasses by providing facilities that buffer and protect pedestrians and cyclists while maintaining efficient vehicular traffic flow. Additional improvements are also included at the East Mission Bay Drive intersection with Clairemont Drive to provide better connections to the existing trail system around East Mission Bay (Figures ES-17 through ES-19). Some of the major features for the Clairemont bridge plan include:

- Buffered multi-use path designed in the center median between Denver Street and East Mission Bay Drive
- Two travel lanes eastbound and westbound
- On-ramps and off-ramps are “squared up” to create standard intersections and increase traffic calming
- Existing walkways are closed to pedestrians to concentrate users in the median. If pedestrian access is not controlled, then the traffic flow benefits will not be realized when both left turn and right turn movements are interrupted by pedestrians.
- Pedestrians are directed to the buffered multi-use path
- New pedestrian and bicycle signals and signage
- Signalization will be prioritized for the multi-use path
- New crosswalks at the E. Mission Bay Drive-Clairemont Drive intersection
- New path that connects pedestrians and cyclists from the E. Mission Bay Drive-Clairemont Drive intersection to the main multi-purpose path in Mission Bay Park.

ES.9 Vehicular Mode Analysis

The future traffic conditions analysis is based on a comparison of daily traffic volumes and peak-hour operations under existing conditions with Year 2035 traffic volumes (based on the adopted community plan land uses) and resulting peak-hour traffic operations at each study intersection under the following three planning scenarios:

- Adopted Community Plan / Baseline 2035: Year 2035 traffic conditions with the approved land uses and planned street network under the currently adopted community plan.
- Proposed Land Use Alternative (Mid-term Street Network): Year 2035 traffic conditions under the preferred land use scenario with the proposed mid-term street network.
- Proposed Land Use Alternative (Long-term Street Network): Year 2035 conditions with the preferred land use scenario and the proposed long-term street network

Figures ES-22 through ES-33 depict the roadway classifications and levels of service for study area intersections and roadway segments for existing conditions and the three scenarios listed above.

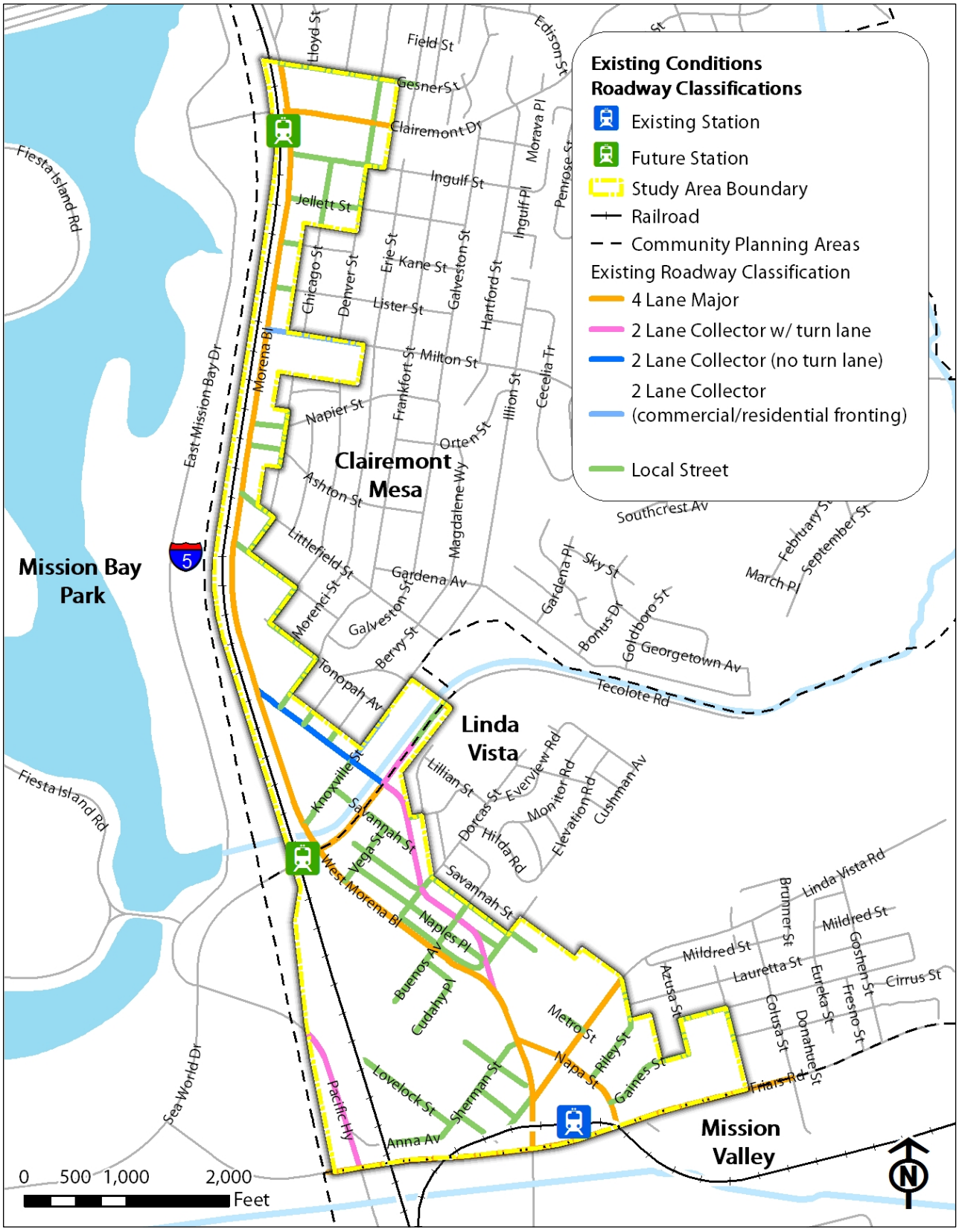


Figure ES-22: Existing Roadway Classification

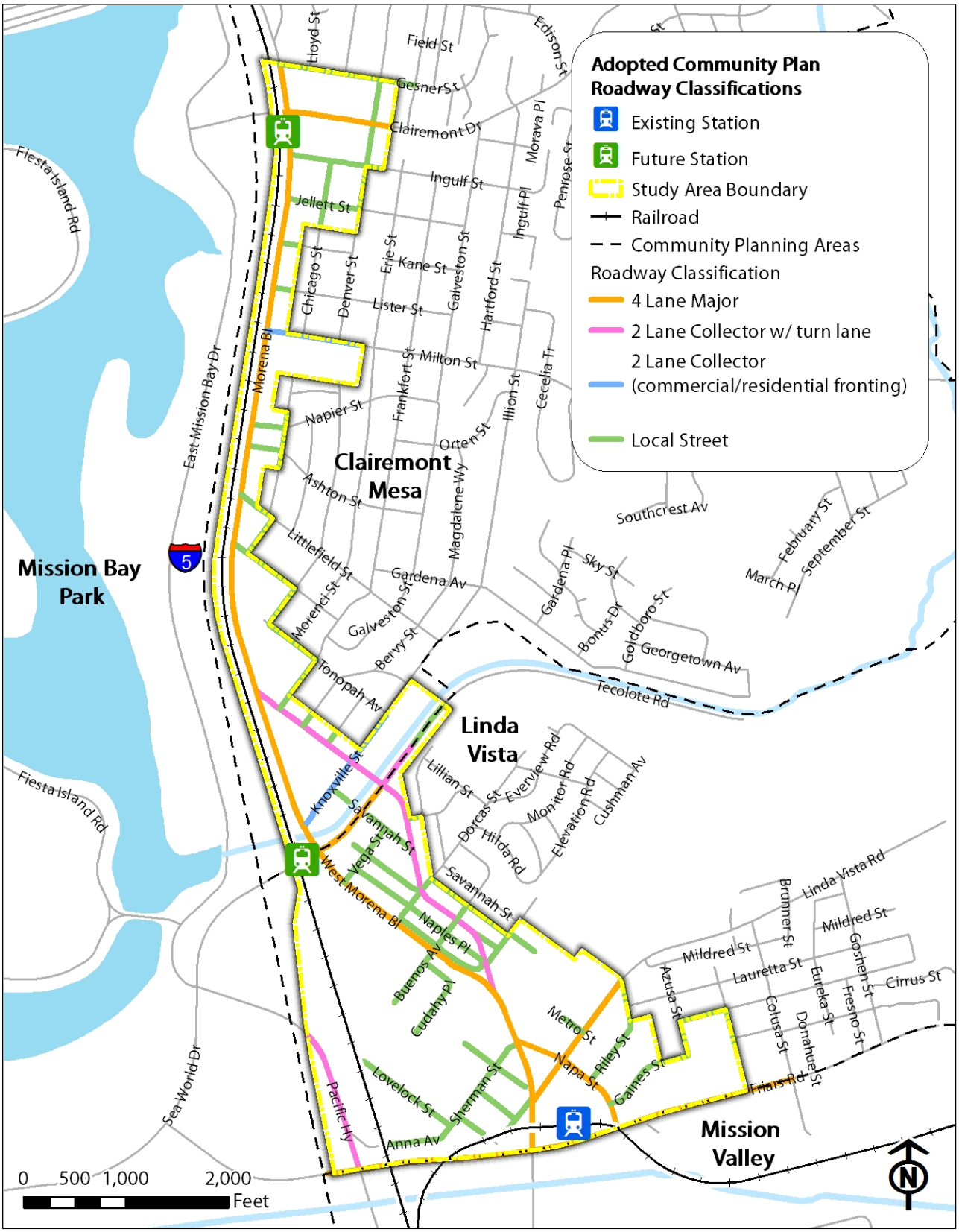


Figure ES-23: Adopted Community Plan Roadway Classification

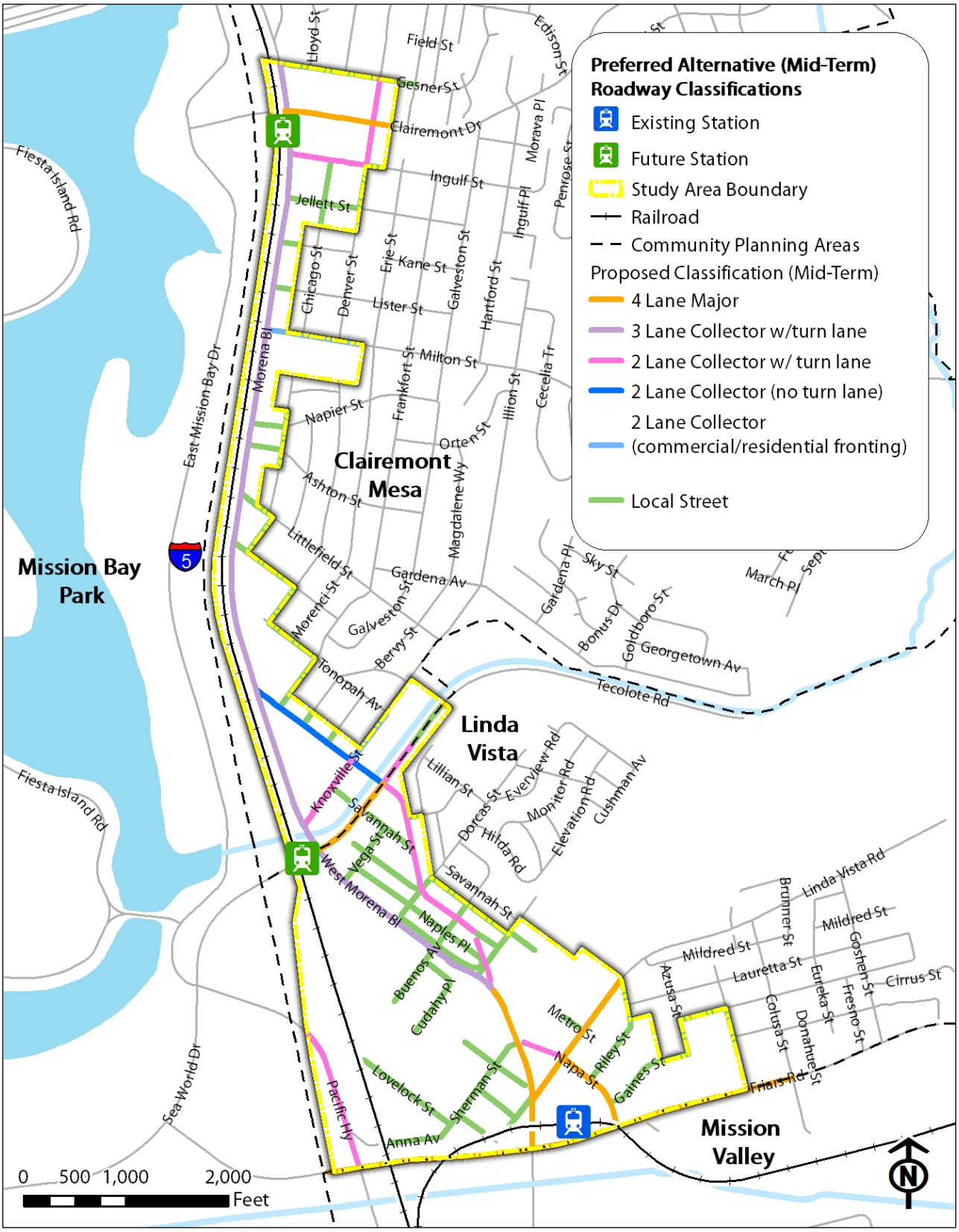


Figure ES-24: Preferred Alternative (Mid-term) Roadway Classification

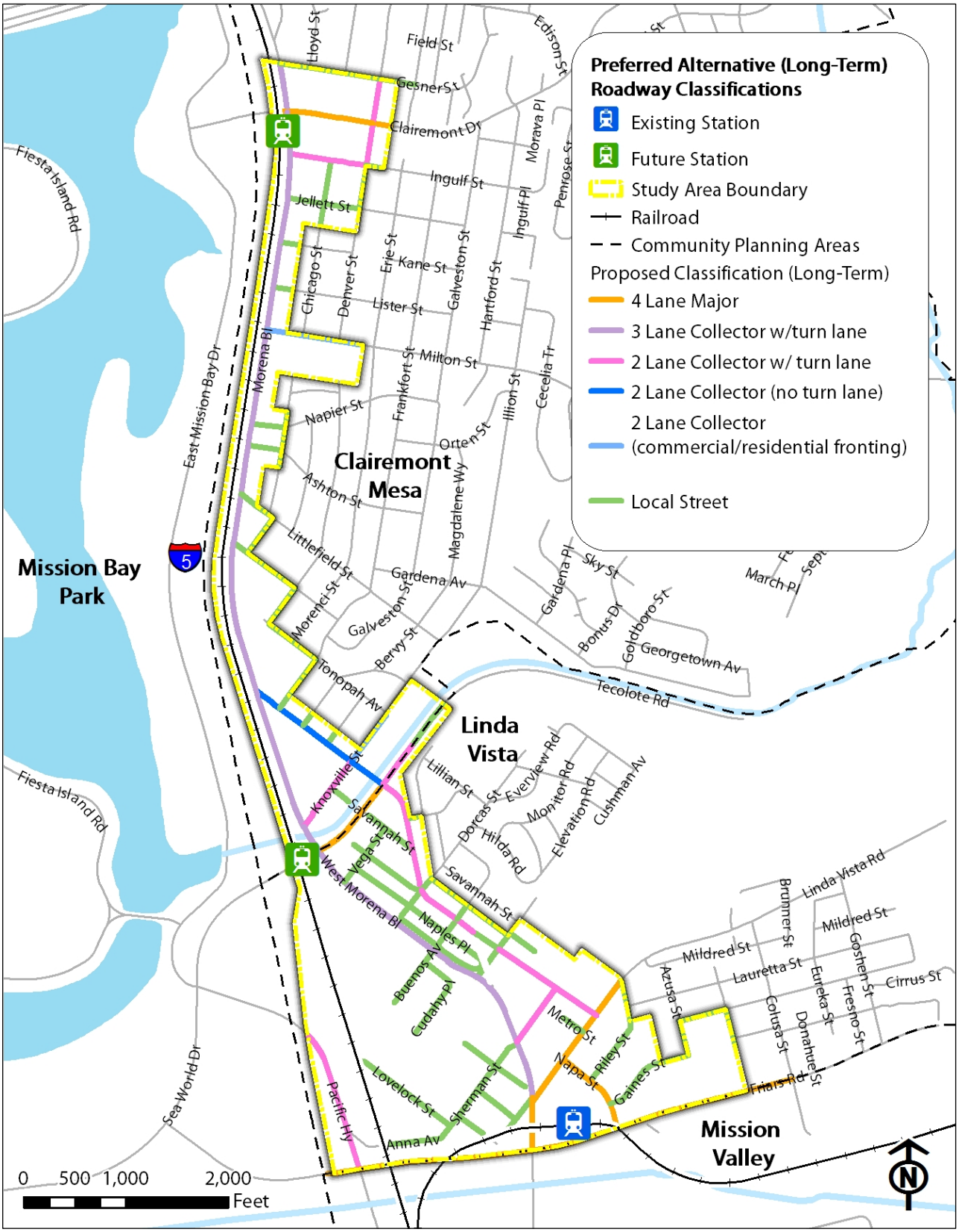


Figure ES-25: Preferred Alternative (Long-term) Roadway Classification

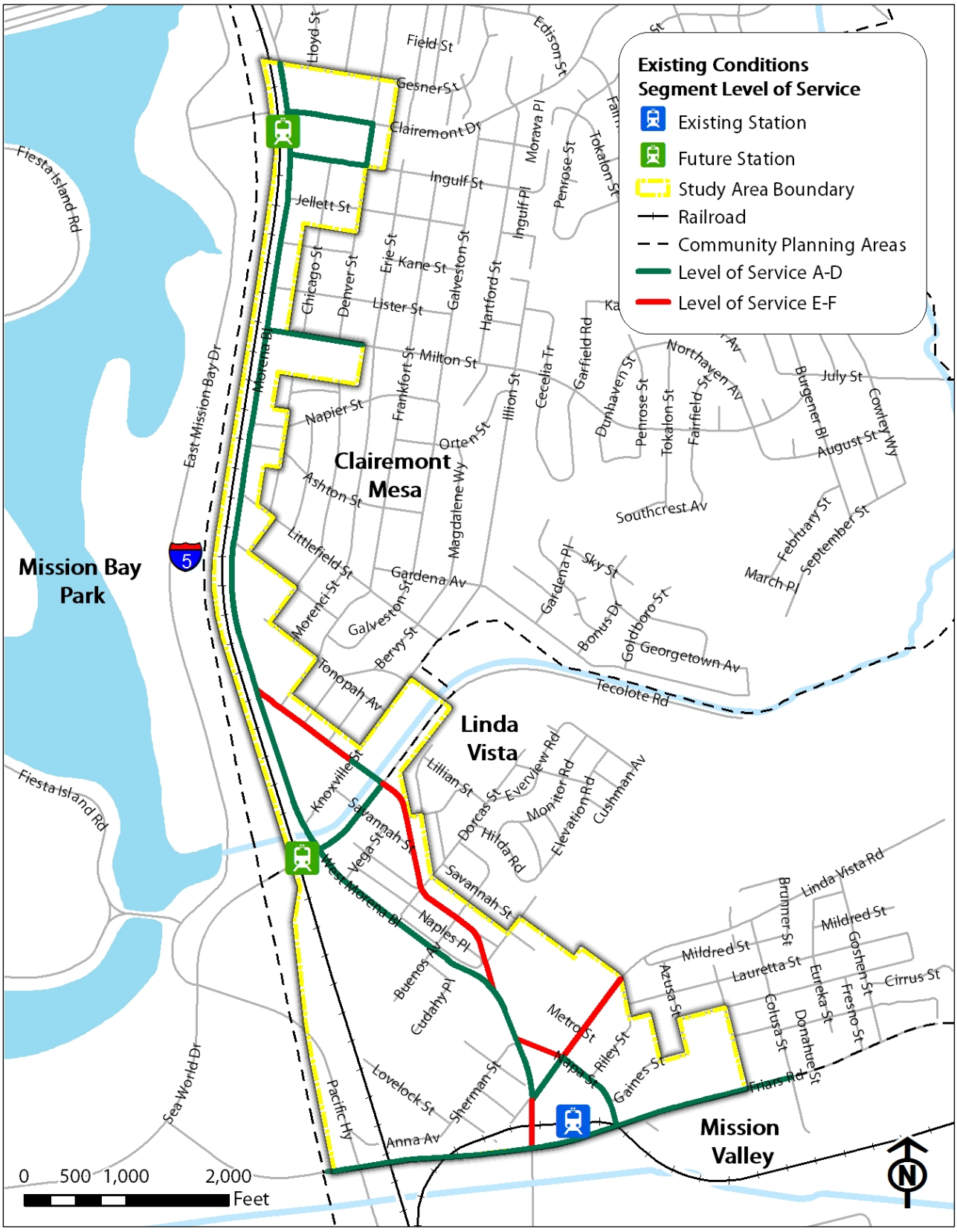


Figure ES-26: Existing Segment LOS

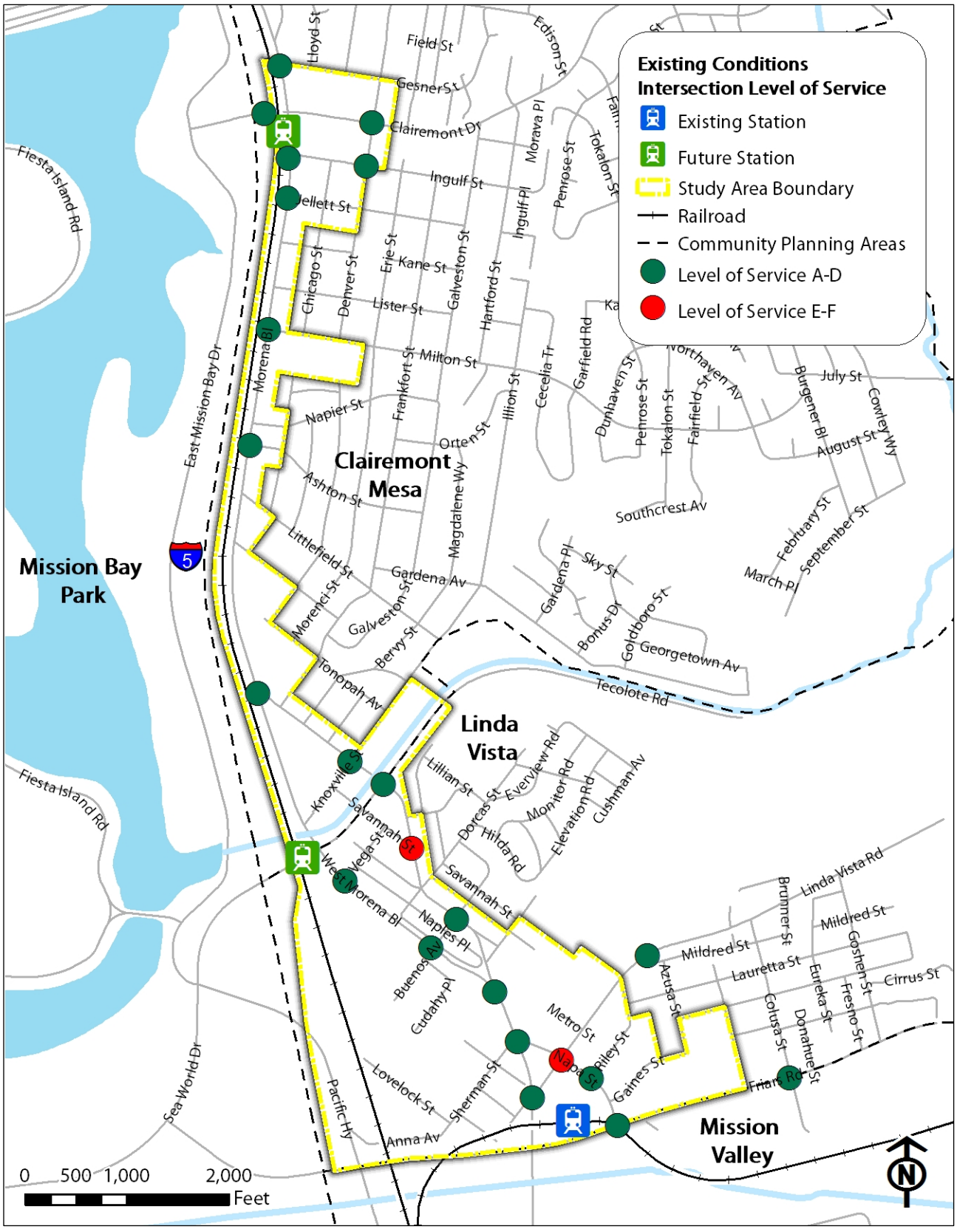


Figure ES-27: Existing Intersection LOS

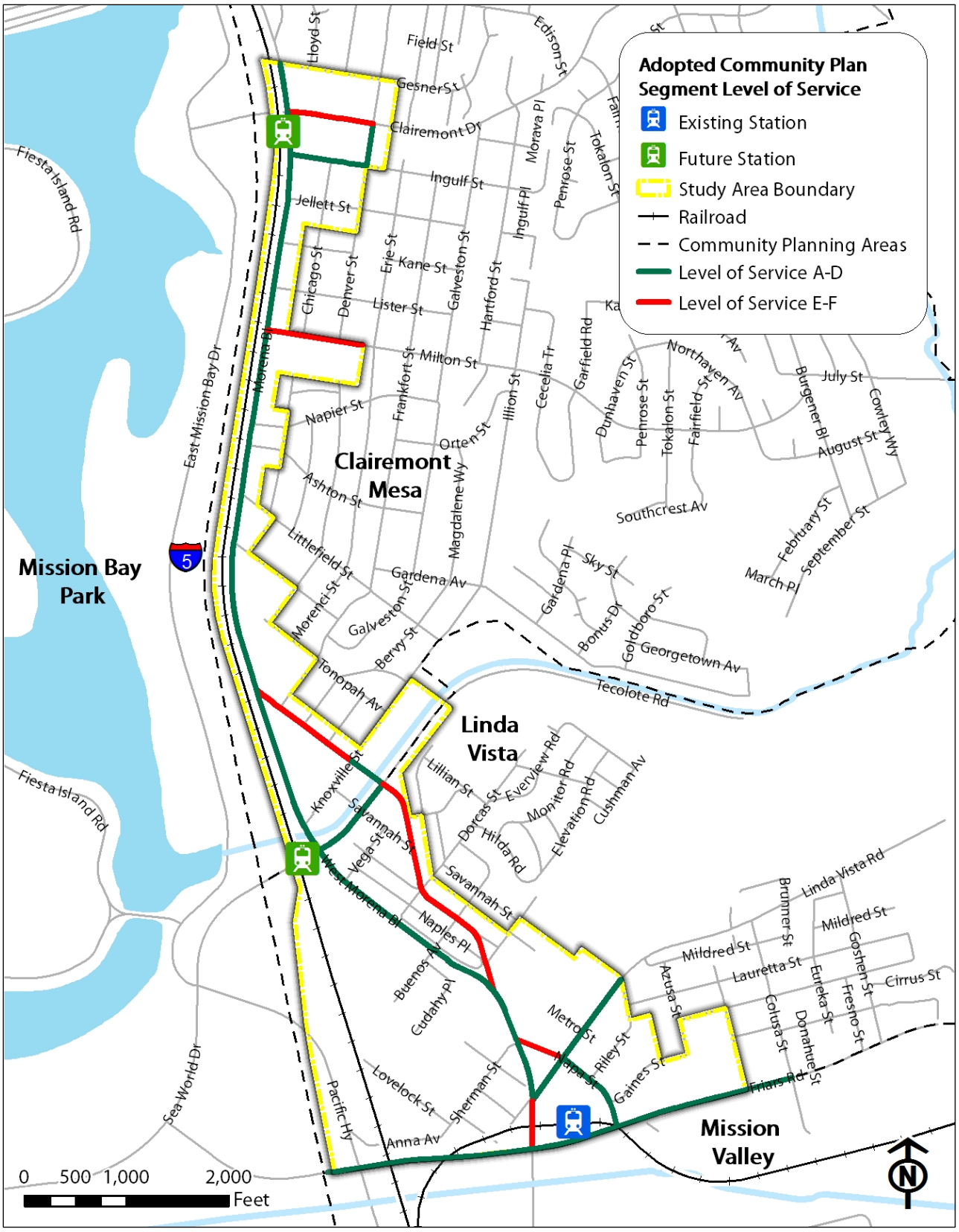


Figure ES-28: Adopted Community Plan Segment LOS

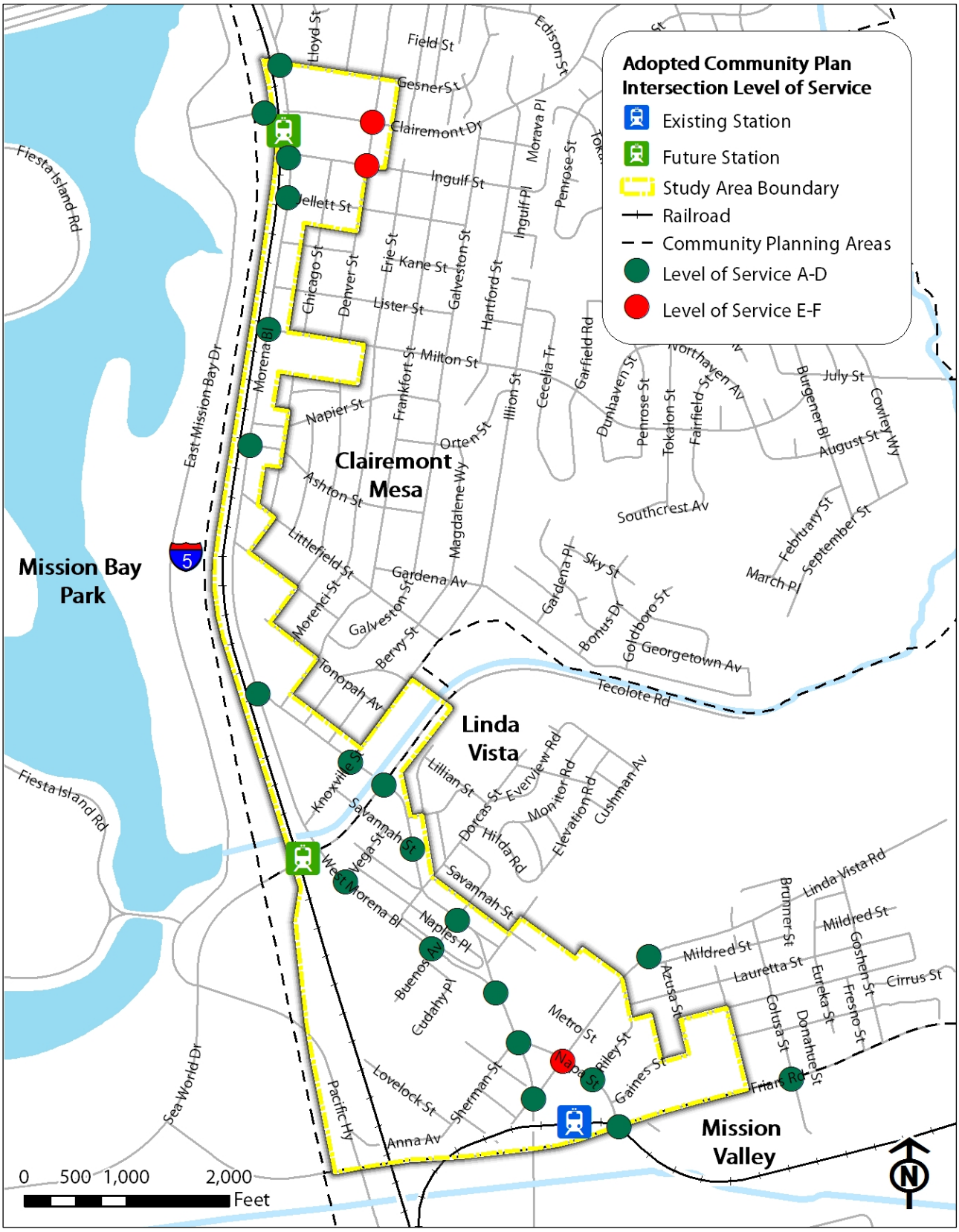


Figure ES-29: Adopted Community Plan Intersection LOS

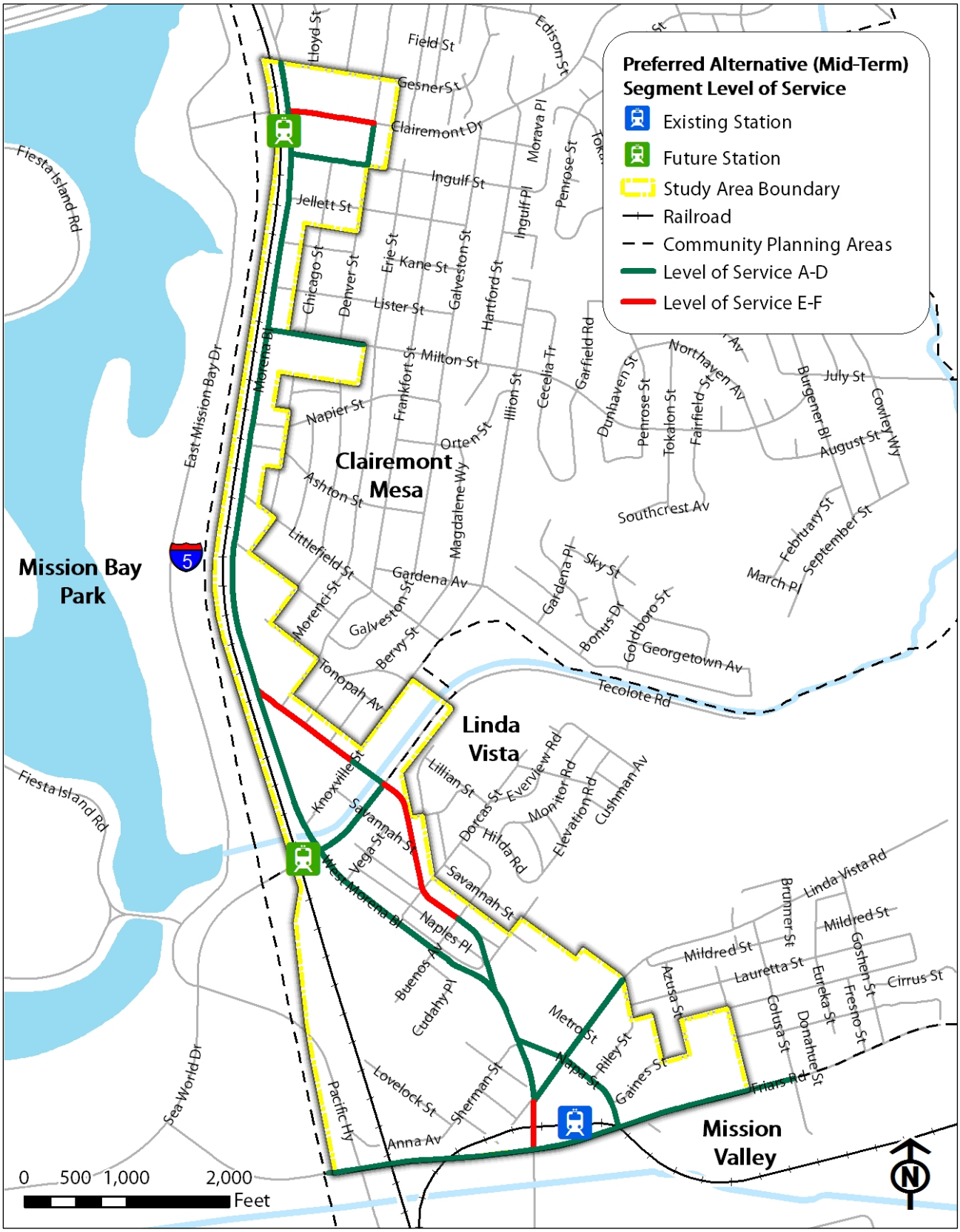


Figure ES-30: Preferred Alternative (Mid-term) Segment LOS

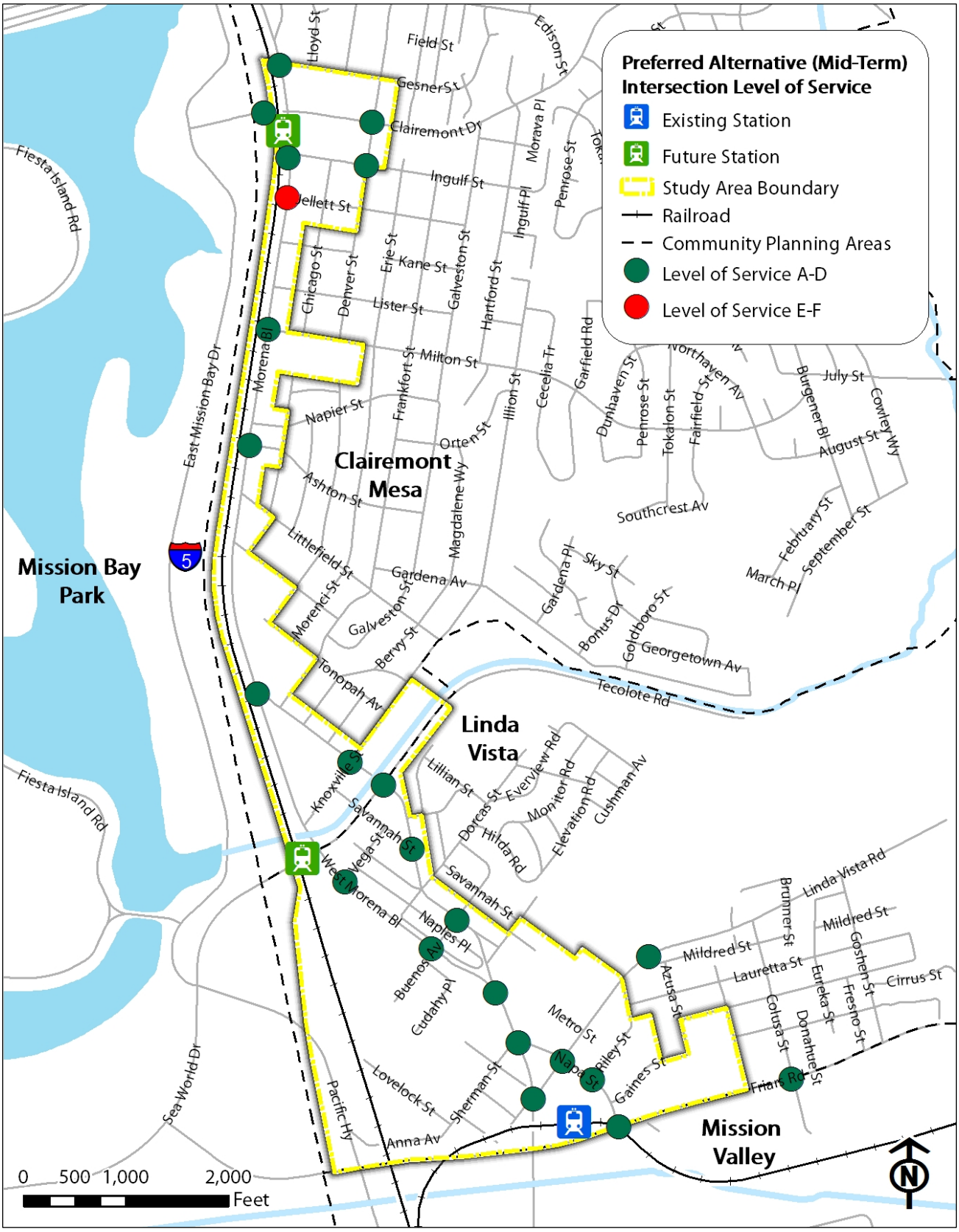


Figure ES-31: Preferred Alternative (Mid-term) Intersection LOS

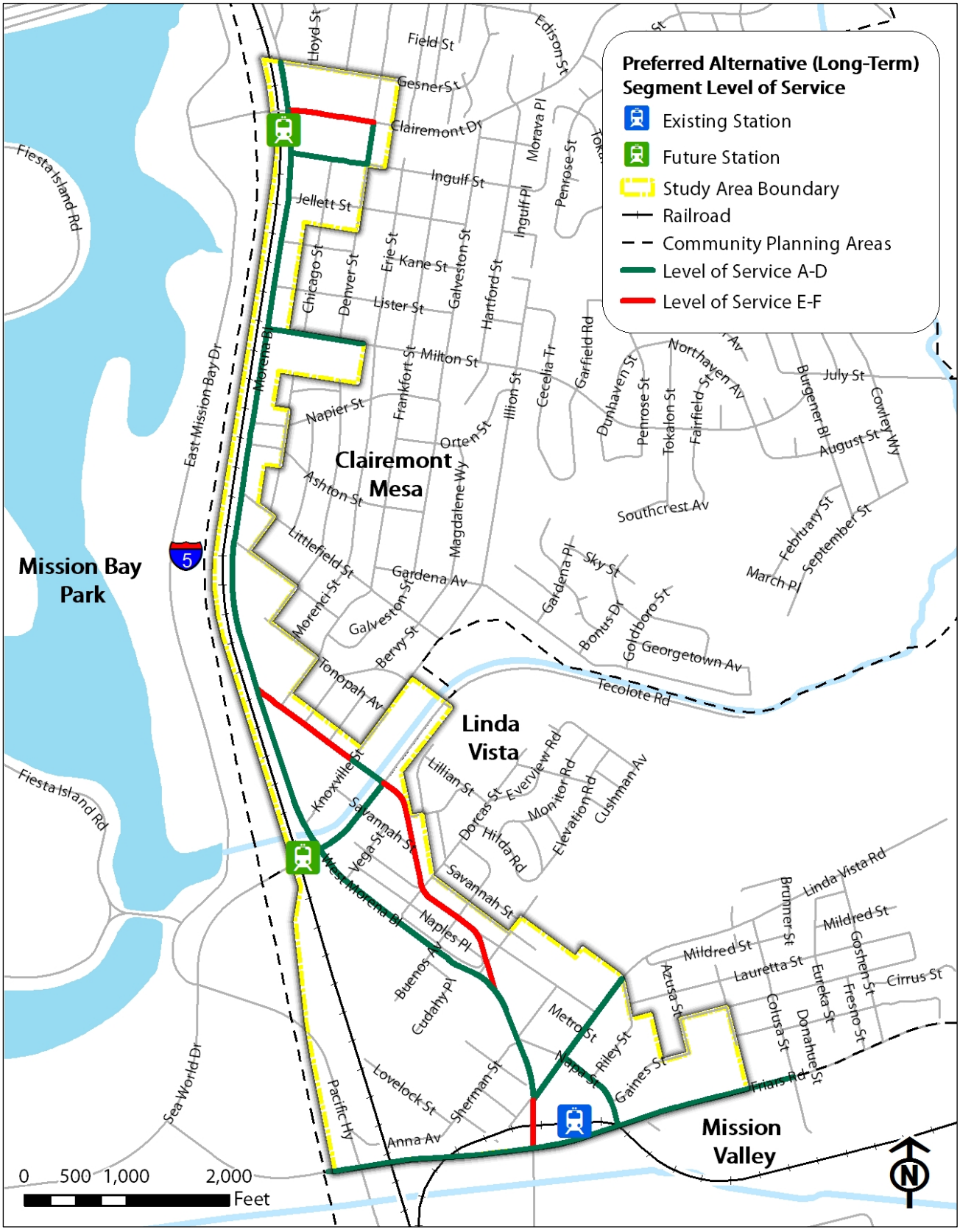


Figure ES-32: Preferred Alternative (Long-term) Segment LOS

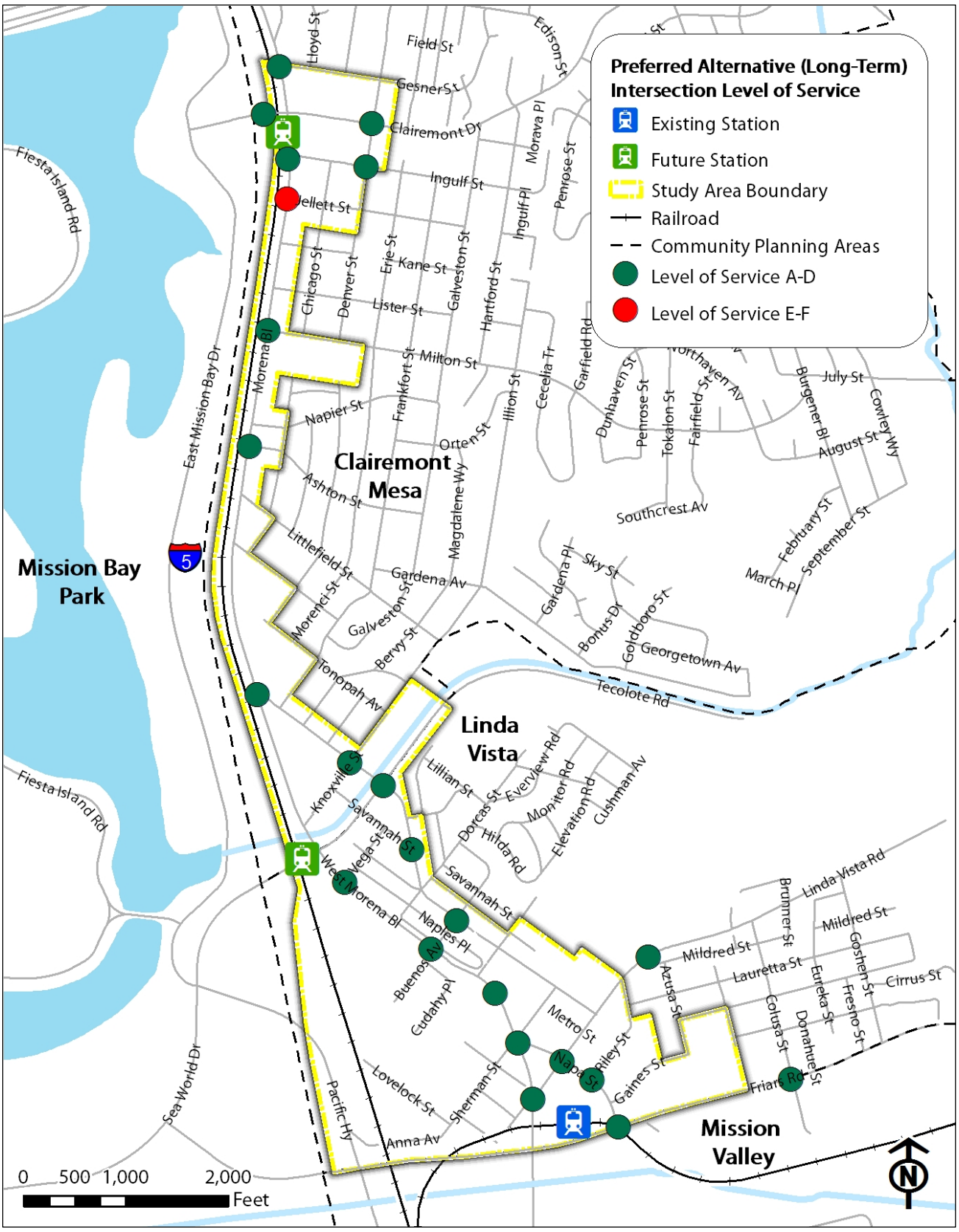


Figure ES-33: Preferred Alternative (Long-term) Intersection LOS

ES.10 Non-Vehicular Mode Analysis

The MBAP also analyzed issues and opportunities related to non-motorized forms of mobility. The following recommendations were generated for pedestrians and cyclists.

ES.10.1 Pedestrian Recommendations

A few of the major deficiencies or issues identified by the public were:

- Lack of sidewalks
- Inadequacy of sidewalks
- Configuration of the intersections
- Safe routes to transit
- Traffic calming
- Streetscape improvements
- Better multi-modal access
- Better connection to Mission Bay and USD

To improve walkability within the study area and to destinations such as existing and future transit stations, the pedestrian environment could be improved with:

- Wider sidewalks
- Connected sidewalks
- High visibility crosswalks (ladder or continental)
- Americans with Disabilities Act (ADA) compliant curb ramps
- Separation between sidewalk and adjacent travel lane (planting strips)
- Traffic calming (narrow lanes, curb extensions, etc)
- Shorter crossing distances at crosswalks

Major improvements and intersection reconfigurations are designed to improve vehicular traffic flow and pedestrian walkability. Additional benefits include access to commercial land uses, as well as existing and proposed transit stations. These reconfigurations shorten crossing distances by angling the intersections at 90-degrees and including curb extensions. They also increase pedestrian and vehicular visibility, provide median refuges and high visibility crosswalks.

Sidewalk gap closures occur at:

- Morena Boulevard south of Napa Street
- West Morena Boulevard between Vega Street and Knoxville Street
- Savannah Street
- Morena Boulevard between Naples Place and West Morena Boulevard
- Morena Boulevard between Ingulf Street and Genser Street (new Clairemont Transit Station)

Intersections that have been reconfigured are:

- Morena Boulevard at Linda Vista Road
- Morena Boulevard at Napa Street
- West Morena Boulevard at Cushman Avenue
- Morena Boulevard at Napa Street
- Napa Street and Linda Vista Street
- Morena Boulevard at Linda Vista Street
- Cushman Avenue at Savannah Street
- West Morena Boulevard at Cushman Avenue
- Knoxville Street at West Morena Boulevard

Improvements north of Tecolote Road to Clairemont Drive include:
- Additional access to the future Tecolote Transit Station from Tecolote Road
- Class 1 multi-use path from Knoxville Street to Ingulf Street (between future Tecolote and Clairemont Transit Stations)
- Pedestrian plaza at Morena Boulevard and Ingulf Street

ES.10.2 Bicycle Recommendations

A few of the major issues identified through the public outreach process were:
- Additional separation from vehicular traffic
- Safety improvements
- Connections to USD and Mission Bay
- Buffered bike lanes
- Separated facilities
- Safe routes to transit
- Close gaps

To improve the bicycling environment and increase ridership throughout the area, the following treatments can be applied:
- Buffered bike lanes (from moving vehicles and/or parked vehicles)
- Colored transition lanes
- Separated facilities (Class 1 bike paths or cycle tracks)
- Properly designed intersections
- Traffic calming
- Reducing vehicular lane widths
- Wider bike lanes
- Shared lane markings with appropriate signage

Reconfigured intersections provide a shorter crossing distance and lane markings leading to the intersections can provide proper placement cues for cyclists. Intersections that have been recommended for a geometric change are:
- Morena Boulevard at Linda Vista Road
- Morena Boulevard at Napa Street
- West Morena Boulevard at Cushman Avenue
- Standard and buffered bike lanes
- High visibility crosswalks
- Coordinated signal timing with vehicular traffic
- Proper placement of cyclist within the travel lane
- Removal of free right-turning movements
- Lane width reductions
- Advisory bike lanes in right-turn pockets

Improvements north of Tecolote Road to Clairemont Drive include:
- Class 1 multi-use path from Knoxville Street to Ingulf Street (between future Tecolote and Clairemont transit stations)
- Buffered bike lanes from parked vehicles (Morena Boulevard northbound lanes)
- Buffered bike lanes from moving vehicles (Morena Boulevard southbound lanes)
- Colored transition lanes

Recommendations for areas south of Tecolote Road include:

- Bicycle only "jug handle" crossing
- Colored transition lanes
- Bike lanes on all the streets
- Median refuges
- Buffered bike lanes from vehicular traffic
- Buffered bike lanes from parked cars
- Lane width reduction

ES.11 Implementation

The following sections identify portions of the study area that may require a zoning change, specific mobility projects, funding/financing options, and phasing.

ES.11.1 Identification of Necessary Zoning Changes

The land use plan proposed in the MBAP will require changes to the existing community plans for the Clairemont Mesa and Linda Vista community planning areas. These changes will include revisions to the community plan land uses and their application to the land development code (zoning). Not all land uses/zones will need to be changed in order to realize the vision documented in the MBAP, but many will.

Please note: this analysis is preliminary and will require additional evaluation and refinement in Phase II of the project (the Community Plan Amendment phase), scheduled to begin in the fall of 2014. At this stage, however, the MBAP retains the 30' height limit in Clairemont Mesa.

A comparison of the proposed land use plan to existing zoning in terms of uses, dwelling units, and FAR reveals that about 60 percent of the study area (in terms of acreage) will need a land use/zoning change to accomplish the vision of the Proposed Land Use Plan (see Figure ES-34). The light industrial areas south of Buenos Avenue and West of Morena/West Morena will not need a change, some of the commercial properties north of Morena between Cushman and Tecolote will not need a change, and many of the properties along Morena north of Asher Street will also not need a change. The remaining areas will need, or will likely need, to be adjusted to match the Preferred Land Use Plan.

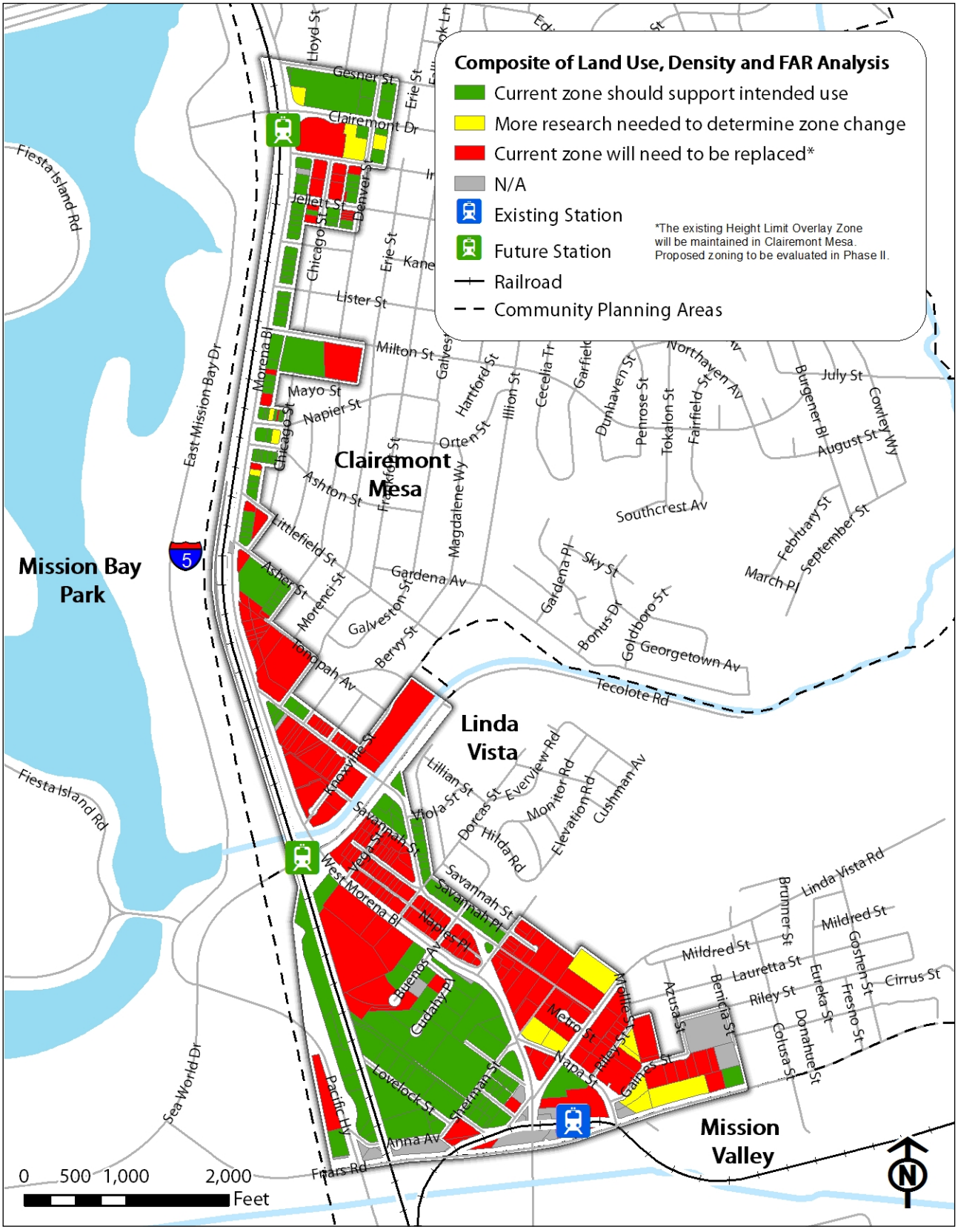


Figure ES-34: Composite of Compatibility Factors

ES.11.2 Funding and Financing Strategies

The MBAP identifies a variety of specific infrastructure improvements that will be necessary to facilitate development within the project area. This strategy identifies funding and financing sources for capital improvements needed to support the plan. The following funding options are relevant to the project:

Development/Project-Related Improvement Costs

- Update Existing Development Impact Fee Programs
- Development Agreements, Dedications, or Exactions
- Developer Agreements

Land-Based or District Financing – Improvement or Benefit Districts

- Benefit Assessment Districts
- Community Facilities Districts
- Infrastructure Financing Districts
- Special Tax Districts
- Financing District

Grants or Loans

- Community Development Block Grant
- State and Federal Transportation Grants
- HOME Grants
- Proposition 84 – Storm Water Grant Program
- Federal Congestion Mitigation and Air Quality (CMAQ) Improvement Program
- Proposition 40 – The California Clean Water, Clean Air, Safe Neighborhood Parks and Coastal Protection Act
- Roberti-Z'Berg-Harris Urbanized Area Need-Basis Grants
- California Economic Development Lending Initiative Loans
- Federal Loan Programs
- Loan Guarantee Programs (e.g., SAFE-BIDCO)

Other Funding Sources

- General Fund Transfers
- California Seismic Bond Act
- Statewide Community Infrastructure Program
- Safe Routes to School
- Transportation Development Act
- Bicycle Transportation Account
- State Revolving Fund (SRF)

Other resources to further flush out/research for Morena Boulevard in Phase 2:

- Public/private partnerships
- Specials Districts whether Joint Powers Authority (JPA) or Infrastructure Financing Districts (IFD, currently req. 2/3 vote)
- Long Range Property Management Plan for former RDAs
- COP Bonds: Line of Credit without a vote of the people
- Revenue sharing
- Parking authorities - Charge revenue and be landlord
- New Go Biz State programs
- Community Development Block Grant (CDBG) funds (see SR plan)
- Tax sharing agreements
- Infrastructure financing District
- Enterprise Zone

ES.11.3 Mobility Project Phasing, Grouping, and Potential Funding

The table below summarizes the costs associated with the major infrastructure projects needed to implement the recommended mobility plan proposed by this study. The costs are to be considered preliminary and in need of future refinement. A significant amount of contingencies have been added to these costs to make sure there is enough funding to cover the general complexities of most public works projects. Once detailed base mapping, right of way research, and utility mapping has been provided and initial engineering is taken to a 35% level of detail, will the costs be more accurate. However, for the time being, the cost estimates provided should be in the general range of the project costs that are likely to be incurred.

The table below also discusses a wide range of potential funding sources that could be considered for the proposed improvements. These sources come from either public monies originating from a federal, state, regional or local government agency, or could be private monies associated with development or ongoing maintenance and operational funds associated with the local landowners and business operators. An effort has also been made to identify the most likely source of funding that should be focused on initially. Project sheets provided in Chapter 5: Implementation include discussion on funding sources, detailed cost estimate sheets, and site plans.

As previously mentioned, all proposed projects and roadway reclassifications are preliminary and will be subject to additional review in Phase II of the project.

Potential Funding Source for Mobility Projects

			Federal					State												Regional					Local							Developer					Property Owner					
ID #	Project Name	Estimate	FTA Transit Funding	Surface Transportation Program (STP)	Safe Routes to School	Congestion Mitigation & Air Quality (CMAQ) Program	Highway Trust Fund / MAP 21	Caltrans Upgrades / Caltrans Active Transportation	Traffic Safety Grants (OTS)	Statewide Community Infrastructure Program (SCIP)	Transportation Development Act (TDA)	Bicycle Transportation Account	Community Based Transportation Planning Grants	California River Parkways & Urban Streams Program	State Revolving Fund (SRF) for Water Quality Improvements	Roberti-Z'Berg-Harris Urbanized Need-Basis Grants	Prop. 40 clean Water, Clean Air, Safe Neighborhoods	Prop. 84 Stormwater & Urban Greening Grants	Mid-Coast Corridor Transit Project	Transnet Smart Growth Incentive Program	SANDAG Active Transportation & Regional Bike Program	Regional Surface Transportation Program (RSTP)	SANDAG / COUNTY Healthy Communities	Locally Influenced RTP Funding Priorities	City Capital Improvements Program / General Funds	Infrastructure Bonds	ADA / Title 24 Compliance / CDBG Local Funds for ADA	Habitat Restoration / Clean Water / Mitigation Banking	Trails & Recreation Funding	Exactions / Discretionary Approval for Developers Receiving Excess ROW	Construct & Dedicate Facility / Developer Agreements	Fund through Fees & Exactions	USD or other Future Property Owner North of Napa	Fair Share Developer Impact Fee	Community Facilities District / Benefit Assessment Districts	Land Based or District Financing / Parking District Fees	In Lieu of Parking Constructed Fees	Infrastructure Financing District / Special Tax Districts	Business Improvement District	Landscape Maint. District
A	Clairemont Bridge Access Improvements	$844,141		✔		✔	✔	✔	✔			✔	✔				✔		✔		✔	✔	✔	✔	✔		✔			✔					✔							
B	Clairemont LRT Station Area Access Improvements	$1,536,538	✔					✔			✔								✔	✔	✔														✔				✔	✔	✔
C	North Morena Complete Street Improvements	$5,500,738		✔	✔	✔	✔	✔	✔			✔	✔		✔	✔	✔	✔		✔	✔	✔	✔	✔		✔		✔						✔	✔			✔	✔	✔
D	Knoxville Street Extension Project	$1,299,543								✔										✔				✔		✔						✔	✔		✔				✔	✔	✔
E	Tecolote Creek Trail Project	$795,615													✔	✔	✔	✔					✔					✔	✔				✔								
F	Tecolote LRT Station Area Improvements	$3,955,219	✔								✔								✔	✔	✔		✔				✔	✔					✔		✔						
G	Tecolote Bridge Access Improvements	$999,302		✔		✔	✔	✔	✔			✔	✔			✔			✔		✔	✔	✔	✔	✔	✔	✔			✔					✔			✔			
H	West Morena Design District Parking Improvements	$2,777,202							✔											✔	✔					✔	✔				✔		✔		✔	✔	✔	✔	✔	✔	
I-1	South Morena Congestion Relief Project (long term)	$995,856				✔			✔	✔	✔									✔	✔	✔	✔	✔	✔	✔	✔					✔	✔	✔	✔	✔	✔	✔	✔	
I-2	South Morena Congestion Relief Project (mid-term)	$2,909,552				✔			✔	✔	✔									✔	✔	✔	✔	✔	✔	✔	✔					✔	✔	✔	✔	✔	✔	✔	✔	
J	East Morena Roadway Extension Project	$4,474,897																		✔		✔										✔	✔	✔	✔	✔	✔	✔	✔	✔	✔
K	Triangle Area Road Closures and Extensions	$1,358,096																														✔	✔	✔	✔	✔	✔	✔	✔	✔	✔
		$27,446,699																																							

Note: Project I-1 & I-2 assumed to both be done resulting in overall cost savings adjusted down by 25% due to some elements staying the same.

Represents primary funding source likely per project

1.0 Introduction

The Morena Boulevard Station Area Planning Study (MBAP) is a coordinated transportation and land use planning study funded by a Caltrans Community Based Transportation Grant. The study is administered by the City of San Diego. The following sections explain the purpose, methodology, previous planning efforts, and community vision for the study.

1.1 Purpose

The MBAP is designed to address the future form of a community in the midst of change, both through the natural evolution of urban development and the introduction of a new form of transit with the Mid-Coast Light Rail Transit (LRT) Trolley extension.

1.2 Study Methodology

The study includes research and analysis combined with stakeholder input to produce a plan that is both technically sophisticated, but also reflective of the needs and desires of the community. The study was structured to integrate community input at each phase of the analysis, ensuring that ideas are incorporated in a timely and effective manner. Key study milestones include:

- Public outreach strategy/public notification of workshops
- Existing Conditions Report
- Public Workshop #1 to receive input on existing conditions
- Urban design vision, mobility concepts, and two land use scenarios
- Economic feasibility analysis of land use scenarios
- Public Workshop #2 to receive input on the land use scenarios and mobility concepts, identify preferred alternative
- Finalized land use, urban design, mobility recommendations
- Public Workshop #3 to present final recommendations and mobility projects
- Implementation strategy and final report

1.3 Previous Planning Efforts

The MBAP is a continuation of efforts that have been ongoing in the study area for many years. While the MBAP is an independent effort that starts with no preconceived ideas, it also recognizes the work that precedes it. Several of the previous planning efforts undertaken related to mobility and land use within the study area include:

- New School of Architecture (NSA) Student Input
- University of San Diego (USD) Real Estate Class Input /Sherm Harmer
- City of San Diego Pedestrian Master Plan
- City of San Diego Bike Master Plan
- Clairemont Ad-Hoc Community Plan Update
- Mid-Coast LRT Trolley Extension
- Linda Vista Community Plan
- Clairemont Mesa Community Plan

1.4 Project Context

The following sections provide baseline information about the study area and the surrounding neighborhoods. Though this information represents a "snap shot in time" of the dynamic nature of the urban environment, it helps to describe the various elements that shape the community and those who live within it. The following sections provide an overview of the political subdivisions of the study area, its demographics, housing, land use, property ownership, street network, transit facilities, natural setting, and man-made setting.

1.5 Overview of Study Area

The following sections provide an overview of some of the political and socio-economic boundaries that overlay the study area. Some of these areas are merely a means to report data about the study area, while others create jurisdictions that can have a meaningful impact on how the community is planned and how it can grow.

1.5.1 Contextual Planning Area

The contextual planning area (Figure 1-1) displays the community planning areas that surround the study area. The study area lies on the western/southwestern boundary of two community planning areas: Linda Vista and Clairemont Mesa. To the south is Old San Diego (Old Town) and to the west is Mission Bay Park. Interstate 5 and the railroad lines run immediately west of the study area and the San Diego River and Interstate 8 run immediately to the south. The contextual planning area graphic also illustrates the abundance of open space near the study area, most notably Mission Bay Park, the San Diego River, and Tecolote Canyon.

1.5.2 Market Area

The Morena study area lies within a larger market area that encompasses land as far east as State Route 163 (in Mission Valley), as far north as Balboa Avenue, as far west as Interstate 5, and as far south as Interstate 8 (see Figure 1-2). The market area's eastern boundary north of Mission Valley is defined largely by Tecolote Canyon/Via Las Cumbres Road. This Market Area boundary is used to set the local context of economic and demographic conditions that affect the smaller study area boundaries.

1.5.3 Station Area Walk Times

The station area walk times graphically display the amount of the study area (and surrounding areas) that can be reached by a pedestrian in 5, 10, and 15 minutes time increments (see Figure 1-3). This analysis utilizes existing walkways to determine available routes of travel. The more traditional method of displaying the area that should be studied as part of a Transit Oriented Development (TOD) effort often used a ¼ mile or ½ mile radius circle. This attempt was to capture the distance around a station that is within walking distance that most would be comfortable in making. However, this method often overstated or understated the actual areas within a 15-minute walkzone. Nowadays, a true walk time analysis is the preferred method of determining the boundaries that should be analyzed around a station. This zone can also be expanded if missing connections and barriers of travel were removed or resolved. Later in the analysis phase, the expansion of walkzones related to specific improvements of access will be generated to determine the effectiveness of these changes.

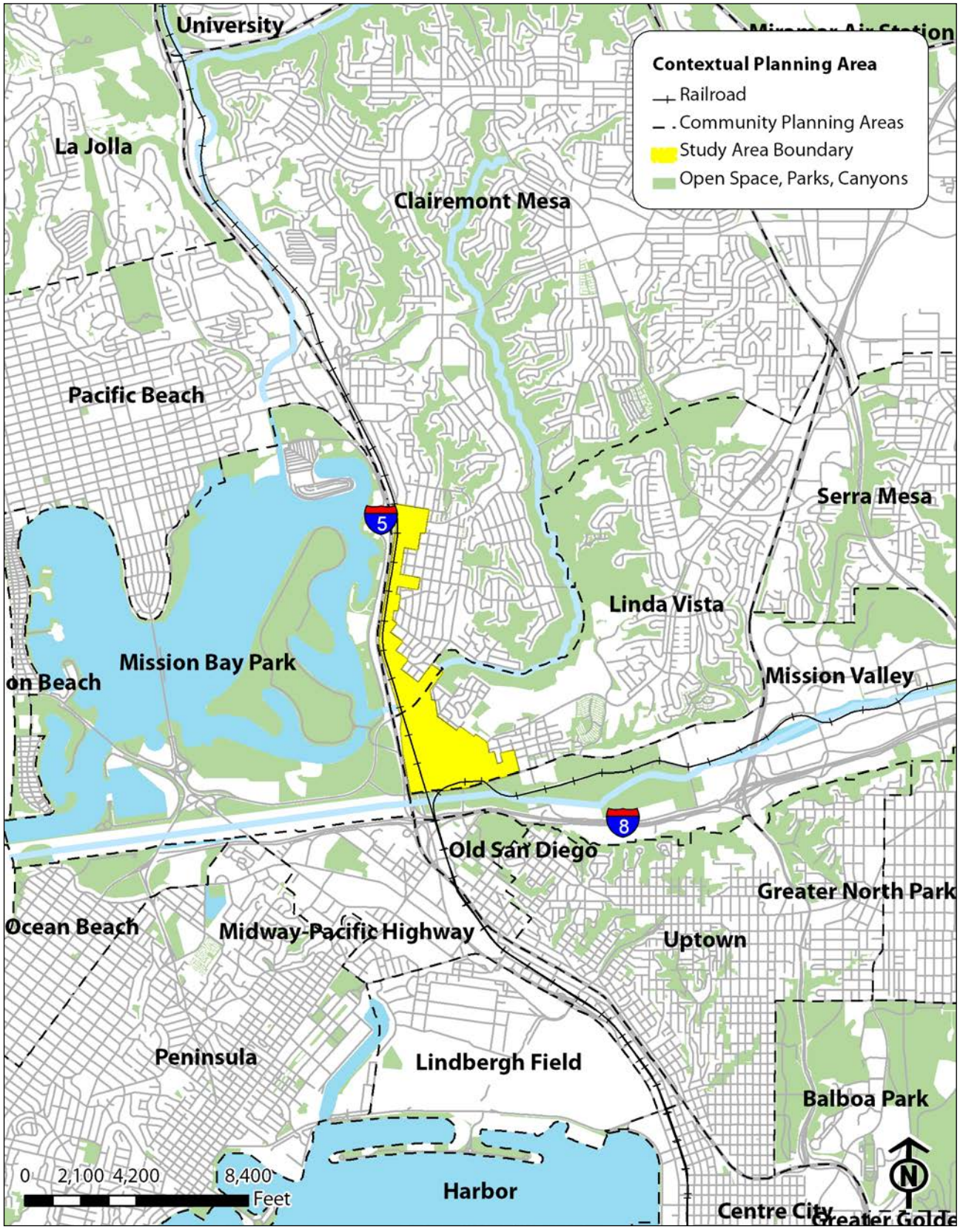


Figure 1-1: Contextual Planning Area

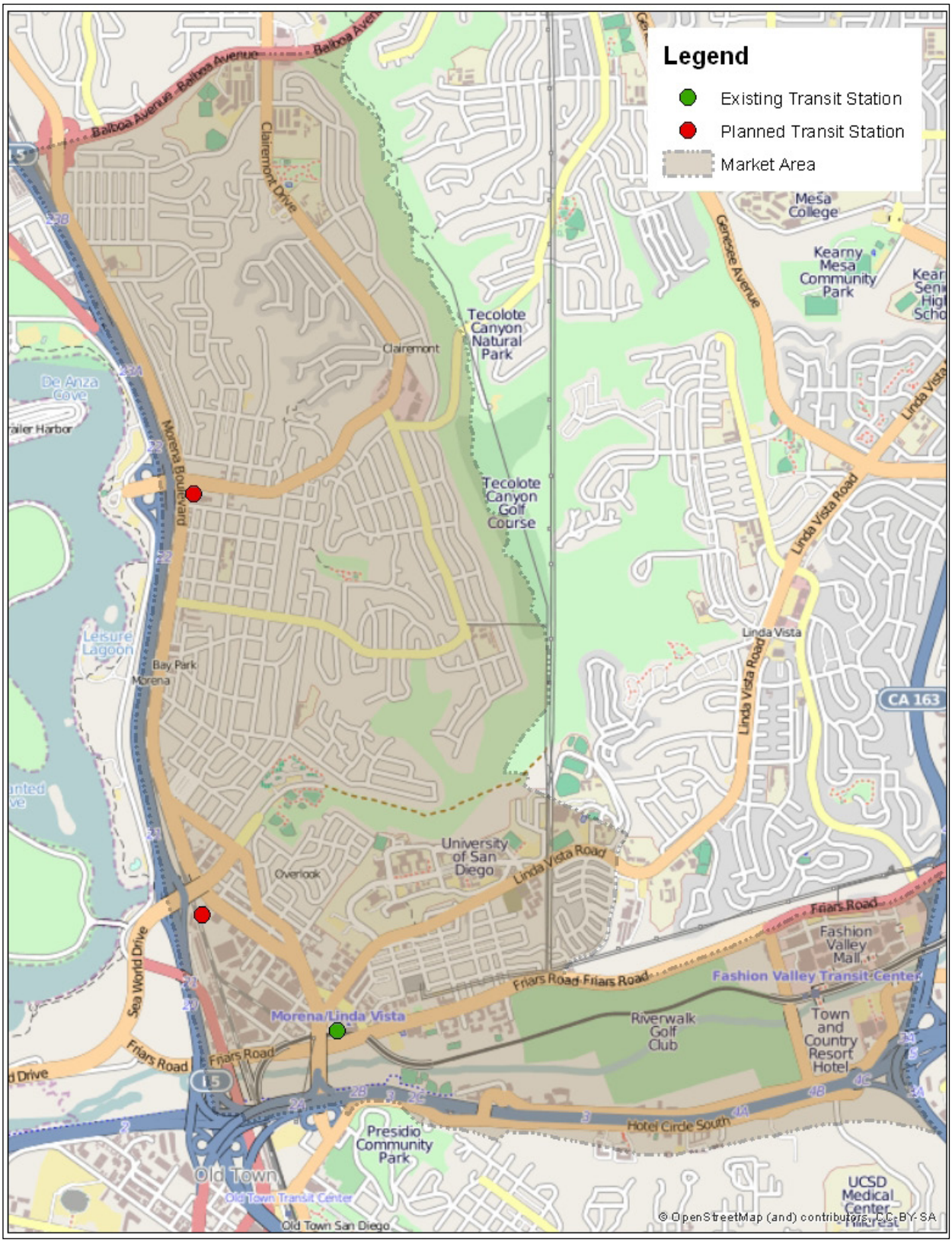


Figure 1-2: Market Area

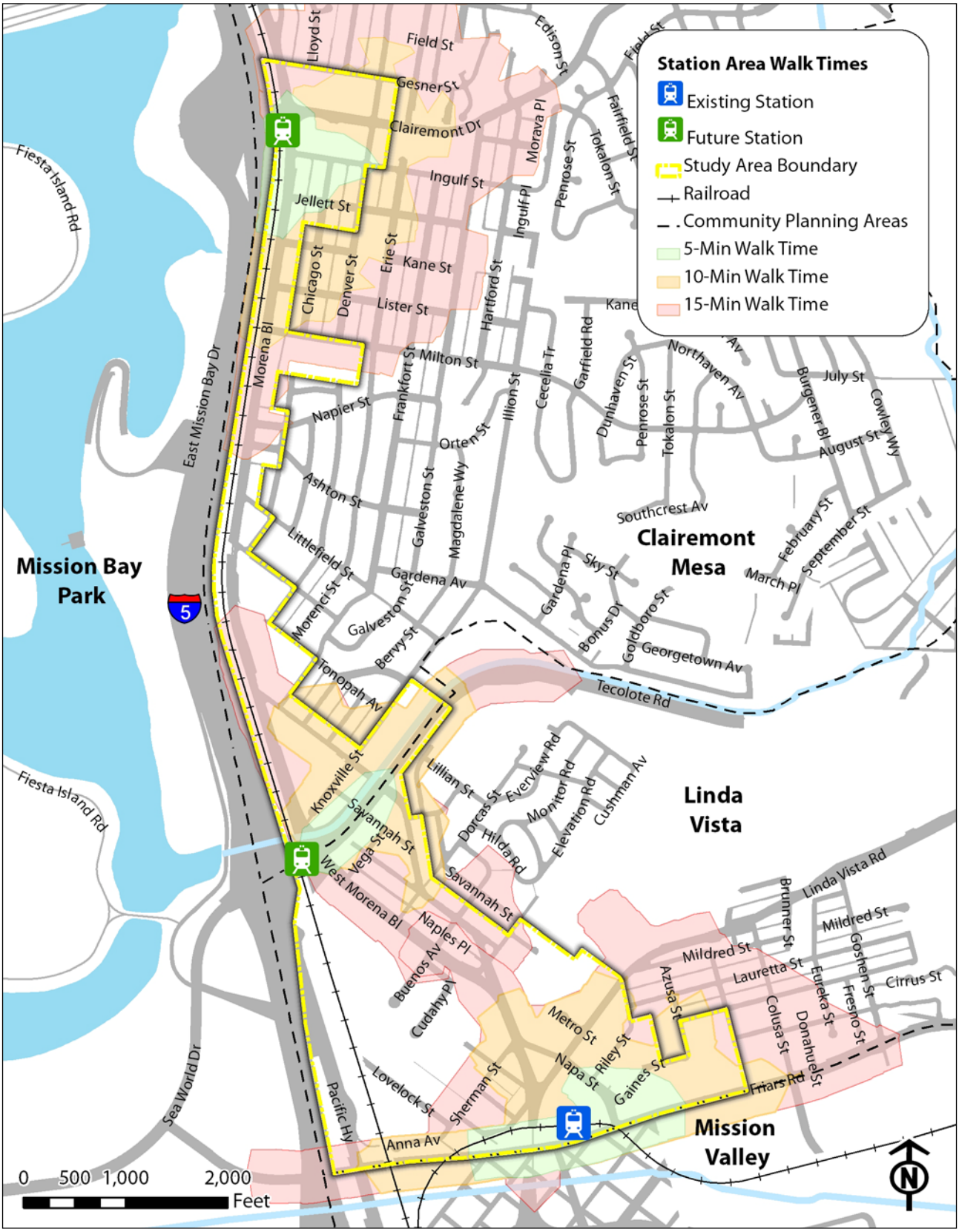


Figure 1-3:Station Area Walk Times

1.5.4 Precise Study Boundaries

The area for which this study will make recommendations is defined by the precise study area boundaries (see Figure 1-4). The northern extent of the study area is Gesner Street, one block north of Clairemont Drive. The southern extent is Friars Road. Interstate 5 forms the western boundary and the eastern boundary is defined by a series of roadways that roughly trace the foot of the mesa south of Tecolote Creek, which extends one block east of Morena Boulevard north of Tecolote Creek.

1.5.5 Council District Boundaries

The study area lies entirely within Council District 2 (former councilmember Kevin Faulconer), although its southern boundary is the boundary between Districts 2 and 7 (Scott Sherman) (see Figure 1-5). Council District 6 (Lorie Zapf) is also near the northern boundary of the study area, Coucilwoman Zapf has historically held an interest in Morena Boulevard, although it is technically not a part of her district.

1.5.6 Smart Growth Boundaries

The San Diego Association of Governments (SANDAG) has identified Smart Growth Areas throughout the San Diego region SANDAG defines each as:

- Town Center: an area of residential and office/commercial uses, including mixed uses, that draws from the immediate subregional area. Desired building types include low to mid rise buildings at 20-45 dwelling units (du)/acre and 30-50 employees/acre near transit service. The Town Center is typically served by one or more transit lines with high frequency service and regional arterials.

- Mixed Use Transit Corridor: an area of residential and office/commercial uses, including mixed uses, that draws from nearby communities and is linear in nature. Desired building types include a mix of low, mid, and high-rise buildings at 20-75 du/acre and commercial and retail supportive uses. The Mixed Use Transit Corridor located along a major arterial, served by frequent corridor/regional transit service and can include shared use park and ride facilities.

- Community Center: an area of residential and office/commercial uses, including mixed uses, that draws from nearby neighborhoods. Desired building types include low to mid-rise buildings at 20-45 du/acre and 20-45 employees/acre near transit service. The Community Center is typically served by at least one transit line with high frequency service and regional arterials/collector streets.

- Urban Center: an area of mixed use employment that draws from throughout the region. Desired building types include mid to high-rise buildings at 40-75 du/acre and 50+ employees/acre near transit service. The Urban Center is typically served by freeways with multiple access points and several corridor/regional lines of transit with very high frequency service.

The Community Center designation applies to the vicinity of the intersection of Clairemont Drive and Morena Boulevard (see Figure 1-6). The Mixed Use Transit Corridor follows West Morena north from Vega Street, past the merge with Morena Boulevard, north to

Clairemont Drive. The overlay extends generally one block to the east from Morena Boulevard. The Town Center runs along Morena and West Morena Blvd. from the northern merge to the southern extent of the study area and the Urban Center starts at Napa Street/Friars Road and continues east towards Fashion Valley Mall.

1.5.7 Business District/Maintenance Assessment District Boundaries

There is one Maintenance Assessment District (MAD) and one proposed Business Improvement District (BID) within the study area. The existing MAD is the Linda Vista MAD and follows Linda Vista Road down the hill from USD, extending one block on either side of the street as far south as Napa Street (see Figure 1-7).

The proposed Morena BID would encompass most of the study area, with the exception of the Knoxville Street recreational vehicle (RV) park the back of the Milton Street car dealership, and the properties north of Clairemont Drive and east of Chicago Street.

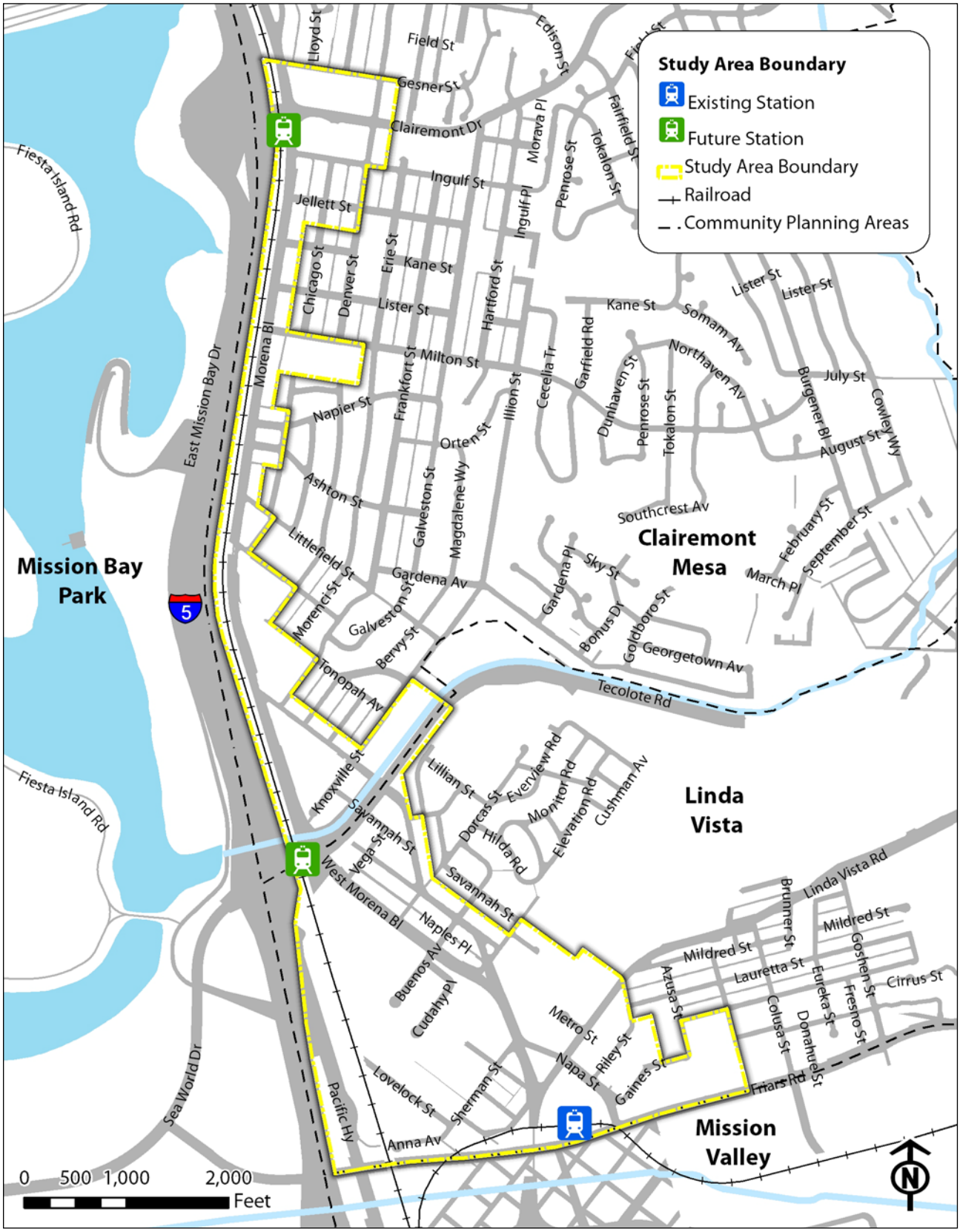


Figure 1-4: Precise Study Area Boundaries

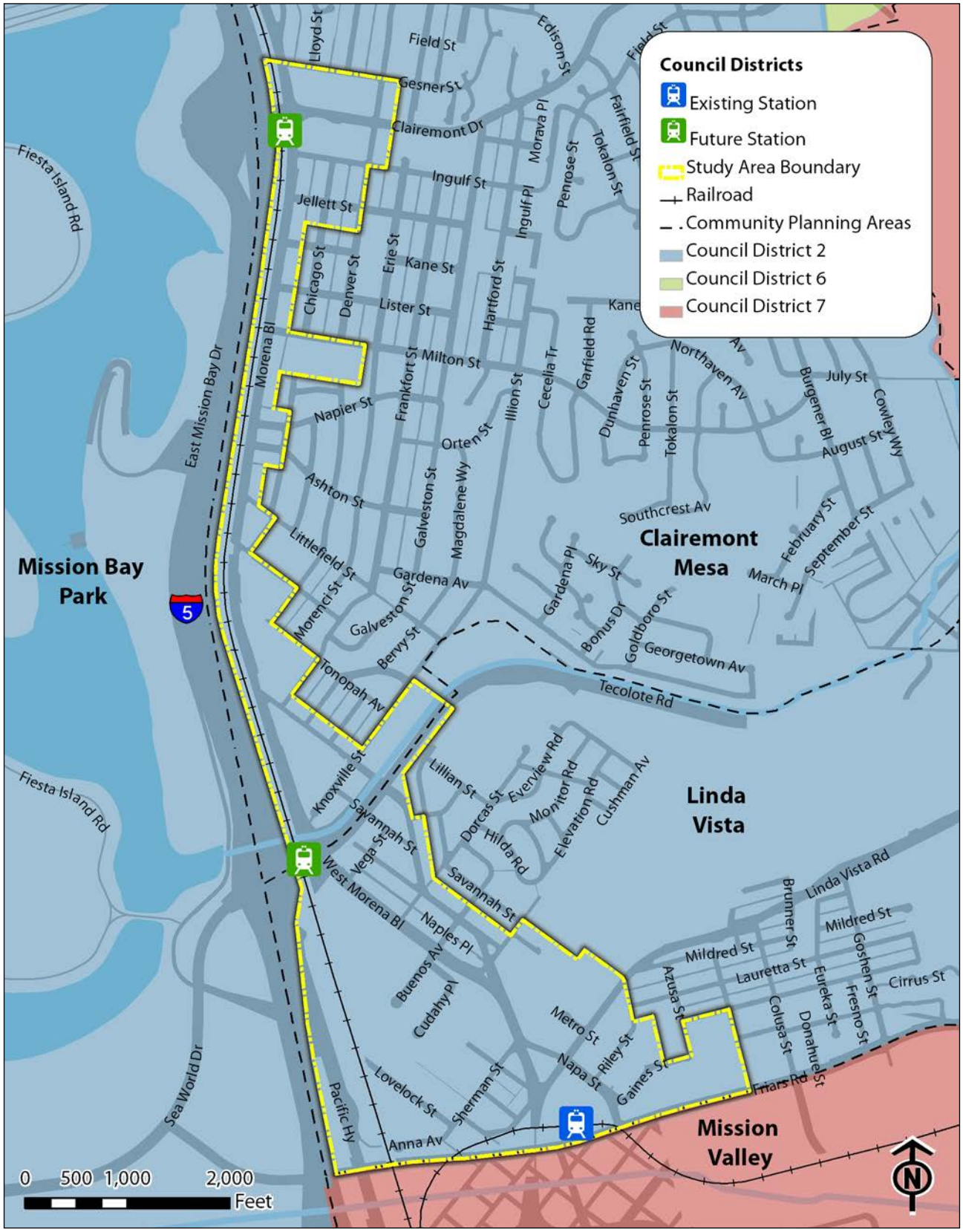


Figure 1-5: Study Area Council Districts

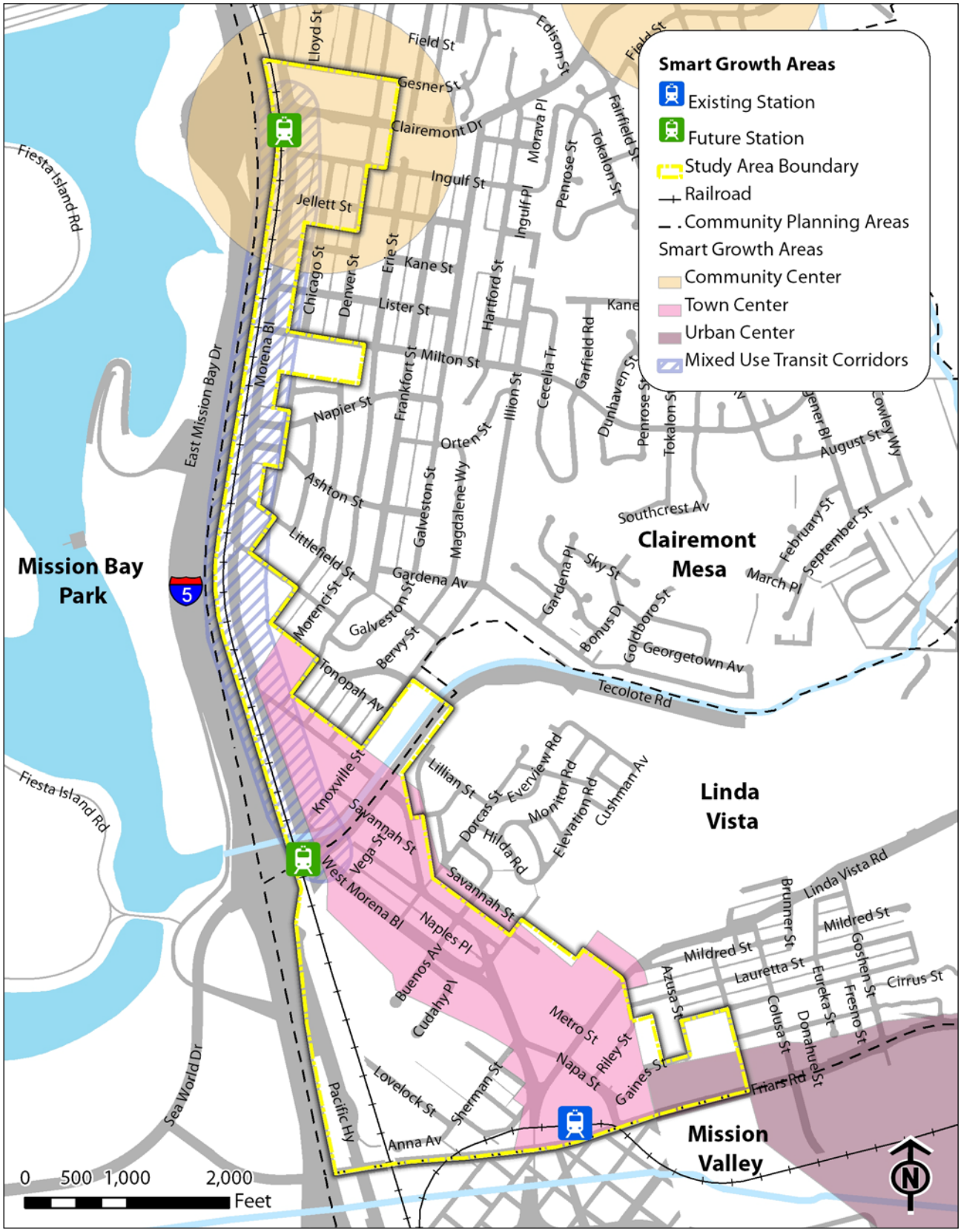


Figure 1-6: Smart Growth Opportunity Areas

Figure 1-7:Business and Maintenance Districts

1.6 Demographics

The following sections help to describe the study area and its environs in terms of demographic data. This information is important in understanding the socio-economic context of the study, which is crucial to the success of both public outreach and economic analysis. The information provided below has been aggregated into four units, based on the source of the information: Traffic Analysis Zone (TAZ), neighborhood, market area, and community planning area. The unit of analysis was chosen based on data available and applicability to the demographic. Statistics at the City (San Diego) and County level are also provided for comparison. All data used is U.S. Census data, as compiled by KTU+A, SANDAG, and/or the City of San Diego.

1.6.1 Population and Households

From 2000 to 2010, the market area population increased, although not at a pace to match the City and County. The market area's population increased 5% from 2000 to 2010, while the City's grew at 7% and the County's grew at 10%. Figure 1-8 shows the distribution of population in the study area by TAZ. The most populous TAZ near the study area is to the east/southeast between Linda Vista Road and the San Diego River, at up to 30 persons/acre. The vast majority of the study area, however, is lowly populated, averaging between zero and two persons/acre. Figure 1-9 displays a similar trend, with almost no households in most of the study area. The most households within the study area occur near Clairemont Drive and between Milton Street and Tonopah Avenue.

Community/ Neighborhood	Residential Zoned Land	Population (persons)	Population Density (persons/ square mile)	Owner-Occupied Housing	%Residents > 7 years
Linda Vista					
Morena Neighborhood	42%	7,570	6,135	48%	76%
Clairemont Mesa					
Bay Park Neighborhood	62%	15,309	5,439	57%	91%

Source: U.S. Census Bureau, 2010

The number of households in the market area increased only 1% from 2000 to 2010, significantly less than the rate of population growth. By comparison, households within the City grew at 7% and within the County grew at 10%, the same as their respective increases in population.

The market area has a small proportion of family households (48% for the market area vs. 59% for the City and 66% for the County) and households with children (18% for the market area vs. 31% for City and 35% for County. The market area also has a smaller household size at 2.11 persons/household vs. 2.60 for the City and 2.75 for the County. Ten percent of the market area lives in group quarters vs. 4% for the City and 3% for the County. The majority of this population lives near USD.

1.6.2 Race and Ethnicity

The residents in the Linda Vista community planning area are 64% ethnically diverse and 36% White. The Hispanic population is approximately 31%, the Asian & Pacific Islanders population is approximately 24%, and the Black population is approximately 5%. The residents of the Clairemont Mesa planning area are predominately white at 63% and 37% ethnically diverse.

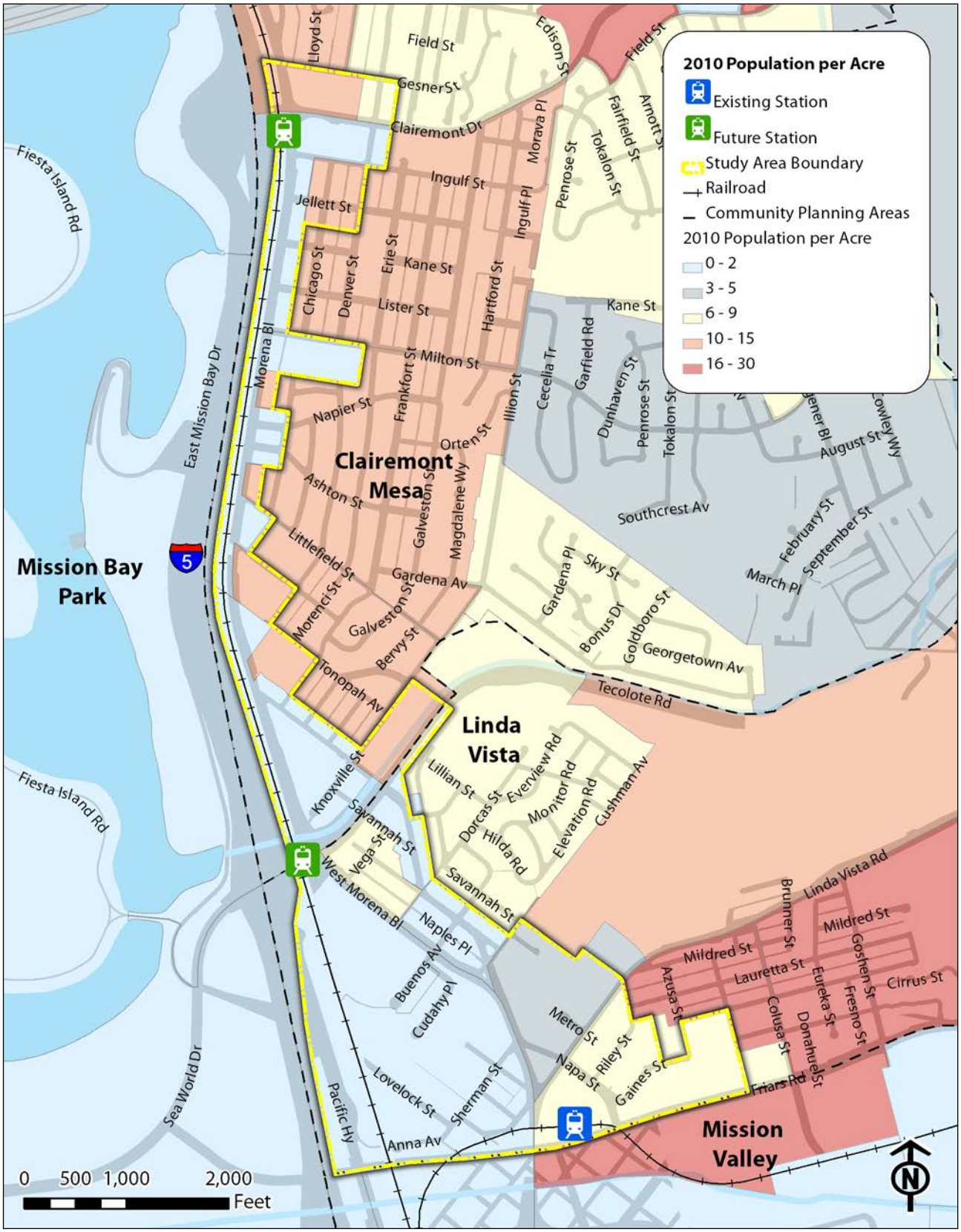


Figure 1-8:Population

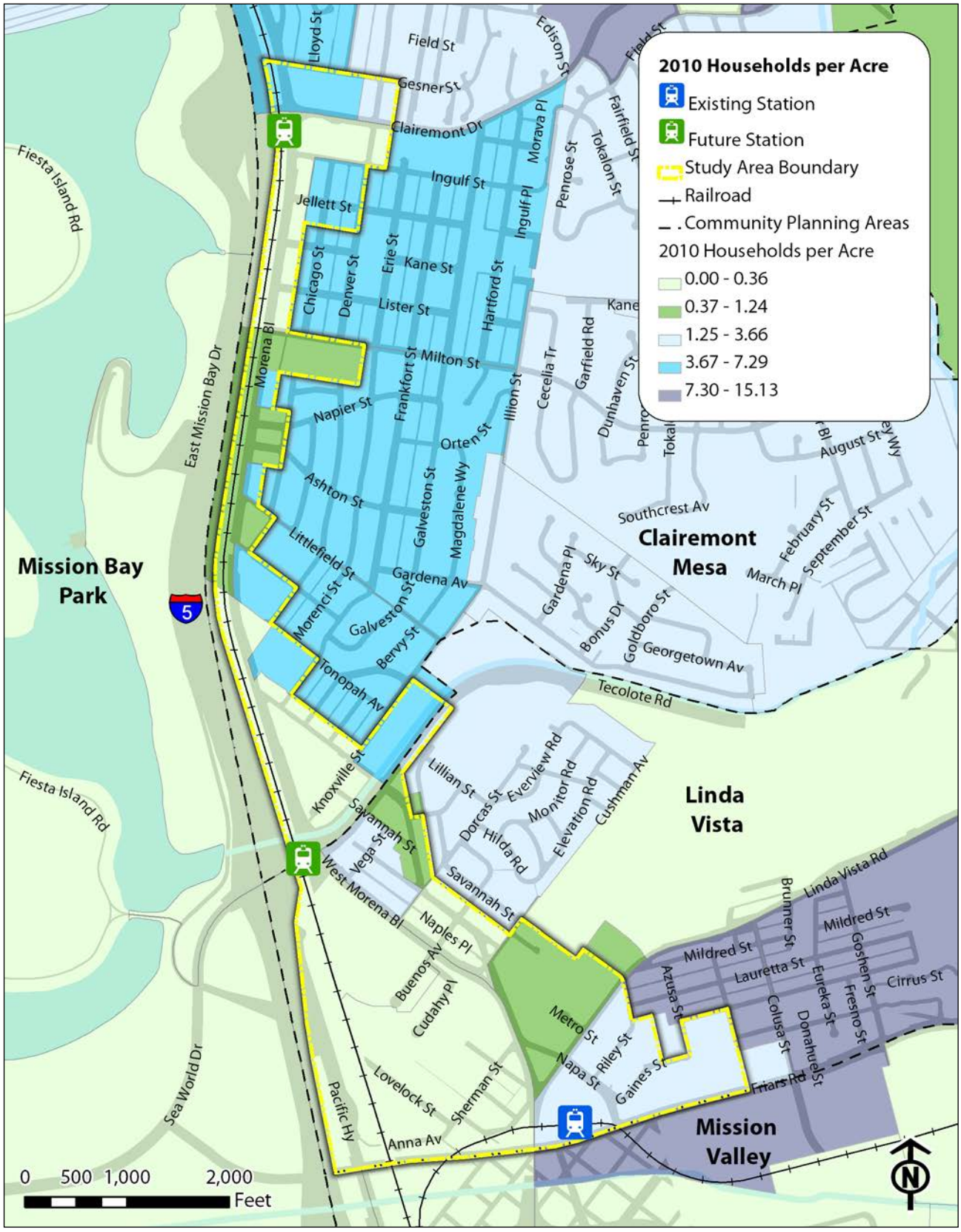


Figure 1-9: Households

1.6.3 Income and Employment

The median annual household income in the market area as a whole is $66,000, which is slightly higher than the City ($64,000) and County ($64,000). A comparison of the median income between the two community planning areas constituting the study area shows that residents of Clairemont Mesa earn approximately $15,000 dollars/year more than their neighbors in Linda Vista. Market area per capita annual income is also slightly higher ($36,000) than the City ($33,000) and County ($31,000). This suggests that residents living within the market area have a reasonable amount of disposable income.

The distribution of income within the market area reflects trends of both the City and County. In the market area, approximately 26% of the population earns less than $25,000/year, 45% earns $25,000 - $99,999, and 29% earns at least $100,000.

Community/ Neighborhood	Median Income
Linda Vista	
Morena Neighborhood	$55,108
Clairemont Mesa	
Bay Park Neighborhood	$69,746

Source: U.S. Census Bureau, 2010

Figure 1-10 displays the employment in the study area by TAZ. The two highest concentrations of employment occur between Morena and West Morena Blvd. between the north and south splits. This may be due to the fact that there are many small scale retail businesses in the area that employ a moderate number of people each. The remainder of the study area employs a moderate number of people, and more than the areas to the east, which is understandable given the transition to residential land uses to the east.

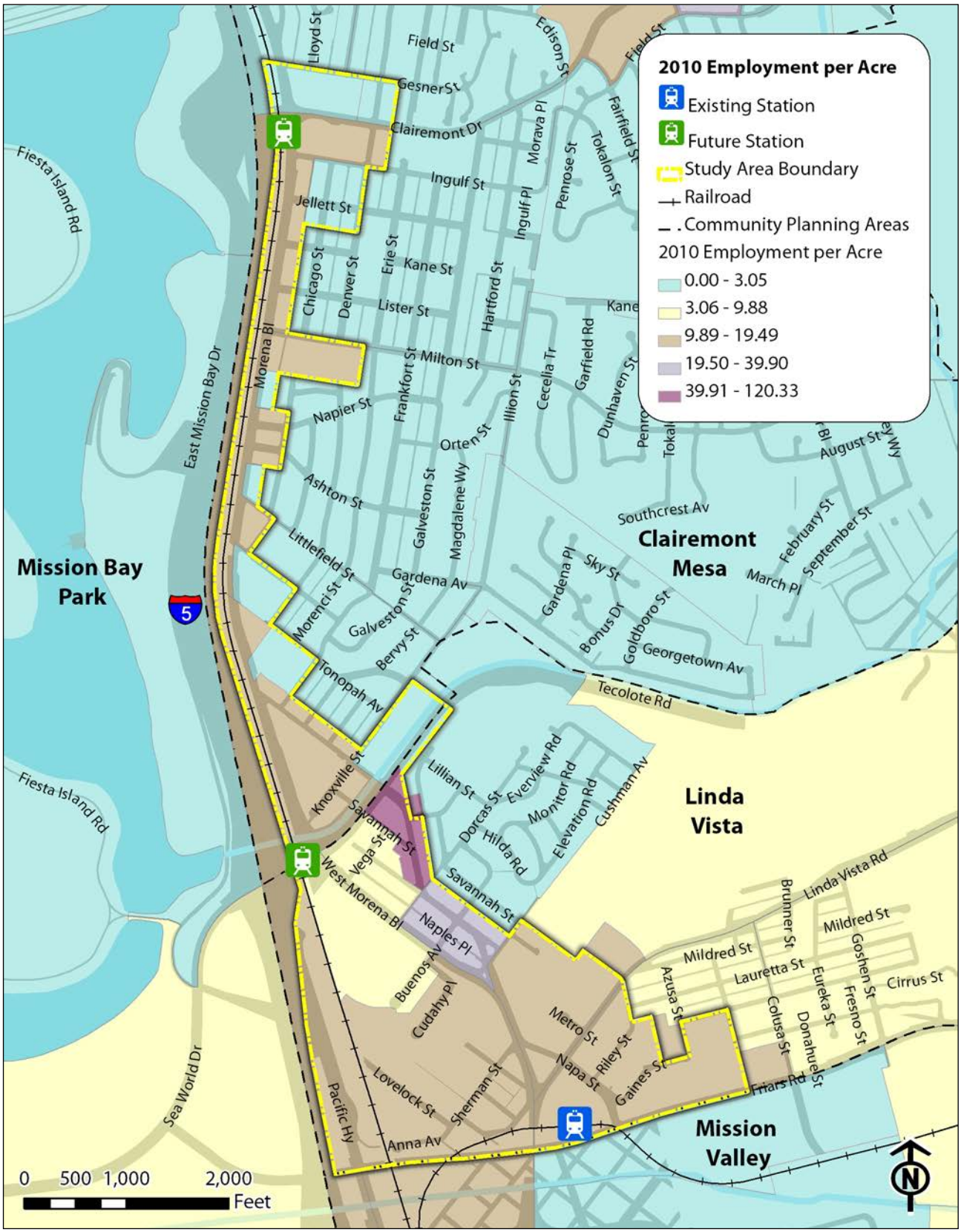


Figure 1-10: Employment

1.7 Community Outreach

The MBAP recognizes the importance of public input to the planning process. The planned LRT stations are being sited in existing neighborhoods, and therefore, input from the community is vital in identifying appropriate changes to land use patterns. The following interactive outreach strategies were used as a part of the multi-lingual outreach process of the study:

Stakeholder/Community Group Announcements – Representatives from the City/consultant team regularly attended stakeholder and Community Group meetings in order to update the community on upcoming events.

Multi-Modal Questionnaire – A questionnaire administered online that allowed participants to record their opinions on existing conditions within the study area, including mobility choices and community strengths/weaknesses.

Public Workshop 1 – Introduction: initial input on vision, goals, and objectives as well as concerns and issues that will need to be addressed. The workshop was held at USD in Linda Vista.

Walk Audit – Two guided tours that explored various aspects of the study area. One tour explored the north end of the study area, while the other explored the south. Participants recorded their thoughts on issues/opportunities identified by the planning team as well as their own observations.

Public Workshop 2 – Analysis: land use trends, market opportunities and constraints, mobility conditions and options, existing zoning and land use flexibility and transit supportive planning policies. The workshop was held at Canyon Ridge Baptist Church in Linda Vista.

Public Workshop 3 – Concepts: solutions for mobility issues, suggestions for land use changes and design guidelines to protect current uses and users in the area. The workshop was held at the San Diego Humane Society in Linda Vista.

All materials produced throughout the study were posted on the City's webpage and City staff and community outreach consultants recorded and responded to community comments either directly or through subsequent workshops. The Draft MBAP study was also posted to the webpage and open to public comment.

2.0 Land Use, Zoning, and the Built Environment

Land use and transportation are inextricably linked. In order to fully capitalize on the investment being made in the Mid-Coast Trolley line/stations, the land uses surrounding the proposed station locations must be reevaluated for conformance with transit-supportive patterns. The following chapter provides an overview of the existing land use/market conditions within the study area, the planning analysis conducted in terms of land use, and the resulting preferred land use scenario and its estimated fiscal impact.

2.1 Existing Conditions

Below is an overview of factors that characterize the study area as it is today: built form, perceived environment, development intensity, land use, zoning, and market conditions.

2.1.1 Built Form and the Perceived Environment

The character of the study area can be expressed as the composite of a series of distinct elements that create a unique user experience. These elements include districts, corridors, edges, gateways, landmarks, and views/viewing locations. Figure 2-1 displays each of these elements and the sections below define each and how it shapes the study area.

Districts

Districts are contiguous sections of the city distinguished by some identity or character. The primary contributors to this character are likely the streets, sidewalks, public spaces, and buildings – the composite of all these elements represents a character that people define as a "place."

Although the study area is not very large, it still encompasses multiple mini-districts. The districts identified within the study area include:

- Gesner Apartments/Offices
- Bayview Plaza Empty Lot
- Ingulf/Denver Single Family/Multi-Family
- North Morena Connecting Commercial
- Milton Car Lot
- Ashton Neighborhood Commercial
- Morena Bend Multi-Family/RV Park
- North Morena Split Business Park/Light Industrial
- Knoxville RV Park
- Middle Morena Split Small Scale Auto-Oriented Horizontal Mixed Use
- West Morena Big Box
- W Morena Industrial
- Linda Vista Business Park
- Fast Food/Convenience Store Triangle
- Morena Station TOD
- Friars Road Police Station and Parking

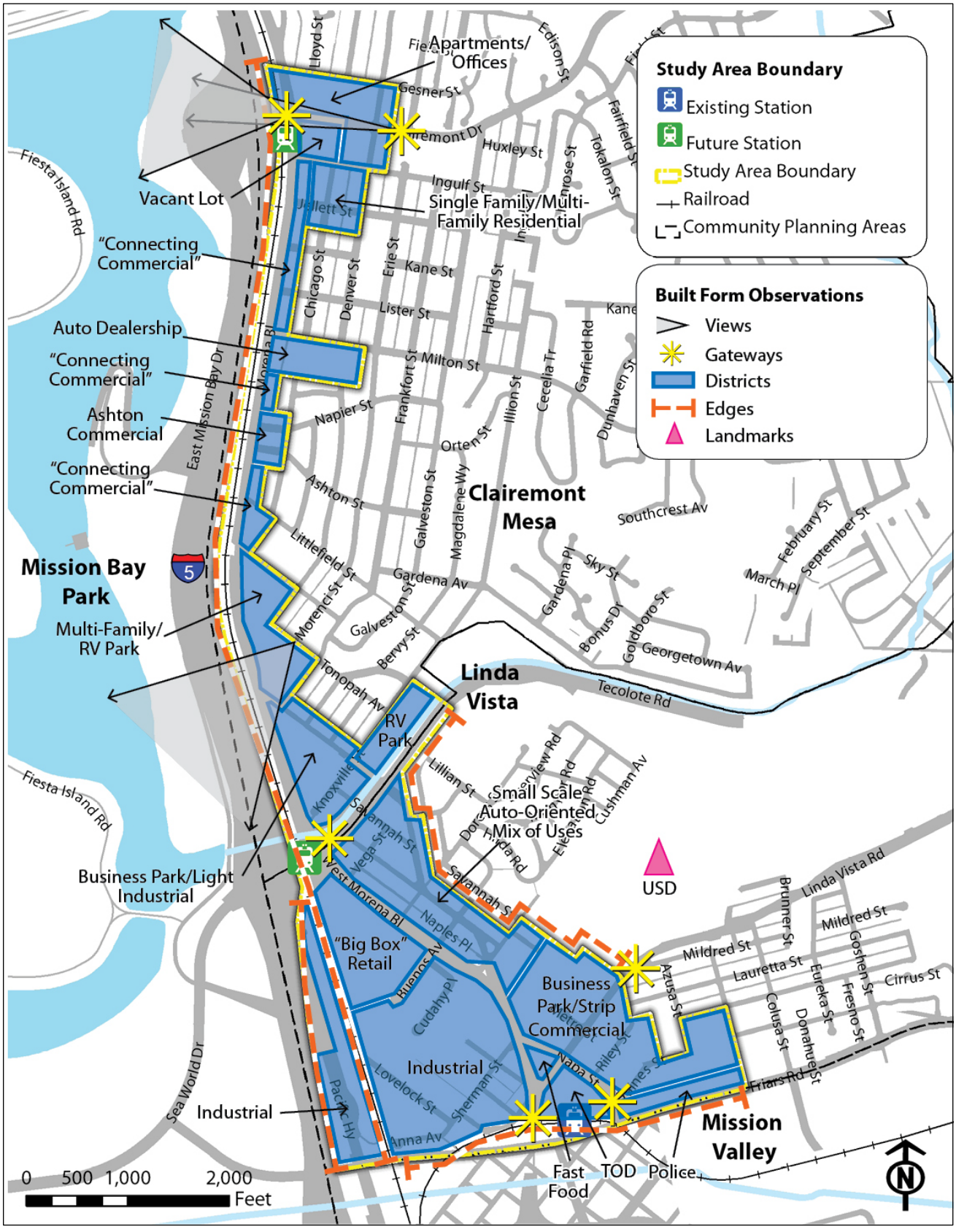


Figure 2-1: Built Form Observations

Corridors

Corridors are linear districts: the streets, sidewalks, trails, and other channels in which people travel. Not all throughways are memorable or exhibit the character required to be classified a corridor, and thus, the study area has four distinguishing corridors:

Clairemont Mesa Drive (coming down off the mesa up to the crest over I-5)

The character of this corridor is largely defined by the views afforded toward Mission Bay when headed west. The buildings on either side of the roadway are varied, but the consistency of the roadway and street trees create a discernible character.

Morena Boulevard (between Tecolote Road and the south merge with West Morena Blvd.)

This portion of Morena Boulevard is defined by the relatively narrow width of the street, the mid-to-low density mix of uses along both sides of the street, and the presence of consistent sidewalks and bike lanes.

Linda Vista Road (northeast of Napa Street)

The portion of Linda Vista Road north of Napa Street is a short corridor, but derives its character from the commercial and business park uses along either side of the roadway and its role as a connector between the mesa and the Morena district below. In addition, this stretch of roadway offers one of the most dramatic views of the buildings of USD when traveling to the east.

Morena Boulevard (between Friars Road and the split with West Morena Blvd.)

Morena Boulevard between Friars and the split with West Morena Blvd. serves as a gateway corridor into the Morena District. While the uses on either side of the road vary greatly, the landscaping and streetscape of the corridor create an effective transition from Old Town/San Diego River crossing into the business/industrial environment of the study area.

Edges

Edges are perceived boundaries which separate districts. Edges can take the form of walls, buildings, cliffs, shorelines, etc. The three most distinct edges within the study area are the railroad tracks at the western edge of the study area, the hills/cliffs northeast of Morena Boulevard, and Friars Road and the San Diego River at the southern edge of the study area. These edges converge at the southern extent of the study area and help to define circulation and land use patterns. They also have an isolating effect on this portion of the study area.

The northern portion of the study area in only constrained by the railroad tracks to the west; the landform to the east rises gently away from Morena Boulevard and transitions easily into the surrounding neighborhood.

Gateways

Gateways are entry/exit points to or from a district that are distinct and memorable. Gateways create the impression of moving from one character area to another. Because of the constrained nature of the study area, many of the entry/exit points are dramatic and serve well as gateways. The most memorable gateways include: Clairemont Drive at

Denver Street, Clairemont Drive at I-5, Sea World/Tecolote Road at I-5, Linda Vista Road at Marian Way, and Morena north of Friars.

Landmarks

Landmarks are readily identifiable objects which serve as external reference points. The landform within the study area is relatively flat and the buildings have minor variation in scale (especially vertical scale), and thus, the study area has no significant landmarks. The most significant landmark is actually outside the study area: the buildings of USD, sited on top of the mesa. These buildings are visually prominent in the southern edge of the study area, although areas near and north of Tecolote Road have limited visibility of USD.

Landform and Topography

As mentioned in the discussion on edges and landmarks, much of the study area is flat. This area is the historic shoreline of Mission Bay, although it has been extended and backfilled to create land for the railroad tracks, freeway, and additional parkland within Mission Bay Park. The northern portion of the study area gently rises in elevation to the east, while the southern portion is defined by the mouth of Tecolote Canyon, the edge of the mesa, and the San Diego River.

Views

Views are visual corridors that frame a scene of interest or regional significance. Given the location of the study area, the most significant visual resource nearby is the water of Mission Bay. Although the study area lies extremely close to the Bay, its low elevation, combined with the interceding edges of the railroad tracks and I-5 freeway, prevent many views from within the study area. Areas that provide views to the Bay include: Clairemont Drive, Sea World Drive, the Tecolote Road I-5 overpass, and to a lesser extent, Tonopah Avenue northwest of Frankfort Street.

2.1.2 Existing Development Intensity

The character of buildings within the study area influences the user experience. Characteristics such as study area development level, density, building heights, and floor area ratios (FARs) influence how an individual feels about an area and how he or she moves through it.

For Figures 2-2 through 2-4, the information displayed is associated with residential or non-residential land uses, but not both. While some mixed use currently exists, these two groups are generally mutually exclusive in the study area's current state.

Development Level

As previously mentioned, the study area is completely urbanized and has been for many years. Its current level of development is typical of a commercial and industrial corridor that has seen more robust activity in the past, but still serves an important role in an increasing urbanized context. Because there has been limited new development in the area, some properties have become dilapidated, while other structures have been demolished, although fairly rare. While economic activity continues in the existing buildings, there is not sufficient demand to consolidate or densify properties within the corridor.

Current Densities

Figure 2-2 displays information on building density in terms of du/acre. Du/acre information is only available for residential and/or mixed use developments with residential uses. The residential properties are spread throughout the study area, although the majority are sited north of Tecolote Road. The figure also shows that density of du/acre varies greatly throughout the study area, with the lowest density residential occurring along Denver and Leita Streets and the highest density along Chicago Street, Morena Boulevard, and near the Morena/Linda Vista trolley station.

Current Building Heights

Building heights within the study area are fairly consistent. In an analysis of non-residential buildings, building heights range from one to four stories (see Figure 2-3). Most non-residential buildings are only one story, with only one being four stories. The analysis shows that although many lots are developed with structures, these structures maintain a very low profile.

Current Floor Area Ratios

The analysis of the FAR of non-residential buildings in the study area reveals that almost all lots have at least a 0.28 FAR, and that many have a 0.58 or higher FAR (see Figure 2-4). This is not surprising for many of the small lot retail/commercial properties that typically rely on limited parking and/or street parking for customers. It is surprising, however, that many of the large-lot commercial and industrial properties also remain above the 0.58 FAR. This indicates that even in this area of low building heights, lot coverage is higher, which implies there is less space between buildings and less surface area devoted to parking.

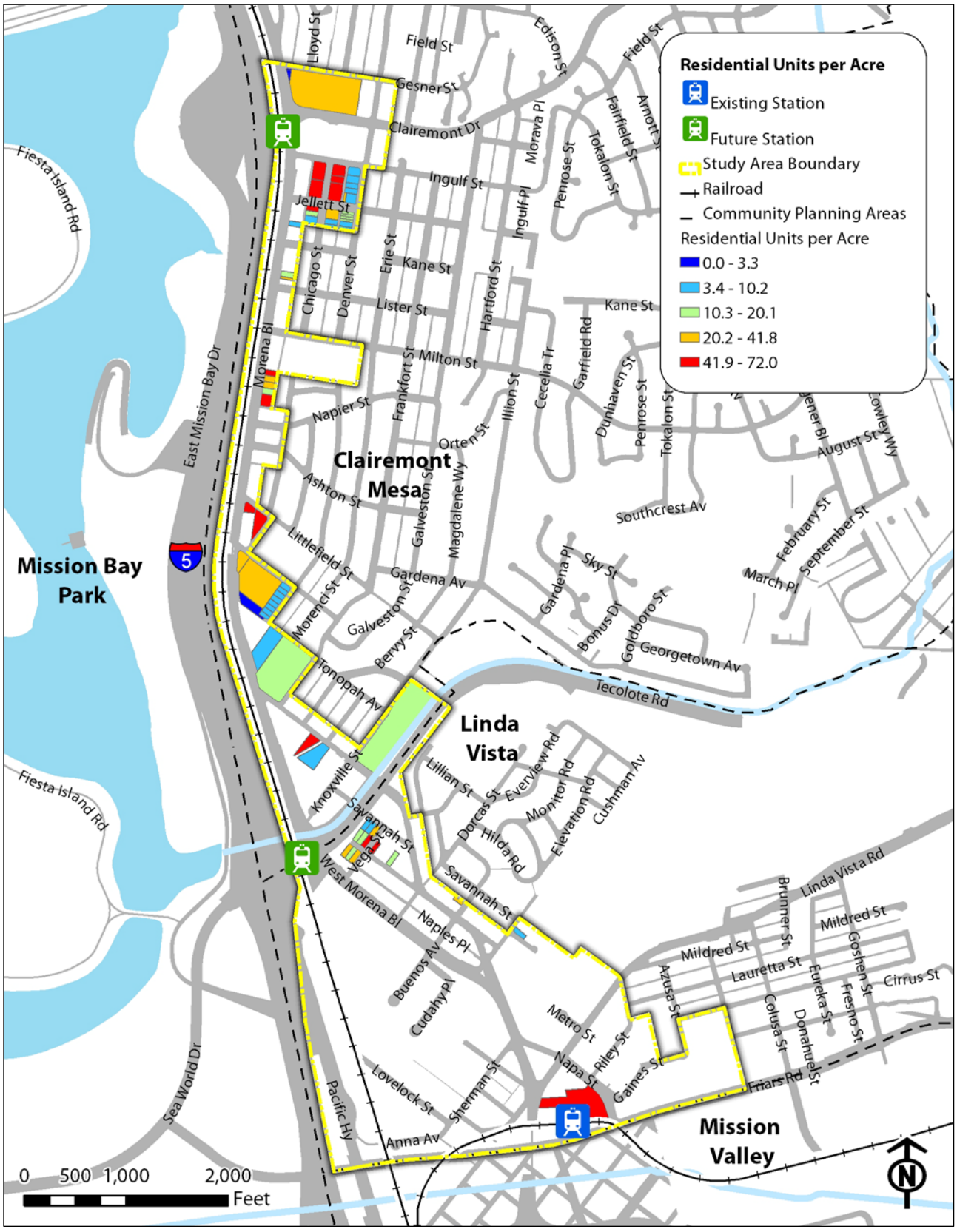


Figure 2-2: Residential Density

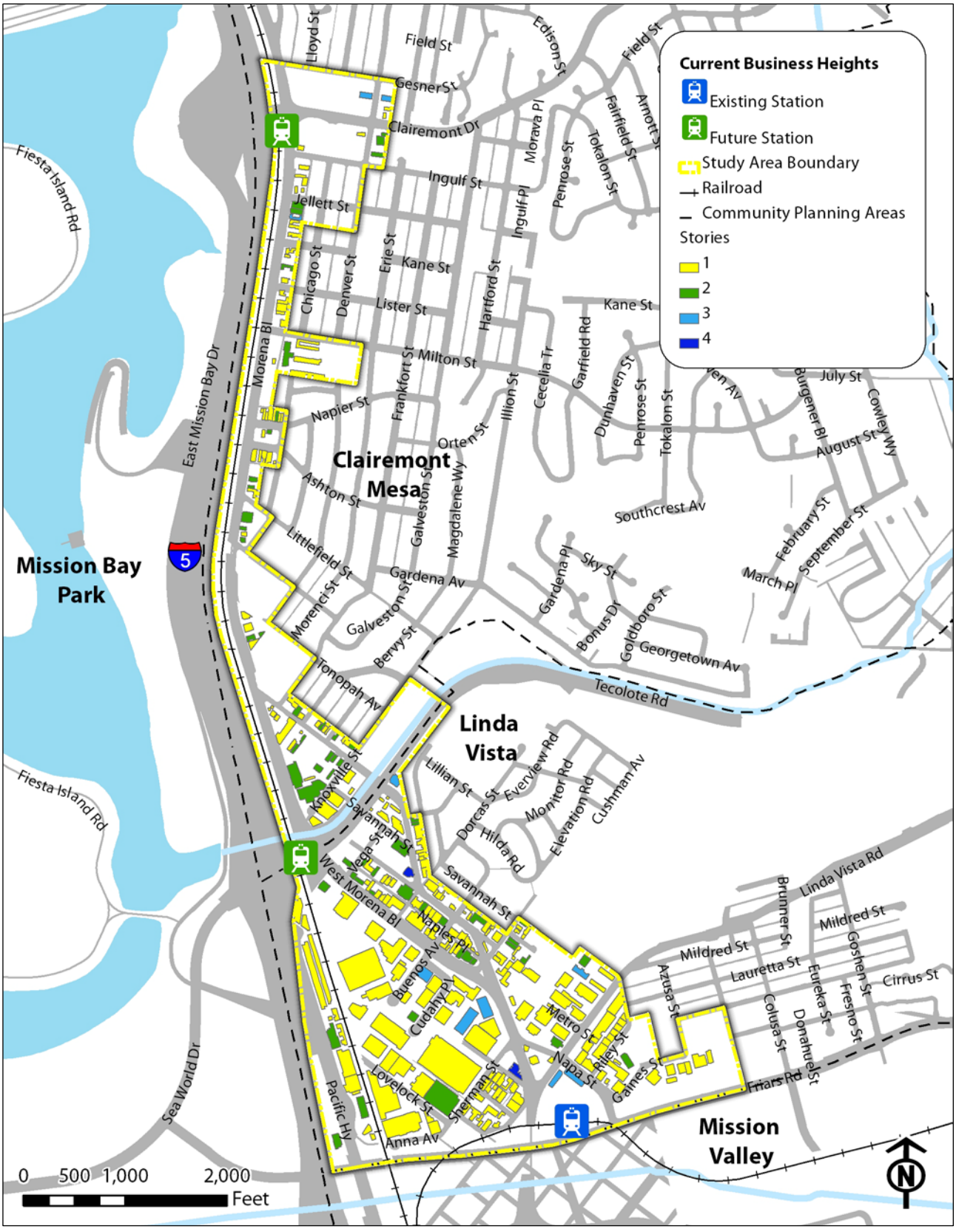


Figure 2-3: Non-Residential Heights

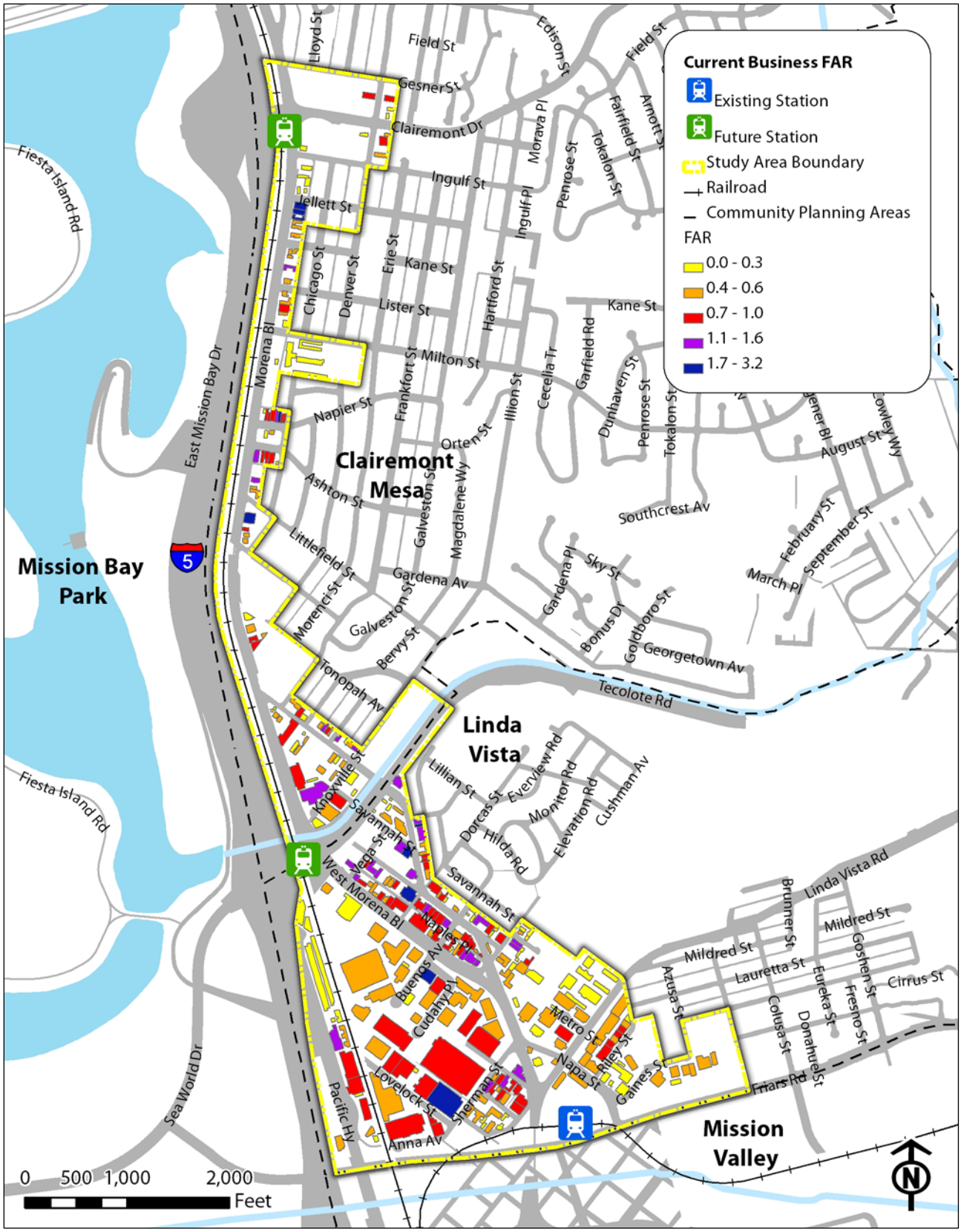


Figure 2-4: Non-Residential FAR

2.1.3 Existing Land Use

The study area is currently dominated by two land uses: commercial and light industrial (see Figure 2-5). The industrial is concentrated in the southern end of the study area, whereas the narrow northern extent is primarily commercial. Some multi-family and mobile home land uses occur near Clairemont Drive, near Tecolote Creek and near the Morena/West Morena northern merge and at the existing Morena Linda Vista Trolley Station. Other miscellaneous land uses within the study area include education, institutions, transportation, communications, and utilities.

Land uses bordering the study area on the east exhibit a strongly residential character. The land falling within the Clairemont planning area is almost exclusively single family detached residential, while the land in the Linda Vista planning area is a mix of single family (attached and detached), multi-family, and mobile home, especially between Linda Vista Road and Friars Road.

Land uses to the south and west of the study area are either open space parks or recreation.

2.1.4 Existing Zoning

Zoning represents the land uses allowed and the development standards applied to the land use that each property must abide by in order to be in legal conformance with the City's regulations. While many properties are non-conforming, future development must adhere to these guidelines and zoning is the best indicator on what will be built on a particular property.

Figure 2-6 graphically displays the extents of the zoning districts. Zoning districts are found in Chapter 13 Zones of the Municipal Code. Additional information on zoning, general plan, and community plan regulations is contained in Appendix B.

In addition to the base zones displayed in Figure 2-6, there are two overlay zones which provide additional regulation of development within the study area:

Parking and the Transit Overlay Zone

The purpose of the Transit Area Overlay Zone is to provide supplemental parking regulations for areas receiving a high level of transit service. The intent of this overlay zone is to identify areas with reduced parking demand and to lower off-street parking requirements accordingly.

The Transit Overlay Zone applies to the area immediately surrounding the LRT station at Clairemont Drive, but could be applied around the LRT station at Tecolote as well.

Clairemont Mesa Height Limit Overlay Zone

The purpose of the Clairemont Mesa Height Limit Overlay Zone is to provide supplemental height restrictions for western Clairemont Mesa. The intent of these regulations is to ensure that the existing low profile development in Clairemont Mesa will be maintained and that public views from western Clairemont Mesa to Mission Bay and the Pacific Ocean will be protected.

Figure 2-5: Land Use

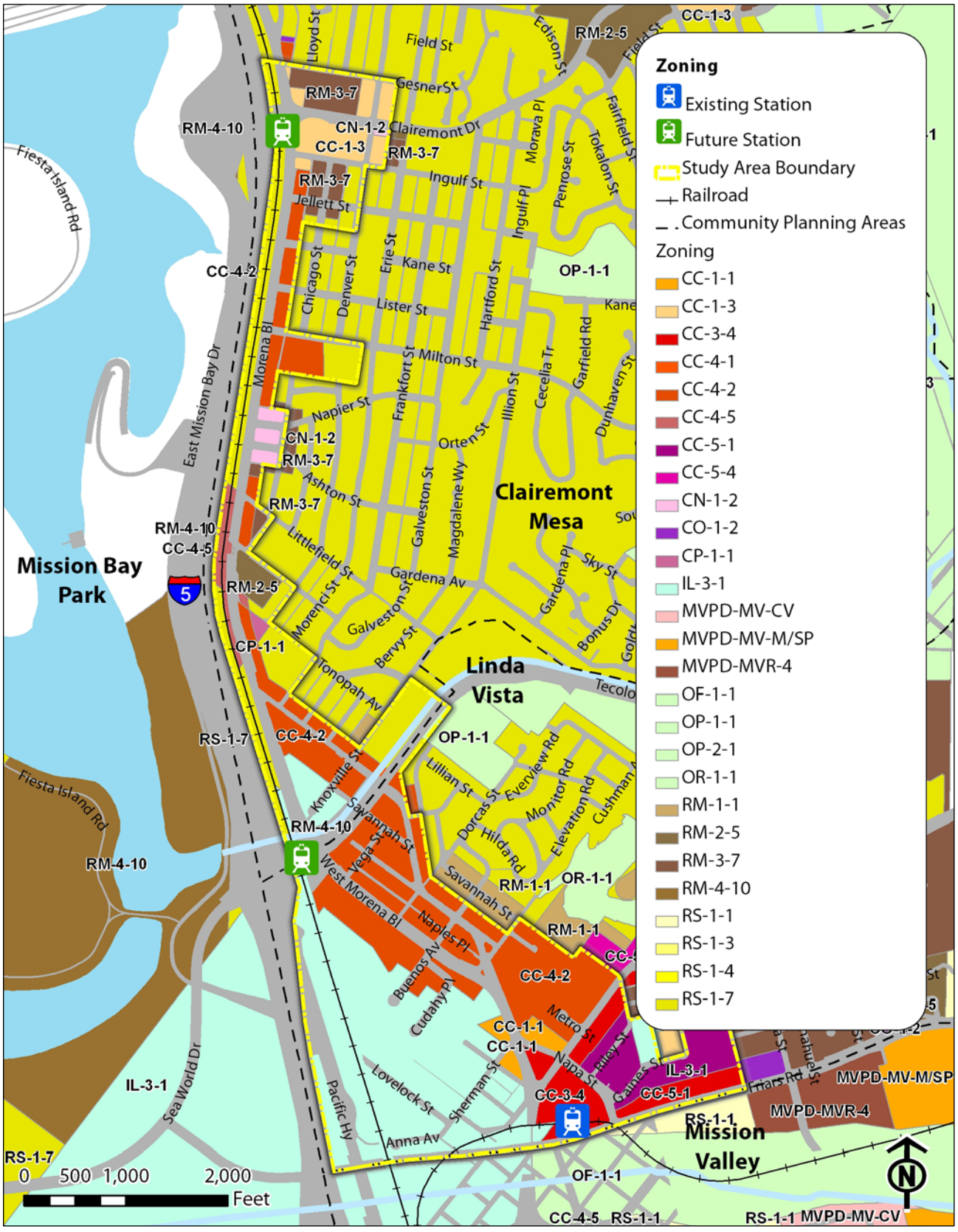


Figure 2-6: Zoning

This overlay zone applies to the portion of the plan area that is bounded by Clairemont Drive to the north and Tecolote Road to the south (see Figure 2-7 below). The overlay imposes a maximum structure height of 30 feet. This may impact the ability to achieve higher densities in areas affected by the overlay zone.

Figure 2-7: Clairemont Mesa Height Limit Overlay Zone

2.1.5 Existing Market Analysis

The economic conditions of the market area around the study area help to determine the amount and type of development that occurs. Below is a discussion of the current state of conditions, trends, and market categories within the study area.

Market Area

The study area lies within a larger market area that encompasses land as far east as State Route 163 (in Mission Valley), as far north as Balboa Avenue, as far west as Interstate 5, and as far south as Interstate 8 (as previously shown in Figure 1-2). The market area's eastern boundary north of Mission Valley is defined largely by Tecolote Canyon/Via Las Cumbres Road.

SANDAG projections for the year 2035 include:

- Approximately 6,700 new residential units of all types;
- Approximately 290,000 to 410,000 square feet of office space; and
- Approximately 260,000 to 350,000 square feet of retail space.

In addition to projected growth, the strategic location and proposed improvements associated with the Mid-Coast transit project indicate significant potential for new development. In spite of these positive indicators, development opportunities are constrained by the lack of suitable sites.

Current Conditions and Trends

The study area has good connectivity to the surrounding region, via Interstate 5, Interstate 8, surface streets, and Metropolitan Transit System (MTS) transit service. One of the

current economic drivers in the market area is USD. The anticipated growth of the university's students and faculty will create additional demand in the housing market. Secondly, the Mid-Coast Corridor Trolley extension project will enhance the existing strength of the market area's location and connectivity to the surrounding neighborhoods of University City, Downtown, Mission Valley, and other areas served by MTS.

Below is a discussion of the current conditions and trends with respect to specific market areas:

For Sale Residential

The MBAP market area, like the rest of the country, has been affected by the national decline in housing prices resulting from the financial crisis of 2007-2008. However, median resale home values suggest a recovering for-sale housing market. For 2012, the median single-family resale price was $499,000 in the 92110 zip code, which is 25% higher than Central San Diego, but 2% lower than the same area in 2011. The 2012 median condo resale was $228,000, a 6% increase over 2011.

Rental Multi-Family

Newer rental residential units, including the Morena Station TOD and other new projects near the study area have strong occupancy and rents:

- One bedroom rents for recently constructed units are priced between $1,645/month to $1,985/month
- Two bedroom rents for recently constructed units are priced between $1,895/month and $2,210/month
- Three bedroom rents for recently constructed units are priced between $2,495/month to $3,000+/month

Office

The MBAP market area has a limited inventory of mostly older office and retail developments with limited vacancies. This reflects an area without a distinct market identity and has had a limited amount of new development. While existing rents do not support new development, if development of higher quality office space occurred, it would likely obtain higher rents. For reference, current office asking rents within the market area range from $1.00 to $1.50 per square foot per month, full service.

Retail

The market area has a relatively robust retail market, with asking rents above average for the City and County. Retail asking rents in the market area range from $1.50 to $3.25/square foot per month, triple net (NNN).

Industrial

The industrial properties and land uses within the study area are assumed to be retained, although not expanded, through the MBAP analysis. While these land uses perform a role in the overall economy, they are typically not transit-supportive uses or integrated into transit-supportive development projects.

For additional information, see Appendices F and G.

2.2 MBAP Land Use Formulation

The land use scenario proposed by the MBAP was created by blending an understanding of the existing dynamics of existing conditions with the vision established by community members and City staff. The following sections provide an explanation of the key inputs in the process and the resulting elements of the preferred scenario.

2.2.1 Vision

The land use vision is set regionally by SANDAG and at a city level by City of San Diego through its General Plan. While the General Plan was updated in 2008, the Community Plans for Clairemont Mesa and Linda Vista have not been updated since 1989 and 1998, respectively (more information on the Community Plan visions for each planning area is provided in Appendix B). As such, the Strategic Framework Action Plan established as the foundation of the General Plan update helps to interpret the older community plans through the vision of the City of Villages concept. Figure 2-8 displays the opportunity areas identified by the Strategic Framework Action Plan that lie within the study area. The concentration of three types of opportunity areas within the study boundary reinforces the City's vision for transit-oriented, mixed use development/redevelopment in this area.

Adding to the Strategic Framework's vision for the study area, the community provided similar input at the Existing Conditions Workshop. The following vision statement regarding land use was created directly from the input provided at the workshop:

Encourage the Morena District to be a mixed-use area that has a strong restaurant component, grocery store, and thoughtful density that includes affordable housing.

The resulting vision for the land use concepts of the MBAP was based on input provided by the community, the results of market demand/trend analyses, and the city's goals of supporting transit through complementary land use patterns. The MBAP land use vision:

- Converts many existing retail/commercial parcels into multi-family residential parcels.
- Proposes key parcels near the existing and proposed trolley stations be a mix of residential, retail, commercial, and office.
- Accommodates future growth in areas that are well served by transit, creating hubs of activity and density that incorporate sustainable principles
- Adds diversity and vibrancy to the existing neighborhood.
- Balances jobs and housing in order to keep trips more local.
- Balances destinations and origins in areas around transit facilities in order to increase users on the transit line.
- Incorporates a wide variety of uses that support a community's needs generally keeps trips shorter, allowing for more of them to be made by bike or walking. All of these considerations are critical to creating a complete community.

Based on this vision, three alternatives were developed for and discussed at Workshop 3 (see Appendix A for workshop details).

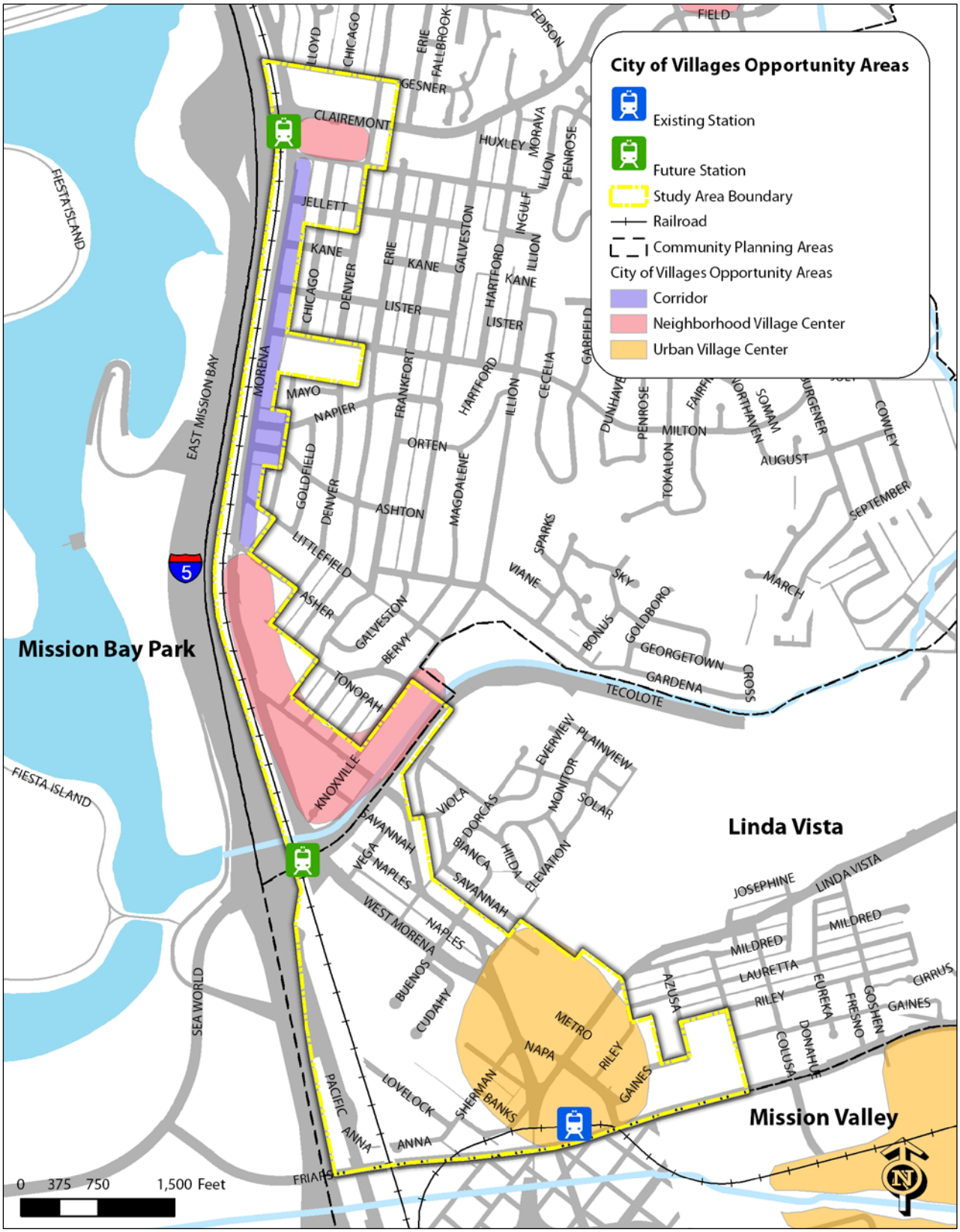


Figure 2-8: City of San Diego Strategic Framework Opportunity Areas

2.2.2 Land Use Alternatives

The community was presented with three land use alternatives in Workshop 3 of the community outreach process. The land uses proposed by the MBAP not only have an impact on the urban form of the study area, but also the efficiency and loading demand on the circulation system. Any change in land uses, or change in intensity of land use, can have an impact, positive or negative, on mobility within the study area.

The MBAP developed alternatives for both land use and circulation together. In order to provide the community with a range of options, the planning team developed three alternatives which represent varying land use intensities that are all consistent with the vision described in the previous section. These alternatives range from least intensive ("Alternative 1") to most intensive ("Alternative 3"), with one scenario in between ("Alternative 2"). The following is an overview of the alternatives. For a fuller discussion of the alternatives, their metrics, and the selection process, please refer to Appendix D: Land Use Alternatives Supporting Materials.

In order to capitalize on the anticipated investment in the Mid-Coast Trolley corridor and its associated stations, the plan set a goal of achieving a range of between 30 and 70 dwelling units per acre. This range is widely accepted as the ideal range for transit oriented development. The goal is to strategically place the higher density development closest to the stations where walk times are shortest, and gradually decrease density as the distance increases. This graduated approach also has the benefit of lessening physical incompatibilities with existing lower density single family development.

The initial phases of the project established that a density of 70 dwelling units per acre could generally be achieved through a development pattern of four stories of multi-family construction built on a podium of two floors structured parking, resulting in an overall height of six stories. However, this height in some areas is not likely to be supported by the public based on concerns over density and the potential for blocking views from many homes located up slope of the study area. The south end of the project study area does not have the neighborhood sensitivity of view blockage as the north end does. This is a result of the depth of non-residential development between I-5 and the slopes where housing exists and it is also related to the lower elevation gains that occur when moving up on landforms to the east. Not as many views in the south end would be blocked and most of the views are of the industrial areas of Morena Boulevard and the freeway aerial structures of I-5 and I-8.

The planning team analyzed the feasibility of obtaining higher and more supportive transit densities in the areas around the transit stations. Figure 2-9 below shows the area surrounding the proposed Tecolote LRT station at Vega and West Morena Boulevard as it appears today. Figure 2-10 shows the potential densities as proposed in the MBAP. As illustrated in these diagrams, the proposed heights would be taller than several of the surrounding buildings, although still compatible in terms of mass and scale.

Figure 2-9: Existing Built Form Surrounding Proposed Tecolote Station

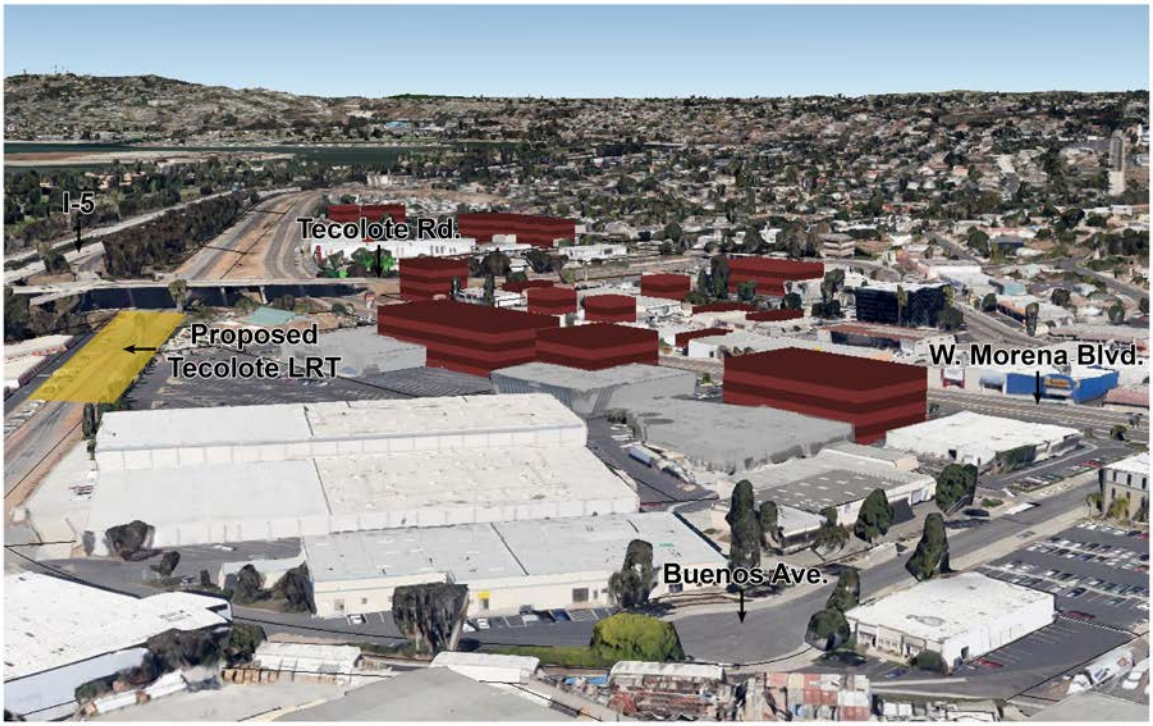


Figure 2-10: Potential Built Form Surrounding Proposed Tecolote Station

Figure 2-11: Workshop 3 Land Use Alternative 1

Workshop 3 Land Use Alternative 1

The Workshop 3 Land Use Alternative 1 envisioned the least amount of land use changes paired with the lowest intensity of development on the changed parcels (see Figure 2-11). Residential land uses were proposed sporadically through the study area, with the largest concentrations occurring south of Tecolote Road. Workshop 3 Land Use Alternative 1 proposed the retention and reinvestment in existing retail between Morena and West Morena (between the south split and Tecolote Road) and along the east side of Morena just south of the south split. This was envisioned as the core of the "Design District" and would create continuity in the character of the neighborhood as residential uses are introduced. The alternative also envisioned the retention of existing commercial/restaurant uses along the east side of Morena Boulevard (between the Linda Vista Road and Tecolote Road).

Workshop 3 Land Use Alternative 3

Workshop 3 Land Use Alternative 3 envisioned an extensive amount of land use changes paired with high intensity development on the changed parcels (see Figure 2-12). Intense multi-family residential land uses were proposed consistently throughout the study area, but in notable quantities in the southern portion of the study area. This introduction of residential would convert most, if not all, of the light industrial properties currently located at the southern extent of the study area. More intense neighborhood-supporting retail was designated throughout as well, with a focus along Clairemont Drive and north Morena Boulevard. The "Design District" and restaurant cores along Morena/West Morena were maintained and expanded slightly as compared to Alternative 1. Finally, Alternative 3 proposed additional office uses along Linda Vista road near the existing Morena Trolley station as well as near the intersection of Ingulf Street and Morena Boulevard.

Figure 2-12: Workshop 3 Land Use Alternative 3

Figure 2-13: Workshop 3 Land Use Alternative 2

Workshop 3 Land Use Alternative 2

Workshop 3 Land Use Alternative 2 envisioned a moderate amount of changes to existing land use patterns (see Figure 2-13). Multi-family residential uses were proposed throughout the study area as in Alternative 3, but were not proposed for the light industrial areas south of West Morena. The "Design District", restaurant, and office uses mirrored those proposed in Alternative 3, but not the more intense neighborhood-supporting retail at the north end of the corridor.

2.3 Proposed Land Use

In general, workshop attendees supported the goal of shifting some non-residential land uses to residential land uses, as long as a core of businesses were retained and enhanced to support the budding "design district" identity of the corridor. Attendees recognized the importance of increasing the level of development near the existing and proposed trolley stations as a means to direct growth away from established single-family neighborhoods and support long-term sustainability goals. There were varying opinions on the appropriate level of density near the stations, however. Some workshop attendees agreed that 60' in height was appropriate in certain locations, especially if it is "stepped back" as it approaches lower density development. Other attendees were adamant that the existing 30' height limit (in the Clairemont planning area) be enforced. Of particular concern to this group were blockage of views and the introduction of too much development in an already established neighborhood.

Based on input provided by the community and city staff, the workshop land use alternatives were merged to produce a scenario that decreases non-residential uses while providing a significant increase in multi-family residential/mixed-uses (see Figure 2-14).

The land use quantities as proposed in the Proposed Land Use alternative are:

- Residential: approximately 5,800 dwelling units (Increase of approximately 4,800 from existing)*
- Non-residential commercial, retail, office, and industrial uses: 2.7 million square feet (Decrease of approximately 700,000 square feet from existing)*

*Metrics represent the combined total for parcels adjusted by the MBAP Proposed Land Use and the unchanged parcels remaining in the study area based on their Adopted Community Plan land use.

With regards to the proposed decrease in non-residential space, this could be accomplished over time as existing retail, commercial, or industrial properties are sold and redeveloped into residential land uses instead. The plan does not recommend demolition of any particular building/business, but rather, sets a trend for the overall study area which could be achieved with numerous combinations of existing and new development. The preferred land use scenario maintained the existing 30' height limit in the Clairemont Mesa community planning area.

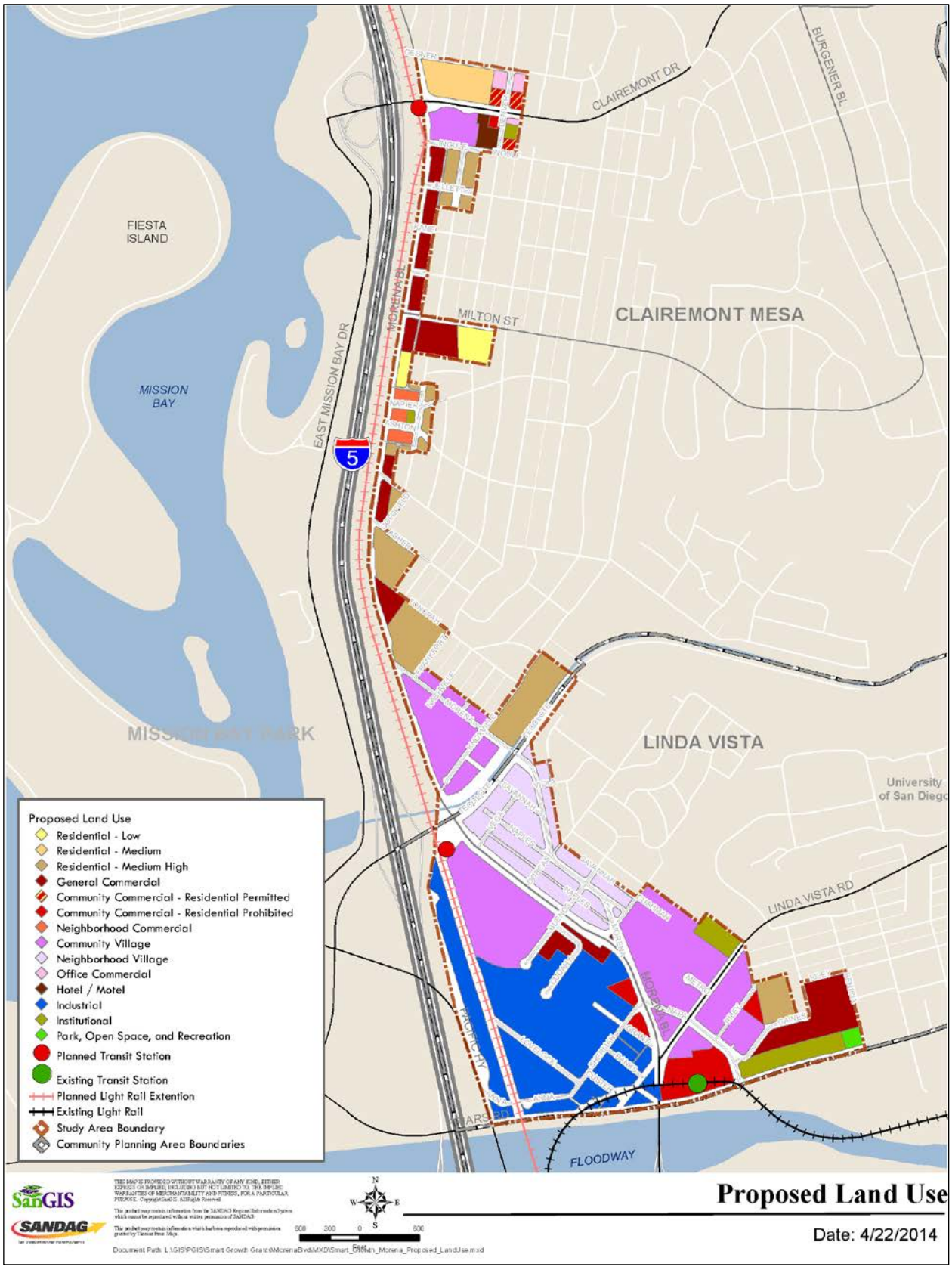


Figure 2-14: Proposed Land Use

2.3.1 Considerations

In all the land use alternatives generated as a part of the visioning process, certain sites surfaced as recurring topics of concern for the community. One such site was the RV park along Tecolote Road, just north of Morena Boulevard. The planning team conducted additional analysis to determine the best way to address the community's concerns while also maintaining the study goal of encouraging transit-supportive development patterns.

Tecolote Road RV Park

Similar to the Bayview Plaza site, the RV park on Tecolote Road represents a site where mixed use development could be strategically introduced, this time near the proposed Tecolote Trolley station. The community concerns with this site again center around the visual impact to the surrounding neighborhood.

The image below highlights visual and physical aspects of the interaction between the RV park and the surrounding community. An adherence to the existing 30' Clairemont height limit and step backs could be used to lessen visual prominence as viewed from surrounding properties. In addition, the RV park site affords the opportunity to create visual corridors through the site towards Tecolote Creek along the Tonopah and Nashville Street alignments (see below). These corridors could help visually open the site even with increased density.

Physical and Visual Corridors near the Tecolote RV Park Site

2.3.2 Market Assessment

The development program for the Project (parcels changed by the MBAP only – does not include Community Plan parcel loading) would result in an increase of 4,718 dwelling units of various types of residential, and a *decrease* of approximately 164,000 square feet of retail and 492,000 square feet of office space (See Table 2-1). The decrease in existing commercial space is necessary in order to create the development sites for new residential, commercial, and mixed-use development. Most of the commercial space that would be demolished is economically obsolescent, and therefore is not generating the level of fiscal revenues, employment, and other economic benefits possible based on current market trends. It is worth noting that while the study area would experience a

decrease in commercial square footage, this does not impact the ability of the City to retain and increase its office-based employment and taxable retail sales; this activity would be expected to shift to other parts of the City, based on the availability of sites elsewhere to accommodate these uses.

Table 2-2 below, summarizes the net annual fiscal impact to the City's General Fund at full build-out for the program in Table 2-1. There would be a minor net negative fiscal impact (deficit) of approximately $229,000 per year at build out. While this may seem more than a minor amount, in terms of the City's $1.2 billion annual General Fund, it represents a deficit of 0.02 percent (two one-hundreds of one percent). This amount is well within the normal budgetary variation that can occur from year to year in either revenues or expenses. It is reasonable to expect that net revenues from other more intensive commercial areas of the City, such as Mission Valley and Downtown, could more than offset the negative fiscal impact that could occur in the Study area at build out. The Study area could be complementary to these areas by offering more housing choices to employees who work in these areas.

It should be noted that an average cost approach was used to project new fiscal costs for police and fire services, due to a lack of more detailed information that could be provided by those departments. Average cost methods can overestimate the new fiscal costs for police and fire services that result from new development. This means that a more detailed study based on further assessment of the exact timing and need for new facilities, personnel, and other costs might reduce the projected net fiscal impact to a lower figure.

The above projected fiscal impact would only occur at full build-out, which could be 15 to 20 years or more in the future. Development proceeds in tandem with general economic growth and market cycles, and periods of active development are followed by periods with minimal new development. Future market shifts may also change the findings in this report.

This fiscal impact analysis is limited to annual General Fund operating revenues and costs, and does not evaluate capital improvement costs associated with Study improvements, project mitigations, or new municipal facilities. It is assumed that these capital costs would be covered by a combination of developer mitigations, development impact fees, grant funds, and other capital funds typically used by the City.

For full fiscal impact analysis, please refer to Appendix G.

Table 2-1: Project Development Program

(figures in parentheses indicate a decrease)

Land Use/Product Type	Project
Residential Dwelling Units	
Community Village	1,610
Residential - High	2,076
Residential - Medium High	966
Residential - Medium	66
TOTAL: Residential Dwelling Units	**4,718**
Commercial Square Feet	
Community Village - Retail	(164,016)
Community Village - Office	(492,049)
TOTAL: Commercial Square Feet	**(656,065)**

Sources: KTU+A; BAE, 2013.

Table 2-2: Summary of Project Net Fiscal Impact

City of San Diego General Fund Fiscal Impacts	Project
Net New Revenues	$3,808,462
Less Net New Service Costs	($4,037,647)
Net Fiscal Impact: Surplus / (Deficit)	**($229,185)**
City of San Diego FY2014 General Fund Budget (a)	$1,200,367,373
Net Fiscal Impact as % of General Fund	**-0.02%**

Notes:
Excludes capital costs, or mitigation payments, impact fees, etc. to fund new capital costs.
(a) FY2014 General Fund expenditure amount. This is slightly higher than revenues due to fund balances, as noted in the budget report.

Sources: City of San Diego; BAE, 2013.

3.0 Urban Design Vision & Framework

The urban design vision was set by the community in the Existing Conditions Workshop. The community worked together to identify key opportunities in the study area to enhance how future growth occurs. The vision statement below is from the workshop and guided creation of the urban design guidelines:

Create an attractive and inviting mixed-use center that builds upon the current feeling of the corridor while creating a defined community identity that includes unique signage, gateways, public gathering spaces, street trees, and landscaping.

Urban design addresses how neighborhoods and the built environment are formed. Urban design is about making connections between people, places, urban form, nature, and the built environment. Urban design creates a character for a district or area.

3.1 Public Realm

These urban design guidelines are intended to respect and reconnect to the historic development patterns of the Morena Boulevard study area while allowing for new growth and development to occur.

The public realm represents the largest urban open space resource in the study area. It represents more space than parks, trails, and recreational fields combined. The public realm, commonly referred to as a street or streetscape, refers to the space from property line to property line. Sidewalks, planting areas, crosswalks, bicycle lanes, vehicles lanes, on-street parking, and many other features contribute to the attractiveness of the public realm or street. Figure 3-1 highlights the elements typical within the public realm in the study area.

Streets are the connections to neighborhoods, as well as paths to work, school, and play. They are used by drivers, pedestrians, bicyclists, and transit riders. These guidelines recognize the importance of street design to facilitate movement as well as encourage healthy physical and social interactions.

The Public Realm interfaces with the Private Realm at the street, ground floor use, alley, parking, and curb conditions.

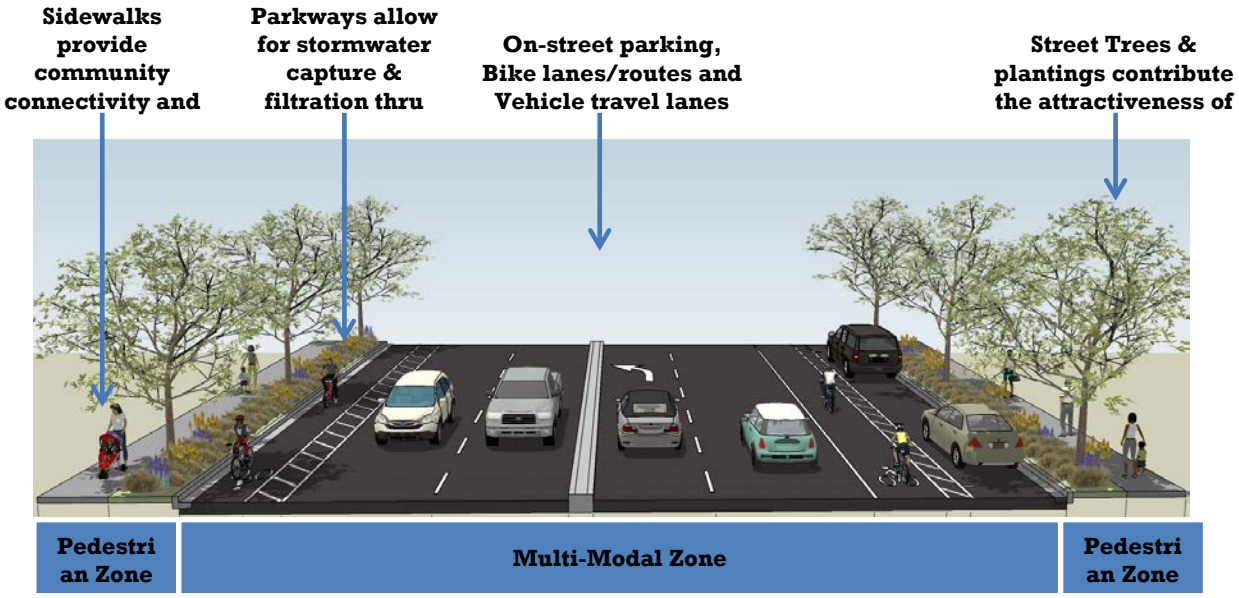


Figure 3-1: Public Realm Elements

3.2 Districts

There are four districts in the MBAP study area. Within a district, public realm criteria are held consistent to preserve/create a specific character. The text below explains the key characteristics of each district and Figure 3-2: District Types identifies where these districts occur in the study area.

Design District

- Land uses: Light Industrial, Retail
- Primarily located in the southern end of Morena Boulevard

Neighborhood Retail District

- Land uses: Light Industrial, Retail
  Clustered around key neighborhood destinations

Restaurant District

- Land uses: Light Industrial, Retail
  Two key areas in the southern end of Morena Boulevard

Residential Mixed Use District

- Land uses: Light Industrial, Retail
- Primarily located in the southern end of Morena Boulevard

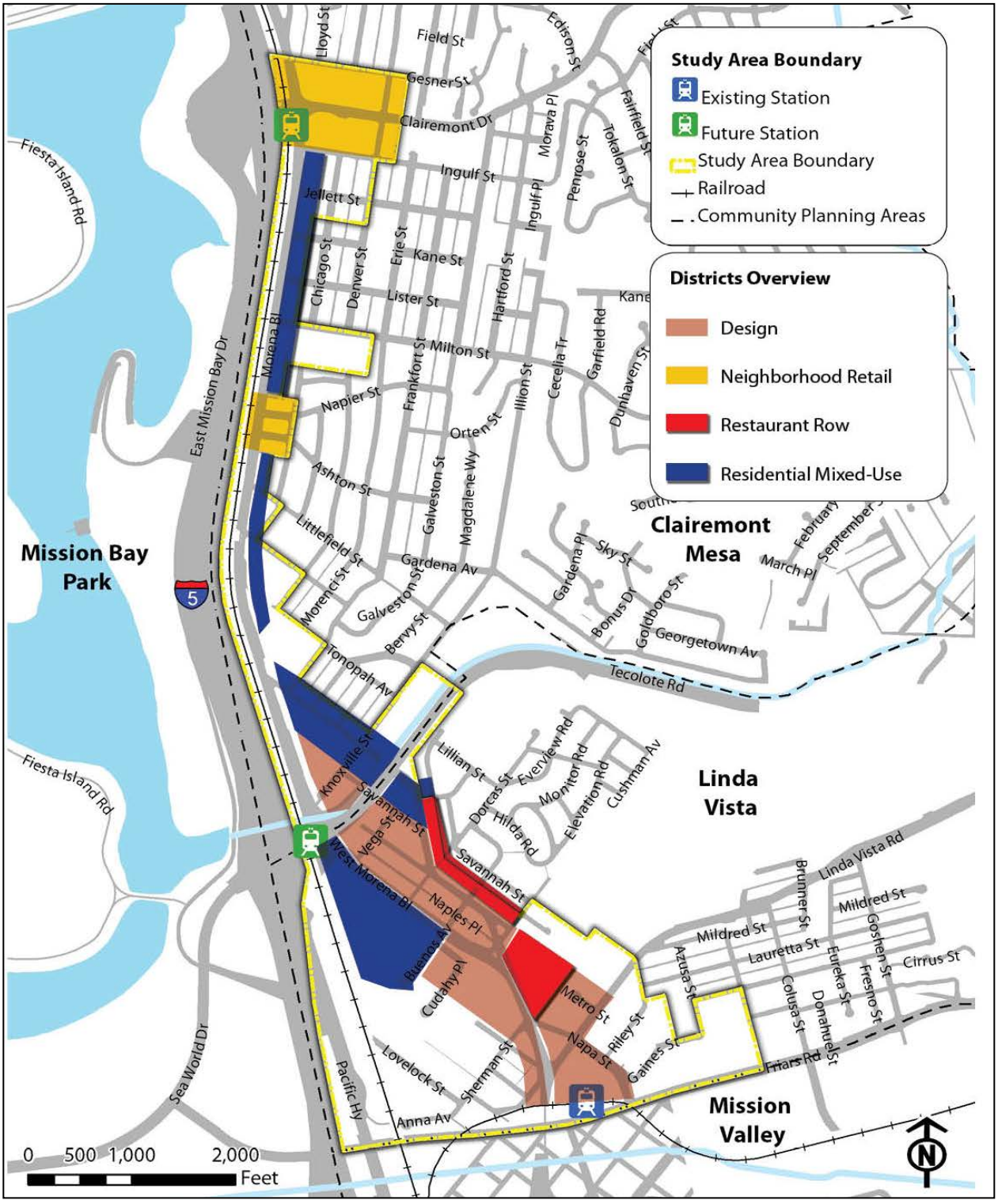


Figure 3-2: District Types

3.2.1 Recommendation Topic Areas

Successful streets are created by carefully crafting the interface between buildings and streets. This interface is also sometimes referred to as the "pedestrian zone." Figure 3-3 explains how the building's interface with the sidewalk, parkway, and street can relate to each other. The district discussion below includes recommendations for each of these pedestrian zone elements. In addition, there is guidance for the study area as a whole at the end of this chapter.

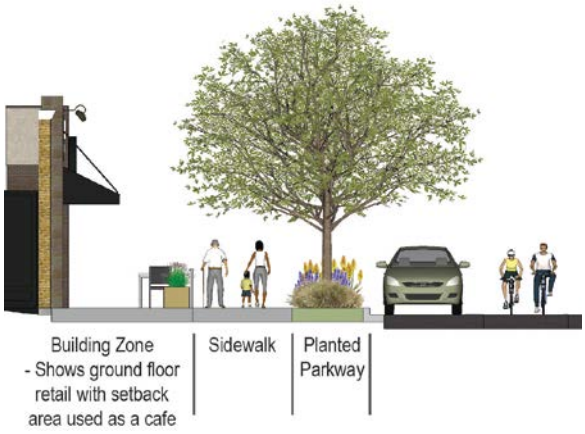


Figure 3-3: Pedestrian Zone

Building Context

District Building Context: Highlights the typical building heights, land uses, and any other focus of the area.

Building Guidelines

Ground Floor Use: Coordinates how the ground floor use activates the sidewalk.
Entries & Parking: Establishes standards for how entrances and parking should be addressed for a district.
Windows & Visibility: Makes recommendations for windows for building types identified in District Building Context.
Building Articulation: Identifies recommendations for how two adjacent buildings relate.

Street Guidelines

Pedestrian Zone: Consists of the sidewalk and planting area. Providing an attractive walking environment is an important catalyst to improving both the mobility and land use environments within the study area.
Bike Routes: Integrates bicycle design with the street design of each district. Bike access has health benefits and is an alternate mode of transportation that does not create pollution. Morena Boulevard is also important regionally as a north/south bicycle facility connector.
Landscape: Discusses street trees and shrubs appropriate for each district setting. Street trees improve the comfort of the street to pedestrians and also help improve air quality through absorption of pollution and carbon dioxide.
Hardscape: Identifies preferred hardscape treatments. These physical features positively impact the walking experience.
Public Space: Identifies open space/public gathering space opportunities.

3.2.2 Design District Overview

The Design District focuses on creating an attractive street environment for the numerous interior design and finish companies that are located in the southern end of Morena Boulevard. In general, they require showrooms, warehouse, and loading areas. This artistic industry has a long history in the study area and has been identified for retention/expansion by the community.

Above highlights a setback, articulated building that uses the setback space as plaza

District Building Context

Typical Height: One to two story buildings - Due to the minimal height and need for maximized interior floor space, these uses face a number of design challenges. For future development that is taller than the typical height identified, projects shall adhere to these guidelines and the Overarching Study Area Guidance.

Focus: Operationally, businesses' key concern is getting inventory on and off vehicles. It is critical to the on-going success of this district to increase visibility from the street and allow easy vehicle access, while minimizing impacts to the street especially as it relates to the pedestrian and bike environments.

Example of light industrial company

Building Guidelines

Ground Floor Use: The exteriors of the buildings in this district must be designed to activate the sidewalk and create visual interest.

- The ground floor shall be a minimum of 15 feet in height. The preferred design is 20 feet with clerestory windows.
- Building facades over 20 feet in length should include a repeating pattern of at least three of the following: color change, texture change, material change and expression of a structural bay.

Entries & Parking: The businesses in this district require a large parking lot and loading area; however, these areas cannot be located adjacent to the street. This condition potentially creates a two sided building – entrance on the parking lot side and parking on the street side.

- Parking lots shall be located to the rear of the site but the entrance to the business must be located on the side or corner of the building and the entrance must be clearly visible from the street through building design, not through signage.
- Two entrances may be provided – one entrance from the parking lot and one from the street - but the street entrance may not be closed to pedestrian access.

Windows & Visibility: Windows encourage pedestrian activity and create interest for a building. This is especially important in this district. Windows allow "eyes on the street" and help improve the perception of safety.

- Windows must be provided adjacent to the entrances. They shall be large commercial windows that are a minimum of 12 feet tall.
- It is highly preferred to locate windows along the street façade.

Building Articulation: The use of color, texture, materials, and horizontal plane change greatly enhances a blank façade. This district must incorporate a minimum of three building articulation strategies. Blank walls or facades are not acceptable.

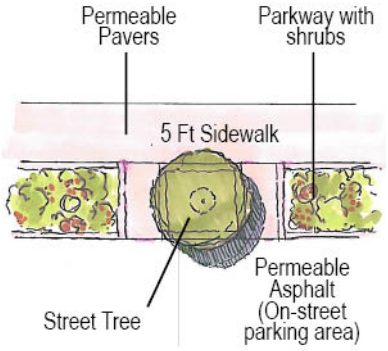
- A mural can be used as a façade treatment if it is commissioned by a artist.
- Living green walls can be used as a façade treatment if water is delivered from a non-potable source and does not contribute to runoff (i.e. all water must be captured on site).

Example of interior design business

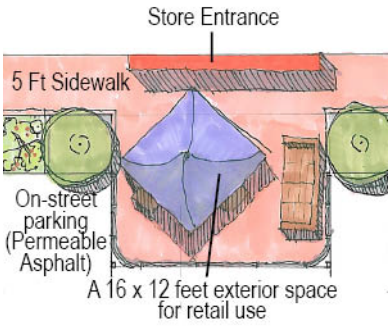
Typical "blank wall" design

Typical loading area

Above highlights a bulbout transit plaza



Above shows a tree in a tree grate, crossing from the on-street parking, and how permeable surfaces can be used in the pedestrian zone



Above shows an exterior urban space that could be used for retail display

Street Guidelines

Pedestrian Zone: Sidewalks are the primary facilities for pedestrian access and a planted parkway is an attractive, environmentally beneficial, physical buffer between vehicles and pedestrians.

- A minimum clear unobstructed path of travel of 5 feet shall be maintained throughout the district. The path of travel must be free of utilities, street furnishings, or any other physical impediments. Where possible, a width of 10 feet should be provided.
- If an expanded walking environment is desired, tree grates may be used in the planting area or parkway. See the landscape section for planting information.

Landscape: Landscape opportunities include the parkway and bulbouts (curb extensions). In addition to criteria listed in Overarching Study Area Guidance, the street trees in this district shall allow visibility through the tree canopy and provide an accent color to the public realm.

- Two theme trees shall be selected and established as a palette to create a consistent character for the district. The theme trees shall be used in the parkway
- Two accent trees shall be selected. One accent tree must have characteristics amenable to a self-treating Low Impact Development (LID) condition without a sub-drain and one tree without LID treatments.

Hardscape: Grey concrete is a very plain surface for sidewalks. Color should be introduced to the hardscape that coordinates with branding of the Design District. Also, permeability in the sidewalk can decrease flooding in the southern end of Morena Boulevard, particularly at intersections.

- Preferred hardscapes: Permeable pavers shall be used in the sidewalk; Permeable asphalt or concrete shall be used in on-street parking areas and multi-use paths (see images at right).
- Standard concrete finishes: Acid wash with exposed aggregate and pattern through scoring.

Bicycle Routes: West Morena Boulevard has a Class 2 bike lane.

- A minimum of two bike racks shall be provided per block. The recommended goal is to achieve a ratio of one bike rack per storefront.

Public Space: One recommendation for public space in the Design District is to activate the street through midblock bulbouts that absorb a parking space. Image at right shows one possible urban plaza. If a permanent extension of the curb is not possible, consider a removable "parklet," as has been installed in North Park and is planned in other locations in the City.

- When a large outdoor display area is needed or a transit plaza is needed, a midblock plaza bulbout shall be designed into the street environment
- For furniture businesses, parklets maybe used a urban space option and exterior display area

3.2.3 Neighborhood Mixed-use District Overview

The Neighborhood Retail Districts are areas of the study area that focus on day–to-day needs of the surrounding neighborhood. It is important that these businesses remain as the neighborhood and community grow.

Image above shows a corner entrance to a major grocery store

District Building Context

Typical Height: Two to six stories – There are few sites available for development and growth is anticipated for San Diego. Conventional strip retail development is strongly discouraged. These guidelines must be used in conjunction with the Overarching Study Area Guidance.

Focus: This district focuses on a blend of retail, office, and residential. The mix of uses gives residents a greater range of neighborhood services while providing day-to-day amenities. For retailers, providing fast, easy in and out parking is important as well as high visibility and pedestrian and bike-friendly access. For residents, an important consideration is maintaining existing views out to Mission Bay – particularly along Clairemont Drive. Offices can be located on the first and second stories. One to three bedroom condo-style residential units are also encouraged, particularly at the Clairemont Drive node due to its adjacency to the trolley station.

Building Guidelines

Ground Floor Use: The ground floor use should activate pedestrian zone with cafes and sidewalk displays.

- If the ground floor use includes a large retailer, the design is encouraged to incorporate “liner retail.” These smaller “liner” businesses can activate the sidewalk in this district. If the major retailer elects to not have liner retail, any building facades facing a street must have storefront entry windows throughout the entire façade.
- The ground floor shall be a minimum of 15 feet in interior height. The preferred design is 20-25 feet with clerestory windows.

Entries & Parking: The businesses in this district require a moderate amount of parking. However, the focus is on a significant number of on-street parking spaces to allow quick in and out for neighborhood conveniences.

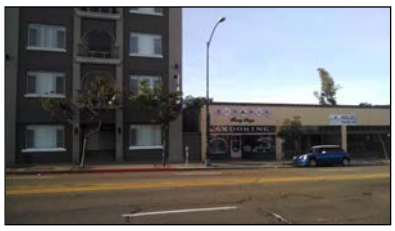
- Parking lots shall be located to the rear of the site but the primary entrance to the business must be located on the street. The entrance must be clearly visible and defined by the building design, not through signage.
- Loading may occur from the street.
- Private surface parking lots are not permitted between building entrances and the nearest sidewalk/pedestrian. Structured parking is encouraged.

Windows & Visibility: Windows encourage retail activity and create interest for pedestrians. Windows also enhance safety by allowing “eyes on the street.”

- Windows must be provided adjacent to all entrances. They shall be large commercial windows that are a minimum of 13 feet tall and extend to a minimum of 15” above the top of sidewalk.
- Windows can only be tinted to help shield sunlight. Screens and reflective glass are not acceptable finishes.
- Clerestory windows are highly desirable.

Image above shows office use on the ground floor with residential above

Unacceptable storefront entry



Unacceptable height difference between adjacent buildings

Building Articulation: Blank walls or facades are not acceptable. Building facades must include horizontal and vertical articulation.

- If the difference between the new development and existing building is more than 3 stories, the building must step back from the existing building through the use of balconies and designed step backs.
- Floors above the first story shall step back between 10 to 15 feet.
- Any new building shall include horizontal and vertical changes in color and material to break up the massing of the building.

Street Guidelines

Pedestrian Zone: Sidewalks in this district serve a dual purpose of allowing outdoor retail activities and providing pedestrian access.

- A minimum 5 foot clear unobstructed path of travel shall be maintained throughout the district, but the sidewalk shall be extended to the edge of curb. The path of travel must be free of utilities, street furnishings, or any other physical impediments.
- Tree grates shall be used in the parkway to increase the sidewalk. See the landscape section for planting information.

Above shows how a sidewalk can be expanded into the parkway

Landscape: Landscape opportunities include trees in tree grates and bulbouts (curb extensions). In addition to criteria listed in Overarching Study Area Guidance, the street trees in this district shall allow visibility through the tree canopy and provide an accent color to the public realm.

- Two theme trees shall be selected and established as a palette to create a consistent character for the district. The theme trees shall be used in tree grates and be amenable to bioretention soil condition with sub-drain.
- One accent trees shall be selected. The accent tree must have characteristics amenable to a self-treating LID condition without a sub-drain.

Hardscape: The amount of hardscape in this district is higher than other districts due to the expanded sidewalk. In this district, the total sidewalk width would ideally be a minimum of 15 feet from property line to curb edge.

Above shows an exterior urban space that could be used for retail display

- Colors for pavers and accents on the sidewalk should be consistent with branding of the Design District.
- Runoff is not acceptable and self-treating or bioretention areas must capture and slow all runoff and water that hits the district.
- Preferred hardscapes: Permeable pavers shall be used in the sidewalk; Permeable asphalt or concrete shall be used in on-street parking areas and multi-use paths (See images at right)
- Standard concrete finishes: Acid wash with exposed aggregate and pattern through scoring

Bicycle Routes: Morena Boulevard has a Class 2 buffered bike lake.

- A minimum of two bike racks shall be provided per block. The recommended goal is to achieve a ratio of one bike rack per storefront.

Public Space: There are no recommendations for permanent public space.

- One recommended temporary public space is to incorporate parklets. Parklets are temporary urban spaces that can be used as plazas, café seating, or green space.

3.2.4 Restaurant Row District Overview

Restaurant Row District is an area of Morena Boulevard supportive of restaurant uses. The exterior space is especially important in this district because it needs to support outdoor cafes and a farmer's market type environment.

Images above show ground floor retail uses through cafes and public plaza areas

Building Context

Typical Height: One to two stories. Despite the limited number of stories, conventional strip retail development is strongly discouraged. For future development that is taller than the typical height identified, projects shall adhere to these guidelines and the Overarching Study Area Guidance.

Focus: The Restaurant Row District focuses on creating a hub of restaurants to draw residents and the general public to the Morena Boulevard area.

Building Guidelines

Ground Floor Use: The ground floor use is restaurants and shops that are related to food sales/service.

- Proposed projects shall include shade devices such as umbrellas or awnings. Businesses must be able to store them inside when the restaurant or storefront is closed.
- The ground floor shall be a minimum of 15 feet in height.
- Business shall only occupy the sidewalk temporarily and must be able to remove café furniture at closing.
- The building edge should be located on the property line or within a 5 foot setback from the property line. If a setback is taken, the business must use the setback as a part of an outdoor activity.
- The restaurants and businesses should form a continuous edge along the property line. Buildings shall be designed with a shared wall condition for lots that are narrower than 50 feet.

Entries & Parking: The businesses in this district require a moderate amount of parking. Appropriately timed on-street parking is critical to the turnaround of restaurant patrons.

- Parking lots shall be located to the rear of the site and all primary entrances must be located on the sidewalk adjacent to the street.
- Loading may occur from the street.
- Food trucks are encouraged to park along the street or in parking lots within the Restaurant Row District.

Outdoor Cafe

Windows & Visibility: Windows for restaurants and food related businesses allow residents and potential patrons to "check out" a restaurant before entering. Windows in this district are a thin screen between the inside and outside of a building.

- Windows must be provided adjacent to all entrances. They shall be large commercial windows that are a minimum of 12 feet tall and extend to a minimum of 15" above the top of sidewalk.
- Windows can be lightly tinted to protect the interior from sunlight, but cannot use reflective glass or shading. Sun should be screened by exterior building treatments.

Building Articulation: When a continuous building edge is desired, there are two strategies. One is to create one project or development that is a series of retail storefronts. A second is to build each building individually with shared walls as is common

Example of a continuous edge

in a "main street" environment. The MBAP study area has a number of small parcels that would currently be more conducive to individual parcel development.

- The small parcels do not require significant building articulation to break down mass. However, care should still be taken to design the building at the pedestrian scale.
- Buildings should also highlight a vertical hierarchy with the ground floor being the primary and the next story being secondary in hierarchy. This can be visually achieved through window size and vertical elements such as columns.

Above shows how the ground floor is the primary floor with second and subsequent floors being secondary

Street Guidelines

Pedestrian Zone: Expanded sidewalks are critical in this district for continued success of the retail businesses and restaurants. Incorporating outdoor cafes, public seating, and a regular farmer's market are key to the success of the Restaurant Row District.

- The expanded sidewalk is necessary but an unobstructed clear pedestrian path is important as well. A 5 foot clear unobstructed path shall be maintained even with any additional sidewalk activity in place.

Landscape: The landscape opportunities include trees in tree grates and bulbouts (curb extensions). In addition to criteria listed in Overarching Study Area Guidance, the street trees in this district shall allow visibility through the tree canopy and provide an accent color to the public realm.

- Two theme trees shall be selected and established as a palette to create a consistent character for the district. The theme trees shall be used in tree grates
- One accent trees shall be selected and can be used in a tree grate or in bulbouts. The accent tree must have characteristics amenable to a self-treating LID condition without a sub-drain.

Above shows an expanded sidewalk with outdoor café and bike racks

Hardscape: Branding should be an integral part of building design and sidewalk design. The colors should be directly related the businesses' selection of the branding. Branding symbol or logo should be incorporated into the sidewalk.

- Preferred hardscapes: Permeable pavers shall be used in the sidewalk as edge treatment around concrete sections.
- Permeable asphalt or concrete shall be used in on-street parking areas.
- Standard concrete finishes: Acid wash with exposed aggregate and Pattern through scoring

Bicycle Routes: West Morena Boulevard has a Class 2 bike lake.

- A bike rack shall be installed to every other parking meter. If parking meters are not introduced then a back rack servicing a minimum of two bikes shall be provided on each of end of each side of a block.

Public Space: There are no public space recommendations for this district.

3.2.5 Overarching Study Area Guidance

Images above highlight ground floor retail uses and the adjacent pedestrian zone

Building Guidelines

Ground Floor Use:

Commercial/Retail Ground Floor

- A portion of the front setback may be increased by as much as 15 feet if that setback is used as public space (i.e. outdoor restaurant seating or a courtyard with public access). A minimum of 60% of the front facade should be constructed up to the front setback. Utilize building setbacks for ground-floor retail uses for spillover activity such as outdoor café seating and adequate space for pedestrian movement.
- All commercial uses located at the street level should provide a direct at-grade access from the sidewalk. An entrance should be provided for each tenant street frontage exceeding 50 feet. Where such frontages exceed 100 feet, one entrance should be provided for each 100 feet of frontage or portion thereof. Separate pedestrian entrances for individual tenants should be at least 25 feet apart.
- The building lobby for office, hotel or other commercial buildings should be expressed on the exterior ground floor of the building, as well as designed as a clearly defined architectural feature of the building.
- Entries to stores and ground-floor commercial uses should be visually distinct from the rest of the building façade. The use of scale, material selection, glazing, projecting/recessed forms, architectural details, color, and shade devices can all contribute to the visual interest of the ground floor uses and street environment.
- For ground floor uses between 3 and 12 feet above the sidewalk, a minimum of 50 percent of storefront façades should contain windows of clear or lightly tinted vision glass that allow views of the interior space.
- Commercial buildings should build to the sidewalk edge, or minimum setback requirement, to bring buildings close to the street and pedestrians.

Residential Ground Floor

- The ground floor of residential building facades should be articulated at regular increments to differentiate individual residential units from each other and from the overall massing of the building, and to express a rhythm of individual units along the street.
- Residential buildings are encouraged to build to the minimum setback requirements.
- Stoops and landscaping should be provided in front setbacks to provide a buffer between the sidewalk the unit's living areas.
- Ground-floor residential units should be raised between 18-42 inches above the adjacent sidewalk grade to provide an additional buffer.
- A minimum of 25 percent of each street-facing ground-level residential unit between 3 and 12 feet above the sidewalk should possess clear, non-reflective windows.
- Fences and gates should be utilized within the setback area only if they demarcate private open space attached to a residential unit. Solid walls or fences should not exceed a height of 42 inches above grade. At-grade railings (at least 50 percent open) may reach a height of 60 inches. Gates and railings located on stoops or raised patios should not exceed 48 inches in height.

Entrances should encourage pedestrian activity

Entries & Parking:

Entries:

- Primary building entrances on all buildings should face the primary public street. Additional secondary entrances should be oriented to a secondary street or parking area.
- Accentuate building entrances with architectural elements, lighting, and/or landscaping.
- Provide clear and continuous paths from every primary building entrance to all sidewalks, crosswalks, transit stops, and parking lots directly adjoining the site.
- Encourage awnings, overhangs, and arcades along commercial facades to provide overhead protection for pedestrians and to create significant entrances. Awnings, decorative roofs, and miscellaneous entry features may encroach up to eight feet into the front public right-of-way, provided that they are not less than eight feet above the sidewalk. These elements should not extend beyond the curb face.
- Recesses or projections in the building façade surrounding the entrance are encouraged to enhance visibility and prominence. Recessed entrances should not exceed 25 feet in width and the face of the door or gates should be within 15 feet of the property line.
- Residential entries in mixed-use buildings should be separate and distinct from commercial entrances.
- If customers, visitors and/or tenants park to the rear of the building, a well-defined and lighted rear entrance is strongly encouraged. If no rear building entrance is provided, a signed and lighted walkway to the front or side building entrance should be provided.

Parking: Parking should also be discreet, utilize on-street parking whenever possible, and should be reserved for use in the rear or side of sites. Parking lots, spaces, and head-in parking should not dominate the frontage of pedestrian-oriented streets, interrupt pedestrian routes, or negatively impact surrounding neighborhoods.

- Joint parking allowances are recommended for nearby uses with staggered peak periods of demand. Encourage the use of shared parking lots and shared driveways, especially for the properties within the Restaurant Row District.
- Connect adjacent parking areas through the use of reciprocal access agreements. Retail, office and entertainment uses should share parking areas and quantities.
- Encourage the use of parking lots in off-peak hours for sporting activities or farmers markets.

Integrating the ground floor use and design the building greatly impacts the street environment. Being a good neighbor includes encouraging pedestrian and bicycle activity on the street.

- All commercial parking lots adjoining a residential use should be screened by perimeter landscape treatments.
- Restrict the number of new curb cuts along Morena Boulevard. New curb cuts must be a minimum of 75 feet away from any intersections and a minimum of 40 feet from any existing curb cut. If these conditions cannot be met, a shared access agreement must be established.
- Parking lots should be located to the rear or side of the property or internal to the block. Provide access to parking through alleys and driveways, as possible.
- A minimum of two bike racks shall be provided per block. The recommended goal is to achieve a ratio of one bike rack per storefront.
- All parking lots must have sufficient trees so that within 10 years, 70 percent of the surface area of the lot is shaded.

Being a good neighbor includes providing screening to parking areas. Parking is not attractive and should be shielded visually.

Windows & Visibility

- Orient active portions of buildings and facades with windows to allow for surveillance of exterior areas, particularly plazas and other public spaces where people may gather.
- Maximize windows to provide visibility of adjacent public spaces. Building facades that face public areas should have a minimum of 50 percent transparency. The view out of windows should not be blocked by shelving and displays.

Visibility at the ground floor is an important part of the street experience

Building Articulation: All buildings can impact the character of a street and neighborhood through its articulation. It is important that new projects/developments act as good neighbors and ensure that they do not negatively impact the character of a neighborhood. Building articulation discusses the parts of a building and how it forms the whole. Articulation breaks up the volume and shape of a building.

- Blank building walls are not acceptable. No greater than a ten foot horizontal space shall be allowed with some change in building articulation through color, attachment, vertical piece, or the use of perimeter landscaping (e.g., foundation plantings or wall vines). Unavoidable blank walls along public streets or those viewed from public streets, open spaces and thoroughfares should use graffiti-resistant surface materials and enhanced with architectural detail in material texture, ornamentation, landscape treatment and/or artwork.
- Encourage positive transitions in scale and character. Upper stories should be stepped back along the following key corridors: Linda Vista Road, Clairemont Drive, Milton Street, and Tecolote Road. Stepping back these buildings along these corridors will reduce massing and preserve important views to USD and Mission Bay.
- Buildings should incorporate a variety of vertical and horizontal step backs to break up continuous horizontal or vertical volumes.
- Encourage upper-story step backs to introduce an increased number of floors. Provide a vertical transition between high-density development and any adjacent lower density development. This can be accomplished by varying the massing within a project, stepping back upper stories, using balconies, and varying sizes of elements to transition to smaller-scale buildings. Buildings should have variations in rooflines to diminish building massing.

Image above shows how a large building can stand out when building massing and articulation are not considered

Being a good neighbor includes providing upper story step backs at the street, alley, and parking. Step backs should be used any time there is a two story change or more.

- Step down building heights along the secondary frontage and rear of buildings to reduce the impact on adjacent properties. Stepping back upper stories will also minimize shadows cast on public amenities and lessen privacy concerns with adjoining lots/neighbors.
- Utilize step back areas to encourage active uses such as balconies or roof gardens. These areas provide additional open spaces for residents and add more "eyes on the street." Courtyards and balconies break up massing and enliven streetscapes.
- Development on either side of streets (facing each other) should be designed at a compatible scale and massing to encourage a comfortable pedestrian environment and maintain a sense of visual cohesion along the street.

Screening:

- Fences and walls should be used to prevent or discourage the public access to dark and unmonitored areas and/or dead-end areas.
- All utilities should be located outside the public right-of-way within a building alcove, utility room, or landscaped area and be fully screened from view of the public right-of-way.
- All mechanical equipment, appurtenances, and access areas should be intentionally grouped and screened architecturally within fully covered enclosures consistent with the overall composition of the building.
- All parking lots should be screened from streets by non-bermed perimeter landscape treatments.

Image above highlights how landscape and fences can be used to screen parking areas

Planted parkway with shade trees & ground floor retail uses

Street Guidelines

Pedestrian Zone

Sidewalks: The sidewalk is the primary means of pedestrian access.

- A minimum 5 foot clear unobstructed path of travel should be clearly identified and kept clear of any obstructions, especially utilities.

Parkways: Planted parkways positively impact the street. The parkway acts as a physical buffer between the sidewalk and the edge of the multi-modal zone. It has vertical elements such as urban forestry, lighting, and furnishings that can provide visual cues that drivers need to slow down.

- Parkways should not be filled in with concrete.
- Parkways should include street trees, shrubs, and ground cover.
- Parkway shall be a minimum of 5 feet. It does not require any fencing or built up curb.

Bike Routes: Although identified in this section, refer to Chapter 4: Mobility for details.

Transit Facilities: Transit facilities shall integrate Morena Boulevard branding for bus stops and light rail transit stops or stations.

- Each bus stop shall include a shade shelter, bench, and trash and recycling receptacles.
- For transit stops with more than three bus routes, a mid-block bulbout plaza shall be provided.

Image shows a transit shelter that incorporates wayfinding, signage, and public seating with a shade structure

Landscape:
Planted areas have many benefits. The presence of trees, plants, and nature can create an attractive street while providing shade, more oxygen, and reducing air pollutants.

- For areas with existing landscaping, care should be taken to create views through existing landscaping. Removal is not a preferred solution.
- Select landscaping for durability and easy maintenance.
- Regional native and drought-resistant plant species are encouraged as plant materials.
- Careful plant selection can provide visual cues and physical deterrents to areas where pedestrian access is not desired. Use thorny or thick plant materials in perimeter landscape areas to discourage pedestrians from cutting through parking areas, trampling vegetation, approaching ground-floor windows, or climbing fences and walls.
- Landscaping and hedges should be used to minimize adverse impacts such as litter, noise, odor, glare or lighting impacts between adjoining residential and non-residential land uses.

Street Trees
Consistent tree planting creates an urban forest and also results in a canopy that can provide shade to residents and visitors. A well landscaped and designed street can increase retail revenues and property values.

- See the City of San Diego Street Tree Selection Guide for recommended species.
- The size of the tree shall be a minimum of two inches in caliper with a clear zone between the top of pavement and bottom of limb of eight feet.
- Street trees shall be planted at a rate of one 24" box for every 35 feet of property line that abuts the public right-of-way.
- 40 square feet of water and air permeable landscape area shall be provided at the base of each street tree. This area must not have an impervious surface. The area shall be protected with either a tree grate or shrubs and mulch.
- Tree grates shall have a minimum 12 inch diameter opening for the tree and shall not have any other openings greater than ¼".
- The space between the tree grate and the finish grade of a tree shall be filled with gravel larger than ¼" to limit the accumulation of debris.
- Root barrier will be used to direct tree roots away from hardscape surfaces.

Groundcover and Shrubs: Planted areas should incorporate groundcover and shrubs into planted areas. Stone and cobble can also be used in planting areas.

- Groundcover and shrubs should be carefully selected for drought tolerance and native conditions. Refer to the San Diego County invasive ornamental plant guide for recommendations.
- A maximum height of 30 inches should be maintained from the bottom of the plant to the top of the plant for visibility by cyclists.
- If the street is within 250 feet of a drainage inlet or environmentally sensitive area, the plant palette must be approved by City's Community Forest Advisory Board.

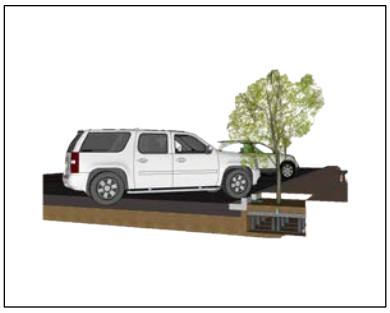


Image above highlights the use of Silva cells with tree grates and expanded sidewalk

Hardscape: Proper control of urban runoff is an important part of street and hardscape design. It is not a visible enhancement, but its benefits can be far reaching. Urban runoff strategies shall be incorporated into any planted area, as well as adjacent areas where there is an opportunity to capture and treat stormwater and dry weather runoff. These areas include the sidewalks, parkways, medians, bulbouts, and on-street parking areas.

- Projects should incorporate porous materials on walkways, driveways and parking areas to minimize stormwater runoff from paved surfaces whenever possible.
- Sidewalks shall incorporate permeable surfaces through the use of ungrouted pavers. This surface shall be in used in conjunction with structural soil, Silva cells, filterra treatments, or other runoff capture devices.
- All planted areas shall incorporate urban runoff strategies. The strategy can range from filtering soils to a structural soil with sub surface drain. Parkways, bulbouts, and planting areas can be used to capture runoff. Strategies include curb inlets, bio-retention soils, and plants that can capture and treat contaminants before being released to the storm drain system.

Above shows a branding of street lighting and seating

Street Furniture: The verticality of street furniture provides visual friction to a driver and cues the driver to slow down. In addition, street furnishings can provide some amount of physical barrier between the pedestrian path of travel and the vehicle path of travel.

Benches: Benches can take many forms and be designed to suit almost any environment.

- Street benches shall be provided at regular intervals and shall be consistent with district theming (even at MTS transit stops). Benches should match the branding of the street in color and style.
- Wall seating can be incorporated to building designs, or low walls can be placed to provide public seating. Seating should be incorporated into the design by the building owner.
- Public seating can be community art opportunities.

Trash/Recycle Receptacles

Waste receptacles with separate recycling receptacles are preferred. Both waste and recycling receptacles are an excellent opportunity for a community art project.

- Blocks with more than 50% retail frontage shall provide separate trash and recycling receptacles (four per block, one at each end of the block on each side of the street).

Lighting: Lighting provides visibility and lighting standards can enhance the street environment significantly by providing objects at a human scale.

- Lighting standards shall be consistent with designated branding for the street character. The pedestrian lighting shall be provided separate and in addition to vehicle lighting. The lighting standards shall be at a human scale with a maximum height light standard of 15 feet.
- Pedestrian scale lighting shall be provided at a regular spacing. Parkways shall include pedestrian lighting to provide 0.8 foot-candles average luminance along the path of travel. Provide adequate lighting for pedestrian areas, access points, sidewalks, pathways, plazas, parking areas, and building entrances to improve public safety and security in these areas. Avoid overly bright light, which can reduce security by create dark shadows and visibility issues.
- The pedestrian lighting elements shall be included at the edge of the parkway so it sheds light on the sidewalk.
- Site, direct, and/or shield light fixtures to prevent light pollution through glare or light spillage. Lighting strategies, including shields on luminaires, that minimize light pollution and glare on adjacent properties should be implemented.
- Up-lighting is discouraged on areas of buildings that have substantially specular facades (such as glass or other highly polished material) due to undesirable light scatter.

Public Space: Public spaces can include a range of spaces from parks to parklets.

- Public gathering space should be placed next to public streets, residential areas, and retail uses. Public gathering space should not be formed from residual areas. Rather, they should be integrated into the design of the project.
- If there is a grade change, a public space should not be more than three feet above or below the sidewalk grade.
- Any walls, planters, or other obstructions (not including trees, lights and steps) that would prevent views into the open space should be limited and generally not exceed a height of 18 inches above the adjacent sidewalk.
- A minimum of 20 percent of the publicly accessible private open space ground area should be improved with landscaping, which may be reduced with the provision of substantial tree canopy coverage. At least one 36-inch box tree should be planted in the urban open space for each 25 feet of street frontage (for linear open space) and/or each 500 square feet of urban open space, whichever is greater.
- Seating should be provided for users in urban spaces at a ratio of 1 linear foot of seating for each 40 square feet of urban open space. The seating may be composed of benches and seating walls. Movable seating is highly encouraged.
- Publicly-accessible through-block walkways, courts, pocket parks, plazas, and urban open spaces are strongly encouraged to enhance the richness and variety of publicly accessible open spaces.
- All public spaces shall include lighting and a public art component.
- Curb extensions extend the sidewalk into the on-street parking lane to narrow the roadway and provide additional public space. Curb extensions may be placed at transit stops. Where curb extensions are provided at transit stops, they should be a full-length transit bulb, and not a standard corner bulb, as it can be difficult for a bus to exit or re-enter traffic around a corner bulb-out.

Image above highlights a building setback and use of an arcade (building articulation) to incorporate a public plaza at an intersection

- Mid-block curb extensions should use special paving or an edging treatment to distinguish the space as a plaza space separate from the through travel area.
- Street furnishings and other above-grade objects should be located on curb extensions where space allows, increasing space for pedestrian through travel on the sidewalk.

Wayfinding & Signage: A neighborhood coalition or business organization can generate a specific branding for a district. In instances where a specific branding or logo is created, signage and gateways should integrate branding into all streetscape elements.

On-Going Maintenance Requirements and Shared Space Agreements:

- As part of the project approval documents, inform property owners of the ongoing responsibility to keep parking areas, buildings, lighting, and landscaping properly maintained.
- Property owners must provide a maintenance agreement for lighting, landscaping, and street furnishings.
- Property owners must provide a shared access agreement if applicable to shared driveway or parking access.

Being a good neighbor includes communication and sharing curb cuts, parking, and access whenever possible.

4.0 Mobility

A key component to the success of future land uses in the study area as well as the planned Mid-Coast LRT stations, is the potential connection to various modes of travel. Only when these systems are individually successful and coordinated as a whole, can the entire system be optimized. The following discussion examines the vehicular, pedestrian, bicycle, and transit systems of the study area.

4.1 Vehicular Systems

Vehicular systems are primarily comprised of the roadways used to carry vehicular traffic through the study area. Below is a discussion of important terms/definitions used to describe the network, as well as metrics used to evaluate the performance of the system.

The following transportation analysis was prepared by Nelson Nygaard, a professional transportation planning firm. Nelson Nygaard also reviewed and provided input on non-vehicular recommendations to ensure compatibility with industry standards and best practices.

4.1.1 Existing Street Network

The City of San Diego roadway classifications are introduced and defined in Section 2.5, Overview of Street Network. Below is further detail on the classifications as they apply to streets within the study area based on existing roadway characteristics. Figure 4-1 graphically displays the existing street classifications.

Major Streets

The City's Street Design Manual requires that Major Streets be designed to accommodate a minimum of four to six travel lanes and a raised median at full build-out. Major streets provide access to the study area (including direct access to adjacent land uses and local streets) for automobile, bicycle, bus, and pedestrian travel. The following streets are designated as Major Streets:

- Clairemont Drive
- Friars Road
- Linda Vista Road
- Sea World Drive/Tecolote (west of Morena Blvd)
- West Morena Boulevard
- Napa Street

Collector Streets

The City's Street Design Manual requires that Collector Street be designed to accommodate a minimum of two to four travel lanes and act as a transition from local streets to major streets. Important in the performance evaluation of collector streets is whether or not they include center turn lanes and whether there are fronting properties with driveways. The following streets are designated as Collector Streets:

- Morena Boulevard (between the splits with West Morena)
- Tecolote Road (east of Morena Boulevard)
- Pacific Highway
- Milton Street

Local Streets

The remainder of the streets are classified as local streets. These roadways are two lanes, have low travel speeds, and serve localized drivers. Table 4-1 is a matrix of the street classifications and their application to roadways in the study area.

4.1.2 Adopted Street Network

The street networks identified in the adopted Community Plans for Linda Vista and Clairemont Mesa recommend several changes to the street network classification system. These recommendations do not have specific projects, or even funding tied to them, although they establish long-term goals to be implemented. While many of the streets in the study area are envisioned to retain their existing classification, two classification changes were adopted as a part of the Community Plans (also shown on Figure 4-2):

- Morena Boulevard between Tecolote and the north split with West Morena changes from a 2-lane collector with no middle turn lane to a 2-lane collector with a middle turn lane.
- Knoxville Street between Morena and West Morena changes from a local to a 2-lane collector with commercial/residential properties fronting.

4.1.3 Street Width and Right of Way

While ideally related to street classification, the existing width of streets within the study area varies, even within common classifications. Figure 4-3 displays the general width of street pavement within the study area. The street pavement width was determined using aerial photography by measuring “curb to curb” dimensions. Roadway segments were established to display the average pavement width of measurements taken within than segment. The breaks in the width categories were chosen to match important dimensions in street functionality:

- 16 feet – minimum dimension for a two-way alley/roadway
- 22 feet – minimum dimension for two fire engines to pass each other
- 32 feet – two 12-foot lanes plus one side of 8-foot on-street parking
- 56 feet – four 12-foot lanes plus one side of 8-foot on-street parking

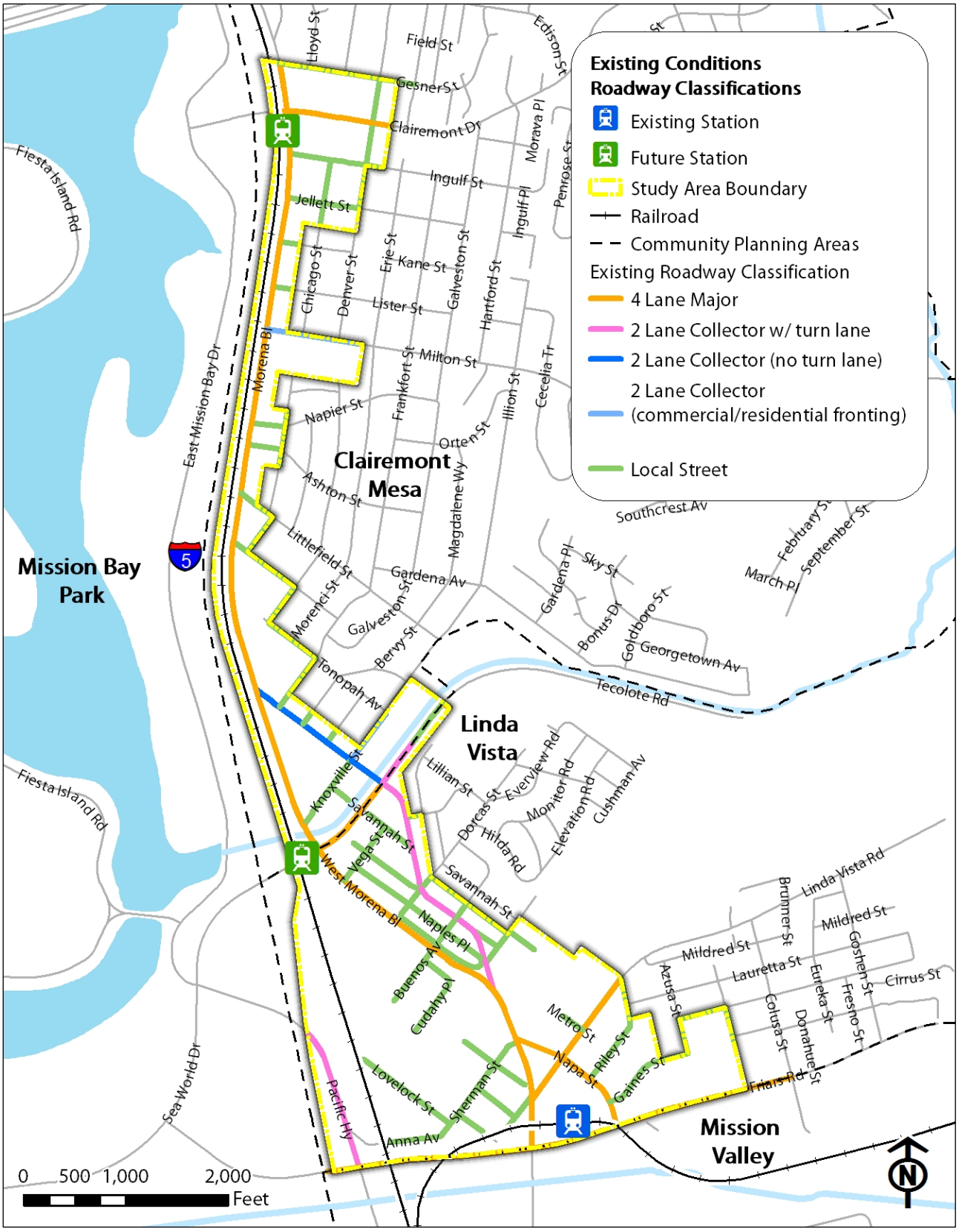


Figure 4-1: Existing Roadway Classification

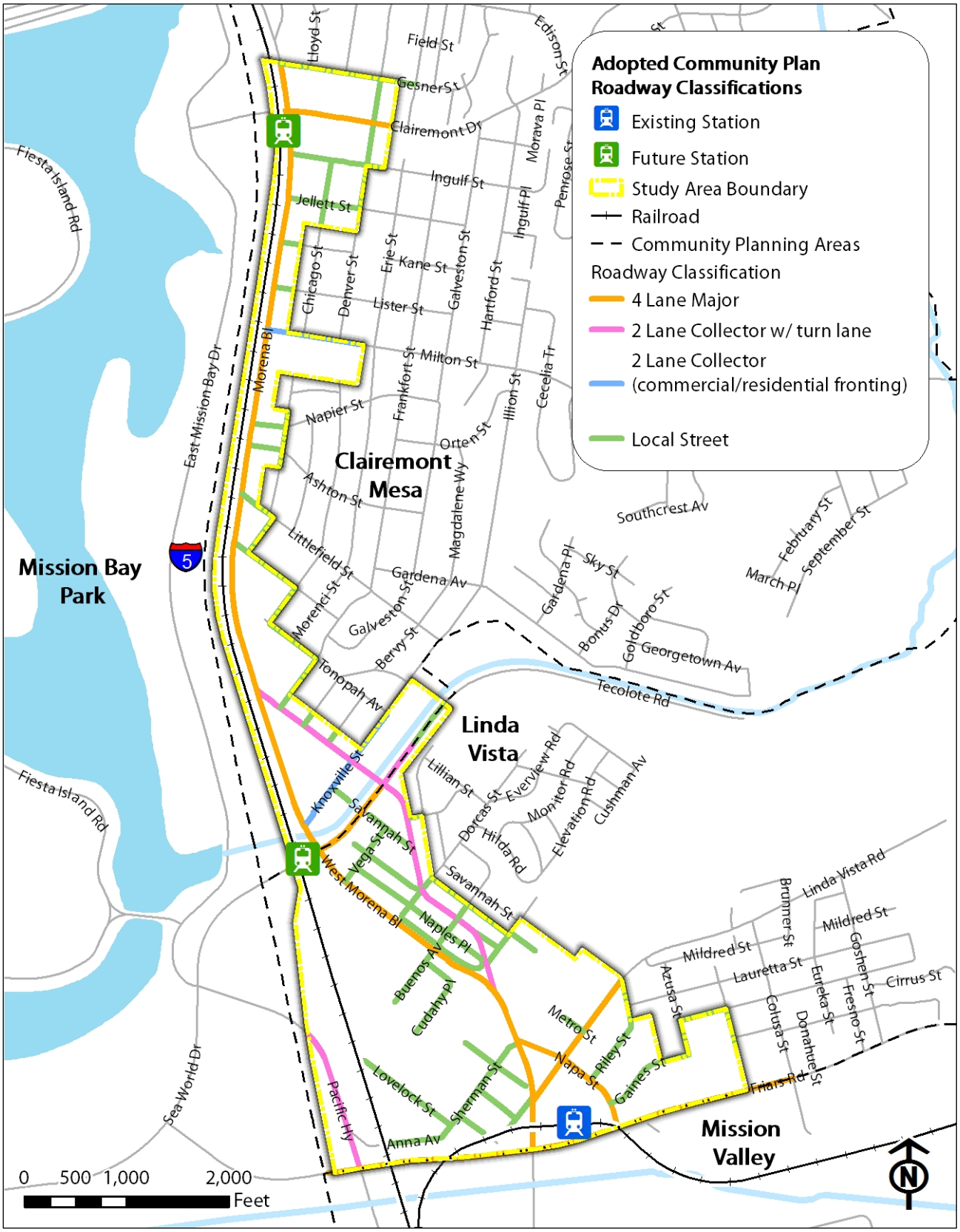


Figure 4-2: Adopted Roadway Classification

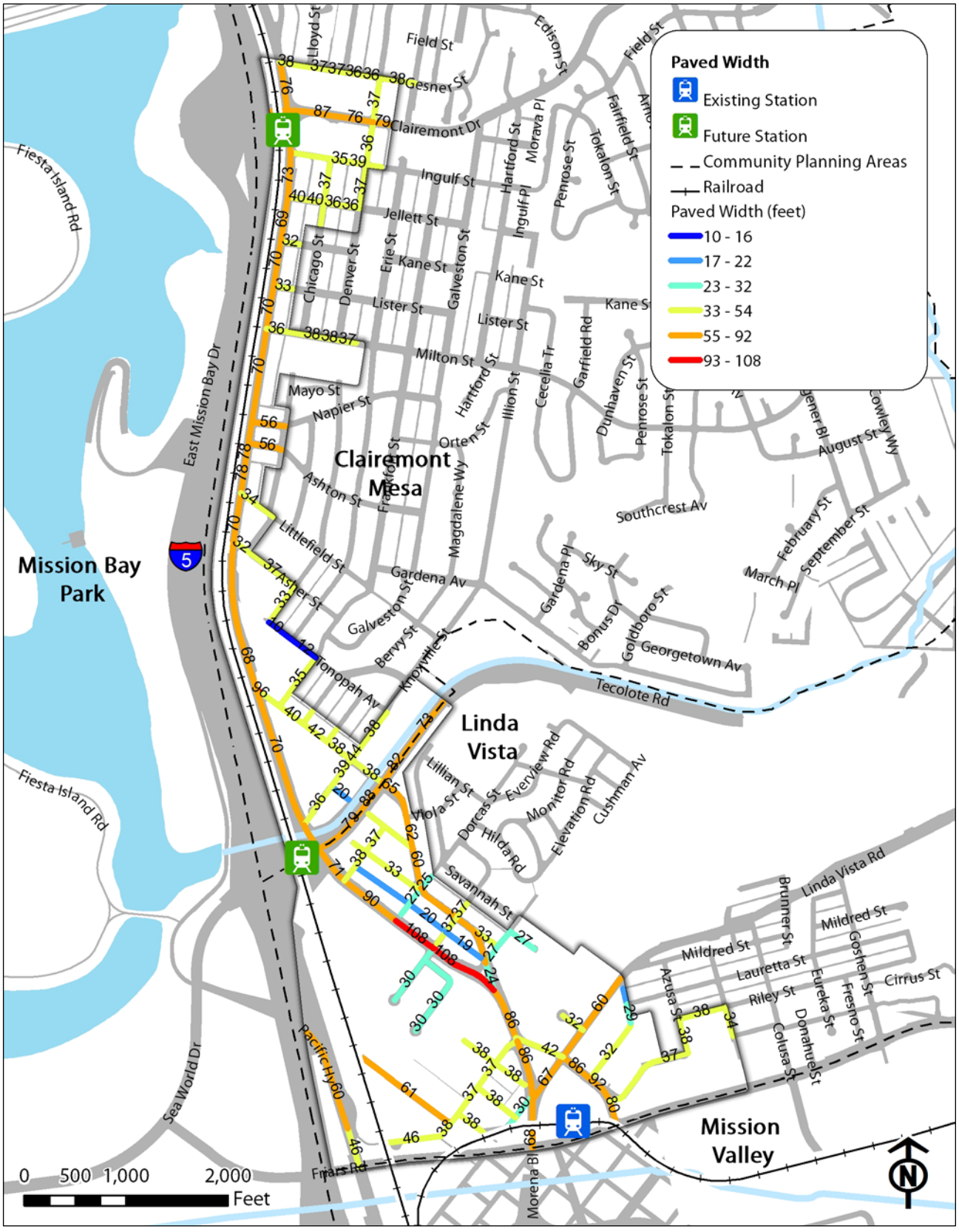


Figure 4-3: General Width of Pavement

4.1.4 Segment Peak Day Volumes

24-hour traffic volumes were determined based on machine counts conducted February 12-17, 2013 (see Appendix C for detailed count sheets for each day). Table 4-1 summarizes the "Peak Daily Traffic Volume" at each of the 33 count locations. (Note: the volumes shown here are based on the "peak" day for each segment, not based on the multi-day "average").

Based on those counts:

Traffic volumes on most of the study segments are relatively low:

- Less than 16,000 daily vehicles on most segments of Morena (north of Tecolote) and on all segments of West Morena.
- This level of traffic can be easily accommodated with just one travel lane in each direction.

Traffic volumes are highest where traffic passes through the edges of the study area:

- Clairemont (at the north edge of the study area) carries 30,000 daily vehicles, consistent with a 4-lane configuration.
- Short segments of Morena, Napa and Linda Vista in the southern portion of the study area carry "pass-through" traffic to and from Linda Vista Road (resulting in high volume of southbound left-turn movements at the intersection of Morena/Napa and Napa/Linda Vista).
- Intersection geometries where the three streets intersect result in three closely spaced intersections in a triangle configuration. This requires a lengthy 136-second signal cycle during the PM peak hour, thus requiring additional storage capacity, while left-turn volumes result in a high portion of conflicting movements.

#	Street Name	Segment Location	DIRECTIONAL VOLUMES ON PEAK DAY				24-HOUR 2-WAY TRAFFIC VOLUME (PEAK DAY OF COUNT PERIOD)
			N/S Streets		E/W Streets		
			NB	SB	EB	WB	
1	Gesner St.	(Morena Bl - Denver St)			1,876	1,680	3,556
2	Clairemont Dr.	(I-5 NB Ramps - Denver St)			14,873	15,953	30,826
3	Ingulf St.	(Morena Bl - Denver St)			2,902	2,283	5,185
4	Denver St.	(Clairemont Dr - Ingulf St)	5,240	4,824			10,064
5	Morena Bl.	(North of Gesner St)	6,593	6,915			13,508
6	Morena Bl.	(Gesner St - Ingulf St)	5,916	5,481			11,397
7	Morena Bl.	(Ingulf St - Milton St)	7,816	6,989			14,805
8	Morena Bl.	(Milton St - Ashton St)	8,277	7,687			15,964
9	Morena Bl.	(Ashton St - Morena Bl N Split)	8,137	7,461			15,598
10	W Morena Bl.	(Morena Bl N Split - Vega St)	4,689	5,460			10,149
11	W Morena Bl.	(Vega St - Buenos Ave)	5,162	5,852			11,014
12	W Morena Bl.	(Buenos Ave - Morena Bl)	6,551	6,761			13,312
13	Morena Bl.	(W Morena Bl - Napa St)	14,938	14,985			29,923
14	Morena Bl.	(Napa/Sherman St - Linda Vista Rd)	10,856	12,167			23,023
15	Morena Bl.	(South of Linda Vista Rd)	19,362	19,021			38,383
16	Morena Bl.	(W Morena Bl - Knoxville St)	5,083	4,088			9,171
17	Morena Bl.	(Knoxville St - Tecolote Rd)	8,832	8,637			17,469
18	Morena Bl.	(Tecolote Rd - Buenos Ave)	8,417	7,603			16,020
19	Morena Bl.	(Buenos Ave - Morena Bl S Split)	8,455	8,148			16,603
20	Napa St.	(Morena Blvd - Linda Vista Rd)	15,611	9,201			24,812
21	Napa St.	(Linda Vista Rd - Riley St)	8,722	8,959			17,681
22	Napa St.	(Riley St - Friars Rd)	7,647	6,273			13,920
23	Milton St.	(East of Morena Bl)			1,614	2,207	3,821
24	Knoxville St.	(Morena Bl - Savannah St)			560	589	1,149
25	Sea World Dr.	(Morena Bl - I-5 NB Ramps)			12,458	12,055	24,513
26	Buenos Ave.	(South of Cudahy Pl)	657	517			1,174
27	Cudahy Pl.	(East of Buenos Ave)			610	510	1,120
28	Sherman St.	(Morena Bl - Grant St)	3,935	3,454			7,389
29	Linda Vista Rd.	(Morena Bl - Napa St)			11,322	11,281	22,603
30	Linda Vista Rd.	(Napa St - Marian Wy)			13,538	13,330	26,868
31	Riley St.	(Napa St - Lautetta St)			852	935	1,787
32	Friars Rd.	(Napa St - Colussa St)			10,025	9,525	19,550
33	Friars Rd.	(West of Napa St)			7,332	2,023	9,355

*Volumes shown are for the peak day of the count period (not average volumes).

Table 4-1: Peak Daily Traffic Volumes

4.1.5 Segment Level of Service

Table 4-2, summarizes the City of San Diego's planning-level Level of Service (LOS) criteria for evaluating daily traffic relative to capacity. (Note: the San Diego Traffic Impact Study Manual specifies that this daily volume criteria is to assist with planning-level discussions but is not intended to serve as a strict LOS criterion for California Environmental Quality Act (CEQA) purposes).

Table 4-3 and Figure 4-4 list and map the existing LOS for study area streets.

CITY OF SAN DIEGO STREET CLASSIFICATIONS		LEVEL OF SERVICE (1)				
STREET CLASSIFICATION	**LANES**	**A**	**B**	**C**	**D**	**E**
Freeway	8 lanes	60,000	84,000	120,000	140,000	150,000
Freeway	6 lanes	45,000	63,000	90,000	110,000	120,000
Freeway	4 lanes	30,000	42,000	60,000	70,000	80,000
Expressway	6 lanes	30,000	42,000	60,000	70,000	80,000
Primary Arterial	6 lanes	25,000	35,000	50,000	55,000	60,000
Major Arterial	6 lanes	20,000	28,000	40,000	45,000	50,000
Major Arterial	4 lanes	15,000	21,000	30,000	35,000	40,000
Collector	4 lanes	10,000	14,000	20,000	25,000	30,000
Collector (no center lane) (continuous left-turn lane)	4 lanes 2 lanes	5,000	7,000	10,000	13,000	15,000
Collector (no fronting property)	2 lanes	4,000	5,500	7,500	9,000	10,000
Collector (commercial-industrial fronting)	2 lanes	2,500	3,500	5,000	6,500	8,000
Collector (multifamily)	2 lanes	2,500	3,500	5,000	6,500	8,000
Sub-Collector (single-family)	2 lanes	—	—	2,200	—	—

Notes:
(1) Level of service based on approximate recommended Average Daily Traffic (ADT) based on the City of San Diego Traffic Impact Study Manual.

(2) Cross sections (XX/XXX)= Curb-to-curb width / Right-of-way width for each street classification, based on City of San Diego Traffic Impact Study Manual.

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

Table 4-2: City of San Diego LOS Standards by Street Classification

Segment #	Street Name	Segment Location	EXISTING CONDITONS			
			Street Classification	City of San Diego LOS E Threshold	Daily Volume*	Daily LOS [1]
1	**Gesner St.**	(Morena Bl - Denver St)	Local	2,200 (see note 2)	3,556	> C
2	**Clairemont Dr.**	(I-5 NB Ramps - Denver St)	4-Lane Major	40,000	30,826	D
3	**Ingulf St.**	(Morena Bl - Denver St)	Local (Classification) 2-Lane Collector with Left-turn Lane (Existing Geometry)	15,000	5,185	A
4	**Denver St.**	(Clairemont Dr - Ingulf St)	Local (Classification) 2-Lane Collector with Left-turn Lane (Existing Geometry)	15,000	10,064	D
5	**Morena Bl.**	(North of Gesner St)	4-Lane Major	40,000	13,508	A
6	**Morena Bl.**	(Gesner St - Ingulf St)	4-Lane Major	40,000	11,397	A
7	**Morena Bl.**	(Ingulf St - Milton St)	4-Lane Major	40,000	14,805	A
8	**Morena Bl.**	(Milton St - Ashton St)	4-Lane Major	40,000	15,964	B
9	**Morena Bl.**	(Ashton St - Morena Bl N Split)	4-Lane Major	40,000	15,598	B
10	**W Morena Bl.**	(Morena Bl N Split - Vega St)	4-Lane Major	40,000	10,149	A
11	**W Morena Bl.**	(Vega St - Buenos Ave)	4-Lane Major	40,000	11,014	A
12	**W Morena Bl.**	(Buenos Ave - Morena Bl)	4-Lane Major	40,000	13,312	A
13	**Morena Bl.**	(W Morena Bl - Napa St)	4-Lane Major (with double left-turn lane southbound)	45,000	29,923	C
14	**Morena Bl.**	(Napa/Sherman St - Linda Vista Rd)	4-Lane Major (Classification) 5-Lane Major (Existing Geometry)	50,000	23,023	B
15	**Morena Bl.**	(South of Linda Vista Rd)	4-Lane Major	40,000	***38,383***	***E***
16	**Morena Bl.**	(W Morena Bl - Knoxville St)	2-Lane Collector (no center turn-lane)	8,000	**9,171**	**F**
17	**Morena Bl.**	(Knoxville St - Tecolote Rd)	4-Lane Collector	30,000	17,469	C
18	**Morena Bl.**	(Tecolote Rd - Buenos Ave)	2-Lane Collector with left-turn lane	15,000	**16,020**	**F**
19	**Morena Bl.**	(Buenos Ave - Morena Bl S Split)	2-Lane Collector with left-turn lane	15,000	**16,603**	**F**
20	**Napa St.**	(Morena Blvd - Linda Vista Rd)	4-Lane Collector (no center turn-lane)	15,000	**24,812**	**F**
21	**Napa St.**	(Linda Vista Rd - Riley St)	4-Lane Major	40,000	17,681	B
22	**Napa St.**	(Riley St - Friars Rd)	4-Lane Major	40,000	13,920	A
23	**Milton St.**	(East of Morena Bl)	2-Lane Collector (residential fronting)	8,000	3,821	C
24	**Knoxville St.**	(Morena Bl - Savannah St)	Local	2,200 (see note 2)	1,149	< C
25	**Sea World Dr.**	(Morena Bl - I-5 NB Ramps)	4-Lane Major	40,000	24,513	C
26	**Buenos Ave.**	(South of Cudahy Pl)	Local	2,200 (see note 2)	1,174	< C
27	**Cudahy Pl.**	(East of Buenos Ave)	Local	2,200 (see note 2)	1,120	< C
28	**Sherman St.**	(Morena Bl - Grant St)	Local	2,200 (see note 2)	7,389	> C
29	**Linda Vista Rd.**	(Morena Bl - Napa St)	4-Lane Major	40,000	22,603	C
30	**Linda Vista Rd.**	(Napa St - Marian Wy)	4-Lane Major (Classification) 4-Lane Collector (Existing Geometry)	30,000	***26,868***	***E***
31	**Riley St.**	(Napa St - Lautetta St)	Local	2,200 (see note 2)	1,787	< C
32	**Friars Rd.**	(Napa St - Colussa St)	4-Lane Major	40,000	19,550	B
33	**Friars Rd.**	(West of Napa St)	4-Lane Major	40,000	9,355	A

Notes:

Bold indicates locations that fail to meet the LOS E threshold. ***Bold itylics indicate locations at LOS E.***

1. City's Daily LOS Threshold is intended to be used as a comparitive tool for planning purposes (but is not an EIR threshold).
2. Based on City TIS standard for Sub-Collector (single-family) streets. City guidelines do not provide daily volume LOS thresholds for local streets, and the TIS guidelines specify that LOS standards "normally apply to roads carrying through traffic between major trip generators and attractors." (City TIS Guidelines, Table 2).

*24-hour volumes are shown above for the peak day of week (Friday 4/12/2013 at most segment count locations). The peak-day volumes is 5%-10% higher than Average Daily Traffic.

Source: Nelson\Nygaard (LOS); KTUA (Street Classification Map); True Count (Counts Conducted February and April 2013).

Table 4-3: Study Area Roadway Segment LOS

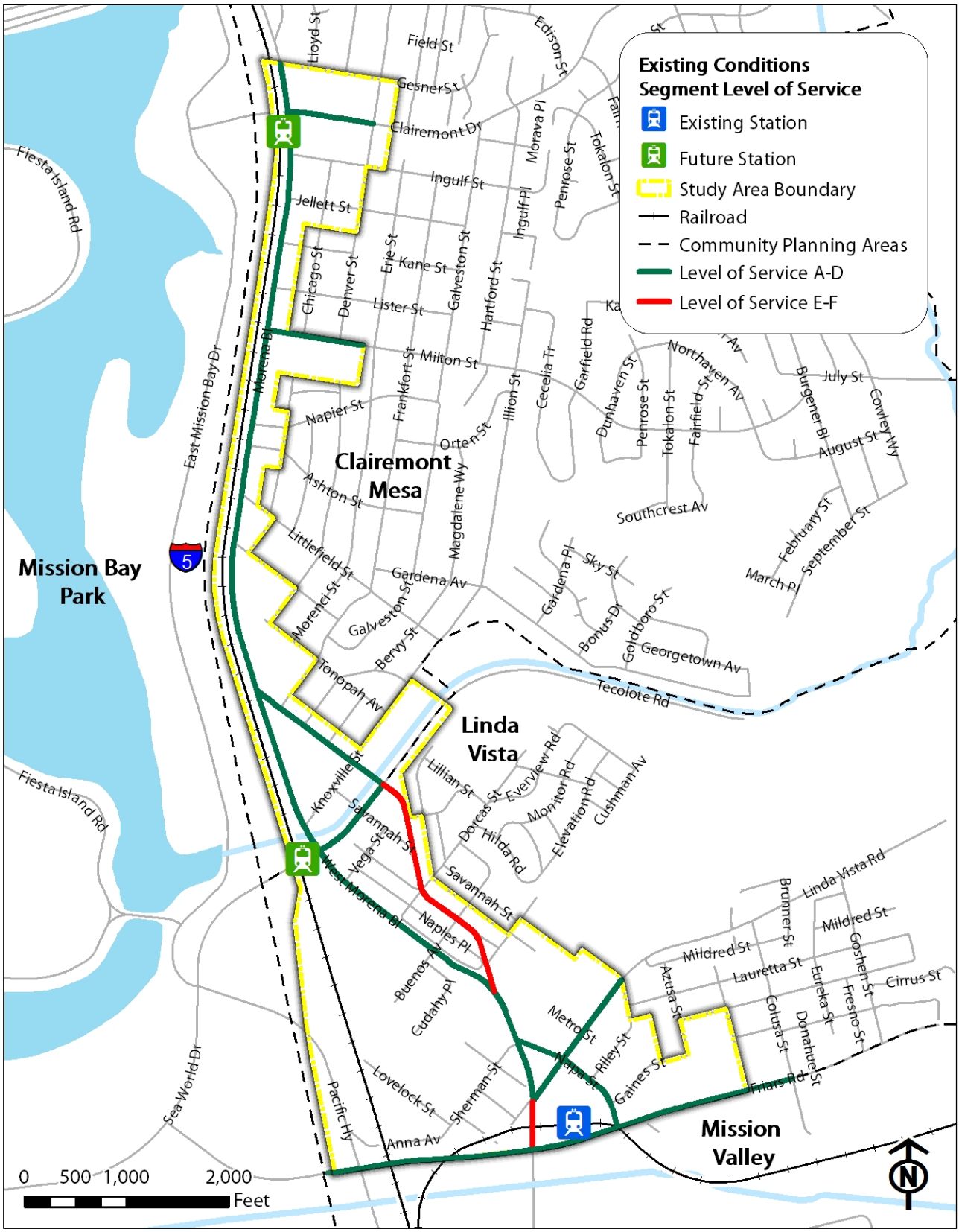


Figure 4-4: Existing Levels of Service

4.1.6 Intersection Configurations

The Traffic Analysis Appendix includes diagrams detailing the configuration of each of the 24 analyzed intersections (both signalized and unsignalized). These diagrams utilize the intersection configuration as a framework to display the turning movement count information collected in the field (displaying either exclusive or combined movements from each lane).

4.1.7 Intersection Level of Service

This section describes AM and PM peak-hour traffic volumes and intersection counts, based on turning-movement and pedestrian/bicycle movement counts at 23 intersections (selected by the City) on February 6, 2013. Counts were conducted from 7-9 am and 4-6 pm at each study intersection. The "peak hour" is the 60-minute period (four consecutive 15-minute periods within the larger 2-hour count period) with the highest total approach volume at each individual intersection. See Appendix C for detailed count sheets at each intersection.

Figure 4-5 shows the signalized intersections within and near the study area that were analyzed as a part of the peak-hour analysis. In addition, several unsignalized intersections were also evaluated.

Based on the turning movement counts, and incorporating signal-timing information provided at select intersections, the existing AM and PM Peak Hour LOS is presented in Table 4-5. Traffic volumes are generally highest during the PM Peak Hour (compared to the AM Peak Hour). Based on City of San Diego criteria:

- LOS A through D is considered acceptable, while LOS E or F is considered unacceptable.
- At unsignalized intersections, LOS is based on delay to stop-controlled approaches.
- At side-street controlled intersections, LOS is based on the "highest" approach delay (not an average for the entire intersection), based on the Highway Capacity Manual (HCM) methodology. For these reasons, LOS E or F may be acceptable in cases where side-street approach volumes (approaching a stop sign) are very low and do not trigger a signal warrant.
- At signalized intersections, LOS is based on average delay for motor vehicles at all approaches.

4.1.8 Peak Hour Level of Service

Tables 4-4 and 4-5, and Figure 4-6 summarize the existing LOS at each study intersection based on:

- Turning movement counts conducted during the AM and PM Peak Periods
- Signal timing sheets provided by City

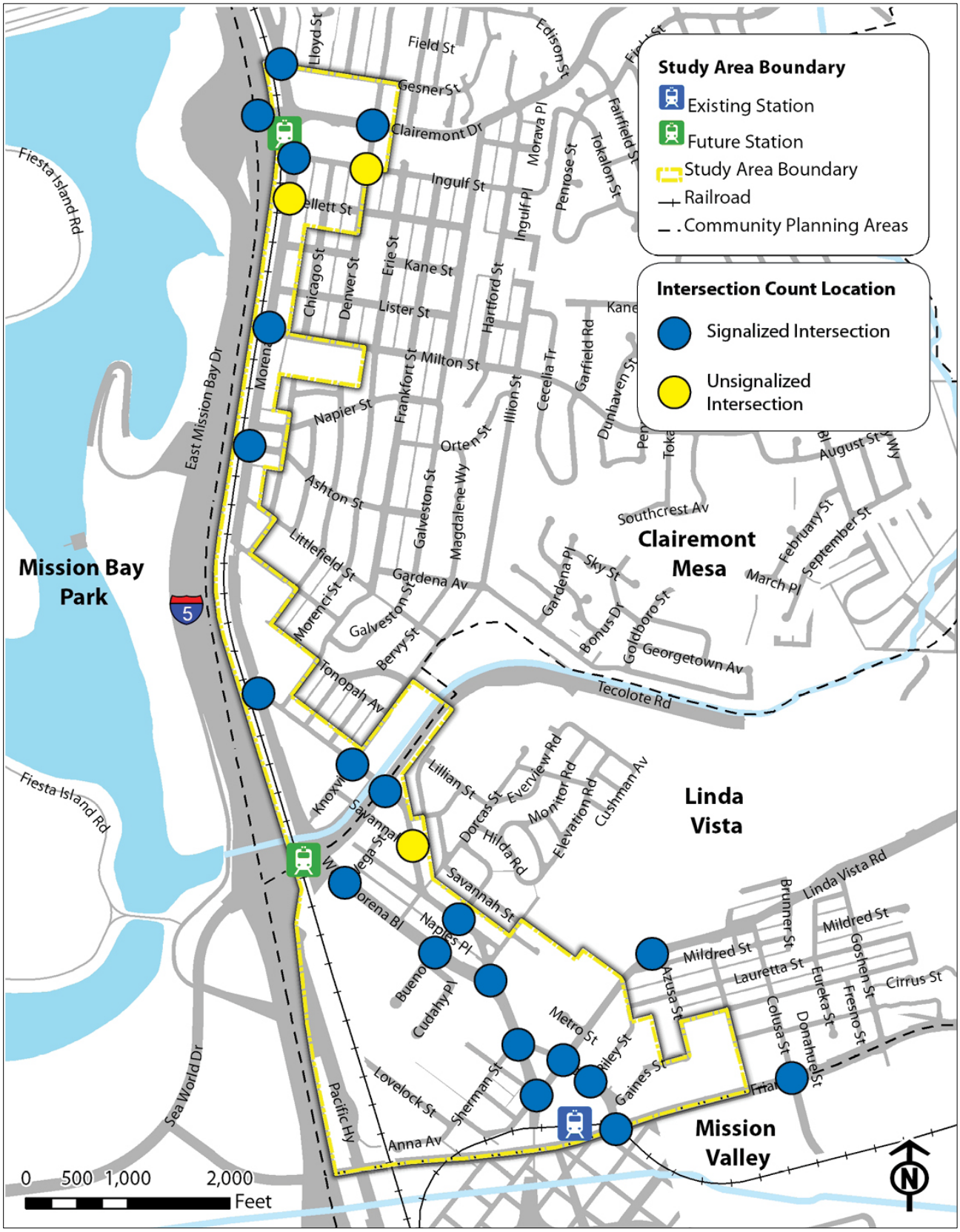


Figure 4-5: Study Area Intersection Count Location

#	Intersecting Streets	EXISTING CONDITIONS (YEAR 2013) AM Peak Hour LOS	AM Peak Hour Avg Delay	PM Peak Hour LOS	PM Peak Hour Avg Delay
1	Morena & Gesner	A	8.3	B	10.4
2	I-5 Northbound Ramps & Clairmont	B	11.5	A	9.7
3	Morena & Ingulf	A	7.2	A	9.8
4	Denver & Clairemont	D	37.6	C	23.9
7	Morena & Milton	B	10.0	A	7.8
8	Morena & Ashton	A	4.9	A	6.5
9	Morena & West Morena *(north split)*	B	11.2	B	11.4
10	Knoxville & East Morena	C	21.6	B	11.4
11	Morena & Tecolote	C	30.1	C	32.7
13	East Morena & Buenos	B	14.0	B	13.3
14	West Morena & Morena *(south split)*	A	8.7	B	14.7
16	West Morena & Vega / Driveway	A	5.6	A	9.5
17	West Morena & Buenos	B	12.8	B	13.1
18	Morena & Napa & Sherman	D	46.4	D	50.7
19	Morena & Linda Vista	B	13.3	B	20.0
20	Napa & Linda Vista	D	51.4	**E**	**77.7**
21	Marian Wy & Linda Vista	D	36.0	B	17.9
22	Napa & Riley	B	14.5	B	14.4
23	Napa & Friars	B	19.3	B	13.6
24	Colusa & Friars	B	11.2	B	12.0

Bold indicates LOS of E or F.

Source: Nelson\Nygaard

Table 4-4: Study Area Intersection LOS (Signalized Intersections)

#	Intersecting Streets	EXISTING CONDITIONS (YEAR 2013) AM Peak Hour LOS	AM Peak Hour Avg Delay	PM Peak Hour LOS	PM Peak Hour Avg Delay
5	Morena & Jellett (side-street stop-sign)	C	15.5	C	18.1
6	Denver & Ingulf (all-way stop-sign)	A	9.9	B	14.8
12	Morena & Savannah (side-street stop-sign)	C	18.9	**E**	**37.9**

Bold indicates failing LOS E or F.

Notes:

Both of the side-street stop controlled study intersections (#5 and #12) are T-intersections, with a stop-sign on the side-street approaching Morena. LOS and delay is based on the side-street approach to Morena.

Table 4-5: Study Area Intersection LOS (Stop-sign Controlled Intersections)

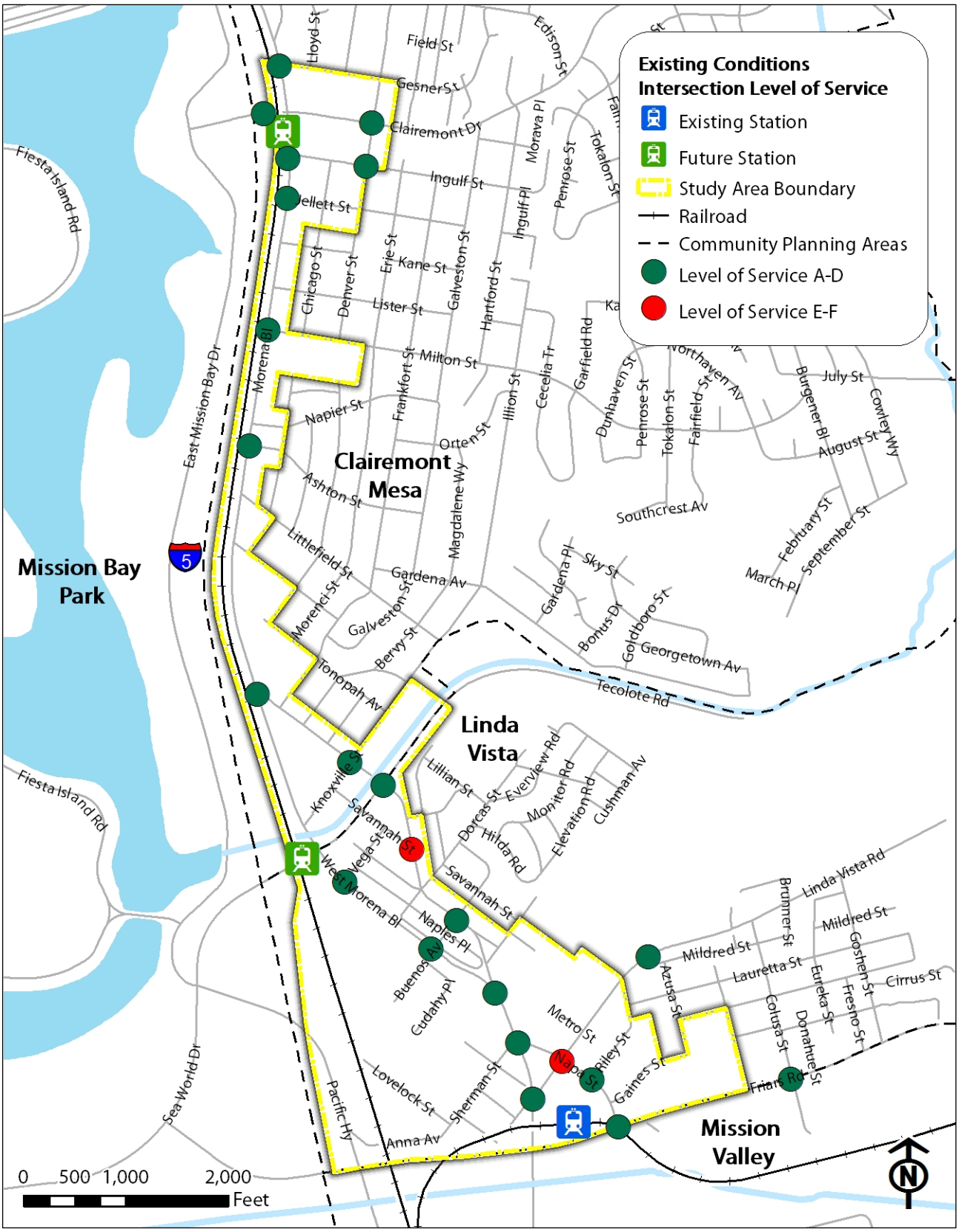


Figure 4-6: Study Area Intersection LOS (PM)

4.1.9 Assets/Liabilities/Opportunities/Constraints

Summary of Initial Vehicular Findings

Based on the 24-hour traffic volume counts that were conducted at 33 segment locations the following conclusions can be made:

- Traffic volumes on most of the study segments are very low given the design capacity:
  - Less than 16,000 daily vehicles on most segments of Morena (north of Tecolote) and on all segments of West Morena.
  - This level of traffic can be easily accommodated with just one travel lane in each direction.
- Traffic volumes are highest where traffic passes through the edges of the study area:
  - Clairemont (at the north edge of the study area) carries 30,000 daily vehicles, consistent with a 4-lane configuration.
  - Short segments of Morena, Napa and Linda Vista in the southern portion of the study area carry "pass-through" traffic to and from Linda Vista Road (resulting in high volume of southbound left-turn movements at the intersection of Morena/Napa and Napa/Linda Vista).
  - Intersection geometries where the three streets intersect result in three closely spaced intersections in a triangle configuration. This requires a lengthy 136-second signal cycle during the PM peak hour, thus requiring additional storage capacity, while left-turn volumes result in a high portion of conflicting movements.

Similarly, based on peak-hour turning movement counts and PM Peak Hour LOS as summarized on Tables 4-4 and 4-5:

- Most of the 23 study intersections evaluated for this report have relatively low peak-hour traffic volumes.
- Nearly all study intersections operate at LOS E-F, (based on City of San Diego criteria that identifies LOS D or better as acceptable):
  - 16 out of 23 intersections operate at LOS A or B, indicating stable flow and low levels of delay to motor vehicles.
  - 3 intersections operate at LOS C, also indicating acceptable operations and stable flow.
  - 2 intersections operate at LOS D, indicating acceptable delay (but approaching unstable flow): Morena and Tecolote (study intersection #11) and Morena and Napa (study intersection #18)
  - Intersections #18 - #20 form a closely spaced "triangle" that operate on a single, coordinated 136-second cycle during the PM Peak Hour
  - As part of this planning process: options to reduce delay can be assessed. Measures to allow for a reduced signal cycle length are likely to reduce average vehicle delay.

- Just 2 out of 23 study intersections operate at LOS E-F (LOS E based on this Draft LOS analysis):
    - Napa and Linda Vista (#20): Motor vehicle volumes at this location are largely affected by "pass-through" traffic (particularly east/west traffic on Linda Vista, as well as southbound traffic from Morena to Linda Vista via Napa). Based on preliminary assessment, this intersection operates at LOS E during the PM Peak Hour.

        -As noted above: intersections #18-#20 form a closely spaced "triangle" that operate on a single, coordinated 136-second cycle during the PM Peak Hour

        - In addition, the odd geometry of this intersection currently requires "split-phase" traffic signal operations on Napa

        - Measures to allow for a reduced signal cycle length, if feasible, are likely to reduce average vehicle delay.

    - Morena and Savannah (#12): This is a side-street stop-controlled intersection. LOS at side-street stops is based on the highest delay to the side-street stop-controlled approach. Based on average delay on Savannah, the side-street approach operates at LOS E. However, traffic volumes are very low on the side-street approach from Savannah (just 82 vehicles during the PM Peak Hour, and just 13 during the AM Peak Hour). Therefore, this location would not trigger a signal warrant based on peak-hour volumes.

4.2 Pedestrian Systems

The most basic form of transportation is walking. People of all ages rely on walking to move around their communities, and walking constitutes a vital link in all other forms of transportation. Although walking can occur in almost any type of environment, it becomes dangerous when it is mixed with conflicting modes of travel. Furthermore, in an urban environment, any number of obstacles may be present which prevent safe and comfortable walking altogether. The following sections discuss the dynamics of the walking environment in the Morena Boulevard vicinity.

4.2.1 Facilities

Because of the highly urbanized nature of the study area, the facilities for pedestrian movement are exclusively sidewalks or in some minor cases, detached walkways away from the street. Sidewalks range in size and condition throughout the study area, with many areas lacking walkways altogether. Where they exist, sidewalks are typically four to six feet wide and run immediately adjacent to the street (vs. detached with a parkway strip).

The City of San Diego has a program in place to assess, improve/replace, and/or construct sidewalks in a systematic manner. This program also includes the replacement of non-ADA (Americans with Disabilities Act) compliant curb ramps. Figure 4-7 shows information as to the existing presence or absence of walkways within the study area.

As Figure 4-7 shows, the areas lacking sidewalks include many of the street serving residential areas as well as portions of West Morena Boulevard and the streets serving the industrial district at the south of the study area. In these areas, pedestrians have either created their own off-street informal pathways or are forced to walk in the street.

4.2.2 Volumes

Pedestrian volumes were recorded at 24 intersection locations throughout the study area. They were counted for the AM (7-9) and PM (4-6) peak hours. Figure 4-8 displays the results of the pedestrian counts. The greatest pedestrian activity occurs at the southern end of the study area, along Friars Road and along Napa Street. The intersection with the highest pedestrian volume is Linda Vista Road and Napa Street, where over 400 pedestrians were counted. This observation is in line with the boardings and alightings data discussed later in this chapter.

4.2.3 Major Origins and Destinations

One of the major determinants of the walkability of a neighborhood is the number of pedestrian generators and attractors, otherwise referenced as origins and destinations. The greater the number and density of origins and destinations located within an area, the greater the likelihood that individuals will choose to walk between those locations. This proximity and distance between the origins and destinations is a primary determinant on the amount of pedestrian activity. Volumes can be increased by an improved walking environment that is safe, connected, and accessible, and offers pedestrian amenities.

Figure 4-9 shows origins and destinations in categories such as public services, employment centers, religious institutions, educational centers, and recreation destinations. The greatest concentration of origins and destinations occurs in the southern end of the study area (south of Tecolote Road). Many of these are employment centers such as commercial, light industrial, and retail establishments. Public services such as the police station and humane society also contribute to activity within the area, though their contribution to pedestrian activity is limited. Numerous origins/destinations occur around the study area north of Tecolote Road. Many of these relate to recreation and education centers.

4.2.4 Major Barriers Propensity for Walking

Pedestrian activity in the study area faces several obstacles: long blocks and wide streets that contribute to an auto-dominated environment, lack of sidewalks in many places, and physical barriers to locations outside the study area (primarily the railroad tracks, I-5, and the edge of the mesa to the east).

4.2.5 Assets/Liabilities/Opportunities/Constraints

Assets (permanent elements that are positives for the study area)

- Many activity centers in close geographical proximity to each other
- Close proximity of residential areas to restaurants/businesses along Morena Boulevard north of Tecolote Road
- Close proximity of the study area to Mission Bay Park
- Many small businesses are clustered close together, encouraging a “park-once” mentality (walk between businesses once parked).

Liabilities (existing negative elements that could be improved upon)

- Lack of lighting on pedestrian walkways (affects walkability at night, even with established sidewalks/walkways)
- Lack of sidewalks in key corridors
- Long distances between safe and legal crossing points
- Interrupted walking environments with a high density of curb cuts and sloped parking areas
- Lack of buffer from high speed, high volume traffic lanes against the curb
- Complete lack of pedestrian amenities, especially shade and buffered edges from the travel lanes.
- Low pedestrian priority crossing points across intersections.
- Lack of ramps, median refuges and other accessible and safe pedestrian interfaces between the walking environment and the street environment.

Opportunities (unrealized positive elements that could be established or developed)

- Additional crossings to Mission Bay Park over the railroad tracks/I-5
- Excessively wide streets that could be reclaimed for walking improvements
- Wide intersections that could include bulb-outs or median refuges to improve safety and decrease lane crossing distances
- Construction of additional sidewalks

Constraints (permanent elements that are negatives for the study area)

- Existing auto-dominated environment (long-blocks, wide streets)
- Numerous parking driveways crossing sidewalks affecting the pedestrian realm
- Railroad tracks/I-5 block access to Mission Bay Park
- Lack of through streets, canyons and creeks (Tecolote) that allow for a connected walking environment

Figure 4-7: Existing Sidewalk Network

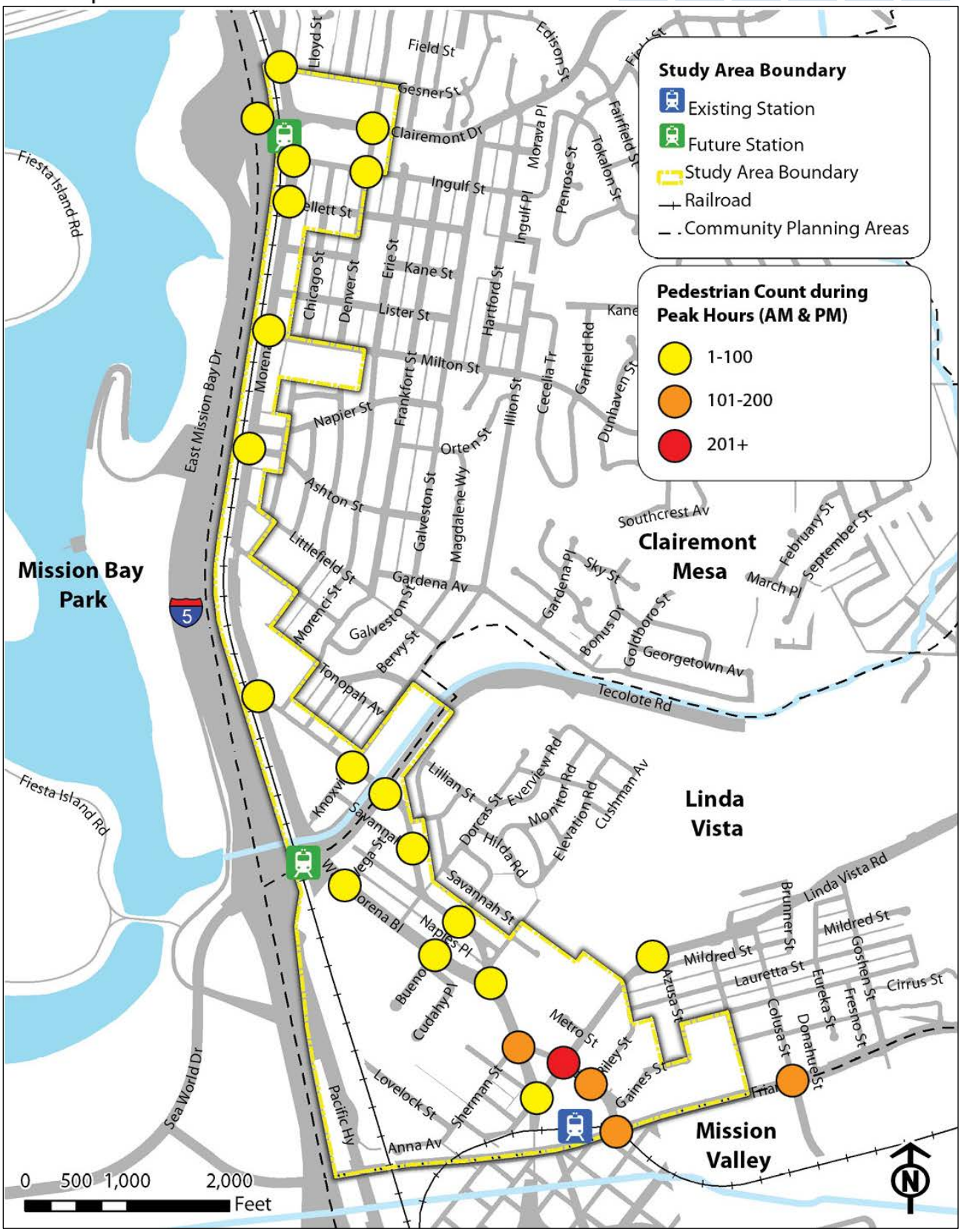


Figure 4-8: Pedestrian Volumes

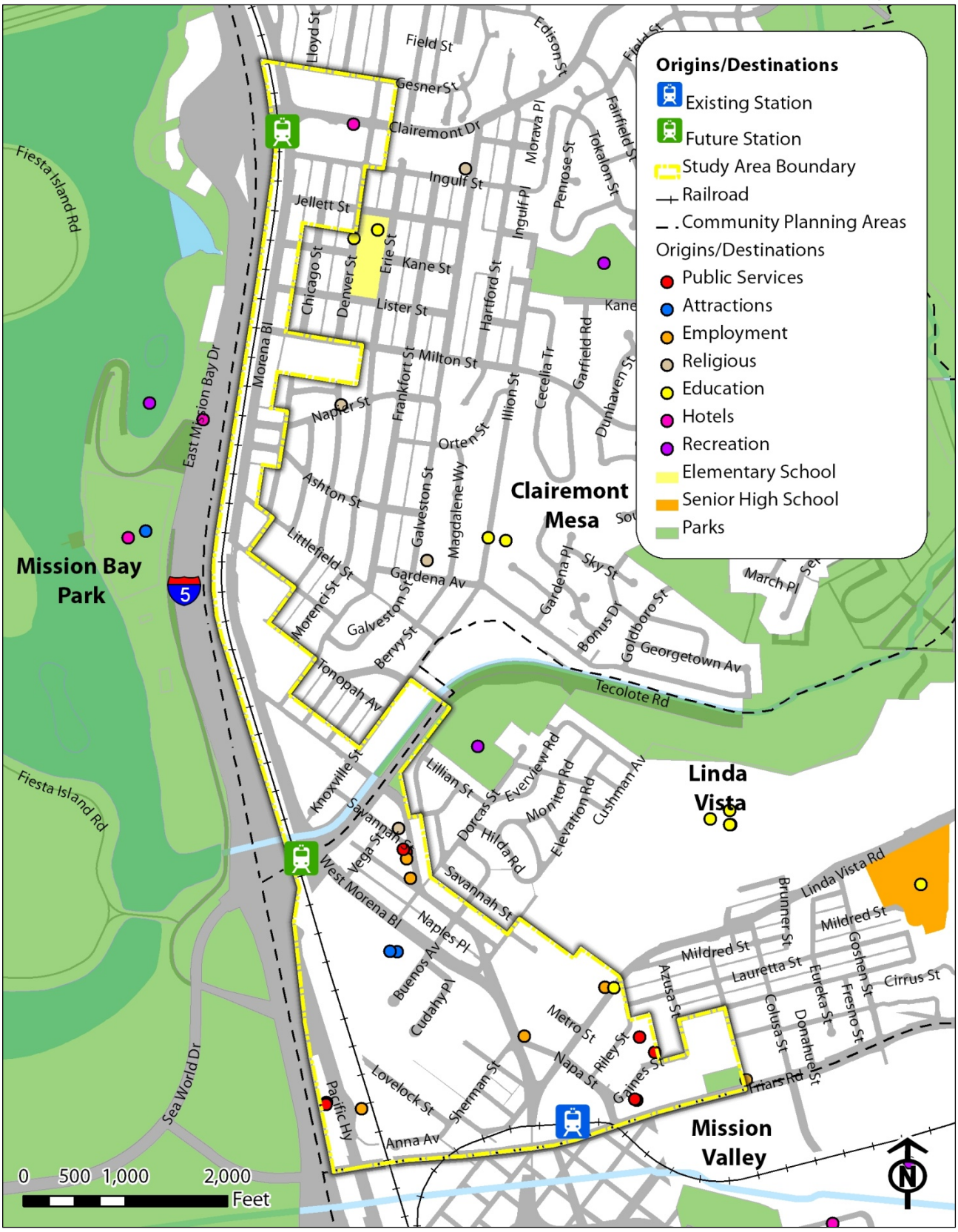


Figure 4-9: Origins and Destinations

4.3 Bicycle Systems

As an integral part of a multi-modal community, transportation facilities must support cycling by increasing the safety and efficiency of this alternative mode of transit. Bicycle systems are typically organized into one of three classifications: Class 1 (Bike Path), Class 2 (Bike Lane), or Class 3 (Bike Route). The study area currently has a patchwork of bicycle facilities that start and stop along roadway segments. A number of improvements are suggested by the SANDAG regional plan and the City of San Diego Bike Facility Master Plan.

4.3.1 Existing Bike Facilities

Existing bicycle facilities serve only a small portion of the study area and its surroundings (see Figure 4-10). Existing bicycle facilities in the study area include:

- Class 1 Bike Path along Friars Road/San Diego River
- Class 2 Bike Lane along Pacific Highway
- Class 2 Bike Lane along Morena Boulevard between the south split with West Morena and Tecolote Road, and from Linda Vista Road and Morena Boulevard east
- Class 3 Bike Route along Tecolote Road from I-5 east.
- Class 3 Bike Route along Napa Street between Friars Road and Linda Vista Road
- Class 3 Bike Route along Sea World Drive/East Mission Bay Drive (outside of study area)

It should be noted that not all of the above bicycle facilities meet design standards for the corresponding classification. In addition to signage/pavement markings being absent in some locations, existing signs/pavement markings have faded or worn to the point that they are either illegible or only partially visible. In some locations without bicycle facilities, cyclists are using roadway shoulders as de facto bicycle lanes.

4.3.2 Proposed Bike Facilities

Proposed bicycle facilities for the area will greatly increase the number and quality of paths, lanes, and routes serving the Morena corridor and surrounding neighborhoods. Figure 4-10 also shows the proposed bicycle facilities:

- Class 1 Bike Path parallel to the railroad tracks (just west of the study area)
- Class 1 Bike Path across the San Diego River at the Colusa Street alignment (outside of the study area)
- Class 1 Bike Path on the southern bank of the San Diego River channel (outside the study area)
- Class 2 Bike Lane along Morena Boulevard from Old town to West Morena (none currently exists)
- Class 2 Bike Lane along all of West Morena Boulevard (none currently exists)
- Class 2 Bike Lane from West Morena north to Gesner Street (none currently exists)

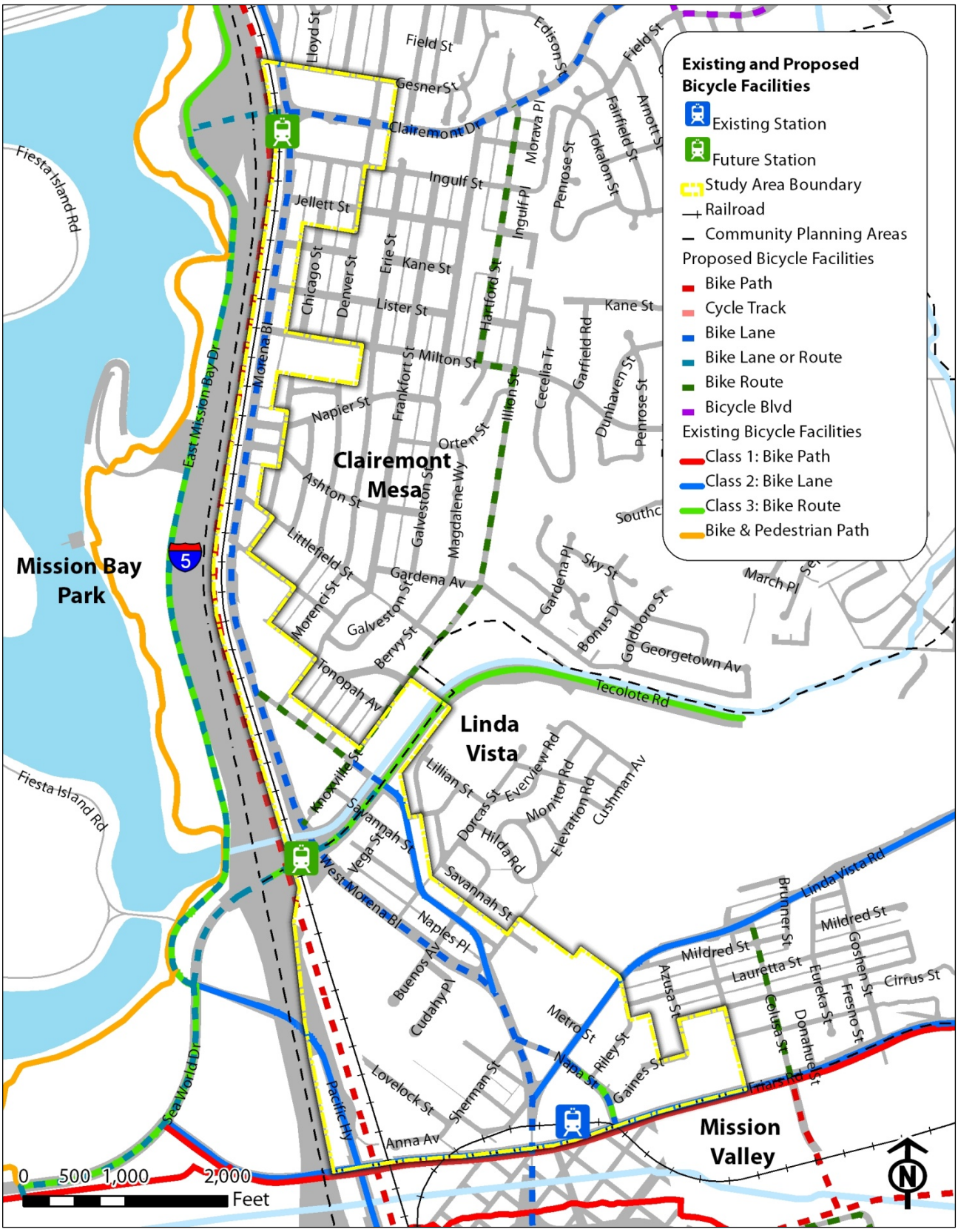


Figure 4-10: Existing and Proposed Bicycle Facilities

- Class 2 Bike Lane along Tecolote from Morena Boulevard, across I-5, continuing on both Sea World Drive and East Mission Bay Drive (upgrading the existing Class 3 on a portion of Tecolote, Sea World Drive and East Mission Bay Drive)
- Class 2 Bike Lane along Napa Street (upgrading the existing Class 3)
- Class 2 Bike Lane along Clairemont Drive (none currently exists)
- Class 3 Bike Route along Colusa Street between Friars Road and Linda Vista Road
- Class 3 Bike Route along Knoxville Street (mostly within study area), leading to Illion Street and Hartford Street, terminating at Clairemont Drive (outside study area)
- Class 3 Bike Route along Morena Boulevard between Tecolote and the West Morena split (north)

The proposed bicycle facilities will greatly increase accessibility along north/south corridors within and near the study area. The proposed Class 1 facility along the railroad Right of Way (ROW) will act as a regional thoroughfare, while the additional Class 2 facilities will create safer options for cyclists on many of the area's key roadways.

4.3.3 Cycling Volumes

Bicycle volumes were recorded at 24 intersection locations throughout the study area. They were counted for the AM (7-9) and PM (4-6) peak hours. Figure 4-11 displays the results of the bicycle counts. As shown on this map, cycling activity is fairly consistent throughout the study area. While higher activity occurs around "the triangle" intersections of Morena, Linda Vista, and Napa, and lower activity occurs at Clairemont Drive, Ingulf Street, and Jellet Street, the remainder of the study area intersections experience a moderate amount of bicycle traffic.

4.3.4 Cycling LOS

LOS standards have not been developed for bicycle volumes by the City of San Diego. While the benefit of establishing LOS standards for bicycle facilities would have many benefits in planning a comprehensive cycling network, adopted criteria have not yet been determined at either a regional or national level to define a common process/ method of measure.

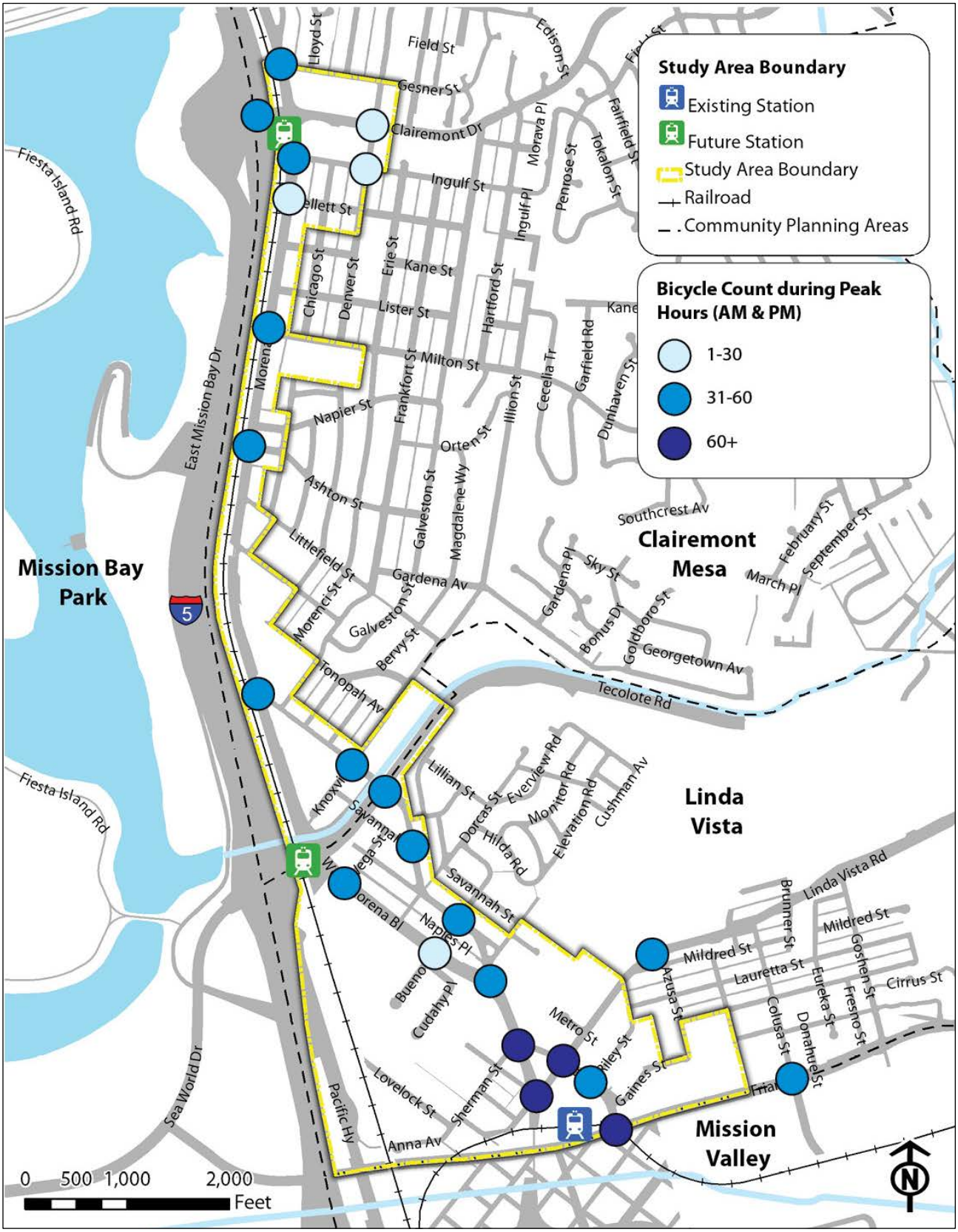


Figure 4-11: Bicycle Volumes

4.3.5 Assets/Liabilities/Opportunities/Constraints

Assets (permanent elements that are positives for the study area)

- Close proximity of the study area to Mission Bay Park and Fiesta Island, which both present excellent riding opportunities.
- Portions of Morena Boulevard have long blocks, limiting the number of intersections and/or driveways fronting on the street, reducing conflicts with cyclists. This is especially true for the west side (southbound) movements along Morena Boulevard.
- Bike lanes exist through the heart of the study area (along Morena Boulevard between the north and south splits), allowing for greater access to many of the offices/stores that are located along this corridor.

Liabilities (existing negative elements that could be improved upon)

- Lack of bicycle facilities north of Tecolote Road.
- Lack of bicycle facilities at Clairemont Drive and Sea World Drive (between I-5 and Pacific Coast Highway. Both are important gateways to Mission Bay Park.
- The intermittent nature of bike facilities and the lack of appropriate near-intersection adjustments to these on-street bike facilities, using the latest standards and practices.
- Relatively high speed of several of the major streets.

Opportunities (unrealized positive elements that could be established or developed)

- Additional crossings to Mission Bay Park over the railroad tracks/I-5.
- Connections to existing regional Class 1 Bike Path routes along the San Diego River and the potential Class 1 Bike Path planned along the railroad ROW.
- If a lane diet or road diet is considered, the street could then support a continuous series of bike lanes.

Constraints (permanent elements that are negatives for the study area)

- Some existing streets within the study area are narrow, limiting options for creating or expanding bicycle facilities.
- Railroad tracks/I-5 block access to Mission Bay Park
- Tecolote Creek/Canyon creates a barrier between the northern and southern portions of the study area.
- The steep incline/decline of Linda Vista Road makes it difficult to connect USD and the lower business district.

4.4 Transit Systems

The study area is currently served by both light rail and bus transit systems (see Figure 4-12). The existing light rail service is limited to the existing Morena/Linda Vista station at the southern extent of the study area.

There are three bus routes, which traverse the area (44, 50 and 105), providing stops along Morena Boulevard, Linda Vista Road, Milton Street, and Clairemont Drive. Bus stop facilities range from those with signage only to those with shelters. The majority of bus stops are signage only or signage with uncovered benches. Although Coaster service utilizes the railroad tracks at the western edge of the study area, the nearest station is in Old Town, south of Interstate 8.

4.4.1 Routes/Stops/Frequency of Service

Light Rail

The only light rail station located in the study area is located between Morena Boulevard, Napa Street, and Friars Road, at the Morena/Linda Vista stop. This station is served by the Green Line, which runs from downtown San Diego (with connections to the Blue and Orange Lines) through Old Town/Mission Valley to Santee (with connections to the Orange Line.

The Green Line runs seven days a week from approximately 5:00 AM to 1:00 AM each day. Monday through Friday, headways are regularly 15 minutes; Saturday headways are regularly 15 minutes and 30 minutes on the eastern end of the line in the morning and late evening; and Sunday headways are regularly 15 minutes and 30 minutes on the eastern end of the line all day.

Bus Routes

The areas served by each of the bus routes listed above are described below:

- Route 44: Route 44 travels north from Old Town via Linda Vista road to serve areas of east Linda Vista and Clairemont, terminating its route at Clairemont Drive and Clairemont Mesa Boulevard, near Clairemont Square shopping center. Route 44 provides service seven days a week.

- Route 50: Route 50 is the University Town Center (UTC) Express, originating in downtown San Diego, running north on I-5 until Clairemont Drive, then continuing north on Genesee Avenue until it reaches the UTC Transit Center. Route 50 provides service Monday through Friday only.

- Route 105: Route 105 originates in Old Town and travels north via Morena Boulevard to Milton Street, where it heads east and connects to Clairemont Drive, then north to Clairemont Mesa Boulevard, Regents Road and Genesee Avenue, terminating at the UTC Transit Center. Route 105 provides service seven days a week.

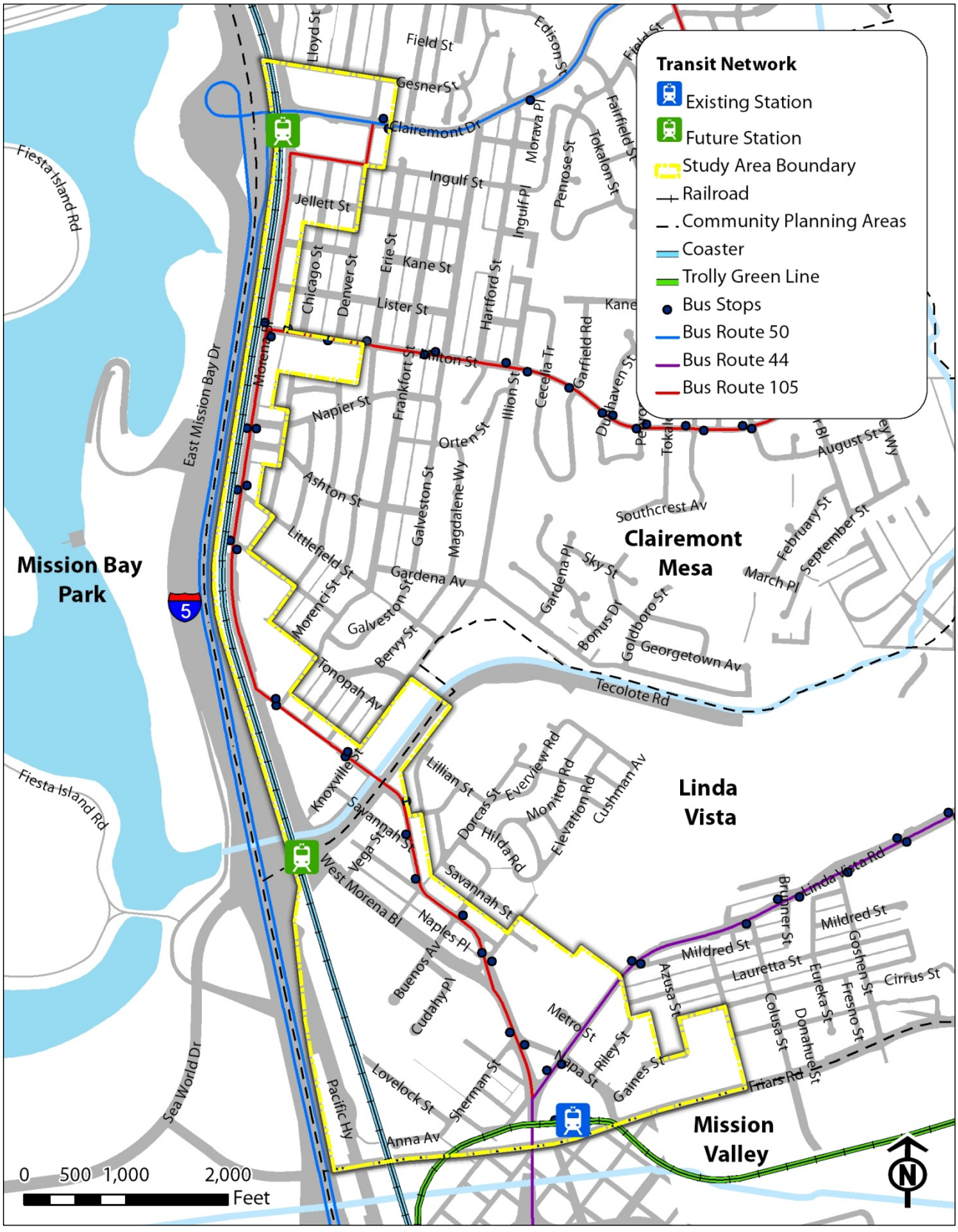


Figure 4-12: Existing Transit Network

4.4.2 Boardings and Alightings

Figures 4-13 and 4-14 display the results of boardings and alightings at bus stops within and nearby the study area. Both graphics show a similar trend: the greatest usage of bus transit occurs at the intersections of Napa Street and Morena Boulevard and Napa Street and Linda Vista Road. These stops are the most heavily traveled because of their close proximity to the Morena/Linda Vista Trolley station, which provides access to/from locations to the east and south. The stops along Linda Vista (to the east of the study area) and Morena (through the heart of the study area) experience a moderate level of activity, with stops at Savannah and Morena and USD being the most active stops along these routes.

4.4.3 Walk Time Zones Based on Existing Facilities

Walk times are defined as the distance an average pedestrian can walk in a given amount of time (assuming a 3 miles per hour (MPH) walk rate/20 minute mile). Figure 4-15 displays this information in terms of 5, 10, and 15 minutes walk time zones. This analysis utilizes existing pedestrian pathways to calculate the walkable distance vs. a distance radius that does not take into account developed blocks, missing sidewalks, and other physical obstructions. The model is generated based on the locations of the existing Morena/Linda Vista station and the proposed Tecolote/Sea World Drive and Clairemont Drive stations.

Figure 4-15 shows that much of the study is covered by the 15-minute walk time zones from the three stations. The only areas not reachable include some of the industrial areas in the south (which lack sidewalks) or the area between Asher Street and Ashton Street, equidistance between the Tecolote/Sea World Drive and Clairemont Drive station locations.

4.4.4 Walk Time Zones Based on Pedestrian Network Improvements

Figure 4-16 shows the same walk time analysis generated from a model with proposed sidewalk/pedestrian pathway improvements. With the improvements, the walkable area surrounding the stations increases substantially. Areas within Mission Bay Park and Fiesta Island become reachable from the Clairemont Drive and Sea World/Tecolote stations. More of the neighborhood along Tonopah and Asher Streets becomes walkable, as well as the neighborhood along Dorcas Street.

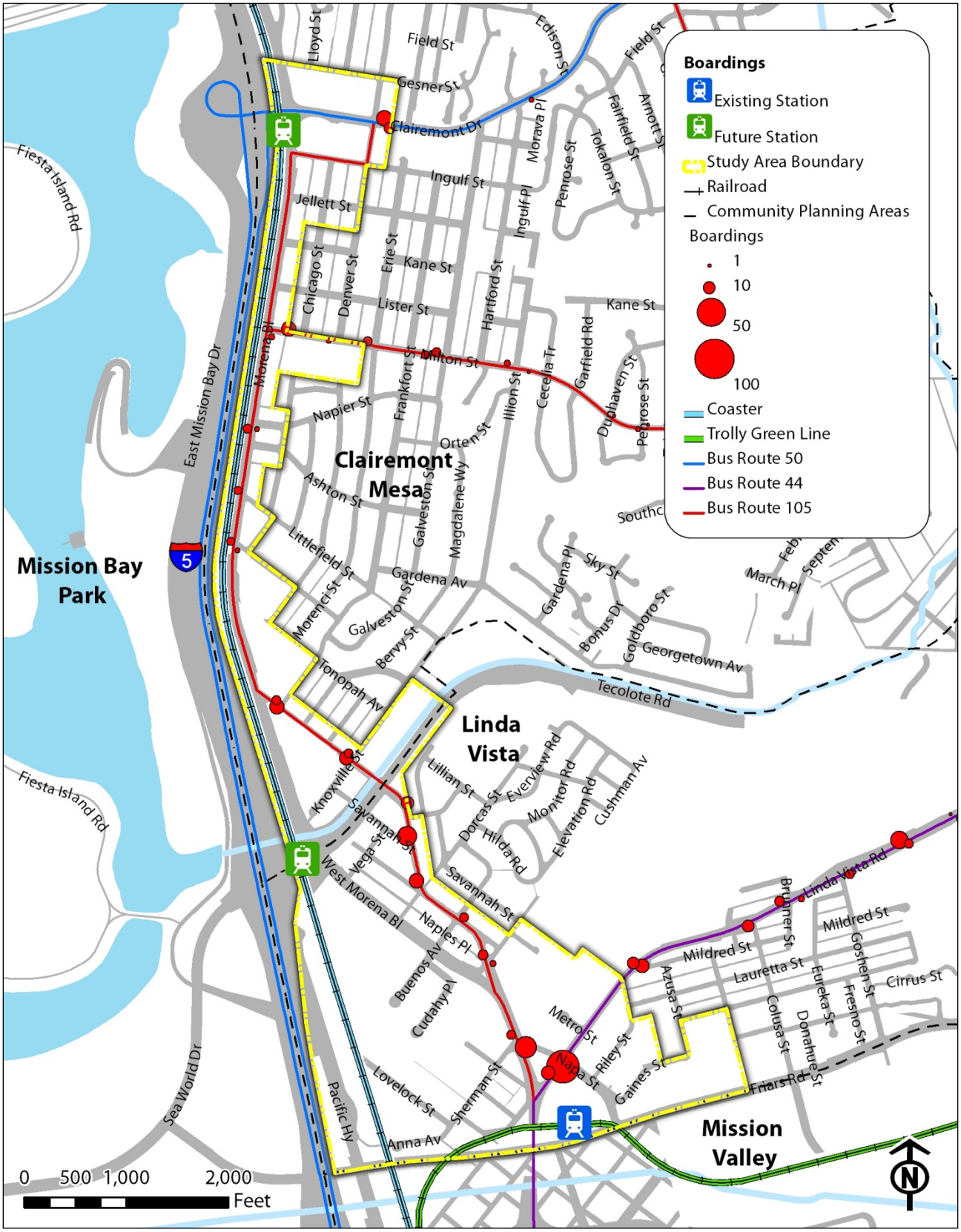


Figure 4-13: Bus Boardings

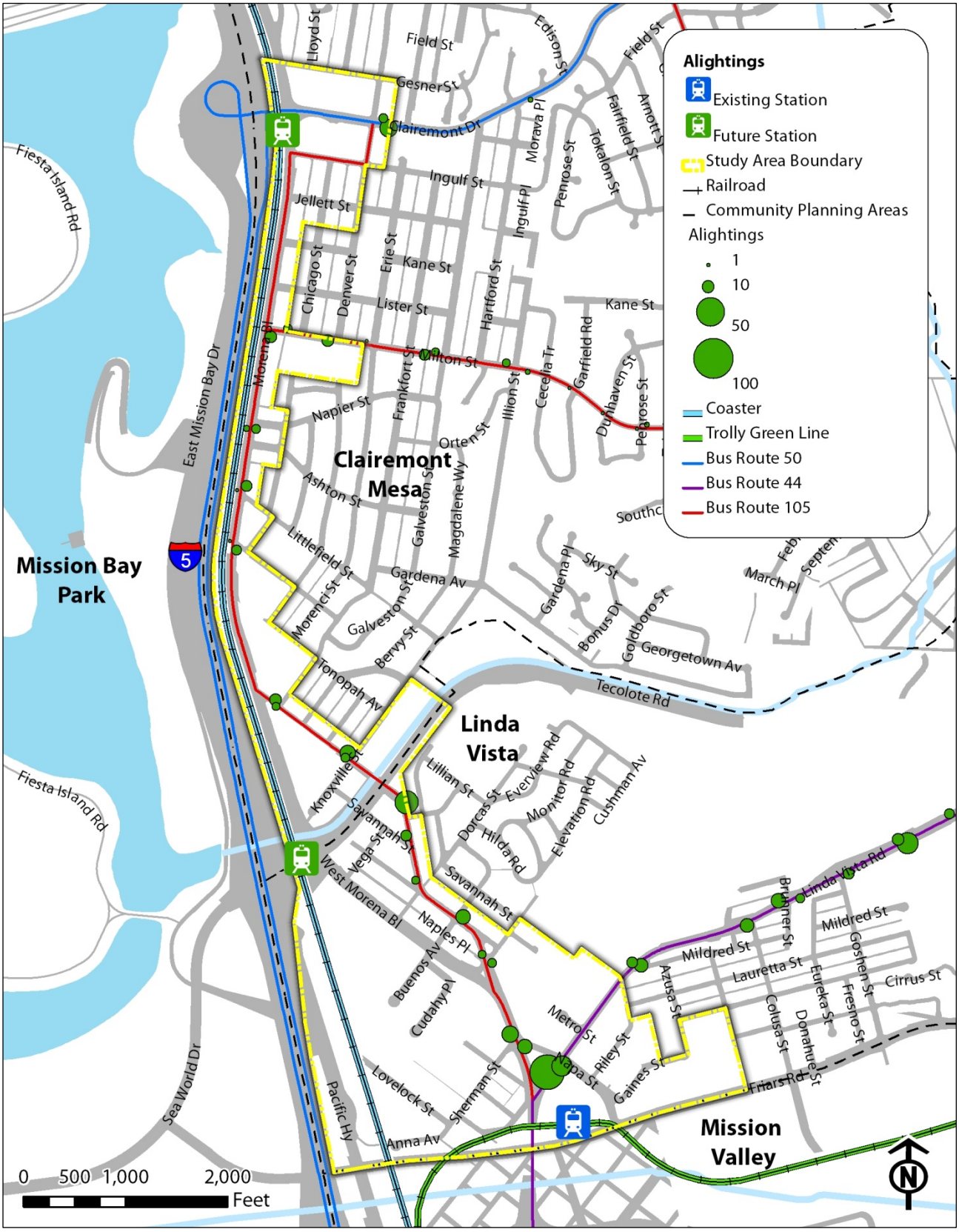


Figure 4-14: Bus Alightings

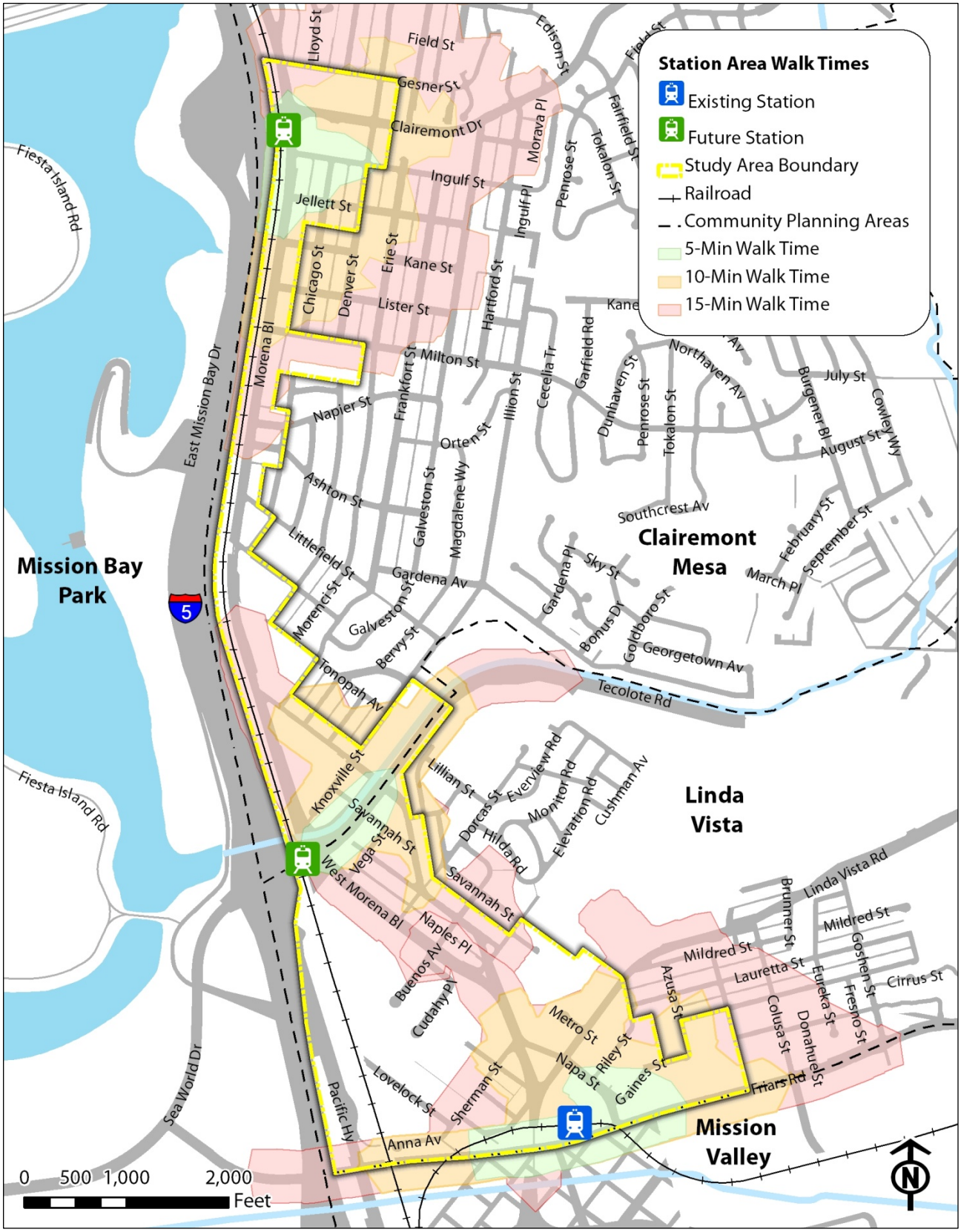


Figure 4-15: Existing Station Walk Times

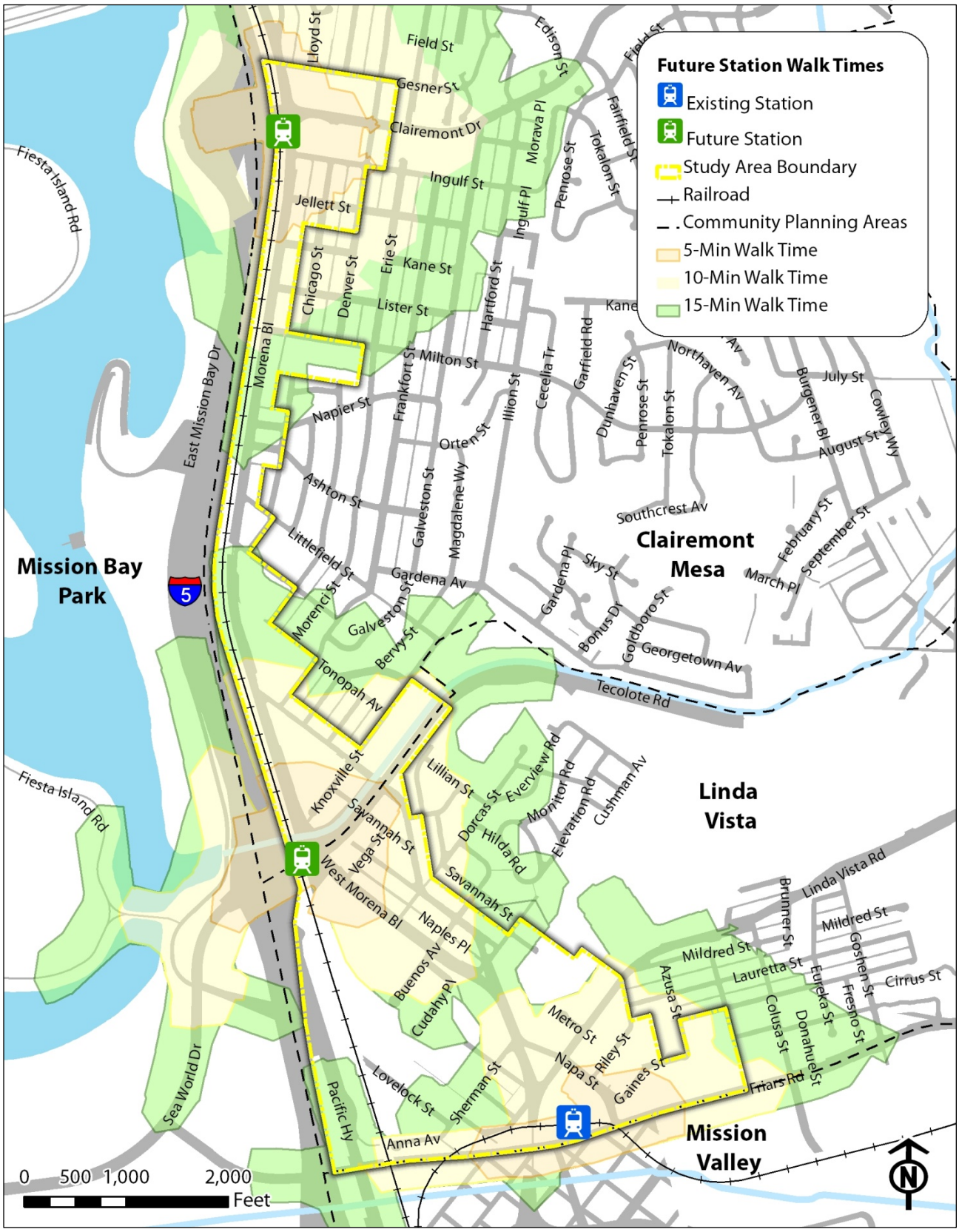


Figure 4-16: Station Walk Times with Pedestrian Network Improvements

4.4.5 Future Transit Services

Aside from the planned Mid-Coast extension of the light rail system through the study area, the SANDAG has proposed the following improvements to the transit systems within or near the study area in its 2050 Regional Transportation Plan:

- Greater frequency of service for existing bus routes
- Rapid Bus Service along Linda Vista Road
- Express LRT service along the Mid-Coast extension
- High speed rail (stop at the Santa Fe Depot, downtown San Diego)

4.4.6 Assets/Liabilities/Opportunities/Constraints

Assets (permanent elements that are positives for the study area)

- The study area encompasses a major thoroughfare north/south between Mission Valley and Mission Bay Park. The compression of development and roadways creates an ideal environment for transit.
- The existing and planned light rail service to the study area provides a permanent "backbone" of transit, which will likely spur future investments in additional transit and infrastructure.

Liabilities (existing negative elements that could be improved upon)

- The poor pedestrian and cycling environment in the study area will continue to discourage transit use because the first/last leg of the transit user's trip is very difficult and unenjoyable.
- Bus stop amenities are scarce, possibly discouraging riders because of an uncomfortable waiting experience.

Opportunities (unrealized positive elements that could be established or developed)

- The Mid-Coast project may have the ability to improve transit access in a limited area around the proposed stations.
- Redevelopment of the areas around the stations could address the first leg/last leg of transit trips.
- The extended development of USD (especially to the west of the existing campus) could help to support transit as well as business development in the surrounding area.

Constraints (permanent elements that are negatives for the study area)

- Because of the non-grid arrangement of some streets, as well as the limited residential density and the interruption of streets by several major barriers, transit penetration into the community will be limited.

4.5 Collision Analysis of Driving, Walking and Cycling Modes

An important element of any transportation system is the safety of its users. Collisions represent one of the most significant risks encountered by users of any transportation system, and minimizing them is one of the highest priorities of system planners. Below is a discussion of collision data collected in terms of vehicles, pedestrians and bicycles for the four-year period from 2006 to 2010.

4.5.1 Pedestrian

Figure 4-17 shows the incidents of auto-pedestrian collisions within the study area. As the graphic shows, most collisions occurred in the southern portion of the study area (south of Tecolote Road), with one concentration occurring in the northern half near Lister Street and Morena Boulevard. In the southern area, collisions occurred near West Morena Boulevard and Vega Street, West Morena Boulevard and Buenos Avenue, Morena Boulevard and Dorcas Street, "The Triangle" of Morena Boulevard, Linda Vista Road, and Napa Street, the cul-de-sac of Lovelock Street and Linda Vista near Metro Street.

The collisions near "The Triangle" are likely due to the high volumes of autos and pedestrians in the area. With higher traffic comes a greater number of conflicts. The collisions occurring along West Morena Boulevard could be attributed to the width of the roadway, which makes it difficult for pedestrians to cross in time and well as increases the likelihood that they will jaywalk one direction of travel at a time. The conflicts at Morena Boulevard and Dorcas Street is likely a result of the five-way intersection geometry and compromised sight lines for drivers.

4.5.2 Bicycle

Figure 4-18 shows the frequency and location of auto-bicycle collisions within the study area. The graphic shows some similarity to the pedestrian collision graphic, although new areas emerge as conflict areas with bicycles. "The Triangle" continues to be a point of conflict, although areas along Pacific Highway, along Napa Street, along Linda Vista, and along Tecolote appear as conflict areas as well. The north experiences less conflict, although a stretch of Clairemont Drive near Denver Street shows a high level of conflicts.

The areas experiencing the conflicts are very different riding environments, some have existing bike lanes (Linda Vista Road), and some do not (Clairemont Drive). With the exception of the conflicts on Linda Vista, many of the conflict areas are along access routes to Mission Bay Park, a popular riding destination. With the increased number of autos and bicycles, the number of conflicts also rises. The conflicts along Linda Vista could also be attributed to higher than average bicycles for those accessing USD or points further east in Linda Vista.

4.5.3 Auto

Auto-auto collisions in the study area are more widespread, and occur in both the northern and southern portions of the study area as Figure 4-19 shows. While most of the collisions occur at intersections, several roadway segments also experience conflicts: Napa Street south of Linda Vista, West Morena north of Buenos, Clairemont Drive west of Denver Street, and Linda Vista north of Napa Street. These collisions are likely the result of intersecting driveways, high travel speeds, irregular roadway geometry, limited sight lines, or a combination of all four.

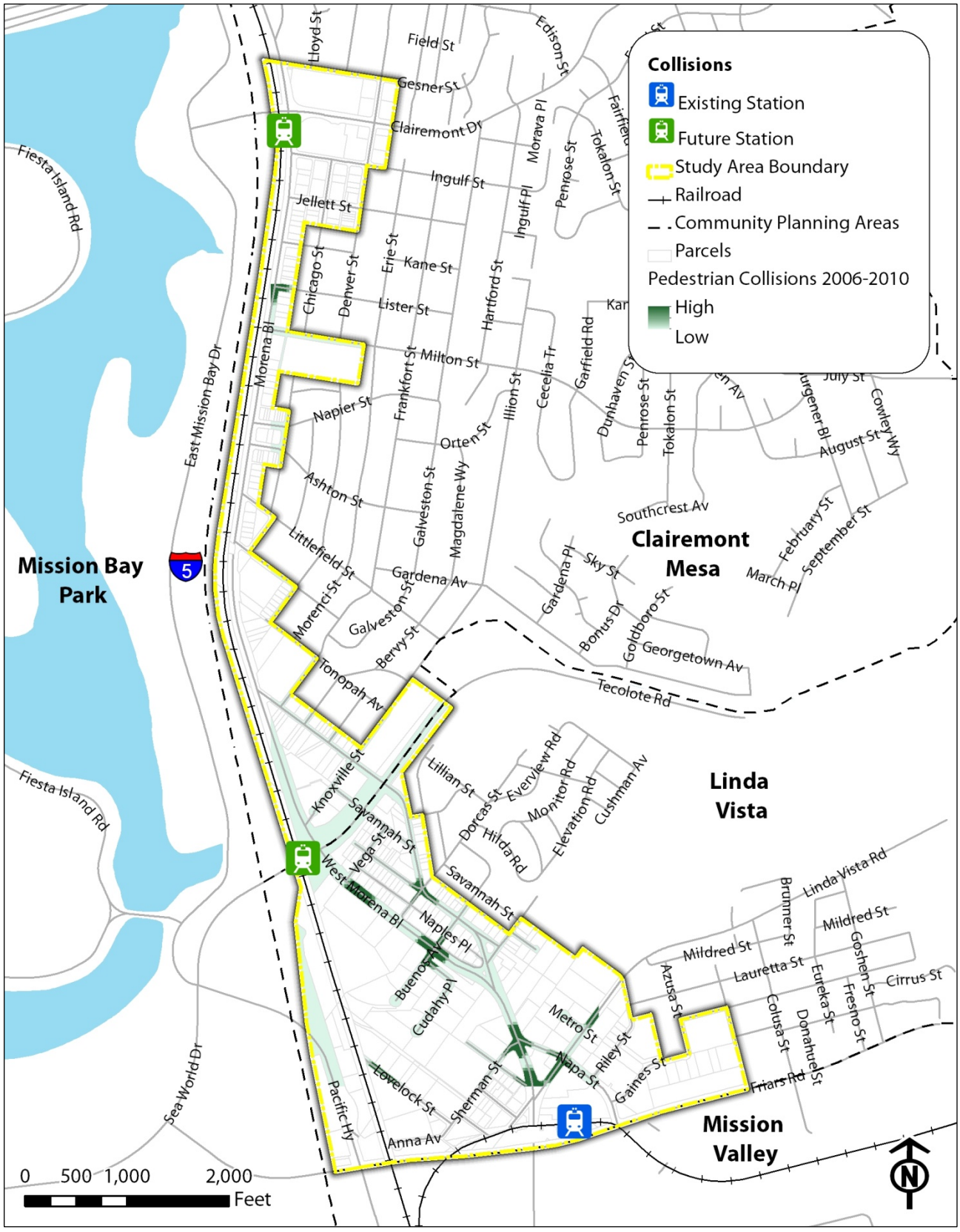


Figure 4-17: Auto-Pedestrian Collisions

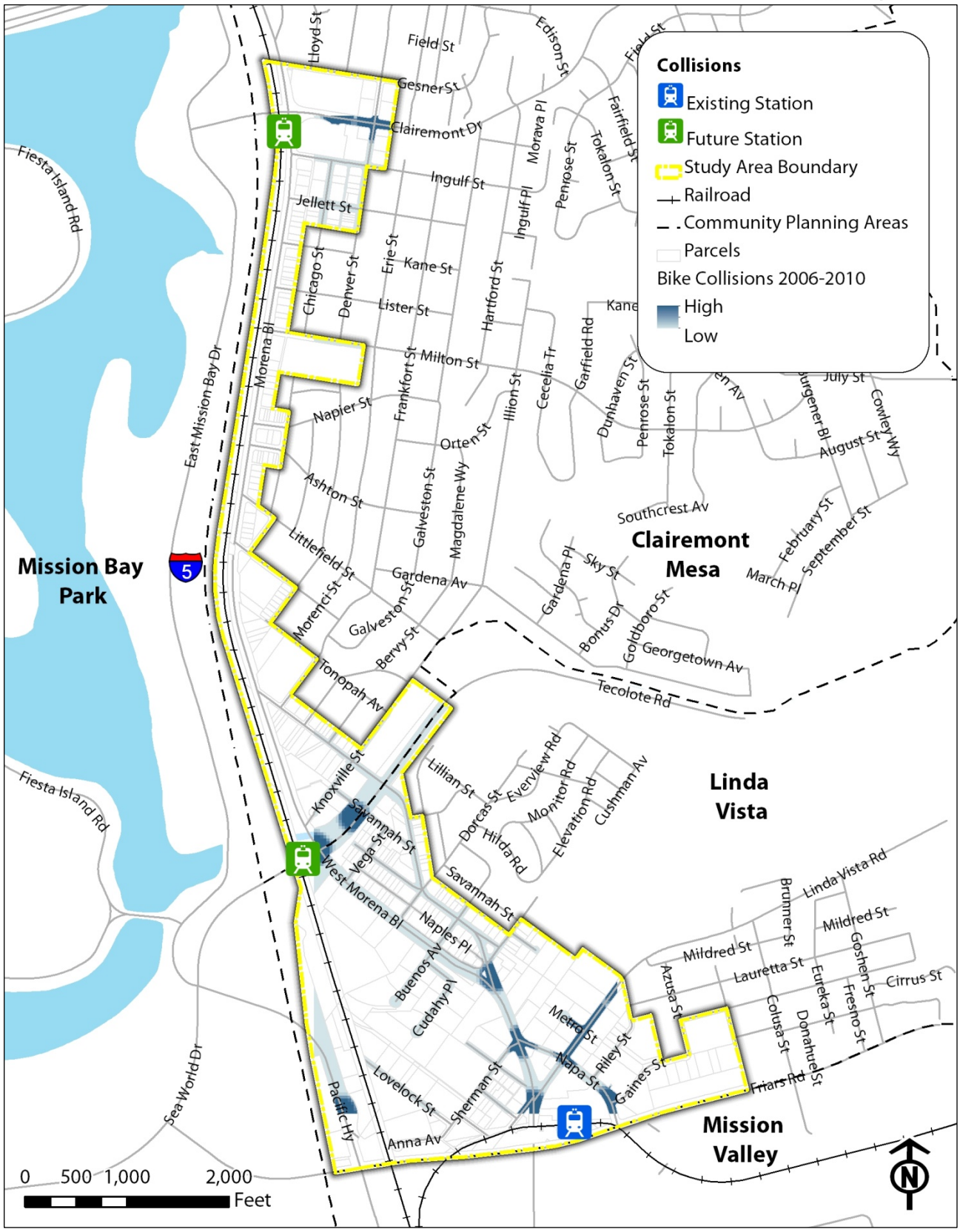


Figure 4-18: Auto-Bicycle Collisions

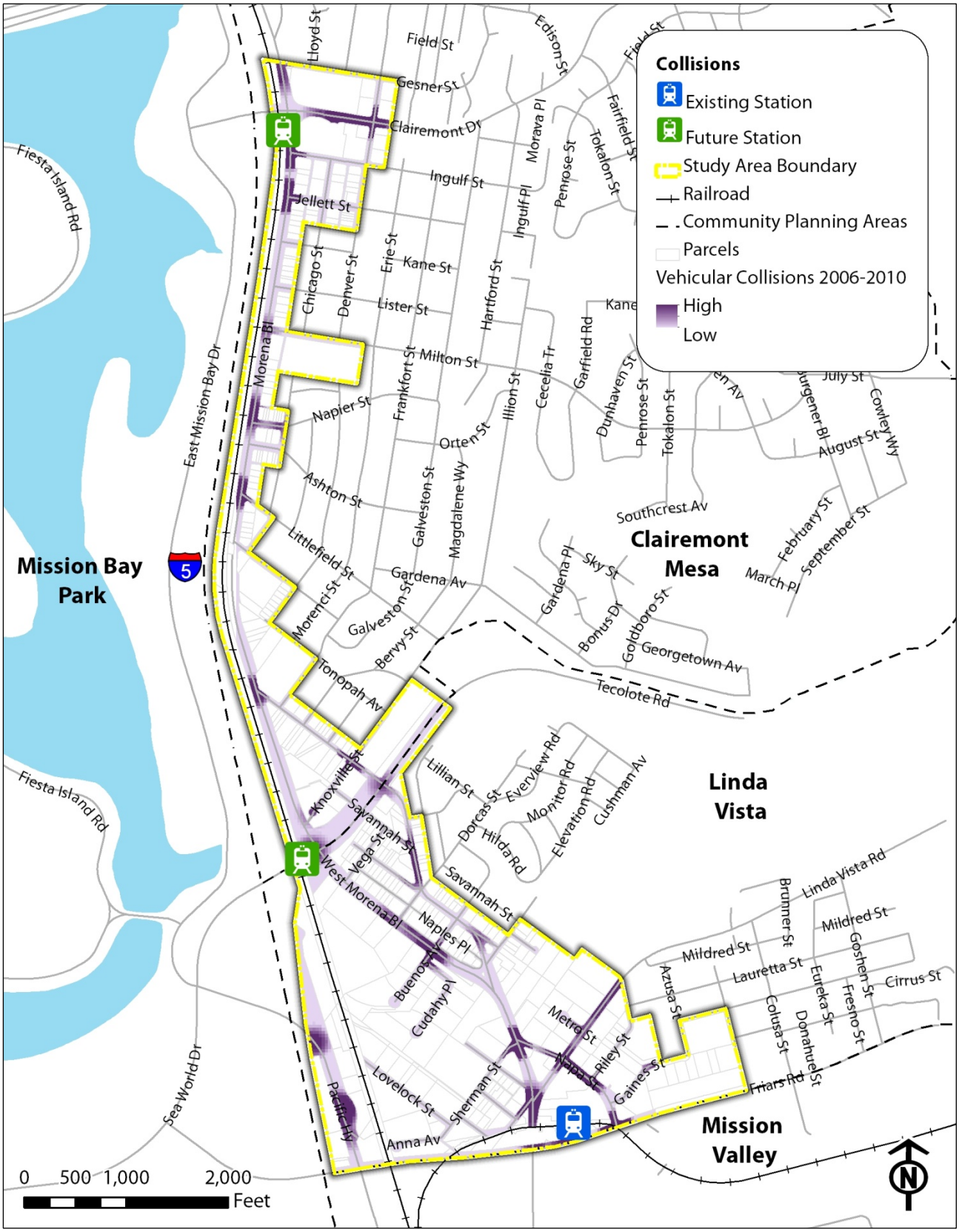


Figure 4-19: Auto-Auto Collisions

4.6 Multi-Modal Framework

Based on priorities established in the City of San Diego General Plan and the mobility elements of this plan, a shift in focus has occurred in regards to planning for circulation improvements. The State of California has contributed to this shift in direction by providing legislation that mandates a change in approach when dealing with transportation. But more important than mandates are the demographic, economic and behavior changes which are becoming more apparent both globally and locally. Fewer people want to spend their time and money on commuting long distances. Many today are tending to self-select the locations where they live and work. Many people are eliminating long distance commutes and avoiding multiple daily trips because of a concern over environmental impacts associated with green house gas emissions. Others are changing their commute patterns for economic reasons, as well the time savings that result from shorter commutes or changing the commute mode where they can do other activities because someone else is driving (transit, carpool, vanpool). Finally, the trend towards active transportation is partly based on support for healthy lifestyles, providing another reason why our streets can no longer be looked at as a place just to drive a vehicle. All of these factors combine to indicate to transportation planners and traffic engineers that a different and more comprehensive approach to mobility is needed.

4.6.1 Existing Conditions that Suggest Changes in Circulation

The study area is characterized by local traffic that maintains a moderate level of speed, with a certain amount of higher speed traffic resulting from drivers who cut through the area when I-5 is heavily congested. The southern end of the study area is a somewhat confusing arrangement of freeway-era style off-ramps, high-speed free right movements and non-standard intersections. This is especially true where the triangle area exists (formed by Linda Vista Road, Napa Street and Morena Boulevard) and again where Morena Boulevard splits into Morena and West Morena. These configurations make it very difficult for safe and comfortable travel as a pedestrian or as a person riding a bike.

The walkway environment is substandard for pedestrians due to a lack of pedestrian crossing facilities, the lack of ADA compatible facilities and the extensive use of off-street parking that is served from extra wide driveways creating an excessive cross pitch to the walking surface that also introduces multiple potential collision points. In many cases, walkways do not exist or are little more than aprons for parking. Significant distances occur between safe and legal crossing points. Although all intersections are legal crossings unless specifically marked for no pedestrian use, many are unsafe to cross in their current conditions. However, the majority of intersections in the south portion of the study area have no signalization, pedestrian control signals, ramps or marked cross walks. From both a qualitative and quantitative perspective, the current level of service for pedestrians is very low. The current land use pattern in the area would indicate a higher priority should be given to fix these pedestrian related shortfalls. This will be especially true for future land uses that will include higher density, mixed-use, and transit oriented projects with a greater level of pedestrian activity being generated by these uses.

For the same reasons that make it difficult to walk, cycling is also difficult through the area. The high-speed, free-moving angled movements, high-speed merge lanes and the lack of bike facilities in general make cycling difficult at the south end. The north end of the study area is far better, but standard bike lanes are missing and cyclists have to ride too close to parked cars, which can result in vehicular door collisions. The level of service

for cyclists would be considered moderate to low based on current roadway conditions and vehicular speeds and movements. The cycling level of service could be greatly improved through the reconfiguration of certain intersections and the addition of buffered bike lanes or separated facilities.

4.6.2 Legislative Framework that Suggests Changes to Circulation

Complete Streets and Routine Accommodation

For many cities, a bicycle master plan alone is not enough to ensure the implementation of the plan's goals and projects. A hurdle that many cities face is that their various plans are not well integrated. Despite many cities' attempts to support a "Complete Streets" approach, entrenched and often contradictory policies can make implementation difficult. For instance, a bicycle master plan, an ADA transition plan and a specific plan may address the same area, but ignore each other's recommendations. One plan may identify a certain project, but it may not be implementable due to prevailing policies and practices that prioritize vehicular flow and parking over other modes of travel.

Efforts to implement Complete Streets policies often highlight other significant obstacles, chief among them include "significant impacts" to traffic, acceptable thresholds to "vehicular level of service" and parking impacts. Drafting a Complete Streets policy often entails the identification of roadblocks such as these and ultimately requires increased flexibility to allow for the creation of a more balanced transportation system.

Legislative support for Complete Streets can be found at the state level (AB 1358) and is currently being developed at the national level (HR 2468). As explained in further detail in the following "relevant legislation" section, AB 1358 requires cities and counties to incorporate Complete Streets in their general plan updates and directs the state Office of Planning Research (OPR) to include Complete Streets principles in its update of guidelines for general plan circulation elements.

State Legislation and Policies

AB 32 Global Warming Solutions Act

AB 32 calls for the reduction of greenhouse gas emissions and codifies the 2020 emissions reduction goal. This act also directs the California Air Resources Board to develop specific early actions to reduce greenhouse gases while also preparing a scoping plan to identify how best to reach the 2020 goal. The MBAP includes several initiatives to help meet these requirements, including smart growth development, transit supportive development, mixed-use development, bike facilities, walking facilities, efficient use of land resources, options for car sharing and bike sharing, and urban forestry elements.

SB 375 Redesigning Communities to Reduce Greenhouse Gases

This bill seeks to reduce vehicle miles traveled through land use and planning incentives. Key provisions require the larger regional transportation planning agencies to develop more sophisticated transportation planning models, and to use them for the purpose of creating "preferred growth scenarios" in their regional plans that limit greenhouse gas emissions. The bill also provides incentives for local governments to incorporate these growth scenarios into the transportation elements of their general land use plans.

AB 1358 The Complete Streets Act

AB 1358 requires a city or county, upon revision of the circulation element of their general plan, to identify how the jurisdiction will provide for the routine accommodation of all users of the roadway including motorists, pedestrians, bicyclists, individuals with disabilities, seniors, and users of public transportation. The bill also directs the State OPR to amend guidelines for the creation of general plan circulation elements so that the building and operation of local transportation facilities safely and conveniently accommodate everyone, regardless of their mode of travel.

AB 1581 Bicycle and Motorcycle Traffic Signal Actuation

This bill defines a traffic control device as a traffic-actuated signal that displays one or more of its indications in response to the presence of traffic detected by mechanical, visual, electrical, or other means. Upon the first placement or replacement of a traffic-actuated signal, the signal would have to be installed and maintained, to the extent feasible and in conformance with professional engineering practices, to detect lawful bicycle or motorcycle traffic on the roadway.

AB-1371 Vehicles: Bicycles: Passing Distance/Three Feet for Safety Act

This statute, widely referred to as the "3 Foot Passing Law," requires drivers to provide at least three feet of clearance when overtaking cyclists. If traffic or roadway conditions prevent drivers from giving cyclists three feet of clearance, they must "*slow to a speed that is reasonable and prudent*" and wait until they reach a point where passing can occur without endangering the cyclist. Violations are punishable by a $35 base fine, but drivers who collide with cyclists and injure them in violation of the law will be subject to a $220 fine. The law is slated to take effect September 14, 2014.

SB743 CEQA Reform Bill

Just as important as the aforementioned pieces of legislation that support increases in cycling infrastructure and routine accommodation is one bill that promises to remove a longstanding roadblock to cycling infrastructure and accommodation. That roadblock is LOS and the legislation with the potential to remove it is SB743. For decades, vehicular congestion has been interpreted as an environmental impact and has often stymied bicycle and pedestrian projects. Projections of degraded Level of Service have, at a minimum, driven up project costs and, at a maximum, precluded projects altogether and excluded many uses when the assets of a roadway are completely given over to vehicular traffic only. SB743 could completely remove LOS as a measure of vehicular traffic congestion that must be used to analyze environmental impacts under the CEQA.

Caltrans' Deputy Directive 64-R1

Deputy Directive 64-R1 is a policy statement affecting Caltrans mobility planning and projects requiring the agency to "*provide for the needs of travelers of all ages and abilities in all planning, programming, design, construction, operations, and maintenance activities and products on the State highway system. The Department views all transportation improvements as opportunities to improve safety, access, and mobility for all travelers in California and recognizes bicycle, pedestrian, and transit modes as integral elements of the transportation system*." Deputy Directive 64-R1 goes on to mention the environmental, health and economic benefits of more Complete Streets.

4.6.3 Framework Set in Previous Planning Efforts

For the purposes of reviewing and assessing the roadway capacity to accommodate future conditions, a baseline (or no project) condition is needed for comparisons. The Adopted Community Plan 2035 "No Project" condition is represented by the circulation improvements made in the Clairemont Mesa Community Plan and the Linda Vista Community Plan. These plans are based on a build-out condition with reasonable expected land uses and circulation network improvements for 2035. Both of these plans share similar goals of improving the existing street system, including bicycle and pedestrian components, to accommodate projected growth.

The following street elements are found in the adopted community plans:

- Two-travel lanes northbound and southbound on Morena Boulevard
- Parallel parking on both sides of Morena Boulevard
- Unobstructed sidewalks with planted parkways throughout the study area
- Planted medians
- Class 2 Bike lanes throughout the study area
- A new standard intersection where Knoxville Street meets West Morena Boulevard
- Two-travel lanes on each side of Napa Street
- Two-travel lanes on each side of Linda Vista Road

4.6.4 Framework for Recommendations from Alternatives Analysis

All concepts developed by this project need to take into account the goal of supporting all travel modes, not only because California Complete Streets legislation requires it, but to address safety and connectivity goals for the local community, as well as the first and last mile pedestrian and bike connections to the existing and proposed trolley stations. The intent of Complete Streets legislation is to take all roadway users into account when planning for changes along a roadway. Although the legislation does not require that all uses be equally balanced or that they have a place within the geometric cross section of the right-of-way, they do need to be accommodated in a safe and direct manner, within the study area itself. All mobility alternatives considered in this study, took into account the Complete Streets requirements and looked at providing additional linkages to the existing and proposed transit stations in the area.

Land use scenarios also are an important foundation to transportation planning. The land uses proposed by the MBAP not only have an impact on the urban form of the study area, but also the efficiency and loading demand on the circulation system. Any change in land uses, or change in intensity of land use can have an impact, positive or negative, on mobility within the study area.

The primary approach for developing mobility alternatives was to first decide on varying levels of land use that look at different land use mixes, densities and vehicular trip generation. Then, the mobility alternatives were paired up with the appropriate land use alternatives as required to support varying levels of trip generation and traffic volumes.

Appendix E summarizes the broad range of alternatives considered by this study and the public input received that informed and ultimately selected the recommended plans shown in this Chapter. These alternatives have been included in this study to document the process, ideas, results and reasons why certain alternative approaches were not carried through into recommendations.

4.6.5 Land Use Framework

Based on input provided by the community and city staff, land use alternatives were merged to produce a scenario that decreases non-residential uses while providing a significant increase in multi-family residential/mixed-uses.

The land use quantities as proposed in the preferred land use alternative are:

- Residential: approximately 5,800 dwelling units (Increase of approximately 4,800 from existing)
- Non-residential commercial, retail, office, and industrial uses: 2.7 million square feet (Decrease of approximately 700,000 square feet from existing)

4.6.6 Vision Framework

The proposed mobility-based vision for this plan is one that:
"Promotes a balanced approach on roadway use, recognizing the role that streets play not only for vehicular flow and goods movement, but also for improvements to transit access, general pedestrian movements and bike uses".

The vision also recognizes the role that streets provide in accommodating and promoting adjacent land uses, activating public spaces with eyes on the public realm and providing additional parking options that also buffer pedestrian and other street uses. The vision strives to identify available capacity in roadway geometry that is not needed for vehicular throughput and reassign this space for bike lanes, pedestrian improvements, on-street parking or streetscape resources that can help provide shade, pedestrian protection, reduce urban heat island affects or provide for stormwater runoff options. Another key component of the vision is to provide better connections between the proposed and existing trolley stations to destinations in the community and connections to the recreational resources of Tecolote Canyon, Tecolote Creek, Fiesta Island and the east shores of Mission Bay. The current walking and biking environment connecting these uses are either non-existent or are very uncomfortable and have safety issues.

4.7 Recommended Plans

Based on the foundation provided by the framework discussed in the previous section, and as a result of the alternative development process, public engagement program and traffic modeling, a recommended set of plans were refined and are recommended for further study and refinement in the Phase 2 effort of this project.

4.7.1 Common Mobility Element Improvements

The following design elements are found throughout the study area. They are each applied to their unique street conditions and are designed to improve the pedestrian, cyclist and vehicular street environment. These common elements include:

- Lane diets/road diets (reducing the number of travel lanes and narrowing widths can reduce vehicular speeds)
- Curb extensions (improves visibility of pedestrians and shortens crossing distance)
- Improved traffic calming through the introduction of edge friction, including parking, street trees and lane markings
- Reclaimed street geometry allowing for bike facilities and parkway planters
- Streetscapes enhanced with the addition of medians and parkways planted with trees and native/drought-tolerant vegetation that can be used for stormwater management

4.7.2 Recommended Mobility Plan

The Recommended Alternative focuses on improvements to Morena Boulevard and West Morena Boulevard within the study area. The plan includes new street connections in the southern portion of the study area and the reorganization of roadway conditions around the triangular parcel of land bordered by Napa Street, Morena Boulevard, and Linda Vista Road. Please refer to Figure 4-20 for an overview of the plan, Sections 1 through 7 shown on Figures 4-21 through 4-27 and Segments 1 through 5 on Figures 4-28 through 4-32.

The following design elements are unique to the northern portion of the study area north of the new LRT Tecolote station (Figures 4-28 to 4-30):

- Morena Boulevard and portions of West Morena Boulevard are designed to have one lane southbound and two lanes northbound
- Parallel parking is provided on the eastern side of Morena Boulevard between Lister Street and Knoxville Street
- Buffered Class 2 bike lanes are included on both sides of Morena Boulevard
- A multi-use Class 1 path, with a tree-planted parkway buffer, is proposed on the west side of Morena Boulevard
- In various locations, tree pop-outs are proposed on the east side of Morena Boulevard that work with on-street parallel parking
- A new standard “T” intersection is proposed where Knoxville Street meets West Morena Boulevard
- A trail is proposed along Tecolote Creek on the northern side of Tecolote Road between Morena Boulevard and West Morena Boulevard, providing pedestrian access.

Southern portion from the new Tecolote LRT station to the southern boundary of the study area (Figures 4-31 through 4-32):

- West Morena Boulevard is designed to have one lane southbound and two lanes northbound between Vega Street and the southern Morena split
- West Morena Boulevard is designed to have two lanes southbound and one lane northbound between the southern Morena split and Linda Vista Road
- Parallel parking is located on the east and west side of West Morena Boulevard between Vega Street and the southern Morena split
- Parallel parking is located on the east side of Morena Boulevard between the southern Morena split and Linda Vista Road
- A new walkway on the southern side of Tecolote Road between Savannah Street and West Morena Boulevard provides pedestrian access to the LRT station
- Improved walkways and crosswalks from Morena Boulevard southward to the LRT station, using Savannah Street, Vega Street and Naples Street
- Tree pop-outs are proposed on the east side of West Morena Boulevard between Vega Street and the southern Morena split
- Buffered Class 2 bike lanes are included along most portions of West Morena Boulevard all the way from Vega Street to Friars Road, with a few minor exceptions

New Intersections and New Streets (Figure 4-32):

Several new intersections and street segments are proposed to efficiently handle future traffic flow, as well as provide pedestrians and cyclists safe and comfortable streetscape environments. These streets are laid out in a more geometric manner and follow a grid pattern, which is the best way to distribute traffic on a variety of streets and provide a more even flow of traffic and to increase levels of service for vehicles, bikes and pedestrians alike. A grid street network works better for pedestrian crossings and helps to

increase the overall likelihood of someone walking to destinations. A distributed network also provides choices to cyclist to follow lower volume streets, where available.

New Intersections:

- The southern Morena split is redesigned as a standard intersection and an extension of Cushman Avenue will cross over a newly named East Morena Boulevard and then to West Morena Boulevard
- Excess right of way at Cushman and West / East Morena Boulevard would be made available for future development
- Napa Street between Linda Vista Road and Morena Boulevard is completely closed off to vehicular traffic and would be made available for future development
- The intersection between Linda Vista Road and Morena Boulevard is redesigned as a standard "T" intersection. Excess right of way at Linda Vista and Morena would be made available for future development

New Street Segments:

- A new collector road, referred as "East Morena", is proposed between Cushman Avenue and Linda Vista Road and includes:
    - One lane northbound and southbound
    - Class 2 bike facilities
    - Curb ramp, crosswalk and countdown pedestrian signals
    - Parkways and tree-planted median

- Cushman Avenue is extended westward towards West Morena Boulevard. This new standard intersection replaces the southern Morena split and includes:
    - One lane northbound and southbound
    - Class 2 bike facilities
    - Tree-planted parkways

- Sherman Street is extended eastward towards the new East Morena Boulevard and includes:
    - One lane northbound and southbound
    - Class 3 bike route
    - Planted parkway

Sherman Street can also be extended up to the edge of the current boundary of USD near campus parking facilities. These improvements could include:

- One lane northbound and one lane southbound
- Wide pedestrian promenades that would lead to new housing and retail development as well as to the existing Morena LRT station and the future Tecolote LRT station

4.7.3 Interim Mid-term Recommended Mobility Plan

The Long-term Recommended Mobility Plan has already been described, although out of chronological order with the Mid-term. This was done to indicate the interim nature of how some of the Long-term plan can be implemented, while waiting for development that may take a while to come along and make the needed roadway changes that the Long-term plan is based on. The Long-term plan is the only way to accommodate future growth of traffic related to intensification of land uses and densities proposed in the study area. The areas where the intensification is most likely to occur, are near the areas where these roadway extensions associated with the Long-term plan would have to be created. Because the new circulation plan creates a significant amount of new developable real estate where right of way currently exists, and due to the upzoning of these properties to create incentives for new development, it is very reasonable to assume that the new projects would be fully conditioned to create these new roadways and demolish underutilized properties and buildings in order to create the road network that this new development needs for access and traffic flow. However, this will take time and an interim solution may be warranted if major new development does not occur over the next few years.

The Mid-term Recommended Plan design concept focuses on the re-organization of the roadway conditions around the triangular parcel of land bordered by Napa Street, Morena Boulevard, and Linda Vista Road. In addition, the current split between West Morena and Morena Boulevards has been modified into a standard “T” intersection to improve pedestrian and cyclist crossing conditions and to lower overall high speeds in this area that are due to the freeway-off-ramp design treatments. Please refer to Figure 4-33.

Southern portion from the new Tecolote LRT station to the southern boundary of the study area:

- West Morena Boulevard is designed to have one lane southbound and two lanes northbound between the Morena split at Cushman up to Tecolote Road (this is due to higher volumes of traffic that in the long-term, would be shifted to the new East Morena Boulevard extension)
- Morena Boulevard is designed to have two lanes southbound and one lane northbound between the southern Morena split at Cushman and the Napa intersection
- Morena Boulevard is designed to have two lanes southbound and two lanes northbound between Linda Vista Road and Napa
- Left turns onto eastbound Napa Street are restricted for those traveling southbound on Morena Boulevard
- A dual left turn is proposed at the Morena Boulevard-Linda Vista Road intersection for motorists traveling southbound on Morena Boulevard onto Linda Vista Road
- Linda Vista Road is designed to have two lanes northbound and southbound
- Napa Street is designed to have two lanes westbound and one lane eastbound

4.7.4 Recommendations for a BayView Loop Trail

A potential exists for the communities of Clairemont and Linda Vista to have a looped multi-use path that is mostly separated from vehicular traffic. This loop combines a number of the proposed elements of this plan with the existing Mission Bay Trail system. The Bayview Loop Trail is intended to be a circular series of 10’-12’ wide pathways that connect Mission Bay Park, Fiesta Island, Tecolote Creek, Tecolote Canyon, and the West Morena Boulevard Multi-use Path. This loop system is shown on Figure 45, which displays all proposed and existing bike facilities, along with the Bayview Loop Trail (BLT).

The community has expressed a high level of concern and desire to be more connected with Mission Bay, a resource a stone's throw away, but completely distant based on safe and comfortable access. Although the community would like to see a bridge that spans over the rail lines and the freeway, this project believes that a more feasible and cost effective solution would be to retrofit the two bridges to be more pedestrian and bike friendly, and provide a few missing segments that can tie together multiple trail segments in the community. The Coastal Rail Trail is proposed through this corridor. Based on several of the design options in this report, the Coastal Rail Trail could utilize Morena Boulevard as its north to south connector through the area. The combination of buffered Class 2 bike lanes and the stand-alone Class I multi-use paths would make for a very safe and low stress route through this area. Even if this segment were not designated the Coastal Rail Trail, it can certainly connect to the west of the freeway side of the Coastal Rail Trail as currently designated.

4.7.5 Recommendations for a Tecolote Creek Trail

Tecolote Creek is an under-appreciated creek system that has been mostly channelized. Adequate space exists on each side of the creek channel to allow for the development of a recreational and transportation pathway system. As shown on Figure 4-31, a Class I trail would connect with the West Morena Multi-use Trail, allowing a westward connection to the Tecolote Bridge route to Mission Bay or an eastward trail up to Tecolote Canyon Open Space Preserve and Nature Center.

4.7.6 Recommended Clairemont Bridge Crossing Plan

The recommended solution for the Clairemont bridge crossing plan must address the existing issues that make it difficult for pedestrians and cyclists to mix with vehicles on the freeway overpass. The proposed solutions strive to improve the overpasses by providing facilities that buffer and protect pedestrians and cyclists while maintaining efficient vehicular traffic flow. Additional improvements are also included at the East Mission Bay Drive intersection with Clairemont Drive to provide better connections to the existing trail system around East Mission Bay (Figure 4-45). The recommended improvements are shown on Figures 4-34 through 4-42. Some of the major features for the Clairemont bridge plan include:

- Buffered multi-use path designed in the center median between a new proposed signalized intersection west of Denver Street and East Mission Bay Drive
- Two travel lanes eastbound and westbound are maintained for vehicles
- Existing walkways are closed to pedestrians to concentrate users in the median. If pedestrian access is not controlled, then the traffic flow benefits will not be realized when both left turn and right turn movements are interrupted by pedestrians.
- Pedestrians are directed to the buffered multi-use path via crosswalks and actuated countdown timers located at the new signalized intersection west of Denver and also at East Mission Bay Drive at a 4-way stop sign controlled intersection
- New pedestrian and bicycle signals and signage
- Signalization will be prioritized for the multi-use path
- New crosswalks at the East Mission Bay Drive-Clairemont Drive intersection
- New path that connects pedestrians and cyclists from the East Mission Bay Drive-Clairemont Drive intersection to the main multi-purpose path in Mission Bay Park.

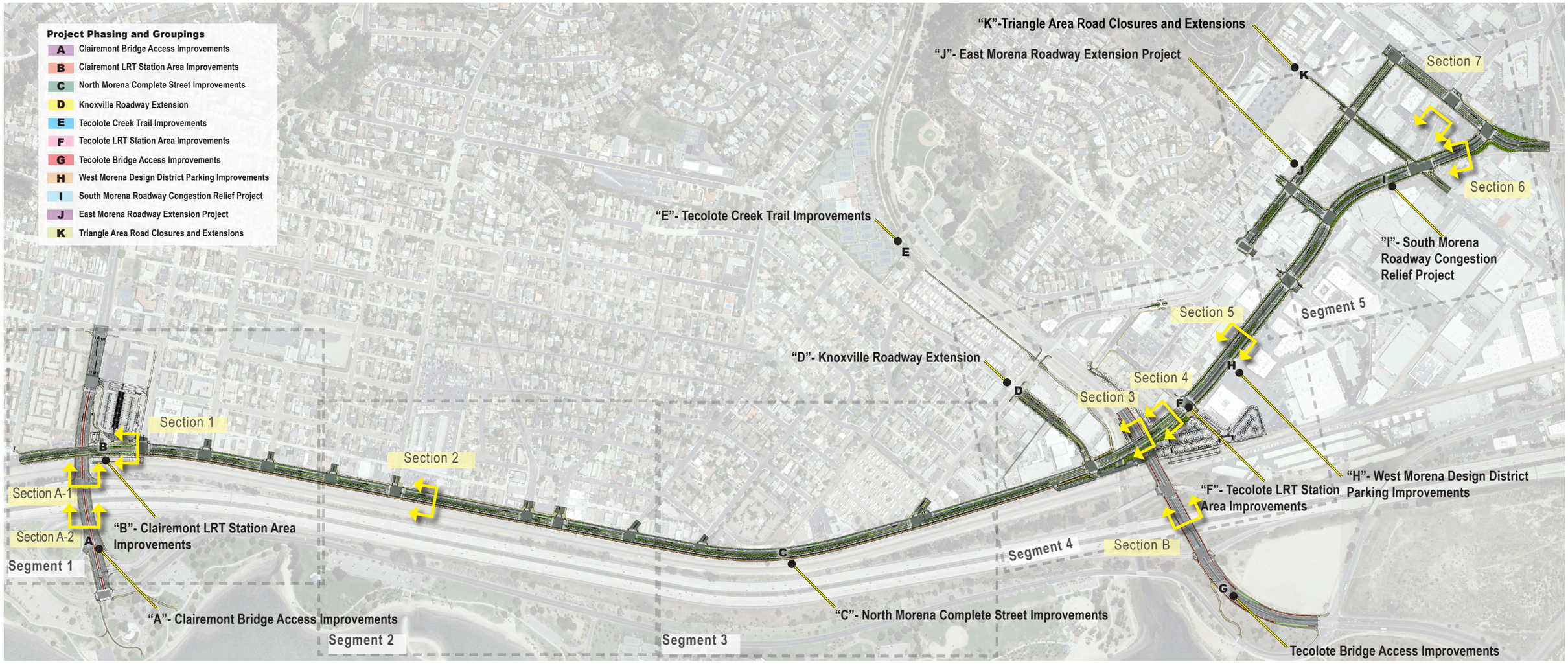
At first glance, the idea of running a multi-use trail down the center of a busy freeway overpass seems unsafe and difficult. However, most of the conflicts between vehicles, bikes and pedestrians can be addressed better with a center median solution than an outer edge solution. This is because all of the conflicts on this bridge are either the result of high volumes of right turning or left turning vehicles and the use of high speed on and off-ramps. Although extra special care needs to be provided for positive and safe operations that will prevent conflicts between left turning vehicles and through direction movement along the multi-use trail, this concept is feasible. Proper signage is needed at the two trail ends that indicate all pedestrian traffic will need to use if crossing the bridge. Bikes will be allowed to use the median lane or continue on the road edge. Pedestrian signage and barriers will be located at the new intersection west of Denver and at the existing intersection at East Mission Bay Drive. Initial discussions with Caltrans at first indicated that this treatment may be too experimental and will require too many design exceptions to Caltrans standards. However, subsequent discussions have indicated a willingness to consider design exceptions, based on research and findings from other facilities located in the United States and on preliminary designs being considered in other locations in California. Extensive review by Caltrans should be anticipated, but recent discussions are encouraging from District 11 multi-modal staff.

The cross section shown on Figure 4-34 shows the width relationship of much of the median with the proposed geometry of the multi-use path. Figure 4-35 shows the special signals that will be needed at the beginning and the end of the median trail, as well as two locations along the interim portions of the path. Figure 4-38 is proposed to accommodate westbound cycling use on Clairemont Drive that needs to get onto the east end of the median trail. They would use this “jug handle” lane approach to position themselves to cross in a bike crosswalk that is adjacent to the pedestrian crosswalk. Figure 4-39 shows a form of curb with candlestick markers placed on top of the raised curb to denote that a barrier exists. This would be proposed at each of the ends and the interim breaks in the system. Figure 4-40 shows some of the devices and signage that can be added on top of these raised curbs. Figure 4-41 indicates the need for pole mounted bike actuators for the special intersection crossings, along with signage denoting a pavement detector loop where the rider can trigger a light change. It should be noted, however, that in most cases, the movement across the intersections would be kept green until a vehicle needs to cross the path with a left turning motion or a through motion. The concept also requires the restriction of pedestrian use on the walkways at the edge of the bridges. These routes have multiple conflicts, very limited buffering from cars, and are located against a railing system that is too low to avoid a potential trip and fall over the railing. In addition, the bridges do not meet Caltrans standards for fencing to help prevent someone dropping something over the edge of the freeway. Pedestrian access restrictions and barriers would have to be created similar to what is shown on Figure 4-42. It appears that a median based solution could actually work in this situation. Figure 4-45 shows how this bridge crossing would be connected up with other path systems on the west side of the freeway.

4.7.7 Recommended Tecolote Bridge Crossing Plan

The median widths and overall geometry of Tecolote bridge will not allow for a center median running solution, nor will it allow for walkway expansions or a raised Class 2 bike lane. This is primarily due to a Caltrans restriction on bridge modification since its seismic condition is not known, resulting in a restriction on adding substantial weight to the bridge. In addition, the traffic volumes and turning movements will make any lane loss unacceptable. However, there are wide lanes on the bridge and the median is also much wider than it needs to be. The best solution for this tight bridge will be to provide full width bike lanes. These bike lanes benefit the pedestrian by providing an additional five to six feet offset of vehicles from the edge of the walkways. Please refer to Figures 4-31 as well as 4-43 through 4-44. Features included on the Tecolote Road freeway overpass include:

- Painted Class 2 bike lanes on both sides between Pacific Highway and Morena Boulevard
- Bike lane heading westbound is directed to the left of the right turn lane of the I-5 northbound on-ramp
- New signage alerts motorists wishing to merge into the right turn lane to yield to bicycles.
- Currently a high volume of right turn movements exist, with often little to no view of possible conflicts with cyclists that are hidden behind other vehicles trying to negotiate this merging movement across the bike lane area
- Two-travel lanes eastbound and westbound are maintained for vehicles
- A new path on the northwest side of Sea World Drive provides a faster connection for pedestrians and cyclists to Fiesta Island and Mission Bay Park



Key for Recommended Circulation Plan:

N

If printed at 11" x 17" then 1"= 150'

0' 38.5' 75' 150'

Figure 20

Morena Blvd Station Area Planning Study

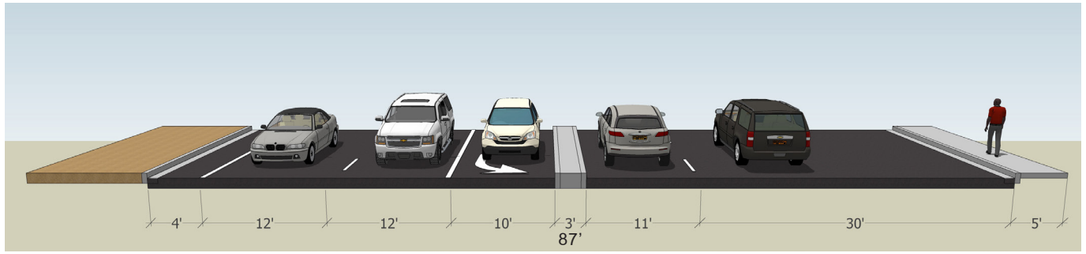
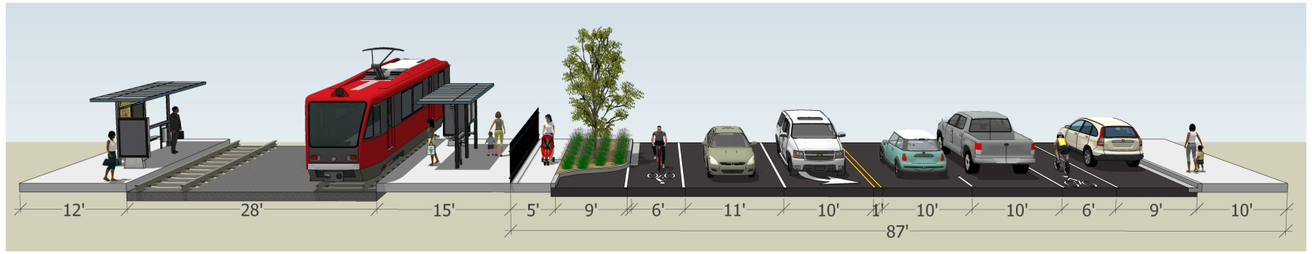


Figure 21 **Section 1:** Existing Cross Section near the Proposed Clairemont Trolley Station



Section 1: Proposed Cross Section near the Proposed Clairemont Trolley Station

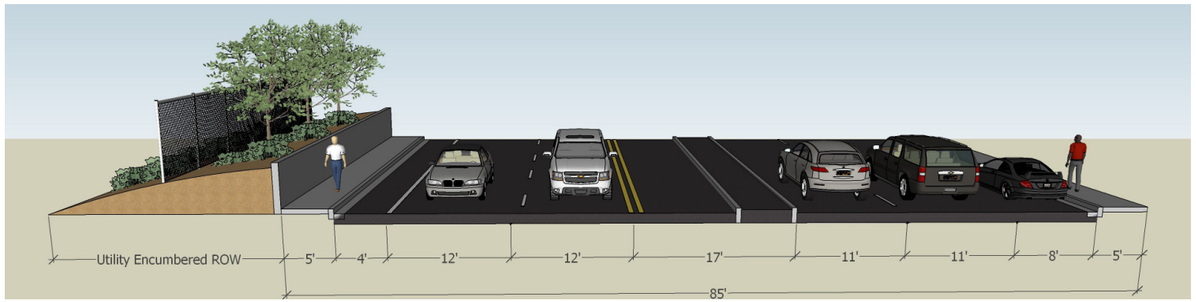
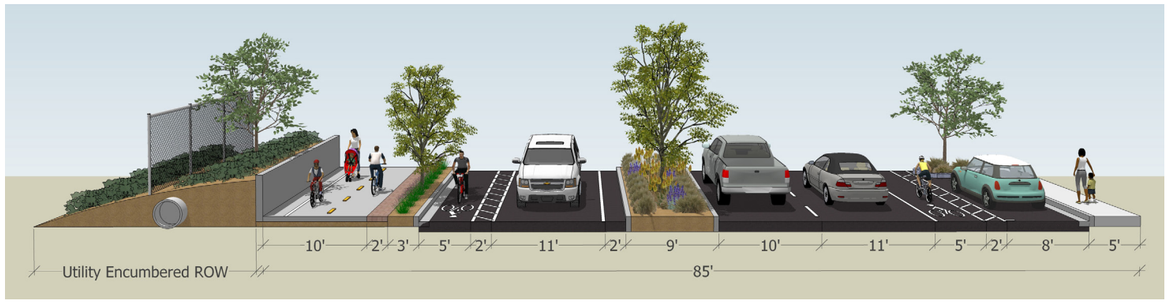


Figure 22 **Section 2:** Existing Cross Section South of Ingulf



Section 2: Proposed Cross Section South of Ingulf

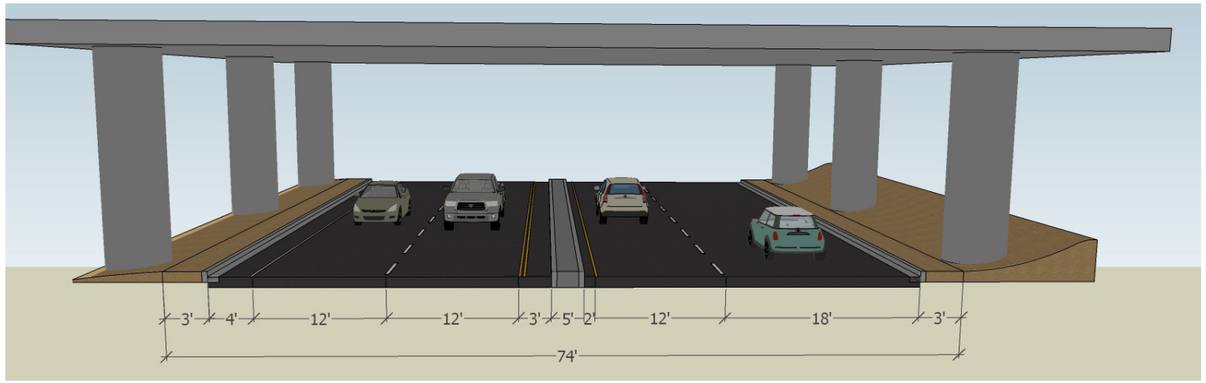
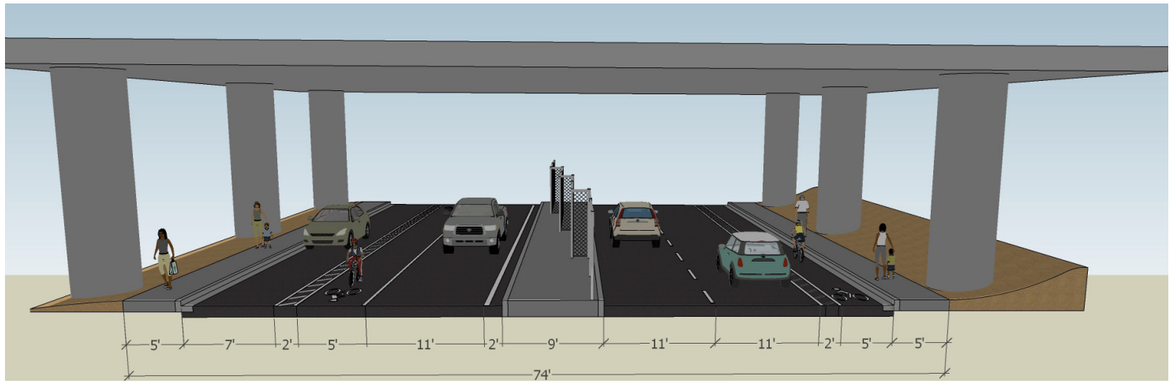


Figure 23 **Section 3:** Existing Cross Section under Tecolote Road Bridge



Section 3: Proposed Cross Section under Tecolote Road Bridge

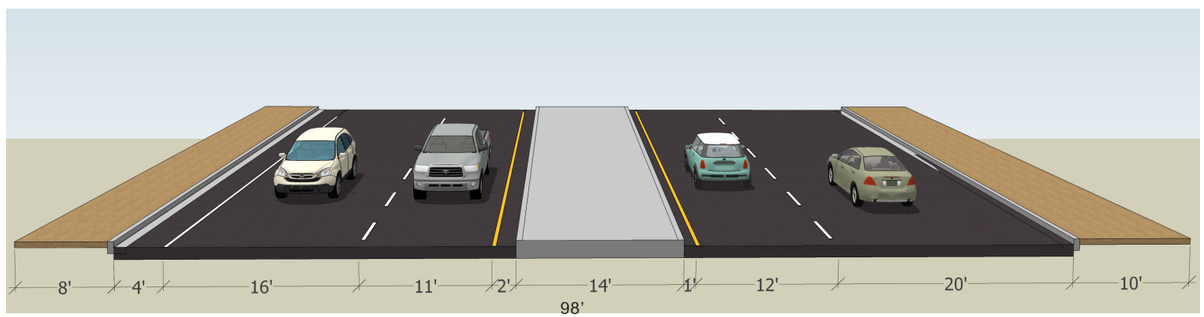
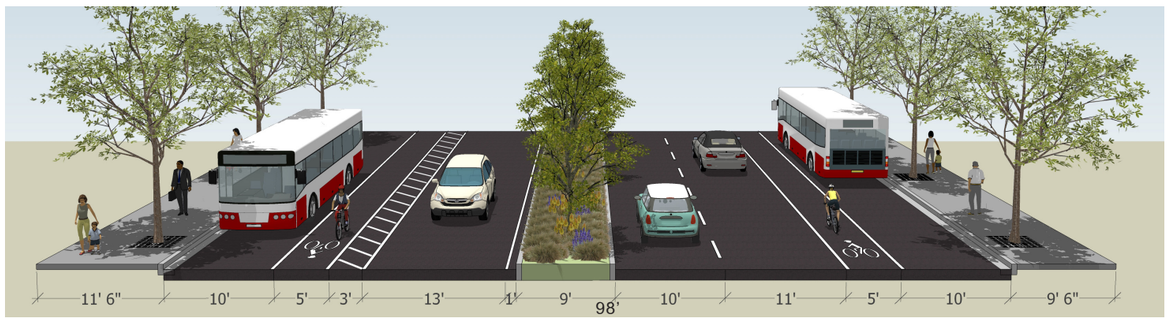


Figure 24 **Section 4:** Existing Cross Section near the Proposed Tecolote Trolley Station



Section 4: Proposed Cross Section near the Proposed Tecolote Trolley Station

Note: Lane configuration, widths & striping options are conceptual & will be further evaluated and finalized as part of the project design phase 2.

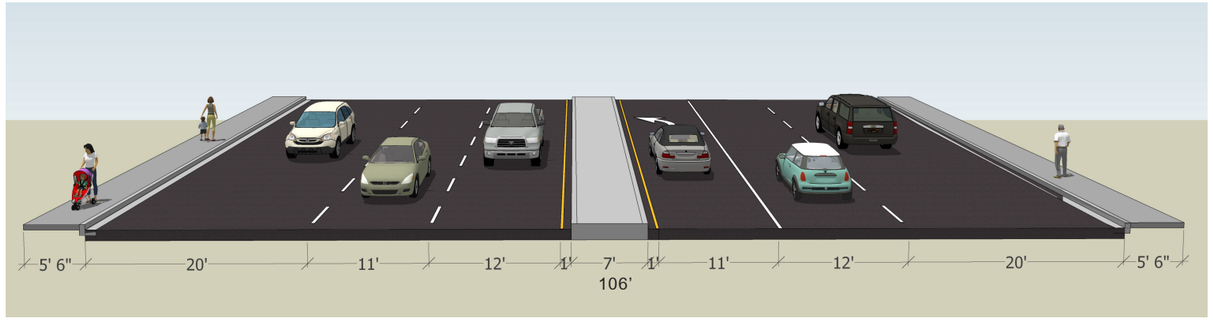
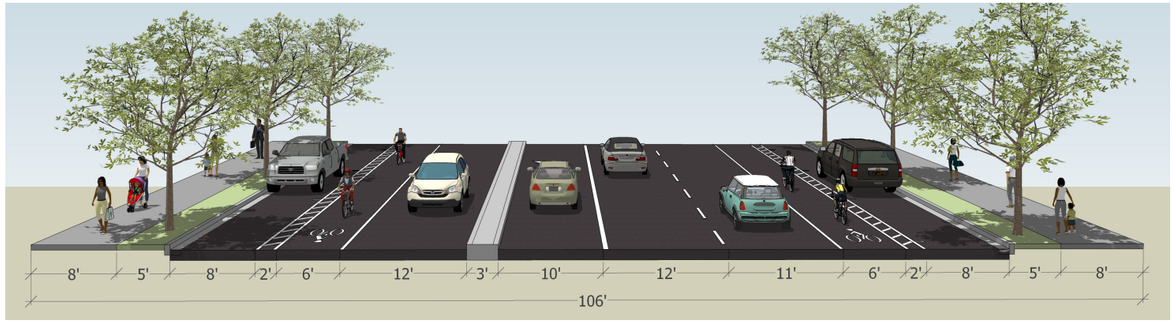


Figure 25 **Section 5:** Existing Cross Section On Morena North of Buenos



Section 5: Proposed Cross Section On Morena North of Buenos

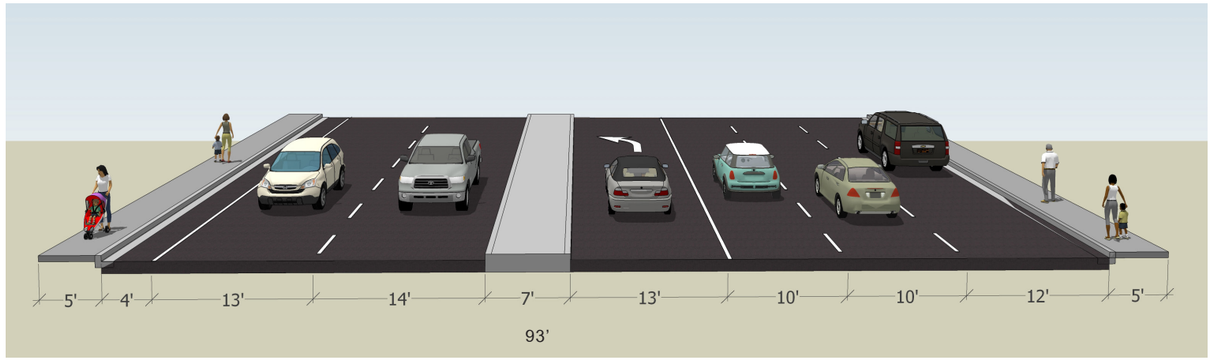
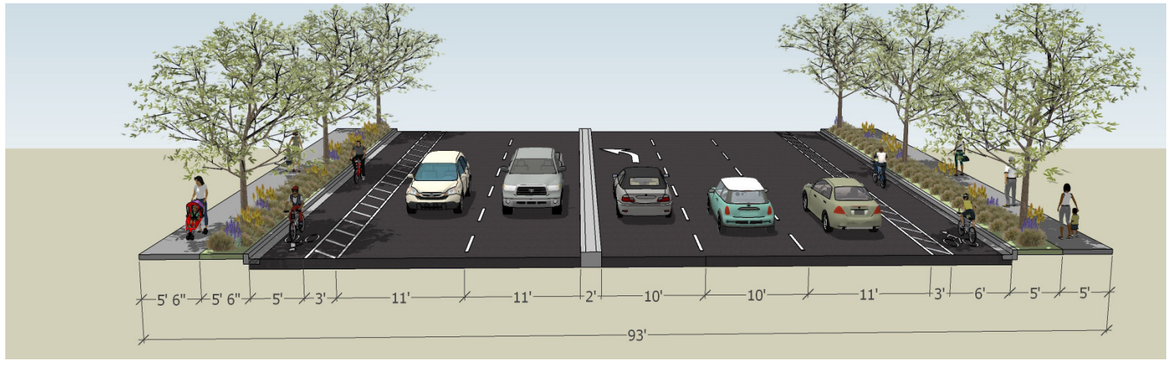
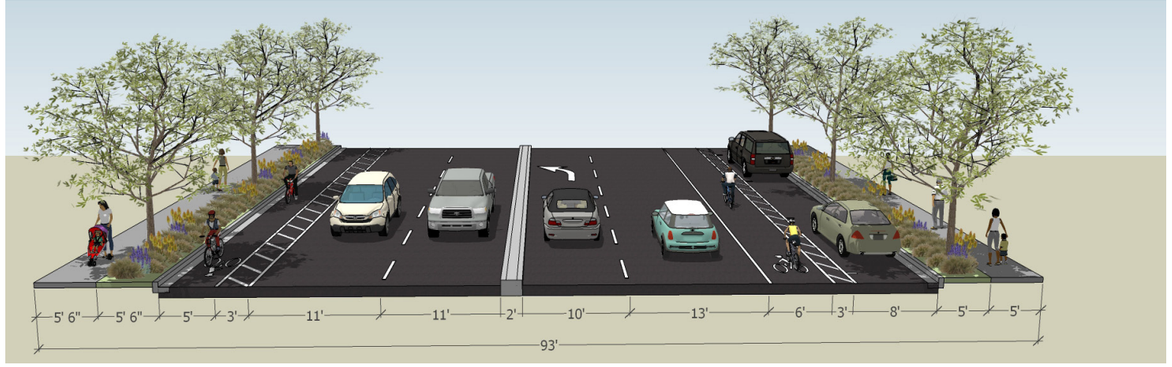


Figure 26 **Section 6:** Existing Cross Section South of Napa



Section 6: Proposed Mid-term Cross Section South of Napa



Section 6: Proposed Long-term Cross Section South of Napa

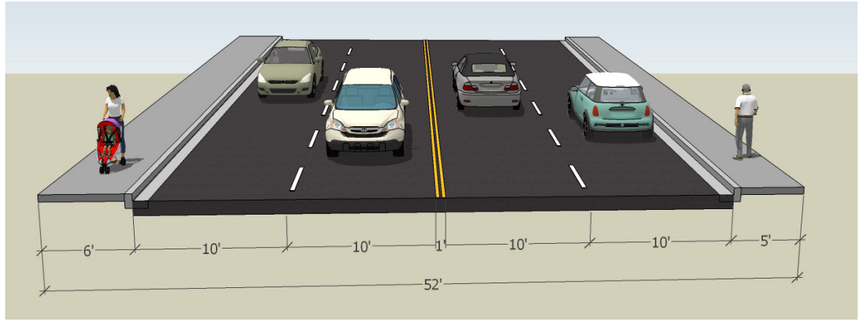
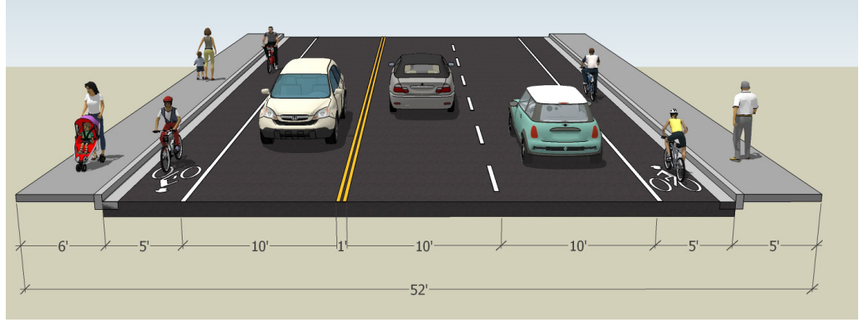


Figure 27 **Section 7:** Existing Cross Section on Napa North of Linda Vista Road



Section 7: Proposed Mid-term Cross Section on Napa North of Linda Vista Road

Existing and Proposed Cross Sections

Figures 25 thru 27

Note: Lane configuration, widths & striping options are conceptual & will be further evaluated and finalized as part of the project design phase 2.

Street Improvements: Segment 1 Plan

N

If printed at 11" x 17" then 1"= 150'

0' 38.5' 75' 150'

Figure 28

Note: Lane configuration, widths & striping options are conceptual & will be further evaluated and finalized as part of the project design phase 2.

Section 1

POTENTIAL FUTURE INTER-SECTION, DEPENDING ON FUTURE STUDY

FUTURE LRT STATION PARKING

FUTURE CLAIREMONT LRT STATION

Clairemont LRT Station Area Improvements

Clairemont Bridge Access Improvements

North Morena Complete Street Improvements

I-5 NORTHBOUND

I-5 SOUTHBOUND

EAST MISSION BAY DRIVE

GESNER

GESNER ST

CLAIREMONT DR

CLAIREMONT

INGULF

INGULF ST

JELLETT

JELLETT ST

MORENA BLVD

MORENA

KANE

KANE ST

A

B

C

Vehicular Improvements

1. Road diet (drop a lane)
2. Lane diet (narrow a lane)
3. Not used on this map
4. Not used on this map
5. Drop-off zone / 15 minute zone
6. Not used on this map
7. On-street parking
8. New traffic signal

Pedestrian Improvements

1. Enhanced crosswalk
2. Curb extension
3. Median refuge
4. Count-down pedestrian signals
5. Not used on this map
6. Not used on this map
7. Widened walkway
8. Not used on this map

Bike Improvements

1. Class 1 multi-use path
2. Class 2 standard bike lane
3. Class 2 buffered bike lane
4. Not used on this map
5. Not used on this map
6. Painted green cross over lane
7. Bike crosswalk
8. Not used on this map

Design Improvements

1. Raised median with no planting
2. Raised median with planting
3. Bio-swales
4. Street furnishings
5. Trees with tree grates
6. Trees in median
7. Trees in parkway strip
8. Not used on this map

Morena Blvd Station Area Planning Study

Project Phasing and Groupings

- A Clairemont Bridge Access Improvements
- B Clairemont LRT Station Area Improvements
- C North Morena Complete Street Improvements
- D Not Shown on this Map
- E Not Shown on this Map
- F Not Shown on this Map
- G Not Shown on this Map
- H Not Shown on this Map
- I Not Shown on this Map
- J Not Shown on this Map
- K Not Shown on this Map

Street Improvements: Segment 2 Plan

N

If printed at 11" x 17" then 1"= 150'

0' 38.5' 75' 150'

Figure 29

Vehicular Improvements

1. Road diet (drop a lane)
2. Lane diet (narrow a lane)
3. Not shown on this map
4. Not shown on this map
5. Not shown on this map
6. Not shown on this map
7. On-street parking
8. Not shown on this map

Pedestrian Improvements

1. Enhanced crosswalk
2. Curb extension
3. Median refuge
4. Count-down pedestrian signals
5. Not shown on this map
6. Not shown on this map
7. Widened walkway
8. Not shown on this map

Bike Improvements

1. Class 1 multi-use path
2. Class 2 standard bike lane
3. Class 2 buffered bike lane
4. Not shown on this map
5. Not shown on this map
6. Painted green cross over lane
7. Not shown on this map
8. Not shown on this map

Design Improvements

1. Not shown on this map
2. Raised median with planting
3. Bio-swales
4. Not shown on this map
5. Trees with tree grates
6. Trees in median
7. Trees in parkway strip
8. Not shown on this map

LISTER

MILTON

MORENA

NAPIER

ASHTON

LITTLEFIELD

Section 2

North Morena Complete Street Improvements

I-5 NORTHBOUND

I-5 SOUTHBOUND

EAST MISSION BAY DRIVE

Project Phasing and Groupings

- A Not Shown on this Map
- B Not Shown on this Map
- C North Morena Complete Street Improvements
- D Not Shown on this Map
- E Not Shown on this Map
- F Not Shown on this Map
- G Not Shown on this Map
- H Not Shown on this Map
- I Not Shown on this Map
- J Not Shown on this Map
- K Not Shown on this Map

Morena Blvd Station Area Planning Study

Street Improvements: Segment 3 Plan
N
If printed at 11" x 17" then 1"= 150'
0' 38.5' 75' 150'
Figure 30
Vehicular Improvements
1 Road diet (drop a lane)
2 Lane diet (narrow a lane)
3 Not shown on this map
4 Not shown on this map
5 Not shown on this map
6 Not shown on this map
7 On-street parking
8 Not shown on this map
Pedestrian Improvements
1 Enhanced crosswalk
2 Curb extension
3 Median refuge
4 Count-down pedestrian signals
5 Not shown on this map
6 Not shown on this map
7 Widened walkway
8 Not shown on this map
Bike Improvements
1 Class 1 multi-use path
2 Class 2 standard bike lane
3 Class 2 buffered bike lane
4 Not shown on this map
5 Not shown on this map
6 Painted green cross over lane
7 Not shown on this map
8 Not shown on this map
Design Improvements
1 Raised median with no planting
2 Raised median with planting
3 Bio-swales
4 Not shown on this map
5 Trees with tree grates
6 Trees in median
7 Trees in parkway strip
8 Not shown on this map
FRANKFORT
EAST MORENA
WEST MORENA
MORENA
ASHER
MORENA BLVD
C
North Morena Complete Street Improvements
I-5 NORTHBOUND
I-5 SOUTHBOUND
EAST MISSION BAY DRIVE
Project Phasing and Groupings
A Not Shown on this Map
B Not Shown on this Map
C North Morena Complete Street Improvements
D Not Shown on this Map
E Not Shown on this Map
F Not Shown on this Map
G Not Shown on this Map
H Not Shown on this Map
I Not Shown on this Map
J Not Shown on this Map
K Not Shown on this Map
Morena Blvd Station Area Planning Study

Street Improvements: Segment 4 Plan

N

If printed at 11" x 17" then 1"= 150'

0' 38.5' 75' 150'

Figure 31

Project Phasing and Groupings

- A Not Shown on this Map
- B Not Shown on this Map
- C North Morena Complete Street Improvements
- D Knoxville Roadway Extension
- E Tecolote Creek Trail Improvements
- F Tecolote LRT Station Area Improvements
- G Tecolote Bridge Access Improvements
- H West Morena Design District Parking Improvements
- I Not Shown on this Map
- J Not Shown on this Map
- K Not Shown on this Map

TECOLOTE

EAST MORENA

Undercrossing

West Morena Design District Parking Improvements

Tecolote Creek Trail Improvements

Knoxville Roadway Extension

North Morena Complete Street Improvements

Tecolote LRT Station Area Improvements

Tecolote Bridge Access Improvements

Section 3

Section 4

FUTURE TECOLOTE LRT STATION

W. MORENA BLVD

WEST MORENA

BUENOS AVE

VEGA ST

KNOXVILLE

Vehicular Improvements

1. Road diet (drop a lane)
2. Lane diet (narrow a lane)
3. New roadway
4. Not shown on this map
5. Drop-off zone / 15 minute zone
6. Not shown on this map
7. On-street parking
8. New traffic signal

Pedestrian Improvements

1. Enhanced crosswalk
2. Curb extension
3. Median refuge
4. Count-down pedestrian signals
5. Ramps and stairs
6. HAWK crossing
7. Widened walkway
8. Enhanced double tree lined path
9. Stairs/Ramp

Bike Improvements

1. Class 1 multi-use path
2. Class 2 standard bike lane
3. Class 2 buffered bike lane
4. Not shown on this map
5. Not shown on this map
6. Painted green cross over lane
7. Bike crosswalk
8. Jug handle (left turn for bikes)

Design Improvements

1. Raised median with no planting
2. Raised median with planting
3. Bio-swales
4. Not shown on this map
5. Trees with tree grates
6. Trees in median
7. Trees in parkway strip
8. Not shown on this map

Note: Lane configuration, widths & striping options are conceptual & will be further evaluated and finalized as part of the project design phase 2.

Morena Blvd Station Area Planning Study

Street Improvements: Segment 5 Plan

N

If printed at 11" x 17" then 1"= 150'

0' 38.5' 75' 150'

Figure 32

Vehicular Improvements

1. Road diet (drop a lane)
2. Lane diet (narrow a lane)
3. New roadway
4. Close road or reclaim space
5. Not shown on this map
6. New driveway / curbcut
7. On-street parking
8. New traffic signal

Pedestrian Improvements

1. Enhanced crosswalk
2. Curb extension
3. Median refuge
4. Count-down pedestrian signals
5. Rectangular Rapid Flashing Beacon
6. HAWK crossing
7. Widened walkway
8. Enhanced double tree lined path

Bike Improvements

1. Not shown on this map
2. Class 2 standard bike lane
3. Class 2 buffered bike lane
4. Not shown on this map
5. Sharrows
6. Painted green cross over lane
7. Not shown on this map
8. Not shown on this map

Design Improvements

1. Raised median with no planting
2. Raised median with planting
3. Bio-swales
4. Street furnishings
5. Trees with tree grates
6. Trees in median
7. Trees in parkway strip
8. Entry monumentation / wayfinding

Note: Lane configuration, widths & striping options are conceptual & will be further evaluated and finalized as part of the project design phase 2.

Morena Blvd Station Area Planning Study

East Morena Roadway Extension Project

Triangle Area Road Closures and Extensions

South Morena Roadway Congestion Relief Project (Long-term)

West Morena Design District Parking Improvements

Section 7

Section 6

NEW EAST MORENA

NEW EXTENDED SHERMAN

NEW CUSHMAN

LINDA VISTA ROAD

NAPA

WEST MORENA

SHERMAN

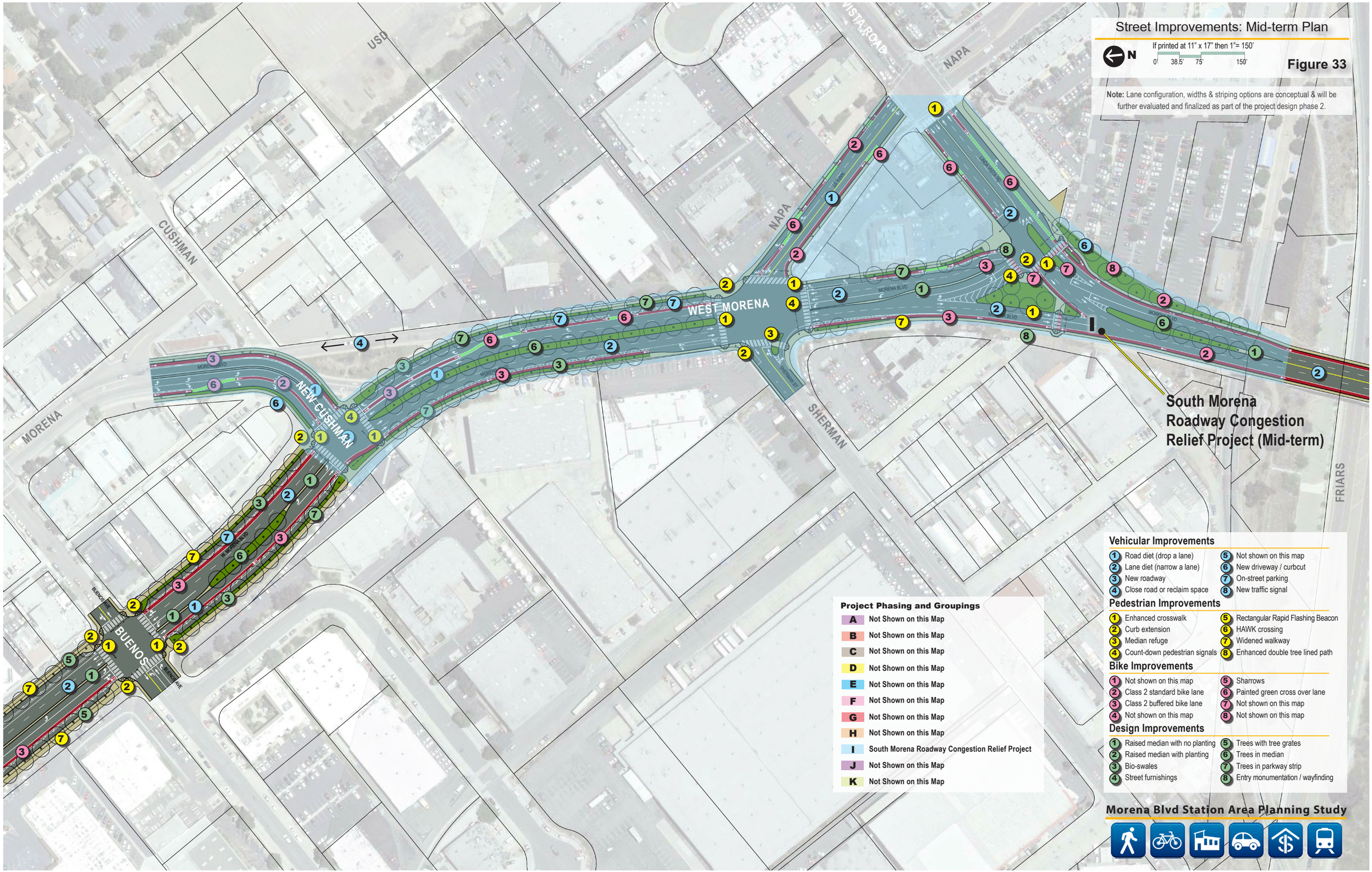
BUENOS

FRIARS

USD

Project Phasing and Groupings

- A Not Shown on this Map
- B Not Shown on this Map
- C Not Shown on this Map
- D Not Shown on this Map
- E Not Shown on this Map
- F Not Shown on this Map
- G Not Shown on this Map
- H West Morena Design District Parking Improvements
- I South Morena Roadway Congestion Relief Project
- J East Morena Roadway Extension Project
- K Triangle Area Road Closures and Extensions


Street Improvements: Mid-term Plan
If printed at 11" x 17" then 1"= 150'
0' 38.5' 75' 150'
Figure 33
Note: Lane configuration, widths & striping options are conceptual & will be further evaluated and finalized as part of the project design phase 2.
South Morena Roadway Congestion Relief Project (Mid-term)
MORENA
CUSHMAN
USD
NAPA
VISTA ROAD
WEST MORENA
SHERMAN
FRIARS
NEW CUSHMAN
BUENOS AVE
Project Phasing and Groupings
A Not Shown on this Map
B Not Shown on this Map
C Not Shown on this Map
D Not Shown on this Map
E Not Shown on this Map
F Not Shown on this Map
G Not Shown on this Map
H Not Shown on this Map
I South Morena Roadway Congestion Relief Project
J Not Shown on this Map
K Not Shown on this Map
Vehicular Improvements
1 Road diet (drop a lane)
2 Lane diet (narrow a lane)
3 New roadway
4 Close road or reclaim space
5 Not shown on this map
6 New driveway / curbcut
7 On-street parking
8 New traffic signal
Pedestrian Improvements
1 Enhanced crosswalk
2 Curb extension
3 Median refuge
4 Count-down pedestrian signals
5 Rectangular Rapid Flashing Beacon
6 HAWK crossing
7 Widened walkway
8 Enhanced double tree lined path
Bike Improvements
1 Not shown on this map
2 Class 2 standard bike lane
3 Class 2 buffered bike lane
4 Not shown on this map
5 Sharrows
6 Painted green cross over lane
7 Not shown on this map
8 Not shown on this map
Design Improvements
1 Raised median with no planting
2 Raised median with planting
3 Bio-swales
4 Street furnishings
5 Trees with tree grates
6 Trees in median
7 Trees in parkway strip
8 Entry monumentation / wayfinding
Morena Blvd Station Area Planning Study

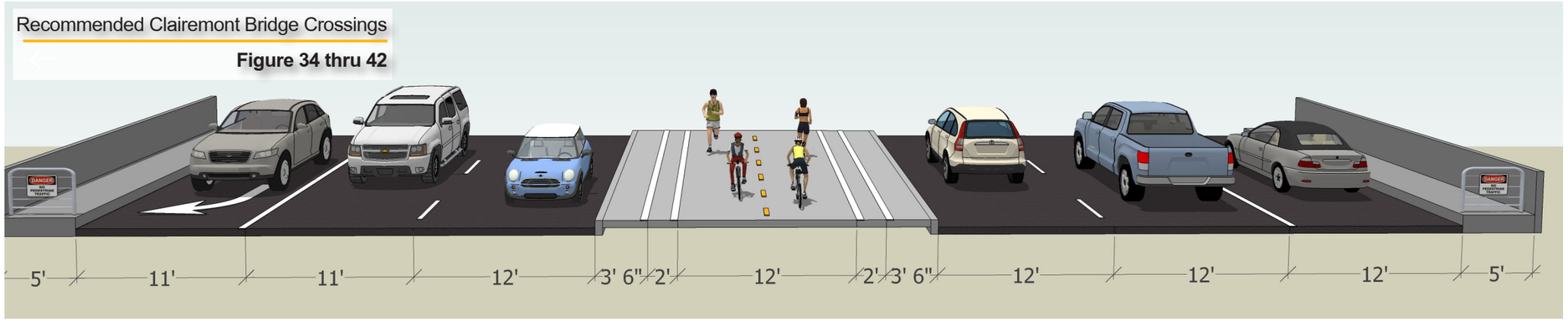


Figure 34: Cross Section Showing the Median Running Multi-use Buffered & Barriered Path

Figure 37: Bike & Pedestrian Control Devices

Figure 38: Bike Left Turn Jug Handle

Figure 35: Perspective of Typical Intersection Control

Section A-2: Clairemont Bridge

Figure 39: Raised Curb with Candlestick Markers on Curb

Figure 40: Signage / Barrier Edges on Raised Curbs or Rolled Curbs

Figure 41: Actuators / Sensors for Bike Crossing

Figure 42: Pedestrian Control, Signage & Barriers

Project Phasing and Groupings

- **A** Clairemont Bridge Access Improvements
- **B** Not Shown on this Map
- **C** Not Shown on this Map
- **D** Not Shown on this Map
- **E** Not Shown on this Map
- **F** Not Shown on this Map
- **G** Not Shown on this Map
- **H** Not Shown on this Map
- **I** Not Shown on this Map
- **J** Not Shown on this Map
- **K** Not Shown on this Map

Vehicular Improvements

- (2) Lane diet (narrow a lane)
- (8) New traffic signal
- (9) Special signage, signals & actuators for bike / ped signals

Pedestrian Improvements

- (1) Enhanced crosswalk
- (3) Median walkway with barriers
- (4) Count-down pedestrian signals

Bike Improvements

- (1) Class 1 multi-use path

Note: Lane configuration, widths & striping options are conceptual & will be further evaluated and finalized as part of the project design phase 2.

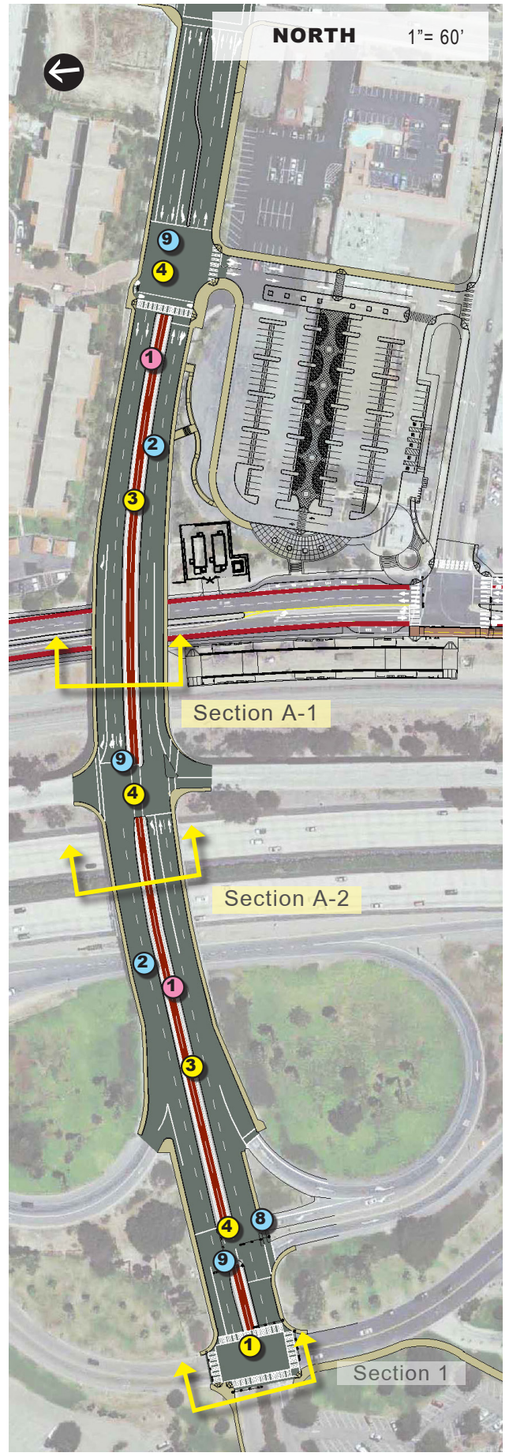


Figure 36: Plan view of Proposed Median Multi-use Path Across Clairemont Bridge

Section A-1: Clairemont Bridge

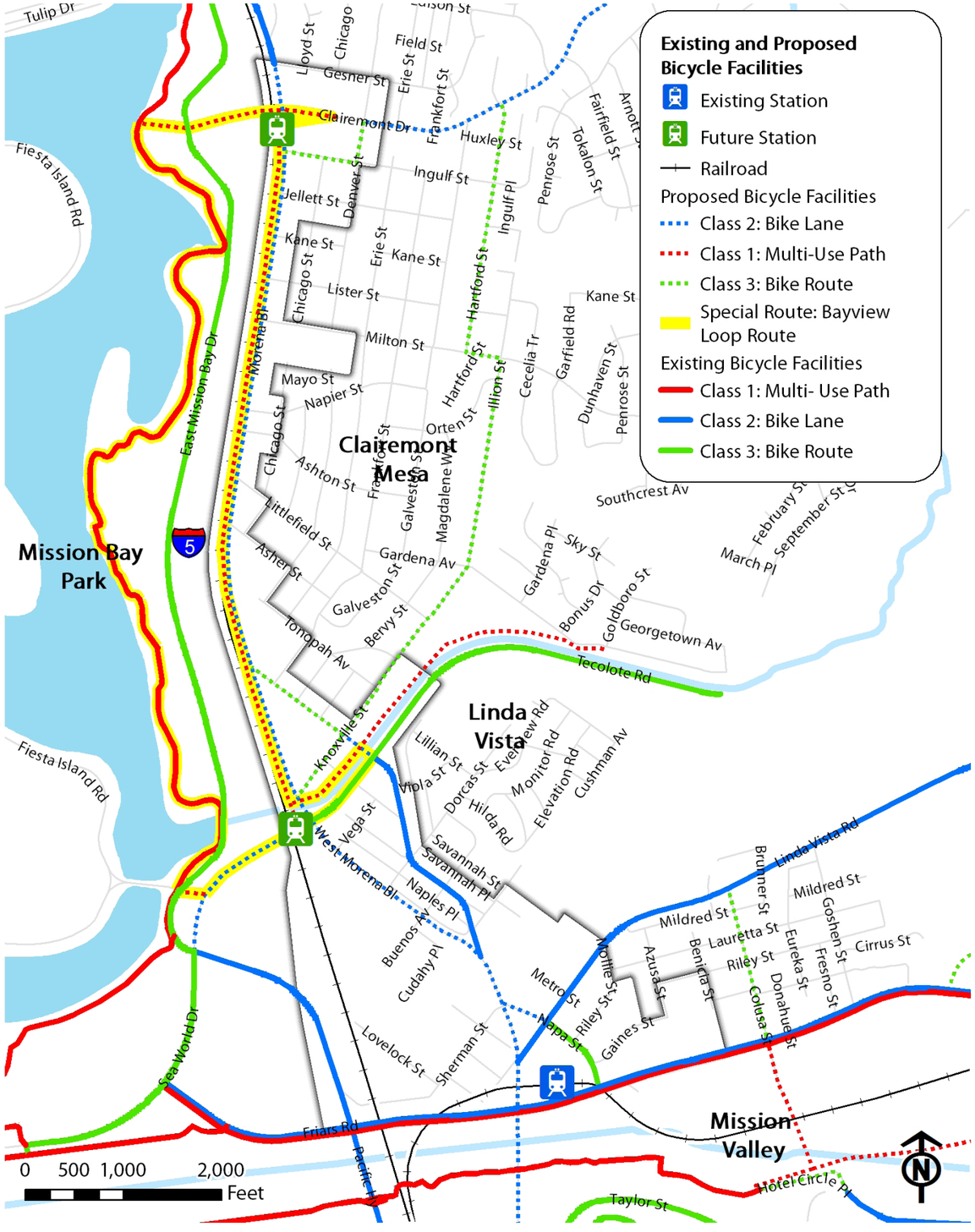


Figure 45: Adopted & Recommended Bike Facilities with "Bayview Loop" Highlighted Connecting Mission Bay, Mission Bay Bike Path, Fiesta Island, Tecolote Canyon, Tecolote Creek, Linda Vista and Clairemont Communities

Project Phasing and Groupings

- A Not Shown on this Map
- B Not Shown on this Map
- C Not Shown on this Map
- D Not Shown on this Map
- E Not Shown on this Map
- F Not Shown on this Map
- G Tecolote Bridge Access Improvements
- H Not Shown on this Map
- I Not Shown on this Map
- J Not Shown on this Map
- K Not Shown on this Map

Vehicular Improvements

- (2) Lane diet (narrow a lane)

Pedestrian Improvements

- (1) Enhanced crosswalk
- (3) Median refuge
- (4) Count-down pedestrian signals

Bike Improvements

- (1) Class 1 multi-use path
- (2) Class 2 standard bike lane
- (6) Painted green cross over lane

Design Improvements

- (4) Street furnishings

Note: Lane configuration, widths & striping options are conceptual & will be further evaluated and finalized as part of the project design phase 2.

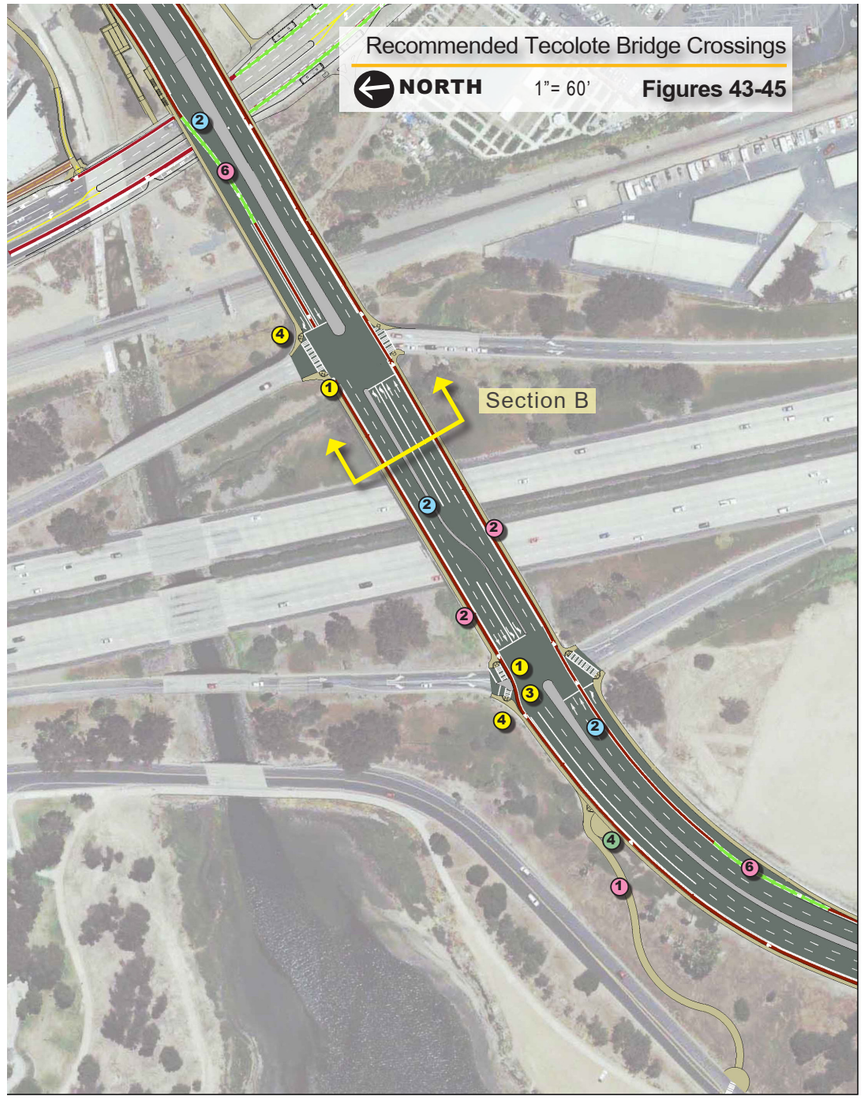


Figure 43: Map of the Recommended Tecolote Bridge Crossing Plan

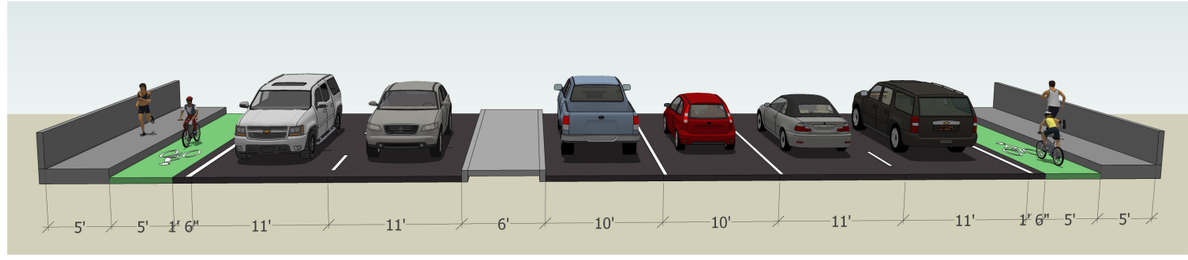


Figure 44: Buffered Bike Lane with Crossover Bike Painted Lanes
Section B: Tecolote Bridge

4.8 Future Vehicular Mode Analysis

This section summarizes the findings of the preferred scenario traffic evaluation.

The future traffic conditions analysis is based on a comparison of daily traffic volumes and peak-hour operations under existing conditions, presented earlier in this chapter, with Year 2035 traffic volumes and resulting peak-hour traffic operations at each study intersection under the following three planning scenarios:

- Adopted Community Plan: Year 2035 traffic conditions with buildout of the approved land uses and planned street network under the currently adopted Community Plan.
- Preferred Land Use Alternative (Mid-term Mobility Network): Year 2035 traffic conditions with buildout of the Preferred Land Use Plan and Interim Mid-term Recommended Mobility Plan.
- Preferred Land Use Alternative (Long-term Mobility Network): Year 2035 Conditions with buildout of the Preferred Land Use Plan and Long-term Recommended Mobility Plan street network

Under each of three scenarios, the traffic evaluation is based on a travel demand forecast that assumes land uses outside the study area will be consistent with buildout identified in the SANDAG Series 12 model; and that the transportation network outside the study area will be consistent with the SANDAG Series 12 Reasonably Expected network.

Table 4-6 provides a comparison of trip generation under the Adopted Community Plan and Preferred Alternative.

Please note: the newly created intersections of Knoxville Street/West Morena Boulevard and Clairemont Drive/the Bayview Plaza driveway were not included as intersections for analysis. Although full analysis was not conducted at these locations, information available indicates that the Knoxville/West Morena intersection would likely operate at LOS B during the peak hours. Insufficient detail existed about the Clairemont Drive/Bayview Plaza driveway intersection to approximate an LOS. In both cases, additional analysis will be required in Phase II of the project.

4.8.1 Adopted Community Plan

The analysis of Adopted Community Plan conditions is based on Year 2035 conditions assuming buildout of adopted land uses within the study area, as described in Chapter 2 Land Use, and approved circulation network changes within the study area as described earlier this chapter:

- Motor vehicle traffic lane configurations and capacity on each of the major and collector streets within the study area would remain essentially unchanged under the adopted community plan.

- Morena Boulevard (north and south of the two splits with West Morena) and West Morena would remain designated as major streets. Since major streets are to be designed to 45 mile per hour (mph) design speeds, existing travel lane widths and intersection designs are expected to remain.

- Traffic capacity enhancements would be limited to the planned extension of Knoxville Street as a 2-lane collector to West Morena Boulevard to provide a direct connection with the planned Tecolote station, while also allowing some motorists to avoid delays at the Morena/Tecolote intersection by providing an alternate route with a direct connection to West Morena.

The analysis of this scenario assumes that land uses outside the study area will be consistent with buildout identified in the SANDAG Series 12 model, and that the transportation network outside the study area will be consistent with the SANDAG Series 12 Reasonably Expected network.

Vehicle Trip Generation Comparison

Existing		Adopted Community Plan		Preferred Land Use Alternative	
Land Use Type	Daily Vehicle Trips	Land Use Type	Daily Vehicle Trips	Land Use Type	Daily Vehicle Trips
Commercial	68,000	Commercial	73,000	Commercial	44,000
Industrial	19,000	Industrial	20,000	Industrial	1,000
Institutional	2,000	Institutional	3,000	Institutional	-
Office	7,000	Office	7,000	Office	1,000
Residential	6,000	Residential	9,000	Residential	35,000
Total	**102,000**	**Total Trips**	**112,000**	**Total Trips**	**81,000**

Notes:
- Excludes traffic associated with University of San Diego
- Totals may not reflect exact numbers used in traffic model due to generalized land use assumptions
- See Appendix E for full trip generation inputs

Source: City of San Diego Planning, Neighborhoods & Economic Development Dept.

Table 4-6: Trip Generation Comparison - Adopted Community Plan and Preferred Land Use Plan

Daily Traffic Volumes and Segment Level of Service –Adopted Community Plan

Daily traffic volumes under Adopted Community Plan conditions were determined by City of San Diego staff utilizing the SANDAG Series 12 travel demand model. Table 4-7 provides a comparison of Existing and Adopted Community Plan daily traffic volumes at each of the 33 study segment locations and Figures 4-46 and 4-47 graphically show the volumes for the two scenarios. Figure 48 displays the segment LOS for the Adopted Community Plan scenario.

Based on the travel demand model forecast:

- Clairemont Drive: Traffic volumes on Clairemont Drive are forecast to increase by approximately 40 percent, with volumes increasing from 30,800 daily vehicles under existing conditions to 43,100 daily vehicles under the Approved Community Plan.
- Morena Boulevard: Traffic volumes on segments of Morena Boulevard and West Morena are forecast to fluctuate by segment:
    - On the northernmost segments (north of Ingulf Street), traffic volumes would increase from 11,000 to 16,000 daily vehicles under existing conditions and would range from 12,000 to 19,400 daily vehicles, still well below the capacity.
    - South of the split with West Morena to Knoxville Street: traffic volumes would increase from 9,200 daily vehicles under existing conditions to 10,500 daily vehicles. Volumes would increase on the 1-block segment just north of Tecolote Road from 17,500 to 22,500 daily vehicles.
    - Volumes are forecast to decrease to the south of Tecolote Road from 16,000 daily vehicles to less than 14,000 daily vehicles.
    - The one-block segment north of Napa Street that currently carries 29,000 daily vehicles would increase by over 20 percent to carry 36,000 daily vehicles under Adopted Community Plan.
    - South of Napa Street to Linda Vista: daily volumes are forecasted to decrease from 23,000 to 21,000 under the Adopted Community Plan.
- West Morena Boulevard: Existing volumes range from 10,000 to 13,300 daily vehicles, while Approved Community Plan traffic volumes range from 15,800 to 18,400 daily vehicles - still well below a capacity of 40,000 daily vehicles.
- Linda Vista Road: Traffic volumes on Linda Vista Road – to the east of the intersection with Napa -- are forecast to drop slightly, by approximately five percent, from 26,800 daily vehicles under Existing Conditions to 24,700 daily vehicles under Adopted Community Plan conditions.
- Traffic volumes at key gateways: Traffic volumes entering and exiting the study area from the south, via Morena Boulevard, would increase from 38,300 to 43,200, an increase of approximately 13 percent. Traffic volumes entering and existing the study area from the north, via Morena Boulevard, are forecast to remain relatively constant – less than 14,000 daily vehicles.

Segment #	Street Name	Segment Location	EXISTING CONDITIONS				ADOPTED COMMUNITY PLAN (YEAR 2035)			
			Street Classification	City of San Diego LOS E Threshold	Daily Volume*	Daily LOS (1)	Street Classification	City of San Diego LOS E Threshold	Daily Volume	Daily LOS (1)
1	**Gesner St.**	(Morena Bl - Denver St)	Local	2,200 (see note 2)	3,556	> C	Local	2,200 (see note 2)	3,900	> C
2	**Clairemont Dr.**	(I-5 NB Ramps - Denver St)	4-Lane Major	40,000	30,826	D	4-Lane Major	40,000	**43,100**	**F**
3	**Ingulf St.**	(Morena Bl - Denver St)	Local (Classification) 2-Lane Collector with Left-turn Lane (Existing Geometry)	15,000	5,185	A	Local (Classification) 2-Lane Collector with Left-turn Lane (Existing Geometry)	15,000	9,000	C
4	**Denver St.**	(Clairemont Dr - Ingulf St)	Local (Classification) 2-Lane Collector with Left-turn Lane (Existing Geometry)	15,000	10,064	D	Local (Classification) 2-Lane Collector with Left-turn Lane (Existing Geometry)	15,000	12,400	D
5	**Morena Bl.**	(North of Gesner St)	4-Lane Major	40,000	13,508	A	4-Lane Major	40,000	13,900	A
6	**Morena Bl.**	(Gesner St - Ingulf St)	4-Lane Major	40,000	11,397	A	4-Lane Major	40,000	12,100	A
7	**Morena Bl.**	(Ingulf St - Milton St)	4-Lane Major	40,000	14,805	A	4-Lane Major	40,000	16,700	B
8	**Morena Bl.**	(Milton St - Ashton St)	4-Lane Major	40,000	15,964	B	4-Lane Major	40,000	18,600	B
9	**Morena Bl.**	(Ashton St - Morena Bl N Split)	4-Lane Major	40,000	15,598	B	4-Lane Major	40,000	19,400	B
10	**W Morena Bl.**	(Morena Bl N Split - Vega St)	4-Lane Major	40,000	10,149	A	4-Lane Major	40,000	15,800	B
11	**W Morena Bl.**	(Vega St - Buenos Ave)	4-Lane Major	40,000	11,014	A	4-Lane Major	40,000	18,400	B
12	**W Morena Bl.**	(Buenos Ave - Morena Bl)	4-Lane Major	40,000	13,312	A	4-Lane Major	40,000	17,300	B
13	**Morena Bl.**	(W Morena Bl - Napa St)	4-Lane Major (with double left-turn lane southbound)	45,000	29,923	C	4-Lane Major (with double left-turn capacity southbound)	45,000	36,200	D
14	**Morena Bl.**	(Napa/Sherman St - Linda Vista Rd)	4-Lane Major (Classification) 5-Lane Major (Existing Geometry)	50,000	23,023	B	4-Lane Major (Classification) 5-Lane Major (Geometry)	50,000	21,500	B
15	**Morena Bl.**	(South of Linda Vista Rd)	4-Lane Major	40,000	***38,383***	***E***	4-Lane Major	40,000	**43,200**	**F**
16	**Morena Bl.**	(W Morena Bl - Knoxville St)	2-Lane Collector (no center turn-lane)	8,000	**9,171**	**F**	2-Lane Collector with left-turn lane	15,000	10,500	A
17	**Morena Bl.**	(Knoxville St - Tecolote Rd)	4-Lane Collector	30,000	17,469	C	4-Lane Collector	30,000	22,500	D
18	**Morena Bl.**	(Tecolote Rd - Buenos Ave)	2-Lane Collector with left-turn lane	15,000	**16,020**	**F**	2-Lane Collector with left-turn lane	15,000	***13,400***	***E***
19	**Morena Bl.**	(Buenos Ave - Morena Bl S Split)	2-Lane Collector with left-turn lane	15,000	**16,603**	**F**	2-Lane Collector with left-turn lane	15,000	***13,900***	***E***
20	**Napa St.**	(Morena Blvd - Linda Vista Rd)	4-Lane Collector (no center turn-lane)	15,000	**24,812**	**F**	4-Lane Collector (no center turn-lane)	15,000	**21,800**	**F**
21	**Napa St.**	(Linda Vista Rd - Riley St)	4-Lane Major	40,000	17,681	B	4-Lane Major	40,000	20,400	B
22	**Napa St.**	(Riley St - Friars Rd)	4-Lane Major	40,000	13,920	A	4-Lane Major	40,000	22,100	C
23	**Milton St.**	(East of Morena Bl)	2-Lane Collector (residential fronting)	8,000	3,821	C	2-Lane Collector (residential fronting)	8,000	***7,300***	***E***
24	**Knoxville St.**	(Morena Bl - Savannah St)	Local	2,200 (see note 2)	1,149	< C	2-Lane Collector (commercial-industrial fronting)	8,000	3,400	A
25	**Sea World Dr.**	(Morena Bl - I-5 NB Ramps)	4-Lane Major	40,000	24,513	C	4-Lane Major	40,000	33,700	D
26	**Buenos Ave.**	(South of Cudahy Pl)	Local	2,200 (see note 2)	1,174	< C	2,200 (see note 2)	2,200 (see note 2)	2,000	< C
27	**Cudahy Pl.**	(East of Buenos Ave)	Local	2,200 (see note 2)	1,120	< C	2,200 (see note 2)	2,200 (see note 2)	8,700	> C
28	**Sherman St.**	(Morena Bl - Grant St)	Local	2,200 (see note 2)	7,389	> C	2,200 (see note 2)	2,200 (see note 2)	6,700	> C
29	**Linda Vista Rd.**	(Morena Bl - Napa St)	4-Lane Major	40,000	22,603	C	4-Lane Major	40,000	21,800	C
30	**Linda Vista Rd.**	(Napa St - Marian Wy)	4-Lane Major (Classification) 4-Lane Collector (Existing Geometry)	30,000	***26,868***	***E***	4-Lane Major	40,000	24,700	C
31	**Riley St.**	(Napa St - Lauretta St)	Local	2,200 (see note 2)	1,787	< C	Local	2,200 (see note 2)	1,800	< C
32	**Friars Rd.**	(Napa St - Colussa St)	4-Lane Major	40,000	19,550	B	4-Lane Major	40,000	18,300	B
33	**Friars Rd.**	(West of Napa St)	4-Lane Major	40,000	9,355	A	4-Lane Major	40,000	18,600	B

Notes:

Bold indicates locations that fail to meet the LOS E threshold. ***Bold italics indicate locations at LOS E.***

1. City's Daily LOS Threshold is intended to be used as a comparitive tool for planning purposes (but is not an EIR threshold).
2. Based on City TIS standard for Sub-Collector (single-family) streets. City guidelines do not provide daily volume LOS thresholds for local streets, and the TIS guidelines specify that LOS standards "normally apply to roads carrying through traffic between major trip generators and attractors." (City TIS Guidelines, Table 2).

*24-hour volumes are shown above for the peak day of week (Friday 4/12/2013 at most segment count locations). The peak-day volumes is 5%-10% higher than Average Daily Traffic.

Source: Nelson\Nygaard (LOS); KTUA (Street Classification Map); True Count (Counts Conducted February and April 2013); City of San Diego Adopted CP ADT Plot (July 31, 2013)

Table 4-7: Adopted Community Plan – Daily Traffic Volume Comparison

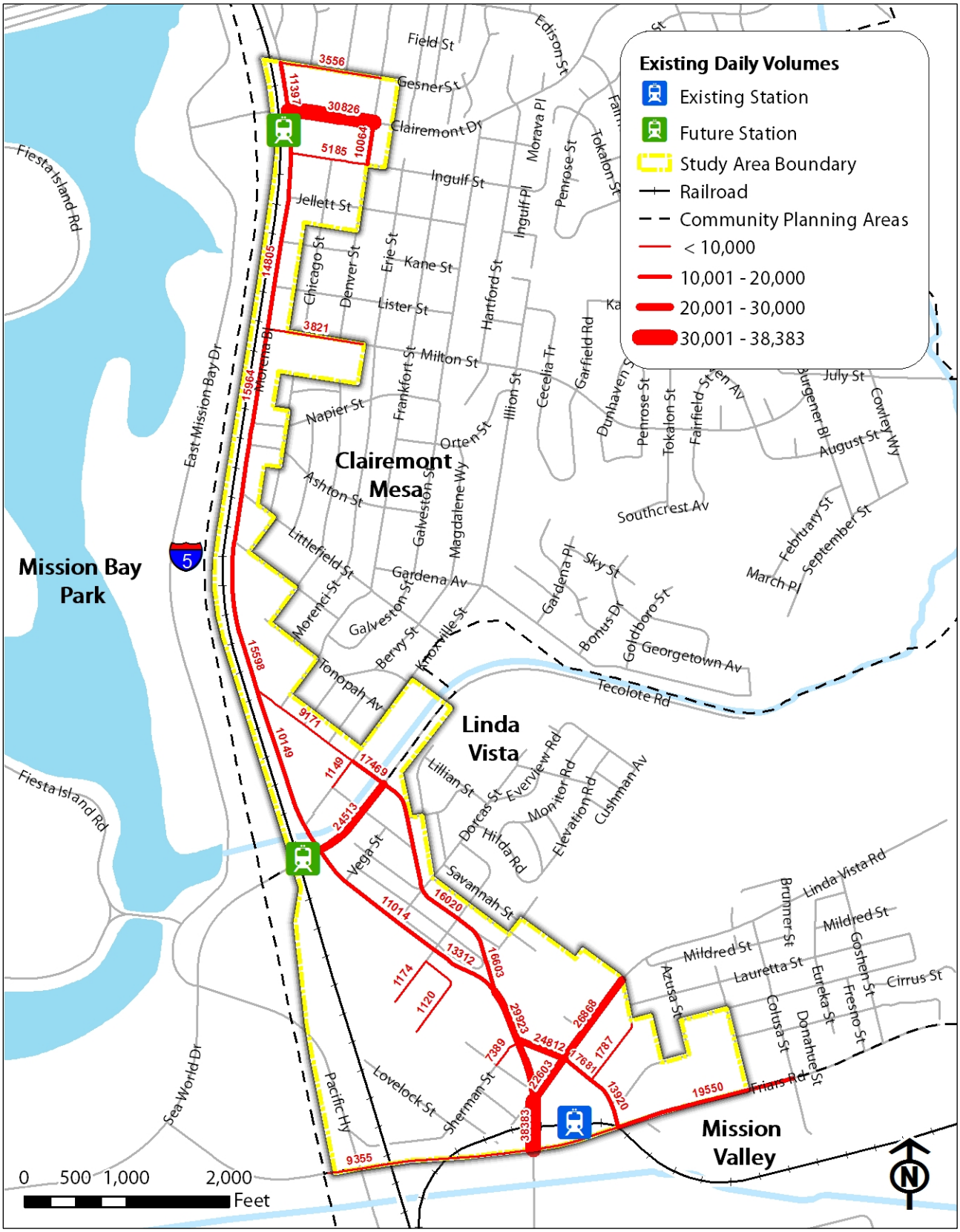


Figure 4-46: Existing Daily Volumes

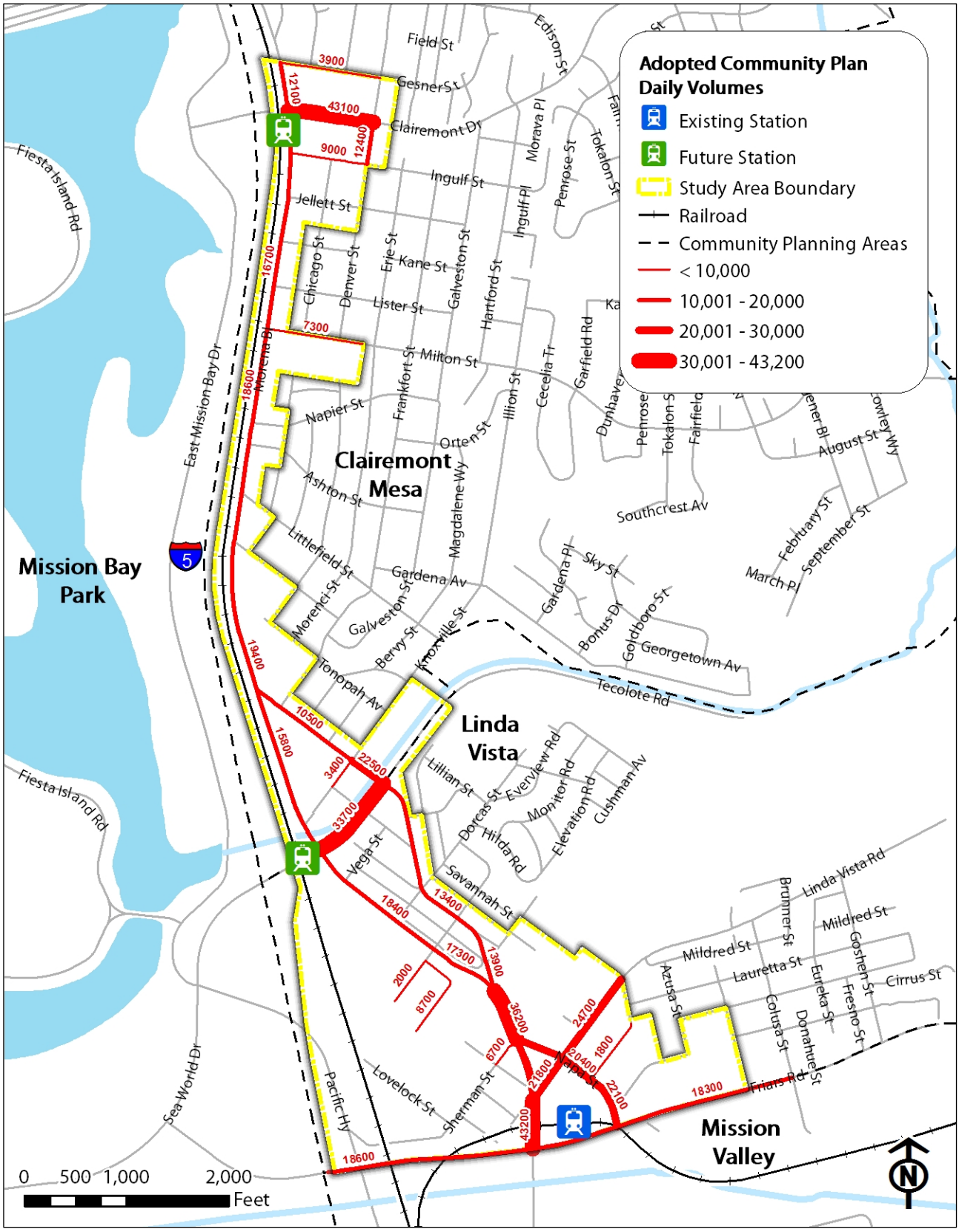


Figure 4-47: Adopted Community Plan Daily Volumes

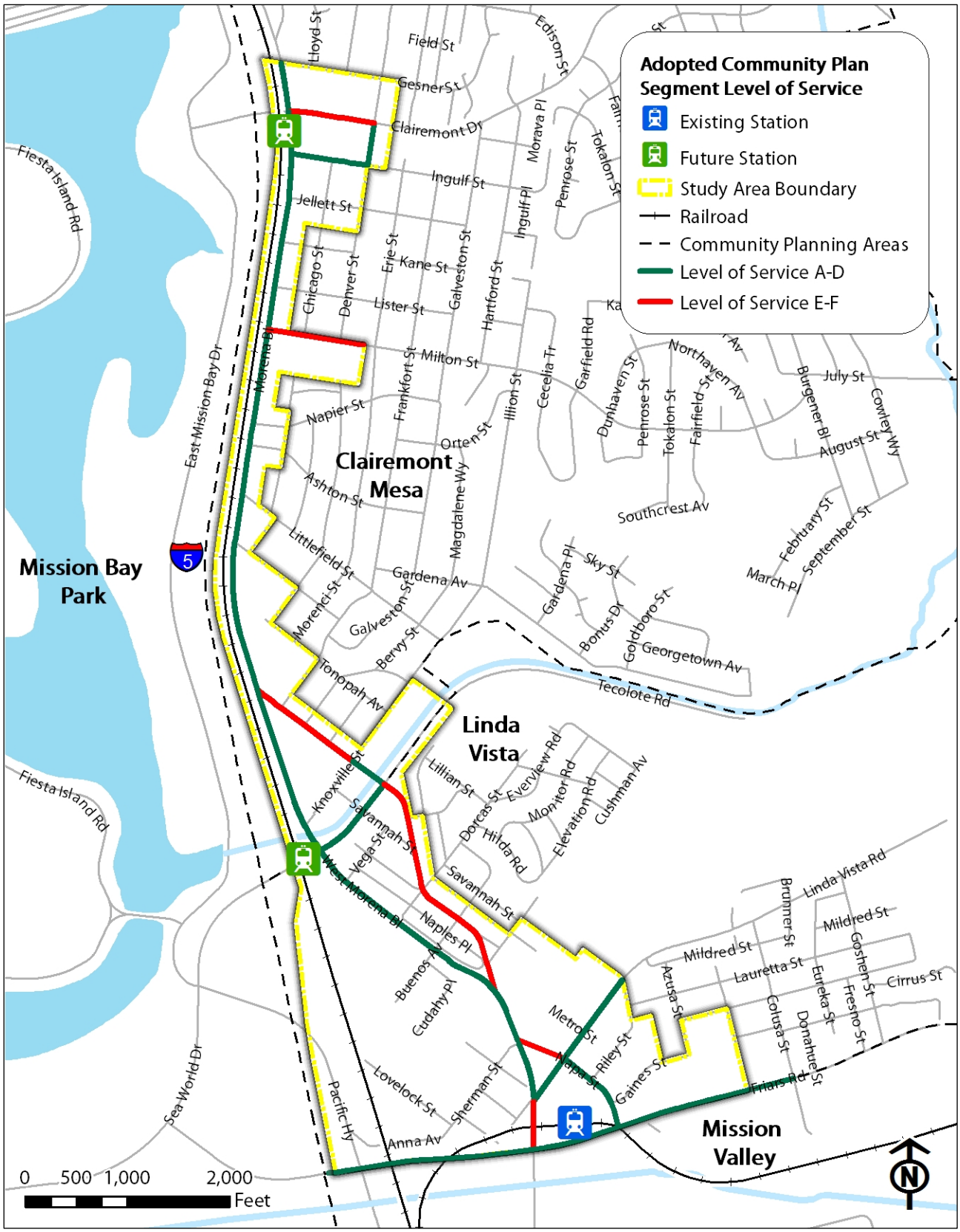


Figure 4-48: Adopted Community Plan Segment Level of Service

Peak Hour Level of Service – Adopted Community Plan

Turning Movement Methodology

Peak hour traffic volumes, intersection turning movements and peak-hour level of service at each study intersection were determined by Nelson\Nygaard based on the forecast change in daily traffic volumes on each approach segment.

- Turning movements were derived by factoring and balancing methods. Based on the daily volume forecast, AM and PM peak hour volumes were forecasted based on the existing share of total daily traffic occurring each of the peak hours, applied to future baseline volumes.
- Turning movements at each study intersection were forecasted by adjusting existing turning movements to reflect changes in approach and departure volumes on upstream and downstream segments.
- The forecast also took into account "select-link" origin and destination forecasts, provided by city staff based on the Year 2035 model forecast for trips to and from key segments.
- The forecasted turning movements and intersection LOS reports at each study intersection are shown in Appendix E. Growth factors for specific movements are shown on the intersection LOS reports, except where manual adjustments were required to low-volume turning movements for purposes of balancing volumes between intersections.
- The forecasted turning movements will be reviewed and refined to be consistent with NCHRP 255 methodology through the community plan amendment process.

Based on the forecast of daily traffic volumes provided by the City (described in the previous subsection), growth factors varied by street and segment. The percent increases and decreases described below are based on the change from existing volumes on each segment:

- Clairemont Drive: forecasted growth of 40 percent under the Adopted Community Plan. This rate of growth was applied to movements at the intersection of Clairemont and Denver and to applicable movements at the intersection of Clairemont and I-5 Northbound Ramps.
- Gesner Street: forecasted growth of 10 percent under the Adopted Community Plan. This rate of growth was applied to specific approaches when developing approach volumes at the Gesner and Morena study intersection.
- Ingulf Street: forecasted growth of 74 percent under the Adopted Community Plan. This rate of growth was applied when developing approach volumes at the intersection of Ingulf with Gesner and Morena.
- Morena Boulevard (north) : forecasted growth of approximately 13 percent but varying by segment:
    - Three (3) percent growth on the northernmost segment (north of Gesner Street)
    - Six (6) percent growth South of Gesner and north of Ingulf Street. Based on this forecast, the traffic analysis applied the six (6) percent growth factor to northbound through movements at Morena and Ingulf.

However, since the model forecast did not appear to fully account for the potential increase in drop-off and pick-up activity associated with the planned light-rail station that will be accessed by this segment of Morena Boulevard – and to achieve volume balancing between Gesner and Ingulf - the traffic analysis applied a slightly higher growth rate of 10 percent to some movements at Morena and Gesner.

  - 13 percent growth south of Ingulf Street to Milton Street. This rate of growth was applied to through movements, while a slightly higher of growth rate of 17 percent was applied to turning movements between Morena and Milton Street.
  - 17 percent growth south of Milton Street to Ashton Street: This rate of growth was applied to all movements at Morena and Napier.
  - 24 percent growth south of Milton Street to West Morena. The analysis applied the 24 percent growth rate to most movements, with the exception of the lower-volume northbound right-turn and southbound left-turn, where a 15 percent growth factor was applied to reflect lower volumes on Morena between the northernmost split and Knoxville.

- Morena Boulevard (east): daily volumes are forecasted to decrease on segments south of Tecolote, but increasing to the north of Tecolote:
  - South of the split with West Morena to Knoxville Street: traffic volumes would increase by approximately 14 percent.
  - South of Knoxville Street to Tecolote Road: increase of 29 percent on the short 1-block segment between Knoxville and Tecolote.
  - South of Tecolote Road: reduction of 16 percent on the segment between Tecolote Road and the southernmost split between Morena and West Morena
- Morena Boulevard (south): traffic volumes are forecasted to increase significantly on the segment north of Napa Street:
  - South of West Morena to Napa Street: increase of 21 percent
  - South of Napa Street to Linda Vista: reduction of 7 percent
- West Morena Boulevard: traffic volumes are forecasted to increase on each segment:
  - At the north end of West Morena Boulevard (immediately south of the “north split” with Morena Boulevard): an increase of 56 percent.
  - South of Vega and north of Buenos: increase of 67 percent
  - South of Buenos to the southernmost split between West Morena and Morena: an increase of 30 percent.

- Napa Street: fluctuating volumes by segment:
    - Morena to Linda Vista: reduction of 12 percent
    - Linda Vista to Riley: increase of 15 percent
    - Riley to Friars: increase of 59 percent
- Linda Vista Road: forecasted reduction on each segment:
    - Morena to Napa: reduction of 4 percent
    - Napa to Marian Way: reduction of 8 percent
- South gateway on Morena: Traffic volumes entering and exiting the study area from the south, via Morena Boulevard, would increase by approximately 13 percent.
- Friars Road: fluctuating volumes east and west of the intersection with Napa Street:
    - West of Napa Street: reduction of 6 percent
    - East of Napa Street: increase of 99 percent (i.e., approximate doubling of existing volumes)

Table 4-8 provides a comparison of existing and Adopted Community Plan LOS at each of the signalized study intersections. Table 4-9 provides a comparison of existing and Adopted Community Plan LOS at each of the unsignalized (stop-sign controlled) study intersections. Figure 4-49 provides Adopted Community Plan LOS information graphically for all intersection types. Intersection LOS calculation sheets for future baseline conditions are provided in Appendix E. Each calculation sheet shows the forecast turning movements at each study intersection.

LOS E-F under the Adopted Community Plan would be limited to the following intersections:

- Clairemont Drive and Denver Street (signalized intersection) would operate at LOS F during the AM and PM Peak Hours, primarily reflecting the forecasted 40 percent increase in traffic volumes on Clairemont under the Adopted Community Plan.
- Ingulf Street and Denver Street (stop-sign controlled intersection) would operate at LOS F during the PM Peak Hour based on increased traffic volumes on both Ingulf and Denver Streets.
- Napa Road and Linda Vista Road (signalized intersection) would continue to operate at LOS E, as is the case under existing conditions. Delays at the intersection are attributable to high volume conflicting left-turns and limited storage capacity on Napa Road between Morena Boulevard and Linda Vista Road given the short block length. The current design would remain under the Adopted Community Plan, which requires a “split-phase” signal operation and a lengthy 136-second peak-hour cycle, further increasing average delay.

#	Intersecting Streets	EXISTING CONDITIONS (YEAR 2013)				ADOPTED COMMUNITY PLAN (YEAR 2035)			
		AM Peak Hour		PM Peak Hour		AM Peak Hour		PM Peak Hour	
		LOS	Avg Delay	LOS	Avg Delay	LOS	Avg Delay	LOS	Avg Delay
1	Morena & Gesner	A	8.3	B	10.4	A	8.7	B	10.4
2	I-5 Northbound Ramps & Clairmont	B	11.5	A	9.7	C	20.8	C	19.1
3	Morena & Ingulf	A	7.2	A	9.8	A	9.5	B	13.3
4	Denver & Clairemont	D	37.6	C	23.9	**F**	**>80**	**F**	**>80**
7	Morena & Milton	B	10.0	A	7.8	B	11.0	A	8.8
8	Morena & Ashton	A	4.9	A	6.5	A	5.5	A	8.1
9	Morena & West Morena *(north split)*	B	11.2	B	11.4	B	11.4	B	12.1
10	Knoxville & East Morena	C	21.6	B	11.4	D	35.0	B	14.1
11	Morena & Tecolote	C	30.1	C	32.7	D	37.8	C	32.9
13	East Morena & Buenos	B	14.0	B	13.3	B	15.6	B	13.9
14	West Morena & Morena *(south split)*	A	8.7	B	14.7	B	11.0	B	14.4
15	N/A								
16	West Morena & Vega / Driveway	A	5.6	A	9.5	A	6.0	B	11.7
17	West Morena & Buenos	B	12.8	B	13.1	B	14.4	B	15.2
18	Morena & Napa & Sherman	D	46.4	D	50.7	D	45.2	D	37.0
19	Morena & Linda Vista	B	13.3	B	20.0	B	15.9	C	25.0
20	Napa & Linda Vista	D	51.4	**E**	**77.7**	D	54.4	**E**	**71.8**
21	Marian Wy & Linda Vista	D	36.0	B	17.9	C	33.3	B	17.2
22	Napa & Riley	B	14.5	B	14.4	B	14.5	B	15.0
23	Napa & Friars	B	19.3	B	13.6	C	22.6	B	15.1
24	Colusa & Friars	B	11.2	B	12.0	B	15.2	C	21.8

Bold indicates LOS of E or F.

Table 4-8: Adopted Community Plan – Peak Hour Level of Service Comparison (Signalized Intersections)

#	Intersecting Streets	EXISTING CONDITIONS (YEAR 2013)				ADOPTED COMMUNITY PLAN (YEAR 2035)			
		AM Peak Hour		PM Peak Hour		AM Peak Hour		PM Peak Hour	
		LOS	Avg Delay	LOS	Avg Delay	LOS	Avg Delay	LOS	Avg Delay
5	Morena & Jellett (side-street stop)	C	15.5	C	18.1	C	15.6	C	19.0
6	Denver & Ingulf (all-way stop)	A	9.9	B	14.8	C	22.5	**F**	**>50**
12	Morena & Savannah (side-street)	C	18.9	**E**	**37.9**	C	22.5	C	21.8

Bold indicates failing LOS E or F.

Notes:

Both of the side-street stop controlled study intersections (#5 and #12) are T-intersections, with a stop-sign on the side-street approaching Morena. LOS and delay is based on the side-street approach to Morena.

Table 4-9: Adopted Community Plan – Peak Hour Level of Service Comparison (Stop-sign Controlled Intersections)

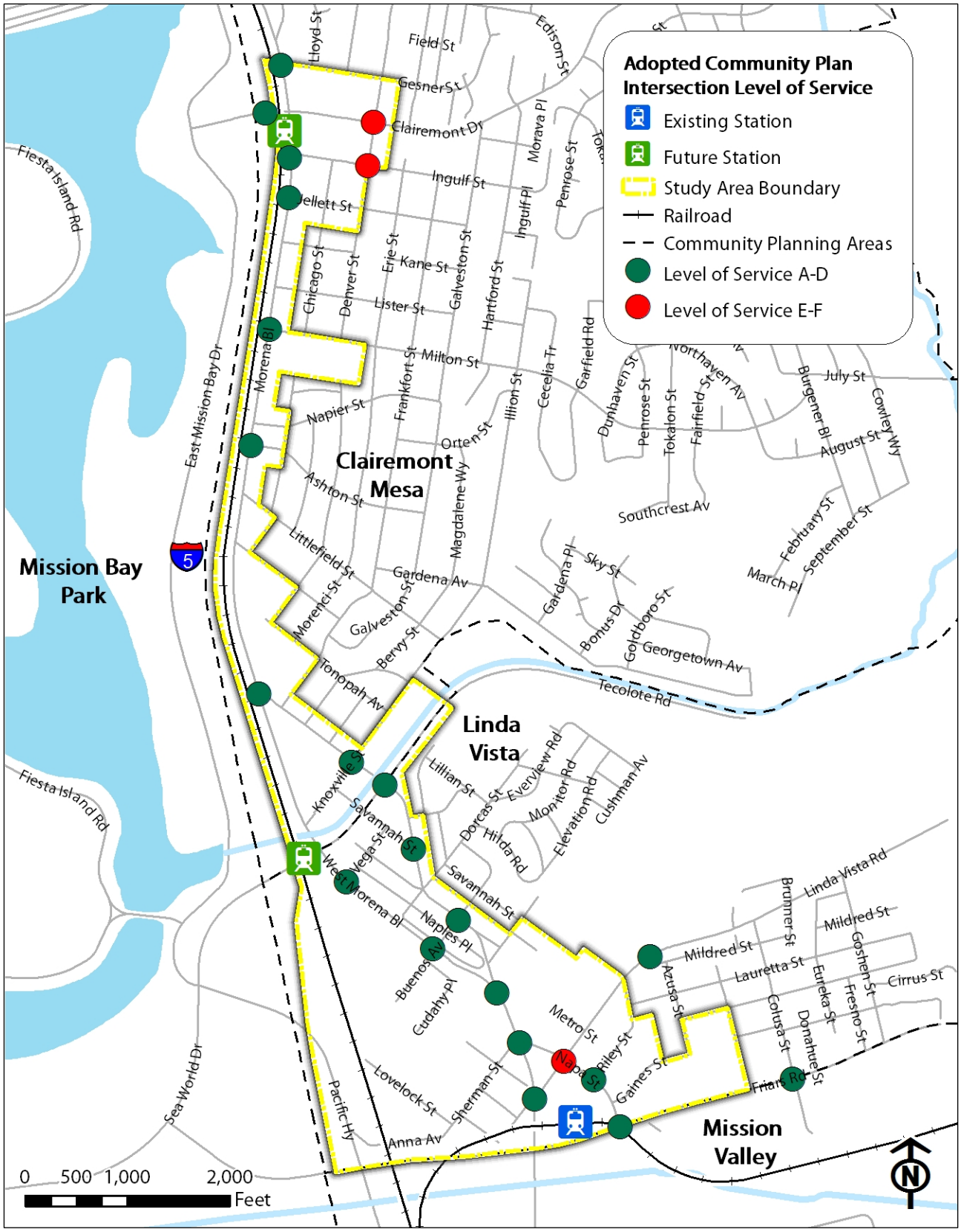


Figure 4-49: Adopted Community Plan Intersection Level of Service

4.8.2 Proposed Land Use Alternative with Mid-term Mobility Plan

The Proposed Land Use Alternative is described in Chapter 2 Land Use. This section provides an analysis of Year 2035 traffic operations under the Proposed Land Use Alternative with buildout of the transportation improvements identified under the proposed Mid-term Mobility Plan as described earlier in this chapter and shown in Figure 4-33.

This includes an evaluation of the proposed "mid-term" roadway configuration in which the intersections of Napa Street, Morena Boulevard and Linda Vista Road would be reconfigured to orient the bulk of traffic in a counter-clockwise direction. The potential advantage of such a scenario is that the volume of conflicting left-turn movements – which currently result in delays at the intersections of Napa/Morena and Napa/Linda Vista – would be reduced.

The road diet proposed for West Morena Boulevard and the northern portions of Morena Boulevard would reduce roadway capacity due to the reduction in southbound lanes from two to one. In addition, narrower lanes would be installed to reduce motor vehicle speeds to approximately 30 to 35 mph, a speed that would be consistent with the collector street standard and intended to enhance pedestrian circulation. Northbound capacity entering Morena from the south would be reduced with the proposed mid-term redesign of the Napa/Linda Vista intersection. Although the intent of the mid-term design is to serve as an interim configuration, the mid-term analysis still utilizes buildout land uses.

Figure 4-50 displays the proposed roadway classifications under the Mid-term Mobility Plan. Figure 4-51 shows the modeled traffic volumes for this scenario and Figure 4-52 shows the corresponding roadway segment LOS.

The analysis of the Proposed Land Use Alternative with Mid-term Mobility Plan assumes that land uses outside the study area will be consistent with buildout identified in the SANDAG Series 12 model, and that the transportation network outside the study area will be consistent with the SANDAG Series 12 Reasonably Expected network.

Daily Traffic Volumes and Segment LOS – Preferred Alternative (Mid-term)

Daily traffic volumes under the Proposed Land Use Alternative were determined by the City of San Diego, utilizing the SANDAG Series 12 travel demand model. Table 4-10 provides a comparison of existing and Year 2035 daily traffic volumes at each of the 33 study segment locations under the Mid-term mobility plan. The table indicates the following changes to traffic volumes in comparison with existing and Adopted Community Plan volumes:

- Clairemont Drive: traffic volumes would increase from 30,800 daily under Existing Conditions to 39,300 daily under the Mid-term Mobility Plan -- an increase of 27 percent over existing conditions, but a reduction from the forecast of 43,100 daily vehicles (representing a 40 percent increase over existing volume) under the Adopted Community Plan.
- Morena Boulevard (north): Traffic volumes are forecast to remain relatively constant on the northernmost segments, with relatively little change from existing volumes. Daily traffic volumes currently range from 11,000 to 16,000 daily vehicles, and would range from 12,000 to 16,000 vehicles under the Mid-term

configuration. With removal of one southbound lane, the daily capacity would be roughly 30,000 daily vehicles, and excess capacity would remain.

- Morena Boulevard (east): South of the split with West Morena to Knoxville Street: traffic volumes would decrease from 9,200 daily vehicles under existing conditions to 7,700 daily vehicles under the Mid-term Mobility Plan– a reduction from 10,200 daily vehicles under the Adopted Community Plan. South of Knoxville Street to Tecolote Road: volumes on this 1-block segment would increase from 17,500 daily vehicles to 20,000 daily vehicles – a reduction from 22,500 under the Adopted Community Plan. South of Tecolote Road to Buenos Street, traffic volumes are forecasted to remain constant with approximately 15,900 daily vehicles (essentially no change from existing volumes of 16,000 daily volumes) – but higher than the Adopted Community Plan forecast of 13,400 daily vehicles, reflecting some diversion of freeway-bound trips from West Morena to Morena/Tecolote given the proposed lane reduction on West Morena.
- Morena Boulevard (south): South of West Morena to Napa Street: the travel demand predicts a substantial decrease, from 29,000 daily vehicles under existing conditions to 22, 000 daily vehicles under the Mid-term – a significant reduction from the forecast of 36,000 daily vehicles under the Adopted Community Plan. South of Napa to Linda Vista: volumes are forecasted to remain constant at approximately 23,000 daily vehicles – no change from existing conditions, although higher than the forecast of 21,000 daily vehicles under the
- West Morena: Traffic volumes would fluctuate by segment, with little change from existing volumes at the southern end of West Morena, while traffic volumes would increase by 30 to 40 percent near the Tecolote Station. Total traffic volume would range from 13,000 to 16,000 daily vehicles, and excess capacity would remain.
- Linda Vista Road: Increase from 22,600 to 28,000 under existing conditions, to between 27,000 to 29,000 vehicles under the Mid-term configuration representing an increase of approximately three percent to the east of Napa Street. Volumes would increase by the largest amount on the one-block segment between Morena Boulevard and Napa Street due to the prohibition on southbound left-turns from Morena to Napa that would re-route that traffic to make the left-turn directly from Morena to Linda Vista.
- Traffic volumes at key gateways: Traffic volumes entering and exiting the study area from the south, via Morena Boulevard, would increase from 38,000 daily vehicles under Existing Conditions to 40,000 daily vehicles under the Mid-term configuration – a reduction from 43,000 daily vehicles under the Approved Community Plan.

Segment #	Street Name	Segment Location	EXISTING CONDITIONS				ADOPTED COMMUNITY PLAN (YEAR 2035)				PREFERRED ALTERNATIVE - MID-TERM (YEAR 2035)			
			Street Classification	City of San Diego LOS E Threshold	Daily Volume*	Daily LOS (1)	Street Classification	City of San Diego LOS E Threshold	Daily Volume	Daily LOS (1)	Street Classification	City of San Diego LOS E Threshold	Daily Volume	Daily LOS (1)
1	**Gesner St.**	(Morena Bl - Denver St)	Local	2,200 (see note 2)	3,556	> C	Local	2,200 (see note 2)	3,900	> C	Local	2,200 (see note 2)	3,900	> C
2	**Clairemont Dr.**	(I-5 NB Ramps - Denver St)	4-Lane Major	40,000	30,626	D	4-Lane Major	40,000	**43,100**	**F**	4-Lane Major	40,000	**39,300**	***E***
3	**Ingulf St.**	(Morena Bl - Denver St)	Local (Classification) 2-Lane Collector with Left-turn Lane (Existing Geometry)	15,000	5,185	A	Local (Classification) 2-Lane Collector with Left-turn Lane (Existing Geometry)	15,000	9,000	C	Local (Classification) 2-Lane Collector with Left-turn Lane (Existing Geometry)	15,000	5,700	A
4	**Denver St.**	(Clairemont Dr - Ingulf St)	Local (Classification) 2-Lane Collector with Left-turn Lane (Existing Geometry)	15,000	10,064	D	Local (Classification) 2-Lane Collector with Left-turn Lane (Existing Geometry)	15,000	12,400	D	Local (Classification) 2-Lane Collector with Left-turn Lane (Existing Geometry)	15,000	8,400	C
5	**Morena Bl.**	(North of Gesner St)	4-Lane Major	40,000	13,508	A	4-Lane Major	40,000	13,900	A	4-Lane Major	40,000	12,400	A
6	**Morena Bl.**	(Gesner St - Ingulf St)	4-Lane Major	40,000	11,397	A	4-Lane Major	40,000	12,100	A	4-Lane Major	40,000	12,100	A
7	**Morena Bl.**	(Ingulf St - Milton St)	4-Lane Major	40,000	14,805	A	4-Lane Major	40,000	16,700	B	3-Lane Collector (2 northbound; 1 southbound) plus left-turn lane	22,500	14,800	C
8	**Morena Bl.**	(Milton St - Ashton St)	4-Lane Major	40,000	15,964	B	4-Lane Major	40,000	18,600	B	3-Lane Collector (2 northbound; 1 southbound) plus left-turn lane	22,500	15,900	D
9	**Morena Bl.**	(Ashton St - Morena Bl N Split)	4-Lane Major	40,000	15,598	B	4-Lane Major	40,000	19,400	B	3-Lane Collector (2 northbound; 1 southbound) plus left-turn lane	22,500	16,100	D
10	**W Morena Bl.**	(Morena Bl N Split - Vega St)	4-Lane Major	40,000	10,149	A	4-Lane Major	40,000	15,800	B	3-Lane Collector (2 northbound; 1 southbound) plus left-turn lane	22,500	13,100	C
11	**W Morena Bl.**	(Vega St - Buenos Ave)	4-Lane Major	40,000	11,014	A	4-Lane Major	40,000	18,400	B	3-Lane Collector (2 northbound; 1 southbound) plus left-turn lane	22,500	15,700	D
12	**W Morena Bl.**	(Buenos Ave - Morena Bl)	4-Lane Major	40,000	13,312	A	4-Lane Major	40,000	17,300	B	3-Lane Collector (2 northbound; 1 southbound) plus left-turn lane	22,500	13,100	C
13	**Morena Bl.**	(W Morena Bl - Napa St)	4-Lane Major (with double left-turn lane southbound)	45,000	29,823	C	4-Lane Major (with double left-turn capacity southbound)	45,000	36,200	D	4-Lane Collector	30,000	22,200	C
14	**Morena Bl.**	(Napa/Sherman St - Linda Vista Rd)	4-Lane Major (Classification) 5-Lane Major (Existing Geometry)	50,000	23,023	B	4-Lane Major (Classification) 5-Lane Major (Geometry)	50,000	21,500	B	4-Lane Collector	30,000	23,100	D
15	**Morena Bl.**	(South of Linda Vista Rd)	4-Lane Major	40,000	**38,383**	***E***	4-Lane Major	40,000	**43,200**	**F**	4-Lane Major	40,000	**40,600**	**F**
16	**Morena Bl.**	(W Morena Bl - Knoxville St)	2-Lane Collector (no center turn-lane)	8,000	**9,171**	**F**	2-Lane Collector with left-turn lane	15,000	10,500	A	2-Lane Collector (no center turn-lane)	8,000	7,700	E
17	**Morena Bl.**	(Knoxville St - Tecolote Rd)	4-Lane Collector	30,000	17,469	C	4-Lane Collector	30,000	22,500	D	4-Lane Collector	30,000	20,000	C
18	**Morena Bl.**	(Tecolote Rd - Buenos Ave)	2-Lane Collector with left-turn lane	15,000	**16,020**	**F**	2-Lane Collector with left-turn lane	15,000	**13,400**	***E***	2-Lane Collector with left-turn lane	15,000	**15,900**	**F**
19	**Morena Bl.**	(Buenos Ave - Morena Bl S Split)	2-Lane Collector with left-turn lane	15,000	**16,603**	**F**	2-Lane Collector with left-turn lane	15,000	**13,900**	***E***	2-Lane Collector with left-turn lane	15,000	9,700	C
20	**Napa St.**	(Morena Blvd - Linda Vista Rd)	4-Lane Collector (no center turn-lane)	15,000	**24,812**	**F**	4-Lane Collector (no center turn-lane)	15,000	**21,900**	**F**	Major with 2 westbound lanes and 1 eastbound lane	30,000	14,800	B
21	**Napa St.**	(Linda Vista Rd - Riley St)	4-Lane Major	40,000	17,681	B	4-Lane Major	40,000	20,400	B	4-Lane Major	40,000	17,900	A
22	**Napa St.**	(Riley St - Friars Rd)	4-Lane Major	40,000	13,820	A	4-Lane Major	40,000	22,100	C	4-Lane Major	40,000	19,700	B
23	**Milton St.**	(East of Morena Bl)	2-Lane Collector (residential fronting)	8,000	3,821	C	2-Lane Collector (residential fronting)	8,000	**7,300**	***E***	2-Lane Collector (residential fronting)	8,000	3,000	C
24	**Knoxville St.**	(Morena Bl - Savannah St)	Local	2,200 (see note 2)	1,149	< C	2-Lane Collector (commercial/industrial fronting)	8,000	3,400	A	2-Lane Collector (commercial/industrial fronting)	8,000	2,700	A
25	**Sea World Dr.**	(Morena Bl - I-5 NB Ramps)	4-Lane Major	40,000	24,513	C	4-Lane Major	40,000	33,700	D	4-Lane Major	40,000	34,700	D
26	**Buenos Ave.**	(South of Cudahy Pl)	Local	2,200 (see note 2)	1,174	< C	2,200 (see note 2)	2,200 (see note 2)	2,000	< C	Local	2,200 (see note 2)	6,600	> C
27	**Cudahy Pl.**	(East of Buenos Ave)	Local	2,200 (see note 2)	1,120	< C	2,200 (see note 2)	2,200 (see note 2)	8,700	> C	Local	2,200 (see note 2)	8,600	> C
28	**Sherman St.**	(Morena Bl - Grant St)	Local	2,200 (see note 2)	7,388	> C	2,200 (see note 2)	2,200 (see note 2)	6,700	> C	Local	2,200 (see note 2)	15,400	> C
29	**Linda Vista Rd.**	(Morena Bl - Napa St)	4-Lane Major	40,000	22,603	C	4-Lane Major	40,000	21,800	C	4-Lane Major	40,000	29,000	C
30	**Linda Vista Rd.**	(Napa St - Marian Wy)	4-Lane Collector (Existing Geometry)	30,000	**26,868**	***E***	4-Lane Major	40,000	24,700	C	4-Lane Major	40,000	27,700	C
31	**Riley St.**	(Napa St - Lauretta St)	Local	2,200 (see note 2)	1,787	< C	Local	2,200 (see note 2)	1,800	< C	Local	2,200 (see note 2)	2,000	< C
32	**Friars Rd.**	(Napa St - Colussa St)	4-Lane Major	40,000	19,550	B	4-Lane Major	40,000	18,300	B	4-Lane Major	40,000	28,900	C
33	**Friars Rd.**	(West of Napa St)	4-Lane Major	40,000	9,355	A	4-Lane Major	40,000	18,600	B	4-Lane Major	40,000	19,200	B

Notes:

Bold indicates locations that fail to meet the LOS E threshold. ***Bold Italics indicate locations of LOS E.***

1. City's Daily LOS Threshold is intended to be used planning purposes (but is not an EIR threshold).

2. Based on City TIS standard for Sub-Collector (single-family) streets. City guidelines do not provide daily volume LOS thresholds for local streets, and the TIS guidelines specify that LOS standards "normally apply to roads carrying through traffic between major trip generators and attractors" (City TIS Guidelines, Table 2).

*24-hour volumes are shown above for the peak day of week (Friday 4/12/2013 at most segment count locations). The peak-day volume is 5%-10% higher than Average Daily Traffic.

Sources: Nelson\Nygaard (LOS); KTUA (Street Classification Map); True Count (Counts Conducted February and April 2013); City of San Diego Adopted CP ADT Plot (July 31, 2013)

Table 4-10: Mid-term – Daily Traffic Volume Comparison

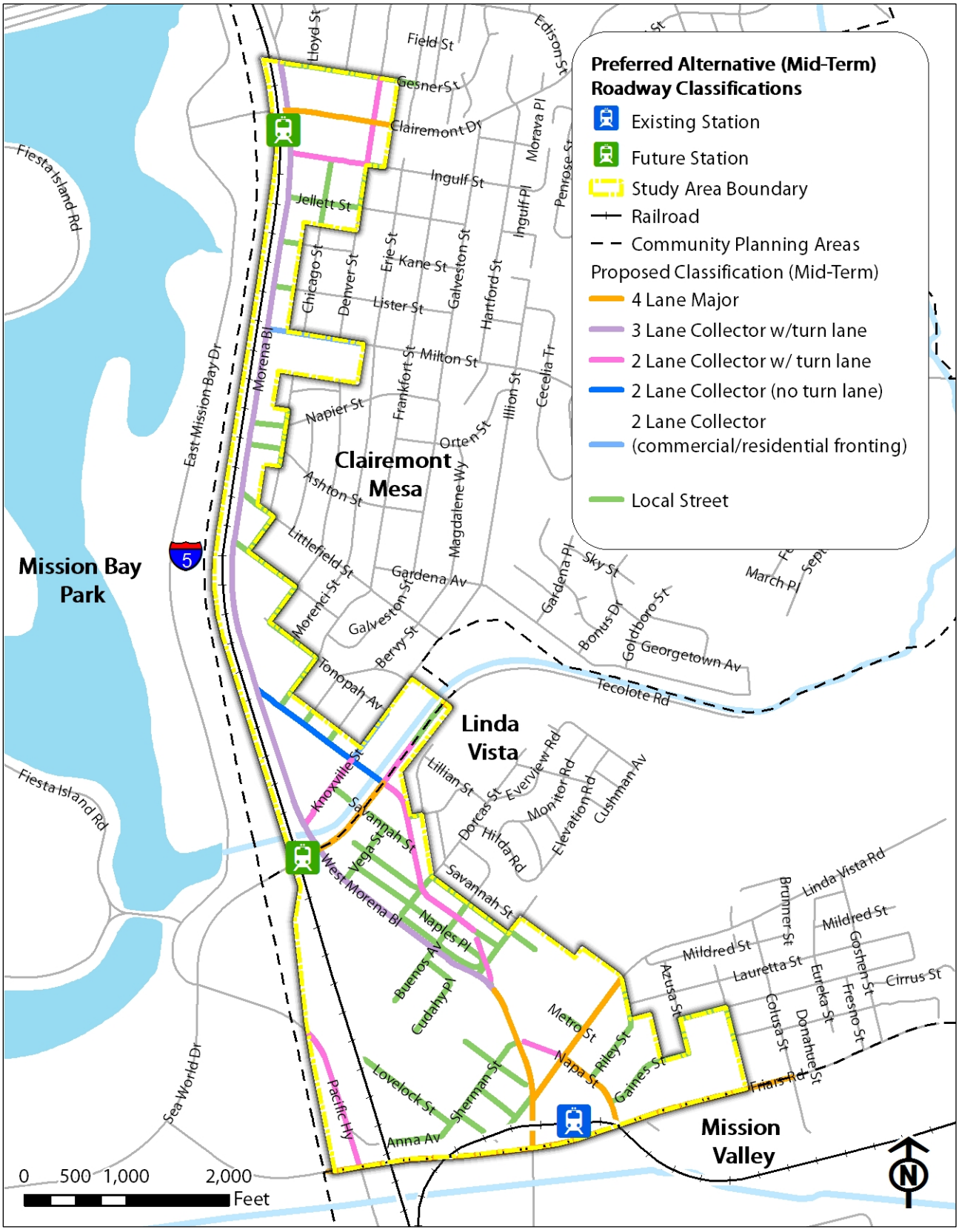


Figure 4-50: Preferred Alternative (Mid-term) Roadway Classification

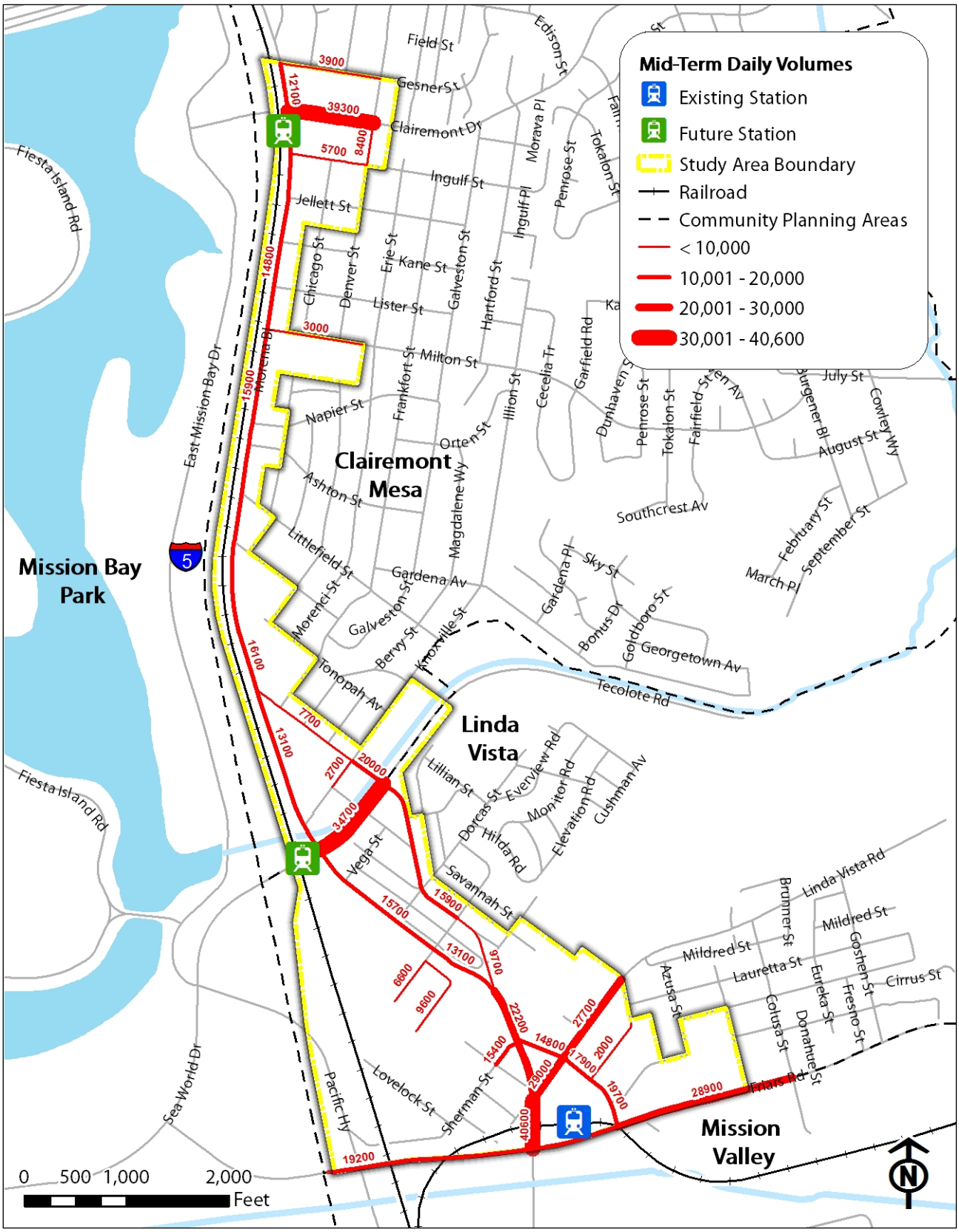


Figure 4-51: Preferred Alternative (Mid-term) Daily Volumes

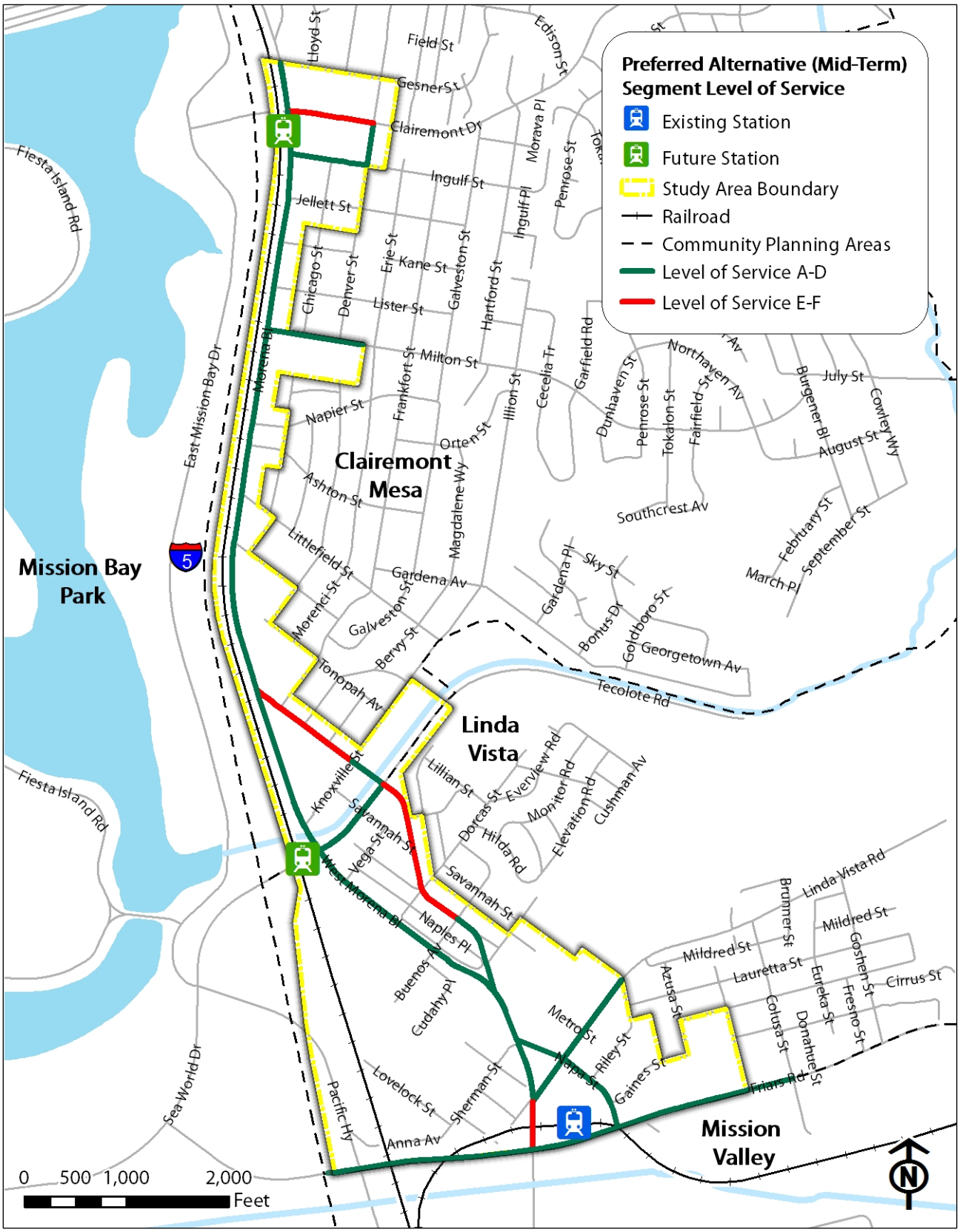


Figure 4-52: Preferred Alternative (Mid-term) Segment Level of Service

Peak-hour Level of Service – Preferred Alternative (Mid-term)

Turning Movement Methodology

Peak hour traffic volumes, intersection turning movements and peak-hour level of service at each study intersection were determined by Nelson\Nygaard based on the forecast change in daily traffic volumes on each approach segment.

- Turning movements were derived by factoring and balancing methods. Based on the daily volume forecast, AM and PM peak hour volumes were forecasted based on the existing share of total daily traffic occurring each of the peak hours, applied to future baseline volumes.
- Turning movements at each study intersection were forecasted by adjusting existing turning movements to reflect changes in approach and departure volumes on upstream and downstream segments.
- The forecast also took into account "select-link" origin and destination forecasts, provided by city staff based on the Year 2035 model forecast for trips to and from key segments.
- The forecasted turning movements and intersection LOS reports at each study intersection are shown in Appendix E. Growth factors for specific movements are shown on the intersection LOS reports, except where manual adjustments were required to low-volume turning movements for purposes of balancing volumes between intersections.
- The forecasted turning movements will be reviewed and refined to be consistent with NCHRP 255 methodology through the community plan amendment process.

Based on the forecast of daily traffic volumes provided by the City (described in the previous subsection), growth factors varied by street and segment. The percent increases and decreases described below are based on the change from existing volumes on each segment:

- Clairemont Drive: forecasted growth of 27 percent under the Mid-term scenario. This rate of growth was applied to movements at the intersection of Clairemont & Denver and to applicable movements at the intersection of Clairemont & I-5 Northbound Ramps.
- Gesner Street: forecasted growth of 10 percent under the Mid-term scenario. This rate of growth was applied to applicable movements when developing approach volumes at the intersection of Ingulf with Gesner & Morena.
- Ingulf Street: forecasted growth of 10 percent under the Mid-term scenario. This rate of growth was applied to specific approach volumes at the intersections of Ingulf with Morena and Denver.
- Morena Boulevard (north): forecasted volumes varying by segment:
    - Eight (8) percent reduction from existing volumes on the northernmost segment (north of Gesner Street)
    - Six (6) percent growth South of Gesner and north of Ingulf Street.

  - No change (0 percent growth) south of Ingulf Street to Milton Street. (Note that total intersection volumes still increase to account for side-street approach volumes).
  - No change (0 percent growth) south of Milton Street to Ashton Street (Note that total intersection volumes still increase to account for side-street approach volumes).
  - Three (3) percent growth south of Milton Street to West Morena.

- Morena Boulevard (east): daily volumes are forecasted to decrease on segments of Morena between the two splits:
  - South of the split with West Morena to Knoxville Street: reduction of 16 percent from existing volumes.
  - South of Knoxville Street to Tecolote Road: increase of 14 percent on the short 1-block segment between Knoxville and Tecolote.
  - South of Tecolote Road: reduction of one (1) percent on the segment between Tecolote Road and Buenos Avenue, just north of the southernmost split between Morena & West Morena.
- Knoxville Street: increase of 35 percent between Morena and Savannah.
- Morena Boulevard (south): traffic volumes are forecasted to fluctuate by segment:
  - South of West Morena to Napa Street: forecasted reduction of 26 percent from existing volumes, based on the raw model outputs. However, this reduction reflects the model loading pattern that assumed a significant portion of trips from the adjacent TAZ would load to Morena from Sherman Street. In "smoothing" the volumes, the intersection analysis assumes that a larger portion of trips to/from adjacent land uses will load directly to/from Morena (including use of proposed on-street parking on Morena). Therefore the intersection LOS analysis does not assume a 26 percent reduction, since such as assumption on this segment seems unlikely.
  - South of Napa Street to Linda Vista: no change (0 percent increase) from existing volumes.
- West Morena Boulevard: traffic volumes are forecasted to increase on each segment:
  - At the north end of West Morena Boulevard (immediately south of the "north split" with Morena Boulevard): an increase of 29 percent.
  - South of Vega and north of Buenos: increase of 43 percent
  - South of Buenos to the southernmost split between West Morena & Morena: reduction of 2 percent

- Napa Street: fluctuating volumes by segment:
    - Morena to Linda Vista: reduction of 40 percent (reflecting diversion of southbound left-turn movements from Morena/Napa to Morena/Linda Vista under the Mid-term scenario)
    - Linda Vista to Riley: increase of 1 percent
    - Riley to Friars: increase of 42 percent
- Linda Vista Road: fluctuating volumes by segment:
    - Morena to Napa: increase of 28 percent (reflecting diversion of southbound left-turn movements from Morena/Napa to Morena/Linda Vista under the Mid-term scenario)
    - Napa to Marian Way: increase of 3 percent
- South gateway on Morena: Traffic volumes entering and exiting the study area from the south, via Morena Boulevard, would increase by six (6) percent.
- Friars Road: fluctuating volumes east and west of the intersection with Napa Street:
    - West of Napa Street: increase of 48 percent
    - East of Napa Street: increase of 105 percent (i.e., approximate doubling of existing volumes)

Table 4-11 provides a comparison of existing and Year 2035 LOS at each of the signalized study intersections and Table 4-12 provides of the same comparison for the unsignalized (stop-sign controlled) study intersections. Figure 4-53 provides Mid-term Mobility Plan LOS information graphically for all intersection types. Intersection LOS calculation sheets and intersection turning movements are provided in Appendix E. Each calculation sheet shows the forecast turning movements at each study intersection.

The Preferred Alternative (Mid-term Mobility Network) would improve operations at the following intersections that would operate at LOS E-F under the Adopted Community Plan:

- Napa Street / Linda Vista Road would improve to LOS C during the PM Peak Hour with the Preferred Alternative Mid-term Mobility Network – a substantial improvement from LOS E during the PM Peak Hour under Existing and Approved Community Plan conditions.
    - The reduction in PM Peak Hour delay would be achieved due to the diversion of southbound left-turn movements from Morena/Napa to Morena/Linda Vista, thus reducing the volume of conflicting left-turn movements at the Napa/Linda Vista intersection.
    - During the AM Peak Hour, delay would also be reduced compared to Existing and Adopted Community Plan conditions but remain at LOS D.

LOS would remain at LOS F at the following intersection under the Preferred Alternative (Mid-term Mobility Network):

- Clairemont Drive / Denver Street would operate at LOS F during the AM Peak Hour – as would also be the case under the Adopted Community Plan -- due to the anticipated increase in traffic volumes on Clairemont under Year 2035 conditions. Nonetheless, the total volume of traffic growth on Clairemont would be reduced under the Proposed Land Use alternative, in comparison with the Adopted Community Plan, and the intersection would operate acceptably at LOS D during the PM Peak Hour.

The Preferred Alternative (Mid-term) would result in LOS E or F conditions at the following intersections:

- Morena Boulevard / Jellett Street is a side-street stop-controlled intersection that would operate at LOS F -- reflecting delay to the stop-controlled approach from Jellett to Morena. Side-street approach volumes are forecasted to be relatively low – just 75 right-turns and 30 left-turns. The volume would not trigger a peak-hour signal warrant (100 approach vehicles if sharing a single lane) if right-turn lane striping is provided on Jellett, approaching Morena.
- Morena Boulevard / Linda Vista Road was evaluated based on a preliminary configuration that provided one northbound through lane and one right-turn lane on Morena Boulevard, approaching Linda Vista Road.
    - Preliminary configuration with one northbound through lane: Based on the preliminary configuration (reflected in the LOS results shown in Table 4-10), the intersection would operate at unacceptable LOS F during the AM Peak Hour under the proposed Mid-Term configuration due to the reduction in northbound through capacity since just one northbound lane would be provided. Average queue lengths would be as long as 800'. During the PM Peak Hour, the intersection would operate at LOS D under the preliminary configuration.
    - Revised configuration with two northbound through lanes: A revised configuration has since been prepared to provide a second northbound through lane to reduce delay. Initial testing suggests that the revised configuration with signal-timing adjustments can potentially achieve an acceptable LOS (to be confirmed concurrent with preparation of the final draft report). Testing this scenario may also require adjustments to signal-timing assumptions at adjacent intersections to optimize operations.

#	Intersecting Streets	EXISTING CONDITIONS (YEAR 2013)				ADOPTED COMMUNITY PLAN (YEAR 2035)				PREFERRED ALTERNATIVE - MID-TERM MOBLITY PLAN (YEAR 2035)			
		AM Peak Hour		PM Peak Hour		AM Peak Hour		PM Peak Hour		AM Peak Hour		PM Peak Hour	
		LOS	Avg Delay	LOS	Avg Delay	LOS	Avg Delay	LOS	Avg Delay	LOS	Avg Delay	LOS	Avg Delay
1	Morena & Gesner	A	8.3	B	10.4	A	8.7	B	10.4	A	8.6	B	11.0
2	I-5 Northbound Ramps & Clairmont	B	11.5	A	9.7	C	20.8	C	19.1	B	16.1	B	14.3
3	Morena & Ingulf	A	7.2	A	9.8	A	9.5	B	13.3	A	13.3	B	12.5
4	Denver & Clairemont	D	37.6	C	23.9	**F**	**>80**	**F**	**>80**	**F**	**>80**	D	50.2
7	Morena & Milton	B	10.0	A	7.8	B	11.0	A	8.8	B	10.3	B	10.9
8	Morena & Ashton	A	4.9	A	6.5	A	5.5	A	8.1	A	5.3	A	8.1
9	Morena & West Morena *(north split)*	B	11.2	B	11.4	B	11.4	B	12.1	B	11.8	B	12.5
10	Knoxville & East Morena	C	21.6	B	11.4	D	35.0	B	14.1	D	43.2	B	15.1
11	Morena & Tecolote	C	30.1	C	32.7	D	37.8	C	32.9	D	38.4	D	43.5
13	East Morena & Buenos	B	14.0	B	13.3	B	15.6	B	13.9	B	13.8	B	14.8
14	West Morena & Morena *(south split)*	A	8.7	B	14.7	B	11.0	B	14.4	C	24.4	D	40.4
15	N/A												
16	West Morena & Vega / Driveway	A	5.6	A	9.5	A	6.0	B	11.7	A	6.9	B	12.6
17	West Morena & Buenos	B	12.8	B	13.1	B	14.4	B	15.2	B	15.3	D	43.1
18	Morena & Napa & Sherman	D	46.4	D	50.7	D	45.2	D	37.0	C	21.5	C	33.0
19	Morena & Linda Vista	B	13.3	B	20.0	B	15.9	C	25.0	**F**	**>80**	D	36.8
20	Napa & Linda Vista	D	51.4	**E**	**77.7**	D	54.4	**E**	**71.8**	D	36.8	C	26.6
21	Marian Wy & Linda Vista	D	36.0	B	17.9	C	33.3	B	17.2	C	27.0	C	21.4
22	Napa & Riley	B	14.5	B	14.4	B	14.5	B	15.0	B	14.5	B	14.0
23	Napa & Friars	B	19.3	B	13.6	C	22.6	B	15.1	C	32.0	B	15.5
24	Colusa & Friars	B	11.2	B	12.0	B	15.2	C	21.8	B	13.2	C	20.7

Bold indicates LOS of E or F.

Table 4-11: Mid-term – Peak Hour LOS (Signalized Intersections)

#	Intersecting Streets	EXISTING CONDITIONS (YEAR 2013)				ADOPTED COMMUNITY PLAN (YEAR 2035)				PREFERRED ALTERNATIVE - MID-TERM MOBLITY PLAN (YEAR 2035)			
		AM Peak Hour		PM Peak Hour		AM Peak Hour		PM Peak Hour		AM Peak Hour		PM Peak Hour	
		LOS	Avg Delay	LOS	Avg Delay	LOS	Avg Delay	LOS	Avg Delay	LOS	Avg Delay	LOS	Avg Delay
5	Morena & Jellett (side-street stop)	C	15.5	C	18.1	C	15.6	C	19.0	C	16.7	**F**	**>50**
6	Denver & Ingulf (all-way stop)	A	9.9	B	14.8	C	22.5	**F**	**>50**	B	11.9	D	25.1
12	Morena & Savannah (side-street)	C	18.9	**E**	**37.9**	C	22.5	C	21.8	D	34.7	D	30.5

Bold indicates LOS of E or F.

Notes:

Both of the side-street stop controlled study intersections (#5 and #12) are T-intersections, with a stop-sign on the side-street approaching Morena. LOS and delay is based on the side-street approach to Morena.

Table 4-12: Mid-term – Peak Hour LOS (Stop-sign Controlled Intersections)

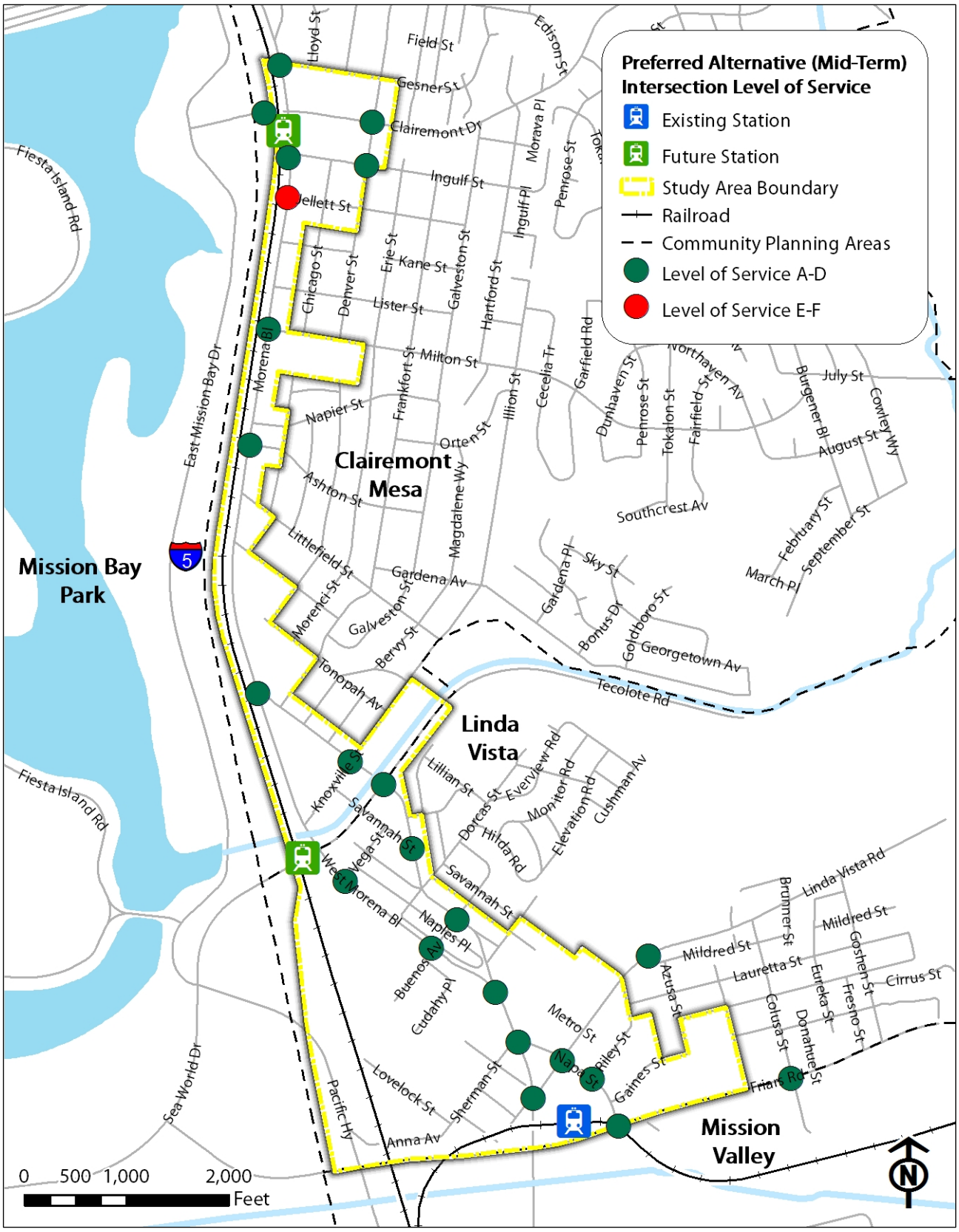


Figure 4-53: Preferred Alternative (Mid-term) Intersection Level of Service

4.8.3 Preferred Alternative (Long-Term) – Extended Roadway Network Grid

The Preferred Land Use Alternative is described in Chapter 2 Land Use. This section provides an analysis of Year 2035 traffic operations under the Proposed Land Use Alternative with buildout of the transportation improvements identified under the Long-term Recommended Mobility Plan as described earlier in this chapter and shown in Figure 4-32.

The Long-term Mobility Plan would differ from the Mid-term in providing a direct connection from the eastern leg of Morena Boulevard to Linda Vista with a new 2-lane collector with center-turn lane. Provision of this new "East Morena" connection would allow for greater dispersal of traffic that currently becomes congested in portions of the "triangle" where Morena, Napa and Linda Vista intersect.

Motor vehicle traffic capacity would be reduced on segments of Morena Boulevard and West Morena given the proposed reduction to one southbound lane. Narrower lanes would be installed to reduce motor vehicle speeds to approximately 30 to 35 mph, a speed that would be consistent with the collector street standard and intended to enhance pedestrian capacity.

Figure 4-54 displays the proposed roadway classifications under the Mid-term Mobility Plan. Figure 4-55 shows the modeled traffic volumes for this scenario and Figure 4-56 shows the corresponding roadway segment LOS.

The analysis of the Proposed Land Use Alternative with Long-term Recommended Mobility Plan assumes that land uses outside the study area will be consistent with buildout identified in the SANDAG Series 12 model, and that the transportation network outside the study area will be consistent with the SANDAG Series 12 Reasonably Expected network.

Daily Traffic Volumes and Segment LOS – Preferred Alternative (Long-term)

Daily traffic volumes under the Proposed Land Use Alternative, with the proposed long-term roadway network configuration, were determined by the City of San Diego, utilizing the SANDAG Series 12 travel demand model. Table 4-13 provides a comparison of existing and future baseline daily traffic volumes at each of the 33 study segment locations under future baseline conditions. Key findings for key segments are as follows:

- Clairemont Drive: Traffic volumes would increase from 30,800 daily vehicles under Existing Conditions to 37,800 under the Long-term Mobility Network a substantial reduction from 43,100 daily vehicles under the Adopted Community Plan and 39,300 daily vehicles under the Mid-term Mobility Network.
- Morena Boulevard (north): Traffic volumes – which range from 11,000 to 16,000 under existing conditions -- would range from 12,000 to 16,000 vehicles, under both the mid-term and long-term configurations. With removal of one southbound lane, the daily capacity would be roughly 30,000 daily vehicles, and excess capacity would remain.
- Morena Boulevard (east): South of the split with West Morena to Knoxville Street: traffic volumes would decrease from 9,200 daily vehicles under existing conditions to 7,700 daily vehicles under the Mid-term Mobility Plan– a reduction

from 10,200 daily vehicles under the Adopted Community Plan. Traffic volumes would increase on segments nearest Tecolote from 16,000 daily vehicles under Existing and Mid-term Conditions to 17,500 daily vehicles under the Long-term Mobility Network - reflecting some diversion of freeway-bound trips from West Morena to Morena/Tecolote given the proposed lane reduction on West Morena.

- West Morena Boulevard: Traffic volumes would fluctuate by segment, with little change from existing volumes at the southern end of West Morena, while traffic volumes would increase by 30 to 40 percent near the Tecolote Station. Total traffic volume would range from 13,000 to 16,000 daily vehicles on the existing segments of West Morena (north of the current southern split with Morena Boulevard). Under the proposed long-term configuration, West Morena would continue south to Linda Vista without rejoining Morena Boulevard. Daily volumes would be 14,000 vehicles just north of Napa Street, increasing to 22,000 vehicles between Napa/Sherman and Linda Vista.
- Linda Vista: Traffic volumes would be approximately 23,000 daily vehicles on segments near Napa Street, representing a decrease in traffic volumes compared to existing volumes that approach 27,000 daily vehicles.
- Traffic volumes at key gateways: Traffic volumes entering and exiting the study area from the south, via Morena Boulevard, would remain around 38,000 daily vehicles, with little change from existing conditions. Traffic volumes entering and existing the study area from the north, via Morena Boulevard, would decrease from 13,500 daily under existing conditions to 12,400 daily under the long-term scenario.

Segment #	Street Name	Segment Location	EXISTING CONDITIONS				ADOPTED COMMUNITY PLAN (YEAR 2035)				PREFERRED ALTERNATIVE - LONG-TERM (YEAR 2035)			
			Street Classification	City of San Diego LOS E Threshold	Daily Volume*	Daily LOS (1)	Street Classification	City of San Diego LOS E Threshold	Daily Volume	Daily LOS (1)	Street Classification	City of San Diego LOS E Threshold	Daily Volume	Daily LOS (1)
1	**Gesner St.**	(Morena Bl - Denver St)	Local	2,200 (see note 2)	3,556	> C	Local	2,200 (see note 2)	3,900	> C	Local	2,200 (see note 2)	4,000	> C
2	**Clairemont Dr.**	(I-5 NB Ramps - Denver St)	4-Lane Major	40,000	30,826	D	4-Lane Major	40,000	***43,100***	***F***	4-Lane Major	40,000	***37,800***	***E***
3	**Ingulf St.**	(Morena Bl - Denver St)	Local (Classification) 2-Lane Collector with Left-turn Lane (Existing Geometry)	15,000	5,185	A	Local (Classification) 2-Lane Collector with Left-turn Lane (Existing Geometry)	15,000	9,000	C	Local (Classification) 2-Lane Collector with Left-turn Lane (Existing Geometry)	15,000	5,800	A
4	**Denver St.**	(Clairemont Dr - Ingulf St)	Local (Classification) 2-Lane Collector with Left-turn Lane (Existing Geometry)	15,000	10,064	D	Local (Classification) 2-Lane Collector with Left-turn Lane (Existing Geometry)	15,000	12,400	D	Local (Classification) 2-Lane Collector with Left-turn Lane (Existing Geometry)	15,000	8,600	C
5	**Morena Bl.**	(North of Gesner St)	4-Lane Major	40,000	13,508	A	4-Lane Major	40,000	13,900	A	4-Lane Major	40,000	12,400	A
6	**Morena Bl.**	(Gesner St - Ingulf St)	4-Lane Major	40,000	11,397	A	4-Lane Major	40,000	12,100	A	4-Lane Major	40,000	16,100	A
7	**Morena Bl.**	(Ingulf St - Milton St)	4-Lane Major	40,000	14,805	A	4-Lane Major	40,000	16,700	B	3-Lane Collector (2 northbound, 1 southbound) plus left-turn lane	22,500	15,200	D
8	**Morena Bl.**	(Milton St - Ashton St)	4-Lane Major	40,000	15,964	B	4-Lane Major	40,000	18,600	B	3-Lane Collector (2 northbound, 1 southbound) plus left-turn lane	22,500	16,100	D
9	**Morena Bl.**	(Ashton St - Morena Bl N Split)	4-Lane Major	40,000	15,598	B	4-Lane Major	40,000	19,400	B	3-Lane Collector (2 northbound, 1 southbound) plus left-turn lane	22,500	16,400	D
10	**W Morena Bl.**	(Morena Bl N Split - Vega St)	4-Lane Major	40,000	10,149	A	4-Lane Major	40,000	15,800	B	3-Lane Collector (2 northbound, 1 southbound) plus left-turn lane	22,500	13,300	C
11	**W Morena Bl.**	(Vega St - Buenos Ave)	4-Lane Major	40,000	11,014	A	4-Lane Major	40,000	18,400	B	3-Lane Collector (2 northbound, 1 southbound) plus left-turn lane	22,500	16,000	D
12	**W Morena Bl.**	(Buenos Ave - Morena Bl)	4-Lane Major	40,000	13,312	A	4-Lane Major	40,000	17,300	B	3-Lane Collector (2 northbound, 1 southbound) plus left-turn lane	22,500	16,400	D
13	**Morena Bl.**	(W Morena Bl - Napa St)	4-Lane Major (with double left-turn lane southbound)	45,000	29,923	C	4-Lane Major (with double left-turn capacity southbound)	45,000	36,200	D	3-Lane Collector (2 northbound, 1 southbound) plus left-turn lane	22,500	14,000	C
14	**Morena Bl.**	(Napa/Sherman St - Linda Vista Rd)	4-Lane Major (Classification) 5-Lane Major (Existing Geometry)	50,000	23,023	B	4-Lane Major (Classification) 5-Lane Major (Geometry)	50,000	21,500	B	4-Lane Collector	30,000	22,500	D
15	**Morena Bl.**	(South of Linda Vista Rd)	4-Lane Major	40,000	***38,383***	***E***	4-Lane Major	40,000	***43,200***	***F***	4-Lane Major	40,000	***38,000***	***E***
16	**Morena Bl.**	(W Morena Bl - Knoxville St)	2-Lane Collector (no center turn-lane)	8,000	***9,171***	***F***	2-Lane Collector with left-turn lane	15,000	10,500	A	2-Lane Collector (no center turn-lane)	8,000	***7,700***	***E***
17	**Morena Bl.**	(Knoxville St - Tecolote Rd)	4-Lane Collector	30,000	17,469	C	4-Lane Collector	30,000	22,500	D	4-Lane Collector	30,000	20,200	D
18	**Morena Bl.**	(Tecolote Rd - Buenos Ave)	2-Lane Collector with left-turn lane	15,000	***16,020***	***F***	2-Lane Collector with left-turn lane	15,000	***13,400***	***E***	2-Lane Collector with left-turn lane	15,000	***17,500***	***F***
19	**Morena Bl.**	(Buenos Ave - Morena Bl S Split)	2-Lane Collector with left-turn lane	15,000	***16,603***	***F***	2-Lane Collector with left-turn lane	15,000	***13,900***	***E***	2-Lane Collector with left-turn lane	15,000	***16,500***	***F***
20	**Napa St.**	(Morena Blvd - Linda Vista Rd)	4-Lane Collector (no center turn-lane)	15,000	***24,812***	***F***	4-Lane Collector (no center turn-lane)	15,000	***21,800***	***F***	Segment removed	N/A	N/A	
21	**Napa St.**	(Linda Vista Rd - Riley St)	4-Lane Major	40,000	17,681	B	4-Lane Major	40,000	20,400	B	4-Lane Major	40,000	17,000	A
22	**Napa St.**	(Riley St - Friars Rd)	4-Lane Major	40,000	13,920	A	4-Lane Major	40,000	22,100	C	4-Lane Major	40,000	19,000	B
23	**Milton St.**	(East of Morena Bl)	2-Lane Collector (residential fronting)	8,000	3,821	C	2-Lane Collector (residential fronting)	8,000	***7,300***	***E***	2-Lane Collector (residential fronting)	8,000	4,400	C
24	**Knoxville St.**	(Morena Bl - Savannah St)	Local	2,200 (see note 2)	1,149	< C	Local	2,200 (see note 2)	3,400	A	2-Lane Collector (commercial-industrial fronting)	8,000	2,700	A
25	**Sea World Dr.**	(Morena Bl - I-5 NB Ramps)	4-Lane Major	40,000	24,513	C	4-Lane Major	40,000	33,700	D	4-Lane Major	40,000	34,700	D
26	**Buenos Ave.**	(South of Cudahy Pl)	Local	2,200 (see note 2)	1,174	< C	2,200 (see note 2)	2,200 (see note 2)	2,000	< C	Local	2,200 (see note 2)	4,200	> C
27	**Cudahy Pl.**	(East of Buenos Ave)	Local	2,200 (see note 2)	1,120	< C	2,200 (see note 2)	2,200 (see note 2)	8,700	> C	Local	2,200 (see note 2)	9,600	> C
28	**Sherman St.**	(Morena Bl - Grant St)	Local	2,200 (see note 2)	7,389	> C	2,200 (see note 2)	2,200 (see note 2)	6,700	> C	Local	2,200 (see note 2)	11,300	> C
29	**Linda Vista Rd.**	(Morena Bl - Napa St)	4-Lane Major	40,000	22,603	C	4-Lane Major	40,000	21,900	C	4-Lane Major	40,000	22,400	B
30	**Linda Vista Rd.**	(Napa St - Marian Wy)	4-Lane Collector (Existing Geometry)	30,000	***26,868***	***E***	4-Lane Major	40,000	24,700	C	4-Lane Major	40,000	23,300	C
31	**Riley St.**	(Napa St - Lariteta St)	Local	2,200 (see note 2)	1,787	< C	Local	2,200 (see note 2)	1,800	< C	Local	2,200 (see note 2)	1,800	< C
32	**Friars Rd.**	(Napa St - Colussa St)	4-Lane Major	40,000	19,550	B	4-Lane Major	40,000	18,300	B	4-Lane Major	40,000	27,700	C
33	**Friars Rd.**	(West of Napa St)	4-Lane Major	40,000	9,355	A	4-Lane Major	40,000	18,600	B	4-Lane Major	40,000	18,400	B

Notes:
1. City's Daily LOS Threshold is intended to be used planning purposes (but is not an EIR threshold).
2. Based on City TIS standard for Sub-Collector (single-family) streets. City guidelines do not provide daily volume LOS thresholds for local streets, and the TIS guidelines specify that LOS standards "normally apply to roads carrying through traffic between major trip generators and attractors." (City TIS Guidelines, Table 2).

*24-hour volumes are shown above for the peak day of week (Friday 4/12/2013 at most segment count locations). The peak-day volumes is 5%-10% higher than Average Daily Traffic.

Source: Nelson\Nygaard (LOS); KTUA (Street Classification Map); True Count (Counts Conducted February and April 2013); City of San Diego Adopted CP ADT Plot (July 31, 2013)

Table 4-13: Long-term – Daily Traffic Volume Comparison

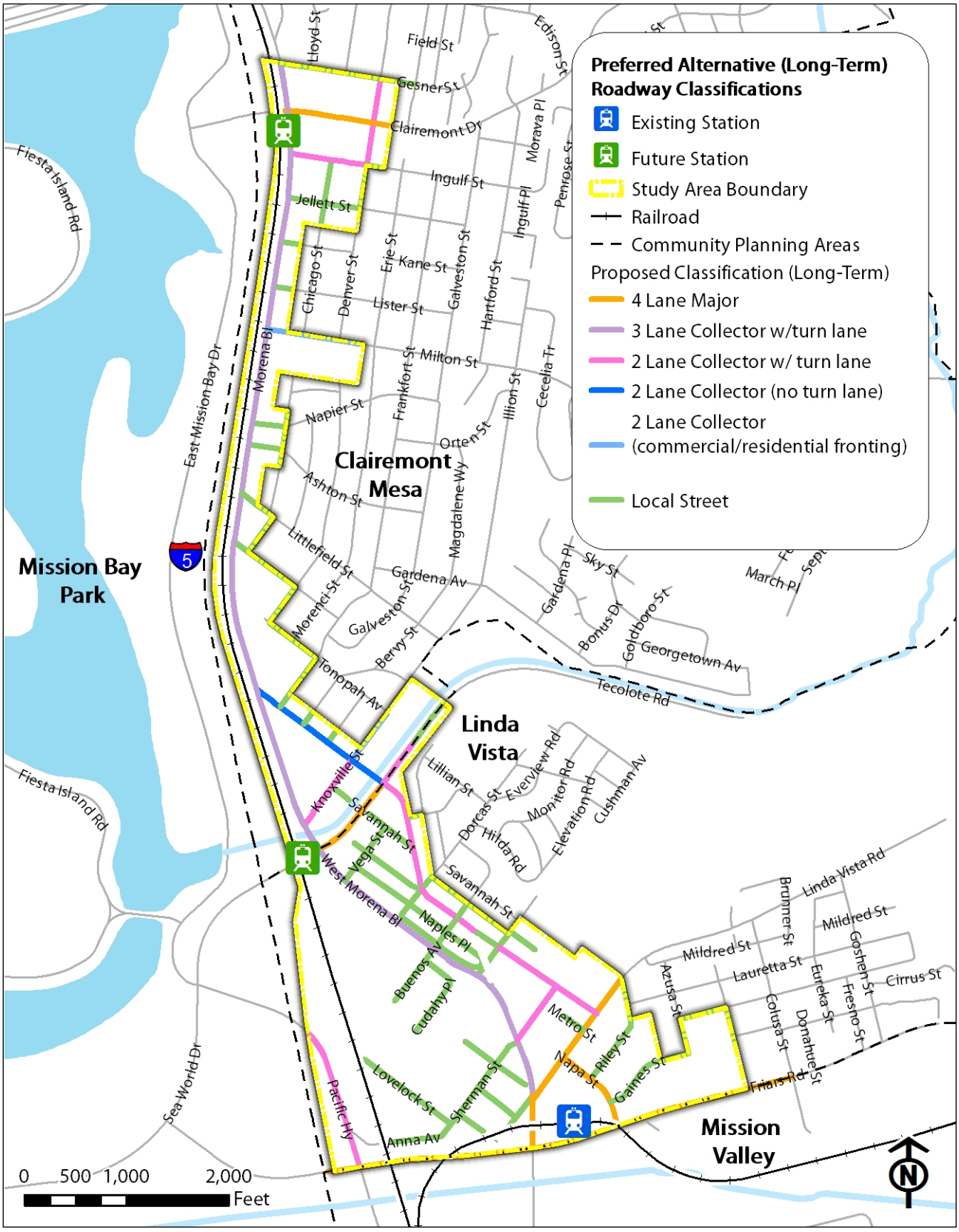


Figure 4-54: Preferred Alternative (Long-term) Roadway Classification

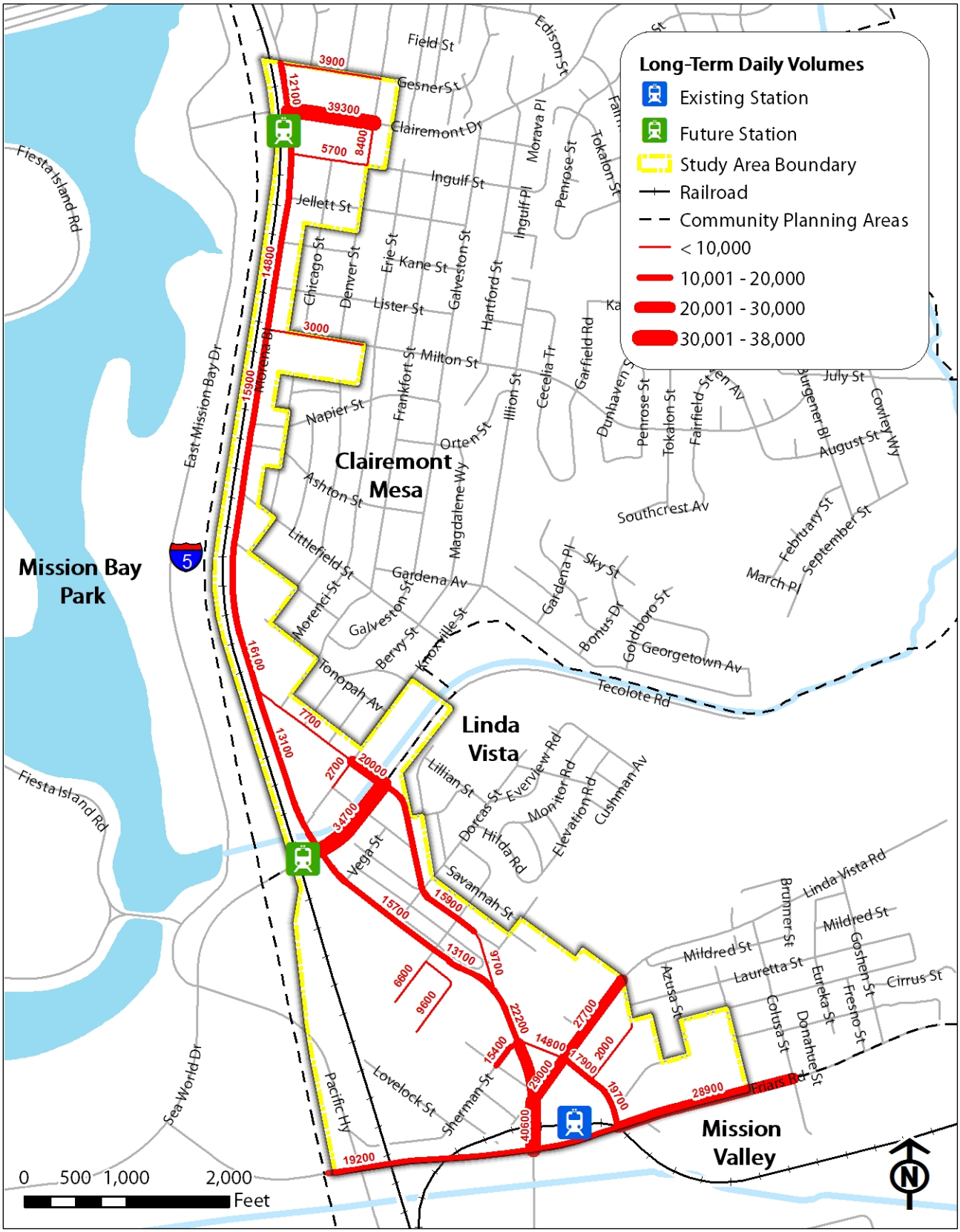


Figure 4-55: Preferred Alternative (Long-term) Daily Volumes

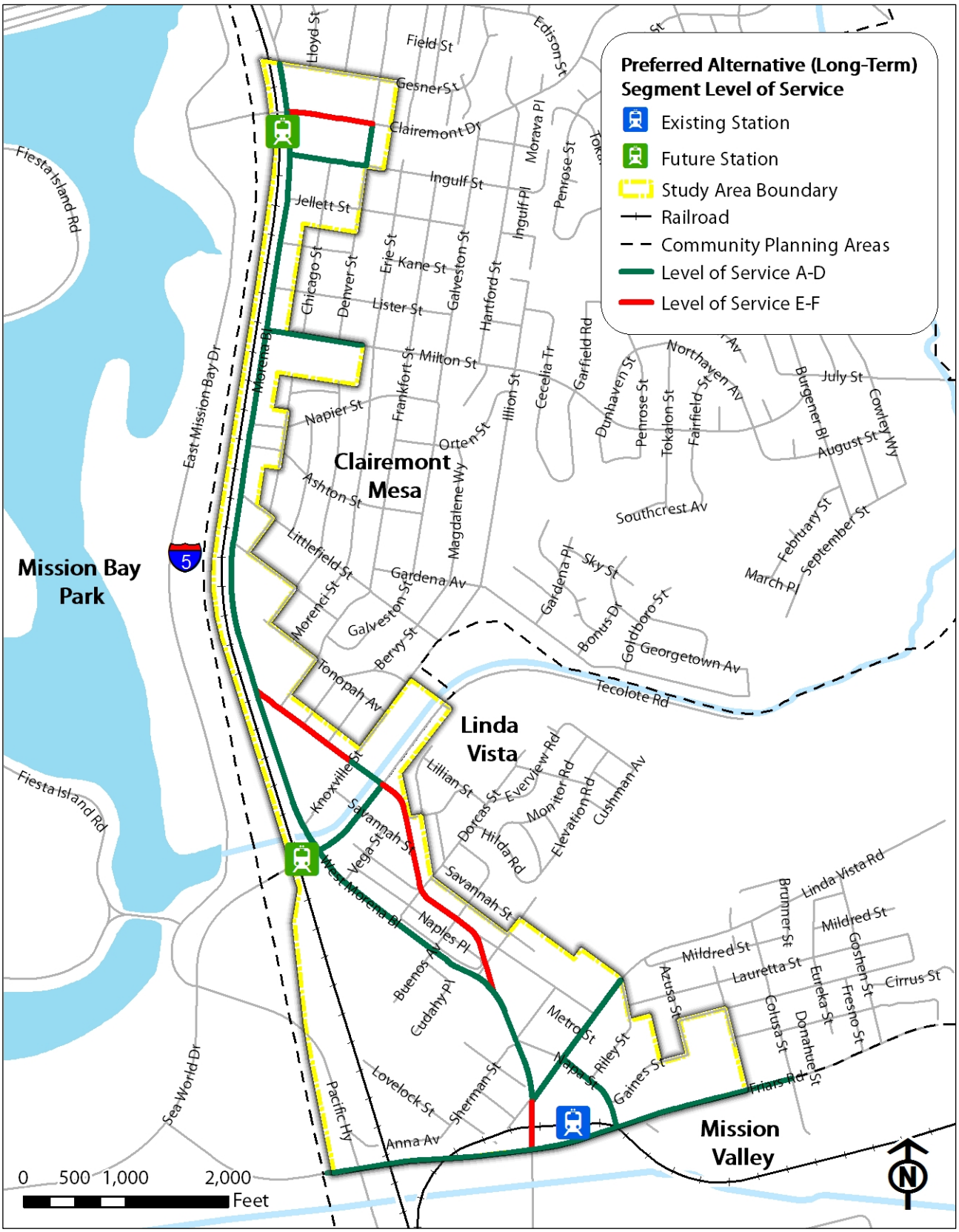


Figure 4-56: Preferred Alternative (Long-term) Segment Level of Service

Intersection Level of Service – Preferred Alternative (Long-term)

Turning Movement Methodology

Peak hour traffic volumes, intersection turning movements and peak-hour level of service at each study intersection were determined by Nelson\Nygaard based on the forecast change in daily traffic volumes on each approach segment.

- Turning movements were derived by factoring and balancing methods. Based on the daily volume forecast, AM and PM peak hour volumes were forecasted based on the existing share of total daily traffic occurring each of the peak hours, applied to future baseline volumes.
- Turning movements at each study intersection were forecasted by adjusting existing turning movements to reflect changes in approach and departure volumes on upstream and downstream segments.
- The forecast also took into account "select-link" origin and destination forecasts, provided by city staff based on the Year 2035 model forecast for trips to and from key segments.
- The forecasted turning movements and intersection LOS reports at each study intersection are shown in Appendix E. Growth factors for specific movements are shown on the intersection LOS reports, except where manual adjustments were required to low-volume turning movements for purposes of balancing volumes between intersections.
- The forecasted turning movements will be reviewed and refined to be consistent with NCHRP 255 methodology through the community plan amendment process.

Based on the forecast of daily traffic volumes provided by the City (described in the previous subsection), growth factors varied by street and segment. The percent increases and decreases described below are based on the change from existing volumes on each segment:

- Clairemont Drive: forecasted growth of 23 percent under the Long-term scenario. This rate of growth was applied to movements at the intersection of Clairemont & Denver and to applicable movements at the intersection of Clairemont & I-5 Northbound Ramps.
- Gesner Street: forecasted growth of 12 percent under the long-term scenario. This rate of growth was applied to applicable movements when developing approach volumes at the Gesner & Morena study intersection.
- Ingulf Street: forecasted growth of 12 percent under the Long-term scenario. This rate of growth was applied to specific approach volumes at the intersections of Ingulf with Morena and Denver.
- Morena Boulevard (north) : forecasted volumes would vary by segment, within 10 percent of volumes on most segments:
    - Eight (8) percent reduction from existing volumes on the northernmost segment (north of Gesner Street)
    - 41 percent growth on the short segment south of Gesner and north of Ingulf Street.

  - Three (3) percent growth south of Ingulf Street to Milton Street.
  - One (1) percent growth south of Milton Street to Ashton Street
  - Five (5) percent growth south of Ashton Street to West Morena.
- Morena Boulevard (east): daily volumes are forecasted to decrease on segments of Morena between the two splits:
  - South of the split with West Morena to Knoxville Street: reduction of 16 percent from existing volumes.
  - South of Knoxville Street to Tecolote Road: increase of 16 percent on the short 1-block segment between Knoxville and Tecolote.
  - South of Tecolote Road: increase of nine (9) percent between Tecolote Road and Buenos Avenue
- Knoxville Street: increase of 35 percent between Morena and Savannah.
- Morena Boulevard (south): traffic volumes are forecasted to increase significantly on the segment north of Napa Street:
  - South of West Morena to Napa Street: reduction of 53 percent from existing volumes, reflecting diversion of traffic to the proposed "East Morena" connection with Linda Vista under the Long-term scenario
  - South of Napa Street to Linda Vista: reduction of 2 percent from existing volumes
- West Morena Boulevard: traffic volumes are forecasted to increase on each segment:
  - At the north end of West Morena Boulevard (immediately south of the "north split" with Morena Boulevard): increase of 31 percent.
  - South of Vega and north of Buenos: increase of 45 percent
  - South of Buenos to the southernmost split between West Morena & Morena: increase of 23 percent.
- Napa Street: fluctuating volumes by segment:
  - Morena to Linda Vista: N/A (closure of this segment is proposed under the Long-term scenario)
  - Linda Vista to Riley: reduction of 4 percent from existing volumes
  - Riley to Friars: increase of 36 percent
- Linda Vista Road: fluctuating volumes by segment:
  - Morena to Napa: reduction of one (1) percent
  - Napa to Marian Way: reduction of 13 percent
- South gateway on Morena: Traffic volumes entering and exiting the study area from the south, via Morena Boulevard, would decrease by approximately one (1) percent compared to existing volumes.

- Friars Road: fluctuating volumes east and west of the intersection with Napa Street:
    - West of Napa Street: increase of 42 percent
    - East of Napa Street: increase of 97 percent (i.e., approximate doubling of existing volumes

Table 4-14 provides a comparison of Existing and Year 2035 LOS at each of the signalized study intersections under the proposed long-term roadway configuration, and Table 4-15 provides results for each the unsignalized study intersections. Figure 4-57 provides Long-term Mobility Plan LOS information graphically for all intersection types Intersection turning movements and LOS calculation sheets are provided in Appendix E.

Each of the signalized study intersections would operate acceptably at LOS D or better under the Preferred Long-term Alternative. The proposed new intersection of Linda Vista / "East Morena" would operate at LOS C curing the peak hours.

The Preferred Alternative (Long-term Mobility Network) would improve operations at the following intersections that would operate at LOS E-F under the Adopted Community Plan:

- Napa Street / Linda Vista Road would operate at LOS D during the PM Peak Hour with the Preferred Alternative Long-term Mobility Network – an improvement from LOS E during the PM Peak Hour under Existing and Approved Community Plan conditions.
    - The reduction in PM Peak Hour delay would be achieved from diversion of traffic to the new "East Morena" extension, and elimination of the high volume of conflicting southbound left-turn movements from Morena/Napa to Morena/Linda Vista under Existing and Approved Community Plan conditions.
    - During the AM Peak Hour, delay would also be reduced compared to Existing and Adopted Community Plan conditions but remain at LOS D.

- Clairemont Drive / Denver Street would operate at LOS D during the peak hours, an improvement from LOS F conditions under the Adopted Community Plan, reflecting the reduction in traffic volumes on Clairemont Drive.

  LOS E-F would be limited to the Morena Boulevard / Jellett Street intersection – a side-street stop-controlled intersection that would operate at LOS F, reflecting delay to the stop-controlled approach from Jellett to Morena. Side-street approach volumes are forecasted to be relatively low – just 75 right-turns and 30 left-turns. The volume would not trigger a peak-hour signal warrant (100 approach vehicles if sharing a single lane) if right-turn lane striping is provided on Jellett, approaching Morena.

#	Intersecting Streets	EXISTING CONDITIONS (YEAR 2013)				ADOPTED COMMUNITY PLAN (YEAR 2035)				PREFERRED ALTERNATIVE - LONG-TERM MOBLITY PLAN (YEAR 2035)			
		AM Peak Hour		PM Peak Hour		AM Peak Hour		PM Peak Hour		AM Peak Hour		PM Peak Hour	
		LOS	Avg Delay	LOS	Avg Delay	LOS	Avg Delay	LOS	Avg Delay	LOS	Avg Delay	LOS	Avg Delay
1	Morena & Gesner	A	8.3	B	10.4	A	8.7	B	10.4	A	9.8	B	10.2
2	I-5 Northbound Ramps & Clairmont	B	11.5	A	9.7	C	20.8	C	19.1	B	12.4	B	12.4
3	Morena & Ingulf	A	7.2	A	9.8	A	9.5	B	13.3	B	12.8	B	14.0
4	Denver & Clairemont	D	37.6	C	23.9	**F**	**>80**	**F**	**>80**	D	38.2	D	38.2
7	Morena & Milton	B	10.0	A	7.8	B	11.0	A	8.8	B	11.8	B	10.5
8	Morena & Ashton	A	4.9	A	6.5	A	5.5	A	8.1	B	10.7	A	9.5
9	Morena & West Morena *(north split)*	B	11.2	B	11.4	B	11.4	B	12.1	B	13.4	B	12.7
10	Knoxville & East Morena	C	21.6	B	11.4	D	35.0	B	14.1	B	13.9	B	15.0
11	Morena & Tecolote	C	30.1	C	32.7	D	37.8	C	32.9	D	38.0	D	52.4
13	East Morena & Buenos	B	14.0	B	13.3	B	15.6	B	13.9	B	17.9	D	36.3
14	West Morena & Morena *(south split)*	A	8.7	B	14.7	B	11.0	B	14.4	A	5.9	B	13.6
15	N/A									C	32.0	C	28.5
16	West Morena & Vega / Driveway	A	5.6	A	9.5	A	6.0	B	11.7	B	16.2	B	13.7
17	West Morena & Buenos	B	12.8	B	13.1	B	14.4	B	15.2	B	18.1	D	43.6
18	Morena & Napa & Sherman	D	46.4	D	50.7	D	45.2	D	37.0	C	31.7	C	24.9
19	Morena & Linda Vista	B	13.3	B	20.0	B	15.9	C	25.0	D	36.1	B	18.1
20	Napa & Linda Vista	D	51.4	**E**	**77.7**	D	54.4	**E**	**71.8**	D	50.7	D	48.4
21	Marian Wy & Linda Vista	D	36.0	B	17.9	C	33.3	B	17.2	C	22.0	C	20.2
22	Napa & Riley	B	14.5	B	14.4	B	14.5	B	15.0	C	22.0	B	15.9
23	Napa & Friars	B	19.3	B	13.6	C	22.6	B	15.1	B	18.7	B	13.6
24	Colusa & Friars	B	11.2	B	12.0	B	15.2	C	21.8	B	12.6	B	12.0

Bold indicates LOS of E or F.

Table 4-14: Long-term – Peak Hour LOS (Signalized Intersections)

#	Intersecting Streets	EXISTING CONDITIONS (YEAR 2013)				ADOPTED COMMUNITY PLAN (YEAR 2035)				PREFERRED ALTERNATIVE - LONG-TERM MOBLITY PLAN (YEAR 2035)			
		AM Peak Hour		PM Peak Hour		AM Peak Hour		PM Peak Hour		AM Peak Hour		PM Peak Hour	
		LOS	Avg Delay	LOS	Avg Delay	LOS	Avg Delay	LOS	Avg Delay	LOS	Avg Delay	LOS	Avg Delay
5	Morena & Jellett (side-street stop)	C	15.5	C	18.1	C	15.6	C	19.0	D	34.1	**F**	**>50**
6	Denver & Ingulf (all-way stop)	A	9.9	B	14.8	C	22.5	**F**	**>50**	D	25.1	D	25.1
12	Morena & Savannah (side-street)	C	18.9	**E**	**37.9**	C	22.5	C	21.8	C	22.1	D	30.5

Bold indicates LOS of E or F.

Notes:

Both of the side-street stop controlled study intersections (#5 and #12) are T-intersections, with a stop-sign on the side-street approaching Morena. LOS and delay is based on the side-street approach to Morena.

Table 4-15: Long-term – Peak Hour LOS (Stop-sign Controlled Intersections)

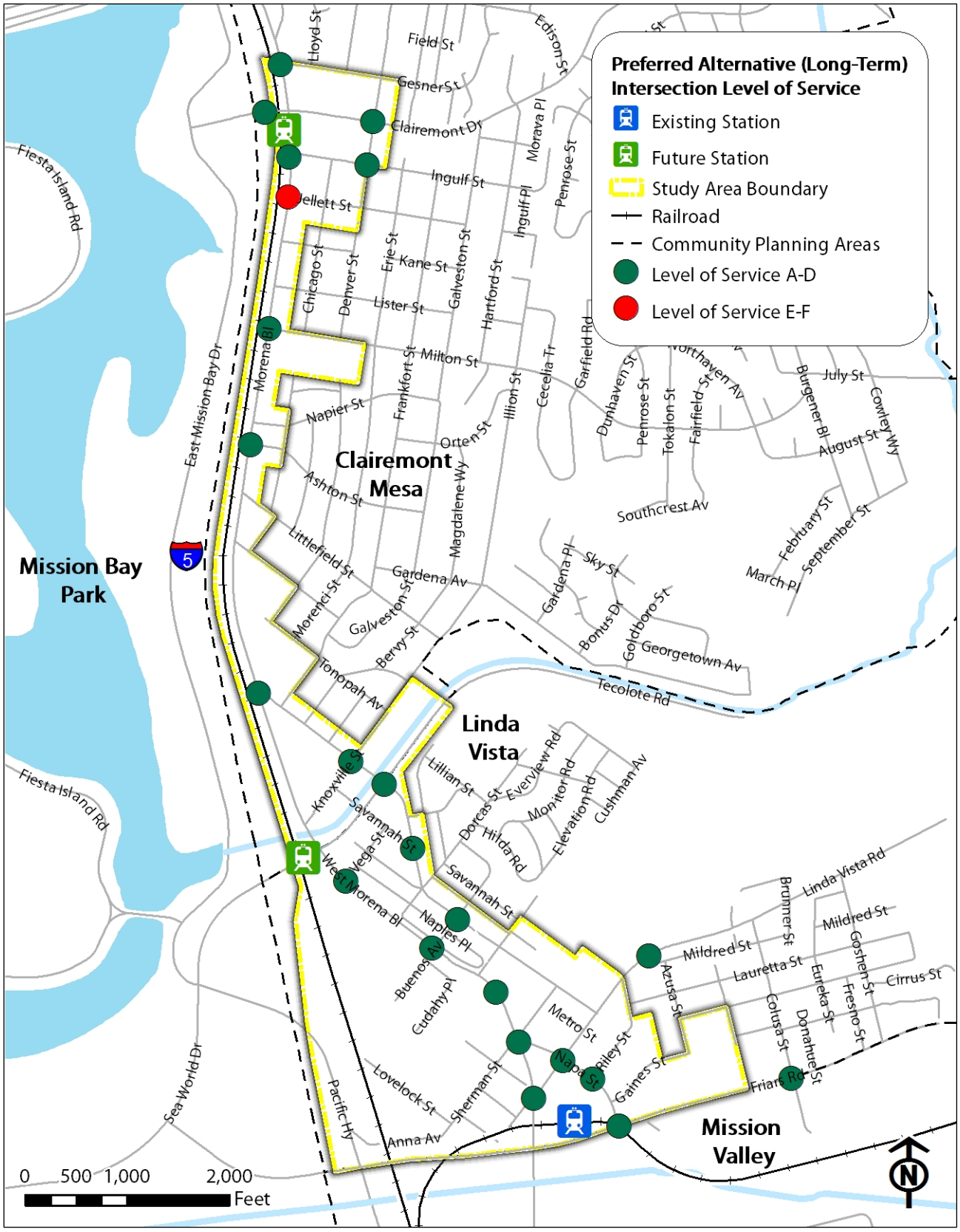


Figure 4-57: Preferred Alternative (Long-term) Intersection Level of Service

4.9 Pedestrian Mobility Analysis

The existing pedestrian environment consists primarily of contiguous sidewalks, standard double bar marked crosswalks, curb ramps, and occasionally a planting strip separating the sidewalk from the adjacent travel lane (non-contiguous walkways).

Sidewalks are present throughout some of the study area, especially along commercial land uses south of Tecolote Road (see Figure 4-7). Sidewalks in most of the neighborhoods, however, are generally missing. These sidewalks vary in size and condition, with some areas missing sidewalks altogether. Sidewalks are typically four to six feet wide and are immediately adjacent to the street. Small segments of West Morena Boulevard, Linda Vista Road and Napa Street have planting strips on the inside of sidewalks against commercial parking. In the residential areas, sidewalks generally do not exist.

Double bar marked crosswalks are present throughout the study area where crossing is allowed. At some four-way intersections, only two or three out of the four legs are permissible for pedestrian crossings. The recommendations of this plan eliminates 4th leg pedestrian crossing restrictions at all signalized intersections and proposes to use a modified ladder style crosswalk marking system that does not include perpendicular bars, only parallel large stripes, thereby reducing the amount of pavement markings vehicles run over.

Pedestrian collision data was collected between 2006 and 2010 and a total of 12 collisions were reported (see Figure 4-17). All 12 collisions involved injuries with no fatalities reported. The one location with multiple vehicular-pedestrian collisions (2) was at Morena Boulevard and Napa Street. One collision involved the pedestrian crossing Morena Boulevard outside of the crosswalk. Marked crosswalks exist on the east, west and southern legs of the intersection with crossing prohibited on the northern leg.

For these 12 collisions, there is an equal split between the motorist and pedestrian violations with each violating each other's right-of-way six times. Pedestrians who violated the vehicular right-of-way were not using the crosswalk or were walking in the road right-of-way. This initially indicates that block lengths are too long, intersections are spaced too far apart discouraging their use, and the lack of sidewalks may be responsible for those hit while walking along the street. Motorists violating pedestrian right-of-ways occurred in crosswalks, along the road and, in some cases, on the sidewalk. The incidents on the sidewalk occurred from vehicles getting in and out of parking spaces. This indicates there was not enough separation between parked cars and the sidewalk or the extra wide driveway aprons do not function well as walkways.

The geometry of several intersections skew the angles of the motorists who are making turning movements through the intersection. These skewed intersections may also allow a faster right turning movement, such as turning right onto Morena Boulevard from Napa Street. It also increases the length pedestrians have to cross, as well as increasing the signal phasing required to allow them to across the street. Vehicles sometimes block the crosswalk while encroaching into the intersection trying to get a better angle to see oncoming traffic. This causes motorists to either block the crosswalk or not see pedestrians altogether. The study area has numerous skewed intersections including:

- Morena Boulevard at Napa Street
- Napa Street at Linda Vista Road
- Morena Boulevard at Linda Vista Road
- Morena Place at Morena Boulevard
- Morena Boulevard at Naples Street /Dorcas Street
- Morena Boulevard at West Morena Blvd
- Morena Boulevard at Asher Street
- Morena Boulevard at Littlefield Street

Pedestrian volumes were conducted as part of this study with the highest volume recorded on Napa Street and Linda Vista Road, having over 200 pedestrian during the peak hours (see Figure 4-8). These volumes coincide with use of the Morena/Linda Vista Transit Station.

Other high pedestrian volume intersections include:
- Morena Boulevard and Napa Street
- Napa Street and Riley Street
- Napa Street and Friars Road

4.9.1 General Recommendations for Pedestrians

A few of the major deficiencies or issues identified by the public were:
- Lack of sidewalks
- Inadequacy of sidewalks
- Configuration of the intersections
- Safe routes to transit
- Traffic calming
- Streetscape improvements
- Better multi-modal access
- Better connection to Mission Bay and USD

To improve walkability within the study area and to destinations such as existing and future transit stations, the pedestrian environment could be improved with:
- Wider sidewalks
- Connected sidewalks
- High visibility crosswalks (ladder or continental)
- ADA compliant curb ramps
- Separation between sidewalk and adjacent travel lane using parkway strips that create a non-contiguous walkway
- Traffic calming (narrow lanes, curb extensions, etc)
- Shorter crossing distances at crosswalks

4.9.2 Mid-Term Recommendations for Pedestrians

The mid-term recommendations primarily focus on the study area south of Tecolote Road. Recommendations throughout include:
- Wider sidewalks
- Connecting sidewalk gaps in the commercial areas
- Separation between sidewalks and adjacent travel lanes with planting strips
- Curb extensions
- Median refuge islands
- High visibility continental crosswalks

These improvements, in the interim, will provide a level of comfort much greater than the existing environment. To address the pedestrian collision analysis and public comments, the recommendations emphasize high visibility crosswalks, curb extensions, and physical separation from adjacent travel lanes. The wider sidewalks and planting strips will alleviate the proximity of parked vehicles and provide additional separation from the travel lane. The high visibility crosswalks and curb extensions will provide greater visibility for both pedestrians and motorists at intersections. The connected sidewalks will provide improved routes to transit, Tecolote Road and Clairemont Drive to access Mission Bay. The sidewalk improvements will provide an enhanced pedestrian environment between USD and the Morena/Linda Vista Transit Station.

Intersections have also been reconfigured to provide a shorter crossing distance with median refuges where needed. These reconfigurations also provide better access and visibility to the different land uses in the area. Intersections that have been recommended for a geometric change are:

- Morena Boulevard at Linda Vista Road
- Morena Boulevard at Napa Street
- West Morena Boulevard at Cushman Avenue

Improvements north of Tecolote Road to Clairemont Drive are planned for both the mid-term and the long-term scenario. These improvements include:

- Additional access to the future Tecolote Transit Station from Tecolote Road
- Class 1 multi-use path from Knoxville Street to Ingulf Street (between future Tecolote and Clairemont Transit Stations)
- Pedestrian plaza at Morena Boulevard and Ingulf Street

These improvements provide better access to the future transit stations from adjoining streets and between each station. The two-way multi-use path closes a gap for pedestrians and bicyclists between two future transit stations on the west side of Morena Boulevard. Multi-use paths are popular for all non-motorized users because it separates them from interacting with vehicles at driveways and provides separation from travel lanes. They provide low-stress connectivity for all ages between destinations.

4.9.3 Long-Term Recommendations for Pedestrians

In the long-term scenario, major improvements and intersection reconfigurations are designed to improve vehicular traffic flow and pedestrian walkability. Additional benefits include access to commercial land uses, as well as existing and proposed transit stations. These reconfigurations shorten crossing distances by angling the intersections at 90-degrees and including curb extensions. They also increase pedestrian and vehicular visibility, provide median refuges and high visibility crosswalks. Other recommendations are similar to the mid-term scenario by utilizing the same treatments when applicable.

Intersections that have been reconfigured from skewed angles to right angles are:

- Morena Boulevard at Napa Street
- Napa Street and Linda Vista Road
- Morena Boulevard at Linda Vista Road
- Cushman Avenue at Savannah Street
- West Morena Boulevard at Cushman Avenue
- Knoxville Street at West Morena Boulevard

The long-term scenario addresses missing sidewalks and crossings at:

- Morena Boulevard south of Napa Street
- West Morena Boulevard between Vega Street and Knoxville Street
- Savannah Street
- Morena Boulevard between Naples Place and West Morena Boulevard
- Morena Boulevard between Ingulf Street and Genser Street (new Clairemont Transit Station)

4.9.4 Walktime Analysis

Improving the pedestrian environment provides better non-motorized access to transit stations, retail, schools and parks. Many people are reluctant to walk to destinations nearby because of pedestrian and vehicular safety conflicts. By increasing the walkability, connectivity, and accessibility between destinations and origins, people are more likely to walk than drive to their destinations.

One way to identify changes in pedestrian accessibility is to measure walk times for both existing and proposed conditions (see Figures 4-15 and 4-16). A walk time analysis identifies the population within a given walking distance to proposed land uses using both the existing and future pedestrian facility network. The table below depicts the number of dwelling units (assumed in the preferred land use scenario) within a 5, 10, and 15 minute walk time of the transit stations.

Table 4-16: Dwelling Units inside Existing and Proposed Walk Times

Walk Time (Minutes)	Existing Facilities	Improved Facilities	Percent Increase in Dwelling Units
0 -5	691	1,486	115%
5-10	1,888	2,500	32%
10-15	2,056	1,404	(-32%)
Total	4,635	5,390	16%

Table 4-16 highlights the significant increase in dwelling units within a shorter walk time with improved pedestrian facilities. The analysis indicates that when improved pedestrian facilities are constructed, accessibility will increase such that an additional 1,407 units will fall within a 10-minute walk time from the transit stations. The decrease in dwelling units falling within the 10-15 minute walk time reflects the shift of dwelling units from a 10-15 minute walk time to that of a 10 minute or less walk time. Furthermore, the analysis suggests that improved pedestrian facilities will capture an additional 755 dwelling units, which would otherwise fall outside of a 15-minute walk time.

4.9.5 Expected Changes in Pedestrian Levels of Activity

The expected benefit resulting from proposed pedestrian improvements would be an increase in pedestrian activity. This will result from improved safety and connectivity to transit and local retail destinations. With the proximity of Fiesta Island, USD and Mission Bay Park, recreational activities such as running, skating, speed walking and stroller use could also see an increase resulting from better accessibility to these destinations.

Shorter pedestrian crossing distances at intersections may help to alleviate any delay at signalized and unsignalized intersections alike. Shorter distances equate to less phase time needing to be dedicated to clear all pedestrians. Increased pedestrian activity and throughput in the study area could be an added benefit to the local businesses in terms of

customers and transit use both to existing and future LRT stations. The proposed changes in land use, the mixture of these uses, and the changes in the physical layout of roads and walkways will all serve to increase the mode share of walking in the area. This is especially true of any expansion of USD facilities, particularly if these facilities contain a mixture of housing, services, retail and food options. Social interaction and street activation could go up dramatically if site design and circulation systems are handled appropriately.

4.10 Bicycle Mobility Analysis

Bicycles are an integral part of the multi-modal network and facilities must be designed to be safe and efficient. Throughout the study area, there is a patchwork of Class 2 bike lanes, Class 3 bike routes and one Class 1 bike path just outside the study boundary on Friars Road. Two continuous bike lanes are on Linda Vista Road from Morena Boulevard to USD and on Pacific Highway from Old Town to Fiesta Island. However, the latter is not easily accessible from Morena Boulevard due to the lack of on-street connections. Additional bicycle facilities are proposed in the City's Bicycle Master Plan, which includes closing gaps in the Class 2 network and upgrading Class 3 bike routes to Class 2 bike lanes. A Class 1 bike path is proposed along the rail line just west of Morena Boulevard.

Bicycle collisions data collected between 2006 and 2010 identified 16 collisions (see Figure 4-18). All collisions resulted in injury to the cyclist with no fatalities reported. Twelve of the 16 collisions were the cyclists' fault, with two being the motorists at fault and two unknown. The three most common causes of the bicycle collisions were violating the vehicle's right-of-way, riding on the wrong side of the street, and improper turning. The motorists' violation was driving at an unsafe speed.

The street that has experienced the most bicycle collisions is Linda Vista Road, with seven collisions. This also happens to be where bicycle facilities exist and the only bicycle connection between USD and the Morena/Linda Vista Transit Station. Clairemont Drive has the second highest with three collisions, two resulting from vehicular speeding and the other an unknown cause.

Similar to the pedestrian environment, the geometry of the intersections plays an integral role in the visibility and safety for both cyclists and motorists. When crossing skewed intersections, cyclists also have a longer crossing distance and are sometimes not seen when travelling through an intersection or turning right. Some less experienced cyclists also use the crosswalks and interface with pedestrians through intersections. The skewed intersections within the study area are identified in the pedestrian mobility section.

Peak hour bicycle counts conducted showed a steady volume of cyclists throughout the study area. Higher bicycle volumes are found in the "triangle" intersections of Morena Boulevard, Linda Vista Road and Napa Street, indicating use of Morena/Linda Vista Transit Station (see Figure 4-11).

A steady volume is found between Friars Road, and Morena Boulevard to Clairemont Drive. Since the counts were conducted on peak weekday periods, the steady volume could also be attributed to bicycle commuting patterns. Residential land uses north of Tecolote Road are sources of origin to destinations like USD and Old Town. It's likely that

the same bicycle commuters were recorded at many of the counting locations in the study area during the count period.

The high volume counts were located in the same intersection as the high pedestrian volumes. These include:

- Morena Boulevard and Napa Street
- Napa Street and Linda Vista Road
- Napa Street and Friars Road
- Linda Vista Road and Morena Boulevard

4.10.1 General Bike Facility Recommendations

A few of the major issues identified through the public outreach process were:

- Additional separation from vehicular traffic
- Safety improvements
- Connections to USD and Mission Bay
- Buffered bike lanes
- Separated facilities
- Safe routes to transit
- Close gaps

To improve the bicycling environment and increase ridership throughout the area, the following treatments can be applied:

- Buffered bike lanes (from moving vehicles and/or parked vehicles)
- Colored transition lanes
- Separated facilities (Class 1 bike paths or cycle tracks)
- Intersections design with safety of cyclists taken into account
- Traffic calming
- Reducing vehicular lane widths
- Wider bike lanes
- Shared lane markings with appropriate signage

4.10.2 Mid-Term Recommendations for Cyclists

Recommendations in the mid-term period for areas south of Tecolote Road include:

- Bicycle only “jug handle” crossing
- Colored transition lanes
- Bike lanes on all the streets
- Median refuges
- Buffered bike lanes from vehicular traffic
- Buffered bike lanes from parked cars
- Lane width reduction

Reconfigured intersections provide a shorter crossing distance and lane markings leading to the intersections can provide proper placement cues for cyclists. Intersections that have been recommended for a geometric change are:

- Morena Boulevard at Linda Vista Road
- Morena Boulevard at Napa Street
- West Morena Boulevard at Cushman Avenue

The recommended mid-term reconfiguration at Morena Boulevard and Linda Vista Road incorporates a “jug handle” treatment, which allows the cyclists to queue like a pedestrian to cross at the crosswalk. Cyclists have the option to continue to Linda Vista Road,

continue on Morena and merge across the lane with other motor vehicles or use the jug handle facility to continue onto Morena Boulevard. The skewed nature of this intersection makes it difficult for all but the most experienced cyclists to safely continue onto Morena Boulevard due to the free right turning movement of vehicles onto Linda Vista Road. This jug handle treatment provides a controlled crossing so cyclists and pedestrians can cross five lanes of traffic. A median refuge is also recommended.

Additional recommendations that address the results of the collision analysis include:

- Closing bike facility gaps with standard and buffered bike lanes
- Shorter crossing distances at intersections
- Enhanced bike facilities
- Connections to USD and Morena/Linda Vista Transit Station
- Traffic calming

Improvements north of Tecolote Road to Clairemont Drive are planned during the mid-term and will not change for the long-term. These improvements include:

- Class 1 multi-use path from Knoxville Street to Ingulf Street (between future Tecolote and Clairemont transit stations)
- Buffered bike lanes from parked vehicles (Morena Boulevard northbound lanes)
- Buffered bike lanes from moving vehicles (Morena Boulevard southbound lanes)
- Colored transition lanes

These improvements provide bicycle access to the future transit stations between Clairemont Drive and Tecolote Road, as well as the rest of the study area. Both the multi-use path and buffered bike lanes add bicycle connections to Mission Bay from Tecolote Road and Clairemont Drive. The two-way multi-use path provides a low-stress facility for cyclists of all ages and skill levels and will appeal to less experienced cyclists. Multi-use paths are popular for all non-motorized users because it separates them from interacting with vehicles at driveways and provides separation from travel lanes. The buffered bike lanes will likely be used by bike commuters and faster recreational cyclists. Faster and more experienced cyclists will likely feel more comfortable in the buffered bike lanes than the multi-use path. The bike lanes provide a facility for cyclists wanting to avoid conflicts with pedestrians on the multi-use path. Colored transition lanes are also being recommended in “conflict zones” where motorists and cyclists have to share the road or interact in tight spaces. This primarily occurs at right-turn-only pockets where cyclists are travelling straight and motorists are turning right. The colored transition lanes, typically green, highlight the area where each user must heed additional caution when travelling through this zone.

4.10.3 Long-Term Recommendations for Cyclists

Similar to the long-term pedestrian improvements, the reconfigurations of the road alignments have the biggest impact for improving cycling in the area. The reconfigured geometries of the long-term recommendations allow the accommodations of:

- Standard and buffered bike lanes
- High visibility crosswalks
- Coordinated signal timing with vehicular traffic
- Proper placement of cyclist within the travel lane
- Removal of free right-turning movements
- Lane width reductions
- Advisory bike lanes in right-turn pockets

4.10.4 Expected Changes in Cycling Levels of Activity

The inherent benefit of improved facilities in the study area would be in an increase in cyclists accessing community destinations and transit stations. There would be an increase in bicycle mode share with bike commuting due to dedicated facilities and gap closures. Individuals that are currently concerned about cycling through the area because of the high speed traffic and lack of buffering would likely be encouraged to ride once they see the buffering and the separated Class 1 facility. These will be highly visible and will serve as a reminder or invitation to come out and ride. The connectivity of the Class 1 facilities to the new bridge crossings and to Mission Bay will result in increased recreational rides by those who live in the community. Anytime a loop system is provided, the resulting increase in use is more dramatic than the same mileage of new facilities that are arranged as an out and back facility. It should also be noted that this route may in fact be a better and safer route than the proposed Coastal Rail Trail, located on the west side of the freeway. The final configuration of this segment of the Coastal Rail Trail has not been determined. However, the original plan located the route along Morena Boulevard. Problems with connections between the Rose Creek Canyon / Sante Fe Street segment of the trail and Morena Boulevard make this difficult. However, a small connector at Balboa Avenue could connect the east and west side of the freeway with a bike facility tied into the Balboa station and then connect with Class 2 lanes to the Clairemont and Tecolote stations.

There is potential for increases in transit use with the addition of a multi-use path between the future transit stations and overall connections to the community and USD. Several levels of bike facilities will be provided, including protected multi-use paths, buffered bike lanes and standard lanes. In addition, improvements to intersections and crossing points should all serve to increase bike movements between the transit stations, destinations / origins in the community, and major attractions such as USD and Mission Bay.

Reduced vehicular speed is likely to result from these changes, which will directly benefit cyclists using the area. The reduction in speed would be related to lane width reductions, shorter block lengths, increased on-street parking and removal of high-speed free right-turning movements. The reconfiguration of Napa Street, and the extension of Savannah Street and Knoxville Street will provide greater access to new land uses and remove some vehicular traffic from Morena Boulevard and West Morena Boulevard. Although the overall development pattern will result in new trip generation, the shift from regional retail to local mixed-use land uses should result in trip reductions.

Mode shifts to walking and biking are only possible when safe, connected and comfortable facilities are in place for the new residents and visitors in the area to take place. If the concept of mobility hubs are put into place around each of the three transit stations, the adoption of transit use, coupled with walking, biking, bike share and car share options, could result in a dramatic increase in trips by bike, transit or walking and a decrease in trips that are vehicular based. This will be especially true for USD if they expand their campus towards the study area. Significant amounts of student housing with local support services could be very successful in the area. These land use changes, along with the adoption of bike share programs and car share programs, could result in a significant number of students that live, work, learn, shop, eat and socialize, all within the local economy. These changes also make it likely that a student could self-select to be in this location without the need for a vehicle. All of these factors could spell success for the economy of the area while at the same time limit the negative effects of increased congestion and incomplete streets.

5.0 Implementation Strategy

The last step in the realization of the vision established by the MBAP is implementation. The numerous concepts and recommendations require coordination to ensure they are executed in an efficient, effective order. The following chapter identifies areas which will likely need zoning changes, provides recommendations for zoning changes, lists mobility projects/project information, explores potential funding sources, and outlines a feasible phasing strategy.

5.1 Identification of Necessary Zoning Changes

The land use plan proposed in the MBAP will require changes to the existing Community Plans for the Clairemont Mesa and Linda Vista community planning areas. These changes will include revisions to the Community Plan land uses and their application to the Land Development Code (zoning). Not all land uses/zones will need to be changed in order to realize the vision documented in the MBAP, but many will. Therefore, the following sections provide an overview of areas that will likely require a change.

Please note: this analysis is preliminary and will require additional evaluation and refinement in Phase II of the project (the Community Plan Amendment phase), scheduled to begin in the fall of 2014. At this stage, however, the MBAP retains the 30' height limit in Clairemont Mesa.

5.1.1 Methodology

In order to determine which land uses and zones might require a change, the planning team created three matrices detailing the compatibility of proposed land uses to those existing in the study area. The three matrices each analyzed use, density (in terms of DU), or density (in terms of FAR). Types of "compatibility" included either yes, no, maybe, or N/A. The appropriate compatibility type was chosen based on land use and density as proposed in the Preferred Land Use Plan, as compared to uses and densities allowed in the existing zone for that site.

A "Yes" was assigned for uses/densities that are allowed by-right according to current zoning. A "No" was assigned for uses/densities that are not allowed according to current zoning. For density compatibility, it was important whether or not the zone allowed for density bonuses. If the zone did not allow for a density bonus, then the Preferred Land Use Plan density for that site was either a "yes" or "no." If the zone allowed for density bonuses, then the Preferred Land Use Plan density could also be a "maybe."

In terms of use, a "Maybe" was assigned for uses that were allowed either with limitations or with use permit restrictions. For density, "maybes" were assigned for densities that could be achieved through attainment of a bonus. Because of the intricate and site-specific calculations necessary to determine bonuses, the MBAP took a high-level approach to determining bonus achievement. If an existing zone allowed a bonus, and the Preferred Land Use Plan proposed a density between the by-right density level and the level of the next most dense threshold, then the density compatibility was assigned a "maybe." Once a proposed density exceeded not only the by-right level, but also the level of the next most dense threshold, then it was assigned a "no." The result was a scale that generalized the flexibility of the existing code, so as to recognize areas that may be able to accommodate the plan's recommendations through extraordinary measures such as use permits and density bonuses.

Once the three compatibility matrices were completed, they were applied to a map (and the associated attribute table) created by combining the Preferred Land Use Plan with existing zones. All the compatibility factors were combined to create a bottom-line compatibility recommendation map/table. While the categories of compatibility remained the same (yes, no, maybe, N/A), the scoring was determined as follows: if any individual compatibility category contained a "no," then the bottom-line recommendation was a "no." If there were no "nos," but any of the individual compatibility categories were a "maybe," then the bottom-line recommendation was "maybe." The only way a bottom-line compatibility recommendation would be a "yes" is in the instance that all individual categories were either "yeses" or a combination of "yeses" and "N/As."

5.1.2 Zoning Compatibility Results

A comparison of the proposed land use plan to existing zoning in terms of uses, dwelling units, and FAR reveals that about three-fifths of the study area (in terms of acreage) will need a land use/zoning change to accomplish the vision of the Proposed Land Use Plan (see Figure 5-1). The light industrial areas south of Buenos Avenue and West of Morena/West Morena will not need a change, some of the commercial properties north of Morena between Cushman and Tecolote will not need a change, and many of the properties along Morena north of Asher Street will also not need a change. The remaining areas will need, or will likely need, to be adjusted to match the Preferred Land Use Plan.

5.1.3 Land Use Intensity Requirements

Taking the compatibility analysis one step further, Figure 5-2 shows the zoning capacity that will be required of parcels that were identified as needing, or potentially needing, a zoning change. The figure shows proposed intensity in terms of DU for residential uses and FAR for non-residential uses. On some parcels, there is only one of these uses, while on others, there are both. It should be noted that these measures of intensity are ratios, and that the total amount of development possible would be determined by the combination of the parcel size and the ratio. As such, changes in use or intensity might not require building heights in excess of 30'. This is especially true for smaller parcels, where the smaller lot size will limit overall development capacity. These parcels primarily occur within the design district between Morena and West Morena and the small properties along the northern portion of Morena Boulevard. The next phase of this project will determine the appropriate zone for each parcel, whether that be a different existing zone or a new zone altogether.

5.2 Land Use and Zoning Implementation Recommendations

Table 5-1 below lists specific incompatibilities between the Proposed Land Use and existing zoning. The incompatibilities are listed first, with applicable recommendations following.

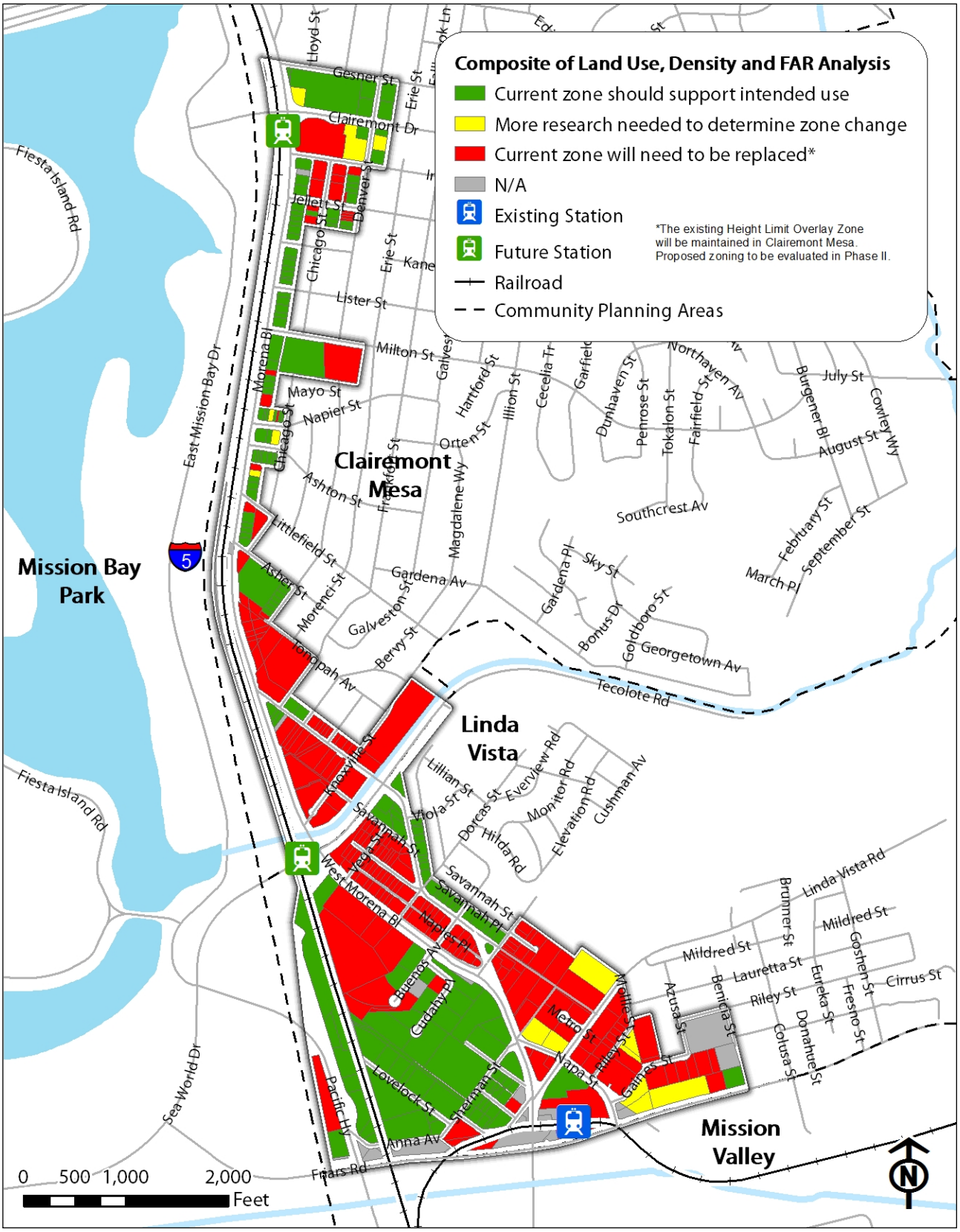


Figure 5-1: Composite of Compatibility Factors

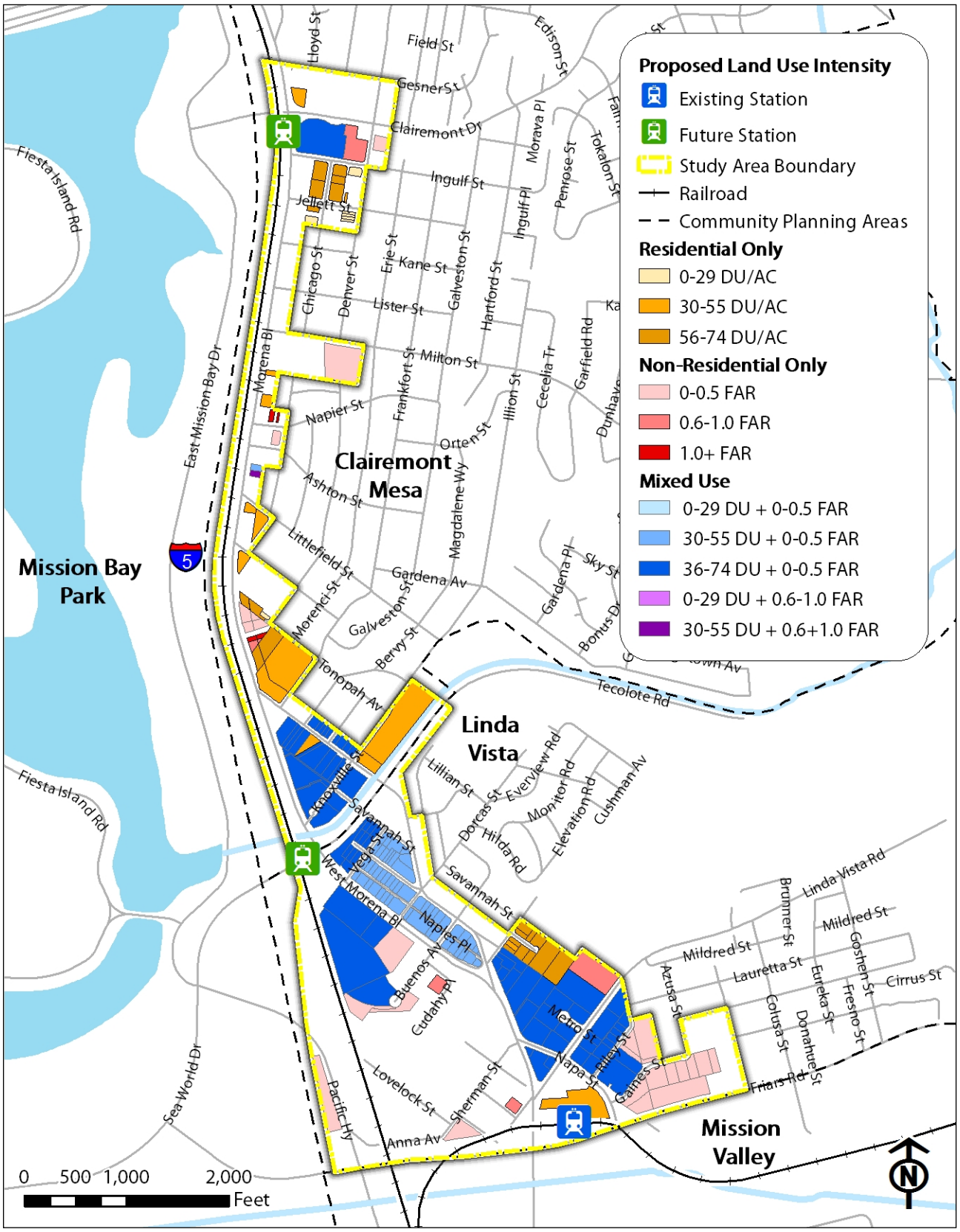


Figure 5-2: Proposed Land Use Intensity Factors

Incompatibility Issue A:
Commercial zone FAR/density allowance is too low to meet the plan objectives for mixed use.
Recommendation A1:
For existing lower intensity commercial, apply designation CC-4-5 for all areas within approximately ½ mile of a transit station.
Recommendation A2:
For existing lower intensity existing commercial, apply designation CC-4-2 for areas outside of the ½ mile transit station radii.
Incompatibility Issue B:
Introduction of Commercial/Residential Mixed use into areas currently zoned industrial light (or IL-3-1).
Recommendation B1:
Apply the Urban Village Overlay Zone to the LI zoned property being proposed for Mixed Use Commercial/Residential.
Recommendation B2:
Consider applying the Transit Overlay Zone to the Tecolote station area. Revise the overlay zone language to include a mix of higher density and intensity commercial, office and residential uses.
Incompatibility Issue C:
Properties currently zoned for residential are being proposed for Commercial/Residential Mixed use.
Recommendation C1:
For parcels currently zoned single family residential (this only occurs on City Chevrolet and the RV parks, which are not single-family), consider applying the RM-3 designation with revisions to the allowable use table to include most retail sale categories, dining establishments, and possibly office uses.
Recommendation C2:
For parcels currently zoned multi-family residential, apply a designation of CC-3, CC-4, or CC-5 depending on the intensity of the nearby corridor/roadway.
Incompatibility Issue D:
Parking reductions may be necessary to accommodate higher density development
Recommendation D1:
Apply the Transit Overlay Zone to not just the Clairemont station vicinity, but to the Tecolote station vicinity as well.
Incompatibility Issue E:
Existing zoning regulations do not allow the flexibility required of many mixed use projects.
Recommendation E1:
Mixed use development projects on sites larger than 3 acres should be designated within the Urban Village Overlay Zone.

Table 5-1: Zoning Incompatibilities and Recommendations

5.3 Funding and Financing Strategy

The Morena Boulevard Station Area Planning Study identifies a variety of specific infrastructure improvements that will be necessary to facilitate development within the project area. This strategy identifies funding and financing sources for capital improvements needed to support the Plan. The following addresses one of the fundamental decisions relating to implementation, which is the general approach to paying for infrastructure improvements.

5.3.1 "Funding" Versus "Financing"

The term "funding" refers to a revenue stream—whether from a tax, fee, grant, or other revenue source that generates money to pay for an improvement. "Financing" or "debt financing" refers to the mechanisms used to manipulate available revenue streams, so that agencies are able to provide infrastructure immediately, before revenue equal to the full cost of that infrastructure is available.

Typically, financing involves borrowing from future revenues by issuing bonds or other debt instruments that are paid back over time through taxes or fee payments. Although the terms funding and financing are often used interchangeably, the distinction is important because financing mechanisms almost always require that a funding source be identified to pay off the debt. For example, the land-based or district financing tools discussed below typically establish a new district-wide tax or fee that is used to pay back bondholders.

5.3.2 Potential Funding Sources and Financing Mechanisms

This section provides an overview of funding sources and financing mechanisms for the types of improvements included in the Plan. They are organized into the following six categories: federal, state, regional, local, developer, and landowner.

Federal
Federal Transit Administration (FTA) Funding The Federal Transit Administration (FTA) is an agency within the United States Department of Transportation(DOT) that provides financial and technical assistance to local public transit systems. The FTA is one of ten modal administrations within the DOT. FTA funds are allocated to the Urbanized Area Formula Program (5307), Non urbanized Area Formula Program (Section 5311 program); and Elderly and Persons with Disabilities Program (Section 5310 program).
Surface Transportation Program (STP) The Surface Transportation Program provides flexible funding that may be used by States and localities for projects on any Federal-aid highway, including the National Highway System, bridge projects public roads, transit capital projects, and intra-city and inter-city bus terminals and facilities.
Safe Routes to School The state legislature and the administration (Caltrans, Business Transportation and Housing, and the governor's office) will be considering proposals for how to spend $3.5 billion each year in federal transportation act funds from the law MAP-21, Moving Ahead for Progress in the 21st century passed by Congress in July 2012. Beginning in October 2012, Safe Routes to School activities will be eligible to compete for funding alongside other programs, including the Transportation Enhancements program and Recreational Trails program, as part of a new program called Transportation Alternatives.
Congestion Mitigation & Air Quality (CMAQ) Program CMAQ provides one-time capital funding for projects that contribute to air quality improvements and reduce congestion. The City's Park-and-Ride parking lot was built with a CMAQ grant. For more information, visit www.fhwa.dot.gov/environment/air_quality/cmaq/
Highway Trust Fund / MAP 21 The United States Highway Trust Fund is a transportation fund, which receives money from a federal fuel tax of 18.3 cents per gallon on gasoline and 24.4 cents per gallon of diesel fuel and related excise taxes.[1] It currently has three accounts, the Highway Account which funds road construction, a smaller 'Mass Transit Account' that supports mass transit and also a 'Leaking Underground Storage Tank Trust Fund'. It was established 1956 to finance the United States Interstate Highway System and certain other roads. The Mass Transit Fund was created in 1982. The federal tax on motor fuels yielded $28.2 billion in 2006.[2] MAP-21, the Moving Ahead for Progress in the 21st Century Act (P.L. 112-141), was signed into law by President Obama on July 6, 2012. Funding surface transportation programs at over $105 billion for fiscal years (FY) 2013 and 2014, MAP-21 is the first long-term highway authorization enacted since 2005. By transforming the policy and programmatic framework for investments to guide the system's growth and development, MAP-21 creates a streamlined and performance-based surface transportation program and builds on many of the highway, transit, bike, and pedestrian programs and policies established in 1991.
Community Development Block Grant (not available for mobility except for ADA) The Community Development Block Grant provides federal funding from the Department of Housing and Urban Development to support development of urban communities with a primary focus on low-income residents. Funds can be used for building rehabilitation, infrastructure, and affordable housing development costs (generally excluding construction costs of new housing).

State
Caltrans Upgrades & Caltrans Active Transportation Major federal funding sources for transportation infrastructure are administered by Caltrans and can be used for a wide variety of transportation-related infrastructure projects, from bike paths to major road improvements. However, these funds can only be used on functionally classified collectors and arterials. A recent program for providing state and federal funds for Active Transportation projects have recently been announced by Caltrans.
Traffic Safety Grants (OTS) Federal Funds administered by the Office of Traffic Safety are available for Pedestrian Safety/Bicycle Safety, Police Traffic Services, and Traffic Records/Roadway Safety. Jurisdictions must provide Traffic Safety Data that demonstrates how the program will save lives on their roadways and be able to demonstrate using performance measures with 1 year of funding.
Statewide Community Infrastructure Program (SCIP) California Communities offers the Statewide Community Infrastructure Program (SCIP), a financing program that enables developers to pay most impact fees (excluding school fees) and finance public improvements through an acquisition agreement that qualifies under the 1913/1915 Act via tax-exempt bond issuance proceeds. Since 2003 the SCIP program has assisted communities and developers throughout California to finance more than $140 million in impact fees. This program has been molded to the needs of each local agency participant of SCIP. Because most local agencies require developers to pay impact fees before obtaining a permit, SCIP can be used to directly prepay these fees or, alternatively, to reimburse the developer after fee payment. The program can be used to enable developers to pay for or be reimbursed for all eligible impact fees or for a single impact fee. Moreover, the program may alleviate the need for a fee deferral program by providing the local agency with necessary funds and eliminating the risk of nonpayment by the developer. These funds are then repaid on a property tax assessment.
Bicycle Transportation Account The Bicycle Transportation Account (BTA) is an annual program providing state funds for city and county projects that improve safety and convenience for bicycle commuters. In accordance with the Streets and Highways Code (SHC) Section 890-894.2 - California Bicycle Transportation Act, projects must be designed and developed to achieve the functional commuting needs and physical safety of all bicyclists. Local agencies first establish eligibility by preparing and adopting a Bicycle Transportation Plan (BTP) that complies with SHC Section 891.2. The BTP must be approved by the local agency's regional transportation planning agency. Caltrans anticipates appropriation of $7.2 million annually for projects that improve safety and convenience for bicycle commuters.
Community Based Transportation Planning Grants The Community-Based Transportation Planning (CBTP) grant program promotes transportation and land use planning projects that encourage community involvement and partnership. These grants include community and key stakeholder input, collaboration, and consensus building through an active public engagement process. CBTP grants support livable and sustainable community concepts with a transportation or mobility objective to promote community identity and quality of life. Each grant displays a transportation and/or land use benefit. CBTP grants are approached in many different ways with innovative ideas and opportunities for public participation.

California River Parkways & Urban Streams Program

The Resources Agency (Agency) and the Department of Water Resources (DWR) collaborated in preparing this combined grant process for the River Parkways (RP) and Urban Streams Restoration (USR) grant programs. Program goals include:

• River Parkways: (1) protecting and restoring riparian and riverine habitat; and (2) directly improving the quality of life in California by providing important recreational, open space, wildlife, flood management, and water quality benefits to in the State.

• Urban Streams Restoration: (1) reducing property damage caused by flooding or erosion; (2) restoring, enhancing, or protecting the natural ecological values of streams; and (3) promoting community involvement, education, or stewardship.

State Revolving Fund (SRF)

The Federal Water Pollution Control Act (Clean Water Act), as amended in 1987, established the Clean Water State Revolving Fund (CWSRF) program. The CWSRF program offers low-interest financing agreements for water quality projects. Annually, the program disburses between $200 and $300 million to eligible projects.

California Economic Development Lending Initiative Loans
(not available for mobility)

The California Economic Development Lending Initiative provides partial loan funds for equipment purchase, permanent working capital, business acquisition, lease hold improvements, financing accounts receivable, and inventory. These funds are often administered by a local economic development corporation or the lending institution financing a new development.

Roberti-Z'Berg-Harris Urbanized Area Need-Basis Grants
(not available for mobility)

The Roberti-Z'Berg-Harris Urbanized Area Need-Basis Program is a competitive grant program, which is intended to meet the urgent need for safe, open, and accessible local park and recreational facilities for increased recreational opportunities that provide positive alternatives to social problems.

California Seismic Bond Act
(not available for mobility)

The California Seismic Bond Act provides a 15-year property tax break for seismic improvements to unreinforced masonry buildings or buildings identified by local government as being hazardous to life during an earthquake. To determine which buildings might qualify for this program, a study will need to be completed.

Regional
Mid-Coast Corridor Transit Project Funds The San Diego Association of Governments (SANDAG) is planning the Mid-Coast Corridor Transit project, which would originate at the Old Town Transit Center, serving the areas north of Downtown San Diego, including the University of California at San Diego, and terminate at the University Towne Centre Transit Center. The current project budget is $1.7 billion, exclusive of financing costs. The project budget will be updated for inclusion in the Final SEIS/SEIR and updated again during Preliminary Engineering prior to entering Final Design in the FTA New Starts process. The Mid-Coast Corridor Transit Project was included in the voter- approved *TransNet* measure, the local half-cent sales tax that provides funding for transportation projects. The project is a part of the *TransNet* Early Action Program, meaning that it is one of the highest priority transportation projects in the region. *TransNet* will provide a 50 percent local match to Federal Transit Administration New Starts funding to complete the project. *TransNet* will also provide operating funds for the project through 2048.
TransNet / Smart Growth Incentive Program The *TransNet* Smart Growth Incentive Program (SGIP) funds transportation-related infrastructure improvements and planning efforts that support smart growth development. The SGIP will award two percent of the annual *TransNet* revenues for the next 40 years to local governments through a competitive grant program to support projects that will help better coordinate transportation and land use in the San Diego region. The goal of the *TransNet* SGIP is to fund comprehensive public infrastructure projects and planning activities that will facilitate compact, mixed use development focused around public transit, and that will increase housing and transportation choices. The projects funded under this program will serve as models for how modest investments in infrastructure and planning can make smart growth an asset to communities around the region. These investments should help attract private developers to build projects that, with the support of the *TransNet*-funded projects, create great places in the San Diego region.
SANDAG Active Transportation and Regional Bike Facilities As the regional planning agency for transportation, land use, and quality of life, SANDAG allocates millions of dollars each year in local, state, and federal funds for various operating, planning, mobility management, and capital improvement projects in transportation (motorized and non-motorized), smart growth, environmental mitigation, transportation for seniors and persons with limited means, and quality of life. The goal of the Active Transportation Grant Program is to encourage local jurisdictions to plan and build facilities that promote multiple travel choices for residents and connectivity to transit, schools, retail centers, parks, work, and other community gathering places. The grant program also encourages local jurisdictions to provide bicycle parking, education, encouragement, and awareness programs that support pedestrian and bicycle infrastructure.
Regional Surface Transportation Program (RSTP) The Regional Surface Transportation Program (RSTP) was established by California State Statute utilizing Surface Transportation Program Funds that are identified in Section 133 of Title 23 of the United States Code. Projects eligible for funding from the RSTP include construction, reconstruction, rehabilitation, resurfacing, restoration, and operational improvements on highways and bridges and Capital costs for transit projects, safety improvements and programs, among others.
SANDAG / COUNTY Healthy Communities SANDAG, by way of CDC federal and County health funds, also issues grants to be used in combating rising obesity rates in the San Diego region by planning communities in ways that support increased physical activity and access to healthy foods. SANDAG distributes funds through four pass-through grant programs to local government agencies, tribal governments, community programs, and school districts. The grants are intended to promote public health through innovative community planning, the planning of safe routes to school, and the development of active transportation programs to support biking and walking.

Local
Locally Influenced Regional Transportation Plan (RTP) Funds The 2050 Regional Transportation Plan (RTP) lays out a plan for investing an estimated $214 billion in local, state, and federal transportation funds expected to come into the region over the next 40 years. The largest proportion of the funds will go toward transit, and the remainder will go towards highway improvements, and local roads and streets. The percentage dedicated to transit will grow each decade. The City of San Diego competes for these funds, generally on a pro-rata basis.
City Capital Improvements Program The 5-Year CIP is a format by which the City uses to review the funding of desired capital improvements that compete for scarce financial resources. Generally, there are two primary sources of funding for capital improvements - revenues sources (various) and the issuance of City bonds. Other sources such as State Aid and Federal Aid may augment the funding for projects.
General Fund Transfers While the City can choose to appropriate General Fund monies to projects as its budget allows, two General Fund revenue sources will be directly affected by development and may warrant special consideration as potential funding mechanisms. Both sales tax and property tax generated in the project area are likely to increase as the retail market improves and property values rise. At the discretion of the City Council, new plan area sales tax or property tax revenues could be dedicated toward project area infrastructure improvements and special programs.
Infrastructure Bonds These bonds are issued by a local government to get funds that will be used for infrastructure projects. Infrastructure bonds are long term investment bonds issued by any non-banking financial companies.
ADA / Title 24 Compliance All agencies have a responsibility to remove barriers within public rights of way. These are controlled by both ADA and Title 24 compliance laws. Funding can come from CDBG grants or from other construction budgets for capital projects for roadway and utility projects. CDBG is generally limited to communities with economic challenges and poverty levels and is also generally associated with housing and community environments, but in this case, CDBG is available in all areas if they help to remove ADA related barriers.
Trails & Recreation Funding Generally funded by developer impact fees or developer construction exactions and dedications, the general fund can also be used for certain types of park development requirements for areas short in population based community and neighborhood parks. Mission Bay Park Revenues distributed to major regional parks and open space areas may apply to Tecolote Canyon and Creek systems, though there are a large number of project competing for this funding.

Developer
Exactions Cities and towns use developer exactions as a strategy to offset the burdens of new development on the community. Exactions contribute to regional equity by ensuring that a new development pays a fair share of the public costs that they generate. Exactions consist of a developer's payment of "impact fees." These fees are used to fund new schools and parks; construction or maintenance of the public infrastructure directly connected to the new development; or other off-site improvements and services. Exactions are levied on developers in exchange for the approvals to proceed with a project. In the case of the proposed mobility projects and associated excess rights of way that would then become developable, discretionary approval may need to be applied given the windfall that the property owners will receive from up-zoning and available excess rights of way that go to the property owner free and clear if vacated for transportation needs. For example, the new block located on the north side of the Cushman extension, will provide approximately 15,000 sf. of excess ROW. The block on the south side of this new extension will provide nearly 19,000 sf. The block surrounded by an extension of Sherman and the vacation of a segment of Napa and the Cul-de-sac at Metro, will yield 36,000 sf. Finally the block on the northwest side of the new Morena and Linda Vista intersection, will yield nearly 7,000 sf. The need for the roadway extensions are generally tied to the development of these properties, so a nexus of fair share costs can be established.
Construct & Dedicate Facility As part of the land development process, municipalities may require a developer to dedicate land to the municipality for public parks, roads and recreation facilities. Called “public dedication” in most planning codes, this tool is also referred to as “mandatory dedication”. A municipality may also provide the option for the developer to choose from several alternatives to public dedication.
Developer Agreements This is an agreement between a City and a developer describing the improvements and funding sources available to finance improvements. It is typically used in conjunction with other financing programs such as improvement districts and benefit zones (see below). These requirements may result from impact analysis to offset significant environmental affects under CEQA or NEPA for public services, infrastructure or parks space.
Fund through Fees & Exactions The City could negotiate direct contracts with developers for financial commitments, dedications, or cash contributions beyond those that could be justified through typical subdivision ordinance dedications and exactions or impact fees. The use of development agreements offers a mechanism for expanding funding potential and creating financing packages suited to the needs of the individual projects.
USD or Future Property Owner This section is identified here to point out that the eventual owners of property located northeast of Morena Boulevard, generally between Cushman and Linda Vista, would likely be required to develop all or most of the roadways proposed as part of the East Morena extension project.
Fair Share Development Impact Fee The City could enact a special development impact fee for the plan area to help fund infrastructure upgrades in the area. This fee would need to be adopted in accordance with California’s Mitigation Fee Act (Government Code Section 66000 et seq.). Creation of a “nexus” study would demonstrate the relationship between the infrastructure items funded and the new development, and calculate the appropriate fee amount on various categories of development.

Property Owner
Special Tax Districts The City may be interested in establishing a special tax district to help fund services such as public safety; streets and street lighting; landscaping, parks, and open space; and storm drains and flood control. To fund these services, new residential subdivisions or multi-family developments would have the option to annex to the district or provide funding to cover the cost of providing these services in some other manner.
Community Facilities Districts Like benefit assessment districts, Mello-Roos community facilities districts (CFDs) are formed when the property owners in a geographical area agree to impose a tax or fee on the land in order to fund infrastructure improvements. Unlike benefit assessment districts, however, CFDs are most commonly formed in cases where the geographic area encompasses a small number of property owners who intend to subdivide the land for sale. This is because CFDs require a two-thirds vote of property owners, unless there are at least 12 registered voters within the proposed district, in which case the district must be approved by a two-thirds majority in an election of registered voters.
Benefit Assessment Districts In a special assessment district, property owners within the district agree to pay an additional fee or tax in order to fund an improvement within a specific geographic area. The amount that each property owner pays must be proportional to the benefit the property will receive from the proposed improvement. Assessment districts are established by a majority vote of the property owners and can include a variety of different types of districts, from business improvement districts to sewer, utility, and parking districts.
Land-Based or District Financing – Improvement or Benefit Districts In California, the most commonly used land-based financing tools have included the formation of benefit assessment districts, community facilities districts, and tax increment financing districts. With the elimination of redevelopment agencies in California at the end of 2011, a similar tool, infrastructure financing districts, may serve as an alternative to tax increment financing. It is important to note that many of these district financing tools depend on new real estate development to generate assessments or property tax revenues to finance the improvements.
In Lieu of Parking Constructed Fees Rather than constructing on-site parking, developers may pay fees into a parking or traffic mitigation fund in lieu of providing the required parking. The fees can then be used to provide centralized public parking. In some cases, the community may wish to establish the fund in such a way that it can also be used for transit, bicycle, and pedestrian improvements that can reduce parking demand. By consolidating parking in centralized public lots or structures and allowing developers an alternative to providing parking on-site, a fee-in-lieu system can encourage in-fill development.
Infrastructure Financing District Infrastructure financing districts (IFDs) use a property tax increment to pay for infrastructure improvements. New tax revenues are diverted to finance improvements, but IFDs cannot divert property tax increment revenues from schools. Under existing California law, a city or county may create infrastructure financing districts by ordinance, if a two-thirds majority of the voters in the proposed district approves the IFD.
Landscape Maintenance District These districts are established by public agencies to provide revenue for annual maintenance of municipal services. It provides a revenue stream to annually maintain parks, open space, and street lighting and fund various improvements and activities within the plan area (or selected districts).

5.3.3 Further Research

Other resources to further research for Morena Boulevard in Phase 2 would include:

- Public private partnerships – This may include approaches such as city contributions to infrastructure by dedicating capital funds, or establishing a preliminary Memorandum of Understanding (MOU) for the City to share in profit after a preferred return on investment.
- Long Range Property Management Plan (LRPMP) for former RDA's– These may be used to revitalize current lands owned by Successor Agencies, in which the Successor Agency can "type" land within their plan for future development. This does not require the RFP process for selection of a developer, however, the property must be sold to "maximize the benefit to the taxing entities", as to show some sort of reasonable valuation of property value. The most conservative approach is through an appraisal process.
- Certificates of Participation (COP's) – These Care bonds can be taken out by the City and used for local development (similar to a line of credit), whereas a level of security is provided by the City in repayment of the of the bonds. The City could also use a bond agreement in conjunction with loan agreement between a developer and the City to confirm a pledge of future revenue.
- Revenue Sharing - This tool can use a site specific tax revenue sharing arrangement through a development agreement between a developer and the City to pass through sales tax amounts.
- Parking Agreements – These may be used under shared parking use agreements, parking requirement waivers, or lease back of purchases parking. These agreements may utilize bonds to build parking structures and pledge future revenues earned under the parking authority as collateral.
- New Go Biz Tax Credits - The California Competes Tax Credit is an income tax credit available to businesses that want to come to California or stay and grow in California. Tax credit agreements will be negotiated by GO-Biz and approved by a newly created “California Competes Tax Credit Committee,” consisting of the State Treasurer, the Director of the Department of Finance, the Director of GO-Biz, one appointee from the Senate, and one appointee of the Assembly.
- Community Development Block Grants (CDBG) – This funding source can be used in low income areas to provide infrastructure for new development. Additionally, this could take on the form of a Section 108 loan, whereas cities are allowed to leverage CDBG funds through an upfront loan up to five times of their latest approved CDBG allocation with a pledge that current and future allocation amounts will cover the loan as a guarantee.
- Tax Sharing Agreements – This took can be developed between developers, retailers, and cities. Infrastructure Financing Districts (IFD's) are to finance various types of infrastructure improvements with a 2/3 voter approval to issues the bonds, and pledge future tax increment to pay back the bonds.
- Enterprise Zone – This designation can be assigned to an impoverished area in which incentives such as tax concessions are offered to encourage business investment and provide jobs for the residents.

5.3.4 Possible Development Incentives

- CEQA Streamlining- completing furthest level of CEQA possible in advance of development, based on allowed density/ inentsity/ development concepts
- Reciprocal access agreements- shared access agreement between adjacent property owners to minimize ingress and egress onto major roadways
- Parking reductions- waiving or reducing required parking spaces to allow for a desired project or type of development
- Pre-marketing packets- compilation of statistical information for developers that may include property information such as: zoning, infrastructure, standards, and surrounding demographics
- Developer "concierge" services/ombudsman- designating one point of contract to "fast track" developer requests and questions
- GoBiz Governor's business development tool- use online state government resource tool to help attract business to the area
- Tax Exemptions- state has added legislation for tax exemption for uses such as manufacturing equipment
- Land use and zoning powers- providing development flexibility for creative/desired plans or allowing increased intensity to achieve higher return on investment
- Density Bonuses- providing additional development potential/density above the maximum requirements (may be on or off site) to encourage a specific type of development
- Transit pass programs - provide passes for employees in lieu of building additional parking; Parking cash-out for employees; Market pricing of curb parking and off-street parking

5.4 Project Phasing

A project of this magnitude will require phasing options and the sequencing of certain roadway improvements will require close coordination. However, most of the mobility projects associated with this study, are likely to be tied to individual development or the Mid-Coast Corridor Transit Study. The projects discussed in Section 5.5 below have been identified as discrete projects based on geographic areas and type of facility. They are organized in a fashion that allows for a great deal of flexibility in terms of sequencing. At this point, it is not possible to identify a sequence of events that is most likely to bring infrastructure on-line in time to support expanded infill development. The larger a project development project, the easier this coordination will be. It is hoped that property owners will see the value of their properties in conjunction with other properties and allow for a master developer or builder to come in and put these plans and properties together. While redevelopment agencies played this role in the past, their dissolution means some other entity would need to play this role. Fortunately for Morena Boulevard, the Community Plan Amendment phase has already been funded through the *TrasNet* Smart Growth Incentive Program. The amendment process is an ideal time to identify coordination efforts between residents, business owners, the City, and potential investors.

5.5 Overview of Costs and Funding Sources for Mobility Projects

The table below summarizes the costs associated with the major infrastructure projects needed to implement the recommended mobility plan proposed by this study. The costs are to be considered preliminary and in need of future refinement. A significant amount of contingencies have been added to these costs to make sure there is enough funding to cover the general complexities of most public works projects. Once detailed base mapping, right of way research, and utility mapping has been provided and initial engineering is taken to a 35% level of detail, will the costs be more accurate. However, for the time being, the cost estimates provided should be in the general range of the project costs that are likely to be incurred.

The table below also discusses a wide range of potential funding sources that could be considered for the proposed improvements. These sources come from either public monies originating from a federal, state, regional or local government agency, or could be private monies associated with development or ongoing maintenance and operational funds associated with the local landowners and business operators. An effort has also been made to identify the most likely source of funding that should be focused on initially. Each of the project sheets that follows includes discussion on funding sources, detailed cost estimate sheets, and site plans.

As previously mentioned, all proposed projects and roadway reclassifications are preliminary and will be subject to additional review in Phase II of the project.

Potential Funding Source for Mobility Projects

			Federal					State												Regional					Local								Developer						Property Owner							
ID #	Project Name	Estimate	FTA Transit Funding	Surface Transportation Program (STP)	Safe Routes to School	Congestion Mitigation & Air Quality (CMAQ) Program	Highway Trust Fund / MAP 21	Caltrans Upgrades / Caltrans Active Transportation	Traffic Safety Grants (OTS)	Statewide Community Infrastructure Program (SCIP)	Transportation Development Act (TDA)	Bicycle Transportation Account	Community Based Transportation Planning Grants	California River Parkways & Urban Streams Program	State Revolving Fund (SRF) for Water Quality Improvements	Roberti-ZBerg-Harris Urbanized Need-Basis Grants	Prop. 40 clean Water, Clean Air, Safe Neighborhoods	Prop. 84 Stormwater & Urban Greening Grants	Mid-Coast Corridor Transit Project	Transnet Smart Growth Incentive Program	SANDAG Active Transportation & Regional Bike Program	Regional Surface Transportation Program (RSTP)	SANDAG / COUNTY Healthy Communities	Locally influenced RTP Funding Priorities	City Capital Improvements Program / General Funds	Infrastructure Bonds	ADA / Title 24 Compliance / CDBG Local Funds for ADA	Habitat Restoration / Clean Water / Mitigation Banking	Trails & Recreation Funding	Exactions / Discretionary Approval for Developers Receiving Excess ROW	Construct & Dedicate Facility / Developer Agreements	Fund through Fees & Exactions	USD or other Future Property Owner North of Napa	Fair Share Developer Impact Fee	Community Facilities District / Benefit Assessment Districts	Land Based or District Financing / Parking District Fees	In Lieu of Parking Constructed Fees	Infrastructure Financing District / Special Tax Districts	Business Improvement District	Landscape Maint. District
A	Clairemont Bridge Access Improvements	$844,141		✔		✔	✔	✔	✔			✔	✔			✔			✔		✔	✔	✔	✔	✔		✔							✔						✔				
B	Clairemont LRT Station Area Access Improvements	$1,536,538	✔					✔			✔								✔	✔	✔														✔						✔	✔	✔	✔
C	North Morena Complete Street Improvements	$5,500,738		✔	✔	✔	✔	✔	✔			✔	✔		✔	✔	✔	✔		✔	✔	✔	✔	✔		✔	✔							✔	✔				✔	✔	✔	✔	✔
D	Knoxville Street Extension Project	$1,299,543								✔										✔				✔		✔						✔	✔	✔			✔	✔			✔	✔	✔
E	Tecolote Creek Trail Project	$795,615												✔	✔	✔	✔	✔					✔						✔	✔				✔										
F	Tecolote LRT Station Area Improvements	$3,955,219	✔								✔								✔	✔	✔		✔		✔	✔							✔			✔								
G	Tecolote Bridge Access Improvements	$999,302		✔		✔	✔	✔	✔			✔	✔			✔			✔		✔	✔	✔	✔	✔		✔										✔							
H	West Morena Design District Parking Improvements	$2,777,202							✔											✔	✔					✔	✔				✔		✔		✔	✔	✔	✔	✔	✔			
I-1	South Morena Congestion Relief Project (long term)	$995,856				✔			✔	✔	✔									✔	✔	✔	✔	✔	✔	✔	✔					✔	✔	✔	✔	✔	✔	✔	✔	✔		
I-2	South Morena Congestion Relief Project (mid-term)	$2,909,552				✔			✔	✔	✔									✔	✔	✔	✔	✔	✔	✔	✔					✔	✔	✔	✔	✔	✔	✔	✔	✔		
J	East Morena Roadway Extension Project	$4,474,897																		✔		✔										✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔
K	Triangle Area Road Closures and Extensions	$1,358,096																														✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔
		$27,446,699																																									

Note: Project I-1 & I-2 assumed to both be done resulting in overall cost savings adjusted down by 25% due to some elements staying the same.

Represents primary funding source likely per project

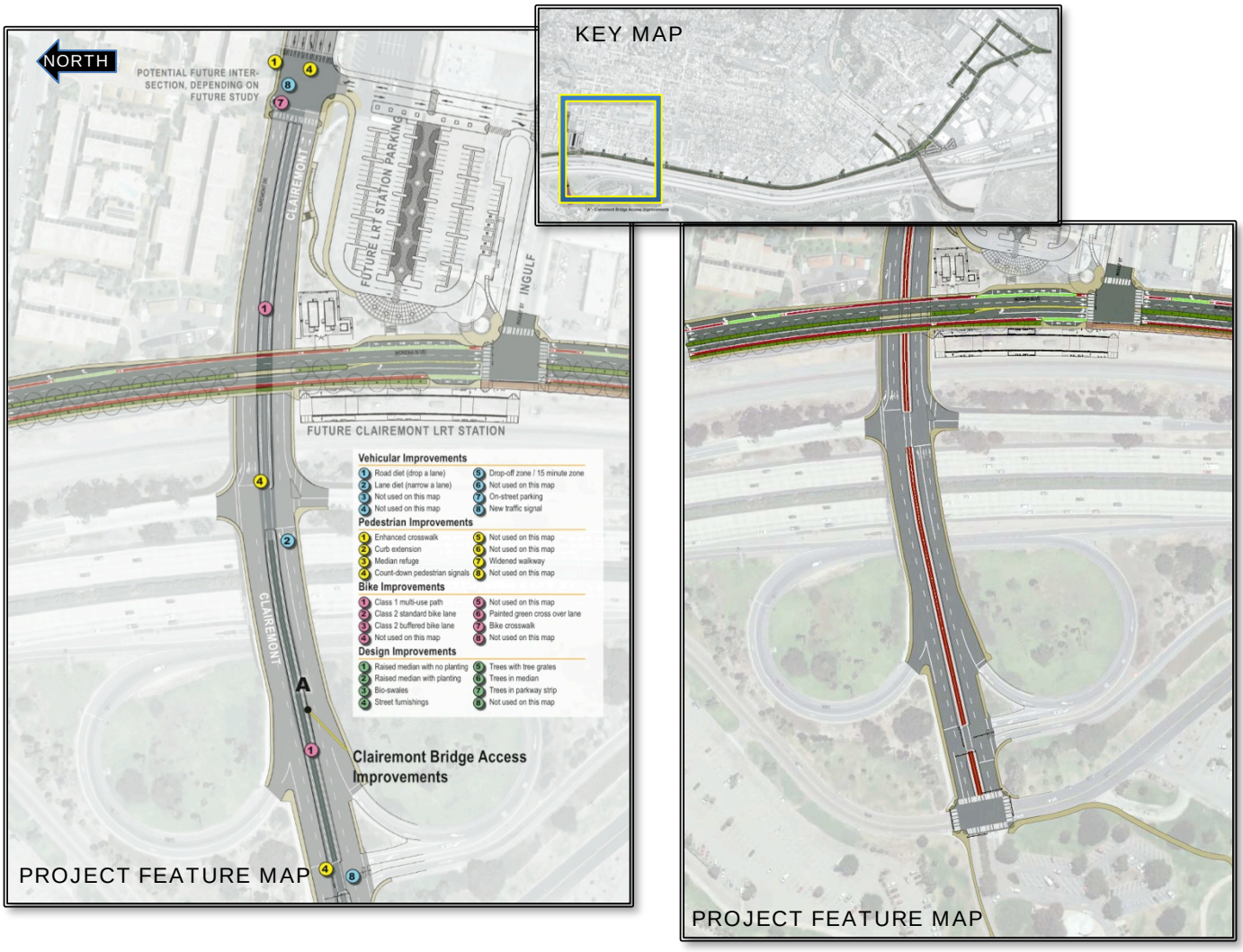
5.5.1 PROJECT "A"- CLAIREMONT BRIDGE ACCESS IMPROVEMENTS

Project Vision: The Clairemont Mesa Community, and specifically the Baypark area, have incredible visual access to Mission Bay Park. However, their physical access is primarily limited to vehicular driving, since most of the roadways and the two bridges (Clairemont and Tecolote) are very pedestrian and bike unfriendly. The distance from the community to these resources, is very short, but perceptually, the physical and psychological barriers related to I-5 and the rail line are major impediments to movement for this community. The vision for this project is to inexpensively modify the bridges to become safer and more complete from a multi-modal standpoint.

Project Features: The project focuses on a Class 1 Multi-use pathway utilizing the excessively wide raised median. It will include special traffic control devices, ramps, barriers, crosswalks and signage to make access safe.

Project Potential Funding Sources: Caltrans grants for active transportation would be a great source of funding as would local SANDAG active transportation and regional bike facility funding.

Primary Justification and Value: To improve safety of all users, deconflict on and off ramp movements, utilize the excessively wide space with reasonable costs. The project trail would connect up with other Morena Boulevard and Mission Bay Park recreation and transportation connections for pedestrians, runners, cyclists and hikers.



Project Name: Clairemont Bridge Access Improvements **Phase #:** A

Items	Unit Cost	Unit	Quantity	Sub-Total
Demolition				
Asphalt Roadway Surface	$3	SF	2,218	$6,654
Curb & Gutter	$5	LF	1,035	$5,175
Relocating Utility Boxes, Traffic Signal Boxes & Utility Lines	$15,000	EA	2	$30,000
			Demolition Totals:	$41,829
New Paving				
Asphalt Paving Patching and Sealing for Minor Roadway Changes	$2	SF	24,081	$48,162
Multi-use Path AC Paving	$5	SF	2,218	$11,090
Pedestrian Bulb-out	$25,000	EA	2	$50,000
Curb Ramps	$2,000	EA	9	$18,000
Upgraded Curb Ramps on Existing Sidewalks	$1,500	EA	2	$3,000
			New Paving Totals:	$130,252
Fences and Barriers				
9" Raised Curb with Reflectorized Rubber Candle-stick Barriers	$20	LF	947	$18,940
30" K-rail Concrete Barrier	$50	LF	500	$25,000
			Fences and Barrier Totals:	$43,940
Signage & Pavement Markings				
Multi-use Path Signs (with core drilling)	$350	EA	4	$1,400
Multi-use Path Centerline & Shoulder Striping	$2	LF	6,245	$12,490
Bike Lane/Sharrow Symbols Paint	$80	EA	20	$1,600
Bike Lane Paint	$2	LF	2,400	$4,800
Bike Lane 2' Chevron Striped Buffer Paint	$3	LF	2,600	$7,800
Modified Ladder Style Crosswalk Striping	$2,500	EA	5	$12,500
Stop Bar Paint	$4	LF	149	$596
Standard Pavement Markings (Arrows, School Xing, etc)	$100	EA	16	$1,600
Wayfinding/Informative Signs	$350	EA	10	$3,500
Regulatory Signs (Stop signs, etc)	$350	EA	12	$4,200
			Signage & Pavement Marking Totals:	$50,486
Enhanced Safety Measures				
Bike Detector Loop	$700	EA	8	$5,600
Bike Boxes	$2,500	EA	2	$5,000
Bike Jug Handle Left Turn Hold Areas	$10,000	EA	1	$10,000
Special Bike Pole Mounted Actuators & Matched Bike Only Signals	$3,500	EA	5	$17,500
Traffic Signals	$40,000	Per Pole	6	$240,000
			Enhanced Safety Totals:	$278,100
Other Costs (55% total):				
Contingency:	20%	$108,921.40		
Bonding / Mobilization / Contractor Internal Management / As Builts:	10%	$54,460.70	**Pre-markup Cost**	$544,607
Engineering / Design:	12%	$65,352.84	**Total Other Cost:**	$299,534
Environmental Clearance & Permitting:	5%	$27,230.35		
Bid Support Services & Agency Construction Management:	3%	$16,338.21		
Traffic Management Services:	5%	$27,230.35	**Grand Total Cost:**	$844,141
			Rounded Grand Total Cost:	$900,000

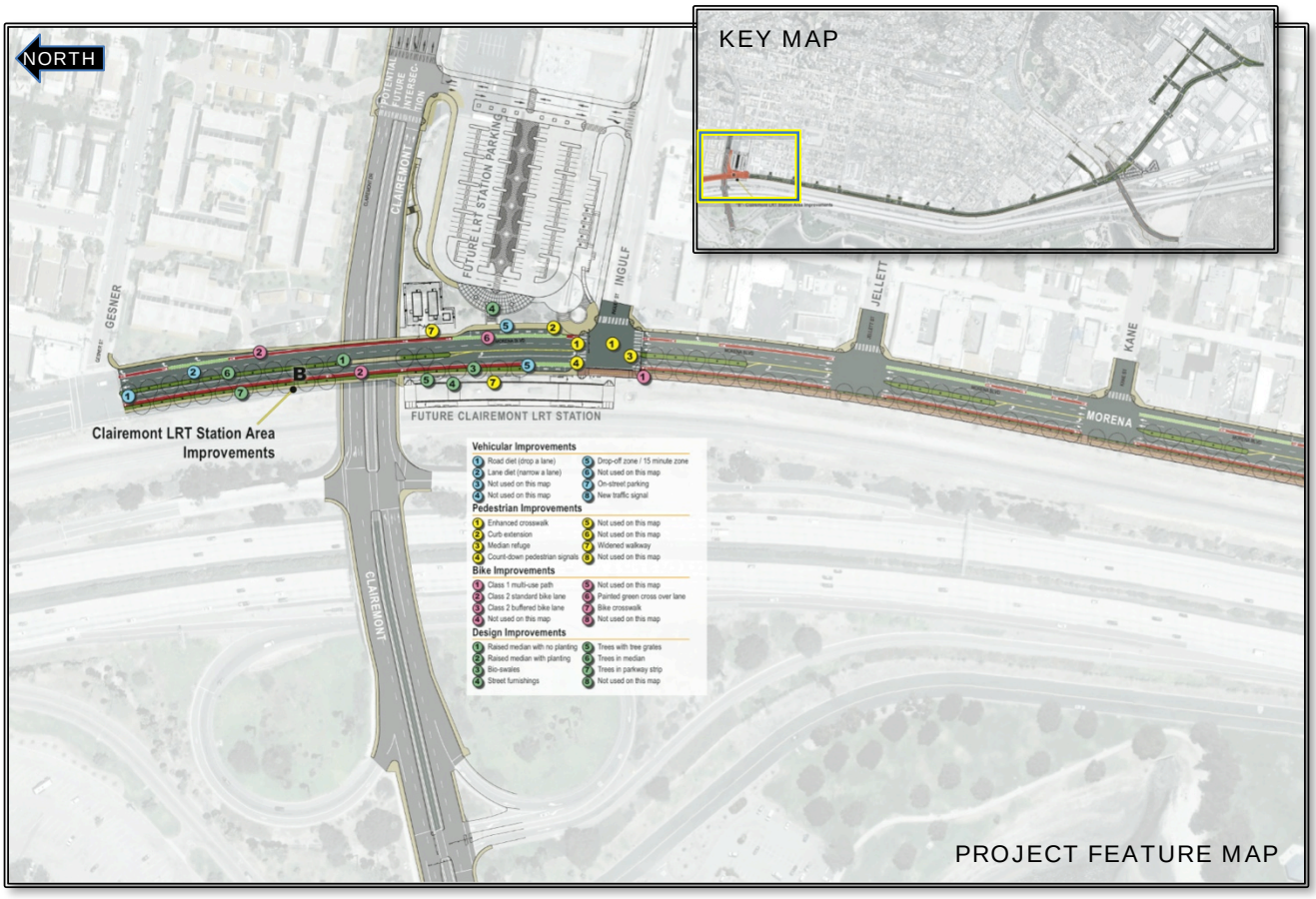
5.5.2 PROJECT "B"- CLAIREMONT LRT STATION ACCESS IMPROVEMENTS

Project Vision: Providing access to the new Mid-coast Corridor Transit Project is of paramount importance in order to attract future ridership that will in turn, reduce the single occupant vehicles found on local roads. Although future transit oriented design is possible and MTS is planning for a surface parking lot located across the street from the proposed Clairemont station platforms, the best type of transit rider from a sustainability, greenhouse gas reduction, energy savings and congestion relief perspective, is one who walks or rides to the station. This project looks at betting linking the proposed project improvements with the adjacent community.

Project Features: The project includes the lane reduction of Morena Boulevard on the southbound side, thereby making room for a buffered platform waiting area away from the active travel lanes, on-street kiss and ride drop off facility, pedestrian connections from Morena, through the surface parking lot area, up to Clairemont Drive with connections to the bridge access project. It will include the improvement of the Ingulf / Morena intersection to safely get pedestrians across the street and provides the prototype landscape, stormwater runoff and multi-use path connections for the rest of Morena.

Project Potential Funding Sources: SANDAG sources of funding for Mid-coast as well as other sources of first mile / last mile connections to transit and smart growth construction grants to help support well designed public spaces and developments that support transit investments.

Primary Justification and Value: Transit oriented development is most feasible in areas that connect the development and the adjacent community with the proposed transit facilities. Also, by paying for improvements along a defined segment of Morena, MTS / SANDAG would then have access to some of the right of way that is currently prohibiting proper station design for comfort and safety at this location.



Project Name: Clairemont LRT Station Area Access Improvements **Phase #:** B

Items	Unit Cost	Unit	Quantity	Sub-Total
Demolition				
Asphalt Roadway Surface	$3	SF	30,229	$90,687
Curb & Gutter	$5	LF	3,192	$15,960
Budget for Relocating Utility Boxes, Traffic Signal Boxes, & Wet / Dry Utility Line Relocations	$150,000	LS	1	$150,000
			Demolition Totals:	$256,647
New Paving				
Asphalt Paving Patching and Sealing for Minor Roadway Changes & Gutter to Road Infills	$3	SF	23,996	$71,988
Concrete Sidewalk	$7	SF	13,099	$91,693
6" Concrete Curb and 18" Gutter	$22	LF	1,844	$40,568
Multi-use Path AC Paving (assume fine grading, compaction, base and 2" of asphalt)	$8	SF	1,630	$13,040
Pedestrian Bulb-out	$25,000	EA	2	$50,000
Median Curb Work	$15	LF	1,146	$17,190
Curb Ramps	$2,000	EA	4	$8,000
Upgraded Curb Ramps on Existing Sidewalks	$1,500	EA	2	$3,000
			New Paving Totals:	$295,479
Streetscape				
Parkway Strips (excludes trees but includes soils, mulch, groundcover & irrigation)	$5	SF	4,164	$20,820
Bio-swale / Bulbout Planter Areas with More Intensive Shrub & Irrigation Requirements	$15	SF	1,000	$15,000
Parkway Trees- 24" box (assumes backfill, small shrub planting, irrigation & root barriers)	$750	EA	20	$15,000
Parkway Trees- 36" box (assumes backfill, small shrub planting, irrigation & root barriers)	$1,250	EA	9	$11,250
Median Trees (8' x 8' planting area with shrubs, cobble, irrigation, soil, root barriers & 24" tree)	$500	EA	13	$6,500
Parkway Tree Grates (for tight walking areas)	$900	EA	6	$5,400
New Lighting Poles & Fixtures (2 per new intersection & 1 per 150lf of a block if area widened)	$10,000	EA	4	$40,000
Various Street Furnishings in Special Areas Only (benches & trash receptacles)	$15,000	EA	1	$15,000
			Landscape Totals:	$128,970
Fences and Barriers				
6' Black Vinyl Covered Metal Framed Chain Link Barrier Fence	$100	LF	944	$94,400
30" K-rail Concrete Barrier	$50	LF	289	$14,450
			Fences and Barrier Totals:	$108,850
Signage & Pavement Markings				
Multi-use Path Signs (with core drilling)	$350	EA	2	$700
Multi-use Path Centerline & Shoulder Striping	$2	LF	40	$80
Bike Lane/Sharrow Symbols Paint	$80	EA	10	$800
Bike Lane Paint	$2	LF	2,061	$4,122
Bike Lane 2' Chevron Striped Buffer Paint	$3	LF	981	$2,943
Bike Lane Cross Over Locations (green dashed or solid paint)	$25	LF	2,298	$57,450
Bike Lane Signs & Cross Over Warning Signs (with core drilling)	$350	EA	4	$1,400
Modified Ladder Style Crosswalk Striping	$2,500	EA	3	$7,500
Stop Bar Paint	$2	LF	62	$124
Standard Pavement Markings (Arrows, School Xing, etc)	$100	EA	16	$1,600
Parking Stripes, Paint	$50	EA	14	$700
Wayfinding/Informative Signs	$350	EA	5	$1,750
Regulatory Signs (Stop signs, etc)	$350	EA	2	$700
			Signage & Pavement Marking Totals:	$79,869
Enhanced Safety Measures				
Special Bike Pole Mounted Actuators & Matched Bike Only Signals	$1,500	EA	1	$1,500
Traffic Signals	$40,000	Per Pole	3	$120,000
			Enhanced Safety Totals:	$121,500
Other Costs (55% total):				
Contingency:	20%	$198,263.00		
Bonding / Mobilization / Contractor Internal Management / As Builts:	10%	$99,131.50	**Pre-markup Cost**	$991,315
Engineering / Design:	12%	$118,957.80	**Total Other Cost:**	$545,223
Environmental Clearance & Permitting:	5%	$49,565.75		
Bid Support Services & Agency Construction Management:	3%	$29,739.45		
Traffic Management Services:	5%	$49,565.75	**Grand Total Cost:**	$1,536,538
			Grand Total Cost:	$1,500,000

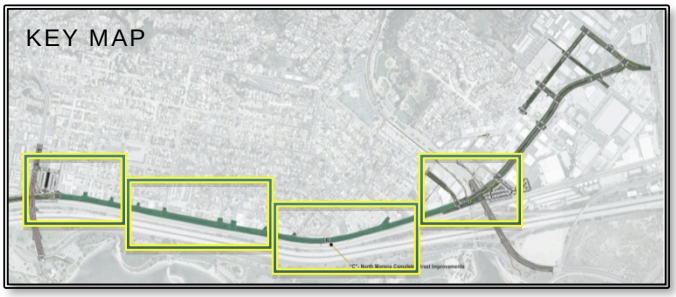
5.5.3 PROJECT "C"- Morena Blvd. Complete Street Improvements

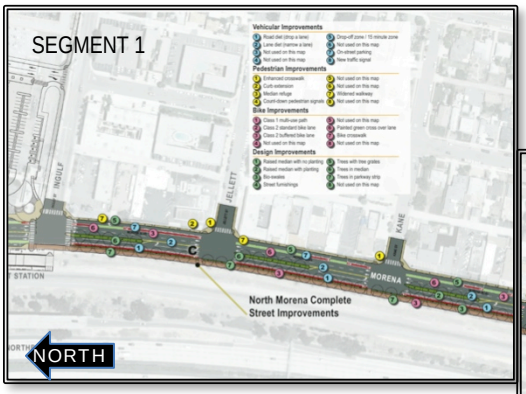
Project Vision: As the original north / south highway through this part of San Diego, Morena Boulevard may have at one point in history warranted the current width, but based on limited land areas to the west of the Boulevard and limited amount of traffic in this area, the width is not needed to only get vehicle throughput. The represents a great "complete streets" opportunity to reclaim portions of the roadway for other potential mobility and public uses.

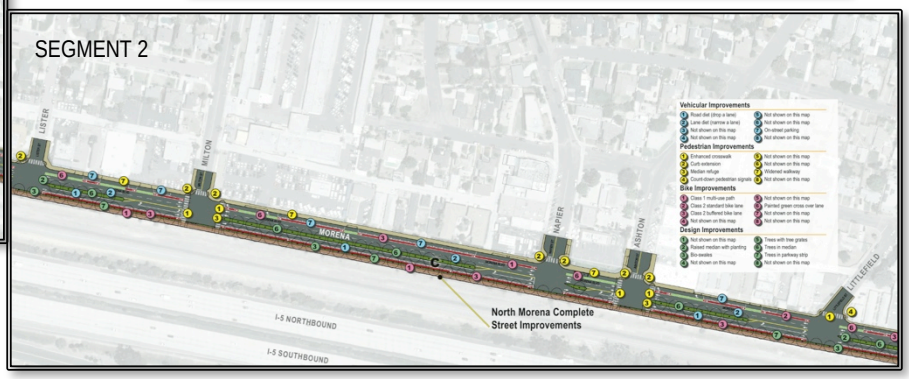
Project Features: One southbound lane will be dropped and the reclaimed space will be used to provide a 12' wide Class 1 Multi-use path, with planted parkways, a buffered Class 2 bike lane, and improved on-street parking.

Project Potential Funding Sources: Active transportation grants either from SANDAG or Caltrans have a potential along with other Transnet based or healthy community based grants.

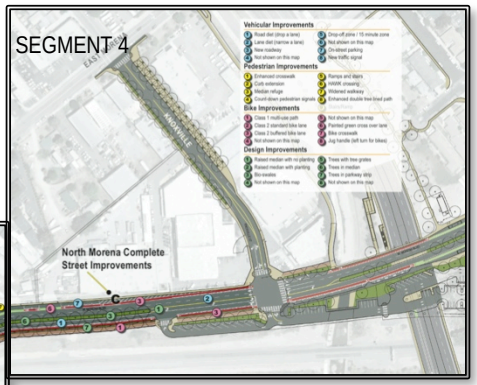
Primary Justification and Value: All future traffic can be handled in the proposed roadway geometry, along with other public uses and active transportation options. This is the definition of a "Complete Street"!







PROJECT FEATURE MAPS



Project Name: North Morena Complete Street Improvements **Phase #:** C

Items	Unit Cost	Unit	Quantity	Sub-Total
Demolition				
Asphalt Roadway Surface	$3	SF	75,452	$226,356
Curb & Gutter	$5	LF	11,899	$59,495
Concrete Pavement	$3	SF	707	$2,121
Budget for Relocating Utility Boxes, Traffic Signal Boxes, & Wet / Dry Utility Line Relocations	$150,000	LS	2	$300,000
			Demolition Totals:	$587,972
New Paving				
New Full Depth AC Paving (base, compaction, fine grading & drainage with 4" new AC)	$10	SF	37,329	$373,290
Asphalt Paving Patching and Sealing for Minor Roadway Changes & Gutter to Road Infills	$2	SF	338,803	$677,606
6" Concrete Curb and 18" Gutter	$22	LF	6,293	$138,446
Multi-use Path AC Paving (assume fine grading, compaction, base and 2" of asphalt)	$8	SF	62,930	$503,440
Multi-use Path Permeable Concrete Over-run Paving	$10	SF	12,786	$127,860
Pedestrian Bulb-out	$25,000	EA	7	$175,000
Median Curb Work	$15	LF	12,537	$188,055
Curb Ramps	$2,000	EA	27	$54,000
Driveway Ramps	$2,000	EA	10	$20,000
Upgraded Curb Ramps on Existing Sidewalks	$1,500	EA	20	$30,000
			New Paving Totals:	$2,287,697
Streetscape				
Parkway Strips (excludes trees but includes soils, mulch, groundcover & irrigation)	$5	SF	12,594	$62,970
Bio-swale / Bulbout Planter Areas with More Intensive Shrub & Irrigation Requirements	$15	SF	1,000	$15,000
Parkway Trees- 24" box (assumes backfill, small shrub planting, irrigation & root barriers)	$750	EA	160	$120,000
Parkway Trees- 36" box (assumes backfill, small shrub planting, irrigation & root barriers)	$1,250	EA	20	$25,000
Median Trees (8' x 8' planting area with shrubs, cobble, irrigation, soil, root barriers & 24" tree)	$500	EA	119	$59,500
Parkway Tree Grates (for tight walking areas)	$900	EA	8	$7,200
New Lighting Poles & Fixtures (2 per new intersection & 1 per 150lf of a block if area widened)	$10,000	EA	12	$120,000
			Landscape Totals:	$409,670
Signage & Pavement Markings				
Multi-use Path Signs (with core drilling)	$350	EA	12	$4,200
Multi-use Path Centerline & Shoulder Striping	$2	LF	12,586	$25,172
Bike Lane/Sharrow Symbols Paint	$80	EA	105	$8,400
Bike Lane Paint	$2	LF	22,912	$45,824
Bike Lane 2' Chevron Striped Buffer Paint	$4	LF	8,492	$33,968
Bike Lane Cross Over Locations (green dashed or solid paint)	$25	LF	2,812	$70,300
Bike Lane Signs & Cross Over Warning Signs (with core drilling)	$350	EA	8	$2,800
Modified Ladder Style Crosswalk Striping	$2,500	EA	13	$32,500
Stop Bar Paint	$2	LF	180	$360
Standard Pavement Markings (Arrows, School Xing, etc)	$100	EA	85	$8,500
Parking Stripes, Paint	$50	EA	122	$6,100
Wayfinding/Informative Signs	$350	EA	4	$1,400
Regulatory Signs (Stop signs, etc)	$350	EA	16	$5,600
			Signage & Pavement Marking Totals:	$245,124
Enhanced Safety Measures				
Bike Detector Loop	$700	EA	12	$8,400
Bike Jug Handle Left Turn Hold Areas	$10,000	EA	1	$10,000
Traffic Signals	$40,000	Per Pole	0	$0
			Enhanced Safety Totals:	$18,400
Other Costs (55% total):				
Contingency:	20%	$709,772.60		
Bonding / Mobilization / Contractor Internal Management / As Builts:	10%	$354,886.30	Pre-markup Cost	$3,548,863
Engineering / Design:	12%	$425,863.56	Total Other Cost:	$1,951,875
Environmental Clearance & Permitting:	5%	$177,443.15		
Bid Support Services & Agency Construction Management:	3%	$106,465.89		
Traffic Management Services:	5%	$177,443.15	Grand Total Cost:	$5,500,738
			Rounded Grand Total Cost:	**$5,500,000**

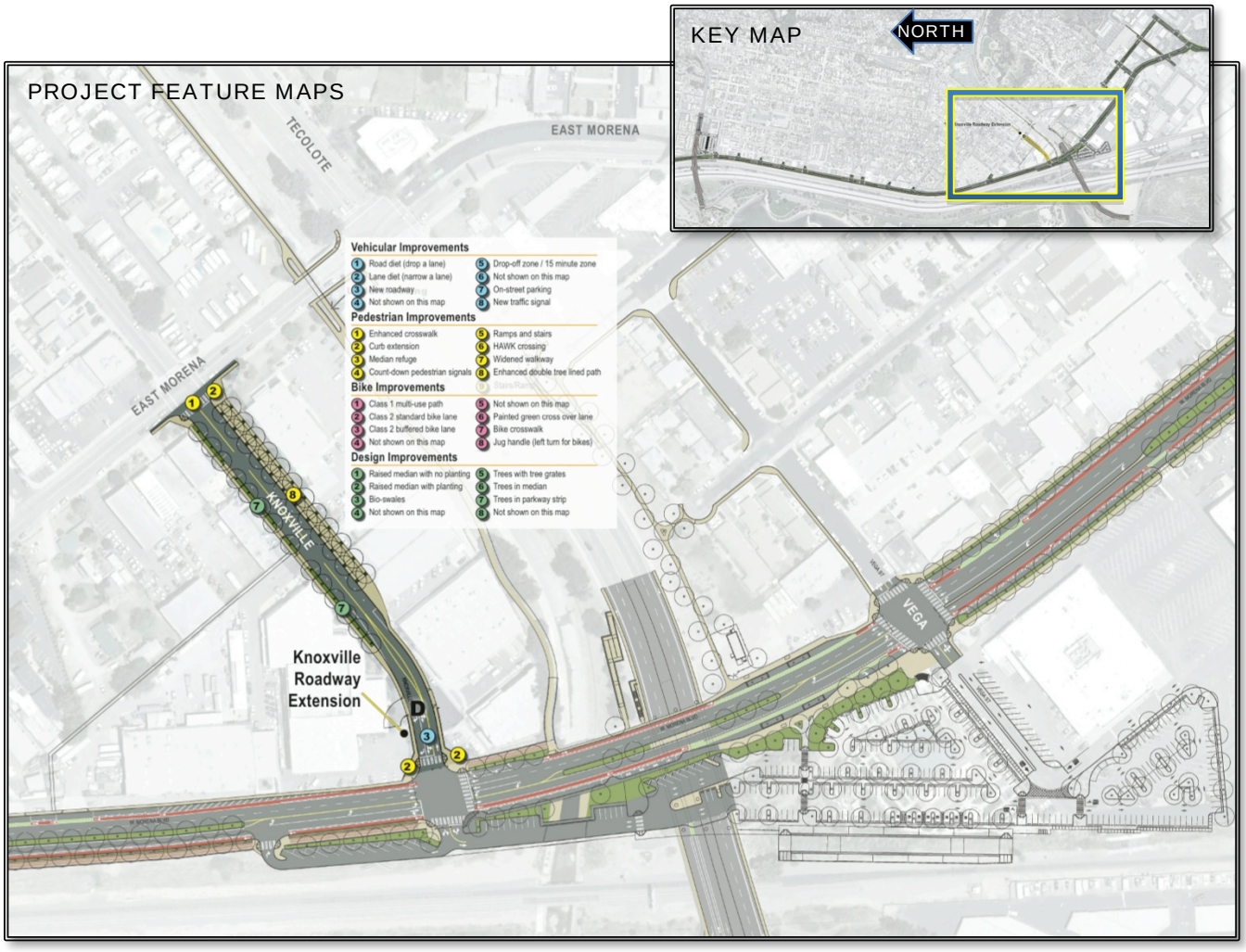
5.5.4 PROJECT "D"- Knoxville Street Extension Project

Project Vision: The triangular shaped land areas located on each side of Knoxville, south of Morena Blvd. and north of West Morena Blvd., represent some of the best available land for increased density and residential / mixed use development. However, to support this land use intensification, some of the road network needs to be more interconnected. This redeveloped area, along with residential neighborhoods to the north, will be able to take advantage of the new intersection of West Morena Blvd. and Knoxville as well as the proposed pedestrian promenade that would run alongside Knoxville. This new intersection would allow access by bike, foot or vehicle, to the new Tecolote LRT station.

Project Features: A new intersection with pedestrian crossings, direct access into the LRT station, a widened walkway system with a double row of trees would connect Morena with West Morena Boulevard.

Project Potential Funding Sources: The potential development allowed in the triangular area is dramatically increased with the proposed up-zoning. The projects that would result from this potential, and would benefit most from this roadway connection, should be conditioned with improving and dedicating this improved roadway.

Primary Justification and Value: Improved ADA access, increased pedestrian safety, Tecolote Creek Trail access, access to the Tecolote LRT station and public spaces that would support major new development of residential in this area are all important justifications for this project.



Project Name: **Knoxville Street Extension Project** Phase #: **D**

Items	Unit Cost	Unit	Quantity	Sub-Total
Demolition				
Asphalt Roadway Surface	$3	SF	10,968	$32,904
Trees, shrubs, groundcover & soil	$3	SF	5,386	$13,465
Curb & Gutter	$5	LF	1,234	$6,170
Concrete Pavement	$3	SF	8,200	$24,600
Budget for Relocating Utility Boxes, Traffic Signal Boxes, & Wet / Dry Utility Line Relocations	$150,000	LS	1	$150,000
			Demolition Totals:	$227,139
New Paving				
New Full Depth AC Paving (base, compaction, fine grading & drainage with 4" new AC)	$10	SF	6,307	$63,070
Asphalt Paving Patching and Sealing for Minor Roadway Changes & Gutter to Road Infills	$2	SF	20,381	$40,762
Concrete Sidewalk	$7	SF	13,031	$91,217
6" Concrete Curb and 18" Gutter	$22	LF	1,400	$30,800
Pedestrian Bulb-out	$25,000	EA	2	$50,000
Walls	$100	SF	744	$74,400
Curb Ramps	$2,000	EA	6	$12,000
Driveway Ramps	$2,000	EA	6	$12,000
Upgraded Curb Ramps on Existing Sidewalks	$1,500	EA	4	$6,000
			New Paving Totals:	$380,249
Streetscape				
Parkway Strips (excludes trees but includes soils, mulch, groundcover & irrigation)	$5	SF	2,397	$11,985
Bio-swale / Bulbout Planter Areas with More Intensive Shrub & Irrigation Requirements	$15	SF	1,000	$15,000
Parkway Trees- 24" box (assumes backfill, small shrub planting, irrigation & root barriers)	$750	EA	30	$22,500
Parkway Trees- 36" box (assumes backfill, small shrub planting, irrigation & root barriers)	$1,250	EA	8	$10,000
Parkway Tree Grates (for light walking areas)	$900	EA	24	$21,600
New Lighting Poles & Fixtures (2 per new intersection & 1 per 150lf of a block if area widened)	$10,000	EA	7	$70,000
Various Street Furnishings in Special Areas Only (benches & trash receptacles)	$15,000	EA	2	$30,000
			Landscape Totals:	$181,085
Signage & Pavement Markings				
Modified Ladder Style Crosswalk Striping	$2,500	EA	2	$5,000
Stop Bar Paint	$2	LF	21	$42
Standard Pavement Markings (Arrows, School Xing, etc)	$100	EA	4	$400
Parking Stripes, Paint	$50	EA	34	$1,700
Wayfinding/Informative Signs	$350	EA	4	$1,400
Regulatory Signs (Stop signs, etc)	$350	EA	4	$1,400
			Signage & Pavement Marking Totals:	$9,942
Enhanced Safety Measures				
Bike Detector Loop	$700	EA	4	$2,800
Modified Traffic Signals	$20,000	Per Pole	2	$40,000
Other Costs (55% total):			**Enhanced Safety Totals:**	$40,000
Contingency:	20%	$167,683.00		
Bonding / Mobilization / Contractor Internal Management / As Builts:	10%	$83,841.50	Pre-markup Cost	$838,415
Engineering / Design:	12%	$100,609.80	Total Other Cost:	$461,128
Environmental Clearance & Permitting:	5%	$41,920.75		
Bid Support Services & Agency Construction Management:	3%	$25,152.45		
Traffic Management Services:	5%	$41,920.75	**Grand Total Cost:**	$1,299,543
			Rounded Grand Total Cost:	**$1,300,000**

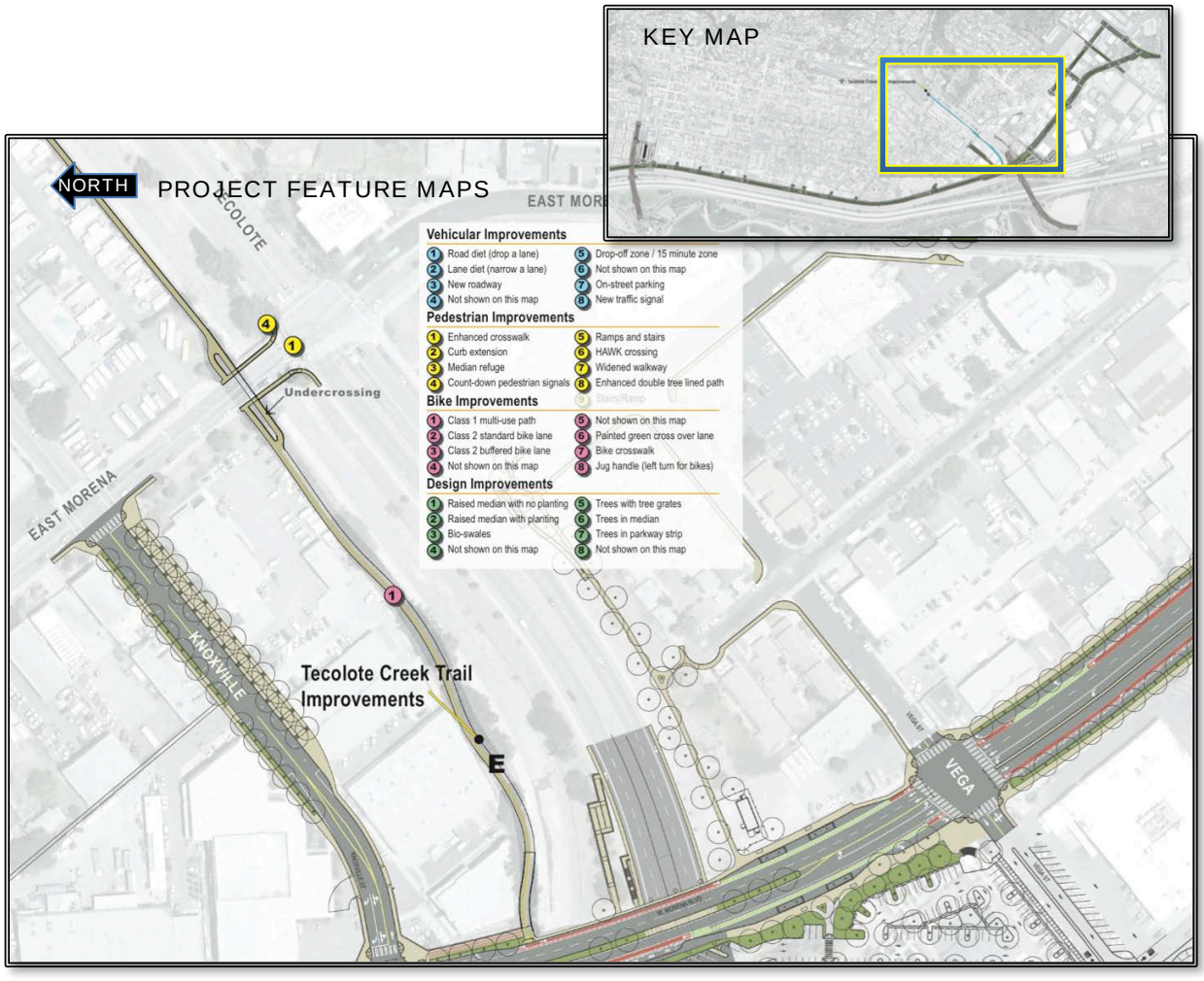
5.5.5 PROJECT "E"- Tecolote Creek Trail Project

Project Vision: Just as the cutting off of Mission Bay from this community is a lost opportunity, so is the current condition of Tecolote Creek. Although a channelized creek, if you follow this route upstream, it connects with a public park, a nature center and major open space. Follow it to the west, and you can reach the proposed Tecolote LRT station and, with Tecolote Bridge improvements, you can reach Mission Bay. The connection would serve as a recreational trail as well as a transportation feature, connecting the community with important destinations.

Project Features: A Class 1 multi-use trail, utilizing highly compacted decomposed granite surfaces with an emulsifier, would connect West Morena Boulevard with Tecolote Canyon. Restoration of the creek and its side slopes could also occur, though not included in this project's cost estimate. A small undercrossing at Morena Blvd. as well as an at grade versions, using enhanced crosswalks and timers, would make movement in the corridor safer and more direct.

Project Potential Funding Sources: The existing recreational vehicle park located north of Morena on Knoxville, has a great deal of potential to be a major residential infill project. As part of the condition for project approval, the trail could be constructed and dedicated to the City. Other recreational funding sources could also be sought after.

Primary Justification and Value: Although primarily a recreation trail, this facility could connect the community with major community destinations and opens space areas and provide additional transportation options.



Project Name: Tecolote Creek Trail Project **Phase #:** E

Items	Unit Cost	Unit	Quantity	Sub-Total
Demolition				
Trees, shrubs, groundcover & soil	$1	SF	21,080	$21,080
Concrete Pavement	$3	SF	2,334	$7,002
Budget for Relocating Utility Boxes, Traffic Signal Boxes, & Wet / Dry Utility Line Relocations	$50,000	LS	1	$50,000
			Demolition Totals:	$78,082
New Paving				
Concrete Sidewalk	$7	SF	2,186	$15,302
Multi-use Path AC Paving (assume fine grading, compaction, base and 2" of asphalt)	$8	SF	8,500	$68,000
Walls	$100	SF	1,224	$122,400
Ramps & Underpass on Morena Boulevard to get under bridge	$100,000	EA	1	$100,000
Upgraded Curb Ramps on Existing Sidewalks	$1,500	EA	4	$6,000
Compacted DG Trail/Edging Paving	$7	SF	11,000	$77,000
			New Paving Totals:	$388,702
Fences and Barriers				
6' Metal Framed Chain Link Barrier Fence	$75	LF	500	$37,500
			Fences and Barrier Totals:	$37,500
Signage & Pavement Markings				
Multi-use Path Signs (with core drilling)	$350	EA	4	$1,400
Multi-use Path Centerline & Shoulder Striping	$2	LF	2,058	$4,116
Wayfinding/Informative Signs	$350	EA	8	$2,800
Regulatory Signs (Stop signs, etc)	$350	EA	2	$700
			Signage & Pavement Marking Totals:	$9,016

Other Costs (55% total):				
Contingency:	20%	$102,660.00		
Bonding / Mobilization / Contractor Internal Management / As Builts:	10%	$51,330.00	**Pre-markup Cost**	$513,300
Engineering / Design:	12%	$61,596.00	**Total Other Cost:**	$282,315
Environmental Clearance & Permitting:	5%	$25,665.00		
Bid Support Services & Agency Construction Management:	3%	$15,399.00		
Traffic Management Services:	5%	$25,665.00	**Grand Total Cost:**	$795,615
			Grand Total Cost:	$800,000

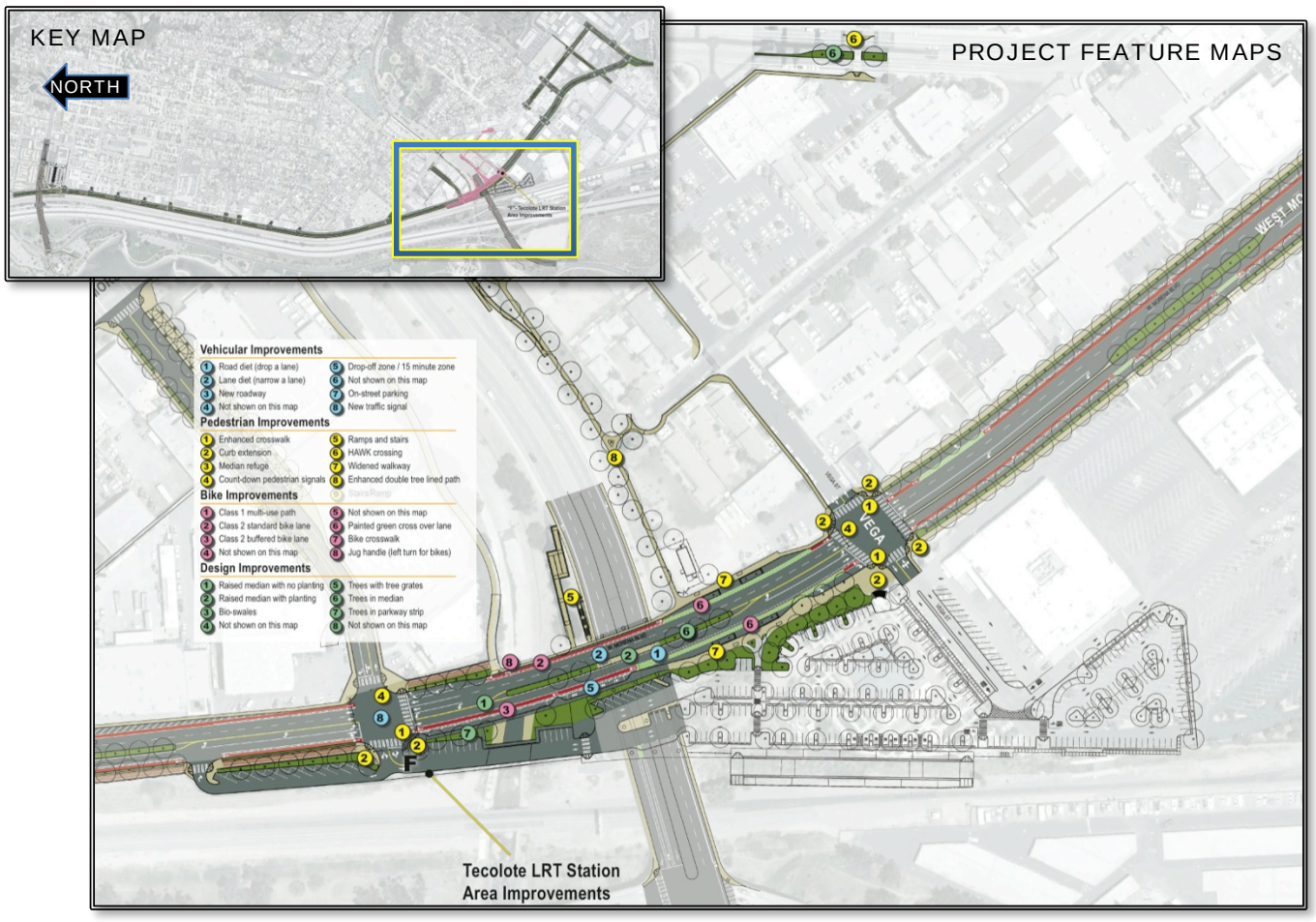
5.5.6 PROJECT "F"- Tecolote LRT Station Area Improvements

Project Vision: The current conditions around the proposed Tecolote LRT station are not conducive to attracting walkers and cyclist to the station. In addition, the development potential for adjacent transit oriented development is also low, due to the lack of amenities and the "big box" retail and industrial dominance of the area. The proposed project would help to improve pedestrian and bike connections to the station and create public realm spaces and a character shift that would be more conducive to residential living, commercial shopping activities and transit ridership.

Project Features: The major features would include the reclamation of one lane of southbound travel on West Morena Boulevard allowing for an expanded walkway system, a bus pullout area, on-street parking, an on-street kiss and ride facility, street trees, bio-swales for stormwater runoff, accommodation of a Class 2 buffered bike lane, a new intersection with signals, crosswalks and pedestrian countdown timers that provides a direct access to the station and improved walkways, ramps and sidewalks north to Savannah and Morena Boulevard and USD.

Project Potential Funding Sources: These elements primarily help the Mid-coast Corridor Transit project and should be financed as part of the first mile and last mile access to the station. Many of the improvements listed in the estimate, can be offset by project site development costs that will no longer be required, such as costs associated with parking lot acquisition and development near Jeromes.

Primary Justification and Value: The primary goal of transit is to get people out of their vehicles by providing choices. If people need to drive to the stations, then they are likely to keep driving past the station.



Project Name: **Tecolote LRT Station Area Improvements** Phase #: **F**

Items	Unit Cost	Unit	Quantity	Sub-Total
Demolition				
Asphalt Roadway Surface	$3	SF	11,620	$34,860
Curb & Gutter	$5	LF	2,492	$12,460
Concrete Pavement	$3	SF	2,928	$8,784
Budget for Relocating Utility Boxes, Traffic Signal Boxes, & Wet / Dry Utility Line Relocations	$150,000	LS	1	$150,000
			Demolition Totals:	$206,104
New Paving				
New Full Depth AC Paving (base, compaction, fine grading & drainage with 4" new AC)	$10	SF	38,175	$381,750
Asphalt Paving Patching and Sealing for Minor Roadway Changes & Gutter to Road Infills	$2	SF	52,021	$104,042
Concrete Sidewalk	$7	SF	26,131	$182,917
6" Concrete Curb and 18" Gutter	$22	LF	5,121	$112,662
Stairs	$150	LF	280	$42,000
Walls	$100	SF	3,560	$356,000
Median Curb Work	$15	LF	719	$10,785
Concrete bridge: Vehicular / Pedestrian	$225	SF	2,660	$598,500
Curb Ramps	$2,000	EA	6	$12,000
			New Paving Totals:	$1,800,656
Streetscape				
Parkway Strips (excludes trees but includes soils, mulch, groundcover & irrigation)	$5	SF	3,554	$17,770
Planting Areas (trees,shrubs, soils, mulch, groundcover & irrigation)	$8	SF	4,744	$37,952
Bio-swale / Bulbout Planter Areas with More Intensive Shrub & Irrigation Requirements	$15	SF	1,000	$15,000
Parkway Trees- 24" box (assumes backfill, small shrub planting, irrigation & root barriers)	$750	EA	25	$18,750
Parkway Trees- 36" box (assumes backfill, small shrub planting, irrigation & root barriers)	$1,250	EA	6	$7,500
Median Trees (8' x 8' planting area with shrubs, cobble, irrigation, soil, root barriers & 24" tree)	$500	EA	5	$2,500
Bus Shelters	$30,000	EA	2	$60,000
Parkway Tree Grates (for tight walking areas)	$900	EA	3	$2,700
New Lighting Poles & Fixtures (2 per new intersection & 1 per 150lf of a block if area widened)	$10,000	EA	8	$80,000
			Landscape Totals:	$242,172
Fences and Barriers				
6' Black Vinyl Covered Metal Framed Chain Link Barrier Fence	$100	LF	500	$50,000
			Fences and Barrier Totals:	$50,000
Signage & Pavement Markings				
Multi-use Path Signs (with core drilling)	$350	EA	10	$3,500
Multi-use Path Centerline & Shoulder Striping	$2	LF	978	$1,956
Bike Lane/Sharrow Symbols Paint	$80	EA	19	$1,520
Bike Lane Paint	$2	LF	3,307	$6,614
Bike Lane 2' Chevron Striped Buffer Paint	$3	LF	3,307	$9,921
Bike Lane Cross Over Locations (green dashed or solid paint)	$25	LF	583	$14,575
Bike Lane Signs & Cross Over Warning Signs (with core drilling)	$350	EA	4	$1,400
Modified Ladder Style Crosswalk Striping	$2,500	EA	9	$22,500
Special Bike Crosswalk Markings	$7,500	EA	1	$7,500
Stop Bar Paint	$2	LF	243	$486
Standard Pavement Markings (Arrows, School Xing, etc)	$100	EA	34	$3,400
Parking Stripes, Paint	$50	EA	17	$850
Wayfinding/Informative Signs	$350	EA	4	$1,400
Regulatory Signs (Stop signs, etc)	$350	EA	4	$1,400
			Signage & Pavement Marking Totals:	$77,022
Enhanced Safety Measures				
Bike Detector Loop	$700	EA	4	$2,800
Bike Jug Handle Left Turn Hold Areas	$10,000	EA	1	$10,000
Special Bike Pole Mounted Actuators & Matched Bike Only Signals	$1,500	EA	2	$3,000
Traffic Signals	$40,000	Per Pole	4	$160,000
			Enhanced Safety Totals:	$175,800
Other Costs (55% total):				
Contingency:	20%	$510,350.80		
Bonding / Mobilization / Contractor Internal Management / As Builts:	10%	$255,175.40	**Pre-markup Cost**	$2,551,754
Engineering / Design:	12%	$306,210.48	**Total Other Cost:**	$1,403,465
Environmental Clearance & Permitting:	5%	$127,587.70		
Bid Support Services & Agency Construction Management:	3%	$76,552.62		
Traffic Management Services:	5%	$127,587.70	**Grand Total Cost:**	$3,955,219
			Rounded Grand Total Cost:	$4,000,000

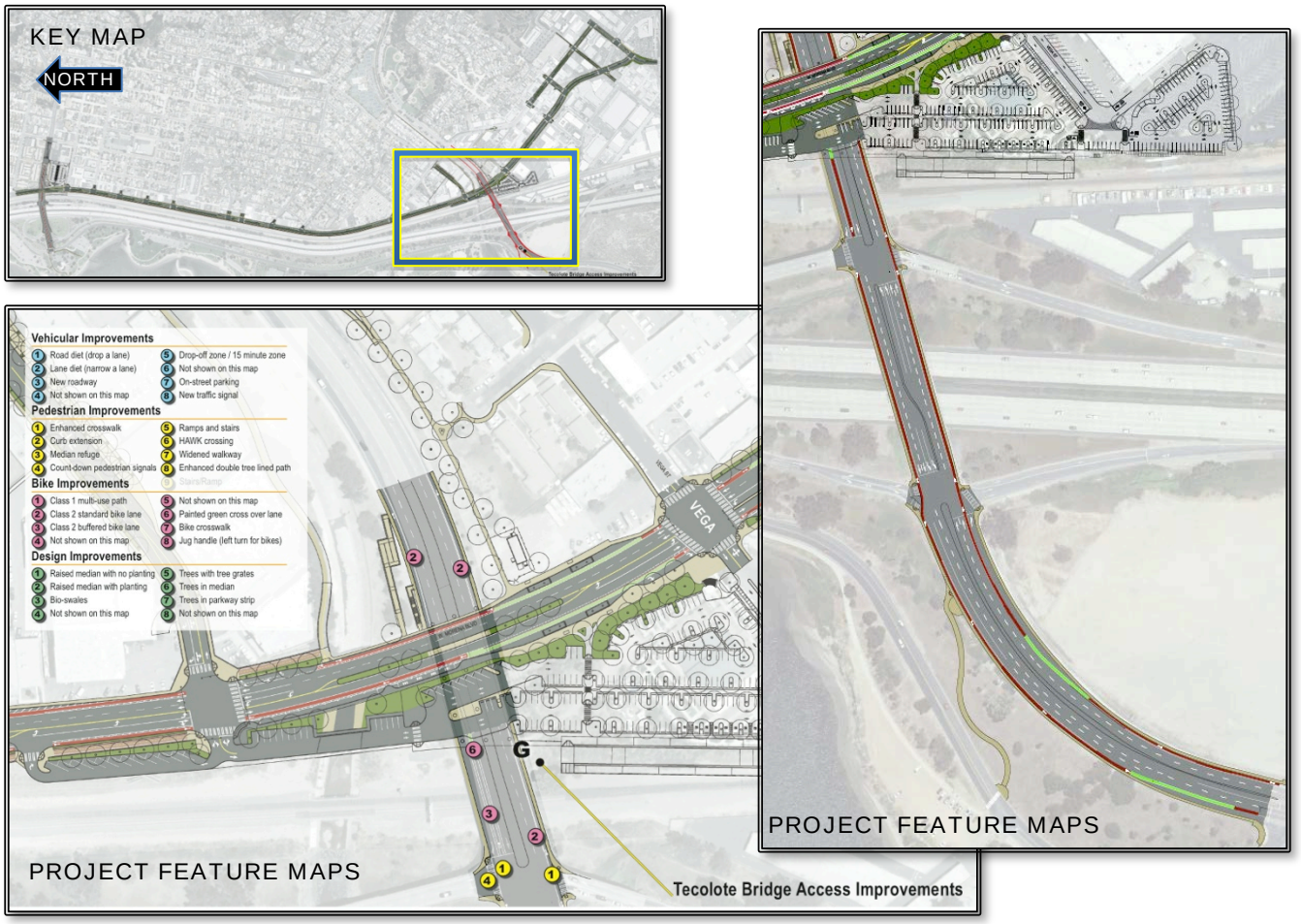
5.5.7 PROJECT "G"- Tecolote Bridge Access Improvements

Project Vision: The Clairemont Mesa and Linda Vista Communities are close to, but so far removed from Mission Bay. Their physical access is primarily limited to vehicular driving, since most of the roadways and the two bridges (Clairemont and Tecolote) are very pedestrian and bike unfriendly. The distance from the community to these resources, is very short but perceptually, the physical and psychological barriers related to I-5 and the rail line are major impediments to movement for this community. The vision for this project is to inexpensively modify Tecolote Bridge to become safer and more complete from a multi-modal standpoint.

Project Features: The project focuses on a Class 2 Bike Lane that would also serve to move the close proximity of higher speed vehicles, away from the walkways that already exist. The project will include special traffic control devices, ramps, barriers, crosswalks, green painted crossover bike lanes, and signage to make access safe. These features, coupled with ramp and stair connections from the station, Tecolote Creek and Knoxville improvements, will greatly increase access to Mission Bay.

Project Potential Funding Sources: Caltrans grants for active transportation to be released annually, would be a great source of funding as would local SANDAG active transportation and regional bike facility funding.

Primary Justification and Value: To improve safety of all users by deconflicting on and off ramp movements. The project would connect up with other Morena Boulevard and Mission Bay Park recreation and transportation connections for pedestrians, runners, cyclists and hikers and provide transit users with the ability to access Mission Bay Park.



Project Name: **Tecolote Bridge Access Improvements** Phase #: **G**

Items	Unit Cost	Unit	Quantity	Sub-Total
Demolition				
Curb & Gutter	$5	LF	2,368	$11,840
Budget for Relocating Utility Boxes, Traffic Signal Boxes, & Wet / Dry Utility Line Relocations	$25,000	LS	1	$25,000
			Demolition Totals:	$36,840
New Paving				
New Full Depth AC Paving (base, compaction, fine grading & drainage with 4" new AC)	$10	SF	26,833	$268,330
Concrete Sidewalk	$7	SF	5,495	$38,465
Walls	$100	SF	1,128	$112,800
Curb Ramps	$2,000	EA	6	$12,000
			New Paving Totals:	$431,595
Fences and Barriers				
6' Black Vinyl Covered Metal Framed Chain Link Barrier Fence	$100	LF	150	$15,000
			Fences and Barrier Totals:	$15,000
Signage & Pavement Markings				
Multi-use Path Signs (with core drilling)	$350	EA	2	$700
Multi-use Path Centerline & Shoulder Striping	$2	LF	500	$1,000
Bike Lane/Sharrow Symbols Paint	$80	EA	19	$1,520
Bike Lane Paint	$2	LF	7,650	$15,300
Bike Lane 2' Chevron Striped Buffer Paint	$3	LF	2,727	$8,181
Bike Lane Cross Over Locations (green dashed or solid paint)	$25	LF	603	$15,075
Bike Lane Signs & Cross Over Warning Signs (with core drilling)	$350	EA	4	$1,400
Modified Ladder Style Crosswalk Striping	$2,500	EA	5	$12,500
Special Bike Crosswalk Markings	$7,500	EA	1	$7,500
Stop Bar Paint	$2	LF	750	$1,500
Standard Pavement Markings (Arrows, School Xing, etc)	$100	EA	13	$1,300
Wayfinding/Informative Signs	$350	EA	2	$700
Regulatory Signs (Stop signs, etc)	$350	EA	4	$1,400
			Signage & Pavement Marking Totals:	$68,076
Enhanced Safety Measures				
Bike Detector Loop	$700	EA	6	$4,200
Special Bike Pole Mounted Actuators & Matched Bike Only Signals	$1,500	EA	6	$9,000
Traffic Signals Modifications	$20,000	Per Pole	4	$80,000
			Enhanced Safety Totals:	$93,200
Other Costs (55% total):				
Contingency:	20%	$128,942.20		
Bonding / Mobilization / Contractor Internal Management / As Builts:	10%	$64,471.10	**Pre-markup Cost**	$644,711
Engineering / Design:	12%	$77,365.32	**Total Other Cost:**	$354,591
Environmental Clearance & Permitting:	5%	$32,235.55		
Bid Support Services & Agency Construction Management:	3%	$19,341.33		
Traffic Management Services:	5%	$32,235.55	**Grand Total Cost:**	$999,302
			Rounded Grand Total Cost:	$1,000,000

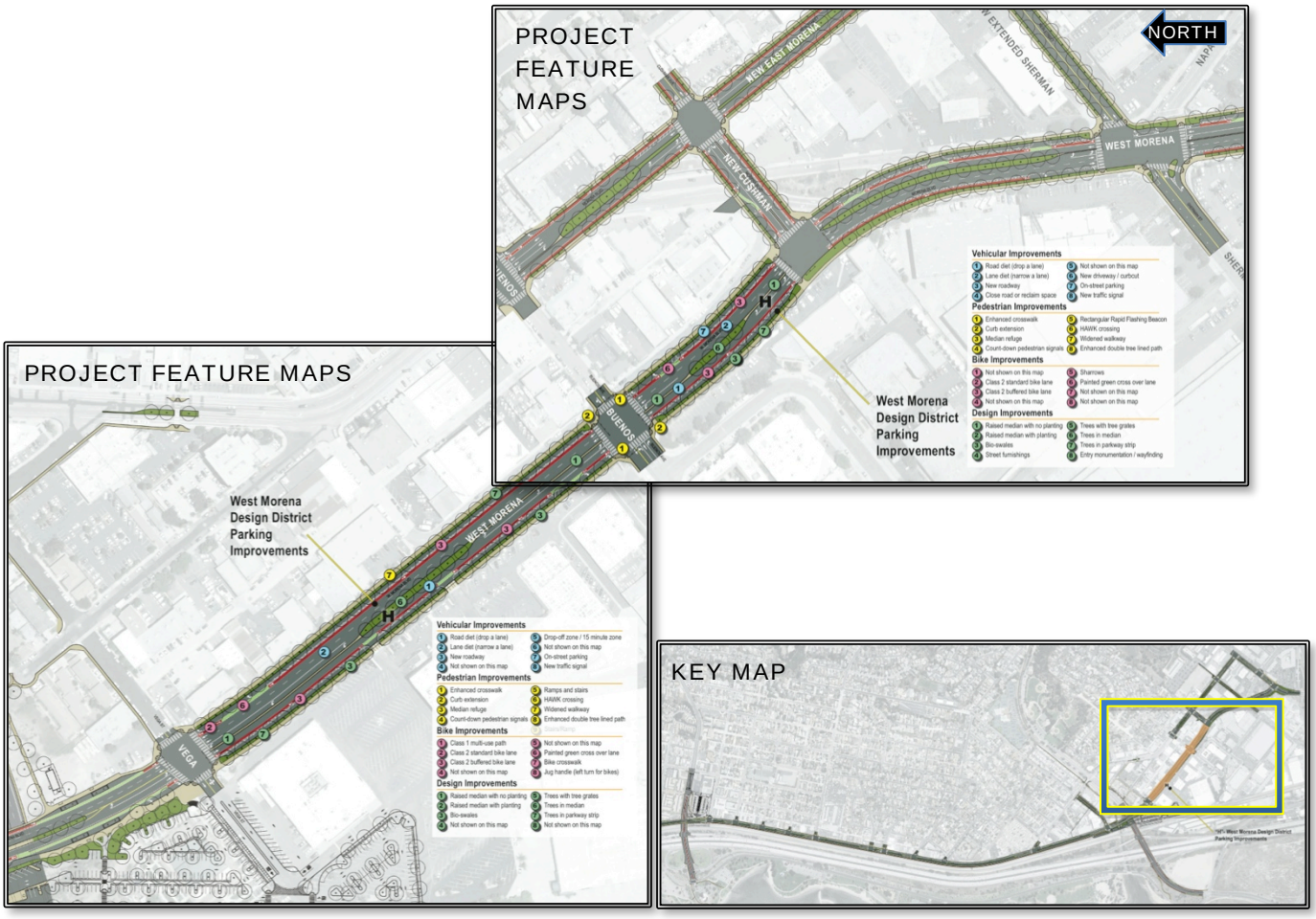
5.5.8 PROJECT "H"- West Morena Design District Parking Improvements

Project Vision: The core of the Morena District has a great potential to be more than a haphazard arrangement of furniture and building supply and automotive stores. More can be done to brand this area as a furniture and design district. Many of the property owners, however, are on small lots that can not be added onto because of restrictive parking requirements. So investment does not occur because of the impracticality of building on-site parking on small lots. The proposed project looks at reclaiming the frontage road in this area and making more on-street parking for customers. A business could then pay into a parking district or pay in-lieu fees for not building parking in exchange for assistance of funding of the on-street parking improvements.

Project Features: On street parking, with tree bulb-outs, expanded walkways, pedestrian crosswalk improvements at Buenos Street, Class 2 buffered bike lanes, street trees and new lighting systems will all help to change the character of this area to encourage customer visits by creating a positive, well branded environment.

Project Potential Funding Sources: The formation of a business improvement district, parking district and landscape maintenance district could all raise money to help pay for the majority of these improvements. Smart growth grants could also be applied for.

Primary Justification and Value: The heart of the project area is in poor shape since few have reinvested in their facilities. The project provides parking solutions that will allow for reasonable costs of on-street parking in-lieu of constructing expensive parking structures. This reinvestment will generate better retail conditions and encourage more infill development and customer base growth related to nearby residential development.



Project Name: West Morena Design District Parking Improvements **Phase #:** H

Items	Unit Cost	Unit	Quantity	Sub-Total
Demolition				
Asphalt Roadway Surface	$3	SF	38,549	$115,647
Trees, shrubs, groundcover & soil	$3	SF	850	$2,125
Curb & Gutter	$5	LF	2,860	$14,300
Concrete Pavement	$3	SF	1,500	$4,500
Budget for Relocating Utility Boxes, Traffic Signal Boxes, & Wet / Dry Utility Line Relocations	$150,000	LS	1	$150,000
			Demolition Totals:	$286,572
New Paving				
New Full Depth AC Paving (base, compaction, fine grading & drainage with 4" new AC)	$10	SF	56,856	$568,560
Asphalt Paving Patching and Sealing for Minor Roadway Changes & Gutter to Road Infills	$2	SF	94,616	$189,232
Concrete Sidewalk	$7	SF	22,252	$155,764
6" Concrete Curb and 18" Gutter	$22	LF	3,176	$69,872
Pedestrian Bulb-out	$25,000	EA	4	$100,000
Median Curb Work	$15	LF	2,801	$42,015
Curb Ramps	$2,000	EA	11	$22,000
Driveway Ramps	$2,000	EA	10	$20,000
Upgraded Curb Ramps on Existing Sidewalks	$1,500	EA	4	$6,000
			New Paving Totals:	$1,173,443
Streetscape				
Parkway Strips (excludes trees but includes soils, mulch, groundcover & irrigation)	$5	SF	13,579	$67,895
Bio-swale / Bulbout Planter Areas with More Intensive Shrub & Irrigation Requirements	$15	SF	2,000	$30,000
Parkway Trees- 24" box (assumes backfill, small shrub planting, irrigation & root barriers)	$750	EA	45	$33,750
Parkway Trees- 36" box (assumes backfill, small shrub planting, irrigation & root barriers)	$1,250	EA	8	$10,000
Median Trees (8' x 8' planting area with shrubs, cobble, irrigation, soil, root barriers & 24" tree)	$500	EA	12	$6,000
Parkway Tree Grates (for tight walking areas)	$900	EA	15	$13,500
New Lighting Poles & Fixtures (2 per new intersection & 1 per 150lf of a block if area widened)	$10,000	EA	8	$80,000
Various Street Furnishings in Special Areas Only (benches & trash receptacles)	$15,000	EA	2	$30,000
			Landscape Totals:	$271,145
Signage & Pavement Markings				
Bike Lane/Sharrow Symbols Paint	$80	EA	23	$1,840
Bike Lane Paint	$2	LF	7,627	$15,254
Bike Lane 2' Chevron Striped Buffer Paint	$4	LF	2,495	$9,980
Bike Lane Cross Over Locations (green dashed or solid paint)	$25	LF	299	$7,475
Bike Lane Signs & Cross Over Warning Signs (with core drilling)	$350	EA	4	$1,400
Modified Ladder Style Crosswalk Striping	$2,500	EA	5	$12,500
Stop Bar Paint	$2	LF	117	$234
Standard Pavement Markings (Arrows, School Xing, etc)	$100	EA	28	$2,800
Parking Stripes, Paint	$50	EA	112	$5,600
Wayfinding/Informative Signs	$350	EA	4	$1,400
Regulatory Signs (Stop signs, etc)	$350	EA	6	$2,100
			Signage & Pavement Marking Totals:	$60,583

Other Costs (55% total):				
Contingency:	20%	$358,348.60		
Bonding / Mobilization / Contractor Internal Management / As Builts:	10%	$179,174.30	Pre-markup Cost	$1,791,743
Engineering / Design:	12%	$215,009.16	Total Other Cost:	$985,459
Environmental Clearance & Permitting:	5%	$89,587.15		
Bid Support Services & Agency Construction Management:	3%	$53,752.29		
Traffic Management Services:	5%	$89,587.15	Grand Total Cost:	$2,777,202
			Rounded Grand Total Cost:	**$2,800,000**

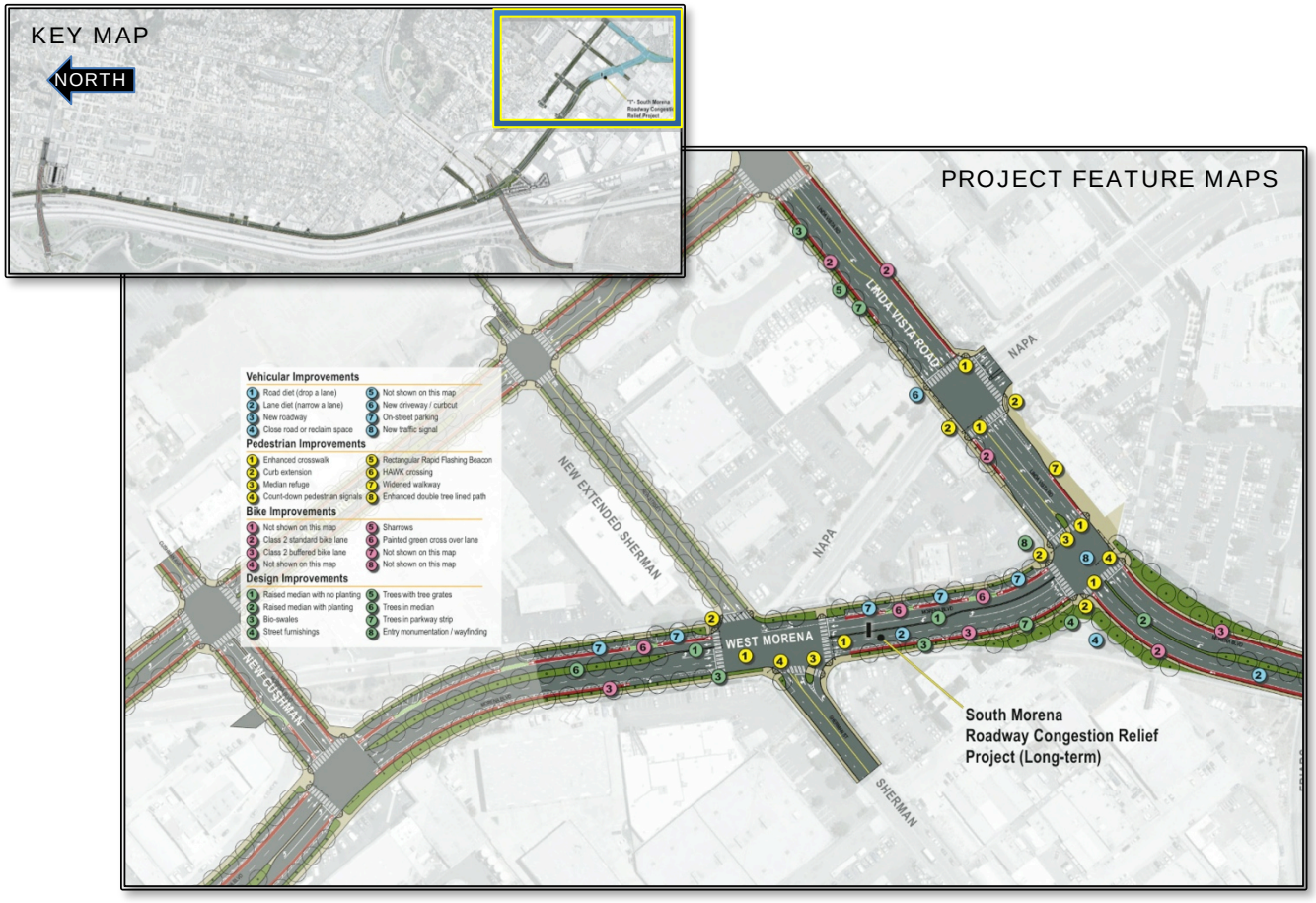
5.5.9 PROJECT "I-1"- South Morena Congestion Relief Project (Long-term)

Project Vision: When the original Morena Bridge washed out across San Diego River, it was at a time when Caltrans was reconfiguring Interstate 8. New clover leaf off ramps were provided at a new Morena Bridge, leading high speed freeway traffic into the heart of lower Linda Vista. This series of events was responsible for the poorly organized "triangle area", formed by Napa, Linda Vista Road and the new Morena Boulevard. Instead of providing a series of interconnected grid streets, the area developed with only a few through options, concentrating all traffic around this triangle. The future development of this area will not be possible without major roadway changes that encourage a broader distribution of traffic. Project "I" has both mid-term and long-term phases. This sheet covers the long-term.

Project Features: Morena will be start at a "T" intersection with Linda Vista Road. Under the long-term condition, it is assumed that a new East Morena Road will be extended south from Cushman to Linda Vista Road, thereby taking a great deal of traffic away from the triangle area. With East Morena in place, the long-term solution can restrict northbound lanes to one, while still providing 2 southbound lanes. The new intersection will work much better for pedestrians and cyclists that have great difficulty in traversing this area.

Project Potential Funding Sources: This project may best be suited for a City of San Diego Capital Improvement Project, using infrastructure bonding and other forms of gas tax and local transportation development funds.

Primary Justification and Value: The area needs to accommodate more residential and mixed-use development. USD is poised to expand their campus. The major investment in transit facilities warrants the use of other public and private money to provide the infrastructure needed to support future beneficial land uses.



Project Name: South Morena Congestion Relief Project (long term) **Phase #:** I-1

Items	Unit Cost	Unit	Quantity	Sub-Total
Demolition				
Asphalt Roadway Surface	$3	SF	9,857	$29,571
Trees, shrubs, groundcover & soil	$3	SF	3,552	$8,880
Curb & Gutter	$5	LF	1,511	$7,555
Concrete Pavement	$3	SF	3,314	$9,942
Budget for Relocating Utility Boxes, Traffic Signal Boxes, & Wet / Dry Utility Line Relocations	$150,000	LS	1	$150,000
			Demolition Totals:	$205,948
New Paving				
New Full Depth AC Paving (base, compaction, fine grading & drainage with 4" new AC)	$10	SF	4,785	$47,850
Asphalt Paving Patching and Sealing for Minor Roadway Changes & Gutter to Road Infills	$2	SF	0	$0
Concrete Sidewalk	$7	SF	2,796	$19,572
6" Concrete Curb and 18" Gutter	$22	LF	1,019	$22,418
Pedestrian Bulb-out	$25,000	EA	6	$150,000
Median Curb Work	$15	LF	3,105	$46,575
Curb Ramps	$2,000	EA	3	$6,000
Driveway Ramps	$2,000	EA	2	$4,000
Upgraded Curb Ramps on Existing Sidewalks	$1,500	EA	0	$0
			New Paving Totals:	$296,415
Streetscape				
Parkway Strips (excludes trees but includes soils, mulch, groundcover & irrigation)	$5	SF	2,273	$11,365
Bio-swale / Bulbout Planter Areas with More Intensive Shrub & Irrigation Requirements	$15	SF	0	$0
Parkway Trees- 24" box (assumes backfill, small shrub planting, irrigation & root barriers)	$750	EA	0	$0
Parkway Trees- 36" box (assumes backfill, small shrub planting, irrigation & root barriers)	$1,250	EA	0	$0
Median Trees (8' x 8' planting area with shrubs, cobble, irrigation, soil, root barriers & 24" tree)	$500	EA	0	$0
Parkway Tree Grates (for tight walking areas)	$900	EA	0	$0
New Lighting Poles & Fixtures (2 per new intersection & 1 per 150lf of a block if area widened)	$10,000	EA	8	$80,000
Various Street Furnishings in Special Areas Only (benches & trash receptacles)	$15,000	EA	2	$30,000
			Landscape Totals:	$121,365
Signage & Pavement Markings				
Bike Lane/Sharrow Symbols Paint	$80	EA	1	$80
Bike Lane Paint	$2	LF	1,111	$2,222
Bike Lane 2' Chevron Striped Buffer Paint	$4	LF	277	$1,108
Bike Lane Cross Over Locations (green dashed or solid paint)	$25	LF	106	$2,650
Bike Lane Signs & Cross Over Warning Signs (with core drilling)	$350	EA	0	$0
Modified Ladder Style Crosswalk Striping	$2,500	EA	1	$2,500
Stop Bar Paint	$2	LF	50	$100
Standard Pavement Markings (Arrows, School Xing, etc)	$100	EA	57	$5,700
Parking Stripes, Paint	$50	EA	18	$900
Wayfinding/Informative Signs	$350	EA	2	$700
Regulatory Signs (Stop signs, etc)	$350	EA	8	$2,800
			Signage & Pavement Marking Totals:	$18,760

Other Costs (55% total):				
Contingency:	20%	$128,497.60		
Bonding / Mobilization / Contractor Internal Management / As Builts:	10%	$64,248.80	Pre-markup Cost	$642,488
Engineering / Design:	12%	$77,098.56	Total Other Cost:	$353,368
Environmental Clearance & Permitting:	5%	$32,124.40		
Bid Support Services & Agency Construction Management:	3%	$19,274.64		
Traffic Management Services:	5%	$32,124.40	Grand Total Cost:	$995,856

Rounded Grand Total Cost:	**$1,000,000**
If done in conjunction with mid-term, assume only 75% of mid-term costs would be required (used in long term / built in mid-term)	**$2,925,000**
Total Project Cost if long term phase done in its entirety	**$3,925,000**

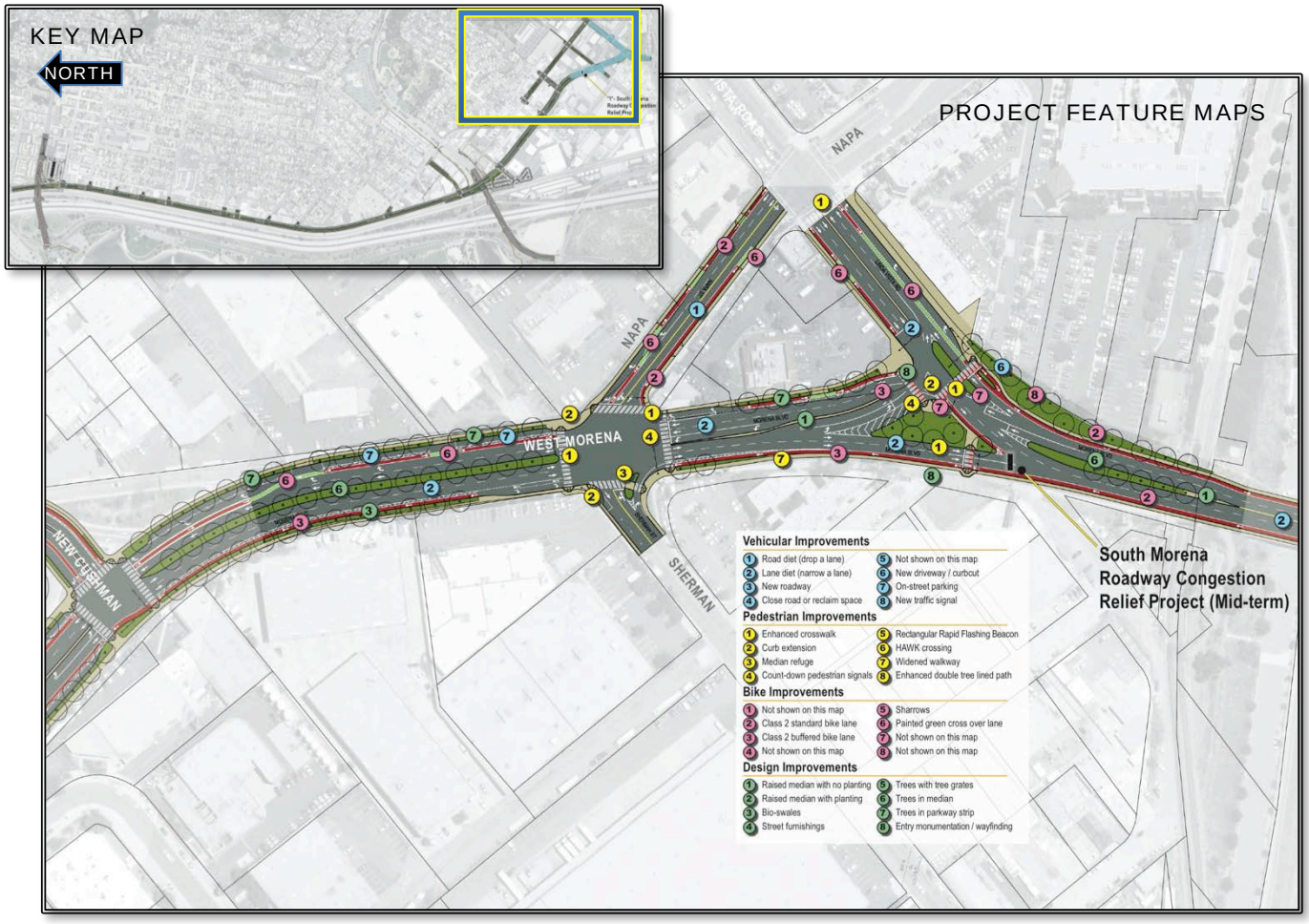
5.5.10 PROJECT "I-2"- South Morena Congestion Relief Project (Mid-term)

Project Vision: Though it is clear that the long-term solution discussed previously, is the best solution for relieving congestion in the area, fixing several multi-modal challenges and in supporting the proper mix of future land uses, this alternative will require the sequencing of new construction, road removal and development to take place, including lot consolidation, ROW vacationing, developer agreements and proper economic conditions. In case these sequential requirements are not resolved in a 5-10 year period, a less expensive and interim solution can help resolve several of the existing problems.

Project Features: Left turn movements from southbound Morena to Napa will not be allowed, but will be directed to two left turn movements at Linda Vista. The intersection will be made into a more standard right angle intersection, with the addition of crosswalks, painted merge lanes over bike lanes, traffic signals, and median reconfigurations to allow the evolution towards the long-term condition. Some on-street parking will also be developed.

Project Potential Funding Sources: This project may best be suited for a City of San Diego Capital Improvement Project, using infrastructure bonding and other forms of gas tax and local transportation development funds.

Primary Justification and Value: The area needs to accommodate more residential and mixed-use development. USD is poised to expand their campus. The major investment in transit facilities, warrants the use of other public and private money to provide the infrastructure needed to support these future beneficial land uses.



Project Name: South Morena Congestion Relief Project (mid-term) **Phase #:** I-2

Items	Unit Cost	Unit	Quantity	Sub-Total
Demolition				
Asphalt Roadway Surface	$3	SF	33,555	$100,665
Trees, shrubs, groundcover & soil	$3	SF	17,589	$43,973
Curb & Gutter	$5	LF	4,567	$22,835
Concrete Pavement	$3	SF	7,139	$21,417
Budget for Relocating Utility Boxes, Traffic Signal Boxes, & Wet / Dry Utility Line Relocations	$150,000	LS	2	$300,000
			Demolition Totals:	$488,890
New Paving				
New Full Depth AC Paving (base, compaction, fine grading & drainage with 4" new AC)	$10	SF	55,833	$558,330
Asphalt Paving Patching and Sealing for Minor Roadway Changes & Gutter to Road Infills	$2	SF	106,485	$212,970
Concrete Sidewalk	$7	SF	16,192	$113,344
6" Concrete Curb and 18" Gutter	$22	LF	3,667	$80,674
Pedestrian Bulb-out	$25,000	EA	6	$150,000
Median Curb Work	$15	LF	3,105	$46,575
Curb Ramps	$2,000	EA	14	$28,000
Driveway Ramps	$2,000	EA	5	$10,000
Upgraded Curb Ramps on Existing Sidewalks	$1,500	EA	2	$3,000
			New Paving Totals:	$1,202,893
Streetscape				
Parkway Strips (excludes trees but includes soils, mulch, groundcover & irrigation)	$5	SF	9,718	$48,590
Bio-swale / Bullbout Planter Areas with More Intensive Shrub & Irrigation Requirements	$15	SF	4,000	$60,000
Parkway Trees- 24" box (assumes backfill, small shrub planting, irrigation & root barriers)	$750	EA	24	$18,000
Parkway Trees- 36" box (assumes backfill, small shrub planting, irrigation & root barriers)	$1,250	EA	19	$23,750
Median Trees (8' x 8' planting area with shrubs, cobble, irrigation, soil, root barriers & 24" tree)	$500	EA	5	$2,500
Parkway Tree Grates (for tight walking areas)	$900	EA	8	$7,200
New Lighting Poles & Fixtures (2 per new intersection & 1 per 150lf of a block if area widened)	$10,000	EA	8	$80,000
Various Street Furnishings in Special Areas Only (benches & trash receptacles)	$15,000	EA	2	$30,000
			Landscape Totals:	$270,040
Signage & Pavement Markings				
Bike Lane/Sharrow Symbols Paint	$80	EA	37	$2,960
Bike Lane Paint	$2	LF	5,116	$10,232
Bike Lane 2' Chevron Striped Buffer Paint	$4	LF	1,108	$4,432
Bike Lane Cross Over Locations (green dashed or solid paint)	$25	LF	210	$5,250
Bike Lane Signs & Cross Over Warning Signs (with core drilling)	$350	EA	4	$1,400
Modified Ladder Style Crosswalk Striping	$2,500	EA	10	$25,000
Stop Bar Paint	$2	LF	395	$790
Standard Pavement Markings (Arrows, School Xing, etc)	$100	EA	63	$6,300
Parking Stripes, Paint	$50	EA	14	$700
Wayfinding/Informative Signs	$350	EA	2	$700
Linda Vista Entry Monument Relocation or Rebuild	$15,000	EA	1	$15,000
Regulatory Signs (Stop signs, etc)	$350	EA	4	$1,400
			Signage & Pavement Marking Totals:	$74,164
Enhanced Safety Measures				
Bike Detector Loop	$700	EA	4	$2,800
Special Pedestrian Countdown Timers	$2,500	EA	4	$10,000
Bike Jug Handle Left Turn Hold Areas	$10,000	EA	1	$10,000
Traffic Signals	$40,000	Per Pole	8	$320,000
			Safety Measure Totals:	$466,854

Other Costs (55% total):				
Contingency:	20%	$500,568.10		
Bonding / Mobilization / Contractor Internal Management / As Builts:	10%	$250,284.05	Pre-markup Cost:	$2,502,841
Engineering / Design:	12%	$300,340.86	Total Other Cost:	$1,376,562
Environmental Clearance & Permitting:	5%	$125,142.03		
Bid Support Services & Agency Construction Management:	3%	$75,085.22		
Traffic Management Services:	5%	$125,142.03	Grand Total Cost:	$3,879,403
			Rounded Grand Total Cost:	**$3,900,000**

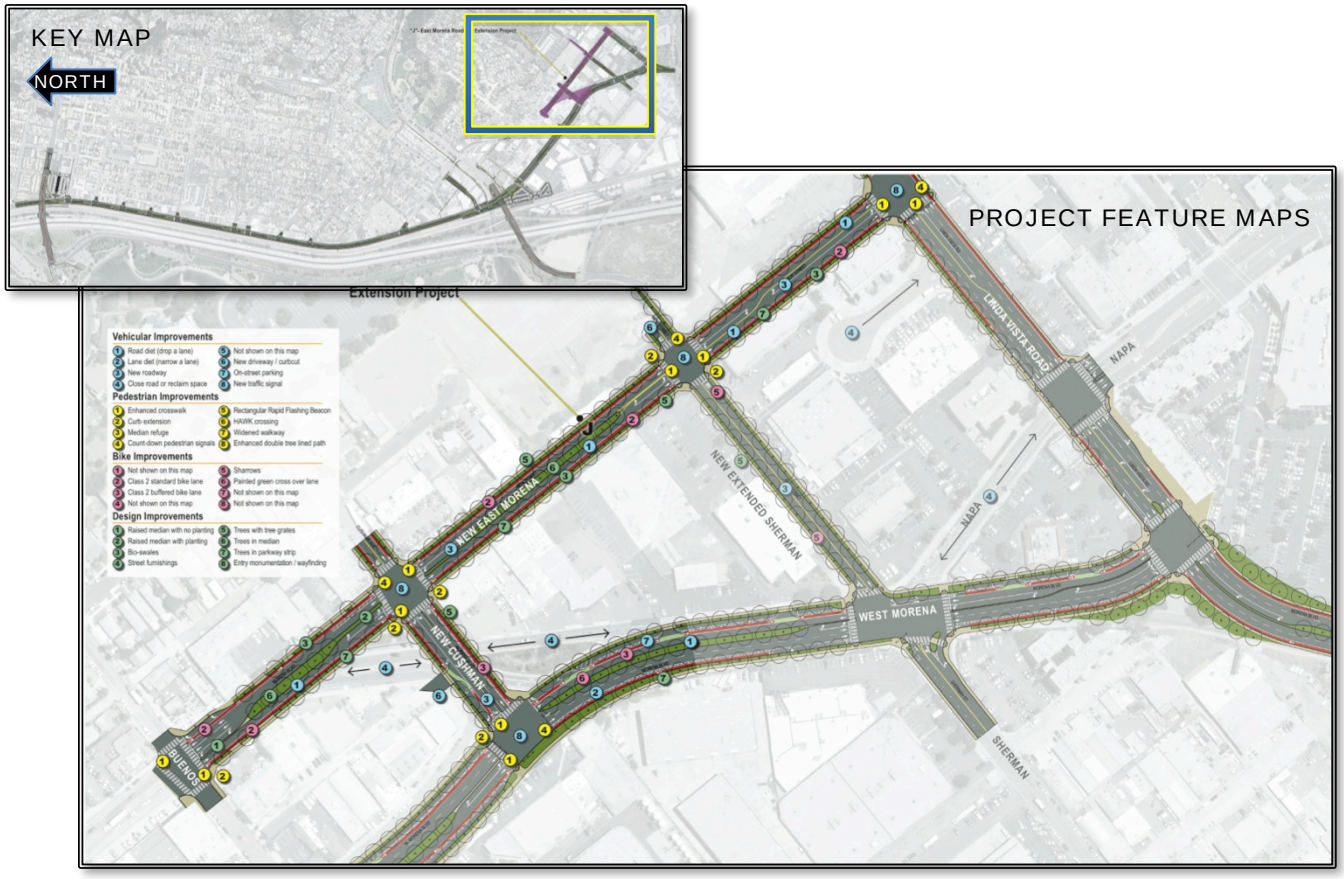
5.5.11 PROJECT "J"- East Morena Roadway Extension Project

Project Vision: Traffic originating from USD, Friars Road and Upper Linda Vista that are destined for I-5, all utilize the triangle area to access the on-ramps at Tecolote. However, this movement is out of direction and already congested. A new extension of Morena at Cushman down to Linda Vista Road, would bypass the triangle and provide a more direct route to the freeway. It would not impact the levels of use on Morena Boulevard any more than current conditions, since all of the above mentioned traffic, finds its way back onto Morena, north of Cushman anyway. The new roadway extension also creates development opportunity in this area since it currently lacks a road network. It also provides reclaimed right of way that can be used for new development.

Project Features: A one lane each direction would be created on this new roadway, with left turn protected lanes. A new intersection would be provided along Linda Vista road, helping to provide safer pedestrian crossing points that may be originating at USD, heading to the existing Morena LRT station. Full urban design treatments, safety improvements, ADA accessible facilities and bike lanes would be provided through this area. A pedestrian promenade should be extended into the new areas of the USD campus, allowing for direct bike and pedestrian connections to the LRT stations and the campus.

Project Potential Funding Sources: The reclaimed right of way by itself, should represent a large return for a private developer to provide the financial support needed to construct this roadway network. The projects located next to these roads stand to benefit mostly, and therefore should be required to construct and dedicate these roadways.

Primary Justification and Value: The future congestion relief and efficient traffic flow needed to support major infill development, must be able to rely on an efficient circulation layout. Pedestrian movements, accommodation of bike travel on roadways and traffic calming are all side benefits of this roadway extension project.



Project Name: East Morena Roadway Extension Project **Phase #:** J

Items	Unit Cost	Unit	Quantity	Sub-Total
Demolition				
Asphalt Roadway Surface	$3	SF	16,525	$49,575
Trees, shrubs, groundcover & soil	$3	SF	8,313	$20,783
Curb & Gutter	$5	LF	1,625	$8,125
Concrete Pavement	$3	SF	3,250	$9,750
Budget for Relocating Utility Boxes, Traffic Signal Boxes, & Wet / Dry Utility Line Relocations	$150,000	LS	1	$150,000
			Demolition Totals:	$238,233
New Paving				
New Full Depth AC Paving (base, compaction, fine grading & drainage with 4" new AC)	$10	SF	105,752	$1,057,520
Asphalt Paving Patching and Sealing for Minor Roadway Changes & Gutter to Road Infills	$2	SF	12,683	$25,366
Concrete Sidewalk	$7	SF	25,261	$176,827
6" Concrete Curb and 18" Gutter	$22	LF	5,201	$114,422
Pedestrian Bulb-out	$25,000	EA	8	$200,000
Median Curb Work	$15	LF	2,828	$42,420
Curb Ramps	$2,000	EA	22	$44,000
Driveway Ramps	$2,000	EA	8	$16,000
Upgraded Curb Ramps on Existing Sidewalks	$1,500	EA	4	$6,000
			New Paving Totals:	$1,682,555
Streetscape				
Parkway Strips (excludes trees but includes soils, mulch, groundcover & irrigation)	$5	SF	21,763	$108,815
Bio-swale / Bulbout Planter Areas with More Intensive Shrub & Irrigation Requirements	$15	SF	5,000	$75,000
Parkway Trees- 24" box (assumes backfill, small shrub planting, irrigation & root barriers)	$750	EA	108	$81,000
Parkway Trees- 36" box (assumes backfill, small shrub planting, irrigation & root barriers)	$1,250	EA	23	$28,750
Median Trees (8' x 8' planting area with shrubs, cobble, irrigation, soil, root barriers & 24" tree)	$500	EA	23	$11,500
Parkway Tree Grates (for tight walking areas)	$900	EA	50	$45,000
New Lighting Poles & Fixtures (2 per new intersection & 1 per 150lf of a block if area widened)	$10,000	EA	9	$90,000
Various Street Furnishings in Special Areas Only (benches & trash receptacles)	$15,000	EA	2	$30,000
			Landscape Totals:	$470,065
Signage & Pavement Markings				
Bike Lane/Sharrow Symbols Paint	$80	EA	18	$1,440
Bike Lane Paint	$2	LF	4,654	$9,308
Bike Lane 2' Chevron Striped Buffer Paint	$4	LF	604	$2,416
Bike Lane Cross Over Locations (green dashed or solid paint)	$25	LF	201	$5,025
Bike Lane Signs & Cross Over Warning Signs (with core drilling)	$350	EA	2	$700
Modified Ladder Style Crosswalk Striping	$2,500	EA	16	$40,000
Stop Bar Paint	$2	LF	500	$1,000
Standard Pavement Markings (Arrows, School Xing, etc)	$100	EA	45	$4,500
Parking Stripes, Paint	$50	EA	150	$7,500
Wayfinding/Informative Signs	$350	EA	5	$1,750
Regulatory Signs (Stop signs, etc)	$350	EA	15	$5,250
			Signage & Pavement Marking Totals:	$78,889
Enhanced Safety Measures				
Bike Detector Loop	$700	EA	12	$8,400
Special Pedestrian Countdown Timers	$2,500	EA	12	$30,000
Traffic Signals	$40,000	Per Pole	6	$240,000
			Safety Measure Totals:	$417,289

Other Costs (55% total):				
Contingency:	20%	$577,406.10		
Bonding / Mobilization / Contractor Internal Management / As Builts:	10%	$288,703.05	Pre-markup Cost:	$2,887,031
Engineering / Design:	12%	$346,443.66	Total Other Cost:	$1,587,867
Environmental Clearance & Permitting:	5%	$144,351.53		
Bid Support Services & Agency Construction Management:	3%	$86,610.92		
Traffic Management Services:	5%	$144,351.53	Grand Total Cost:	$4,474,897

Rounded Grand Total Cost: **$4,500,000**

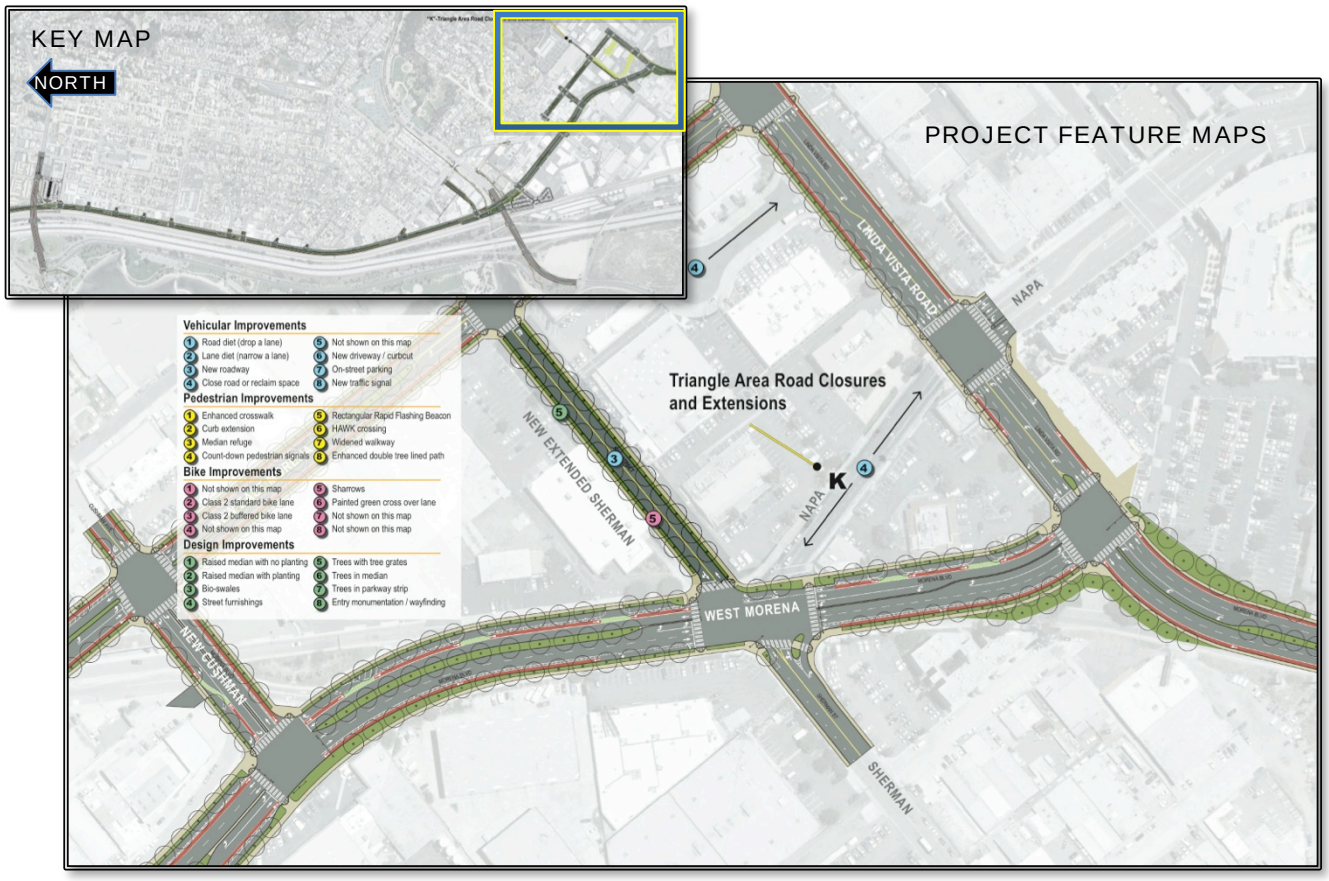
5.5.12 PROJECT "K"- Triangle Area Road Closures and Extensions

Project Vision: The triangle will be difficult to redevelop with higher intensity mixed infill development, that would be appropriate for the heavily transit supported area that if falls within. The geometry of the triangle and the fact that it is surrounded with congested traffic, indicates that a change is needed. With the implementation of the East Morena Extension, Napa Street from Linda Vista Road to West Morena, could be closed and reused for development. This remaining three sided intersection could be modified as a major entrance point into the development project for surface or structured parking. The existing cul-de-sac on Metro Street could also be removed and redeveloped.

Project Features: A roadway extension would be provided from Sherman Avenue at Morena Blvd, northward up to the new East Morena Boulevard. This extension could be a one lane each direction with left turn lanes. This street should function as a major pedestrian connection through the area, connecting the USD walkway promenade as part of Project "J", with the Tecolote and Morena LRT stations. A Class 3 Sharrow lane would be acceptable on this lower volume street, which should have pedestrian movement as its major focus. Retail uses supportive of major new campus development and adjacent housing, would benefit by this walking street that would also support local vehicle movements.

Project Potential Funding Sources: The reclaimed right of way by itself, should represent a large return for a private developer to provide the financial support needed to construct this roadway network. The projects located next to these roads stand to benefit mostly, and therefore should be required to construct and dedicate these roadways.

Primary Justification and Value: The area needs to accommodate more residential and mixed use development. USD is poised to expand their campus. The major investment in transit facilities, warrants the use of other public and private money to provide the infrastructure needed to support these future beneficial land uses.



Project Name: Triangle Area Road Closures and Extensions **Phase #:** K

Items	Unit Cost	Unit	Quantity	Sub-Total
Demolition * Assumed all demo by developer to prepare for a road ready surface				
Budget for Relocating Utility Boxes, Traffic Signal Boxes, & Wet / Dry Utility Line Relocations	$150,000	LS	2	$300,000
			Demolition Totals:	$300,000
New Paving				
New Full Depth AC Paving (base, compaction, fine grading & drainage with 4" new AC)	$10	SF	13,287	$132,870
Asphalt Paving Patching and Sealing for Minor Roadway Changes & Gutter to Road Infills	$2	SF	15,000	$30,000
Concrete Sidewalk	$7	SF	9,540	$66,780
6" Concrete Curb and 18" Gutter	$22	LF	954	$20,988
Pedestrian Bulb-out	$25,000	EA	8	$200,000
Curb Ramps	$2,000	EA	4	$8,000
Driveway Ramps	$2,000	EA	4	$8,000
Upgraded Curb Ramps on Existing Sidewalks	$1,500	EA	4	$6,000
			New Paving Totals:	$472,638
Streetscape				
Parkway Strips (excludes trees but includes soils, mulch, groundcover & irrigation)	$5	SF	4,172	$20,858
Bio-swale / Bulbout Planter Areas with More Intensive Shrub & Irrigation Requirements	$15	SF	5,000	$75,000
Parkway Trees- 24" box (assumes backfill, small shrub planting, irrigation & root barriers)	$750	EA	24	$18,000
Parkway Trees- 36" box (assumes backfill, small shrub planting, irrigation & root barriers)	$1,250	EA	12	$15,000
Median Trees (8' x 8' planting area with shrubs, cobble, irrigation, soil, root barriers & 24" tree)	$500	EA	0	$0
Parkway Tree Grates (for tight walking areas)	$900	EA	40	$36,000
New Lighting Poles & Fixtures (2 per new intersection & 1 per 150lf of a block if area widened)	$10,000	EA	20	$200,000
Various Street Furnishings in Special Areas Only (benches & trash receptacles)	$15,000	EA	2	$30,000
			Landscape Totals:	$394,858
Signage & Pavement Markings				
Bike Lane/Sharrow Symbols Paint	$80	EA	20	$1,600
Bike Lane Signs & Cross Over Warning Signs (with core drilling)	$350	EA	4	$1,400
Modified Ladder Style Crosswalk Striping	$2,500	EA	4	$10,000
Stop Bar Paint	$2	LF	250	$500
Standard Pavement Markings (Arrows, School Xing, etc)	$100	EA	35	$3,500
Parking Stripes, Paint	$50	EA	80	$4,000
Wayfinding/Informative Signs	$350	EA	2	$700
Regulatory Signs (Stop signs, etc)	$350	EA	2	$700
			Signage & Pavement Marking Totals:	$22,400
Enhanced Safety Measures				
Bike Detector Loop	$700	EA	2	$1,400
Special Pedestrian Countdown Timers	$2,500	EA	2	$5,000
Traffic Signals	$40,000	Per Pole	3	$120,000
			Safety Measure Totals:	$168,200

Other Costs (55% total):				
Contingency:	20%	$271,619.10		
Bonding / Mobilization / Contractor Internal Management / As Builts:	10%	$135,809.55	Pre-markup Cost	$1,358,096
Engineering / Design:	12%	$162,971.46	Total Other Cost:	$746,953
Environmental Clearance & Permitting:	5%	$67,904.78		
Bid Support Services & Agency Construction Management:	3%	$40,742.87		
Traffic Management Services:	5%	$67,904.78	Grand Total Cost:	$2,105,048
			Rounded Grand Total Cost:	**$2,100,000**