CLAIREMONT COMPLETE CORRIDORS

Existing Conditions Report

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Prepared For

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Table of Contents

List of Figures

List of Tables

Executive Summary

Project Description

The Clairemont Complete Corridors project is a collaborative effort between SANDAG, Caltrans, MTS, and the City of San Diego, which aims to enhance access to the newly opened Clairemont Drive Trolley Station and Tecolote Road Trolley Station and develop multimodal improvement options along Morena Boulevard and Clairemont Drive. Study components include assessing existing transportation infrastructure and services, identifying needs and opportunities, and recommending mobility improvements. The study area includes Morena Boulevard from Gesner Street to Linda Vista Road and Clairemont Drive from Mission Bay Drive to Denver Street, covering parts of the Clairemont Mesa and Linda Vista Community Planning Areas and the eastern part of Mission Bay Park within the City of San Diego.

The Blue Line Trolley departs the Tecolote Road Trolley Station.

Bike lockers at the Trolley stations provide a secure place to store a bicycle, helping to facilitate multimodal trips.

The transportation network in the Clairemont Mesa and Linda Vista communities heavily relies on Morena Boulevard and Clairemont Drive. As essential links, these roads facilitate the daily commute and mobility of residents, workers, and visitors. To ensure a more comfortable and convenient experience for all users, the Clairemont Complete Corridors project identifies opportunities to remove access barriers and provide sustainable transportation options. These improvements will not only enhance mobility and safety but also contribute to the creation of a more competitive and appealing transportation system.

The Mid-Coast Trolley Extension of the Blue Line opened in November 2021, offering expanded transit options that are accessible within the study area through the Clairemont Drive and Tecolote Road Stations. The stations offer new opportunities for people in other parts of the region to access nearby destinations, including Mission Bay Park, University of San Diego, and the variety of industrial and commercial businesses along Morena Boulevard. Ensuring comfortable and convenient access to the stations and connecting routes to nearby destinations is essential to realizing the potential of this regional investment.

Interstate 5 and the rail corridor present significant barriers to mobility, particularly for people with mobility challenges, pedestrians, and cyclists. The Clairemont Complete Corridors recommendations will seek to strengthen multimodal connections across these facilities, improving user comfort and safety while minimizing the burden on users.

The study is an opportunity to progress the Draft Clairemont Mesa Community Plan Update Mobility Element policies, the Mid-Coast Mobility Hub strategies, and vision of the 2021 Regional Plan. The

prioritized list of recommendations resulting from this effort will aid in the future pursuit of grant funding to help implement identified solutions.

Existing Issues and Opportunities

In any planning process, it is necessary to first develop a comprehensive understanding of the transportation networks serving the study area. To achieve this, an in-depth analysis was undertaken to document the existing transportation infrastructure and services, including assessments of connectivity, demand, quality, and user safety for the four core travel modes: walking, cycling, transit use, and driving. This analysis provides a foundational starting point for developing transportation strategies and solutions.

The existing conditions stage also involved a review of recent planning documents with infrastructure recommendations and/or policy language that may be influential to the Clairemont Complete Corridors effort. The analysis and document review are complemented by discussions with agency representatives that oversee facilities within the study area: the City of San Diego, MTS, Caltrans, and SANDAG. These entities plan, implement, maintain, and operate infrastructure and services within the project study area. The agencies are also in regular contact with users of the facilities, giving them unique perspectives of issues, needs, and opportunities. Discussions with community members through the Clairemont and Linda Vista Community Planning Groups further informed the identification of needs and opportunities for enhancements. The findings from these pieces together serve as the basis for crafting recommendations.

Figure ES.1 highlights key findings from the existing conditions analysis, which are summarized in the remainder of this section.

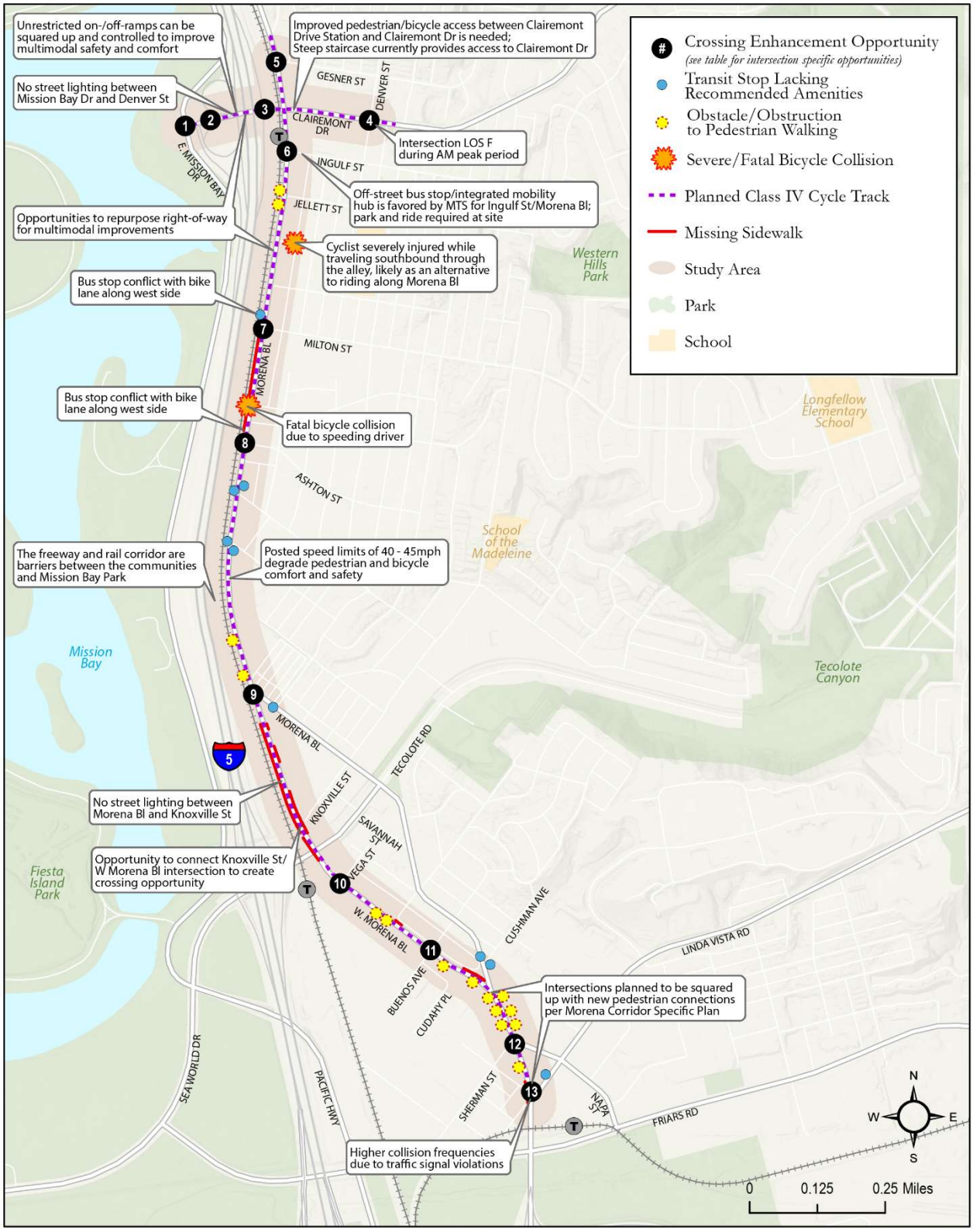
Remove walkway obstructions and provide continuous sidewalks supported by enhanced intersection crossings. Both sides of Morena Boulevard are missing sidewalks in multiple locations. Additionally, utilities, parked vehicles, and other physical obstacles currently obstruct walkways. Completing the sidewalk network and removing obstructions should be a priority.

Pedestrian safety and accessibility can be further improved by ensuring all marked crosswalks are high visibility and supported by curb ramps with detectable warning surfaces. Providing advance stop bars and pedestrian countdown signal heads at signalized intersections will also contribute to improved pedestrian safety.

Additional pedestrian safety enhancement features that may benefit the Clairemont Complete Corridors study area include:

- Lead pedestrian intervals (LPI) give pedestrians a 3-5 second head start while crossing an intersection before the parallel vehicle signal turns green.
- Curb extensions shorten pedestrian crossing distances, make pedestrians more visible to drivers, and help facilitate slower vehicle turning speeds.
- Mid-block crossings can be used along stretches of the corridor where signalized intersections are infrequent. Mid-block crossing safety can be maximized by including features such as pedestrian signals, pedestrian refuges, and curb extensions.
- No right-turn on red restrictions can be combined with LPIs to further improve pedestrian safety by eliminating a potential conflict with right turning vehicles as pedestrians establish themselves in the intersection

Figure ES.1 - Summary of Existing Conditions Findings



Build on the planning work completed to date and better utilize the right-of-way to provide context appropriate bicycle facilities. Morena Boulevard includes posted speed limits of 40 – 45 miles per hour, unsuitable conditions for bicycle travel without a separated facility. Speeds are slower along Clairemont Drive, however, the high traffic volumes, five to six vehicle travel lanes, and uncontrolled turning vehicle movements result in a high stress bicycling environment.

Existing bicycle facilities along Morena Boulevard are currently only provided in the northbound direction and are not suitable with the 40 – 45 miles per hour posted speed limit.

Further, the collision analysis indicated the only serious injury collisions (severe or fatal collisions) recently reported involved bicyclists. The fatal collision occurred mid-block, involving a bicyclist traveling northbound along Morena Boulevard where no dedicated bicycle facility or shoulder is available. The driver was at-fault while traveling at unsafe speeds. A cyclist was severely injured in a separate incident while traveling southbound along the alley just east of Morena Boulevard, possibly as an alternative to the conditions along Morena Boulevard. These collisions could have been avoided with the provision of appropriate infrastructure.

The conditions of the bicycling environment are well known, with multiple planning documents recommending Class IV cycle tracks along the entirety of the study area corridors. The documents recognize space from the wide medians is underutilized and could be repurposed to provide continuous separated bicycle facilities. Along Morena Boulevard, a two-way cycle track along the west side of the road was previously recommended. Two options were proposed for consideration along Clairemont Drive: 1) one-way cycle tracks in each direction, or 2) two-way cycle track along the south side of the road.[1]

Improve connections and minimize travel distances to the Clairemont Drive and Tecolote Road Trolley Stations. Addressing the issues and opportunities previously discussed will help improve access to the trolley stations, however, additional improvements could further benefit users.

Providing a safe crossing and sidewalk north of the Tecolote Road Trolley Station will make for a more direct connection for people walking from the north.

Pedestrians traveling between the Clairemont Drive Station and Mission Bay Park currently have two options: a staircase connects the southside of Clairemont Drive to the westside of Morena Boulevard, however, stairs are not a feasible option for all pedestrians. The second option requires utilizing Ingulf Street and Denver Street, which adds 0.33-miles (approximately 7-minute walk) compared to the stairs. Making a more direct and ADA accessible pathway would reduce

[1] Mid-Coast Mobility Hub Strategies, SANDAG (2017); Morena Corridor Specific Plan, City of San Diego (2019); Draft Clairemont Community Plan Update – Mobility Element, City of San Diego (2021); Project Study Report – Active Transportation Improvements Across I-5, Caltrans (2022)

pedestrian travel distance and help provide more equitable access to the station and park. Development of the property at the northeast corner of the Morena Boulevard / Ingulf Street intersection is an opportunity to implement a more direct and accessible pedestrian connection.

Knoxville Street currently terminates as a cul-de-sac just east of W Morena Boulevard. Creating an intersection with the two roads controlled by a signal would help users traveling from north of the Tecolote Road Trolley Station reach the station with a more direct route than crossing at the W Morena Boulevard / Vega Street intersection. A controlled mid-block crossing could provide a similar benefit as an alternative.

Microtransit and micromobility devices could provide additional options for people to connect between Mission Bay Park and the Clairemont Drive Trolley Station and surrounding neighborhoods. On-demand shuttles during high demand periods (e.g., weekends and summer months) could run between the Bay and Station, expediting travel times. Micromobility devices such as shared scooters or e-bikes could similarly accelerate travel for transit users or people walking, however, supporting infrastructure needs to be in place for users to feel comfortable using these options.

1.0 Introduction

1.1 Project Description

The Clairemont Complete Corridors study serves to understand existing transportation infrastructure and services, identify needs and opportunities, and recommend potential mobility improvements. The study area, depicted in **Figure 1.1**, is located along Morena Boulevard from Gesner Street to Linda Vista Road, and along Clairemont Drive from Mission Bay Drive to Denver Street. These facilities fall within the City of San Diego's Clairemont Mesa and Linda Vista Community Planning Areas and eastern part of Mission Bay Park.

Recommended multimodal solutions will seek to enhance mobility, improve safety, and increase access throughout the study area. Morena Boulevard and Clairemont Drive are important links in the transportation network for people that live, work, or visit the Clairemont Mesa and Linda Vista communities and Mission Bay Park. Maximizing user comfort and convenience while removing access barriers will help create a system of transportation choices where sustainable travel options are competitive and appealing.

The Mid-Coast Trolley Extension of the Blue Line opened in November 2021, offering expanded transit options that are accessible within the study area via the Clairemont Drive and Tecolote Road Stations. The stations also create new opportunities to help people from communities in other parts of the region access nearby destinations such as Mission Bay Park, University of San Diego, and the variety of industrial and commercial businesses along Morena Boulevard. Ensuring people can comfortably and conveniently access the stations and connect to nearby destinations will help realize the potential of this regional investment.

Conversely, Interstate 5 and the rail corridor can act as barriers to mobility, particularly for people with mobility challenges as well as those walking and biking. Strengthening multimodal connections across these facilities will improve user comfort and safety while minimizing their burden.

The study is an opportunity to help further progress the Draft Clairemont Mesa Community Plan Update Mobility Element policies, the Mid-Coast Mobility Hub strategies, and vision of the 2021 Regional Plan. The Clairemont Complete Corridors study will result in a prioritized list of recommendations that will aid in the future pursuit of grant funding to help implement identified solutions. Due to the regional nature of many destinations surrounding the study area, mobility improvements will benefit not only the adjacent communities, but also users from the surrounding areas and broader region.

1.2 Report Purpose

This Existing Conditions Report serves to understand conditions as they are today in terms of transportation network connectivity, demand, quality of the infrastructure and services, and safety of the users for the four core travel modes (walking, bicycling, using transit, and driving). This effort also entails a review of recent planning documents that provide infrastructure recommendations and policy language that may be influential to the Clairemont Complete Corridors effort. The analysis and document review are complemented by discussions with agencies that operate or oversee infrastructure within the study area: the City of San Diego, MTS, Caltrans, and SANDAG. Community engagement will further inform the understanding of needs and opportunities for enhancements. Together, these pieces will serve as the basis for crafting recommendations.

Figure 1.1 - Clairemont Complete Corridors Study Area

1.3 Currently Planned Transportation Improvements

The following documents were reviewed to understand planned infrastructure and supporting policy language influential to the Clairemont Complete Corridors study area:

- Morena Corridor Specific Plan, City of San Diego (2019)
- Systemic Safety: The Data Driven Path to Vision Zero, City of San Diego (2019)
- Draft Clairemont Community Plan Update Mobility Element, City of San Diego (2021)
- Mid-Coast Mobility Hub Strategies, SANDAG (2017)
- Project Study Report – Active Transportation Improvements across I-5, Caltrans (2022)
- Bicycle Master Plan, City of San Diego (2015)
- San Diego Forward: The Regional Plan, SANDAG (2021)

Appendix A provides brief document summaries and excerpts of relevant policies. **Table 1.1** documents the infrastructure recommendations and their status (complete, planned, or superseded by a newer document), while **Figure 1.2** provides a visual summary of the recommendations.

Table 1.1 - Currently Planned Transportation Improvements

	Recommendation	Status
Morena Corridor Specific Plan		
1	Reconfigure Morena Blvd/West Morena Blvd from Ingulf St to Knoxville St (two lanes southbound and two lanes northbound with left-turn pockets at intersections)	Complete
2	Two-way cycle track with mountable curb or flexible delineators along Morena Blvd/West Morena Blvd from Ingulf St to Knoxville St	Planned
3	Where feasible, provide on-street parking along the west side of Morena Blvd/West Morena Blvd from Ingulf St to Knoxville St	Planned
4	Reconfigure the 'Y' intersection at Morena Blvd and West Morena Blvd by squaring up the Morena Blvd approach of the intersection to a standard "T" intersection (consider a roundabout)	Planned
5	Extend the two-lane collector and create a new "T" intersection at Knoxville St and West Morena Blvd	Planned
6	Road diet along West Morena Blvd from Vega St to Cushman Ave (remove one southbound lane and maintain two northbound lanes with left-turn pockets at intersections)	Planned
7	Two-way cycle track along the west side of West Morena Blvd from Vega St to Cushman Ave	Planned
8	Two-way cycle track along the west side of Morena Blvd from Cushman Ave to Linda Vista Rd	Planned
9	Reconfigure intersection of Linda Vista Rd and West Morena Blvd to square up intersection and allow more turning movements and pedestrian crossings	Planned
10	Extend Cushman Ave to West Morena Blvd and provide bike lanes along the Cushman Ave extension	Planned
11	Extend Morena Blvd to Linda Vista Rd and continue bike lanes along the Morena Blvd extension	Planned

Table 1.1 - Currently Planned Transportation Improvements

	Recommendation	Status
12	Extend Sherman St to connect to the extension of Morena Blvd as a two-lane collector with a two-way left turn lane	Planned
13	Extend Dorcas St so that it continues west of West Morena Blvd and re-establishes street grid	Planned
14	Create a new public street or private driveway parallel to West Morena Blvd that is located on the west side of West Morena Blvd that would extend from Buenos Ave to Vega St and intersect with the Dorcas St extension	Planned
15	Extend Vega St so that it continues south of West Morena Blvd and re-establishes street grid	Complete
16	Create a one-block street segment between Buenos Ave and Dorcas St that is parallel to West Morena Blvd and another new public street or private driveway	Planned
17	Vacate Napa St between Morena Blvd and Linda Vista Rd as part of new development	Planned
18	Vacate Morena Blvd between West Morena Blvd and Morena Pl to allow for a two-lane collector with a left turn lane consistent with the Street Design Manual and to help establish a street grid	Planned
19	Vacate Morena Blvd between the extension of Morena Blvd and West Morena Blvd. Cushman Ave extension bisects this vacated segment.	Planned
20	Signalize intersection of E. Mission Bay Drive and Clairemont Drive and restripe northbound approach to include a dedicated right-turn lane	Planned
21	Signalize intersection of Morena Boulevard and Jellett Street	Planned
22	Permit left-turns from southbound Morena Boulevard onto eastbound Asher Street	Planned
23	Establish a mid-block pedestrian connection across West Morena Boulevard, between Vega Street and Buenos Avenue, with a continental crosswalk and pedestrian hybrid beacon	Planned
24	Implement continuous sidewalk throughout study area, with an emphasis on the roadways of Morena Boulevard and West Morena Boulevard where intermittent sidewalks are currently present, and all new roadways	Planned
25	Provide a Class I multi-use path connection from the intersection of Morena Boulevard and Sherman Street to the USD parking lot to the north	Planned
Clairemont CPU Mobility Element - Draft		
1	Class IV two-way cycle track along the west side of Morena Boulevard/W Morena Boulevard, from Jutland Dr to Tecolote Rd	Superseded by Morena Corridor SP #2
2	Class I multi-use path along Santa Fe St from Rose Canyon Bikeway to Rose Creek Trail	Complete
3	Class I multi-use path along Santa Fe St from Damon Ave to Garnet Ave	Planned

Table 1.1 - Currently Planned Transportation Improvements

	Recommendation	Status
4	Class IV one-way cycle track along Damon Ave from I-5 to Santa Fe St	Planned
5	Class I multi-use path along Garnet Ave/Balboa Ave from I-5 to Clairemont Dr	Planned
6	Extend Knoxville Street to W Morena Boulevard as a full street connection	Planned
7	Class IV one-way cycle track along Clairemont Drive	Planned
8	Class II bike lanes along Milton Street	Planned
Regional Mobility Hub Implementation Strategies		
Clairemont Drive Station		
1	Provide landscaped buffered sidewalk for pedestrians, bicyclists, and low speed shared mobility options along Mission Bay Dr and Clairemont Dr to improve access to and from the station (extent undefined)	Complete
2	Improve crossings with high visibility markings and eliminate free right turns along Clairemont Dr especially at the freeway on/off ramps to increase pedestrian safety around the station (extent undefined)	Planned
3	Two-way separated cycle track on the west side of Morena Blvd with 2-stage turn boxes at intersections to facilitate safe travel for bikes, kick scooters, and other rideables (extent undefined)	Planned
4	Two-way cycle track along Clairemont Dr (extent undefined)	Planned
5	Bike lanes on Ingulf St to enable safe bike access between the station, Mission Bay bike path, and W Morena Blvd cycle track (extent undefined)	Planned
6	Other improvements: • WiFi and USB Charging ports at station and bus stops • Real-time availability of shared mobility options via mobile app, website, or interactive kiosks at the station, nearby retail area, and Mission Bay Park • Drop zones for shared dockless bikes and electric scooters at the station and nearby destinations • Secure parking options and repair tools for personal bikes, scooters, and other rideables at the Trolley station and new transit-oriented development on Morena Blvd and Ingulf St • Electric bikeshare and moped scootershare program with dedicated moped parking to help people travel to destinations that are uphill or beyond a 5 minute bike ride • Dedicated carshare parking spaces at developments near the station, neighborhood commercial centers, and on-street • Dedicated pick-up/drop-off area with signage near the station and nearby residential complexes • Encourage low speed, electric vehicles by reducing speeds on Morena Blvd	Planned

Table 1.1 - Currently Planned Transportation Improvements

	Recommendation	Status
	• EV charging stations at the station and throughout the mobility hub for neighborhood electric vehicles (NEVs), personal electric vehicles, e-bikes and scooters, and electric carshare • Smart parking solutions at the station to provide people with real-time parking availability and allow users to reserve spaces in advance • Dynamic wayfinding signage along major corridors such as Mission Bay Dr, Morena Blvd, and Clairemont Dr	
Tecolote Station		
1	Provide improved walkways for pedestrians along Tecolote Rd and Morena Blvd to improve access to and from the Trolley station (extend undefined)	Planned
2	Improve pedestrian mobility at intersections along Morena Blvd and Tecolote Rd by adding crosswalks, median refuges, and curb extensions (extent undefined)	Planned
3	Two-way separated cycle track along the west side of W Morena Blvd with 2-stage turn boxes at intersections and bike channels on stairs connecting the station to Tecolote Rd (extent undefined)	Planned
4	Upgrade existing Class II bike lanes to a Class IV cycle track along Sea World Dr, E Mission Bay, and Fiesta Island Rd to provide safe bike access to the Trolley station (extent undefined)	Planned
5	Other improvements: • WiFi and USB charging ports at station and bus stops • Real-time information and availability of nearby mobility options via a mobile app and interactive kiosks at the Trolley station, USD campus, and commercial centers in Linda Vista • Designated drop zones for shared dockless bikes and electric scooters at the station and nearby destinations • Moped scootershare program to help passengers travel to destinations that require uphill travel or are located farther than a 5 minute bike ride such as the USD campus • Dedicated carshare parking spaces at the station, USD, other employment areas, and on-street • Convenient and safe pick-up/drop-off areas with signage at the station, USD, and nearby commercial areas for on-demand shuttles and other pooled rideshare options • Deploy low speed neighborhood electric vehicle shuttles to offer short-distance connections between the Tecolote Village, Artisian, and Employment Districts of the Morena Specific Plan • EV charging stations at the station and throughout the mobility hub	Planned

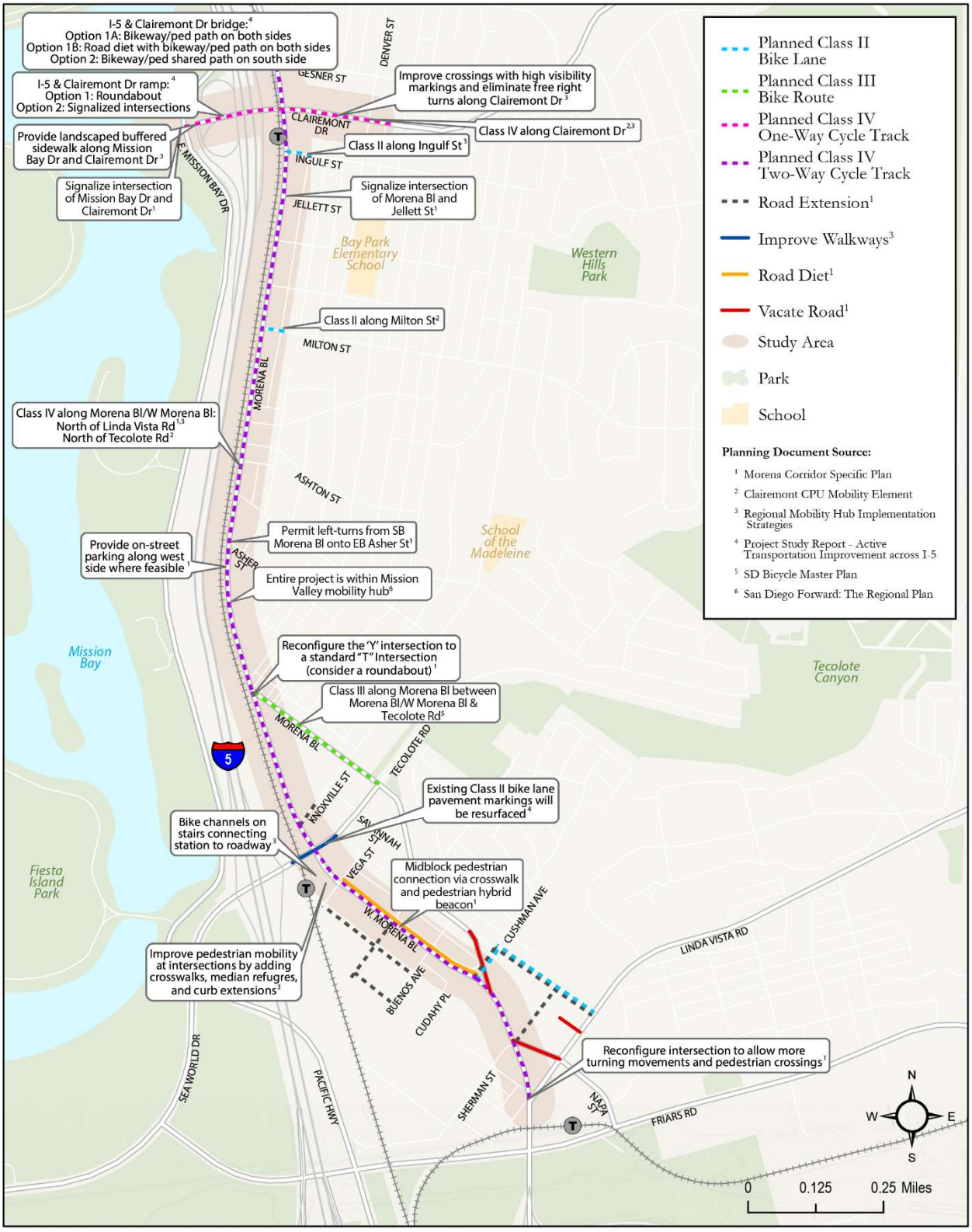
Table 1.1 - Currently Planned Transportation Improvements

	Recommendation	Status
	• Smart parking solutions at the station and USD campus to provide real-time parking availability, carpool priority, and the ability to reserve spaces in advance • Establish areas near the station such as the north side of Vega St to hail rideshare services during peak hours and stage mobile retail/package delivery services during non-peak hours • Multi-modal digital wayfinding displays along major corridors like Morena Blvd, Sea World Dr, and Tecolote Dr	
Project Study Report – Active Transportation Improvements across I-5		
Location B: I-5 & Clairemont Dr		
1	Bridge Option 1A: Bikeway/Ped path on both sides Restripe to provide three 11-foot-wide traffic lanes, a 2-foot-wide buffer with channelizers, and a 5-foot-wide, class IV bikeway in each direction. A 7-foot-wide raised sidewalk is provided with upgraded bridge rail and chain link fence in each direction. No shoulder is provided for either direction.	Proposed for Consideration
2	Bridge Option 1B: Road Diet option with bikeway/Ped path on both sides Restripe eastbound and westbound traffic lanes on the bridge to provide one 12-foot-wide through lane, one 12-foot-wide left turn lane, an 8-foot-wide shoulder, a 2-foot-wide buffer, and a 6-foot-wide class IV bikeway in each direction. A 7-foot-wide raised sidewalk is provided with upgraded bridge rail and chain link fence in each direction.	Proposed for Consideration
3	Bridge Option 2: Bikeway/Ped shared path on south side Restripe to provide a 12-foot-wide, two-way class IV bikeway and raised pedestrian path on the southside of the bridge. The shared path is separated from the traffic by a 2-foot-wide concrete barrier. Standard 12-foot-wide traffic lanes and 4-foot-wide shoulders are provided.	Proposed for Consideration
4	Ramp and Street Option 1: Roundabout Roundabout on Clairemont Drive near Mission Bay Drive just west of the I-5 overcrossing with 4 free-flow entrances/exits: 2 connecting the southbound I-5 interchange ramps, 1 connecting Mission Bay Drive, and 1 connecting Clairemont Drive.	Proposed for Consideration
5	Ramp and Street Option 2: Signalized Intersections Convert the existing stop-controlled and free-flow intersections into signalized intersections at ramp terminals and realign southbound I-5 on and off ramp termini to allow vehicle movements and pedestrian and bike crossing in separate signal cycles.	Proposed for Consideration
6	Additional improvements include: replacing TMS elements including cabinets, poles, conductors, conduits, and signal indicators, connecting all TMS elements to a fiber optic cable system, replacing limit line loops at all intersections, providing a midblock crossing if Ramp and Street Option 1 is chosen, installing a camera system with dual cameras at the overcrossing, and providing bicycle detection at the signalized intersections.	Proposed for Consideration

Table 1.1 - Currently Planned Transportation Improvements

	Recommendation	Status
	Location C: I-5 & Tecolote Rd	
1	East of the overcrossing the existing class II bike lane pavement markings will be resurfaced along Tecolote Road to Morena Boulevard.	Proposed for Consideration
San Diego Bicycle Master Plan		
1	Class II along Morena Blvd from Gesner St to W. Morena Blvd (S)	Superseded by Morena Corridor SP #2
2	Class III along Morena Blvd from W. Morena Blvd to Tecolote Rd	Planned
San Diego Forward: The 2021 Regional Plan		
1	Western study area (around I-5 and Balboa Ave intersection) part of Pacific Beach Mobility Hub	Planned
2	Southwest study area part of Mission Valley Mobility Hub	Planned

Figure 1.2 - Currently Planned Improvements



2.0 Analysis Methodology

This chapter outlines the various methodologies utilized to analyze the mobility network within the Clairemont Complete Corridors study area.

Table 2.1 identifies the performance measures used to evaluate each transportation mode. The remaining sections of this chapter further detail the approaches employed to assess each mode (pedestrian, bicycle, transit, and vehicular).

Table 2.1 - Multimodal Performance Measures

Performance Measure	Pedestrian	Bicycle	Transit	Vehicular
Connectivity	Sidewalk, curb ramp, and marked crosswalk inventory	Existing bicycle facilities	Existing transit routes and stops	Functional roadway classification
Demand	AM/PM peak period intersection counts	AM/PM peak period intersection counts	Boardings and alightings	AM/PM peak hour intersection counts
Quality	Pedestrian environment quality evaluation (PEQE)	Bicycle level of traffic stress (LTS)	Stop/station amenities; on-time performance	Roadway segment and intersection level of service
Safety	Pedestrian collisions	Bicycle collisions	N/A	Vehicular collisions

Source: CR Associates (2023)

2.1 Pedestrian

2.1.1 Pedestrian Network Connectivity

The presence of existing sidewalks, curb ramps, and marked crosswalks were inventoried along Clairemont Drive and Morena Boulevard/W Morena Boulevard within the project study area. Quarter- and half-mile travelsheds were depicted from the two Blue Line Trolley stops within the study area to demonstrate locations that could be accessed via 5- or 10-minute walks, respectively. This information is presented within Section 5.1 Transit Connectivity.

2.1.2 Pedestrian Demand

AM/PM peak hour pedestrian intersection counts were collected at the thirteen study area intersections.

2.1.3 Pedestrian Environmental Quality Evaluation (PEQE)

The quality of all roadway segments and marked crossing locations within the project study area were evaluated using the Pedestrian Environment Quality Evaluation (PEQE) methodology. This approach takes into consideration variables that may influence a pedestrian's comfort or safety, such as the separation from vehicular travel, lighting, posted speed limit, type of traffic control, curb ramps, physical obstructions, and the presence of other operational and physical features.

Table 2.2 outlines the PEQE evaluation system. The quality of the pedestrian environment quality is categorized as High (> 6 points), Medium (4 – 6 points), or Low (< 4 points). The PEQE analysis results (score and rating) are presented in tabular and mapped formats for each facility scored.

Table 2.2 - Pedestrian Environmental Quality Evaluation Scoring

Facility Type	Measure	Description/Feature	Scoring
Segment between two intersections	Horizontal Buffer	Between the edge of auto travel way and the edge of clear pedestrian zone	0 point: < 6 feet 1 point: 6 - 14 feet 2 points: > 14 feet or vertical buffer
	Lighting		0 point: below standard/requirement 1 point: meet standard/requirement 2 points: exceed standard/requirement
	Clear Pedestrian Zone	5' minimum	0 point: has obstructions 2 points: no obstruction
	Posted Speed Limit		0 point: > 40 mph 1 point: 30 - 40 mph 2 points: < 30 mph
Maximum	8 points		
Intersection by Leg	Physical & Operational Features	▪ High Visibility Crosswalk ▪ Raised Crosswalk ▪ Advanced Stop Bar ▪ Curb Extension ▪ Pedestrian Signage ▪ No-Turn on Red Sign/Signal ▪ Countdown Signal ▪ Pedestrian Lead Interval	0 point: 0 features 1 point: 1 feature 2 points: 2 features 3 points: 3 features 4 points: ≥ 4 features
	Curb Ramp		0 point: no ramps, no truncated domes 1 point: ramps only, no truncated domes 2 points: meet standard/requirement
	Traffic Control		0 point: no control 1 point: signalized (permissive left-turn receiving leg) / side-street stop controlled 2 points: signalized (protected left-turn receiving leg) / all-way stop / roundabout
Maximum	8 points		
Mid-block Crossing	Visibility		0 point: w/o high visibility crosswalk 2 points: with high visibility crosswalk
	Crossing Distance		0 point: no treatment 2 points: bulb out or median refuge
	ADA		0 point: no ramps, no truncated tomes 1 point: ramps only, no truncated domes 2 points: meets standard/requirement
	Traffic Control		0 point: no control 1 point: flashing beacon 2 points: signal/hybrid beacon/HAWK
Maximum	8 points		

Source: CR Associates (2023)

2.1.4 Pedestrian Safety

Vehicle-pedestrian collision data was obtained from the UC Berkeley's Transportation Injury Mapping System (TIMS) for the five-year period from January 2017 to December 2021. This data was mapped to display pedestrian-involved collision locations within the study area and analyzed to identify potential trends.

2.2 Bicycle

2.2.1 Bicycle Network Connectivity

Bicycle network connectivity was assessed by identifying the presence of existing bicycle facilities. Quarter- and half-mile travelsheds were depicted from all transit stops within the study area to demonstrate locations that could be accessed via 2- to 5-minute bike ride, respectively. This information is presented within Section 5.1 Transit Connectivity.

2.2.2 Bicycle Demand

Bicycle demand was evaluated by collecting AM/PM peak hour intersection counts at the thirteen study area intersections.

2.2.3 Bicycle Level of Traffic Stress

The bicycle level of traffic stress analysis methodology consists of two sections:

- **General Evaluation Criteria:** Defines the general LTS evaluation criteria for all facility types, in accordance with methodology established by the Mineta Transportation Institute in its 2012 report, "Low Stress Bicycling and Network Connectivity."[2]
- **Key Assumptions:** Details analysis assumptions.

General Evaluation Criteria
Table 2.3 identifies the four primary criteria used in the LTS analysis, as defined by the Mineta Institute. The criteria differ depending on the facility classification.

Table 2.3 - LTS Criteria by Facility Classification

Criterion	Class I and Class IV	Class II	Class III and Shared Roadways
Speed Limit or Prevailing Speed	N/A (generally assumed to be LTS 1)	●	●
Street Width (Auto Lanes)		●	●
Bike Lane/Parking Width		●	N/A
Bike Lane Blockage		●	N/A

Source: "Low Stress Bicycling and Network Connectivity," Mineta Transportation Institute, pp. 17-21.

Class I and Class IV – Separated Facilities
Traditional LTS presumes separated bicycle facilities to be LTS 1, the lowest level of stress, as they are physically separated from vehicular traffic and therefore unaffected by the auto-centric criteria listed in **Table 2-4**. As explained by the Mineta Institute:

[2] http://transweb.sjsu.edu/project/1005.html

> "Bikeways that are physically separated from motor traffic have the lowest level of traffic stress between intersections, LTS 1. They include standalone paths as well as those that run alongside a road that may be called cycle tracks, sidepaths, or segregated lanes. Means of physical separation from motor traffic include, but are not limited to, curbs, raised medians, parking lanes, and flexible bollards.
>
> This category includes shared-use paths as well as bicycling-only facilities. (While there can be some stress in sharing a path with pedestrians, it is not in the same class as traffic danger; it is more akin to congestion which can force a traveler to go slow, and, unlike traffic danger, is rarely a factor that keeps people from riding a bike.)"[3]

Class II Bicycle Lanes

Striped Class II bicycle lanes can cover the entire range of LTS levels, and their evaluation depends upon the largest number of criteria. **Table 2-4** shows the criteria for Class II lanes located alongside a parking lane, while **Table 2-5** shows the criteria for Class II lanes not located alongside a parking lane. As explained by the Mineta Institute:

> "Bike lanes can exhibit the full range of traffic stress. Where they have ample width and are positioned on a road whose traffic is slow and simple (a single lane per direction), they can offer cyclists a low-stress riding environment. However, bike lanes can also present a high-stress environment when positioned on roads with highway speeds or turbulent traffic, or next to high-turnover parking lanes without adequate clearance."[4]

Assigning a segment's LTS level requires identifying the "weakest link" among all criteria:

> "For any given segment, these criteria aggregate following the weakest link principle: the dimension with the worst level of stress governs. For this reason, traffic stress levels in the tables that follow use notations such as "LTS > 2," which means the factor puts a floor on traffic stress at level 2. For example, if a segment's street width matches the criteria for LTS > 1, its prevailing speed matches LTS > 2, and its bike lane blockage matches LTS > 3, then the segment as a whole has LTS 3."[5]

Table 2.4 - LTS Criteria for Class II Bike Lanes Alongside a Parking Lane

Criterion	LTS > 1	LTS > 2	LTS > 3	LTS > 4
Street width (through lanes per direction)	1	(no effect)	2 or more	(no effect)
Sum of bike lane and parking lane width (includes marked buffer and paved gutter)	15 ft. or more	14 or 14.5 ft.*	13.5 ft. or less	(no effect)
Speed limit or prevailing speed	25 mph or less	30 mph	35 mph	40 mph or more
Bike lane blockage (typically applies in commercial areas)	rare	(no effect)	frequent	(no effect)

Source: "Low Stress Bicycling and Network Connectivity," Mineta Transportation Institute, p. 18.

Notes:
(no effect) = factor does not trigger an increase to this level of traffic stress.
** If speed limit < 25 mph or Class = residential, then any width is acceptable for LTS 2.*

[3] Low Stress Bicycling and Network Connectivity, Mineta Transportation Institute, p. 17 (2012).
[4] Low Stress Bicycling and Network Connectivity, Mineta Transportation Institute, pp. 17-18 (2012).
[5] Low Stress Bicycling and Network Connectivity, Mineta Transportation Institute, p. 18 (2012).

Table 2.5 - LTS Criteria for Class II Bike Lanes Not Alongside a Parking Lane

Criterion	LTS > 1	LTS > 2	LTS > 3	LTS > 4
Street width (through lanes per direction)	1	2, if directions are separated by a raised median	more than 2, or 2 without a separating median	(no effect)
Bike lane width (includes marked buffer and paved gutter)	6 ft. or more	5.5 ft. or less	(no effect)	(no effect)
Speed limit or prevailing speed	30 mph or less	(no effect)	35 mph	40 mph or more
Bike lane blockage (typically applies in commercial areas)	rare	(no effect)	frequent	(no effect)

Source: "Low Stress Bicycling and Network Connectivity," Mineta Transportation Institute, p. 18.

Note: (no effect) = factor does not trigger an increase to this level of traffic stress.

Class III and Other Shared Roadways

Class III and other shared roadways rely on two criteria—street width and speed—as shown in **Table 2-6**. This evaluation applies both to segments specifically designated as Class III (often marked by signs and sharrows) as well as to all other local roadways that are not marked specifically for bicycles and are therefore implicitly shared. As explained by the Mineta Institute:

> "Where cyclists share space on the road with motor traffic, level of traffic stress is assumed to be unaffected by signage (e.g., "Bike Route" or "Share the Road" signs), shared-lane markings, or having a wide outside lane. Studies of shared-lane markings have shown that they have a small beneficial effect but nothing comparable to the benefit of designating an exclusive bicycling zone by marking a bike lane."[6]

Table 2.6 - LTS Criteria for Class III Shared Roadways

	Street Width		
Speed Limit	2-3 Lanes	4-5 Lanes	6+ Lanes
Up to 25 mph	LTS 1 or 2 *	LTS 3	LTS 4
30 mph	LTS 2 or 3 *	LTS 4	LTS 4
35+ mph	LTS 4	LTS 4	LTS 4

Source: "Low Stress Bicycling and Network Connectivity," Mineta Transportation Institute, p. 21.

** Use lower value for streets without marked centerlines or classified as residential and with fewer than 3 lanes; use higher value otherwise.*

Key Assumptions

Applying the general LTS methodology to the specific conditions of Clairemont requires several data sources and key assumptions. The sources and key assumptions for each criterion are:

- Traffic Speed: The 85th percentile speed limit for vehicular traffic, gathered from field observation.

[6] Low Stress Bicycling and Network Connectivity, Mineta Transportation Institute, pp. 20-21 (2012).

- Street Width (Auto Lanes): The number of auto through lanes in each direction, gathered from field observation as well as functional classification data.
- Bike Lane/Parking Width: Assumed standard widths of 5 feet for all Class II bicycle lanes and 8 feet for all parking lanes alongside Class II bicycle lanes.
- Bike Lane Blockage: This criterion is categorized simply into "Frequent" and "Rare," with "Frequent" generally applying only in busy commercial districts. Assumed "Rare" for all areas with Class II bike lanes.

2.2.4 Bicycle Safety

Vehicle-bicycle collision data was obtained from the UC Berkeley's TIMS for the five-year period from January 2017 to December 2021. This data was mapped to display bicycle-involved collision locations within the study area and analyzed to identify potential trends.

2.3 **Transit**

2.3.1 Transit Connectivity

The transit routes and stop locations within and adjacent to the study area were mapped and summarized, including a description of typical headways and the destinations served by each route. Quarter- and half-mile travelsheds were depicted from the Trolley stops within the study area to demonstrate locations that could be accessed via active transportation modes.

2.3.2 Transit Demand

Transit demand was evaluated by examining average daily boardings and alightings for each stop within the study area.

2.3.3 Transit Quality

Presence of Amenities

Transit stations and stops were reviewed to identify the presence or absence of the following amenities:

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

Table 2.7 outlines the standard amenities that should be provided at transit stations/stops based on the projected daily passenger boardings (across all routes), according to MTS bus stop features guidelines[7].

[7] Designing for Transit: A Manual for Integrating Public Transportation and Land Development in the San Diego Metropolitan Area, San Diego Metropolitan Transit System (2018).

Table 2.7 - Transit Amenity Standards by Ridership Levels

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

Source: Design for Transit, MTS (1993)

On-Time Performance

On-time performance data was collected for transit routes with stops within the study area. The performance data was compared to goals set for the type of service to identify which route(s), if any, are not meeting targets.

2.4 Vehicle System

2.4.1 Vehicular Connectivity

Study area roadway segments were depicted using the existing functional classification, while intersection geometry displays the presence of through—and turn-lanes at study area intersections, as determined via recent satellite imagery and confirmed during field reviews.

2.4.2 Vehicular Demand

AM/PM peak hour intersection turning movements and daily roadway segment volumes were collected on Thursday, January 19, 2023. The volumes are depicted graphically and used to conduct the level of service analyses.

2.4.3 Vehicular Quality

Analysis of the roadways and intersections were prepared for this study in accordance with City of San Diego and SANTEC/ITE Traffic Impact Study Guidelines. A description of the methodologies employed to evaluate vehicular travel is outlined throughout this section.

Level of Service (LOS) is a quantitative measure representing the quality of service from the driver's perspective. LOS A represents optimal conditions for the driver, while LOS F represents the worst. **Table 2.8** describes generalized definitions of auto LOS A through F.

Table 2.8 - Vehicular Level of Service Definitions

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

Source: Highway Capacity Manual, Transportation Research Board (2010)

Roadway Segment Analysis

Roadway segment level of service standards and thresholds provided the basis for analysis of arterial roadway segment performance. The analysis of roadway segment level of service is based on the functional classification of the roadway, the maximum capacity, roadway geometrics, and existing or forecast Average Daily Traffic (ADT) volumes. **Table 2.9** presents the roadway segment capacity and LOS standards utilized to analyze roadways evaluated in this report.

These standards are generally used as long-range planning guidelines to determine the functional classification of roadways. The actual capacity of a roadway facility varies according to its physical and operational attributes. LOS D is considered acceptable for Mobility Element roadway segments in the City of San Diego. Often, a roadway segment that is analyzed to be LOS E or F based on theoretical capacity is found to operate acceptably in practice. In such cases, HCM arterial analysis may be conducted and utilized (or intersection analysis, if arterial analysis is not applicable) to provide a more accurate indication of LOS.

Table 2.9 - City of San Diego Roadway Segment Daily Capacity and LOS Standards

		Level of Service				
Roadway Classification	**Lanes**	**A**	**B**	**C**	**D**	**E**
Freeway	8	60,000	84,000	120,000	140,000	150,000
Freeway	6	45,000	63,000	90,000	110,000	120,000
Freeway	4	30,000	42,000	60,000	70,000	80,000
Expressway	6	30,000	42,000	60,000	70,000	80,000
Prime Arterial	8	35,000	50,000	70,000	75,000	80,000
Prime Arterial	6	25,000	35,000	50,000	55,000	60,000
Prime Arterial	4	17,500	24,500	35,000	40,000	45,000
Major Arterial	7	22,500	31,500	45,000	50,000	55,000
Major Arterial	6	20,000	28,000	40,000	45,000	50,000
Major Arterial	5	17,500	24,500	35,000	40,000	45,000
Major Arterial	4	15,000	21,000	30,000	35,000	40,000
Major Arterial	3	11,250	15,750	22,500	26,250	30,000
Major Arterial	2	7,500	10,500	15,000	17,500	20,000
Major Arterial (one-way)	3	12,500	16,500	22,500	25,000	27,500
Major Arterial (one-way)	2	10,000	13,000	17,500	20,000	22,500
Collector (w/ two-way left turn lane)	4	10,000	14,000	20,000	25,000	30,000
Collector (w/ two-way left turn lane)	3	7,500	10,500	15,000	18,750	22,500
Collector (w/ two-way left turn lane)	2	5,000	7,000	10,000	13,000	15,000
Collector (w/o two-way left turn lane)	4	5,000	7,000	10,000	13,000	15,000
Collector (w/o two-way left turn lane)	3	4,000	5,000	7,500	10,000	11,000
Collector (w/o two-way left turn lane)	2	2,500	3,500	5,000	6,500	8,000
Collector (no fronting property)	2	4,000	5,500	7,500	9,000	10,000
Collector (one-way)	3	11,000	14,000	19,000	22,500	26,000
Collector (one-way)	2	7,500	9,500	12,500	15,500	17,500
Collector (one-way)	1	2,500	3,500	5,000	6,500	7,500
Sub-Collector (single-family)	2	-	-	2,200	-	-

Source: City of San Diego Traffic Impact Study Manual (1998)
Updated with input from City of San Diego Planning Department Mobility Staff (2019)

Peak Hour Intersection Level of Service Standards and Thresholds

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

- **Pedestrian Calls per Hour:** Obtained from existing pedestrian counts.

- **Heavy Vehicle Factor:** Based on existing vehicle classification counts. For roadways with low heavy vehicle activity, a minimum of 2% was used in the analysis. Two percent is the standard, default heavy vehicle factor provided in HCM and Synchro 10.0 software.
- **Peak Hour Factor:** Obtained from existing peak hour counts.
- **Signal Timing:** Obtained from existing signal timing plans (as of December 2022).

Signalized Intersection Analysis
The signalized intersection analysis utilized in this study conforms to the operational analysis methodology outlined in 2010 Highway Capacity Manual 6th Edition (HCM). This method defines LOS in terms of delay, or more specifically, average control delay per vehicle (seconds/vehicle).

The 2010 HCM methodology sets 1,900 passenger-cars per hour per lane (pcphpl) as the ideal saturation flow rate at signalized intersections based upon the minimum headway that can be sustained between departing vehicles at a signalized intersection. The service saturation flow rate, which reflects the saturation flow rate specific to the study facility, is determined by adjusting the ideal saturation flow rate for lane width, on-street parking, bus stops, pedestrian volume, traffic composition (or percentage of heavy vehicles), and shared lane movements (e.g. through and right-turn movements sharing the same lane). The LOS criteria used for this technique are described in **Table 2.10**. The computerized analysis of intersection operations will be performed utilizing the Synchro 10.0 (2010 HCM methodology) traffic analysis software (by Trafficware, 2021).

Table 2.10 - Signalized Intersection Level of Service HCM Operational Analysis Criteria

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

Source: Highway Capacity Manual, Transportation Research Board (2010)

Unsignalized Intersection Analysis
Unsignalized intersections, including two-way and all-way stop controlled intersections were analyzed using the 2010 HCM unsignalized intersection analysis methodology. The Synchro 10.0 software supports this methodology and will be utilized to produce LOS results. The LOS for a two-way stop controlled (TWSC) intersection is determined by the computed or measured control delay and is defined for each minor movement. The LOS for an all-way stop controlled (AWSC) intersection is

determined by the computed or measured average control delay of all movements. **Table 2.11** summarizes the level of service criteria for unsignalized intersections. Consistent with City policy, LOS D will be used in this study as the minimum acceptable LOS for peak hour intersection operations.

Table 2.11 - Level of Service Criteria for Stop Controlled Intersections

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

Source: Highway Capacity Manual, Transportation Research Board (2010)

2.4.4 Vehicular Safety

Vehicle collision data was obtained from the UC Berkeley's TIMS for the five-year period from January 2017 to December 2021. This data was mapped to display collision locations within the study area and analyzed to identify potential trends.

3.0 Pedestrian Mobility

3.1 Connectivity

Pedestrian infrastructure was inventoried to understand the existing network, limitations, and opportunities. The review included the presence of sidewalks, marked crosswalks, curb ramps, and crossing features. This information was collected via aerial imagery and field reviews.

Figure 3.1 displays the existing pedestrian infrastructure within the study area.

Standard sidewalks are continuous along both sides of Clairemont Drive within the study area, however, several gaps exist along Morena/W Morena Boulevard:

- West side of Morena Boulevard, between Milton Street and Ashton Street
- West and east sides of W Morena Boulevard, between Morena Boulevard and Tecolote Creek
- East side of W Morena Boulevard at intersection with Morena Boulevard
- West side of Morena Boulevard at intersection with Linda Vista Road

Pedestrians traveling between the Clairemont Drive Station and Mission Bay Park currently have two options: a staircase connects the southside of Clairemont Drive to the westside of Morena Boulevard, however, stairs are not a feasible option for all pedestrians. The second option requires utilizing Ingulf Street and Denver Street, which adds 0.33-miles (approximately 7-minute walk) compared to the stairs. Making a more direct and ADA accessible pathway would reduce pedestrian travel distance and help provide more equitable access to the station and park. Development of the property at the northeast corner of the Morena Boulevard / Ingulf Street intersection is an opportunity to implement a more direct and accessible pedestrian connection.

Stairs connecting Clairemont Drive to Morena Boulevard.

The lack of sidewalks and crossing opportunities along W Morena Boulevard north of Tecolote Creek is a gap for pedestrians accessing the Tecolote Road Station from the north. Knoxville Street is planned to connect to W Morena Boulevard[8], which could include a full traffic signal. Completing the missing sidewalks and creating a new signalized crossing would improve pedestrian connectivity.

Missing sidewalk and obstructions along the east side of W Morena Boulevard, north of Tecolote Creek.

[8] Morena Corridor Specific Plan, City of San Diego (2019).

Figure 3.1 - Existing Pedestrian Infrastructure

The pedestrian network is interrupted at the intersections of W Morena Boulevard / Morena Boulevard (south) and Morena Boulevard / Linda Vista Road. Sidewalks discontinue and there are no formal crossing opportunities at these "Y" shaped intersections, resulting in out of direction travel for people walking. The Morena Corridor Specific Plan calls for reorganizing the two intersections to create more squared geometry and help facilitate pedestrian connections. Transit users would also benefit from improved pedestrian connections, as the Morena/Linda Vista Green Line Station is located just southwest of the study area.

Pedestrians are unable to cross the W Morena Boulevard / Morena Boulevard (south) intersection.

With the exception of the W Morena Boulevard / Morena Boulevard (south) and Morena Boulevard / Linda Vista Road intersections, marked crosswalks are present at all signalized intersections within the study area. Most marked crosswalks are high visibility and include advanced stop bars. The following marked crossings are not high visibility:

- Both I-5 southbound on-ramps at Clairemont Drive
- I-5 northbound on-ramp at Clairemont Drive
- All legs of Denver Street / Clairemont Drive
- East leg of Morena Boulevard / Milton Street
- North, south, and east legs of Buenos Avenue / W Morena Boulevard
- South, east, and west legs of Morena Boulevard / Napa Street

High visibility crosswalk leading to a curb ramp with a detectable warning surface across Morena Boulevard at Ashton Street.

Pedestrian countdown signal heads contribute to pedestrian safety by informing pedestrians how much time remains to safely cross the road. Crossing legs where pedestrian countdown signal heads are absent include:

- North and south legs of I-5 northbound ramps
- All legs of Denver Street / Clairemont Drive
- North and east legs of Morena Boulevard / Milton Street
- East leg of W Morena Boulevard / Morena Boulevard (north)
- North, south, and east legs of Buenos Avenue / W Morena Boulevard
- South, east, and west legs of Morena Boulevard / Napa Street

Curb ramps are present to support all marked crossings throughout the study area, however, many curb ramps are missing detectable warning surfaces. Detectable warning surfaces, also referred to as truncated domes, help visually impaired people identify a street crossing. Implementing these surfaces at all curb ramps is one component to providing accessible and safe pedestrian infrastructure.

3.2 Demand

Pedestrian counts were collected at study area intersections on Thursday, January 19, 2023 during the AM and PM peak commute hours (7:00–9:00 AM and 4:00–6:00 PM). This data provides a snapshot of existing crossing demand and can inform the identification of crossing enhancements.

Figure 3.2 graphically depicts the combined AM and PM pedestrian count results. **Figure 3.3** shows intersection crossing movement volumes for individual legs during each peak period. The three locations with the greatest observed demand for the combined peak periods include:

- Morena Boulevard / Ingulf Street (129 pedestrians)
- Morena Boulevard / Sherman Street / Napa Street (113 pedestrians)
- W Morena Boulevard / Vega Street (51 pedestrians)

The higher pedestrian activity intersections listed above provide access to the transit stations within and just outside of the study area. Prioritizing pedestrian safety and comfort improvements in these areas could be considered as a means to maximize benefits from investments.

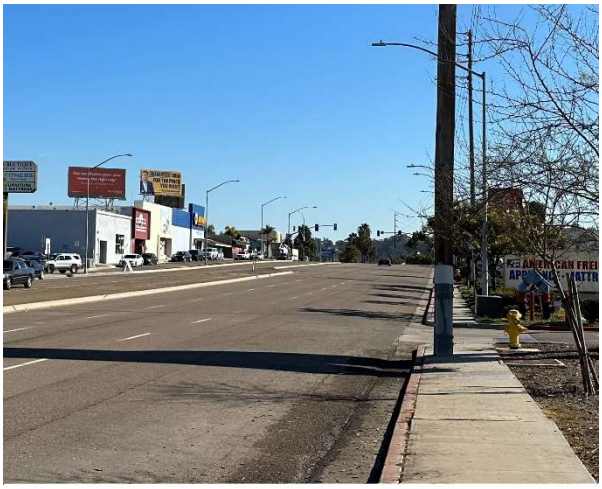
Additionally, four pedestrians were observed crossing the Morena Boulevard / Linda Vista Road intersection where pedestrian crossings are currently prohibited. This indicates a need for safe pedestrian connections through this intersection. This need could be addressed by implementing the previously mentioned intersection squaring as planned in the Morena Corridor Specific Plan.

3.3 Quality

The quality of all roadway segments and marked crossing locations within the project study area were evaluated using the Pedestrian Environment Quality Evaluation (PEQE) methodology presented in Chapter 2. This approach takes into consideration variables that may influence a pedestrian's comfort and safety, such as the separation from vehicular travel, lighting, posted speed limit, traffic control, curb ramps, physical obstructions, and the presence of operational and physical features.

The PEQE results are presented in **Figure 3.4**. Most segments were identified as low scoring, due to missing sidewalks or a combination of lack of a buffer between vehicular traffic, physical obstructions, lack of lighting, and/or the posted speed limit. The remaining segments were scored as medium, which is suitable for areas with lower pedestrian activity. No segments were scored as high.

A total of 31 marked crossing legs were scored, with approximately half (14/31) receiving medium scores, nine legs receiving low scores, and eight high. Pedestrians travelling along Clairemont Drive encounter multiple intersections with low scoring crossings, as well as low scoring segments along the north side of Clairemont Drive. The Morena Boulevard / Sherman Street / Napa Street intersection, which may be used to access the Morena / Linda Vista Green Line Trolley Station, scored low on the leg crossing Morena Boulevard, while the sidewalk approaches were also low scoring. Enhancing the pedestrian environment in these areas will help people access community resources and high-quality transit services.



Sidewalk obstruction along the south side of W Morena Boulevard just south of Vega Street.

Figure 3.2 - Combined AM and PM Peak Period Pedestrian Intersection Counts

Figure 3.3 - AM and PM Peak Period Pedestrian Crossing Volumes

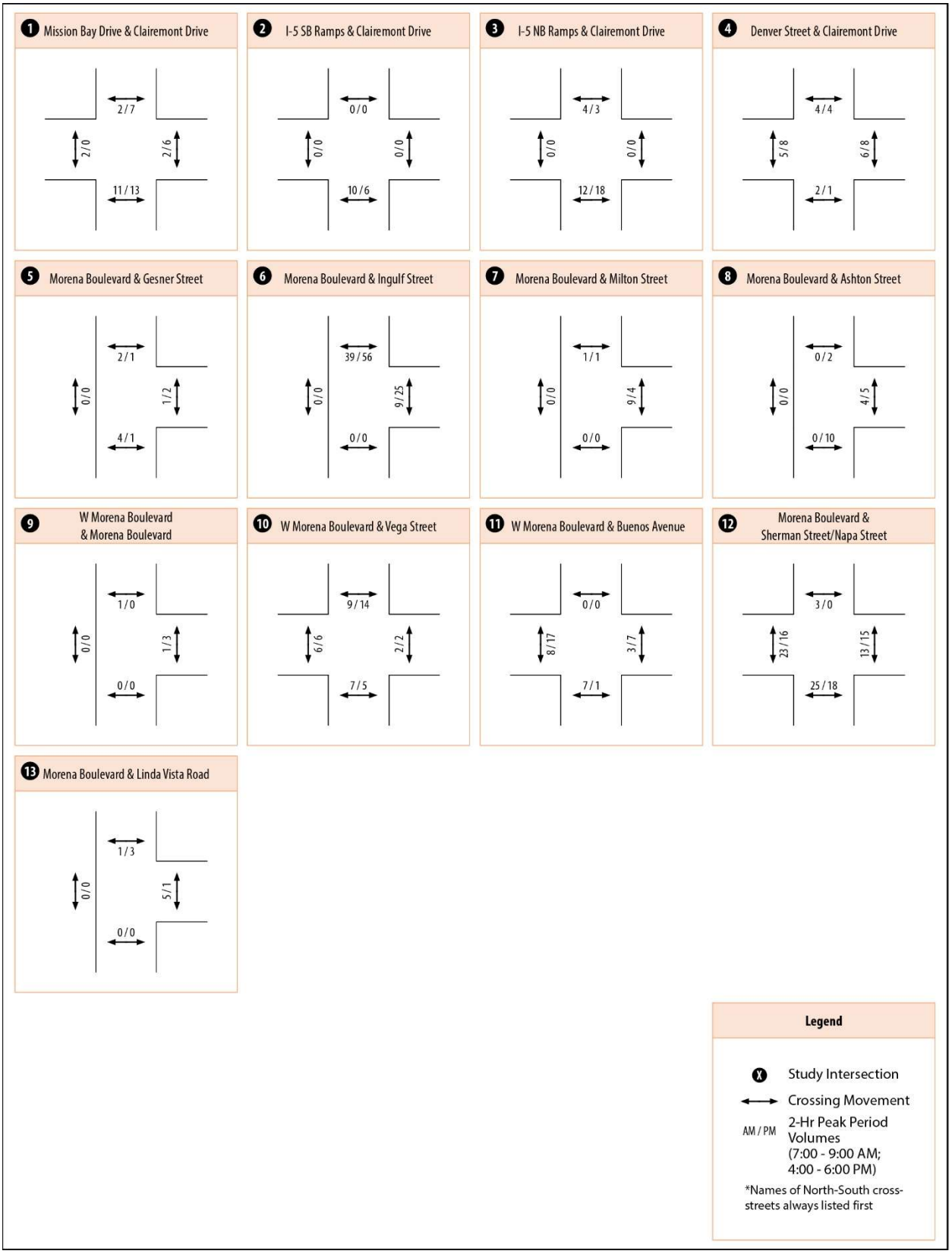


Figure 3.4 - Pedestrian Environment Quality Evaluation

3.4 Safety

Figure 3.5 displays the three pedestrian-involved collisions reported in the study area between January 2017 and December 2021. All three collisions occurred during daytime at intersections where the driver was at-fault by failing to yield to the crossing pedestrian. The level of injury reported for each of the collisions was complaint of pain.

High visibility crosswalks with advance stop bars have been implemented at the Morena Boulevard / Ashton Street intersection following the collision. Similar treatments at the W Morena Boulevard / Buenos Avenue crossing legs would help improve pedestrian visibility and awareness of crossing locations. Pedestrian safety would also benefit from protected left turn phasing from southbound Buenos Avenue onto eastbound W Morena Boulevard. This phasing change would eliminate the conflict between left-turning vehicles and pedestrians crossing W Morena Boulevard, similar to the scenario resulting in the collision at this location. Implementing a leading pedestrian interval could be an alternative approach to consider in lieu of protected left-turn phasing.

Figure 3.5 - Pedestrian Collisions (2018 – 2022)

4.0 Bicycle Mobility

4.1 Connectivity

Table 4.1 provides descriptions and images of the four bicycle facility classifications as recognized by Caltrans, including Class I Bike Paths or Multi-Use Paths, Class II Bike Lanes, Class III Bike Routes, and Class IV Separated Bikeways or Cycle Tracks.

Existing bicycle facilities are displayed in **Figure 4.1**. In addition to the Caltrans classifications identified in Table 4.1, the map distinguishes between bike lanes and buffered bike lanes.

Recently installed southbound cycle track along Morena Boulevard, approaching the Clairemont Drive Station.

A cycle track was recently implemented in the southbound direction, terminating just at the Clairemont Drive Station at Ingulf Street. The facility then continues as a bike lane in the southbound direction through most of the study area. The only northbound facility is between Linda Vista Road and the W. Morena Boulevard / Morena Boulevard intersection. Providing a continuous, dedicated space for bicyclists in both directions is critical to user safety and to encourage bicycling as a viable transportation mode.

Clairemont Drive lacks dedicated bicycle facilities, requiring cyclists to use vehicle travel lanes to access Mission Bay.

The study area bicycle network lacks connections to Mission Bay. There are no existing bicycle facilities on Clairemont Drive west of Denver Street, and the Tecolote Road bike lane discontinues west of the I-5 northbound ramps. Both Clairemont Drive and Tecolote Road include on- and off-ramps for I-5, which contributes to higher vehicular volumes on the two roadways. Uncontrolled ramps on each roadway further emphasize the need for dedicated bicycle facilities connecting to Mission Bay.

Clairemont Drive includes a wide median and wide outside travel lanes that have the potential to be repurposed for dedicated bicycle facilities. Additionally, Clairemont Drive is a component of the Regional Bike Network, identified as a segment of the Kearny Mesa to Beaches Corridor. This designation underscores the important role the corridor has in the region and the need for providing a safe and comfortable facility. Similarly, the median width along Morena Boulevard could be repurposed to provide a northbound facility.

Table 4.1 - Bicycle Facility Classifications

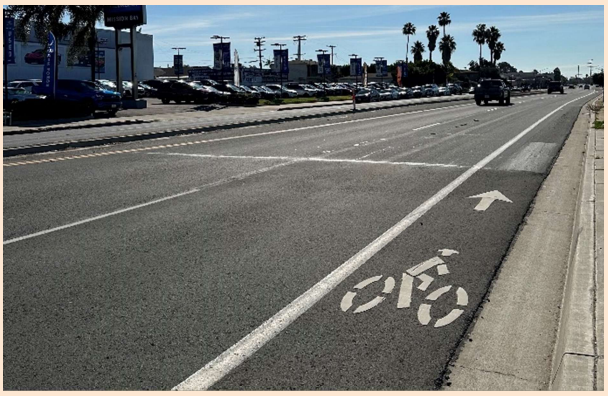
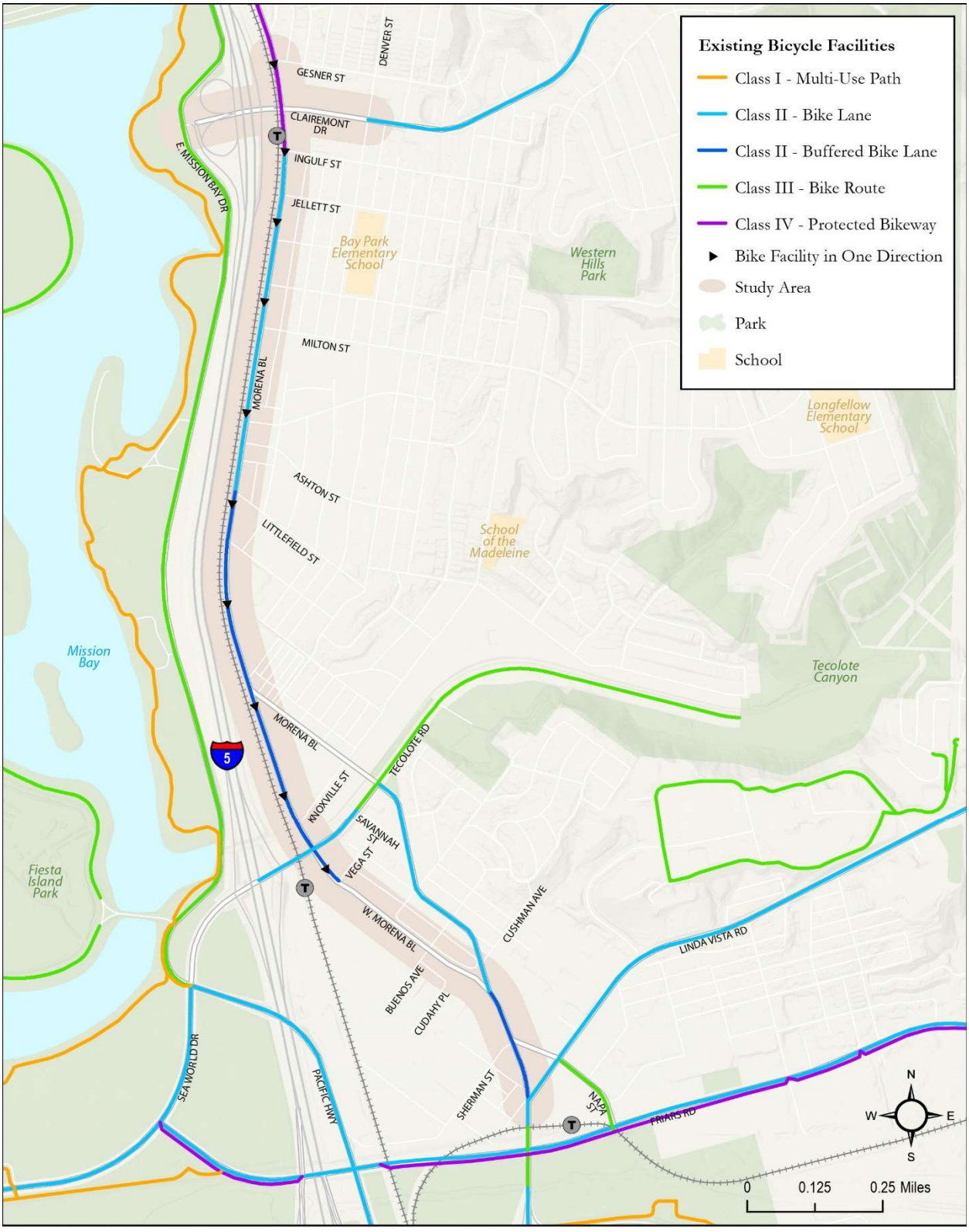
Image	Description
	**Class I Bike Path** – Also referred to as a multi-use path or shared-use path, Class I facilities provide a completely separated right-of-way designed for the exclusive use of bicycles and pedestrians with crossflows by motorists minimized. Bike paths can provide connections where roadways are non-existent or unable to support bicycle travel. The minimum paved width for a two-way bike path is considered to be eight-feet (ten-feet preferred), with a two-foot wide graded area adjacent to each side of the pavement.
	**Class II Bike Lane** – Provides a striped lane designated for the exclusive or semi-exclusive use of bicycles with through travel by motor vehicles or pedestrians prohibited. Bike lanes are one-way facilities located on either side of a roadway. Pedestrian and motorist crossflows are permitted. Additional enhancements such as painted buffers and signage may be applied. The minimum bike lane width is considered to be five-feet when adjacent to on-street parking, or six-feet when posted speeds are greater than 40 miles per hour. Bike lanes can also have striped buffer areas a few feet in width to provide separation from vehicles.
	**Class III Bike Route** – Provides shared use of traffic lanes with cyclists and motor vehicles, identified by signage and/or street markings such as “sharrows”. Bike routes are best suited for low-speed, low-volume roadways. Bike routes provide network continuity or designate preferred routes through corridors with high demand.
	**Class IV Cycle Track** – Also referred to as a separated or protected bikeway, cycle tracks provide a right-of-way designated exclusively for bicycle travel within the roadway and physically protected from vehicular traffic. Cycle tracks can provide for one-way or two-way travel. Types of separation include, but are not limited to, grade separation, concrete curbs, flexible delineators, or on-street parking.

Figure 4.1 - Existing Bicycle Facilities



4.2 Demand

Bicycle counts were collected at study area intersections on Thursday, January 19, 2023 during the AM and PM peak commute hours (7:00–9:00 AM and 4:00–6:00 PM). **Figure 4.2** displays the combined AM and PM peak period counts, while **Figure 4.3** shows the intersection turning movements for both the AM and PM count periods.

The three locations with the greatest observed demand for the combined peak periods include:

- Mission Bay Drive / Clairemont Drive (112 bicyclists)
- Morena Boulevard / Sherman Street / Napa Street (37 bicyclists)
- Morena Boulevard / Linda Vista Road (33 bicyclists)

Most bicyclists at the Mission Bay Drive / Clairemont Drive intersection were observed travelling north or south along Mission Bay Drive. This roadway parallels a segment of the Bayshore Bikeway, located just to the west, which serves as link in the Regional Bike Network. The route connects to Pacific Beach to the north and can be used to reach the Old Town – Pacific Highway and Ocean Beach communities further south.

A bicyclist rides along Mission Bay drive through the Clairemont Drive intersection.

The Morena Boulevard intersections with Sherman Street / Napa Street and Linda Vista Road are located at the southern part of the Linda Vista community planning area. The relatively higher demand at these locations signifies moderate inter-community bicycle demand. The University of San Diego (USD) and the Old Town Transit Center are located just outside of the study area, accessible via these intersections. USD is a major university and active transportation trip attractor, while the Old Town Transit Center includes numerous public transit connections. These uses add to the importance of ensuring these intersections and connecting segments are suitable for bicyclists.

4.3 Quality

All bikeable roadways were evaluated using the bicycle level of traffic stress (LTS) methodology, where LTS 1-2 indicate the most comfortable environments and LTS 4 indicating the most stressful. **Figure 4.4** displays the results of the LTS analysis.

As shown in the figure, both Morena Boulevard and Clairemont Drive were determined to exhibit LTS 4 conditions for the entirety of the study area, meaning they are high stress environments for bicyclists. The poor rating is due to the combination of high posted speed limits (40 – 45 mph along Morena Boulevard & W Morena Boulevard; 30 – 35 mph along Clairemont Drive) and the lack of dedicated bicycle facilities in both directions.

The northernmost part of Morena Boulevard within the study area includes a separated bike lane in the southbound direction, however, no northbound facility. The LTS analysis evaluates bicycle travel in both directions yet only the lower score is reported. This approach accounts for the return trip and the potential for bicycle trips to be discouraged by high stress segments.

Figure 4.2 - Combined AM and PM Peak Period Bicycle Counts

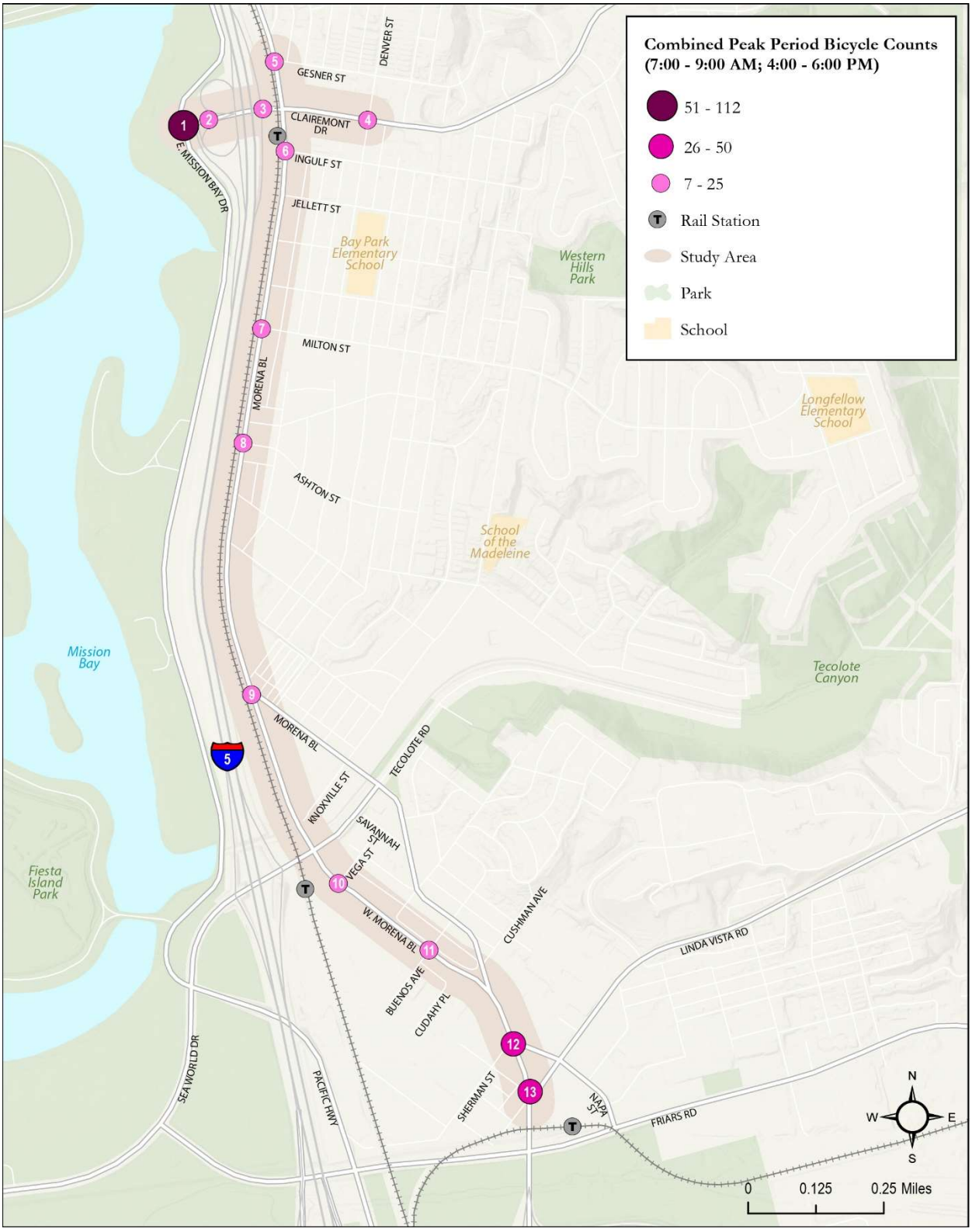


Figure 4.3 - AM and PM Peak Period Bicycle Intersection Turning Movements

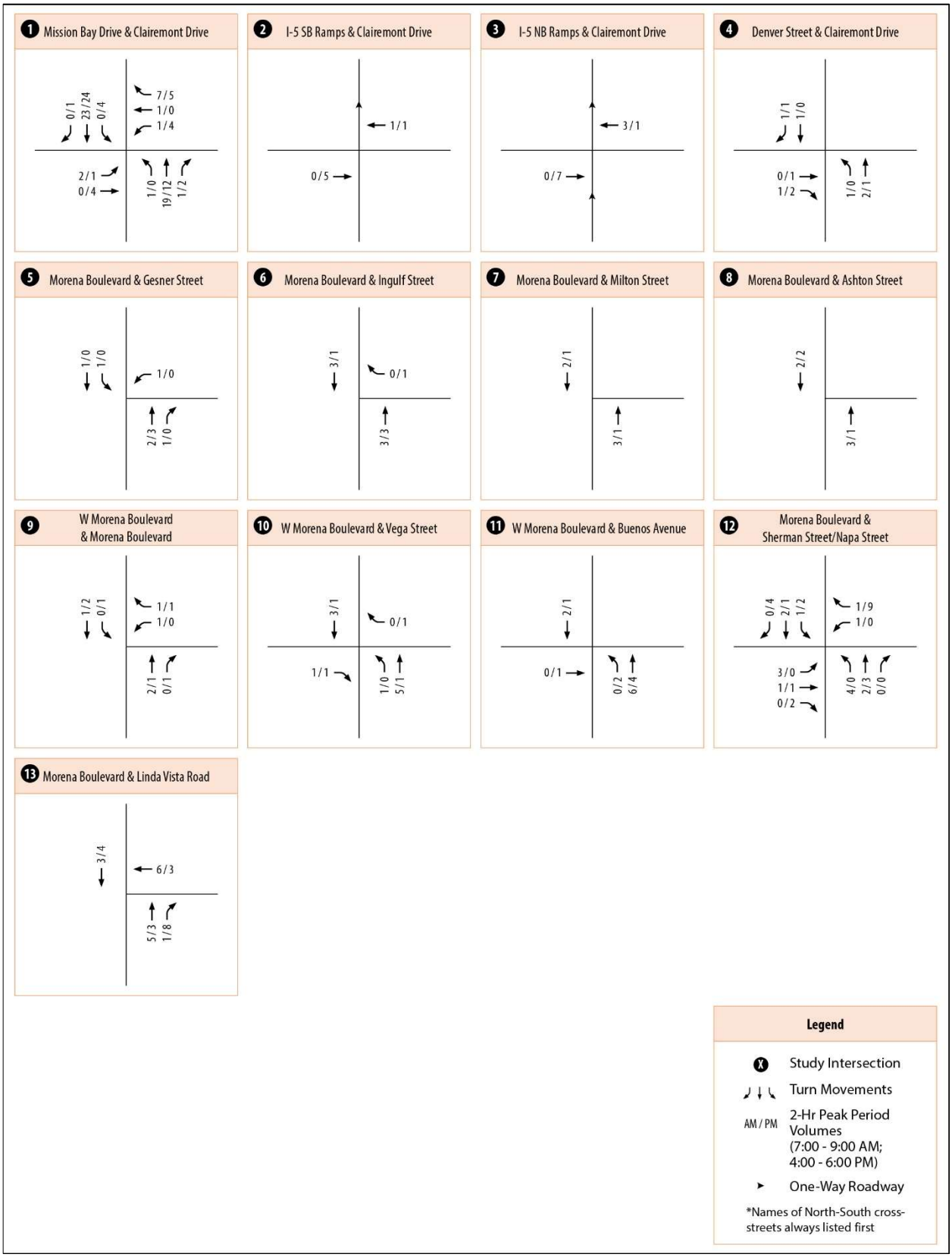
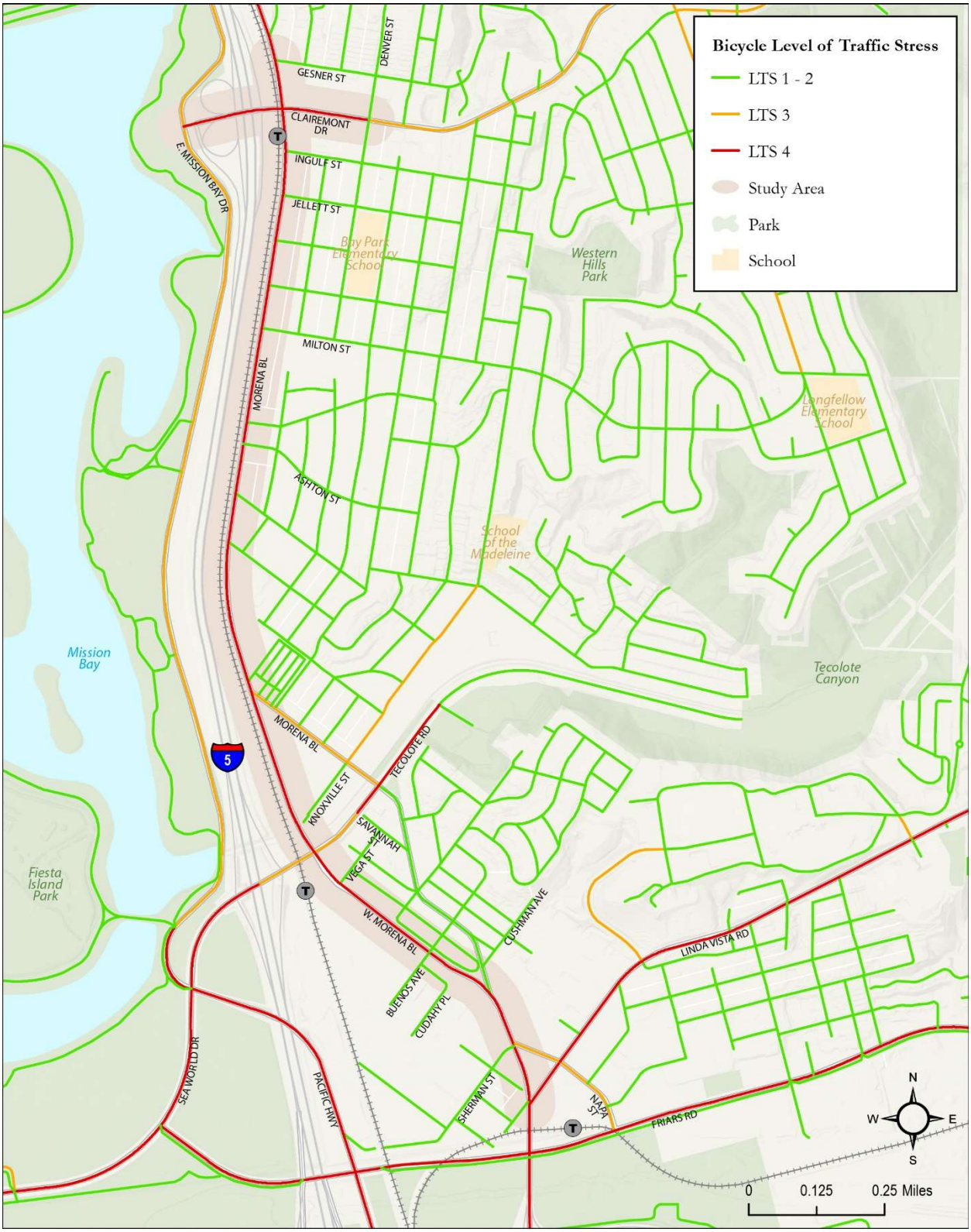


Figure 4.4 - Bicycle Level of Traffic Stress



4.4 Safety

Figure 4.5 displays the seven bicycle-involved collisions reported between January 2017 and December 2021. Six of the seven collisions were reported within intersections.

The intersection of Mission Bay Drive and Clairemont Drive was the only location where multiple (three) collisions were reported. No discernable patterns were identified when comparing the collision details (cause, direction of travel, movement, time of day, party-at-fault). The Mission Bay Drive / Clairemont Drive intersection was also the location with the greatest observed bicycle activity during the count periods, with volumes three times greater than the second highest location.

Of the seven collisions, one resulted in a fatality and one in a severe injury. The remaining collisions were complaint of pain or other visible injuries. The fatal bicycle-involved collision was reported along Morena Boulevard, approximately 150' north of Napier Street. Both the bicyclist and driver were headed northbound – a bike lane is only present in the southbound direction. The roadway does not have a shoulder on this segment due to the presence of on-street parking, requiring bicyclists to operate fully within the vehicular travel lane. The driver was reported as the party-at-fault due to unsafe speed, alcohol was also a factor.

A bicyclist was severely injured while travelling southbound along the alley just east of Morena Boulevard, while crossing Kane Street. The bicyclist was reported as the party-at-fault due to violating the driver's right-of-way when entering the roadway from the alley. The collision location is notable in that the bicyclist was traveling in the alley, possibly as an alternative to Morena Boulevard.

Figure 4.5 - Bicycle Collisions (2018 – 2022)

5.0 Transit

5.1 Connectivity

Transit service within the study area is provided by the San Diego Metropolitan Transit System (MTS). Study area transit routes and stop locations were mapped and summarized, including a description of typical headways and the destinations served by each route. **Figure 5.1** displays the existing transit routes and stops.

Bus Route 105 travels south along Morena Boulevard.

Two transit routes currently have stops along the study corridors, Bus Route 105 and the UC San Diego Blue Line Trolley. Additional service is provided just outside of the study area by Routes 30 and 44, and the Green Line Trolley.

The recently extended UC San Diego Blue Line Trolley traverses the study area north-south. The Trolley can be accessed via two transit stations within the study area: the Clairemont Drive Trolley Station, located at the Clairemont Drive and Ingulf Street intersection, and the Tecolote Road Trolley Station, located at the W Morena Boulevard and Vega Street intersection. The Mid-Coast extension began service on November 21, 2021. The entire project added 11 miles of light rail to the MTS network. It includes 9 new stations and serves major activity centers such as Mission Bay, UC San Diego, and UTC Westfield.

Walking from the Clairemont Drive Trolley Station to Mission Bay requires traversing multiple freeway ramps and traveling a nearly half-mile distance.

The Green Line Trolley runs along the southern edge of study area. The Green Line's Morena/Linda Vista Trolley Station is located just southwest of the Morena Boulevard / Linda Vista Road intersection, making the Green Line an accessible transportation option for those with trip origins or destinations within the study area.

Assessing the accessibility of transit station is crucial for identifying the needs of the communities they serve. Figure 5.1 provides a visual representation of the travelsheds for the two transit stations, illustrating the distances that can be easily covered on foot or by bicycle. The street grid network surrounding the Clairemont Drive Trolley Station is designed to facilitate connections between the station and nearby residential areas, while the Tecolote Road Trolley Station is strategically located within a half-mile travel distance of commercial and industrial areas in the Morena area.

Figure 5.1 - Existing Transit Routes and Stops

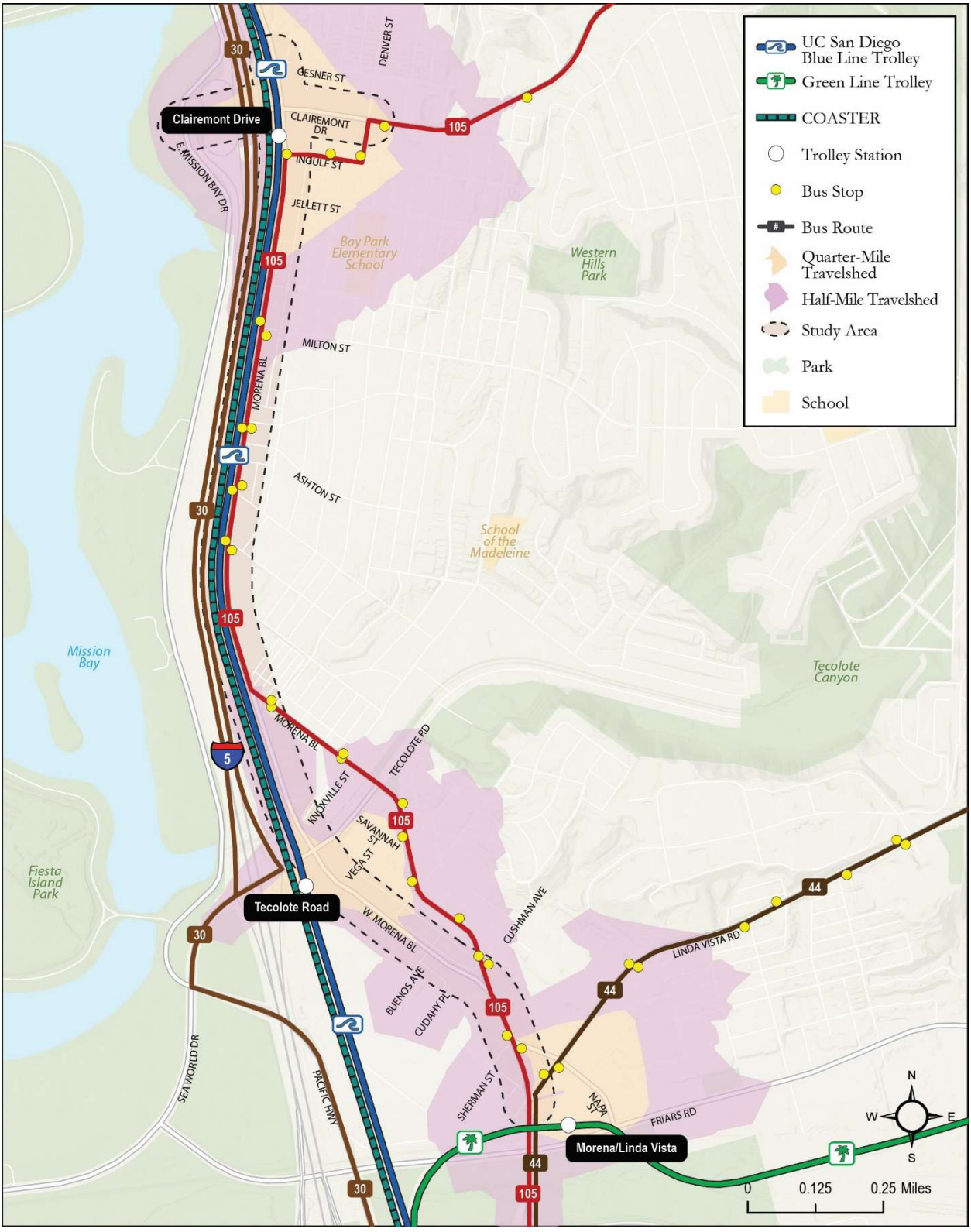
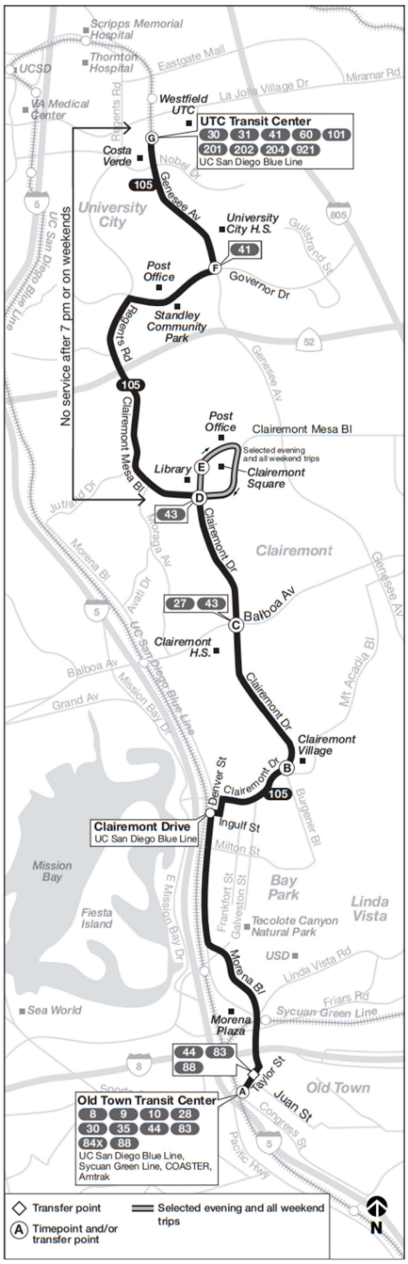


Figure 5.1 also highlights the limitations that the freeway and rail corridor may have on mobility. To promote sustainable transportation options and foster vibrant, connected communities, it is essential to optimize the accessibility between the stations and the surrounding destinations. By doing so, we can ensure that the needs of the community are met while encouraging active transportation and reducing dependence on private vehicles.

In addition to distance, the roadway environment plays an influential role in travel behaviors and mode selection. As evident from the PEQE and LTS results, the study corridor falls short in providing a comfortable environment for pedestrians and bicyclists. All segments within the study area resulted in a Low or Medium PEQE scores and high stress bicycle environments (LTS 4), which may discourage transit users relying on active transportation modes to reach the stations. The upward sloping terrain to the east of the study area represents an additional factor that may influence mode choice.

SANDAG's Mid-Coast Mobility Hub Strategy (2019) includes recommendations to enhance the travel experience to and from the Clairemont Drive Station and the Tecolote Road Station. The microtransit and micromobility solutions proposed in the Mid-Coast Mobility Hub Strategy could help address the distance and terrain challenges for first-/last-mile connections, however, the quality of the connections must still be addressed.

Figure 5.2 - Bus Route 105 Route Map



Bus Route 105

Figure 5.2 provides the route map for Bus Route 105. MTS Bus Route 105 provides service between the Old Town Transit Center and UTC Transit Center. The route runs along Morena Boulevard, Clairemont Drive, Clairemont Mesa Boulevard/Regents Road, Governor Drive, and Genesee Avenue. Within the study area, there are seven northbound stops and eight southbound stops on Morena Boulevard, and one eastbound stop on Clairemont Drive,

Route 105 provides weekday and weekend service. During the weekday, northbound service is provided within the study area on 30-minute regular intervals, running between approximately 5:20AM and 10:40PM.

Saturday service runs on one-hour headways from approximately at 5:50AM to 8:40PM. Sunday service also runs once every hour approximately from 7:05AM to 8:40PM.

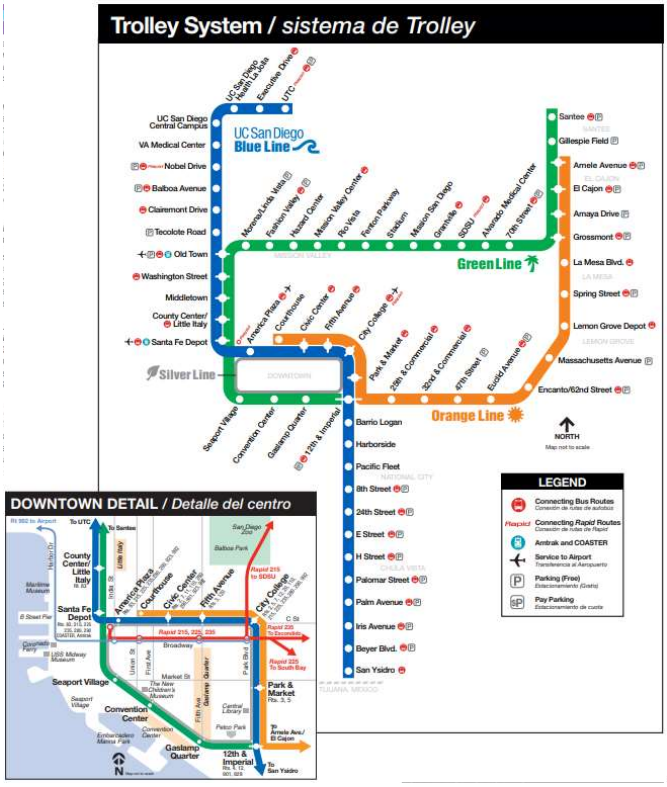
UC San Diego Blue Line Trolley

Figure 5.3 provides the route map for the MTS Trolley System lines, including UC San Diego Blue Line. The Blue Line provides service between the San Ysidro Transit Center and UTC Transit Center. The route Downtown San Diego, Old Town, and UC San Diego Central Campus. There are two trolley stations within the study area, the Clairemont Drive and Tecolote Road Trolley Stations.

The Blue Line provides service seven days a week. During the weekday, northbound service runs on 5- to 15-minute irregular intervals, from approximately 4:50AM until 11:50PM within the study area, while southbound service begins approximately at 5:15AM and runs to about 12:40AM.

Service hours on the weekend are shortened slightly and have approximately 15- to 30-minute headways. Northbound service runs from approximately 5:05AM until 11:35PM within the study area, while southbound service begins approximately at 5:10AM and runs to about 12:40AM.

Figure 5.3 - MTS Trolley System Route Map



5.2 Demand

Transit ridership information was obtained from MTS and is an average of Fiscal Year 2022 ridership. **Figure 5.4** summarizes combined boarding and alighting data by stop, while **Table 5.1** displays each stops' individual boarding and alighting data.

Daily ridership along Route 105 ranges from a low of zero at the Morena Boulevard & Frankfort Steet stop and the Morena Boulevard & W Morena Boulevard stop to a high of 18 at the Morena Boulevard & Ingulf Street stop (the closest to the Clairemont Drive Station).

The Blue Line Trolley's Clairemont Drive Station has a daily ridership of 420 transit riders while the Tecolote Road Station accumulates 549 daily boardings and alightings. It is important to note that the Blue Line Trolley extension (including the two stations in the study area) began service in late November of 2021. The limited ridership data and short service life may influence that data's validity in terms of depicting normal ridership conditions.

Figure 5.4 - Boardings and Alightings by Stop

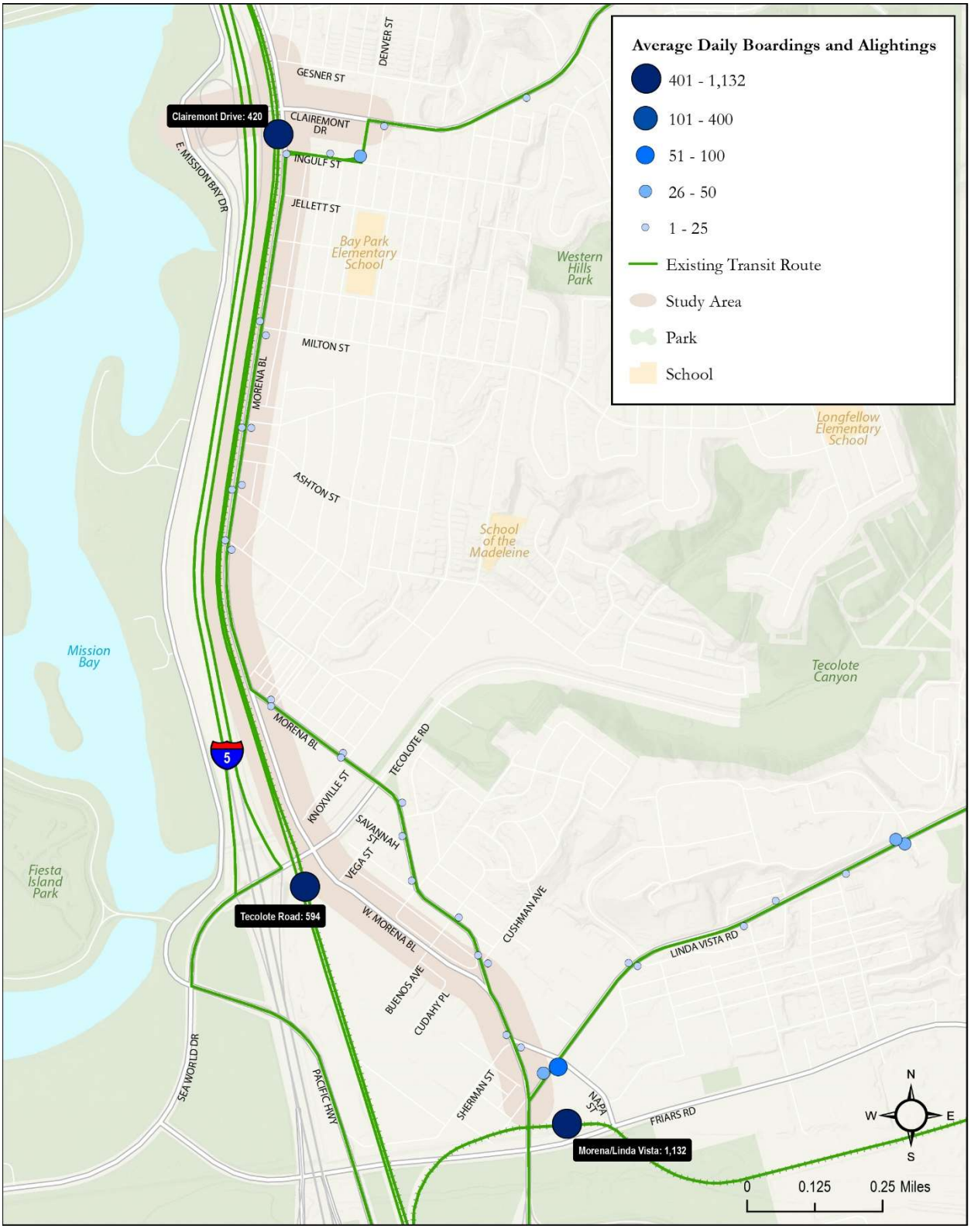


Table 5.1 - Average Daily Boardings and Alightings by Transit Stop (FY 2022)

ID	Location	Direction	Route	Boardings[1]	Alightings[1]	Total[1]
10048	Morena Bl & Frankfort St	SB	105	0	0	0
10419	Clairemont Dr & Denver St	EB	105	1	0	1
11175	Morena Bl & Frankfort St	NB	105	2	4	6
11573	Morena Bl & Asher St	SB	105	5	2	7
11583	Morena Bl & W Morena Bl	SB	105	0	0	0
11929	Morena Bl & Littlefield St	SB	105	1	0	2
11930	Morena Bl & Napier St	SB	105	1	2	3
11949	Linda Vista Rd & Napa St	SB	44	13	31	44
12349	Morena Bl & Asher St	NB	105	1	1	2
12351	Morena Bl & Napier St	NB	105	1	2	3
12352	Morena Bl & Milton St	NB	105	2	2	3
12359	Morena Bl & Cushman Av	NB	105	2	3	5
12360	Morena Bl & Napa St	NB	105	9	3	11
12670	Morena Bl & Littlefield St	NB	105	1	1	2
89013	Morena Bl & Ingulf St	NB	105	14	4	18
99467	Morena Bl & Milton St	SB	105	2	2	4
99853	Morena Bl & Sherman St	SB	105	3	7	9
N/A	Clairemont Drive Station[2]	NB, SB	Blue Line Trolley	224	195	420
N/A	Tecolote Road Station[2]	NB, SB	Blue Line Trolley	301	293	594

Source: MTS (2022)

Notes:
[1] Average boardings and alightings rounded to nearest whole number.
[2] Service was running for less than two months when the data was collected.

5.3 Quality

Transit quality is presented in this section in terms of the presence of amenities at each transit stop and on-time performance for the two routes within the study area.

Presence of Amenities

An inventory of amenities present at each transit stop was undertaken to better understand existing stop quality. **Table 5.2** shows the presence of recommended features from the MTS Designing for Transit Manual, based on the average daily boardings. Each stop's amenities were then identified as either present, lacking and required, or lacking and optional based on the criteria for the respective stop type. Of the 19 stops within the study area, 9 are lacking amenities that should be required based on average boarding data. Amenities identified as lacking include ADA accessibility infrastructure and red curbs.

Table 5.2 - Amenities by Transit Stop

Stop ID	Stop Name	Direction	Daily Boardings[1]	Sign and Pole	Built-in Sign	Expanded Sidewalk	Accessible	Seating	Passenger Shelter	Route Designations	Schedule Display	Route Map	System Map	Trash Receptable	Real time Digital Display	Bus Pads (street)	Red Curbs
10048	Morena Bl & Frankfort St	SB	0	●	-	-	X	-	-	●	-	-	-	-	-	-	●
10419	Clairemont Dr & Denver St	EB	1	●	-	-	●	●	-	●	-	-	-	-	-	-	●
11175	Morena Bl & Frankfort St	NB	2	●	-	-	●	-	-	●	-	-	-	-	-	●	●
11573	Morena Bl & Asher St	SB	5	●	-	-	X	-	-	●	-	-	-	-	-	-	X
11583	Morena Bl & W Morena Bl	SB	0	●	-	-	X	●	-	●	-	-	-	-	-	-	●
11929	Morena Bl & Littlefield St	SB	1	●	-	-	X	-	-	●	-	-	-	-	-	-	●
11930	Morena Bl & Napier St	SB	1	●	-	-	●	-	-	●	-	-	-	-	-	-	●
11949	Linda Vista Rd & Napa St	SB	13	●	-	-	X	●	-	●	-	-	-	-	-	-	●
12349	Morena Bl & Asher St	NB	1	●	-	-	X	●	-	●	-	-	-	-	-	-	●
12351	Morena Bl & Napier St	NB	1	●	-	-	●	●	-	●	-	-	-	-	-	-	●
12352	Morena Bl & Milton St	NB	2	●	-	-	●	●	-	●	-	-	-	-	-	-	●
12359	Morena Bl & Cushman Av	NB	2	●	-	-	X	●	-	●	-	-	-	-	-	-	●
12360	Morena Bl & Napa St	NB	9	●	-	-	●	●	-	●	-	-	-	-	-	-	●
12670	Morena Bl & Littlefield St	NB	1	●	-	-	X	-	-	●	-	-	-	-	-	-	●
89013	Morena Bl & Ingulf St	NB	14	●	-	-	●	●	-	●	-	-	-	-	-	-	●
99467	Morena Bl & Milton St	SB	2	●	-	-	X	-	-	●	-	-	-	-	-	-	X
99853	Morena Bl & Sherman St	SB	3	●	-	-	●	●	-	●	-	-	-	-	-	-	●
N/A	Clairemont Drive Station	NB, SB	224	●	●	N/A	●	●	●	●	●	●	●	●	●	N/A	N/A
N/A	Tecolote Road Station	NB, SB	301	●	●	N/A	●	●	●	●	●	●	●	●	●	N/A	N/A

Source: MTS Designing for Transit (2018); MTS (2022)

Notes:
[1] Average boardings reflect averaged Fiscal Year 2022 ridership data, rounded to nearest whole number
● Amenity is present
X Amenity is required and absent
- Amenity is optional/not applicable and absent

On-Time Performance

Table 5.3 displays average on-time performance for MTS Bus Routes 105 and the Blue Line Trolley. The average on-time performance includes the dates between July 2021 and June 2022.

On-time performance is an important factor for people that depend on public transit for transportation to work, school, or other time sensitive matters. On-time performance was approximately 94% for Route 105, meeting its 85% goal. The Blue Line Trolley also met its 90% target. This data indicates the routes serving the study area are generally reliable travel options.

Table 5.3 - Transit On-Time Performance by Route

Route	Peak Weekday Headway	On-Time Performance	Target	Met Target?
Bus Route 105	30	94%	85%	Yes
Blue Line Trolley	6	90%	90%	Yes
Green Line Trolley	15	92%	90%	Yes

Source: MTS (2022)

6.0 Vehicular Mobility

6.1 Connectivity

Figure 6.1 presents the existing functional classifications for the study area roadways. A description of each study roadway is provided **Table 6.1**, including number of travel lanes, median type, posted speed limit, parking availability, presence of sidewalks, and bicycle facilities. Existing intersection configurations are displayed in **Figure 6.2**.

6.2 Demand

To assess the current demand on the vehicular system, weekday count data was collected along Clairemont Drive and Morena Boulevard at 13 intersections (7-9 AM and 4-6 PM) and along 5 roadway segments (24-hour). The count sheets are provided in **Appendix B**.

Figure 6.3 displays the daily roadway segment traffic volumes. Note, this figure also includes the roadway segment level of service analysis results which are discussed under Section 6.3. Along Morena Boulevard, volumes ranged from a low of 10,675 (W Morena Boulevard from Vega Street to Buenos Avenue) to a high of 36,799 (Morena Boulevard, south of Linda Vista Road). A single segment count was performed along Clairemont Drive, between I-5 and Denver Street, which was found to be 28,820.

Figure 6.4 displays AM/PM peak hour intersection turning movements for the 13 study area intersections. Intersection operations are discussed under the following Quality section.

A parking analysis was conducted for the Clairemont Complete Corridors study area. The study analyzed on-street parking activity, taking into consideration the nearby land uses and time of day. The analysis was intended to help build an understanding of the parking environment and demand throughout the corridor. Overall, there was a generally low parking utilization within the study area, averaging 31-percent capacity. The corridor study area experiences its highest utilization mid-day (11:45 a.m. – 12:15 p.m.). A detailed parking analysis is provided in **Appendix D**.

6.3 Quality

Roadway Segment Level of Service Analysis

Figure 6.3 displays existing daily traffic volumes for study roadway segments and associated level of service (LOS). **Table 6.2** presents the functional classification for each roadway, count date, maximum capacity threshold, highest daily traffic volume, volume to capacity ratio and resulting level of service. Note, four segment counts were conducted along Morena Boulevard, however, they were expanded to provide segment evaluations between each of the 13 study intersections.

As shown in Table 6.2, the following roadway segment currently operates at LOS E:

- Morena Boulevard, south of Linda Vista Road (LOS E)

Intersection Level of Service Analysis

An analysis of the peak vehicular traffic operations was conducted for the 13 identified study intersections, as described in Section 6.2. **Figure 6.5** presents the intersection LOS analysis results for the AM and PM peak hours.

Table 6.3 identifies the traffic control type, provides the intersection level of service results, and presents the average intersection delay for AM and PM peak hours for all study intersections. Intersection level of service calculation worksheets are provided in Appendix C.

As shown in Table 6.3, the following intersection currently operates at LOS F:

- #4 Denver Street & Clairemont Drive – LOS F during the AM peak hour

6.4 Safety

Figure 6.6 displays the 34 vehicle-only collisions reported within the study area between January 2017 and December 2021. None of the vehicle-only collisions resulted in a severe injury or fatality. Broadside (9 collisions) and rear end (6 collisions) were the most frequent collision types reported.

The leading three violation categories include unsafe speeds (12 collisions), violations related to traffic signals and signs – such as failure to stop at the limit line (7 collisions), and automobile right-of-way violation (5 collisions).

The Morena Boulevard & Linda Vista Road intersection experienced eight collisions, the most of any intersection. Collisions at this location were largely due to issues with drivers violated the traffic signal. The three-legged intersection has skewed approaches which may contribute to the violations. The Morena Corridor Specific Plan includes a recommendation to make approaches more perpendicular or squared.

Collisions were identified to be spread out throughout Morena Blvd at intersections with the residential roadways such as Ashton Street and Ingulf Street. Along Clairemont Drive, there a cluster of collisions was identified at and around the intersection of Denver Street and Clairemont Drive.

Figure 6.1 - Existing Functional Roadway Classification

Table 6.1 - Roadway Segment Descriptions

No.	Roadway	From	To	Functional Classification	Median Type	Posted Speed (mph)	On-Street Parking	Sidewalks	Bicycle Facilities
1	Clairemont Drive	Mission Bay Drive	I-5 SB Ramps	4-Ln Major Arterial	Raised	35	Prohibited	Contiguous	None
2	Clairemont Drive	I-5 SB Ramps	I-5 NB Ramps	4-Ln Major Arterial	Raised	35	Prohibited	Contiguous	None
3	Clairemont Drive	I-5 NB Ramps	Denver Street	4-Ln Major Arterial	Raised	35	Prohibited	Contiguous	None
4	Morena Boulevard	Gesner Street	Ingulf Street	4-Ln Major Arterial	Raised	40	Prohibited	Contiguous	SB: Class IV
5	Morena Boulevard	Ingulf Street	Milton Street	4-Ln Major Arterial	Raised	40	NB: Parallel	Contiguous	SB: Class II
6	Morena Boulevard	Milton Street	Ashton Street	4-Ln Major Arterial	Raised	40	NB: Parallel	NB: Contiguous SB: Non-Contiguous	SB: Class II
7	Morena Boulevard	Ashton Street	West Morena Boulevard	4-Ln Major Arterial	Raised	40	Parallel	Contiguous	Class II
8	West Morena Boulevard	Morena Boulevard	Vega Street	4-Ln Major Arterial	Raised	40	NB: Parallel	Non-Contiguous	SB: Class II
9	West Morena Boulevard	Vega Street	Buenos Avenue	4-Ln Major Arterial	Raised	40	Parallel	Contiguous	None
10	West Morena Boulevard	Buenos Avenue	Morena Boulevard	5-Ln Major Arterial	Raised	40	Parallel	Contiguous	None
11	Morena Boulevard	West Morena Boulevard	Napa Street/ Sherman Street	4-Ln Major Arterial	Raised	40	Prohibited	Contiguous	Class II
12	Morena Boulevard	Napa Street/ Sherman Street	Linda Vista Road	4-Ln Major Arterial	Raised	40	Prohibited	Contiguous	Class II
13	Morena Boulevard	Linda Vista Road	South of Linda Vista Road	4-Ln Major Arterial	Raised	40	Prohibited	NB: Contiguous SB: Non-Contiguous	Class II

Figure 6.2 - Existing Intersection Geometry

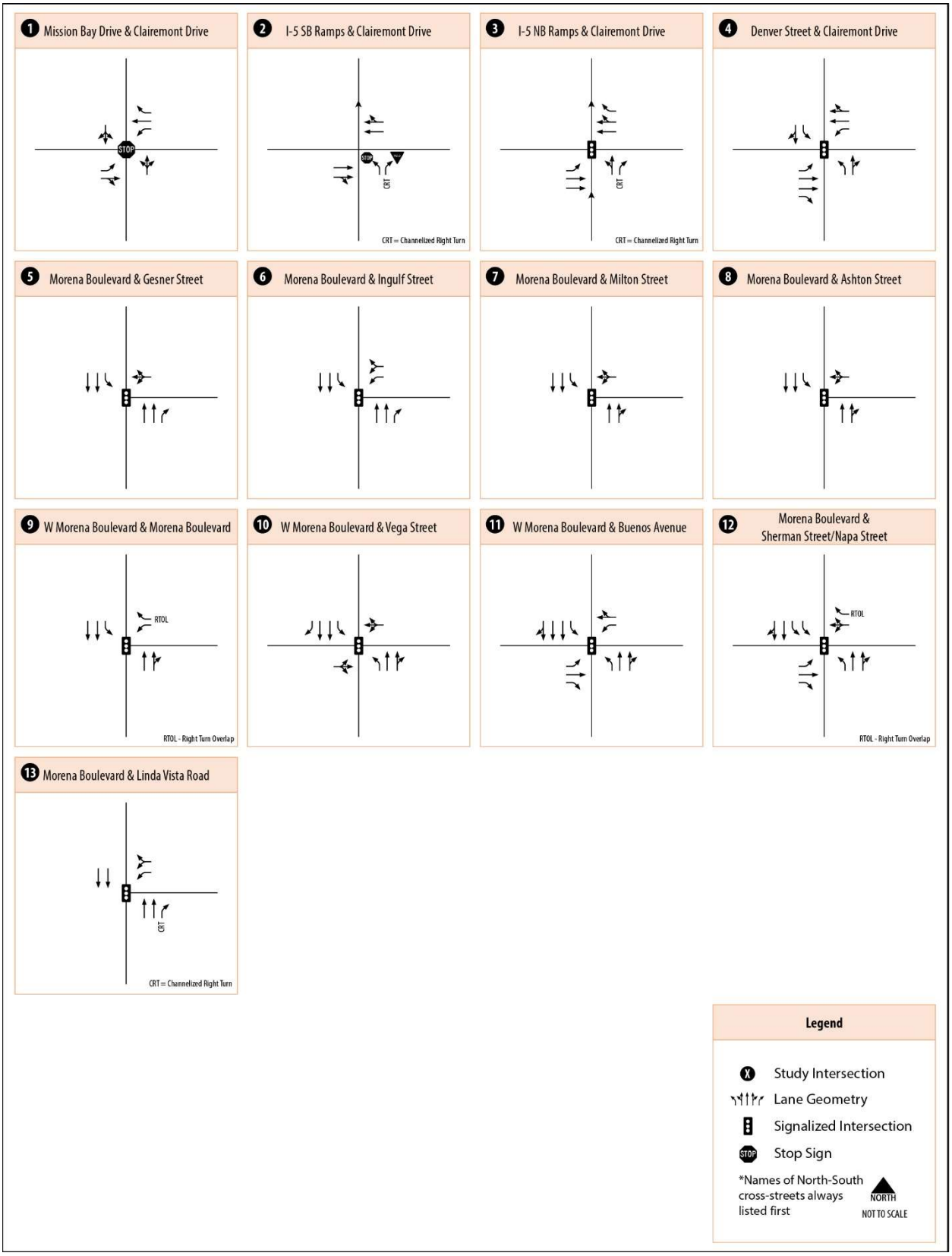


Figure 6.3 - Roadway Segment Traffic Volumes and Level of Service

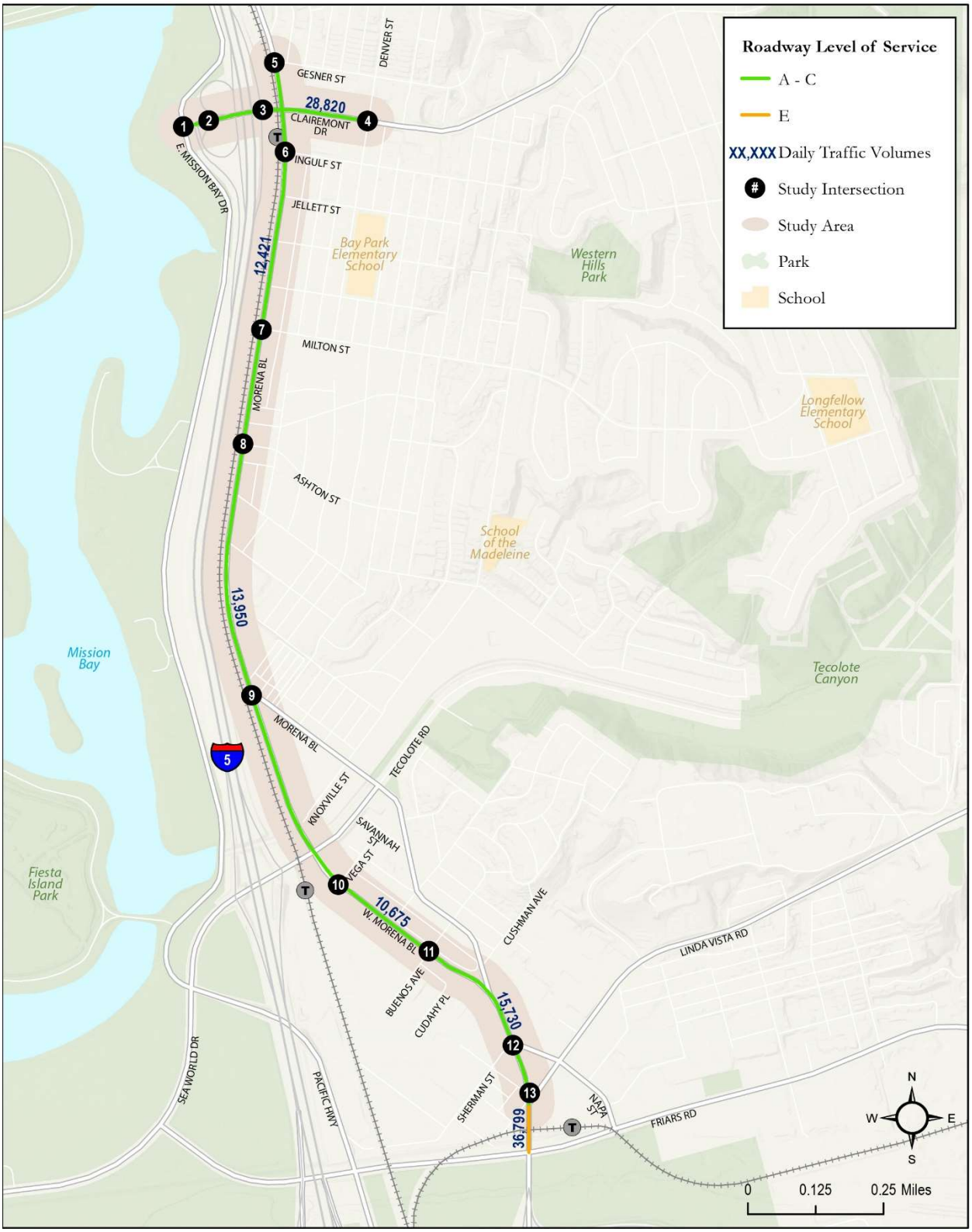


Figure 6.4 - Peak Hour Intersection Turning Movements

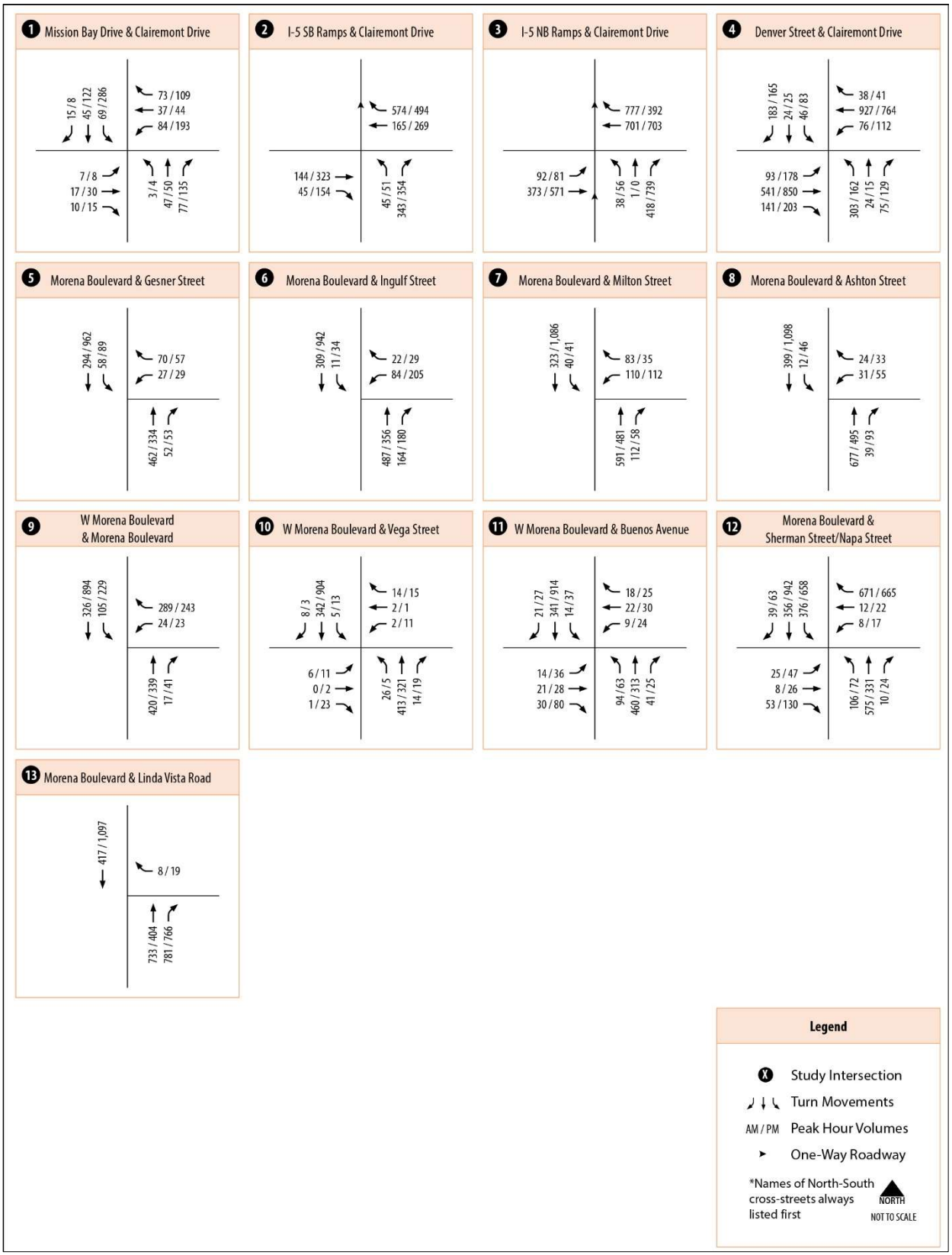


Table 6.2 - Existing Roadway Segment Level of Service

Roadway	Segment	Functional Classification	Count Date	Capacity (LOS E)	ADT	V/C	LOS
Clairemont Drive	Mission Bay Drive to I-5 SB Ramps	4-Lane Major Arterial	1/19/2023	40,000	28,820	0.721	C
Clairemont Drive	I-5 SB Ramps to I-5 NB Ramps	4-Lane Major 2Arterial	1/19/2023	40,000	28,820	0.721	C
Clairemont Drive	I-5 NB Ramps to Denver Street	4-Lane Major Arterial	1/19/2023	40,000	28,820	0.721	C
Morena Boulevard	Gesner Street to Ingulf Street	4-Lane Major Arterial	1/19/2023	40,000	12,421	0.311	A
Morena Boulevard	Ingulf Street to Milton Street	4-Lane Major Arterial	1/19/2023	40,000	12,421	0.311	A
Morena Boulevard	Milton Street to Ashton Street	4-Lane Major Arterial	1/19/2023	40,000	12,421	0.311	A
Morena Boulevard	Ashton Street to West Morena Boulevard	4-Lane Major Arterial	1/19/2023	40,000	13,950	0.349	A
West Morena Boulevard	Morena Boulevard to Vega Street	4-Lane Major Arterial	1/19/2023	40,000	13,950	0.349	A
West Morena Boulevard	Vega Street to Buenos Avenue	5-Lane Major Arterial	1/19/2023	45,000	10,675	0.237	A
West Morena Boulevard	Buenos Avenue to Morena Boulevard	4-Lane Major Arterial	1/19/2023	40,000	10,675	0.237	A
Morena Boulevard	Morena Boulevard to Napa Street/Sherman Street	4-Lane Major Arterial	1/19/2023	40,000	15,730	0.393	B
Morena Boulevard	Napa Street/Sherman Street to Linda Vista Road	4-Lane Major Arterial	1/19/2023	40,000	15,730	0.393	B
Morena Boulevard	Linda Vista Road to south of Linda Vista Road	4-Lane Major Arterial	1/19/2023	40,000	36,799	0.920	**E**

Source: Counts Unlimited, Inc. (January 2023)

Note:
Bold letter indicates substandard LOS E and F.

Figure 6.5 - Peak Hour Intersection Level of Service

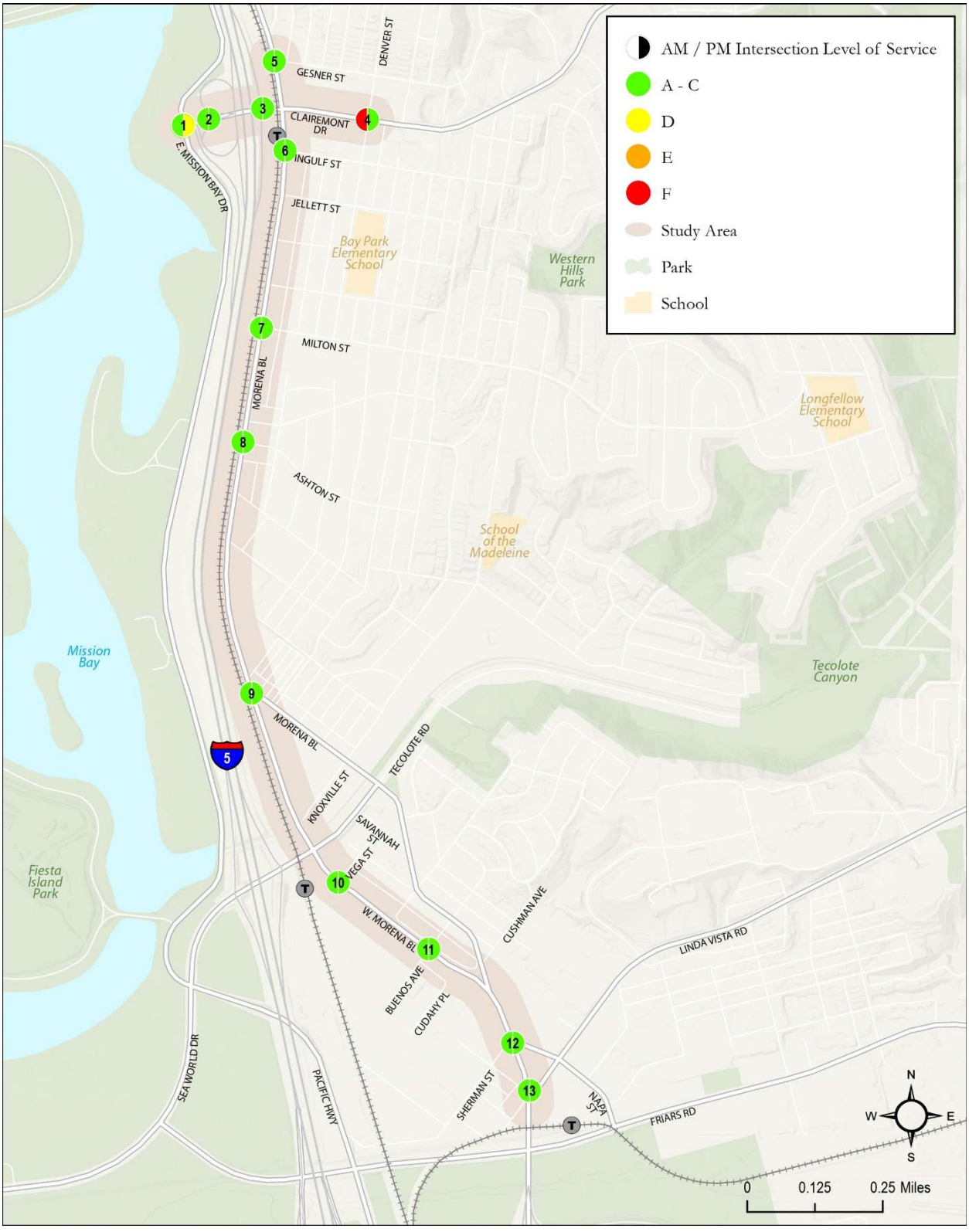


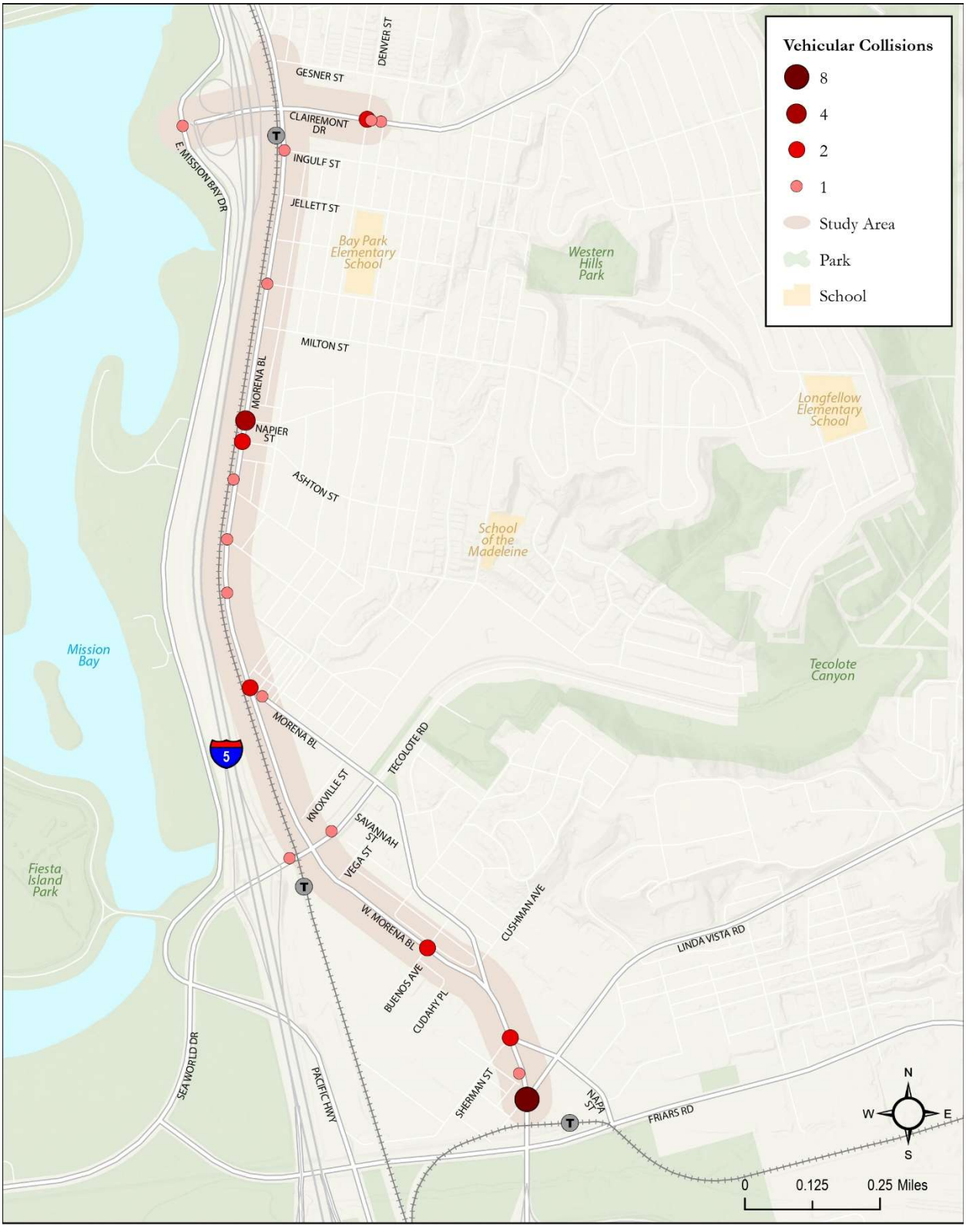
Table 6.3 - Existing Intersection Level of Service

ID	Intersection	Traffic Control	AM Peak Hour		PM Peak Hour	
			Avg. Delay (sec.)	LOS	Avg. Delay (sec.)	LOS
1	Mission Bay Drive & Clairemont Drive	AWSC	9.2	A	27.0	D
2	I-5 SB Ramps & Clairemont Drive	TWSC	10.9	B	16.1	C
3	I-5 NB Ramps & Clairemont Drive	Signal	30.5	C	34.2	C
4	Denver Street & Clairemont Drive	Signal	166.7	**F**	32.4	C
5	Morena Boulevard & Gesner Street	Signal	8.2	A	6.9	A
6	Morena Boulevard & Ingulf Street	Signal	8.4	A	8.8	A
7	Morena Boulevard & Milton Street	Signal	10.1	B	7.2	A
8	Morena Boulevard & Ashton Street	Signal	6.0	A	7.0	A
9	W Morena Boulevard & Morena Boulevard	Signal	23.1	C	21.8	C
10	W Morena Boulevard & Vega Street	Signal	7.3	A	7.4	A
11	W Morena Boulevard & Buenos Avenue	Signal	7.6	A	11.1	B
12	Morena Boulevard & Sherman Street/Napa Street	Signal	20.5	C	14.3	B
13	Morena Boulevard & Linda Vista Road	Signal	2.3	A	1.6	A

Source: Counts Unlimited, Inc. (January 2023)

Note:
Bold letter indicates substandard LOS E and F.

Figure 6.6 - Vehicular Collisions (2018 – 2022)



7.0 Next Steps

The findings from this report will be supplemented by future discussions with agency representatives and community members to build consensus on the key needs of the corridors. A variety of potential solution types will also be shared to gauge initial levels of support for traditional and more innovative concepts. This information will be used to inform the development of recommendations.