



HEXAGON TRANSPORTATION CONSULTANTS, INC.



1020-1040 Terra Bella Avenue

Transportation Analysis



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Executive Summary

This report presents the results of the transportation analysis conducted for the proposed development at 1020 & 1040 Terra Bella Avenue in Mountain View, California. The existing project site contains approximately 77,418 square feet (s.f.) of drive up storage lockers, a rental office, and a non-habitable single family home. The project would redevelop the site by replacing the existing buildings on-site with 108 units of affordable housing and a 408,964 s.f. Public Storage facility. Access to the affordable housing site would be provided via a driveway on Terra Bella Avenue and a driveway on San Rafael Avenue. Access to the public storage site would be provided via driveways on Linda Vista Avenue and on San Rafael Avenue.

Transportation Analysis Scope

The transportation analysis was prepared following the standards and methodologies set forth by the City of Mountain View, the Santa Clara Valley Transportation Authority (VTA) Congestion Management Program's *Transportation Impact Guidelines* (October 2014), and by the California Environmental Quality Act (CEQA).

CEQA Transportation Analysis Scope

The CEQA transportation analysis for the project consists of a project-level VMT impact analysis that is evaluated against the City of Mountain View's Vehicle Miles Traveled (VMT) Policy. The City of Mountain View's VMT Policy describes screening criteria based on a project description, characteristics, and/or locations of projects that would not exceed the CEQA thresholds of significance. If a project meets the screening criteria, it is then presumed that the project would result in a less-than-significant VMT impact, and a VMT analysis is not required.

Multimodal Transportation Analysis Scope

The Multimodal Transportation Analysis (MTA) includes an evaluation of weekday AM and PM peak hour operational issues (queuing, signal operations, and potential multi-modal issues) at intersections in the general vicinity of the project site, an evaluation of the transit, bicycle, and pedestrian access and circulation, and a review of site access, on-site circulation, and parking. Operational deficiencies identified as part of the MTA are not considered impacts per CEQA guidelines.

CEQA VMT Analysis

Evaluation of Screening Criteria

The project consists of 108 units of affordable housing and a 408,964 s.f. Public Storage facility. Since 100% of the residential units would be affordable, the residential portion of the project is presumed to result in a less-than-significant transportation impact, and a detailed VMT analysis is not required.

Project Level VMT Analysis

There are currently 13 similar personal storage facilities in Mountain View and Sunnyvale. The average distance of these facilities from the mid-point of Mountain View (assumed to be City Hall) is 2.1 miles. The distance between the project site and the mid-point of Mountain View is 1.4 miles. Therefore, the project would reduce the average trip length for residents to access public storage facilities, and its impact to VMT would be less-than-significant.

Multimodal Transportation Analysis

Trip Generation

After applying the ITE trip rates and trip credits from existing uses, it is estimated that the project would generate 996 daily vehicle trips, with 68 trips (29 inbound and 39 outbound) occurring during the AM peak hour and 98 trips (52 inbound and 46 outbound) occurring during the PM peak hour.

Intersection Operations

The operations analysis shows that most of the study intersections are projected to operate at acceptable levels of service, under background conditions and background plus project conditions during both the AM and PM peak hours. The intersection of Shoreline Boulevard & US 101 Northbound Off-Ramp/La Avenida Street currently operates at LOS F during both peak hours under background conditions, with and without the project. Since the project would not cause the critical movement delay to increase by 4 or more seconds, the project would not have an adverse effect at the intersection.

The intersection of Linda Vista Avenue & Middlefield Road operates at LOS E during the AM peak hour, with and without the project under background conditions, and would degrade from LOS D to LOS E during the PM peak hour. Under background conditions, the intersection would operate at a substandard level of service during the AM peak hour. Since the addition of project generated trips would not cause the critical delay to increase by 4 or more seconds, the project would not have an adverse effect at the intersection during the AM peak hour. The addition of project generated trips would degrade the operating level of service from LOS D to LOS E during the PM peak hour. The project proposes to implement a Transportation Demand Management (TDM) plan for the affordable housing portion of the project. Based on the calculations described in the TDM plan, the implementation of a TDM program is estimated to reduce vehicle trips generated by the project by 15%. The multi-modal improvements proposed by the project would also encourage future residents to walk, bike, or use transit instead of driving. With the implementation of a TDM plan, the PM peak hour would no longer degrade to LOS E and would not have an adverse effect on traffic operations at this intersection.

Intersection Queuing Analysis

Shoreline Boulevard & Terra Bella Avenue

The existing southbound left-turn storage length is approximately 150 feet. As part of the mitigation measures for a previously approved project, the left-turn storage pocket will be extended to 350 feet

under background conditions. Under all scenarios, the Shoreline Boulevard & Terra Bella Avenue intersection was calculated to have insufficient storage for the southbound left-turn movement during the AM peak hour. The project would add 12 vehicles during the AM peak hour to the southbound left-turn movement. This equates to at most one vehicle during the heaviest cycles and would cause an adverse effect at the intersection. Based on the calculations described in the TDM plan, the implementation of a TDM program is estimated to reduce vehicle trips generated by the project by 15%. With this reduction, the project is estimated to add 10 vehicles during the AM peak hour to the southbound left-turn movement and would not extend the 95th percentile AM peak hour queue under background conditions.

Site Access and On-Site Circulation

Site access was evaluated to determine the adequacy of the site's access points with regard to the following: traffic volume, delays, vehicle queues, geometric design, and corner sight distance. On-site vehicular circulation was reviewed in accordance with generally accepted traffic engineering standards and transportation planning principles.

Recommended Site Access and On-Site Circulation Improvements

Affordable Housing Site

- Approximately 25 feet of red curb should be painted on both sides of project driveways
- Parking spaces should be assigned because the garage has dead-ends with no place to turn around.
- Trash bins would need to be wheeled out to the trash pick-up area on trash pick-up days

Public Storage Site

- Red curb should be painted in the cul-de-sac on Linda Vista Avenue.
- Red curb should be painted along the project frontage at the San Rafael cul-de-sac

Parking Supply

Vehicle Parking

Parking occupancy counts were conducted at similar affordable housing developments, which yielded an average parking demand of 1.36 spaces per unit. The project would provide 10 units for individuals that are developmentally disabled and 27 units for rapid housing. The applicant has provided information based on similar projects, stating the parking ratios provided for these uses are .85 spaces per unit for the individuals that are developmentally disabled and .6 spaces per unit for rapid housing. These ratios have been observed at similar developments from Alta Housing. The remaining 71 units would require 1.36 parking spaces per unit, as found in the parking occupancy count study.

Based on the parking ratios provided by the applicant and the observed parking demand at similar affordable housing developments in the region, the affordable housing component of the project would be required to provide 123 parking spaces. The project proposes to implement a TDM program to reduce the parking demand generated by the project. Based on the TDM strategies that would reduce vehicle ownership rates, the TDM program is estimated to reduce parking demand by 15%. Therefore, the affordable housing component of the project should provide a minimum of 105 parking spaces.

Parking counts also were conducted at similar storage facilities. These yielded an average parking demand of 0.07 space per 1,000 square feet. Based on the observed parking demand at similar Public Storage facilities in the region, the proposed project should provide 29 parking spaces for the Public Storage site.

The project proposes to provide 105 parking spaces within the two-level parking garage for the affordable housing site and 66 surface parking spaces within the Public Storage site. The affordable housing site would provide 18 fewer spaces than the recommended number of parking spaces based on the parking ratios provided by the applicant and the observed parking demand at similar affordable housing developments in the region. The project proposes to implement a TDM program that would reduce parking demand by 15%. With the implementation of the TDM program, the proposed 105 parking spaces for the affordable housing site is adequate. The Public Storage site would provide 37 more parking spaces than the demand observed at other Public Storage facilities.

Bicycle Parking

The affordable housing site would provide a total of 108 bicycle spaces for residents and 12 short-term bicycle parking spaces. The proposed number of bicycle parking spaces meets the requirements specified in the City of Mountain View municipal code.

Pedestrian, Bicycle, and Transit Analysis

The project proposes to upgrade the San Rafael Avenue/Terra Bella Avenue intersection with a raised intersection and install “ladder” style crosswalks along all approaches. The project also proposes to construct a new curb ramp to serve the existing crosswalk near the cul-de-sac along Linda Vista Avenue. The crosswalk will be restriped to be a high-visibility “ladder” style crosswalk.

The project would generate a small number of pedestrian trips between the project site and pedestrian generators along Shoreline Boulevard. With the anticipated improvements related to the Shoreline Boulevard Bus Lane and Utility Improvement project, pedestrians would have a safe and continuous connection between the project site and Shoreline Boulevard.

The project would have an adverse effect on pedestrian operations because the project is expected to add vehicle trips to San Rafael Avenue, Linda Vista Avenue, Terra Bella Avenue, Middlefield Road, and Shoreline Boulevard, which have a PQOS score of 3 or more. As described above, it is assumed that the Shoreline Boulevard Bus Lane and Utility Improvements would upgrade existing pedestrian facilities along Shoreline Boulevard and at the intersection of Shoreline Boulevard/Terra Bella Avenue. Additionally, the project would install several improvement features within the project vicinity, including a raised intersection, upgraded curb ramps, and restriped crosswalks to high-visibility crosswalks. The planned improvements by the City of Mountain View and the proposed improvements from the project would increase pedestrian comfort and safety while improving the pedestrian quality of service and is consistent with the guidelines described in the City’s Comprehensive Modal Plan.

Based on the 2015 Bicycle Transportation Plan Update, the project is expected to generate between 2-4 new bicycle trips during the AM and PM peak hours. The project would provide secure bicycle storage for residents on the ground level of the affordable housing building. Guest bicycle parking would be located along the frontages of the affordable housing building.

The project would create an adverse effect on bicycle operations because the project would add vehicle trips to Shoreline Boulevard, Middlefield Road, and Moffett Boulevard, which have a BLTS score of 3 or more. The 2015 Bicycle Transportation Plan proposes Class IV cycle tracks along Shoreline Boulevard and Moffett Boulevard and a Class II full time bike lane along Middlefield Road. The Shoreline Boulevard Bus Lane and Utility Improvements would upgrade the bicycle facilities along Shoreline Boulevard between US 101 and Montecito Avenue with protected bike lanes. The planned improvements by the City of Mountain View would increase bicyclist comfort and safety while improving the Bicycle Level of Traffic Stress and is consistent with the guidelines described in the City’s Comprehensive Modal Plan.

The project is expected to generate between 2-3 new transit riders during the AM and PM peak hours. This new ridership generated by the project could be accommodated by existing services. Due to the small number of new vehicle trips generated by the project, the project would result in a minimal increase in vehicle delay at the study intersections and would not cause a noticeable change in transit travel time and vehicle delay for the bus routes in the study area. The completion of the Shoreline Boulevard Bus Lane and Utility Improvement project would decrease travel time and delay for transit in the peak direction.

Transportation Demand Management

The following design features and TDM measures would be implemented by the project as part of the TDM plan:

- Transportation Management Association (TMA) Membership
- On-Site Carshare
- Bicycle Parking
- Collaborative Workspace
- Pedestrian-Oriented Site Design
- Delivery-Supported Amenities (Front Desk, Food Delivery Drop-Off Area, etc)
- Family TDM Amenities (Ground Level Storage for strollers, carts, etc.)
- Shared Bicycles and Resource Center
- Bike Repair and Wash Station
- Bike Training and Workshops
- TDM Coordinator and Mobility Concierge
- Informational/Promotional Materials
- Pre-Tax Transportation Benefits

1. Introduction

This report presents the results of the transportation analysis conducted for the proposed development at 1020 & 1040 Terra Bella Avenue in Mountain View, California (see Figure 1). The existing project sites contain approximately 77,418 square feet (s.f.) of drive up storage lockers, a rental office, and a non-habitable single family home. The project would redevelop the sites by replacing the existing buildings on-site with 108 units of affordable housing and a 408,964 s.f. Public Storage facility. Access to the affordable housing site would be provided via a driveway on Terra Bella Avenue and a driveway on San Rafael Avenue. Access to the public storage site would be provided via driveways on Linda Vista Avenue and on San Rafael Avenue. Figure 2 shows the project site plan for the proposed project.

Scope of Study

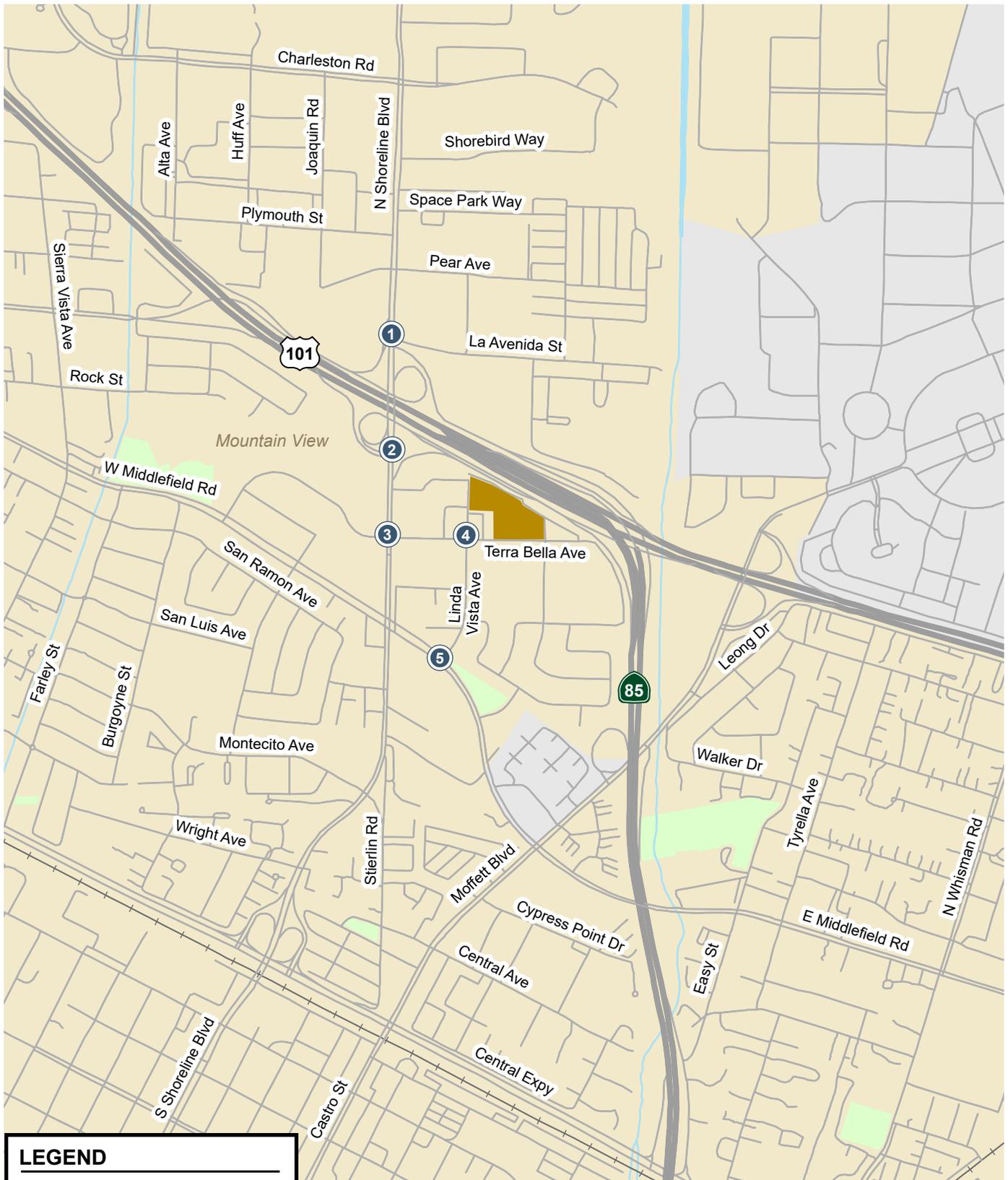
The purpose of the study is to identify potential transportation impacts related to the proposed development. Per California Senate Bill 743 (SB743) and CEQA Guidelines, the study includes a vehicle miles traveled (VMT) analysis. The study also includes a multimodal transportation analysis (MTA) that evaluates potential transportation effects of the project in accordance with the standards and methodologies set forth by the City of Mountain View and the Santa Clara Valley Transportation Authority (VTA). The VTA administers the County Congestion Management Program (CMP).

CEQA Transportation Analysis Scope

Vehicle Miles Traveled

The evaluation of VMT for this project is based on the City’s VMT Policy adopted on June 30, 2020. The City of Mountain View’s Vehicle Miles Traveled (VMT) Policy describes screening criteria based on a project description, characteristics, and/or locations of projects that would not exceed the CEQA thresholds of significance. If a project meets the screening criteria, it is then presumed that the project would result in a less-than-significant VMT impact, and a VMT analysis is not required.

The proposed project consists of affordable housing and a personal warehouse storage facility. The city’s VMT policy states that for mixed-use projects, each project component shall be evaluated independently by applying the most appropriate threshold of significance. The residential portion of the proposed project is 100% affordable and would meet the city’s screening criteria. The personal warehouse storage facility portion of the project is local-serving and would also meet the city’s screening criteria.



LEGEND

- = Site Location
- X = Study Intersection

Figure 1
Site Location and Study Intersections

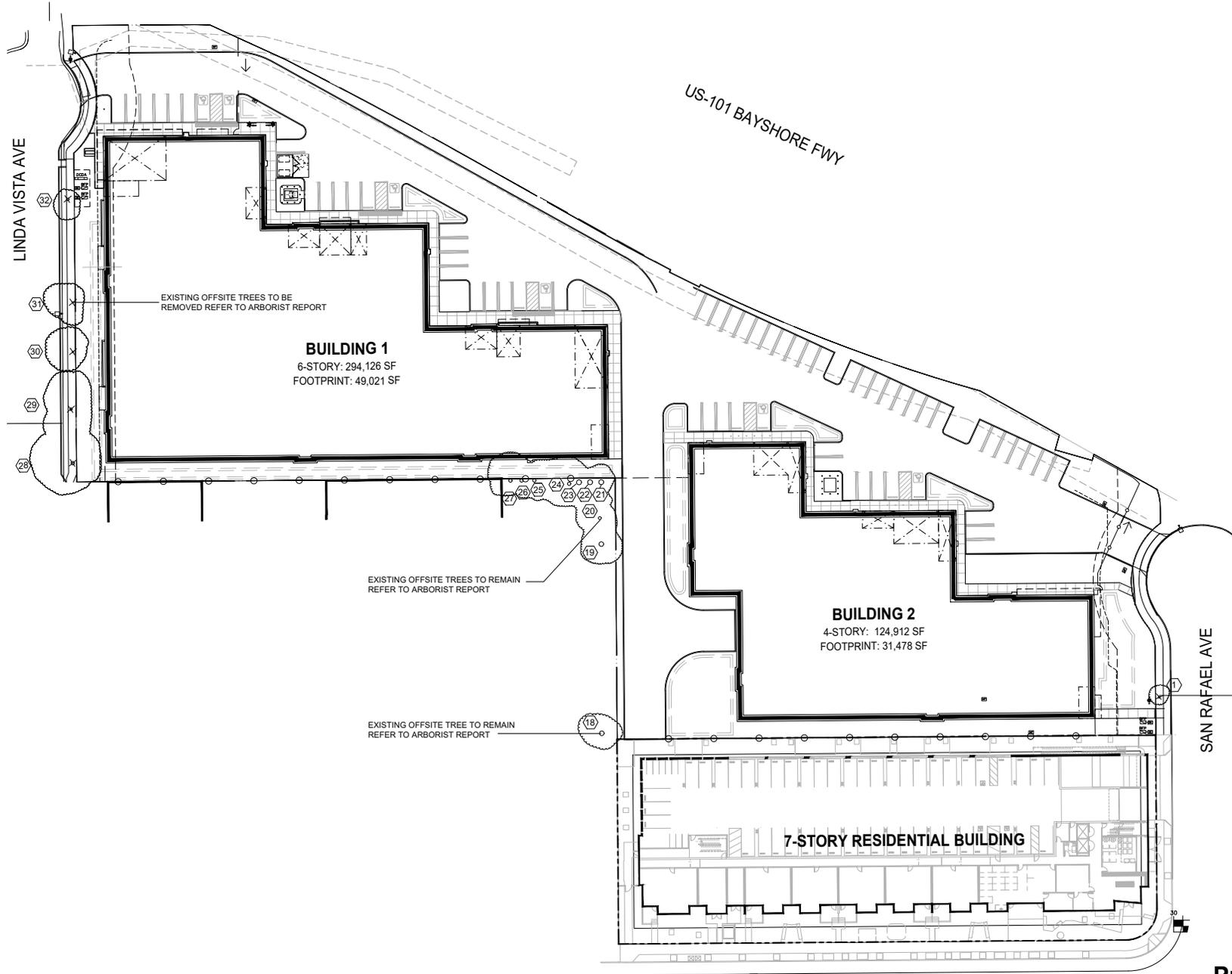


Figure 2
Project Site Plan

Transit Services

Significant impacts to transit service would occur if the project:

- Creates demand for public transit services above the capacity that is provided or planned; or
- Disrupts existing transit services or facilities; or
- Conflicts with an existing or planned transit facility; or
- Conflicts with transit policies adopted by the City of Mountain View, VTA, or Caltrans for their respective facilities in the study area.

Pedestrian and Bicycle Facilities

The Mountain View 2030 General Plan (July 2012) describes related policies necessary to ensure pedestrian and bicycle facilities are safe and effective for City residents. Using the General Plan as a guide, significant impacts to these facilities would occur when a project or an element of the project:

- Creates a hazardous condition that does not currently exist for pedestrians and bicyclists, or otherwise interferes with pedestrian accessibility to the site and adjoining areas; or
- Conflicts with an existing or planned pedestrian or bicycle facility; or
- Conflicts with policies related to bicycle and pedestrian activity adopted by the City of Mountain View, VTA, or Caltrans for their respective facilities in the study area.

Multimodal Transportation Analysis (MTA) Scope

The MTA includes an analysis of the traffic operational effects of the project on the key intersections in the vicinity of the site, a freeway capacity and ramp analysis, an evaluation of the transit, bicycle, and pedestrian access and circulation, and a review of site access and on-site circulation.

The MTA includes the evaluation of operational issues (queuing, signal operations, and potential multi-modal issues) at intersections in the general vicinity of the project site. The MTA is required by the City of Mountain View in order to assist city staff with identifying potential adverse effects on the transportation system. However, the operational deficiencies identified as part of the MTA are not considered impacts per CEQA guidelines.

Report Organization

The remainder of this report is divided into four chapters. Chapter 2 describes the existing transportation system including the existing roadway network, transit service, bicycle and pedestrian facilities. Chapter 3 describes the CEQA transportation analysis, including the VMT analysis methodology and applicable screening criteria. Chapter 4 describes the MTA including the method by which project traffic is estimated, intersection operations analysis methodology, any adverse intersection traffic effects caused by the project, signal warrant analysis, intersection vehicle queuing analysis, a parking analysis, a site access and on-site circulation review, and effects on bicycle, pedestrian, and transit facilities. Chapter 5 presents the conclusions of the transportation analysis.

2. Existing Transportation Setting

This chapter describes the existing conditions of the transportation system within the study area of the project. It describes transportation facilities in the vicinity of the project site, including the roadway network, transit services, and pedestrian and bicycle facilities.

Existing Roadway Network

Regional access to the project site is provided by US 101 and SR 85. Local access to the project site is provided via Shoreline Boulevard, Middlefield Road, Moffett Boulevard, Terra Bella Avenue, San Rafael Avenue, and Linda Vista Avenue. For the purposes of this study, US 101 and all parallel streets are considered to run east-west, and cross streets, such as Shoreline Boulevard, are considered to run north-south.

US 101 is a freeway that extends through and beyond the Bay Area, connecting San Francisco to San Jose. US 101 is eight lanes wide with three mixed-flow lanes and one high-occupancy vehicle (HOV) lane in each direction in the vicinity of the project site. US 101 provides access to the study area via a full interchange at Shoreline Boulevard.

SR 85 is a freeway that begins at US 101, east of N. Shoreline Boulevard, extends south towards San Jose, and terminates at US 101 east of the Silicon Valley Boulevard/Bernal Road interchange. SR 85 is six lanes wide (two mixed-flow lanes and one HOV lane in each direction) in the vicinity of the project site. SR 85 provides access to the project study area via an interchange at Moffett Boulevard.

Shoreline Boulevard is a north-south four-lane arterial in the vicinity of the project site. It begins near Shoreline Lake in the north and extends to El Camino Real in the south, where it becomes Miramonte Avenue. In the project vicinity, Shoreline Boulevard has a posted speed limit of 35 mph. Shoreline Boulevard has left-turn pockets at intersections and has bike lanes and sidewalks on both sides of the street. Access to the project site from Shoreline Boulevard is provided via Terra Bella Avenue.

Middlefield Road is an east-west four-lane arterial that runs parallel to US 101. It begins at the intersection of Central Expressway in Mountain View and traverses westward through Redwood City. Middlefield Road has landscaped medians with left-turn pockets at signalized intersections and has bike lanes and sidewalks on both sides of the street except one section on the south side of Middlefield Road over SR 85. Middlefield Road has a posted speed limit of 35 mph. Access to the project site from Middlefield Road is via Shoreline Boulevard and Linda Vista Avenue.

Moffett Boulevard is a north-south four-lane arterial in the vicinity of the project site. It begins from R T Jones Road in the north and extends to Central Expressway in the south, where it becomes Castro Street. Moffett Boulevard has landscaped medians with left-turn pockets at signalized intersections and has sidewalks on both sides of the street. Bike lanes are present from SR 85 to just north of Leong Drive. Moffett Boulevard has a posted speed limit of 40 mph. Access to the project site from Moffett Boulevard is via Middlefield Road.

Terra Bella Avenue is a two-lane east-west roadway in the vicinity of the project site. Terra Bella Avenue has sidewalks and on-street parking on both sides of the street. Terra Bella Avenue has a posted speed limit of 25 mph. A driveway along Terra Bella Avenue would provide access to the parking garage for the affordable housing site.

San Rafael Avenue is a two-lane north-south roadway in the vicinity of the project site. San Rafael has sidewalks and on-street parking on both sides of the street. San Rafael Avenue has a posted speed limit of 25 mph. A driveway would provide access to the second level parking of the affordable housing site. A driveway at the end of San Rafael Avenue provides access to the existing and proposed public storage facility.

Linda Vista Avenue is a two-lane north-south roadway in the vicinity of the project site. Linda Vista Avenue has sidewalks and on-street parking on both sides of the street. Linda Vista Avenue has a posted speed limit of 25 mph. A driveway at the end of Linda Vista Avenue provides access to the existing and proposed public storage facility.

Existing Pedestrian, Bicycle and Transit Facilities

The existing bicycle, pedestrian, and transit facilities in the study area are described below.

Existing Pedestrian Facilities

Pedestrian facilities in the study area consist of sidewalks along all the surrounding streets, including the project frontages along Terra Bella Avenue, Linda Vista Avenue, and San Rafael Avenue. Crosswalks and pedestrian signal heads are present along the following legs at study intersections:

- North, west, and east legs of the Shoreline Boulevard/US 101 Northbound Off-Ramp/La Avenida Street intersection
- West leg of the Shoreline Boulevard/US 101 Southbound Ramps intersection
- All legs of the Shoreline Boulevard/Terra Bella Avenue intersection

Additionally, crosswalks are provided at all legs of the Linda Vista Avenue/Terra Bella Avenue intersection and the north leg of the Linda Vista Avenue/Middlefield Road intersection. ADA-compliant curb ramps are located at most intersections within the project vicinity, with the exception of the northwest, southwest, and southeast corners of the Shoreline Boulevard/Terra Bella Avenue intersection.

Pedestrian generators in the project vicinity include office buildings and bus stops along Shoreline Boulevard and Middlefield Road. Continuous sidewalks along Terra Bella Avenue and Shoreline Boulevard provide access to major pedestrian generators in the project vicinity.

Existing Bicycle Facilities

There are several bicycle facilities in the vicinity of the project site. The existing bicycle facilities are shown in Figure 3.

Class II Bikeways (Bike Lanes). Class II bikeways are striped bike lanes on roadways that are marked by signage and pavement markings. Within the vicinity of the project site, striped bike lanes are present on the following roadway segments.

- Shoreline Boulevard, southern terminus to Charleston Road
- Middlefield Road (part-time, open during the daytime and peak hours), within the Mountain View city limits

Stevens Creek Trail

The Stevens Creek multi-use trail system runs through the City of Mountain View and is shared between pedestrians and bicyclists and separated from motor vehicle traffic. The Stevens Creek trail in the City of Mountain View is a five-mile continuous Class I bikeway from Shoreline at Mountain View in the north to Dale/Heatherstone in the south. This trail system can be accessed via a trailhead on Middlefield Road, approximately 1-mile walking distance southeast of the project site.

Existing Transit Service

Existing transit services in the study area are provided by the Valley Transportation Authority VTA and the Mountain View Transportation Management Association (MTMA). The closest bus stops serviced by the VTA and the MTMA are located along Shoreline Boulevard, approximately 1,100 feet walking distance from the project site. Figure 4 shows the existing transit services.

The project area is served by one VTA bus line and one MTMA “MVgo” shuttle. The routes that operate along Shoreline Boulevard in the project vicinity are listed in Table 1, including their route descriptions and commute hour headways.

**Table 1
Existing Bus Service Near the Project Site**

Transit Route	Route Description	Hours of Operation	Headway ¹
VTA Local Route 40	Foothill College - Mountain View Transit Center via North Bayshore	6:15 am - 10:30 pm	30 mins
Mvgo Shuttle Route B	Shoreline, La Avenida, Crittenden	6:30 am - 10:30 am and 3:30 pm - 8:00 pm	30 mins

Notes:
¹ Approximate headways during peak commute periods.



Figure 3
Existing Bicycle Facilities

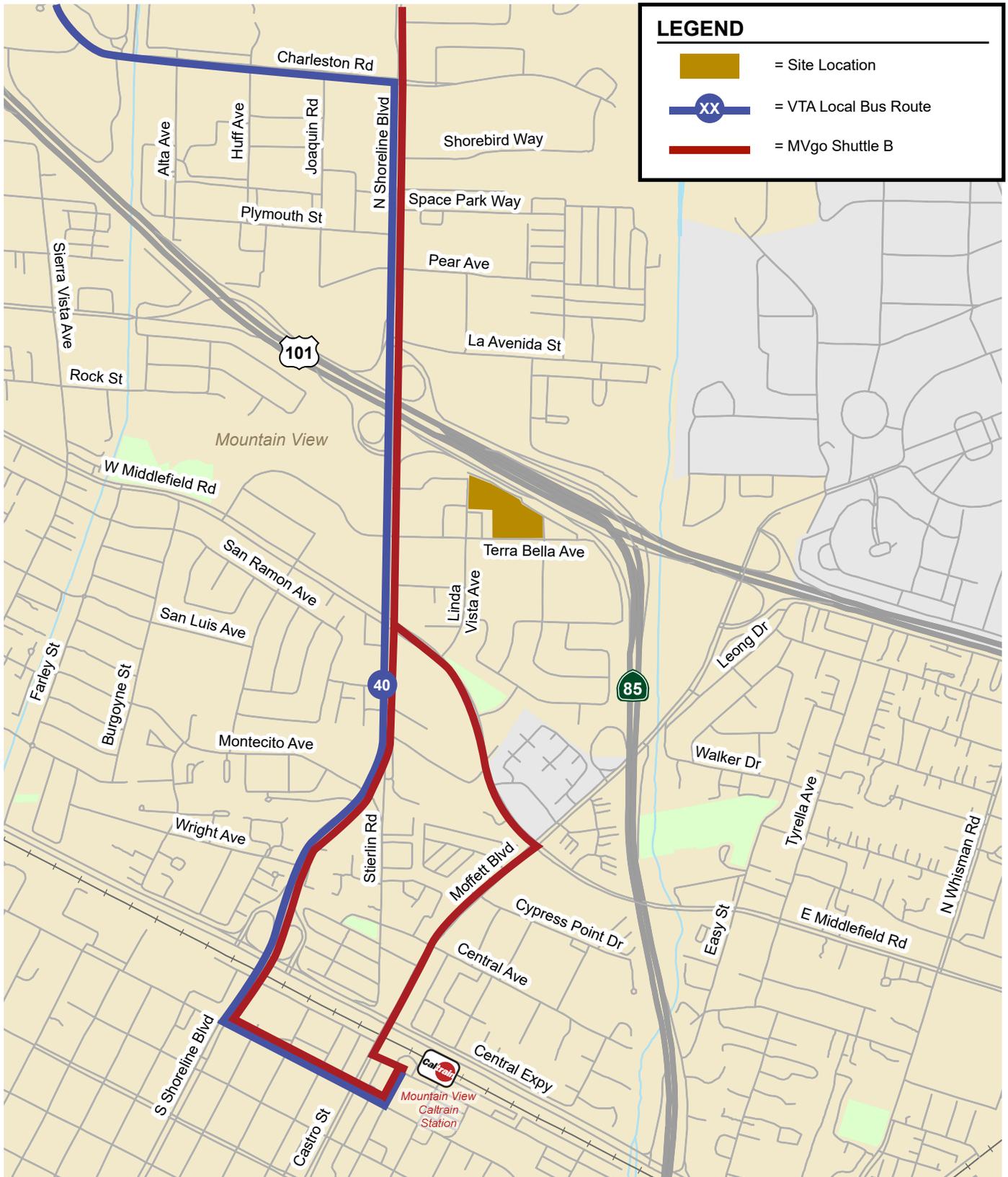


Figure 4
Existing Transit Services

3.

CEQA Transportation Analysis

This chapter describes the CEQA transportation analysis, including the VMT analysis methodology, significance criteria, and potential project impacts on VMT.

CEQA Transportation Analysis Screening Criteria

The City of Mountain View's adopted VMT policy identifies screening criteria that determine whether a CEQA transportation analysis would be required for development projects. The criteria are based on the type of project, characteristics, and/or location. If a project meets the City's screening criteria, it is presumed that the project would result in a less-than-significant transportation impact and a detailed VMT analysis is not required. The type of development projects that may meet the screening criteria include the following:

- (1) small projects screening
- (2) map-based screening
- (3) transit screening
- (4) affordable housing screening

Additionally, projects that meet the following criteria would be exempt from a detailed VMT analysis:

Retail Land Use Projects: A net increase in total VMT (difference in total VMT in the area affected with and without the project) shall be presumed to cause a significant transportation impact. Depending on the local context, projects determined by the City to be local-serving retail are exempt from being required to conduct a detailed CEQA VMT analysis. Retail projects larger than 50,000 square feet may be considered regional-serving and would be subject to the retail land-use threshold of significance.

Evaluation of Screening Criteria

The project consists of 108 units of affordable housing and a 408,964 s.f. Public Storage facility. Since 100% of the residential units will be affordable, the residential portion of the project is presumed to result in a less-than-significant transportation impact, and a detailed VMT analysis is not required.

VMT Analysis Methodology

The effects of the Public Storage facility on VMT were evaluated against the adopted VMT policy for the City of Mountain View. Since personal storage facilities are not a common land use described in the city's VMT policy, the city has provided their preferred analysis methodology for personal storage

facilities. The methodology assumes that demand for personal storage facilities is constant, and the addition of a new (or redeveloping) self-storage site would redistribute existing personal storage-based trips within the City instead of creating new trips. The quantitative approach to evaluate the potential change in project-related VMT is as follows:

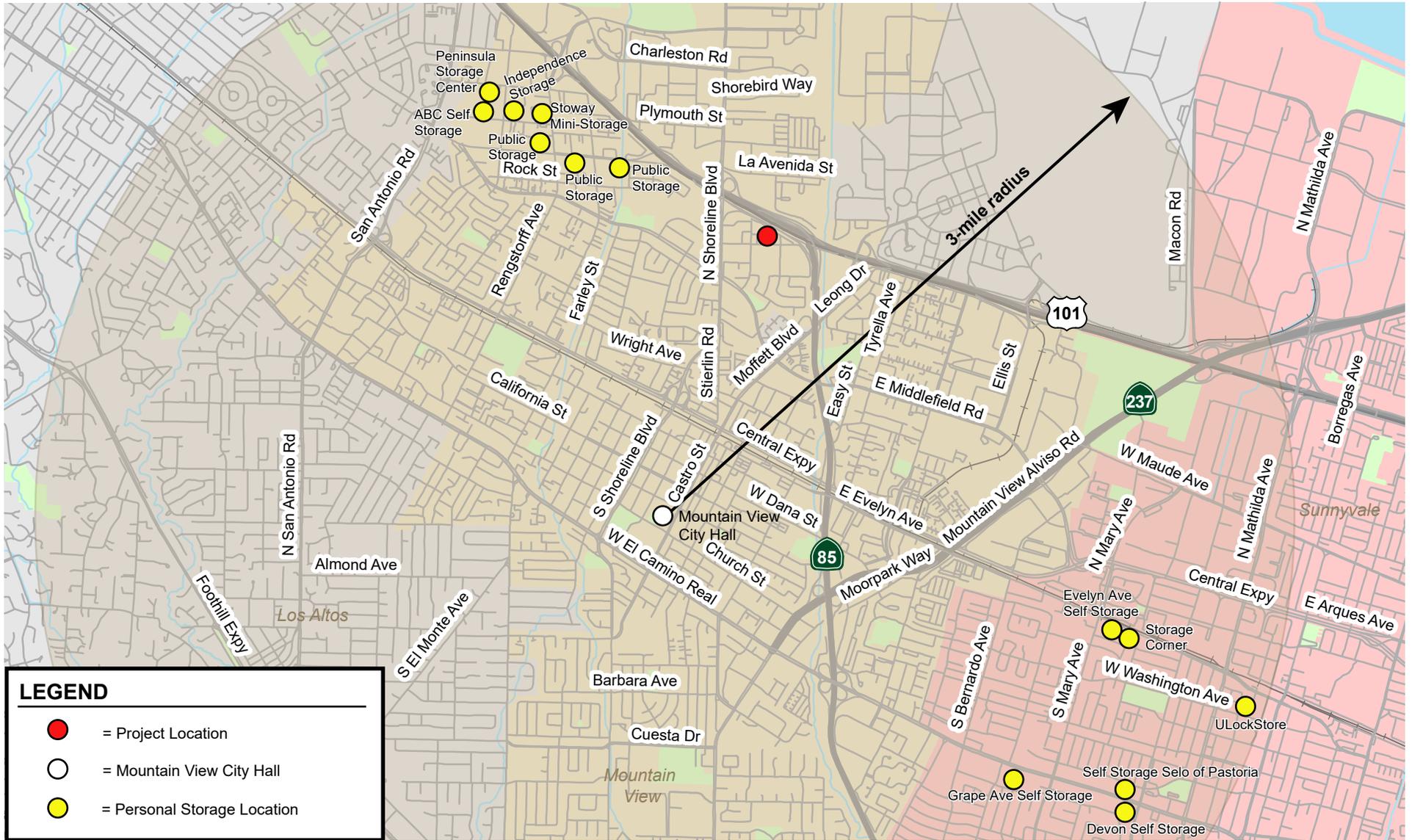
- (1) Determine the average personal storage trip length in the immediate area by measuring the distance between existing personal storage facilities and a common point near the geographical center of Mountain View (assumed to be city hall)
- (2) Measure the trip length from the project site to common point (city hall)
- (3) If the project trip length is less than the average personal storage trip length for existing personal storage facilities, than the project is presumed to reduce the average distance traveled for this type of use and is considered to have a less than significant VMT impact

Project Level VMT Analysis

There are currently 13 similar personal storage facilities in the study area vicinity within a 3 mile radius of city hall. The average distance of these facilities and the Mountain View city hall is 2.1 miles. The distance between the project site and city hall is 1.4 miles. Therefore, the project is presumed to have a less-than-significant impact on VMT because the length of travel from city hall to the project site is less than the average distance to similar personal storage facilities. Table 2 shows the list of personal storage facilities and the distance from city hall. Figure 5 shows a map of personal storage facilities and the geographic common point (city hall).

**Table 2
Vehicle Miles Traveled Estimate**

#	Name	Address	Distance to City Hall (Miles)
1	Grape Avenue Self Storage	690 Grape Avenue, Sunnyvale, CA	2.0
2	Devon Self Storage	818 W El Camino Real, Sunnyvale, CA	2.5
3	Self Storage Selo of Pastoria	833 W El Camino Real, Sunnyvale, CA	2.5
4	ULockStore	131 S Taffee Street, Sunnyvale, CA	2.8
5	Storage Corner	922 W Evelyn Avenue, Sunnyvale, CA	2.2
6	Evelyn Ave Self Storage	938 W Evelyn Avenue, Sunnyvale, CA	2.2
7	Public Storage	1909 Old Middlefield Way, Mountain View, CA	1.7
8	Public Storage	1987 Old Middlefield Way, Mountain View, CA	1.8
9	Public Storage	830 N Rengstorff Avenue, Mountain View, CA	1.9
10	Stoway Mini-Storage	2172 Wyandotte Street, Mountain View, CA	2.0
11	Independence Storage	877 Independence Avenue, Mountain View, CA	2.0
12	ABC Self Storage	2496 Wyandotte Street, Mountain View, CA	2.1
13	Peninsula Storage Center	2409 Leghorn Street, Mountain View, CA	2.2
Average (All sites within 3 miles of City Hall):			2.1
	Project	1040 Terra Bella Avenue, Mountain View, CA	1.4



LEGEND

- = Project Location
- = Mountain View City Hall
- = Personal Storage Location

Figure 5
Personal Storage Locations

4. Multimodal Transportation Analysis

The MTA includes an analysis of the traffic operational effects of the project on the key intersections in the vicinity of the site, an evaluation of the transit, bicycle, and pedestrian access and circulation, and a review of site access, on-site circulation, and parking.

The MTA includes the evaluation of weekday AM and PM peak hour operational issues (queuing, signal operations, and potential multi-modal issues) at intersections in the general vicinity of the project site. The MTA is required by the City of Mountain View in order to assist city staff with identifying potential adverse effects on the transportation system. However, the operational deficiencies identified as part of the MTA are not considered impacts per CEQA guidelines.

Project Trip Estimates

The magnitude of traffic produced by a new development and the locations where that traffic would appear are estimated using a three-step process: (1) trip generation, (2) trip distribution, and (3) trip assignment. In determining project trip generation, the magnitude of traffic entering and exiting the site is estimated for the AM and PM peak hours. As part of the project trip distribution, the directions to and from which the project trips would travel are estimated. In the project trip assignment, the project trips are assigned to specific streets and intersections. These procedures are described below.

Trip Generation

Proposed Project Trips

Through empirical research, data have been collected that indicate the amount of traffic that can be expected to be generated by common land uses. Project trip generation was estimated by applying to the size and uses of the development the appropriate trip generation rates. The average trip generation rates for Mini-Warehouse (Land Use 151) and Affordable Housing (Land Use 223) as published in the Institute of Transportation Engineers (ITE) *Trip Generation Manual, 11th Edition* (2021) were applied to the size of the Public Storage facility and the proposed number of affordable housing units. Based on the trip generation rates and the project size, it is estimated that, prior to any trip reductions, the proposed development would generate 1,117 daily trips with 76 trips (33 inbound and 43 outbound) occurring during the AM peak-hour and 111 trips (59 inbound and 52 outbound) occurring during the PM peak-hour.

Trip credits were taken for the existing 77,418 s.f. of personal storage warehousing and the single-family home on the project site.

Net Project Trips

After applying the ITE trip rates and trip credits from existing uses, it is estimated that the project would generate 996 new daily vehicle trips, with 68 new trips (29 inbound and 39 outbound) occurring during the AM peak hour and 98 new trips (52 inbound and 46 outbound) occurring during the PM peak hour. The project trip generation estimates are presented in Table 3.

Trip Distribution and Trip Assignment

The trip distribution pattern for the project was developed based on existing travel patterns on the surrounding roadway system and the locations of complementary land uses. The peak-hour vehicle trips generated by the project were assigned to the roadway network in accordance with the trip distribution pattern. Figure 6 shows the trip distribution pattern, and Figure 7 shows the net trip assignment of project traffic on the local transportation network.

Intersection Operations Methodology

This section presents the methods used to evaluate traffic operations at the study intersections. It includes descriptions of the data requirements, the analysis methodologies, the applicable level of service standards, and the criteria defining adverse effects at the study intersections.

The intersection operations analysis is intended to quantify the operations of intersections and to identify potential negative effects due to the addition of project traffic. However, a potential adverse effect on a study intersection is not considered a CEQA impact metric.

Study Intersections

The study includes an analysis of AM and PM peak-hour traffic conditions for three signalized intersections and two unsignalized intersections within the City of Mountain View. Intersections were selected in coordination with city staff.

The following study intersections were selected for analysis:

1. Shoreline Boulevard & La Avenida Street/US 101 Northbound Off-ramp
2. Shoreline Boulevard & US 101 Southbound Ramps
3. Shoreline Boulevard & Terra Bella Avenue
4. Linda Vista Avenue & Terra Bella Avenue (unsignalized)
5. Linda Vista Avenue & Middlefield Road (unsignalized)

Data Requirements

The data required for the analysis were obtained from recent traffic studies, new traffic counts, the City of Mountain View, and field observations. The following data were collected from these sources:

- existing traffic volumes
- existing lane configurations
- signal timing and phasing
- approved roadway improvements
- approved project trips

**Table 3
Project Trip Generation Estimates**

Land Use	Size	Daily		AM Peak Hour						PM Peak Hour						
		Rate	Trip	Rate	Split		Trip		Rate	Split		Trip				
					In	Out	In	Out		Total	In	Out	Total			
Proposed Land Uses																
#151 - Mini-Warehouse	408,964 Square Feet	1.450	593	0.090	59%	41%	22	15	37	0.150	47%	53%	29	32	61	
#223 - Affordable Housing	109 Dwelling Units	4.810	524	0.360	29%	71%	11	28	39	0.460	59%	41%	30	20	50	
Total Project Trips			1,117				33	43	76				59	52	111	
Existing Land Uses																
#151 - Mini-Warehouse	77,418 Square Feet	1.450	112	0.090	59%	41%	4	3	7	0.150	47%	53%	6	6	12	
#210 - Single-Family Detached Housing	1 Dwelling Units	9.430	9	0.700	26%	74%	0	1	1	0.940	63%	37%	1	0	1	
Total Project Trips			121				4	4	8				7	6	13	
Net Project Trips			996				29	39	68				52	46	98	

Source: ITE Trip Generation Manual, 11th Edition 2021.

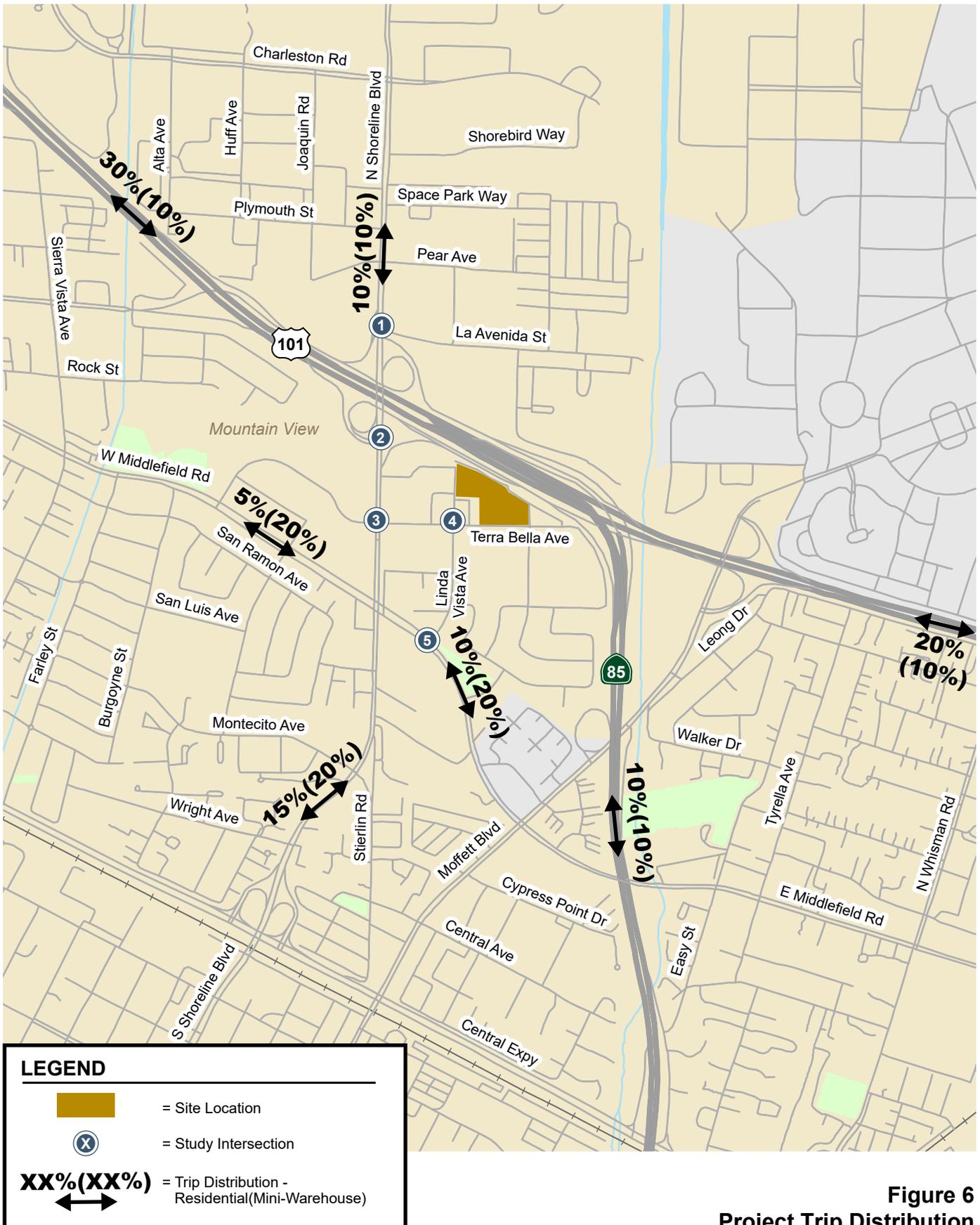


Figure 6
Project Trip Distribution

1020-1040 Terra Bella Avenue Transportation Analysis

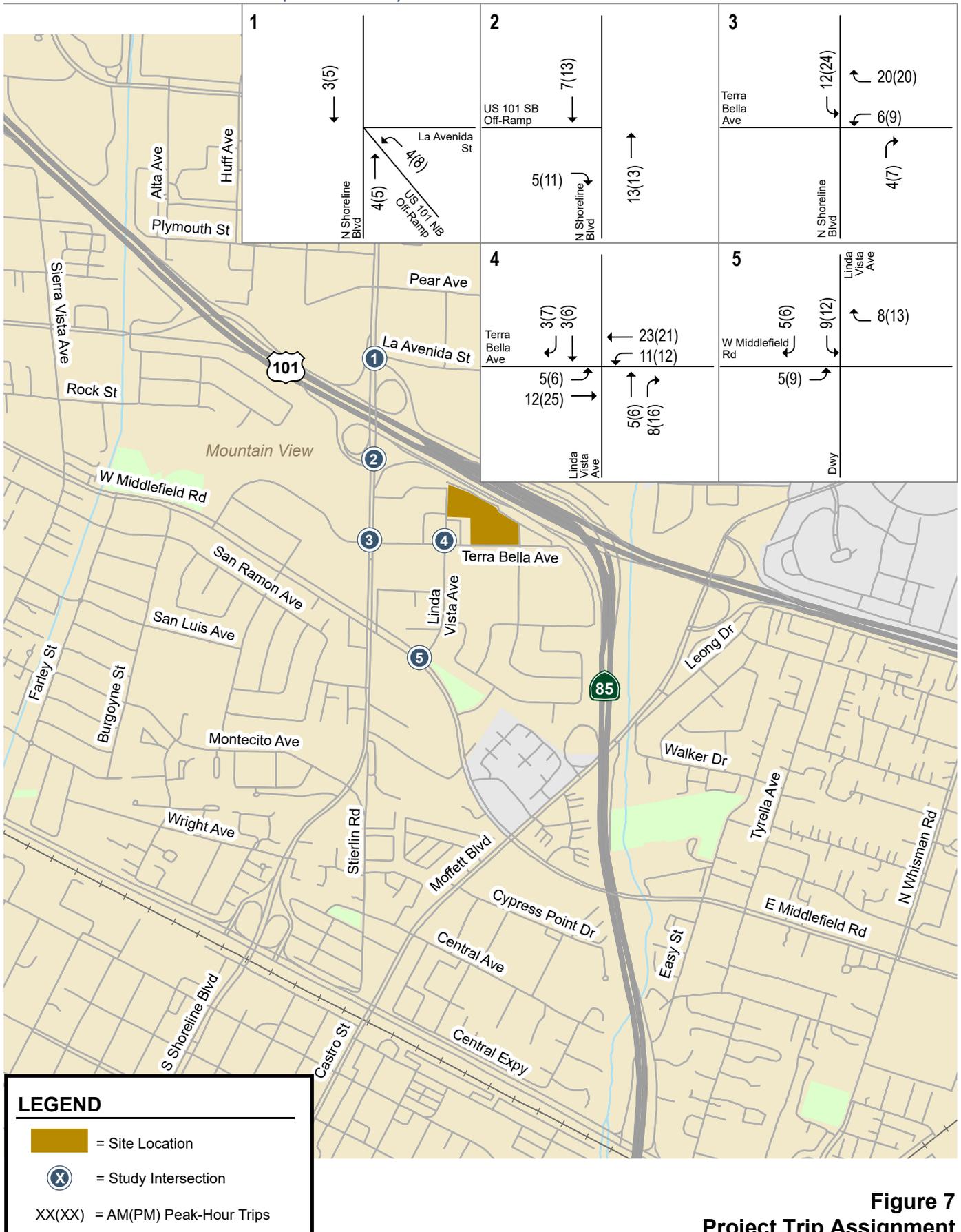


Figure 7
Project Trip Assignment

Lane Configurations

The existing lane configurations at the study intersections were determined by observations in the field and are shown on Figure 8. The following roadway improvements are assumed to be completed under background and background plus project conditions:

- **Shoreline Boulevard Bus Lane Improvement Project.** The project would include a reversible transit-only lane on N. Shoreline Boulevard that extends northward from Middlefield Road to Pear Avenue. The single lane would operate northbound on weekday mornings and southbound in the afternoon. On N. Shoreline Boulevard between Middlefield Road and Terra Bella Avenue, the transit lane would occupy the existing center left-turn lane. All vehicles currently using the center turn lane would perform a U-turn at either the Middlefield Road or Terra Bella Avenue intersections. The left-turn lane that provides access to the southbound SR 85 on-ramp from northbound Shoreline Boulevard would be removed and replaced with the reversible bus lane. Traffic bound for southbound SR 85 is expected to divert to the SR 85/Moffett Boulevard interchange. The bus lane along Shoreline Boulevard would occupy the existing landscaped medians between Pear Avenue and Terra Bella Avenue.
 - N. Shoreline Boulevard and US 101 Southbound Off-Ramp: The northbound left-turn lane onto the southbound SR 85 on-ramp and the associated signal phase would be removed.
 - N. Shoreline Boulevard and Terra Bella Avenue: The signal phasing for the eastbound and westbound approaches is expected to be modified from permitted to split phase. Split phase operation would increase the total intersection lost time and the cycle length.

Traffic Volumes

Existing Conditions

Existing peak hour traffic volumes at all signalized study intersections were obtained from previous transportation studies in the area. For intersections where count data was more than two years old, a compounded growth factor of 1% per year was applied. At locations where count data was unavailable, counts were conducted and at adjacent intersections where count data is available. The new turning movement counts were then compared to existing counts and factored to represent pre-COVID traffic volumes. The existing peak-hour intersection volumes are shown on Figure 9. Intersection turning-movement counts conducted for this analysis are presented in Appendix A.

Future Conditions

Background traffic volumes for the study intersections (see Figure 10) were estimated by adding to the existing traffic volumes (1) the trips generated by nearby approved projects that have not been constructed or occupied and (2) the reassigned traffic resulting from the Shoreline Boulevard bus lane improvement project. Project trips were added to background traffic volumes to obtain background plus project traffic volumes (see Figure 11).

A list of approved projects was obtained from the City of Mountain View. Hexagon considered both the location and size of the approved projects in order to eliminate those that were too far away or too small to affect traffic conditions of the study intersections. The approved projects considered for the study are listed in Appendix B. Vehicle trips from the approved projects were obtained from the project's TIA or environmental document (initial study or EIR), if available. For projects without a traffic study, trip estimates were developed using rates published in the *Trip Generation Manual*. The estimated trips were assigned to the study intersections according to distributions identified in the development traffic studies, if available, or knowledge of the study area.

1020-1040 Terra Bella Avenue Transportation Analysis

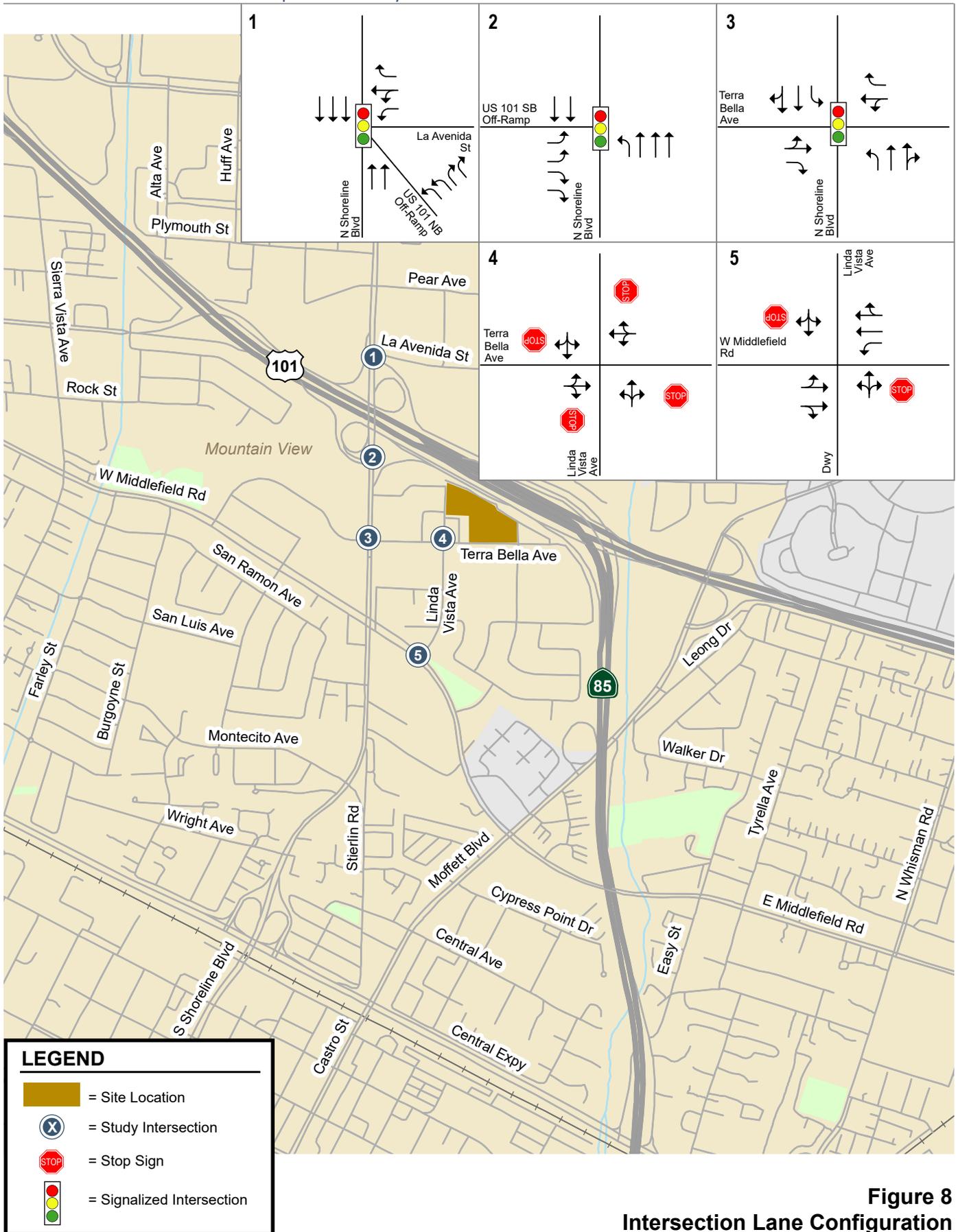


Figure 8
Intersection Lane Configuration

1020-1040 Terra Bella Avenue Transportation Analysis

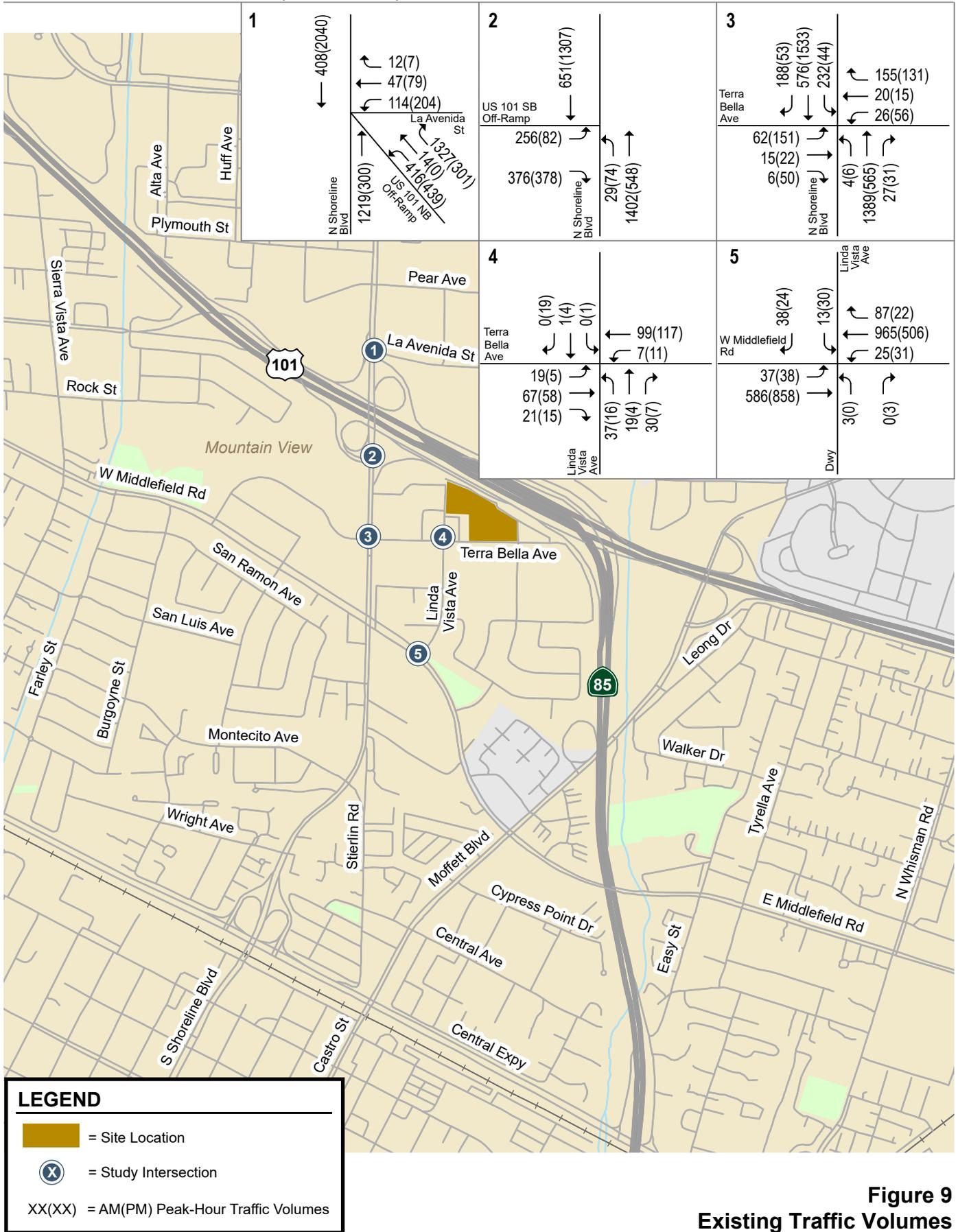


Figure 9
Existing Traffic Volumes

1020-1040 Terra Bella Avenue Transportation Analysis

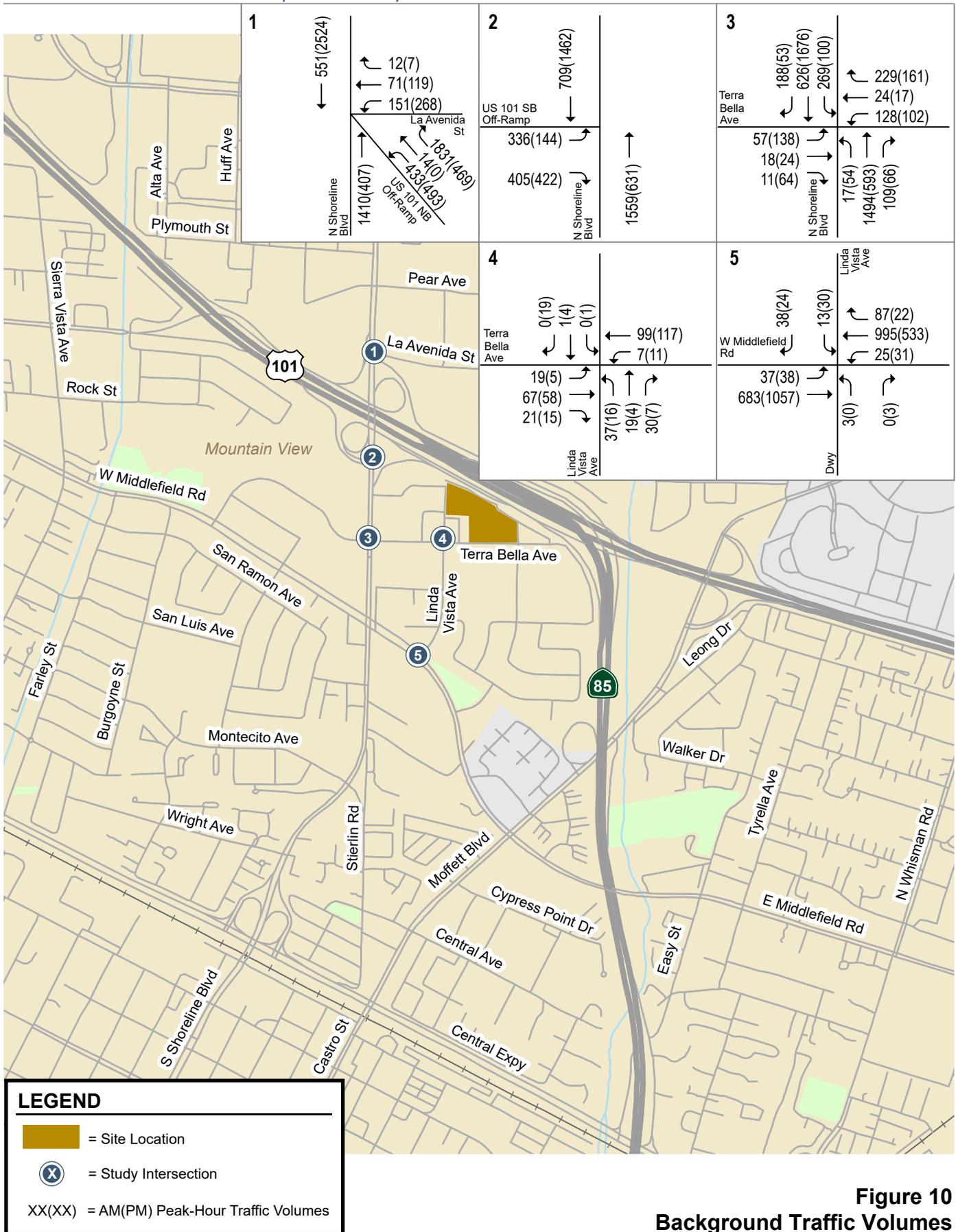


Figure 10
Background Traffic Volumes

1020-1040 Terra Bella Avenue Transportation Analysis

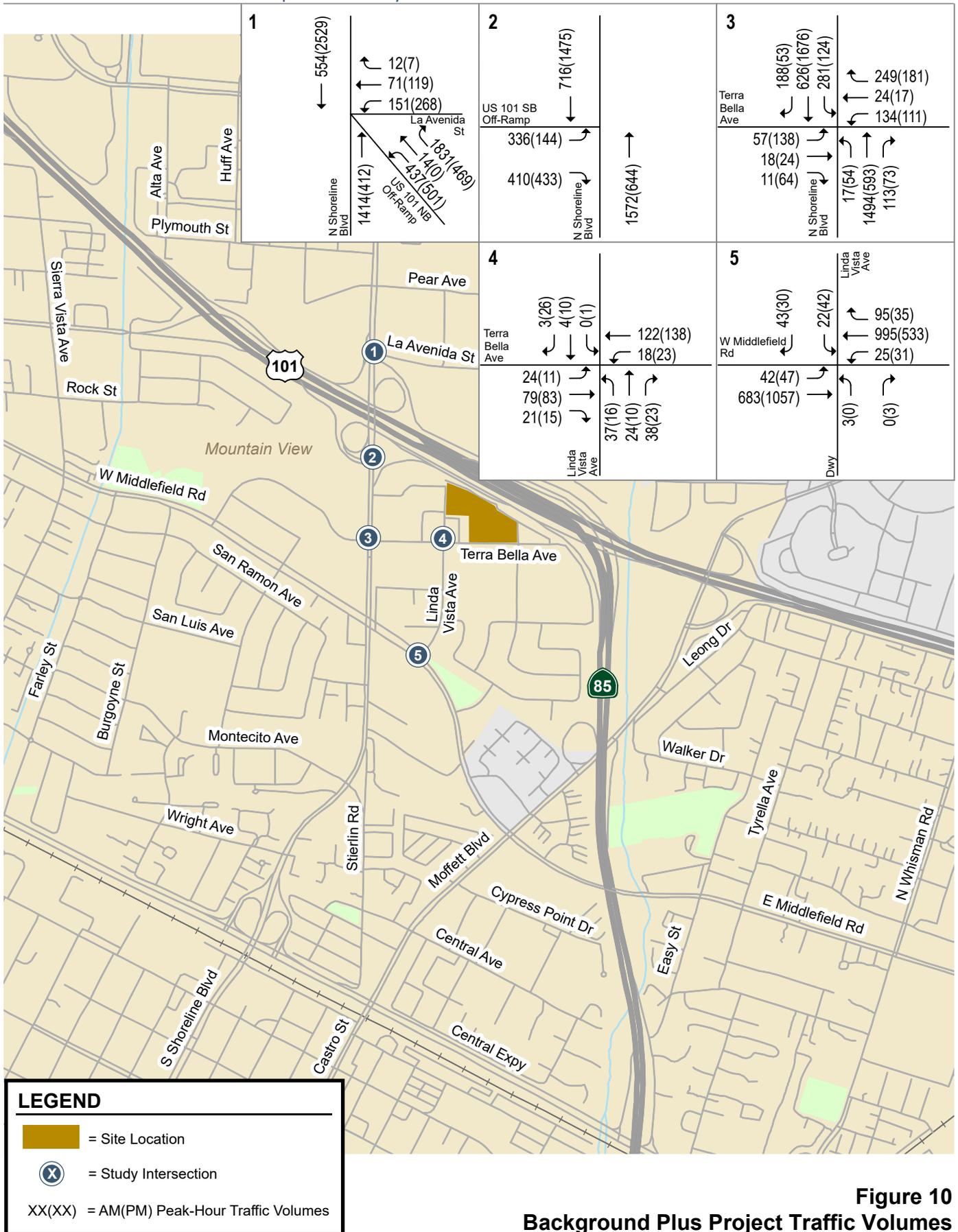


Figure 10
Background Plus Project Traffic Volumes

The Shoreline Boulevard bus lane improvement project identifies the removal of the northbound left-turn lane at the intersection of N. Shoreline Boulevard and the on-ramp to southbound US 101/SR 85. The closure of this lane would require all vehicles bound for SR 85 to use Middlefield Road to access the Moffett Boulevard/SR 85 interchange. Therefore, all existing vehicles that are utilizing the left-turn lane were rerouted to the Moffett interchange. The proposed center transit lane would occupy the existing center turn lane on N. Shoreline Boulevard between Middlefield Road and Terra Bella Avenue. All vehicles currently using the center turn lane would perform a U-turn at either the Middlefield Road or Terra Bella Avenue intersections. Potential traffic reduction as a result of bus lane project was not considered in the background traffic volumes.

Traffic volumes under all scenarios are tabulated in Appendix C.

Level of Service Standards and Analysis Methodologies

Traffic conditions at the study intersections were evaluated using level of service (LOS). Level of service is a qualitative description of operating conditions ranging from LOS A, or free-flow conditions with little or no delay, to LOS F, or jammed conditions with excessive delays.

Signalized Intersection Level of Service

For signalized intersections, the level of service method evaluates intersection operations on the basis of average control delay time for all vehicles at the intersection based on the methodology described in the *2000 Highway Capacity Manual* (HCM). Table 4 presents the level of service definitions for signalized intersections.

This study utilizes TRAFFIX software to determine intersection levels of service based on the 2000 HCM methodology. Since TRAFFIX is approved by VTA as the level of service analysis software for CMP signalized intersections, the City of Mountain View employs the CMP default values for the analysis parameters. TRAFFIX software was used to analyze intersection operations and intersection impacts based on the increases in critical-movement delay and the volume-to-capacity ratio (v/c) between no-project and project scenarios.

According to the 2030 General Plan Action Items (MOB 8.1.3), until adoption of new significance thresholds of performance indicators occurs, the City of Mountain View has interim level of service (LOS) standards based on the 1992 General Plan. The interim standard for signalized intersections is LOS D, except for CMP intersections and intersections in the Downtown and San Antonio Center planning areas, where the standard is LOS E.

Unsignalized Intersection Level of Service

Level of service analysis at unsignalized intersections is generally used to determine the need for modification in the type of intersection control (i.e., all-way stop or signalization). As part of the evaluation, traffic volumes, delays, and traffic signal warrants are evaluated to determine if the existing intersection control is appropriate.

For unsignalized intersections, level of service depends on the average delay experienced by vehicles on the stop-controlled approaches. For side street stop-controlled intersections (two-way or T-intersections), operations are defined by the average control delay experienced by vehicles entering the intersection from the stop-controlled approaches on minor streets or from left-turn approaches on major streets. For side street stop-controlled intersections, the level of service is reported based on the average delay for the worst approach. The level of service definitions for unsignalized intersections is shown in Table 5. This study utilizes TRAFFIX software to determine intersection levels of service based on the 2000 HCM methodology for unsignalized intersection.

Table 4
Signalized Intersection Level of Service Definitions Based on Control Delay

Level of Service	Description	Average Control Delay Per Vehicle (sec.)
A	Signal progression is extremely favorable. Most vehicles arrive during the green phase and do not stop at all. Short cycle lengths may also contribute to the very low vehicle delay.	10.0 or less
B	Operations characterized by good signal progression and/or short cycle lengths. More vehicles stop than with LOS A, causing higher levels of average vehicle delay.	10.1 to 20.0
C	Higher delays may result from fair signal progression and/or longer cycle lengths. Individual cycle failures may begin to appear at this level. The number of vehicles stopping is significant, though some vehicles may still pass through the intersection without stopping.	20.1 to 35.0
D	The influence of congestion becomes more noticeable. Longer delays may result from some combination of unfavorable signal progression, long cycle lengths, or high volume-to-capacity (V/C) ratios. Many vehicles stop and individual cycle failures are noticeable.	35.1 to 55.0
E	This is considered to be the limit of acceptable delay. These high delay values generally indicate poor signal progression, long cycle lengths, and high volume-to-capacity (V/C) ratios. Individual cycle failures occur frequently.	55.1 to 80.0
F	This level of delay is considered unacceptable by most drivers. This condition often occurs with oversaturation, that is, when arrival flow rates exceed the capacity of the intersection. Poor progression and long cycle lengths may also be major contributing causes of such delay levels.	greater than 80.0

Source: Transportation Research Board, *2010 Highway Capacity Manual* (Washington, D.C., 2010)

Table 5
Unsignalized Intersection Level of Service Definitions Based on Average Delay

Level of Service	Description	Average Delay Per Vehicle (Sec.)
A	Little or no traffic delay	10.0 or less
B	Short traffic delays	10.1 to 15.0
C	Average traffic delays	15.1 to 25.0
D	Long traffic delays	25.1 to 35.0
E	Very long traffic delays	35.1 to 50.0
F	Extreme traffic delays	greater than 50.0

Source: Transportation Research Board, *2010 Highway Capacity Manual* (Washington, D.C., 2000)

Definition of Adverse Intersection Operations Effects

Adverse operations effects on signalized intersections are based on the City of Mountain View and CMP level of service standards. The City of Mountain View has applied adverse effect criteria for unsignalized intersections. Adverse intersection operation effects are described below.

According to the City of Mountain View and CMP level of service standards, a development is said to create an adverse operations effect on traffic conditions at a study intersection if for either peak hour, either of the following conditions occurs:

1. The level of service at the intersection drops below its respective level of service standard (LOS D or better for local intersections and LOS E or better for CMP intersections) when project traffic is added, or
2. An intersection that operates below its level of service standard under no-project conditions experiences an increase in critical-movement delay of four (4) or more seconds, and an increase in critical volume-to-capacity ratio (v/c) of one percent (0.01) or more when project traffic is added.

The exception to this threshold is when the addition of project traffic reduces the amount of average control delay for critical movements, i.e., the change in average control delay for critical movements are negative. In this case, the threshold is when the project increases the critical v/c value by 0.01 or more. An adverse operations effect is said to be satisfactorily mitigated when measures are implemented that would restore intersection conditions to its acceptable level of service or to an average delay that is better than no-project conditions.

Intersection Operations Analysis Results

The intersection level of service analysis is summarized in Table 6. The level of service calculation sheets are included in Appendix D.

Existing Intersection Operation Conditions

Intersection levels of service were evaluated against applicable City of Mountain View operations standards. The results of the level of service analysis show most study intersections currently operate at an acceptable LOS D or better during both the AM and PM peak hours. Based on prior field observations at the intersection of Shoreline Boulevard & US 101 Northbound Off-Ramp/La Avenida Street, both peak hours often require vehicles to wait more than one signal cycle. The field observations indicate that the intersection currently operates at LOS F during both peak hours.

Future Intersection Operation Conditions

The operations analysis shows that most of the study intersections are projected to operate at acceptable levels of service, under background conditions and background plus project conditions during both the AM and PM peak hours. The intersection of Shoreline Boulevard & US 101 Northbound Off-Ramp/La Avenida Street will operate at LOS F during both peak hours under background conditions, with and without the project. Since the project would not cause the critical movement delay to increase by 4 or more seconds, the project would not have an adverse effect at the intersection.

The intersection of Linda Vista Avenue & Middlefield Road operates at LOS E during the AM peak hour, with and without the project and would degrade from LOS D to LOS E during the PM peak hour. During the AM peak hour, the driveway (south leg) of the intersection experiences the most delay. The north leg (to which project would add trips) would also operate at LOS E with the project during the AM peak

hour). During the PM peak hour, the north leg of the intersection experiences the most delay. Under background conditions, the intersection would operate at a substandard level of service during the AM peak hour. Since the addition of project generated trips would not cause the critical delay to increase by 4 or more seconds, the project would not have an adverse effect at the intersection during the AM peak hour. The addition of project generated trips would degrade the operating level of service from LOS D to LOS E during the PM peak hour. The project proposes to implement a Transportation Demand Management (TDM) plan for the affordable housing portion of the project. Based on the calculations described in the TDM plan, the implementation of a TDM program is estimated to reduce vehicle trips generated by the project by 15%. The multi-modal improvements proposed by the project would also encourage future residents to walk, bike, or use transit instead of driving. With the implementation of a TDM plan, the PM peak hour would no longer degrade to LOS E and would not have an adverse effect on traffic operations at this intersection.

Table 6
Intersection Level of Service Results

#	Intersection	Peak Hour	Existing		Background		Background		Incr. in Critical Delay (sec)	Incr. in Critical V/C
			No Project		No Project		with Project			
			Avg. Delay (sec)	LOS	Avg. Delay (sec)	LOS	Avg. Delay (sec)	LOS		
1	Shoreline Boulevard & US 101 Northbound Off-Ramp/La Avenida Street	AM	80+	F²	80+	F²	80+	F²	0.1	0.000
		PM	80+	F²	80+	F²	80+	F²	0.0	0.001
2	Shoreline Boulevard & US 101 Southbound Ramps	AM	22.3	C	20.9	C	21.0	C	0.2	0.006
		PM	22.3	C	19.4	B	19.6	B	0.3	0.008
3	Shoreline Boulevard & Terra Bella Avenue	AM	20.9	C	34.2	C	35.3	D	1.5	0.013
		PM	16.9	B	31.5	C	32.7	C	0.8	0.006
4	Linda Vista Avenue & Terra Bella Avenue ¹	AM	10.5	B	10.5	B	10.8	B	0.3	0.007
		PM	9.9	A	9.9	A	10.2	B	0.8	0.006
5	Linda Vista Avenue & Middlefield Road ¹	AM	34.3	D	40.8	E	42.2	E	0.6	0.121
		PM	23.4	C	28.6	D	35.1	E	0.6	0.108
	TDM Plan mitigation (-15% affordable housing trips)	AM					42.1	E	0.3	0.042
		PM					34.4	D	0.5	0.100

Bold indicates a substandard level of service.

Note:

¹ Denotes two-way stop-controlled intersection. The worst leg delay is reported.

² The calculated LOS does not reflect the unmet vehicle demand that cannot get through the intersection during the peak hour. Prior field observations indicate that the intersection operates at LOS F with 80+ seconds of average delay during one or both peak hours.

Signal Warrant Analysis

The need for signalization of an unsignalized intersection is assessed based on the Peak Hour Volume Warrant (Warrant 3) described in the *California Manual on Uniform Traffic Control Devices for Streets and Highways (CA MUTCD)*, Part 4, Highway Traffic Signals, 2014. This method makes no evaluation of intersection level of service, but simply provides an indication whether vehicular peak hour traffic volumes are, or would be, sufficient to justify installation of a traffic signal. Intersections that meet the peak hour warrant are subject to further analysis before determining that a traffic signal is necessary. Additional analysis may include unsignalized level of service analysis and/or operational analysis such as evaluating vehicle queuing and delay. Other options such as traffic control devices, signage, or geometric changes may be preferable based on existing field conditions.

In order to meet the peak-hour traffic signal warrant, minor streets must have a volume of at least 100 vehicles per hour. Since the minor streets at both unsignalized intersections do not meet the 100 vehicle per hour threshold, it can be concluded that neither unsignalized intersection meets the peak hour traffic warrant.

Intersection Queuing Analysis

The analysis of intersection operations was supplemented with a vehicle queuing analysis at intersections where the project would add a substantial number of trips to left-turn movements. The queuing analysis is presented for informational purposes only, since the City of Mountain View has not defined a policy related to queuing. Vehicle queues were estimated using a Poisson probability distribution, which estimates the probability of “n” vehicles for a vehicle movement using the following formula:

$$P(x=n) = \frac{\lambda^n e^{-\lambda}}{n!}$$

Where:

- P (x=n) = probability of “n” vehicles in queue per lane
- n = number of vehicles in the queue per lane
- λ = average # of vehicles in the queue per lane (vehicles per hr per lane/signal cycles per hr)

The basis of the analysis is as follows: (1) the Poisson probability distribution is used to estimate the 95th percentile maximum number of queued vehicles for a particular left-turn movement; (2) the estimated maximum number of vehicles in the queue is translated into a queue length, assuming 25 feet per vehicle; and (3) the estimated maximum queue length is compared to the existing or planned available storage capacity for the left-turn movement. This analysis thus provides a basis for estimating future turn pocket storage requirements at intersections.

For signalized intersections, the 95th percentile queue length value indicates that during the peak hour, a queue of this length or less would occur on 95 percent of the signal cycles, or, a queue length larger than the 95th percentile queue would only occur on 5 percent of the signal cycles (about 3 cycles during the peak hour for a signal with a 60-second cycle length). Thus, turn pocket storage designs based on the 95th percentile queue length would ensure that storage space would be exceeded only 5 percent of the time for a signalized movement. Vehicle queuing at unsignalized intersections are evaluated based on the delay experienced at the specific study turn movement. The operations analysis is based on vehicle queuing for high-demand movements at intersections (see Table 7).

The proposed project would add a substantial number of trips (10 or more) to left-turn movements at one study intersection, as described below. As shown in Table 7, the queue for the southbound left turn would exceed the storage length under existing, background conditions, and background plus project conditions.

Shoreline Boulevard & Terra Bella Avenue

The existing southbound left-turn storage length is approximately 150 feet. As part of the mitigation measures for a previously approved project, the left-turn storage pocket will be extended to 350 feet under background conditions. Under all scenarios, the Shoreline Boulevard & Terra Bella Avenue intersection was calculated to have insufficient storage for the southbound left-turn movement during the AM peak hour. The project would add 12 vehicles during the AM peak hour to the southbound left-turn movement. This equates to at most one vehicle during the heaviest cycles and would cause an adverse effect at the intersection. Based on the calculations described in the TDM plan, the implementation of a TDM program is estimated to reduce vehicle trips generated by the project by

15%. With this reduction, the project is estimated to add 10 vehicles during the AM peak hour to the southbound left-turn movement and would not extend the 95th percentile AM peak hour queue under background conditions.

**Table 7
Queuing Analysis Summary**

Shoreline Boulevard & Terra Bella Avenue				
Measurement	SBL		SBL (with TDM)	
	AM	PM	AM	PM
Existing				
Cycle/Delay ¹ (sec)	150	145	150	145
Volume (vphpl)	232	44	232	44
95th % Queue (veh/ln.)	15	4	15	4
95th % Queue (ft./ln.) ²	375	100	375	100
Storage (ft./ln.)	150	150	150	150
Adequate (Y/N)	N	Y	N	Y
Background				
Cycle/Delay ¹ (sec)	160	165	160	165
Volume (vphpl)	269	100	269	100
95th % Queue (veh/ln.)	18	8	18	8
95th % Queue (ft./ln.) ²	450	200	450	200
Storage (ft./ln.)	350	350	350	350
Adequate (Y/N)	N	Y	N	Y
Background Plus Project				
Cycle/Delay ¹ (sec)	160	165	160	165
Volume (vphpl)	281	124	279	121
95th % Queue (veh/ln.)	19	10	18	10
95th % Queue (ft./ln.) ²	475	250	450	250
Storage (ft./ln.)	350	350	350	350
Adequate (Y/N)	N	Y	N	Y

Notes:
 SBL = southbound left movement
¹ Vehicle queue calculations based on cycle length.
² Assumes 25 Feet Per Vehicle Queued.

Site Access and On-Site Circulation

Site access was evaluated to determine the adequacy of the site’s access points with regard to the following: traffic volume, delays, vehicle queues, geometric design, and corner sight distance. On-site vehicular circulation was reviewed in accordance with generally accepted traffic engineering standards and transportation planning principles.

Affordable Housing Building

The evaluation of site access and circulation for the affordable housing building is based on the September 2022 site plan prepared by Van Mater Williams Pollack. The ground level site plan is shown on Figure 12. The second-floor site plan is shown on Figure 13.

Project Driveway Design

Vehicular access to the ground level parking garage would be provided via a full access driveway on Terra Bella Avenue. Vehicular access to the second level parking garage would be provided via a full access driveway on San Rafael Avenue. The driveway on Terra Bella Avenue would measure approximately 22 feet in width. The driveway on San Rafael Avenue would measure 20 feet in width. These widths are adequate for a two-way driveway, as described in the City of Mountain View’s Zoning Ordinance, Section 36.32.80(e).

Sight Distance at Project Driveways

The project driveways should be free and clear of any obstructions to optimize sight distance per the City’s Standard Details A-22, thereby ensuring the exiting vehicles can see pedestrians coming from either direction on the sidewalk and other vehicles or bicycles traveling on the street. Any landscaping and signage within the pedestrian triangle and vehicle triangle at the driveway should be no taller than 3 feet and in such a way to ensure an unobstructed view for drivers exiting the site. Tree canopies should be maintained so that they are at least 6 feet off of the ground. The posted speed limit along Terra Bella Avenue and San Rafael Avenue is 25 mph. According to the City’s Standard Detail A-22, the stopping sight distance for a 25-mph roadway is 150 feet.

The project’s civil site plan (see Figure 14) shows the clear sight triangles per the City’s Standard Detail A-22. There are no roadway curvatures on Terra Bella Avenue and San Rafael Avenue that would obstruct the vision of exiting drivers at either driveway. The project site plan shows trees that would be planted along both streets. The canopies of the trees should be maintained so that they do not block the vision of exiting drivers. Both streets permit on-street parking that could obstruct the vision of exiting drivers if there were cars parked next to the driveways. Approximately 25 feet of red curb should be painted on both sides of the driveways along Terra Bella Avenue and San Rafael Avenue. Providing red curb adjacent to a driveway would allow drivers to see along the traveled way. If red curb is not provided, a large vehicle could potentially block the line of sight along the roadway. Sight distance exhibits at the project driveways are provided in Appendix E.

Recommendation: Approximately 25 feet of red curb should be painted on both sides of the project driveways

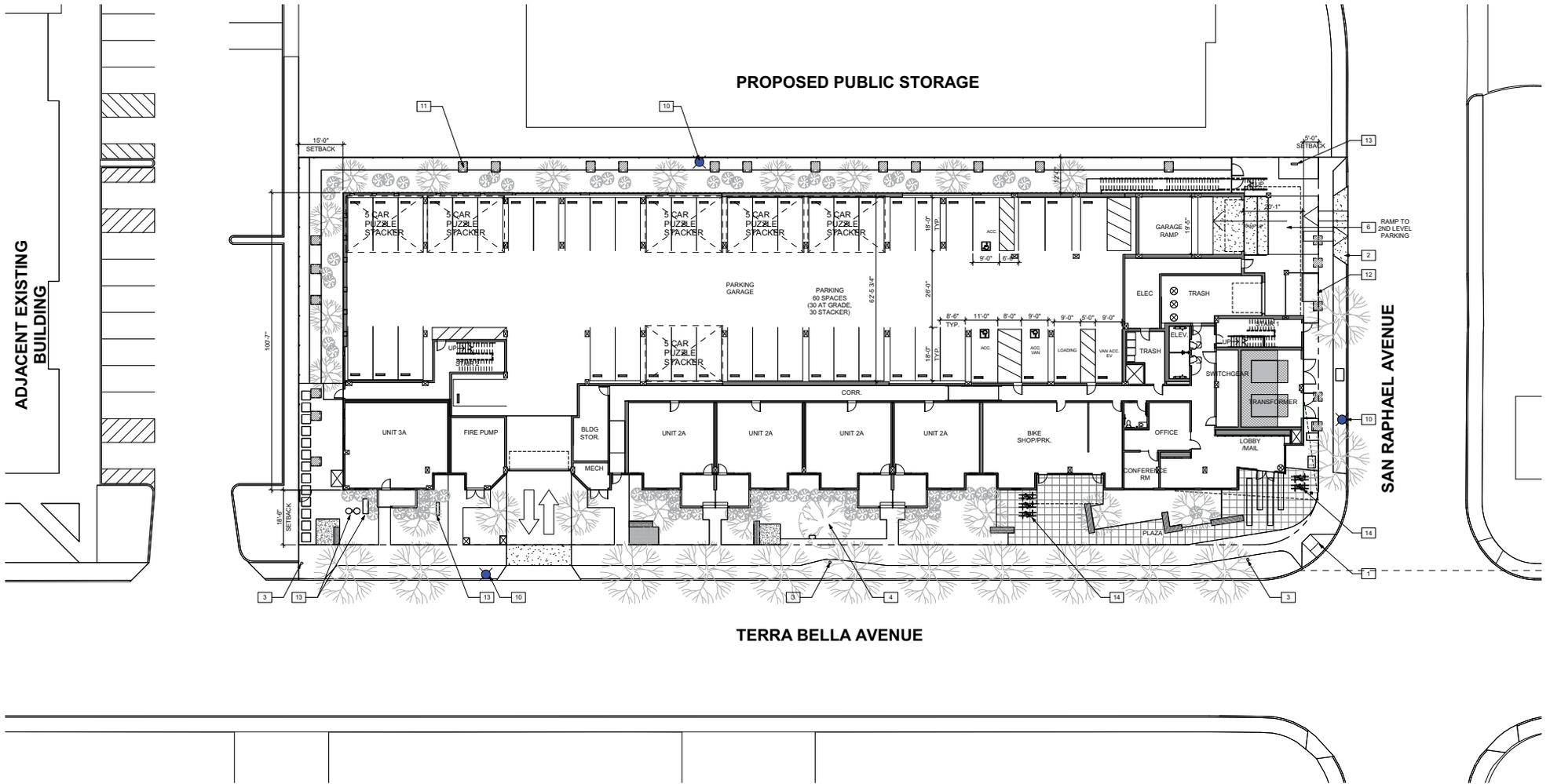


Figure 12
Affordable Housing Ground Level Site Plan

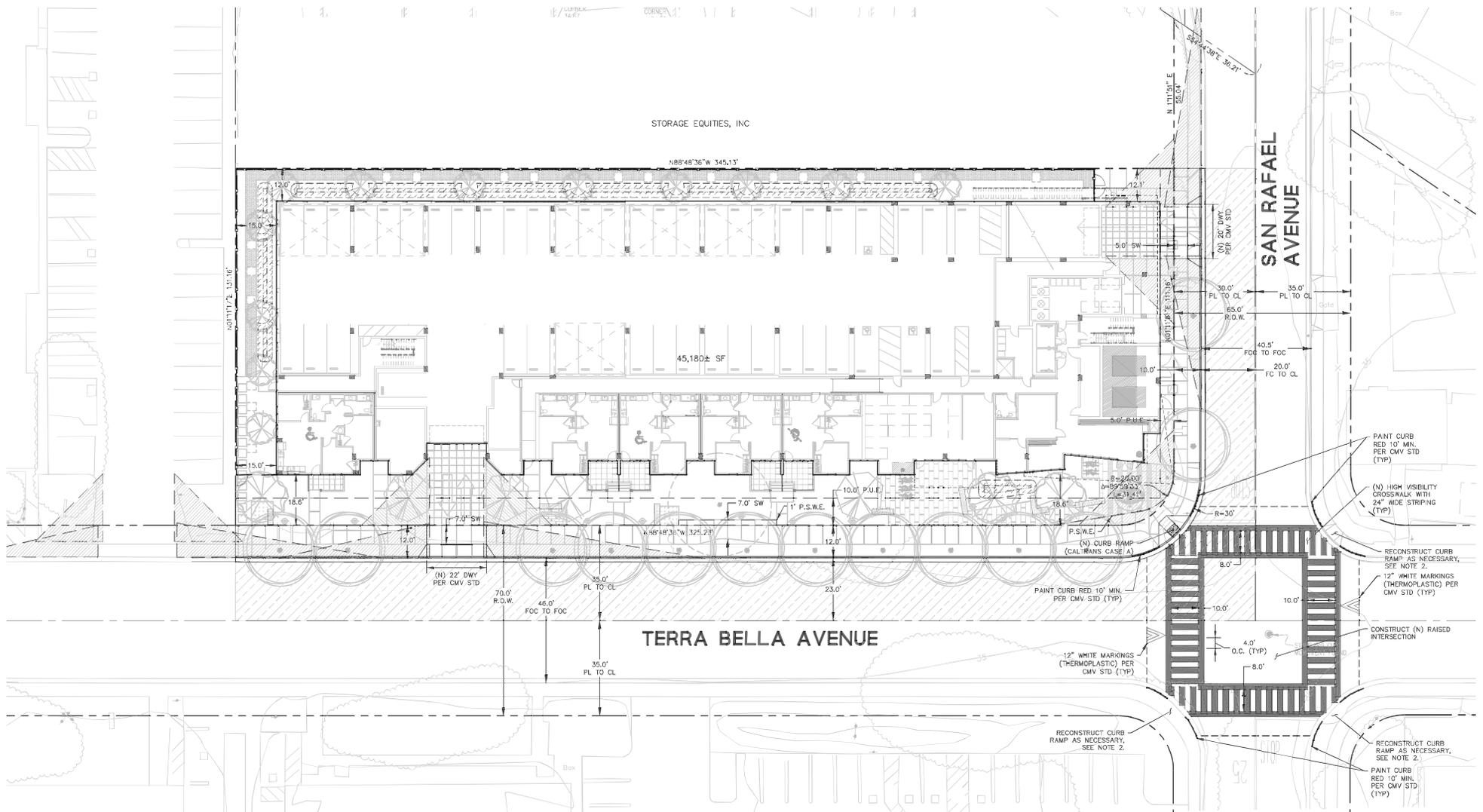


Figure 14
Affordable Housing Civil Site Plan

Project Driveway Operations

Based on the number of parking spaces provided on the first and second levels, approximately 60% of vehicles would be parked at ground level, utilizing the Terra Bella Avenue driveway, and the remaining 40% would be parked on the second level, utilizing the San Rafael Avenue driveway. The estimated number of trips at each project driveway is shown on Figure 15.

The trips that are estimated to occur at the Terra Bella Avenue driveway are 18 inbound trips and 24 outbound trips in the AM peak hour and 31 inbound trips and 28 outbound trips during the PM peak hour. The trips that are estimated to occur at the San Rafael Avenue driveway are 11 inbound trips and 15 outbound trips in the AM peak hour and 21 inbound trips and 18 outbound trips during the PM peak hour. Due to the relatively low traffic volume along both streets, significant operational issues related to vehicle queueing and vehicle delay for inbound and outbound traffic are not expected to occur at the driveways. Vehicles turning left into the project site from either street may block the travel lane momentarily due to vehicles slowing down to turn into the driveway, but this would not have a significant effect on traffic operations. Given the small number of estimated outbound trips at each driveway, the probability of two or more outbound vehicles exiting the site at the same time would be low. The maximum queue is not expected to affect the on-site circulation.

Vehicle On-Site Circulation

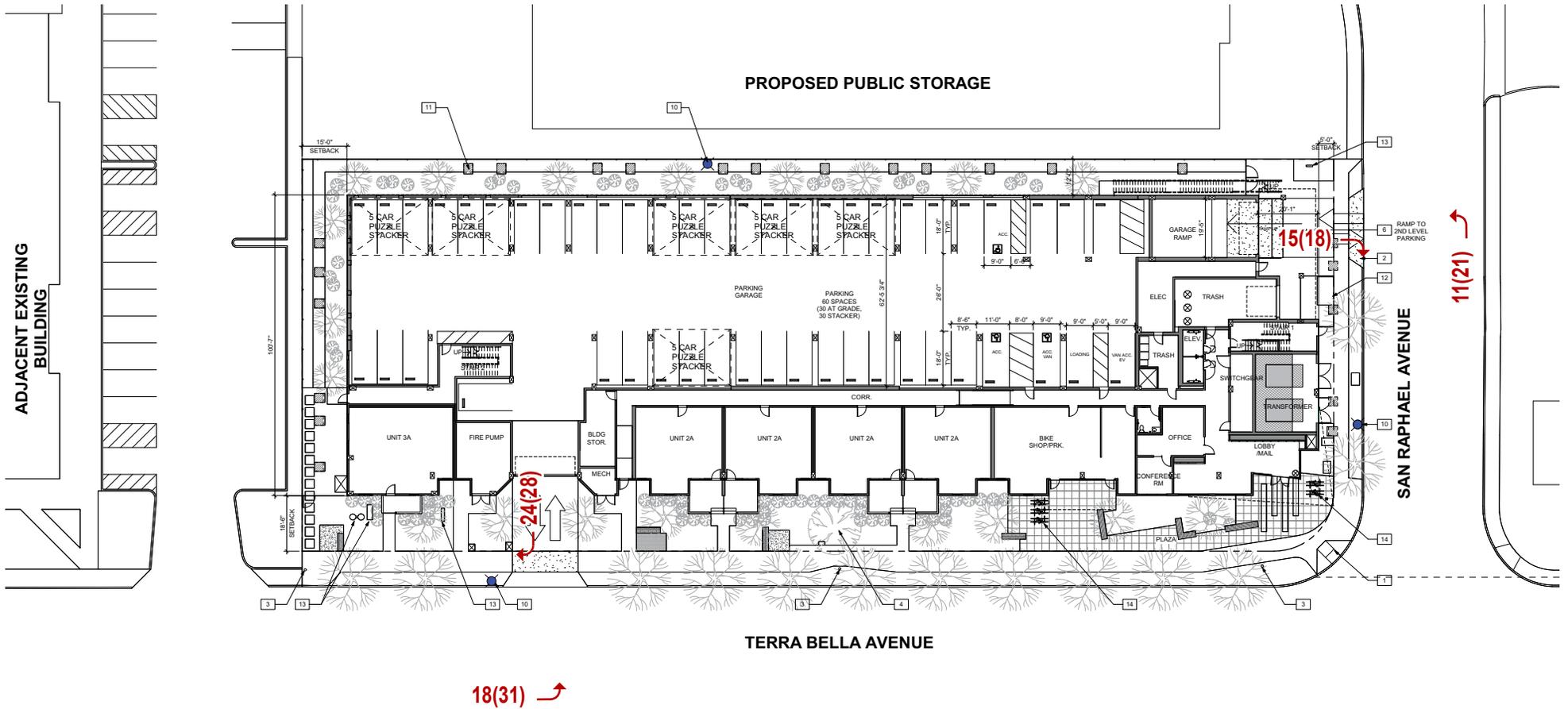
The project would provide 90-degree uniform parking stalls throughout the garage areas. The project proposes an internal drive aisle of at least 26 feet width within the garage areas, which is adequate to allow vehicles to maneuver in and out of 90-degree parking spaces.

According to City's Standard Details A-24, transition slopes should be provided at the two ends of the ramps with a minimum length of 10 feet to avoid vehicles bottoming out. The city also requires a car length (20 feet) of flat area approaching surface lots at garage exits. The slope of the parking garage ramp to the second level parking area is shown to be 20 percent with 10 percent transition slopes on either end. A minimum 20-foot flat area would be provided approaching the ground level. Therefore, the proposed parking garage ramp is adequate for vehicle access.

On-site vehicle circulation was also evaluated to identify whether there are dead-end aisles within the garage areas. Dead-end aisles are undesirable because drivers can enter the aisle, and upon discovering that there is no available parking, must back out or conduct three-point turns. Since the parking areas on both levels consist of a single drive aisle, dead ends are present at the ends of each level. Parking spaces should be assigned so that residents do not have to look for a space and turn around if there is not a space available at the end.

The project site plan shows several mechanical vehicle puzzle stackers on the ground level parking garage. Since the mechanical vehicle stackers will require knowledge of how to use them, residents assigned a space in the parking stackers should be provided instructions on how to use the lifts. Additionally, clear signage and instructions should be posted outside of each stacker with guidance on how to operate the mechanical stackers.

Recommendation: Parking spaces should be assigned so that residents do not have to look for a space and turn around if there is not a space available at the end of the aisle.



LEGEND
XX(X) = AM(PM) Driveway Trips

Figure 15
Estimated Trips at Project Driveways

Parking Stall Dimensions

Parking spaces are shown to be 18 feet long by 8.5 feet wide for standard parking spaces and 18 feet long by 9 feet wide for accessible parking spaces. According to the City of Mountain View Zoning Code all standard parking stalls should be at least 8.5 feet in width by 17 feet in length. The proposed parking space dimensions would meet the City requirements.

Truck, Garbage, and Emergency Vehicle Access

Emergency vehicle access would be provided along Terra Bella Avenue and San Rafael Avenue. The site plan shows a loading space on the first level of the parking garage. This space measures 18 feet long by 9 feet wide. Since the drive aisle measures 26 feet, this space is only adequate for normal size vehicles. Large vehicles, such as delivery trucks, would have trouble accessing the garage.

The site plan shows a trash room on the ground level: one adjacent to the parking area and one located near the garage entrance on San Rafael Avenue. The site plan shows a trash pick-up staging area along San Rafael Avenue. Trash bins would need to be wheeled out to the loading zone on trash pick-up days.

Recommendation: Trash bins would need to be wheeled out to the trash pick-up area on trash pick-up days.

Public Storage Site

The evaluation of site access and circulation for the Public Storage is based on the September 2022 site plan prepared by Ware Malcomb. The project site plan is shown on Figure 16.

Project Driveway Design

Vehicular access to the project site would be provided via a full access driveway along Linda Vista Avenue and a full access driveway along San Rafael Avenue. The driveway to Linda Vista Avenue is existing, and the driveway to San Rafael Avenue would be new. Both driveways are located at the cul-de-sac of their respective streets, and both driveways would measure 26 feet in width. These widths are adequate for a two-way driveway, as described in the City of Mountain View's Zoning Ordinance, Section 36.32.80(e).

Sight Distance at Project Driveways

The project driveways should be free and clear of any obstructions to optimize sight distance per the City's Standard Details A-22, thereby ensuring the exiting vehicles can see pedestrians coming from either direction on the sidewalk and other vehicles or bicycles traveling on the street. Any landscaping and signage within the pedestrian triangle and vehicle triangle at the driveway should be no taller than 3 feet and in such a way to ensure an unobstructed view for drivers exiting the site. Tree canopies should be maintained so that they are at least 6 feet off of the ground. The posted speed limit along Linda Vista Avenue and San Rafael Avenue is 25 mph. According to the City's Standard Detail A-22, the stopping sight distance for a 25-mph roadway is 150 feet.

The project's civil site plan (see Figure 17 and 18) shows the clear sight triangles per the City's Standard Detail A-22. There are no roadway curvatures on Linda Vista Avenue and San Rafael Avenue that would obstruct the vision of exiting drivers at either driveway. As previously mentioned, both driveways are located at the cul-de-sac of both streets. A clear line of sight should be provided between a vehicle exiting the driveway and the traveled way. The project site plan shows trees that would be planted along both streets. The canopies of the trees should be maintained so that they do not block the vision of exiting drivers. Both streets permit on-street parking and could obstruct the vision of exiting drivers if there

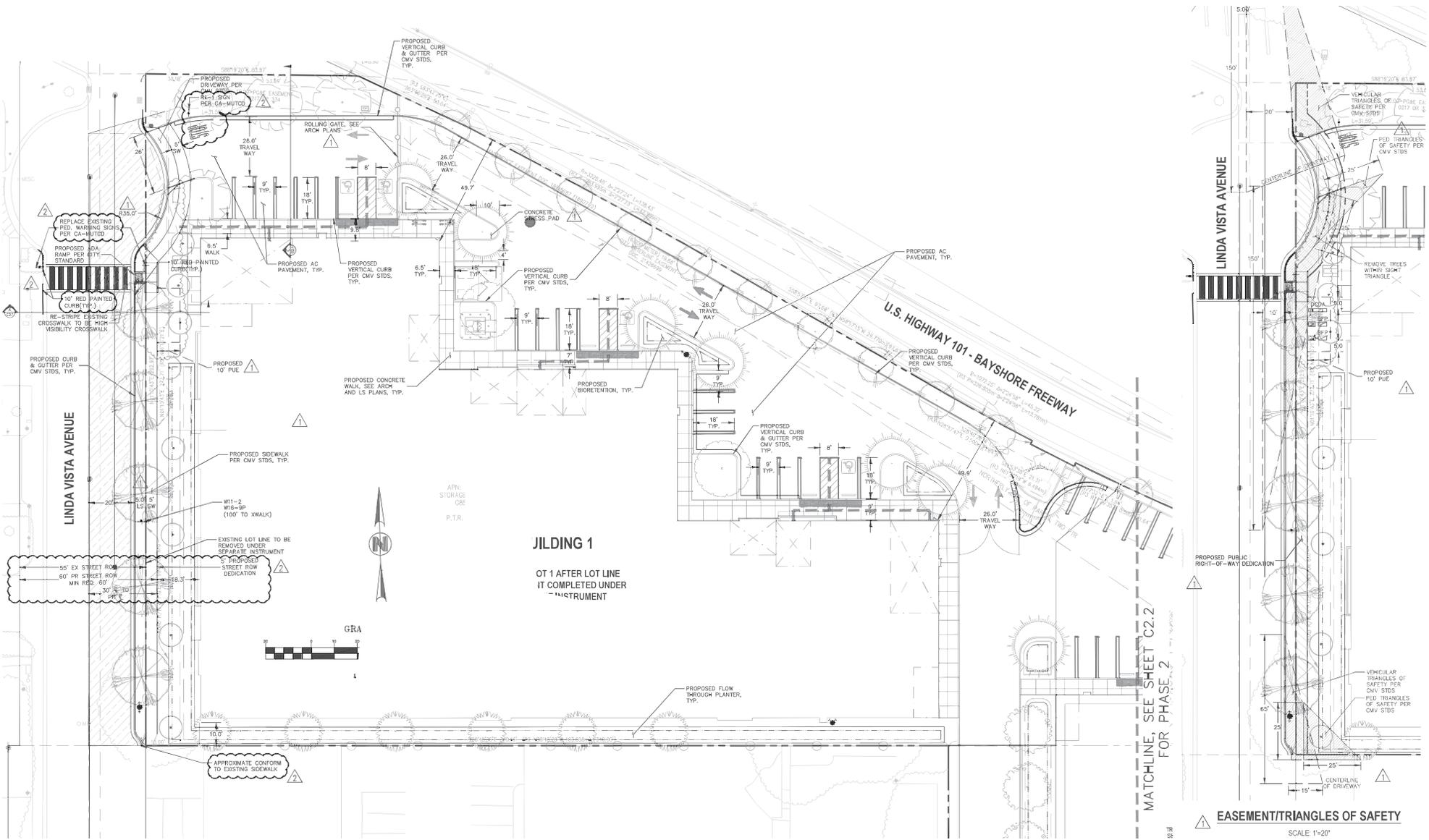


Figure 17
Public Storage Civil Site Plan

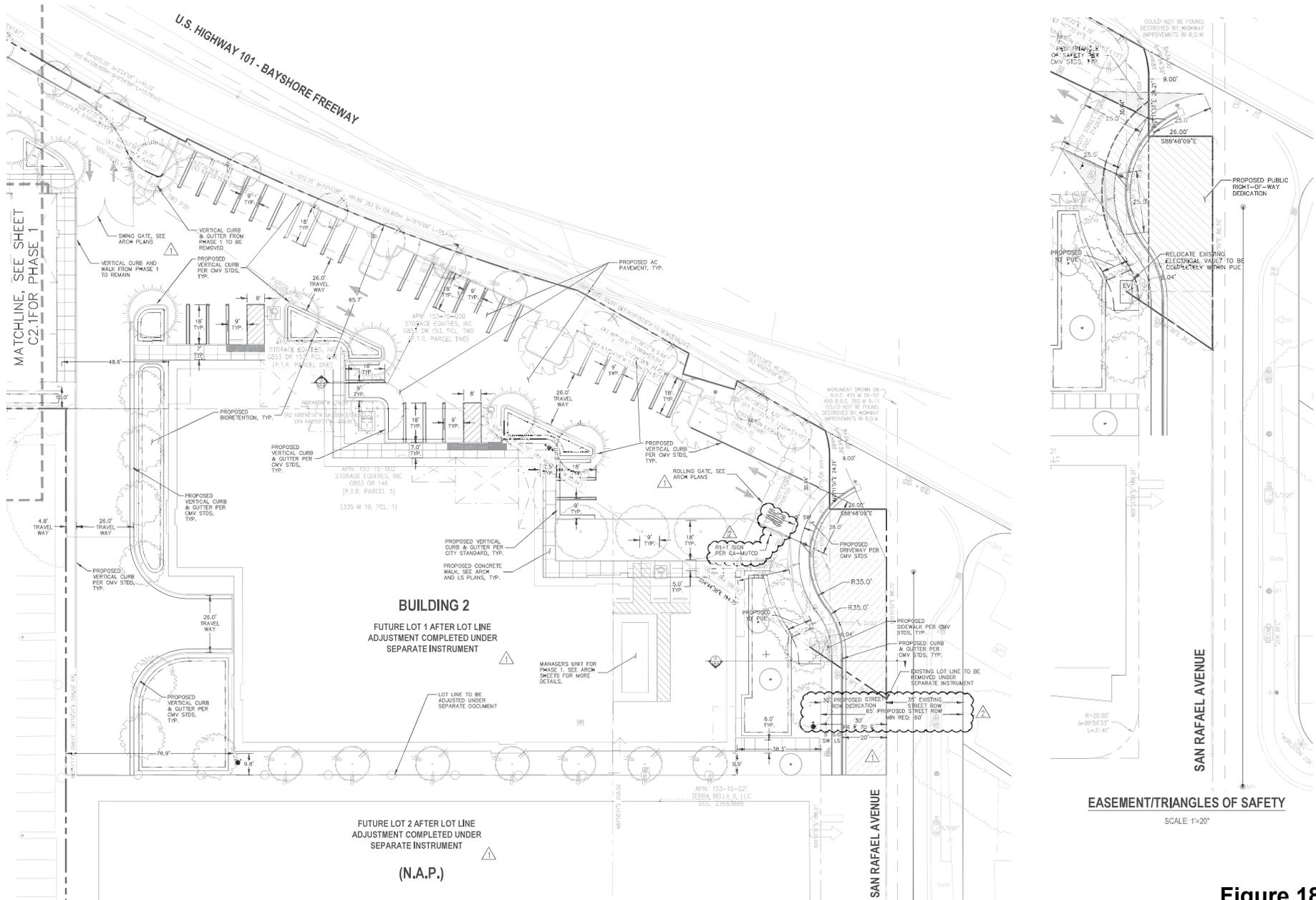


Figure 18
Public Storage Civil Site Plan (cont.)

were cars parked next to the driveways. The entire cul-de-sac at the end of Linda Vista Avenue should be painted with red curb to ensure parked vehicles do not obstruct the vision of exiting drivers. Similarly, half of the cul-de-sac along the project frontage on San Rafael Avenue should be painted with red curb to ensure parked vehicles do not obstruct the vision of exiting drivers. Providing red curb adjacent to a driveway would allow drivers to see along the traveled way. If red curb is not provided, a large vehicle could potentially block the line of sight along the roadway.

Recommendation: Red curb should be painted in the cul-de-sac on Linda Vista Avenue

Recommendation: Red curb should be painted along the project frontage at the San Rafael cul-de-sac

Project Driveway Operations

Since the leasing office would be located near the Linda Vista Avenue driveway, it is presumed most trips would occur at this driveway. In a worst-case scenario where all vehicle trips utilize one driveway, the trips that are estimated to occur are 11 inbound trips and 18 outbound trips in the AM peak hour and 30 inbound trips and 20 outbound trips during the PM peak hour. Due to the relatively low traffic volume along both streets, significant operational issues related to vehicle queueing and vehicle delay for inbound and outbound traffic are not expected to occur at either driveway. Vehicles turning into the project site from either street may block the travel lane momentarily due to vehicles slowing down to turn into the driveway, but this would not have a significant effect on traffic operations. Given the small number of estimated outbound trips at each driveway, the probability of two or more outbound vehicles exiting the site at the same time would be low. The maximum queue is not expected to affect the on-site circulation.

Vehicle On-Site Circulation

The project would provide mostly 90-degree uniform parking stalls throughout the project site. Parking spaces would be located perpendicular to buildings and the northern project boundary. The project proposes internal drive aisles of at least 26 feet in width throughout the parking areas, which is adequate to allow vehicles to maneuver in and out of 90-degree parking spaces.

On-site vehicle circulation was also evaluated to identify whether there are dead-end aisles within the parking areas. There would be one dead-end within the project site located near the rear of Building 2. The site plan shows a gate that prevents entry to the dead-end fire access road.

Parking Stall Dimensions

Parking spaces are shown to be 18 feet long by 9 feet wide for standard parking spaces. According to the City of Mountain View Zoning Code all standard parking stalls should be at least 8.5 feet in width by 17 feet in length. The proposed parking space dimensions would meet the City requirements.

Truck, Garbage, and Emergency Vehicle Access

Emergency vehicle access would be provided along Linda Vista Avenue and San Rafael Avenue. The site plan provides adequate circulation for trucks and emergency vehicles. The site plan shows a trash enclosure within the parking area located near Building 1. Trash collection vehicles can access the enclosure area via either project driveway.

Parking Supply

Vehicular Parking

The vehicular parking requirements for the project were calculated based on the City of Mountain View municipal code (Chapter 36.32.50). The city’s municipal code does not specifically address requirements for affordable housing. Based on the standard rate for multi-family residential developments, parking is required at a rate of 1.5 spaces per studio or one-bedroom unit under 650 s.f. and two spaces per one-bedroom over 650 s.f. and two-or-more bedroom units. Based on the proposed unit mix of 2 studios, 49 one-bedroom, 29 two-bedroom, and 28 three-bedroom units, the affordable housing building would be required to provide 191 parking spaces.

The Public Storage portion of the project is required to provide parking at 1 space per 2,000 s.f. of gross floor area and 2 spaces for any resident manager. The project proposes an option to have an on-site facility manager. Based on the proposed 408,964 s.f. of floor space for the Public Storage, the project would be required to provide 206 parking spaces (204 for the floor space and 2 for an on-site resident manager).

Parking Demand Analysis

Since residents of an affordable housing development are less likely to own multiple vehicles, a parking analysis was conducted to determine the number of spaces an affordable housing development should provide. The analysis included parking occupancy counts on a typical weekday and a Saturday at two affordable housing developments in the area. The peak parking demand for residential uses are typically in the middle of the night. Therefore, parking occupancy counts were conducted between 2:00 and 3:00 AM.

Since parking demand at a personal storage facility is expected to be less than the requirements of the City’s municipal code, a parking analysis of similar Public Storage facilities was conducted to determine parking demand. The parking analysis included parking occupancy counts at two similar Public Storage facilities on a typical weekday and a Saturday. Parking occupancy counts at the Public Storage facilities were conducted every 15 minutes from 6:00 AM – 9:00 PM. Additionally, previous parking occupancy counts for a personal storage facility were used for the analysis.

The following sites were counted for the parking analysis:

Affordable Housing:

- 1. Evelyn Family Apartments (779 E. Evelyn Avenue, Mountain View, CA)
- 2. Parkview Family Apartments (360 Meridian Avenue, San Jose, CA)*
*Site contains 44 closed garages. It is assumed all 44 garages contained one parked vehicle

Public Storage:

- 1. Public Storage (1040 Terra Bella Avenue, Mountain View, CA)
- 2. Public Storage (1060 Stewart Drive, Sunnyvale, CA)
- 3. Public Storage (875 E Arques Avenue, Sunnyvale, CA) (Prior Parking Study in 2019)
- 4. Public Storage (317 Weddell Drive, Sunnyvale, CA) (Prior Parking Study in 2019)
- 5. Public Storage (5679 Santa Teresa Boulevard, San Jose, CA) (Prior Parking Study in 2019)

The parking occupancy counts can be found in Appendix E.

Table 8 shows the results of the parking occupancy counts of similar affordable housing developments on a typical weekday and a Saturday. The results show that similar affordable housing developments in the region have an average of 1.36 parked vehicles per unit and .83 parked vehicles per bedroom on a typical weekday and 1.31 parked vehicles per unit and .80 parked vehicles per bedroom on a Saturday.

**Table 8
Parking Demand (Affordable Housing)**

Site #	Location	Units	Bed-rooms	Parking Spaces	Weekday	Saturday	Weekday Demand		Saturday Demand	
					Max. Observed Parking Demand	Max. Observed Parking Demand	per Unit	per Bedroom	per Unit	per Bedroom
1	779 E. Evelyn Avenue	116	191	194	184	178	1.586	0.963	1.534	0.932
2	360 Meridian Avenue ¹	90	148	106	96	92	1.067	0.648	1.022	0.621
Weighted Average							1.36	0.83	1.31	0.80

Notes:
1. Bedroom Count is unavailable. It is assumed this site would have a similar ratio of units to bedrooms.

The project would provide 10 units for individuals that are developmentally disabled and 27 units for rapid housing. The applicant has provided information based on similar projects, stating the parking ratios provided for these uses are .85 spaces per unit for the individuals that are developmentally disabled and .6 spaces per unit for rapid housing. These ratios have been observed at similar developments from Alta Housing. The remaining 71 units would require 1.36 parking spaces per unit, as found in the parking occupancy count study.

Based on the parking ratios provided by the applicant and the observed parking demand at similar affordable housing developments in the region, the affordable housing component of the project would be required to provide 123 parking spaces (see Table 9). The project proposes to implement a TDM program to reduce the parking demand generated by the project. Based on the TDM strategies that would reduce vehicle ownership rates, the TDM program is estimated to reduce parking demand by 15%. Therefore, the affordable housing component of the project should provide a minimum of 105 parking spaces.

**Table 9
Parking Requirement (Affordable Housing)**

Affordable Housing Component	Ratio	Units	Required
Individuals with Different Mental Abilities	0.85 per unit	10	9
Rapid Housing	0.60 per bedroom	27	17
Affordable Units	1.36 per unit	71	97
Total		108	123
<i>Transportation Demand Management (-15%)</i>			-18
Total Parking Required			105

Table 10 shows the results of the parking occupancy counts of Public Storage facilities on a typical weekday and a Saturday. The results show that Public Storage facilities in the region have an average peak parking demand of .07 parked vehicles per 1,000 s.f. on a typical weekday and on a Saturday. The highest facility had a maximum demand of .17 parked vehicles per 1,000 s.f. and .15 parked vehicles per 1,000 s.f. on a typical weekday and a Saturday, respectively. It is recommended that the average parked vehicle rate be used to calculate the peak parking demand instead of the maximum parking demand rate to eliminate potential outliers. Based on the average peak parking demand rate for

Public Storage facilities, the Public Storage site should provide a minimum of 29 parking spaces (.07 parking spaces X 408,964 s.f.).

**Table 10
Parking Demand (Public Storage)**

Site #	Location	Square Feet (GSF)	Weekday	Saturday	Weekday	Saturday
			Max. Observed Parking Demand	Max. Observed Parking Demand	per 1,000 GSF	per 1,000 GSF
1	1040 Terra Bella Ave, Mt. View	52,610	9	8	0.171	0.152
2	1060 Stewart Dr, Sunnyvale	293,455	12	15	0.041	0.051
3	875 E. Arques Ave, Sunnyvale	216,607	13	14	0.060	0.065
4	317 Weddell Dr, Sunnyvale	47,796	4	4	0.084	0.084
5	5679 Santa Teresa Blvd, San Jose	70,278	7	6	0.100	0.085
Weighted Average					0.07	0.07
Maximum Observed					0.17	0.15

Project Parking

The project proposes to provide 105 parking spaces within the two-level parking garage for the affordable housing site and 66 surface parking spaces within the Public Storage site. The affordable housing site would provide 18 fewer spaces than the recommended number of parking spaces based on the parking ratios provided by the applicant and the observed parking demand at similar affordable housing developments in the region. The project proposes to implement a TDM program that would reduce parking demand by 15%. With the implementation of the TDM program, the proposed 105 parking spaces for the affordable housing site is adequate. The Public Storage site would provide 37 more parking spaces than the demand observed at other Public Storage facilities.

Bicycle Parking

The bicycle parking requirements for the project were calculated based on the City of Mountain View municipal code. Since parking requirements for affordable housing are not specifically addressed, it is assumed bicycle parking is required at the same rate as multi-family dwellings. According to the City’s Bicycle Parking Standards (Chapter 36.32.50), bicycle parking for the proposed project is required at a rate of one secure bicycle parking space per unit for residents and one short-term space per 10 units for guests. The City’s Bicycle Parking Standards do not require any bicycle parking spaces for personal storage facilities.

Based on the City’s bicycle parking requirements, the project would be required to provide a total of 108 secure bicycle parking spaces and 11 short-term bicycle parking spaces for guests. The City’s definition of long-term and short-term bicycle parking is described below.

The affordable housing site would provide a total of 108 bicycle spaces for residents and 12 short-term bicycle parking spaces. The site plan for the public storage facility shows two short-term bike racks near the leasing office. The project meets the required number of short-term and long-term bicycle parking spaces. The site plan shows a secure bicycle storage room and bike repair station on the ground level of the residential building. Short-term bike racks for guests are shown near the entrance to the lobby and near the entrance to the bicycle storage room.

City of Mountain View Classification of Bicycle Parking Facilities

Class I facilities. Intended for long-term parking (e.g., for employees); protects against theft of entire bicycle and of its components and accessories. The facility shall also protect the bicycles from inclement weather, including wind-driven rain. Three (3) design alternatives for Class I facilities are as follows:

- (a) **Bicycle locker.** A fully enclosed, weather-resistant space accessible only by the owner or operator of the bicycle. Bicycle lockers may be premanufactured or designed for individual sites. All bicycle lockers shall be fitted with key locking mechanisms. This is the preferred Class I facility;
- (b) **Restricted access.** Class III bicycle parking facilities located within an interior locked room or locked enclosure accessible by key only to the owners or operators of the bicycles parked within. The maximum capacity of each restricted room or enclosure shall be ten (10) bicycles; and
- (c) **Enclosed cages.** An exterior enclosure for individual bicycles, where contents are visible from the sides but the top is covered, and which can be securely locked by a user-provided lock. This type of facility is only to be used for retail and service uses and multiple-family development.
- (d) **Other.** Class I facilities other than lockers, restricted access rooms or enclosed cages, but providing the same level of security, may be approved by the zoning administrator. A written building management policy of permitting bicycles to be stored in private offices or multi-family dwellings (including apartments, townhomes and condominiums), or in designated areas within the structure where adequate security is provided, may be approved by the zoning administrator as an alternative to Class I facilities.

Class II and Class III facilities. Intended for short term parking (e.g., for shoppers, visitors). A stationary object to which the user can lock the frame and both wheels. Should be protected from weather whenever possible. The zoning administrator may require either a Class II or Class III facility depending on where the facilities are to be located.

- (a) **Class II.** Class II facilities are designed so that the lock is protected from physical assault and therefore the facility need not be within constant visual range. A Class II rack shall accept padlocks and high security, U-shaped locks.
- (b) **Class III.** Class III facilities are less secure and, therefore, shall be within constant visual range of persons within the adjacent structure or located in well-traveled pedestrian areas.

Pedestrian, Bicycle, and Transit Facility Assessment

The following describes the existing and future transit, pedestrian and bicycle facilities that serve the site and evaluates whether appropriate bicycle and pedestrian access and transit service are provided between the site and nearby destinations.

Pedestrian Transportation

Pedestrian Access and Circulation

Pedestrian access to the project site is provided via sidewalks on Terra Bella Avenue, San Rafael Avenue and Linda Vista Avenue. The affordable housing building would reconstruct the sidewalks along the project frontage and provide walkways and a pedestrian plaza to and from the sidewalk to building entrances. Similarly, the public storage facility would reconstruct the sidewalks along its frontage and provide walkways throughout the project site. The project proposes to upgrade the San Rafael Avenue/Terra Bella Avenue intersection with a raised intersection and install “ladder” style crosswalks along all approaches (see Figure 19). A raised crosswalk would reduce vehicle speeds approaching the intersection, decreasing the likelihood of vehicle and pedestrian collisions. A new curb ramp is proposed at the northwest corner in front of the proposed project. Curb ramps at the remaining

three corners would be reconstructed to accommodate the new raised intersection. The project also proposes to construct a new curb ramp to serve the existing crosswalk near the cul-de-sac along Linda Vista Avenue. The crosswalk will be restriped to be a high-visibility “ladder” style crosswalk.

Pedestrian Infrastructure, Safety, and User Experience

Pedestrian facilities in the study area consist of sidewalks and crosswalks. A complete network of sidewalks is present along all of the surrounding streets. Crosswalks with pedestrian signal heads are located at all of the signalized study intersections in the study area.

According to the 2015 General Plan, a neighborhood is walkable when people can travel comfortably and safely on foot to many destinations. Convenient walking distance is considered to be a half mile to a mile, a walk that would take 10 to 20 minutes. Within a mile of the project site, there are a few restaurants and a grocery store (along Shoreline Boulevard at Montecito Avenue) and bus stops along Shoreline Boulevard and Middlefield Road. Other pedestrian generators include San Veron Park and the Stevens Creek multi-use trail.

As part of the Shoreline Boulevard Bus Lane and Utility Improvements, the Shoreline Boulevard/Middlefield Road intersection will be upgraded to include a protected intersection design, which will include a pedestrian refuge area that is highly visible to drivers and will reduce the crossing distance across the wide major arterials of Shoreline Boulevard and Middlefield Road. Additionally, the sidewalks and curb ramps at the Shoreline Boulevard/Terra Bella Avenue intersection will be reconstructed and new bus stops added at the intersection servicing the dedicated bus lane.

ADA Access

ADA curb ramps are present at the Linda Vista Avenue/Terra Bella Avenue intersection, which connect the project sites to pedestrian generators along Shoreline Boulevard. As previously described in Chapter 2, ADA curb ramps are missing along the northwest, southwest, and southeast corners of the Shoreline Boulevard/Terra Bella Avenue intersection and the northwest, southwest, and southeast corners of the Shoreline Boulevard/Middlefield Road intersection. It is assumed that the Shoreline Boulevard Bus Lane and Utility Improvements will reconstruct the curb ramps described above to be ADA-compliant curb ramps. With these improvements continuous ADA-compliant pedestrian facilities would connect the project sites to pedestrian generators along Shoreline Boulevard.

Pedestrian Quality of Service

Pedestrian quality of service (PQOS) identifies the level of comfort for pedestrians on any given roadway. Mountain View’s Comprehensive Modal Plan (AccessMV), published in May 2021, includes a PQOS map (see Figure 20) that shows continuity or gaps in the pedestrian facilities as indicated with a PQOS score ranging from 1 to 5. A higher PQOS score indicates a low quality of service. The PQOS metric in the AccessMV document covers the following factors:

- Proximity to a variety of destinations and amenities
- Street connectivity and directness of routes to destinations
- Presence of a continuous network of pedestrian facilities
- Motor vehicle traffic speed; and
- Street width and intersection conditions

Based on the PQOS map, the following streets in the project vicinity have a PQOS greater than 2, which is not desirable:

- Terra Bella Avenue (PQOS 3)
- Linda Vista Avenue (north of San Ardo Way) (PQOS 3)
- Linda Vista Avenue (south of San Ardo Way) (PQOS 5)

- San Rafael Avenue (PQOS 4)
- Middlefield Road (between Shoreline Boulevard and Moffett Boulevard) (PQOS 4&5)
- Shoreline Boulevard (north of Middlefield Road (PQOS 5)

The project would have an adverse effect on pedestrian operations because the project is expected to add vehicle trips to San Rafael Avenue, Linda Vista Avenue, Terra Bella Avenue, Middlefield Road, and Shoreline Boulevard, which have a PQOS score of 3 or more. As described above, it is assumed that the Shoreline Boulevard Bus Lane and Utility Improvements would upgrade existing pedestrian facilities along Shoreline Boulevard and at the intersection of Shoreline Boulevard/Terra Bella Avenue.

Additionally, the project would install several improvement features within the project vicinity, including a raised intersection, upgraded curb ramps, and restriped crosswalks to high-visibility crosswalks. The planned improvements by the City of Mountain View and the proposed improvements from the project would increase pedestrian comfort and safety while improving the pedestrian quality of service and are consistent with the guidelines described in the City's Comprehensive Modal Plan.

Bicycle Assessment

Bicycle Access and Circulation

Bicycle access to the project site is via Shoreline Boulevard and Terra Bella Avenue. There are bike lanes on Shoreline Boulevard that connect bicyclists from the North Bayshore area and downtown Mountain View to Terra Bella Avenue and the project area. Terra Bella Avenue carries low traffic, which is conducive to bicycle riders. Part-time bike lanes along Middlefield Road connect the project area to the Whisman area.

As part of the Shoreline Boulevard Bus Lane and Utility Improvements, the Shoreline Boulevard/Middlefield Road intersection will be upgraded to include a protected intersection design, which will include a refuge area that is highly visible to drivers and provides a dedicated crosswalk for bicyclists. Additionally, the bike lanes along Shoreline Boulevard, between Middlefield Road and the US 101 Overcrossing, will be upgraded to a protected bike lane with a 2-foot buffer between the bike lanes and vehicular traffic. The North Bayshore Precise Plan also identifies a bicycle/pedestrian overcrossing along Shoreline Boulevard over US 101. The overcrossing would provide a safe connection for bicyclists between the project site and the North Bayshore area.

The project would provide secure bicycle storage for residents on the ground level of the affordable housing building. A locked access door located along Terra Bella Avenue would provide direct access to the bicycle storage room. Additionally, short-term bicycle parking spaces for guests would be located on the project frontage along Terra Bella Avenue. The public storage site would provide two short-term bike racks near the leasing office.

Bicycle Infrastructure, Safety, and User Experience

The 2015 Bicycle Transportation Plan Update evaluates the quality of the bicycle network in the City in terms of connectivity gaps and low stress gaps. The plan identifies spot gaps and quality gaps along Middlefield Road. Spot gaps refer to point-specific locations lacking dedicated bicycle facilities or other treatments to accommodate safe and comfortable bicycle travel; while quality gaps are links of an existing bikeway that are deficient or have operational shortcomings. The plan also identifies the low stress bicycle network. Low stress segments include Class I separated paths and streets with low traffic volumes, low traffic speeds, and bike facilities such as a protected bike lane or a bike boulevard. These are facilities where people feel most comfortable biking because they typically have the least interaction with motor-vehicles. The planned bicycle improvements along Shoreline Boulevard would increase bicyclist comfort.



Source: Access MV, City of Mountain View, 2021

Figure 20
Pedestrian Quality of Service

It is expected that residents of the affordable housing would generate some bicycle trips, which could utilize the existing bike lanes and proposed upgraded protected bike lanes along Shoreline Boulevard and Middlefield Road to get to Downtown Mountain View, the Mountain View Transit Center, and corporate campuses in the North Bayshore and Whisman areas. According to the 2015 Bicycle Transportation Plan Update, the proportion of Mountain View residents that bicycle to work is about 6.5 percent, which equates to 2-4 new bicycle trips during the AM and PM peak hours for the project.

Bicycle Level of Traffic Stress

The City's AccessMV report includes a bicycle level of traffic stress (BLTS) map (see Figure 21) to identify the perceived comfort and safety of existing roads and bikeway facilities from the perspective of cyclists, as indicated with a BLTS score ranging from 1 to 4. A higher BLTS score indicates that the bikeway is comfortable for a more confident adult. A BLTS score of 1 is comfortable for all ages and abilities, a BLTS score of 2 is comfortable for an average adult, while a BLTS score of 4 indicates that the streets are comfortable only for highly confident riders. The metric (ranging from 1 to 4) in the AccessMV document covers the following factors:

- Number of through lanes or street width
- Posted speed limit or prevailing vehicle speed
- Presence and type of bicycle facilities
- Presence of traffic signals

Based on the BLTS map, the following streets in the project vicinity have a BLTS greater than 2, which is undesirable:

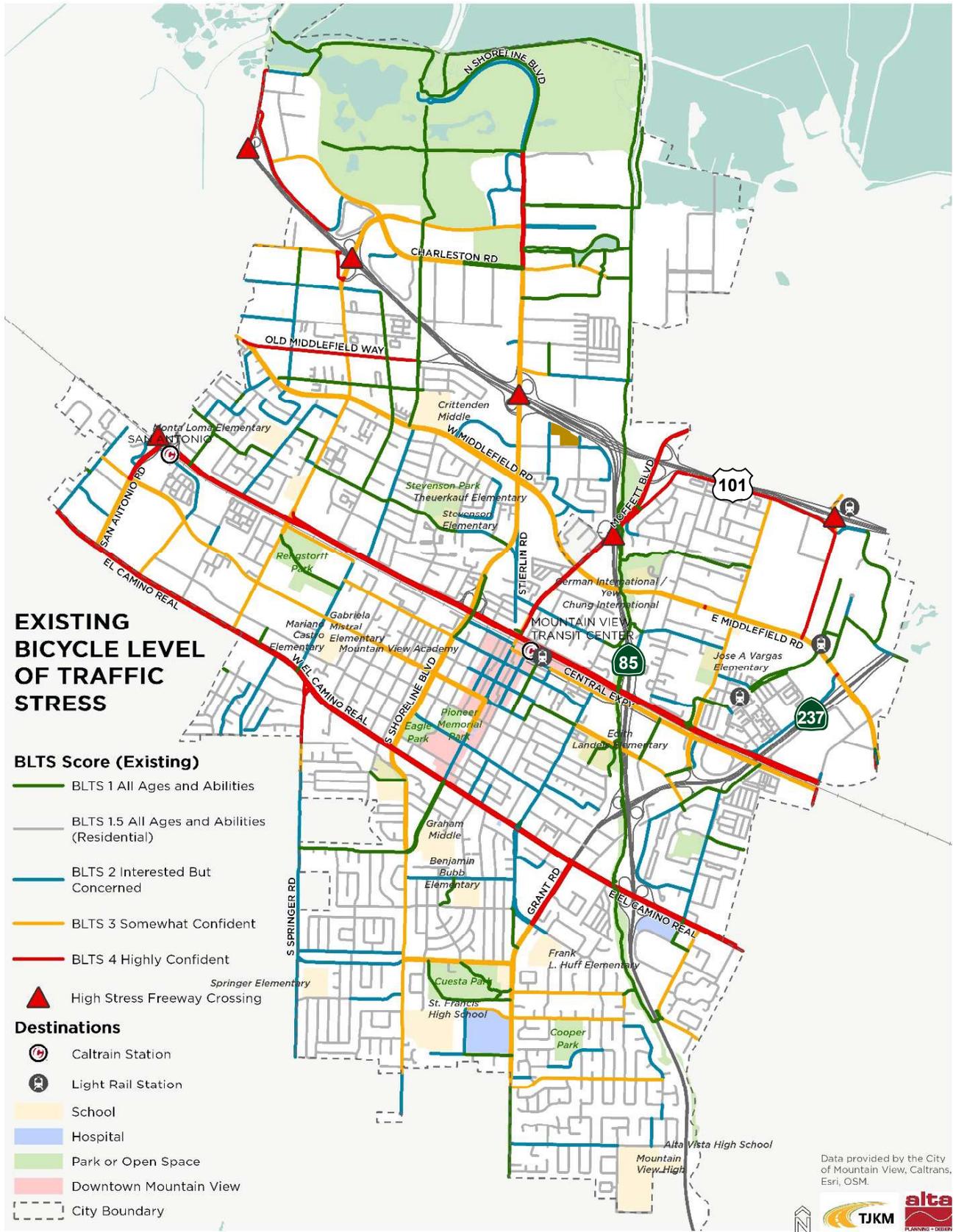
- Shoreline Boulevard (BLTS 3)
- Middlefield Road (BLTS 3)
- Moffett Boulevard (BLTS 4)

The project would create an adverse effect on bicycle operations because the project would add vehicle trips to Shoreline Boulevard, Middlefield Road, and Moffett Boulevard, which have a BLTS score of 3 or more. The 2015 Bicycle Transportation Plan proposes Class IV cycle tracks along Shoreline Boulevard and Moffett Boulevard and a Class II full time bike lane along Middlefield Road. The Shoreline Boulevard Bus Lane and Utility Improvements would upgrade the bicycle facilities along Shoreline Boulevard, between US 101 and Montecito Avenue with protected bike lanes. The planned improvements by the City of Mountain View would increase bicyclist comfort and safety while improving the Bicycle Level of Traffic Stress and are consistent with the guidelines described in the City's Comprehensive Modal Plan.

The AccessMV report also includes a BLTS map considering the planned bicycle facilities listed in the Caltrans District 4 Bike Plan (2018), the VTA Countywide Bicycle Plan (2018), the City of Mountain View Bicycle Transportation Plan (2015), the Caltrain Bicycle Access and Parking Plan (2008), and several area precise plans. With the planned improvements identified in these documents, Middlefield Road is expected to continue to have a BLTS score of 3. All other streets in the project area would have a BLTS score of 2 or lower.

Pedestrian and Bicycle Access to Schools

The project site is located within the boundary of Theuerkauf Elementary School, Crittenden Middle School, and Mountain View High School, which are about 0.8 mile southwest, 0.6 mile west, and 4.3 miles south of the project site, respectively. Some elementary and middle school students may wish to walk or bike to school. Walking and Biking Suggested Routes to School Maps for these schools can be found in Appendix F. Pedestrians and bicyclists could walk or bike from the project site to the elementary school via Shoreline Boulevard and Montecito Avenue. Pedestrians could walk from the



Source: Access MV, City of Mountain View, 2021

Figure 21
Bicycle Level of Traffic Stress

project site to the middle school via Terra Bella Avenue. Bicyclists from the project site could utilize bike lanes along Shoreline Boulevard and Middlefield Road to reach the middle school.

Transit Assessment

Transit Facilities, Service, and Access

The project site is served by VTA Route 40 and MvGo Shuttle B with bus stops located along Shoreline Boulevard, approximately ¼ -mile west of the project site.

As part of the Shoreline Boulevard Bus Lane and Utility Improvements, sidewalks and curb ramps at the Shoreline Boulevard/Terra Bella Avenue intersection will be reconstructed, and four new bus stops will be constructed at the intersection servicing the dedicated bus lane. Transit operations at the Shoreline Boulevard/Terra Bella Avenue stops will be improved in the peak hour direction since buses will utilize the dedicated bus lane and bus stops.

Transit Operations

It is expected that the residents of the affordable housing would generate some transit trips to get to the North Bayshore area, the downtown area, or to other destinations. According to the 2015 Bicycle Transportation Plan Update, approximately 5.1 percent of Mountain View residents use public transit to get to work. Applying the 5.1 percent transit mode share equates to 2-3 new transit riders during the AM and PM peak hours. This new ridership generated by the project could be accommodated by existing services.

Due to the small number of new vehicle trips generated by the project, the project would result in a minimal increase in vehicle delay at the study intersections and would not cause a noticeable change in transit travel time and vehicle delay for the bus routes in the study area. The completion of the Shoreline Boulevard Bus Lane and Utility Improvement project will decrease travel time and delay for transit in the peak direction.

Transportation Demand Management

The project would implement a Transportation Demand Management (TDM) program that is estimated to reduce vehicle trips generated by the project by 15%. The project also proposes multi-modal infrastructure improvements that could encourage the use of alternative transportation and reduce vehicle trips. These improvements include restriping crosswalks, installing a raised intersection, and installing accessible bicycle storage from the project's frontage along Terra Bella Avenue. The proposed TDM measures and design features would encourage use of alternative transportation modes (walking, bicycle, and transit) and reduce the likelihood of vehicle ownership. A TDM plan was prepared in September 2022 by Nelson\Nygaard Consulting Associates. The following design features and TDM measures would be implemented as part of the TDM plan:

- Transportation Management Association (TMA) Membership
- On-Site Carshare
- Bicycle Parking
- Collaborative Workspace
- Pedestrian-Oriented Site Design
- Delivery-Supported Amenities (Front Desk, Food Delivery Drop-Off Area, etc)
- Family TDM Amenities (Ground Level Storage for strollers, carts, etc.)
- Shared Bicycles and Resource Center
- Bike Repair and Wash Station

- Bike Training and Workshops
- TDM Coordinator and Mobility Concierge
- Informational/Promotional Materials
- Pre-Tax Transportation Benefits

5. Conclusions

The transportation analysis of the project was evaluated following the standards and methodologies set forth by the City of Mountain View, the Santa Clara Valley Transportation Authority (VTA) Congestion Management Program's *Transportation Impact Guidelines* (October 2014), and by the California Environmental Quality Act (CEQA).

CEQA VMT Analysis

Evaluation of Screening Criteria

The project consists of 108 units of affordable housing and a 408,964 s.f. Public Storage facility. Since 100% of the residential units would be affordable, the residential portion of the project is presumed to result in a less-than-significant transportation impact, and a detailed VMT analysis is not required.

Project Level VMT Analysis

There are currently 13 similar personal storage facilities in Mountain View and Sunnyvale. The average distance of these facilities from the mid-point of Mountain View (assumed to be City Hall) is 2.1 miles. The distance between the project site and the mid-point of Mountain View is 1.4 miles. Therefore, the project would reduce the average trip length for residents to access public storage facilities, and its impact to VMT would be less-than-significant.

Multimodal Transportation Analysis

Trip Generation

After applying the ITE trip rates and trip credits from existing uses, it is estimated that the project would generate 996 daily vehicle trips, with 68 trips (29 inbound and 39 outbound) occurring during the AM peak hour and 98 trips (52 inbound and 46 outbound) occurring during the PM peak hour.

Intersection Operations

The operations analysis shows that most of the study intersections are projected to operate at acceptable levels of service, under background conditions and background plus project conditions during both the AM and PM peak hours. The intersection of Shoreline Boulevard & US 101 Northbound Off-Ramp/La Avenida Street currently operates at LOS F during both peak hours under background

conditions, with and without the project. Since the project would not cause the critical movement delay to increase by 4 or more seconds, the project would not have an adverse effect at the intersection.

The intersection of Linda Vista Avenue & Middlefield Road operates at LOS E during the AM peak hour, with and without the project under background conditions, and would degrade from LOS D to LOS E during the PM peak hour. Under background conditions, the intersection would operate at a substandard level of service during the AM peak hour. Since the addition of project generated trips would not cause the critical delay to increase by 4 or more seconds, the project would not have an adverse effect at the intersection during the AM peak hour. The addition of project generated trips would degrade the operating level of service from LOS D to LOS E during the PM peak hour. The project proposes to implement a Transportation Demand Management (TDM) plan for the affordable housing portion of the project. Based on the calculations described in the TDM plan, the implementation of a TDM program is estimated to reduce vehicle trips generated by the project by 15%. The multi-modal improvements proposed by the project would also encourage future residents to walk, bike, or use transit instead of driving. With the implementation of a TDM plan, the PM peak hour would no longer degrade to LOS E and would not have an adverse effect on traffic operations at this intersection.

Intersection Queuing Analysis

Shoreline Boulevard & Terra Bella Avenue

The existing southbound left-turn storage length is approximately 150 feet. As part of the mitigation measures for a previously approved project, the left-turn storage pocket will be extended to 350 feet under background conditions. Under all scenarios, the Shoreline Boulevard & Terra Bella Avenue intersection was calculated to have insufficient storage for the southbound left-turn movement during the AM peak hour. The project would add 12 vehicles during the AM peak hour to the southbound left-turn movement. This equates to at most one vehicle during the heaviest cycles and would cause an adverse effect at the intersection. Based on the calculations described in the TDM plan, the implementation of a TDM program is estimated to reduce vehicle trips generated by the project by 15%. With this reduction, the project is estimated to add 10 vehicles during the AM peak hour to the southbound left-turn movement and would not extend the 95th percentile AM peak hour queue under background conditions.

Site Access and On-Site Circulation

Site access was evaluated to determine the adequacy of the site's access points with regard to the following: traffic volume, delays, vehicle queues, geometric design, and corner sight distance. On-site vehicular circulation was reviewed in accordance with generally accepted traffic engineering standards and transportation planning principles.

Recommended Site Access and On-Site Circulation Improvements

Affordable Housing Site

- Approximately 25 feet of red curb should be painted on both sides of project driveways
- Parking spaces should be assigned because the garage has dead-ends with no place to turn around.
- Trash bins would need to be wheeled out to the trash pick-up area on trash pick-up days

Public Storage Site

- Red curb should be painted in the cul-de-sac on Linda Vista Avenue.
- Red curb should be painted along the project frontage at the San Rafael cul-de-sac

Parking Supply

Vehicle Parking

Parking occupancy counts were conducted at similar affordable housing developments, which yielded an average parking demand of 1.36 spaces per unit. The project would provide 10 units for individuals that are developmentally disabled and 27 units for rapid housing. The applicant has provided information based on similar projects, stating the parking ratios provided for these uses are .85 spaces per unit for the individuals that are developmentally disabled and .6 spaces per unit for rapid housing. These ratios have been observed at similar developments from Alta Housing. The remaining 71 units would require 1.36 parking spaces per unit, as found in the parking occupancy count study.

Based on the parking ratios provided by the applicant and the observed parking demand at similar affordable housing developments in the region, the affordable housing component of the project would be required to provide 123 parking spaces. The project proposes to implement a TDM program to reduce the parking demand generated by the project. Based on the TDM strategies that would reduce vehicle ownership rates, the TDM program is estimated to reduce parking demand by 15%. Therefore, the affordable housing component of the project should provide a minimum of 105 parking spaces.

Parking counts also were conducted at similar storage facilities. These yielded an average parking demand of 0.07 space per 1,000 square feet. Based on the observed parking demand at similar Public Storage facilities in the region, the proposed project should provide 29 parking spaces for the Public Storage site.

The project proposes to provide 105 parking spaces within the two-level parking garage for the affordable housing site and 66 surface parking spaces within the Public Storage site. The affordable housing site would provide 18 fewer spaces than the recommended number of parking spaces based on the parking ratios provided by the applicant and the observed parking demand at similar affordable housing developments in the region. The project proposes to implement a TDM program that would reduce parking demand by 15%. With the implementation of the TDM program, the proposed 105 parking spaces for the affordable housing site is adequate. The Public Storage site would provide 37 more parking spaces than the demand observed at other Public Storage facilities.

Bicycle Parking

The affordable housing site would provide a total of 108 bicycle spaces for residents and 12 short-term bicycle parking spaces. The proposed number of bicycle parking spaces meets the requirements specified in the City of Mountain View municipal code.

Pedestrian, Bicycle, and Transit Analysis

The project proposes to upgrade the San Rafael Avenue/Terra Bella Avenue intersection with a raised intersection and install “ladder” style crosswalks along all approaches. The project also proposes to construct a new curb ramp to serve the existing crosswalk near the cul-de-sac along Linda Vista Avenue. The crosswalk will be restriped to be a high-visibility “ladder” style crosswalk.

The project would generate a small number of pedestrian trips between the project site and pedestrian generators along Shoreline Boulevard. With the anticipated improvements related to the Shoreline Boulevard Bus Lane and Utility Improvement project, pedestrians would have a safe and continuous connection between the project site and Shoreline Boulevard.

The project would have an adverse effect on pedestrian operations because the project is expected to add vehicle trips to San Rafael Avenue, Linda Vista Avenue, Terra Bella Avenue, Middlefield Road, and Shoreline Boulevard, which have a PQOS score of 3 or more. As described above, it is assumed that the Shoreline Boulevard Bus Lane and Utility Improvements would upgrade existing pedestrian facilities

along Shoreline Boulevard and at the intersection of Shoreline Boulevard/Terra Bella Avenue. Additionally, the project would install several improvement features within the project vicinity, including a raised intersection, upgraded curb ramps, and restriped crosswalks to high-visibility crosswalks. The planned improvements by the City of Mountain View and the proposed improvements from the project would increase pedestrian comfort and safety while improving the pedestrian quality of service and is consistent with the guidelines described in the City's Comprehensive Modal Plan.

Based on the 2015 Bicycle Transportation Plan Update, the project is expected to generate between 2-4 new bicycle trips during the AM and PM peak hours. The project would provide secure bicycle storage for residents on the ground level of the affordable housing building. Guest bicycle parking would be located along the frontages of the affordable housing building.

The project would create an adverse effect on bicycle operations because the project would add vehicle trips to Shoreline Boulevard, Middlefield Road, and Moffett Boulevard, which have a BLTS score of 3 or more. The 2015 Bicycle Transportation Plan proposes Class IV cycle tracks along Shoreline Boulevard and Moffett Boulevard and a Class II full time bike lane along Middlefield Road. The Shoreline Boulevard Bus Lane and Utility Improvements would upgrade the bicycle facilities along Shoreline Boulevard between US 101 and Montecito Avenue with protected bike lanes. The planned improvements by the City of Mountain View would increase bicyclist comfort and safety while improving the Bicycle Level of Traffic Stress and is consistent with the guidelines described in the City's Comprehensive Modal Plan.

The project is expected to generate between 2-3 new transit riders during the AM and PM peak hours. This new ridership generated by the project could be accommodated by existing services. Due to the small number of new vehicle trips generated by the project, the project would result in a minimal increase in vehicle delay at the study intersections and would not cause a noticeable change in transit travel time and vehicle delay for the bus routes in the study area. The completion of the Shoreline Boulevard Bus Lane and Utility Improvement project would decrease travel time and delay for transit in the peak direction.

Transportation Demand Management

The following design features and TDM measures would be implemented by the project as part of the TDM plan:

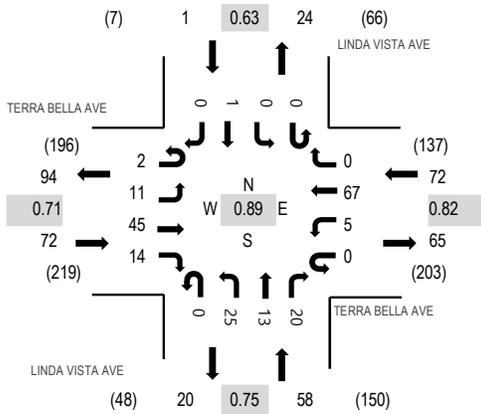
- Transportation Management Association (TMA) Membership
- On-Site Carshare
- Bicycle Parking
- Collaborative Workspace
- Pedestrian-Oriented Site Design
- Delivery-Supported Amenities (Front Desk, Food Delivery Drop-Off Area, etc)
- Family TDM Amenities (Ground Level Storage for strollers, carts, etc.)
- Shared Bicycles and Resource Center
- Bike Repair and Wash Station
- Bike Training and Workshops
- TDM Coordinator and Mobility Concierge
- Informational/Promotional Materials
- Pre-Tax Transportation Benefits

**1020-1040 Terra Bella Avenue
Transportation Analysis
Technical Appendices**

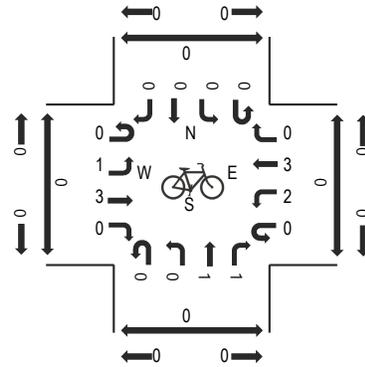
Appendix A

Turning Movement Counts

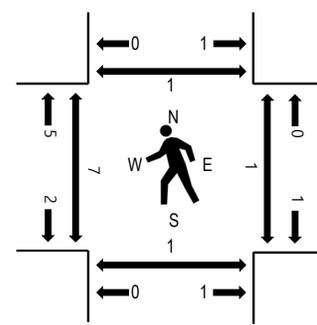
Peak Hour - Motorized Vehicles



Peak Hour - Bicycles



Peak Hour - Pedestrians



Note: Total study counts contained in parentheses.

Traffic Counts - Motorized Vehicles

Interval Start Time	TERRA BELLA AVE Eastbound				TERRA BELLA AVE Westbound				LINDA VISTA AVE Northbound				LINDA VISTA AVE Southbound				Total	Rolling Hour	Pedestrian Crossings			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right			West	East	South	North
7:00 AM	2	4	4	5	0	0	4	0	0	5	2	4	0	0	0	0	30	162	0	0	0	1
7:15 AM	0	0	10	3	0	2	12	0	0	4	2	1	0	0	1	0	35	189	0	0	1	0
7:30 AM	1	3	14	3	0	3	13	0	0	3	3	4	0	0	0	0	47	203	0	0	0	0
7:45 AM	1	5	8	2	0	1	14	0	0	10	4	4	0	0	1	0	50	199	1	0	1	0
8:00 AM	0	2	12	4	0	0	22	0	0	7	2	8	0	0	0	0	57	166	2	1	0	1
8:15 AM	0	1	11	5	0	1	18	0	0	5	4	4	0	0	0	0	49	151	4	0	0	0
8:30 AM	0	3	17	3	0	1	13	1	0	0	5	0	0	0	0	0	43	155	4	0	0	0
8:45 AM	0	2	6	0	0	0	6	0	0	0	3	0	0	0	0	0	17	170	1	0	2	0
9:00 AM	0	0	12	2	0	0	4	0	0	10	2	10	0	0	1	1	42	185	2	0	1	0
9:15 AM	0	2	16	4	0	2	12	0	0	6	1	9	0	0	0	1	53		5	0	0	0
9:30 AM	0	8	22	1	0	0	8	0	0	10	3	4	0	0	0	2	58		6	0	2	0
9:45 AM	0	2	16	3	0	0	0	0	0	2	2	7	0	0	0	0	32		2	1	2	5

Peak Rolling Hour Flow Rates

Vehicle Type	Eastbound				Westbound				Northbound				Southbound				Total
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	
Articulated Trucks	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1
Lights	2	11	45	14	0	5	66	0	0	25	13	19	0	0	1	0	201
Mediums	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	1
Total	2	11	45	14	0	5	67	0	0	25	13	20	0	0	1	0	203

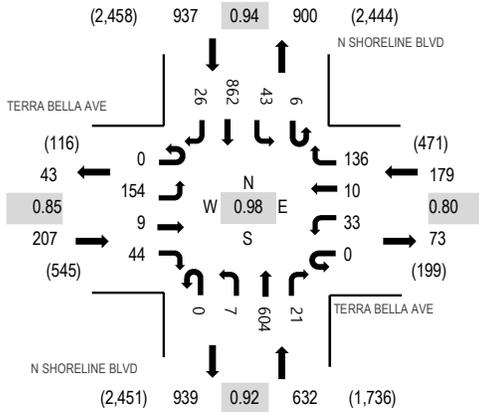
Location: 1 N SHORELINE BLVD & TERRA BELLA AVE PM

Date: Wednesday, June 1, 2022

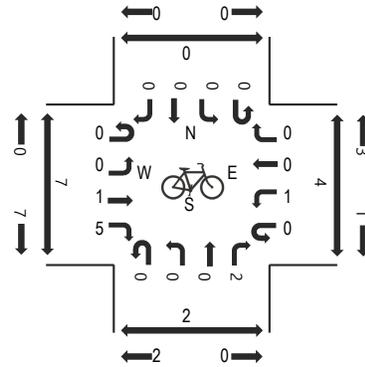
Peak Hour: 04:45 PM - 05:45 PM

Peak 15-Minutes: 05:15 PM - 05:30 PM

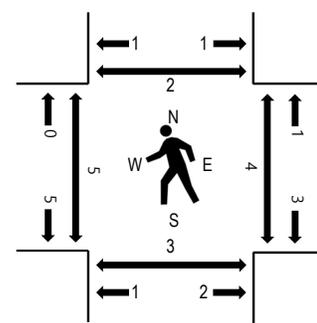
Peak Hour - Motorized Vehicles



Peak Hour - Bicycles



Peak Hour - Pedestrians



Note: Total study counts contained in parentheses.

Traffic Counts - Motorized Vehicles

Interval Start Time	TERRA BELLA AVE Eastbound				TERRA BELLA AVE Westbound				N SHORELINE BLVD Northbound				N SHORELINE BLVD Southbound				Total	Rolling Hour	Pedestrian Crossings			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right			West	East	South	North
	4:00 PM	0	40	0	5	0	12	2	39	0	4	138	8	1	10	151			3	413	1,731	1
4:15 PM	0	30	1	5	0	7	1	21	0	3	148	5	1	6	176	8	412	1,791	1	0	1	0
4:30 PM	0	58	2	7	0	9	0	24	0	0	129	6	2	4	174	3	418	1,877	0	0	0	1
4:45 PM	0	31	2	10	0	7	1	28	0	1	162	8	1	11	216	10	488	1,955	0	0	0	0
5:00 PM	0	45	4	13	0	5	2	37	0	0	152	4	2	13	191	5	473	1,912	0	2	1	1
5:15 PM	0	45	1	10	0	11	3	27	0	4	142	4	3	6	235	7	498	1,860	2	1	1	0
5:30 PM	0	33	2	11	0	10	4	44	0	2	148	5	0	13	220	4	496	1,765	3	1	1	1
5:45 PM	0	35	0	12	0	8	3	32	0	1	107	6	1	10	227	3	445	1,673	1	1	1	0
6:00 PM	0	24	1	6	0	6	3	31	0	1	150	5	0	7	184	3	421	1,567	1	1	0	0
6:15 PM	0	46	2	4	0	4	2	25	0	2	145	5	0	5	149	14	403		3	0	0	1
6:30 PM	0	26	1	2	0	9	4	19	0	0	136	7	1	10	182	7	404		3	0	0	0
6:45 PM	0	24	0	7	0	12	0	19	0	2	92	4	0	21	154	4	339		0	1	1	2

Peak Rolling Hour Flow Rates

Vehicle Type	Eastbound				Westbound				Northbound				Southbound				Total
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	
Articulated Trucks	0	0	0	0	0	0	0	2	0	0	0	0	0	1	1	0	4
Lights	0	154	9	44	0	33	10	132	0	7	598	20	6	42	858	26	1,939
Mediums	0	0	0	0	0	0	0	2	0	0	6	1	0	0	3	0	12
Total	0	154	9	44	0	33	10	136	0	7	604	21	6	43	862	26	1,955

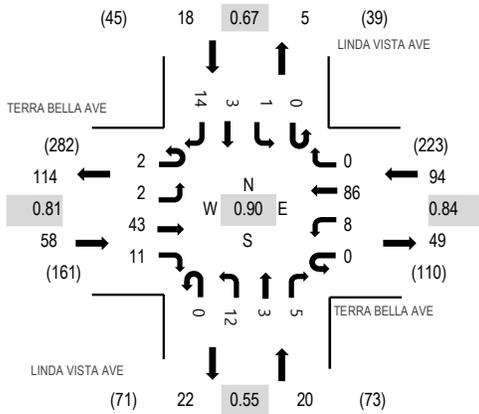
Location: 2 LINDA VISTA AVE & TERRA BELLA AVE PM

Date: Wednesday, June 1, 2022

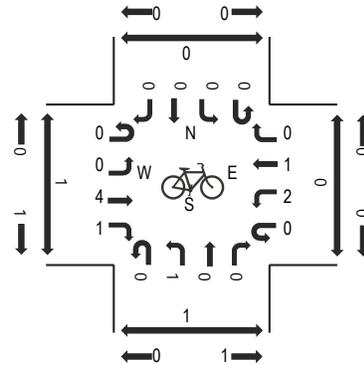
Peak Hour: 05:00 PM - 06:00 PM

Peak 15-Minutes: 05:30 PM - 05:45 PM

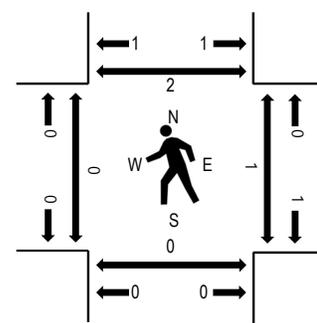
Peak Hour - Motorized Vehicles



Peak Hour - Bicycles



Peak Hour - Pedestrians



Note: Total study counts contained in parentheses.

Traffic Counts - Motorized Vehicles

Interval Start Time	TERRA BELLA AVE Eastbound				TERRA BELLA AVE Westbound				LINDA VISTA AVE Northbound				LINDA VISTA AVE Southbound				Total	Rolling Hour	Pedestrian Crossings				
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right			West	East	South	North	
4:00 PM	0	1	8	6	0	1	26	0	0	5	2	0	0	0	1	0	1	51	151	0	0	4	0
4:15 PM	0	2	5	2	0	0	13	0	0	2	3	1	0	0	0	0	28	151	0	0	0	0	
4:30 PM	0	2	7	6	0	0	6	1	0	5	0	1	0	0	3	2	33	166	0	1	2	2	
4:45 PM	0	1	6	5	0	0	18	0	0	4	0	3	0	0	0	2	39	186	0	0	0	0	
5:00 PM	0	1	13	4	0	1	25	0	0	2	1	2	0	0	0	2	51	190	0	0	0	1	
5:15 PM	2	0	8	1	0	3	17	0	0	2	0	1	0	0	1	8	43	178	0	1	0	0	
5:30 PM	0	1	13	1	0	2	26	0	0	3	1	2	0	0	1	3	53	182	0	0	0	1	
5:45 PM	0	0	9	5	0	2	18	0	0	5	1	0	0	1	1	1	43	161	0	0	0	0	
6:00 PM	0	1	6	2	0	1	16	0	0	1	1	3	0	0	2	6	39	161	0	0	0	0	
6:15 PM	0	4	4	3	0	4	16	0	0	4	8	2	0	0	0	2	47		0	0	0	0	
6:30 PM	0	5	3	4	0	1	12	0	0	0	1	0	0	0	0	6	32		0	1	0	0	
6:45 PM	0	2	10	8	0	0	14	0	0	6	0	1	0	0	1	1	43		0	0	1	0	

Peak Rolling Hour Flow Rates

Vehicle Type	Eastbound				Westbound				Northbound				Southbound				Total
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	
Articulated Trucks	0	0	0	1	0	0	1	0	0	0	0	0	0	0	0	0	2
Lights	2	2	43	10	0	8	85	0	0	12	3	5	0	1	3	13	187
Mediums	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1
Total	2	2	43	11	0	8	86	0	0	12	3	5	0	1	3	14	190

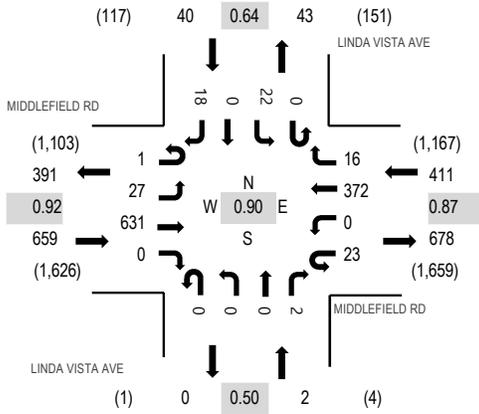
Location: 3 LINDA VISTA AVE & MIDDLEFIELD RD PM

Date: Wednesday, June 1, 2022

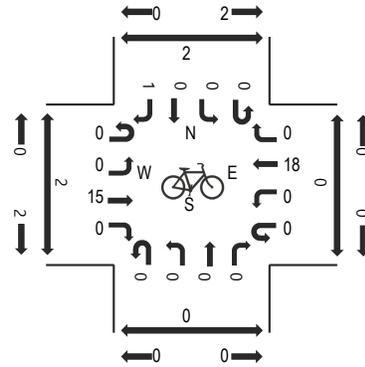
Peak Hour: 04:45 PM - 05:45 PM

Peak 15-Minutes: 05:30 PM - 05:45 PM

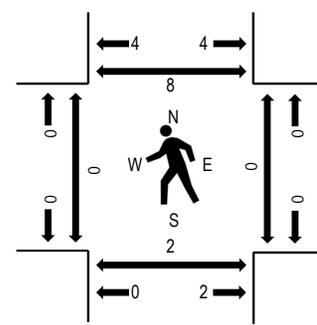
Peak Hour - Motorized Vehicles



Peak Hour - Bicycles



Peak Hour - Pedestrians



Note: Total study counts contained in parentheses.

Traffic Counts - Motorized Vehicles

Interval Start Time	MIDDLEFIELD RD Eastbound				MIDDLEFIELD RD Westbound				LINDA VISTA AVE Northbound				LINDA VISTA AVE Southbound				Total	Rolling Hour	Pedestrian Crossings			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right			West	East	South	North
4:00 PM	0	9	108	0	7	0	89	8	0	1	0	0	0	5	0	4	231	981	1	1	0	6
4:15 PM	1	4	131	0	7	0	81	9	0	0	0	0	0	2	0	4	239	1,019	0	0	0	0
4:30 PM	1	9	112	0	10	0	85	3	0	0	0	0	0	11	0	9	240	1,042	0	0	0	5
4:45 PM	0	12	147	0	6	0	95	3	0	0	0	0	0	5	0	3	271	1,112	0	0	0	0
5:00 PM	0	6	146	0	7	0	89	4	0	0	0	1	0	7	0	9	269	1,108	0	0	0	4
5:15 PM	1	4	162	0	5	0	80	3	0	0	0	0	0	5	0	2	262	1,091	0	0	2	2
5:30 PM	0	5	176	0	5	0	108	6	0	0	0	1	0	5	0	4	310	1,046	0	0	0	2
5:45 PM	0	7	162	0	2	0	85	1	0	0	0	0	0	7	0	3	267	891	0	0	1	4
6:00 PM	0	6	135	1	6	0	90	7	0	0	0	0	0	2	0	5	252	825	0	0	2	4
6:15 PM	0	10	97	0	7	0	84	11	0	0	0	0	0	3	0	5	217		0	0	3	2
6:30 PM	0	9	64	0	3	0	74	2	0	0	0	0	0	3	0	0	155		0	0	1	4
6:45 PM	0	10	91	0	1	0	81	3	0	0	0	1	0	4	0	10	201		0	0	2	1

Peak Rolling Hour Flow Rates

Vehicle Type	Eastbound				Westbound				Northbound				Southbound				Total
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	
Articulated Trucks	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Lights	1	27	631	0	23	0	370	16	0	0	0	2	0	22	0	18	1,110
Mediums	0	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0	2
Total	1	27	631	0	23	0	372	16	0	0	0	2	0	22	0	18	1,112

Appendix B

City of Mountain View Approved Project List

Mountain View Background Projects

Sr. No.	Address	Applicant	Project Description	Status
1	1255 Pear Avenue	The Sobrato Organization	231,210 s.f. office and 635 multi-family residential	Approved
2	1100 La Avenida Street	Eden Housing	100 affordable units	Approved
3	555 W Middlefield Road	Avalon Bay Communities	323 unit residential apartment	Approved
4	2000 N Shoreline Boulevard (Charleston East)	Google Inc.	595,000 s.f. office	Under Construction
5	1001 N Shoreline Boulevard	Sares Regis Group of Northern California	203 unit residential apartment, 100 unit condominium building, and six-level parking structure	Under Construction
6	777 W Middlefield Road	Fortbay	716 unit residential apartment (including 144 affordable)	Under Construction
7	1860-2159 Landings Drive, 1014-1058 Huff Avenue, 900 Alta Avenue, 2000 N Shoreline Boulevard (Google Landings)	Google Inc.	800,000 s.f. office	Under Construction
8	2600 Marine Way (Intuit)	Intuit	364,000 s.f. office	Under Construction
9	Hope Street Lots (City Lots 4 and 8)	Robert Green Company	120,000 s.f. hotel with ground floor commercial and 52,000 s.f. mixed use building	Approved

Appendix C

Tabulated Traffic Volumes

Intersection Number:	1												
Traffic Node Number:	1												
Intersection Name:	Shoreline Blvd & La Avenida Avenue/US 101 NB Off-Ramp												
Peak Hour:	AM												
Count Date:	09/25/18												
													Date of Analysis: 08/05/22
Movements													
Scenario:	North Approach			East Approach			South Approach			Southeast Approach			Total
	RT	TH	LT	RT	TH	LT	RT	TH	LT	RT	TH	LT	
Existing Conditions ¹	0	408	0	12	47	114	0	1219	0	1327	14	416	3557
Approved Project Trips													
1255 Pear Avenue	0	76	0	0	12	19	0	75	0	91	0	0	273
1100 La Avenida Street	0	0	0	0	12	18	0	5	0	5	0	0	40
555 W Middlefield Road	0	2	0	0	0	0	0	5	0	0	0	0	7
Charleston East	0	44	0	0	0	0	0	23	0	312	0	0	379
1001 N Shoreline Boulevard	0	7	0	0	0	0	0	10	0	0	0	6	23
777 W Middlefield Road	0	2	0	0	0	0	0	6	0	0	0	8	16
1555 W Middlefield Road	0	0	0	0	0	0	0	0	0	0	0	3	3
Google Landings	0	8	0	0	0	0	0	51	0	80	0	0	139
2600 Marine Way	0	4	0	0	0	0	0	16	0	16	0	0	36
Hope Street Lots (City Lots 4 and 8)	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Approved Trips	0	143	0	0	24	37	0	191	0	504	0	17	273
Shoreline Bus Lane Improvement Project	0	0	0	0	0	0	0	0	0	0	0	0	0
Background Conditions	0	551	0	12	71	151	0	1410	0	1831	14	433	4473
Project Trips	0	3	0	0	0	0	0	4	0	0	0	4	11
Existing + Project	0	411	0	12	47	114	0	1223	0	1327	14	420	3568
Background + Project	0	554	0	12	71	151	0	1414	0	1831	14	437	4484
¹ Existing Volumes include a 1%/year growth rate from Count Date to Year 2022.													
Intersection Number:	2												
Traffic Node Number:	2												
Intersection Name:	Shoreline Blvd & US 101 SB Off-Ramp												
Peak Hour:	AM												
Count Date:	09/25/18												
													Date of Analysis: 08/05/22
Movements													
Scenario:	North Approach			East Approach			South Approach			West Approach			Total
	RT	TH	LT	RT	TH	LT	RT	TH	LT	RT	TH	LT	
Existing Conditions ¹	0	651	0	0	0	0	0	1402	29	376	0	256	2714
Approved Project Trips													
1255 Pear Avenue	0	19	0	0	0	0	0	23	0	0	0	52	94
1100 La Avenida Street	0	4	0	0	0	0	0	1	0	0	0	4	9
555 W Middlefield Road	0	2	0	0	0	0	0	5	0	0	0	0	7
Charleston East	0	3	0	0	0	0	0	23	0	0	0	0	26
1001 N Shoreline Boulevard	0	12	0	0	0	0	0	29	0	10	0	0	51
777 W Middlefield Road	0	11	0	0	0	0	0	28	0	8	0	0	47
1555 W Middlefield Road	0	3	0	0	0	0	0	0	0	0	0	0	3
Google Landings	0	2	0	0	0	0	0	27	0	0	0	24	53
2600 Marine Way	0	2	0	0	0	0	0	16	0	0	0	0	18
Hope Street Lots (City Lots 4 and 8)	0	0	0	0	0	0	0	5	0	11	0	0	16
Total Approved Trips	0	58	0	0	0	0	0	157	0	29	0	80	94
Shoreline Bus Lane Improvement Project	0	0	0	0	0	0	0	0	-29	0	0	0	-29
Background Conditions	0	709	0	0	0	0	0	1559	0	405	0	336	3009
Project Trips	0	7	0	0	0	0	0	13	0	5	0	0	25
Existing + Project	0	658	0	0	0	0	0	1415	29	381	0	256	2739
Background + Project	0	716	0	0	0	0	0	1572	0	410	0	336	3034
¹ Existing Volumes include a 1%/year growth rate from Count Date to Year 2022.													

Intersection Number:	3												
Traffic Node Number:	3												
Intersection Name:	Shoreline Blvd & Terra Bella Avenue												
Peak Hour:	AM												
Count Date:	09/25/18												
	Date of Analysis: 08/05/22												
	Movements												
	North Approach			East Approach			South Approach			West Approach			
Scenario:	RT	TH	LT	RT	TH	LT	RT	TH	LT	RT	TH	LT	Total
Existing Conditions ¹	188	576	232	155	20	26	27	1389	4	6	15	62	2700
Approved Project Trips													
1255 Pear Avenue	0	19	0	0	0	0	0	23	0	0	0	0	42
1100 La Avenida Street	0	4	0	0	0	0	0	1	0	0	0	0	5
555 W Middlefield Road	0	2	0	0	0	0	0	5	0	0	0	0	7
Charleston East	0	3	0	0	0	0	0	23	0	0	0	0	26
1001 N Shoreline Boulevard	0	-15	37	86	4	90	82	-28	0	0	3	0	259
777 W Middlefield Road	0	19	0	0	0	0	0	38	1	0	0	0	58
1555 W Middlefield Road	0	3	0	0	0	0	0	7	0	0	0	0	10
Google Landings	0	2	0	0	0	0	0	27	0	0	0	0	29
2600 Marine Way	0	2	0	0	0	0	0	16	0	0	0	0	18
Hope Street Lots (City Lots 4 and 8)	0	11	0	0	0	0	0	5	0	0	0	0	16
Total Approved Trips	0	50	37	86	4	90	82	117	1	0	3	0	42
Shoreline Bus Lane Improvement Project	0	0	0	-12	0	12	0	-12	12	5	0	-5	0
Background Conditions	188	626	269	229	24	128	109	1494	17	11	18	57	3170
Project Trips	0	0	12	20	0	6	4	0	0	0	0	0	42
Existing + Project	188	576	244	175	20	32	31	1389	4	6	15	62	2742
Background + Project	188	626	281	249	24	134	113	1494	17	11	18	57	3212
¹ Existing Volumes include a 1%/year growth rate from Count Date to Year 2022.													
Intersection Number:	4												
Traffic Node Number:	4												
Intersection Name:	Linda Vista Avenue & Terra Bella Avenue												
Peak Hour:	AM												
Count Date:	06/01/22												
	Date of Analysis: 08/05/22												
	Movements												
	North Approach			East Approach			South Approach			West Approach			
Scenario:	RT	TH	LT	RT	TH	LT	RT	TH	LT	RT	TH	LT	Total
Existing Conditions ¹	0	1	0	0	99	7	30	19	37	21	67	19	300
Approved Project Trips													
1255 Pear Avenue	0	0	0	0	0	0	0	0	0	0	0	0	0
1100 La Avenida Street	0	0	0	0	0	0	0	0	0	0	0	0	0
555 W Middlefield Road	0	0	0	0	0	0	0	0	0	0	0	0	0
Charleston East	0	0	0	0	0	0	0	0	0	0	0	0	0
1001 N Shoreline Boulevard	0	0	0	0	0	0	0	0	0	0	0	0	0
777 W Middlefield Road	0	0	0	0	0	0	0	0	0	0	0	0	0
1555 W Middlefield Road	0	0	0	0	0	0	0	0	0	0	0	0	0
Google Landings	0	0	0	0	0	0	0	0	0	0	0	0	0
2600 Marine Way	0	0	0	0	0	0	0	0	0	0	0	0	0
Hope Street Lots (City Lots 4 and 8)	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Approved Trips	0	0	0	0	0	0	0	0	0	0	0	0	0
Shoreline Bus Lane Improvement Project	0	0	0	0	0	0	0	0	0	0	0	0	0
Background Conditions	0	1	0	0	99	7	30	19	37	21	67	19	300
Project Trips	3	3	0	0	23	11	8	5	0	0	12	5	70
Existing + Project	3	4	0	0	122	18	38	24	37	21	79	24	370
Background + Project	3	4	0	0	122	18	38	24	37	21	79	24	370
¹ Existing Volumes include a 1%/year growth rate from Count Date to Year 2022.													

Intersection Number:	5												
Traffic Node Number:	5												
Intersection Name:	Linda Vista Avenue & Middlefield Road												
Peak Hour:	AM											Date of Analysis: 08/05/22	
Count Date:	06/01/22												
	Movements												
	North Approach			East Approach			South Approach			West Approach			
Scenario:	RT	TH	LT	RT	TH	LT	RT	TH	LT	RT	TH	LT	Total
Existing Conditions ¹	38	0	13	87	965	25	0	0	3	0	586	37	1754
Approved Project Trips													
1255 Pear Avenue	0	0	0	0	0	0	0	0	0	0	0	0	0
1100 La Avenida Street	0	0	0	0	0	0	0	0	0	0	0	0	0
555 W Middlefield Road	0	0	0	0	11	0	0	0	0	0	5	0	16
Charleston East	0	0	0	0	7	0	0	0	0	0	1	0	8
1001 N Shoreline Boulevard	0	0	0	0	0	0	0	0	0	0	12	0	12
777 W Middlefield Road	0	0	0	0	5	0	0	0	0	0	12	0	17
1555 W Middlefield Road	0	0	0	0	2	0	0	0	0	0	5	0	7
Google Landings	0	0	0	0	5	0	0	0	0	0	0	0	5
2600 Marine Way	0	0	0	0	0	0	0	0	0	0	0	0	0
Hope Street Lots (City Lots 4 and 8)	0	0	0	0	0	0	0	0	0	0	0	0	0
<i>Total Approved Trips</i>	0	0	0	0	30	0	0	0	0	0	35	0	0
Shoreline Bus Lane Improvement Project	0	0	0	0	0	0	0	0	0	0	62	0	62
Background Conditions	38	0	13	87	995	25	0	0	3	0	683	37	1881
Project Trips	5	0	9	8	0	0	0	0	0	0	0	5	27
Existing + Project	43	0	22	95	965	25	0	0	3	0	586	42	1781
Background + Project	43	0	22	95	995	25	0	0	3	0	683	42	1908
¹ Existing Volumes include a 1%/year growth rate from Count Date to Year 2022.													

Intersection Number:	1												
Traffic Node Number:	1												
Intersection Name:	Shoreline Blvd & La Avenida Avenue/US 101 NB Off-Ramp												
Peak Hour:	PM												
Count Date:	09/25/18												
	Date of Analysis: 08/05/22												
	Movements												
	North Approach			East Approach			South Approach			Southeast Approach			
Scenario:	RT	TH	LT	RT	TH	LT	RT	TH	LT	RT	TH	LT	Total
Existing Conditions ¹	0	2040	0	7	79	204	0	300	0	301	0	439	3370
Approved Project Trips													
1255 Pear Avenue	0	61	0	0	33	53	0	69	0	84	0	0	300
1100 La Avenida Street	0	0	0	0	7	11	0	16	0	15	0	0	49
555 W Middlefield Road	0	5	0	0	0	0	0	4	0	0	0	0	9
Charleston East	0	302	0	0	0	0	0	5	0	64	0	0	371
1001 N Shoreline Boulevard	0	7	0	0	0	0	0	5	0	0	0	24	36
777 W Middlefield Road	0	6	0	0	0	0	0	4	0	0	0	21	31
1555 W Middlefield Road	0	0	0	0	0	0	0	0	0	0	0	9	9
Google Landings	0	74	0	0	0	0	0	1	0	2	0	0	77
2600 Marine Way	0	29	0	0	0	0	0	3	0	3	0	0	35
Hope Street Lots (City Lots 4 and 8)	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Approved Trips	0	484	0	0	40	64	0	107	0	168	0	54	300
Shoreline Bus Lane Improvement Project	0	0	0	0	0	0	0	0	0	0	0	0	0
Background Conditions	0	2524	0	7	119	268	0	407	0	469	0	493	4287
Project Trips	0	5	0	0	0	0	0	5	0	0	0	8	18
Existing + Project	0	2045	0	7	79	204	0	305	0	301	0	447	3388
Background + Project	0	2529	0	7	119	268	0	412	0	469	0	501	4305
¹ Existing Volumes include a 1%/year growth rate from Count Date to Year 2022.													
Intersection Number:	2												
Traffic Node Number:	2												
Intersection Name:	Shoreline Blvd & US 101 SB Off-Ramp												
Peak Hour:	PM												
Count Date:	09/25/18												
	Date of Analysis: 08/05/22												
	Movements												
	North Approach			East Approach			South Approach			West Approach			
Scenario:	RT	TH	LT	RT	TH	LT	RT	TH	LT	RT	TH	LT	Total
Existing Conditions ¹	0	1307	0	0	0	0	0	548	74	378	0	82	2389
Approved Project Trips													
1255 Pear Avenue	0	27	0	0	0	0	0	21	0	0	0	48	96
1100 La Avenida Street	0	2	0	0	0	0	0	4	0	0	0	12	18
555 W Middlefield Road	0	5	0	0	0	0	0	4	0	0	0	9	9
Charleston East	0	20	0	0	0	0	0	5	0	0	0	25	25
1001 N Shoreline Boulevard	0	31	0	0	0	0	0	15	0	16	0	62	62
777 W Middlefield Road	0	28	0	0	0	0	0	19	0	21	0	68	68
1555 W Middlefield Road	0	9	0	0	0	0	0	0	0	0	0	9	9
Google Landings	0	19	0	0	0	0	0	1	0	0	0	2	22
2600 Marine Way	0	14	0	0	0	0	0	3	0	0	0	17	17
Hope Street Lots (City Lots 4 and 8)	0	0	0	0	0	0	0	11	0	7	0	18	18
Total Approved Trips	0	155	0	0	0	0	0	83	0	44	0	62	96
Shoreline Bus Lane Improvement Project	0	0	0	0	0	0	0	0	-74	0	0	0	-74
Background Conditions	0	1462	0	0	0	0	0	631	0	422	0	144	2659
Project Trips	0	13	0	0	0	0	0	13	0	11	0	0	37
Existing + Project	0	1320	0	0	0	0	0	561	74	389	0	82	2426
Background + Project	0	1475	0	0	0	0	0	644	0	433	0	144	2696
¹ Existing Volumes include a 1%/year growth rate from Count Date to Year 2022.													

Intersection Number:	3												
Traffic Node Number:	3												
Intersection Name:	Shoreline Blvd & Terra Bella Avenue												
Peak Hour:	PM												
Count Date:	09/25/18												
	Date of Analysis: 08/05/22												
	Movements												
	North Approach			East Approach			South Approach			West Approach			
Scenario:	RT	TH	LT	RT	TH	LT	RT	TH	LT	RT	TH	LT	Total
Existing Conditions ¹	53	1533	44	131	15	56	31	565	6	50	22	151	2657
Approved Project Trips													
1255 Pear Avenue	0	27	0	0	0	0	0	21	0	0	0	0	48
1100 La Avenida Street	0	2	0	0	0	0	0	4	0	0	0	0	6
555 W Middlefield Road	0	5	0	0	0	0	0	4	0	0	0	0	9
Charleston East	0	20	0	0	0	0	0	5	0	0	0	0	25
1001 N Shoreline Boulevard	0	-9	56	36	2	40	35	-5	0	0	2	0	157
777 W Middlefield Road	0	49	0	0	0	0	0	26	1	1	0	0	77
1555 W Middlefield Road	0	9	0	0	0	0	0	5	0	0	0	0	14
Google Landings	0	19	0	0	0	0	0	1	0	0	0	0	20
2600 Marine Way	0	14	0	0	0	0	0	3	0	0	0	0	17
Hope Street Lots (City Lots 4 and 8)	0	7	0	0	0	0	0	11	0	0	0	0	18
Total Approved Trips	0	143	56	36	2	40	35	75	1	1	2	0	48
Shoreline Bus Lane Improvement Project	0	0	0	-6	0	6	0	-47	47	13	0	-13	0
Background Conditions	53	1676	100	161	17	102	66	593	54	64	24	138	3048
Project Trips	0	0	24	20	0	9	7	0	0	0	0	0	60
Existing + Project	53	1533	68	151	15	65	38	565	6	50	22	151	2717
Background + Project	53	1676	124	181	17	111	73	593	54	64	24	138	3108
¹ Existing Volumes include a 1%/year growth rate from Count Date to Year 2022.													
Intersection Number:	4												
Traffic Node Number:	4												
Intersection Name:	Linda Vista Avenue & Terra Bella Avenue												
Peak Hour:	PM												
Count Date:	06/01/22												
	Date of Analysis: 08/05/22												
	Movements												
	North Approach			East Approach			South Approach			West Approach			
Scenario:	RT	TH	LT	RT	TH	LT	RT	TH	LT	RT	TH	LT	Total
Existing Conditions ¹	19	4	1	0	117	11	7	4	16	15	58	5	257
Approved Project Trips													
1255 Pear Avenue	0	0	0	0	0	0	0	0	0	0	0	0	0
1100 La Avenida Street	0	0	0	0	0	0	0	0	0	0	0	0	0
555 W Middlefield Road	0	0	0	0	0	0	0	0	0	0	0	0	0
Charleston East	0	0	0	0	0	0	0	0	0	0	0	0	0
1001 N Shoreline Boulevard	0	0	0	0	0	0	0	0	0	0	0	0	0
777 W Middlefield Road	0	0	0	0	0	0	0	0	0	0	0	0	0
1555 W Middlefield Road	0	0	0	0	0	0	0	0	0	0	0	0	0
Google Landings	0	0	0	0	0	0	0	0	0	0	0	0	0
2600 Marine Way	0	0	0	0	0	0	0	0	0	0	0	0	0
Hope Street Lots (City Lots 4 and 8)	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Approved Trips	0	0	0	0	0	0	0	0	0	0	0	0	0
Shoreline Bus Lane Improvement Project	0	0	0	0	0	0	0	0	0	0	0	0	0
Background Conditions	19	4	1	0	117	11	7	4	16	15	58	5	257
Project Trips	7	6	0	0	21	12	16	6	0	0	25	6	99
Existing + Project	26	10	1	0	138	23	23	10	16	15	83	11	356
Background + Project	26	10	1	0	138	23	23	10	16	15	83	11	356
¹ Existing Volumes include a 1%/year growth rate from Count Date to Year 2022.													

Intersection Number:	5												
Traffic Node Number:	5												
Intersection Name:	Linda Vista Avenue & Middlefield Road												
Peak Hour:	PM											Date of Analysis: 08/05/22	
Count Date:	06/01/22												
Movements													
Scenario:	North Approach			East Approach			South Approach			West Approach			Total
	RT	TH	LT	RT	TH	LT	RT	TH	LT	RT	TH	LT	
Existing Conditions ¹	24	0	30	22	506	31	3	0	0	0	858	38	1512
Approved Project Trips													
1255 Pear Avenue	0	0	0	0	0	0	0	0	0	0	0	0	0
1100 La Avenida Street	0	0	0	0	0	0	0	0	0	0	0	0	0
555 W Middlefield Road	0	0	0	0	8	0	0	0	0	0	15	0	23
Charleston East	0	0	0	0	1	0	0	0	0	0	6	0	7
1001 N Shoreline Boulevard	0	0	0	0	0	0	0	0	0	0	6	0	6
777 W Middlefield Road	0	0	0	0	12	0	0	0	0	0	30	0	42
1555 W Middlefield Road	0	0	0	0	6	0	0	0	0	0	4	0	10
Google Landings	0	0	0	0	0	0	0	0	0	0	4	0	4
2600 Marine Way	0	0	0	0	0	0	0	0	0	0	0	0	0
Hope Street Lots (City Lots 4 and 8)	0	0	0	0	0	0	0	0	0	0	0	0	0
<i>Total Approved Trips</i>	0	0	0	0	27	0	0	0	0	0	65	0	0
Shoreline Bus Lane Improvement Project	0	0	0	0	0	0	0	0	0	0	134	0	134
Background Conditions	24	0	30	22	533	31	3	0	0	0	1057	38	1738
Project Trips	6	0	12	13	0	0	0	0	0	0	0	9	40
Existing + Project	30	0	42	35	506	31	3	0	0	0	858	47	1552
Background + Project	30	0	42	35	533	31	3	0	0	0	1057	47	1778
¹ Existing Volumes include a 1%/year growth rate from Count Date to Year 2022.													

Appendix D

Level of Service Calculations

Scenario Report

Scenario: Existing AM
Command: Default Command
Volume: Existing AM
Geometry: Existing AM
Impact Fee: Default Impact Fee
Trip Generation: No Trip Generation
Trip Distribution: Distribution
Paths: Default Path
Routes: Default Route
Configuration: Default Configuration

Level Of Service Computation Report

2000 HCM Operations Method (Future Volume Alternative)

Intersection #1 Shoreline Blvd & US 101 NB Ramp/La Avenida St

Cycle (sec): 160 Critical Vol./Cap.(X): 0.848
Loss Time (sec): 9 Average Delay (sec/veh): 42.6
Optimal Cycle: 93 Level Of Service: D

Table with 4 columns: North Bound, South Bound, East Bound, West Bound. Rows include Movement (L-T-R), Control (Protected, Split Phase), Rights (Ignore, Include), and Lane counts.

Volume Module: Table with 12 columns representing different traffic flows. Rows include Base Vol, Growth Adj, Initial Bse, Added Vol, PasserByVol, Initial Fut, User Adj, PHF Adj, PHF Volume, Reduct Vol, Reduced Vol, PCE Adj, MLF Adj, and Final Volume.

Saturation Flow Module: Table with 12 columns. Rows include Sat/Lane, Adjustment, Lanes, and Final Sat.

Capacity Analysis Module: Table with 12 columns. Rows include Vol/Sat, Crit Moves, Green/Cycle, Volume/Cap, Uniform Del, IncremntDel, InitQueueDel, Delay Adj, Delay/Veh, User DelAdj, AdjDel/Veh, LOS by Move, and HCM2kAvgQ.

Note: Queue reported is the number of cars per lane.

Level Of Service Computation Report

2000 HCM Operations Method (Future Volume Alternative)

Intersection #2 Shoreline Blvd & US 101 SB Ramp

Cycle (sec): 150 Critical Vol./Cap.(X): 0.411
Loss Time (sec): 9 Average Delay (sec/veh): 22.3
Optimal Cycle: 30 Level Of Service: C

Table with 4 columns: North Bound, South Bound, East Bound, West Bound. Rows include Movement (L-T-R), Control (Protected, Split Phase), Rights (Include, Ignore), and Lane counts.

Volume Module: Table with 12 columns representing different traffic movements. Rows include Base Vol, Growth Adj, Initial Bse, Added Vol, PasserByVol, Initial Fut, User Adj, PHF Adj, PHF Volume, Reduct Vol, Reduced Vol, PCE Adj, MLF Adj, and Final Volume.

Saturation Flow Module: Table with 12 columns. Rows include Sat/Lane, Adjustment, Lanes, and Final Sat.

Capacity Analysis Module: Table with 12 columns. Rows include Vol/Sat, Crit Moves, Green/Cycle, Volume/Cap, Uniform Del, IncremntDel, InitQueueDel, Delay Adj, Delay/Veh, User DelAdj, AdjDel/Veh, LOS by Move, and HCM2kAvgQ.

Note: Queue reported is the number of cars per lane.

Level Of Service Computation Report

2000 HCM Operations Method (Future Volume Alternative)

Intersection #3 Shoreline Blvd & Terra Bella Avenue

Cycle (sec): 150 Critical Vol./Cap.(X): 0.613
Loss Time (sec): 9 Average Delay (sec/veh): 20.9
Optimal Cycle: 44 Level Of Service: C

Table with 4 columns: North Bound, South Bound, East Bound, West Bound. Rows include Movement (L-T-R), Control (Protected/Permitted), Rights (Include/Ovl), and Lane configurations.

Volume Module: Table with 12 columns representing different volume types (Base Vol, Growth Adj, Initial Bse, etc.) and 12 rows of values.

Saturation Flow Module: Table with 12 columns representing saturation flow values for different lanes and adjustment factors.

Capacity Analysis Module: Table with 12 columns representing capacity analysis metrics (Vol/Sat, Crit Moves, Green/Cycle, etc.) and 12 rows of values.

Note: Queue reported is the number of cars per lane.

Level of Service Computation Report

2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #4 Linda Vista Avenue & Terra Bella Avenue

Average Delay (sec/veh): 3.6 Worst Case Level Of Service: B[10.5]

Table with 4 columns: North Bound, South Bound, East Bound, West Bound. Rows include Approach, Movement, Control, Rights, and Lanes.

Volume Module: Table with 13 columns for traffic flow metrics (Base Vol, Growth Adj, Initial Bse, Added Vol, PasserByVol, Initial Fut, User Adj, PHF Adj, PHF Volume, Reduct Vol, FinalVolume).

Critical Gap Module: Table with 13 columns for critical gap and follow-up time metrics.

Capacity Module: Table with 13 columns for capacity-related metrics (Cnflct Vol, Potent Cap., Move Cap., Volume/Cap).

Level of Service Module: Table with 13 columns for LOS metrics (2Way95thQ, Control Del, LOS by Move, Movement, Shared Cap., SharedQueue, Shrd ConDel, Shared LOS, ApproachDel, ApproachLOS).

Note: Queue reported is the number of cars per lane.

Level of Service Computation Report

2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #5 Linda Vista Avenue & Middlefield Road

Average Delay (sec/veh): 1.1 Worst Case Level Of Service: D[34.3]

Table with 4 columns: North Bound, South Bound, East Bound, West Bound. Rows include Approach, Movement, Control, Rights, and Lanes.

Volume Module: Table with 12 columns for different volume types (Base Vol, Growth Adj, Initial Bse, Added Vol, PasserByVol, Initial Fut, User Adj, PHF Adj, PHF Volume, Reduct Vol, FinalVolume).

Critical Gap Module: Table with 12 columns for Critical Gp and FollowUpTim.

Capacity Module: Table with 12 columns for Cnflct Vol, Potent Cap., Move Cap., and Volume/Cap.

Level of Service Module: Table with 12 columns for 2Way95thQ, Control Del, LOS by Move, Movement, Shared Cap., SharedQueue, Shrd ConDel, Shared LOS, ApproachDel, and ApproachLOS.

Note: Queue reported is the number of cars per lane.

Scenario Report

Scenario: Existing PM

Command: Default Command

Volume: Existing PM

Geometry: Existing PM

Impact Fee: Default Impact Fee

Trip Generation: No Trip Generation

Trip Distribution: Distribution

Paths: Default Path

Routes: Default Route

Configuration: Default Configuration

Level Of Service Computation Report

2000 HCM Operations Method (Future Volume Alternative)

Intersection #1 Shoreline Blvd & US 101 NB Ramp/La Avenida St

Cycle (sec): 140 Critical Vol./Cap.(X): 0.627
Loss Time (sec): 9 Average Delay (sec/veh): 29.5
Optimal Cycle: 45 Level Of Service: C

Table with 4 columns: North Bound, South Bound, East Bound, West Bound. Rows include Movement (L-T-R), Control (Protected, Split Phase), Rights (Ignore, Include), and Lane counts.

Volume Module table with 12 columns representing different traffic movements and 12 rows of volume-related metrics like Base Vol, Growth Adj, Initial Bse, etc.

Saturation Flow Module table with 12 columns for saturation flow and 4 rows of adjustment factors and final saturation values.

Capacity Analysis Module table with 12 columns for capacity metrics and 12 rows of analysis values like Vol/Sat, Crit Moves, Green/Cycle, etc.

Note: Queue reported is the number of cars per lane.

Level Of Service Computation Report

2000 HCM Operations Method (Future Volume Alternative)

Intersection #2 Shoreline Blvd & US 101 SB Ramp

Cycle (sec): 145 Critical Vol./Cap.(X): 0.565
Loss Time (sec): 9 Average Delay (sec/veh): 22.5
Optimal Cycle: 40 Level Of Service: C

Table with columns for Approach (North, South, East, West Bound) and Movement (L, T, R). Rows include Control, Rights, Min. Green, Y+R, and Lanes.

Volume Module: Table with columns for Base Vol, Growth Adj, Initial Bse, Added Vol, PasserByVol, Initial Fut, User Adj, PHF Adj, PHF Volume, Reduct Vol, Reduced Vol, PCE Adj, MLF Adj, Final Volume.

Saturation Flow Module: Table with columns for Sat/Lane, Adjustment, Lanes, Final Sat.

Capacity Analysis Module: Table with columns for Vol/Sat, Crit Moves, Green/Cycle, Volume/Cap, Uniform Del, IncremntDel, InitQueueDel, Delay Adj, Delay/Veh, User DelAdj, AdjDel/Veh, LOS by Move, HCM2kAvgQ.

Note: Queue reported is the number of cars per lane.

Level Of Service Computation Report

2000 HCM Operations Method (Future Volume Alternative)

Intersection #3 Shoreline Blvd & Terra Bella Avenue

Cycle (sec): 125 Critical Vol./Cap.(X): 0.614
Loss Time (sec): 9 Average Delay (sec/veh): 16.9
Optimal Cycle: 43 Level Of Service: B

Table with 4 columns: North Bound, South Bound, East Bound, West Bound. Rows include Movement (L-T-R), Control (Protected/Permitted), Rights (Include/Ovl), Min. Green, Y+R, and Lanes.

Volume Module: Table with 13 columns representing different volume components and 13 rows for various adjustments like Base Vol, Growth Adj, Initial Bse, etc.

Saturation Flow Module: Table with 13 columns for saturation flow values and 4 rows for Sat/Lane, Adjustment, Lanes, and Final Sat.

Capacity Analysis Module: Table with 13 columns for capacity analysis metrics and 13 rows for Vol/Sat, Crit Moves, Green/Cycle, Volume/Cap, etc.

Note: Queue reported is the number of cars per lane.

Level of Service Computation Report

2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #4 Linda Vista Avenue & Terra Bella Avenue

Average Delay (sec/veh): 2.4 Worst Case Level Of Service: A[9.9]

Table with 4 columns: North Bound, South Bound, East Bound, West Bound. Rows include Approach, Movement, Control, Rights, and Lanes.

Volume Module: Table with 13 columns representing different volume categories and 13 rows for various adjustment factors like Base Vol, Growth Adj, etc.

Critical Gap Module: Table with 13 columns for gap and follow-up times across different movements.

Capacity Module: Table with 13 columns for capacity-related metrics and 4 rows for Conflict Vol, Potent Cap., Move Cap., and Volume/Cap.

Level of Service Module: Table with 13 columns for LOS metrics and 10 rows for 2Way95thQ, Control Del, LOS by Move, etc.

Note: Queue reported is the number of cars per lane.

Level Of Service Computation Report

2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #5 Linda Vista Avenue & Middlefield Road

Average Delay (sec/veh): 1.3 Worst Case Level Of Service: C [23.4]

Table with 4 columns: North Bound, South Bound, East Bound, West Bound. Rows include Approach, Movement, Control, Rights, and Lanes.

Volume Module: Table with 13 columns representing different traffic volumes and adjustment factors like Base Vol, Growth Adj, Initial Bse, etc.

Critical Gap Module: Table with 13 columns showing critical gap values and follow-up times for different movements.

Capacity Module: Table with 13 columns showing capacity-related metrics like Conflict Vol, Potent Cap., Move Cap., and Volume/Cap.

Level Of Service Module: Table with 13 columns showing level of service metrics like 2Way95thQ, Control Del, LOS by Move, Shared Cap., etc.

Note: Queue reported is the number of cars per lane.

Scenario Report

Scenario: Background AM
Command: Default Command
Volume: Background AM
Geometry: Background AM
Impact Fee: Default Impact Fee
Trip Generation: No Trip Generation
Trip Distribution: Distribution
Paths: Default Path
Routes: Default Route
Configuration: Default Configuration

Level Of Service Computation Report

2000 HCM Operations Method (Future Volume Alternative)

Intersection #1 Shoreline Blvd & US 101 NB Ramp/La Avenida St

Cycle (sec): 160 Critical Vol./Cap.(X): 1.097
Loss Time (sec): 9 Average Delay (sec/veh): 85.7
Optimal Cycle: 180 Level Of Service: F

Table with 4 columns: North Bound, South Bound, East Bound, West Bound. Rows include Movement (L-T-R), Control (Protected, Split Phase), Rights (Ignore, Include), and various timing parameters like Min. Green, Y+R, and Lanes.

Volume Module: Table showing traffic volume adjustments. Rows include Base Vol, Growth Adj, Initial Bse, Added Vol, PasserByVol, Initial Fut, User Adj, PHF Adj, PHF Volume, Reduct Vol, Reduced Vol, PCE Adj, MLF Adj, and Final Volume.

Saturation Flow Module: Table showing saturation flow rates and adjustments. Rows include Sat/Lane, Adjustment, Lanes, and Final Sat.

Capacity Analysis Module: Table showing capacity analysis metrics. Rows include Vol/Sat, Crit Moves, Green/Cycle, Volume/Cap, Uniform Del, IncremntDel, InitQueueDel, Delay Adj, Delay/Veh, User DelAdj, AdjDel/Veh, LOS by Move, and HCM2kAvgQ.

Note: Queue reported is the number of cars per lane.

Level Of Service Computation Report

2000 HCM Operations Method (Future Volume Alternative)

Intersection #2 Shoreline Blvd & US 101 SB Ramp

Cycle (sec): 150 Critical Vol./Cap.(X): 0.597
Loss Time (sec): 9 Average Delay (sec/veh): 20.9
Optimal Cycle: 42 Level Of Service: C

Table with 4 columns: North Bound, South Bound, East Bound, West Bound. Rows include Movement (L-T-R), Control, Rights, Min. Green, Y+R, and Lanes.

Volume Module: Table with 12 columns representing different volume components and 12 rows of data including Base Vol, Growth Adj, Initial Bse, etc.

Saturation Flow Module: Table with 12 columns for saturation flow values and 4 rows of data including Sat/Lane, Adjustment, Lanes, and Final Sat.

Capacity Analysis Module: Table with 12 columns for capacity analysis metrics and 14 rows of data including Vol/Sat, Crit Moves, Green/Cycle, etc.

Note: Queue reported is the number of cars per lane.

Level Of Service Computation Report

2000 HCM Operations Method (Future Volume Alternative)

Intersection #3 Shoreline Blvd & Terra Bella Avenue

Cycle (sec): 160 Critical Vol./Cap.(X): 0.782
Loss Time (sec): 12 Average Delay (sec/veh): 34.2
Optimal Cycle: 82 Level Of Service: C

Table with 4 columns: North Bound, South Bound, East Bound, West Bound. Rows include Movement (L-T-R), Control (Protected, Split Phase), Rights (Include, Ovl), and Lane configurations.

Volume Module: Table with 12 columns representing different traffic movements and 12 rows of volume-related metrics such as Base Vol, Growth Adj, Initial Bse, etc.

Saturation Flow Module: Table with 12 columns for saturation flow and 4 rows of adjustment factors and final saturation values.

Capacity Analysis Module: Table with 12 columns for capacity analysis metrics and 12 rows of delay, LOS, and HCM2kAvgQ values.

Note: Queue reported is the number of cars per lane.

Level of Service Computation Report

2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #4 Linda Vista Avenue & Terra Bella Avenue

Average Delay (sec/veh): 3.6 Worst Case Level Of Service: B[10.5]

Table with 4 columns: North Bound, South Bound, East Bound, West Bound. Rows include Approach, Movement, Control, Rights, and Lanes.

Volume Module: Table with 13 columns for traffic volumes and adjustment factors like Base Vol, Growth Adj, Initial Bse, etc.

Critical Gap Module: Table with 13 columns for critical gap and follow-up time values.

Capacity Module: Table with 13 columns for conflict volume, potential capacity, and volume/capacity ratios.

Level of Service Module: Table with 13 columns for LOS metrics like 2Way95thQ, Control Del, LOS by Move, etc.

Note: Queue reported is the number of cars per lane.

Level Of Service Computation Report

2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #5 Linda Vista Avenue & Middlefield Road

Average Delay (sec/veh): 1.1 Worst Case Level Of Service: E[40.8]

Table with 4 columns: North Bound, South Bound, East Bound, West Bound. Rows include Approach, Movement, Control, Rights, and Lanes.

Volume Module: Table with 12 columns for different volume types (Base Vol, Growth Adj, etc.) and 4 rows for North, South, East, and West bounds.

Critical Gap Module: Table with 12 columns for gap and follow-up times and 4 rows for North, South, East, and West bounds.

Capacity Module: Table with 12 columns for capacity-related metrics and 4 rows for North, South, East, and West bounds.

Level Of Service Module: Table with 12 columns for LOS metrics and 4 rows for North, South, East, and West bounds.

Note: Queue reported is the number of cars per lane.

Scenario Report

Scenario: Background PM
Command: Default Command
Volume: Background PM
Geometry: Background PM
Impact Fee: Default Impact Fee
Trip Generation: No Trip Generation
Trip Distribution: Distribution
Paths: Default Path
Routes: Default Route
Configuration: Default Configuration

Level Of Service Computation Report

2000 HCM Operations Method (Future Volume Alternative)

Intersection #1 Shoreline Blvd & US 101 NB Ramp/La Avenida St

Cycle (sec): 140 Critical Vol./Cap.(X): 0.780
Loss Time (sec): 9 Average Delay (sec/veh): 34.5
Optimal Cycle: 69 Level Of Service: C

Table with 4 columns: North Bound, South Bound, East Bound, West Bound. Rows include Movement (L-T-R), Control, Rights, Min. Green, Y+R, and Lanes.

Volume Module: Table with 12 columns representing different volume types (Base Vol, Growth Adj, Initial Bse, Added Vol, PasserByVol, Initial Fut, User Adj, PHF Adj, PHF Volume, Reduct Vol, Reduced Vol, PCE Adj, MLF Adj, FinalVolume).

Saturation Flow Module: Table with 12 columns representing saturation flow values for different lanes and adjustments.

Capacity Analysis Module: Table with 12 columns representing capacity analysis metrics like Vol/Sat, Crit Moves, Green/Cycle, Volume/Cap, Uniform Del, etc.

Note: Queue reported is the number of cars per lane.

Level Of Service Computation Report

2000 HCM Operations Method (Future Volume Alternative)

Intersection #2 Shoreline Blvd & US 101 SB Ramp

Cycle (sec): 145 Critical Vol./Cap.(X): 0.578
Loss Time (sec): 9 Average Delay (sec/veh): 19.4
Optimal Cycle: 41 Level Of Service: B

Table with columns for Approach (North, South, East, West Bound) and Movement (L, T, R). Rows include Control, Rights, Min. Green, Y+R, and Lanes.

Volume Module: Table with columns for Volume and Movement (L, T, R). Rows include Base Vol, Growth Adj, Initial Bse, Added Vol, PasserByVol, Initial Fut, User Adj, PHF Adj, PHF Volume, Reduct Vol, Reduced Vol, PCE Adj, MLF Adj, and Final Volume.

Saturation Flow Module: Table with columns for Sat/Lane and Movement (L, T, R). Rows include Sat/Lane, Adjustment, Lanes, and Final Sat.

Capacity Analysis Module: Table with columns for Capacity and Movement (L, T, R). Rows include Vol/Sat, Crit Moves, Green/Cycle, Volume/Cap, Uniform Del, IncremntDel, InitQueueDel, Delay Adj, Delay/Veh, User DelAdj, AdjDel/Veh, LOS by Move, and HCM2kAvgQ.

Note: Queue reported is the number of cars per lane.

Level Of Service Computation Report

2000 HCM Operations Method (Future Volume Alternative)

Intersection #3 Shoreline Blvd & Terra Bella Avenue

Cycle (sec): 165 Critical Vol./Cap.(X): 0.708
Loss Time (sec): 12 Average Delay (sec/veh): 31.5
Optimal Cycle: 66 Level Of Service: C

Table with 4 columns: North Bound, South Bound, East Bound, West Bound. Rows include Movement (L-T-R), Control (Protected, Split Phase), Rights (Include, Ovl), and Lane configurations.

Volume Module: Table with 13 columns representing different traffic movements and 13 rows of volume-related metrics such as Base Vol, Growth Adj, Initial Bse, etc.

Saturation Flow Module: Table with 13 columns for movements and 13 rows for Sat/Lane, Adjustment, Lanes, and Final Sat.

Capacity Analysis Module: Table with 13 columns for movements and 13 rows for Vol/Sat, Crit Moves, Green/Cycle, Volume/Cap, etc.

Note: Queue reported is the number of cars per lane.

Level of Service Computation Report

2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #4 Linda Vista Avenue & Terra Bella Avenue

Average Delay (sec/veh): 2.4 Worst Case Level Of Service: A[9.9]

Table with 4 columns: North Bound, South Bound, East Bound, West Bound. Rows include Approach, Movement, Control, Rights, and Lanes.

Volume Module: Table with 13 columns for traffic volumes and adjustment factors like Base Vol, Growth Adj, Initial Bse, etc.

Critical Gap Module: Table with 13 columns for critical gap and follow-up time values.

Capacity Module: Table with 13 columns for capacity-related metrics like Cnflct Vol, Potent Cap., Move Cap., etc.

Level of Service Module: Table with 13 columns for LOS metrics like 2Way95thQ, Control Del, LOS by Move, etc.

Note: Queue reported is the number of cars per lane.

Level of Service Computation Report

2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #5 Linda Vista Avenue & Middlefield Road

Average Delay (sec/veh): 1.3 Worst Case Level Of Service: D [28.6]

Table with 4 columns: North Bound, South Bound, East Bound, West Bound. Rows include Approach, Movement, Control, Rights, and Lanes.

Volume Module: Table with 12 columns representing different traffic volumes and adjustment factors like Base Vol, Growth Adj, Initial Bse, etc.

Critical Gap Module: Table with 12 columns showing critical gap and follow-up time values.

Capacity Module: Table with 12 columns showing conflict volume, potential capacity, and volume/capacity ratios.

Level of Service Module: Table with 12 columns showing delay, LOS by movement, and shared queue/delay values.

Note: Queue reported is the number of cars per lane.

Scenario Report

Scenario: Background+P AM
Command: Default Command
Volume: Background AM
Geometry: Background AM
Impact Fee: Default Impact Fee
Trip Generation: Project AM
Trip Distribution: Distribution
Paths: Default Path
Routes: Default Route
Configuration: Default Configuration

Level Of Service Computation Report

2000 HCM Operations Method (Future Volume Alternative)

Intersection #1 Shoreline Blvd & US 101 NB Ramp/La Avenida St

Cycle (sec): 160 Critical Vol./Cap.(X): 1.098
Loss Time (sec): 9 Average Delay (sec/veh): 85.7
Optimal Cycle: 180 Level Of Service: F

Table with 4 columns: North Bound, South Bound, East Bound, West Bound. Rows include Movement (L-T-R), Control (Protected, Split Phase), Rights (Ignore, Include), and various timing parameters like Min. Green, Y+R, and Lanes.

Volume Module: Table showing traffic volume data for Base Vol, Growth Adj, Initial Bse, Added Vol, PasserByVol, Initial Fut, User Adj, PHF Adj, PHF Volume, Reduct Vol, Reduced Vol, PCE Adj, MLF Adj, and Final Volume across different movements.

Saturation Flow Module: Table showing saturation flow data for Sat/Lane, Adjustment, Lanes, and Final Sat. across different movements.

Capacity Analysis Module: Table showing capacity analysis data for Vol/Sat, Crit Moves, Green/Cycle, Volume/Cap, Uniform Del, IncremntDel, InitQueueDel, Delay Adj, Delay/Veh, User DelAdj, AdjDel/Veh, LOS by Move, and HCM2kAvgQ across different movements.

Note: Queue reported is the number of cars per lane.

Level Of Service Computation Report

2000 HCM Operations Method (Future Volume Alternative)

Intersection #2 Shoreline Blvd & US 101 SB Ramp

Cycle (sec): 150 Critical Vol./Cap.(X): 0.603
Loss Time (sec): 9 Average Delay (sec/veh): 21.0
Optimal Cycle: 43 Level Of Service: C

Table with 4 columns: North Bound, South Bound, East Bound, West Bound. Rows include Movement (L-T-R), Control, Rights, Min. Green, Y+R, and Lanes.

Volume Module: Table with 12 columns representing different volume categories and 12 rows of adjustment factors like Growth Adj, Initial Bse, Added Vol, etc.

Saturation Flow Module: Table with 12 columns for saturation flow and 4 rows for Sat/Lane, Adjustment, Lanes, and Final Sat.

Capacity Analysis Module: Table with 12 columns for capacity analysis metrics and 14 rows including Vol/Sat, Crit Moves, Green/Cycle, etc.

Note: Queue reported is the number of cars per lane.

Level Of Service Computation Report

2000 HCM Operations Method (Future Volume Alternative)

Intersection #3 Shoreline Blvd & Terra Bella Avenue

Cycle (sec): 160 Critical Vol./Cap.(X): 0.795
Loss Time (sec): 12 Average Delay (sec/veh): 35.3
Optimal Cycle: 86 Level Of Service: D

Table with 4 columns: North Bound, South Bound, East Bound, West Bound. Rows include Movement (L-T-R), Control (Protected, Split Phase), Rights (Include, Ovl), and Lane counts.

Volume Module: Table with 12 columns for volume metrics (Base Vol, Growth Adj, Initial Bse, etc.) and 4 rows of data.

Saturation Flow Module: Table with 12 columns for saturation flow metrics (Sat/Lane, Adjustment, Lanes, Final Sat.) and 4 rows of data.

Capacity Analysis Module: Table with 12 columns for capacity analysis metrics (Vol/Sat, Crit Moves, Green/Cycle, etc.) and 13 rows of data.

Note: Queue reported is the number of cars per lane.

Level Of Service Computation Report

2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #4 Linda Vista Avenue & Terra Bella Avenue

Average Delay (sec/veh): 3.9 Worst Case Level Of Service: B[10.8]

Table with 4 columns: North Bound, South Bound, East Bound, West Bound. Rows include Approach, Movement, Control, Rights, and Lanes.

Volume Module: Table with 13 columns for traffic volumes and adjustment factors like Base Vol, Growth Adj, Initial Bse, etc.

Critical Gap Module: Table with 13 columns for critical gap and follow-up time values.

Capacity Module: Table with 13 columns for capacity-related metrics like Conflict Vol, Potent Cap., Move Cap., etc.

Level Of Service Module: Table with 13 columns for LOS metrics like 2Way95thQ, Control Del, LOS by Move, etc.

Note: Queue reported is the number of cars per lane.

Level of Service Computation Report

2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #5 Linda Vista Avenue & Middlefield Road

Average Delay (sec/veh): 1.7 Worst Case Level Of Service: E[42.2]

Table with 4 columns: North Bound, South Bound, East Bound, West Bound. Rows include Approach, Movement, Control, Rights, and Lanes.

Volume Module: Table with 12 columns for volume components like Base Vol, Growth Adj, Initial Bse, Added Vol, PasserByVol, Initial Fut, User Adj, PHF Adj, PHF Volume, Reduct Vol, Final Volume.

Critical Gap Module: Table with 12 columns for critical gap and follow-up time values.

Capacity Module: Table with 12 columns for capacity-related metrics like Cnflct Vol, Potent Cap., Move Cap., Volume/Cap.

Level of Service Module: Table with 12 columns for LOS metrics like 2Way95thQ, Control Del, LOS by Move, Movement, Shared Cap., SharedQueue, Shrd ConDel, Shared LOS, ApproachDel, ApproachLOS.

Note: Queue reported is the number of cars per lane.

Scenario Report

Scenario: Background+P PM

Command: Default Command

Volume: Background PM

Geometry: Background PM

Impact Fee: Default Impact Fee

Trip Generation: Project PM

Trip Distribution: Distribution

Paths: Default Path

Routes: Default Route

Configuration: Default Configuration

Level Of Service Computation Report

2000 HCM Operations Method (Future Volume Alternative)

Intersection #1 Shoreline Blvd & US 101 NB Ramp/La Avenida St

Cycle (sec): 140 Critical Vol./Cap.(X): 0.781
Loss Time (sec): 9 Average Delay (sec/veh): 34.6
Optimal Cycle: 69 Level Of Service: C

Table with columns: Approach (North Bound, South Bound, East Bound, West Bound), Movement (L, T, R), Control (Protected, Split Phase), Rights (Ignore, Include), and various traffic volume and timing parameters.

Volume Module: Table showing traffic volume adjustments including Base Vol, Growth Adj, Initial Bse, Added Vol, PasserByVol, Initial Fut, User Adj, PHF Adj, PHF Volume, Reduct Vol, Reduced Vol, PCE Adj, MLF Adj, and Final Volume.

Saturation Flow Module: Table showing saturation flow parameters such as Sat/Lane, Adjustment, Lanes, and Final Sat.

Capacity Analysis Module: Table showing capacity analysis parameters including Vol/Sat, Crit Moves, Green/Cycle, Volume/Cap, Uniform Del, IncremntDel, InitQueueDel, Delay Adj, Delay/Veh, User DelAdj, AdjDel/Veh, LOS by Move, and HCM2kAvgQ.

Note: Queue reported is the number of cars per lane.

Level Of Service Computation Report

2000 HCM Operations Method (Future Volume Alternative)

Intersection #2 Shoreline Blvd & US 101 SB Ramp

Cycle (sec): 145 Critical Vol./Cap.(X): 0.586
Loss Time (sec): 9 Average Delay (sec/veh): 19.6
Optimal Cycle: 41 Level Of Service: B

Table with 4 columns: North Bound, South Bound, East Bound, West Bound. Rows include Movement (L-T-R), Control, Rights, Min. Green, Y+R, and Lanes.

Volume Module: Table with 12 columns for volume metrics. Rows include Base Vol, Growth Adj, Initial Bse, Added Vol, PasserByVol, Initial Fut, User Adj, PHF Adj, PHF Volume, Reduct Vol, Reduced Vol, PCE Adj, MLF Adj, and Final Volume.

Saturation Flow Module: Table with 12 columns for saturation flow metrics. Rows include Sat/Lane, Adjustment, Lanes, and Final Sat.

Capacity Analysis Module: Table with 12 columns for capacity analysis metrics. Rows include Vol/Sat, Crit Moves, Green/Cycle, Volume/Cap, Uniform Del, IncremntDel, InitQueueDel, Delay Adj, Delay/Veh, User DelAdj, AdjDel/Veh, LOS by Move, and HCM2kAvgQ.

Note: Queue reported is the number of cars per lane.

Level Of Service Computation Report

2000 HCM Operations Method (Future Volume Alternative)

Intersection #3 Shoreline Blvd & Terra Bella Avenue

Cycle (sec): 165 Critical Vol./Cap.(X): 0.714
Loss Time (sec): 12 Average Delay (sec/veh): 32.7
Optimal Cycle: 67 Level Of Service: C

Table with columns for Approach (North, South, East, West Bound) and Movement (L, T, R). Rows include Control (Protected, Split Phase), Rights (Include, Ovl), and various timing parameters like Min. Green, Y+R, and Lanes.

Volume Module: Table showing traffic volume data across different movements and adjustments. Rows include Base Vol, Growth Adj, Initial Bse, Added Vol, PasserByVol, Initial Fut, User Adj, PHF Adj, PHF Volume, Reduct Vol, Reduced Vol, PCE Adj, MLF Adj, and Final Volume.

Saturation Flow Module: Table showing saturation flow rates and adjustment factors for different movements. Rows include Sat/Lane, Adjustment, Lanes, and Final Sat.

Capacity Analysis Module: Table showing capacity analysis metrics such as Vol/Sat, Crit Moves, Green/Cycle, Volume/Cap, Uniform Del, and Delay/Veh across different movements.

Note: Queue reported is the number of cars per lane.

Level of Service Computation Report

2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #4 Linda Vista Avenue & Terra Bella Avenue

Average Delay (sec/veh): 3.1 Worst Case Level Of Service: B[10.2]

Table with 4 columns: North Bound, South Bound, East Bound, West Bound. Rows include Approach, Movement, Control, Rights, and Lanes.

Volume Module: Table with 13 columns representing different volume metrics and 13 rows for various adjustment factors like Base Vol, Growth Adj, etc.

Critical Gap Module: Table with 13 columns for gap metrics and 2 rows for Critical Gp and FollowUpTim.

Capacity Module: Table with 13 columns for capacity metrics and 4 rows for Cnflct Vol, Potent Cap., Move Cap., and Volume/Cap.

Level of Service Module: Table with 13 columns for LOS metrics and 10 rows for 2Way95thQ, Control Del, LOS by Move, etc.

Note: Queue reported is the number of cars per lane.

Level Of Service Computation Report

2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #5 Linda Vista Avenue & Middlefield Road

Average Delay (sec/veh): 1.9 Worst Case Level Of Service: E[35.1]

Table with 4 columns: North Bound, South Bound, East Bound, West Bound. Rows include Approach, Movement, Control, Rights, and Lanes.

Volume Module: Table with 13 columns representing different volume categories and 13 rows of data including Base Vol, Growth Adj, Initial Bse, etc.

Critical Gap Module: Table with 13 columns and 2 rows of data for Critical Gp and FollowUpTim.

Capacity Module: Table with 13 columns and 4 rows of data for Cnflct Vol, Potent Cap., Move Cap., and Volume/Cap.

Level Of Service Module: Table with 13 columns and 10 rows of data including 2Way95thQ, Control Del, LOS by Move, etc.

Note: Queue reported is the number of cars per lane.

Appendix E

Parking Occupancy Counts

Parking Occupancy Counts- 22DC05 (MV,SV,SJ)

Date: 7/16/2022
 Counter: Kathy, Matt, Jo, Mike
 Intersection Name: PS and Family View Apts.
 Weather: Fair

AUTO CENSUS
Traffic Monitoring and Analysis

7536 Lighthouse Drive
 Stockton, CA 95219
 Phone: 408-533-3398

	Stewart		Terra Bella	
	Sat. 7/23/22	Tues. 7/26/22	Sat. 7/30/22	Thurs. 7/28/22
6:00 am	0	1	0	0
6:15 am	0	0	0	1
6:30 am	1	2	0	0
6:45 am	1	2	0	0
7:00 am	2	4	1	2
7:15 am	1	2	0	4
7:30 am	4	4	1	5
7:45 am	5	5	0	6
8:00 am	9	6	1	2
8:15 am	6	9	1	3
8:30 am	9	9	3	4
8:45 am	8	7	1	5
9:00 am	10	6	2	6
9:15 am	9	5	4	7
9:30 am	11	8	5	6
9:45 am	11	9	5	7
10:00 am	12	9	6	9
10:15 am	12	9	6	8
10:30 am	10	11	5	9
10:45 am	11	10	6	9
11:00 am	10	6	5	3
11:15 am	9	5	5	6
11:30 am	10	4	8	7
11:45 am	14	5	7	6
12:00 pm	15	6	7	1
12:15 pm	14	6	4	3
12:30 pm	14	7	4	3
12:45 pm	13	10	3	6
1:00 pm	12	11	3	8
1:15 pm	9	12	5	7
1:30 pm	9	12	3	8
1:45 pm	11	11	3	6
2:00 pm	13	10	3	6
2:15 pm	15	8	3	7
2:30 pm	14	7	4	6
2:45 pm	13	7	6	5
3:00 pm	9	4	7	4
3:15 pm	10	4	4	6
3:30 pm	9	6	4	5
3:45 pm	10	3	2	4
4:00 pm	8	4	2	1
4:15 pm	11	9	3	3
4:30 pm	7	11	3	2
4:45 pm	6	8	7	3
5:00 pm	2	7	3	2
5:15 pm	1	6	2	1
5:30 pm	0	4	3	1
5:45 pm	0	3	4	1
6:00 pm	0	2	2	1
6:15 pm	0	2	1	2
6:30 pm	0	0	1	2
6:45 pm	0	0	1	1
7:00 pm	0	0	1	0
7:15 pm	0	0	2	0
7:30 pm	0	0	2	1
7:45 pm	0	0	2	1
8:00 pm	0	0	1	0
8:15 pm	0	0	1	1
8:30 pm	0	0	0	1
8:45 pm	0	0	0	0
9:00 pm	0	0	0	0

Park View Family Apartments		
	Sunday 8/14/22	Thursday 8/16/22
Total Spaces	62	
Total Garages	44	
Occupancy	48	52

Evelyn Family Apartments		
	Sunday 8/10/22	Thursday 8/14/22
Total Spaces	194	
Occupancy	178	184

Appendix F

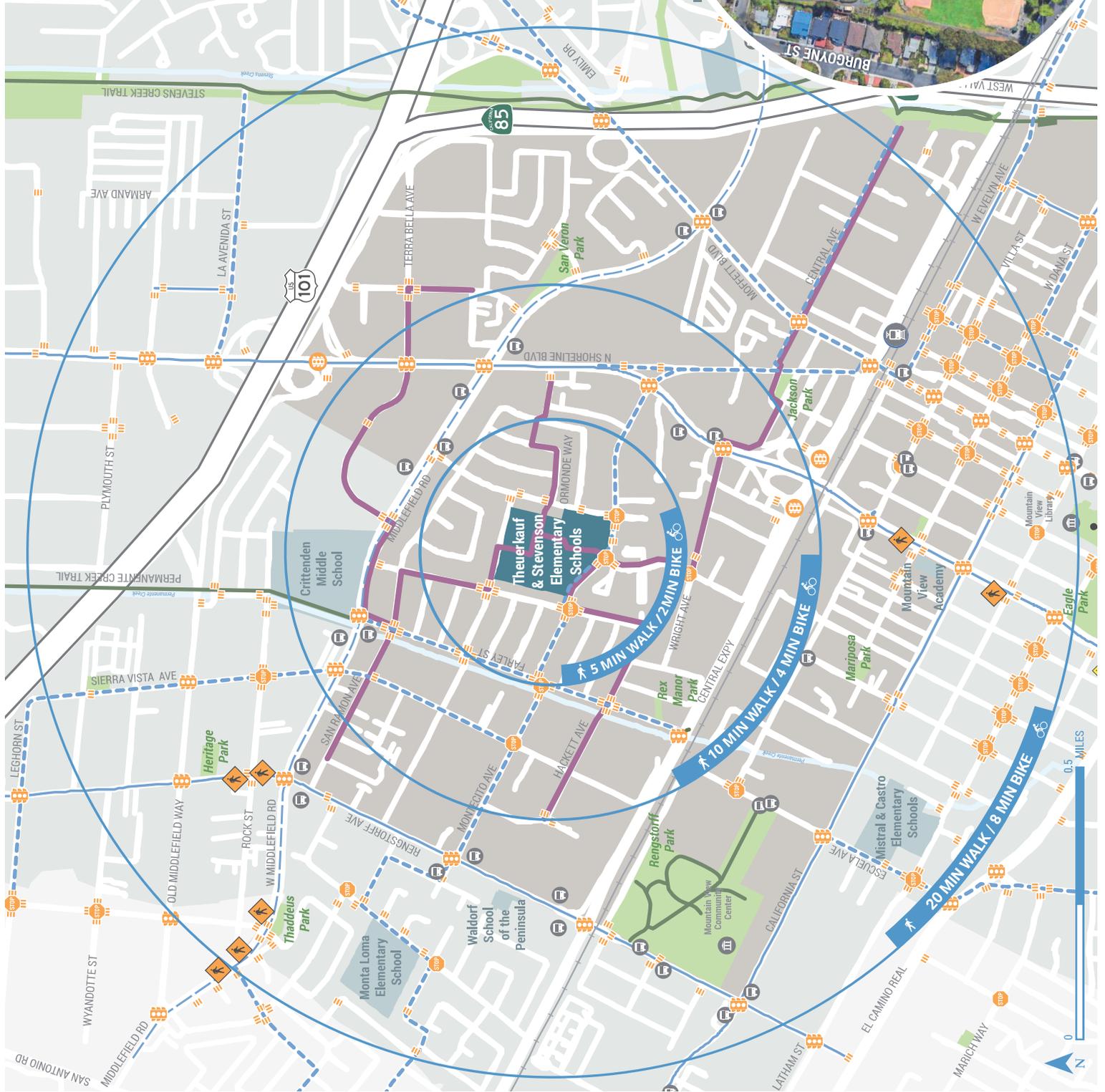
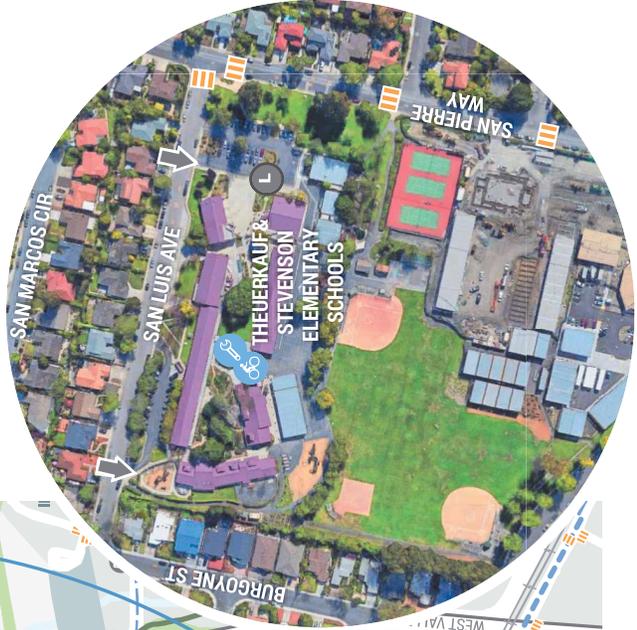
Walk and Roll to School Maps

THEUERKAUF & STEVENSON ELEMENTARY SCHOOLS

1625 San Luis Ave.
Mountain View, 94043

LEGEND

-  Suggested Route
-  Bike Lane
-  Part-Time Bike Lane
-  Bike Route
-  Trail
-  Cycle Track
-  Light Rail / Railroad Stop and Tracks
-  Place of Interest
-  Bus Stop
-  Pedestrian Bridge
-  School Catchment Area
-  All-Way Stop
-  Traffic Signal With Crosswalk
-  Traffic Signal Without Crosswalk
-  Crosswalk
-  Pedestrian Signal
-  Bike Parking
-  Bike Repair Station
-  Loading Zone
-  School Entrance
-  Mountain View Boundary

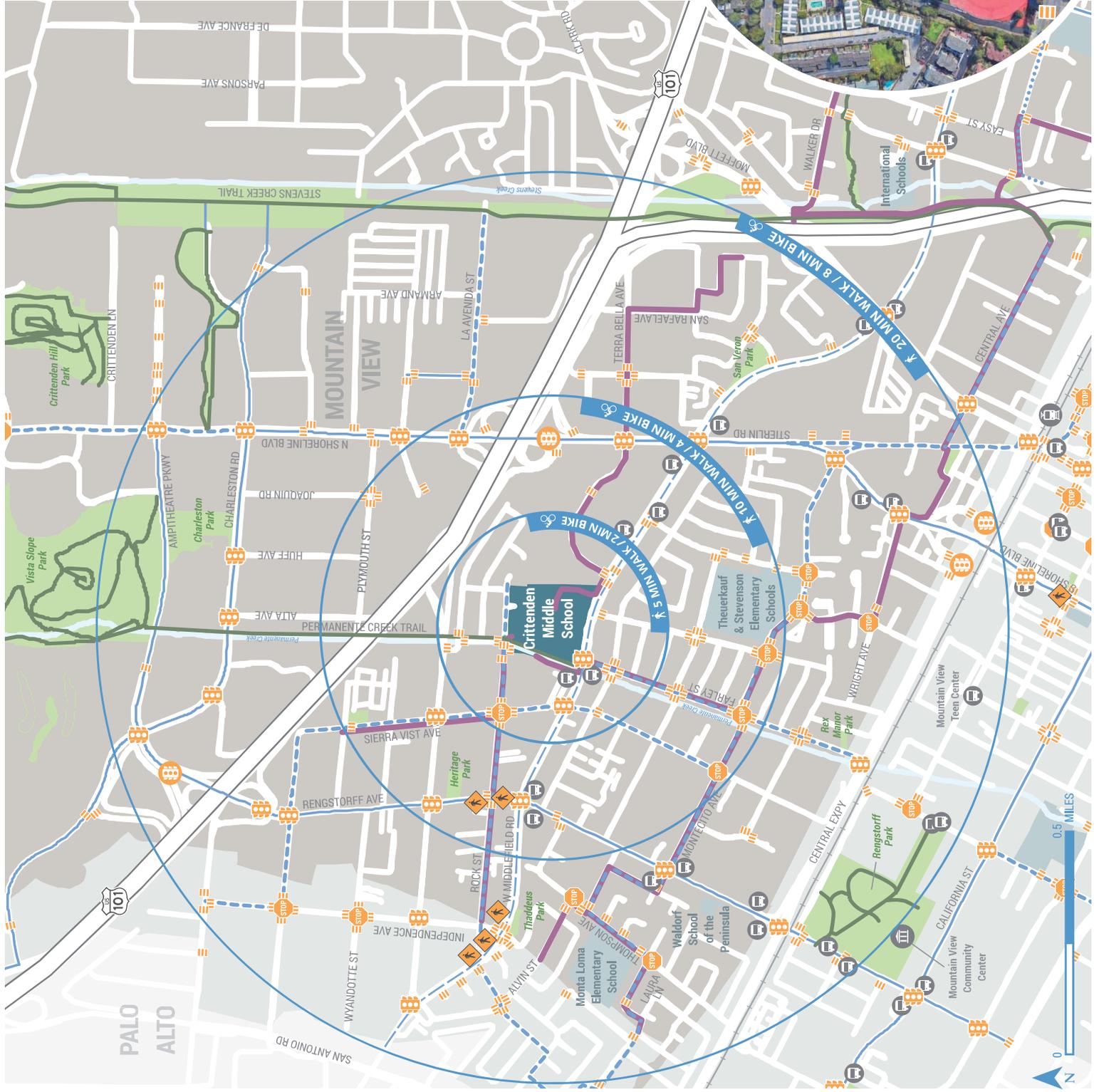


CRITTENDEN MIDDLE SCHOOL

1701 Rock St.
Mountain View, 94043

LEGEND

- | | | | |
|--|----------------------------------|--|---------------------------------------|
| | All-Way Stop | | Suggested Route |
| | Traffic Signal With Crosswalk | | Bike Lane |
| | Traffic Signal Without Crosswalk | | Part-Time Bike Lane |
| | Crosswalk | | Bike Route |
| | Pedestrian Signal | | Trail |
| | Crossing Guard | | Cycle Track |
| | Bike Parking | | Light Rail / Railroad Stop and Tracks |
| | Bike Repair Station | | Place of Interest |
| | Loading Zone | | Bus Stop |
| | School Entrance | | Pedestrian Bridge |
| | Mountain View Boundary | | School Catchment Area |



MOUNTAIN VIEW HIGH SCHOOL

3535 Truman Ave.
Mountain View, 94040

LEGEND

- | | | | |
|--|-------------------------------|--|---------------------------------------|
| | All-Way Stop | | Suggested Route |
| | Traffic Signal With Crosswalk | | Bike Lane |
| | Crosswalk | | Part-Time Bike Lane |
| | Pedestrian Signal | | Bike Route |
| | Crossing Guard | | Trail |
| | Bike Parking | | Cycle Track |
| | Bike Repair Station | | Light Rail / Railroad Stop and Tracks |
| | Loading Zone | | Bus Stop |
| | School Entrance | | Place of Interest |
| | Mountain View Boundary | | Pedestrian Bridge |

