Transportation Impact Analysis Report

701 West Evelyn Avenue

Mixed-Use Development

Mountain View, California

October 17, 2019

TJKM

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EXECUTIVE SUMMARY

This report summarizes the results of the Transportation Impact Analysis (TIA) conducted for the proposed mixed-use (Office and Retail) commercial development located along West Evelyn Avenue in the City of Mountain View, California. The project is located in the City's downtown core, and proposes to develop a building with office, retail space and terrace, plus a subterranean parking garage on a 11,324 square foot lot. The project proposes a 4-story commercial building site consisting of three-stories of 28,090 office space (with an above-grade lobby and vertical circulation), 6,481 square feet of one-story ground-level retail space and 5,000 square feet of terraces. The remainder of the space includes a below-grade lobby, mechanical and vertical circulation and a three-level below-ground parking garage that provides 70 parking spaces plus space for valet. The Marwood project is proposing to share the access from the Robert Green Hotel project driveway on Hope Street.

The report also includes evaluations and recommendations concerning project site access and on-site circulation for vehicles, bicycles, and pedestrians; evaluation of on-site vehicle parking supply, passenger and commercial loading spaces, garbage/trash facilities; and queuing analysis at the study intersections. Additional analyses include intersection queue and level of service (LOS) related to the project. The report identifies significant impacts and recommends mitigations to improve any adverse traffic impacts of the project.

To evaluate the impacts on the transportation infrastructure due to the addition of traffic from the proposed project, 16 study intersections and five roadway segments were evaluated during the weekday morning (a.m.) peak hour, midday and evening (p.m.) peak hour under six study scenarios. The study intersections were evaluated under *No Project* and *plus Project* scenarios for Existing, Background, and Cumulative Conditions. For the purposes of this analysis, potential traffic operational effects from the proposed project are identified based on established traffic operational thresholds for the Santa Clara County Valley Transportation Authority (VTA) Congestion Management Program (CMP) and the City.

Project Trip Generation

The proposed project is expected to generate approximately 59 weekday a.m. peak hour trips (49 inbound trips, 10 outbound trips), 55 midday peak hour trips (36 inbound trips, 19 outbound trips) and 54 weekday p.m. peak hour trips (15 inbound trips, 39 outbound trips).

Level of Service (LOS) Standards

The City standard is LOS D, except in the San Antonio and Downtown Core areas, where the standard is LOS E. The VTA CMP standard is LOS E.

Existing, Background and Cumulative Conditions

Under these scenarios, all of the study intersections and roadway segments operate within applicable jurisdictional standards of LOS D/E (City and VTA CMP) or better during the a.m., midday and p.m. peak hours.

Existing, Background and Cumulative plus Project Conditions

Under these scenarios, all of the study intersections and roadway segments operate within applicable jurisdictional standards of LOS D/E (City and VTA CMP) or better during the a.m., midday and p.m. peak hours.

Based on the City and VTA CMP impact criteria the project is expected to have a **less-than-significant** impact at all of the study intersections and roadway segments.

Queueing Analysis

The proposed project *does not create a significant impact* by itself on the expected left-turn or right-turn queues at the study intersections. The project driveways are expected to operate at an acceptable LOS and the 95th percentile queueing at the outbound approach of project driveways is expected to be minimal.

Pedestrian Signal Warrant Analysis at Castro Street and W. Evelyn Avenue

TJKM analyzed pedestrian signal warrants to improve pedestrian safety at the intersection of Castro Street/W.Evelyn Avenue. It is recommended the City use the enclosed analysis to determine the preferred signal operation to improve pedestrian conditions.

Pedestrian Impacts

The proposed project provides adequate and appropriate facilities for safe non-motorized mobility. There is adequate pedestrian access to the project site from the surrounding area, including the Mountain View Transit Center located on W. Evelyn Avenue. However, it is recommended to improve overall pedestrian access and facilities by providing and/or replacing finished sidewalks and curb cuts within the project vicinity (driveway/frontage) with adequate accessible design (American Disability Act- ADA) that meets City of Mountain View Design Standards.

The proposed project does not conflict with existing and planned pedestrian facilities; therefore, the impact to pedestrian facilities is ***less-than-significant***.

Bicycle Impacts

The project is expected to generate additional bicycle trips on existing and planned bicycle facilities and does not conflict with existing and planned bicycle facilities; therefore, the impact to bicycle facilities is ***less than significant***.

Transit Impacts

The project site is directly across from the Mountain View Transit Center, which serves both Caltrain Baby Bullet Service and VTA bus and light rail service. VTA operates bus service within Santa Clara County and runs multiple transit routes through the study area along El Camino Real, Castro Street, California Street, etc. These bus routes operate near the project site with stops located within walking distance of the proposed development. The project site is adequately served by the VTA transit service and thus, impacts to transit service are expected to be ***less than significant***.

Regardless, it is recommended that the project applicant coordinate with the jurisdictional staff to accommodate transit amenities near the project site.

Site Access and On-Site Circulation

The proposed shared driveway on Hope Street for the Lot 4 development is approximately 100 feet away from the intersection of Hope Street and Villa Street. All driveways meet the city's driveway standards. The project driveways are well spaced and properly aligned with opposing driveways.

Emergency vehicle access would serve the site through public street frontages. The lines of sight for vehicles exiting the driveways and vehicles travelling on Hope Street are clear and visible.

Construction Impacts

Though temporary, construction impacts can create significant impact to the roadways, the adjacent neighborhoods, and parking. TJKM recommends the project developer provide a Construction Traffic Management Plan, to be approved prior to construction, to address truck routes, staging, parking, and avoid any impacts to the adjacent residential community.

Parking

The proposed project is expected to build a three level subterranean parking garage, which would provide parking for the office/retail land use. A total of 70 automobile parking stalls plus 41 bicycle parking stalls are proposed by the project, including three accessible parking stalls. The proposed parking structure will directly connect to the parking structure of an adjacent, approved hotel development which will provide 225 dedicated public parking spaces. These public spaces may accommodate retail trips for the ground floor retail space of the proposed project.

Per the approved scope of work, TJKM conducted a peer review of the parking analysis and Transportation Demand Management Plan and provided comments in a letter format with conclusions separately.

1.0 INTRODUCTION

This report summarizes the results of the Transportation Impact Analysis (TIA) for the proposed mixed-use (Office and Retail) development located at 701 West Evelyn Avenue in the City of Mountain View, California.

1.1 PROJECT DESCRIPTION

The project proposes to develop a four story commercial building, with 28,090 gross square feet (GSF) of office space and 6,481 GSF of ground-level retail space, with a three level subterranean parking garage that provides 70 automobile stalls and 41 bicycle stalls. The proposed building will have a lobby and commercial area on the first floor, three floors of office space, and fourth floor and roof terrace spaces. Current plans provide for a joint parking garage between the proposed site and the proposed hotel on the west side of Hope Street (Lot 4). The project sites are currently serving as fast food and office land uses, along with two vacant buildings along the south side of W. Evelyn Avenue.

The below grade parking structure will provide 70 automobile parking stalls, of which three will be van-accessible. The project will also provide 41 bicycle parking stalls in the form of bicycle lockers, available for use throughout all three levels of the parking structure.

Located in the "heart" of the city in downtown Mountain View, the project site is surrounded by mixed-use residential, retail, restaurants and the nearby Mountain View Civic Buildings. The proposed development integrates with the downtown urban fabric, promotes and enhances the pedestrian-friendly environment via its open space, street front linkages, and mixed land uses. This project is expected to create increased foot traffic to local businesses and destinations in downtown Mountain View. The project site is currently occupied by fast-food and office space land uses. The proposed project is conveniently located across from the Mountain View Caltrain Station and Mountain View Transit Center.

The project site is located in "Downtown Precise Plan". The proposed land use is within historic Castro Street retail district. General characteristics of the area include small shallow parcels containing local, commercial, and service-oriented uses. The major objective for this area is to ensure a transition to the residential neighborhoods, maximize the amount of convenient parking, maintain the pattern of active uses along Castro Street, and to promote an attractive street environment and entry to the downtown. The proposed project is consistent with the Mountain View General Plan Downtown Mixed-Use designation.

The following section discusses the TIA Purpose, study intersections, roadway segments and analysis scenarios.

1.2 Project Purpose

The purpose of the Transportation Impact Analysis is to evaluate the impacts on the transportation infrastructure due to the addition of the traffic from the proposed project. The report also includes evaluations and recommendations concerning project site access and on-site circulation for vehicles, bicycles, and pedestrians, evaluation of on-site vehicle parking supply, passenger and commercial loading spaces and garbage/trash facilities, and queuing analysis at the driveway and at the study intersections.

1.3 Study Area

The study area generally is bounded by Hope Street, Villa Street, West Evelyn Avenue and Castro Street. The project site is directly across from the Mountain View Transit Center, and the Santa Clara Valley Transportation Authority's Mountain View Station commuter line, along West Evelyn Avenue. The roadway impacts of the proposed project were evaluated for the intersections and roadway segments discussed below.

1.3.1 Study Intersections

TJKM evaluated traffic conditions at 16 study intersections during the a.m., midday, and p.m. peak hours for a typical weekday. The study intersections were selected in consultation with the City of Mountain View staff. The peak periods observed were between 7:00-10:00 a.m., 11:30-1:30 p.m., and 4:00-7:00 p.m. The study intersections and associated traffic controls are as follows:

1. Moffett Boulevard/Castro Street/Central Expressway[1] (Signal)
2. Shoreline Boulevard Northbound/Central Expressway[1] (Signal)
3. Shoreline Boulevard Southbound/Central Expressway[1] (Signal)
4. Hope Street/Villa Street[2] (Unsignalized)
5. Hope Street/Evelyn Avenue[2] (Signal)
6. Bush Street/Villa Street (Signal)
7. Bush Street/Evelyn Avenue (Signal)
8. Calderon Avenue/Evelyn Avenue (Signal)
9. Castro Street/Dana Street[2] (Signal)
10. Castro Street/California Street[2] (Signal)
11. Castro Street/Mercy Street[2] (Signal)
12. Castro Street/Church Street[2] (Signal)
13. Castro Street/El Camino Real[1, 2] (Signal)
14. Calderon Avenue/Villa Street (Unsignalized)
15. Castro Street/Villa Street[2] (Signal)
16. Castro Street/Evelyn Avenue[2] (Unsignalized)

[1]Congestion Management Program (CMP) Intersection
[2]Intersection within the City of Mountain View Downtown Precise Plan Area.

1.3.2 Roadway Segments

TJKM also evaluated the traffic conditions at the five roadway segments that the proposed project may potentially impact. The roadway segments analyzed were selected in consultation with City of Mountain View staff and are as follows;

1. Hope Street, between Villa Street and Evelyn Avenue
2. Castro Street, between Dana Street and Villa Street
3. Castro Street, between Villa Street and Evelyn Avenue
4. W. Evelyn Avenue, between Hope Street and View Street
5. Villa Street, between Castro Street and Hope Street

Figure 1 illustrates the study intersections and the vicinity map of the proposed project. **Figure 2** shows the proposed project site plan.

1.4 Analysis Scenarios

This study addresses the following six traffic scenarios:

- **Existing Conditions** – This scenario evaluates the study intersections based on existing traffic volumes, lane geometry, and traffic controls.
- **Existing plus Project Conditions** – This scenario is identical to Existing Conditions, but with the addition of traffic from the proposed project.
- **Background (Existing plus Approved Projects) Conditions** – This scenario is similar to Existing Conditions, but with the addition of traffic from approved and pending developments within the vicinity of the proposed project.
- **Background plus Project Conditions** – This scenario is identical to Background Conditions, but with the addition of traffic from the proposed project.
- **Cumulative Conditions** – This scenario is similar to the Background Conditions but with the projected growth rate of two percent per year for five years, which was applied to existing traffic volumes, and then background project trips were added, in accordance with standard Mountain View procedures.
- **Cumulative plus Project Conditions** – This scenario is identical to Cumulative Conditions, but with the addition of traffic from the proposed project.

Vicinity Map

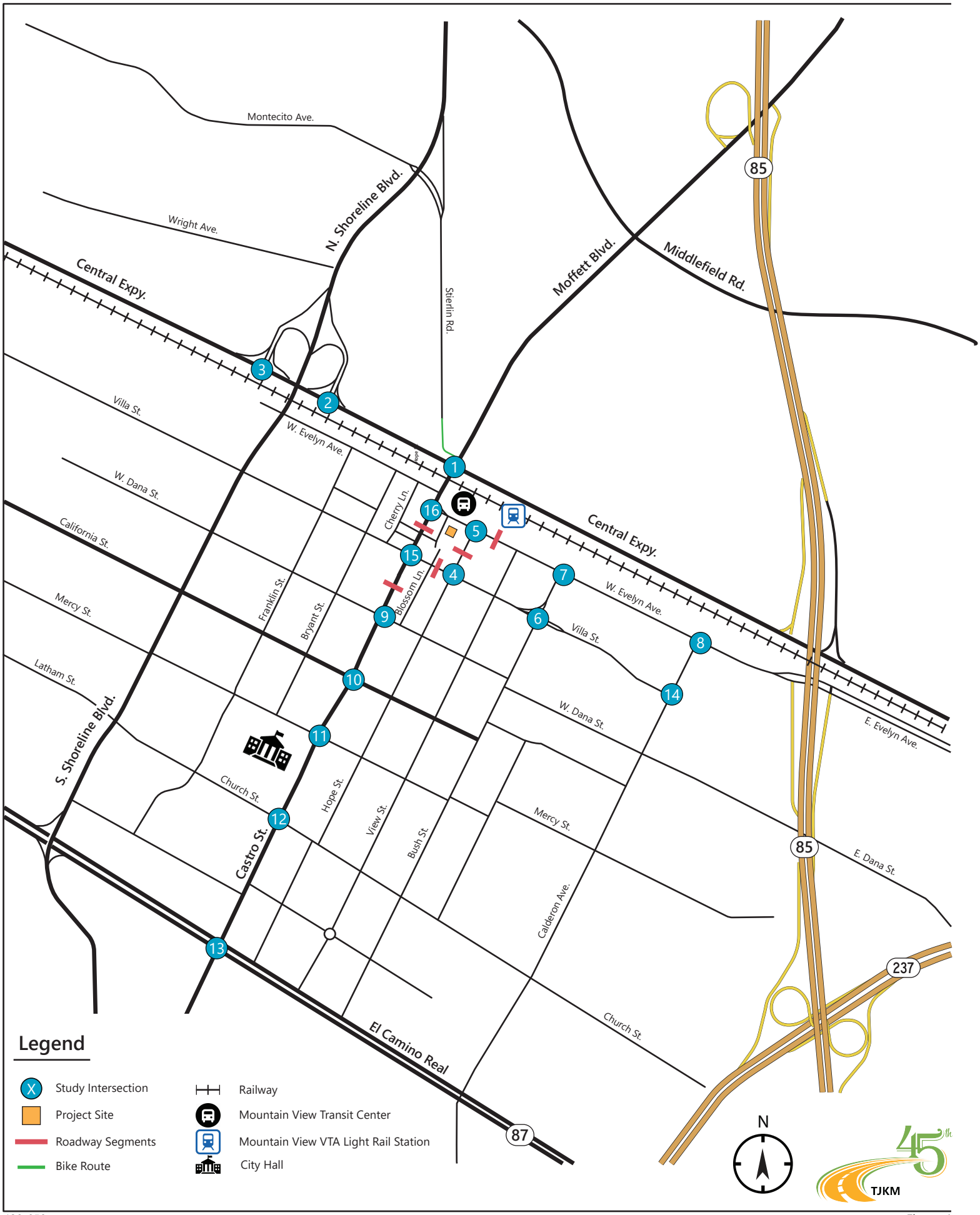

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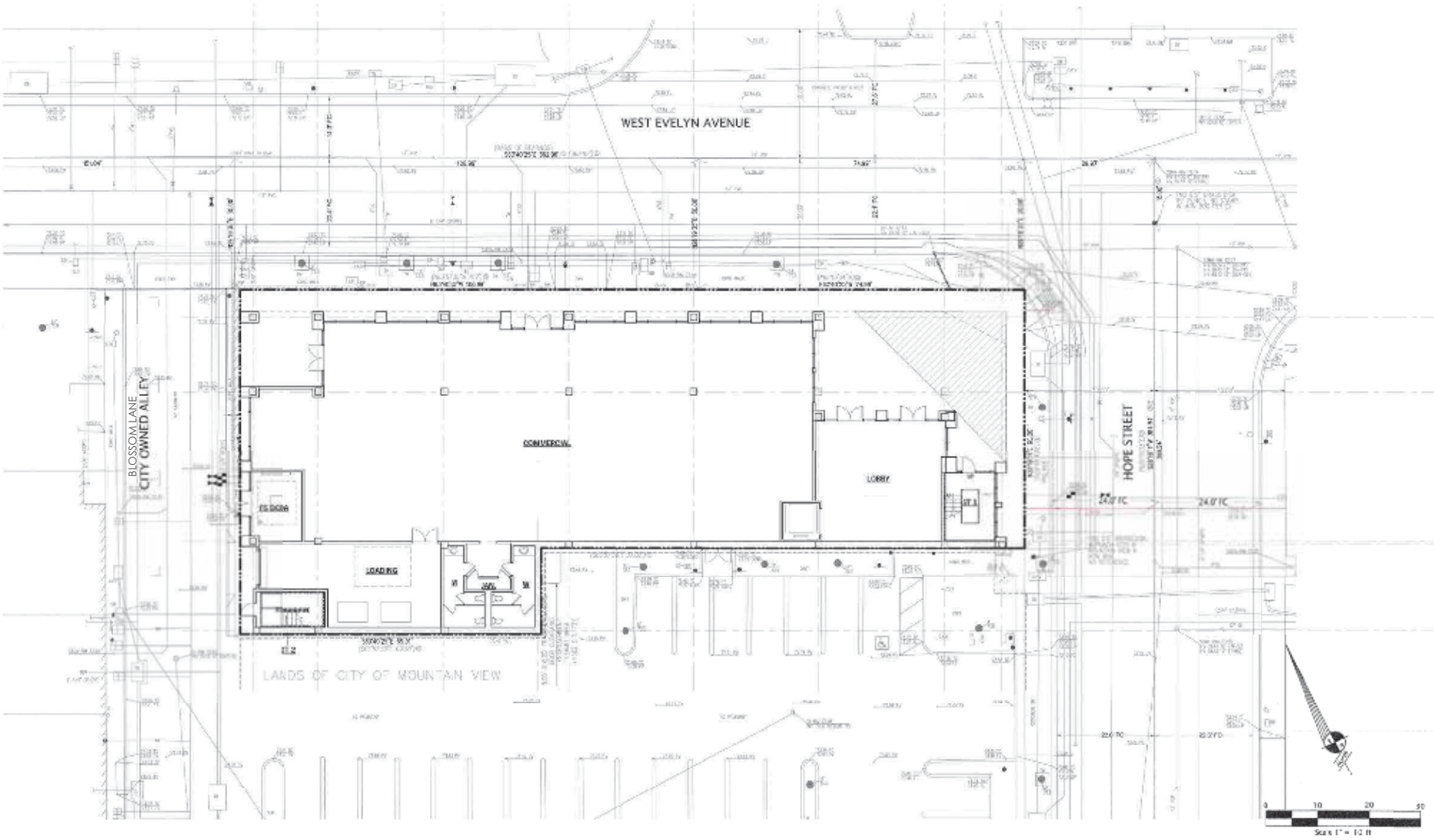
Figure 1

Project Site Plan



2.0 STUDY METHODOLOGY

This chapter discusses the level of service analysis methodology for study intersections and roadway segments and criteria used to identify significant impacts.

2.1 Level of Service Analysis Methodology

LOS is a qualitative measure that describes operational conditions as they relate to the traffic stream and perceptions by motorists and passengers. The LOS generally describes these conditions in terms of such factors as speed and travel time, delays, freedom to maneuver, traffic interruptions, comfort and convenience, and safety. The operational LOS are given letter designations from A to F, with A representing the best operating conditions (free-flow) and F the worst (severely-congested flow with high delays). Intersections generally are the capacity-controlling locations with respect to traffic operations on arterial and collector streets.

Signalized Intersections

The study intersections under traffic signal control were analyzed using the 2000 Highway Capacity Manual (HCM) Operations Methodology for signalized intersections described in Chapter 16 (HCM 2000). This methodology determines LOS based on average control delay per vehicle for the overall intersection during peak-hour intersection operating conditions. The LOS methodology is approved by VTA and adopted by the City. Control delay includes initial deceleration delay, queue move-up time, stopped delay, and final acceleration delay. The average control delay for signalized intersections was calculated using TRAFFIX 8.0 analysis software and was correlated to a LOS designation as shown in **Appendix A**. The LOS methodology for signalized intersections is described in detail in **Appendix A**.

Unsignalized Intersections

The study intersections under stop control (Unsignalized) were analyzed using the 2000 HCM Operations Methodology for unsignalized intersections described in Chapter 17 (HCM 2000). LOS ratings for stop-sign controlled intersections are based on the average control delay expressed in seconds per vehicle. At the side street, controlled intersections or two-way stop sign intersections, the control delay is calculated for each movement, not for the intersection as a whole. For approaches composed of a single lane, the control delay is computed as the average of all movements in that lane. The weighted average delay for the entire intersections is presented for all-way stop controlled intersections. The average control delay for unsignalized intersections was calculated using TRAFFIX 8.0 analysis software and was correlated to a LOS designation as shown in **Appendix A**. The LOS methodology for unsignalized intersections is described in detail in **Appendix A**.

Roadway Segment Operations

Roadways were analyzed by comparing the daily volume to threshold volumes based on roadway type. Daily roadway capacity is an indicator used to evaluate roadway segment operations at the General Plan planning-level. This daily analysis approach is consistent with the level of planning detail addressed in a General Plan where specific development details and locations are not typically known. This approach helps to evaluate and determine the roadway cross-sections (e.g., two, four or six travel lanes) rather than detailed operational issues at the intersection level, which are dependent on the number of turn lanes,

signal timing, adjacent driveway operations, and development details and locations that are not typically known at the time of a program level general plan analysis. In addition to being the most feasible level of analysis for program level general plan environmental evaluation, daily operations better indicate the use of a roadway over a longer period of time outside the traditional peak hours and account for the non-peak times when roadways are substantially underutilized. The LOS methodology for roadway segments is described in detail in **Appendix A.**

2.2 Significant Impact Criteria/Level of Service Standards

Signalized Intersections

In general, according to the City LOS standard (minimum acceptable operations) for signalized intersections is LOS D or better except at intersections within the Downtown Core and San Antonio areas where vitality, activity, and multi-modal transportation use are primary goals. Within these planning areas, the level service standard is LOS E or better.

According to the City of Mountain View, a projected-generated increase in traffic is considered to have a significant impact at a signalized intersection if it meets either of the following criteria:

- Intersection operations deteriorate from an acceptable level (LOS D outside of Downtown and San Antonio Center areas) to an unacceptable level (LOS E or F)
- Intersection operations deteriorate from an acceptable level (LOS E within the Downtown and San Antonio Center areas) to an unacceptable level (LOS F)
- If the study intersection is already operating at unacceptable levels, LOS E or F under Background Conditions and the addition of project trips causes an increase in the average critical delay by more than four seconds and increasing the critical volume-to-capacity (V/C) ratio by 0.01 or more

The City considers a significant impact to be satisfactorily mitigated when the measure implemented would restore LOS to Background Conditions or better. All proposed mitigation must also include a feasibility analysis, which includes an aerial photograph showing all buildings and right-of-way lines overlaid with the proposed mitigation.

VTA CMP Intersections

The LOS standard for CMP intersections is LOS E. The projected-generated increase in traffic is considered to have a significant impact at a CMP intersection if it meets either of the following criteria:

- If intersection operations degrade from an acceptable level (LOS E or better) to an unacceptable level (LOS F).
- If the critical delay increases by more than four seconds and the V/C ratio increases by 0.01 or more at intersections with unacceptable operations (LOS F).
- The V/C ratio increases by 0.01 or more at an intersection with unacceptable operations (LOS F) when the change in critical delay is negative (i.e., decreases). This can occur if the critical movements change.

Unsignalized Intersections

According to City of Mountain View standards, a project is said to create a significant adverse impact on traffic conditions at unsignalized intersections if it meets the following criteria:

- When the addition of project traffic causes the average intersection delay for an all-way stop-controlled or the worst movement/approach for side-street stop-controlled intersections to degrade from an acceptable LOS (as defined for signalized intersections) to unacceptable level; and
- The intersection(s) satisfies the California MUTCD peak-hour signal warrant.

Roadway Impact Criteria

A daily roadway segment operation is considered significant if implementation of the proposed project would cause:

- Mountain View roadway segment operations to deteriorate from an acceptable level (LOS D outside of Downtown and San Antonio Center areas) to an unacceptable level (LOS E or F).
- Mountain View roadway segment operations deteriorate from an acceptable level (LOS E within the Downtown and San Antonio Center areas) to an unacceptable level (LOS F).
- Santa Clara County roadway segment operations deteriorate from an acceptable level (LOS E) to an unacceptable level (LOS F).
- If a segment is already operating at unacceptable levels, as defined by the controlling agency (i.e., the City of Mountain View for local streets, Santa Clara County for expressways, and Caltrans or VTA for El Camino Real), an increase in traffic volume on the segment representing more than one (1.0) percent of the facilities' capacity is considered significant.

Transit Impact Criteria

According to City of Mountain View standards, a transit impact is considered significant if implementation of the proposed project would disrupt existing, or interfere with planned transit services or facilities.

Bicycle Facilities Impact Criteria

According to City of Mountain View standards, a bicycle impact is considered significant if implementation of the proposed project would:

- Disrupt existing bicycle facilities; or
- Conflict or create inconsistencies with adopted bicycle system plans, guidelines, policies or standards.

Pedestrian Facilities Impact Criteria

According to City of Mountain View standards, a pedestrian impact is considered significant if implementation of the proposed project would:

- Disrupt existing pedestrian facilities; or
- Create inconsistencies with planned pedestrian facilities or adopted pedestrian system plans, guidelines, policies or standards.

3.0 EXISTING CONDITIONS

This section describes existing conditions in the immediate project site vicinity, including roadway facilities, bicycle and pedestrian facilities, and available transit service. In addition, existing traffic volumes and operations are presented for the study intersections, including the results of LOS calculations.

3.1 Existing Setting and Roadway System

Regional roadway facilities providing access to the proposed mixed-use development is provided via US 101, State Route (SR) 237 and SR 85. Local access to the proposed project is provided via El Camino Real, Central Expressway, Castro Street, W. Evelyn Avenue, Hope Street, Shoreline Boulevard, Villa Street, Bryant Street, Calderon Avenue, Franklin Street, and California Street. Descriptions of the existing roadways are provided as follows:

US 101 is a north-south, eight-lane freeway with three mixed-flow lanes and one High Occupancy Vehicle (HOV) lane in each direction in the vicinity of the project. HOV Lanes, also known as diamond or carpool lanes, are restricted for use by vehicles occupied by two or more persons or motorcycles between 5 - 9 a.m. and between 3-7 p.m.. HOV includes carpools, vanpools, and buses. US 101 is located north of the project site and provides regional freeway access north through the City of San Francisco and south through the City of San Jose. Near the project site, US 101 is oriented in an east-west direction. Access from US 101 to the project site is provided via interchanges at Shoreline Boulevard, Moffett Boulevard, SR 85, and SR 237.

SR 85 is a north-south, six-lane freeway with two mixed-flow lanes per direction and one HOV lane in each direction during peak periods in the vicinity of the project site. SR 85 extends from the SR 85/US 101 interchange in Mountain View to the SR 85/US 101 interchange in south San Jose. Access from SR 85 to the project site is provided via interchanges at Moffett Boulevard, Central Expressway/Evelyn Avenue, SR 237, and El Camino Real.

SR 237 is an east-west freeway extending between the City of Mountain View (El Camino Real/SR 85) and the City of Milpitas (I-680). SR 237 includes two mixed flow lanes in the City of Mountain View. Access from SR 237 to the project site is provided via interchange at Whisman Road and an at-grade intersection with El Camino Real/Grant Road.

SR 82/El Camino Real provides regional access between the City of San Francisco to the north and City of San Jose to the south. It is a regionally significant east-west (in the project vicinity) arterial with three mixed-flow lanes in each direction. The roadway provides local connections to the project site via SR 85, SR 237, Phyllis Avenue, Calderon Avenue, Bush Street, Hope Street, Castro Street, and Shoreline Boulevard.

Central Expressway is a regional significant roadway located north of the project site that provide access between the City of Mountain View to the west and City of Santa Clara to the east. It is an east-west expressway with two mixed-flow lanes in each direction in the vicinity of the proposed project. Access

from Central Expressway in the project vicinity is provided by Castro Street/Moffett Boulevard and Shoreline Boulevard.

Castro Street is a two- lane roadway that extends between Central Expressway and Miramonte Avenue. Between El Camino Real and Central Expressway, Castro Street is a two-lane roadway and is the main street to the core downtown area of Mountain View. North of Central Expressway, Castro Street becomes Moffett Boulevard and provides direct freeway access to and from US 101 and SR 85. Castro Street is parallel to Hope Street and can access the project site from Villa Street.

W. Evelyn Avenue is a two-lane and four-lane roadway comprised of residential, commercial, and offices uses. At the intersection of Hope Street and W. Evelyn Avenue, there is an entrance to the Caltrain Transit Center. This area is considered the Downtown Precise Plan "Transit Center Block". In Mountain View, Evelyn Avenue is a two-lane roadway. South of the Stevens Creek Trail, Evelyn Avenue becomes a four-lane roadway until the City limits with Sunnyvale.

Blossom Lane is a one-lane, north-south roadway that connects W. Evelyn Avenue to Lot 4 and Villa Street. On-street parking is allowed on Blossom Lane and is typically occupied by adjacent businesses. This private roadway is owned by the City of Mountain View.

Hope Street is a two-lane, north-south roadway that extends between El Camino Real and W. Evelyn Avenue. In the project vicinity, it is fronted by United States Postal Service and a mix of commercial, office, and residential land uses. On-street parking is allowed on Hope Street in both the directions.

Shoreline Boulevard is a four-lane and six-lane roadway aligned in a mostly north-south orientation in the vicinity of the site. Shoreline Boulevard extends from SR 82/El Camino Real to Shoreline Park.

Villa Street, W. Dana Street, California Street, Mercy Street, and ***Church Street*** are all two-lane, east-west roadways with a mix of commercial, restaurant, and primarily residential land uses in the vicinity of the proposed project. All these streets intersect Castro Street and Hope Street and provide local access to the project site. On-street parking is allowed on all these streets with few regulations.

View Street, Bush Street and ***Calderon Avenue*** are all two-lane, north-south roadways with a mix of commercial, restaurant, and residential land uses in the vicinity of the proposed project. All these streets intersect Villa Street and W. Evelyn Avenue and provide local access to the project site. On-street parking is allowed on all these streets with few regulations.

3.2 Existing Pedestrian Facilities

Walkability is defined as the ability to travel easily and safely between various origins and destinations without having to rely on automobiles or other motorized travel. The ideal "walkable" community includes wide sidewalks, a mix of land uses such as residential, employment, and shopping opportunities, a limited number of conflict points with vehicle traffic, easy access to transit facilities and services and a network of pedestrian facilities.

Pedestrian facilities are comprised of crosswalks, sidewalks, pedestrian signals, and off-street paths, which provide safe and convenient routes for pedestrians to access the destinations such as institutions, businesses, public transportation, and recreation facilities. The project site is located in Downtown

Mountain View and in close proximity Downtown Mountain View Transit Center. In front of the existing building on Hope Street, the sidewalk width is approximately 9 feet, however, with the street light and tree wells approximately four feet in width, the actual walkway is around five feet. On Evelyn Street, sidewalk widths vary between approximately six and 15 feet, with a narrow walkway due to street lighting and tree wells.

In the project vicinity, all signalized study intersections are equipped with countdown pedestrian signal heads. Most of the study intersections have crosswalks with curb ramps. The roadway segments surrounding project vicinity have sidewalk along the both sides.

There are four bus stops in the immediate vicinity of the project site. Two bus stops are located on Castro Street, one bus stop is on Villa Street, and one more stop is located on Evelyn Avenue. Three of the stops are located at the intersection of Castro Street and Villa Street and one stop is located on Evelyn Avenue. The project site is within the immediate vicinity of the City of Mountain View Transit Center. All bus stops are accessible via existing sidewalks. During field observations, it was observed that pedestrians near the project site at Castro Street and the Mountain View Transit Center are able to walk or bike to grocery stores, other retail stores, and office buildings within a five minute period. The location's walk score is 92, considered a "Walkers Paradise" being relatively walking distance to daily errands without a car. Within the project vicinity pedestrians are able to easily access bus lines, light rail, or Caltrain. In the downtown area, the City has installed pedestrian refuge islands, mid-block crosswalks, and signage on Castro Street to increase driver awareness of pedestrians and provide acceptable gaps in traffic to allow for crossings. This effort helps the business district to thrive and has greatly improved pedestrian connectivity to the surrounding neighborhoods.

The existing pedestrian facilities in the study area are shown in **Figure 3**. Existing peak-hour pedestrian counts are provided in **Appendix B**.

3.3 Existing Bicycle Facilities

The 2015 Bicycle Transportation Plan describes the four bikeway classifications in the City of Mountain View, which all meet the design guidelines of the: VTA Bicycle Technical Guidelines for bicycle facilities, and the Caltrans Highway Design Manual (HDM), Chapter 1000: Bikeway Planning and Design for multi-use trails. These bicycle facility types are described below.

- **Class I Bikeways/Multi-Use Paths**: Class I bikeways are also referred to as multi-use or shared-use paths. They provide completely separated, exclusive right of way for people to walk and bike. There are 15 miles of Class I bikeways in Mountain View, , which include the Stevens Creek Trail, Permanente Creek Trail, Hetch Hetchy Trail and 2.2 miles of the San Francisco Bay Trail.
- **Class II Bikeways/On-Street Bike Lanes**: Class II bikeways are striped lanes on roadways for one-way bicycle travel. The Valley Transportation Authority's (VTA's) Bicycle Technical Guidelines have adopted wider optimum minimum width standards than Caltrans to reduce potential conflict with the "door zone" and to encourage a wider range of bicyclists. VTA suggests an optimum width of five feet for bikeways located on roadways with posted speed limits less than or equal to 30 miles per hour, six feet for bikeways located on roadways with posted speed limits between 35 and 40

miles per hour, and eight feet for bikeways located on roadways with posted speed limits equal to or greater than 45 miles per hour. VTA also suggests an additional eight feet be added to each of these optimum bike lane widths to accommodate on-street parking. Some Class II bikeways can also have painted buffers that add a few feet of separation between the bike lane and the traffic lane. The majority of the bikeways in Mountain View are Class II on-street bike lanes. There are 26.5 miles of Class II bikeways in Mountain View.

- **Class III Bikeways/Bike Routes**: Class III bikeways are signed bike routes where bicyclists share a travel lane with motorists. Class III bike routes are appropriate for low-volume streets with slow travel speeds, especially those on which motorist volumes are low enough that passing maneuvers can use the full street width, on roadways with bicycle demand but without adequate space for Class II striped bike lanes, and as "gap fillers" where there are short breaks in Class II lanes due to right-of-way constraints. There are 10.7 miles of Class III bikeways in Mountain View.
- **Bicycle Boulevards:** Bicycle Boulevards are a type of Class III bikeway with additional treatments that prioritize bicycle use. Bike Boulevards are signed, shared roadways with low motor vehicle volume, such that motorists passing bicyclists can use the full width of the roadway. Bicycle Boulevards prioritize convenient and safe bicycle travel through traffic calming strategies, wayfinding signage, and other measures. One key feature is that stop signs are "flipped" - removed from the boulevard and placed on cross streets - to favor the bicycle direction of travel. This change improves bicyclists' average speed by minimizing unneeded stops. Bicycle Boulevard improvements are coupled with traffic calming features to discourage speeding. There are 5.9 miles of Bicycle Boulevards in Mountain View.
- **Class IV Bikeways / Protected On-Street Bike Lane/Cycle tracks:** A Class IV bikeway, known as a cycle track or protected bike lane, is an on-street bike lane that is physically separated from motor-vehicle traffic by a vertical separation, such as a raised curb, bollards, or car parking. A protected bikeway is similar to a Class II buffered bike lane, but provides the vertical physical barrier, separation and associated comfort a user can experience on a Class I path. Per Caltrans Design Information Bulletin 89 (DIB 89 Separated bikeways typically operate as one-way bikeway facilities in the same direction as vehicular traffic on the same side of the roadway. However, two-way separated bikeways can also be used. Since there is a potential for bicycles traveling in two directions simultaneously at intersections, two-way separated bikeways should be designed in lower speed (35 miles per hour or less) environments unless traffic control devices are employed to prohibit the conflict Class IV bikeways are located on Castro Street between El Camino Real and Miramonte Avenue.

The Stevens Creek Trail is a Class I shared-use facility that runs adjacent to SR 85 in the project area, approximately five miles long that extends north to south from the Bay Trail in Shoreline at Mountain View Park south to Heatherstone Way. This trail is a popular facility and provides access to the Downtown Core Area.

Class II Bicycle lanes are located near the project site on Evelyn Avenue, California Street, Shoreline Boulevard, Dana Street and Calderon Avenue.

Church Street is classified as a bike route (Class III) with bicycle route signs along the street as well as segments of Evelyn Avenue, California Street, Bush Street, Dana Street, Calderon Avenue, and View Street. During field observations, it was noticed that bicycles use Castro Street, which is in the immediate vicinity of the project site. The *City of Mountain View 2015 Downtown Bicycle Parking Location Map* shows a 294-bicycle capacity in the downtown area along Castro Street between Central Expressway and El Camino Real.

A Class I bike shelter is located in the Mountain View Train Station Building, adjacent to the Downtown Mountain View Transit Center. This bike shelter holds more than 40 bikes on lockable vertical bike racks within a secured room, which can be accessed only by authorized renters and City staff. These spaces can be rented through the City. The Transit Center is also home to several types of Class III bike racks and more than 100 Class I bicycle lockers owned by Caltrain. Class III bike racks have been incorporated on each block of Castro Street and 2220 two-bike Class I bike lockers have been placed in many of the adjacent public parking areas. These lockers are owned by and can be rented from the City. Class III bike racks are available on a first-come, first-served basis.

The existing bicycle facilities in the study area are shown in **Figure 4**. Existing peak-hour traffic bicycle counts are provided in **Appendix B**.

The *Mountain View Bicycle Transportation Plan* (adopted November 17, 2015) recommends the following bicycle projects adjacent to the project site:

- View Street Bicycle Boulevard between California Street and Evelyn Avenue
- W. Dana Street Bicycle Boulevard between Bush Street and Calderon Avenue
- Bush Street Bicycle Boulevard between California Street and West Dana Street
- Castro Street Bicycle Route between Central Expressway and El Camino Real
- California Street Bicycle Boulevard between Castro Street and Bush Street.
- Church Street Bicycle Boulevard between SR 237 and Shoreline Boulevard
- Calderon Avenue Class II Bike Lane between El Camino Real and Dana Street.
- Evelyn Avenue Bicycle Boulevard between Hope Street and Pioneer Way
- Castro Street and El Camino Real bicycle crossing and turning improvements
- Evelyn Avenue and Hope Street bicycle detection and marking improvements
- Villa Street and Bush Street signal detection improvements
- Dana Street and Calderon Avenue signal detection improvements
- California Street and Castro Street signal detection improvements
- Evelyn Avenue and Castro Street bicycle crossing and turning improvements

3.4 PARKING

The project site is adjacent to Lot 4, which currently serves as a downtown surface parking lot. Lot 4 is located on Hope Street between W. Evelyn Avenue and Villa Street, and is referred to as one of the "Hope Street Lots." Lot 4 is 31,588 square feet in size (0.73 acres) with 88 public parking stalls, east of Castro Street.

On-street parking is available on all adjacent streets including Blossom Lane, Villa Street, Castro Street, Hope Street, and Mercy Street. On-street parking is allowed on the southern side of W. Evelyn Avenue and restricted on the northern side within the immediate vicinity of the project site. During field observations, it was noted that on-street parking on the Castro Street, Villa Street, Blossom Lane, Mercy Street and Hope Street are mostly occupied as they serve the downtown businesses.

3.5 Existing Transit Facilities

Mountain View has a vibrant downtown with a mix of restaurants and retail situated primarily along Castro Street, and the Downtown Mountain View Transit Center, a multi-modal transit hub. Mountain View has several transit options that provide access to regional destination as well as intercity travel. Transit services with route schedules are described in this section. The existing transit facilities in the study area are shown in **Figure 5**.

Caltrain provides commuter rail service along the San Francisco Bay Area peninsula between Gilroy, through the south bay in San Jose, to San Francisco. Mountain View has two stations: San Antonio Station located at 190 Showers Drive and the Mountain View Station located at 600 W. Evelyn Avenue. The Mountain View Station is a major transit center, which has connections to VTA busses and light rail, community shuttles, bicycle share, and parking facilities. This station offers the Baby Bullet Express service which has fewer stops between San Jose and San Francisco. The station is within 300 feet from the project site, allowing for a short walk. The Mountain View Caltrain Station is located approximately of 300 feet northeast of the project site. The **Table 1** summarizes existing Caltrain Service.

Table 1: Existing Caltrain Service

Direction	***Weekdays***		***Weekends***	
	Operating Hours	***Headway (minutes)***	***Operating Hours***	***Headway (minutes)***
Northbound	4:49 AM–10:49 PM	25-60	8:19 AM–9:19 PM (7:19 AM–10:49 PM Saturdays)	60
Southbound	6:05 AM–1:11 AM	25-60	9:31 AM–10:31 PM (extended to 1:17 AM Saturdays)	60
Northbound (Baby Bullet)	6:01 AM-8:05 AM, 4:38 PM -6:34 PM	AM-60 PM- 20-35	10:06 AM 5:36 PM	N/A
Southbound (Baby Bullet)	7:28 AM-9:28 AM 4:56 PM- 7:03 PM	AM- 22-38 PM 60	12:54 PM 8:24 PM	N/A

Notes: Source Caltrain Website * The weekend Baby Bullet only offers two express times in each direction during the weekend day.

The VTA operates bus service and light rail services in the City of Mountain View, feeding into the entire Santa Clara County system. Local Bus Routes 22, 35, 40, 51, and 52 connect the City with adjacent jurisdictions via local roads and provide frequent stops. Community Bus Routes 32 and 34 use smaller 25-passenger buses and lower fares, to serve Downtown, the San Antonio Shopping Center, local schools, and employment centers. The Mountain View-Winchester Light Rail Transit (LRT) Line 902 provides service between Campbell, Downtown San Jose, and Mountain View. It connects with the Alum Rock-Santa Teresa line. During special events at Levi's Stadium in Santa Clara, such as professional football games or concerts, Route 902 will run extra trains during that event time. **Table 2** summarizes existing VTA Services.

Three community shuttles operate at the Mountain View Transit Center. **Table 3** summarizes existing Mountain View community shuttle service.

- MVgo – a service of the Mountain View Transportation Management Association (MTMA), a nonprofit organization run by local businesses and landowners to reduce traffic congestion on Mountain View Streets.
- Duane Avenue Shuttle – a Caltrain shuttle that travels between the Mountain View Caltrain Station and the Lawrence Caltrain Station in Sunnyvale using a route north of the Caltrain railroad tracks along Central Expressway, Wolfe Road, Arques Avenue, Stewart Avenue, and Lawrence Expressway.
- Mountain View Community Shuttle.

Additionally, the Mountain View Community Shuttle provides residents and visitors transportation connections between transit center facilities; residential neighborhoods; senior residences and services; City offices, Library, park and recreation facilities; medical offices; shopping centers; and entertainment venues throughout the City. The shuttles operate along two routes- Gray (clockwise) and Red (Counterclockwise). The Mountain View Community Shuttle is a pilot program fully funded by Google, offering midday service. Shuttle details are also included in **Table 3.** Transit route schedules are provided in **Appendix B**.

Table 2: Existing Santa Clara Valley Transportation Authority (VTA) Service

Route	*From*	*To*	*Closest Stop to Project Site*	*Weekdays*		*Weekends*	
				Operating Hours	*Headway (minutes)*	*Operating Hours*	*Headway (minutes)*
22	Palo Alto Transit Center	Eastridge Transit Center	El Camino Real & Castro Street	24 hour	9-60	24 hour	14-60
34	San Antonio Shopping Center	Downtown Mountain View	Mountain View Transit Center (Evelyn Avenue & Hope Street)	9:22 AM–3:10 PM	60	No Service	N/A
35	Downtown Mountain View	Stanford Shopping Center	Mountain View Transit Center (Evelyn Avenue & Hope Street)	6:23 AM–9:49 AM	60	8:22 AM – 9:01 PM	45-60
51	De Anza College	Moffett Field/Ames Center	Castro & El Camino Real/ Castro & Evelyn Avenue	6:30 AM–7:04 PM	20-60	No Service	N/A
52	Foothill College	Downtown Mountain View	Castro & El Camino Real/ Castro Street & Evelyn Avenue	6:58 AM–9:46 PM	24-55	No Service	N/A

522	Palo Alto Transit Center	Eastridge Transit Center	El Camino Real & Castro Street	4:37 AM– 11: 26 PM	15-30	7:50 AM – 11:11 PM	14-25
902 (LRT)	Mountain View	Winchester	Mountain View Transit Center	5:09 AM– 12:07 AM	14-31	6:56 AM – 12:49 AM	30

Notes: Source VTA Website

Table 3: Existing Mountain View Community Shuttle Service

Route	***From***	***To***	***Weekdays***		***Weekends***	
			Operating Hours	***Headway (minutes)***	***Operating Hours***	***Headway (minutes)***
Duane Avenue	Mountain View Caltrain Station	Lawrence Caltrain Station	7:12 AM–10:11 AM 3:48 PM–7:49 PM	25-46	No Service	N/A
Mountain View Community Shuttle	Citywide Stops		10:00 AM–6:00 PM	30	12:00 PM– 8:00 PM	60
MVgo	East Whisman Route		7:12 AM–10:34 AM 4:06 PM–7: 35 PM	12-24	No Service	N/A
MVgo	East Bayshore Route		6:40 AM–10:36 AM 3:24 PM–8:35 PM	12-58	No Service	N/A
MVgo	West Bayshore Route		6:40 AM–10:39 AM 3:22 PM–8:35 PM	12-58	No Service	N/A

Notes: Source City of Mountain View and VTA Website

3.6 Field Observations

Traffic conditions in the field were observed in order to identify existing operational deficiencies and to confirm the accuracy of calculated levels of service. The purpose of this effort was (1) to identify any existing traffic problems that may not be directly related to intersection level of service, and (2) to identify any locations where the level of service analysis does not accurately reflect level of service in the field.

Overall, the study intersections operate adequately during the weekday a.m., midday, and p.m. peak hours, and the level of service analysis appears to accurately reflect actual existing traffic conditions. However, field observations showed that some operational problems currently occur at the following locations near the project site:

Moffett Boulevard/Castro Street/Central Expressway: During the a.m., and p.m. peak hours, the northbound approach was queueing/ backing up to Villa Street and blocking right turning traffic from West Evelyn Avenue to Castro Street. These queues were observed taking more than one cycle to clear. A major cause of these queues is the relatively high frequency of trains that operate during the a.m., and p.m. peak hours. The intersection is located immediately north of the Caltrain tracks, and space is provided for only two or three vehicles to queue in the northbound direction without spilling onto the

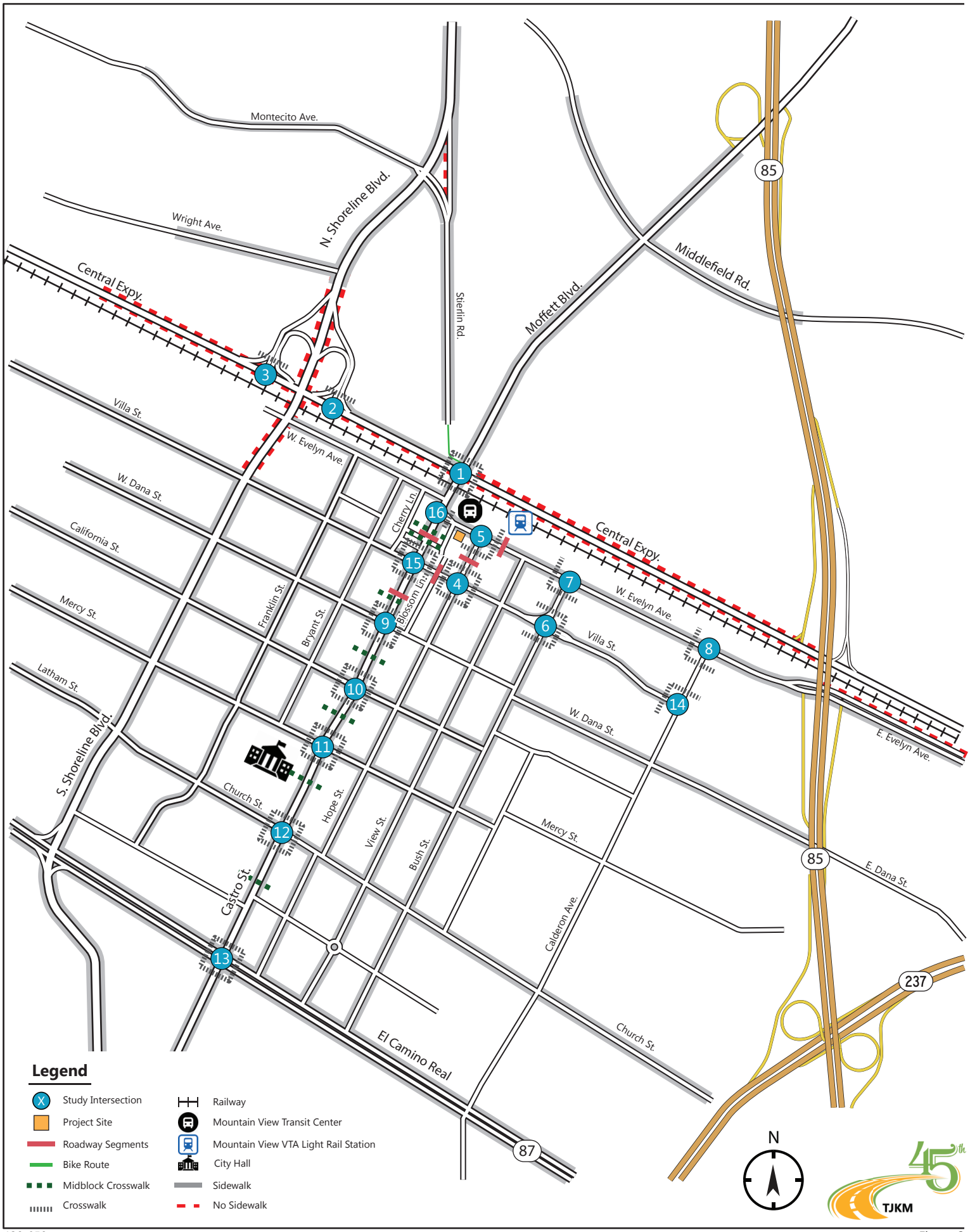
tracks. Additionally, the Downtown Mountain View Caltrain Station begins immediately east of Castro Street, resulting in trains traveling relatively slowly across Castro Street. The high volume of slow moving trains results in lengthy delays for northbound traffic, as well as southbound through, eastbound right-turn, and westbound left-turn traffic. This lengthy delay creates queues that never fully dissipate until the end of the peak hour. Additional issues at this intersection are caused because of one of the two southbound receiving lanes immediately turning into a right-turn only lane from Castro Street onto W. Evelyn Avenue. Observations revealed that at least two or three vehicles per southbound through cycle attempted to merge out of this right-turn only lane into the single southbound through lane after clearing the intersection. This tended to slow down southbound through traffic and created queues that extended into the intersection. In the midday peak hour, the traffic is relatively low when compared to the a.m., and p.m. peak hours at this intersection.

Castro Street/Villa Street: During the p.m., peak hour, it was observed that the eastbound approach faces higher delays and the queue backs up to the next intersection (Bryant Street and Villa Street) due to heavy pedestrian activity on Castro Street. The same back-up exists at eastbound Villa Street between Castro Street and Hope Street in the p.m. peak hour. Pedestrians crossing at Hope Street/Villa Street cause traffic on eastbound Villa Street to back up to Castro Street. As the eastbound and westbound approach has permissive signal operations phasing the left turning vehicles have to yield for pedestrians crossing Castro Street, left turning vehicles get very few gaps to pass through the intersection, once they find enough gaps the queue clears up.

Castro Street/El Camino Real: Generally, traffic volumes along El Camino Real are relatively high during the peak hours. During the p.m. peak hour, it was observed that the southbound approach on Castro Street was queueing/ backing up to Yosemite Avenue. These queues were observed taking more than one cycle to clear.

Castro Street: Generally, traffic volumes along Castro Street during the p.m. peak hour are relatively high and slow-moving between Central Expressway and El Camino Real. Since Castro Street supports a high amount of casual and fine dining uses, this area is a popular destination during this peak hour. This results in a relatively large number of vehicles searching for available parking, or ride-share vehicles dropping-off/picking-up riders. Traffic was regularly observed along Castro Street requiring more than one cycle to clear northbound and/or southbound traffic at the signalized intersections at Villa Street, Dana Street, and California Street. In numerous instances, vehicles were observed stopping in the travel way to pick-up or drop-off passengers rather than moving to the curbside or a nearby low-volume street. This, along with vehicles stopped to wait for parallel parking spaces to open up, created queues along the roadway that occasionally spilled into signalized intersections.

Existing Pedestrian Facilities



Existing Bicycle Facilities

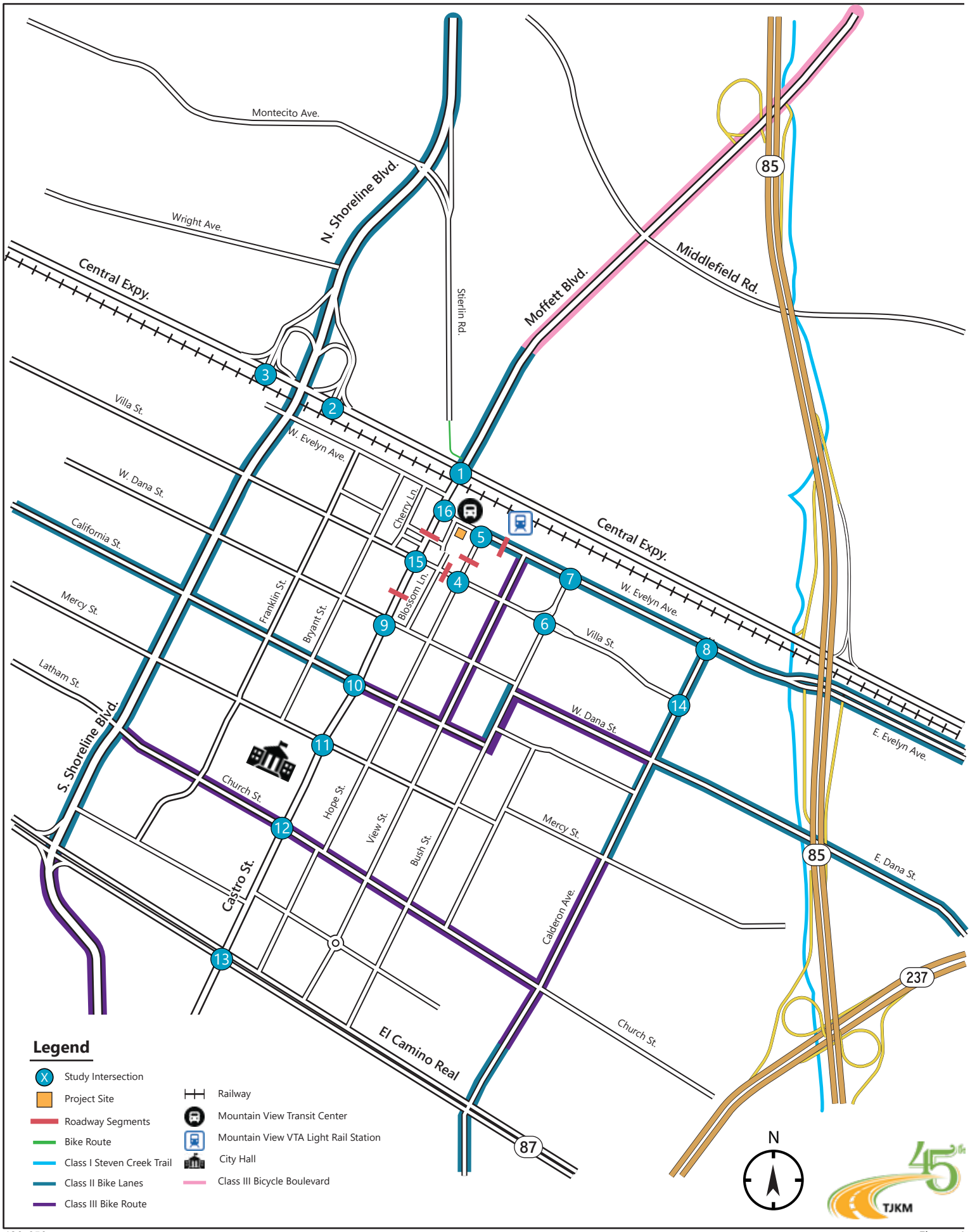


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Figure 4

Existing Transit Facilities

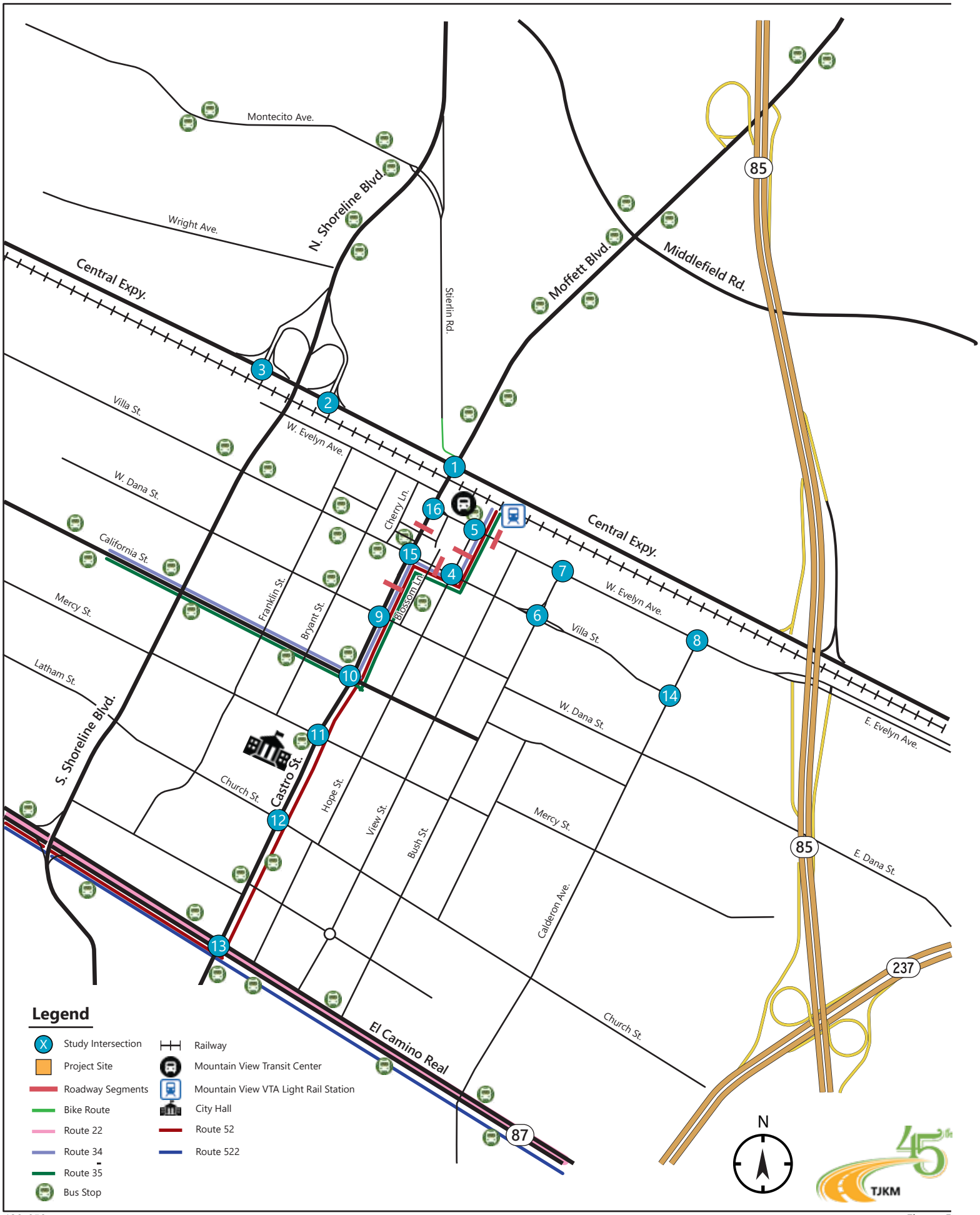

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Figure 5

3.7 Existing Peak Hour Traffic Volumes And Lane Configurations

The existing operations of the study intersections were evaluated for the highest one-hour volumes during weekday morning, midday and evening peak periods. Recent turning movement counts for vehicles, bicycles, and pedestrians were conducted during the weekday a.m. peak period (7:00-10:00 a.m.), midday peak period (11:30 a.m.-1:30 p.m.) and p.m. peak period (4:00-7:00 p.m.) at the study intersections and study roadway segments in May 2018. In addition, seven-day 24-hour average daily counts were conducted at the study roadway segments in May 2018. Field verification of existing intersection lane configurations and traffic controls was also conducted and provided the basis for the level of service analysis for Existing Conditions. **Appendix B** includes all data sheets for the collected vehicle, bicycle, and pedestrian counts. **Figures 6** illustrates the existing lane geometry, and traffic controls at the study intersections. **Figures 7** illustrates the existing a.m., midday and p.m. peak hour pedestrian and bicycle volumes at the study intersections. **Figure 8** illustrates the existing a.m., midday and p.m. peak hour vehicle turning movement volumes at the study intersections.

3.8 Intersection Level of Service Analysis – Existing Conditions

Existing intersection lane configurations, signal timings, and turning movement volumes are used to calculate the level of service for the study intersections during each peak hour. The peak hour factor of 1.00 was used to all study intersections for the existing analysis. The results of the LOS analysis using the TRAFFIX software program for Existing Conditions are summarized in **Table 4**.

The Existing Conditions LOS analysis for purpose of this TIA is based on an isolated intersection analysis of traffic volumes, rather than analysis of the corridor as a whole. The standalone LOS results sometimes can be misleading if a corridor operates under forced flow, or congested, traffic conditions. Forced flow traffic operations can reduce overall vehicle throughput per hour at intersections, leading to LOS analysis results that suggest there is less corridor congestion than is actually occurring under existing field conditions. Where there is known congestion, additional analysis of field conditions becomes necessary in order to review and evaluate the extent of forced flow operations. TJKM conducted a field review of existing traffic conditions at the study intersections during the prevailing a.m., midday and p.m. peak periods based on collected traffic counts (7:00-10:00 a.m., 11:30 a.m.-1:30 p.m. and 4:00-6:00 p.m.). The purpose was to identify existing operational conditions at the study intersection that might not be reflected in the preceding existing conditions intersection LOS results. The existing operational conditions at the study intersection reflects the preceding existing conditions intersection LOS results.

Table 4 below summarizes peak hour LOS at the study intersections under Existing Conditions. Under this scenario, all of the study intersections operate at acceptable service levels (LOS D/E or better for City intersections and LOS E or better for regionally significant and CMP Intersections) during a.m., midday and p.m. peak hours. LOS worksheets are provided in **Appendix C**.

Table 4: Intersection Level of Service Analysis – Existing Conditions

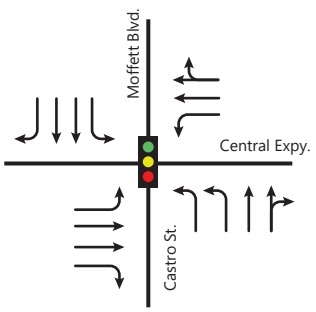
#	Study Intersections	Control	Peak Hour	Existing Conditions			
				Delay[1]	LOS[2]	Critical V/C[3]	Critical Delay[4]
1	Moffett Boulevard/Castro Street/Central Expressway*	Signalized	AM	46.8	D	0.677	49.8
			MD	50.3	D	0.422	55.8
			PM	50.0	D	0.707	52.7
2	Shoreline Boulevard Northbound/Central Expressway*	Signalized	AM	15.7	B	0.592	17.8
			MD	10.9	B	0.285	11.6
			PM	13.2	B	0.598	16.0
3	Shoreline Boulevard Southbound/Central Expressway*	Signalized	AM	9.1	A	0.516	8.5
			MD	8.6	A	0.270	9.6
			PM	9.1	A	0.519	11.4
4	Hope Street/Villa Street**	All-Way Stop	AM	11.1	B	0.500	11.1
			MD	9.8	A	0.392	9.8
			PM	13.0	B	0.635	13.0
5	Hope Street/Evelyn Avenue**	Signalized	AM	13.6	B	0.213	13.4
			MD	19.0	B	0.159	21.5
			PM	14.3	B	0.214	16.2
6	Bush Street/Villa Street	Signalized	AM	16.1	B	0.289	16.0
			MD	11.8	B	0.168	12.5
			PM	6.2	A	0.277	9.9
7	Bush Street/Evelyn Avenue	Signalized	AM	6.8	A	0.311	10.5
			MD	7.7	A	0.185	11.7
			PM	12.2	B	0.349	15.6
8	Calderon Avenue/Evelyn Avenue	Signalized	AM	22.1	C	0.317	18.0
			MD	21.5	C	0.175	28.7
			PM	24.6	C	0.371	26.6
9	Castro Street/Dana Street**	Signalized	AM	10.2	B	0.212	10.8
			MD	9.0	A	0.250	9.6
			PM	10.6	B	0.257	10.9
10	Castro Street/California Street**	Signalized	AM	23.8	C	0.273	24.2
			MD	21.4	C	0.296	23.4
			PM	24.5	C	0.392	24.7
11	Castro Street/Mercy Street**	Signalized	AM	8.1	A	0.184	8.6
			MD	7.9	A	0.212	7.5
			PM	9.0	A	0.221	8.5
12	Castro Street/Church Street**	Signalized	AM	17.9	B	0.295	15.6
			MD	18.3	B	0.336	18.3
			PM	20.7	C	0.461	20.5
13	Castro Street/El Camino Real**	Signalized	AM	27.6	C	0.695	29.2
			MD	27.7	C	0.546	30.2
			PM	30.1	C	0.647	33.1
14	Calderon Avenue/Villa Street	One-Way Stop	AM	10.7	B	...	...
			MD	9.7	A	...	...
			PM	11.0	B	...	...
15	Castro Street/Villa Street**	Signalized	AM	16.2	B	0.459	16.4
			MD	15.1	B	0.412	15.7
			PM	15.5	B	0.478	16.3
16	Castro Street/Evelyn Avenue**	One-Way Stop	AM	13.8	B	...	...
			MD	13.7	B	...	...

#	Study Intersections	Control	Peak Hour	Existing Conditions			
				Delay[1]	LOS[2]	Critical V/C[3]	Critical Delay[4]
			PM	13.1	B	…	…

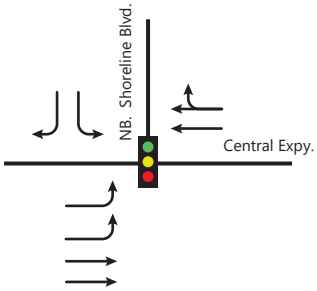
Notes:
1. AM – morning peak hour, MD - Midday peak hour, PM – evening peak hour
2. Delay – Whole intersection weighted average control delay expressed in seconds per vehicle for signalized and all-way stop controlled intersections. Total control delay for the worst movement is presented for side-street stop – controlled intersections. LOS – Level of Service
3. Critical volume to capacity ratio
4. Critical movement delay
* CMP intersections with LOS E threshold
** Intersection located within Downtown precise plan boundary with LOS E threshold

Existing Conditions Lane Geometry and Traffic Controls

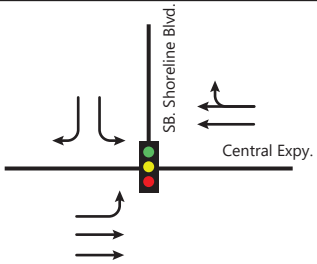
Intersection #1
Moffett Blvd. / Castro St. / Central Expy.



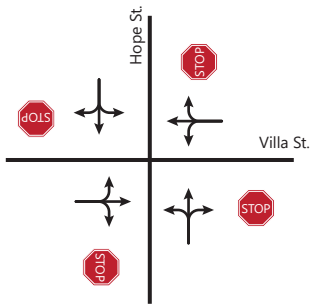
Intersection #2
Shoreline Blvd. Northbound / Central Expy.



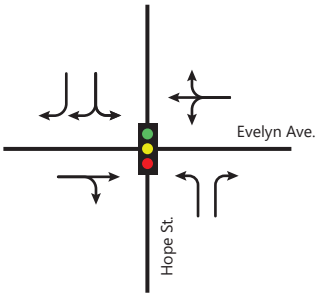
Intersection #3
Shoreline Blvd. Southbound /Central Expy.



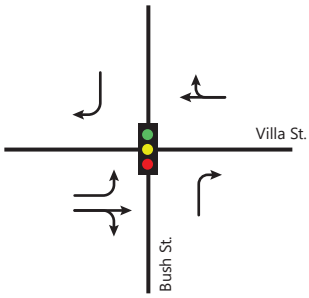
Intersection #4
Hope St. / Villa St.



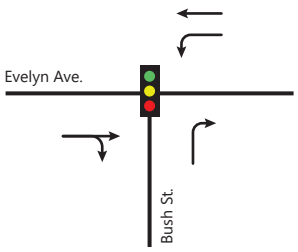
Intersection #5
Hope St. / Evelyn Ave.



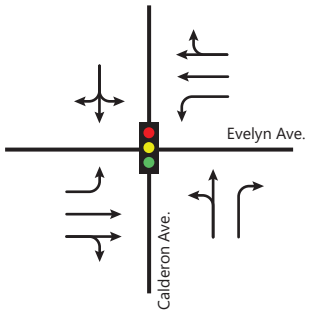
Intersection #6
Bush St. / Villa Street



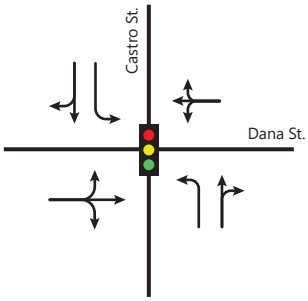
Intersection #7
Bush St. / Evelyn Ave.



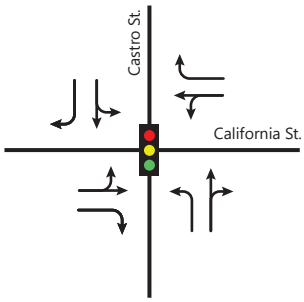
Intersection #8
Calderon Ave. / Evelyn Ave.



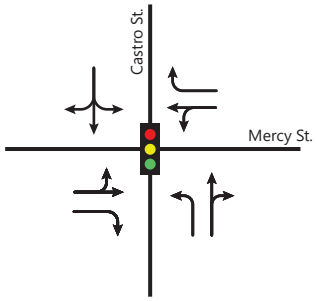
Intersection #9
Castro St. / Dana St.



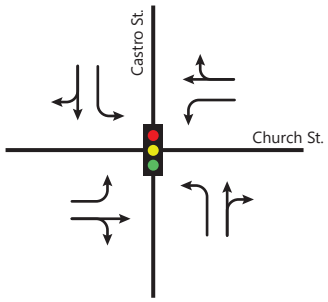
Intersection #10
Castro St. / California St.



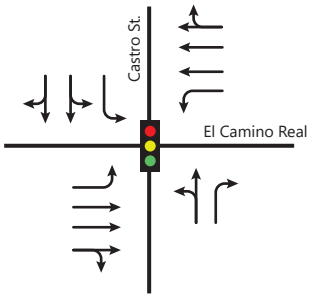
Intersection #11
Castro St. / Mercy St.



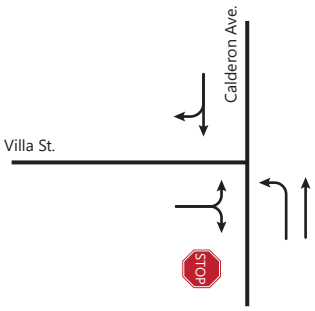
Intersection #12
Castro St. / Church St.



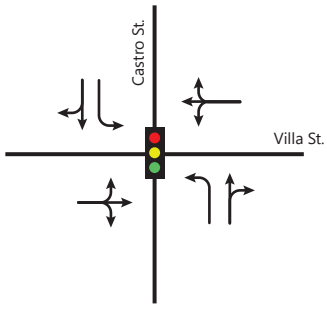
Intersection #13
Castro St. / El Camino Real



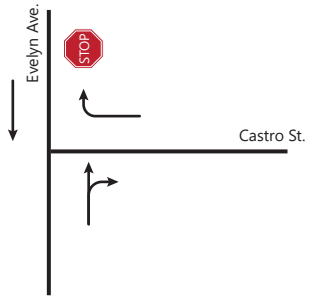
Intersection #14
Calderon Ave. / Villa St.



Intersection #15
Castro St. / Villa St.



Intersection #16
Castro St. / Evelyn Ave.

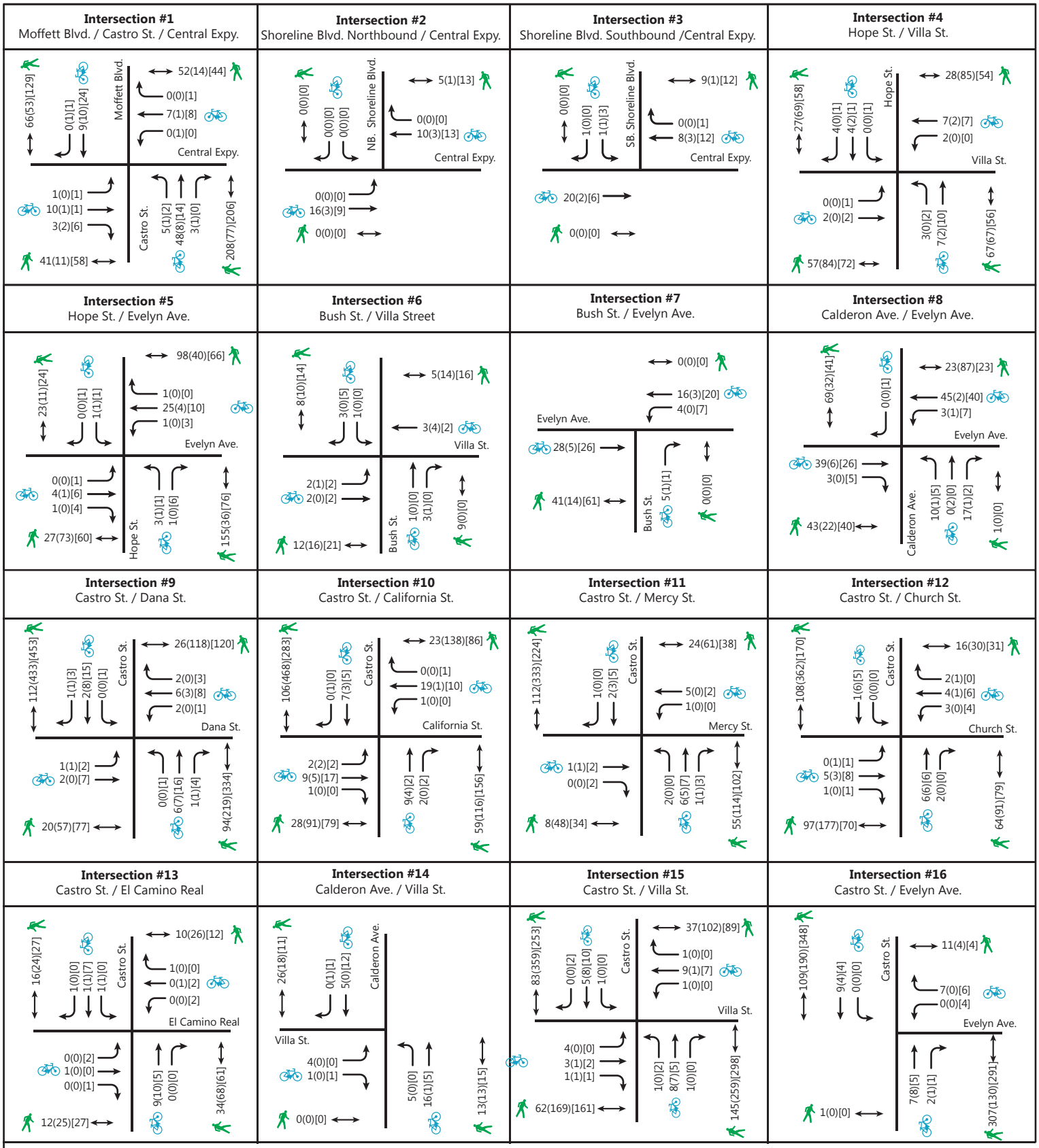


Legend

Traffic Signal

Stop Control

Existing Pedestrian and Bicycle Volumes

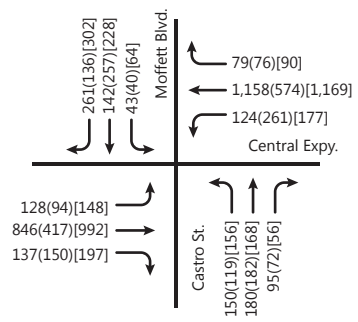


Legend

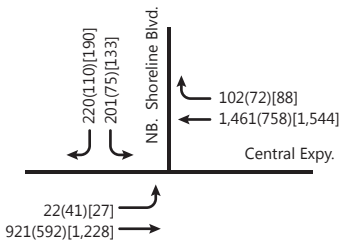
XX	AM Peak Hour Ped/Bike Volumes		Pedestrian Crossing volume
(XX)	Midday Peak Hour Ped/Bike Volumes		Bicycle Turn Movement Volume
[XX]	PM Peak Hour Ped/Bike Volumes		

Existing Conditions Peak Hour Traffic Volumes

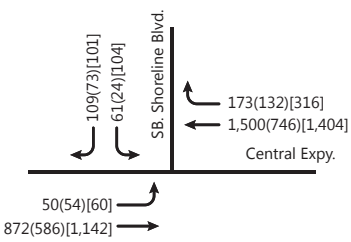
Intersection #1
Moffett Blvd. / Castro St. / Central Expy.



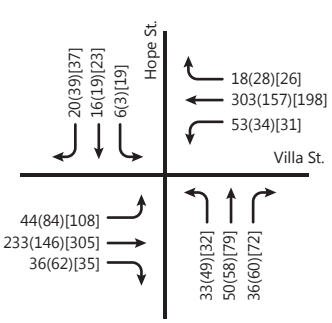
Intersection #2
Shoreline Blvd. Northbound / Central Expy.



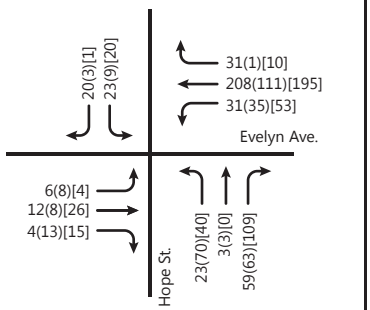
Intersection #3
Shoreline Blvd. Southbound /Central Expy.



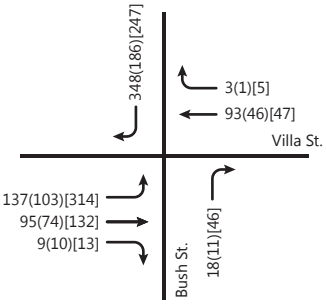
Intersection #4
Hope St. / Villa St.



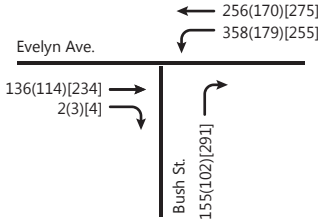
Intersection #5
Hope St. / Evelyn Ave.



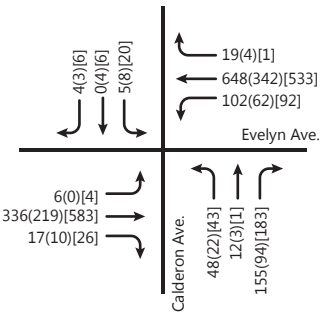
Intersection #6
Bush St. / Villa Street



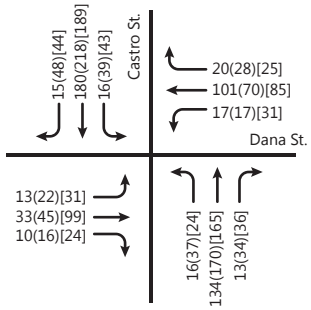
Intersection #7
Bush St. / Evelyn Ave.



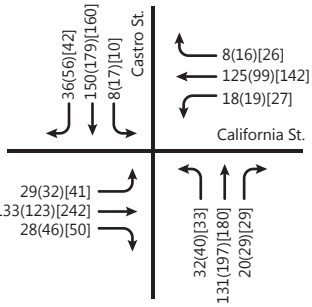
Intersection #8
Calderon Ave. / Evelyn Ave.



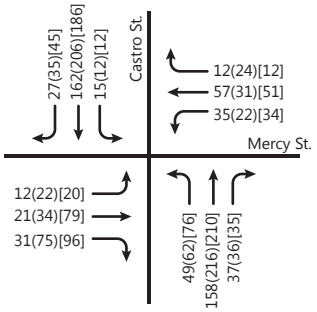
Intersection #9
Castro St. / Dana St.



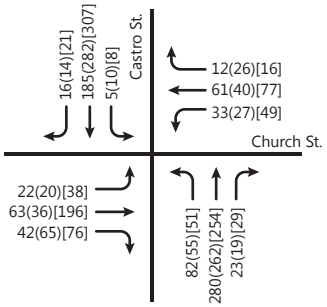
Intersection #10
Castro St. / California St.



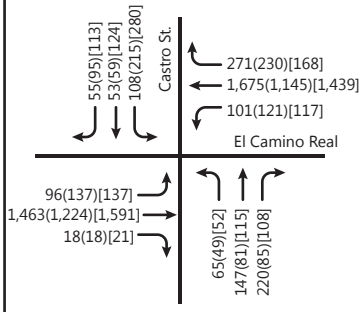
Intersection #11
Castro St. / Mercy St.



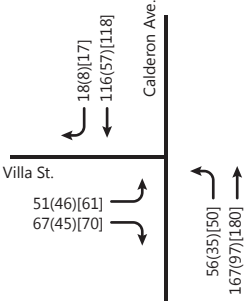
Intersection #12
Castro St. / Church St.



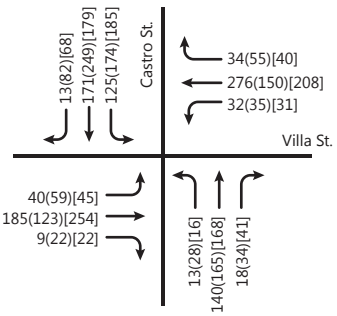
Intersection #13
Castro St. / El Camino Real



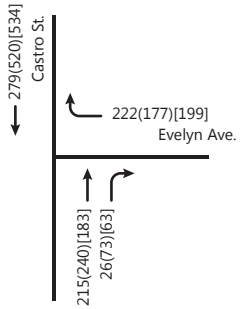
Intersection #14
Calderon Ave. / Villa St.



Intersection #15
Castro St. / Villa St.



Intersection #16
Castro St. / Evelyn Ave.



Legend

XX	AM Peak Hour Volumes
(XX)	Midday Peak Hour Volumes
[XX]	PM Peak Hour Volumes

3.9 Roadway Segment Level of Service Analysis – Existing Conditions

The analysis methodology used to analyze roadway facilities is described in the LOS analysis methodology section. LOS was determined by comparing existing traffic volumes for selected roadway segments with daily traffic capacities. Twenty four-hour bi-directional counts for seven days were collected for the listed roadway segments in the month of May 2018. **Table 5** below summarizes the study roadway segment operations under existing conditions and includes facility type; maximum daily volumes, no. of lanes, daily volumes and LOS information for each study roadway segment. All the study roadway segments are expected to be operating at a satisfactory LOS D or better.

Table 5: Roadway Segment Level of Service Analysis - Existing Conditions

#	Roadway Segment	Facility Type	Maximum Daily Volumes	No. of Lanes / Divided-Undivided	Daily Volume[1]	Level of Service[2]
1	Hope Street, between Villa Street and Evelyn Avenue	Collector	15,480	2-Lane Undivided	3,332	B
2	Castro Street, between Dana Street and Villa Street	Arterial	21,240	2-Lane Undivided	7,552	C
3	Castro Street, between Villa Street and Evelyn Avenue	Arterial	21,240	2-Lane Undivided	11,163	D
4	Evelyn Avenue, between Hope Street and View Street	Arterial	21,240	2-Lane Undivided	4,370	B
5	Villa Street, between Castro Street and Hope Street	Collector	15,480	2-Lane Undivided	9,493	D

Notes:
[1]Daily traffic volumes are average of mid-week daily traffic counted in May 2018.
[2]LOS – Level of Service

4.0 EXISTING PLUS PROJECT CONDITIONS

The impacts of the proposed project on the transportation system are discussed in this chapter. First, the method used to estimate the amount of traffic generated by the project is described. Then, the results of the level of service calculations for Existing plus Project Conditions are presented. (Existing plus Project Conditions are defined as Existing Conditions plus traffic generated by the proposed project). A comparison of intersections under Existing plus Project Conditions and Existing Conditions is presented and the impacts of the project on the study intersections are discussed. Project impacts on roadway segments are also addressed.

The amount of traffic added to the roadway system by the proposed development is estimated using a three-step process.

- Trip Generation – Estimates the amount of traffic added to the roadway network,
- Trip Distribution – Estimates the direction of travel to and from the project site,
- Trip Assignment – The new trips are assigned to specific street segments and intersection turning movements.

4.1 Project Trip Generation

TJKM developed estimated project trip generation for the proposed project based on published trip generation rates from the *Institute of Transportation Engineers' (ITE) publication Trip Generation (10th Edition)*. TJKM applied trip discounts to the proposed project trip generation that are consistent with the VTA Transportation Impact Guidelines, retail pass by, and proximity to rail transit and in consultation with City of Mountain View Staff.

TJKM used published trip rates for the ITE land use General Office Building (ITE Code 710) and Shopping Center (ITE Code 820) for this project, as this land use most closely matches the trip characteristics of the proposed mixed use development. For purposes of forecasting net peak hour trips, TJKM applied six percent trip reductions for employment near light rail, bus rapid transit or Caltrain Station, and 34 percent trip reductions for pass-by and internal trip discount for the Shopping Center land use.

Pass-by trips are made as intermediate stops on the way from an origin to a primary trip destination without a route diversion. Pass by trips account for trips that are already on the roadway but will stop/divert to the new development on their way to their final destinations. Pass by trips are attracted from traffic passing the site on an adjacent street or roadway that offers direct access to the generator. Pass by trips are not diverted from another roadway.

Table 6 shows the trip generation expected to be generated by the proposed project. The proposed project is expected to generate approximately 59 weekday a.m. peak hour trips (49 inbound trips, 10 outbound trips), 55 midday peak hour trips (36 inbound trips, 19 outbound trips) and 54 weekday p.m. peak hour trips (15 inbound trips, 39 outbound trips).

Table 6: Project Trip Generation

Proposed Land Uses (ITE Code)	Units	AM Peak Rate	AM Peak In/out %	AM Peak In/out	AM Peak Total	Mid-day Peak* Rate	Mid-day Peak* In/out %	Mid-day Peak* In/out	To
General Office Building (ITE Code 710)[1]	30.0 k.s.f	*1.82*	*86/14*	47/8	55	*1.03*	*60/40*	19/12	3
Shopping Center (ITE Code 820)[2]	8.0 k.s.f	*0.94*	*62/38*	5/3	8	*3.24*	*70/30*	18/8	2
Reduction : Office Employment near LRT,BRT or Caltrain Station, 6%[3]				-3/-1	-4			-1/-1	-
Reduction : Retail Land Use Peak Hour Pass-by Trip Reduction (ITE), 34%[4]									
Total Net Trips				**49/10**	**59**			**36/19**	**5**

Source - ITE Trip Generation Manual, 10th Edition (2017).

[1]Fitted Curve Equations for Hotel (ITE Land Use Code 310) based upon number of rooms. Daily: T = 11.29(X)-426.97; AM Peak: T = 0.50(X)-5.34; PM Peak: T = 0.
Average Vehicle Trip Ends; X = Land Use Size in ksf (One Thousand Square Feet).

[2]Shoping Center (ITE Land Use Code 820) vehicle trip rates are based upon number of thousand square feet gross leasable area.

[3] VTA Standard Trip Reduction, 6% based on VTA TIA Guidelines.

[4]Peak Hour Pass by Trip Reduction of 34% as per ITE for Shopping Center (ITE Code 820).

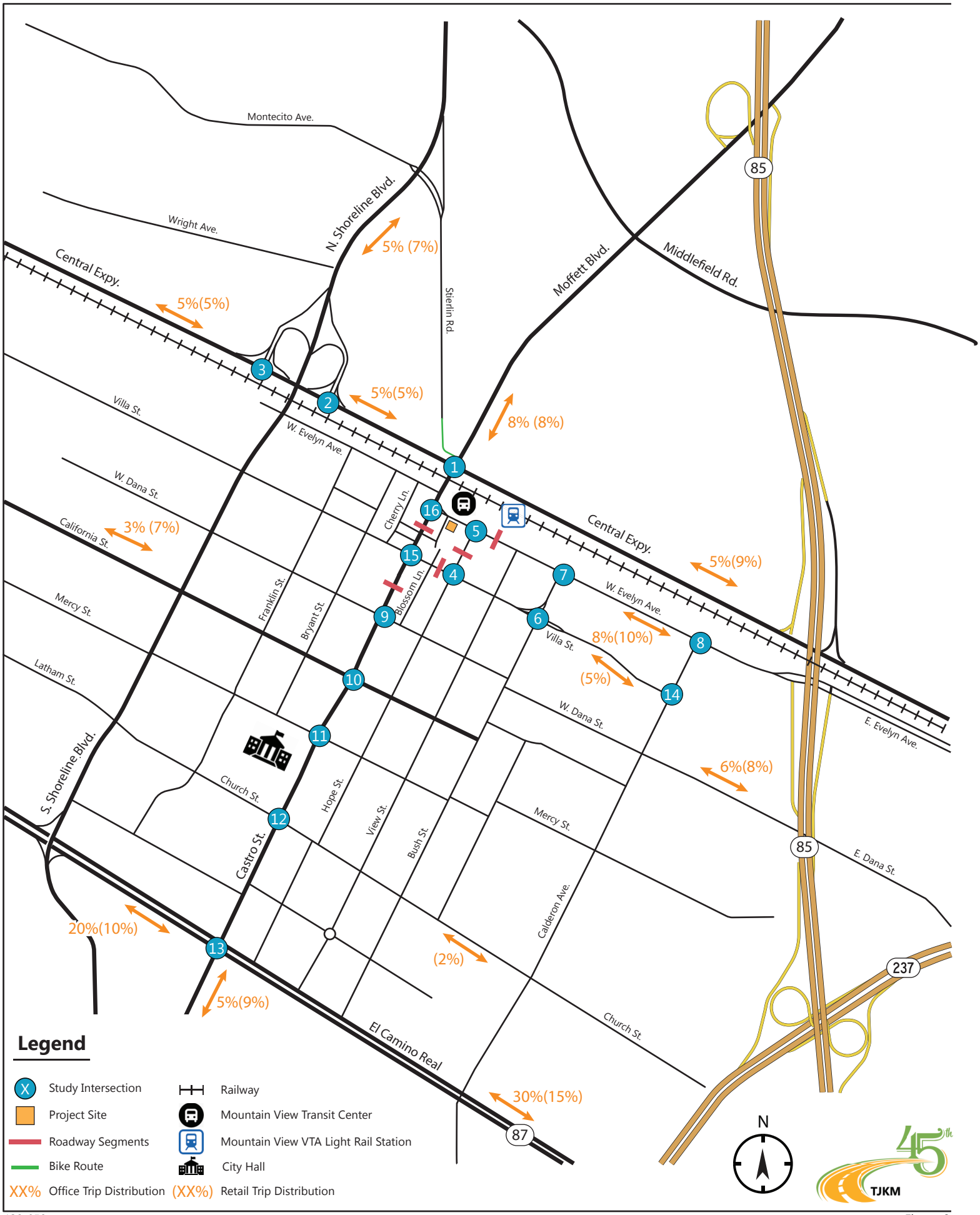
*ITE Manual does not include mid-day peak rates. TJKM estimated a mid-day peak rate as a percentage of the Midday Peak Hour Volume to the PM Peak Hour

4.2 Project Trip Distribution and Assignment

Trip distribution is a process that determines in what proportion vehicles would be expected to travel between the project site and various destinations outside the project study area and also determines the various routes that vehicles would take from the project site to each destination using the calculated trip distribution. Trip distribution assumptions for the proposed project were developed based on existing travel patterns, knowledge of the study area, and consultation with City staff.

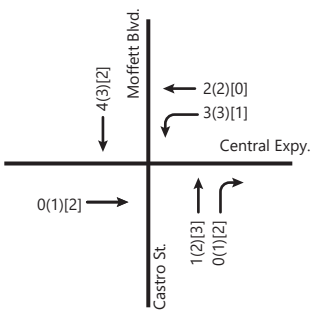
Figure 9 illustrates the trip distribution percentages developed for the proposed mixed-use development project and **Figure 10a & 10b** illustrates the trip assignment project volumes developed for the proposed project. The assigned project trips were then added to traffic volumes under Existing Conditions to generate Existing plus Project Conditions traffic volumes.

Project Trip Distribution

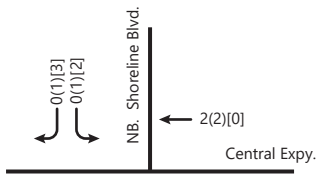


Project Trip Assignment

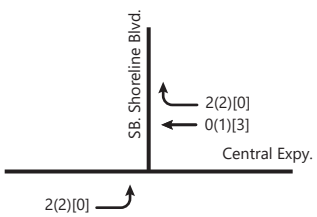
Intersection #1
Moffett Blvd. / Castro St. / Central Expy.



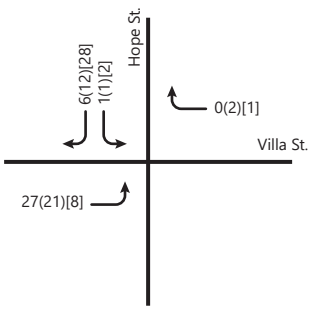
Intersection #2
Shoreline Blvd. Northbound / Central Expy.



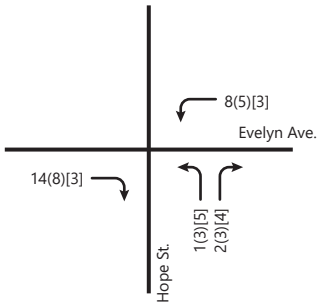
Intersection #3
Shoreline Blvd. Southbound /Central Expy.



Intersection #4
Hope St. / Villa St.

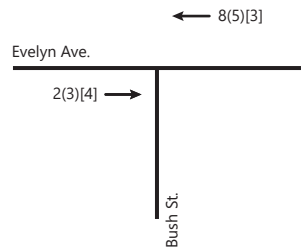


Intersection #5
Hope St. / Evelyn Ave.

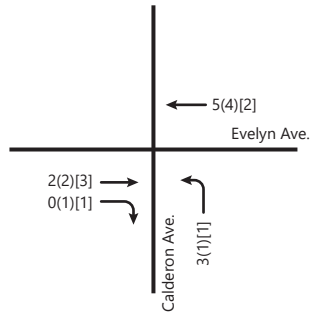


Intersection #6
Bush St. / Villa Street

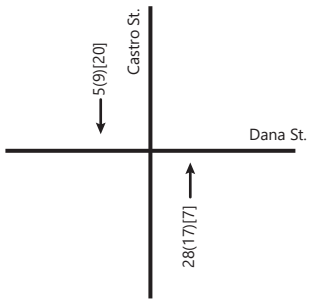
Intersection #7
Bush St. / Evelyn Ave.



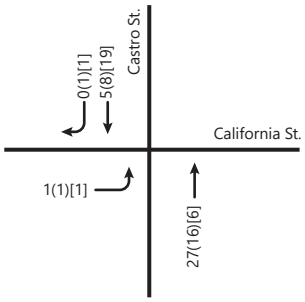
Intersection #8
Calderon Ave. / Evelyn Ave.



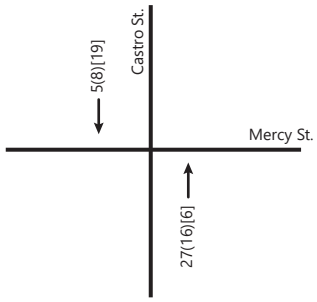
Intersection #9
Castro St. / Dana St.



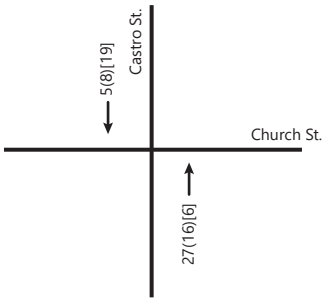
Intersection #10
Castro St. / California St.



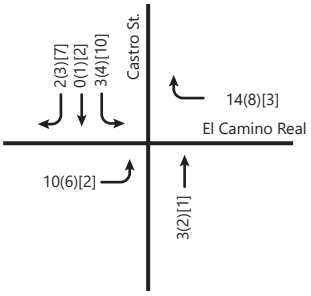
Intersection #11
Castro St. / Mercy St.



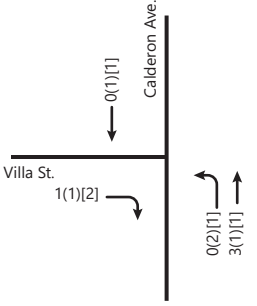
Intersection #12
Castro St. / Church St.



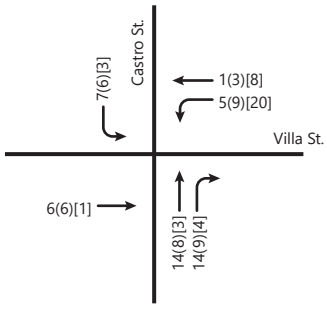
Intersection #13
Castro St. / El Camino Real



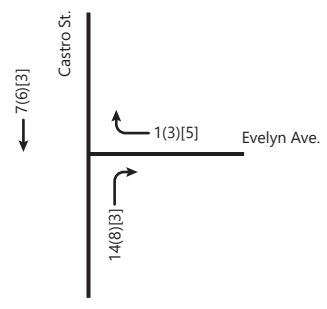
Intersection #14
Calderon Ave. / Villa St.



Intersection #15
Castro St. / Villa St.



Intersection #16
Castro St. / Evelyn Ave.

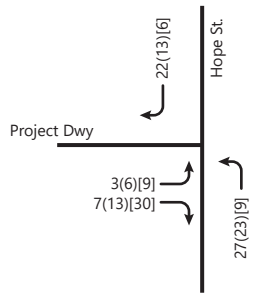


Legend

XX	AM Peak Hour Project Trips
(XX)	Midday Peak Hour Project Trips
[XX]	PM Peak Hour Project Trips

Project Trip Assignment

Intersection
Hope St. / Project Dwy.



Legend

XX	AM Peak Hour Project Trips
(XX)	Midday Peak Hour Project Trips
[XX]	PM Peak Hour Project Trips

4.3 Intersection Level of Service Analysis – Existing plus Project Conditions

The intersection LOS analysis results for Existing plus Project Conditions are summarized in **Table 7**. Detailed calculation sheets for Existing plus Project Conditions are contained in **Appendix D**. All intersections are expected to continue operating within applicable jurisdictional standards of LOS D/E (City of Mountain View) and LOS E (CMP) under this scenario.

Based on the City of Mountain View and VTA's impact criteria the project is expected to have a **less-than-significant impact** at all the study intersections evaluated in this TIA.

Figures 11 displays projected peak hour turning movement volumes at all of the study intersections for Existing plus Project Conditions.

The results for Existing Conditions are included for comparison purposes, along with the projected increases in critical delay and critical V/C ratios. It should be noted that some of the study intersections are estimated to show a negative net increase in intersection delay due to the addition of project trips to non-critical turn movements.

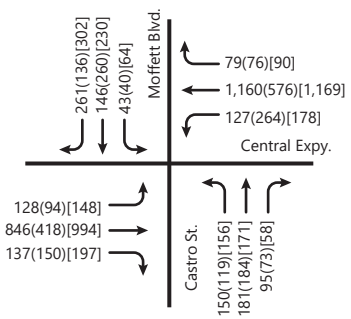
Table 7: Intersection Level of Service Analysis – Existing plus Project Conditions

#	Study Intersections	Control	Peak Hour	Existing Conditions		Existing plus Project Conditions		*Change in*	
				Delay[1]	LOS[2]	Delay[1]	LOS[2]	Critical V/C[3]	Critical Delay[4]
1	Moffett Boulevard/Castro Street/Central Expressway*	Signalized	AM	46.8	D	46.9	D	0.001	0.0
			MD	50.3	D	50.3	D	0.002	0.0
			PM	50.0	D	50.0	D	0.000	0.0
2	Shoreline Boulevard Northbound/Central Expressway*	Signalized	AM	15.7	B	15.7	B	0.000	0.0
			MD	10.9	B	10.9	B	0.001	0.1
			PM	13.2	B	13.4	B	0.002	0.2
3	Shoreline Boulevard Southbound/Central Expressway*	Signalized	AM	9.1	A	9.1	A	0.001	0.1
			MD	8.6	A	8.7	A	0.002	0.2
			PM	9.1	A	9.1	A	0.001	0.0
4	Hope Street/Villa Street**	All-Way Stop	AM	11.1	B	11.5	B	0.007	0.4
			MD	9.8	A	10.1	B	0.035	0.3
			PM	13.0	B	13.6	B	0.026	0.6
5	Hope Street/Evelyn Avenue**	Signalized	AM	13.6	B	15.1	B	0.017	1.8
			MD	19.0	B	20.0	B	0.012	1.0
			PM	14.3	B	14.8	B	0.008	0.7
6	Bush Street/Villa Street	Signalized	AM	16.1	B	16.1	B	0.000	0.0
			MD	11.8	B	12.0	B	0.000	0.2
			PM	6.2	A	6.3	A	0.000	0.1
7	Bush Street/Evelyn Avenue	Signalized	AM	6.8	A	6.8	A	0.001	0.1
			MD	7.7	A	7.8	A	0.002	0.1
			PM	12.2	B	12.2	B	0.002	0.1
8	Calderon Avenue/Evelyn Avenue	Signalized	AM	22.1	C	22.1	C	0.001	-0.1
			MD	21.5	C	21.4	C	0.001	-0.1
			PM	24.6	C	24.5	C	0.002	-0.1
9	Castro Street/Dana Street**	Signalized	AM	10.2	B	10.1	B	0.003	-0.1
			MD	9.0	A	8.9	A	0.005	0.0
			PM	10.6	B	10.5	B	0.012	-0.1
10	Castro Street/California Street**	Signalized	AM	23.8	C	23.4	C	0.013	0.1
			MD	21.4	C	21.1	C	0.010	-0.2
			PM	24.5	C	24.6	C	0.004	0.1
11	Castro Street/Mercy Street**	Signalized	AM	8.1	A	7.9	A	0.009	-0.2
			MD	7.9	A	7.8	A	0.007	-0.2
			PM	9.0	A	8.9	A	0.012	-0.2
12	Castro Street/Church Street**	Signalized	AM	17.9	B	17.5	B	0.017	-0.3
			MD	18.3	B	18.1	B	0.005	-0.1
			PM	20.7	C	20.6	C	0.012	-0.1
13	Castro Street/El Camino Real**	Signalized	AM	27.6	C	27.9	C	0.011	0.6
			MD	27.7	C	28.0	C	0.009	0.4
			PM	30.1	C	30.5	C	0.006	0.4
14	Calderon Avenue/Villa Street	One-Way Stop	AM	10.7	B	10.8	B	...	...
			MD	9.7	A	9.7	A	...	...
			PM	11.0	B	11.0	B	...	...
15	Castro Street/Villa Street**	Signalized	AM	16.2	B	16.6	B	0.008	0.6
			MD	15.1	B	15.3	B	0.026	0.1
			PM	15.5	B	15.5	B	0.007	0.0
16	Castro Street/Evelyn Avenue**	One-Way Stop	AM	13.8	B	13.9	B	...	...
			MD	13.7	B	13.8	B	...	...
			PM	13.1	B	13.2	B	...	...

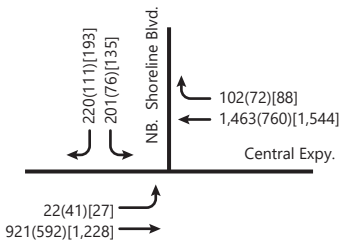
Notes:
1. AM – morning peak hour, MD - Midday peak hour, PM – evening peak hour
2. Delay – Whole intersection weighted average control delay expressed in seconds per vehicle for signalized and all-way stop controlled intersections. Total control delay for the worst movement is presented for side-street stop – controlled intersections.
LOS – Level of Service
3. Change in critical volume to capacity ratio between Existing and Existing plus Project Conditions
4. Change in average critical movement delay between Existing and Existing plus Project Conditions
* CMP intersections with LOS E threshold
** Intersection located within Downtown precise plan boundary with LOS E threshold.

Existing plus Project Peak Hour Traffic Volumes

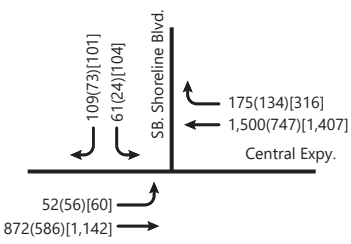
Intersection #1
Moffett Blvd. / Castro St. / Central Expy.



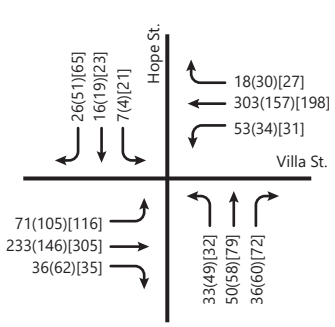
Intersection #2
Shoreline Blvd. Northbound / Central Expy.



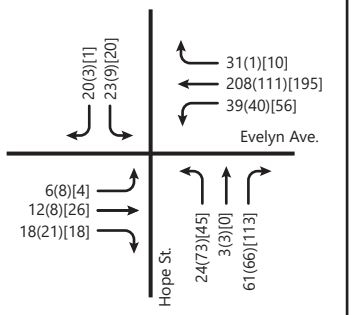
Intersection #3
Shoreline Blvd. Southbound /Central Expy.



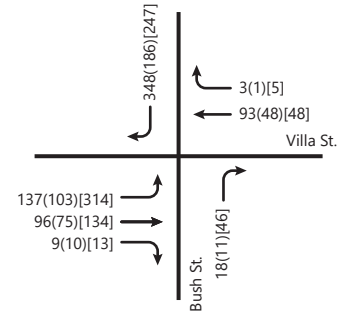
Intersection #4
Hope St. / Villa St.



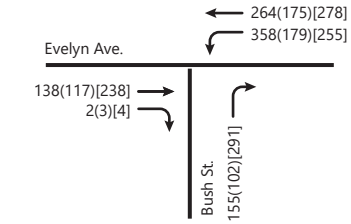
Intersection #5
Hope St. / Evelyn Ave.



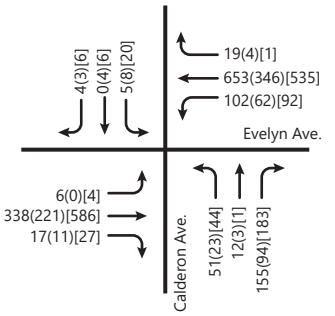
Intersection #6
Bush St. / Villa Street



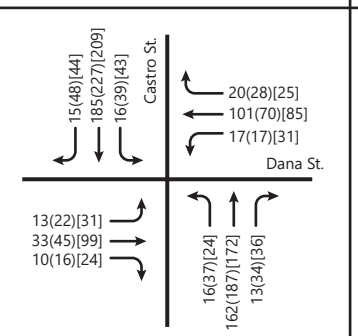
Intersection #7
Bush St. / Evelyn Ave.



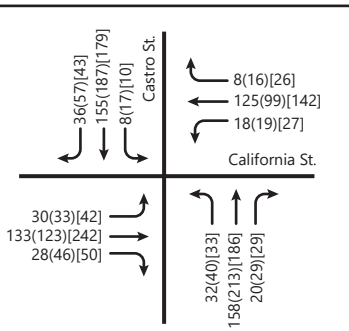
Intersection #8
Calderon Ave. / Evelyn Ave.



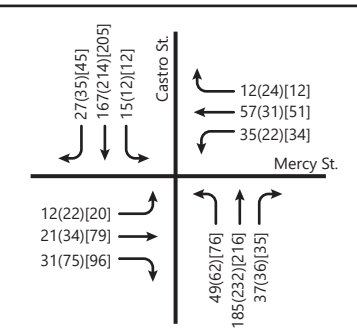
Intersection #9
Castro St. / Dana St.



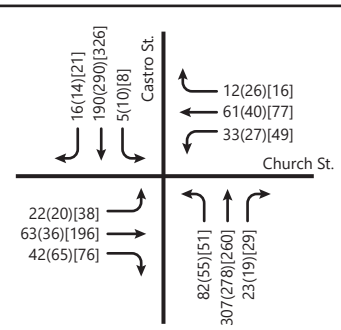
Intersection #10
Castro St. / California St.



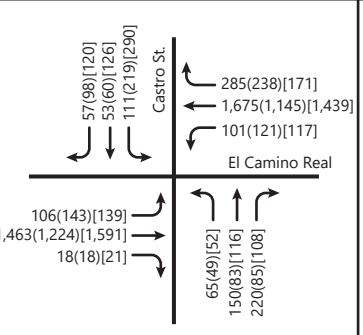
Intersection #11
Castro St. / Mercy St.



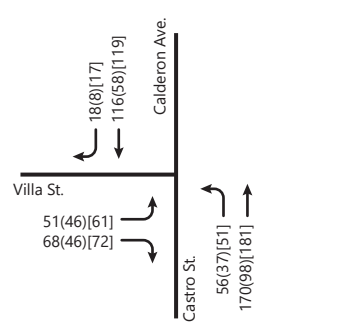
Intersection #12
Castro St. / Church St.



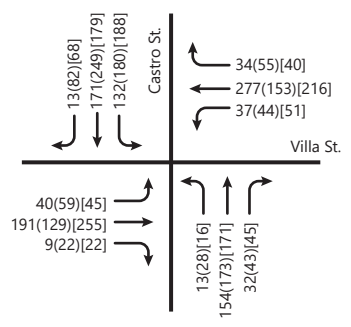
Intersection #13
Castro St. / El Camino Real



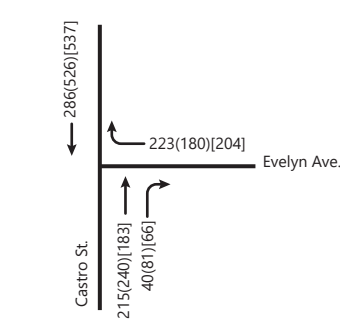
Intersection #14
Calderon Ave. / Villa St.



Intersection #15
Castro St. / Villa St.



Intersection #16
Castro St. / Evelyn Ave.



Legend

XX	AM Peak Hour Volumes
(XX)	Midday Peak Hour Volumes
[XX]	PM Peak Hour Volumes

4.4 Roadway Segment Level of Service Analysis – Existing Plus Project Conditions

Table 8 below summarizes the study roadway segment operations under existing plus project conditions and includes facility type; maximum daily volumes, no. of lanes, daily volumes and LOS information for each study roadway segment. All the study roadway segments are expected to be operating at a satisfactory LOS D or better. Based on the City of Mountain View and VTA's impact criteria, the proposed project will have a less-than-significant impact on the study roadway segments under Existing plus Project Conditions.

Table 8: Roadway Segment Level of Service Analysis - Existing plus Project Conditions

#	Roadway Segment	Facility Type	Maximum Daily Volumes	No. of Lanes / Divided-Undivided	Daily Volume[1]	Level of Service[2]
1	Hope Street, between Villa Street and Evelyn Avenue	Collector	15,480	2-Lane Undivided	3,897	B
2	Castro Street, between Dana Street and Villa Street	Arterial	21,240	2-Lane Undivided	7,852	C
3	Castro Street, between Villa Street and Evelyn Avenue	Arterial	21,240	2-Lane Undivided	11,298	D
4	Evelyn Avenue, between Hope Street and View Street	Arterial	21,240	2-Lane Undivided	4,455	B
5	Villa Street, between Castro Street and Hope Street	Collector	15,480	2-Lane Undivided	9,838	D

Notes:
[1]Daily traffic volumes are average of mid-week daily traffic counted in May 2018.
[2]LOS – Level of Service

5.0 BACKGROUND (EXISTING PLUS APPROVED PROJECTS) CONDITIONS

This scenario is similar to Existing Conditions, but with the addition of traffic from approved and pending developments located within the immediate vicinity of the project. The City staff provided the list of Approved Trips Inventory (ATI), which represents the traffic volumes generated by projects that are approved but not constructed. ATI volumes were added to the Existing Conditions volumes to project the peak hour turning movements at the study intersections under Background Conditions. The ATI sheets are included in **Appendix E**.

5.1 Approved Projects and Planned Developments

Approved and pending developments located within the immediate vicinity of the project are:

- 1701 W. El Camino Real – 67 residential units
- 1313 and 1347 W. El Camino Real – 3,363 sf of commercial use and 24 residential units
- 801 W. El Camino Real – 10,800 sf of commercial use and 164 residential units
- 840 East El Camino Real – 4,421 sf of commercial use and expand existing 160 room hotel to 200 rooms
- 700 E. Middlefield Road – 763,000 sf of office land use
- 582 Hope Street – 96,600 sf of commercial land use and 12 residential units,
- 460 North Shoreline Boulevard – 62 residential units
- 777 West Middlefield Road – 716 residential units
- 759 West Middlefield Road – 75 residential units
- 555 West Middlefield Road – 341 residential units
- 1696 – 1758 Villa Street - 226 residential units
- 1919, 1945, 1933, Gamel and 574 Escuela – 53 residential units
- 231-235 Hope Street - 9 residential units
- 881 Castro Street – 8,500 sf of commercial use and 18 residential units
- Lots 4 & 8 Hope Street Mixed-Use Development
- 714 Villa Street - 32,000 square foot mixed-use office and commercial
- 676 W Dana Street - mixed-use, 9 units and 6500 sf commercial
- 810 Miramonte Avenue - 36-room hotel
- 1510 West El Camino Real - 89-room hotel

For conservative purposes, the developments are considered gross new square footage and units as these may be currently under construction and not adding vehicle trips to the roadway.

Figure 12 shows projected turning movement volumes at all of the study intersections under Background Conditions for a.m., midday and p.m. peak hours. **Appendix E** includes a list of approved and pending projects trips.

5.2 Intersections Level of Service Analysis – Background Conditions

The intersection LOS analysis results for Background Conditions are summarized in **Table 9**. Detailed calculation sheets for Background Conditions (Existing plus Approved Projects) are contained in **Appendix E**. All intersections are expected to continue operating within applicable jurisdictional standards of LOS D/E (City of Mountain View) and LOS E (CMP) under this scenario

Table 9: Intersection Level of Service Analysis – Background Conditions

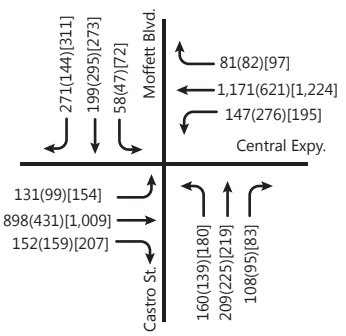
#	Study Intersections	Control	Peak Hour	Background Conditions			
				Delay[1]	LOS[2]	Critical V/C[3]	Critical Delay[4]
1	Moffett Boulevard/Castro Street/Central Expressway*	Signalized	AM	48.5	D	0.694	51.1
			MD	51.2	D	0.447	56.8
			PM	51.8	D	0.741	54.7
2	Shoreline Boulevard Northbound/Central Expressway*	Signalized	AM	16.2	B	0.607	18.3
			MD	11.5	B	0.311	12.6
			PM	13.8	B	0.627	16.8
3	Shoreline Boulevard Southbound/Central Expressway*	Signalized	AM	9.5	A	0.530	8.9
			MD	8.7	A	0.289	10.0
			PM	9.4	A	0.541	11.8
4	Hope Street/Villa Street**	All-Way Stop	AM	13.7	B	0.605	13.7
			MD	11.2	B	0.495	11.2
			PM	17.5	C	0.779	17.5
5	Hope Street/Evelyn Avenue**	Signalized	AM	14.3	B	0.231	14.5
			MD	19.5	B	0.179	22.2
			PM	15.7	B	0.238	18.4
6	Bush Street/Villa Street	Signalized	AM	16.3	B	0.294	16.3
			MD	12.0	B	0.169	12.9
			PM	6.5	A	0.279	10.4
7	Bush Street/Evelyn Avenue	Signalized	AM	6.9	A	0.317	10.7
			MD	8.0	A	0.193	12.0
			PM	12.4	B	0.360	16.0
8	Calderon Avenue/Evelyn Avenue	Signalized	AM	21.9	C	0.322	17.8
			MD	21.1	C	0.179	28.3
			PM	24.3	C	0.377	26.4
9	Castro Street/Dana Street**	Signalized	AM	9.5	A	0.269	10.3
			MD	8.3	A	0.306	9.0
			PM	10.0	B	0.321	10.3
10	Castro Street/California Street**	Signalized	AM	22.1	C	0.328	23.9
			MD	19.5	B	0.350	22.2
			PM	23.8	C	0.454	25.1
11	Castro Street/Mercy Street**	Signalized	AM	7.1	A	0.237	7.6
			MD	7.1	A	0.264	6.6
			PM	8.3	A	0.281	7.5
12	Castro Street/Church Street**	Signalized	AM	18.3	B	0.407	17.0
			MD	18.9	B	0.421	18.9
			PM	22.1	C	0.564	22.5
13	Castro Street/El Camino Real**	Signalized	AM	31.1	C	0.764	34.2
			MD	32.5	C	0.640	35.6
			PM	36.1	D	0.758	39.8

#	Study Intersections	Control	Peak Hour	Background Conditions			
				Delay[1]	LOS[2]	Critical V/C[3]	Critical Delay[4]
14	Calderon Avenue/Villa Street	One-Way Stop	AM	10.8	B	…	…
			MD	9.7	A	…	…
			PM	11.0	B	…	…
15	Castro Street/Villa Street**	Signalized	AM	17.4	B	0.547	17.9
			MD	15.9	B	0.527	16.5
			PM	17.9	B	0.595	18.3
16	Castro Street/Evelyn Avenue**	One-Way Stop	AM	14.9	B	…	…
			MD	15.4	C	…	…
			PM	14.8	B	…	…

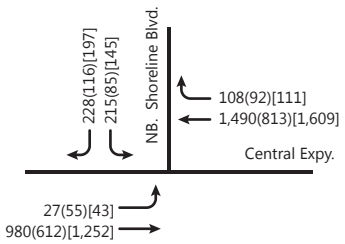
Notes:
1. AM – morning peak hour, MD - Midday peak hour, PM – evening peak hour
2. Delay – Whole intersection weighted average control delay expressed in seconds per vehicle for signalized and all-way stop controlled intersections. Total control delay for the worst movement is presented for side-street stop – controlled intersections.
LOS – Level of Service
3. Critical volume to capacity ratio
4. Critical movement delay
* CMP intersections with LOS E threshold
** Intersection located within Downtown precise plan boundary with LOS E threshold

Background Conditions Peak Hour Traffic Volumes

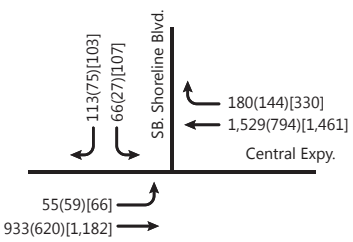
Intersection #1
Moffett Blvd. / Castro St. / Central Expy.



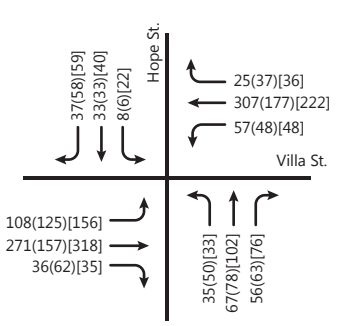
Intersection #2
Shoreline Blvd. Northbound / Central Expy.



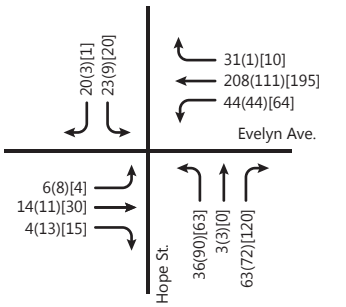
Intersection #3
Shoreline Blvd. Southbound /Central Expy.



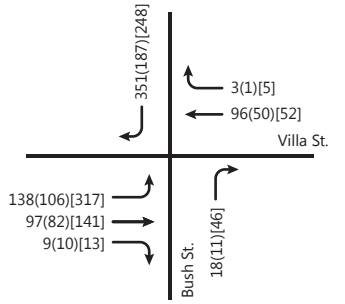
Intersection #4
Hope St. / Villa St.



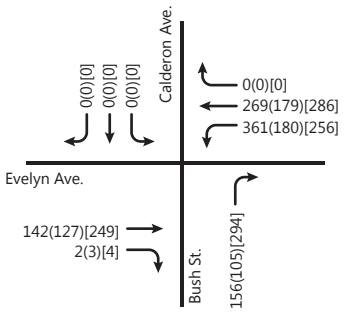
Intersection #5
Hope St. / Evelyn Ave.



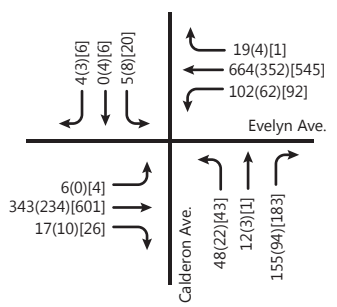
Intersection #6
Bush St. / Villa Street



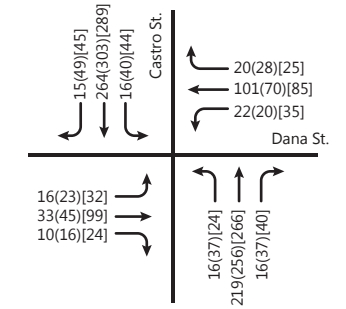
Intersection #7
Bush St. / Evelyn Ave.



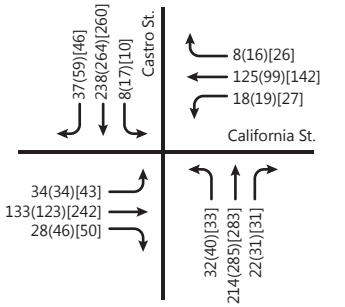
Intersection #8
Calderon Ave. / Evelyn Ave.



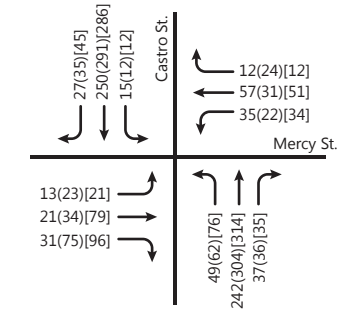
Intersection #9
Castro St. / Dana St.



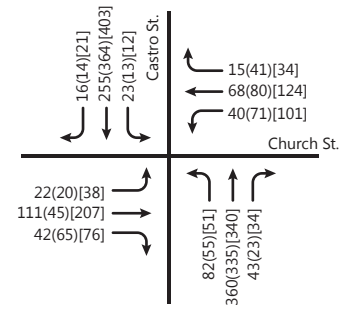
Intersection #10
Castro St. / California St.



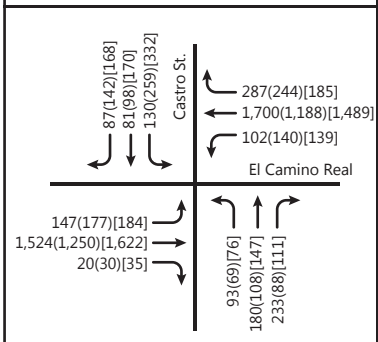
Intersection #11
Castro St. / Mercy St.



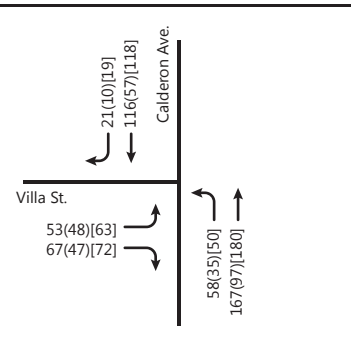
Intersection #12
Castro St. / Church St.



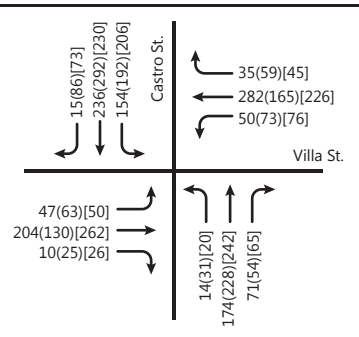
Intersection #13
Castro St. / El Camino Real



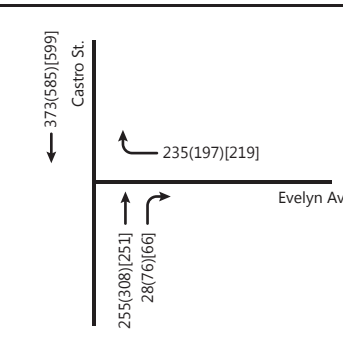
Intersection #14
Calderon Ave. / Villa St.



Intersection #15
Castro St. / Villa St.



Intersection #16
Calderon Ave. / Villa St.



Legend

XX	AM Peak Hour Volumes
(XX)	Midday Peak Hour Volumes
[XX]	PM Peak Hour Volumes

5.3 Roadway Segment Level of Service Analysis – Background Conditions

Table 10 below summarizes the study roadway segment operations under Background Conditions and includes facility type; maximum daily volumes, no. of lanes, daily volumes and LOS information for each study roadway segment. All the study roadway segments are expected to be operating at a satisfactory LOS D or better.

Table 10: Roadway Segment Level of Service Analysis - Background Conditions

#	Roadway Segment	Facility Type	Maximum Daily Volumes	No. of Lanes / Divided-Undivided	Daily Volume[1]	Level of Service[2]
1	Hope Street, between Villa Street and Evelyn Avenue	Collector	15,480	2-Lane Undivided	4,567	B
2	Castro Street, between Dana Street and Villa Street	Arterial	21,240	2-Lane Undivided	9,447	C
3	Castro Street, between Villa Street and Evelyn Avenue	Arterial	21,240	2-Lane Undivided	12,648	D
4	Evelyn Avenue, between Hope Street and View Street	Arterial	21,240	2-Lane Undivided	4,595	B
5	Villa Street, between Castro Street and Hope Street	Collector	15,480	2-Lane Undivided	10,728	D

Notes:
[1]Daily traffic volumes are average of mid-week daily traffic counted in May 2018.
[2]LOS – Level of Service

6.0 BACKGROUND PLUS PROJECT CONDITIONS

This scenario is identical to Background Conditions, but with the addition of projected traffic from the proposed mixed-use development project. Trip generation and distribution for the proposed project are identical to that assumed under Existing plus Project Conditions.

6.1 Intersection Level of Service Analysis – Background plus Project Conditions

The intersection LOS analysis results for Background plus Project Conditions are summarized in **Table 11**. Detailed calculation sheets for Background plus Project Conditions are contained in **Appendix F**. All intersections are expected to continue operating within applicable jurisdictional standards of LOS D/E (City of Mountain View) and LOS E (CMP) under this scenario.

Based on the City of Mountain View and VTA's impact criteria, the project is expected to have a **less-than-significant impact** at all the study intersections evaluated in this TIA.

Figure 14 displays projected peak hour turning movement volumes at all of the study intersections for Background plus Project Conditions.

The results for Background Conditions are included for comparison purposes, along with the projected increases in critical delay and critical V/C ratios. It should be noted that some of the study intersections are estimated to show a negative net increase in intersection delay due to the addition of project trips to non-critical turn movements.

Table 11: Intersection Level of Service Analysis – Background plus Project Conditions

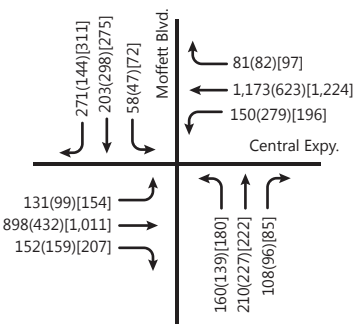
#	Study Intersections	Control	Peak Hour	Background Conditions		Background plus Project Conditions		*Change in*	
				Delay[1]	LOS[2]	Delay[1]	LOS[2]	Critical V/C[3]	Critical Delay[4]
1	Moffett Boulevard/Castro Street/Central Expressway*	Signalized	AM	48.5	D	48.6	D	0.001	0.0
			MD	51.2	D	51.2	D	0.002	0.0
			PM	51.8	D	51.8	D	0.000	0.0
2	Shoreline Boulevard Northbound/Central Expressway*	Signalized	AM	16.2	B	16.2	B	0.001	0.0
			MD	11.5	B	11.6	B	0.002	0.1
			PM	13.8	B	13.9	B	0.002	0.2
3	Shoreline Boulevard Southbound/Central Expressway*	Signalized	AM	9.5	A	9.5	A	0.002	0.1
			MD	8.7	A	8.8	A	0.002	0.1
			PM	9.4	A	9.4	A	0.001	0.0
4	Hope Street/Villa Street**	All-Way Stop	AM	13.7	B	14.5	B	0.044	0.8
			MD	11.2	B	11.7	B	0.037	0.5
			PM	17.5	C	18.9	C	0.031	1.4
5	Hope Street/Evelyn Avenue**	Signalized	AM	14.3	B	15.7	B	0.016	1.5
			MD	19.5	B	20.3	C	0.012	0.9
			PM	15.7	B	16.1	B	0.007	0.6
6	Bush Street/Villa Street	Signalized	AM	16.3	B	16.3	B	0.000	0.0
			MD	12.0	B	12.2	B	0.000	0.2
			PM	6.5	A	6.6	A	0.000	0.1
7	Bush Street/Evelyn Avenue	Signalized	AM	6.9	A	6.9	A	0.001	0.1
			MD	8.0	A	8.0	A	0.002	0.0
			PM	12.4	B	12.4	B	0.003	0.0
8	Calderon Avenue/Evelyn Avenue	Signalized	AM	21.9	C	21.9	C	0.001	0.0
			MD	21.1	C	21.0	C	0.001	-0.1
			PM	24.3	C	24.3	C	0.001	-0.1
9	Castro Street/Dana Street**	Signalized	AM	9.5	A	9.4	A	0.003	0.0
			MD	8.3	A	8.3	A	0.005	-0.1
			PM	10.0	B	9.9	A	0.012	-0.1
10	Castro Street/California Street**	Signalized	AM	22.1	C	21.7	C	0.011	-0.1
			MD	19.5	B	19.3	B	0.010	-0.3
			PM	23.8	C	23.7	C	0.005	0.0
11	Castro Street/Mercy Street**	Signalized	AM	7.1	A	7.0	A	0.006	-0.1
			MD	7.1	A	7.0	A	0.007	-0.1
			PM	8.3	A	8.2	A	0.011	-0.1
12	Castro Street/Church Street**	Signalized	AM	18.3	B	18.0	B	0.017	-0.2
			MD	18.9	B	18.7	B	0.005	-0.1
			PM	22.1	C	22.1	C	0.012	0.1
13	Castro Street/El Camino Real**	Signalized	AM	31.1	C	31.5	C	0.010	0.7
			MD	32.5	C	32.8	C	0.009	0.4
			PM	36.1	D	36.4	D	0.007	0.4
14	Calderon Avenue/Villa Street	One-Way Stop	AM	10.8	B	10.8	B	...	...
			MD	9.7	A	9.7	A	...	...
			PM	11.0	B	11.1	B	...	...
15	Castro Street/Villa Street**	Signalized	AM	17.4	B	17.6	B	0.028	0.3
			MD	15.9	B	16.2	B	0.028	0.4
			PM	17.9	B	18.2	B	0.038	0.7

#	Study Intersections	Control	Peak Hour	Background Conditions		Background plus Project Conditions		*Change in*	
				Delay[1]	LOS[2]	Delay[1]	LOS[2]	Critical V/C[3]	Critical Delay[4]
16	Castro Street/Evelyn Avenue**	One-Way Stop	AM	14.9	B	15.0	C	…	…
			MD	15.4	C	15.6	C	…	…
			PM	14.8	B	14.9	B	…	…

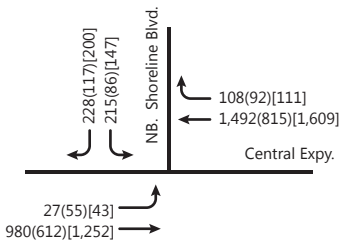
Notes:
1. AM – morning peak hour, MD - Midday peak hour, PM – evening peak hour
2. Delay – Whole intersection weighted average control delay expressed in seconds per vehicle for signalized and all-way stop controlled intersections. Total control delay for the worst movement is presented for side-street stop – controlled intersections. LOS – Level of Service
3. Change in critical volume to capacity ratio between Background and Background plus Project Conditions
4. Change in average critical movement delay between Background and Background plus Project Conditions
* CMP intersections with LOS E threshold
** Intersection located within Downtown precise plan boundary with LOS E threshold

Background plus Project Conditions Peak Hour Traffic Volumes

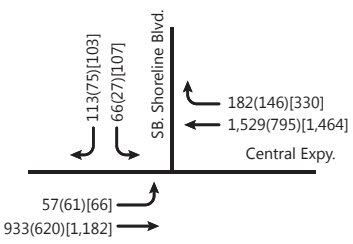
Intersection #1
Moffett Blvd. / Castro St. / Central Expy.



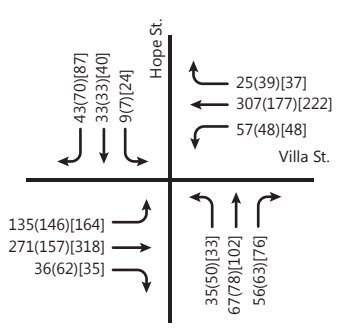
Intersection #2
Shoreline Blvd. Northbound / Central Expy.



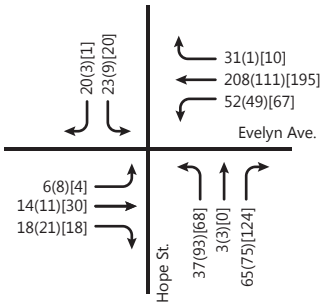
Intersection #3
Shoreline Blvd. Southbound /Central Expy.



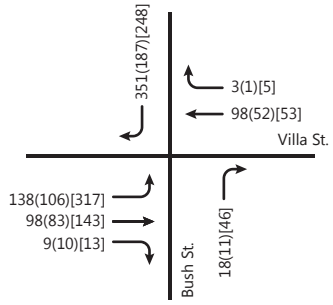
Intersection #4
Hope St. / Villa St.



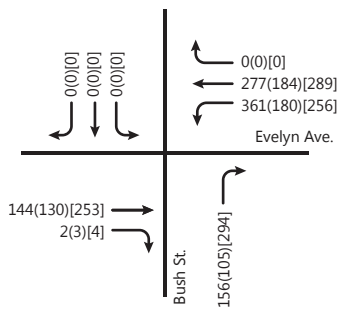
Intersection #5
Hope St. / Evelyn Ave.



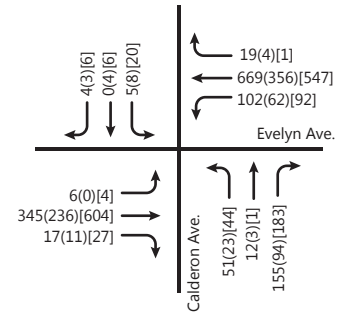
Intersection #6
Bush St. / Villa Street



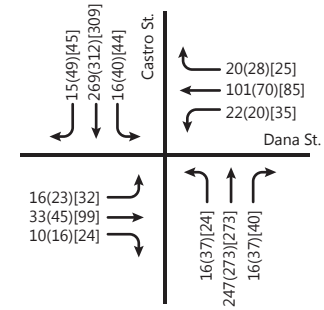
Intersection #7
Bush St. / Evelyn Ave.



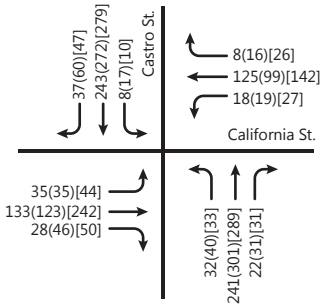
Intersection #8
Calderon Ave. / Evelyn Ave.



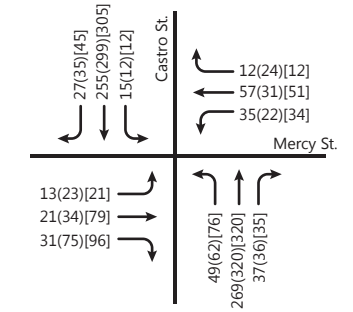
Intersection #9
Castro St. / Dana St.



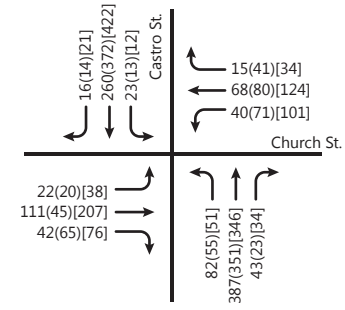
Intersection #10
Castro St. / California St.



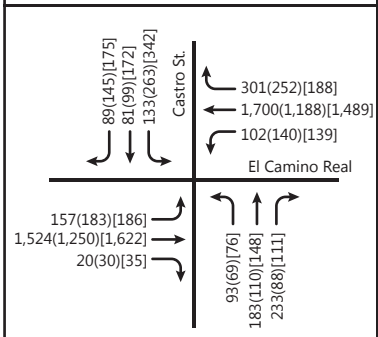
Intersection #11
Castro St. / Mercy St.



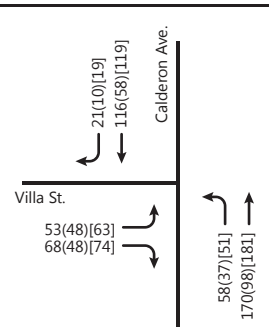
Intersection #12
Castro St. / Church St.



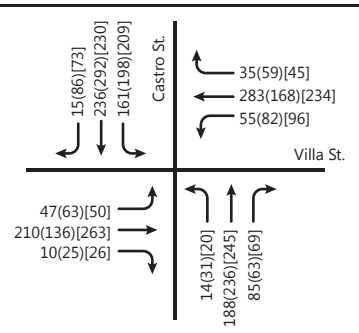
Intersection #13
Castro St. / El Camino Real



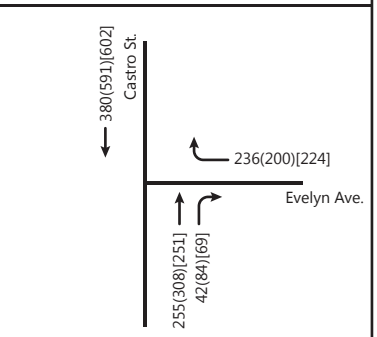
Intersection #14
Calderon Ave. / Villa St.



Intersection #15
Castro St. / Villa St.



Intersection #16
Castro St. / Evelyn Ave.



Legend

XX	AM Peak Hour Volumes
(XX)	Midday Peak Hour Volumes
[XX]	PM Peak Hour Volumes

6.2 Roadway Segment Level of Service Analysis – Background Plus Project Conditions

Table 12 below summarizes the study roadway segment operations under Background plus Project conditions and includes facility type; maximum daily volumes, no. of lanes, daily volumes and LOS information for each study roadway segment. All the study roadway segments are expected to be operating at a satisfactory LOS D or better. Based on the City of Mountain View and VTA's impact criteria, the proposed project will have a less-than-significant impact on the study roadway segments under Background plus Project Conditions.

Table 12: Roadway Segment Level of Service Analysis - Background plus Project Conditions

#	Roadway Segment	Facility Type	Maximum Daily Volumes	No. of Lanes / Divided-Undivided	Daily Volume[1]	Level of Service[2]
1	Hope Street, between Villa Street and Evelyn Avenue	Collector	15,480	2-Lane Undivided	5,132	B
2	Castro Street, between Dana Street and Villa Street	Arterial	21,240	2-Lane Undivided	9,747	C
3	Castro Street, between Villa Street and Evelyn Avenue	Arterial	21,240	2-Lane Undivided	12,783	D
4	Evelyn Avenue, between Hope Street and View Street	Arterial	21,240	2-Lane Undivided	4,680	B
5	Villa Street, between Castro Street and Hope Street	Collector	15,480	2-Lane Undivided	11,073	D

Notes:
[1]Daily traffic volumes are average of mid-week daily traffic counted in May 2018.
[2]LOS – Level of Service

7.0 CUMULATIVE CONDITIONS

This section details expected traffic conditions at the study intersections under Cumulative (No Project) Conditions. The Cumulative conditions reflect a five year horizon. The cumulative baseline traffic volumes were estimated based on the assumption of a two percent growth factor per year for 5 years, or a factor of 1.104, applied to the existing traffic volumes plus traffic expected to be generated by approved developments in the study area that are not yet built or occupied.

The level of service analysis has taken into account the City of Mountain View Transit Center study, planned closure of the intersection of Castro Street and Central Expressway and other planned improvements/studies under Cumulative Conditions.

The City of Mountain View embarked on the Transit Center Master Plan to establish a vision that not only expands and integrates the various transportation elements, but creates a landmark facility that supports a thriving greater Downtown now and for the foreseeable future. Employment growth in Mountain View and surrounding cities has been paralleled by growth in Caltrain service. In coming decades, use of the facility is expected to double, to over 20,000 distinct trips per weekday. Improving the Transit Center's facilities, and access to and from them, offers a unique opportunity for Mountain View to enhance mobility for its residents and support the growth of sustainable – i.e., non-single-occupant auto -- transportation modes. The existing transit facility and the adjacent Castro Street at-grade rail crossing have been overloaded by demand for use of the facility. The existing at-grade rail crossing results in significant congestion and delays for vehicles. It also presents a barrier for hundreds of pedestrians and bicyclists attempting to access the Transit Center, Downtown Mountain View, Moffett Boulevard, and points north. To address this problem, the Master Plan recommends re-directing Castro Street to Evelyn Avenue, connecting to Shoreline Boulevard. This plan also provides a grade-separated pedestrian and bicycle undercrossing of the rail tracks and Central Expressway, and a more direct and seamless connection for these travel modes to Moffett Boulevard, neighborhoods and employment centers to the north, the Transit Center, and Downtown. The schematic below illustrates the proposed changes as per the City of Mountain View Transit Center Study.

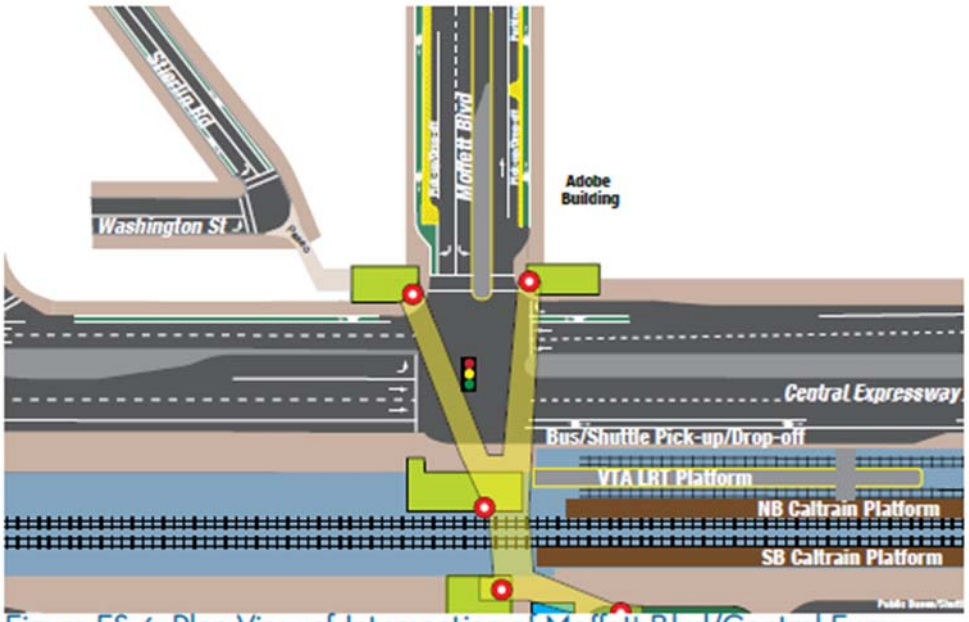


Figure ES-6: Plan View of Intersection of Moffett Blvd/Central Expy

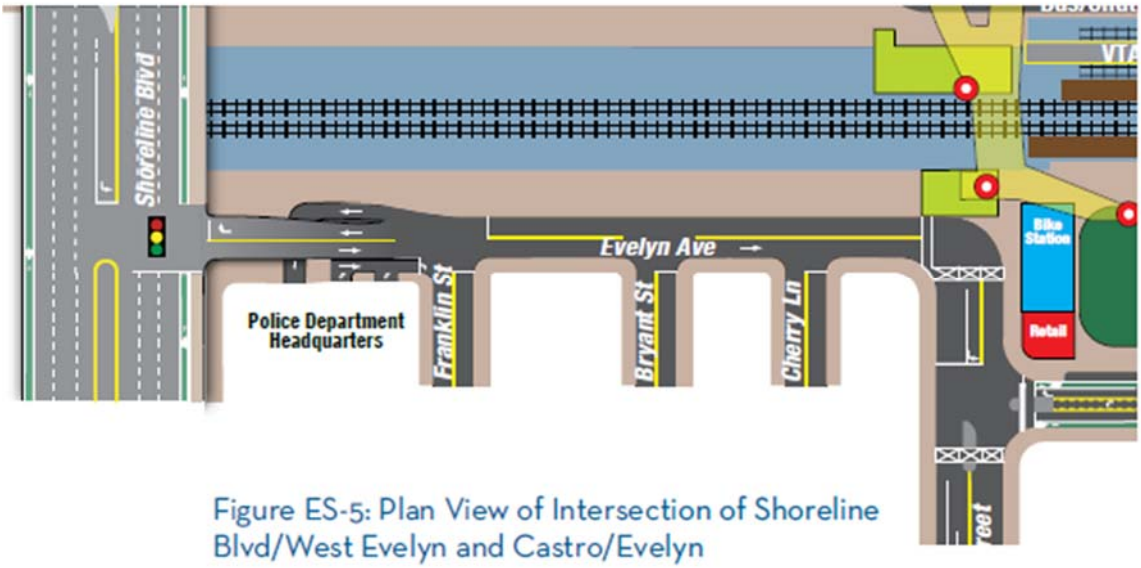


Figure ES-5: Plan View of Intersection of Shoreline Blvd/West Evelyn and Castro/Evelyn

7.1 Intersection Level of Service Analysis – Cumulative Conditions

The intersection LOS analysis results for Cumulative Conditions are summarized in **Table 13**. Detailed calculation sheets for Cumulative Conditions are contained in **Appendix G**. All intersections are expected to continue operating within applicable jurisdictional standards of LOS D/E (City of Mountain View) and LOS E (CMP) under this scenario.

Figure 14 shows cumulative conditions lane geometry and traffic controls at all of the study intersections for Cumulative Conditions. **Figure 15** shows projected peak hour turning movement volumes at all of the study intersections for Cumulative Conditions.

Table 13: Intersection Level of Service Analysis – Cumulative Conditions

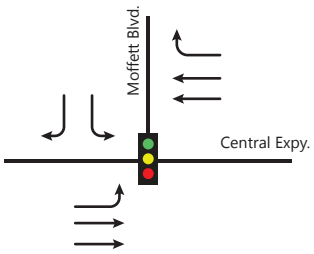
#	Study Intersections	Control	Peak Hour	Cumulative Conditions			
				Delay[1]	LOS[2]	Critical V/C[3]	Critical Delay[4]
1	Moffett Boulevard/Castro Street/Central Expressway*	Signalized	AM	59.7	E	0.974	80.7
			MD	50.6	D	0.804	61.5
			PM	72.4	E	1.113	102.7
2	Shoreline Boulevard Northbound/Central Expressway*	Signalized	AM	44.2	D	0.958	57.5
			MD	24.7	C	0.735	28.2
			PM	47.1	D	0.986	60.7
3	Shoreline Boulevard Southbound/Central Expressway*	Signalized	AM	17.3	B	0.739	20.7
			MD	15.5	B	0.704	26.8
			PM	23.8	C	0.935	52.1
4	Hope Street/Villa Street**	All-Way Stop	AM	15.5	C	0.656	15.5
			MD	12.1	B	0.548	12.1
			PM	22.8	C	0.873	22.8
5	Hope Street/Evelyn Avenue**	Signalized	AM	13.5	B	0.216	14.5
			MD	19.8	B	0.160	22.8
			PM	16.4	B	0.217	20.2
6	Bush Street/Villa Street	Signalized	AM	16.5	B	0.324	16.5
			MD	12.7	B	0.181	13.4
			PM	6.6	A	0.299	10.5
7	Bush Street/Evelyn Avenue	Signalized	AM	9.2	A	0.358	10.3
			MD	10.3	B	0.220	11.0
			PM	15.5	B	0.420	19.3
8	Calderon Avenue/Evelyn Avenue	Signalized	AM	21.0	C	0.562	18.2
			MD	18.5	B	0.302	14.5
			PM	21.5	C	0.493	20.4
9	Castro Street/Dana Street**	Signalized	AM	9.8	A	0.288	10.6
			MD	8.6	A	0.326	9.3
			PM	10.3	B	0.342	10.7
10	Castro Street/California Street**	Signalized	AM	22.8	C	0.352	24.4
			MD	20.3	C	0.375	22.8
			PM	24.5	C	0.488	25.7
11	Castro Street/Mercy Street**	Signalized	AM	7.3	A	0.252	7.9
			MD	7.4	A	0.279	6.9
			PM	8.6	A	0.295	7.9
12	Castro Street/Church Street**	Signalized	AM	18.5	B	0.433	17.3
			MD	19.2	B	0.448	19.4
			PM	22.9	C	0.602	23.5
13	Castro Street/El Camino Real**	Signalized	AM	33.3	C	0.830	37.0
			MD	33.1	C	0.686	36.2
			PM	37.9	D	0.812	41.7
14	Calderon Avenue/Villa Street	One-Way Stop	AM	11.2	B	...	...
			MD	9.9	A	...	...
			PM	11.5	B	...	...
15	Castro Street/Villa Street**	Signalized	AM	17.6	B	0.584	18.3
			MD	16.5	B	0.561	17.1
			PM	18.5	B	0.633	19.0
16			AM	15.8	C	...	...

#	Study Intersections	Control	Peak Hour	Cumulative Conditions			
				Delay[1]	LOS[2]	Critical V/C[3]	Critical Delay[4]
	Castro Street/Evelyn Avenue**	One-Way Stop	MD	16.5	C	…	…
			PM	15.7	C	…	…

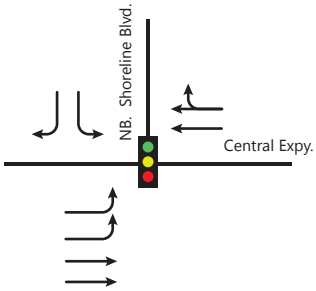
Notes:
1. AM – morning peak hour, MD - Midday peak hour, PM – evening peak hour
2. Delay – Whole intersection weighted average control delay expressed in seconds per vehicle for signalized and all-way stop controlled intersections. Total control delay for the worst movement is presented for side-street stop – controlled intersections.
LOS – Level of Service
3. Critical volume to capacity ratio
4. Critical movement delay
* CMP intersections with LOS E threshold
** Intersection located within Downtown precise plan boundary with LOS E threshold

Cumulative Conditions Lane Geometry and Traffic Controls

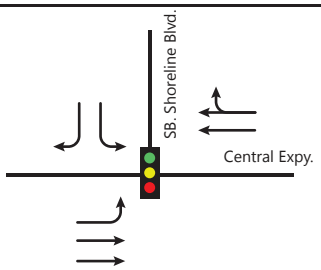
Intersection #1
Moffett Blvd. / Castro St. / Central Expy.



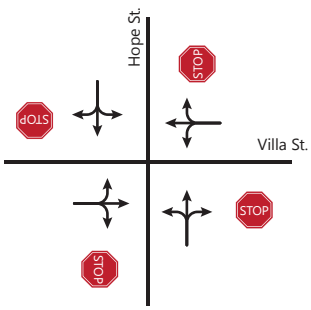
Intersection #2
Shoreline Blvd. Northbound / Central Expy.



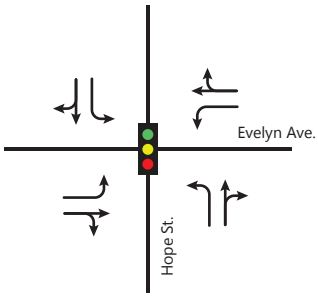
Intersection #3
Shoreline Blvd. Southbound /Central Expy.



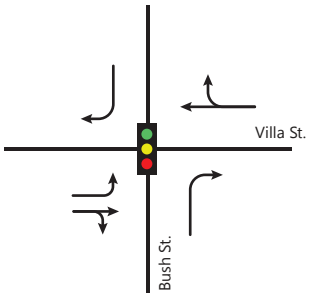
Intersection #4
Hope St. / Villa St.



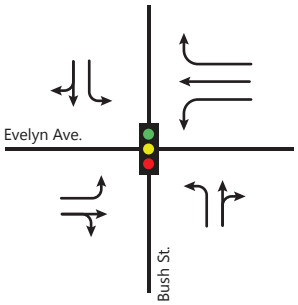
Intersection #5
Hope St. / Evelyn Ave.



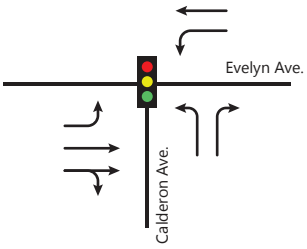
Intersection #6
Bush St. / Villa Street



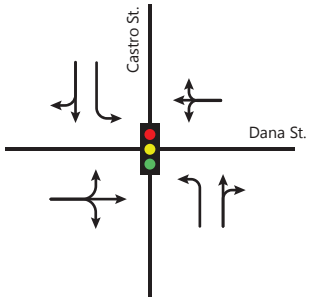
Intersection #7
Bush St. / Evelyn Ave.



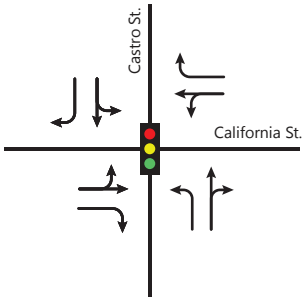
Intersection #8
Calderon Ave. / Evelyn Ave.



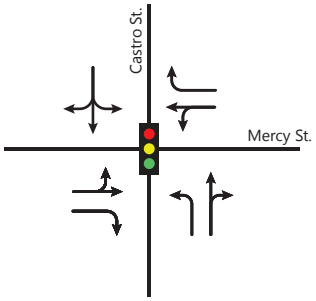
Intersection #9
Castro St. / Dana St.



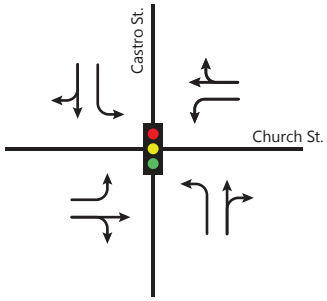
Intersection #10
Castro St. / California St.



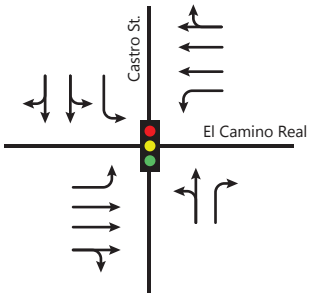
Intersection #11
Castro St. / Mercy St.



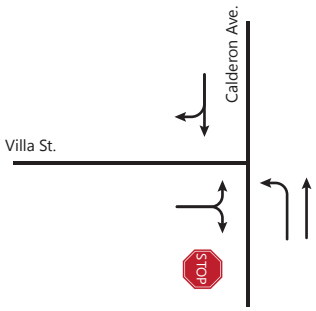
Intersection #12
Castro St. / Church St.



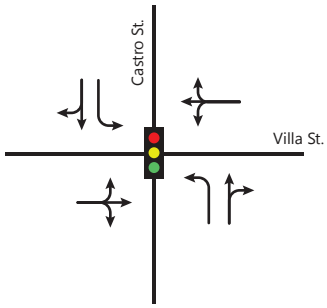
Intersection #13
Castro St. / El Camino Real



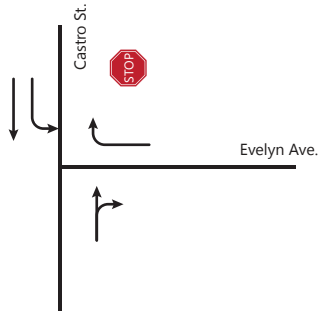
Intersection #14
Calderon Ave. / Villa St.



Intersection #15
Castro St. / Villa St.



Intersection #16
Castro St/ / Evelyn Ave.



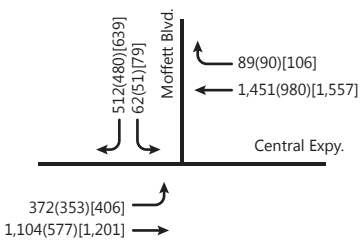
Legend

Traffic Signal

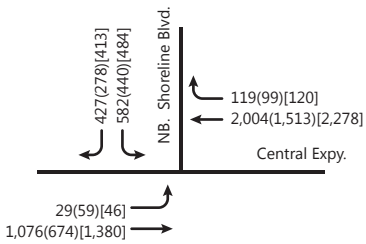
STOP Stop Control

Cumulative Conditions Peak Hour Traffic Volumes

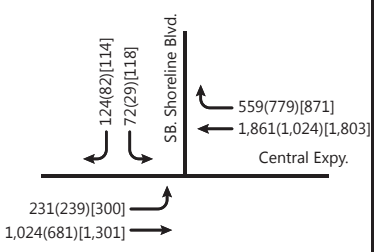
Intersection #1
Moffett Blvd. / Castro St. / Central Expy.



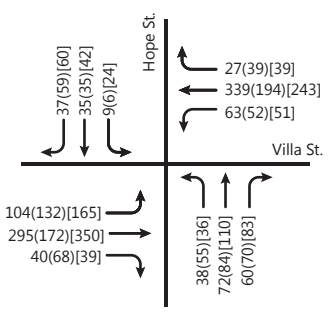
Intersection #2
Shoreline Blvd. Northbound / Central Expy.



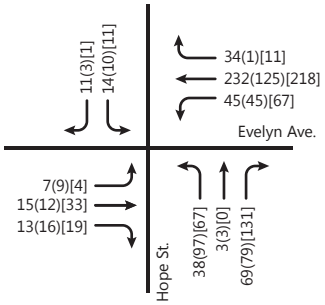
Intersection #3
Shoreline Blvd. Southbound /Central Expy.



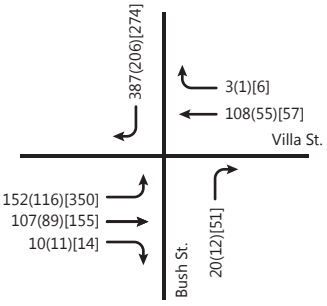
Intersection #4
Hope St. / Villa St.



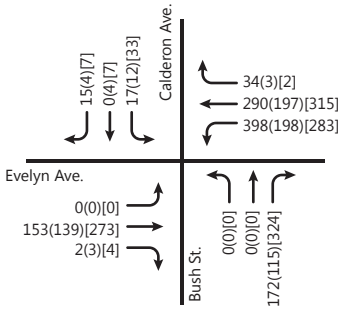
Intersection #5
Hope St. / Evelyn Ave.



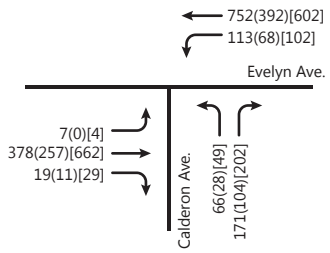
Intersection #6
Bush St. / Villa Street



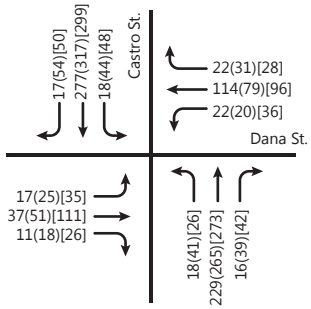
Intersection #7
Bush St. / Evelyn Ave.



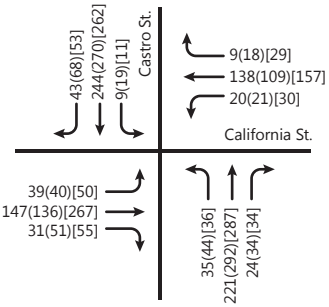
Intersection #8
Calderon Ave. / Evelyn Ave.



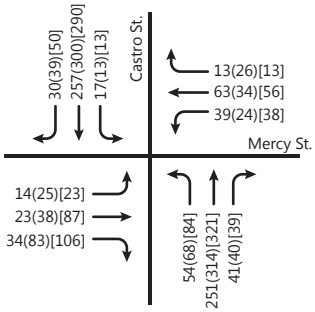
Intersection #9
Castro St. / Dana St.



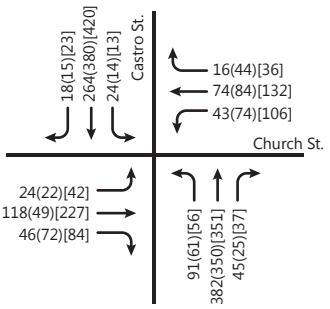
Intersection #10
Castro St. / California St.



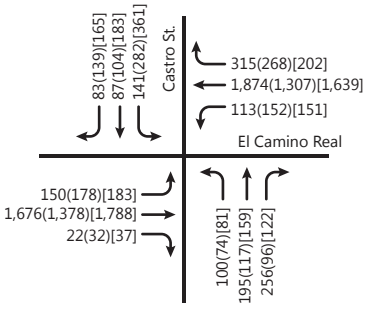
Intersection #11
Castro St. / Mercy St.



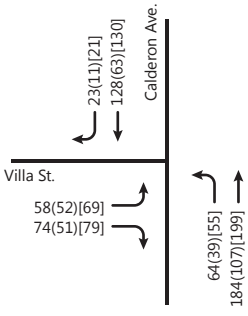
Intersection #12
Castro St. / Church St.



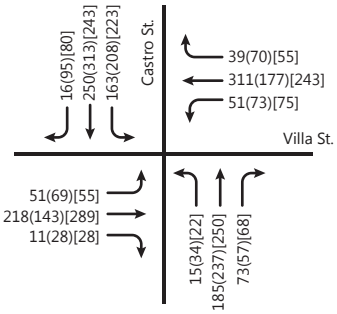
Intersection #13
Castro St. / El Camino Real



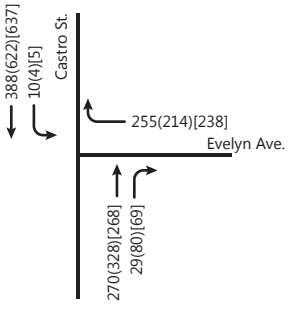
Intersection #14
Calderon Ave. / Villa St.



Intersection #15
Castro St. / Villa St.



Intersection #16
Castro St. / Evelyn St.



Legend

XX	AM Peak Hour Volumes
(XX)	Midday Peak Hour Volumes
[XX]	PM Peak Hour Volumes

7.2 Roadway Segment Level of Service Analysis – Cumulative Conditions

Table 14 below summarizes the study roadway segment operations under Cumulative conditions and includes facility type; maximum daily volumes, no. of lanes, daily volumes and LOS information for each study roadway segment. All the study roadway segments are expected to be operating at a satisfactory LOS D/E or better.

Table 14: Roadway Segment Level of Service Analysis - Cumulative Conditions

#	Roadway Segment	Facility Type	Maximum Daily Volumes	No. of Lanes / Divided-Undivided	Daily Volume[1]	Level of Service[2]
1	Hope Street, between Villa Street and Evelyn Avenue	Collector	15,480	2-Lane Undivided	4,914	B
2	Castro Street, between Dana Street and Villa Street	Arterial	21,240	2-Lane Undivided	10,233	C
3	Castro Street, between Villa Street and Evelyn Avenue	Arterial	21,240	2-Lane Undivided	13,810	D
4	Evelyn Avenue, between Hope Street and View Street	Arterial	21,240	2-Lane Undivided	5,050	B
5	Villa Street, between Castro Street and Hope Street	Collector	15,480	2-Lane Undivided	11,716	D

Notes:
[1]Daily traffic volumes are average of mid-week daily traffic counted in May 2018.
[2]LOS – Level of Service

8.0 CUMULATIVE PLUS PROJECT CONDITIONS

This scenario is similar to the Cumulative Conditions, with the addition of projected traffic from the proposed mixed-use development. Trip generation, distribution, and assignment for the proposed project are identical to that assumed under Existing plus Project Conditions. **Figure 16** displays projected turning movement volumes at all the study intersections for Cumulative plus Project Conditions. Trip assignment was revised as per the proposed changes in the roadway geometries per the City of Mountain View Transit Center Study.

8.1 Intersection Level of Service Analysis – Cumulative plus Project Conditions

The intersection LOS analysis results for Cumulative plus Project Conditions are summarized in **Table 15**. Detailed calculation sheets for Cumulative plus Project Conditions are contained in **Appendix H**. All intersections are expected to continue operating within applicable jurisdictional standards of LOS D/E (City of Mountain View) and LOS E (CMP) under this scenario.

Based on the City of Mountain View and VTA's impact criteria, the project is expected to have a **less-than-significant impact** at all the study intersections evaluated in this TIA.

The results for Cumulative Conditions are included for comparison purposes, along with the projected increases in critical delay and critical V/C ratios. It should be noted that some of the study intersections are estimated to show a negative net increase in intersection delay due to the addition of project trips to non-critical turn movements.

Table 15: Intersection Level of Service Analysis – Cumulative plus Project Conditions

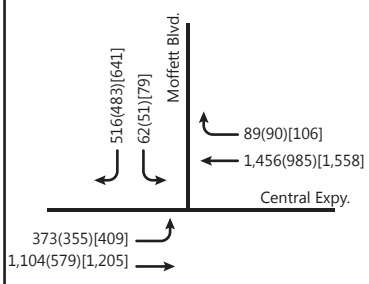
#	Study Intersections	Control	Peak Hour	Cumulative Conditions		Cumulative plus Project Conditions		*Change in*	
				Delay[1]	LOS[2]	Delay[1]	LOS[2]	Critical V/C[3]	Critical Delay[4]
1	Moffett Boulevard/Castro Street/Central Expressway*	Signalized	AM	59.7	E	60.6	E	0.004	1.2
			MD	50.6	D	50.9	D	0.005	0.4
			PM	72.4	E	73.2	E	0.003	1.4
2	Shoreline Boulevard Northbound/Central Expressway*	Signalized	AM	44.2	D	44.8	D	0.003	0.9
			MD	24.7	C	24.8	C	0.005	0.3
			PM	47.1	D	48.2	D	0.005	1.9
3	Shoreline Boulevard Southbound/Central Expressway*	Signalized	AM	17.3	B	17.4	B	0.001	0.1
			MD	15.5	B	15.7	B	0.007	0.4
			PM	23.8	C	22.5	C	-0.025	-5.2
4	Hope Street/Villa Street**	All-Way Stop	AM	15.5	C	16.5	C	0.047	1.0
			MD	12.1	B	12.7	B	0.039	0.6
			PM	22.8	C	25.5	D	0.035	2.7
5	Hope Street/Evelyn Avenue**	Signalized	AM	13.5	B	14.9	B	0.011	1.9
			MD	19.8	B	20.8	C	0.010	1.0
			PM	16.4	B	16.9	B	0.005	0.6
6	Bush Street/Villa Street	Signalized	AM	16.5	B	16.5	B	0.000	0.0
			MD	12.7	B	12.8	B	0.000	0.2
			PM	6.6	A	6.8	A	0.000	0.3
7	Bush Street/Evelyn Avenue	Signalized	AM	9.2	A	9.2	A	0.001	0.0
			MD	10.3	B	10.3	B	0.001	0.0
			PM	15.5	B	15.4	B	0.001	-0.1
8	Calderon Avenue/Evelyn Avenue	Signalized	AM	21.0	C	21.0	C	0.003	0.0
			MD	18.5	B	18.5	B	0.002	-0.1
			PM	21.5	C	21.5	C	0.002	0.0
9	Castro Street/Dana Street**	Signalized	AM	9.8	A	9.7	A	0.003	-0.1
			MD	8.6	A	8.5	A	0.006	-0.1
			PM	10.3	B	10.2	B	0.011	-0.1
10	Castro Street/California Street**	Signalized	AM	22.8	C	22.4	C	0.013	-0.1
			MD	20.3	C	20.1	C	0.010	-0.1
			PM	24.5	C	24.4	C	0.004	0.0
11	Castro Street/Mercy Street**	Signalized	AM	7.3	A	7.2	A	0.006	-0.1
			MD	7.4	A	7.3	A	0.007	-0.1
			PM	8.6	A	8.4	A	0.006	-0.3
12	Castro Street/Church Street**	Signalized	AM	18.5	B	18.3	B	0.017	-0.2
			MD	19.2	B	19.1	B	0.005	0.0
			PM	22.9	C	22.9	C	0.013	0.2
13	Castro Street/El Camino Real**	Signalized	AM	33.3	C	33.9	C	0.010	0.9
			MD	33.1	C	33.4	C	0.009	0.5
			PM	37.9	D	38.3	D	0.006	0.5
14	Calderon Avenue/Villa Street	One-Way Stop	AM	11.2	B	11.3	B	...	...
			MD	9.9	A	9.9	A	...	...
			PM	11.5	B	11.5	B	...	...
15	Castro Street/Villa Street**	Signalized	AM	17.6	B	18.0	B	0.028	0.5
			MD	16.5	B	16.8	B	0.028	0.4
			PM	18.5	B	19.5	B	0.061	1.9

#	Study Intersections	Control	Peak Hour	Cumulative Conditions		Cumulative plus Project Conditions		*Change in*	
				Delay[1]	LOS[2]	Delay[1]	LOS[2]	Critical V/C[3]	Critical Delay[4]
16	Castro Street/Evelyn Avenue**	One-Way Stop	AM	15.8	C	16.0	C	…	…
			MD	16.5	C	16.7	C	…	…
			PM	15.7	C	15.9	C	…	…

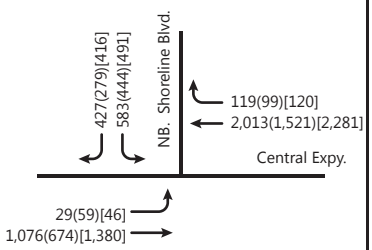
Notes:
1. AM – morning peak hour, MD - Midday peak hour, PM – evening peak hour
2. Delay – Whole intersection weighted average control delay expressed in seconds per vehicle for signalized and all-way stop controlled intersections. Total control delay for the worst movement is presented for side-street stop – controlled intersections. LOS – Level of Service
3. Change in critical volume to capacity ratio between Cumulative and Cumulative plus Project Conditions
4. Change in average critical movement delay between Cumulative and Cumulative plus Project Conditions
* CMP intersections with LOS E threshold
** Intersection located within Downtown precise plan boundary with LOS E threshold

Cumulative plus Project Conditions Peak Hour Traffic Volumes

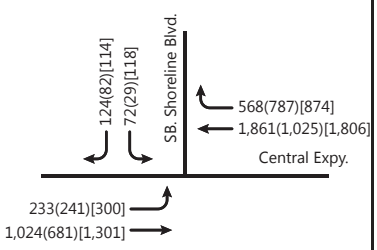
Intersection #1
Moffett Blvd. / Castro St. / Central Expy.



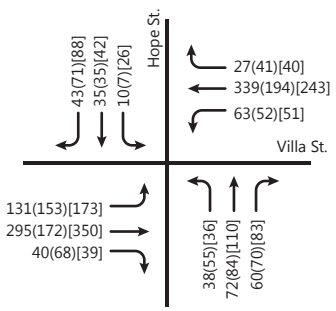
Intersection #2
Shoreline Blvd. Northbound / Central Expy.



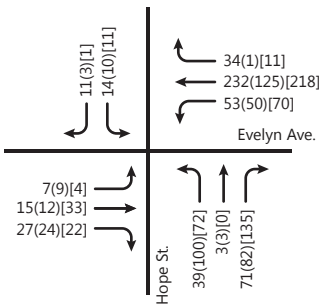
Intersection #3
Shoreline Blvd. Southbound /Central Expy.



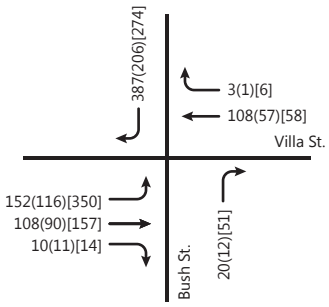
Intersection #4
Hope St. / Villa St.



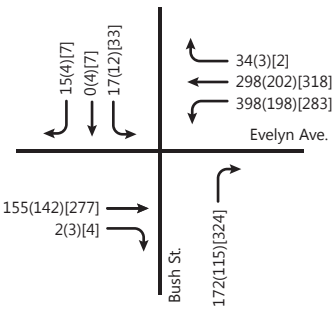
Intersection #5
Hope St. / Evelyn Ave.



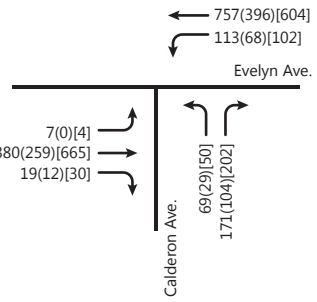
Intersection #6
Bush St. / Villa Street



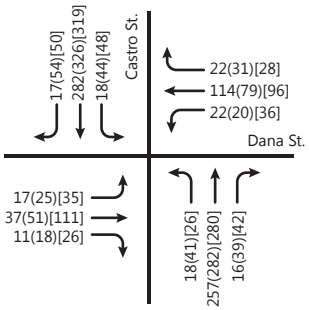
Intersection #7
Bush St. / Evelyn Ave.



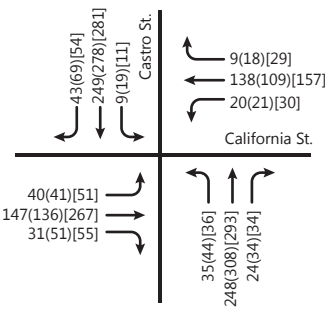
Intersection #8
Calderon Ave. / Evelyn Ave.



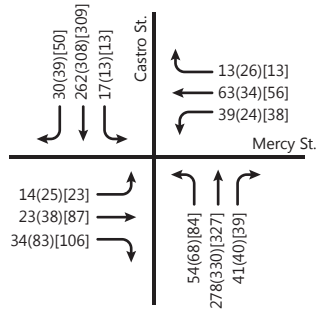
Intersection #9
Castro St. / Dana St.



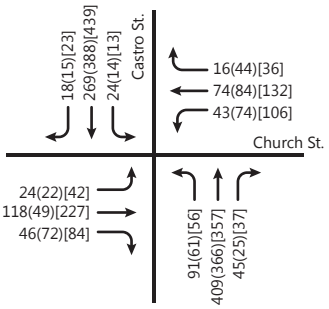
Intersection #10
Castro St. / California St.



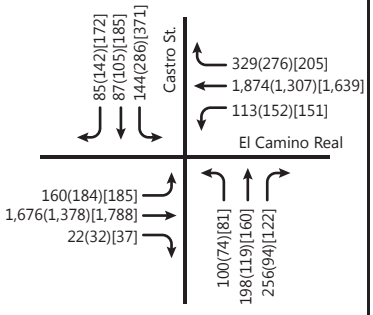
Intersection #11
Castro St. / Mercy St.



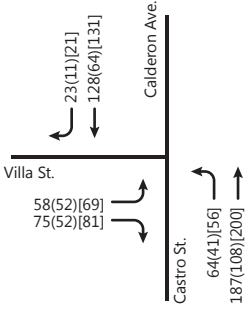
Intersection #12
Castro St. / Church St.



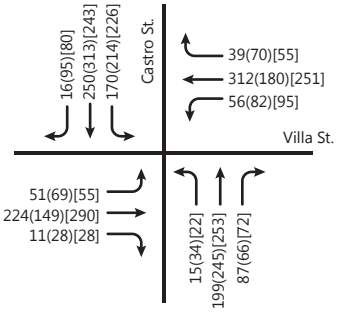
Intersection #13
Castro St. / El Camino Real



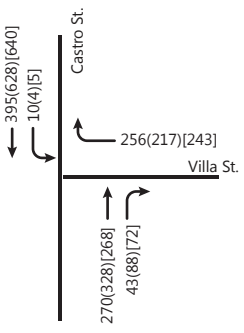
Intersection #14
Calderon Ave. / Villa St.



Intersection #15
Castro St. / Villa St.



Intersection #16
Castro St. / Evelyn Ave.



Legend

XX	AM Peak Hour Volumes
(XX)	Midday Peak Hour Volumes
[XX]	PM Peak Hour Volumes

7.2 Roadway Segment Level of Service Analysis – Cumulative Plus Project Conditions

Table 16 below summarizes the study roadway segment operations under Cumulative plus Project Conditions and includes facility type; maximum daily volumes, number of lanes, daily volumes and LOS information for each study roadway segment. All the study roadway segments are expected to be operating at a satisfactory LOS D/E or better. Based on the City of Mountain View and VTA's impact criteria, the proposed project will have a less-than-significant impact on the study roadway segments under Cumulative plus Project Conditions.

Table 16: Roadway Segment Level of Service Analysis – Cumulative plus Project Conditions

#	Roadway Segment	Facility Type	Maximum Daily Volumes	No. of Lanes / Divided-Undivided	Daily Volume[1]	Level of Service[2]
1	Hope Street, between Villa Street and Evelyn Avenue	Collector	15,480	2-Lane Undivided	5,479	B
2	Castro Street, between Dana Street and Villa Street	Arterial	21,240	2-Lane Undivided	10,533	C
3	Castro Street, between Villa Street and Evelyn Avenue	Arterial	21,240	2-Lane Undivided	13,945	D
4	Evelyn Avenue, between Hope Street and View Street	Arterial	21,240	2-Lane Undivided	5,135	B
5	Villa Street, between Castro Street and Hope Street	Collector	15,480	2-Lane Undivided	12,061	D

Notes:
[1]Daily traffic volumes are average of mid-week daily traffic counted in May 2018.
[2]LOS – Level of Service

9.0 ADDITIONAL ANALYSES

The following sections provide additional analyses of other transportation issues associated with the project site, including:

- Operational analysis – vehicle queuing and driveway analysis;
- Pedestrian Signal analysis at Castro Street and W. Evelyn Avenue;
- Site access and onsite circulation;
- Pedestrian, bicycle and transit impacts
- Construction impacts; and
- Parking/shared parking analysis;

Unlike the LOS impact methodology, which is adopted by the City Council, the analyses in these sections is based on professional judgment in accordance with the standards and methods employed by traffic engineers. Although operational issues are not considered CEQA impacts, they do describe traffic conditions that are relevant to describing the project environment.

9.1 Queuing and Driveway Analysis

Queuing Analysis at Select Study Intersections

TJKM conducted a vehicle queuing and storage analysis for all exclusive left and right turn pockets at selected study intersections and driveways where project traffic is added under Existing plus Project Conditions. The 95th percentile (maximum) queues were analyzed using the HCM 2000 Queue methodology contained in TRAFFIX software. Detailed calculations are included in the LOS appendices corresponding to each analysis scenario. **Table 17** summarizes the 95th percentile queue lengths at selected study intersections under Existing and Existing plus Project Conditions scenarios. It should be noted that queue lengths at some locations exceed capacity creating a deficient condition; however, the project would add less than one vehicle to the average design queue length. The proposed project *does not create a significant impact* by itself on the expected left-turn or right-turn queues at the study intersections.

Table 17: 95th Percentile Queues at Turn Pockets Affected by Project Traffic

#	Study Intersections	Lane Group	Storage Length	Existing			Existing plus Project			Change		
				AM	MD	PM	AM	MD	PM	AM	MD	PM
1	Moffett Boulevard/Castro Street/Central Expressway	NBL	180	**250**	175	**275**	**250**	175	**275**	0	0	0
		SBL	120	100	100	**150**	100	100	**150**	0	0	0
		SBR	250	**600**	**300**	**675**	**600**	**300**	**675**	0	0	0
		EBL	290	**375**	225	**425**	**375**	225	**425**	0	0	0
		EBR	220	**225**	**325**	**350**	**225**	**325**	**350**	0	0	0
		WBL	200	**325**	**500**	**450**	**325**	**500**	**450**	0	0	0
5	Hope Street/Evelyn Avenue	NBTL	60	50	**100**	**75**	50	**100**	**75**	0	0	0
		NBR	60	25	25	50	25	50	50	0	25	0
		SBLR	50	50	25	25	50	25	25	0	0	0
		SBR	50	50	25	25	50	25	25	0	0	0
13	Castro Street/El Camino Real	SBL	165	**175**	**250**	**350**	**175**	**250**	**350**	0	0	0
		EBL	320	250	250	275	250	275	300	0	25	25
		WBL	320	200	225	250	200	225	250	0	0	0
15	Castro Street/Villa Street	NBL	160	25	25	25	25	25	25	0	0	0
		SBL	240	125	125	150	125	125	150	0	0	0

Notes: Storage length and 95th percentile queue is expressed in feet per lane
AM – morning peak hour, MD - Midday peak hour, PM – evening peak hour
Bold indicates queue lengths exceeding capacity

Queuing and Level of Service Analysis at Project Driveway

TJKM conducted a vehicle queuing and LOS analysis at the proposed shared project driveway on Hope Street. The 95th percentile (maximum) queues were analyzed using the HCM 2000 Queue methodology contained in TRAFFIX software for the project driveways. **Table 18** summarizes the 95th percentile queue lengths and LOS at the project driveways under Existing plus Project scenario. As shown in **Table 18**, under Existing plus Project Conditions project driveways are expected to operate at an acceptable LOS. In addition, the 95th percentile queueing at the outbound approach of project driveways is expected to be minimal.

Table 18: 95th Percentile Queues and Level of Service at Project Driveways

#	Study Intersections	Control	Existing plus Project Conditions								
			AM			MD			PM		
			Delay	LOS	95th Percentile Queue	Delay	LOS	95th Percentile Queue	Delay	LOS	95th Percentile Queue
2	Hope Street/Project Driveway	One-Way Stop	8.8	A	0.0	9.0	A	0.0	9.1	A	0.0

Notes:
Delay – Average control delay in seconds per vehicle
LOS = Level of Service
Reported values of 95th percentile Queues are for the outbound movements at the project driveways

9.2 Pedestrian Hybrid Beacon Analysis At The Intersection Of Castro Street and W. Evelyn Avenue

TJKM conducted a pedestrian hybrid beacon warrant analysis at the intersection of Castro Street and W. Evelyn Avenue to assess the need for the pedestrian beacon based on projected vehicle and pedestrian volumes resulting from the proposed development. A pedestrian hybrid beacon is a type of hybrid beacon used to warn and control traffic at an unsignalized location, assisting pedestrians in safely crossing a marked crosswalk on a street or highway.

The intersection of Castro Street and W. Evelyn Avenue is currently one-way stop controlled. All approaches at Castro Street and W. Evelyn Avenue have one approach lane. One crosswalk is provided on the W. Evelyn Avenue approach from Castro Street and a midblock pedestrian crossing is provided approximately 15 feet south of the intersection. The current surrounding land uses are mainly retail and commercial. Castro Street allows parking on the east side of the street and W. Evelyn Avenue allows parking on the south side of the street. The intersection has relatively high traffic volumes and pedestrian volumes, consistent with the intersection's downtown setting and proximity to the Mountain View Transit Center. The characteristics of the intersection consist of high pedestrian volumes with low vehicular volumes on W. Evelyn Street, and low pedestrian volumes with high vehicular volumes on Castro Street. While Castro Street is the major street approach, pedestrians travelling from the transit center tend to avoid the midblock crossings on Castro Street, instead opting to cross at the controlled Castro Street and Villa Street intersection. Due to these conditions, TJKM analyzed the pedestrian hybrid beacon standard under two scenarios:

- Castro Street as the major street approach
- W. Evelyn Avenue as the major street approach

TJKM conducted a pedestrian beacon warrant analysis for the intersection of Castro Street and W. Evelyn Avenue based on the 2014 California Manual on Uniform Traffic Control Devices (MUTCD), Revision 4, standards and guidelines. The warrant analysis used existing traffic volumes and conditions, in addition to the vehicle and pedestrian volumes.

Pedestrian hybrid beacon standards were developed by the Federal Highway Administration (FHWA) and are described in the MUTCD. These standards correlate the need for a pedestrian hybrid beacon at a pedestrian crossing with pedestrian and vehicle volumes.

PEDESTRIAN HYBRID BEACON STANDARD, LOW-SPEED ROADWAYS

A pedestrian hybrid beacon should be considered at locations where the posted speed limit, or 85th-percentile speed, is 35 mph or less, if the total vehicular volume for both major street approaches and the total pedestrian volume crossing the major street for any 1-hour period falls above the corresponding curve for the length of the crosswalk. For the purposes of this analysis, the pedestrian hybrid beacon standard shall be considered met if the point for the two data parameters falls above the corresponding curve, and vice versa.

Castro Street as Major Street Approach

Based on the 2014 CA MUTCD criteria and the existing vehicular and pedestrian conditions, the pedestrian hybrid beacon standard is not met for the a.m., midday, and p.m. peak periods at the Castro Street crosswalk. Calculation sheets for the pedestrian hybrid beacon analysis under this scenario are contained in **Appendix I**.

W. Evelyn Avenue as Major Street Approach

Based on the 2014 CA MUTCD criteria and the existing vehicular and pedestrian conditions, the pedestrian hybrid beacon standard is not met for the a.m., midday, and p.m. peak periods at the W. Evelyn Avenue crosswalk. Calculation Sheets for the pedestrian hybrid beacon analysis under this scenario are contained in **Appendix I**.

9.3 Site Access and On-Site Circulation

Site Access

This section analyzes site access and internal circulation for vehicles, pedestrians and bicycles based on the site plan presented on **Figure 2**. TJKM reviewed internal and external access for the project site for vehicles, pedestrians, and bicycles.

The site access and on-site circulation is considered adequate with recommended changes described below. These recommendations address on-site vehicle circulation and potential driver confusion. Active and transit mode recommendations include provision of on-site pedestrian and bicycle facilities, direct connections off-site facilities, and efficient linkages with existing and potential future transit stops external to the site.

On-Site Circulation

In terms of external access, the project conceptual plan (dated June 19, 2019) shows the driveways that the proposed project would use. The loading area on Blossom Lane serves left-in and left-out movements only. The driveway on the Hope Street serving Lot 4 development is a full access 25-foot wide driveway providing access to the three-level underground parking garage with a 20 percent slope. The internal circulation for the proposed underground parking garages was reviewed for issues related to queuing, safety, dead-end aisles, and parking spaces with difficult maneuvers. All of the circulation aisles accommodate two-way travel and all of the proposed parking spaces are perpendicular.

Service vehicles have access to the proposed mixed-use development via the proposed driveway on Hope Street for the loading and trash enclosure. These vehicles will enter through Hope Street and circulate to the trash enclosures and turn to exit onto Hope Street. To confirm the trucks can circulate on-site, a truck turning analysis and stopping sight distance analysis should be completed for the final site plan.

From the site plan, it appears fire truck access will not occur to the project interior. Fire trucks would serve the site from the public street frontages, and there will be onsite fire suppression systems, wharf hydrants, etc. to provide service to the buildings and site interior per municipal Fire Code.

Based on a preliminary review of the project site plan, the project driveways are well spaced. However, it should be noted that the proposed shared-driveway for the Lot 4 development is just 100 feet north of the Hope Street and Villa Street intersection. There may be some minor queuing issues on Hope Street

resulting in slowing down the traffic on W. Evelyn Avenue and Hope Street, which is very common for the downtown type of settings.

9.5 Pedestrian, Bicycle, and Transit Impacts

Pedestrian Access

Pedestrian access to the project site will be facilitated by existing sidewalks on W. Evelyn Avenue, Castro Street, Villa Street, and Hope Street, as well as proposed internal pedestrian circulation facilities near the project. There is adequate street lighting provided by sidewalk lamps in the vicinity of the project. The project's site plan proposes to provide 12 foot wide sidewalks at the project frontages along W. Evelyn Avenue and Hope Street. The sidewalks will be lined with planter boxes and street trees. The proposed improvements by the project applicant along the frontage of W. Evelyn Avenue and Hope Street, as shown in the site plan, would comply with ADA requirements. The proposed project provides adequate and appropriate facilities for safe non-motorized mobility. Though the proposed project will have adequate pedestrian access to the project site from the surrounding area, including the Mountain View Transit Center. However, with recent planned improvements of the Mountain View Transit Center, there is a potential for increased pedestrian travel along Evelyn Avenue and Hope Street. The planned 12 foot sidewalks with street furniture and lighting may not be sufficient to receive the anticipated pedestrian volumes that will increase due to that project. Wider sidewalks in front of the proposed project can also accommodate the retail services on the ground floor, encouraging economic development as part of Mountain View Transit Center development.

The project proposes to provide a plaza at the northwestern corner of the project site. The Plaza, at the corner of W. Evelyn Avenue and Hope Street will provide landscaping, via trees and planter boxes, and seating, via wood benches or concrete seating. The corner plaza will be a connecting space that supports pedestrian activity to and from the project site and other downtown destinations, and connects the project site to the pedestrian activity along W. Evelyn Avenue and Hope Street.

An impact to pedestrians occurs if the proposed project disrupts existing pedestrian's facilities; or create inconsistencies with planned pedestrian facilities or adopted pedestrian system plans, guidelines, policies, or standards. The proposed project will not result in any impacts to existing or planned pedestrian facilities in the immediate vicinity of the project. However, it is recommended to improve overall pedestrian access and facilities by providing finished sidewalks and curb cuts within the project vicinity (driveway/frontage) with adequate accessible design (ADA) that meets City of Mountain View Design Standards.

The proposed project does not conflict with existing and planned pedestrian facilities; therefore, the impact to pedestrian facilities is ***less than significant***.

Bicycle Access

In terms of bicycle access to the project site, there are Class III bike routes on View Street, Evelyn Avenue, California Street, Bush Street, Dana Street, Calderon Avenue, and Church Street. Class II Bicycle lanes are located on California Street, Shoreline Boulevard, Evelyn Avenue, and Calderon Avenue. The recommended bicycle improvements projects on View Street, W. Dana Street, Castro Street, California Street, Evelyn Avenue and Church Street, are described in the *Mountain View Bicycle Transportation Plan*

Update, adopted November 17, 2015, as being immediately adjacent to the proposed project, improving the bicycle access to the project. An impact to bicyclists occurs if the proposed project disrupts existing bicycle facilities; or conflicts or creates inconsistencies with adopted bicycle system plans, guidelines, policies or standards as per the City of Mountain View bicycle impact criteria. The project is expected to generate few additional bicycle trips on existing and planned bicycle facilities. The project does not conflict with existing and planned bicycle facilities; therefore, the impact to bicycle facilities is ***less than significant***.

Transit Access

A proposed project is considered to have a significant impact on transit if it conflicts with existing or planned transit facilities, or is expected to generate additional transit trips and does not provide adequate facilities for pedestrians and bicyclists to access transit routes and stops. As per the Project Trip Generation (Table 2), 6% transit trip reduction was applied for office employees. Based on this, the proposed project would generate approximately 4 transit trips in the a.m. peak hour, 2 transit trips in the midday peak hour and, 2 transit trips in the p.m. peak hour. Based on the existing commute patterns in the area, it would be expected that these trips would likely occur on VTA bus and light rail or Caltrain. The project applicant intends to provide a robust Transportation Demand Management Plan (TDM) with the goal for 70 to 80 percent solo vehicle car free. With the supporting transit facilities, the project is well suited for focusing on transit use as a commute mode.

The project site is directly across the street and within walking distance from the Mountain View Transit Center, which serves both Caltrain and VTA bus and light rail service, which operates transit service within Santa Clara County, and runs multiple transit routes through the study area along El Camino Real, Castro Street, and California Street etc. These bus routes operate near the project site with stops located within walking distance of the proposed development. The existing pedestrian facilities in the project vicinity are crosswalks, including midblock crossings, and actuated pedestrian signals at all signalized study intersections and crosswalks at unsignalized intersections, which provide adequate connectivity for pedestrians to transit stops. There are four bus stops in the immediate vicinity of the project site. Out of four, three transit stops are located at the intersection of Castro Street and Villa Street and one transit stop (Downtown Mountain View transit center) is located on W. Evelyn Avenue. All bus stops are accessible via existing sidewalks. It should be noted that this distance is within the VTA CMP guideline of 2,000 feet reasonable walking distance to a nearest transit stop. Thus, the project site is adequately served by transit service. Spread among multiple bus routes, the existing transit service can accommodate the proposed demand. The transit service within the immediate project site operates below capacity, and additional trips generated by the proposed project could be accommodated by existing transit services. Therefore, impacts to transit service are expected to be ***less than significant***.

9.6 Sight Distance Analysis

Sight distance is evaluated to determine if a driver will have adequate visibility to enter a roadway safely without resulting in a conflict with traffic already on the roadway. The project access points should be free and clear of any obstructions that would materially and adversely affect sight distance, thereby ensuring that exiting vehicles can see pedestrians on the sidewalk and other vehicles traveling on adjacent roadways. Landscaping and parking should not conflict with a driver's ability to locate a gap in traffic and

see oncoming pedestrians and bicyclists. Adequate corner sight distance (sight distance triangles) should be provided at all site access points in accordance with the City's standards. The speed limit is 25 miles per hour (mph) on Hope Street and is assumed to be 15 mph on Blossom Lane. According to the Highway Design Manual (HDM), Chapter 200, 2014, the required minimum stopping sight distance for design speed of 25 mph is 150 feet and for design speed of 15 mph should be 100 feet. The proposed access to the project site will be via a shared driveway on Hope Street as shown in the project site plan **Figure 2**. The shared driveway will provide access to office parking for the proposed project, hotel parking for an approved development on Lot 4, and public parking.

The project proposes to use Blossom Lane for trash and loading purposes only. Blossom Lane approximately 65 feet away from the intersection Of W. Evelyn Avenue and Blossom Lane. Blossom Lane is currently a one-way local road, owned by the City. , There is no intent from the project applicant or the City to allow for access to the proposed project utilizing Blossom Lane.

The proposed project driveway on Hope Street for the Lot 4 development is approximately 100 feet away from the intersection of Hope Street and Villa Street. The line of sight for vehicles exiting the driveways and vehicles travelling northbound and southbound on Hope Street is clear and visible.

The proposed driveway on Hope Street is flat and straight with no curves. However to ensure smooth operations TJKM recommends a stop sign be installed at the project driveway with appropriate pavement delineation and signing to enhance traffic safety and operations, keeping landscaping to a maximum height of 30 inches near the driveway and the addition of sections of red curbs within 40 feet of the driveway on Hope Street to prevent parked vehicles from obstructing sight triangles.

9.7 Construction Impacts

Construction of the project will result in a number of heavy trucks travelling to and from the site over a period of months. The heaviest volume of trucks will occur as dirt-hauling operations during the excavation of the site for underground parking and building foundations and concrete pouring for the underground garage

During some phases of building construction for the project, a large number of construction workers are expected to be on the site daily. If adequate off-street parking for these workers is not provided, they might park their vehicles on adjacent residential streets, which could result in traffic hazards or be considered an intrusion of those communities.

The expected number of truck trips during construction could significantly impact traffic conditions on some roadways during peak commute periods. Similarly, construction worker parking demand could significantly affect adjacent streets and communities if not managed and monitored properly. Therefore, construction traffic and parking conditions are anticipated to be a significant *temporary* impact.

To minimize construction impacts the project developer should prepare a Construction Traffic Management Plan for submittal to the City, which shall be subject to review and conditions as determined by the City of Mountain View Public Works Department. The Construction Traffic Management Plan shall include the following:

a) Truck routes for construction and delivery trucks to ensure that neighborhood streets have limited impact. Access to the project site during construction for trucks, deliveries, construction equipment, etc. should be from W. Evelyn Avenue via Hope Street and Villa Street.
b) Construction phasing and hours of operation;
c) Detailed plan for proposed on-site locations for staging, storing construction vehicles, equipment area, construction trailer on public right-of-way, if any; and
d) Parking plan for construction workers during each major phase of construction, including: number of vehicles expected to park; location(s) and number of parking spaces available at arranged areas; description of shuttle operations for any proposed "satellite" parking areas; any proposed carpool, transit, or other programs to reduce parking demand; etc.
e) Parking management plan to address the loss of on-street and parking lot spaces during construction.

The plan must be approved by the City prior to issuance of the first building permit.

9.8 Parking Analysis

This section discusses vehicle parking for the proposed project and includes an assessment of whether the proposed parking supply is adequate. The amount of parking needed for a retail/office development is based on a number of factors including the employee density, the availability of transit services near the site, the existence of TDM measures, and the location of the site relative to other uses and destinations.

As per the City of Mountain View Municipal Code section 36.32.50 and Downtown Precise Plan Table II-1, office buildings are to provide one space per each 333 sf of gross floor area. The Downtown Precise Plan specifies that ground-floor retail spaces within the Parking District do not have parking requirements, thus the proposed project is only required to provide parking for the office land use. With the total office space of 28,678 square feet (including the lobby and vertical circulation), a total of 82, automobile parking spaces plus four bicycle parking stalls are required as per City standards. A parking reduction of five percent can be allowed with a TDM Plan.

The proposed project is expected to build a three level subterranean parking structure, which would provide parking for the office land use only. The parking structure will directly connect to a parking structure for the adjacent approved hotel development (Lot 4), which will provide 225 public parking spaces. The hotel parking structure along with the transit center and additional downtown public parking will accommodate the retail trips. A total of 70 automobile parking stalls are proposed by the project, including three dedicated accessible spaces. While the Downtown Precise Plan excludes the proposed project site from loading space requirements, the project proposes one loading space on the ground floor.

The Mountain View Downtown Precise Plan requires bicycle parking where vehicle parking is provided. The number of bicycle parking spaces provided should be, at a minimum, five percent of the total number of required parking spaces. The project is required to provide a minimum of four bicycle parking stalls. As per the proposed plans, the project will provide a total of 41 Type II/III bicycle parking spaces (racks), where 30 will consist of stacked bicycle racks located on the first floor of the parking structure, and 11 will consist of outdoor bicycle racks. The project should include a mix of short and long term parking.

TJKM conducted a peer review of the parking analysis and Transportation Demand Management plan and provide comments in a letter format with conclusions separately.

10.0 CONCLUSIONS AND RECOMMENDATIONS

Project Trip Generation

The proposed project is expected to generate approximately 59 weekday a.m. peak hour trips (49 inbound trips, 10 outbound trips), 55 midday peak hour trips (36 inbound trips, 19 outbound trips) and 54 weekday p.m. peak hour trips (15 inbound trips, 39 outbound trips).

Level of Service (LOS) Standards

The City standard is LOS D, except in the San Antonio and Downtown Core areas, where the standard is LOS E. The VTA CMP standard is LOS E.

Existing, Background and Cumulative Conditions

Under these scenarios, all of the study intersections and roadway segments operate within applicable jurisdictional standards of LOS D/E (City and VTA CMP) or better during the a.m., midday and p.m. peak hours.

Existing, Background and Cumulative plus Project Conditions

Under this scenarios, all of the study intersections and roadway segments operate within applicable jurisdictional standards of LOS D/E (City and VTA CMP) or better during the a.m., midday and p.m. peak hours.

Based on the City and VTA CMP impact criteria the project is expected to have a **less-than-significant** impact at all of the study intersections and roadway segments.

Queueing Analysis

The proposed project *does not create a significant impact* by itself on the expected left-turn or right-turn queues at the study intersections. The project driveways are expected to operate at an acceptable LOS and the 95th percentile queueing at the outbound approach of project driveways is expected to be minimal.

Pedestrian Signal Warrant Analysis at Castro Street and W. Evelyn Avenue

TJKM analyzed pedestrian signal warrants to improve pedestrian safety at the intersection of Castro Street/W.Evelyn Avenue. It is recommended the City use the enclosed analysis to determine the preferred signal operation to improve pedestrian conditions.

Pedestrian Impacts

The proposed project provides adequate and appropriate facilities for safe non-motorized mobility. There is adequate pedestrian access to the project site from the surrounding area, including the Mountain View Transit Center located on W. Evelyn Avenue. However, it is recommended to improve overall pedestrian access and facilities by providing and/or replacing finished sidewalks and curb cuts within the project vicinity (driveway/frontage) with adequate accessible design (American Disability Act- ADA) that meets City of Mountain View Design Standards.

The proposed project does not conflict with existing and planned pedestrian facilities; therefore, the impact to pedestrian facilities is ***less-than-significant***.

Bicycle Impacts

The project is expected to generate additional bicycle trips on existing and planned bicycle facilities and does not conflict with existing and planned bicycle facilities; therefore, the impact to bicycle facilities is ***less than significant***.

Transit Impacts

The project site is directly across from the Mountain View Transit Center, which serves both Caltrain and VTA bus and light rail service. VTA operates bus service within Santa Clara County and runs multiple transit routes through the study area along El Camino Real, Castro Street, California Street, etc. These bus routes operate near the project site with stops located within walking distance of the proposed development. The project site is adequately served by the VTA transit service and thus, impacts to transit service are expected to be ***less than significant***.

Regardless, it is recommended that the project applicant coordinate with the jurisdictional staff to accommodate transit amenities near the project site.

Site Access and On-Site Circulation

The proposed shared driveway on Hope Street for the hotel development (Lot 4) is approximately 100 feet away from the intersection of Hope Street and Villa Street. Blossom Lane would only be utilized by the project for loading and trash access. . The driveway meets the city's driveway standards. The project driveway is well spaced and properly aligned with opposing driveways.

Emergency vehicle access would serve the site on public street frontages. The lines of sight for vehicles exiting the driveways and vehicles travelling on Blossom Lane and Hope Street are clear and visible. TJKM recommends the following:

Construction Impacts

Though temporary, construction impacts can create significant impact to the roadways, the adjacent neighborhoods, and parking. TJKM recommends the project developer provide a Construction Traffic Management Plan, to be approved prior to construction, to address truck routes, staging, parking, and avoid any impacts to the adjacent residential community.

Parking

The proposed project is expected to build a three level subterranean parking garage, which would provide parking for the office/retail land use. A total of 70 automobile parking stalls plus 41 bicycle parking stalls are proposed by the project, including three accessible parking stalls. The proposed parking structure will directly connect to the parking structure of an adjacent, approved hotel development which will provide 225 dedicated public parking spaces. These public spaces may accommodate retail trips for the ground floor retail space of the proposed project.

Per the approved scope of work, TJKM conducted a peer review of the parking analysis and Transportation Demand Management Plan and provided comments in a letter format with conclusions separately.

All appendices and hardcopies of this report can be viewed at:

Community Development Department
First Floor, City Hall
500 Castro Street
Mountain View, CA 94041

Monday – Friday
8 a.m. to 4 p.m.