



**DATE:** June 18, 2013

**CATEGORY:** New Business

**DEPT.:** Community Development

**TITLE:** **Potential Closure and Sale of Stierlin Road and Vehicle Ramp Related to the 100 Moffett Boulevard Apartment Project**

### **RECOMMENDATION**

Authorize Prometheus Real Estate Group to proceed with the 100 Moffett Boulevard development application with a project area that includes City right-of-way (Parcels A and B only), a plan that includes a new dedicated right-turn lane for southbound Moffett Boulevard, and the closure of the Stierlin Road ramp for vehicles.

### **PURPOSE**

The purpose of this Council report is to receive Council direction on the potential extent of the Stierlin Road and Washington Alley right-of-way (ROW) that Council will consider authorizing Prometheus Real Estate Group (Prometheus) to propose purchasing and including in the 100 Moffett Boulevard apartment project.

While the extent of the potential ROW sale is the fundamental question, the following two topics are critical to resolving the ROW question and concluding the development review process:

1. Stierlin Road design, including potential ramp closure; and
2. Modifications to southbound Moffett Boulevard, including a proposed dedicated right-turn lane to help address concerns raised by members of the neighborhood.

### **BACKGROUND**

As part of the Gatekeeper authorization in December 2011, Prometheus originally proposed to close the Stierlin Road ramp to Central Expressway, and incorporate all of the applicable ROW at the Stierlin Road cul-de-sac and Washington Alley ROW into their project area. The ROW would increase the lot area of the project, thus allowing additional floor area and units.

This report will outline how new information arose during the development review process since the Gatekeeper authorization, adding complexity to the potential ROW sale. As a result, staff requests Council direction to determine, as a property owner, what portions of the ROW the Council is willing to consider selling.

The Council's willingness to consider selling ROW does not bind the Council, as a land use authority, to approve the eventual development project. Without Council's direction on the extent of the potential ROW sale, redesign and review of the development project cannot reasonably proceed.

Following Council direction on the extent of the potential ROW sale, the development plans and environmental review of the full development project at 100 Moffett Boulevard can be finalized. If Council agrees to consider selling any ROW, a Closed Session on price and terms for the sale will be held. The development project and ROW sale would be brought to Council for final action in fall 2013.

#### Time Line Related to Stierlin Road Vehicle Ramp

The original proposal incorporated the southern terminus of Stierlin Road into the project site, including closure of the vehicle ramp to Central Expressway.

In May 2012, the Council Transportation Committee (CTC) received substantial public input opposed to the ramp closure. In response, Prometheus designed two alternative site plans for Stierlin Road—one with the ramp open and the other with the ramp closed. Each scenario was analyzed under the California Environmental Quality Act (CEQA), including traffic analysis, to provide Council with the greatest flexibility in taking final action on the project. The expectation was that the plan options of Prometheus would allow Council to choose whether to close or retain the Stierlin Road ramp at the final public hearing.

In early 2013, Council considered recommendations from the Shoreline Transportation Study (STS), which identified the Shoreline transportation corridor as a major connection between the downtown and the North Bayshore Area (including Moffett Boulevard and Stierlin Road/Shoreline Boulevard). In March 2013, Council endorsed the Shoreline transportation corridor concept, including prioritization of potential future active transportation (bicycle) connections to North Bayshore. This led staff to elevate the Stierlin Road design question to Council prior to the final public hearing with a recommendation that at least a portion of the Stierlin Road ROW remain City-

owned public ROW, and thus not available for Prometheus to count toward project floor area.

At the April 2, 2013 Study Session, Council was presented with various scenarios in an attempt to resolve the floor area and Stierlin Road design issues. At the Study Session, a majority of the Council endorsed closure of the Stierlin Road vehicle ramp to Central Expressway, and construction of a public bicycle/pedestrian path in its place. Council also supported a maximum floor area ratio (FAR) of 1.85. Based on this direction, the key remaining issue became how much of the Stierlin Road ROW would be considered for sale, determining the effective FAR for the project.

### Neighborhood Input

Throughout the review process, members of the public have expressed both support and opposition to closure of the Stierlin Road vehicle ramp. Input has continued to be received since the April 2, 2013 Study Session and neighbors continue to request that Council reconsider the closure. Many residents have stated that the Stierlin Road vehicle ramp provides convenient access to Central Expressway and allows an alternative to traffic at the Central Expressway/Moffett Boulevard intersection.

In response to neighbor concerns about access to Central Expressway from Moffett Boulevard, Prometheus designed a revised circulation plan that creates a new dedicated right-turn lane from Moffett Boulevard onto Central Expressway in addition to closing the Stierlin Road vehicle ramp as directed by Council on April 2, 2013 (see Attachment 2).

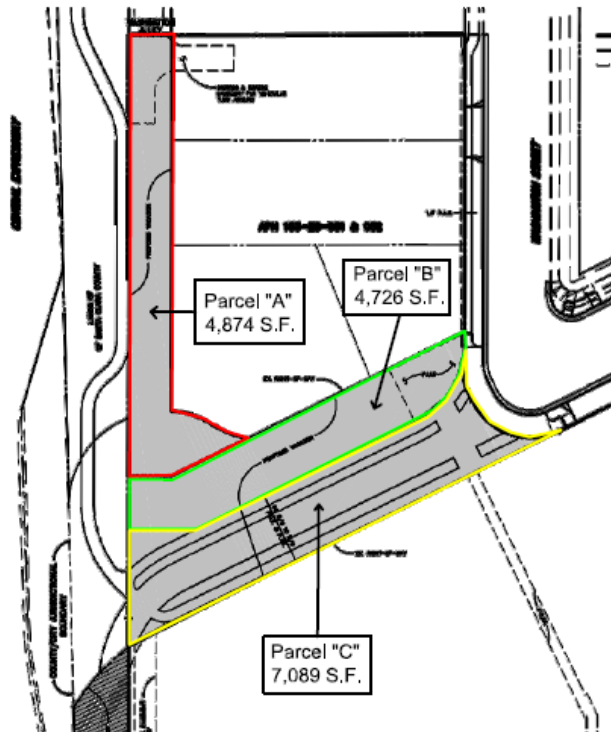
### ANALYSIS

The item tonight is not about approval of the project. It is focused solely on the ROW sale and potential closure of the Stierlin Road vehicle ramp, which may also be informed by a new proposal for a dedicated right-turn lane on Moffett Boulevard.

## ROW Sale

For ease of reference, the ROW is broken into three sections as described below.

- Parcel A: A portion of the Stierlin Road cul-de-sac and Washington Alley, which is not needed in any circulation scenario and is not affected by Council direction on the Stierlin Road vehicle ramp.
- Parcel B: A portion of Stierlin Road that could be sold to Prometheus if Council supports the closure of the Stierlin Road vehicle ramp.
- Parcel C: A portion of Stierlin Road that would be a public bike and pedestrian ROW.



ROW Vacation Graphic

Prometheus has proposed to purchase Parcels A, B, and C. Staff recommends sale of Parcels A and B only, as described later in this report. Before a determination can be made on Parcels A, B, and C, Council must first determine whether to close the Stierlin Road vehicle ramp and replace it with a bicycle-/pedestrian-only ROW.

### *Stierlin Road Vehicle Ramp*

The Stierlin Road vehicle ramp is a remnant improvement, which originally provided delivery access for a historic lumberyard at the 100 Moffett Boulevard site. The ramp prioritizes convenient, uncontrolled neighborhood and cut-through vehicle access from Stierlin Road to Central Expressway. It is not a standard access ramp, and is the only one of its kind in the City.

As part of its project review, the County has expressed preliminary support for closure of the nonstandard ramp because of its close proximity to the Moffett Boulevard intersection with Central Expressway and the Shoreline Boulevard access ramps, pending City Council direction on the topic. Retention of the ramp would be unlikely if

grade separation of the Castro Street/Moffett Boulevard/Central Expressway intersection ever occurs.

By straw motion at the April 2, 2013 Study Session, Council supported closure of the Stierlin Road vehicle ramp to Central Expressway (Option B) in order to prioritize bicycle and pedestrian connections and safety through the Stierlin Road corridor between the downtown and North Bayshore.



100 Moffett Boulevard— Vehicle Ramp Closed (Option B)

The project traffic impact and cut-through analyses found that on average, around 750 to 1,650 vehicles currently use the Stierlin Road ramp on a daily basis, with around 90 vehicles using the ramp during peak-hour conditions. Based on all available information, these vehicle trips originate from a variety of sources, with at least 55 percent coming from outside the immediate neighborhood (see Attachment 3). Closure of the Stierlin Road ramp would incrementally distribute these existing daily and peak-hour trips to surrounding roadways. Below are existing trip counts for the ramp and surrounding streets:

EXISTING PEAK HOUR AND DAILY TRIP DATA <sup>1</sup>				
	<i>Peak hour (Average)<sup>2</sup></i>	<i>Peak Hour Capacity<sup>3</sup></i>	<i>Daily</i>	<i>Daily Vehicle Capacity</i>
<i>Central Expressway</i>	2,900	4,500	30,600	45,000
<i>Moffett Boulevard</i>	1,200	3,000	11,700	30,000
<i>Shoreline Boulevard</i>	2,100	3,000	20,800	30,000
<i>Stierlin Road</i>	300	1,200	3,300	12,000
<i>Stierlin Road Ramp</i>	100	n/a	800 – 1,700	n/a

1. Trip data is from the project traffic impact analysis. Trip counts are rounded to the nearest 100.
2. A.M. and P.M. peak-hour counts are averaged, given similarity in the data for each.
3. Peak-hour capacity is determined as 10 percent of daily capacity, based on engineering best practices.

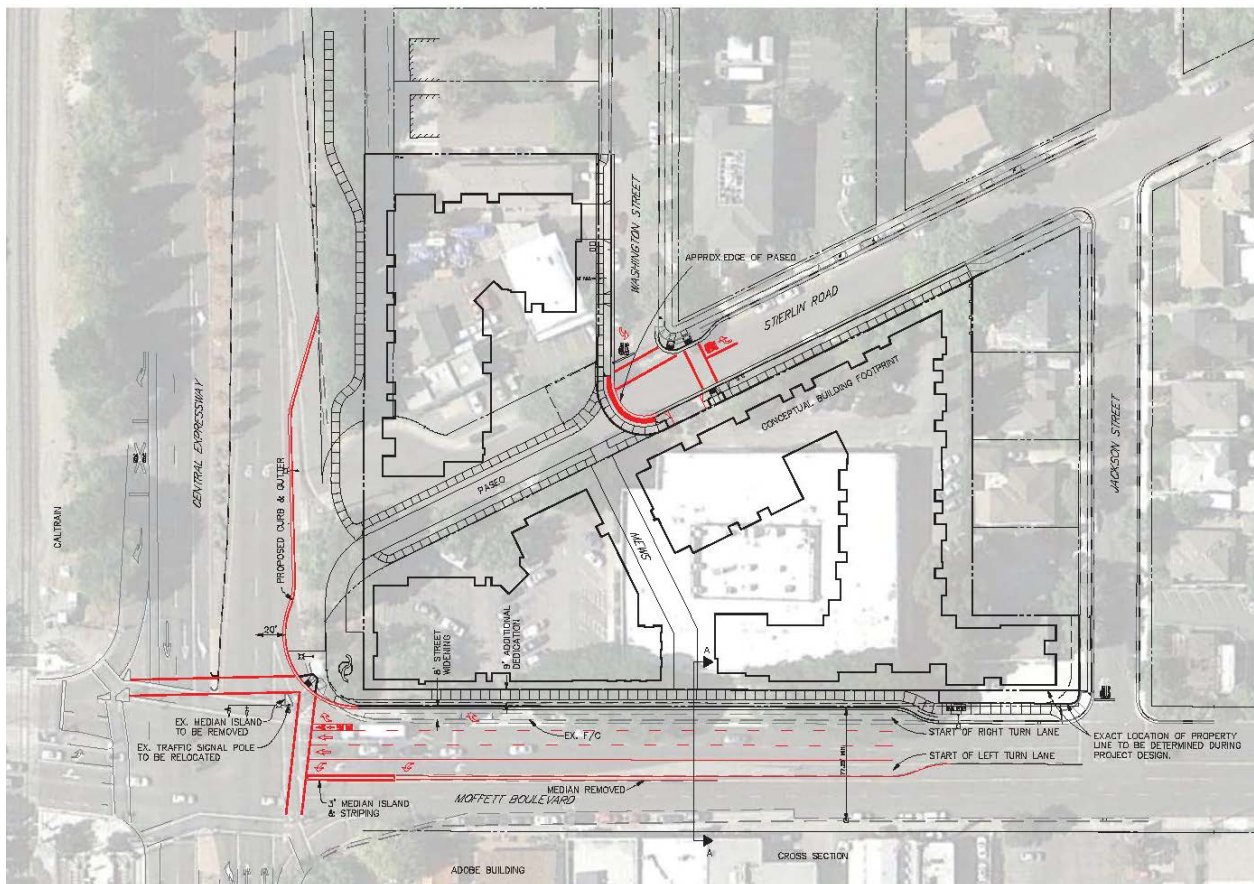
While neighbors have raised concerns about the impact of the closure and have collected their own data, the overall number of existing trips from the ramp and potential project trips that would be redistributed to other streets is not significant when compared to existing volumes and capacities on nearby streets.

Existing commercial activities on all of the project parcels generate vehicle trips, which are already accounted for in the existing trip counts. The project is anticipated to generate an average of around 20 net new peak-hour trips (+/- 0 to 44 trips) and 600 net new daily trips. The traffic impact analyses (see Attachment 3) showed specifically that the redistributed and project trips would not degrade any intersection levels of service (LOS) to less than acceptable levels.



### *Right-Turn Lane on Moffett Boulevard*

The Stierlin Road vehicle ramp provides convenient access to westbound Central Expressway. Neighbors raised concerns that removing the ramp would redirect existing and project trips to Moffett Boulevard for right-turn access onto Central Expressway. In its current configuration, vehicles trying to make a right turn onto Central Expressway are delayed by vehicle backups caused by the railroad crossing. Some of these neighbors stated that the Stierlin Road vehicle ramp should not be closed unless a dedicated right-turn lane is provided on Moffett Boulevard.

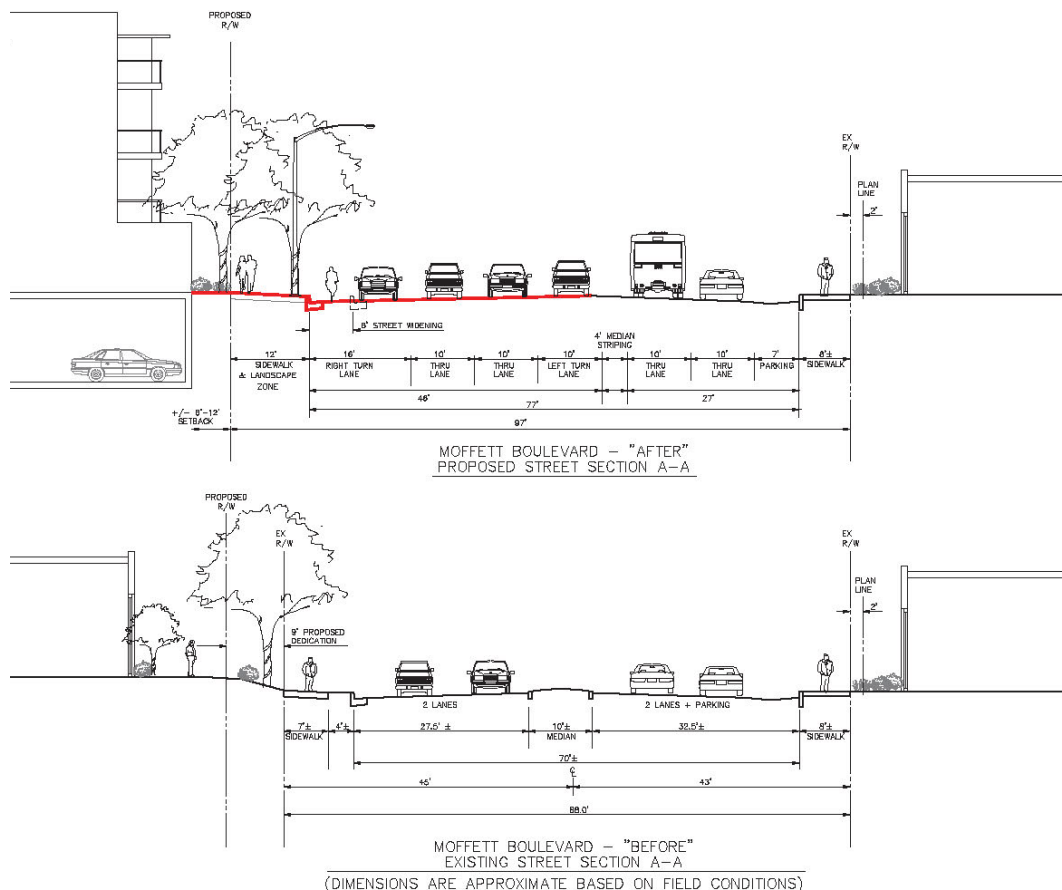


In response, Prometheus has proposed to dedicate an additional 9' of private property along Moffett Boulevard for a dedicated right-turn lane. The design of this right-turn lane was based on direction from City of Mountain View and County of Santa Clara traffic engineers. As shown in the street cross-sections below, the dedicated right-turn lane is achieved by reconfiguring lanes within the existing street width and through additional land dedication by Prometheus.

In general, staff believes that most Stierlin Road ramp traffic would utilize the new dedicated right-turn lane on Moffett Boulevard to access Central Expressway. Some motorists may also access Central Expressway through Shoreline Boulevard.

### Analysis of the Right-Turn Lane

The net result of the new dedicated right-turn lane is that the adopted plan line for the public ROW would expand by 7', from 90' (existing) to 97'. The existing curb in front of the site moves inward to widen the street by approximately 8', existing Moffett Boulevard travel lanes narrow to 10' wide, and the street median narrows and shifts to the east. The new right-turn lane and an extended left-turn lane begin just south of Jackson Street to limit conflicts between traffic queuing to cross the tracks and vehicles accessing Central Expressway.



The proposed 16' exclusive right-turn lane includes space for a 5' bike lane along the project frontage, which could eventually be extended northward along Moffett



Boulevard. At the existing Moffett Boulevard/Central Expressway intersection, pedestrian safety is improved by removing the uncontrolled right-turn lane (“slip lane”) and the pedestrian island where people currently stand waiting for the pedestrian signal.

The development project already proposed removal of all of the existing on-site mature trees along the Moffett Boulevard frontage due to the underground garage. Construction of the right-turn lane would also necessitate removal of these trees as well as one additional street tree, which had been proposed to remain. Staff believes the right-turn lane improvement warrants these removals, given the streetscape proposal for planting a new double row of trees along the Moffett Boulevard frontage.

The roadway changes are consistent with the 2030 General Plan policy to limit consideration of roadway widening to cases where targeted improvements are needed to address congestion issues—typically near intersections. The additional ROW is also needed to configure the right-turn lane to include space for bicycle facilities, which is consistent with the 2030 General Plan complete streets policy direction.

#### Right-Turn Lane and Stierlin Road Ramp Closure

The new dedicated right-turn lane on Moffett Boulevard provides an alternative to the Stierlin Road vehicle ramp. In light of this new information:

**Key Question: Does Council support the staff-recommended design for a dedicated right-turn lane for southbound Moffett Boulevard at Central Expressway?**

**Key Question: Does Council support the concept of closing the Stierlin Road vehicle ramp and creating a bicycle-/pedestrian-only ROW?**

Resolution of these two questions will allow the Council to address the primary question for this agenda item: What is the extent of the Stierlin Road and Washington Alley ROW that Prometheus can include in their development proposal?

There are two scenarios for Council to consider based on whether Council supports the Stierlin Road vehicle ramp closure or keeping the ramp open. Under all scenarios, staff supports the sale of Parcel A.

If a majority of Council continues to support closure of the Stierlin Road vehicle ramp, Council has two options for potential vacation and sale of the Stierlin Road ROW.

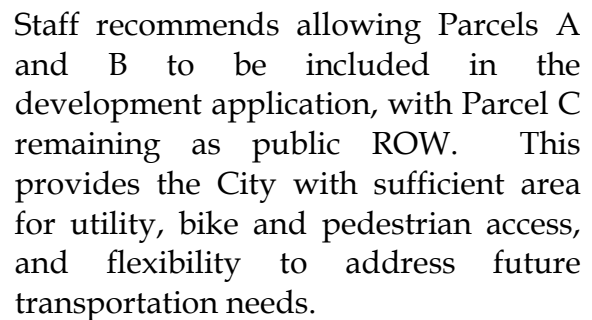
Prometheus requests authorization to include Parcels A, B, and C in their development project, with the provision of a public utility and public bicycle/pedestrian access easement over Parcel C. This would provide the project with the greatest land area and allow the largest development project of all scenarios, per the summary tables below.

Parcel "A"  
4,874 S.F.

Parcel "B"  
4,726 S.F.

Parcel "C"  
7,089 S.F.

OPTION B (closed)



<i>Proposal</i>	<i>Parcel(s) to Potentially Sell</i>	<i>Land Area to Potentially Sell</i>	<i>Additional Project Floor Area (FAR = 1.85)*</i>	<i>Total Project Size (Approx. No. of Units)**</i>
<b>Staff</b>	A and B	9,600 s.f.	17,760 s.f.	+/- 169 units
<b>Prometheus</b>	A, B, and C	16,689 s.f.	30,875 s.f.	182 units

\* If Council did not support the sale and vacation of any existing City-owned ROW, the total building area would be limited to approximately 200,700 square feet.

\*\* The data listed under "Total Project Size" is estimated unit counts by Prometheus. In addition to the unit reductions, the projects would reduce floor area by replacing two-bedroom units and more one-bedroom units.

### ROW Sale Scenario – Stierlin Road Vehicle Ramp Open

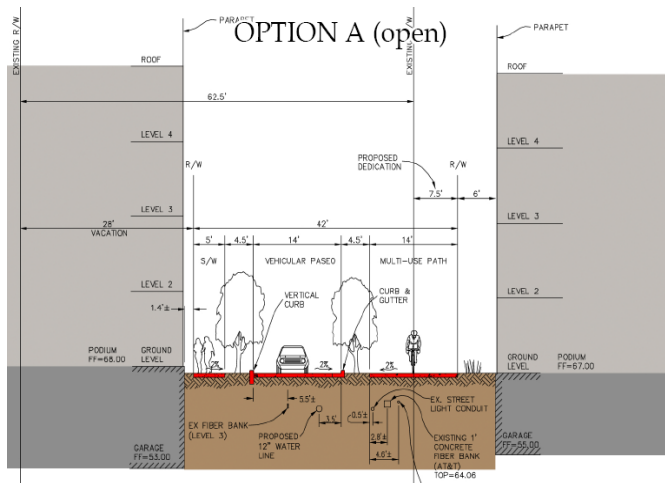
The issue of how this section of Stierlin Road ROW should be designed if the vehicular ramp remains open was included in the Council report for the April 2, 2013 Study Session, but was not resolved because the majority of Council supported closing the ramp (see Attachment 3 – April 2, 2013 Study Session Council Report).



100 Moffett Boulevard – Vehicle Ramp Open (Option A)

*Prometheus Request: Parcels A and B*

Under the ramp-open scenario, Prometheus requests authorization to include Parcels A and B in their development project.

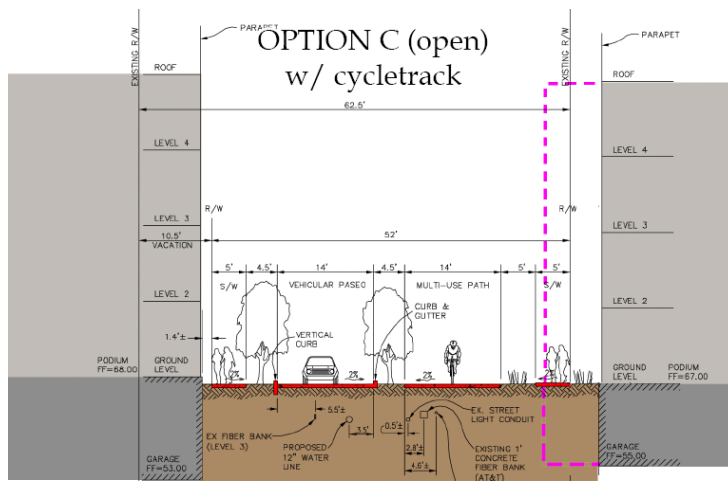


100 Moffett Boulevard—Prometheus Option A (Ramp Open)

This option would provide a one-way, single-lane vehicle ramp and bicycle and pedestrian access through a shared bicycle/pedestrian trail (Class I trail standard) that would require a small land dedication from the project site along the east side of Stierlin Road.

*Staff Recommendation: Parcel A and a Portion of Parcel B Only*

If the ramp remains open, staff does not believe that Parcel C provides enough width to provide for all modes of transportation (see Attachment 4—April 2, 2013 Study Session Report and Attachments).



100 Moffett Boulevard—Staff Option C (Ramp Open)

Staff estimates that Parcel B would need to be narrowed by at least 10'. This provides the City with sufficient area to install separated bicycle and pedestrian facilities, with a sidewalk and cycletrack configuration. If Council concurs with the staff recommendation on the ROW width, staff would work with Prometheus to refine the site plan and confirm the specific area of Parcel B that could be sold and vacated.

<i>Proposal</i>	<i>Parcel(s) to Potentially Sell</i>	<i>Land Area to Potentially Sell</i>	<i>Additional Project Floor Area (FAR = 1.85)*</i>	<i>Total Project Size (Approx. No. of Units)**</i>
<b>Prometheus</b>	A and B	9,600 s.f.	17,760 s.f.	+/- 169 units
<b>Staff</b>	A and a portion of B	4,874 s.f. to +/- 8,144 s.f.	9,017 s.f. to 15,066 s.f.	+/- 163 - 168 units

\* If Council does not support the sale and vacation of any existing City-owned ROW, the total building area would be limited to approximately 200,700 square feet.

\*\* The data listed under "Total Project Size" is estimated unit counts by Prometheus. In addition to the unit reductions, the projects would reduce floor area by replacing two-bedroom units and more one-bedroom units.

**Key Question: Based on direction for the design of Stierlin Road and Moffett Boulevard, what ROW areas does Council support for potential sale to Prometheus and potential street vacation?**

### **FISCAL IMPACT**

The sale of a portion of the Stierlin Road and Washington Alley ROWs will generate revenue that could be deposited in the City's Strategic Property Acquisition Reserve or used for another purpose. The amount of revenue will be based on the final extent, price, and terms of sale for the property.

### **CONCLUSION**

In order to move forward with the 100 Moffett Boulevard development review, Council direction is needed on the extent of potential ROW that the Council will authorize Prometheus to include in the development proposal. While the extent of the ROW sale is the fundamental question, the Stierlin Road vehicle ramp closure and a new proposed right-turn lane on Moffett Boulevard are interrelated factors to be considered.

Staff recommends Council work through the following key circulation questions to arrive at the eventual direction on the extent of ROW to authorize Prometheus to include in their project:

- **Does Council support the staff-recommended design for a dedicated right-turn lane for southbound Moffett Boulevard at Central Expressway?**
- **Does Council support the concept of closing the Stierlin Road vehicle ramp and creating a bicycle-/pedestrian-only ROW?**

- **Based on direction for the design of Stierlin Road and Moffett Boulevard, what ROW areas does Council support for potential sale to Prometheus and potential street vacation?**
  - **If Stierlin Road ramp is closed, staff recommends consideration of sale of Parcels A and B.**
  - **If Stierlin Road ramp is open, staff recommends consideration of sale of Parcel A and a portion of Parcel B.**

### **NEXT STEPS**

Following Council direction on the extent of the potential ROW sale, the development and environmental review of the actual development project at 100 Moffett Boulevard can be finalized and the project would be brought to Council for final action in fall 2013.

In addition, a Closed Session is tentatively scheduled on June 25, 2013 for Council to determine price and terms for the portion of ROW being considered for sale.

### **ALTERNATIVES**

Alternatives for Council action are discussed in the Analysis section of this report.

### **PUBLIC NOTICING**

Agenda posting and courtesy notices were sent to the interested parties list and property owners within a 1000' radius of this project site.

Prepared by:

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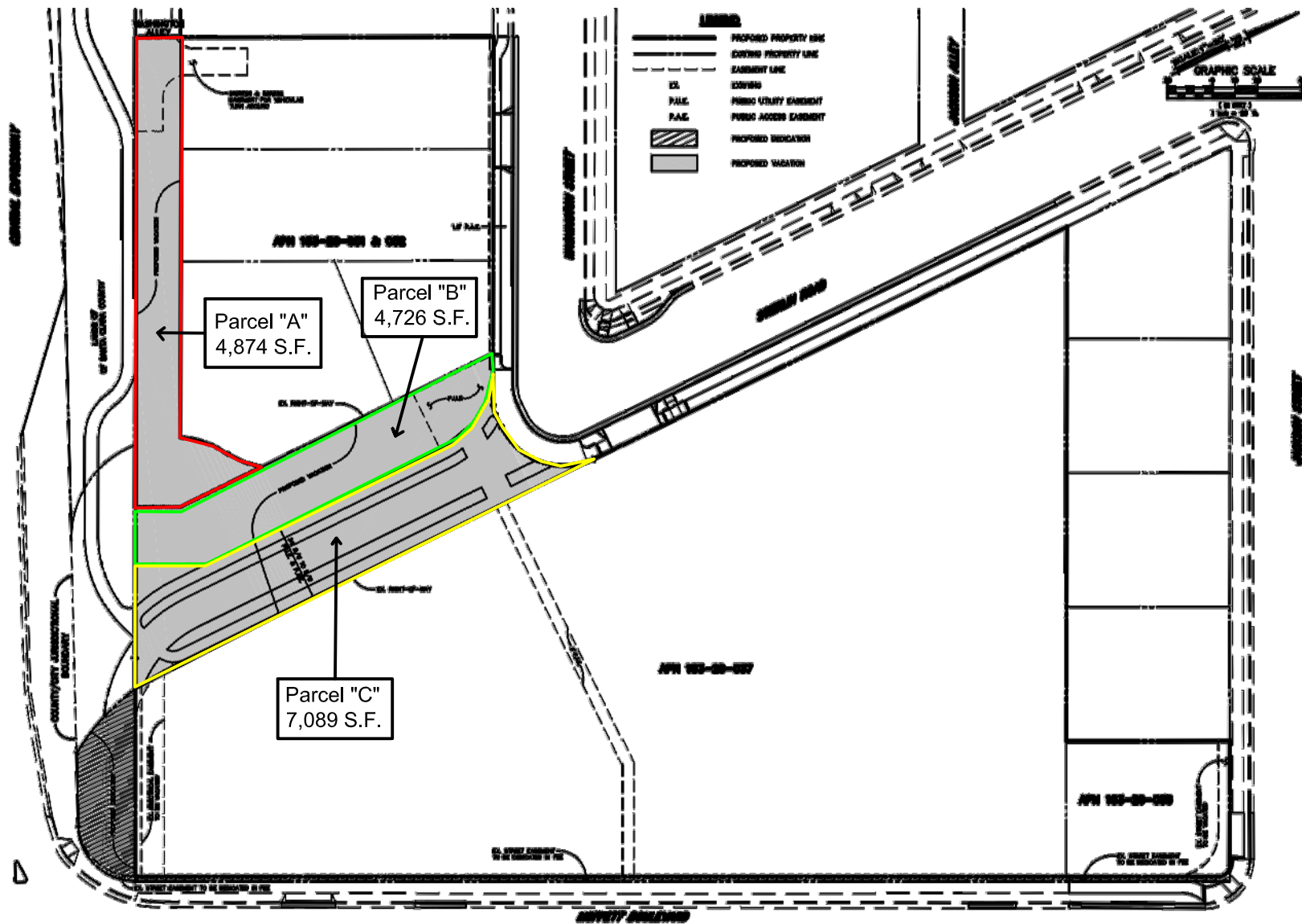
Approved by:

Randal Tsuda  
Community Development Director

Daniel H. Rich  
City Manager



- Attachments:
1. ROW Vacation Graphic
  2. Circulation Plan Concept (Site Plan and Cross Sections)
  3. 100 Moffett Boulevard Traffic Analyses
  4. [April 2, 2013 Study Session Report and Attachments](#)



- : Architecture
- : Planning
- : Urban Design

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100 Moffett Boulevard (Option B)

Mountain View, California

**Prometheus Real Estate Group**  
SUITE SOUTH MONROE ST. STE. 100

San Mateo, California



**Civil  
Engineering  
Associates**  
Oil Engineers • Planners • Surveyors

224 Airport Highway  
Suite 625  
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## OUR TIME MAPPING AND EASEMENT EXHIBIT

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**C-08B**





: Architecture  
: Planning  
: Urban Design

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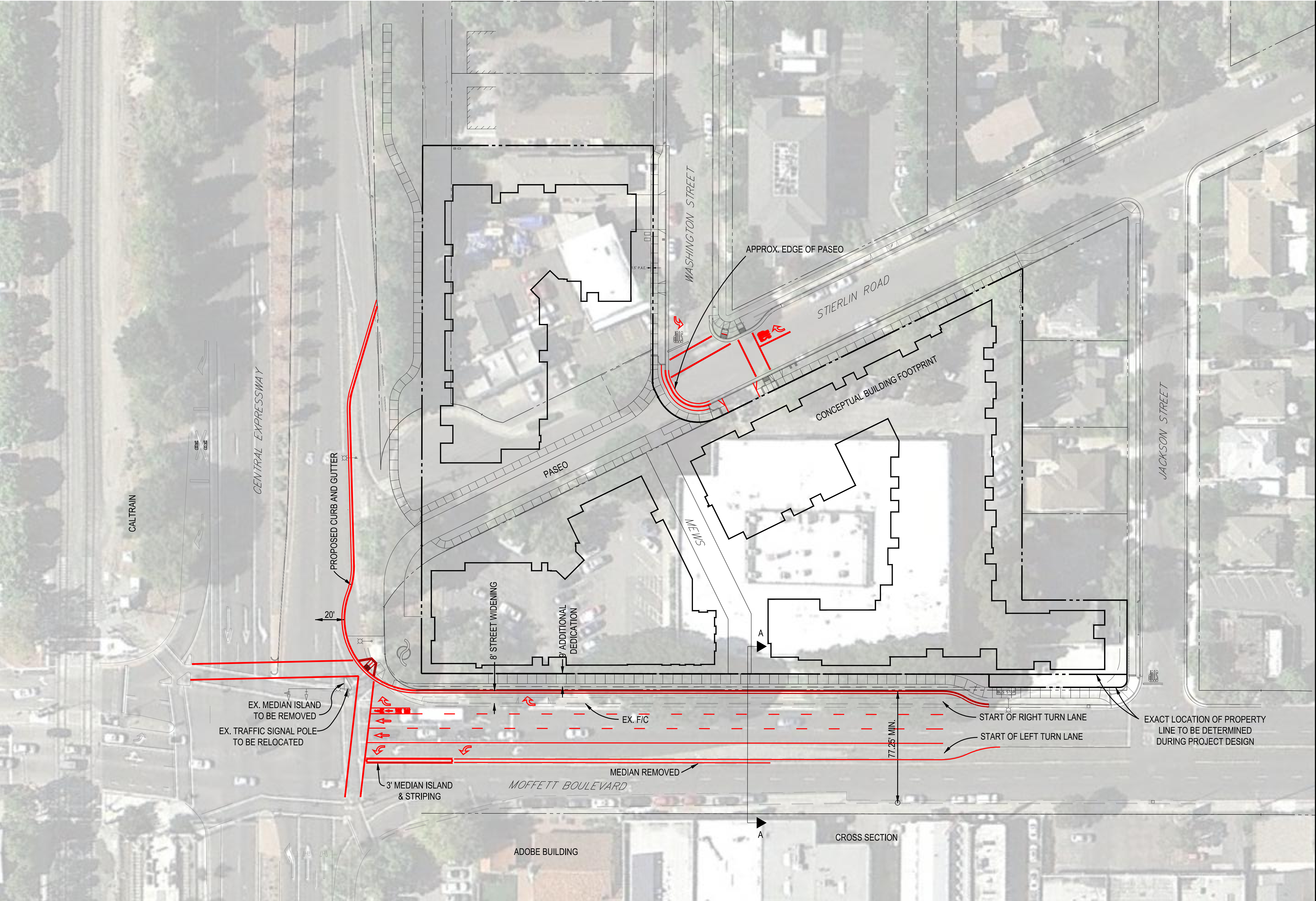
100 Moffett Boulevard  
Mountain View, California

Prometheus Real Estate Group  
1900 SOUTH NORFOLK ST., STE. 150  
San Mateo, California

Sheet Title:  
**CONCEPTUAL  
CIRCULATION  
CONCEPT**

Job No. 12033  
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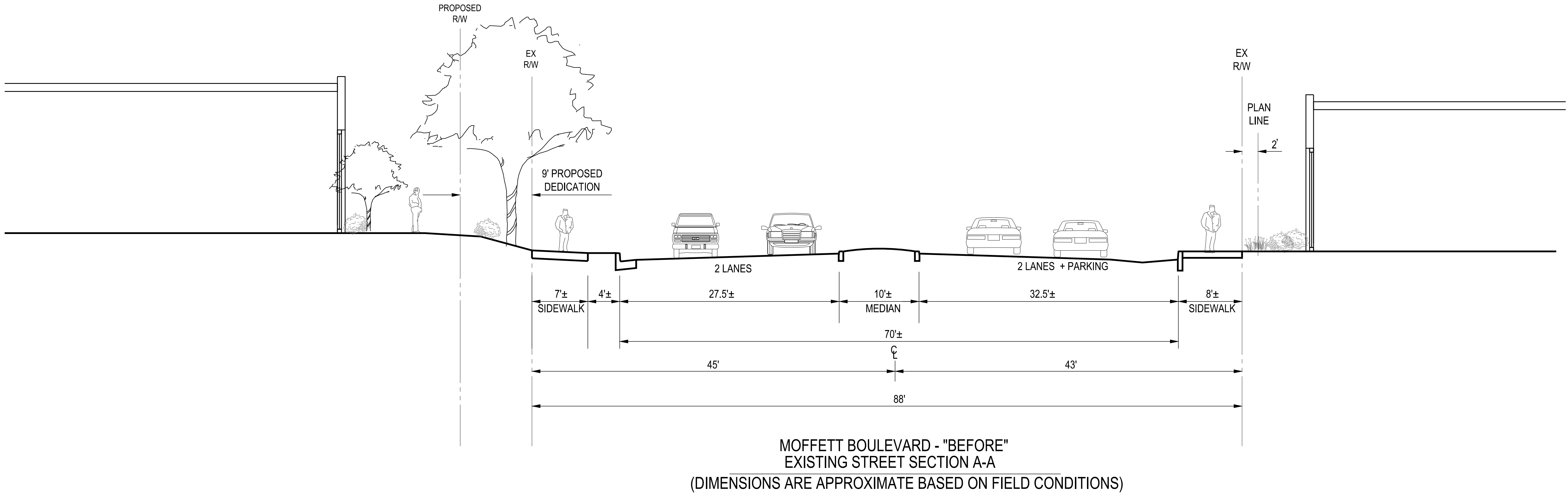
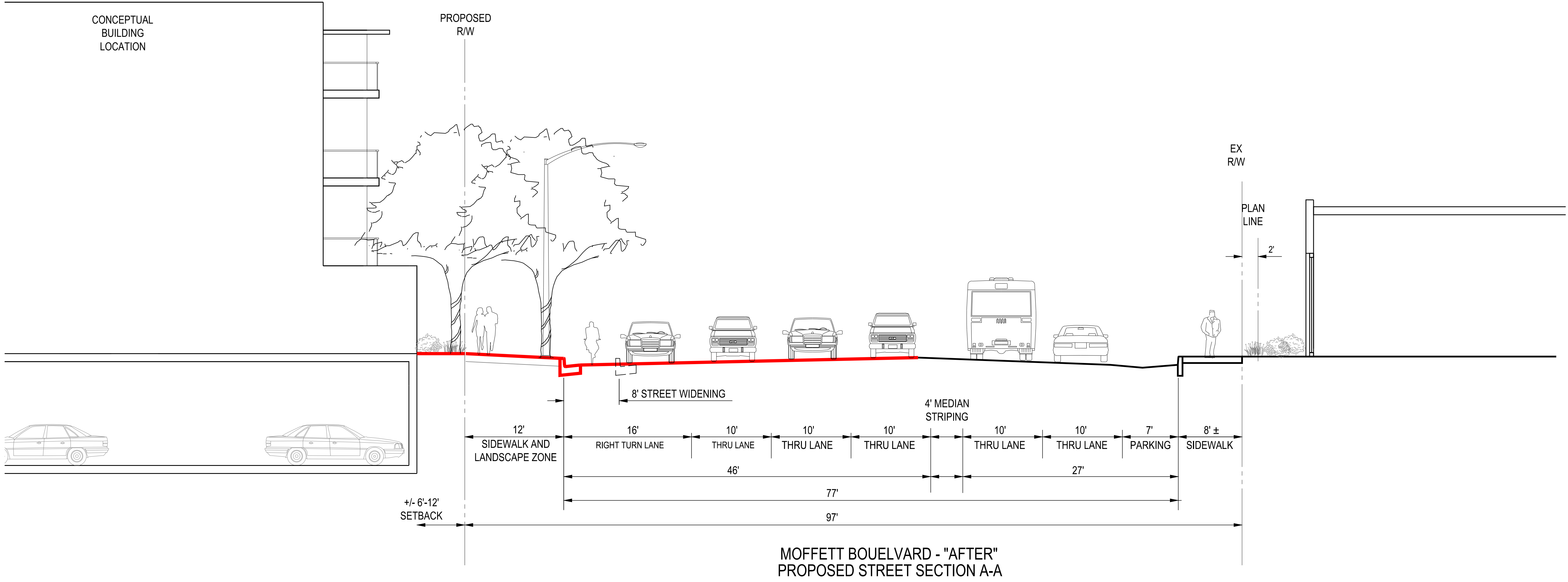
100 Moffett Boulevard  
Mountain View, California

Prometheus Real Estate Group  
1900 SOUTH NORFOLK ST., STE. 150  
San Mateo, California

Sheet Title:  
CONCEPTUAL  
CROSS SECTIONS -  
MOFFETT BLVD

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## 3.15 Transportation and Circulation

This chapter summarizes the potential transportation and circulation impacts related to construction and operation of the Project based on the traffic impact analysis report prepared for the Project by Hexagon Transportation Consultants (2012) (Appendix I). Included are a review of existing conditions, a summary of applicable policies and regulations related to transportation and circulation, and an analysis of environmental impacts of the Project, including the rationale for determining the impacts would be less than significant.

### 3.15.1 Environmental Setting

This section provides a discussion of the existing conditions related to transportation and circulation on the Project site and the surrounding area. The study area for transportation and circulation impacts is defined as the surrounding street network, and transit, pedestrian, and bicycle facilities in the vicinity of the Project site for which the operation could be potentially affected by implementation of the Project.

The Project is located on Moffett Boulevard at the intersection of Central Expressway and near US 101, SR 85, and SR 237. Central Expressway, US 101, SR 85, and SR 237 are part of the Congestion Management Program (CMP) roadway system in Santa Clara County. Santa Clara VTA is responsible for maintaining the performance and standards of the CMP roadway system in Santa Clara County. Based on VTA's Transportation Impact Analysis (TIA) Guidelines<sup>1</sup> and consultation with City of Mountain View staff, the eight intersections listed below were selected for the analysis. Figure 3.15-1 shows the Project vicinity and study intersections.

1. Moffett Boulevard and Middlefield Road
2. Moffett Boulevard and Central Avenue
3. Moffett Boulevard and Jackson Street
4. Moffett Boulevard and Central Expressway
5. Castro Street and Villa Street
6. Shoreline Boulevard and Montecito Street/Stierlin Road
7. Shoreline Boulevard and Central Expressway (West)
8. Shoreline Boulevard and Central Expressway (East)

The three intersections with Central Expressway are part of the County's CMP system, and the other five intersections are under the City of Mountain View's jurisdiction. All eight study intersections are signalized, except the Moffett Boulevard/Jackson Street intersection, which is stop controlled on Jackson Street.

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<sup>1</sup> Based on the VTA's TIA Guidelines, a CMP intersection would be included in a TIA if the proposed development project is expected to add 10 or more peak hour vehicles per lane to any intersection movement and a CMP freeway segment would be included in a TIA if the proposed development project is expected to add traffic equal to or at least 1 percent of the freeway segment's capacity (Santa Clara Valley Transportation Authority 2009).

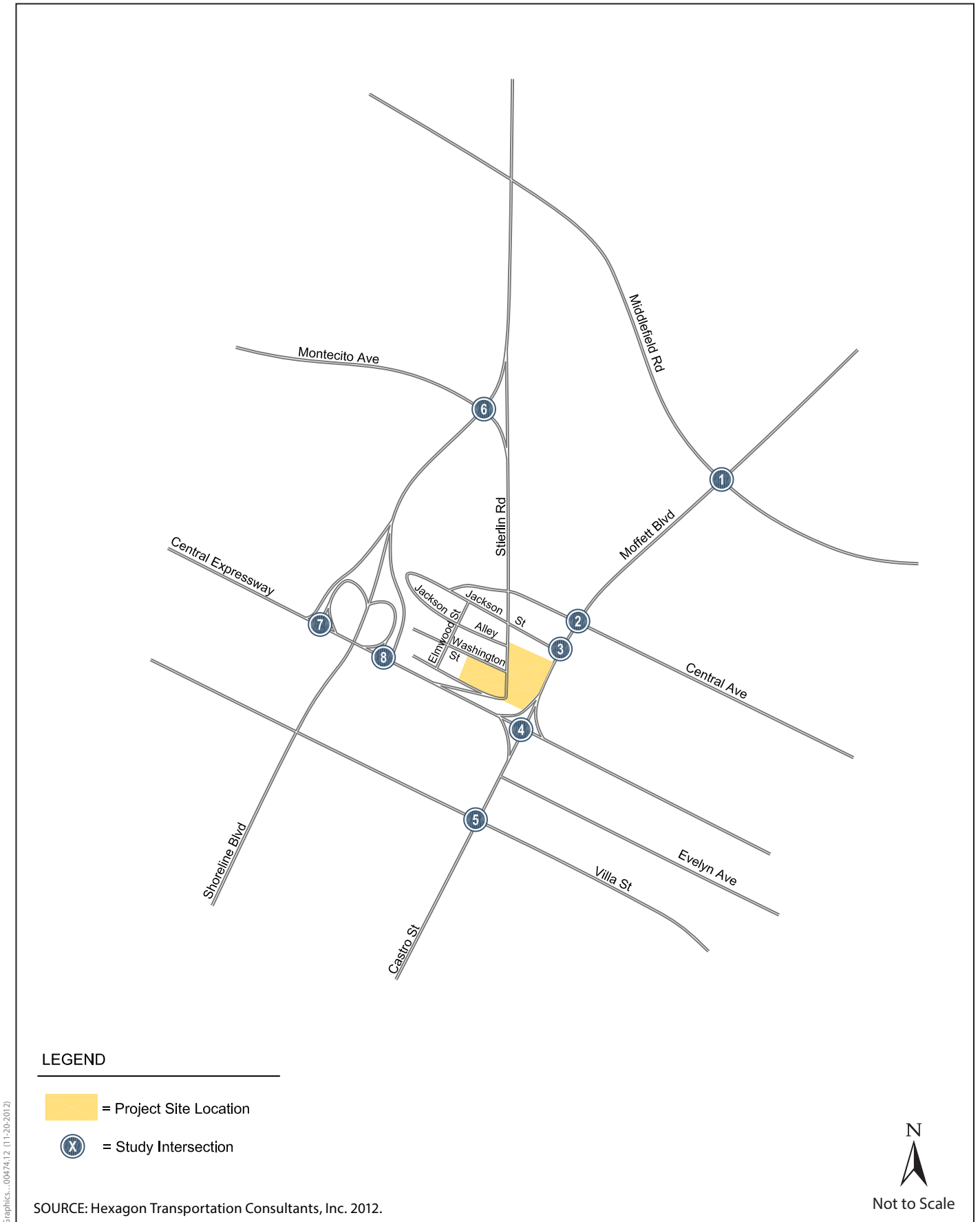
US 101, SR 85, and SR 237 are CMP freeways; however, because of the number of trips generated by the proposed development, no freeway segment analysis is required.

## Roadway System

Regional access to the Project site is provided by SR 85, SR 237, and US 101. Local access to the Project site is provided via Central Expressway, Moffett Boulevard, Stierlin Road, Central Avenue, Jackson Street, Middlefield Road, and Castro Street (Figure 3.15-1). The following provides descriptions of the existing roadways.

- US 101 is an eight-lane freeway in the vicinity of the Project site. US 101 generally runs in a north-south direction and extends through and beyond the Bay Area, connecting San Francisco to San Jose. US 101 provides site access via a full interchange at Moffett Boulevard.
- SR 85 is a six-lane freeway in the vicinity of the Project site. SR 85 generally runs in a north-south direction and extends northward between Sunnyvale and Mountain View to US 101. Access to the study area is provided from an interchange at Central Expressway.
- SR 237 is a four-lane freeway in the vicinity of the project site. SR 237 generally runs in an east-west direction and extends eastward from El Camino Real through Sunnyvale and north San Jose to Interstate (I)-880.
- Central Expressway is an east-west four-lane roadway that extends between Palo Alto and Santa Clara. Central Expressway borders the Project site on the south, and existing access out of the Project site onto Central Expressway westbound is provided via the Stierlin Road ramp. On-street parking is prohibited on Central Expressway.
- Moffett Boulevard is a north-south four-lane roadway with left-turn pockets that extends between US 101 to the north and Central Expressway to the south. South of Central Expressway, it extends through downtown Mountain View as Castro Street. Moffett Boulevard provides access to the Project site via Jackson Street and an existing right-turn in-only driveway on Moffett Boulevard. In the Project vicinity, on-street parking is permitted only in the northbound direction on Moffett Boulevard.
- Castro Street is a north-south two-lane roadway that begins at its intersection with Miramonte Road and transitions to Moffett Boulevard north of Central Expressway. Castro Street provides access to Mountain View's downtown with commercial development on both sides of the street. In the Project vicinity, on-street parking is available on both sides of Castro Street, south of Evelyn Avenue.
- Shoreline Boulevard is a four-lane roadway aligned in a mostly north-south orientation in the Project vicinity. Shoreline Boulevard extends between US 101 to the north and El Camino Real to the south. Starting south of El Camino Real, Shoreline Boulevard extends farther southward as Miramonte Avenue. On-street parking is not available on Shoreline Boulevard.
- Middlefield Road is an east-west four-lane roadway that runs parallel to US 101 between Redwood City and Mountain View. The major intersections along Middlefield Road are signalized. On-street parking is not available on Middlefield Road.
- Stierlin Road is a north-south two-lane residential roadway that extends between Shoreline Boulevard to the north and Central Expressway to the south. At Central Expressway, it terminates as a right-turn only on-ramp to Central Expressway westbound. Access to the





**Figure 3.15-1**

**Project Vicinity and Study Intersections**

100 Moffett Boulevard Residential Development Project

existing site is provided by a driveway on Stierlin Road. In the Project vicinity, on-street parking is available on both sides of Stierlin Road.

- Central Avenue is an east-west two-lane residential roadway that extends between Stierlin Road to the west and Orchard Avenue to the east. The intersection of Moffett Boulevard and Central Avenue in the Project vicinity is signalized. On-street parking is available on both sides of Central Avenue in the Project vicinity.
- Jackson Street is an east-west two-lane residential roadway that originates at Moffett Boulevard and extends west into the residential neighborhood west of Moffett Boulevard and terminates at a cul-de-sac just east of Shoreline Boulevard. There are no signalized intersections along Jackson Street. In the Project vicinity, on-street parking is available on both sides of Jackson Street.
- Washington Street is an east-west two-lane residential roadway that originates at Stierlin Road and extends west into the immediate residential neighborhood. It terminates as a dead end street just east of the Central Expressway ramp to Shoreline Boulevard. Access to the proposed Project site is provided via a full access driveway on Washington Street. In the Project vicinity, on-street parking is available on both sides of Washington Street.

## Existing Traffic Conditions

### Level of Service Method

The operations of roadway facilities are described with the term level of service (LOS), a scale used to determine the operating quality of a roadway segment or intersection based on volume-to-capacity (V/C) ratio or average delay experienced by vehicles on the facility. The levels range from A to F, with LOS A representing free traffic flow and LOS F representing severe traffic congestion. LOS E represents “at-capacity” operations. When traffic volumes exceed the intersection capacity, stop-and-go conditions result, and operations are designated as LOS F.

Methods described in the Highway Capacity Manual (Transportation Research Board 2000) were used to calculate the LOS for signalized and stop-controlled intersections. For signalized intersections, the LOS method was approved by VTA, and adopted by the City of Mountain View with adjusted saturation flow rates to reflect conditions in Santa Clara County. LOS for signalized intersections is determined by the average delay experienced by vehicles at the intersection. Table 3.15-1 summarizes the relationship between delay and LOS for signalized intersections. The LOS standard (i.e., minimum acceptable operations) for signalized intersections in Mountain View is generally LOS D. The LOS standard for CMP intersections is LOS E.

For stop-controlled intersections, LOS depends on the average delay experienced by vehicles on the stop-controlled approaches. Thus, for side-street stop-controlled intersections, LOS is based on the average delay experienced by vehicles entering the intersection from the minor (stop-controlled) streets and vehicles making left-turns from the major street. For all-way stop-controlled intersections, LOS is determined by the average delay for all movements through the intersection. The LOS criteria for stop-controlled intersections have different threshold values than those for signalized intersections, primarily because drivers expect different levels of performance from distinct types of transportation facilities. In general, stop-controlled intersections are expected to carry lower volumes of traffic than signalized intersections. Thus, for the same LOS, a lower level of delay is acceptable at stop-controlled intersections than at signalized intersections. Table 3.15-1 also summarizes the relationship between delay and LOS for stop-controlled intersections.

**Table 3.15-1. LOS Criteria for Intersections**

LOS Designation	Average Delay per Vehicle (seconds/vehicle)	
	Signalized Intersections	Stop-Controlled Intersections
A	≤ 10.0	≤ 10.0
B	10.1 to 20.0	10.1 to 15.0
C	20.1 to 35.0	15.1 to 25.0
D	35.1 to 55.0	25.1 to 35.0
E	55.1 to 80.0	35.1 to 50.0
F	> 80.0	> 50.0

Source: Transportation Research Board 2000.

### Intersection Level of Service

Existing intersection LOS was calculated based on the peak hour traffic volumes and lane configurations collected at the study intersections. Existing peak hour traffic volumes for the non-CMP intersections and AM peak hour traffic volumes for the CMP intersections are based on traffic counts conducted by Hexagon Transportation Consultants in April and May 2012, and PM peak hour traffic volumes for the CMP intersections are based on traffic counts conducted in September 2010 by VTA for the 2010 Monitoring and Conformance Report. Peak period intersection turning movement counts were conducted between 7 a.m. and 9 a.m. and between 4 p.m. and 6 p.m. on weekdays. The peak hour volumes are presented on Figure 3.15-2. Existing lane configurations and signal controls were obtained through field observations.

The results of the existing LOS analysis are presented in Table 3.15-2. The intersection of Moffett Boulevard/Central Expressway is a CMP intersection, and the CMP LOS calculations at this intersection reflect the delay associated with the railroad gate closures due to Caltrain. The results of the LOS calculations indicate that all intersections operate at acceptable service levels (LOS D or better for Mountain View intersections and LOS E or better for CMP intersections) during the AM and PM peak hours.

### Field Observations

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

Overall, the study intersections were observed to operate at LOS D or better during the AM and PM peak hours of traffic, and the LOS analysis appears to reflect actual existing traffic conditions. At the intersection of Central Expressway and Moffett Boulevard, commuter rail service (Caltrain) operates along Central Expressway; and whenever a train passes the Central Expressway/Moffett Boulevard (Castro Street) intersection,<sup>2</sup> long delays are observed on the cross street.

<sup>2</sup> Moffett Boulevard turns into Castro Street on the south side of the Central Expressway/Moffett Boulevard intersection.

100 Moffett Boulevard

<p><b>1</b></p> <p>Middlefield Rd 322(301) 193(373) 103(118) 78(56) 677(616) 127(192) 140(134) 319(630) 47(101) Moffett Blvd 97(60) 328(197) 135(138)</p>	<p><b>2</b></p> <p>Central Ave 55(119) 240(340) 34(62) 89(50) 45(27) 49(31) 60(77) 10(53) 5(21) Moffett Blvd 33(30) 334(317) 39(50)</p>	<p><b>3</b></p> <p>Jackson St 32(25) 288(370) 1(1) 1(2) 0(1) 5(6) 3(11) Moffett Blvd 33(31) 320(341) 2(0)</p>	<p><b>4</b></p> <p>Central Expressway 130(97) 128(236) 46(33) 145(93) 1273(1166) 155(180) 125(119) 849(1324) 123(194) Moffett Blvd 219(159) 226(274) 87(130)</p>
<p><b>5</b></p> <p>Villa St 10(22) 150(187) 133(165) 32(49) 179(164) 28(32) 29(72) 123(181) 9(22) Castro St 8(20) 147(252) 21(32)</p>	<p><b>6</b></p> <p>Montecito Ave 24(26) 543(1234) 46(93) 75(58) 60(61) 43(45) 105(99) 33(29) 141(125) Shoreline Blvd 139(177) 1106(752) 51(99)</p>	<p><b>7</b></p> <p>Central Expressway 90(90) 55(130) 195(293) 1475(1325) 0(1) 36(65) 895(1394)</p>	<p><b>8</b></p> <p>Central Expressway 81(155) 146(161) 171(96) 1543(1466) 32(50) 924(1464)</p>

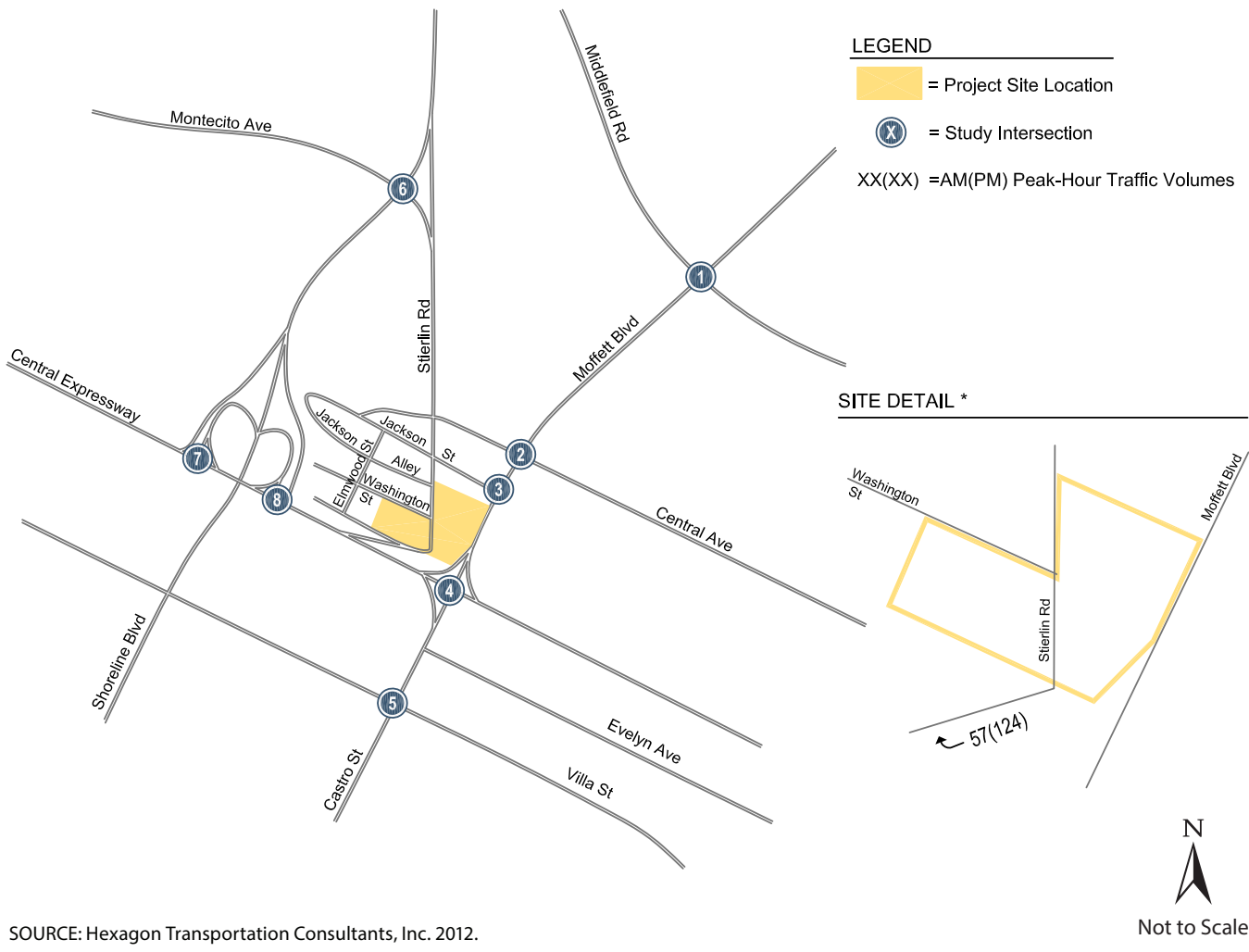


Figure 3.15-2

Existing Intersection Peak-Hour Volumes

100 Moffett Boulevard Residential Development Project

**Table 3.15-2. Existing Intersection LOS**

Intersection	Traffic Control	Peak Hour	Delay (seconds/vehicle)	LOS
Moffett Boulevard and Middlefield Road	Signal	AM	27.9	C
		PM	27.5	C
Moffett Boulevard and Central Avenue	Signal	AM	16.0	B
		PM	17.6	B
Moffett Boulevard and Jackson Street	Side Street Stop	AM	12.2	B
		PM	11.5	B
Moffett Boulevard and Central Expressway <sup>a</sup>	Signal	AM	41.1	D
		PM	42.9	D
Castro Street and Villa Street	Signal	AM	20.8	C
		PM	22.5	C
Shoreline Boulevard and Montecito Street/Stierlin Road	Signal	AM	15.4	B
		PM	15.9	B
Shoreline Boulevard and Central Expressway (W) <sup>a</sup>	Signal	AM	12.9	B
		PM	12.6	B
Shoreline Boulevard and Central Expressway (E) <sup>a</sup>	Signal	AM	8.7	A
		PM	10.4	B
Source: Hexagon Transportation Consultants 2012.				
<sup>a</sup> CMP intersection.				

## Transit Service

Bus and light rail service in Mountain View is operated by VTA. Caltrain is provided from San Francisco to Gilroy by the Peninsula Joint Powers Board. Figure 3.15-3 shows the bus routes and transit facilities near the Project site. VTA bus services are described below.

- The 32 line operates on Central Expressway in the Project vicinity, providing service between San Antonio Transit Center and the Santa Clara Transit Center between 6:00 a.m. and 7:30 p.m. with 30-minute headways during the AM and PM peak hours.
- The 34 line operates on Rengstorff Avenue, Montecito Road, and Shoreline Boulevard, providing service between the San Antonio Shopping Center and El Camino Hospital during the hours of 9 a.m. to 2 p.m., with 60-minute headways during non-commute hours only.
- The 35 line operates primarily on Castro Street between Evelyn Street and California Street in the Project vicinity, providing service between the Stanford Shopping Center and Downtown Mountain View during the hours of 6 a.m. to 9 p.m., with 30-minute headways during the AM and PM peak hours.
- The 51 line operates on Castro Street and Moffett Boulevard in the Project vicinity, providing service between Moffett Field/Ames Center and De Anza College in Cupertino during the hours of 6 a.m. and 7 p.m., with 60-minute headways during the AM and PM peak hours.
- The 52 line operates on El Monte Avenue, El Camino Real, and Castro Street, providing service between Foothill College and Downtown Mountain View during the hours of 7:30 a.m. to 5:15 p.m., with 10-minute headways at all times of the day.

The closest bus stop is located at the intersection of Moffett Boulevard and Jackson Street, within walking distance of the Project site. In addition, many bus routes serve the Mountain View transit station, which is within walking distance of the Project site at the southeast corner of the Moffett Boulevard/Central Expressway intersection. Many private and public shuttles also serve the downtown transit station, providing access to employment areas in Mountain View and other nearby cities.

MTA light rail service is available at the transit station. MTA light rail route 902 provides service between Downtown Mountain View and the Winchester Station in Campbell. Weekday service is approximately between 4:30 a.m. and 12:30 a.m. (post-midnight), with 15-minute headways during commute hours.

The Mountain View transit station also serves Caltrain, which provides frequent passenger train service between San Jose and San Francisco 7 days a week. During commute hours, Caltrain provides extended service to Morgan Hill and Gilroy. Caltrain's Baby Bullet limited-stop service is also provided from this station.

## Nonmotorized Transportation Facilities

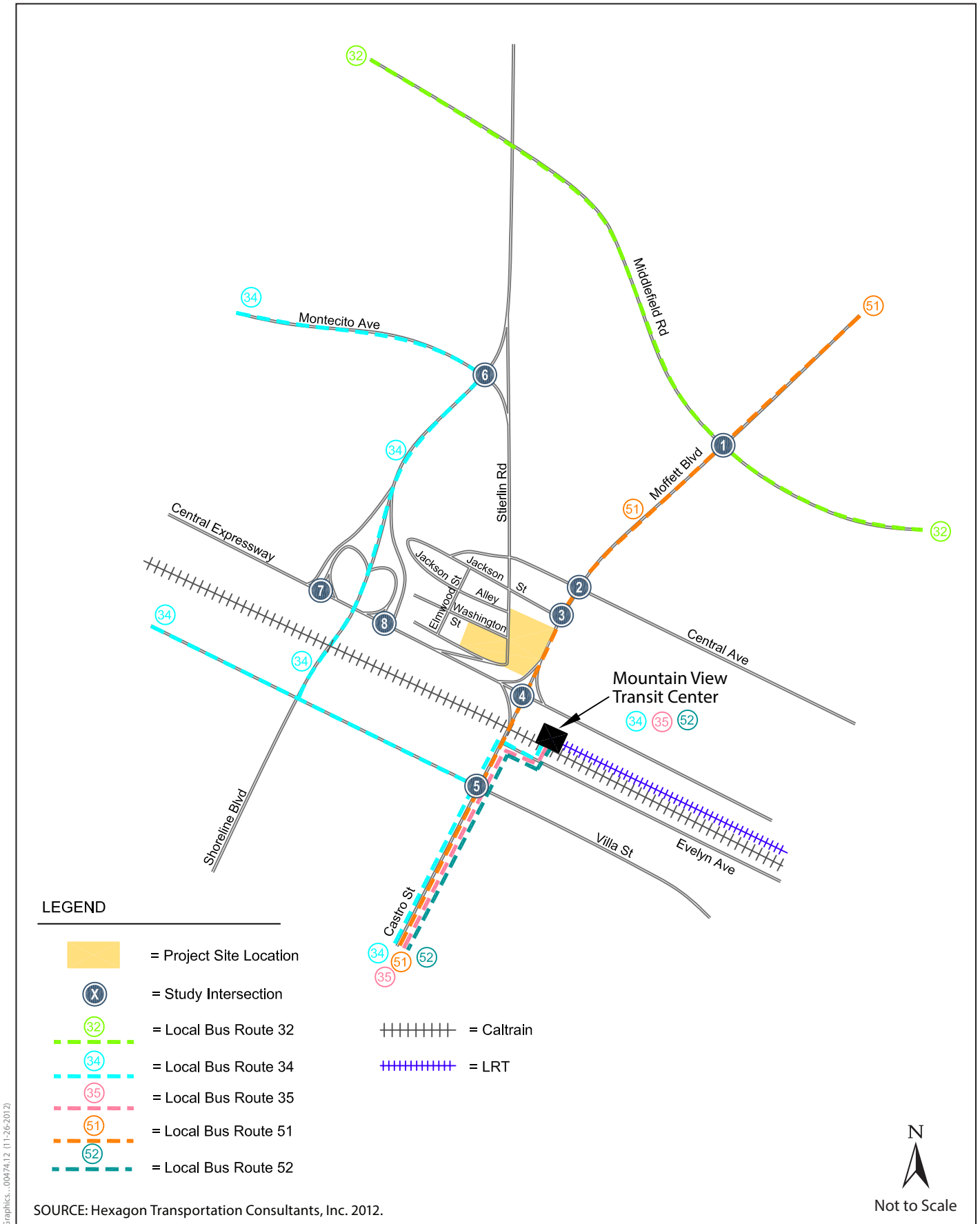
Pedestrian facilities comprise sidewalks, crosswalks, pedestrian signals, and off-street paths. In the vicinity of the Project site, sidewalks are provided along Moffett Boulevard, Middlefield Road, Shoreline Boulevard, Stierlin Road, Central Avenue, Jackson Street, Washington Street, and Castro Street. Although there are no sidewalks on either side of Central Expressway in the vicinity of the Project, the City is currently designing a project to install sidewalks along the north side of Central Expressway, which is expected to be completed before this Project. Crosswalks with curb ramps and pedestrian signals with countdown timers are located at all signalized intersections in the study area. From the Project site, pedestrians must use a short uncontrolled crosswalk on the right-turn slip lane (used by cars going from southbound Moffett Boulevard to westbound Central Expressway) to access the controlled crosswalks across the signalized intersection of Moffett Boulevard/Central Expressway. This is an existing safety concern.

Bicycle facilities are classified into three categories: bike paths (Class I) provide a completely separate right-of-way for the exclusive use of bicycles and pedestrians with minimal roadway crossings; bike lanes (Class II) provide a striped lane and signage for one-way bike travel on a street and are designed for the exclusive use of cyclists; and bike routes/bike boulevards (Class III) may be identified on a local residential or collector street when the travel lane is wide enough and the traffic volume is low enough to allow both cyclists and motor vehicles.

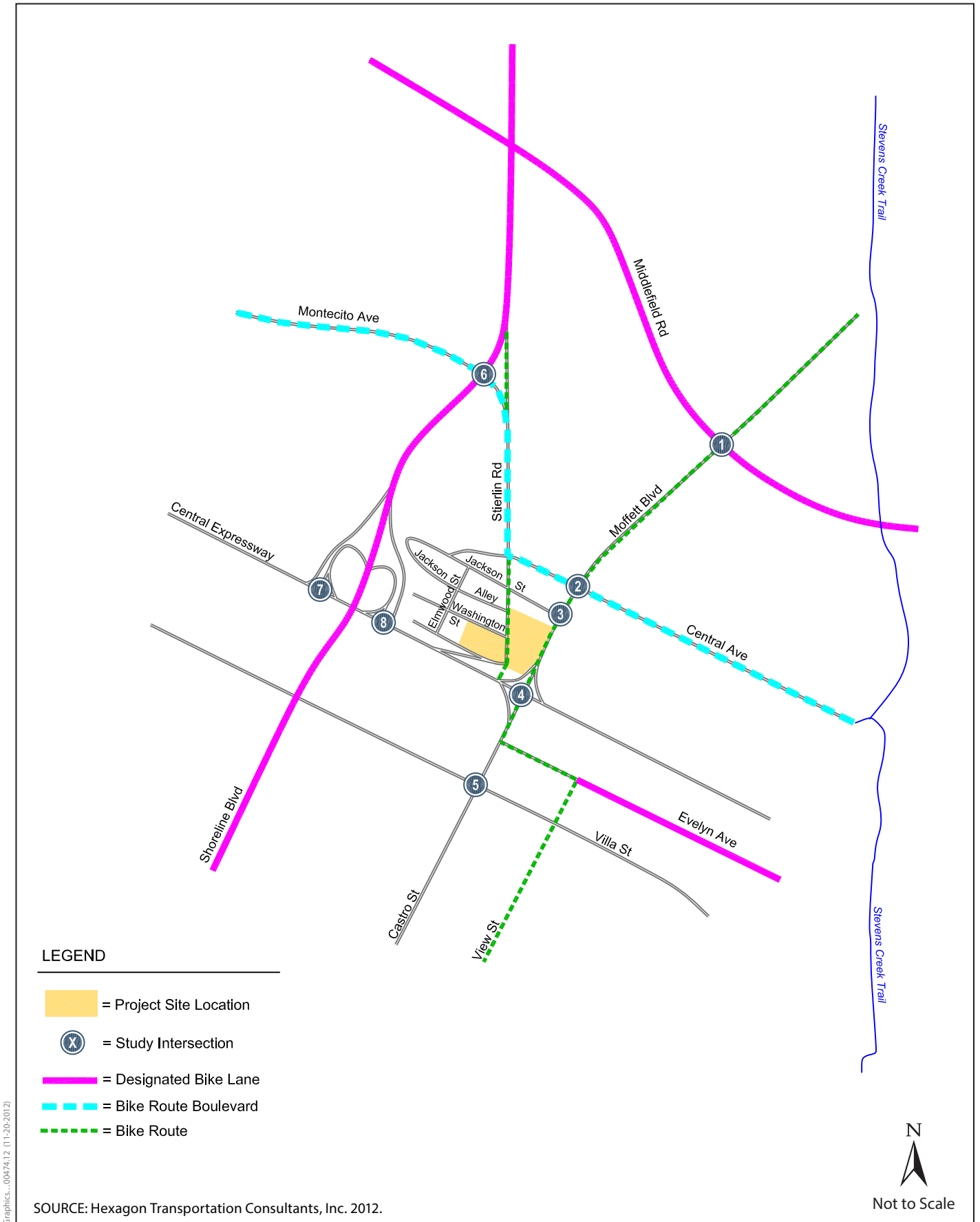
Stevens Creek Trail is a Class I bike path located approximately 3,000 feet east of the Project site and is accessed via Central Avenue and a pedestrian bridge across Central Expressway in the Project vicinity. Middlefield Road, Shoreline Boulevard, and Evelyn Avenue (east of View Street) are designated as Class II bike lanes. Montecito Avenue, Stierlin Road (between Montecito Avenue and Central Avenue), and Central Avenue are designated as Class III bike boulevards; and Moffett Boulevard and Stierlin Road are designated as Class III bike routes. The existing bicycle facilities within the study area are shown on Figure 3.15-4.

Although bicycles are also allowed on Central Expressway, bicyclists are instructed to exercise extreme caution while traveling on the street. Residential streets like Jackson Street and Washington Street carry low traffic volumes and are conducive to bicyclists.





**Figure 3.15-3**  
**Existing Transit Facilities**  
100 Moffett Boulevard Residential Development Project



**Figure 3.15-4**  
**Existing Bicycle Facilities**  
 100 Moffett Boulevard Residential Development Project

Pedestrian and bicycle counts were conducted at the intersection of Moffett Boulevard and Central Expressway between 10 a.m. and 8 p.m. on a Sunday and a typical weekday in November 2012. The counts indicate that there is significant pedestrian/bike activity in the Project vicinity to and from downtown Mountain View. The counts show that on a regular weekday, pedestrian/bike activity peaked between 5 p.m. and 6 p.m. and on a Sunday between 11 a.m. and 12 p.m. with approximately 250 to 300 pedestrians/bikes during the peak hour. Most of the pedestrians/bikes using Stierlin Road were observed to cut-through the social services building site, which is the proposed project site, and used Moffett Boulevard to cross Central Expressway.

## 3.15.2 Regulatory Setting

### Federal

There are no relevant federal regulations for identifying environmental effects of the proposed Project on transportation and circulation.

### State

There are no relevant state regulations for identifying environmental effects of the proposed Project on transportation and circulation.

### Local

#### Santa Clara County Congestion Management Program

MTA is responsible for maintaining the performance and standards of the CMP roadway system in Santa Clara County. MTA strives to maintain LOS E operations on all CMP-monitored facilities. Based on MTA's TIA Guidelines, a CMP intersection would be included in a TIA if a proposed development project is expected to add 10 or more peak hour vehicles per lane to any intersection movement; a CMP freeway segment would be included in a TIA if a proposed development project is expected to add traffic equal to or at least 1 percent of the freeway segment's capacity (Santa Clara Valley Transportation Authority 2009).

#### Mountain View 2030 General Plan

The Circulation Chapter/Element of the Mountain View 2030 General Plan includes specific goals, policies, and actions designed to maintain acceptable traffic operations and to reduce congestion. Improved circulation is expected to be provided through enhancement of transit, bicycle, and pedestrian modes, as well as the use of aggressive TDM measures to reduce single-occupant vehicle trips. The Mountain View 2030 General Plan establishes the LOS standards for local roadways (LOS D), acknowledges higher levels of congestion on regional roadways (LOS E standard), and includes objectives for future bicycle facilities and walkways. These standards are discussed in *Existing Traffic Conditions* above.

### 3.15.3 Impact Analysis

#### Criteria for Determining Significance

The State CEQA Guidelines Appendix G (14 CCR 15000 et seq.) identifies significance criteria to be considered for determining whether a project could have significant impacts on existing transportation and circulation.

A project impact would be considered significant if construction or operation of the proposed project would result in any of the following.

1. Conflict with an applicable plan, ordinance, or policy establishing measures of effectiveness for the performance of the circulation system, taking into account all modes of transportation including mass transit and nonmotorized travel and relevant components of the circulation system, including but not limited to intersections, streets, highways and freeways, pedestrian and bicycle paths, and mass transit.
2. Conflict with an applicable CMP, including, but not limited to LOS standards and travel demand measures, or other standards established by the county congestion management agency for designated roads or highways.
3. Substantially increase hazards because of a design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment).
4. Result in inadequate emergency access.
5. Conflict with adopted policies, plans, or programs regarding public transit, bicycle, or pedestrian facilities, or that otherwise decrease the performance or safety of such facilities.
6. Result in a change in air traffic patterns, including either an increase in traffic levels or a change in location that results in substantial safety risks.

Regarding air traffic patterns, the Project would include up to a four-story residential structures that would be a maximum height of approximately 59 feet. This building height would not extend high enough to impede air traffic patterns. Therefore, the Project would not result in a change in air traffic patterns or otherwise result in a safety risk, and impacts would not occur. Potential impacts on air traffic patterns are not analyzed further.

The City of the Mountain View and VTA established significance thresholds to determine a project's impacts on operating quality of intersections and roadway/freeway segments. The following thresholds of significance apply to the study intersections. The Mountain View 2030 General Plan provides policy direction for the City to consider new ways of evaluating the multimodal transportation system to achieve greater balance in the performance of different travel modes. However, new standards have not been adopted and existing LOS significant thresholds remain in effect.

**Signalized Intersection**

A significant impact on a signalized intersection would occur if the Project would result in one of the following.

- Cause a signalized City of Mountain View intersection to deteriorate from acceptable LOS D or better to unacceptable LOS E or F.
- Cause a signalized City of Mountain View intersection operating at LOS E or F under existing or future without-project conditions to increase in critical movement delay of 4 seconds or more, and increase in the critical V/C ratio by 0.01 or more.
- Cause a CMP intersection to deteriorate from acceptable LOS E or better to unacceptable LOS F.
- Cause a CMP intersection operating at LOS F under existing or future without-project conditions to increase in critical movement delay of 4 seconds or more, and increase in the V/C ratio by 0.01 or more.

Critical delay and V/C ratio represent the delay and V/C ratio associated with the critical movements of the intersection, or the movements that require the most “green time” and have the greatest effect on overall intersection operations.

**Unsignalized Intersection**

LOS analysis at unsignalized intersections is generally used to determine the need for modifying intersection control type (i.e., all-way stop or signalization). The City does not apply significance thresholds to unsignalized intersections. Significant impacts could potentially occur when the addition of project traffic degrades the operation of the intersection from the acceptable operating level of LOS D to LOS E/F or from LOS E to LOS F, and the intersection satisfies the signal warrants from the Manual on Uniform Traffic Control Devices (California Department of Transportation 2010). However, traffic volumes, delay, traffic signal warrants, queuing analysis, and gap analysis are all evaluated to determine if the existing intersection control is appropriate and whether the Project would result in significant impacts at the intersection.

**Methods**

This section describes the methods used to analyze impacts, in addition to the information included in Section 3.15.1, *Environmental Setting*, and Section 3.15.2, *Regulatory Setting*.

**Traffic Analysis Scenarios**

Peak hour operations of the study intersections were evaluated for the following scenarios to identify the potential traffic impacts related to the Project.

**Existing plus Project Condition**

The net new traffic generated by the Project was added to the traffic volumes in the Existing Condition. No transportation network improvements were proposed as part of the Project; therefore, the existing roadway network was used for the Existing plus Project Condition.

As described in Section 2.4.3, *Roadway Modifications*, the Project includes the option of removing the right-turn slip lane from southbound Moffett Boulevard to westbound Central Expressway. The removal of the slip lane is not expected to cause any operational problems at this intersection or the

existing roadway network. Under existing conditions during the peak hour periods, the slip lane does not serve most of the right-turning traffic because the vehicular queue from the southbound through traffic on Moffett Boulevard almost always blocks access to the slip lane. The entrance to the slip lane is only 25 feet from the stop bar, which means a southbound vehicular queue of even 1 to 2 vehicles blocks access to the slip lane.

### **Background Condition**

Background traffic volumes were obtained by estimating trip generation for a list of approved but not yet constructed projects provided by City staff (see Appendix I). The locations of the approved projects that were considered in developing the background traffic volumes are shown on Figure 3.15-5. Trip generation estimates for the approved projects were based on traffic impact studies conducted for each of the projects. For projects that did not require a traffic study (due to their small size), trips were estimated based on Institute of Transportation Engineers' (ITE) trip rates. The estimated trips from the approved projects were distributed and assigned to the Project study area roadways based on the trip distribution assumptions present in the traffic studies. Trip generation and trip assignment for the approved projects are described in details in the traffic impact analysis report (Appendix I) (Hexagon Transportation Consultants 2012).

No approved and funded transportation network improvements have been identified that would be constructed prior to Project completion except at the intersection of Moffett Boulevard and Central Expressway. The Peninsula Corridor Joint Powers Board has plans for signal preemption and modification improvements at the Moffett Boulevard/Central Expressway intersection that would result in an 8-phase signal. The signal modification improvements are expected to be completed by December 2013. The proposed 8-phase signal is expected to improve traffic operations with better coordination through the enhanced railroad signal pre-emption. With the 8-phase signal proposed at the intersection of Moffett Boulevard and Central Expressway, the northbound approach on Castro Street/Moffett Boulevard would be constructed to accommodate dual left-turn lanes, one through lane and one shared through-right lane.

### **Background plus Project Condition**

The net new traffic generated by the Project was added to the traffic volumes from the Background Condition. No approved and funded transportation network improvements have been identified that would be constructed prior to Project completion except at the intersection of Moffett Boulevard and Central Expressway, described under *Background Condition* above. Therefore, the Background Condition network was used for the scenario.

### **Cumulative Condition**


Traffic volumes under the Cumulative Condition include the existing volumes, traffic generated from approved but not yet constructed projects, and account for future traffic associated with pending developments in the Project vicinity (see Appendix I). Cumulative traffic volumes were estimated based on the assumption of an annual growth rate of 2 percent per year for 6 years that gets applied to existing traffic volumes, to account for regional traffic growth in the Project vicinity, rather than direct application of approved and pending project trips. This growth assumption was provided by the City of Mountain View Engineering Department.


No approved and funded transportation network improvements have been identified that would be constructed prior to Project completion except at the intersection of Moffett Boulevard and Central



## LEGEND


 = Project Site Location

 = 209-405 Evelyn Avenue


 = 365 Villa Street


 = 135 Franklin Street

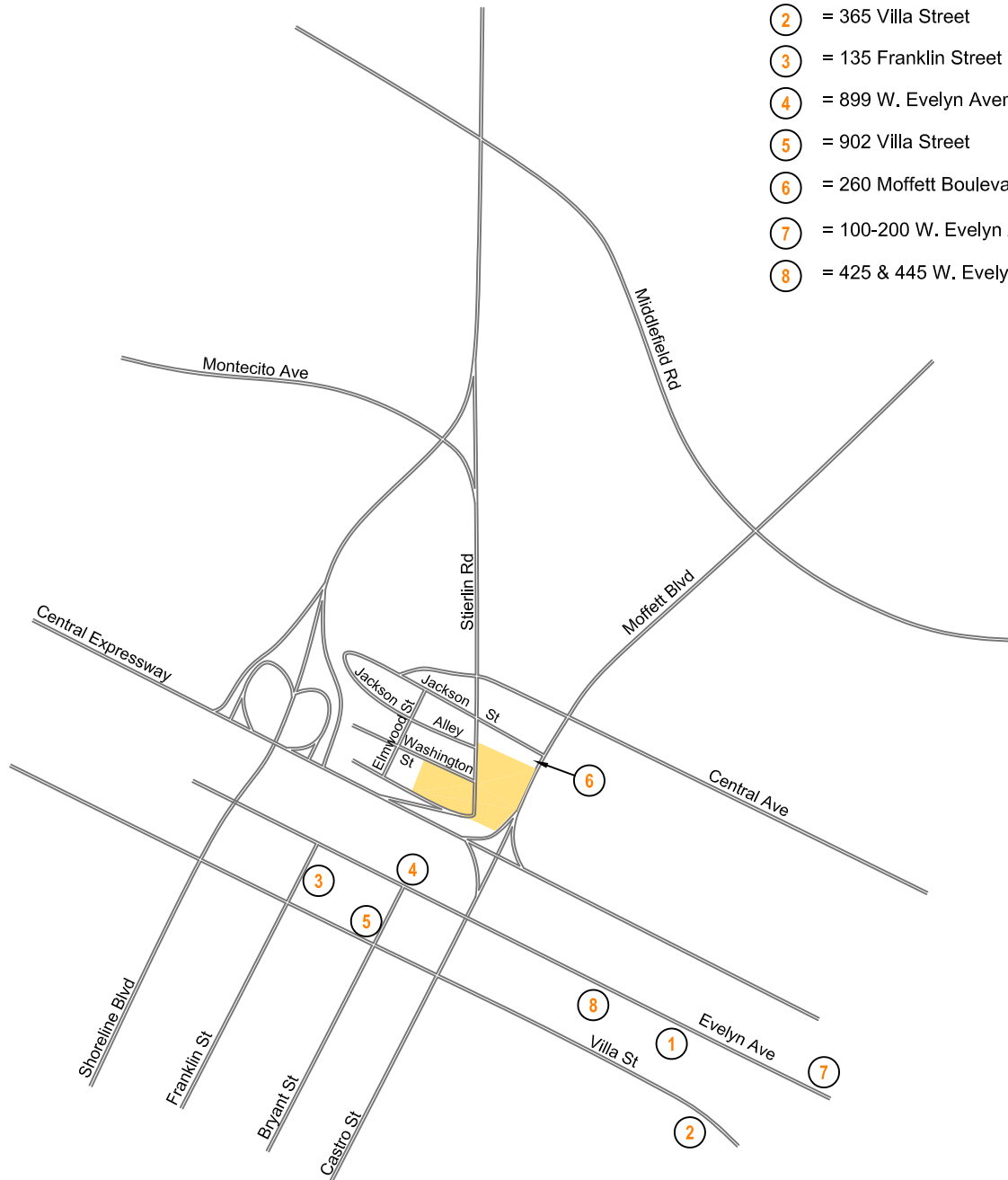
 = 899 W. Evelyn Avenue

 = 902 Villa Street

 = 260 Moffett Boulevard

 = 100-200 W. Evelyn Avenue

 = 425 & 445 W. Evelyn Avenue



Not to Scale

SOURCE: Hexagon Transportation Consultants, Inc. 2012.

**Figure 3.15-5**

**Location of Approved Projects**

**100 Moffett Boulevard Residential Development Project**

Expressway, described under *Background Condition*. Therefore, the Background Condition network was used for the Cumulative Condition analysis.

### **Cumulative plus Project Condition**

The net new traffic generated by the Project was added to the traffic volumes from the Cumulative Condition. No approved and funded transportation network improvements have been identified that would be constructed prior to Project completion except at the intersection of Moffett Boulevard and Central Expressway, described under *Background Condition*. Therefore, the Background Condition network was used for the scenario.

### **Project Trip Estimates**

The magnitude of traffic produced by a new development and the locations where that traffic would appear are estimated using a three-step process: (1) trip generation, (2) trip distribution, and (3) trip assignment.

#### **Trips Generation**

Trip generation refers to the process of estimating the amount of vehicular traffic a project would add to the surrounding roadway system. Estimates are created for the peak 1-hour periods during the AM and PM commute periods when traffic volumes on the adjacent streets are highest. Project trip generation was estimated using rates published in the ITE's Trip Generation (Institute of Transportation Engineers 2008). Trips associated with the existing site uses, based on the driveway survey, were deducted from the estimated Project trip generation to develop net new trip generation estimates. The Project is located within walking distance of VTA light rail, Caltrain, and the Mountain View transit station and could receive trip reduction credit given its proximity to the transit facilities. However, no credit was taken for the Project's proximity to transit facilities in order to represent a conservative analysis. As presented in Table 3.15-3, the Project is expected to generate 3 negative net AM peak-hour trips (48 negative inbound trips and 45 outbound trips), and 43 net new PM peak-hour trips (62 inbound trips and 19 negative outbound trips).

#### **Trips Distribution**

Trip distribution is defined as the directions of approach and departure that vehicles would use to arrive at and depart from the site. The trip distribution pattern was estimated based on the locations of complementary land uses, existing travel patterns, and the proposed site access.

#### **Trips Assignment**

Under Option A, the existing Stierlin Road on-ramp to Central Expressway would remain open. The Project trips were assigned to specific streets and intersections based on the estimated trip distribution. The trip assignment for Option A is shown on Figure 3.15-6.

Under Option B, the existing Stierlin Road on-ramp to Central Expressway would be closed to vehicular access. Bicycle and pedestrian access would be allowed in a *paseo*. With the closure of the Stierlin Road on-ramp to Central Expressway, existing traffic using the on-ramp was re-assigned to adjacent local streets based on a license plate survey, which was conducted to determine the traffic patterns using the Stierlin Road on-ramp. The survey shows that about 55 percent of the vehicles using the Stierlin ramp to Central Expressway are cutting through the neighborhood. Of the total cut-through traffic, about 50 percent entered the neighborhood from Moffett Boulevard via Central

Avenue, 35 percent from Moffett Boulevard via Jackson Street, and 15 percent from Shoreline Boulevard via Stierlin Road. The cut-through study report is included in the traffic impact analysis report (Hexagon Transportation Consultants 2012) (see Appendix I). Based on the traffic counts collected for the license plate survey, the AM and PM peak hour Stierlin Road on-ramp volumes were re-assigned to Shoreline Boulevard and Moffett Boulevard. The trip assignment for Option B is shown on Figure 3.15-7.

**Table 3.15-3. Trip Generation Estimates**

Land Use	Unit <sup>a</sup>	Daily Total	AM Peak Hour			PM Peak Hour		
			In	Out	Total	In	Out	Total
Proposed Residential Apartments <sup>b</sup>	191	1,281	19	78	97	79	44	123
Trip Credit from Existing Uses <sup>c</sup>		(667)	(67)	(33)	(100)	(17)	(63)	(80)
Net New Trips		614	(48)	45	(3)	62	(19)	43

Sources: Hexagon Transportation Consultants 2012, Institute of Transportation Engineers 2008.

<sup>a</sup> Residential Units

<sup>b</sup> Following Trip Generation equations for Code 220, Residential Apartments (Institute of Transportation Engineers 2008):

Weekday Daily:  $T = 6.06(X) + 123.56$

AM:  $T = 0.49(X) + 3.73$ , 20% enter, 80% exit

PM:  $T = 0.55(X) + 17.65$ , 65% enter, 35% exit

Where X = number of units, T = number of vehicle trips

<sup>c</sup> AM and PM peak hour driveway counts for the existing buildings were conducted on April 25, 2012. The daily trips were estimated assuming that 15% of the daily trips occurred during the highest peak hour.

## Transportation Demand Management

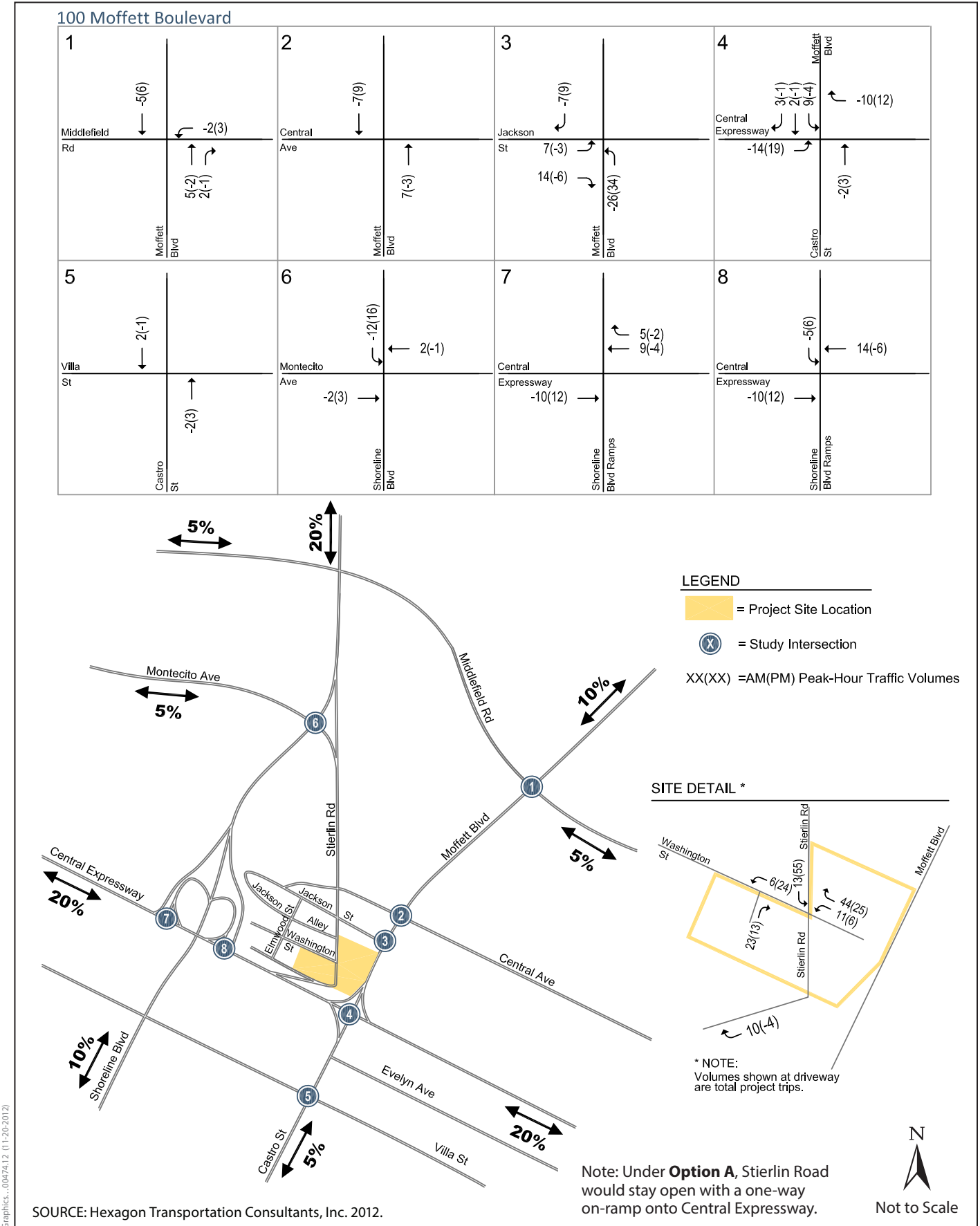
The intent of TDM strategies is to reduce vehicle trips and lessen the impact on traffic congestion anticipated to occur by a proposed development. Typical measures and strategies that encourage the use of alternative modes of travel include transit use, ridesharing (carpooling and vanpooling), bicycling, and walking. However, in order to conservatively estimate the Project's impacts on the operation of the street system, no trip reduction is assumed to account for these TDM measures.

As described in Chapter 2, *Project Description* (Section 2.4.6, *Green Building Practices, Energy Efficiency Measures, and Transportation Demand Management Features*), the Project includes the following minimum TDM measures.

- 191 resident bicycle storage
- 20 guest bicycle parking spaces
- Car-sharing space in Project garage

In addition to Project-level TDM measures, the Project location provides ease of access to transit facilities and bicycle and pedestrian facilities. Location-based TDM measures include the following.

- VTA Bus Route 51 on Moffett Boulevard with a bus stop at the intersection of Moffett Boulevard and Jackson Street.



**Figure 3.15-6**

**Project Trip Assignment: Option A**

100 Moffett Boulevard Residential Development Project

100 Moffett Boulevard

<p>1</p> <p>Middlefield Rd</p> <p>Moffett Blvd</p> <p>5(6) ↓</p> <p>2(3) ↗</p> <p>5(2) ↑</p> <p>2(1) ↘</p>	<p>2</p> <p>Central Ave</p> <p>Moffett Blvd</p> <p>7(9) ↓</p> <p>7(3) ↑</p>	<p>3</p> <p>Jackson St</p> <p>Moffett Blvd</p> <p>7(9) ↗</p> <p>7(3) ↘</p> <p>25(10) ↘</p> <p>26(34) ↘</p>	<p>4</p> <p>Central Expressway</p> <p>Castro St</p> <p>Moffett Blvd</p> <p>14(6) ↗</p> <p>2(1) ↘</p> <p>9(4) ↘</p> <p>10(12) ↗</p> <p>2(3) ↑</p>
<p>5</p> <p>Villa St</p> <p>Castro St</p> <p>2(1) ↓</p> <p>2(3) ↑</p>	<p>6</p> <p>Montecito Ave</p> <p>Shoreline Blvd</p> <p>12(16) ↗</p> <p>2(1) ↘</p> <p>2(3) ↘</p>	<p>7</p> <p>Central Expressway</p> <p>Shoreline Blvd Ramps</p> <p>5(2) ↗</p> <p>9(4) ↘</p> <p>10(12) ↘</p>	<p>8</p> <p>Central Expressway</p> <p>Shoreline Blvd Ramps</p> <p>5(6) ↗</p> <p>14(6) ↘</p> <p>10(12) ↘</p>

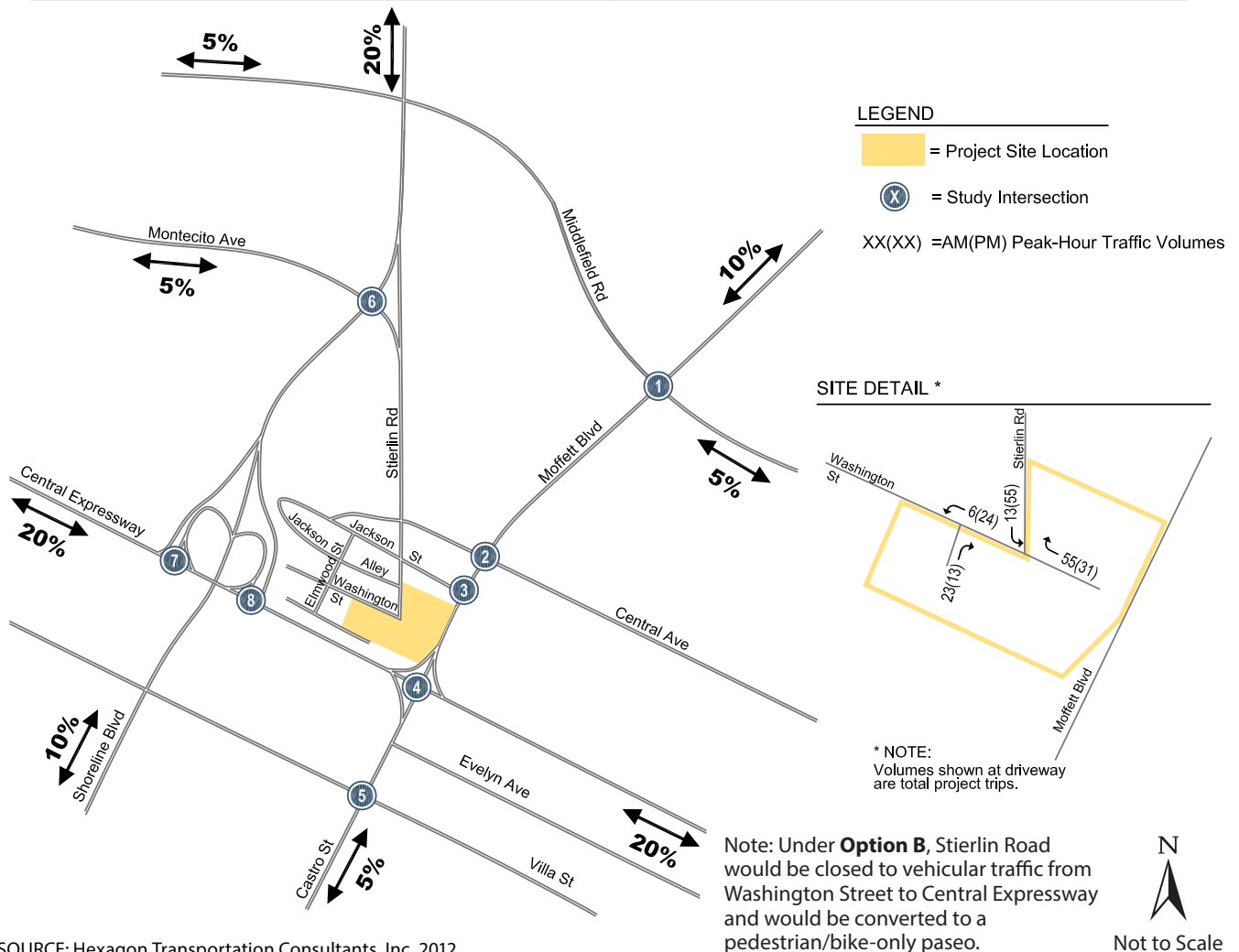


Figure 3.15-7

Project Trip Assignment: Option B

100 Moffett Boulevard Residential Development Project

- VTA Bus Routes 34, 35, and 52 at Mountain View Transit Station.
- VTA light rail service and Caltrain rail service at Mountain View Transit Station.
- Stevens Creek Trail access via Central Avenue.
- Bike route/lane access via Stierlin Road and Central Avenue.

## Impacts

<b>Impact TRA-1a</b>	Increased traffic from Project operation under the Existing plus Project Condition.
<b>Level of Impact</b>	Less than Significant

LOS calculations were conducted to evaluate intersection operations under the Existing plus Project Conditions for both Option A and Option B. The results of the LOS analysis are summarized in Table 3.15-4. The LOS at some study intersections would improve under the Existing plus Project Conditions compared to the Existing Condition. This is because the Project would replace the existing uses on the site and result in decreases of peak hour turning-movement volumes at some intersections. Figure 3.15-6 shows the net negative trips for certain movements at some study intersections.

The results of the LOS calculations indicate that all study intersections are projected to operate within acceptable LOS standards (LOS D or better for City intersections and LOS E or better for CMP intersections) during the AM and PM peak hours. Therefore, the Project meets acceptable LOS standards and significance thresholds established by the City of Mountain View and VTA. Project operational impacts at the study intersections would be less than significant.

In addition to intersection LOS analysis, vehicle queuing analysis was conducted for high-demand turning-movements at intersections where 10 or more project trips were added. The analysis was used to determine whether or not the existing storages or queues could accommodate the queued vehicles and provides a basis for estimating future storage requirements at analysis intersections.

The vehicle queuing analysis was conducted for one southbound left-turn lane, two southbound through lanes, and one eastbound left-turn lane at the intersection of Moffett Boulevard and Central Expressway. The vehicle queuing analysis for the southbound through lanes includes vehicles queued for right turns onto Central Expressway from the slip-lane. The intersection of Moffett Boulevard/Central Expressway is a CMP intersection, and the CMP LOS calculations at this intersection reflect the delay associated with the railroad gate closures due to Caltrain. The analysis used traffic volumes that would occur under Option B because it represents a conservative scenario, compared to Option A. The results of the queuing analysis are summarized in Table 3.15-5. Reported queues are presented in both vehicle volumes and length, which assume a typical length of 25 feet per queued vehicle. The analysis indicated that the estimated maximum vehicle queues for the southbound left-turn, southbound through, and eastbound left-turn movements would not exceed the existing vehicle storage capacity under any scenario during the AM and PM peak hours. Therefore, queued vehicles for the southbound left-turn movement would not extend into Moffett Boulevard through lanes; queued vehicles for the Moffett Boulevard southbound through and right-turn movements would not extend beyond the Jackson Street intersection; and queued vehicles for the eastbound left-turn movement would not extend into Central Expressway through lanes.

Consequently, the Project operational impact on the circulation of Moffett Boulevard and Central Expressway would be less than significant.

**Table 3.15-4. Existing and Existing Plus Project Intersection LOS**

Intersection	Peak Hour	Existing Condition		Existing Plus Project Option A		Existing Plus Project Option B	
		Delay (sec/veh) <sup>c</sup>	LOS	Delay (sec/veh) <sup>c</sup>	LOS	Delay (sec/veh) <sup>c</sup>	LOS
Moffett Boulevard and Middlefield Road	AM	27.9	C	28.3	C	28.3	C
	PM	27.5	C	28.1	C	28.1	C
Moffett Boulevard and Central Avenue	AM	16.0	B	16.5	B	16.7	B
	PM	17.6	B	18.0	B	19.0	B
Moffett Boulevard and Jackson Street <sup>b</sup>	AM	12.2	B	10.8	B	10.5	B
	PM	11.5	B	12.1	B	11.9	B
Moffett Boulevard and Central Expressway <sup>a</sup>	AM	41.1	D	40.8	D	43.2	D
	PM	42.9	D	43.0	D	46.0	D
Castro Street and Villa Street	AM	20.8	C	18.1	C	18.1	C
	PM	22.5	C	19.8	C	19.8	C
Shoreline Boulevard and Montecito Street/Stierlin Road	AM	15.4	B	15.9	B	15.9	B
	PM	15.9	B	17.6	B	17.6	B
Shoreline Boulevard and Central Expressway (W) <sup>a</sup>	AM	12.9	B	12.9	B	12.9	B
	PM	12.6	B	12.5	B	12.7	B
Shoreline Boulevard and Central Expressway (E) <sup>a</sup>	AM	8.7	A	8.6	A	8.6	A
	PM	10.4	B	10.5	B	10.5	B

Source: Hexagon Transportation Consultants 2012.

<sup>a</sup> CMP intersection.

<sup>b</sup> Unsignalized intersections.

<sup>c</sup> Average delay in seconds per vehicle.

**Table 3.15-5. Vehicle Queues at Moffett Boulevard and Central Expressway**

Movement	Storage Length (feet)	Peak Hour	Queue — Number of Vehicles (Length—feet)		
			Existing + Project	Background + Project	Cumulative + Project
Southbound Left Turn	200	AM	5 (125)	5 (125)	6 (150)
		PM	3 (75)	3 (75)	4 (100)
Southbound Through	530	AM	12 (300)	13 (325)	14 (350)
		PM	16 (400)	16 (400)	18 (450)
Eastbound Left Turn	450	AM	9 (225)	9 (225)	4 (100)
		PM	11 (275)	11 (275)	10 (250)

Source: Hexagon Transportation Consultants 2012.



### Moffett Boulevard Driveway

As described in Section 2.4.2 of the project description, the Project does not include a driveway on Moffett Boulevard, but the City is evaluating it as an option. Therefore, site access was analyzed with a driveway on Moffett Boulevard, in addition to the driveways on Stierlin Road and Washington Street. As described in Section 2.4.2, the driveway on Moffett Boulevard would be located at the Moffett Building North and would be restricted to right-turn in and right-turn out only movements. The left-turn movements would be restricted because (1) depending on the location of the proposed driveway, the existing raised median on Moffett Boulevard could potentially block the left-turn accesses of the proposed driveway; (2) there is not adequate storage on Moffett Boulevard between Jackson Street and Central Expressway to accommodate the left-turning vehicles into the Project site; and (3) left turns out of the Project site would disrupt the southbound traffic flow and could potentially increase southbound queuing on Moffett Boulevard.

With the left-turn restrictions, the Moffett Boulevard driveway would be used by Project inbound vehicles coming southbound on Moffett Boulevard (that would otherwise make right turns at Central Avenue or Jackson Street to access the Stierlin Road driveway) and project outbound vehicles heading southbound to Central Expressway and Castro Street (that would otherwise exit the Stierlin Road driveway and make right turns at Jackson Street to access Moffett Boulevard). Therefore, the Moffett Boulevard driveway would reduce the right turning vehicles to and from the Stierlin Road driveway via the Central Avenue/Moffett Boulevard intersection or the Jackson Street/Moffett Boulevard intersection. The Moffett Boulevard driveway would not affect the project trip distribution on surrounding roadways and the trip assignment for the other analysis intersections; therefore, the traffic operation conditions at study intersections as a result of the driveway would be similar to the analysis discussed above for Impact TRA-1a and below for Impacts TRA-1b, TRA-1c, and TRA-2.

<b>Impact TRA-1b</b>	Increased traffic from Project operation under the Background plus Project Condition.
<b>Level of Impact</b>	Less than Significant

The LOS calculations were conducted to evaluate intersection operations under the Background plus Project Conditions for both Option A and Option B. The LOS at some study intersections would improve under the Existing plus Project Conditions compared to Existing Condition. This is because the Project would replace the existing uses on the site and result in decreases of peak hour turning-movement volumes at some intersections. Figure 3.15-6 shows the net negative trips for certain movements at some study intersections.

At the Moffett Boulevard/Central Expressway intersection, the average vehicle delay for the Background Condition and the Background plus Project Conditions would be less than the average delay shown in Table 3.15-4 for the Existing Condition and the Existing plus Project Conditions. This is because the Background Conditions assume that the proposed improvements, as described under *Traffic Analysis Scenarios* above, at the Moffett Boulevard/Central Expressway intersection are in place. The proposed improvements include (1) dual left-turn lanes for the northbound approach on Moffett Boulevard/Castro Street and (2) protected phasing for the left turns (instead of split phasing under the Existing Conditions). These improvements would result in improved LOS and reduced vehicle delay and at this intersection.

The results of the LOS analysis are summarized in Table 3.15-6. The results of the LOS calculations indicate that all study intersections are projected to operate within acceptable LOS standards (LOS D or better for city intersections and LOS E or better for CMP intersections) during the AM and PM peak hours. Therefore, the Project meets acceptable LOS standards and significance thresholds established by the City of Mountain View and VTA. Project operational impacts at the study intersections would be less than significant.

The results of queuing analysis for the southbound left-turn, southbound through, and eastbound left-turn lanes at the intersection of Moffett Boulevard and Central Expressway are summarized in Table 3.15-5. The analysis as discussed in Impact TRA-1a indicated that the Project operational impact on the circulation of Moffett Boulevard and Central Expressway would be less than significant under all scenarios.

**Table 3.15-6. Background and Background plus Project Intersection LOS**

Intersection	Peak Hour	Background Condition		Background Plus Project Option A		Background Plus Project Option B	
		Delay (sec/veh) <sup>c</sup>	LOS	Delay (sec/veh) <sup>c</sup>	LOS	Delay (sec/veh) <sup>c</sup>	LOS
Moffett Boulevard and Middlefield Road	AM	28.3	C	28.2	C	28.2	C
	PM	28.1	C	28.2	C	28.2	C
Moffett Boulevard and Central Avenue	AM	17.3	B	17.3	B	17.5	B
	PM	19.2	B	18.7	B	19.7	B
Moffett Boulevard and Jackson Street <sup>b</sup>	AM	12.3	B	11.1	B	11.1	B
	PM	11.7	B	12.4	B	12.4	B
Moffett Boulevard and Central Expressway <sup>a</sup>	AM	39.1 <sup>d</sup>	D	38.7 <sup>d</sup>	D	41.7 <sup>d</sup>	D
	PM	41.1 <sup>d</sup>	D	41.2 <sup>d</sup>	D	42.9 <sup>d</sup>	D
Castro Street and Villa Street	AM	20.9	C	20.9	C	20.9	C
	PM	22.0	C	22.1	C	22.1	C
Shoreline Boulevard and Montecito Street/ Stierlin Road	AM	16.1	B	15.7	B	15.7	B
	PM	17.0	B	17.4	B	17.4	B
Shoreline Boulevard and Central Expressway (W) <sup>a</sup>	AM	12.9	B	12.9	B	12.9	B
	PM	12.6	B	12.6	B	12.7	B
Shoreline Boulevard and Central Expressway (E) <sup>a</sup>	AM	8.7	A	8.6	A	8.6	A
	PM	10.4	B	10.6	B	10.6	B

Source: Hexagon Transportation Consultants 2012.

<sup>a</sup> CMP intersection.

<sup>b</sup> Unsignalized intersections.

<sup>c</sup> Average delay in seconds per vehicle.

<sup>d</sup> The average vehicle delay under the Background Conditions is less than the delay under the Existing Conditions shown in Table 3.15-4 because the Background Conditions account for signal modification improvements, expected to be completed by December 2013. The proposed improvements are described in *Background Condition* under *Traffic Analysis Scenarios* above.

<b>Impact TRA-1c</b>	Increased traffic from Project operation under the Cumulative plus Project Condition.
<b>Level of Impact</b>	Less than Significant

LOS calculations were conducted to evaluate intersection operations under the Cumulative plus Project Conditions for both Option A and Option B. The results of the LOS analysis are summarized in Table 3.15-7. The results of the LOS calculations indicate that all study intersections are projected to operate within acceptable LOS standards (LOS D or better for city intersections and LOS E or better for CMP intersections) during the AM and PM peak hours. Therefore, the Project meets acceptable LOS standards and significance thresholds established by the City of Mountain View and VTA. Project operational impacts at the study intersections would be less than significant.

**Table 3.15-7. Cumulative and Cumulative plus Project Intersection LOS**

Intersection	Peak Hour	Cumulative Condition		Cumulative Plus Project Option A		Cumulative Plus Project Option B	
		Delay (sec/veh) <sup>c</sup>	LOS	Delay (sec/veh) <sup>c</sup>	LOS	Delay (sec/veh) <sup>c</sup>	LOS
Moffett Boulevard and Middlefield Road	AM	28.8	C	28.7	C	28.7	C
	PM	28.6	C	28.7	C	28.7	C
Moffett Boulevard and Central Avenue	AM	16.7	B	16.7	B	16.8	B
	PM	18.5	B	18.2	B	19.0	B
Moffett Boulevard and Jackson Street <sup>b</sup>	AM	13.3	B	12.5	B	11.2	B
	PM	11.7	B	13.4	B	13.0	B
Moffett Boulevard and Central Expressway <sup>a</sup>	AM	40.7	D	40.4	D	43.5	D
	PM	43.0	D	43.3	D	45.3	D
Castro Street and Villa Street	AM	22.7	C	22.7	C	22.7	C
	PM	24.0	C	24.1	C	24.1	C
Shoreline Boulevard and Montecito Street/ Stierlin Road	AM	15.6	B	15.2	B	15.2	B
	PM	16.4	B	16.8	B	16.8	B
Shoreline Boulevard and Central Expressway (W) <sup>a</sup>	AM	13.8	B	13.9	B	13.9	B
	PM	13.6	B	13.5	B	13.7	B
Shoreline Boulevard and Central Expressway (E) <sup>a</sup>	AM	9.5	A	9.4	A	9.4	A
	PM	11.4	B	11.7	B	11.7	B

Source: Hexagon Transportation Consultants 2012.

<sup>a</sup> CMP intersection.

<sup>b</sup> Unsignalized intersections.

<sup>c</sup> Average delay in seconds per vehicle.

<sup>d</sup> The average vehicle delay under the Cumulative Conditions is less than the delay under the Existing Conditions shown in Table 3.15-4 because the Cumulative Conditions account for signal modification improvements, expected to be completed by December 2013. The proposed improvements are described in *Traffic Analysis Scenarios* above.

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<b>Impact TRA-1d</b>	Increased traffic and disruption to circulation system during Project construction.
<b>Level of Impact</b>	Less than Significant with Mitigation TRA-MM-1: Develop and implement a construction traffic control plan.

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Project construction is expected to occur between 2014 and 2015. Transportation system impacts during Project construction include the potential to disrupt traffic flows on area roadways and the potential to disrupt alternative modes of transportation, such as blocking bicycle or pedestrian pathways or public transit lanes on area roadways. Disruption to traffic flows could be caused by heavy-duty construction vehicles sharing the roadway with normal vehicle traffic, creating potential conflicts between incompatible uses, and by utility installation in Stierlin Road, Washington Street, and Moffett Boulevard or other construction activities requiring temporary lane closures. Although construction impacts would be temporary in nature, this impact is considered potentially significant. Implementation of a construction traffic control plan, as prescribed in **Mitigation Measure TRA-MM-1**, would reduce the potential for construction vehicle conflicts with other roadway users to a less-than-significant level.

**Mitigation Measure TRA-MM-1: Develop and implement a construction traffic control plan.**

Prior to issuance of any building permits, the construction contractor will develop the traffic control plan in accordance with City policies and submit for City approval. The plan will be implemented throughout the course of Project construction and may include, but will not be limited to, the following elements.

- Limit truck access to the Project site during peak commute times (7 a.m. to 9 a.m. and 4 p.m. to 6 p.m.).
- Require that written notification be provided to contractors regarding appropriate routes to and from the Project site, as well as the weight and speed limits on local roads used to access the Project site.
- Provide access for emergency vehicles at all times.
- When lane closures occur, provide advance notice to local fire and police departments to ensure that alternative evacuation and emergency routes are designed to maintain response times.
- Provide adequate onsite parking for construction employees, site visitors, and inspectors as feasible.
- Maintain pedestrian and bicycle access and circulation during Project construction where safe to do so. If construction encroaches on a sidewalk, a safe detour will be provided for pedestrians at the nearest crosswalk. If construction encroaches on a bike lane, warning signs will be posted that indicate bicycles and vehicles are sharing the roadway.
- Require traffic controls in the Project area and the Project entrance driveway, including flag persons wearing bright orange or red vests and using a “Stop/Slow” paddle to control oncoming traffic.

- Post standard construction warning signs in advance of the construction area and at any intersection that provides access to the construction area.
- Repair or restore the road right-of-way to its original condition or better upon completion of the work.

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<b>Impact TRA-2</b>	Increased traffic and potential conflict with applicable CMP standards.
<b>Level of Impact</b>	Less than Significant

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As described for Impacts TRA-1a, TRA-1b, and TRA-1c, Project impacts on the performance of the transportation and circulation system, including operation of the CMP intersections on Central Expressway, would be less than significant. Based on the VTA Guidelines, the Project is not expected to increase traffic equal to or at least 1 percent of the nearby freeway segments' capacity; therefore, no freeway segment analysis is required for CMP freeway segments. Although the Project is expected to add vehicle trips to nearby freeways, the level of increase associated with the Project is considered less than significant.

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<b>Impact TRA-3a</b>	Increased hazards offsite from vehicles entering and exiting the site.
<b>Level of Impact</b>	Less than Significant with Mitigation TRA-MM-2: Implement all-way stop controls at the intersection of Stierlin Road and Washington Street. TRA-MM-3: If driveway installed on Moffett Boulevard, extend the median farther north on Moffett Boulevard or construct a pork-chop island with a right-turn only sign at the Moffett Boulevard driveway (Moffett Boulevard driveway option only).

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The Project includes two full access driveways to the underground parking garages, one on Washington Street and one on Stierlin Road. The driveway on Stierlin Road would have 68 AM peak hour trips (13 inbound and 55 outbound) and 86 PM peak hour trips (55 inbound and 31 outbound), and the driveway on Washington Street would have 29 AM peak hour trips (6 inbound and 23 outbound) and 37 PM peak hour trips (24 inbound and 13 outbound). Based on the expected garage gate operation and vehicle flows into and out of the site, it is expected that the driveways could accommodate staged vehicles and queues without spill onto Stierlin Road or Washington Street. Therefore, the Project traffic is not expected to disrupt traffic flow on Stierlin Road or Washington Street.

The driveway on Stierlin Road would be located near the intersection of Stierlin Road and Washington Street, which could result in safety hazards because of the offset in roadway alignment on Stierlin Road and the limited sight distance for vehicles exiting the project driveway on Stierlin Road. Under existing conditions, the intersection of Stierlin Road and Washington Street is unsignalized with a stop control on Washington Street and no stop control on Stierlin Road. With Project implementation, Stierlin Road south of Washington Street would be narrowed down to a one-way street to connect to Central Expressway westbound (Option A) or would terminate with no connection to Central Expressway (Option B). This lane modification would result in an offset in alignment for the southbound approach on Stierlin Road at Washington Street. Because of this offset in roadway alignment, the Project could potentially result in safety hazards for vehicles, pedestrians and bicyclists entering the Stierlin Road/Washington Street intersection from all directions if there

is not adequate intersection control designed for the reconfigured intersection. This impact on intersection safety is considered potentially significant. Implementation of **Mitigation Measure TRA-MM-2** would reduce the safety hazards at the intersection to a less-than-significant level.

**Mitigation Measure TRA-MM-2: Implement all-way stop controls at the intersection of Stierlin Road and Washington Street.**

The Applicant and the City will ensure the off-site improvement plans for the intersection of Stierlin Road and Washington Street provide stop control on all approaches under both Option A and Option B.

**Moffett Boulevard Driveway**

As described in Section 2.4.2 of the Project Description, the Project does not include a driveway on Moffett Boulevard, but the City is evaluating it as an option. Therefore, site access was analyzed with a driveway on Moffett Boulevard in addition to the driveways on Stierlin Road and Washington Street. As described in Section 2.4.2, the driveway on Moffett Boulevard would be located at the Moffett Building North and would be restricted to right-turn in and right-turn out only movements.

The Moffett Boulevard driveway would be used by Project inbound vehicles coming southbound on Moffett Boulevard (that would otherwise make right turns at Central Avenue or Jackson Street to access the Stierlin Road driveway) and project outbound vehicles heading southbound to Central Expressway and Castro Street (that would otherwise exit the Stierlin Road driveway and make right turns at Jackson Street to access Moffett Boulevard). Therefore, the Moffett Boulevard driveway would reduce the vehicles using the Stierlin Road driveway. Under Option A (in which the end of Stierlin Road would be converted to one-way access to Central Expressway), the Moffett Boulevard driveway would serve 21 AM peak hour trips (2 inbound and 19 outbound) and 19 PM peak hour trips (8 inbound and 11 outbound). Under the Option B (in which the end of Stierlin Road would be closed to vehicular traffic and thus no access to Central Expressway), the Moffett Boulevard driveway would serve approximately 32 AM peak hour trips (2 inbound and 30 outbound) and 25 PM peak hour trips (8 inbound and 17 outbound). The driveway would operate at acceptable LOS A under both Project Options.

Based on the queuing analysis shown in Table 3.15-5, southbound vehicle queues on Moffett Boulevard extend just short of the Jackson Street intersection. Depending on the location of the Moffett Boulevard driveway, it is possible that the southbound vehicular queues on Moffett Boulevard could extend past the driveway, resulting in longer delays for the vehicles exiting the Project site. These queues would be momentary and are not expected to cause any significant operational problems at the driveway. Although use of the Moffett driveway would be restricted to right-in and right-out access, it would provide another access option for the future residents.

If the Moffett Boulevard driveway is located north of the existing raised median on Moffett Boulevard, it is possible that drivers would ignore the restriction and make the left-turn because there is no median to prevent the left turn. This would result in safety hazards for vehicles traveling on Moffett Boulevard, as well as vehicles exiting the site. This impact on is considered potentially significant. Implementation of **Mitigation Measure TRA-MM-3** would reduce the safety hazards at the driveway location to a less-than-significant level.

**Mitigation Measure TRA-MM-3: If the driveway is installed on Moffett Boulevard, extend the median farther north on Moffett Boulevard or construct a pork-chop island with a right-turn only sign at the Moffett Boulevard driveway (Moffett Boulevard driveway option only).**

If the driveway is installed on Moffett Boulevard, the City will restrict left turns from the Moffett Boulevard driveway onto Moffett Boulevard by extending the median farther north on Moffett Boulevard or by constructing a pork-chop island with a right-turn only sign at the Project driveway. Extending the median farther north on Moffett Boulevard could potentially restrict the driveway accesses for business on the east side of Moffett Boulevard that currently have no median to restrict the left-turn access.

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<b>Impact TRA-3b</b>	Increase hazards on site in the underground parking garage.
<b>Level of Impact</b>	Less than Significant

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The internal circulation for the underground parking garage was reviewed for dead-end aisles, parking stall angle, lane width, and garage ramps that would be difficult to maneuver in and out of. The proposed site plan includes two driveways: one along Stierlin Road and one along Washington Street. Both driveways provide access to the underground parking garages with no shared access between the Moffett (east) and Central (west) buildings. A vertical clearance of 12 feet 2 inches is provided in the parking garage, and the parking aisles are 24 feet wide, which is adequate for two-way circulation of vehicular traffic. Guest parking would be provided in the Moffett (east) building only. Resident parking would be separated from guest parking using a secured gate. All of the proposed parking spaces would be perpendicular. The underground garage includes dead-end aisles, but resident parking would be assigned, which would alleviate circulation challenges for resident parking. Based on the review of the site plan, adequate circulation is provided on site in the parking garages. This impact is considered less than significant.

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<b>Impact TRA-3c</b>	Increased hazards for pedestrians/bikes across the Moffett Boulevard/Central Expressway intersection.
<b>Level of Impact</b>	Less than Significant

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The Project would increase pedestrian/bicycle use in the area and across the Moffett Boulevard/Central Expressway intersection to access the transit station and Downtown. Because the Project is located close to bus and rail facilities at the Mountain View transit station, it is expected that the new residents would utilize the convenient transit services. Based on the VTA's TIA guidelines, it is estimated that during the peak hour, approximately 10–12 residents<sup>3</sup> would cross the Moffett Boulevard/Central Expressway intersection and utilize the transit facilities at the Mountain View transit station.

As discussed in *Nonmotorized Transportation Facilities* above, there is an existing pedestrian safety concern at the Moffett Boulevard/Central Expressway intersection. Pedestrians using the north and

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<sup>3</sup> Although no trip credit was taken in the trip generation estimate for vehicle trips, the VTA's TIA guidelines allow up to a 9 percent vehicle trip reduction for projects near a rail station, which would be 10–12 peak hour vehicle trips. Assuming one person per vehicle trip, it is expected that approximately 10–12 residents from the Project site would utilize the transit facilities at the Mountain View transit station.

west crosswalks must use a short uncontrolled crosswalk on the southbound right-turn slip lane<sup>4</sup> to access the signal controlled crosswalks across the intersection. In general, slip lanes pose a hazard to pedestrians for a number of reasons. Drivers tend to concentrate on merging with oncoming traffic and may not see pedestrians entering the crosswalk. In high-traffic areas, inadequate gaps in uncontrolled right-turning traffic may exist, making crossing a slip turn lane difficult for pedestrians. The non-standard corner geometry introduced by slip lanes is also difficult for people with visual impairments to negotiate.

Based on the existing pedestrian/bike counts at the Moffett Boulevard/Central Expressway intersection, there are approximately 250 to 300 pedestrians/bikes across the intersection during the peak hour. The Project is anticipated to add at least 10–12 pedestrian/bike trips, which is a small fraction of total pedestrians/bikes using the intersection. Therefore, although there is an existing pedestrian safety concern at the intersection, the Project is not expected to significantly increase the safety hazards for pedestrians/bikes across the Moffett Boulevard/Central Expressway intersection. The impact would be less than significant.

In addition, as described in Section 2.4.3, *Roadway Modifications*, the Project includes the option of removing the right-turn slip lane, which would enable pedestrians/bikes to more safely access the signal controlled intersection and crosswalks without having to cross the uncontrolled slip lane. The improvement, if implemented as part of the Project, would result in a beneficial effect.

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<b>Impact TRA-4</b>	Potential for inadequate emergency access.
<b>Level of Impact</b>	Less than Significant with Mitigation
	TRA-MM-1: Develop and implement a construction traffic control plan.

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There would be a significant impact if the Project failed to maintain emergency access and circulation at all times or caused an increase in response times. Fire and emergency vehicle access to the Project site would remain the same as the existing condition, which would be provided via Moffett Boulevard, Stierlin Road, and Washington Street. In addition, there would be a fire turnaround provided along the western Project boundary to provide egress for any emergency vehicle using Washington Alley, which would dead-end at the Project. Under Option B, the Stierlin Road On-Ramp would be closed to vehicular access, but emergency vehicle access would be provided via Moffett Boulevard, Stierlin Road, and Washington Street. Therefore, the Project would not result in inadequate emergency access once constructed and operational.

During Project construction, emergency access to the Project site and in the immediate vicinity could be disrupted because of lane closures for utility installation or construction-related traffic, which could delay or obstruct the movement of emergency vehicles. Implementation of **Mitigation Measure TRA-MM-1** would reduce the impact on emergency access to a less-than-significant level.

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<sup>4</sup> Under the existing lane configuration at the intersection of Moffett Boulevard and Central Expressway, the corner island on the southbound approach on Moffett Boulevard creates a slip lane, which separates right turning vehicles from through traffic with no traffic control for the slip lane. Right turning traffic in the slip lane merges with westbound traffic on Central Expressway.



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<b>Impact TRA-5</b>	Potential conflict with nonmotorized transportation facilities.
<b>Level of Impact</b>	Less than Significant with Mitigation
	TRA-MM-1: Develop and implement a construction traffic control plan.

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The City does not specify impact criteria for effects on pedestrians, bicycles, and transit. However, these impacts are generally evaluated based on whether a project would: (1) conflict with existing or planned pedestrian, bicycle, or transit facilities, or (2) create walking, bicycling, or transit use demand without providing adequate and appropriate facilities for nonmotorized mobility. The Project would not conflict with existing or planned pedestrian, bicycle, or transit facilities; but it would create walking, bicycling, or transit demand in the area by increasing the number of residents.

As described in *Nonmotorized Transportation Facilities* above, there are sidewalks in the immediate Project vicinity along Moffett Boulevard, Stierlin Road, Central Avenue, Jackson Street, Washington Street, and Castro Street; and there will be sidewalks along Central Expressway. There are bike lanes and bike routes along Stierlin Road, Central Avenue, and Moffett Boulevard; and Jackson Street and Washington Street carry low traffic volumes and are conducive to bicyclists.

The pedestrian and bicycle counts conducted at the intersection of Moffett Boulevard and Central Expressway indicate that there is substantial pedestrian/bike activity in the Project vicinity to and from downtown Mountain View. From the Project site, pedestrians/bikes must cross the uncontrolled right-turn slip lane (used by vehicles going from southbound Moffett Boulevard to westbound Central Expressway) to access the signal controlled crosswalks across the Moffett Boulevard/Central Expressway intersection.

During Project construction, there would be temporary sidewalk and lane closures on Stierlin Road, Washington Street, and Moffett Boulevard adjacent to the Project site. This would temporarily decrease the performance of the sidewalk and the safety of bicycle riders. Implementation of **Mitigation Measure TRA-MM-1** would reduce this impact to a less-than-significant level.

Once constructed and operational, the Project would increase pedestrian/bicycle use in the area and across the Moffett Boulevard/Central Expressway intersection to access the transit station and Downtown. Because the Project is located close to bus and rail facilities at the Mountain View transit station, it is expected that the new residents would utilize the convenient transit services. It is estimated that during the peak hour, approximately 10–12 residents<sup>5</sup> would cross the Moffett Boulevard/Central Expressway intersection and utilize the transit facilities at the Mountain View transit station, which could be accommodated by the existing transit services.

The Project includes a public mews between Buildings B and C providing pedestrian access between Moffett Boulevard and Stierlin Road in a mid-block location. The Project also includes construction of sidewalks along its frontage on Stierlin Road and Central Expressway. Under Option A, these improvements would be along the one-way roadway, and would also incorporate two-way bicycle access. Under Option B, this would be a two-way pedestrian/bicycle only *paseo*. Pedestrians/bikes from Stierlin Road would travel through the Project site to the sidewalk on Moffett Boulevard to

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<sup>5</sup> Although no trip credit was taken in the trip generation estimate for vehicle trips, the VTA's TIA guidelines allow up to a 9 percent vehicle trip reduction for projects near a rail station, which would be 10–12 peak hour vehicle trips. Assuming one person per vehicle trip, it is expected that approximately 10–12 residents from the Project site would utilize the transit facilities at the Mountain View transit station.

access the crosswalks across Central Expressway and Moffett Boulevard. Therefore, the Project would provide a better connection to the Central Expressway/Moffett Boulevard intersection and major transit facilities at Mountain View transit station for bikes and pedestrians. The impact is less than significant.

In addition, the Project includes the option of removing the right-turn slip lane (from southbound Moffett Boulevard to westbound Central Expressway), which would enable pedestrians/bikes to more safely access the signal controlled intersection and crosswalks without having to cross the uncontrolled slip lane. The improvement, if implemented as part of the Project, would result in a beneficial effect.



## HEXAGON TRANSPORTATION CONSULTANTS, INC.

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March 2, 2012

Mr. Nathan Tuttle  
Prometheus Real Estate Group  
1900 S. Norfolk Street, Suite 150  
San Mateo, CA 94403

**Re: Results of Cut-through Traffic Study of Stierlin Ramp to Central Expressway in Mountain View, CA**

Dear Mr. Tuttle:

Hexagon Transportation Consultants, Inc., has completed a license plate survey to determine the amount of cut-through traffic that uses the Stierlin Road on-ramp to Central Expressway in Mountain View, CA. Cut-through traffic is defined as traffic that does not originate in the neighborhood bounded by Shoreline Boulevard, Moffett Boulevard and Central Expressway. Cut-through traffic can enter the neighborhood via Stierlin Road, Central Avenue, or Jackson Street. For two hours in the morning and two hours in the afternoon, Hexagon recorded the license plate of every vehicle that entered the neighborhood from Stierlin Road (at Montecito Avenue), Central Avenue (at Moffett), and Jackson Street (at Moffett). License plates also were recorded for every vehicle that used the Stierlin ramp to get onto Central Expressway. Any license plate matches within a five-minute period were defined as cut-through traffic.

The results of the study show that about 55% of the vehicles using the Stierlin ramp to Central Expressway are cutting through the neighborhood (see Tables 1 and 2). Of the cut-through traffic, about 50% enters the neighborhood via Central Avenue, 35% via Jackson Street, and 15% via Stierlin Road. When we apply these percentages to the daily traffic count on the Stierlin ramp (750 vehicles per day), we get an estimate of about 200 cut-through vehicles per day on Central Avenue, 150 cut-through vehicles per day on Jackson Street, and 400 cut-through vehicles per day on Stierlin, near the ramp.

We appreciate the opportunity to submit these data for your review. Please do not hesitate to contact us if additional information is needed.

Sincerely,

Hexagon Transportation Consultants, Inc.

Gary K. Black  
President



Mr. Nathan Tuttle  
March 2, 2012  
Page 2 of 3

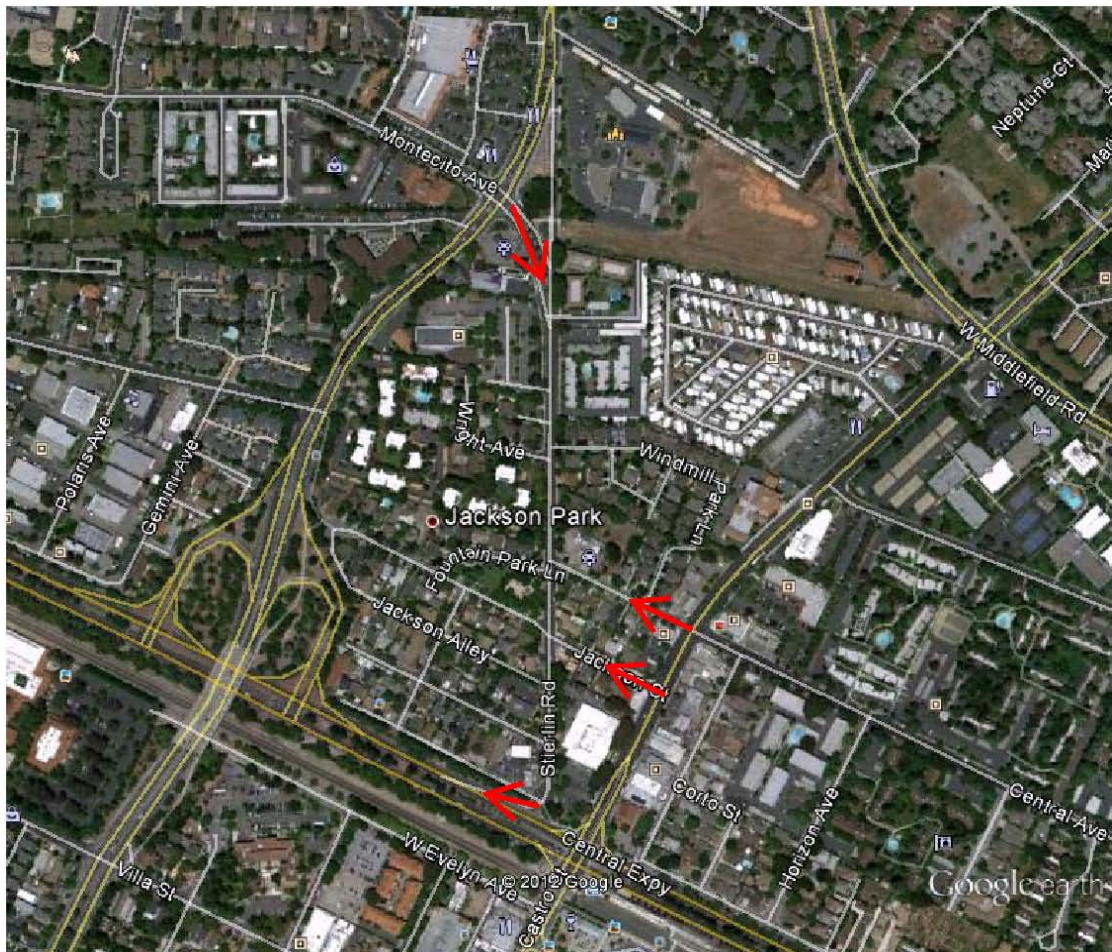
**Table 1 – AM Analysis**

<b>7:30 - 9:30 AM License Plate Survey</b>				
	<b>Stierlin Road</b>	<b>Central Avenue</b>	<b>Jackson Street</b>	<b>Central Expressway</b>
<b>Direction</b>	IN	IN	IN	OUT
<b>Total Cars Counted</b>	317	268	116	131
<b>Matches to Central Expressway ramp</b>	7	39	26	
<b>Total Cut through traffic on ramp</b>				72
<b>% Cut through on ramp</b>				55%
<b>Cut Through Distribution</b>	10%	54%	36%	

**Table 2 – PM Analysis**

<b>3:30 - 5:30 PM License Plate Survey</b>				
	<b>Stierlin Road</b>	<b>Central Avenue</b>	<b>Jackson Street</b>	<b>Central Expressway</b>
<b>Direction</b>	IN	IN	IN	OUT
<b>Total Cars Counted</b>	330	214	81	107
<b>Matches to Central Expressway ramp</b>	15	30	19	
<b>Total Cut through traffic on ramp</b>				64
<b>% Cut through on ramp</b>				60%
<b>Cut Through Distribution</b>	23%	47%	30%	

Mr. Nathan Tuttle  
March 2, 2012  
Page 3 of 3



Google earth

feet 1000  
meters 500

License Plate Survey Counts Locations