



Memorandum

Date: February 23, 2018
To: Mr. Bryan Robertson, Piercy Tower Alpha LLC
From: Brian Jackson, Rueben Rodriguez
Subject: 459 & 469 Piercy Road Hotels Traffic Operations Study

Introduction

Hexagon Transportation Consultants, Inc. has completed a traffic operations study for two proposed hotels at 459 and 469 Piercy Road in San Jose, California. The project as proposed would construct a 112-room hotel at 459 Piercy Road and a 175-room hotel at 469 Piercy Road. The project sites are located on the northeast corner of the Hellyer Avenue and Piercy Road intersection. The project sites and surrounding area are shown on Figure 1.

The 459 Piercy Road hotel site is 2.02 acres and is currently unoccupied. The 469 Piercy Road hotel site is 3.4 acres and is currently occupied by one single-family home. The project would demolish the existing single-family home. The project would be accessible from driveways located along Hellyer Avenue and Piercy Road, and would provide surface parking. The 459 and 469 Piercy Road site plans are shown Figures 2 and 3, respectively. Two driveways on Hellyer Avenue would provide access to the 459 Piercy Road site, and one driveway on Hellyer Avenue and one driveway on Piercy Road would provide access to the 469 Piercy Road site. The project is not proposing to provide cross access between the two properties.

The project sites are located in the Edenvale Industrial Area (Area 3), which means the sites already have approval for Light Industrial/R&D development as part of the Edenvale Area Development Policy (EADP). Thus, the project would receive credit for the approximately 94,000 s.f. of Light Industrial/R&D development approved for the sites. In addition, the project would receive trip credits for the existing single-family home on-site. For any approved trips that would remain after applying these trip credits, the project can “buy” trips from the EADP pool of industrial-based trips. This means that other approved EADP trips can be assigned to the proposed project to achieve a net zero increase in project trips. For these reasons, City of San Jose staff have indicated that a comprehensive transportation impact analysis (TIA) is not required for the project, but that a focused traffic operations study is more appropriate.

The methodology and results of the traffic operations study prepared for the proposed hotels are presented below.

Scope of Study

The purpose of this traffic study is to satisfy the requirements of the City of San Jose. The traffic study focuses on evaluating site access, including sight distance at the project driveways, circulation, truck access, pedestrian and bicycle facilities, and transit services. The traffic study also determined the effects of the proposed hotel developments on two key intersections in the vicinity of the project sites during the weekday AM and PM peak hours of traffic (see Figure 1).



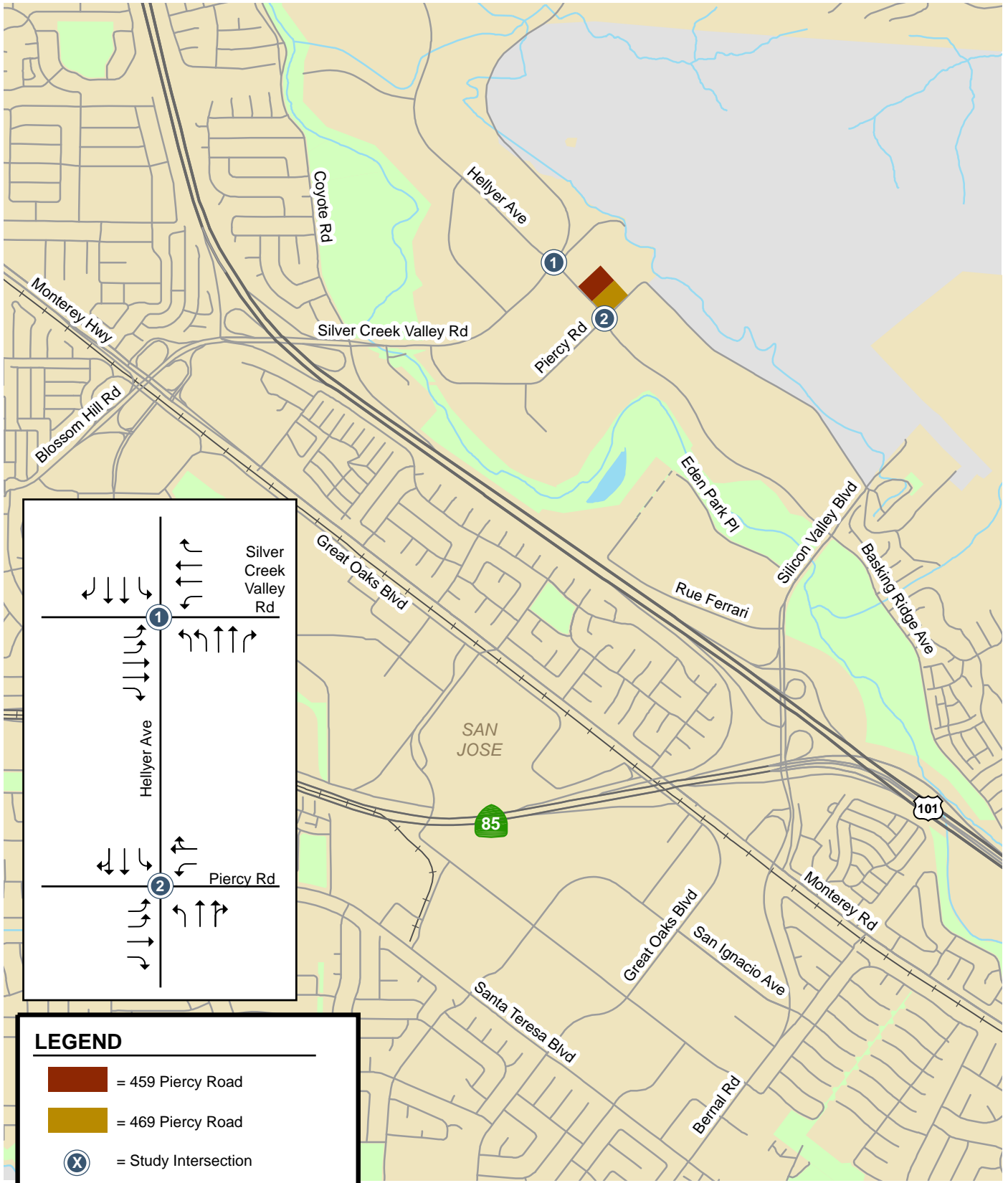


Figure 1
Site Location, Study Intersections, and Existing Lane Geometry

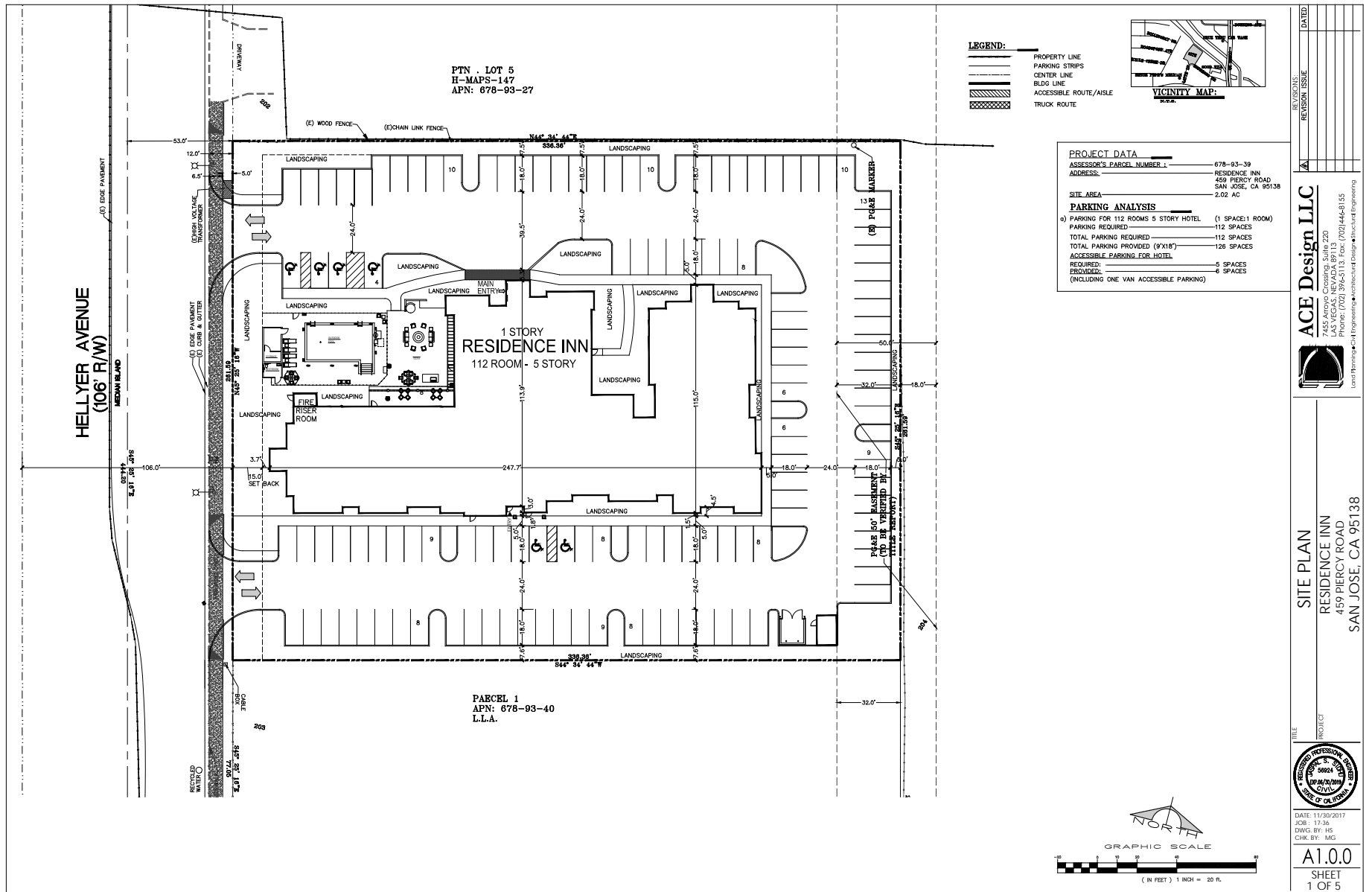


Figure 2
 Proposed 459 Piercy Road Site Plan

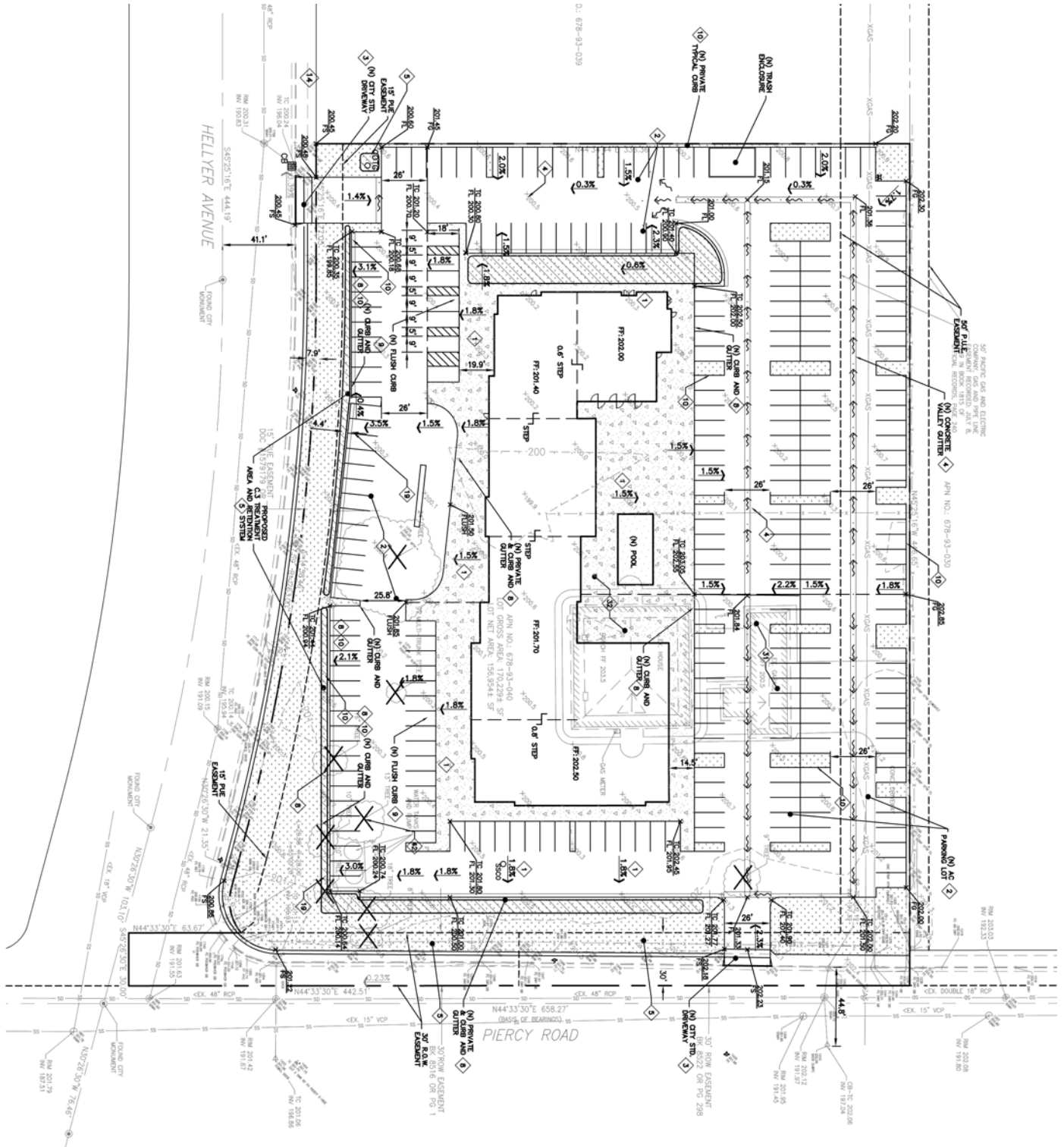


Figure 3
Proposed 468 Piercy Road Site Plan

Study Intersections

Traffic conditions were evaluated at the two signalized intersections listed below.

1. Hellyer Avenue and Silver Creek Valley Road
2. Hellyer Avenue and Piercy Road

Analysis Time Periods

Traffic conditions at the study intersections were analyzed for the weekday AM and PM peak hours of adjacent street traffic. The AM peak hour of traffic is typically between 7:00 AM and 9:00 AM, while the PM peak hour of traffic is typically between 4:00 PM and 6:00 PM. These are the peak commute hours during which most weekday traffic congestion occurs on the roadways in the study area.

Analysis Scenarios

Traffic conditions were analyzed for the following scenarios:

- Scenario 1:** *Existing Conditions.* Existing AM and PM peak-hour traffic volumes were obtained from the City of San Jose TRAFFIX count database.
- Scenario 2:** *Existing Plus Project Conditions.* Existing plus project peak-hour traffic volumes were estimated by adding to existing traffic volumes the new trips generated by the proposed project, with trip credits taken for the existing single-family home on-site.
- Scenario 3:** *Background Plus Conditions.* Background traffic volumes represent existing volumes plus the projected volumes from approved development that has not yet been constructed and occupied. Approved project trips and information were obtained from the City of San Jose. Included in the City's Approved Trips Inventory (ATI) are the Edenvale Area trips. Since the ATI contains trips associated with approved Light Industrial and R&D development in the Edenvale Area, the ATI already includes the Light Industrial/R&D trips approved for the project site.
- Scenario 4:** *Background Plus Project Conditions.* Background plus project peak-hour traffic volumes were estimated by adding to background traffic volumes the net new trips generated by the proposed project. The net new trips generated by the proposed project include trip credits for the existing single-family home on-site and trip credits for the EADP Light Industrial/R&D approved trips for the project site.

Edenvale Area Development Policy

The Edenvale area in south San Jose is a geographic area that is subject to the Edenvale Area Development Policy (EADP) adopted by San Jose in 2000 in conformance with the provisions of the General Plan Policy TR-5.3. According to the EADP, updated in April 2014, the Edenvale area is subdivided into three areas: "New Edenvale Area", "Old Edenvale", and "Mixed-Use Development Area". The "New Edenvale Area", which is generally east of the US 101 between Hellyer Avenue and Silicon Valley Boulevard, is designated for Industrial Park/R&D/Office land uses and includes the project site. The "Old Edenvale" area, which is generally bounded to the west by Santa Teresa Boulevard, to the east by SR 85, to the north by Cottle Road, and to the south by Bernal Road, is designated for Industrial Park/R&D/Office land uses. The "Mixed-Use Development Area", which is generally west of Monterey Road between Cottle Road and SR 85, is designated for Retail, Office, and Residential land uses.

Uses other than Industrial Park/R&D/Office can be approved under the City's Zoning Code for the Edenvale area east of US 101 (which is where the project sites are located), providing that a traffic analysis performed for the proposed project determines that the number and distribution of trips associated with the new use would not exceed the trips associated with the type and level of development allocated to the sites under the EADP or that trip credits allocated to the sites and trips from the EADP "pool" together enable the proposed project to have a net zero increase in trips.

The EADP was adopted to provide for the timely approval of up to 5 million square feet (MSF) of R&D/Light Industrial development in the Edenvale Redevelopment Project Area and acknowledges that significant congestion will occur at major gateway locations (i.e., US 101/Blossom Hill Road-Silver Creek Valley Road and US 101/Hellyer Avenue interchanges) until major roadway improvements are constructed in the future. The EADP allows the level of service at the US 101/Blossom Hill Road-Silver Creek Valley Road and US 101/Hellyer Avenue interchanges to deteriorate to levels below the existing acceptable levels of service identified in Council Policy 5-3, Transportation Level of Service, as an interim condition until improvements to the impacted intersections are constructed to return to a level of service better than or equal to the background traffic conditions identified in the EADP once the planned improvements are constructed for the EADP area.

Existing Conditions

This section describes the existing conditions for all the major transportation facilities in the vicinity of the sites, including the roadway network, pedestrian and bicycle facilities, and transit service. Also included is a summary of the field observations at the study intersections.

Existing Roadway Network

Regional access to the project sites is provided by US 101, SR 85, and Monterey Road.

US 101 is an eight-lane freeway (three mixed-flow lanes and one HOV lane in each direction) in the vicinity of the sites. US 101 extends northward through San Francisco and southward through Gilroy. Access to and from the sites is provided via full interchanges at Blossom Hill Road/Silver Creek Valley Road and Bernal Road/Silicon Valley Boulevard.

SR 85 is a predominantly north-south freeway that is oriented in an east-west direction in the vicinity of the project sites. It extends from Mountain View to south San Jose, terminating at US 101. SR 85 is a six-lane freeway with four mixed-flow lanes and two HOV lanes. SR 85 provides access to the project sites via an interchange at Bernal Road.

Monterey Road (SR 82) is a six-lane major arterial north of Blossom Hill Road and a four-lane major arterial south of Blossom Hill Road. Monterey Road extends from Alma Street in downtown San Jose to US 101 south of the City of Gilroy. Monterey Road provides access to the project sites via interchanges at Blossom Hill Road and Bernal Road.

Other roadways within the project study area include Blossom Hill Road, Silver Creek Valley Road, Bernal Road, Silicon Valley Boulevard, Hellyer Avenue, and Piercy Road. These roadways are described below.

Blossom Hill Road is a generally a divided four- to six-lane east/west arterial that extends from the US 101/Silver Creek Valley Road interchange in the east to Los Gatos in the west. In the vicinity of the proposed project, it has a posted speed of 40 miles per hour (mph) and provides an interchange

with the US 101 southbound ramps. East of the interchange, Blossom Hill Road becomes Silver Creek Valley Road.

Silver Creek Valley Road is generally a divided four-lane arterial that extends from Yerba Buena Road in the east to the US 101/Blossom Hill Road interchange in the west. In vicinity of the proposed project, it has a posted speed of 45 mph, provides an interchange with the US 101 northbound ramps, and provides access to the project sites via Hellyer Avenue and Piercy Road.

Bernal Road is a six-lane divided arterial that intersects US 101, SR 85 and Monterey Road. Bernal Road has a posted speed limit of 40 mph. East of US 101, Bernal Road becomes Silicon Valley Boulevard.

Silicon Valley Boulevard is a four-lane divided arterial that extends from Hellyer Avenue in the east and becomes Bernal Road west of the US 101. In the vicinity of the project, Silicon Valley Boulevard has a posted speed limit of 40 mph and provides access to the project sites via Hellyer Avenue.

Hellyer Avenue is a four-lane divided arterial with a posted speed limit of 45 mph, that runs in the north-south direction. Hellyer Avenue extends north from Silicon Valley Boulevard and terminates at Senter Road. Hellyer Avenue provides direct access to the project sites.

Piercy Road is a two-lane collector street with a posted speed limit of 30 mph that extends south from Silver Creek Valley Road, runs east-west through its intersection with Hellyer Avenue, and runs north-south again ultimately terminating at its intersection with Tennant Avenue. Piercy Road provides direct access to the project sites.

Existing Pedestrian and Bicycle Facilities

Pedestrian facilities consist of sidewalks and crosswalks in the project vicinity, as well as the Coyote Creek Trail. On Hellyer Avenue, between Silver Creek Valley Road and Tennant Avenue/Silicon Valley Boulevard, there are sidewalks along northbound Hellyer Avenue and along portions of southbound Hellyer Avenue. In the project vicinity, there are sidewalks along portions of Silver Creek Valley Road. Piercy Road has sidewalks on both sides between Silver Creek Valley Road and the project sites, and on the southbound side of the street between the project sites and Tennant Avenue. There are existing crosswalks and accessible ramps at the nearby signalized intersections of Hellyer Avenue/Silver Creek Valley Road and Hellyer Avenue/Piercy Road.

The Coyote Creek Trail is approximately 20 miles long and connects to Silver Creek Valley Road, Yerba Buena Road, and Capitol Expressway in the project vicinity. The Coyote Creek Trail is a shared pedestrian and bicycle facilities that is separated from vehicle traffic. This trail qualifies as a Class I bicycle facility.

Additional bicycle facilities in the project vicinity consist of on-street bicycle lanes. Bicycle lanes, or Class II bicycle facilities, are provided on the roadways listed below.

- Hellyer Avenue
- Silver Creek Valley Road
- Monterey Road

Existing Transit Services

The project sites are not well served by bus or rail service. The nearest bus service is provided by VTA Local Route 42, which travels between Evergreen Valley College and Kaiser San Jose. Route 42 runs on 50-minute headways between 6:00 AM and 7:30 PM. Local Route 42 has stops at

Monterey Road/Blossom Hill Road and Monterey Road/Bernal Road, each approximately two miles walking distance from the project sites. The Blossom Hill Caltrain Station is also located about two miles walking distance from the project sites at the intersection of Monterey Road/Ford Road.

Existing Traffic Volumes

Existing weekday AM (7:00 AM to 9:00 AM) and PM (4:00 PM to 6:00 PM) peak-hour traffic volumes were obtained from the City of San Jose TRAFFIX count database. The existing traffic volumes at the study intersections are shown on Figure 4.

Field Observations

The traffic conditions were observed in the field to identify existing operational deficiencies. The field observations occurred on Thursday, September 28, 2017 during the AM peak period (7:00 AM to 9:00 AM) and during the PM peak period (4:00 PM to 6:00 PM). There are low volumes at both study intersections relative to the capacity for which the intersections have been built. There were no traffic operational deficiencies observed during either the AM or PM peak hour.

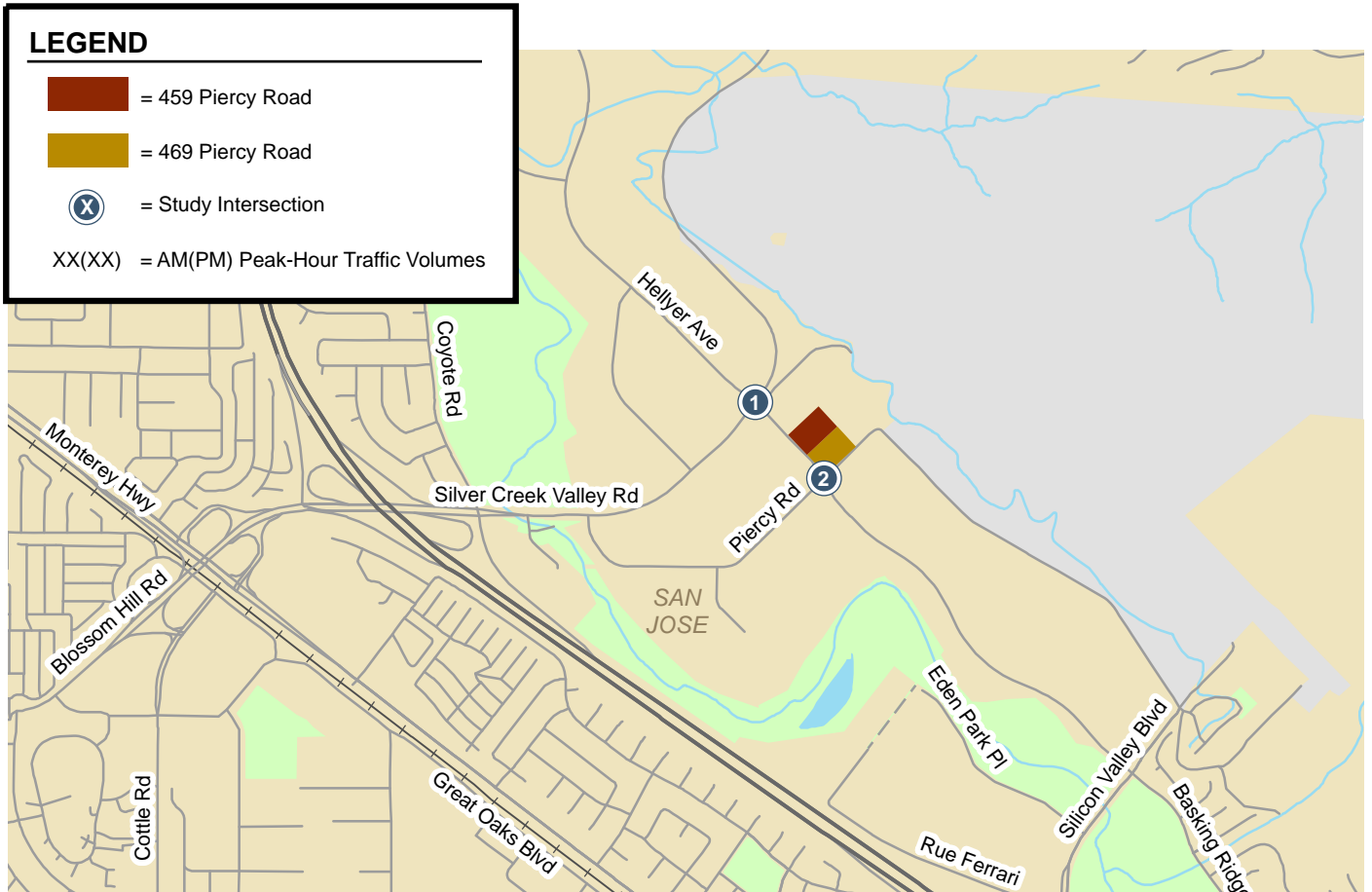
Project Trip Estimates

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

Trip Generation

Through empirical research, data have been collected that quantify the amount of traffic produced by common land uses. Thus, for the most common land uses there are standard trip generation rates that can be applied to help predict the future traffic increases that would result from a new development. The magnitude of traffic added to the roadway system by a particular development is estimated by multiplying the applicable trip generation rates by the size of the development. Trip generation resulting from new development proposed within the City of San Jose outside of the Downtown area typically is estimated using the trip rates published in the Institute of Transportation Engineers' (ITE) manual entitled *Trip Generation Manual, 10th Edition* (2017). The rates published for Hotel (Land Use Code 310) were used to estimate the vehicle trips the proposed project would generate. The ITE rates for Hotel are typically used for projects such as this that include sleeping accommodations and supporting facilities (e.g., restaurants, meeting rooms) but have limited recreational facilities and amenities. Based on ITE rates, the proposed project would generate 178 gross vehicle trips (103 inbound and 75 outbound) during the AM peak hour, and 210 gross trips (103 inbound and 107 outbound) during the PM peak hour.

The proposed project would receive trip credits for the existing single-family home on the 469 Piercy Road site and the total approved Light Industrial/R&D trips assigned to the project sites as part of the EADP. The trips generated by the existing single-family home were estimated using the rates published for Single-Family Detached Housing (Land Use Code 210) in the ITE *Trip Generation Manual*. Based on the ITE rates, the existing single-family home generates 1 outbound trip during the AM peak hour and 1 inbound trip during the PM peak hour. The project sites are located in the Edenvale Industrial Area (Area 3), which means the sites already have approval for Light Industrial/R&D development as part of the EADP.



Existing Traffic Volumes	Existing Plus Project Traffic Volumes	Background Traffic Volumes	Background Plus Project Traffic Volumes
<p>Silver Creek Valley Rd</p> <p>194(93) →</p> <p>533(461) →</p> <p>53(39) ↓</p> <p>22(125) ↓</p> <p>18(84) ↓</p> <p>22(72) ↓</p> <p>94(37) ↗</p> <p>515(407) ↘</p> <p>168(132) ↘</p> <p>Hellyer Ave</p> <p>39(80) →</p> <p>142(54) →</p> <p>184(226) →</p> <p>26(14) ↓</p> <p>181(223) ↓</p> <p>63(22) ↓</p> <p>14(31) ↗</p> <p>8(14) ↘</p> <p>3(3) ↘</p> <p>Piercy Rd</p> <p>7(34) ↗</p> <p>7(14) ↘</p> <p>23(141) ↘</p> <p>138(14) ↗</p> <p>417(295) ↗</p> <p>4(4) ↗</p>	<p>Silver Creek Valley Rd</p> <p>194(93) →</p> <p>533(461) →</p> <p>85(70) ↓</p> <p>22(125) ↓</p> <p>21(87) ↓</p> <p>22(72) ↓</p> <p>94(37) ↗</p> <p>515(407) ↘</p> <p>170(134) ↘</p> <p>Hellyer Ave</p> <p>81(141) →</p> <p>144(57) →</p> <p>186(228) →</p> <p>26(14) ↓</p> <p>181(223) ↓</p> <p>100(58) ↓</p> <p>19(38) ↗</p> <p>18(28) ↘</p> <p>21(30) ↘</p> <p>Piercy Rd</p> <p>21(48) ↗</p> <p>18(25) ↘</p> <p>23(141) ↘</p> <p>138(14) ↗</p> <p>438(316) ↗</p> <p>24(24) ↗</p>	<p>Silver Creek Valley Rd</p> <p>532(149) →</p> <p>718(1138) →</p> <p>342(89) ↓</p> <p>140(484) ↓</p> <p>262(142) ↓</p> <p>30(103) ↓</p> <p>126(40) ↗</p> <p>1150(623) ↘</p> <p>320(149) ↘</p> <p>Hellyer Ave</p> <p>131(379) →</p> <p>223(297) →</p> <p>213(382) →</p> <p>172(14) ↓</p> <p>527(264) ↓</p> <p>98(26) ↓</p> <p>16(38) ↗</p> <p>20(67) ↘</p> <p>9(27) ↘</p> <p>Piercy Rd</p> <p>41(35) ↗</p> <p>92(15) ↘</p> <p>92(328) ↘</p> <p>328(61) ↗</p> <p>607(648) ↗</p> <p>24(6) ↗</p>	<p>Silver Creek Valley Rd</p> <p>532(149) →</p> <p>718(1138) →</p> <p>344(116) ↓</p> <p>140(484) ↓</p> <p>262(145) ↓</p> <p>30(103) ↓</p> <p>126(40) ↗</p> <p>1150(623) ↘</p> <p>320(151) ↘</p> <p>Hellyer Ave</p> <p>159(386) →</p> <p>224(297) →</p> <p>215(382) →</p> <p>172(14) ↓</p> <p>527(264) ↓</p> <p>100(58) ↓</p> <p>19(38) ↗</p> <p>27(69) ↘</p> <p>21(30) ↘</p> <p>Piercy Rd</p> <p>42(48) ↗</p> <p>92(25) ↘</p> <p>92(328) ↘</p> <p>328(61) ↗</p> <p>610(666) ↗</p> <p>24(24) ↗</p>

Figure 4
Traffic Volumes for All Study Scenarios

The EADP specifies that Area 3 developments may consist of Light Industrial/R&D development with a floor area ratio (FAR) of up to 0.40. This equates to up to 94,438 s.f. of light industrial development approved for the project sites. Based on the City of San Jose rates for development in the Edenvale Area, a light industrial/R&D development of 94,438 s.f. would generate 121 trips (97 inbound and 24 outbound) during the AM peak hour and 106 trips (11 inbound and 95 outbound) during the PM peak hour.

After applying the appropriate trip rates and applicable trip credits, the proposed project is expected to generate 56 new trips (6 inbound and 50 outbound) during the AM peak hour, and 103 new trips (91 inbound and 12 outbound) during the PM peak hour (see Table 1). These are the project-generated trips that would occur during the weekday AM and PM peak hours of traffic when most weekday traffic congestion occurs on the streets in the study area.

Table 1
Project Trip Generation Summary

Land Use	Size	Units	Daily Rate ⁴	Daily Trips	AM Peak Hour			PM Peak Hour				
					Rate ⁴	In	Out	Total	Rate ⁴	In	Out	Total
Proposed												
459 Piercy Road Hotel ¹	112	rooms	12.23	1,370	0.62	40	29	69	0.73	40	42	82
469 Piercy Road Hotel ¹	175	rooms	12.23	2,140	0.62	63	46	109	0.73	63	65	128
<i>Subtotal:</i>	287	rooms		3,510		103	75	178		103	107	210
Trip Credits												
Existing Single-Family Home ²	1	d.u.	9.44	(9)	0.74	0	(1)	(1)	0.99	(1)	0	(1)
Approved Industrial/R&D ³	94,438	s.f.	8.00	(756)	1.28	(97)	(24)	(121)	1.12	(11)	(95)	(106)
Net Project Trips⁵:				2,745		6	50	56		91	12	103
Notes:												
d.u. = dwelling unit(s)												
s.f.= square feet												
¹ Trip generation based on Hotel (Land Use Code 310) average rates published in the ITE <i>Trip Generation Manual, 10th Edition (2017)</i> .												
² Trip generation based on Single-Family Detached Housing (Land Use Code 210) average rates published in the ITE <i>Trip Generation Manual, 10th Edition (2017)</i> .												
³ Approved industrial/R&D trip generation is based on City of San Jose R&D rates for approved light industrial development in the Edenvale Area. The amount of approved industrial/R&D was calculated by multiplying 5.42 acres by a floor area ratio (FAR) of 0.40 and converting to square feet.												
⁴ Hotel rates are expressed in trips per occupied room, single-family home rates are expressed in trips per dwelling unit, and industrial/R&D rates are expressed in trips per 1,000 s.f.												
⁵ The net project trips represents the number of trips that the proposed project would "buy" from the Edenvale Area Development Policy (EADP) pool of industrial-based trips.												

Traffic Impact Fees

To achieve a net zero increase of project trips, the proposed project would need to pay a Traffic Impact Fee (TIF) for the remaining amount of light industrial/R&D square footage that is equivalent to generate either 56 AM peak hour trips or 103 PM peak hour trips, whichever amount is greater, from the EADP pool of industrial-based trips. For this project, the PM peak hour trips equate to a greater amount of Light Industrial development (91,965 SF) than the AM peak hour trips. The City has established an EADP TIF equal to \$2,024 per 1,000 SF of equivalent light industrial development, based on a maximum FAR of 0.4. Applying the standard TIF, the project would be required to pay a fee of \$186,137.16 as follows:

$$91,965 \text{ SF of equivalent Light Industrial} \times (\$2,024 / 1,000 \text{ SF}) = \$186,137.16$$

Note that this amount would be in addition to payment of the \$154,460 TIF required to satisfy the environmental conformance provisions of the EADP. Of this amount, the 459 Piercy Road hotel development would be responsible for \$69,720, and the 469 Piercy Road hotel development would be responsible for \$84,740. These individual amounts were calculated and provided by the City of San Jose.

Trip Distribution and Assignment

The trip distribution pattern for the project was developed based on existing travel patterns on the surrounding roadway system and the locations of complementary land uses. The project trip distribution pattern is shown on Figure 5.

The gross peak-hour vehicle trips associated with the proposed project were added to the transportation network in accordance with the trip distribution pattern, with an emphasis on freeway access points. The trips were assigned to the project driveways based on driveway access (i.e., full access or limited access) and origin/destination splits of vehicles. The gross project trip assignment at the study intersections and proposed project driveways is shown on Figure 5.

Existing Plus Project Conditions

The new project trips, with trip credits taken for the existing single-family home on-site to be removed, were added to existing traffic volumes to obtain existing plus project peak-hour traffic volumes. The existing plus project peak-hour traffic volumes are shown previously on Figure 4.

Background Conditions

Background peak-hour traffic volumes were estimated by adding to existing peak-hour volumes, the estimated traffic from approved but not yet constructed and occupied developments. The added traffic from approved but not yet constructed and occupied developments in the City of San Jose is obtained from the City's Approved Trips Inventory (ATI). The ATI lists each approved project and the associated trips at intersections. Approved projects in the area include the following:

- EADP developments in the Edenvale Areas 1, 2, 3, and 4,
- Evergreen East Hills Development Policy (EEHDP),
- Electroglas,
- Hellyer Vista View,
- Hitachi,
- iStar,
- Silver Creek Crossing, and
- Cisco North Coyote Valley.

The background peak-hour traffic volumes are shown previously on Figure 4.

Background Plus Project Conditions

The City's ATI contains the trips associated with the approved EADP light industrial/R&D development for the project sites. To avoid double counting trips for the project sites, the net new trips for the proposed project were added to background traffic volumes to obtain background plus project peak-hour traffic volumes. The net new trips generated by the proposed project include trip credits for the existing single-family home on-site to be removed, as well as trip credits for the EADP light industrial/R&D approved trips for the sites. The background plus project peak-hour traffic volumes are shown previously on Figure 4.

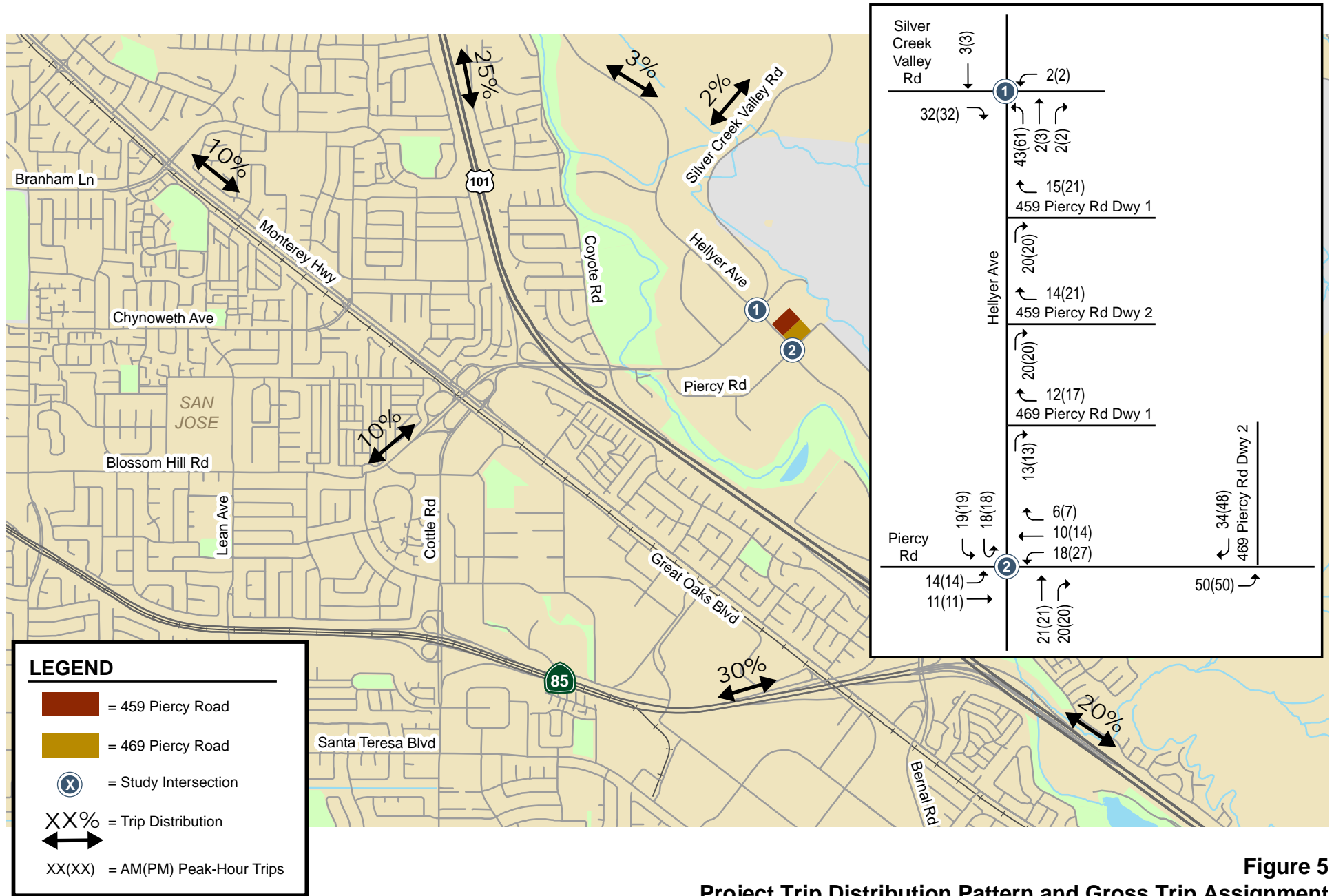


Figure 5
Project Trip Distribution Pattern and Gross Trip Assignment

Vehicle Queuing Analysis

An intersection operations analysis was performed for the two study intersections. The operations analysis is based on vehicle queuing for high-demand turning-movements at intersections. Vehicle queues are estimated using a Poisson probability distribution, which estimates the probability of “n” vehicles for a vehicle movement using the following formula:

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

where:

$P(x=n)$ = probability of “n” vehicles in queue per lane

n = number of vehicles in the queue per lane

λ = Average # of vehicles in the queue per lane (vehicles per hour per lane/signal cycles per hour)

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

For signalized intersections, the 95th percentile queue length value indicates that during the peak hour, a queue of this length or less would occur on 95 percent of the signal cycles. Or, a queue length larger than the 95th percentile queue would only occur on 5 percent of the signal cycles (about 3 cycles during the peak hour for a signal with a 60-second cycle length). Therefore, left-turn storage pocket designs based on the 95th percentile queue length would ensure that storage space would be exceeded only 5 percent of the time. The 95th percentile queue length is also known as the “design queue length.”

The queuing analysis is based on vehicle queuing for the four left-turn movements listed below.

- Northbound left turn at Hellyer Avenue and Silver Creek Valley Road
- Eastbound left turn at Hellyer Avenue and Piercy Road
- Southbound left turn at Hellyer Avenue and Piercy Road
- Westbound left turn at Hellyer Avenue and Piercy Road

For each movement listed above, the estimated queue length was compared to the length of the existing left-turn pocket. The queuing analysis shows that the available storage capacities for all left-turn movements evaluated are expected to be adequate to accommodate the 95th percentile queues under all traffic scenarios (see Table 2).

**Table 2
Vehicle Queuing Analysis Summary**

Movement: Peak Hour:	Hellyer Avenue and Silver Creek Valley Road		Hellyer Avenue and Piercy Road					
	NBL	NBL	EBL	EBL	SBL	SBL	WBL	WBL
	AM	PM	AM	PM	AM	PM	AM	PM
Existing								
Cycle/Delay ¹ (sec)	110	110	100	100	100	100	100	100
Volume (vphpl)	20	40	4	17	63	22	3	3
Avg. Queue (veh/ln.)	0.6	1.2	0.1	0.5	1.8	0.6	0.1	0.1
Avg. Queue ² (ft./ln)	15	31	3	12	44	15	2	2
95th%. Queue (veh/ln.)	2	3	1	2	4	2	1	1
95th%. Queue ² (ft./ln)	50	75	25	50	100	50	25	25
Storage (ft./ ln.)	425	425	325	325	190	190	210	210
Adequate (Y/N)	Y	Y	Y	Y	Y	Y	Y	Y
Existing Plus Project								
Cycle/Delay ¹ (sec)	110	110	100	100	100	100	100	100
Volume (vphpl)	41	71	11	24	50	58	21	30
Avg. Queue (veh/ln.)	1.3	2.2	0.3	0.7	1.4	1.6	0.6	0.8
Avg. Queue ² (ft./ln)	31	54	8	17	35	40	15	21
95th%. Queue (veh/ln.)	3	5	1	2	4	4	2	3
95th%. Queue ² (ft./ln)	75	125	25	50	100	100	50	75
Storage (ft./ ln.)	425	425	325	325	190	190	210	210
Adequate (Y/N)	Y	Y	Y	Y	Y	Y	Y	Y
Background								
Cycle/Delay ¹ (sec)	110	110	100	100	100	100	100	100
Volume (vphpl)	66	190	21	18	98	26	9	27
Avg. Queue (veh/ln.)	2.0	5.8	0.6	0.5	2.7	0.7	0.3	0.8
Avg. Queue ² (ft./ln)	50	145	15	13	68	18	6	19
95th%. Queue (veh/ln.)	5	10	2	2	6	2	1	2
95th%. Queue ² (ft./ln)	125	250	50	50	150	50	25	50
Storage (ft./ ln.)	425	425	325	325	190	190	210	210
Adequate (Y/N)	Y	Y	Y	Y	Y	Y	Y	Y
Background Plus Project								
Cycle/Delay ¹ (sec)	110	110	100	100	100	100	100	100
Volume (vphpl)	80	193	21	24	100	58	21	30
Avg. Queue (veh/ln.)	2.4	5.9	0.6	0.7	2.8	1.6	0.6	0.8
Avg. Queue ² (ft./ln)	61	147	15	17	69	40	15	21
95th%. Queue (veh/ln.)	5	10	2	2	6	4	2	3
95th%. Queue ² (ft./ln)	125	250	50	50	150	100	50	75
Storage (ft./ ln.)	425	425	325	325	190	190	210	210
Adequate (Y/N)	Y	Y	Y	Y	Y	Y	Y	Y

Notes:

¹ Vehicle queue calculations based on cycle length for signalized intersections.

² Assumes 25 feet per vehicle queued.

Pedestrian, Bicycle, and Transit Facilities

Pedestrian facilities consist of sidewalks and crosswalks in the project vicinity, as well as the Coyote Creek Trail. In the project vicinity, there are sidewalks along portions of Hellyer Avenue, Piercy Road, and Silver Creek Valley Road. There are existing crosswalks with accessible ramps at the Hellyer Avenue signalized intersections at Silver Creek Valley Road, Piercy Road, and Tennant Avenue/Silicon Valley Boulevard. No mid-block pedestrian crossings exist on Hellyer Avenue. The pedestrian facilities in the area are generally good, however, there are no likely destinations within walking distance of the proposed project that would encourage pedestrian activity to and from the project sites. The sites are generally surrounded by light industrial and R&D uses.

Bicycle facilities in the project vicinity consist of on-street bicycle lanes and the Coyote Creek Trail. Class II bicycle facilities (bicycle lanes) are provided along some of the roadways in the study area, including Hellyer Avenue, Silver Creek Valley Road, and Monterey Road. According to the *San Jose Bike Plan 2020*, no additional bicycle facilities are planned in the study area. The north-south bicycle accessibility in the area is very good due to the Coyote Creek Trail and bike lanes on Hellyer Avenue and Monterey Road, but east-west accessibility is not good because of having to cross US 101. The current US 101 interchanges at Blossom Hill Road/Silver Creek Valley Road and Bernal Road/Silicon Valley Boulevard are not bike friendly. However, the US 101/Blossom Hill Road interchange will be rebuilt in the future, so there will be an opportunity to better serve bicycles.

The project sites are not well served by bus or rail service. The nearest bus service is provided by VTA Local Route 42, which travels between Evergreen Valley College and Kaiser San Jose and has bus stops approximately two miles walking distance from the project sites along Monterey Road. The Blossom Hill Caltrain Station is also located approximately two miles walking distance from the project sites at the intersection of Monterey Road/Ford Road.

459 Piercy Road Site Access, Circulation and Parking

The evaluation of site access, circulation, and parking is based on the site plan prepared by ACE Design LLC dated November 30, 2017. Site access and circulation was reviewed in accordance with generally accepted traffic engineering standards. The parking evaluation is based on City of San Jose parking code requirements.

Site Access & Circulation

Vehicle access to the 459 Piercy Road project site would be provided via two driveways. Both driveways would be located along Hellyer Avenue. The driveways would allow right in/out movements only. The driveways are shown to be 24 feet wide, measured at the throat, and would provide access to a surface parking lot. Based on the site plan, the project driveways would be free and clear of obstructions, thereby ensuring that exiting vehicles would see pedestrians on the sidewalk, as well as vehicles and bicycles traveling along Hellyer Avenue and Piercy Road. The site plan shows good on-site circulation with no dead-end drive aisles. The surface parking lot would have one north/south drive aisles and two east/west drive aisle, providing a continuous loop. All drive aisles would be 24 feet wide. The City of San Jose off-street parking space design standards specifies that two-way driveway aisles have a minimum width of 26 feet (*San Jose Municipal Code Section 20.90.100*). However, the proposed 24-foot drive aisle width would be adequate to allow sufficient circulation and maneuvering in and out of the 90-degree parking spaces.

Sight Distance at the Project Driveways

Sight distance generally should be provided in accordance with Caltrans standards. The minimum acceptable sight distance is most often considered the Caltrans stopping sight distance. According to the Caltrans *Highway Design Manual*, the minimum stopping sight distance is the distance required by the user, traveling at a given speed, to bring the vehicle to stop after an object on the road becomes visible. Stopping sight distance for motorists is measured from the driver's eyes, which are assumed to be 3 feet 6 inches above the pavement surface, to an object 6 inches high on the road. The required stopping sight distances that are referenced below can be found in Table 201.1 of the Caltrans *Highway Design Manual*. The sight distance at each of the project driveways is discussed further below.

The driveways would be right-turn only, thus, the project traffic exiting this driveway would need to have adequate sight distance looking south (i.e. looking at the oncoming northbound Hellyer traffic). Hellyer Avenue has a posted speed of 45 mph. Assuming a 50-mph design speed, the recommended Caltrans stopping sight distance is 430 feet. The sight distance from each of the project driveways is estimated to be at least 500 feet. Thus, the driveways would have sufficient sight distance.

Truck Access and Circulation

The City of San Jose's off-street loading space requirements (*San Jose Municipal Code, Section 20.90.410*) state that projects of this type are required to provide one loading space for the first 10,000 s.f. plus one additional loading space for each additional 20,000 s.f. of floor area. While the site plan does show a passenger drop-off/check-in lane adjacent to the north side of the building that could be used by smaller delivery vehicles, no on-site freight loading spaces are shown on the site plan. The project applicant should coordinate with City of San Jose Public Works staff to determine the number of off-street freight loading spaces that would be required to serve the project, as well as the appropriate on-site location(s).

Trucks could enter and exit the project site via either of the driveways. However, in order to enter the site from Hellyer Avenue, trucks would need to swing out wide and momentarily block both through lanes on Hellyer Avenue. The entire driveway width would also need to be utilized when trucks enter the project site, which is a typical occurrence.

Trucks could adequately circulate throughout the site in either direction by entering one driveway, driving around the hotel parking lot, and exiting the other driveway.

Emergency Vehicle Access

The City of San Jose Fire Department requires that all portions of the building are within 150 feet of a fire department access road and requires a minimum of six feet clearance from the property line along all sides of the building. The proposed building on the site would be within 150 feet of a fire access road and the project would meet the 6-foot requirement for building clearance on all sides.

Garbage Collection

The site plan shows the trash enclosure would be located at the southeast corner of the site, with adequate access and overhead clearance provided for garbage trucks.

Parking Analysis

On-site parking was evaluated based on the City of San Jose parking standards (*San Jose Municipal Code Chapter 20.90*).

Vehicular Parking Requirement

Based on the City of San Jose's off-street parking requirements, a hotel development is required to provide vehicle parking spaces at a rate of one space per guest room plus one space per employee. Based on the City Code, the number of employees is "the greatest number of employees who are or may be on the premises associated with a specific use during any one working shift or period of time of the day or night" (*San Jose Municipal Code Section 20.90.050*). According to the site plan, 126 vehicle parking spaces would be provided on the 459 Piercy Road hotel site. Thus, this project site would provide sufficient parking for the 112 guest rooms plus a maximum of 14 employees on the premises during any period of the day or night.

In addition, the 459 Piercy Road hotel would be required to designate 11 parking spaces as clean air vehicle parking. Clean air vehicle parking spaces can be any combination of low-emitting, fuel efficient, and carpool/vanpool designated parking spaces.

Vehicular Parking Dimensions

The 459 Piercy Road hotel site plan shows that all of the vehicle parking spaces would be orientated 90-degrees (measured from curb). The City of San Jose off-street parking space design standard for 90-degree uniform size car parking spaces is 8 feet 6 inches wide by 17 feet long (*San Jose Municipal Code Section 20.90.100*). The site plan shows that the proposed parking spaces would meet this requirement.

Motorcycle Parking Requirement

Based on the City's motorcycle parking requirement for commercial uses, the 459 Piercy Road hotel would be required to provide one motorcycle parking space per 20 code required auto parking spaces. Based on the City's requirement, and assuming a maximum of 14 employees on the premises during any period of the day or night, 7 motorcycle parking spaces should be provided.

Bicycle Parking Requirement

Based on the City of San Jose bicycle parking requirements, hotel uses are required to provide one bicycle parking space plus one space per ten guest rooms. For the proposed 459 Piercy Road hotel, this equates to 13 bicycle parking spaces required. In addition, the City requires a minimum of 80% of the bicycle parking spaces for hotel uses be short-term spaces. To meet the City's requirements, 11 short-term bicycle parking spaces and 2 long-term bicycle parking spaces should be provided.

469 Piercy Road Site Access, Circulation and Parking

The evaluation of site access, circulation, and parking is based on the site plan prepared by Lea & Braze Engineering, Inc. dated September 25, 2017. Site access and circulation was reviewed in accordance with generally accepted traffic engineering standards. The parking evaluation is based on City of San Jose parking code requirements.

Site Access & Circulation

Vehicle access to the 469 Piercy Road project site would be provided via two driveways. One driveway would be located on Hellyer Avenue and one driveway would be located on Piercy Road. The Hellyer Avenue driveway would allow right in/out movements only, and the Piercy Road driveway would be full access. Both driveways are shown to be 26 feet wide, measured at the throat, and would provide access to a surface parking lot. The site plan shows good on-site circulation with no dead-end drive aisles. The surface parking lot would have three north/south drive

aisles and two east/west drive aisle. All drive aisles would be 26 feet wide, which would be adequate to allow maneuvering in and out of the 90-degree parking spaces. Based on the site plan, the project driveways would be free and clear of obstructions, thereby ensuring that exiting vehicles would see pedestrians on the sidewalk, as well as vehicles and bicycles traveling along Hellyer Avenue and Piercy Road.

Sight Distance at the Project Driveways

Sight distance generally should be provided in accordance with Caltrans standards. The minimum acceptable sight distance is most often considered the Caltrans stopping sight distance. According to the Caltrans *Highway Design Manual*, the minimum stopping sight distance is the distance required by the user, traveling at a given speed, to bring the vehicle to stop after an object on the road becomes visible. Stopping sight distance for motorists is measured from the driver's eyes, which are assumed to be 3 feet 6 inches above the pavement surface, to an object 6 inches high on the road. The required stopping sight distances that are referenced below can be found in Table 201.1 of the Caltrans *Highway Design Manual*. The sight distance at each of the project driveways is discussed further below.

Hellyer Avenue Driveway

The Hellyer Avenue driveway is right-turn only, thus, the project traffic exiting this driveway would need to have adequate sight distance looking south (i.e. looking at the oncoming northbound Hellyer traffic). The sight distance in the field was measured to be approximately 630 feet. Hellyer Avenue has a posted speed of 45 mph. Assuming a 50-mph design speed, the recommended Caltrans stopping sight distance is 430 feet. Thus, the Hellyer Avenue driveway would have sufficient sight distance.

Piercy Road Driveway

The Piercy Road driveway would be full access, thus, exiting vehicles would be allowed to make left and right turns. Piercy Road has a posted speed limit of 30 mph. Based on a 35-mph design speed, the Caltrans recommended stopping sight distance is 250 feet. Looking west, the sight distance in the field was measured to be over 800 feet. Looking east, the sight distances in the field from the Piercy Road driveway was measured to be approximately 400 feet. Thus, the Piercy Road driveway would have sufficient sight distance.

Truck Access and Circulation

The City of San Jose's off-street loading space requirements (*San Jose Municipal Code, Section 20.90.410*) state that projects of this type are required to provide one loading space for the first 10,000 s.f. plus one additional loading space for each additional 20,000 s.f. of floor area. While the site plan does show a passenger drop-off/check-in lane adjacent to the west side of the building that could be used by smaller delivery vehicles, no on-site freight loading spaces are shown on the site plan. The project applicant should coordinate with City of San Jose Public Works staff to determine the number of off-street freight loading spaces that would be required to serve the project, as well as the appropriate on-site location(s).

Trucks could enter and exit the project site via either of the project driveways. However, in order to enter the site via the Hellyer Avenue driveway, trucks would need to swing out wide and momentarily block both through lanes on Hellyer Avenue. The entire driveway width would also need to be utilized if entering at the Hellyer Avenue driveway, which is a typical occurrence. Left turns into the site via the Piercy Road driveway would be a better option for large trucks.

With the exception of the easternmost north-south drive aisle (which is intended to be used by passenger vehicles only), trucks could adequately maneuver throughout the site. Note that the most efficient on-site circulation pattern for large trucks would be to enter the parking lot via the Piercy Road driveway and exit the lot via the Hellyer Avenue driveway (counterclockwise circulation pattern).

Emergency Vehicle Access

The City of San Jose Fire Department requires that all portions of the building are within 150 feet of a fire department access road and requires a minimum of six feet clearance from the property line along all sides of the building. The proposed building on the site would be within 150 feet of a fire access road and the project would meet the 6-foot requirement for building clearance on all sides.

Garbage Collection

The site plan shows the trash enclosure would be located on the north end of the project site, with adequate access and overhead clearance provided for garbage trucks.

Parking Analysis

On-site parking was evaluated based on the City of San Jose parking standards (*San Jose Municipal Code Chapter 20.90*).

Vehicular Parking Requirement

Based on the City of San Jose's off-street parking requirements, a hotel development is required to provide vehicle parking spaces at a rate of one space per guest room plus one space per employee. Based on the City Code, the number of employees is "the greatest number of employees who are or may be on the premises associated with a specific use during any one working shift or period of time of the day or night" (*San Jose Municipal Code Section 20.90.050*). According to the site plan, the project would provide 274 vehicle parking spaces. Thus, this project site would provide sufficient parking for the 175 guest rooms plus a maximum of 99 employees on the premises during any period of the day or night.

In addition, the 469 Piercy Road hotel would be required to designate eight percent of the parking supply as clean air vehicle parking. Clean air vehicle parking spaces can be any combination of low-emitting, fuel efficient, and carpool/vanpool designated parking spaces. To meet the City's vehicle parking requirements, 22 parking spaces for clean air vehicles should be provided.

Vehicular Parking Dimensions

The 469 Piercy Road hotel site plan shows that all of the vehicle parking spaces would be orientated 90-degrees (measured from curb). The City of San Jose off-street parking space design standard for 90-degree uniform size car parking spaces is 8 feet 6 inches wide by 17 feet long (*San Jose Municipal Code Section 20.90.100*). The site plan shows that the proposed parking spaces would meet this requirement.

Motorcycle Parking Requirement

Based on the City's motorcycle parking requirement for commercial uses, the 469 Piercy Road hotel would be required to provide one motorcycle parking space per 20 code required auto parking spaces. Based on the City's requirement, and assuming a maximum of 99 employees on the premises during any period of the day or night, 14 motorcycle parking spaces should be provided.

Bicycle Parking Requirement

Based on the City of San Jose bicycle parking requirements, hotel uses are required to provide one bicycle parking space plus one space per ten guest rooms. For the proposed 469 Piercy Road hotel, this equates to 19 bicycle parking spaces required. In addition, the City requires a minimum of 80% of the bicycle parking spaces for hotel uses be short-term spaces. To meet the City's requirements, 16 short-term bicycle parking spaces and 3 long-term bicycle parking spaces should be provided.

Recommendations

Hexagon is providing the following recommendations resulting from the traffic operations study:

- To meet the City's TIF requirement, the project would need to pay a fee of \$186,137.16.
- To satisfy the environmental conformance provisions of the EADP, the project would be required to pay a fee of \$154,460. Of this amount, the 459 Piercy Road hotel development would be responsible for \$69,720, and the 469 Piercy Road hotel development would be responsible for \$84,740.
- The project applicant should coordinate with City of San Jose Public Works staff to determine the number of off-street freight loading spaces that would be required to serve the two hotel project sites, as well as the appropriate on-site location(s).
- Designate 11 parking spaces on the 459 Piercy Road site and 22 parking spaces on the 469 Piercy Road site as clean air vehicles spaces to meet the City's vehicle parking requirement.
- Provide 7 motorcycle parking spaces on the 459 Piercy Road site and 14 motorcycle parking spaces on the 469 Piercy Road site to meet the City's motorcycle parking requirement.
- Provide 13 bicycle parking spaces (11 short-term and 2 long-term) on the 459 Piercy Road site and 19 bicycle parking spaces (16 short-term and 3 long-term) to meet the City's bicycle parking requirements.