## Appendix H

## Transportation Analysis

## - Hexagon Transportation (onsultants, Inc.

## 550 Piercy Road Industrial Buildings

## Transportation Analysis

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## Executive Summary


#### Abstract

This report presents the results of the transportation analysis conducted for a proposed industrial development located at 550 Piercy Road in San Jose, California. The project site is located within the Edenvale Area Development Policy (EADP) boundaries. The project would construct two industrial buildings with up to 430,000 square feet and associated vehicle and trailer parking on an approximately 28.9 -acre vacant site. Access to the project site would be provided via Hellyer Avenue and Piercy Road.

This study was conducted for the purpose of identifying the potential transportation impacts related to the proposed industrial project. The transportation impacts of the project were evaluated following the standards and methodologies established in the City of San Jose's Transportation Analysis Handbook (April 2020). Based on the City of San Jose's Transportation Analysis Policy (Policy 5-1) and the Transportation Analysis Handbook, the project includes a California Environmental Quality Act (CEQA) level Transportation Analysis (TA) and a non-CEQA Local Transportation Analysis (LTA). The project would generate more than 100 new peak-hour vehicle trips, thus, a Congestion Management Program (CMP) traffic analysis based on the Santa Clara Valley Transportation Authority (VTA) Transportation Impact Analysis Guidelines (2014) is required.


## CEQA Transportation Impact Analysis

## Project Vehicle Miles Traveled (VMT) Analysis

The project VMT estimated by the City's VMT Evaluation Tool is 14.69 VMT per worker, which exceeds the industrial threshold (existing regional average) of 14.37 VMT per worker. Since the VMT generated by the project would exceed the threshold of significance for industrial employment uses in the area, the project would result in a significant transportation impact on VMT, and mitigation measures are required to reduce the VMT impact to a less-than-significant level.

## Project Mitigation

Implementation of the following off-site multi-modal infrastructure improvements (Tier 2 VMT reduction strategy) would mitigate the significant VMT impact:

1. Traffic Calming Measures and Bike Access Improvements - The project should narrow the existing roadway lane widths along Silicon Valley Boulevard to implement Class IV protected bikeways in both directions between Hellyer Avenue and Eden Park Place. The bike lanes would connect the existing Coyote Creek Trailheads and encourage the use of bicycles.
2. Pedestrian Network Improvements - The project should remove the pork-chop island on the southwest corner at the Hellyer Avenue and Silicon Valley Boulevard intersection. The improvement would require tightening the corner radius at the southwest corner and modifying
the signal to accommodate pork chop island removals. The improvement would improve the multi-modal environment by eliminating unsignalized pedestrian/vehicle conflict points, increasing visibility of pedestrians at the intersection corner, and providing a safer refuge for pedestrians waiting to use the crosswalks.

Based on the City's VMT Evaluation Tool, implementing the above recommended mitigation measures would lower the project VMT to 14.11 per worker (a reduction of about $4.8 \%$ ), which would reduce the project impact to a less-than-significant level (below the industrial threshold of 14.37 VMT per worker).

## Cumulative VMT Impact Analysis

The proposed industrial project is consistent with the uses allowed within the Industrial Park (IP) land use designation and is consistent with the following City of San Jose Land Use Policies:

- Land Use Policy LU-6.4: Encourage the development of new industrial areas and the redevelopment of existing older or marginal industrial areas with new industrial uses, particularly in locations which facilitate efficient commute patterns.
- Land Use Policy LU-6.5: Maintain and create Light Industrial and Heavy Industrial designated sites that are at least one acre in size in order to facilitate viable industrial uses.
- Land Use Policy LU-7.1: Encourage industrial supplier/service business retention and expansion in appropriate areas in the City.

The proposed project is consistent with the Envision San Jose 2040 General Plan and would not require a General Plan Amendment (GPA). The construction of new industrial buildings would facilitate the development of an industrial site and would help retain industrial designated land within the City. Thus, the project would be considered part of the cumulative solution to meet the General Plan's longrange transportation goals and would result in a less-than-significant cumulative impact.

## Local Transportation Analysis

## Edenvale Area Development Policy Conformance

The project is required to be in conformance with the maximum allowable floor area ratio (FAR) for Edenvale Sub-Area 3 development, which is a maximum FAR of 0.40 for industrial development. The project would construct 430,000 square feet of building floor area on the 28.9-acre site, so the project FAR would be 0.34 and would be lower than the maximum allowable FAR of 0.40 . Thus, the proposed project density is in conformance with the EADP.

## Project Trip Generation

After applying the Institute of Transportation Engineers (ITE) trip rates to the proposed project and applying the appropriate trip reductions, it is estimated that the project would generate 1,989 new daily trips, with 302 new trips ( 266 inbound and 36 outbound) occurring during the AM peak hour and 266 new trips ( 37 inbound and 229 outbound) occurring during the PM peak hour.

## Intersection Traffic Operations

The results of the intersection level of service evaluation show that all of the signalized study intersections are currently operating at acceptable levels of service during the AM and PM peak hours of traffic.

The project site is located in Edenvale Sub-Area 3, which means the site already has approval for industrial development as part of the EADP. Therefore, the project is not required to analyze any signalized intersections for potential adverse effects.

## Other Transportation Items

The proposed site plan shows adequate site access and on-site circulation for automobiles and trucks (including emergency vehicles), and no adverse traffic operational issues are expected to occur at the project driveways as a result of the project. The project would not have an adverse effect on the existing pedestrian or bicycle facilities in the study area.

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## 1. <br> Introduction

This report presents the results of the transportation analysis conducted for a proposed industrial development located at 550 Piercy Road in San Jose, California (see Figure 1). The project site is located within the Edenvale Area Development Policy (EADP) boundaries. The project would construct two industrial buildings with up to 430,000 square feet and associated vehicle and trailer parking on an approximately 28.9 -acre vacant site. Access to the project site would be provided via Hellyer Avenue and Piercy Road (see Figure 2).

This study was conducted for the purpose of identifying the potential transportation impacts related to the proposed industrial project. The transportation impacts of the project were evaluated following the standards and methodologies established in the City of San Jose's Transportation Analysis Handbook (April 2020). Based on the City of San Jose's Transportation Analysis Policy (Policy 5-1) and the Transportation Analysis Handbook, the project includes a California Environmental Quality Act (CEQA) level Transportation Analysis (TA) and a non-CEQA Local Transportation Analysis (LTA). The project would generate more than 100 new peak-hour vehicle trips, thus, a Congestion Management Program (CMP) traffic analysis based on the Santa Clara Valley Transportation Authority (VTA) Transportation Impact Analysis (TIA) Guidelines (2014) is required.

## CEQA Transportation Analysis Scope

The CEQA transportation analysis for the project consists of a project-level Vehicle Miles Traveled (VMT) impact analysis and a cumulative evaluation that demonstrates the project's consistency with the Envision San Jose 2040 General Plan.

## VMT Analysis Scope

The City of San Jose's Transportation Analysis Policy establishes procedures for determining project impacts on VMT based on project description, characteristics, and/or location. VMT is the total miles of travel by personal motorized vehicles a project is expected to generate in a day. VMT measures the full distance of personal motorized vehicle trips with one end within the project. Typically, development projects that are farther from other, complementary land uses (such as a business park far from housing) and in areas without transit or active transportation infrastructure (bike lanes, sidewalks, etc.) generate more driving than developments near complementary land uses with more robust transportation options. Therefore, developments located in a central business district with high density and diversity of complementary land uses and frequent transit services are expected to internalize trips and generate shorter and fewer vehicle trips than developments located in a suburban area with low density of residential developments and no transit service in the project vicinity.

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Figure 1
Site Location and Study Intersections


Figure 2
Site Plan

A project's VMT is compared to the appropriate thresholds of significance based on the project location and type of development. When assessing a residential project, the project's VMT is divided by the number of residents expected to occupy the project to determine the VMT per capita. When assessing an office or industrial project, the project's VMT is divided by the number of employees to determine the VMT per employee. The thresholds of significance for development projects, as established in the Transportation Analysis Policy, are based on the existing citywide average VMT level for residential uses and the existing regional average VMT level for employment uses.

To identify whether a project would result in VMT impacts and whether the impacts can be mitigated, the City has created heat maps for residential and employment uses that show the current VMT per capita and per worker based on the locations of residences and jobs. Figure 3 shows the current VMT levels estimated by the City for industrial workers based on the locations of industrial jobs.
Developments in the green-colored areas are estimated to have VMT levels that are below the thresholds of significance, while the orange- and pink-colored areas are estimated to have VMT levels that are above the thresholds of significance. Orange areas are deemed to be capable of being mitigated, whereas pink areas are considered incapable of being mitigated to a less-than-significant level. The project site is identified as being located in an orange area (mitigation possible).

To determine whether a project would result in CEQA transportation impacts related to VMT, the City has developed the San Jose VMT Evaluation Tool to streamline the analysis for residential, office, and industrial development projects. The VMT analysis approach is described under CEQA Transportation Analysis Methodology below.

## Cumulative Evaluation

Projects that require a CEQA transportation analysis must demonstrate consistency with the Envision San José 2040 General Plan to address cumulative impacts. Consistency with the City's General Plan is based on the project's density, design, and conformance to the General Plan goals and policies. If a project is consistent with the General Plan, it will be considered as part of the cumulative solution to meet the General Plan's long-range transportation goals, and therefore, will result in a less-thansignificant cumulative impact. If a project is determined to be inconsistent with the General Plan, a cumulative impact analysis is required as part of the General Plan amendment to determine the project's cumulative effects.

## General Plan Policies Addressing VMT

The Circulation Element of the Envision San José 2040 General Plan includes a set of balanced, longrange, multi-modal transportation goals and policies that provide for a transportation network that is safe, efficient, and sustainable (minimizes environmental, financial, and neighborhood impacts). These transportation goals and policies are intended to improve multi-modal accessibility to all land uses and create a city where people are less reliant on driving to meet their daily needs. The Envision San José 2040 General Plan contains the following policies to encourage the use of non-automobile transportation modes to minimize vehicle trip generation and reduce VMT:

- Accommodate and encourage the use of non-automobile transportation modes to achieve San Jose's mobility goals and reduce vehicle trip generation and VMT (TR-1.1);
- Consider impacts on overall mobility and all travel modes when evaluating transportation impacts of new developments or infrastructure projects (TR-1.2);
- Increase substantially the proportion of commute travel using modes other than the singleoccupant vehicle in order to meet the City's mode split targets for San Jose residents and workers (TR-1.3);


Figure 3
VMT per Industrial Job Heat Map in San Jose

- Through the entitlement process for new development, projects shall be required to fund or construct needed transportation improvements for all transportation modes, giving first consideration to improvement of bicycling, walking and transit facilities and services that encourage reduced vehicle travel demand (TR-1.4);
- Actively coordinate with regional transportation, land use planning, and transit agencies to develop a transportation network with complementary land uses that encourage travel by bicycling, walking and transit, and ensure that regional greenhouse gas emissions standards are met (TR-1.8);
- Coordinate the planning and implementation of citywide bicycle and pedestrian facilities and supporting infrastructure. Give priority to bicycle and pedestrian safety and access improvements at street crossings and near areas with higher pedestrian concentrations (school, transit, shopping, hospital, and mixed-use areas) (TR-2.1);
- Provide a continuous pedestrian and bicycle system to enhance connectivity throughout the City by completing missing segments. Eliminate or minimize physical obstacles and barriers that impede pedestrian and bicycle movement on City streets. Include consideration of gradeseparated crossings at railroad tracks and freeways. Provide safe bicycle and pedestrian connections to all facilities regularly accessed by the public, including the Mineta San Jose International Airport (TR-2.2);
- Integrate the financing, design and construction of pedestrian and bicycle facilities with street projects. Build pedestrian and bicycle improvements at the same time as improvements for vehicular circulation (TR-2.5);
- Require new development where feasible to provide on-site facilities such as bicycle storage and showers, provide connections to existing and planned facilities, dedicate land to expand existing facilities or provide new facilities such as sidewalks and/or bicycle lanes/paths, or share in the cost of improvements (TR-2.8);
- As part of the development review process, require that new development along existing and planned transit facilities consist of land use and development types and intensities that contribute towards transit ridership, and require that new development is designed to accommodate and provide direct access to transit facilities (TR-3.3);
- Support the development of amenities and land use and development types and intensities that increase daily ridership on the VTA, BART, Caltrain, ACE and Amtrak California systems and provide positive fiscal, economic, and environmental benefits to the community (TR-4.1);
- Balance business viability and land resources by maintaining an adequate supply of parking to serve demand while avoiding excessive parking supply that encourages automobile use (TR8.2);
- Support using parking supply limitations and pricing as strategies to encourage the use of nonautomobile modes (TR-8.3);
- Discourage, as part of the entitlement process, the provision of parking spaces significantly above the number of spaces required by code for a given use (TR-8.4);
- Within new development, create and maintain a pedestrian-friendly environment by connecting the internal components with safe, convenient, accessible, and pleasant pedestrian facilities and by requiring pedestrian connections between building entrances, other site features, and adjacent public streets (CD-3.3);
- Create a pedestrian-friendly environment by connecting new residential development with safe, convenient, accessible, and pleasant pedestrian facilities. Provide such connections between new development, its adjoining neighborhood, transit access points, schools, parks, and nearby commercial areas (LU-9.1);
- Facilitate the development of housing close to jobs to provide residents with the opportunity to live and work in the same community (LU-10.5).


## CEQA Transportation Analysis Methodology

## Screening Criteria for VMT Analysis Exemption

The City of San Jose's Transportation Analysis Handbook, 2020 includes screening criteria for projects that are expected to result in a less-than-significant VMT impact based on the project description, characteristics and/or location. The screening criterion set forth in the Transportation Analysis Handbook for small infill industrial projects is described below.

- 30,000 square feet of total gross floor area or less

The project is proposing to construct two industrial buildings with up to 430,000 square feet. Therefore, the project does not meet the screening criterion for small infill industrial projects. And since there is no other basis to screen out the project, a CEQA transportation analysis is required to address potential significant VMT impacts.

## Thresholds of Significance

For a project that does not meet the screening criteria, a project's VMT impact is determined by comparing the project VMT to the appropriate thresholds of significance (see Table 1) based on the type of development. The VMT thresholds of significance are established based on the existing citywide average VMT level for residential uses and the existing regional average VMT level for employment uses. Thus, projects that include industrial employment uses (such as the proposed project) are said to create a significant adverse impact when the estimated project-generated VMT exceeds the existing regional average VMT, which is 14.37 VMT per employee (significant impact threshold).

Projects that trigger a significant VMT impact can implement a variety of the four strategies described below to reduce the impact. A significant impact is said to be satisfactorily mitigated when the strategies and VMT reductions implemented render the VMT impact less than significant.

## VMT Analysis Methodology

To determine whether a project would result in CEQA transportation impacts related to VMT, the City has developed the San Jose VMT Evaluation Tool to streamline the analysis for residential, office, and industrial projects with local traffic. Accordingly, the City's VMT Evaluation Tool was used for this VMT analysis; it calculates VMT and compares it to the appropriate thresholds of significance based on the project location and type of development.

Based on the assessor's parcel number (APN) of a project, the VMT Evaluation Tool identifies the existing average VMT per capita and VMT per employee for the area. Based on the project location, type of development, project description, and proposed trip reduction measures, the evaluation tool calculates the project VMT. Projects located in areas where the existing VMT is above the established threshold are referred to as being in "high-VMT areas". Projects in high-VMT areas are required to include a set of VMT reduction measures that would reduce the project VMT to the extent possible.

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Table 1
VMT Thresholds of Significance for Development Projects

| Project Types | Significance Criteria | Current Level | Threshold |
| :---: | :---: | :---: | :---: |
| Residential Uses | Project VMT per capita exceeds existing citywide average VMT per capita minus 15 percent OR existing regional average VMT per capita minus 15 percent, whichever is lower. | $11.91$ <br> VMT per capita (Citywide Average) | $10.12$ <br> VMT per capita |
| General Employment Uses | Project VMT per employee exceeds existing regional average VMT per employee minus 15 percent | $14.37$ <br> VMT per employee (Regional Average) | $12.21$ <br> VMT per employee |
| Industrial Employment Uses | Project VMT per employee exceeds existing regional average VMT per employee | $14.37$ <br> VMT per employee (Regional Average) | $14.37$ <br> VMT per employee |
| Retail/ Hotel/ School Uses | Net increase in existing regional total VMT | Regional Total VMT | Net Increase |
| Public/Quasi-Public Uses | In accordance with the most appropriate type(s) as determined by Public Works Director | Appropriate levels listed above | Appropriate thresholds listed above |
| Mixed Uses | Evaluate each land use component of a mixed-use project independently, and apply the threshold of significance for each land use type included | Appropriate levels listed above | Appropriate thresholds listed above |
| Change of Use/ Additions to Existing Development | Evaluate the full site with the change of use or additions to existing development, and apply the threshold of significance for each project type included | Appropriate levels listed above | Appropriate thresholds listed above |
| Area Plans | Evaluate each land use component of the area plan independently, and apply the threshold of significance for each land use type included | Appropriate levels listed above | Appropriate thresholds listed above |

Source: City of San Jose, 2020 Transportation Analysis Handbook, Table 2.
The VMT Evaluation Tool evaluates a list of selected VMT reduction measures that can be applied to a project to reduce the project VMT. There are four strategy tiers whose effects on VMT can be calculated with the Evaluation Tool:

1. Project characteristics (e.g., density, diversity of uses, design, and affordability of housing) that encourage walking, biking and transit uses;
2. Multimodal network improvements that increase accessibility for transit users, bicyclists, and pedestrians;
3. Parking measures that discourage personal motorized vehicle-trips; and
4. Transportation Demand Management (TDM) measures that provide incentives and services to encourage alternatives to personal motorized vehicle-trips.

The first three strategies - land use characteristics, multimodal network improvements, and parking are physical design strategies that can be incorporated into the project design. TDM includes programmatic measures that aim to reduce VMT by decreasing personal motorized vehicle mode share and by encouraging more walking, biking, and riding transit. TDM measures are typically enforced through annual trip monitoring to assess the project's status in meeting the VMT reduction goals.

## Edenvale Area Development Policy Conformance

The project site is located within the Edenvale Area Development Policy (EADP) boundaries. With approval of the nearby iStar development proposal in 2006, additional 494,000 s.f. of potential industrial development was approved for future industrial/R\&D/office development within Edenvale Sub-Areas 1 and 3 . The 494,000 s.f. of potential industrial development is an addition to the approximately 2.9 million s.f. of existing capacity remaining for Sub-Areas 1, 3, and 4 per the original EADP.

The project site is located in Edenvale Sub-Area 3, which means the site already has approval for industrial development as part of the EADP. The traffic study that was completed for the iStar development identified intersection improvements based on full buildout of the 494,000 s.f. of industrial development. The necessary intersection improvements that were identified have already been completed. For this reason, the project is not required to analyze any signalized intersections for potential adverse effects due to the project. The project is, however, required to report the existing intersection levels of service for informational purposes.

The project is required to be in conformance with the maximum allowable floor area ratio (FAR) for Edenvale Sub-Area 3 development, which is a maximum FAR of 0.40 for industrial development. The project would construct 430,000 square feet of building floor area on the 28.9-acre site, so the project FAR would be 0.34 and would be lower than the maximum allowable FAR of 0.40 . Thus, the proposed project density is in conformance with the EADP.

## Local Transportation Analysis Scope

The non-CEQA LTA supplements the VMT analysis by identifying potential adverse operational effects that may arise due to a new development, as well as evaluating the effects of a new development on site access, circulation, and other safety-related elements in the proximate area of the project.

As part of the LTA, a project is generally required to conduct an intersection operations analysis if the project is expected to add 10 or more vehicle trips per hour per lane to any signalized intersection that is located within a half-mile of the project site. Based on these criteria, as outlined in the City's Transportation Analysis Handbook, a list of study intersections is then developed for the LTA. As previously described, City staff have determined that the project is not required to analyze any signalized intersections for potential adverse effects since the amount of industrial development proposed for the site (which is located in Edenvale Sub-Area 3) has already been approved as part of the EADP. The project is, however, required to report the existing intersection levels of service for informational purposes.

Based on the site location, project trip generation estimates and trip distribution pattern, the LTA includes an evaluation of AM and PM peak hour traffic conditions for the following eight intersections:

1. US 101 Southbound Off-Ramp and Blossom Hill Road (CMP)
2. US 101 Northbound Off Ramp/Coyote Road and Blossom Hill Road (CMP)
3. Hellyer Avenue and Silver Creek Valley Road
4. Hellyer Avenue and Piercy Road
5. Hellyer Avenue/Basking Ridge Avenue and Silicon Valley Boulevard/Tennant Avenue
6. US 101 Northbound Ramps and Bernal Road/Silicon Valley Boulevard
7. US 101 Southbound Off-Ramp and Bernal Road (CMP)
8. SR 85 Southbound Ramps and Bernal Road (CMP)

Four signalized study intersections are designated CMP intersections. The VTA administers the CMP and monitors the PM peak-hour traffic conditions of CMP intersections.

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

Traffic conditions were reported for existing conditions as described in detail below.

- Existing Conditions. Due to the current construction activity at the US 101/Blossom Hill interchange and schools out for summer break when the study was initiated, new traffic counts were not collected for the study. Accordingly, a $1 \%$ compounded annual growth factor was applied to the historical turning movement counts (from 2016 - 2018) provided by City staff for this project and the 2018 PM peak-hour counts at the CMP intersections to reflect existing (2022) traffic volumes.

Additionally, intersection traffic volumes were estimated for background conditions and background plus project conditions for the purpose of evaluating intersection vehicle queueing. The traffic scenarios are described in detail below.

- Background Conditions. Background traffic volumes reflect traffic added by nearby approved projects that are not yet completed or occupied. The added traffic from approved but not yet completed developments was provided by the City of San Jose in the form of the Approved Trips Inventory (ATI).
- Background Plus Project Conditions. Background plus project conditions reflect projected traffic volumes on the planned roadway network with completion of the project and approved developments that are not yet completed or occupied. Background plus project traffic volumes were estimated by adding to background traffic volumes the additional traffic generated by the project.

The LTA also includes a freeway ramp operations analysis, a vehicle queuing analysis, an evaluation of potential project adverse effects on bicycle, pedestrian, and transit facilities, and a review of site access, on-site circulation, and parking demand.

## Intersection Operations Analysis Methodology

This section presents the methods used to determine the traffic conditions at the study intersections. It includes descriptions of the data requirements, the analysis methodologies, and the applicable intersection level of service standards. The study intersections are located within the City of San Jose and were evaluated according to the City of San Jose level of service (LOS) standards for informational purposes.

## Data Requirements

The data required for the analysis were obtained from the City of San Jose and field observations. The following data were collected from these sources:

- existing traffic volumes
- trips from approved projects
- existing lane configurations
- signal timing and phasing


## Level of Service Standards and Analysis Methodologies

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

## Signalized Intersections

The signalized study intersections are subject to the City of San Jose's level of service standards. The City of San Jose evaluates level of service at signalized intersections based on the 2000 Highway Capacity Manual (HCM) level of service methodology using TRAFFIX software. Since TRAFFIX is the level of service analysis software for the CMP signalized intersections, the City employs the CMP default values for the analysis parameters. This HCM method evaluates signalized intersection operations on the basis of average control delay time for all vehicles at the intersection. The City of San Jose level of service standard for signalized intersections is LOS D or better. The correlation between average control delay and level of service is shown in Table 2.

## CMP Signalized Intersections

Since TRAFFIX is the designated level of service methodology for the CMP and the City of San Jose, the four CMP study intersections were not analyzed separately, but rather are among the signalized intersections analyzed using TRAFFIX. The only difference between the City of San Jose and CMP analyses is that the CMP level of service standard for signalized intersections is LOS E or better.

## Intersection Vehicle Queuing Analysis

The analysis of intersection operations was supplemented with a vehicle queuing analysis at study intersections where the project would add a noteworthy number of trips to the left-turn movements. Similar to the intersection level of service analysis, the intersection queuing analysis is presented for informational purposes only. The City of San Jose has not defined a policy related to queuing. Vehicle queues were estimated using a Poisson probability distribution, which estimates the probability of " $n$ " vehicles for a vehicle movement using the following formula:

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

Where:
$P(x=n)=$ probability of " $n$ " vehicles in queue per lane
$n=$ number of vehicles in the queue per lane
$\lambda=$ average \# of vehicles in the queue per lane (vehicles per hr. per lane/signal cycles per hr.)
The basis of the analysis is as follows: (1) the Poisson probability distribution is used to estimate the 95th percentile maximum number of queued vehicles 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.

Table 2
Signalized Intersection Level of Service Definitions Based on Control Delay

| Level of Service | Description | Average Control Delay (seconds/vehicle) |
| :---: | :---: | :---: |
| A | Operations with very low delay occurring with favorable progression and/or short cycle lengths. | 10.0 or less |
| B | Operations with low delay occurring with good progression and/or short cycle lengths. | 10.1 to 20.0 |
| C | Operations with average delays resulting from fair progression and/or longer cycle lengths. Individual cycle failures begin to appear. | 20.1 to 35.0 |
| D | Operations with longer delays due to a combination of unfavorable progression, long cycle lengths, and high volume-to-capacity (V/C) ratios. Many vehicles stop and individual cycle failures are noticeable. | 35.1 to 55.0 |
| E | Operations with high delays indicating poor progression, long cycle lengths, and high V/C ratios. Individual cycle failures are frequent occurrences. | 55.1 to 80.0 |
| F | Operations with delays unacceptable to most drivers occurring due to over-saturation, poor progression, or very long cycle lengths. | greater than 80.0 |
| Source: Transportation Research Board, 2000 Highway Capacity Manual (Washington, D.C., 2000), p.10-16. |  |  |

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 pocket storage designs based on the 95th percentile queue length would ensure that storage space would be exceeded only 5 percent of the time for a signalized movement.

## Report Organization

This report has a total of five chapters. Chapter 2 describes the existing roadway network, transit service, bicycle, and pedestrian facilities. Chapter 3 describes the CEQA transportation analysis, including the project VMT impact analysis, mitigation measures to reduce the VMT impact, and cumulative transportation impact assessment. Chapter 4 describes the local transportation analysis (LTA) including the method by which project traffic is estimated, intersection operations analysis, intersection vehicle queuing analysis, freeway ramp operation evaluation, site access and on-site circulation review, effects on bicycle, pedestrian, and transit facilities, and parking. Chapter 5 presents the conclusions of the transportation analysis.

## 2. <br> Existing Conditions

This chapter describes the existing conditions of the transportation system within the study area of the project. It presents the VMT of the existing land uses in the proximity of the project and describes transportation facilities in the vicinity of the project site, including the roadway network, transit service, and pedestrian and bicycle facilities. The analysis of existing intersection operations is included as part of the LTA (see Chapter 4).

## VMT of Existing Land Uses

To determine whether a project would result in CEQA transportation impacts related to VMT, the City has developed the San Jose VMT Evaluation Tool to streamline the analysis for residential, office, and industrial projects. Based on the Evaluation Tool and the project's APN, the existing Area VMT for industrial uses in the project vicinity is 14.82 VMT per worker. The current regional average VMT for industrial uses is 14.37 VMT per worker (see Table 1 in Chapter 1). Thus, the VMT levels of existing industrial uses in the project area are slightly higher than the regional average VMT levels. The VMT Evaluation Tool summary report for the project is included in Chapter 3.

## Existing Roadway Network

Regional access to the project site 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 site. US 101 extends northward through San Francisco and southward through Gilroy. Access to and from the site 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 site. 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 site via an interchange at Bernal Road.

Monterey Road is a four- to six-lane north-south oriented Grand Boulevard that extends from Alma Street in downtown San Jose to US 101 south of the City of Gilroy. Monterey Road has a raised median island with left-turn pockets and has a posted speed limit of 55 mph in the project vicinity. A sidewalk is provided on the east side of the street only while striped bike lanes are provided on both sides. Monterey Road provides access to the project site 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, Tennant Avenue, Hellyer Avenue, and Piercy Road. For the purposes of this study, Hellyer Avenue and Piercy Road are considered to run north-south, and cross streets, Blossom Hill Road, Silver Creek Valley Road, Bernal Road, Silicon Valley Boulevard, and Tennant Avenue, are considered to run east-west. These roadways are described below.

Blossom Hill Road is a six-lane divided arterial that runs in an east-west direction from the US 101/Silver Creek Valley Road interchange to the town of Los Gatos. In the vicinity of the proposed project, it has a posted speed of 40 mph and has an interchange with the US 101 southbound ramps. East of the interchange, Blossom Hill Road becomes Silver Creek Valley Road. There are no bike lanes between US 101 and Monterey Road. A sidewalk is provided along the north side of the Blossom Hill Road overpass that connects Silver Creek Valley Road to Monterey Road. Blossom Hill Road is a designated Main Street west of Snell Avenue and a designated City Connector Street east of Snell Avenue. Blossom Hill Road provides access to the project site via Silver Creek Valley Road.

Silver Creek Valley Road is generally a divided four-lane arterial that extends from the US 101/Blossom Hill Road interchange in the west to Yerba Buena Road in the east. In the vicinity of the proposed project, Silver Creek Valley Road has a posted speed of 45 mph , has an interchange with the US 101 northbound ramps, and provides access to the project site via Hellyer Avenue and Piercy Road. Silver Creek Valley Road is a designated On-Street Primary Bicycle Facility with striped bike lanes and sidewalks on both sides of the street between US 101 and Hellyer Avenue. East of Hellyer Avenue, Silver Creek Valley Road has a sidewalk on one side of the street only.

Bernal Road is a six-lane divided City Connector Street that intersects US 101, SR 85 and Monterey Road. Bernal Road has a posted speed limit of 40 mph and has striped bike lanes on both sides of the street west of San Ignacio Avenue. There are sidewalks on both sides of the street in the project vicinity. East of US 101, Bernal Road becomes Silicon Valley Boulevard. Bernal Road provides access to the project site via Silicon Valley Boulevard.
Silicon Valley Boulevard is a four-lane divided City Connector Street that transitions from Bernal Road west of US 101 and becomes Tennant Avenue east of Hellyer Avenue. Silicon Valley Boulevard has a posted speed limit of 40 mph . Silicon Valley Boulevard includes continuous sidewalks along the north side but has limited sidewalks along the south side. It provides access to the project site via Hellyer Avenue.

Tennant Avenue is a two-lane local street that transitions from Silicon Valley Boulevard west of Hellyer Avenue and terminates at its intersection with Piercy Road. Tennant Avenue does not have a posted speed limit. However, based on the posted speed limit on Piercy Road, the post speed limit is expected to be 30 mph . Tennant Avenue has sidewalks along the north side of the street. It provides access to the project site via Piercy Road.

Hellyer Avenue is a four-lane divided City Connector Street with a posted speed limit of 45 mph . Hellyer Avenue extends northward from Silicon Valley Boulevard until its intersection with Senter Road. Hellyer Avenue has striped bike lanes along the extent of the roadway and sidewalks on the east side of the street in the immediate vicinity of the project site. Hellyer Avenue provides direct access to the project site.

Piercy Road is a two-lane City Connector Street that extends southward 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 does not have a posted speed limit between Hellyer Avenue and Tennant Avenue. However, based on the posted speed limit on Tennant Avenue, the post speed limit is expected to be 30 mph . Sidewalks are provided along both sides of the street west of Hellyer Avenue. Sidewalks are provided along the west side of the street only

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where Piercy Road bends to the southeast of Hellyer Avenue. Piercy Road provides direct access to the project site.

## Existing Intersection Lane Configurations

The existing lane configurations at the study intersections are shown on Figure 4.

## Existing Pedestrian and Bicycle Facilities

Pedestrian facilities consist of sidewalks and crosswalks in the project vicinity, as well as the Coyote Creek Trail. Crosswalks with pedestrian signal heads and push buttons are located at all the signalized intersections in the study area. 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. Between US 101 and Hellyer Avenue, there are sidewalks along both sides of Silver Creek Valley Road. East of Hellyer Avenue, Silver Creek Valley Road has sidewalks on only one side of the street. Piercy Road has sidewalks on both sides between Silver Creek Valley Road and Hellyer Avenue, and on the southbound side of the street between Hellyer Avenue and Tennant Avenue. There are existing crosswalks, pedestrian pushbuttons, and accessible ramps at the nearby signalized intersections of Hellyer Avenue/Piercy Road and Hellyer Avenue/Basking Ridge Avenue/Silicon Valley Boulevard/Tennant Avenue.

The Coyote Creek Multi-Use Trail is approximately 20 miles long and connects to Silver Creek Valley Road, Yerba Buena Road, and Capitol Expressway. The closest trail access is provided at the intersection of Eden Park Place and Silicon Valley Boulevard, approximately 0.4 mile southwest of the project site. The Coyote Creek Trail is a shared pedestrian and bicycle facility that is separated from motor vehicle traffic. This trail qualifies as a Class I bicycle facility.

Additional bicycle facilities in the project vicinity consist of on-street bike lanes. Bike lanes (Class II bicycle facilities) or buffered bike lanes (Class IIB) are provided on the roadways listed below.

- Hellyer Avenue (Class IIB south of Dove Road)
- Silver Creek Valley Road (Class IIB north/east of Hellyer Avenue, Class II west of Hellyer Avenue)
- Monterey Road (Class IIB north of Blossom Hill Road, Class II south of Blossom Hill Road)

Existing bicycle facilities within the study area are shown on Figure 5.

## Existing Transit Service

The project site is served by only one bus route. Bus service is provided by VTA Local Route 42. Route 42 travels along Silver Creek Valley Road, Hellyer Avenue and Silicon Valley Boulevard in the project vicinity and provides service between Evergreen Valley College and Santa Teresa Station. Route 42 runs on 60-minute headways between 6:00 AM and 7:00 PM and provides service to the Blossom Hill Caltrain station via its connection to Rapid Route 568. The Blossom Hill Caltrain Station is located about 2.5 miles from the project site at the intersection of Monterey Road/Ford Road. Local Route 42 has stops on Hellyer Avenue at Piercy Road (northbound and southbound bus stops) approximately 0.5 miles from the project site and on Silicon Valley Boulevard at Eden Park Place approximately 0.4 miles from the project site.


Figure 4
Existing Lane Configurations
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Figure 5
Existing Bicycle Facilities

## 3. <br> CEQA Transportation Analysis

This chapter describes the CEQA transportation analysis, including the VMT threshold of significance, the project-level VMT impact analysis results, any mitigation measures to reduce a VMT impact, and the cumulative transportation impact analysis used to determine consistency with the City's General Plan.

## Project Level VMT Analysis

The project-level impact analysis under CEQA uses the VMT metric to evaluate a project's transportation impact by comparing against the VMT thresholds of significance as established in the Transportation Analysis Policy. The San Jose VMT Evaluation Tool is used to estimate the project VMT based on the project location (APN), type of development, project description, and proposed trip reduction measures. The threshold of significance for industrial employment uses (see Table 1 in Ch. 1) was used for the VMT analysis. The VMT threshold for industrial employment uses is the existing regional average VMT level of 14.37 miles per employee.

The proposed light industrial buildings would include 43,985 square feet of office space with the remaining 386,015 square feet be used for warehousing. The office space is about 10 percent of the total building floor area. Based on the Institute of Transportation Engineers (ITE) Trip Generation Manual, a light industrial facility typically also includes a small ancillary office space as part of normal operation of the facility. Therefore, light industrial trip rates were applied to the total building floor area for the trip generation estimate. Similarly, the project was analyzed as an industrial land use for VMT analysis purposes.

## Project VMT Impact Analysis Results

Per the City's VMT Evaluation Tool, the existing Area VMT for employment uses is 14.82 VMT per worker, which is above the existing regional average threshold of 14.37 VMT per worker. The project VMT estimated by the Evaluation Tool is 14.69 VMT per worker, which also exceeds the industrial threshold of 14.37 VMT per worker. According to the Transportation Analysis Handbook, projects located in areas where the existing VMT is above the established threshold are referred to as being in "high-VMT areas" and are required to include VMT reduction measures that would reduce the project VMT to the extent possible.

## Project Impact

Since the VMT generated by the project would exceed the threshold of significance for industrial employment uses in the area, the project would result in a significant transportation impact on VMT, and mitigation measures are required to reduce the VMT impact to a less-than-significant level.

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## Project Mitigation

Implementation of the following off-site multi-modal infrastructure improvements (Tier 2 VMT reduction strategy) would mitigate the significant VMT impact:
3. Traffic Calming Measures and Bike Access Improvements - The project should narrow the existing roadway lane widths along Silicon Valley Boulevard to implement Class IV protected bikeways in both directions between Hellyer Avenue and Eden Park Place. The bike lanes would connect the existing Coyote Creek Trailheads and encourage the use of bicycles. Figure 6 shows the conceptual designs of the planned improvements.
4. Pedestrian Network Improvements - The project should remove the pork-chop island on the southwest corner at the Hellyer Avenue and Silicon Valley Boulevard intersection (see Figure 6). The improvement would require tightening the corner radius at the southwest corner and modifying the signal to accommodate pork chop island removals. The improvement would improve the multi-modal environment by eliminating unsignalized pedestrian/vehicle conflict points, increasing visibility of pedestrians at the intersection corner, and providing a safer refuge for pedestrians waiting to use the crosswalks.

Based on the City's VMT Evaluation Tool, implementing the above recommended mitigation measures would lower the project VMT to 14.11 per worker (a reduction of about $4.8 \%$ ), which would reduce the project impact to a less-than-significant level (below the industrial threshold of 14.37 VMT per worker).

Appendix A shows the VMT summary reports generated by the City of San Jose's VMT Evaluation Tool without and with implementation of the recommended mitigation measures, respectively.

## Cumulative VMT Impact Analysis

Projects must demonstrate consistency with the Envision San Jose 2040 General Plan to address cumulative impacts. Consistency with the City's General Plan is based on a consideration of all its aspects, including the project's density, design, and ability to further the General Plan goals and policies and not obstruct their attainment. If a project is determined to be inconsistent with the General Plan, a cumulative impact analysis is required as part of the City's Transportation Analysis Handbook.

According to the Envision San Jose 2040 General Plan, the project site is designated as Industrial Park (IP). This land use designation is intended for a wide variety of industrial uses such as research and development (R\&D), manufacturing, assembly, testing, and office uses. Industrial uses are consistent with this designation insofar as any functional or operational characteristics of a hazardous or nuisance nature can be mitigated through design controls.

The proposed industrial project is consistent with the uses allowed within the Industrial Park land use designation and is consistent with the following City of San Jose Land Use Policies:

- Land Use Policy LU-6.4: Encourage the development of new industrial areas and the redevelopment of existing older or marginal industrial areas with new industrial uses, particularly in locations which facilitate efficient commute patterns.
- Land Use Policy LU-6.5: Maintain and create Light Industrial and Heavy Industrial designated sites that are at least one acre in size in order to facilitate viable industrial uses.
- Land Use Policy LU-7.1: Encourage industrial supplier/service business retention and expansion in appropriate areas in the City.


Figure 6
Hellyer Avenue and Silicon Valley Boulevard Intersection and Bikeway Improvements

The proposed project is consistent with the Envision San Jose 2040 General Plan and would not require a General Plan Amendment (GPA). The construction of new industrial buildings would facilitate the development of an industrial site and would help retain industrial designated land within the City. Thus, the project would be considered part of the cumulative solution to meet the General Plan's longrange transportation goals and would result in a less-than-significant cumulative impact.

## 4.

## Local Transportation Analysis

This chapter describes the non-CEQA local transportation analysis (LTA) including existing traffic conditions, the method by which project traffic is estimated, existing intersection operations, intersection queuing analysis, freeway segment, and freeway ramp analysis, site access and on-site circulation review, effects on bicycle, pedestrian and transit facilities, and parking supply.

## Intersection Operations Analysis

The intersection operations analysis is intended to quantify the operations of the signalized study intersections for informational purposes. Information required for the intersection operations analysis related to project trip generation, trip distribution, and trip assignment are presented in this section.

## Project Trip Estimates

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

## Trip Generation

Through empirical research, data have been collected that quantifies the amount of traffic produced by many types of land uses. This research is compiled in the Trip Generation Manual, 11th Edition published by the Institute of Transportation Engineers (ITE). The magnitude of traffic added to the roadway system by a particular development is estimated by multiplying the applicable trip generation rate(s) by the size of the development. Trips that would be generated by the proposed project were estimated using the ITE trip rates for General Light Industrial (ITE Land Use 110) located in a general urban/suburban setting.

## Trip Adjustments and Reductions

In accordance with San Jose’s Transportation Analysis Handbook (April 2020, Section 4.8, "Intersection Operations Analysis"), the project is eligible for adjustments and reductions from the baseline trip generation. Based on the 2020 San Jose guidelines, the project qualifies for a location-based adjustment. The location-based adjustment reflects the project's vehicle mode share based on the "place type" in which the project is located per the San Jose Travel Demand Model. The project's place type was obtained from the San Jose VMT Evaluation Tool. Based on the Evaluation Tool, the project
site is located within a Suburban with Single-Family Homes place type. Therefore, the baseline project trips were adjusted to reflect the mode share associated with this place type.

Industrial developments located within areas designated Suburban with Single-Family Homes have a vehicle mode share of 95 percent (according to Table 6 of the City's Transportation Analysis Handbook). Thus, a 5 percent reduction was applied to the project trip generation estimates based on the location-based vehicle mode share outputs produced from the San Jose Travel Demand Model.

## Net Project Trips

After applying the ITE trip rates to the proposed project and applying the appropriate trip reduction, it is estimated that the project would generate 1,989 new daily trips, with 302 new trips ( 266 inbound and 36 outbound) occurring during the AM peak hour and 266 new trips ( 37 inbound and 229 outbound) occurring during the PM peak hour (See Table 3).

Table 3
Project Trip Generation Estimates


## Trip Distribution and Assignment

The trip distribution pattern for the project was estimated based on existing travel patterns on the surrounding roadway system, freeway access, and the locations of complementary land uses. The peak-hour vehicle trips associated with the project were added to the roadway network in accordance with the trip distribution pattern (see Figure 7). Based on the site plan, it is assumed vehicles would access each building via the adjacent roadway. Therefore, Building 1 ( 257,149 s.f.) would be accessed via the driveways on Piercy Road and Building $2(172,851$ s.f.) would be accessed via the driveways on Hellyer Avenue. Based on the building size, about 60 percent of the project trips would utilize Piercy Road to access Building 1 and the rest of the trips would utilize Hellyer Avenue to access Building 2. The site plan shows that the Building 1 driveways on Piercy Road would be full-access driveways. For Building 2 on Hellyer Avenue, the project would remove the existing median to construct a southbound left-turn lane at the northern driveway and construct a median at the southern driveway. Therefore, the southern driveway would be restricted to right turns only while the northern driveway would be a fullaccess driveway.

## Roadway Network

The US 101/Blossom Hill Road interchange improvement project is currently under construction. The interchange improvement would add a Class I bicycle/pedestrian path from Xander's Crossing at Monterey Road to the Coyote Creek Trail and add lanes to Blossom Hill Road and the northbound and southbound off-ramps. Figure 4 shows the lane improvements anticipated under background conditions.


## Traffic Volumes

The AM and PM peak-hour intersection volumes under existing, background and background plus project conditions are shown on Figures 8, 9, and 10, respectively. Traffic volumes for all scenarios are tabulated in Appendix B.

## Existing Traffic Volumes

Due to the current construction activity at US 101/Blossom Hill interchange and schools out for summer break when the study was being initiated, new traffic counts were not collected for the study. Accordingly, a $1 \%$ compounded annual growth factor was applied to the historical turning movement counts provided by City staff for this project and the 2018 PM peak-hour counts at the CMP intersections to reflect existing (2022) AM and PM peak hour traffic volumes for the study intersections. The historical counts used were conducted in 2016 and 2018.

## Background Traffic Volumes

Background AM and PM peak hour traffic volumes were estimated by adding to existing traffic volumes the trips generated by nearby approved but not yet completed or occupied projects. The vehicular trips associated with the approved projects in the area are listed in the City of San Jose's Approved Trips Inventory (ATI) contained in Appendix C.

## Background Plus Project Traffic Volumes

Project trips were added to background traffic volumes to obtain background plus project traffic volumes.

## Intersection Levels of Service

City staff have determined that the project is not required to analyze any signalized intersections for potential adverse effects since the amount of industrial development proposed for the site (which is located in Edenvale Sub-Area 3) has already been approved as part of the EADP. The project is, however, required to report existing intersection levels of service for informational purposes. The results of the existing intersection level of service analysis (see Table 4) show that all of the signalized study intersections are currently operating at acceptable levels of service during the AM and PM peak hours of traffic. The detailed signalized intersection level of service calculations are contained in Appendix D.


Figure 8
Existing Traffic Volumes
ZHexagon



Table 4
Existing Intersection Levels of Service

| ID Intersection | Peak <br> Hour | Count Date | Existing |  |
| :---: | :---: | :---: | :---: | :---: |
|  |  |  | Avg. Delay (sec) | LOS |
| 1 US 101 SB Off-Ramp and Blossom Hill Rd* | AM | 10/06/16 | 28.2 | C |
|  | PM | 11/15/18 | 23.1 | C |
| 2 US 101 NB Off-Ramp-Coyote Rd and Blossom Hill Rd* | AM | 10/06/16 | 39.9 | D |
|  | PM | 11/15/18 | 29.1 | D |
| 3 Hellyer Ave and Silver Creek Valley Rd | AM | 09/27/18 | 25.8 | C |
|  | PM | 09/27/18 | 28.3 | C |
| 4 Hellyer Ave and Piercy Rd | AM | 10/26/16 | 18.5 | B |
|  | PM | 10/26/16 | 22.7 | B |
| 5 Hellyer Ave-Basking Ridge Ave and Silicon Valley Blvd-Tennant Ave | AM | 10/12/16 | 22.1 | C |
|  | PM | 10/12/16 | 23.1 | C |
| 6 US 101 NB Ramps and Bernal Rd-Silicon Valley Blvd | AM | 05/03/16 | 13.7 | B |
|  | PM | 05/03/16 | 6.6 | B |
| 7 US 101 SB Off-Ramp and Bernal Rd* | AM | 10/06/16 | 16.0 | B |
|  | PM | 12/13/18 | 12.3 | B |
| 8 SR 85 SB Ramps and Bernal Rd* | AM | 10/06/16 | 15.2 | B |
|  | PM | 12/13/18 | 19.1 | B |
| * Denotes VTA CMP intersection |  |  |  |  |

## Vehicle Queuing Analysis

A vehicle queuing analysis was prepared for selected left-turn movements at intersections where the project would add a noteworthy number of peak hour vehicle trips. This analysis provides a basis for estimating future left-turn pocket storage requirements at the intersections under background plus project conditions. Vehicle queues were estimated using Poisson probability distribution, as described in Chapter 1. The following left-turn movements were evaluated, and the results of the queueing analysis are summarized in Table 5:

- Southbound US 101 Off-Ramp left turn to Blossom Hill Road
- Northbound Hellyer Avenue left turn to Silver Creek Valley Road
- Southbound Hellyer Avenue left turn to Piercy Road
- Eastbound Silicon Valley Boulevard left turn to Hellyer Avenue
- Southbound SR 85 Off-Ramp left turn to Bernal Road
- Westbound Bernal Road left turn to SR 85/US 101 SB On-Ramp

The queuing analysis indicates that the left-turn storage length from eastbound Silicon Valley Boulevard to Hellyer Avenue would be insufficient in the AM peak hour under background conditions and the project would further increase the 95th percentile queue by one vehicle.

## Eastbound Silicon Valley Boulevard Left Turn to Northbound Hellyer Avenue

The available vehicle storage capacity for the left-turn from eastbound Silicon Valley Boulevard to northbound Hellyer Avenue is approximately 12 vehicles per lane ( 300 feet). The estimated 95th percentile vehicle queues for the left-turn movement are approximately 12 vehicles per lane during the AM peak hour under existing conditions. Thus, currently the left-turn storage is sufficient to accommodate the 95th percentile vehicle queues.

However, with the EADP, the 95th percentile vehicle queue length would increase to 23 vehicles per lane under background conditions. The project is expected to slightly increase the vehicle queue by one vehicle per lane. Increasing the left-turn storage for this movement is not considered feasible because it would require widening the bridge over the Coyote Creek.

Table 5
Intersection Vehicle Queuing Analysis Results

| Analysis Scenario | US 101 SB Off-Ramp <br> \& Blossom Hill Rd |  | Hellyer Ave \& Silver Creek Valley Rd |  | Hellyer Ave \& Piercy Rd |  | Hellyer Ave \& Silicon Valley Blvd |  | SR 85 SB Ramps \& Bernal Rd |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | SBL |  | NBL |  | SBL |  | EBL ${ }^{2}$ |  | SBL+SBR ${ }^{3}$ |  | WBL |  |
|  | AM | PM | AM | PM | AM | PM | AM | PM | AM | PM | AM | PM |
| Existing |  |  |  |  |  |  |  |  |  |  |  |  |
| Cycle (sec) | 140 | 93 | 110 | 110 | 104 | 104 | 92 | 92 | 67 | 78 | 67 | 78 |
| Volume (vph) | 411 | 158 | 56 | 105 | 60 | 39 | 542 | 273 | 798 | 1170 | 73 | 75 |
| Number of lanes | 1 | 1 | 2 | 2 | 1 | 1 | 2 | 2 | 3 | 3 | 1 | 1 |
| Volume (vphpl) | 411 | 158 | 28 | 53 | 60 | 39 | 271 | 137 | 266 | 390 | 73 | 75 |
| 95th \%. Queue (veh/ln) | 23 | 8 | 3 | 4 | 4 | 3 | 12 | 7 | 9 | 13 | 3 | 4 |
| 95th \%. Queue ${ }^{1}$ (ft/ln) | 575 | 200 | 75 | 100 | 100 | 75 | 300 | 175 | 225 | 325 | 75 | 100 |
| Storage (ft/ln) | 950 | 950 | 425 | 425 | 225 | 225 | 300 | 300 | 560 | 560 | 475 | 475 |
| Adequate (Y/N) | Y | Y | Y | Y | Y | Y | Y | Y | Y | Y | Y | Y |
| Background |  |  |  |  |  |  |  |  |  |  |  |  |
| Cycle (sec) | 140 | 93 | 110 | 110 | 104 | 104 | 92 | 92 | 67 | 78 | 67 | 78 |
| Volume (vph) | 480 | 94 | 111 | 272 | 60 | 39 | 1258 | 411 | 1491 | 984 | 162 | 272 |
| Number of lanes | 1 | 1 | 2 | 2 | 1 | 1 | 2 | 2 | 3 | 3 | 1 | 1 |
| Volume (vphpl) | 480 | 94 | 56 | 136 | 60 | 39 | 629 | 206 | 497 | 328 | 162 | 272 |
| 95th \%. Queue (veh/ln) | 26 | 5 | 4 | 8 | 4 | 3 | 23 | 9 | 15 | 12 | 6 | 10 |
| 95th \%. Queue ${ }^{1}$ (ft/n) | 650 | 125 | 100 | 200 | 100 | 75 | 575 | 225 | 375 | 300 | 150 | 250 |
| Storage (ft/ln) | 950 | 950 | 425 | 425 | 225 | 225 | 300 | 300 | 560 | 560 | 475 | 475 |
| Adequate (Y/N) | Y | Y | Y | Y | Y | Y | N | Y | Y | Y | Y | Y |
| Background Plus Project |  |  |  |  |  |  |  |  |  |  |  |  |
| Cycle (sec) | 140 | 93 | 110 | 110 | 104 | 104 | 92 | 92 | 67 | 78 | 67 | 78 |
| Volume (vph) | 560 | 105 | 127 | 375 | 140 | 50 | 1311 | 418 | 1544 | 991 | 171 | 329 |
| Number of lanes | 1 | 1 | 2 | 2 | 1 | 1 | 2 | 2 | 3 | 3 | 1 | 1 |
| Volume (vphpl) | 560 | 105 | 64 | 188 | 140 | 50 | 656 | 209 | 515 | 330 | 171 | 329 |
| 95th \%. Queue (veh/ln) | 30 | 6 | 4 | 10 | 8 | 4 | 24 | 9 | 15 | 12 | 6 | 12 |
| 95th \%. Queue ${ }^{1}$ (ft/ln) | 750 | 150 | 100 | 250 | 200 | 100 | 600 | 225 | 375 | 300 | 150 | 300 |
| Storage (ft/ln) | 950 | 950 | 425 | 425 | 225 | 225 | 300 | 300 | 560 | 560 | 475 | 475 |
| Adequate (Y/N) | Y | Y | Y | Y | Y | Y | N | Y | Y | Y | Y | Y |

## Notes:

$\overline{\text { NBL }}=$ northbound left-turn movement; $\mathrm{SBL}=$ southbound left-turn movement; $\mathrm{EBL}=$ eastbound left-turn movement; WBL $=$ westbound left-turn movement; SBR = southbound right-turn movement
${ }^{1}$ Assumes 25 feet per vehicle queued.
${ }^{2}$ Storage length reflects average of two lanes: inside left-turn pocket ( 150 feet) and outside left-turn lane ( 450 feet) from where the change in striping takes place to delineate the trap-left turn lane on Silicon Valley Road.
${ }^{3}$ Storage length reflects average of three lanes: left-turn pocket (300 feet), left/through/right-turn lane ( 1,080 feet), and right-turn pocket ( 300 feet).

## Freeway Ramp Operations Analysis

The VTA's TIA Guidelines recommend a TA include a queuing analysis for freeway on-ramps with existing or planned ramp meters, and off-ramps controlled by signals at junctions with local streets. Therefore, a freeway ramp operations analysis was performed to identify the effects of project traffic on the vehicle queues at the metered on-ramps and the signal-controlled off-ramps at the US 101/Blossom Hill Road, US 101/Bernal Road, and SR 85/Bernal Road interchanges that provide access to the freeway system from the project site. It should be noted that the evaluation of freeway ramps is
recommended but not required based on the VTA's TIA Guidelines, and there are no adopted methodologies and impact criteria for the analysis of freeway ramps.

Field observations indicate that the SR 85 northbound on-ramp at Bernal Road is metered during the AM peak period. All other on-ramps that provide access from the site are not metered during either peak period, or there were no vehicle queues on these ramps. At the SR 85 northbound on-ramp, the vehicle queue in the mixed-flow lane extends to the end of ramp occasionally during the AM peak period but does not extend onto Bernal Road. The project would add 7 AM peak-hour trips to the onramp. The small amount of the project trips is not expected to result in a noticeable increase in the vehicle queue on the ramp.

Table 5 shows the vehicle queue length for the US 101 southbound off-ramp at Blossom Hill Road and the SR 85 southbound off-ramp at Bernal Road. The queueing analysis results show that the vehicle queues on the ramps would not extend to the freeway mainline with the project traffic. At the US 101 northbound off-ramp to Bernal Road, the project traffic would make right turns at the foot of the ramp. Field observations show that there is no vehicle queue in the right-turn lane during the peak hours. Therefore, although the project would add 67 trips in the AM peak hour, the increase in vehicle queue is expected to be contained in the right-turn lane.

## Vehicular Site Access and On-Site Circulation

The site access and circulation evaluations are based on the January 19, 2023 site plan prepared by HPA Architecture (see Figure 2 in Chapter 1). Site access was evaluated to determine the adequacy of the site's driveways with regard to the following: traffic volume, geometric design, truck access, and overall operations. On-site vehicular circulation and parking layout were reviewed in accordance with generally accepted traffic engineering standards and transportation planning principles.

## Site Access

Vehicular access to the site would be provided via one full access driveway and one right-turn only driveway on Hellyer Avenue and two full access driveways on Piercy Road (see Figure 2). At the northern/western driveway on Hellyer Avenue, the project would remove the existing median to provide a left-turn lane for inbound traffic at the driveway. At the southern driveway on Hellyer Avenue, the project would construct a median at the existing median break, so the driveway would be limited to right turns only.
Both driveways on Hellyer Avenue would be 45 feet wide and are designed to accommodate large freight trucks (WB-67) turning in and out of the driveways. Based on the turn restriction at the southern driveway, more project traffic would access the northern driveway. Figure 10 shows the estimated project trips at the driveways.

The northern/western driveway on Piercy Road would be 45 feet wide and the southern driveway would be 26 feet wide. The wider northern driveway would be able to accommodate large freight trucks. Based on the on-site vehicle parking, it is assumed both driveways would be used by vehicles equally (see Figure 11).

## Project Driveway Dimensions

According to the City of San Jose Department of Transportation (DOT) Geometric Design Guidelines (Addendum Drawing No. R-6), the typical width for a two-way driveway that serves a commercial development is 26-32 feet wide. This provides adequate width for vehicular ingress and egress and provides a reasonably short crossing distance for pedestrians. The driveways on Hellyer Avenue and the northern driveway on Piercy Road are wider than 32 feet for large trucks to access the site.


Figure 11
Gross Project Trips at Driveways

## Sight Distance at Driveways

The project driveways should be free and clear of any obstructions to provide adequate sight distance, thereby ensuring that exiting vehicles can see pedestrians on the sidewalk and vehicles and bicycles traveling on Hellyer Avenue and Piercy Road. Any landscaping and signage should be located in such a way to ensure an unobstructed view for drivers exiting the site. Providing the appropriate sight distance reduces the likelihood of a collision at a driveway or intersection and provides drivers with the ability to exit a driveway or locate sufficient gaps in traffic.

The minimum acceptable sight distance is considered the Caltrans stopping sight distance. Sight distance requirements vary depending on roadway speeds. For driveways on Hellyer Avenue, which has a posted speed limit of 45 mph , the Caltrans stopping sight distance is 430 feet (based on a design speed of 50 mph ). For driveways on Piercy Road, which has a posted speed limit of 30 mph , the Caltrans stopping sight distance is 250 feet (based on a design speed of 35 mph ). Accordingly, a driver must be able to see 430 feet along Hellyer Avenue and 250 feet along Piercy Road in order to stop and avoid a collision. On-street parking is prohibited along Hellyer Avenue and Piercy Road. Both driveways on Hellyer Avenue and the southern driveway on Piercy Road would be on a horizontal curve. However, all project driveways would meet the Caltrans stopping sight distance requirement (see Figure 12).

According to the site plan, the landscape plan shows street trees would be added along the project frontage on Hellyer Avenue and Piercy Road. The type and location of the street trees would be determined by the City of San Jose Public Works Department at the implementation stage. Note that street trees have a high canopy and would not obstruct the view of drivers exiting the project driveways.

## Project Driveway Operations

The project-generated trips that are estimated to occur at the project site are shown in Figure 10. Passenger vehicles and large trucks could use both driveways on Hellyer Avenue to access the site. On Piercy Road, passenger vehicles and small trucks could use both driveways to access the site while large trucks would be required to use the wider northern/western driveway for ingress and egress.

Traffic operations at the northern Hellyer Avenue driveway were evaluated with a vehicle queuing analysis for inbound left-turn traffic and outbound driveway traffic at the driveway (see Table 6). The analysis evaluates whether adequate left-turn storage would be provided for the project's inbound traffic and whether there would be a long vehicle queue on site for the outbound traffic. The queueing analysis shows that the maximum queue for inbound left-turn vehicles would be no more than one vehicle during the AM and PM peak hours. The queue would be well contained within the left-turn storage.

For the outbound traffic at the northern project driveway on Hellyer Avenue, the maximum vehicle queue is expected to be no more than two vehicles during the AM and PM peak hours. The project driveway would have a throat length of 100 feet between the face of curb on Hellyer Avenue and the closest drive aisle within the parking lot, which could accommodate a vehicle queue of four outbound vehicles without blocking access to the drive aisle. Therefore, the outbound vehicle queue is not expected to block the drive aisles.

The southern driveway on Hellyer Avenue would be limited to right turns only. Therefore, significant operational issues related to vehicle queueing and vehicle delay for inbound and outbound traffic are not expected to occur at the driveway.


On Piercy Road, inbound and outbound vehicle trips would generally be unimpeded due to the extremely low traffic volumes on this street. Due to the low number of project-generated trips and low traffic volumes on Piercy Road, operational issues related to vehicle queueing and/or delay are not expected to occur at the project driveways.

Table 6
Driveway Queuing Analysis

| Analysis Scenario | Hellyer Avenue Driveway (N) |  |  |  |
| :---: | :---: | :---: | :---: | :---: |
|  | SBL |  | WBL/WBR |  |
|  | AM | PM | AM | PM |
| Background Plus Project |  |  |  |  |
| Delay (sec) | 11.3 | 8.5 | 29.8 | 19.3 |
| Volume (vph) | 53 | 7 | 11 | 69 |
| 95th \%. Queue (veh/ln) | 1 | 1 | 1 | 2 |
| 95th \%. Queue ${ }^{1}$ (ft/ln) | 25 | 25 | 25 | 50 |
| Storage (ft/ln) | 120 | 120 | 100 | 100 |
| Adequate (Y/N) | Y | Y | Y | Y |
| Notes: |  |  |  |  |
| SBL = southbound left-turn movement; WBL = westbound left-turn movement; WBR = westbound right-turn movement |  |  |  |  |

Developments should provide adequate on-site stacking space for inbound vehicles between the face of curb and any entry gates or on-site drive aisles or parking spaces. This prevents vehicles from queuing onto the street and blocking traffic. Approximately 40 feet of inbound vehicle stacking space would be provided between Piercy Road and the first drive aisle at the northern driveway. At the southern driveway on Hellyer Avenue, there is approximately 45 feet between Hellyer Avenue and the first drive aisle. According to the site plan, the driveway throat lengths at the other two driveways would exceed 50 feet. Given the relatively low volume of traffic expected to use these driveways, adequate on-site stacking space would be provided at the project driveways.
There would be gates provided on both sides of the loading dock area for each building and a gate between two building areas along the southern/eastern drive aisle. The gates are located far from the driveways and would not cause on-site vehicle stacking at the driveways. It is expected that the gates on both sides of the loading dock areas would be kept open during business hours. The gate between two building areas would be accessible by emergency vehicles.

## On-Site Vehicular Circulation and Parking Layout

On-site vehicular circulation was reviewed for the project in accordance with generally accepted traffic engineering standards and City of San Jose design guidelines. The City's standard minimum width for two-way drive aisles is 26 feet wide where 90-degree parking is provided. This allows sufficient room for vehicles to back out of the parking stalls. According to the site plan, all the two-way drive aisles are shown to be at least 26 feet wide and would provide access to the 90 -degree parking stalls throughout the site. The two-way drive aisles that would be utilized by trucks to access the loading docks and the trailer parking stalls would be 40 to 52 feet wide to accommodate trucks. The site would provide adequate circulation for drivers with no dead-end aisles.

## Parking Stall Dimensions

The City's off-street parking design standard for 90 -degree full-size parking stalls is 9 feet wide by 18 feet long. All the standard parking stalls shown on the site plan measure 9 feet wide by 18 feet long, which meets the City's design standard. The accessible ADA stalls also measure 9 feet wide by 18 feet long and include access aisles of 5 feet or more for van accessibility. These stall dimensions would meet ADA standards.

## Truck Access and Circulation

The project site plan was reviewed for truck access using the truck turning-movement template for WB67 truck types, which represent the largest semi-trailer trucks that would access the site. Based on the site plan configuration adequate access would be provided for WB-67 type trucks to enter and exit the site via the driveways on Hellyer Avenue and the northern driveway on Piercy Road (see Figures 13, 14, and 15). WB-67 trucks would require the full width of both streets when exiting the site. However, this situation is common for large trucks. The driveways on Hellyer Avenue and the northern driveway on Piercy Road would need to be 45 feet wide, as proposed, to accommodate WB-67 trucks.

Figure 16 shows that large trucks accessing the loading docks would be able to back into and exit the loading docks and circulate through the site without any maneuvering issues.

## Emergency Vehicle Access

The City of San Jose Fire Code requires that all portions of the building be within 150 feet of a fire department access road and requires a minimum 6 feet of clearance from the property line along all sides of the building. The Fire Code also requires driveways to provide at least 20 feet of width for fire access.

According to the project site plan, all areas of the buildings would be within 150 feet of a fire access road (i.e., drive aisle), and at least 6 feet of clearance would be provided around the perimeter of the building. The driveway widths as proposed would be adequate to accommodate emergency vehicles. Therefore, the project would comply with the City's Fire Code requirements.

## Garbage Collection

A trash enclosure would be located on the north side of the Building 1 loading dock area and on the southside of the Building 2 loading dock area near the vehicular gates. Garbage collection is expected to occur on site. Since garbage collection would occur on-site, traffic operations along Hellyer Avenue and Piercy Road would not be affected during garbage collection activities.

## Construction Activities

Typical activities related to the construction of any development could include lane narrowing and/or lane closures, sidewalk and pedestrian crosswalk closures, and bike lane closures. In the event of any type of closure, clear signage (e.g., closure and detour signs) must be provided to ensure vehicles, pedestrians and bicyclists are able to adequately reach their intended destinations safely.

Per City standard practice, the project would be required to submit a construction management plan for City approval that addresses demolition, remediation, construction schedule, street closures and/or detours, construction staging areas and parking, and planned truck routes.


Figure 13
Freight Truck Turning Template for Northern Driveway on Hellyer Avenue


Figure 14
Freight Truck Turning Template for Southern Driveway on Hellyer Avenue

NORTH
Not to scale


Right-Turn Outbound


## Left-Turn Inbound



Left-Turn Outbound


Figure 15
Freight Truck Turning Template for Northern Driveway on Piercy Road


Figure 16
Freight Truck Turning Template for On-Site Circulation

# Effects on Pedestrian, Bicycle, and Transit Facilities 

## Pedestrian Facilities

Pedestrian facilities consist of sidewalks and crosswalks in the project vicinity, as well as the Coyote Creek multi-use trail. Crosswalks with pedestrian signal heads and push buttons are located at all the signalized intersections in the study area. According to the site plan, the project would widen the sidewalk with tree wells along both Hellyer Avenue and Piercy Road from 7 feet to 10 feet wide. Within the site, the project would provide a pedestrian walkway between Piercy Road and the front door of the office area of Building 1. The project would also provide two pedestrian walkways between Hellyer Avenue and Building 2. The network of sidewalks and on-site pedestrian walkways exhibits good connectivity and would provide employees of the project with safe routes to transit stops and other points of interest in the immediate project vicinity.

## Bicycle Facilities

Bicycle facilities in the project vicinity consist of standard or buffered bike lanes (Class II or Class IIB bicycle facilities) on Hellyer Avenue, Silver Creek Valley Road and Monterey Road, as well as the aforementioned Coyote Creek trail (Class I bicycle facility). The project would also construct a Class IV protected bike lane along the Hellyer Avenue project frontage per the City of San Jose Better Bike Plan. The network of bike facilities exhibits good connectivity and would provide employees of the project with safe bicycle routes in the immediate project vicinity. Currently, a continuous bicycle route between the project site and the residential and commercial areas west of US 101 does not exist on either Blossom Hill Road or on Silicon Valley Boulevard. However, the US101/Blossom Hill Road interchange is being reconstructed and will include a mixed-use bicycle/bicycle path that runs along Blossom Hill Road and connects the bike lanes between Coyote Road and Monterey Road.

The project would not remove any bicycle facilities, nor would it conflict with any adopted plans or policies for new bicycle facilities. As part of the project's VMT mitigation, the project should narrow the existing roadway lane widths along Silicon Valley Boulevard to implement the Class IV protected bikeways in both directions of the street between Hellyer Avenue and Eden Park Place. The bike lanes would connect the existing Coyote Creek Trailheads and the bike lanes on Hellyer Avenue.

The project would provide bicycle racks near the entrances to the office areas of each building. The site plan does not show long-term bicycle storage. Providing adequate and convenient long-term bike parking would help to create a bicycle-friendly environment and encourage bicycling by employees of the project.

## Transit Facilities

The project site is not well served by bus or rail service. Bus service in the project vicinity is provided by VTA local route 42 only. Route 42 travels along Silver Creek Valley Road, Hellyer Avenue and Silicon Valley Boulevard in the project vicinity and provides service between Evergreen Valley College and Santa Teresa Station. Route 42 runs on 60-minute headways between 6:00 AM and 7:00 PM and provides service to the Blossom Hill Caltrain station via its connection to Rapid Route 568. The Blossom Hill Caltrain Station is located about 2.5 miles from the project site at the intersection of Monterey Road/Ford Road. Local Route 42 has stops on Hellyer Avenue at Piercy Road (northbound and southbound bus stops) approximately 0.5 miles from the project site and on Silicon Valley Boulevard at Eden Park Place approximately 0.4 miles from the project site.

Due to the lack of transit service options within walking distance of the site, it is reasonable to assume that few employees of the project would utilize transit. A small increase in transit demand generated by the proposed project could be accommodated by the current available ridership capacity of the transit service in the study area.

## Parking

The majority of the site would be paved and would include 335 standard parking spaces, 12 ADAcompliant spaces, 79 trailer parking spaces ( $12 \mathrm{ft} \times 55 \mathrm{ft}$ ), and 84 loading dock spaces.

## Vehicular Parking

Based on the function of the project, 43,985 square feet of the building area would be used as offices for the industrial buildings while the remaining 368,015 square feet would be used for warehousing. According to the City of San Jose's off-street parking requirements (Chapter 20.90, Table 20-190 of the City's Zoning Code), warehouse buildings in excess of 25,000 s.f. of total gross floor area require a minimum of 1 vehicle parking space per 5,000 s.f. of warehouse space and offices require a minimum of 1 vehicle parking space per 250 s.f. of office floor area ( $85 \%$ of gross floor area). Accordingly, the project would be required to provide at least 250 vehicle parking spaces ( 74 spaces for warehouse space and 176 spaces for office).

The site plan shows a total of 347 vehicle parking spaces would be provided, which would exceed the City's vehicle parking requirement.

## Bicycle Parking

According to the City of San Jose's off-street parking requirements (Chapter 20.90 of the City's Zoning Code), non-residential projects must provide a minimum of two short-term bicycle parking spaces and one long-term bicycle parking space. The project would provide 7 bicycle racks with space for 14 bicycles near the entrances to Building 1 and 6 long-term bicycle parking spaces on racks inside the building. The project would provide 6 bicycle racks with space for 12 bicycles near the entrances to Building 2 and 4 long-term bicycle parking spaces on racks inside the building. The project would meet City's parking requirement.

## 5.

## Conclusions

This report presents the results of the transportation analysis conducted for a proposed industrial development located at 550 Piercy Road in San Jose, California. The project site is located within the Edenvale Area Development Policy (EADP) boundaries. The project would construct two industrial buildings with up to 430,000 square feet and associated vehicle and trailer parking on an approximately 28.9 -acre vacant site. Access to the project site would be provided via Hellyer Avenue and Piercy Road.

This study was conducted for the purpose of identifying the potential transportation impacts related to the proposed industrial project. The transportation impacts of the project were evaluated following the standards and methodologies established in the City of San Jose's Transportation Analysis Handbook (April 2020). Based on the City of San Jose's Transportation Analysis Policy (Policy 5-1) and the Transportation Analysis Handbook, the project includes a California Environmental Quality Act (CEQA) level Transportation Analysis (TA) and a non-CEQA Local Transportation Analysis (LTA). The project would generate more than 100 new peak-hour vehicle trips, thus, a Congestion Management Program (CMP) traffic analysis based on the Santa Clara Valley Transportation Authority (VTA) Transportation Impact Analysis Guidelines (2014) is required.

## CEQA Transportation Impact Analysis

## Project Vehicle Miles Traveled (VMT) Analysis

The project VMT estimated by the City's VMT Evaluation Tool is 14.69 VMT per worker, which exceeds the industrial threshold (existing regional average) of 14.37 VMT per worker. Since the VMT generated by the project would exceed the threshold of significance for industrial employment uses in the area, the project would result in a significant transportation impact on VMT, and mitigation measures are required to reduce the VMT impact to a less-than-significant level.

## Project Mitigation

Implementation of the following off-site multi-modal infrastructure improvements (Tier 2 VMT reduction strategy) would mitigate the significant VMT impact:
5. Traffic Calming Measures and Bike Access Improvements - The project should narrow the existing roadway lane widths along Silicon Valley Boulevard to implement Class IV protected bikeways in both directions between Hellyer Avenue and Eden Park Place. The bike lanes would connect the existing Coyote Creek Trailheads and encourage the use of bicycles.
6. Pedestrian Network Improvements - The project should remove the pork-chop island on the southwest corner at the Hellyer Avenue and Silicon Valley Boulevard intersection. The improvement would require tightening the corner radius at the southwest corner and modifying

Page
the signal to accommodate pork chop island removals. The improvement would improve the multi-modal environment by eliminating unsignalized pedestrian/vehicle conflict points, increasing visibility of pedestrians at the intersection corner, and providing a safer refuge for pedestrians waiting to use the crosswalks.

Based on the City's VMT Evaluation Tool, implementing the above recommended mitigation measures would lower the project VMT to 14.11 per worker (a reduction of about $4.8 \%$ ), which would reduce the project impact to a less-than-significant level (below the industrial threshold of 14.37 VMT per worker).

## Cumulative VMT Impact Analysis

The proposed industrial project is consistent with the uses allowed within the Industrial Park (IP) land use designation and is consistent with the following City of San Jose Land Use Policies:

- Land Use Policy LU-6.4: Encourage the development of new industrial areas and the redevelopment of existing older or marginal industrial areas with new industrial uses, particularly in locations which facilitate efficient commute patterns.
- Land Use Policy LU-6.5: Maintain and create Light Industrial and Heavy Industrial designated sites that are at least one acre in size in order to facilitate viable industrial uses.
- Land Use Policy LU-7.1: Encourage industrial supplier/service business retention and expansion in appropriate areas in the City.

The proposed project is consistent with the Envision San Jose 2040 General Plan and would not require a General Plan Amendment (GPA). The construction of new industrial buildings would facilitate the development of an industrial site and would help retain industrial designated land within the City. Thus, the project would be considered part of the cumulative solution to meet the General Plan's longrange transportation goals and would result in a less-than-significant cumulative impact.

## Local Transportation Analysis

## Edenvale Area Development Policy Conformance

The project is required to be in conformance with the maximum allowable floor area ratio (FAR) for Edenvale Sub-Area 3 development, which is a maximum FAR of 0.40 for industrial development. The project would construct 430,000 square feet of building floor area on the 28.9-acre site, so the project FAR would be 0.34 and would be lower than the maximum allowable FAR of 0.40 . Thus, the proposed project density is in conformance with the EADP.

## Project Trip Generation

After applying the ITE trip rates to the proposed project and applying the appropriate trip reductions, it is estimated that the project would generate 1,989 new daily trips, with 302 new trips ( 266 inbound and 36 outbound) occurring during the AM peak hour and 266 new trips (37 inbound and 229 outbound) occurring during the PM peak hour.

## Intersection Traffic Operations

The results of the intersection level of service evaluation show that all of the signalized study intersections are currently operating at acceptable levels of service during the AM and PM peak hours of traffic.

The project site is located in Edenvale Sub-Area 3, which means the site already has approval for industrial development as part of the EADP. Therefore, the project is not required to analyze any signalized intersections for potential adverse effects.

## Other Transportation Items

The proposed site plan shows adequate site access and on-site circulation for automobiles and trucks (including emergency vehicles), and no adverse traffic operational issues are expected to occur at the project driveways as a result of the project. The project would not have an adverse effect on the existing pedestrian or bicycle facilities in the study area.

## 550 Piercy Road Warehouse TA Technical Appendices

## Appendix A <br> VMT Evaluation Tool Summary Reports

PROJECT:

| Name: | 550 Piercy Rd Industrial - No Mitigation | Tool Version: | $2 / 29 / 2019$ |
| :--- | :--- | ---: | :--- |
| Location: | 550 Piercy Rd | Date: | $4 / 28 / 2022$ |

Parcel: 67808043 Parcel Type: Suburb with Single-Family Homes
Proposed Parking Spaces ..... Vehicles: $322 \quad$ Bicycles: 0
LAND USE:

| Residential: |  |
| :--- | ---: |
| Single Family | 0 DU |
| Multi Family | 0 DU |
| Subtotal | 0 DU |
| Office: | 0 KSF |
| Retail: | 0 KSF |
| Industrial: | 430 KSF |

Percent of All Residential Units

| Extremely Low Income ( $\leq 30 \% \mathrm{MFI})$ | $0 \%$ Affordable |
| :--- | :--- |
| Very Low Income ( $>30 \% \mathrm{MFI}, \leq 50 \% \mathrm{MFI})$ | $0 \%$ Affordable |
| Low Income ( $>50 \% \mathrm{MFI}, \leq 80 \% \mathrm{MFI})$ | $0 \%$ Affordable |

## VMT REDUCTION STRATEGIES

## Tier 1 - Project Characteristics

Increase Residential Density
Existing Density (DU/Residential Acres in half-mile buffer) ..... 3
With Project Density (DU/Residential Acres in half-mile buffer) ..... 3
Increase Development Diversity
Existing Activity Mix Index ..... 0.73
With Project Activity Mix Index ..... 0.72
Integrate Affordable and Below Market Rate
Extremely Low Income BMR units ..... 0 \%
Very Low Income BMR units ..... 0 \%
Low Income BMR units ..... 0 \%
Increase Employment Density
Existing Density (Jobs/Commercial Acres in half-mile buffer) ..... 25
With Project Density (Jobs/Commercial Acres in half-mile buffer) ..... 33

## Tier 2 - Multimodal Infrastructure

Tier 3 - Parking
Tier 4 - TDM Programs

## EMPLOYMENT ONLY

The tool estimates that the project would generate per non-industrial worker VMT and per industrial worker VMT above the City's threshold.


Est. Max Reduction Possible . . . . . . . . . . . . . . 11.86

- Industrial Threshold
14.37


## PROJECT:

LAND USE:

| Residential: |  |
| :--- | ---: |
| Single Family | 0 DU |
| Multi Family | 0 DU |
| Subtotal | 0 DU |
| Office: | 0 KSF |
| Retail: | 0 KSF |
| Industrial: | 430 KSF |


| Name: | 550 Piercy Rd Industrial - With Mitigation | Tool Version: | 2/29/2019 |
| :--- | :--- | ---: | :--- |
| Location: | 550 Piercy Rd | Date: | $6 / 23 / 2022$ |

Parcel: $67808043 \quad$ Parcel Type: Suburb with Single-Family Homes
Proposed Parking Spaces Vehicles: 322 Bicycles: 0

Percent of All Residential Units
Extremely Low Income ( $\leq 30 \% \mathrm{MFI}$ ) 0 \% Affordable
Very Low Income ( > 30\% MFI, $\leq 50 \% \mathrm{MFI}$ ) 0 \% Affordable
Low Income ( $>50 \% \mathrm{MFI}, \leq 80 \% \mathrm{MFI}$ ) 0 \% Affordable

## VMT REDUCTION STRATEGIES

## Tier 1 - Project Characteristics

## Increase Residential Density

Existing Density (DU/Residential Acres in half-mile buffer) ..... 3
With Project Density (DU/Residential Acres in half-mile buffer) ..... 3
Increase Development Diversity
Existing Activity Mix Index ..... 0.73
With Project Activity Mix Index ..... 0.72
Integrate Affordable and Below Market Rate
Extremely Low Income BMR units ..... 0 \%
Very Low Income BMR units ..... 0 \%
Low Income BMR units ..... 0 \%
Increase Employment Density
Existing Density (Jobs/Commercial Acres in half-mile buffer) ..... 25
With Project Density (Jobs/Commercial Acres in half-mile buffer) ..... 33
Tier 2 - Multimodal Infrastructure
Bike Access Improvements (In Coordination with SJ)
Distance to Nearest Existing Bicycle Facility ..... 10 feet
Distance to Nearest Bicycle Facility With Project ..... 10 feet
Traffic Calming Measures (In Coordination with SJ)
Are improvements provided beyond the development frontage? ..... Yes
Pedestrian Network Improvements (In Coordination with SJ)
Are pedestrian improvements provided beyond the development frontage? ..... Yes

Tier 3 - Parking

Tier 4 - TDM Programs

## EMPLOYMENT ONLY

The tool estimates that the project would generate per non-industrial worker VMT below the City's threshold. There are selected strategies that require coordination with the City of San Jose to implement.


## Appendix B Intersection Volumes








## Appendix C <br> Approved Trips Inventory (ATI)




| Intersection of : Bernal Rd <br> Traffix Node Number : 3003 |  |  |  |  |  |  |  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  |  |  |  |  |  |  |  |  |  |  |  |
| Permit No./Proposed Land Use/Description/Location | $\begin{aligned} & \text { MO } 9 \\ & \text { NBL } \end{aligned}$ | $\text { M0 } 8$ <br> NBT | $\begin{aligned} & \text { M07 } \\ & \text { NBR } \end{aligned}$ | $\begin{aligned} & \text { M03 } \\ & \text { SBL } \end{aligned}$ | $\begin{aligned} & \text { MO2 } \\ & \text { SBT } \end{aligned}$ | $\begin{aligned} & \text { M01 } \\ & \text { SBR } \end{aligned}$ | M12 <br> EBL | M11 <br> EBT | M10 <br> EBR | $\text { M0 } 6$ <br> WBL | M05 <br> WBT | $\text { M0 } 4$ <br> WBR |
| COYOTE REASSIGN Office/Industrial NORTH COYOTE VALLEY COYOTE VALLEY | 0 | 0 | 0 | -29 | 0 | -238 | 0 | -53 | 0 | 0 | -267 | 0 |
| EDENVALE1 <br> Office/Industrial <br> EAST OF 101, NORTH OF SILVER CREEK VALLEY RD EDENVALE ZONE 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 4 | 0 | 0 | 38 | 0 |
| EDENVALE2 <br> Office/Industrial <br> W/O 101, BOUNDED BY COTTLE RD, SANTA TERESA AND EDENVALE ZONE 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 390 | 280 | 0 | 73 | 0 |
| EDENVALE3-4 <br> Office/Industrial <br> EAST OF 101, SOUTH OF SILVER CREEK VALLEY RD EDENVALE ZONE $3 \& 4$ | 0 | 0 | 0 | 29 | 0 | 0 | 0 | 18 | 0 | 169 | 166 | 0 |
| EDENVALE3-4POOL <br> Office/Industrial <br> EAST OF 101, SOUTH OF SILVER CREEK VALLEY RD EDENVALE AREA 3-4 POOL | 0 | 0 | 0 | 3 | 0 | 0 | 0 | 1 | 0 | 20 | 20 | 0 |
| HITACHI CREDIT (3-14641) Office/Industrial 5600 COTTLE RD HITACHI CREDIT | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 9 | 4 | 0 | 5 | 0 |
| NORTH COYOTE <br> Office/Industrial <br> NORTH COYOTE VALLEY <br> NORTH COYOTE VALLEY CAMPUS INDUSTRIAL | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 6 | 0 | 0 |











Intersection of : Blossom Hill Rd \& SB 101 To Blossom Hill Rp
Traffix Node Number : 3019

| Permit No./Proposed Land | M09 | M08 | M0 7 | M03 | M02 | M01 | M12 | M11 | M10 | M0 6 | M05 | M0 4 |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Use/Description/Location | NBL | NBT | NBR | SBL | SBT | SBR | EBL | EBT | EBR | WBL | WBT | WBR |
| SIGN | 0 | 0 | 0 | -18 | 0 | -60 | 0 | -258 | 0 | 0 | -24 | 0 |

Office/Industrial
NORTH COYOTE VALLEY
COYOTE VALLEY

| EDENVALE1 |  |  |  |
| :---: | :---: | :---: | :---: |
|  |  |  |  |

Office/Industrial
EAST OF 101, NORTH OF SILVER CREEK VALLEY RD
EDENVALE ZONE 1

|  | EDENVALE2 | 0 |
| :---: | :---: | :---: |
|  | -DENVALE2 |  |

Office/Industrial
W/O 101, BOUNDED BY COTTLE RD, SANTA TERESA AND
EDENVALE ZONE 2


Office/Industrial
EAST OF 101, SOUTH OF SILVER CREEK VALLEY RD
EDENVALE ZONE 3\&4


Office/Industrial
EAST OF 101, SOUTH OF SILVER CREEK VALLEY RD
EDENVALE AREA 3-4 POOL

| EEHDP (RES) | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Residential |  |  |  |  |  |  |  |  |  |  |  |  |
| EVERGREEN |  |  |  |  |  |  |  |  |  |  |  |  |
| EEHDP (RESIDENTIAL) |  |  |  |  |  |  |  |  |  |  |  |  |
| EEHDP (RETAIL) | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 3 | 0 | 0 | 0 | 0 |
| Retail/Commercial |  |  |  |  |  |  |  |  |  |  |  |  |
| EVERGREEN |  |  |  |  |  |  |  |  |  |  |  |  |
| EEHDP (RETAIL) |  |  |  |  |  |  |  |  |  |  |  |  |



|  | LEFT | THRU | RIGHT |
| :--- | :---: | :---: | :---: |
| NORTH | 69 | 0 | 301 |
| EAST | 0 | 328 | 0 |
| SOUTH | 0 | 0 | 0 |
| WEST | 0 | 108 | 3 |




|  | LEFT | THRU | RIGHT |
| :--- | :---: | :---: | :---: |
| NORTH | $(64)$ | 0 | $(93)$ |
| EAST | 0 | 800 | 0 |
| SOUTH | 0 | 0 | 0 |
| WEST | 0 | 307 | 0 |


| Intersection of : Fontanoso <br> Traffix Node Number : 3848 |  |  |  |  |  |  |  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  |  |  |  |  |  |  |  |  |  |  |  |
| Permit No./Proposed Land Use/Description/Location | $\begin{aligned} & \text { MO } 9 \\ & \text { NBL } \end{aligned}$ | M08 <br> NBT | M0 7 <br> NBR | $\begin{aligned} & \text { M03 } \\ & \text { SBL } \end{aligned}$ | $\begin{aligned} & \mathrm{MO} 2 \\ & \mathrm{SBT} \end{aligned}$ | $\begin{aligned} & \text { M01 } \\ & \text { SBR } \end{aligned}$ | M12 <br> EBL | M11 <br> EBT | M10 <br> EBR | M0 6 <br> WBL | M05 <br> WBT | M0 4 <br> WBR |
| EDENVALE1 <br> Office/Industrial <br> EAST OF 101, NORTH OF SILVER CREEK VALLEY RD EDENVALE ZONE 1 | 5 | 18 | 0 | 4 | 4 | 48 | 186 | 0 | 1 | 0 | 2 | 19 |
| EDENVALE2 <br> Office/Industrial <br> W/O 101, BOUNDED BY COTTLE RD, SANTA TERESA AND EDENVALE ZONE 2 | 0 | 0 | 12 | 0 | 0 | 0 | 0 | 4 | 0 | 51 | 18 | 0 |
| EDENVALE3-4 <br> Office/Industrial <br> EAST OF 101, SOUTH OF SILVER CREEK VALLEY RD EDENVALE ZONE $3 \& 4$ | 34 | 30 | 10 | 0 | 122 | 14 | 3 | 0 | 141 | 43 | 3 | 0 |
| EDENVALE3-4POOL <br> Office/Industrial <br> EAST OF 101, SOUTH OF SILVER CREEK VALLEY RD EDENVALE AREA 3-4 POOL | 4 | 3 | 1 | 0 | 14 | 1 | 0 | 0 | 17 | 4 | 0 | 0 |
| EEHDP (RES) <br> Residential <br> EVERGREEN <br> EEHDP (RESIDENTIAL) | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| ```HITACHI CREDIT (3-14641) Office/Industrial 5600 COTTLE RD HITACHI CREDIT``` | 12 | 0 | 0 | 0 | 0 | 0 | 3 | 5 | 0 | 0 | 25 | 0 |
| ```NORTH COYOTE Office/Industrial NORTH COYOTE VALLEY NORTH COYOTE VALLEY CAMPUS INDUSTRIAL``` | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 60 | 0 | 0 | 241 | 0 |








| Intersection of : NB 101 To Silicon Valley Rp \& Silicon Valley Bl |  |  |  |  |  |  |  |  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Traffix Node Number : 3860 |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Permit No./Proposed LandUse/Description/Location |  | $\begin{aligned} & \text { M09 } \\ & \text { NBL } \end{aligned}$ | $\begin{aligned} & \text { M08 } \\ & \text { NBT } \end{aligned}$ | $\text { M0 } 7$ <br> NBR | $\begin{aligned} & \text { MO } 3 \\ & \text { SBL } \end{aligned}$ | $\begin{aligned} & \text { M02 } \\ & \text { SBT } \end{aligned}$ | $\begin{aligned} & \text { M01 } \\ & \text { SBR } \end{aligned}$ | $\begin{aligned} & \text { M12 } \\ & \text { EBL } \end{aligned}$ | $\begin{aligned} & \text { M11 } \\ & \text { EBT } \end{aligned}$ | $\begin{aligned} & \text { M10 } \\ & \text { EBR } \end{aligned}$ | $\begin{aligned} & \text { M0 } 6 \\ & \text { WBL } \end{aligned}$ | $\begin{aligned} & \text { M0 } 5 \\ & \text { WBT } \end{aligned}$ | $\begin{aligned} & \text { MO } 4 \\ & \text { WBR } \end{aligned}$ |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| PDC12-028 RES (3-14681) |  | 27 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 6 | 0 |
| Residential |  |  |  |  |  |  |  |  |  |  |  |  |  |
| ISTAR MIXED-USE |  |  |  |  |  |  |  |  |  |  |  |  |  |
| PDC99-053 (3-13970) |  | 0 | 0 | 19 | 0 | 0 | 0 | 0 | 8 | 0 | 0 | 3 | 0 |
| LEGACY |  |  |  |  |  |  |  |  |  |  |  |  |  |
| CISCO NORTH COYOTE VALLEY |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  | TOTAL: | 73 | 0 | 62 | 0 | 0 | 0 | 0 | 87 | 0 | 0 | 836 | 0 |
|  |  |  |  | U |  |  |  |  |  |  |  |  |  |
|  | NORTH |  |  |  |  |  |  |  |  |  |  |  |  |
|  | EAST |  |  |  |  |  |  |  |  |  |  |  |  |
|  | SOUTH |  |  |  |  |  |  |  |  |  |  |  |  |
|  | WEST | 0 |  |  |  |  |  |  |  |  |  |  |  |

Intersection of : Basking Ridge Av \& Hellyer Av \& Silicon Valley Bl / Silicon Valle Traffix Node Number : 3919

| Permit No./Proposed Land | M09 | M08 | M07 | M03 | M02 | M01 | M12 | M11 | M10 | M0 6 | M0 5 | M0 4 |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Use/Description/Location | NBL | NBT | NBR | SBL | SBT | SBR | EBL | EBT | EBR | WBL | WBT | WBR |
| OTE REASSIGN | -43 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | -11 | 0 | 0 |  |

Office/Industrial
NORTH COYOTE VALLEY
COYOTE VALLEY

| EDENVALE1 | 0 | 3 | 0 | 0 | 0 | 4 | 20 | 0 | 0 | 0 | 0 | 0 |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Office/Industrial |  |  |  |  |  |  |  |  |  |  |  |  |
| EAST OF 101, NORTH OF SILVER CREEK VALLEY RD EDENVALE ZONE 1 |  |  |  |  |  |  |  |  |  |  |  |  |
| EDENVALE2 | 0 | 0 | 0 | 0 | 0 | 51 | 12 | 0 | 0 | 0 | 0 | 0 |
| Office/Industrial |  |  |  |  |  |  |  |  |  |  |  |  |
| W/O 101, BOUNDED BY COTTLE RD, SANTA TERESA AND EDENVALE ZONE 2 |  |  |  |  |  |  |  |  |  |  |  |  |
| EDENVALE3-4 | 0 | 6 | 0 | 0 | 1 | 160 | 610 | 49 | 0 | 0 | 12 | 0 |
| Office/Industrial |  |  |  |  |  |  |  |  |  |  |  |  |
| EAST OF 101, SOUTH OF SILVER CREEK VALLEY RD |  |  |  |  |  |  |  |  |  |  |  |  |
| EDENVALE ZONE 3\&4 |  |  |  |  |  |  |  |  |  |  |  |  |
| EDENVALE3-4POOL | 0 | 0 | 0 | 0 | 0 | 18 | 74 | 6 | 0 | 0 | 1 | 0 |

EDENVALE3-4POOL
Office/Industrial
EAST OF 101, SOUTH OF SILVER CREEK VALLEY RD
EDENVALE AREA 3-4 POOL

```
PDC99-053 (3-13970)
```

LEGACY
CISCO NORTH COYOTE VALLEY

|  | LEFT | THRU | RIGHT |
| :--- | :---: | :---: | :---: |
| NORTH | 0 | 1 | 233 |
| EAST | 0 | 40 | 0 |
| SOUTH | $(43)$ | 9 | 0 |
| WEST | 716 | 62 | $(11)$ |



|  | LEFT | THRU | RIGHT |
| :--- | :---: | :---: | :---: |
| NORTH | 0 | 9 | 698 |
| EAST | 0 | 58 | 0 |
| SOUTH | $(5)$ | 0 | 0 |
| WEST | 138 | 32 | $(42)$ |




## Appendix D <br> Intersection Level of Service Calculations


















