## Appendix G

## Transportation Analysis

## 1669 Monterey Road Hotel

## Local Transportation Analysis

Prepared for:
Denise Duffy \& Associates, Inc.

July 21, 2022

Hexagon Transportation Consultants, Inc.
Hexagon Office: 100 Century Center Court, Suite 501
San Jose, CA 95112
Hexagon Job Number: 22BJ02
Phone: 408.971.6100
Client: Denise Duffy \& Associates, Inc.

Areawide Circulation Plans Corridor Studies Pavement Delineation Plans Traffic Handling Plans Impact Fees Interchange Analysis Parking Transportation Planning Traffic Calming Traffic Control Plans Traffic Simulation Traffic Impact Analysis Traffic Signal Design Travel Demand Forecasting

## Table of Contents

Executive Summary ..... iii

1. Introduction ..... 1
2. Existing Transportation Conditions ..... 12
3. Local Transportation Analysis ..... 18
4. Conclusions ..... 34
Appendices
Appendix A San Jose Approved Trips Inventory (ATI)
Appendix B Volume Spreadsheets
Appendix C Intersection Level of Service CalculationsAppendix D Passenger Car and Truck Turning Template Diagrams
List of Tables
Table 1 Conversion of Hotel Land Use to Equivalent Retail Land Use ..... 6
Table 2 Signalized Intersection Level of Service Definitions Based on Average Control Delay. ..... 9
Table 3 Project Trip Generation Estimates ..... 19
Table 4 Intersection Level of Service Summary ..... 26
Table 5 Intersection Queuing Analysis Summary ..... 27
List of Figures
Figure 1 Site Location and Study Intersections. ..... 2
Figure 2 Site Plan ..... 3
Figure 3 Existing Hotels in the Project Vicinity ..... 7
Figure 4 Existing Bicycle Facilities. ..... 14
Figure 5 Existing Transit Service ..... 15
Figure 6 Existing Intersection Lane Configurations ..... 17
Figure 7 Project Trip Distribution Pattern and Trip Assignment. ..... 20
Figure 8 Existing Traffic Volumes ..... 22
Figure 9 Background Traffic Volumes ..... 23
Figure 10 Background Plus Project Traffic Volumes. ..... 24
Figure 11 Cumulative Traffic Volumes ..... 25

## Executive Summary

This report presents the results of the transportation analysis conducted for a proposed hotel at 1669 Monterey Road in San Jose, California. The project would construct a 5 -story hotel with 120 rooms and 99 parking spaces. The site is currently occupied by the Casa Linda Motel which would be demolished. The project would remove two existing right-turn only driveways and construct one right-turn only driveway on Monterey Road.

This study was conducted for the purpose of identifying the potential transportation impacts and operational issues related to the proposed hotel development. The transportation impacts of the project were evaluated following the standards and methodologies established in the City of San Jose's Transportation Analysis Handbook, adopted in April 2020. Based on the City of San Jose's Transportation Analysis Policy (Council Policy 5-1) and the Transportation Analysis Handbook, the study includes a California Environmental Quality Act (CEQA) transportation analysis and a non-CEQA local transportation analysis (LTA). The LTA supplements the CEQA transportation analysis by identifying transportation operational issues via an evaluation of weekday AM and PM peak-hour traffic conditions for four (4) signalized intersections in the vicinity of the project site. The LTA also includes an analysis of site access, on-site circulation, parking, vehicle queuing, and effects to transit services and bicycle and pedestrian access.

## Vehicle Miles Traveled (VMT) Analysis

Most projects in San Jose require a CEQA-level analysis of vehicle miles traveled (VMT) per the City guidelines. The City of San Jose's VMT Evaluation Tool is used to calculate the daily VMT generated by project. However, the evaluation tool is limited to the evaluation of the general land use categories of residential, office, and industrial. Therefore, the use of the VMT tool for land uses that are not reflective of one of the three general land uses, such as the proposed hotel, requires the conversion of the proposed land use to an equivalent land use category. Based on this procedure, the hotel project trip generation estimates were converted to an equivalent amount of retail square footage. This is a reasonable approach to the VMT analysis since hotels exhibit similar vehicle mode share characteristics, travel patterns, and trip length characteristics to that of local retail uses (e.g., both uses typically serve nearby local businesses). There are over 20 existing hotels within a two-mile radius of the project site, and it is expected that the proposed hotel would generate mostly localized traffic. The majority of hotel customers would divert trips to the proposed hotel from other existing hotels and, therefore, would not generate a significant number of new hotel trips in the region.

Although the VMT Evaluation Tool does not allow for an evaluation of retail uses, retail developments that total less than 100,000 square feet (s.f.) of gross floor area and do not include drive-through operations are exempt from preparing a detailed CEQA-level VMT analysis. Based on the land use conversion process, a 120-room hotel is estimated to generate the same number of daily vehicle trips
as 27,000 s.f. of retail space. Accordingly, a CEQA Transportation Analysis (i.e., VMT analysis) is not required for the hotel project.

## Project Trip Generation

After applying the ITE trip rates for Hotel and a 12 percent mode-share trip reduction, the proposed project would generate 1,292 new daily vehicle trips, with 65 new trips occurring during the AM peak hour and 77 new trips occurring during the PM peak hour.

## Intersection Traffic Operations

Based on the City of San Jose intersection operations analysis criteria, none of the study intersections would be adversely affected by the project.

## Other Transportation Issues

The proposed site plan shows generally adequate site access and on-site circulation. The project would not have an adverse effect on the existing pedestrian, bicycle or transit facilities in the study area. Below are recommendations resulting from the site plan review.

## Recommendations

- Increase the driveway width on Monterey Road from 24 feet to 26 feet, per City standards (City of San Jose Department of Transportation Geometric Guidelines).
- Confirm with City of San Jose Public Works staff that the proposed 24 -foot-wide drive aisles would be acceptable.
- Provide at least 13 feet 6 inches of vertical clearance at the porte cochere to accommodate delivery trucks and emergency vehicles.
- Pay a fair-share contribution of $\$ 16,700$ toward the planned Class IV bikeway improvements on Monterey Road, per the request of the City of San Jose Department of Public Works.
- Provide a $\$ 15,000$ fair-share contribution toward implementation of an Accessible Pedestrian Signal (APS) at the Monterey Road and Phelan Avenue signalized intersection, per the request of the City of San Jose Department of Public Works.
- Provide 5 additional vehicle parking spaces to meet the City's Zoning Code or request an additional parking reduction from the City of San Jose Planning Department.


## 1. Introduction

This report presents the results of the transportation analysis conducted for a proposed hotel at 1669 Monterey Road in San Jose, California (see Figure 1). The project would construct a 5 -story hotel with 120 rooms and 99 parking spaces. The site is currently occupied by the Casa Linda Motel which would be demolished. The project would remove two existing right-turn only driveways and construct one right-turn only driveway on Monterey Road. The project site plan is shown on Figure 2.

This study was conducted for the purpose of identifying the potential transportation impacts and operational issues related to the proposed hotel development. The transportation impacts of the project were evaluated following the standards and methodologies established in the City of San Jose's Transportation Analysis Handbook, adopted in April 2020. Based on the City of San Jose's Transportation Analysis Policy (Council Policy 5-1) and the Transportation Analysis Handbook, the study includes a California Environmental Quality Act (CEQA) transportation analysis and a non-CEQA local transportation analysis (LTA).

## Transportation Policies

In adherence with State of California Senate Bill 743 (SB 743) and the City's goals as set forth in the Envision San Jose 2040 General Plan, the City of San Jose has adopted a new Transportation Analysis Policy, Council Policy 5-1. The Policy establishes the thresholds for transportation impacts under CEQA based on vehicle miles traveled (VMT) instead of intersection level of service (LOS). The intent of this change is to shift the focus of transportation analysis under CEQA from vehicle delay and roadway auto capacity to a reduction in vehicle emissions, and the creation of robust multimodal networks that support integrated land uses. Council Policy 5-1 requires all projects to analyze transportation impacts using the VMT metric.

The Transportation Analysis Policy 5-1 aligns with the Envision San Jose 2040 General Plan which seeks to focus new development growth within Planned Growth Areas, bringing together office, residential, and service land uses to internalize trips and reduce VMT. VMT-based policies support dense, mixed-use, infill projects as established in the General Plan's Planned Growth Areas.

The Envision San Jose 2040 General Plan contains policies to encourage the use of non-automobile transportation modes to minimize vehicle trip generation and reduce VMT, including the following:

- 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);


Figure 1
Site Location and Study Intersections


Figure 2
Site Plan
－Increase substantially the proportion of commute travel using modes other than the single－ occupant vehicle in order to meet the City＇s mode split targets for San Jose residents and workers（TR－1．3）；
－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）；
－Give priority to the funding of multimodal projects that provide the most benefit to all users． Evaluate new transportation projects to make the most efficient use of transportation resources and capacity（TR－1．9）；
－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 grade－ separated 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）；
－Coordinate and collaborate with local School Districts to provide enhanced，safer bicycle and pedestrian connections to school facilities throughout San Jose（TR－2．10）；
－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）；
－Require large employers to develop and maintain TDM programs to reduce the vehicle trips generated by their employees（TR－7．1）；
－Promote transit－oriented development with reduced parking requirements and promote amenities around transit hubs and stations to facilitate the use of transit services（TR－8．1）；

- Balance business viability and land resources by maintaining an adequate supply of parking to serve demand while avoiding excessive parking supply that encourages auto use (TR-8.2);
- 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);
- Allow reduced parking requirements for mixed-use developments and for developments providing shared parking or a comprehensive transportation demand management (TDM) program, or developments located near major transit hubs or within Urban Villages and other Growth Areas (TR-8.6);
- 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);
- Encourage all developers to install and maintain trails when new development occurs adjacent to a designated trail location. Use the City's Parkland Dedication Ordinance and Park Impact Ordinance to have residential developers build trails when new residential development occurs adjacent to a designated trail location, consistent with other parkland priorities. Encourage developers or property owners to enter into formal agreements with the City to maintain trails adjacent to their properties (PR-8.5).


## CEQA Transportation Analysis Scope

The City of San Jose's Transportation Analysis Policy (Policy 5-1) establishes procedures for determining project impacts on VMT based on project description, characteristics, and/or location. The City of San Jose defines VMT as the total miles of travel by personal motorized vehicles a project is expected to generate in a day. VMT is calculated for residential, office, and industrial projects using the Origin-Destination VMT method, which measures the full distance of personal motorized vehicle-trips with one end within the project.
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 VMT per worker. 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 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. The tool estimates a project's VMT and compares it to the appropriate thresholds of significance based on the project location (i.e., assessor's parcel number) and type of development.

The San Jose VMT Evaluation Tool does not provide express guidance on evaluating VMT for the "Hotel" land use specifically. Instead, as noted above, the Evaluation Tool only specifies three broad categories of uses: residential, office and industrial. Accordingly, based on direction from the City staff, the VMT analysis for the proposed project was conducted by converting the hotel project trip generation estimates to an equivalent retail square footage to obtain project VMT. This is a reasonable approach to VMT analysis since hotels exhibit similar vehicle mode share characteristics, travel patterns, and trip length characteristics to that of local retail uses (e.g., both uses typically serve nearby local businesses). There are over 20 existing hotels within a two-mile radius of the project site (see Figure 3 ), and it is expected that the hotel project would generate mostly localized traffic. The majority of hotel customers would divert trips to the proposed hotel from other existing hotels and, therefore, would not generate a significant number of new hotel trips in the region. Based on the conversion process, a 120room hotel would generate daily trips equivalent to 27,000 square feet of retail space (see Table 1). This relatively small amount of retail space meets the screening criterion set forth in the Transportation Analysis Handbook, as described below.

## Screening Criterion for Local-Serving Retail

- 100,000 square feet of total gross floor area or less without drive-through operations.

Since the project would meet the screening criterion, no CEQA Transportation Analysis (i.e., VMT analysis) is required. Although the project is exempt from a VMT analysis, a Local Transportation Analysis (LTA) must be prepared to identify potential operational issues that may arise due to the project, as described below.

## Table 1

Conversion of Hotel Land Use to Equivalent Retail Land Use

| Land Use | Size | Daily |  |
| :---: | :---: | :---: | :---: |
|  |  | Trip Rate | Trips |
| Hotel (ITE Land Use 310) | 120 rooms | 12.23 | 1,468 |
| Strip Retail Plaza <40 KSF (ITE Land Use 822) | 27,000 s.f. ${ }^{1}$ | 54.45 | 1,468 |
| Source: ITE Trip Generation Manual, 11th Edition, 2021. Notes: |  |  |  |
| ${ }^{1}$ The project trips were converted to an equiva | amount of ret | pace: | 000 |

## Local Transportation Analysis Scope

The non-CEQA Local Transportation Analysis (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, on-site circulation, vehicle queuing, and transit, bicycle, and pedestrian facilities 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. Note, however, that signalized intersections that do not meet all the criteria may still be added to the list of study intersections at the City's discretion. Unsignalized intersections may also be added; though, unlike signalized intersections, unsignalized intersections typically are not evaluated for level of service.


Figure 3

The LTA analyzes AM and PM peak hour traffic conditions for the following four signalized intersections:

1. Monterey Road/First Street and Alma Avenue - CMP intersection
2. Monterey Road and Cottage Grove Avenue
3. Monterey Road and San Jose Avenue
4. Monterey Road and Phelan Avenue

The list of study intersections was approved by City of San Jose staff. Traffic conditions at the study intersections were analyzed for both 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. It is during these periods that the most congested traffic conditions occur on a typical weekday. Traffic conditions were evaluated for the following scenarios:

- Existing Conditions. Existing AM and PM peak hour traffic volumes for the signalized study intersections were obtained from the 2018 CMP Annual Monitoring Report (2018 PM count was used for the CMP intersection) and historical count data provided by the City of San Jose.
- Background Conditions. Background traffic volumes were estimated by adding to existing peak hour volumes the projected volumes from approved but not yet completed or occupied developments. 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 conditions represent the baseline conditions to which project conditions are compared for the purpose of determining potential adverse operational effects of the project. The ATI sheets are contained in Appendix A.
- Background Plus Project Conditions. Project conditions reflect projected traffic volumes on the planned roadway network with completion of the project and approved developments. Project traffic volumes were estimated by adding to background traffic volumes the additional trips generated by the project.
- Cumulative Conditions. Cumulative traffic volumes were estimated by adding to existing volumes the ATI provided by City staff, project-generated trips, and trips generated by pending developments in the study area. For the purpose of this study, cumulative traffic volumes include traffic generated by the following adjacent pending project: 1675 Monterey Road Vehicle Parking/Storage Lot (CP21-018). This traffic scenario is provided for informational purposes at the request of the City of San Jose.


## Intersection Operations Analysis Methodology

This section presents the methods used to determine the traffic conditions at the study intersections and the potential adverse operational effects due to the project. It includes descriptions of the data requirements, the analysis methodologies, the applicable intersection level of service standards, and the criteria used to determine adverse effects on intersection operations.

## Data Requirements

The data required for the study were obtained from new traffic counts, the City of San Jose, the 2018 CMP Annual Monitoring Report, and field observations. The following data were collected from these sources:

- existing traffic volumes
- intersection lane configurations
- signal timing and phasing
- a list of approved and pending projects


## Analysis Methodologies and Level of Service Standards

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 analysis methods are described below.

## Signalized Intersections

The City of San Jose level of service methodology for signalized intersections is the 2000 Highway Capacity Manual (HCM) method. This method is applied using the TRAFFIX software. The 2000 HCM operations 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 the City's signalized intersections and CMP intersections is LOS D or better. The correlation between average control delay and level of service is shown in Table 2.

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

| Level of Service | Description | Average Control Delay Per Vehicle (sec.) |
| :---: | :---: | :---: |
| A | Operations with very low delay occurring with favorable progression and/or short cycle lengths. | up to 10.0 |
| 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, or high V/C ratios. Many vehicles stop and individual cycle failures are noticeable. | 35.1 to 55.0 |
| E | Operations with high delay values indicating poor progression, long cycle lengths, and high V/C ratios. Individual cycle failures are frequent occurrences. This is considered to be the limit of acceptable delay. | 55.1 to 80.0 |
| F | Operation with delays unacceptable to mostdrivers occurring due to oversaturation, poor progression, or very long cycle lengths. | Greater than 80.0 |
| Source: Transportation Research Board, 2010 Highway Capacity Manual, (Was hington, D.C., 2010). |  |  |

## Adverse Intersection Operations Effects

According to the City of San Jose's Transportation Analysis Handbook, 2020, an adverse effect on signalized intersection operations would occur if for either peak hour:

1. The level of service at the intersection degrades from an acceptable level (LOS D or better) under background conditions to an unacceptable level under background plus project conditions, or
2. The level of service at the intersection is an unacceptable level (LOS E or F) under background conditions and the addition of project trips cause both the critical-movement delay at the intersection to increase by four (4) or more seconds and the volume-to-capacity ratio (V/C) to increase by one percent (.01) or more.

The exception to this threshold is when the addition of project traffic reduces the amount of average control delay for critical movements, i.e., the change in average control delay for critical movements is negative. In this case, the threshold is when the project increases the critical v/c value by 0.01 or more.

Adverse effects at signalized intersections can be addressed by one of the following approaches:

- Construct improvements to the subject intersection or other roadway segments of the citywide transportation system to increase overall capacity, or
- Reduce project-generated vehicle trips (e.g., implement a "trip cap") to eliminate the adverse operational effects and restore intersection operations to background conditions. The extent of trip reduction should be set at a level that is realistically attainable through proven methods of reducing trips.


## 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. The queuing analysis is presented for informational purposes only, since 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
$\mathrm{n}=$ 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 for a particular left-turn movement; (2) the estimated maximum number of vehicles in the queue is translated into a queue length, assuming 25 feet per vehicle; and (3) the estimated maximum queue length is compared to the existing or planned available storage capacity for the left-turn movement. This analysis thus provides a basis for estimating future turn pocket storage requirements at intersections.

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

## Report Organization

This report has a total of four chapters. Chapter 2 describes the existing roadway network, transit services, and bicycle and pedestrian facilities. Chapter 3 describes the local transportation analysis (LTA) including the method by which project traffic is estimated, intersection operations analysis, any adverse intersection operations effects caused by the project, intersection vehicle queuing analysis, site access and on-site circulation review, effects on bicycle, pedestrian, and transit facilities, and parking. Chapter 4 presents the conclusions of the transportation analysis.

## 2. Existing Transportation Conditions

This chapter describes the existing conditions of the transportation system within the study area of the project. It describes transportation facilities in the vicinity of the project site, including the roadway network, transit service, and pedestrian and bicycle facilities. The analysis of existing intersection operations is included as part of the Local Transportation Analysis (see Chapter 3).

## Existing Roadway Network

Regional access to the project site is provided via State Route 87. Local access to the project site is provided via Monterey Road, Curtner Avenue, Lelong Street, Alma Avenue, San Jose Avenue, and Phelan Avenue. These facilities are described below.

SR 87 is a north-south freeway providing regional access to the project site via its connections to SR 85 in the south, and I-280 and US 101 in the north. These facilities allow for regional access from East Bay and Peninsula cities, as well as Gilroy and Morgan Hill to San Jose. SR 87 is oriented in a northwest/southwest direction with four mixed-flow lanes and two HOV lanes in the vicinity of the site. SR 87 provides access to the project study area via its interchange with Curtner Avenue to the south and Lelong Street to the north.

Monterey Road is a north-south four- to six-lane Grand Boulevard with a posted speed limit of 35 mph in the vicinity of the site. As defined by the Envision San Jose 2040 General Plan, Grand Boulevards are major transportation corridors that serve as primary routes for LRT, busses, and other public transit vehicles. Although Grand Boulevards accommodate all modes of travel, priority is given to public transit vehicles. Monterey Road is also a Vision Zero Corridor, which is a commitment to prioritizing street safety and ensuring all road users - whether walking, biking, riding transit, or driving - are safe. Monterey Road extends from Gilroy in the south to central San Jose in the north. It transitions into First Street north of Alma Avenue. Bicycle lanes are provided in both directions in the project vicinity and sidewalks are located on both sides of the street. Monterey Road provides direct access to the project site.

Curtner Avenue is an east-west four- to six-lane City Connector Street extending from Camden Avenue near SR 17 to Tully Road just east of Monterey Road. Curtner Avenue has a posted speed limit of 40 mph and has Class II bike lanes and sidewalks on both sides of the street. Curtner Avenue provides access to SR 87 and provides access to the project site via Monterey Road.

Lelong Street is a two-lane north-south local street with a posted speed limit of 25 mph in the vicinity of the site. It connects Alma Avenue in the south and Willow Street in the north. Lelong Street provides on-ramp access to SR 87 northbound and off-ramp access for SR 87 southbound. Lelong Street provides access to the project site via its intersection with Alma Avenue.

Alma Avenue is a designated On-Street Primary Bicycle Facility with a posted speed limit of 35 mph in the vicinity of the site. Alma Avenue does not have bike lanes but has sidewalks on both sides of the street in the project vicinity. It extends westward from Senter Road to where it transitions into Minnesota Avenue. Alma Avenue is a four-lane undivided road within the study area and provides access to the project site via Monterey Road.

San Jose Avenue is an east-west local street with a posted speed limit of 25 mph . San Jose Avenue does not have bike lanes and has sidewalk on the north side of the street only. It extends westward from Monterey Road and terminates at Almaden Road. San Jose Avenue is a two-lane undivided road within the study area and provides access to the project site via Monterey Road.

Phelan Avenue is an east-west Local Collector Street that extends from Monterey Road east to Senter Road. It has a posted speed limit of 25 mph west of $7^{\text {th }}$ Street and 30 mph east of $7^{\text {th }}$ Street. Phelan Avenue has buffered Class II bike lanes and sidewalks are very sporadic. Land uses along Phelan Avenue consist of mostly industrial uses. Phelan Avenue is a two-lane undivided road within the study area and provides access to the project site via Monterey Road.

## Existing Pedestrian, Bicycle and Transit Facilities

San Jose desires to provide a safe, efficient, fiscally, economically, and environmentally sensitive transportation system that balances the needs of bicyclists, pedestrians, and public transit riders with those of automobiles and trucks. The existing bicycle, pedestrian and transit facilities in the study area are described below.

## Existing Pedestrian Facilities

Due to the industrial nature of the project area, many roadway segments in the area have no sidewalks. However, a complete network of sidewalks and crosswalks is found along Monterey Road. Crosswalks with pedestrian signal heads are located at all the signalized intersections along Monterey Road. ADA compliant curb ramps are also provided at all the nearby signalized intersections along Monterey Road. The existing pedestrian facilities provide adequate connectivity between the project site and the surrounding land uses and transit stops along Monterey Road.

## Existing Bicycle Facilities

In the project area, Class II striped bike lanes are present on Monterey Road, Curtner Avenue, and segments of Phelan Avenue (see Figure 4).

## Multi-Use Trail

The Guadalupe River/Los Alamitos Creek multi-use trail system (Class I bikeway) runs through the City of San Jose along the Guadalupe River and separates bicyclists from motor vehicle traffic. The Guadalupe River trail is a continuous Class I bikeway (paved path) from W Virginia Street in the south to Alviso Marina County Park. There is another section of the trail a few blocks south of W Virginia Street from Willow Street to Curtner Avenue, which provides access to trails that lead to Almaden Valley in southern San Jose. This park trail system runs adjacent to SR 87 in the project vicinity, with access provided via the Tamien Caltrain/Light Rail Transit (LRT) station approximately 1 mile from the project site. The trail system is also available for use by pedestrians year round.

## Existing Transit Services

Existing bus service and Light Rail Transit (LRT) service in the project area is provided by the Santa Clara Valley Transportation Authority (VTA). The project area is served by frequent bus routes 26, 66, and 68 and Rapid Bus route 568 (see Figure 5).


Figure 4
Existing Bicycle Facilities

## ZHexagon



Figure 5
Existing Transit Services

## ZHexagon

Route 26 operates between West Valley College and Eastridge Mall. It provides frequent service between 5:20 AM and 11:10 PM with 15-minute headways during the AM and PM peak commute hours. Route 26 operates along Curtner Avenue in the study area.

Route 66 operates between Kaiser San Jose Medical Center and north Milpitas. It provides frequent service between 5:10 AM and 12:10 AM with 15-minute headways during the AM and PM peak commute hours. Route 66 operates along Monterey Road in the study area

Route 68 operates between the San Jose Diridon Station and Gilroy Transit Center. It provides frequent service between 4:40 AM and 1:20 AM with 15-minute headways during the AM and PM peak commute hours. Route 68 operates along Monterey Road in the study area.

Rapid Bus Route 568 operates between the San Jose Diridon Station and Gilroy Transit Center. It provides limited-stop service between 5:25 AM and 8:10 PM with 30-minute headways during the AM and PM peak commute hours. Route 26 operates along Monterey Road in the study area.

## Existing LRT Service

The VTA currently operates the 42.2-mile light rail line system extending from south San Jose through downtown to the northern areas of San Jose, Santa Clara, Milpitas, Mountain View and Sunnyvale. The service operates nearly 24 hours a day with 15 -minute headways during much of the day. The Tamien LRT Station is located approximately 1 mile from the project site and is served by the Santa TeresaBaypointe LRT Line (Blue Line). Although no LRT stations are located within walking distance of the project site, bus route 26 serves the Curtner LRT station.

## Caltrain Service

Commuter rail service between San Francisco and Gilroy is provided by Caltrain. Caltrain operates a total of 92 weekday trains. The Tamien Caltrain Station is located approximately 1 mile from the project site. Trains stop at the Tamien Station during commute hours five days a week, although stops are not as frequent as at the downtown Diridon Station. Trains stop at the Tamien Station between 4:22 AM and 11:05 PM in the northbound direction, and between 7:24 AM and 1:46 AM (following day) in the southbound direction. Caltrain provides passenger train service seven days a week and provides extended service to Morgan Hill and Gilroy during the weekday commute hours.

## Existing Intersection Lane Configurations

The existing lane configurations at the study intersections were determined by observations in the field and are shown on Figure 6.

## Observed Existing Traffic Conditions

Traffic conditions were observed in the field to identify any existing operational deficiencies. Overall, the study intersections operated well during both the AM and PM peak commute periods. However, field observations revealed that one minor operational problem currently occurs as described below.

## First Street/Monterey Road and Alma Avenue

During the PM peak hour, the northbound left-turn movement vehicle queue extends out of the turn pocket. The green time for this left-turn movement is inadequate, which is why the vehicle queues extend beyond the turn pocket and why it takes two signal cycles for vehicles to clear the intersection.

All other study intersections were observed to operate without any noteworthy operational issues during both the AM and PM peak hours of traffic.


Figure 6
Existing Intersection Lane Configurations

## 3. Local Transportation Analysis

This chapter describes the local transportation analysis (LTA) including the method by which project traffic is estimated, intersection operations analysis, any adverse effects to intersection level of service caused by the project, intersection vehicle queuing analysis, site access and on-site circulation review, effects on bicycle, pedestrian and transit facilities, and parking.

## Intersection Operations Analysis

The intersection operations analysis is intended to quantify the operations of the study intersections and to identify potential negative effects due to the addition of project traffic. Information required for the intersection operations analysis related to project trip generation, trip distribution, and trip assignment are presented in this section. The study intersections are located in the City of San Jose and are evaluated based on the City of San Jose's intersection analysis methodology and standards in determining potential adverse operational effects due to the project, as described in Chapter 1. It is assumed in this analysis that the future transportation network with the project would be the same as the existing transportation network.

## 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

Trips generated by any new development are typically estimated based on counts of existing developments of the same land use type. A compilation of typical trip generation rates can be found in the Institute of Transportation Engineers' (ITE) Trip Generation Manual.

Project trip generation was estimated by applying to the size and use of the proposed development the appropriate trip generation rates obtained from the ITE Trip Generation Manual, 11th Edition (2021). The average trip generation rates for "Hotel" (Land Use Category 310) were applied to the project.

## 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 described above. Based on the 2020 San Jose guidelines, the project qualifies for a

Page
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 an area designated as "Suburban with Multifamily Housing". Therefore, the baseline project trips were adjusted to reflect this place type.

Since hotels exhibit similar vehicle mode share characteristics, travel patterns and trip length characteristics to that of retail uses (e.g., both uses typically serve nearby local businesses), applicable City of San Jose trip generation reductions were applied to the project accordingly. Retail developments within Suburban with Multifamily Housing areas have a vehicle mode share of 88 percent (according to Table 6 of the City's Transportation Analysis Handbook). Thus, a 12 percent trip reduction was applied to the project based on the location-based vehicle mode share outputs produced from the San Jose Travel Demand Model for this place type. The trip reduction is based on the percent mode share for other modes of travel besides automobiles.

Note that since the existing hotel is such a low trip generator ( 3 vehicle trips during both the AM and PM peak hours based on driveway counts conducted on March 1, 2022), trip credits were not applied for the existing hotel to be removed. This approach presents a more conservative analysis.

## Net Project Trips

After applying the ITE trip rates for Hotel and a 12 percent mode-share trip reduction, the proposed project would generate 1,292 new daily vehicle trips, with 65 new trips occurring during the AM peak hour and 77 new trips occurring during the PM peak hour. Using the inbound/outbound splits contained in the ITE Trip Generation Manual, the project would produce 36 inbound and 29 outbound trips during the AM peak hour, and 38 inbound and 39 outbound trips during the PM peak hour (see Table 3).

Table 3
Project Trip Generation Estimates

| Land Use | Size | Daily |  | AM Peak Hour |  |  |  | PM Peak Hour |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  | Trip <br> Rate | Trips | Trip Rate | Trips |  |  | Trip <br> Rate | Trips |  |  |
|  |  |  |  |  | In | Out | Total |  | In | Out | Total |
| Hotel ${ }^{1}$ | 120 rooms | 12.23 | 1,468 | 0.62 | 41 | 33 | 74 | 0.73 | 43 | 45 | 88 |
| Location-Based Vehicle Mode Share (12\%) ${ }^{2}$ |  |  | (176) |  | (5) | (4) | (9) |  | (5) | (6) |  |
| Net New project Trips: |  |  | 1,292 |  | 36 | 29 | 65 |  | 38 | 39 | 77 |

Sources: ITE Trip Generation Manual, 11th Edition, 2021 and City of San Jose's Transportation Analysis Handbook, April 2020.
Notes:

1. Average trip rates (per occupied rooms) for Hotel (Land Use 310) were used.
2. Since a hotel exhibits similar mode share characteristics to that of a retail use, a $12 \%$ mode share trip reduction was applied based on the location-based vehicle mode share \% outputs (Table 6 of TA Handbook) for retail development in a Suburban with Multifamily Housing area.

## Trip Distribution and Assignment

The trip distribution pattern for the project was estimated based on existing travel patterns on the surrounding roadway network that reflect typical weekday AM and PM commute patterns, the locations of complementary land uses, and freeway access points. The peak hour vehicle trips generated by the project were assigned to the roadway network in accordance with the trip distribution pattern. Figure 7 shows the project trip distribution pattern and trip assignment.


Figure 7
Project Trip Distribution Pattern and Trip Assignment

## Traffic Volumes Under All Scenarios

## Existing Traffic Volumes

Existing AM and PM peak hour traffic volumes for the signalized study intersections were obtained from the City of San Jose (2015 and 2016 counts) and the 2018 CMP Annual Monitoring Report (PM count for First Street/Alma Avenue only). Although new 2022 counts were conducted, the new counts are lower than counts conducted prior to the COVID-19 pandemic. For this reason, City of San Jose staff have requested that the older "pre-pandemic" counts be used in this transportation study to be conservative. The existing peak hour intersection volumes are shown graphically on Figure 8.

## Background Traffic Volumes

Background traffic volumes were estimated by adding to existing peak hour volumes the projected volumes from approved but not yet completed developments. 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). The ATI sheets are contained in Appendix A. Background conditions represent the baseline conditions to which project conditions are compared for the purpose of determining potential adverse operational effects of the project. The background peak-hour intersection volumes are shown on Figure 9.

## Background Plus Project Traffic Volumes

Project peak hour trips were added to background peak hour traffic volumes to obtain project peak hour traffic volumes (see Figure 10).

## Cumulative Traffic Volumes

Cumulative traffic volumes were estimated by adding to existing volumes the ATI provided by City staff, project-generated trips, and trips generated by the pending development in the study area (see Figure 11). For the purpose of this study, cumulative traffic volumes include traffic generated by the following adjacent pending project: 1675 Monterey Road Vehicle Parking/Storage Lot (CP21-018). As proposed, the parking lot would be used mostly to store vans overnight from the 1710 Little Orchard Street package sorting and loading facility.

Traffic volumes for all traffic scenarios are tabulated in Appendix B.

## Intersection Traffic Operations

Intersection levels of service were evaluated against the standards of the City of San Jose. The results of the analysis show that all the signalized study intersections are currently operating at acceptable levels of service (LOS D or better) during the AM and PM peak hours of traffic and all but one intersection would continue to operate acceptably under background, background plus project, and cumulative conditions (see Table 4). The intersection of Monterey Road/First Street and Alma Avenue would operate at an unacceptable LOS E during the AM peak hour of traffic under background, background plus project, and cumulative conditions. However, the project would not have an adverse effect on intersection operations according to the City's operational thresholds.

The detailed intersection level of service calculation sheets are included in Appendix C.


Figure 8


Figure 9


Figure 10
Background Plus Project Traffic Volumes


Figure 11

Table 4
Intersection Level of Service Summary

| \# | Signalized Intersection | Peak Hour | Count Date | Existing |  | Background |  | Background + Project |  |  |  | Cumulative |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  |  |  | Avg. <br> Delay <br> (sec) | LOS | Avg. <br> Delay <br> (sec) | LOS | Avg. <br> Delay <br> (sec) | LOS | Incr. In Crit. Delay (sec) | Incr. In Crit. V/C | Avg. <br> Delay <br> (sec) | LOS |
| 1 | Monterey Rd/First St \& Alma St * | AM | 10/8/2016 | 42.1 | D | 63.9 | E | 64.2 | E | 0.4 | 0.003 | 64.2 | E |
|  |  | PM | 12/4/2018 | 47.8 | D | 53.8 | D | 54.2 | D | 0.7 | 0.009 | 54.3 | D |
| 2 | Monterey Rd \& Cottage Grove Av | AM | 10/22/2015 | 11.9 | B | 10.9 | B | 10.9 | B | 0.0 | 0.002 | 10.8 | B |
|  |  | PM | 10/22/2015 | 20.1 | C | 17.4 | B | 17.3 | B | -0.2 | 0.003 | 17.3 | B |
| 3 | Monterey Rd \& San Jose Av | AM | 10/28/2015 | 17.1 | B | 17.2 | B | 18.1 | B | 0.8 | 0.011 | 17.9 | B |
|  |  | PM | 10/28/2015 | 20.1 | C | 19.9 | B | 20.9 | C | 1.3 | 0.017 | 20.5 | C |
| 4 | Monterey Rd \& Phelan Av | AM | 10/28/2015 | 16.8 | B | 19.3 | B | 19.8 | B | 0.8 | 0.009 | 19.8 | B |
|  |  | PM | 10/28/2015 | 20.9 | C | 21.5 | C | 21.8 | C | -0.2 | 0.004 | 21.7 | C |
| Notes: |  |  |  |  |  |  |  |  |  |  |  |  |  |
| * Denotes CMP intersection <br> Bold indicates a substandard level of service. |  |  |  |  |  |  |  |  |  |  |  |  |  |

## Intersection Queuing Analysis

The intersection queuing analysis (see Table 5) is based on vehicle queuing for left-turn movements at intersections near the project site where the project would add a noteworthy number of trips. Based on the project trip generation and trip distribution pattern, the following left-turn movements were evaluated as part of the intersection queuing analysis for this project:

- Northbound left-turn (U-turn) on Monterey Road at San Jose Avenue
- Southbound left-turn (U-turn) on Monterey Road at Phelan Avenue

The queuing analysis (see Table 5) indicates that the northbound left-turn pocket at the intersection of Monterey Road and San Jose Avenue has adequate storage capacity to accommodate the maximum left-turn vehicle queues that currently occur and would continue to occur under background conditions during the AM and PM peak hours of traffic. It is estimated that the project would add 7 U-turns during the AM peak hour and 8 U-turns during the PM peak hour, which would increase the maximum ( $95^{\text {th }}$ percentile) vehicle queue for this left-turn movement by one vehicle during both the AM and PM peak hours. As a result, inadequate northbound left-turn pocket storage would be provided during the PM peak hour under background plus project conditions (storage inadequacy of one vehicle).

The queuing analysis indicates that the southbound left-turn pocket at the intersection of Monterey Road and Phelan Avenue has inadequate storage capacity to accommodate the maximum left-turn vehicle queues that currently occur and would continue to occur under background and background plus project conditions during the AM and PM peak hours of traffic. It is estimated that the project would add 12 U-turns during the AM peak hour and 16 U-turns during the PM peak hour, which would increase the maximum ( $95^{\text {th }}$ percentile) vehicle queue for this left-turn movement by one vehicle during both the AM and PM peak hours.

It is not possible to extend the northbound left-turn pocket at Monterey Road/San Jose Avenue or the southbound left-turn pocket at Monterey Road/Phelan Avenue because these are back-to-back left-turn pockets.

Page

Table 5
Intersection Queuing Analysis Summary

| Measurement | Monterey Road \& San Jose Avenue |  | Monterey Road \& Phelan Avenue |  |
| :---: | :---: | :---: | :---: | :---: |
|  | NBL |  | SBL |  |
|  | AM | PM | AM | PM |
| Existing |  |  |  |  |
| Cycle/Delay ${ }^{1}$ (sec) | 160 | 156 | 160 | 160 |
| Volume (vphpl) | 89 | 104 | 118 | 181 |
| 95th \%. Queue (veh/ln.) | 7 | 8 | 9 | 13 |
| 95th \%. Queue (ft./n) ${ }^{2}$ | 175 | 200 | 225 | 325 |
| Storage (ft./ In.) ${ }^{3}$ | 200 | 200 | 200 | 200 |
| Adequate (Y/N) | Y | Y | N | N |
| Background |  |  |  |  |
| Cycle/Delay ${ }^{1}$ (sec) | 160 | 156 | 160 | 160 |
| Volume (vphpl ) | 89 | 104 | 121 | 187 |
| 95th \%. Queue (veh/ln.) | 7 | 8 | 9 | 13 |
| 95th \%. Queue (ft./In) | 175 | 200 | 225 | 325 |
| Storage (ft./ In.) ${ }^{3}$ | 200 | 200 | 200 | 200 |
| Adequate (Y/N) | Y | Y | N | N |
| Background Plus Project |  |  |  |  |
| Cycle/Delay ${ }^{1}$ (sec) | 160 | 156 | 160 | 160 |
| Volume (vphpl) | 96 | 112 | 133 | 203 |
| 95th \%. Queue (veh/ln.) | 8 | 9 | 10 | 14 |
| 95th \%. Queue (ft./ln) ${ }^{2}$ | 200 | 225 | 250 | 350 |
| Storage (ft./ In.) ${ }^{3}$ | 200 | 200 | 200 | 200 |
| Adequate (Y/N) | Y | N | N | N |
| Notes: |  |  |  |  |
| ${ }^{1}$ Vehicle queue calculations based on cycle length. |  |  |  |  |
| ${ }^{2}$ Assumes 25 Feet Per Vehicle Queued. |  |  |  |  |
| ${ }^{3}$ Storage Length represents the length of turn pocket + approx. $1 / 2$ of taper. |  |  |  |  |

## Site Access and On-Site Circulation

The site access evaluation is based on the March 3, 2022 site plan prepared by I \& A Architects, Inc. (see Figure 2). Site access was evaluated to determine the adequacy of the site's driveway with regard to the following: traffic volume, geometric design, sight distance and operations (e.g., queuing and delay). On-site vehicular circulation and parking layout were reviewed in accordance with generally accepted traffic engineering standards and transportation planning principles.

## Vehicular Site Access

As proposed, the project would remove two existing right-turn only driveways on Monterey Road and construct a new 24 -foot-wide right-turn driveway. The driveway would provide access to 99 on-site parking spaces and the on-site passenger loading zone and porte cochere (covered entrance).

Recommendation: Increase the driveway width on Monterey Road from 24 feet to 26 feet, per City standards (City of San Jose Department of Transportation Geometric Guidelines).

## Hotel Driveway Operations

Hotel guests would enter the project driveway and perform a U-turn approximately 150 feet on-site to access the passenger loading zone and hotel lobby. Access to the porte cochere (U-turn movement) was evaluated for vehicle access by the method of turning-movement templates. Analysis using the Passenger Car turning templates shows that small and large passenger vehicles (turning templates "Pm" and "P", respectively) could adequately perform a U-turn/three-point maneuver on-site and access the porte cochere location upon check-in. Alternatively, vehicles could circle around the parking lot on the west side of the hotel and return to the passenger loading zone. The passenger car turning templates are contained in Appendix D.

The on-site passenger loading zone is shown to be approximately 65 feet long, consisting of a 40 -foot bus loading zone and a 25 -foot passenger vehicle loading zone. It is assumed that passenger vehicles could utilize the bus loading zone when no buses are present, which would be the majority of the time. The 65 -foot-long passenger loading zone would be adequate to accommodate two large vehicles or three small to medium size vehicles simultaneously. Following check-in, hotel guests would either park their own vehicles or utilize the hotel valet service.

The project-generated trips that are estimated to occur at the project driveway are 36 inbound trips and 29 outbound trips during the AM peak hour, and 38 inbound trips and 39 outbound trips during the PM peak hour. This equates to one vehicle trip every 1.5 to 2 minutes during the AM and PM peak periods of traffic. Due to the relatively low number of AM and PM peak hour project-generated trips, operational issues related to vehicle queueing and/or delays are not expected to occur at the project driveway. Some minor on-site vehicle queuing could occur at the passenger loading zone due to a combination of the inherent unpredictability of hotel arrivals and length of time to check in to the hotel. However, there is adequate space on-site to accommodate the vehicle overflows that may occur. In addition, not all hotel guests would use the passenger loading zone/valet upon check-in. Some guests would immediately park their vehicle and walk the short distance to the hotel lobby.

## Sight Distance

There are no existing landscaping, roadway curves, or other visual obstructions along the project frontage that could obscure sight distance at the project driveway, and the site plan does not indicate any new landscaping that could affect the sight distance at the driveway. In addition, parking is not allowed along this segment of Monterey Road. Clear sight distance ensures that vehicles can see pedestrians on the sidewalk, as well as vehicles and bicycles travelling along Monterey Road.

Providing the appropriate sight distance reduces the likelihood of a collision at a driveway or intersection and provides drivers with the ability to locate sufficient gaps in traffic. Sight distance generally should be provided in accordance with Caltrans standards. The minimum acceptable sight distance is often considered the Caltrans stopping sight distance. Sight distance requirements vary depending on the roadway speeds. For Monterey Road, which has a posted speed limit of 35 mph , the Caltrans stopping sight distance is 300 feet (based on a design speed of 40 mph ). This means that a driver must be able to see 300 feet down Monterey Road to locate a sufficient gap to turn out of the project driveway. This also gives drivers traveling along Monterey Road adequate time to react to
vehicles exiting the project driveway. The project driveway would meet the Caltrans stopping sight distance requirement.

## On-Site Vehicular Circulation and Parking Layout

On-site vehicular circulation was reviewed in accordance with generally accepted traffic engineering standards and City of San Jose design guidelines. Access to the 99 on-site surface parking spaces would be provided via the right-turn only driveway on Monterey Road. The drive aisles were evaluated for vehicle access by the method of turning-movement templates. Analysis using the appropriate Passenger Car turning templates shows that standard passenger vehicles (turning template "Pm") and larger passenger vehicles (Passenger Car turning template "P") could adequately access the passenger loading zone/porte cochere and circulate through the parking areas.

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 spaces. According to the site plan, the two-way drive aisles measure 24 feet wide.
Recommendation: Confirm with City of San Jose Public Works staff that the proposed 24 -foot-wide drive aisles would be acceptable.

Circulation throughout the site would be efficient with only one dead-end drive aisle at the west end of the site. Adequate space would be provided in the dead-end aisle to allow vehicles to turn around.

## Parking Stall Dimensions

The City's off-street parking design standard for 90 -degree uniform parking stalls is 8.5 feet wide by 17 feet long. The 85 standard 90 -degree parking stalls all measure 8.5 feet wide by 17 feet long. The 5 accessible (ADA) stalls measure 9 feet wide by 18 feet long and include van accessibility. The 9 EVdesignated stalls measure 8.5 feet wide by 18 feet long.

## Truck Access and Circulation

The project site plan was reviewed for truck access using truck turning-movement templates for a SU30 truck type (single unit trucks), which represents various emergency vehicles, garbage trucks, and delivery trucks. Based on the site plan configuration, adequate access would be provided for SU-30 type trucks to enter the site from Monterey Road, maneuver through the site, and exit back onto Monterey Road. The truck turning templates for the project site are contained in Appendix D.

According to the site plan, the project is not proposing to provide an off-street freight loading space. Thus, it is assumed that delivery trucks would utilize the loading area situated adjacent to the hotel lobby.

Recommendation: Either provide adequate vertical clearance (at least 13 feet 6 inches) at the porte cochere to accommodate SU-30 delivery trucks or identify an alternative on-site freight loading zone.

## Garbage Collection

The site plan shows an exterior trash enclosure on the west side of the hotel building. Garbage trucks require approximately 24 feet of overhead clearance to empty a bin over the truck. Since the trash bins would be accessed from outside the building, adequate vertical clearance would be provided for on-site garbage collection. The on-site drive aisle configuration would provide adequate access to the trash staging area. Since garbage collection would occur on site, traffic operations along Monterey Road would not be affected during garbage collection activities.

## Emergency Vehicle Access

Emergency vehicle access (EVA) to the site would be provided via Monterey Road. The project driveway and drive aisles would be adequately wide and would comply with the City's fire code. The City of San Jose Fire Department requires that all portions of the buildings be within 150 feet of a fire department access road, requires a minimum of 6 feet clearance from the property line along all sides of the building, and requires a minimum of 13 feet 6 inches of vertical clearance. According to the site plan, the project appears to meet the fire access requirements. However, since the porte cochere is not shown on the site plan, vertical clearance cannot be verified at the passenger loading area.

Recommendation: Provide at least 13 feet 6 inches of vertical clearance at the porte cochere to accommodate emergency vehicles.

## 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., sidewalk closure and detour signs) must be provided to ensure vehicles, pedestrians and bicyclists are able to adequately reach their intended destinations safely. Because Monterey Road is a bicycle travel corridor with striped bike lanes, signage would be particularly important to redirect bicyclists to an alternative southbound route in the event the bike lane on southbound Monterey Road is blocked by construction activities. Per City standard practice, the project would be required to submit a construction management plan for City approval that addresses the construction schedule, street closures and/or detours, construction staging areas and parking, and the planned truck routes.

## Pedestrian, Bicycle and Transit Evaluation

All new development projects in San Jose should encourage multi-modal travel, consistent with the goals and policies of the City's General Plan. It is the goal of the General Plan that all development projects accommodate and encourage the use of non-automobile transportation modes to achieve San Jose's mobility goals and reduce vehicle trip generation and vehicle miles traveled. In addition, the adopted City Bike Master Plan establishes goals, policies and actions to make bicycling a daily part of life in San Jose. The Master Plan includes designated bike lanes along many City streets, as well as on designated bike corridors. In order to further the goals of the City, pedestrian and bicycle facilities should be encouraged with new development projects.

## Pedestrian and Bicycle Facilities

Due to the industrial nature of the project area, many roadway segments in the area have no sidewalks or bicycle facilities. However, a complete network of sidewalks and crosswalks, as well as striped bike lanes, are found along Monterey Road. Crosswalks with pedestrian signal heads are located at all the signalized intersections in the study area. The existing pedestrian facilities provide connectivity between the project site and nearby bus stops.

The Guadalupe River/Los Alamitos Creek multi-use trail system (Class I bikeway) runs through the City of San Jose along the Guadalupe River and separates bicyclists from motor vehicle traffic. The Guadalupe River trail is a continuous Class I bikeway (paved path) from W. Virginia Street in the south to Alviso Marina County Park. There is another section of the trail a few blocks south of W. Virginia Street from Willow Street to Curtner Avenue, which provides access to trails that lead to Almaden Valley in southern San Jose. This park trail system runs adjacent to SR 87 in the project vicinity, with access provided via the Tamien Caltrain/Light Rail Transit (LRT) station approximately 1 mile from the project site. Note that a potential future Three Creek Trail (eastern alignment) would provide a
connection between Keyes Street and the Guadalupe River Trail north of the project site. The Guadalupe River Trail system is available for use by bicyclists and pedestrians year round.

## Pedestrian Facilities

The site plan indicates that the existing sidewalk and curb along the project frontage on Monterey Road would be reconstructed. The site plan shows a 10 - to 12 -foot-wide attached sidewalk. The reconstructed sidewalk would connect to a 5 -foot-wide sidewalk that would encircle the hotel and provide pedestrian access to the hotel lobby and associated areas, including the check-in counter, elevators, stairwells, meeting room, dining room, fitness center, bocce ball court, pool, restrooms, hotel offices, and four guest rooms.

## Bicycle Facilities

In the immediate project vicinity, Class II striped bike lanes are present on Monterey Road, $7^{\text {th }}$ Street, $10^{\text {th }}$ Street, Curtner Avenue, and portions of Phelan Avenue. Future hotel employees and guests could use the bike lanes for recreational or commuting purposes. Adequate bike parking ( 12 short-term bike racks and 4 long-term bike lockers) is shown on the site plan.

The project would not remove any bicycle facilities, nor would it conflict with any adopted plans or policies for new bicycle facilities. Note, however, that the City of San Jose Better Bike Plan 2025 identifies Monterey Road as having a Class IV separated bikeway. Accordingly, City staff will likely request that the project make a fair-share monetary contribution toward the planned Class IV bikeway improvements along the project frontage on Monterey Road. Based on a cost of $\$ 144$ per linear foot (source: City of San Jose Department of Public Works), the project's total fair-share contribution would equate to approximately $\$ 16,700$ ( $\$ 144 \times 116$ feet $=\$ 16,700$ ).
Recommendation: Pay a fair-share contribution of $\$ 16,700$ toward the planned Class IV bikeway improvements on Monterey Road.

## Transit Services

VTA bus routes 66, 68 and 568 operate along Monterey Road and stop near the project site at Phelan Avenue. The bus stop on the west side of Monterey Road (project side) consists of a standard blue bus stop sign attached to an existing pole. The bus stop on the east side of Monterey Road has a bench and shelter.

Since the project site is served directly by three bus routes, it is reasonable to assume that some hotel employees and guests would utilize the bus service. It is estimated that the small increase in transit demand generated by the proposed hotel could be accommodated by the current available ridership capacity of the VTA bus service.

## Safety Priority Streets

Monterey Road between Alma Avenue and Bernal Road is designated as a "Safety Priority Street" as part of San Jose's Vision Zero policy (Vision Zero San Jose, April 2015). The goal of Vision Zero San Jose is to create a community culture that prioritizes traffic safety and ensures that mistakes on roadways don't result in severe injury or death. Vision Zero is designed to create policies that focus on roadway safety for all modes, particularly non-automobile modes. Safety Priority Streets are identified as major street segments that have the highest frequency of fatal and severe injury for people walking, bicycling, motorcycle riding, and driving. Since 2013, 50\% of the fatal traffic crashes in the City of San Jose occurred on these streets, which represent only $3 \%$ of the overall San Jose street system. Streets with these "Safety Priority Street" designations are given priority within the City's Transportation Capital Improvement Program (CIP) to provide safer transportation systems for all users.

## Monterey Road Improvements

Buffered bike lanes were installed along Monterey Road in 2014 in coordination with the pavement resurfacing project. A new traffic signal at Cottage Grove Avenue also was installed in 2014. More recently, the LED streetlight conversion project was completed along this segment of Monterey Road.

According to City staff, there are plans to install an Accessible Pedestrian Signal (APS) at the Monterey Road and Phelan Avenue signalized intersection. An APS is an integrated device that communicates information about the "WALK" and "DON'T WALK" intervals at signalized intersections in non-visual formats, including audible tones and vibrotactile surfaces, to pedestrians who are blind or have significantly impaired vision. Research has found that APS improves crossing performance by blind and visually impaired pedestrians, including reduced crossing delay and significantly more crossings completed before the signal changes.

According to the National Cooperative Highway Research Program (NCHRP) Project 3-62: Guidelines for Accessible Pedestrian Signals, APS can provide information to pedestrians about:

- Existence of and location of the pushbutton;
- Beginning of the WALK interval;
- Direction of the crosswalk and location of the destination curb;
- Intersection street names in Braille, raised print, or through speech messages;
- Intersection signalization with a speech message; and
- Intersection geometry through tactile maps and diagrams, or through speech messages.

Recommendation: Provide a $\$ 15,000$ fair-share contribution toward implementation of an Accessible Pedestrian Signal (APS) at the Monterey Road and Phelan Avenue signalized intersection, per the request of the City of San Jose Department of Public Works.

## Parking

The project's off-street parking requirements for automobiles, motorcycles and bicycles are based on the City of San Jose parking standards (San Jose Municipal Code Chapter 20.90, Table 20-190).

## Vehicle Parking

The vehicle parking requirement for hotels in San Jose is one space per guest room plus one space per employee. The project proposes 120 guest rooms, with an estimated maximum of 10 employees expected to be on site at any one time. Thus, the project is required to provide 130 vehicle parking spaces. The site plan shows a total of 99 vehicle parking spaces, including 5 ADA and 9 EV spaces.

Since the project site is located within 2,000 feet of a major transit stop, the project qualifies for a 20 percent parking reduction in the City's standard parking requirement. A "major transit stop" is defined as a rail station, a ferry terminal served by bus or rail, or a bus stop served by two or more major bus routes with a frequency of service interval of 15 minutes or less during the AM and PM peak commute periods. The bus stops near the site are each served by three bus routes.

After applying the allowable reduction, the proposed hotel would require 104 parking spaces. Therefore, the project would not meet the City's vehicle parking requirement per the Zoning Code.
Recommendation: Provide 5 additional vehicle parking spaces to meet the City's Zoning Code or request an additional parking reduction from the City of San Jose Planning Department.

## Motorcycle Parking

The City of San Jose does not have a motorcycle parking requirement for hotels. However, the project would provide 3 on-site motorcycle parking spaces.

## Bicycle Parking

The bicycle parking requirement for hotels is one space plus one space per ten guest rooms. The project proposes 120 guest rooms and, thus, is required to provide 13 bicycle parking spaces. The site plan shows 12 short-term bicycle parking spaces (bike racks) and 4 long-term bicycle parking spaces (bike lockers). Therefore, the project would meet the City's bicycle parking requirement per the Zoning Code.

## 4. Conclusions

This report presents the results of the transportation analysis conducted for a proposed hotel at 1669 Monterey Road in San Jose, California. The project would construct a 5 -story hotel with 120 rooms and 99 parking spaces. The site is currently occupied by the Casa Linda Motel which would be demolished. The project would remove two existing right-turn only driveways and construct one right-turn only driveway on Monterey Road.

This study was conducted for the purpose of identifying the potential transportation impacts and operational issues related to the proposed hotel development. The transportation impacts of the project were evaluated following the standards and methodologies established in the City of San Jose's Transportation Analysis Handbook, adopted in April 2020. Based on the City of San Jose's Transportation Analysis Policy (Council Policy 5-1) and the Transportation Analysis Handbook, the study includes a California Environmental Quality Act (CEQA) transportation analysis and a non-CEQA local transportation analysis (LTA). The LTA supplements the CEQA transportation analysis by identifying transportation operational issues via an evaluation of weekday AM and PM peak-hour traffic conditions for four (4) signalized intersections in the vicinity of the project site. The LTA also includes an analysis of site access, on-site circulation, parking, vehicle queuing, and effects to transit services and bicycle and pedestrian access.

## Vehicle Miles Traveled (VMT) Analysis

Most projects in San Jose require a CEQA-level analysis of vehicle miles traveled (VMT) per the City guidelines. The City of San Jose's VMT Evaluation Tool is used to calculate the daily VMT generated by project. However, the evaluation tool is limited to the evaluation of the general land use categories of residential, office, and industrial. Therefore, the use of the VMT tool for land uses that are not reflective of one of the three general land uses, such as the proposed hotel, requires the conversion of the proposed land use to an equivalent land use category. Based on this procedure, the hotel project trip generation estimates were converted to an equivalent amount of retail square footage. This is a reasonable approach to the VMT analysis since hotels exhibit similar vehicle mode share characteristics, travel patterns, and trip length characteristics to that of local retail uses (e.g., both uses typically serve nearby local businesses). There are over 20 existing hotels within a two-mile radius of the project site, and it is expected that the proposed hotel would generate mostly localized traffic. The majority of hotel customers would divert trips to the proposed hotel from other existing hotels and, therefore, would not generate a significant number of new hotel trips in the region.

Although the VMT Evaluation Tool does not allow for an evaluation of retail uses, retail developments that total less than 100,000 square feet (s.f.) of gross floor area and do not include drive-through operations are exempt from preparing a detailed CEQA-level VMT analysis. Based on the land use conversion process, a 120 -room hotel is estimated to generate the same number of daily vehicle trips
as 27,000 s.f. of retail space. Accordingly, a CEQA Transportation Analysis (i.e., VMT analysis) is not required for the hotel project.

## Project Trip Generation

After applying the ITE trip rates for Hotel and a 12 percent mode-share trip reduction, the proposed project would generate 1,292 new daily vehicle trips, with 65 new trips occurring during the AM peak hour and 77 new trips occurring during the PM peak hour.

## Intersection Traffic Operations

Based on the City of San Jose intersection operations analysis criteria, none of the study intersections would be adversely affected by the project.

## Other Transportation Issues

The proposed site plan shows adequate site access and on-site circulation. The project would not have an adverse effect on the existing pedestrian, bicycle or transit facilities in the study area. Below are recommendations resulting from the site plan review.

## Recommendations

- Increase the driveway width on Monterey Road from 24 feet to 26 feet, per City standards (City of San Jose Department of Transportation Geometric Guidelines).
- Confirm with City of San Jose Public Works staff that the proposed 24 -foot-wide drive aisles would be acceptable.
- Provide at least 13 feet 6 inches of vertical clearance at the porte cochere to accommodate delivery trucks and emergency vehicles.
- Pay a fair-share contribution of $\$ 16,700$ toward the planned Class IV bikeway improvements on Monterey Road, per the request of the City of San Jose Department of Public Works.
- Provide a $\$ 15,000$ fair-share contribution toward implementation of an Accessible Pedestrian Signal (APS) at the Monterey Road and Phelan Avenue signalized intersection, per the request of the City of San Jose Department of Public Works.
- Provide 5 additional vehicle parking spaces to meet the City's Zoning Code or request an additional parking reduction from the City of San Jose Planning Department.


# 1669 Monterey Road Hotel TA Technical Appendices 

## Appendix A

San Jose Approved Trips Inventory (ATI)









## Appendix B <br> Volume Spreadsheets






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


















| COMPARE | Tue May $2411: 35 \cdot 202022$ | Page 3-2 |
| :---: | :---: | :---: |
|  | $\begin{gathered} \hline \hline \text { Fairfield Inn \& Suites } \\ \text { 120-Room Hotel } \\ 1669 \text { Monterey Road, San Jose, CA } \\ \hline \end{gathered}$ |  |
|  | $\begin{gathered} \hline \hline \text { Level Of Service Computation Report } \\ 2000 \text { HCM Operations (Future Volume Alternative) } \\ \text { Background PM } \\ \hline \end{gathered}$ |  |



## 

| Appr | North Bound |  |  | South Bound |  |  | East Bound |  |  | Vest Bound |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Mover |  |  |  |  |  |  | L - |  |  | L |  |  |
| Min. Gr |  | 10 | 10 |  | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 |
| R: | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | 4. | 4. | 4.0 | 4.0 | 4.0 | 4.0 |
| Volume Modu |  | Count | Date | 8 Oct | 2008 | << 4 : | 0-5:3 | 30pM |  |  |  |  |
| Base vol: | 229 | 761 | 244 | 100 | 1246 | 198 | 164 | 374 | 189 | 165 | 370 | 71 |
| Growth Adj: | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Initial Bse | 229 | 761 | 244 | 100 | 1246 | 198 | 164 | 374 | 189 | 165 | 370 | 71 |
| Added Vol | 0 | 0 | 0 | 0 | 0 | 0 | 0 |  |  |  |  |  |
| ATI: | 36 | 310 | 61 | 79 | 256 | 14 | 21 | 66 | 20 | -5 | 165 | 57 |
| Initial Fut | 265 | 1071 | 305 | 179 | 1502 | 212 | 185 | 440 | 209 | 160 | 535 | 128 |
| User Adj: | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| phr Adj : | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| PHF Volume: | 265 | 1071 | 305 | 179 | 1502 | 212 | 185 | 440 | 209 | 160 | 535 |  |
| Reduct Vol: | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Reduced Vol: | 265 | 1071 | 305 | 179 | 1502 | 212 | 185 | 440 | 209 | 160 | 535 | 128 |
| PCE Adj | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| MLF Adj: | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | . 00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Finalvolume: | 265 | 1071 | 305 | 179 | 1502 | 212 | 185 | 440 | 209 | 160 | 535 | 128 |

Saturation Flow Module: $\begin{array}{lllllllllllll}\text { Sat/Lane: } & 1900 & 1900 & 1900 & 1900 & 1900 & 1900 & 1900 & 1900 & 1900 & 1900 & 1900 & 1900 \\ \text { Adjustment: } & 0.92 & 1.00 & 0.92 & 0.92 & 1.00 & 0.92 & 0.92 & 0.99 & 0.95 & 0.92 & 0.98 & 0.95\end{array}$ $\begin{array}{lllllllllllll}\text { Adjustment: } & 0.92 & 1.00 & 0.92 & 0.92 & 1.00 & 0.92 & 0.92 & 0.99 & 0.95 & 0.92 & 0.98 & 0.95 \\ \text { Lanes: } & 1.00 & 3.00 & 1.00 & 1.00 & 3.00 & 1.00 & 1.00 & 1.34 & 0.66 & 1.00 & 1.60 & 0.40\end{array}$

$\begin{array}{llllllllllll}\text { Capacity Analysis Module: } \\ \text { Vol/Sat: } & 0.15 & 0.19 & 0.17 & 0.10 & 0.26 & 0.12 & 0.11 & 0.18 & 0.18 & 0.09 & 0.18 \\ * * * * * * & 0.18 \\ * * * *\end{array}$ $\begin{array}{llllllllllllll}\text { Crit Moves: } & * * * * & & * * * * & & \\ \text { Green Time: } \\ 29.1 & 51.7 & 86.1 & 28.1 & 50.7 & 84.4 & 33.7 & 33.7 & 33.7 & 34.5 & 34.5 & 34.5\end{array}$ $\begin{array}{llllllllllllll}\text { Green Time: } & 29.1 & 51.7 & 86.1 & 28.1 & 50.7 & 84.4 & 33.7 & 33.7 & 33.7 & 34.5 & 34.5 & 34.5 \\ \text { Volume/Cap: } & 0.83 & 0.58 & 0.32 & 0.58 & 0.83 & 0.23 & 0.50 & 0.83 & 0.83 & 0.42 & 0.83 & 0.83\end{array}$ $\begin{array}{llllllllllll}\text { Volume/Cap: } & 0.83 & 0.58 & 0.32 & 0.58 & 0.83 & 0.23 & 0.50 & 0.83 & 0.83 & 0.42 & 0.83 \\ \text { Delay/Veh: } & 79.8 & 45.6 & 20.9 & 63.4 & 54.2 & 20.4 & 55.9 & 66.4 & 66.4 & 54.4 & 66.1 \\ \text { De6.1 } & 66.1 \\ \text { User DelAdj: } & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\ 1.00\end{array}$ $\begin{array}{lllllllllllll}\text { AdjDel/Veh: } & 79.8 & 45.6 & 20.9 & 63.4 & 54.2 & 20.4 & 55.9 & 66.4 & 66.4 & 54.4 & 66.1 & 66.1 \\ \text { LOS by Move: } & \text { E } & \text { D } & \text { C } & \text { E } & \text { D } & \text { C } & \text { E } & \text { E } & \text { E } & \text { D } & \text { E } & \text { E }\end{array}$ LoS by Move:
Note: Queue reported is the number of cars per lane.












|  |  |  |  |  |  |  |  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Approach: Movement: | North Bound |  |  | South Bound |  |  | East Bound |  |  | West Bound |  |  |
|  | L - | T |  | L | - T |  | L - |  |  | L - |  |  |
| Min. Green: | 7 | 10 | 0 | 0 | 10 | 10 | 10 | 0 | 10 | 0 | 0 |  |
| Y+R: | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 |
| Volume Module:4:45-5:45PM |  |  |  |  |  |  |  |  |  |  |  |  |
| Base Vol: | 112 | 906 | 0 |  | 0 1743 | 107 | 169 | 0 | 136 | 0 | 0 |  |
| Growth Adj: | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Initial Bse: | 112 | 906 | 0 |  | 01743 | 107 | 169 | 0 | 136 | 0 | 0 | 0 |
| Added Vol: | 0 | 0 | 0 |  | 0 | 0 | 0 | 0 | 0 | 0 | 0 |  |
| PasserByVol: | 0 | 0 | 0 |  | 0 | 0 | 0 | 0 | 0 | 0 |  |  |
| Initial Fut: | 112 | 906 | 0 |  | 01743 | 107 | 169 | 0 | 136 | 0 | 0 |  |
| User Adj: | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| PhF Adj: | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| PHF Volume: | 112 | 906 | 0 |  | 01743 | 107 | 169 | 0 | 136 | 0 | 0 | 0 |
| Reduct Vol: | 0 |  | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |  |
| Reduced Vol: | 112 | 906 | 0 |  | 01743 | 107 | 169 | 0 | 136 | 0 | 0 |  |
| PCE Adj : | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| MLF Adj : | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Finalvolume: | 112 | 906 | 0 |  | 01743 | 107 | 169 | 0 | 136 | 0 | 0 | 0 |

$\begin{array}{lllllllllll}\text { Saturation Flow Module: } & & & 1900 \\ \text { Sat/Lane: } & 1900 & 1900 & 1900 & 1900 & 1900 & 1900 & 1900 & 1900 & 1900 & 1900 \\ 1900 & 1900\end{array}$ $\begin{array}{lllllllllllll}\text { Adjustment: } & 0.92 & 1.00 & 0.92 & 0.92 & 1.00 & 0.92 & 0.92 & 1.00 & 0.92 & 0.92 & 1.00 & 0.92 \\ \text { Lanes: } & 1.00 & 3.00 & 0.00 & 0.00 & 3.00 & 1.00 & 1.38 & 0.00 & 0.62 & 0.00 & 0.00 & 0.00\end{array}$

Capacity Analysis Module:
Vol/Sat: $\begin{array}{lllllllllll}0.06 & 0.16 & 0.00 & 0.00 & 0.31 & 0.06 & 0.07 & 0.00 & 0.13 & 0.00 & 0.00\end{array} 0.00$
 $\begin{array}{llllllrlllllll}\text { Green Time: } & 19.0 & 110 & 0.0 & 0.0 & 90.7 & 128.0 & 37.4 & 0.0 & 37.4 & 0.0 & 0.0 & 0.0 \\ \text { Volume/Cap: } & 0.53 & 0.23 & 0.00 & 0.00 & 0.53 & 0.07 & 0.29 & 0.00 & 0.53 & 0.00 & 0.00 & 0.00\end{array}$ $\begin{array}{lrrrrrrrrrrrr}\text { Volume/Cap: } & 0.53 & 0.23 & 0.00 & 0.00 & 0.53 & 0.07 & 0.29 & 0.00 & 0.53 & 0.00 & 0.00 & 0.00 \\ \text { Delay/Veh: } & 66.7 & 8.2 & 0.0 & 0.0 & 19.9 & 2.7 & 48.7 & 0.0 & 52.5 & 0.0 & 0.0 & 0.0 \\ \text { User DelAdj: } & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\ \text { AdjDel/veh: } & 66.7 & 8.2 & 0.0 & 0.0 & 19.9 & 2.7 & 48.7 & 0.0 & 52.5 & 0.0 & 0.0 & 0.0\end{array}$ $\begin{array}{lrrrrrrrrrrr}\text { AdjDel/veh: } & 66.7 & 8.2 & 0.0 & 0.0 & 19.9 & 2.7 & 48.7 & 0.0 & 52.5 & 0.0 & 0.0 \\ \text { Lo by Move: } & \text { E } & \text { A } & \text { A } & \text { A } & \text { B } & \text { A } & \text { D } & \text { A } & \text { D } & \text { A } & \text { A } \\ \text { LOS } & \text { A } \\ \text { HCM2kAvgQ: } & 6 & 5 & 0 & 0 & 16 & 1 & 5 & 0 & 10 & 0 & 0\end{array}$
Note: Queue reported is the number of cars per lane.





## Appendix D <br> Passenger Car and Truck Turning Template Diagrams










