

**Appendix F**  
**Transportation Study**



# HEXAGON TRANSPORTATION CONSULTANTS, INC.

## 1747 Almaden Road Residential Development

### Transportation Analysis

Prepared for:

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March 18, 2020



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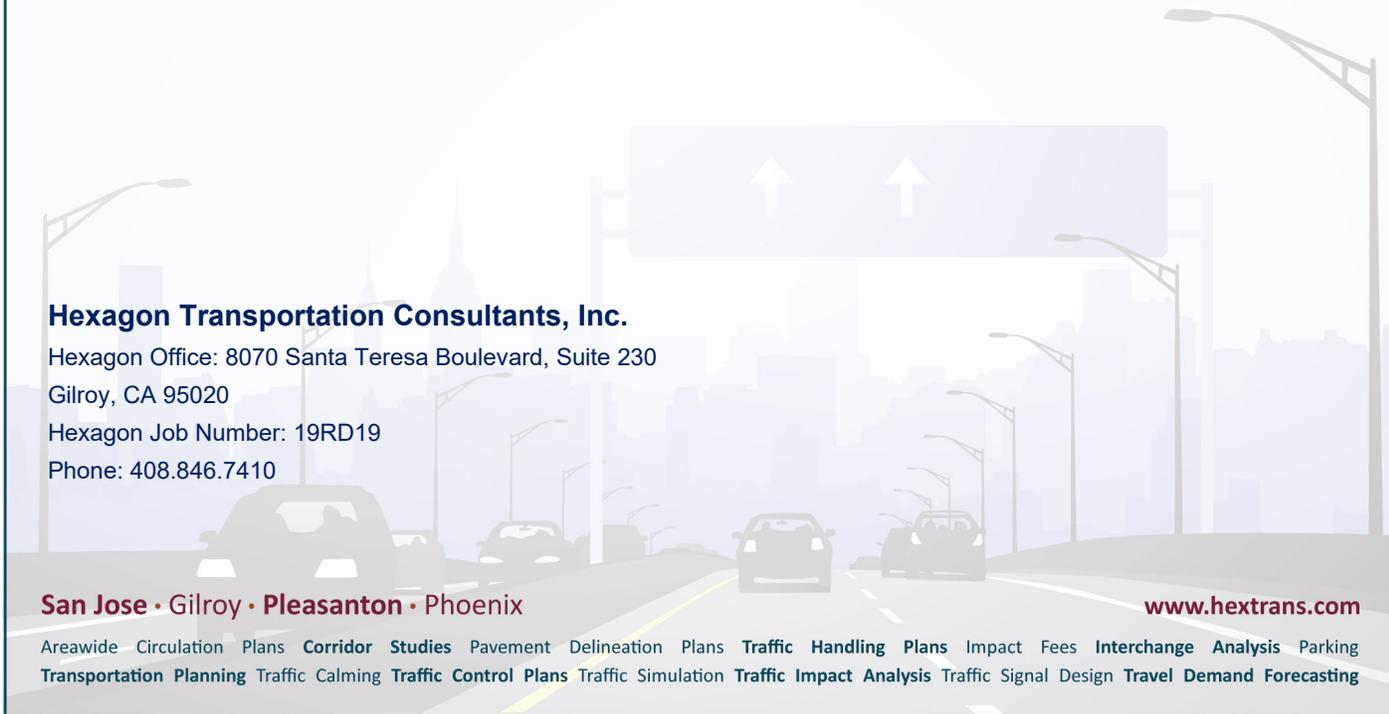
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# Table of Contents

Executive Summary .....	i
1. Introduction .....	1
2. Existing Transportation Setting .....	13
3. CEQA Transportation Analysis .....	21
4. Local Transportation Analysis .....	28
5. Conclusions.....	49

## Appendices

Appendix A	San Jose VMT Evaluation Tool Output Sheet
Appendix B	Traffic Counts
Appendix C	Approved Trips Inventory
Appendix D	Volume Summary
Appendix E	Intersection Level of Service Calculations
Appendix F	Queue Length Calculations

## List of Tables

Table 1	CEQA VMT Analysis Screening Criteria for Development Projects.....	11
Table 2	Existing Transit Services.....	20
Table 3	CEQA VMT Analysis Significant Impact Criteria for Development Projects.....	26
Table 4	Project Trip Generation Estimates .....	30
Table 5	Signalized Intersection Level of Service Definitions Based on Control Delay.....	36
Table 6	Intersection Level of Service Results.....	37
Table 7	Queuing Analysis Summary.....	39
Table 8	Vehicle Parking Requirement .....	43

## List of Figures

Figure 1	Site Location .....	2
Figure 2	Proposed Site Plan .....	3
Figure 3	VMT per Capita Heat Map in San Jose .....	6
Figure 4	VMT per Job Heat Map in San Jose .....	7
Figure 5	Low VMT per Capita Areas in San Jose .....	9
Figure 6	Low VMT per Job Areas in San Jose.....	10
Figure 7	Existing Pedestrian Facilities .....	16
Figure 8	Existing Bicycle Facilities .....	17
Figure 9	Existing Transit Services.....	19
Figure 10	Low VMT per Capita Areas .....	22
Figure 11	VMT per Capita Heat Map in Project Area .....	24
Figure 12	VMT Analysis Summary .....	27
Figure 13	Project Trip Distribution .....	31
Figure 14	Project Trip Assignment .....	32
Figure 15	Existing Lane Configurations and Traffic Volumes for All Study Scenarios .....	34
Figure 16	Project Trips at Site Driveway .....	41
Figure 17	Proposed Almaden Road Improvements .....	46

## Executive Summary

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This report presents the results of a Transportation Analysis (TA) for the proposed residential development at 1747 Almaden Road in the City of San José. The project site is comprised of one parcel (APN 456-03-003) located west of Almaden Road and approximately 400 feet south of Willow Glen Way.

As proposed, the project would demolish an existing multi-tenant residential building on-site and construct 64 condominium units, 15% of which will be designated affordable housing for moderate income. The project proposes one level of ground-level parking which would provide 87 parking spaces using stacked parking lifts. Vehicular access to the project site would be provided via a full-access driveway on Almaden Road.

### Transportation Analysis Scope

The transportation analysis of the project was evaluated following the standards and methodologies set forth in the City of San Jose's *Transportation Analysis Handbook 2018*, the Santa Clara Valley Transportation Authority (VTA) Congestion Management Program's *Transportation Impact Guidelines* (October 2014), and by the California Environmental Quality Act (CEQA). Based on the City of San Jose's Transportation Policy and *Transportation Analysis Handbook 2018*, the TA report for the project consists of a CEQA vehicle-miles-traveled (VMT) analysis and a supplemental Local Transportation Analysis (LTA).

### CEQA Transportation Analysis Scope

The CEQA transportation analysis for the project consists a project-level VMT impact analysis using the City's VMT tool and a cumulative impact analysis that demonstrates the project's consistency with the Envision San Jose 2040 General Plan.

### CEQA Transportation Analysis Exemption Criteria

The City of San Jose *Transportation Analysis Handbook* identifies screening criteria that determines whether a CEQA transportation analysis would be required for development projects. The criteria are based on the type of project, characteristics, and/or location. If a project meets the City's screening criteria, the project is expected to result in less-than-significant VMT impacts and a detailed CEQA VMT analysis is not required. A VMT evaluation for the project was completed using the *San José VMT Evaluation Tool* and is presented in Chapter 3.

The project site is not located within a Planned Growth Area, per the City's General Plan. Therefore, the proposed residential project would not meet the VMT screening criteria and a detailed CEQA transportation analysis that evaluates the project's effects on VMT is required.

## Project-Level VMT Impact Analysis

The results of the VMT evaluation, using the City's VMT Evaluation Tool, indicate that the proposed project is projected to generate VMT per capita (9.98) which is less than the existing VMT per capita in the project area and below the established VMT impact threshold.

## Cumulative (GP Consistency) Evaluation

Projects 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 determined to be inconsistent with the General Plan, a cumulative impact analysis is required per the City's *Transportation Analysis Handbook*.

The project is consistent with the General Plan goals and policies because it is in close proximity to the Tamien LRT and Caltrain Station that is located within one mile from the project site between Lelong Street and Lick Avenue, north of Alma Avenue. The Caltrain and LRT lines provide access to the Diridon Transit Center, located approximately two miles north of the project site. Connections between local and regional bus routes, light rail lines, and commuter rail lines are provided within the Diridon Transit Center.

Therefore, based on the project description, the proposed project would be consistent with the *Envision San José 2040 General Plan*. Thus, the project would be considered as part of the cumulative solution to meet the General Plan's long-range transportation goals and would result in a less-than-significant cumulative impact.

## Local Transportation Analysis

The intersection operations analysis is intended to quantify the operations of intersections and to identify potential negative effects due to the addition of project traffic. However, a potential adverse effect on a study intersection operation is not considered a CEQA impact metric. The LTA includes the analysis of AM and PM peak-hour traffic conditions for three signalized intersections and two unsignalized intersections, following the standards and methodology set forth by the City of San Jose.

### Trip Generation

After applying the ITE trip rates and appropriate trip reductions, it is estimated that the project would generate an additional 298 daily vehicle trips, with 20 trips (5 inbound and 15 outbound) occurring during the AM peak hour and 26 trips (16 inbound and 10 outbound) occurring during the PM peak hour.

### Future Intersection Operation Conditions

The operations analysis shows that all signalized study intersections would continue to operate at an acceptable LOS C or better during both the AM and PM peak hours, under background conditions, and background plus project conditions.

### Site Access and On-Site Circulation

Site access was evaluated to determine the adequacy of the site's access points with regard to the following: traffic volume, delays, vehicle queues, geometric design, and corner sight distance. On-site vehicular circulation was reviewed in accordance with generally accepted traffic engineering standards and transportation planning principles.

## **Recommended Site Access and On-Site Circulation Improvements**

**Emergency Vehicle Access.** The project site design would not meet the Fire Department requirement that access to all sides of the proposed building be provided by an emergency access road. The project applicant will need to work with the Fire Department to mitigate its non-conformance with the access requirement.

**Freight Loading Zone.** The implementation of a loading zone on Almaden Road will be evaluated at the implementation phase.

**Provide a 26-foot Wide Drive Aisle.** The entrance gate and entire drive aisle will need to meet the City's minimum 26-foot wide requirement for two-way drive aisles.

**Provide Turn-Around Space.** The site plan should be adjusted to provide adequate turn-around space for vehicles at the end of the drive aisle. This adjustment will require the removal or relocation of planned parking spaces.

## **Parking Supply**

### **Vehicular Parking**

Per State law and the City's standard parking requirements, the project would be required to provide 86 off-street parking spaces for the proposed 64 residential units. The project is proposing to provide a total of 87 parking spaces on-site, which would exceed the minimum on-site parking requirement.

### **Bicycle Parking**

According to the City's Bicycle Parking Standards (Chapter 20.90, Table 20-210), the project is required to provide a total of 16 bicycle parking spaces consisting of four short-term parking spaces and seven long-term parking spaces. All proposed bicycle spaces will be located within the ground-floor level of the parking garage. The project proposes to provide nine long-term bicycle parking spaces. If the project provides at least seven short-term bicycle parking spaces, the proposed bicycle parking of the project will meet the City's Bicycle Parking Standards.

## **Pedestrian, Bicycle, and Transit Analysis**

### **Pedestrian Facilities**

The network of pedestrian facilities is discontinuous in the general vicinity of the project site. Curb ramps at the northwest and southwest corners of the Almaden Road and Malone Road intersection (located less than ½-mile from the project site) are not ADA-compatible. Additionally, there are currently no sidewalks available along the following roadway segments:

- West side of Almaden Road, between the north project boundary and Malone Road (including along the east project frontage)
- East side of Almaden Road, between Willow Glen Way and 250 feet south of Willow Glen Way
- East side of Almaden Road, between New Street and 250 feet north of New Street
- Both sides of Almaden Road, between Stone Court and Almaden Expressway
- Southeast corner of the Guadalupe Avenue/Willow Glen Way intersection (frontage of Willow Glen Way Market)

Pedestrian generators in the project vicinity include commercial areas and transit stops along Curtner Avenue, Alma Avenue, Tamien Station and Curtner Station. Access to Galarza Elementary School would be provided along Willow Glen Way. However, a 135-foot portion of sidewalk (and ADA-

compatible ramp) is missing along the south side of Willow Glen Way, east of Guadalupe Avenue and along the north frontage of Willow Glen Way Market. In addition, some of the ramps along cross streets of Willow Glen Way (including Creek Drive and Arbor Drive) are not ADA compatible.

Willow Glen Middle School and Willow Glen High School are located along the Cottle Avenue, approximately 1.5 miles from the project site. Access to these schools via the shortest route along Almaden Road, south of the project, is limited due to missing sidewalks along portions of both sides of Almaden Road between the project site and Malone Road.

Continuous pedestrian access to the Tamien LRT and Caltrain stations is not provided via Almaden Road due to missing sidewalks on both sides of Almaden Road between Stone Court and Almaden Expressway.

### **Bicycle Facilities**

There are no existing bicycle facilities in the immediate area of the project site. However, there are bicycle facilities in the area surrounding the project site. The bikeways within the vicinity of the project site would remain unchanged under project conditions. There are currently no bike lanes along Almaden Road in the vicinity of the project site.

However, the San Jose Bike Plan 2020 indicates that a variety of bicycle facilities are planned in the study area, some of which would benefit the project and adhere to the goals of the Envision 2040 General Plan. Of the planned facilities, the following are relevant to the project.

- Class II bike lanes along Almaden Road, along its entire extent
- Class I bike trail extension of the Guadalupe River Trail between Willow Street to South San Jose

The City is currently proposing to install a bike lane along Almaden Road. Along the project frontage, buffered bike lanes are proposed along both sides of the roadway.

Additionally, the Guadalupe River Trail is proposed to be extended from its current terminus at Willow Street south to Chynoweth Avenue. In the project vicinity, access to the trail would be provided via trailheads at Almaden Road, approximately 800 feet south of the project site, and at Willow Glen Way, approximately 900 feet west of Almaden Road. The extension would provide a direct route for bicycle-users and pedestrians from the project site to Tamien station and Downtown San Jose.

### **Transit Services**

The nearest bus stops to the project site are located at the intersections of Bird Avenue/Minnesota Avenue (Local Route 56), Lincoln Avenue/Willow Glen Way (Local Route 64A), and Almaden Road/Curtner Avenue (Frequent Route 26).

The Tamien LRT and Caltrain stations are located between Lelong Street and Lick Avenue north of Alma Avenue. The Curtner LRT station is located south of Curtner Avenue, east of Canoas Garden Avenue, approximately 1.2 miles south of the project site. The LRT and Caltrain services provide access to the Diridon Transit Center, located approximately two miles north of the project site at Cahill Street. Connections between local and regional bus routes, light rail lines, and commuter rail lines are provided within the Diridon Transit Center.

Connections between local and regional bus routes, light rail lines, and commuter rail lines are provided within the Diridon Transit Center. The new transit trips generated by the project are not expected to create demand in excess of the transit service that is currently provided.

# 1. Introduction

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This report presents the results of a Transportation Analysis (TA) for the proposed residential development at 1747 Almaden Road in the City of San José. The project site is comprised of one parcel (APN 456-03-003) located west of Almaden Road and approximately 400 feet south of Willow Glen Way. The project site location and the surrounding study area are shown on Figure 1.

As proposed, the project would demolish an existing multi-tenant residential building on-site and construct 64 condominium units, 15% of which will be designated affordable housing for moderate income. The project proposes one level of ground-level parking which would provide 87 parking spaces using stacked parking lifts. Vehicular access to the project site would be provided via a full-access driveway on Almaden Road. The project site plan is shown on Figure 2.

The transportation analysis of the project was evaluated following the standards and methodologies set forth in the City of San Jose's Transportation Analysis Policy (Council Policy 5-1), the City of San Jose's *Transportation Analysis Handbook 2018*, the Santa Clara Valley Transportation Authority (VTA) Congestion Management Program's *Transportation Impact Guidelines* (October 2014), and by the California Environmental Quality Act (CEQA). Per the City of San Jose's Transportation Policy and *Transportation Analysis Handbook 2018*, the TA report for the project consists of a CEQA vehicle-miles-traveled (VMT) analysis and a supplemental Local Transportation Analysis (LTA).

## Transportation Policies

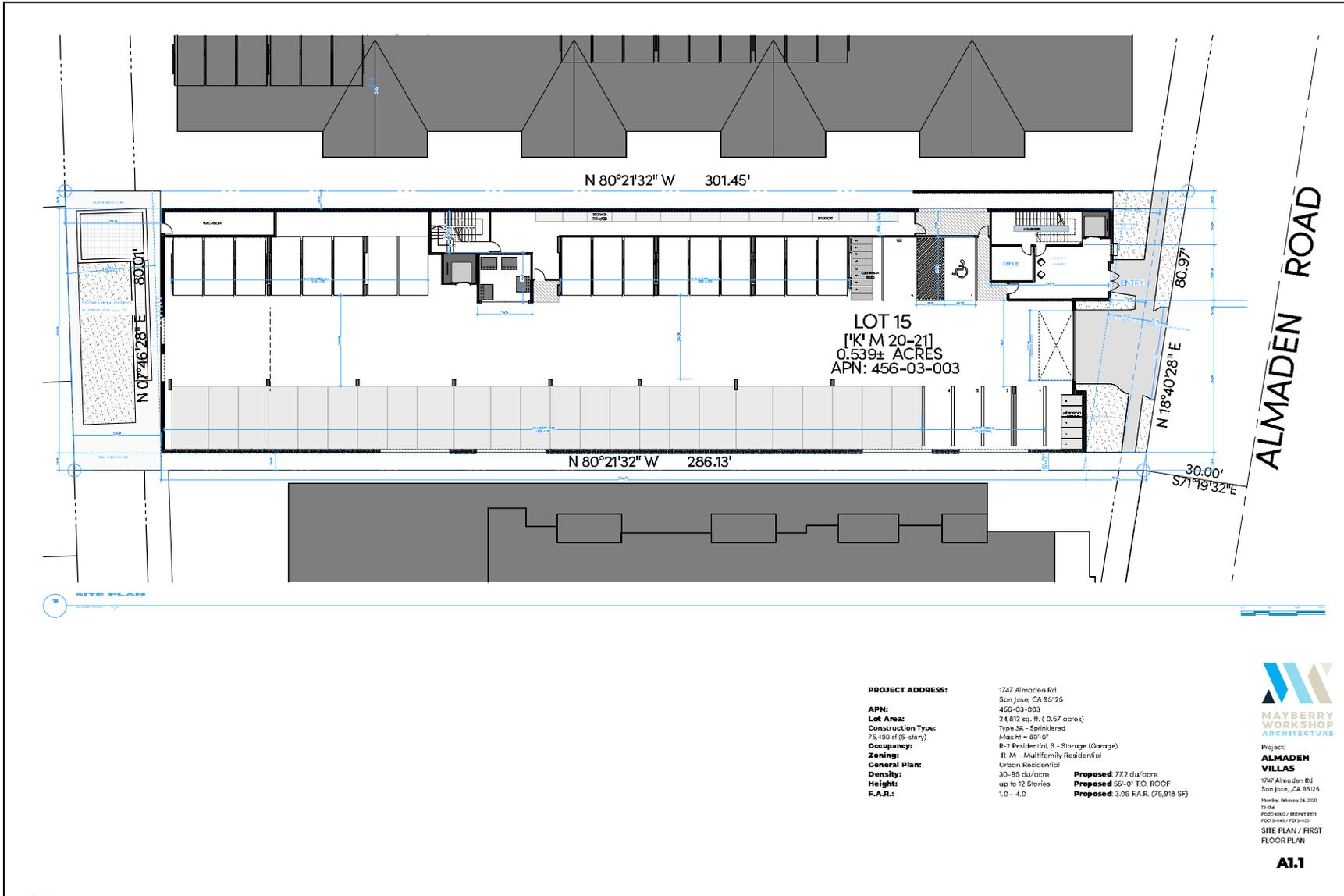
Historically, transportation analysis has utilized delay and congestion on the roadway system as the primary metric for the identification of traffic impacts and potential roadway improvements to relieve traffic congestion that may result due to proposed/planned growth. However, the State of California has recognized the limitations of measuring and mitigating only vehicle delay at intersections and in 2013 passed Senate Bill (SB) 743, which requires jurisdictions to stop using congestion and delay metrics, such as Level of Service (LOS), as the measurement for CEQA transportation analysis. With the adoption of SB 743 legislation, public agencies will soon be required to base the determination of transportation impacts on Vehicle Miles Traveled (VMT) rather than level of service.

In adherence to SB 743, the City of San Jose has adopted a new Transportation Analysis Policy, Council Policy 5-1. The policy replaces its predecessor (Policy 5-3) and establishes the thresholds for transportation impacts under the CEQA based on vehicle miles traveled (VMT) instead of levels 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. The new transportation policy aligns with the currently

**Figure 1**  
**Site Location**



**Figure 2**  
**Proposed Site Plan**



adopted General Plan which seeks to focus new development growth within Planned Growth Areas, bringing together office, residential, and supporting service land uses to internalize trips and reduce VMT. All new development projects are required to analyze transportation impacts using the VMT metric and conform to Council Policy 5-1.

The Circulation Element of the *Envision San José 2040 General Plan* includes a set of balanced, long-range, 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:

- Consider impacts on overall mobility and all travel modes when evaluating transportation impacts of new developments or infrastructure projects (TR-1.2);
- 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 biking, walking and transit facilities and services that encourage reduced vehicle travel demand (TR-1.4);
- 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. In addition, require that new development is designed to accommodate and to provide direct access to transit facilities (TR-3.3);
- 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 Villages and Corridors and other growth areas (TR-8.6);
- Encourage private property owners to share their underutilized parking supplies with the general public and/or other adjacent private developments (TR-8.7);
- 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);
- 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 CEQA transportation analysis for the project consists a project-level VMT impact analysis using the City's VMT tool and a cumulative impact analysis that demonstrates the project's consistency with the Envision San Jose 2040 General Plan.

### VMT Analysis

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. 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 established 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.

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 development 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 serve in the project vicinity.

### VMT Evaluation Tool

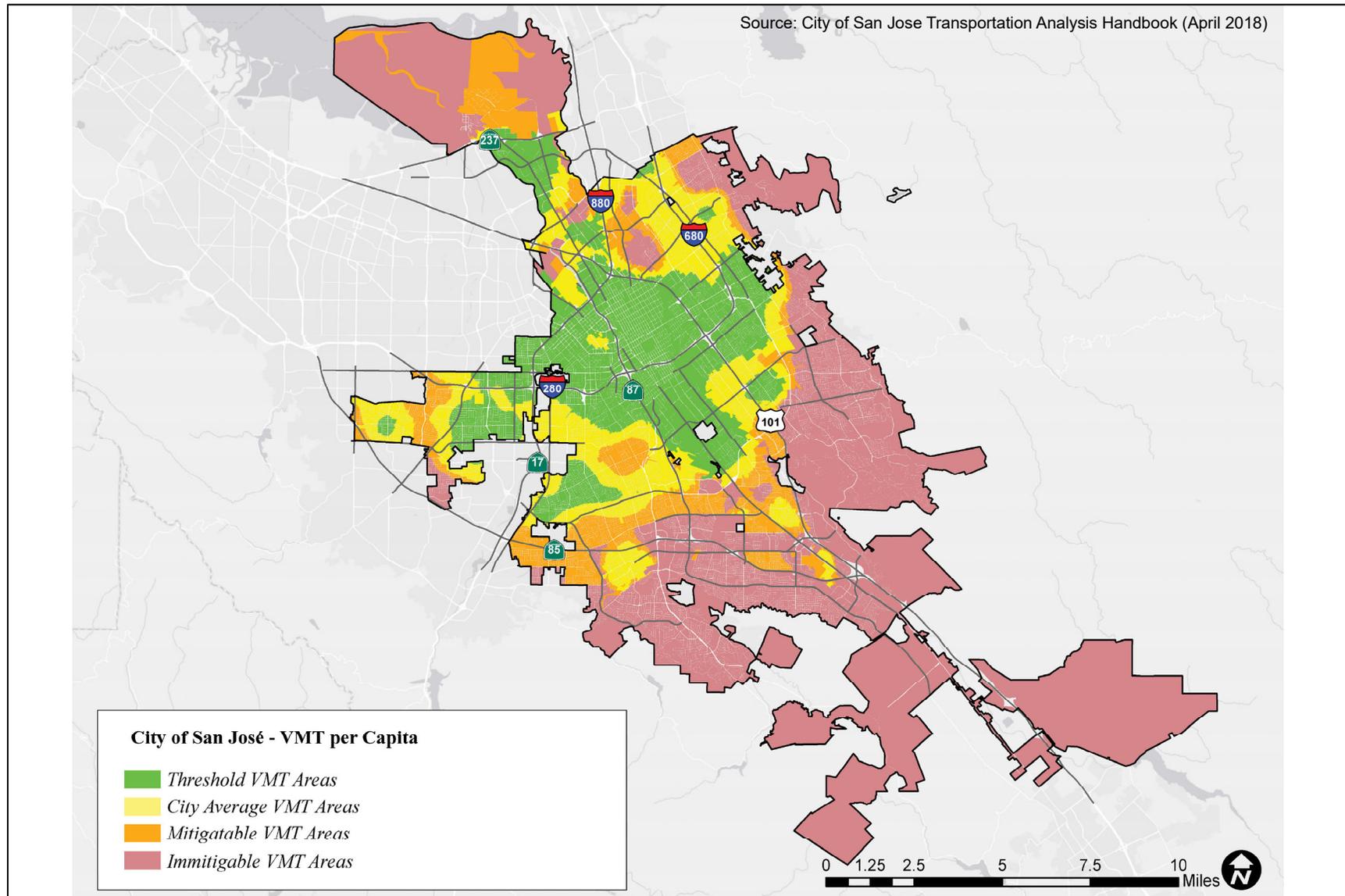
To determine whether a project would result in CEQA transportation impacts related to VMT, the City has developed the San Jose VMT Evaluation Tool to streamline the analysis for development projects. For non-residential or non-office projects, very large projects, or projects that can potentially shift travel patterns, the City's Travel Demand Model can be used to determine project VMT.

Based on the assessor's parcel number (APN) of a project, the evaluation tool identifies the existing average VMT per capita and VMT per employee for the project 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.

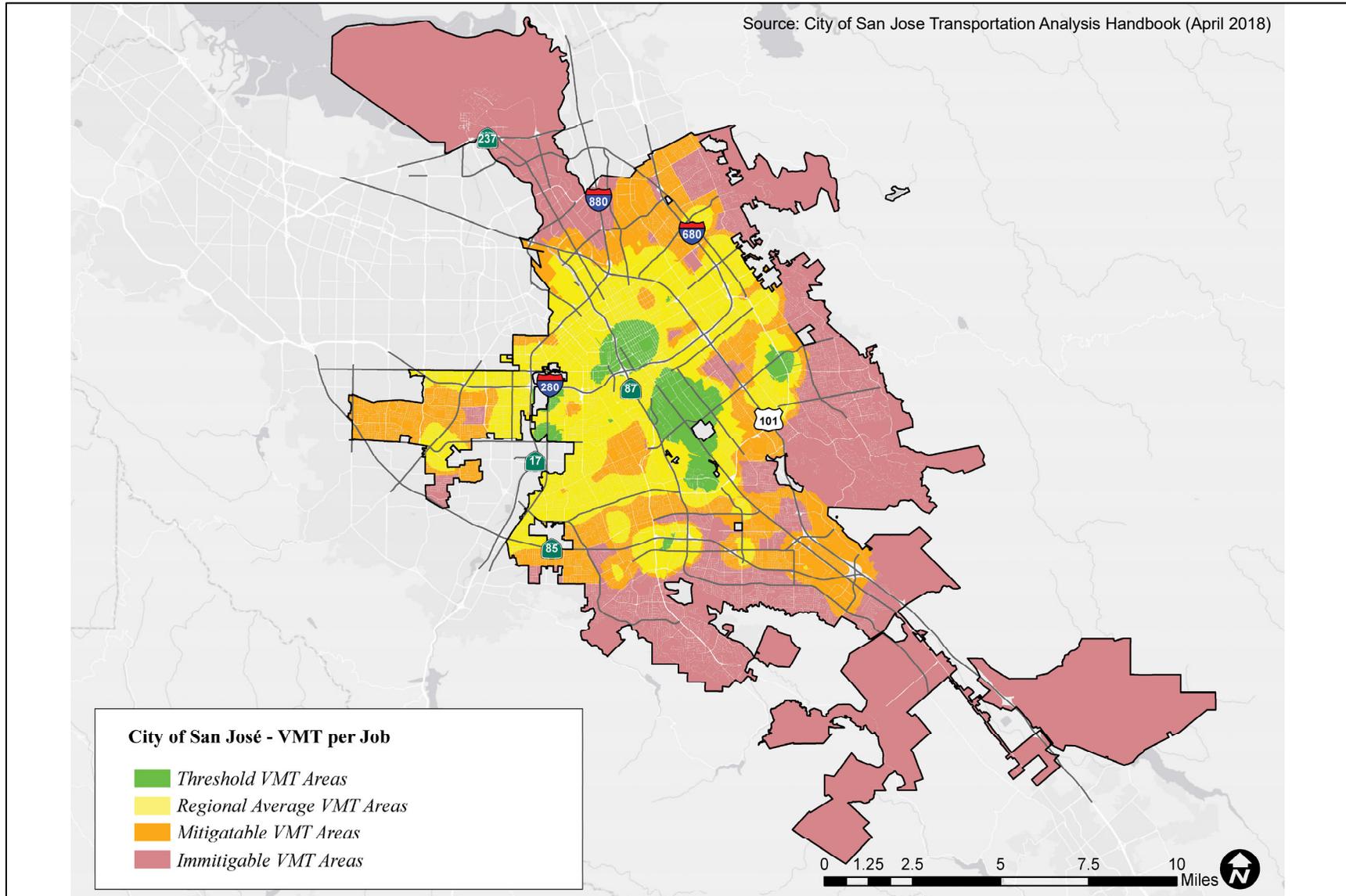
The thresholds of significance for development projects, as established in the Transportation Analysis Policy, are based on the existing citywide average VMT level for residential uses and the existing regional average VMT level for employment uses. Figure 3 and Figure 4 show the current Citywide VMT levels estimated by the City's TDF model for residents and workers, respectively, based on the locations of residences and jobs. Areas are color-coded based on the level of existing VMT:

- Green-filled areas are parcels with existing VMT less than the City's residential and employee thresholds of 10.12 VMT per capita and 12.21 per employee. The thresholds are calculated by

**Figure 3**  
**VMT per Capita Heat Map in San Jose**



**Figure 4**  
**VMT per Job Heat Map in San Jose**



- subtracting 15 percent from the citywide average of 11.91 VMT per capita and regional average of 14.37 per employee.
- Yellow-filled areas are parcels with existing VMT between the residential and employee thresholds and the city-wide average of 11.91 VMT per capita and regional average 14.37 VMT per employee.
- Orange-filled areas are parcels with existing VMT greater than the residential and employee thresholds. However, a project's VMT impact may be mitigated by implementing VMT-reducing measures.
- Red-filled areas are parcels with existing VMT greater than the residential and employee threshold. Implementing VMT-reducing measures will not be sufficient to reduce a project's VMT to less than the threshold of significance.

Average per-capita and per-employee VMT for all the existing developments within ½ mile buffer of each parcel in the City serves as the baseline from which a project is evaluated. The VMT in the proposed project site vicinity is presented in further detail in Chapter 3.

### Screening for VMT Analysis

The City's VMT methodology includes screening criteria that are used to identify types, characteristics, and/or locations of projects that would not exceed the CEQA thresholds of significance. If a project or a component of a mixed-use project meets the screening criteria, it is then presumed that the project or the component would result in a less-than-significant VMT impact and a VMT analysis is not required. The type of development projects that may meet the screening criteria include the following:

- (1) small infill projects
- (2) local-serving retail
- (3) local-serving public facilities
- (4) projects located in *Planned Growth Areas* with low VMT and *High-Quality Transit*
- (5) deed-restricted affordable housing located in *Planned Growth Areas* with *High-Quality Transit*

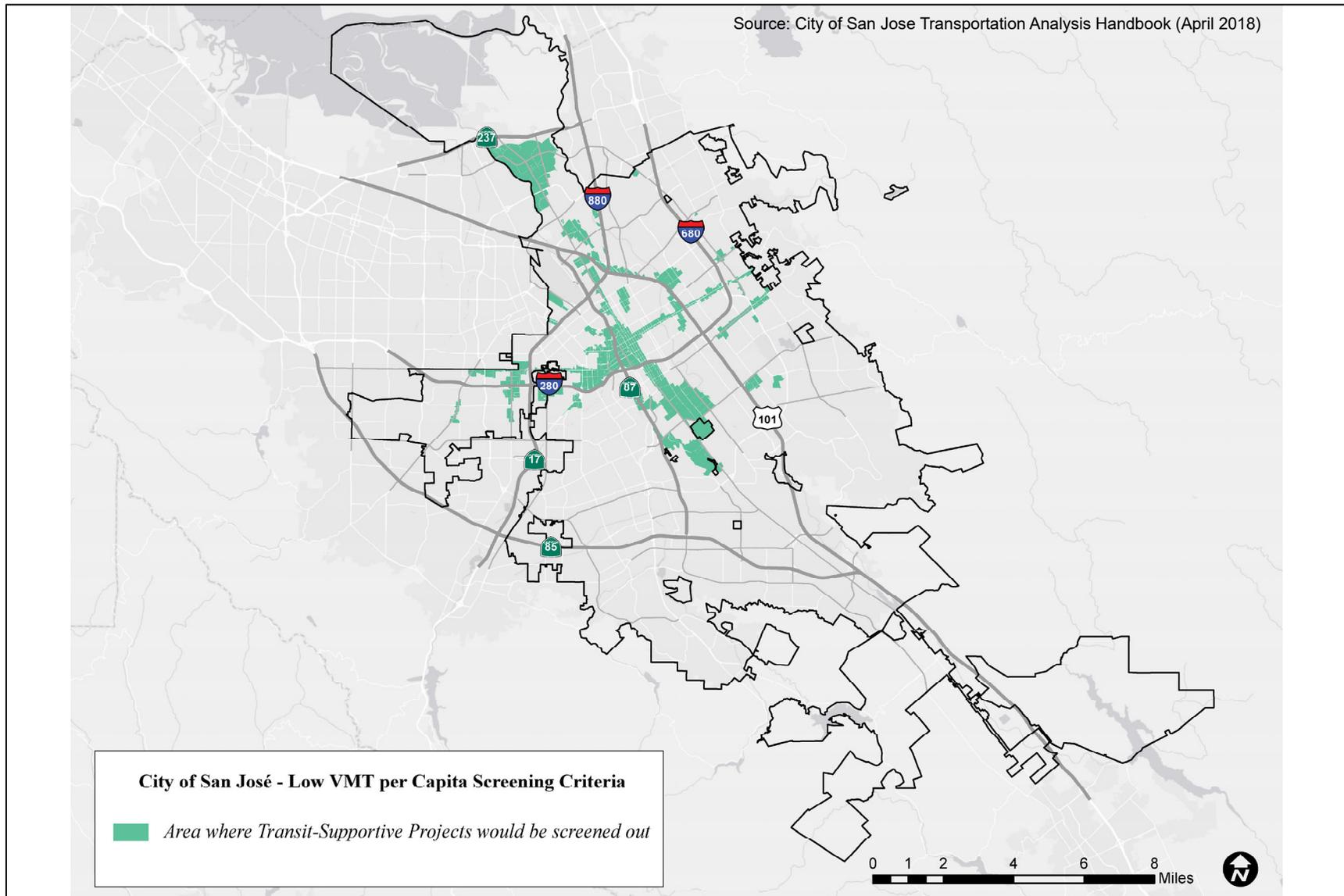
Table 1 summarizes the screening criteria for each type of development project as identified in the in the City of San Jose Transportation Analysis Handbook. Figure 5 and Figure 6 identify areas within the City that currently have low VMT levels estimated by the City for residents and workers, respectively, for which transit supportive development located within a priority growth area would be screened out of the evaluation of VMT.

The project site is not located within a Planned Growth Area, per the City's General Plan. Therefore, the proposed residential project would not meet the VMT screening criteria and a detailed CEQA transportation analysis that evaluates the project's effects on VMT is required. A VMT evaluation for the project was completed using the *San José VMT Evaluation Tool* and is presented in Chapter 3.

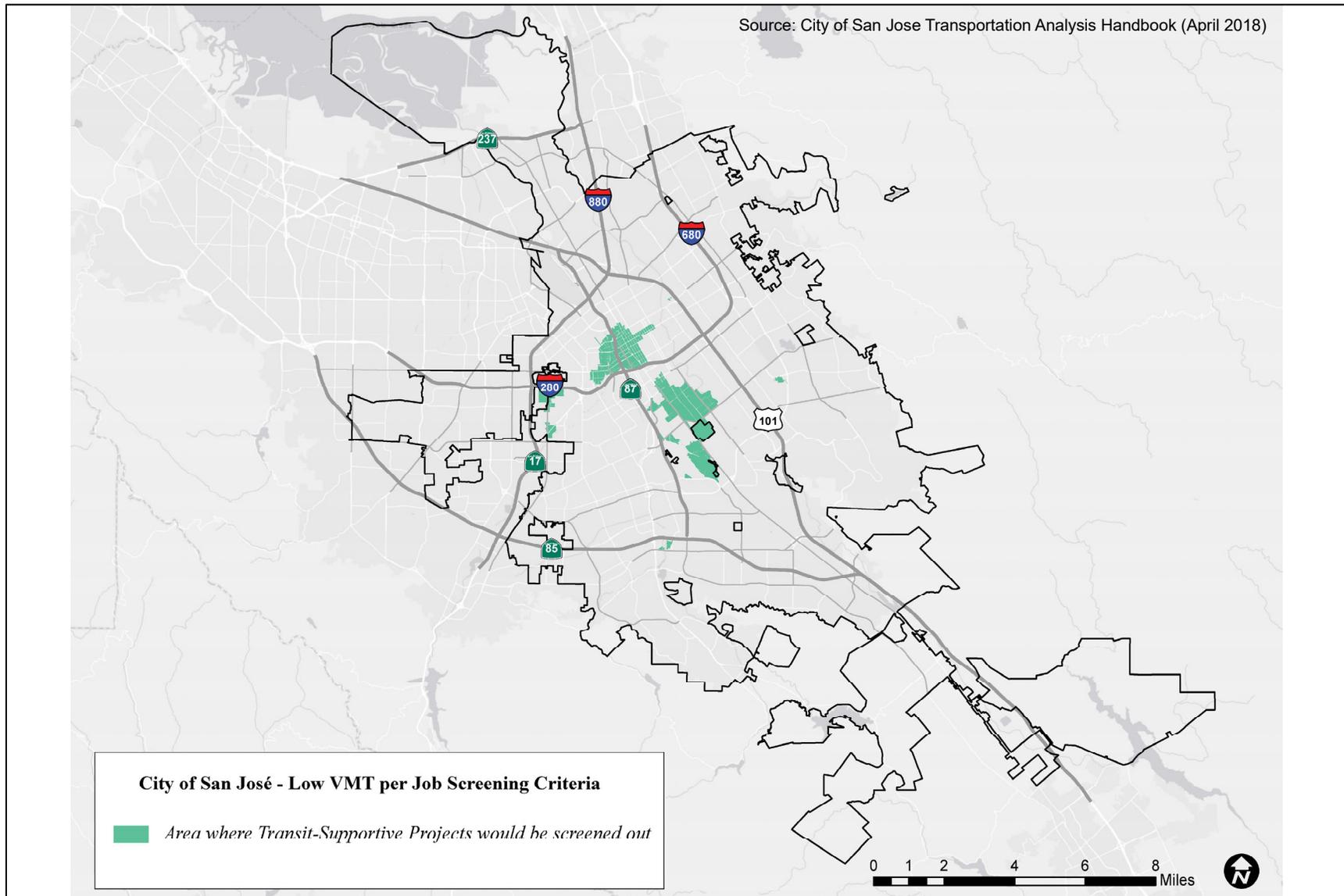
### Local Transportation Analysis Scope

A local transportation analysis (LTA) supplements the CEQA VMT analysis and identifies transportation and traffic operational issues that may arise due to a development project. The LTA includes an evaluation of the effects of the project on transportation, access, circulation, and related safety elements in the proximate area of the project.

**Figure 5**  
**Low VMT per Capita Areas in San Jose**



**Figure 6**  
**Low VMT per Job Areas in San Jose**



**Table 1  
CEQA VMT Analysis Screening Criteria for Development Projects**

Type	Screening Criteria
<b>Small Infill Projects</b>	<ul style="list-style-type: none"> <li>• Single-family detached housing of 15 units or less; <u>OR</u></li> <li>• Single-family attached or multi-family housing of 25 units or less; <u>OR</u></li> <li>• Office of 10,000 square feet of gross floor area or less; <u>OR</u></li> <li>• Industrial of 30,000 square feet of gross floor area or less</li> </ul>
<b>Local-Serving Retail</b>	<ul style="list-style-type: none"> <li>• 100,000 square feet of total gross floor area or less without drive-through operations</li> </ul>
<b>Local-Serving Public Facilities</b>	<ul style="list-style-type: none"> <li>• Local-serving public facilities</li> </ul>
<b>Residential/Office Projects or Components</b>	<ul style="list-style-type: none"> <li>• <b>Planned Growth Areas:</b> Located within a Planned Growth Area as defined in the Envision San José 2040 General Plan; <u>AND</u></li> <li>• <b>High-Quality Transit:</b> Located within ½ a mile of an existing major transit stop or an existing stop along a high-quality transit corridor; <u>AND</u></li> <li>• <b>Low VMT:</b> Located in an area in which the per capita VMT is less than or equal to the CEQA significance threshold for the land use; <u>AND</u></li> <li>• <b>Transit-Supporting Project Density:</b> <ul style="list-style-type: none"> <li>○ Minimum Gross Floor Area Ratio (FAR) of 0.75 for office projects or components;</li> <li>○ Minimum of 35 units per acre for residential projects or components;</li> <li>○ If located in a Planned Growth Area that has a maximum density below 0.75 FAR or 35 units per acre, the maximum density allowed in the Planned Growth Area must be met; <u>AND</u></li> </ul> </li> <li>• <b>Parking:</b> <ul style="list-style-type: none"> <li>○ No more than the minimum number of parking spaces required;</li> <li>○ If located in Urban Villages or Downtown, the number of parking spaces must be adjusted to the lowest amount allowed; however, if the parking is shared, publicly available, and/or “unbundled”, the number of parking spaces can be up to the zoned minimum; <u>AND</u></li> </ul> </li> <li>• <b>Active Transportation:</b> Not negatively impact transit, bike or pedestrian infrastructure.</li> </ul>
<b>Restricted Affordable Residential Projects or Components</b>	<ul style="list-style-type: none"> <li>• <b>Affordability:</b> 100% restricted affordable units, excluding unrestricted manager units; affordability must extend for a minimum of 55 years for rental homes or 45 years for for-sale homes; <u>AND</u></li> <li>• <b>Planned Growth Areas:</b> Located within a Planned Growth Area as defined in the Envision San José 2040 General Plan; <u>AND</u></li> <li>• <b>High Quality Transit:</b> Located within ½ a mile of an existing major transit stop or an existing stop along a high quality transit corridor; <u>AND</u></li> <li>• <b>Transit-Supportive Project Density:</b> <ul style="list-style-type: none"> <li>○ Minimum of 35 units per acre for residential projects or components;</li> <li>○ If located in a Planned Growth Area that has a maximum density below 35 units per acre, the maximum density allowed in the Planned Growth Area must be met; <u>AND</u></li> </ul> </li> <li>• <b>Transportation Demand Management (TDM):</b> If located in an area in which the per capita VMT is higher than the CEQA significance threshold, a robust TDM plan must be included; <u>AND</u></li> <li>• <b>Parking:</b> <ul style="list-style-type: none"> <li>○ No more than the minimum number of parking spaces required;</li> <li>○ If located in Urban Villages or Downtown, the number of parking spaces must be adjusted to the lowest amount allowed; however, if the parking is shared, publicly available, and/or “unbundled”, the number of parking spaces can be up to the zoned minimum; <u>AND</u></li> </ul> </li> <li>• <b>Active Transportation:</b> Not negatively impact transit, bike or pedestrian infrastructure.</li> </ul>

Source: City of San José Transportation Analysis Handbook, April 2018.

## Intersection Operations Analysis

The evaluation of a project's impact on level of service at intersections under the jurisdiction of the City of San Jose is no longer required. Per Senate Bill (SB) 743 and the updated CEQA Guidelines. (Section 15064.3) Nov 2017, beginning July 1, 2020 the use of intersection level of service as a metric for determining impacts of development growth on the transportation system will no longer be permitted. However, since the VTA's Congestion Management Program (CMP) has yet to adopt and implement guidelines and standards for the evaluation of transportation impacts using VMT, the effects of the proposed project traffic on CMP-designated intersections in the vicinity of the project area were evaluated following the current peak-hour LOS standards and methodologies as outlined in the *VTA Transportation Impact Analysis Guidelines*.

The LTA includes the evaluation of weekday AM and PM peak hour operations at a limited number of intersections for the purpose of identifying operational issues (queuing, signal operations, and potential multi-modal issues) at intersections in the general vicinity of the project site. However, the determination of project impacts per CEQA requirements is based solely on the VMT analysis.

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. These are the peak commute hours during which most weekday traffic congestion occurs on the roadways in the study area.

Intersection operations conditions were evaluated for the following scenarios:

- **Existing Conditions.** Existing AM and PM peak hour traffic volumes at all study intersections were obtained from the City of San Jose and previously completed traffic studies.
- **Background Conditions.** Background traffic volumes were estimated by adding to existing peak hour volumes the projected volumes from approved but not yet completed developments. The approved project traffic 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. Background traffic volumes with the project were estimated by adding to background traffic volumes the additional traffic generated by the project.

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

## Report Organization

The remainder of this report is divided into four chapters. Chapter 2 describes existing transportation system including the existing roadway network, transit service, bicycle and pedestrian facilities. Chapter 3 describes the CEQA transportation analysis, including VMT analysis methodology, baseline and potential project VMT impacts, mitigation measures to reduce the VMT impact, and potential cumulative transportation impacts. Chapter 4 describes the LTA including the method by which project traffic is estimated, intersection operations analysis methodology, any adverse intersection traffic 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 5 presents the conclusions of the transportation analysis.

## 2. Existing Transportation Setting

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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 services, and pedestrian and bicycle facilities.

### Existing Roadway Network

Regional access to the project site is provided via SR 87 and I-280. 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 and US 101 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 consists of 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 partial interchanges at Lelong Street/Alma Avenue and Almaden Expressway, and its full interchange at Curtner Avenue.

**I-280** is an eight-lane freeway in the vicinity of the site. It extends northwest to San Francisco and east to King Road in San Jose, at which point it makes a transition into I-680 to Oakland. North of I-880, I-280 has high occupancy vehicle (HOV) lanes in both directions. Access to and from northbound I-280 to the site is provided via SR 87.

Local access to the site is provided by Almaden Expressway, Almaden Road, Minnesota Avenue/ Alma Avenue, Bird Avenue, Curtner Avenue, and Willow Glen Way. These roadways are described below.

**Almaden Road** is a two to four-lane north-south roadway with two lanes in the vicinity of the project site. It extends from Almaden Avenue in the north to Almaden Expressway in the south, at which point it makes a transition into Ironwood Drive. In the project vicinity, Almaden Road has a posted speed limit of 35 mph with sidewalks on portions of the eastern side of the road and on-street parking on both sides of the street and no bike lanes. Almaden Road runs along the east project frontage and provides direct access to the project site via one driveway.

**Almaden Expressway** is a two to six lane north south expressway with four lanes in the vicinity of the project site. It extends from Alma Avenue in the north to Harry Road in the south. In the project vicinity, the posted speed limit on Almaden Expressway is 45 mph. Almaden Expressway provides access to the project site via Almaden Road and Curtner Avenue.

**Alma Avenue** is a three to five lane east-west roadway in the vicinity of the project site. It extends from Senter Road in the east and merges with Minnesota Avenue in the west. In the project vicinity, Alma Avenue has a posted speed limit of 35 mph with sidewalks and bike lanes available between Whitehurst Court and Belmont Way. Alma Avenue provides access to the project site via Almaden Expressway.

**Bird Avenue** is a two to six-lane north-south roadway that extends southward from San Carlos Street to Malone Road. North of San Carlos Street, Bird Avenue makes a transition to Montgomery Street. In the project vicinity, Bird Avenue has a posted speed limit of 35 mph with sidewalks and on-street parking on both sides of the street and bike lanes. Access to the project site from Bird Avenue is provided via Willow Glen Way and Almaden Road.

**Curtner Avenue** is a two to four-lane east-west roadway that extends southward from Camden Avenue east to Monterey Road. East of Monterey Road, Curtner Avenue makes a transition to Tully Road. In the project vicinity, Curtner Avenue has a posted speed limit of 35 mph with sidewalks and on-street parking on both sides of the street (along most segments) and bike lanes. Access to the project site from Curtner Avenue is provided via Almaden Road.

**Willow Glen Way** is a two-lane east-west roadway that extends from Newport Avenue in the west to Almaden Road in the east. In the project vicinity, Willow Glen Way has a posted speed limit of 25 mph with sidewalks and on-street parking on both sides of the street. Access to the project site from Willow Glen Way is provided via Almaden 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 need 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

Pedestrian facilities near the project site consist mostly of sidewalks along the streets in the study area. North of the project site, sidewalks are available on the western side of Almaden Road between the project site and Willow Glen Way. Sidewalks are found on both sides of Almaden Road between Willow Glen Way and Stone Court. South of the project site, sidewalks are found along only portions of the eastern side of Almaden Road. A crosswalk with ADA-compatible ramps and push buttons are located along the south leg of the Almaden Road and Willow Glen Way intersection. There are no crosswalks provided on the north or west legs of the Almaden Road and Willow Glen Way intersection. A crosswalk and push buttons also are located along the south and west leg of the Almaden Road and Malone Road intersection, located less than ½-mile south of the site. However, curb ramps at the northwest and southwest corners of the Almaden Road and Malone Road intersection are not ADA-compatible. Additionally, there are currently no sidewalks available along the following roadway segments:

- West side of Almaden Road, between the north project boundary and Malone Road (including along the east project frontage)
- East side of Almaden Road, between Willow Glen Way and 250 feet south of Willow Glen Way
- East side of Almaden Road, between New Street and 250 feet north of New Street
- Both sides of Almaden Road, between Stone Court and Almaden Expressway
- Southeast corner of the Guadalupe Avenue/Willow Glen Way intersection (frontage of Willow Glen Way Market)

Pedestrian generators in the project vicinity include commercial areas and transit stops along Curtner Avenue, Alma Avenue, and the Tamien and Curtner Transit Stations. The project site is within the service boundaries of Galarza Elementary School, Willow Glen Middle School, and Willow Glen High School. Existing sidewalks along Almaden Road, Willow Glen Way, and other local streets including Creek Drive and Pine Avenue provide a mostly continuous pedestrian connection to Galarza Elementary School located along Bird Avenue (approximately 0.6 miles from the project site). As shown on Figure 7, however, a 135-foot portion of sidewalk (and ADA-compatible ramp) is missing along the south side of

Willow Glen Way, east of Guadalupe Avenue and along the north frontage of Willow Glen Way Market. In addition, some of the ramps along cross streets of Willow Glen Way (including Creek Drive and Arbor Drive) are not ADA compatible. To avoid the missing sidewalk, pedestrians may cross Willow Glen Way at its intersection with Cross Way and continue along the north side of Willow Glen Way. It should also be noted that a crosswalk is not provided along the west leg of the Almaden Road/Willow Glen Way intersection. Therefore, the north-south crosswalk at the Cross Way/Willow Glen Way intersection provides the only means of accessing the north side of Willow Glen Way from the project site.

Willow Glen Middle School and Willow Glen High School are located along Cottle Avenue, approximately 1.5 miles from the project site. Access to these schools via Almaden Road, south of the project, is limited due to missing sidewalks along portions of both sides of Almaden Road between the project site and Malone Road. A longer but mostly continuous pedestrian route is available via Willow Glen Way, Bird Avenue, and Malone Road.

Continuous pedestrian access to the Tamien LRT and Caltrain stations is not provided via Almaden Road due to missing sidewalks on both sides of Almaden Road between Stone Court and Almaden Expressway. A longer but mostly continuous pedestrian route is available via Willow Glen Way, Bird Avenue, and Minnesota Avenue.

The existing pedestrian facilities in the vicinity of the site are shown in Figure 7.

### Existing Bicycle Facilities

There are no existing bicycle facilities in the immediate area of the project site. There are no bicycle facilities provided along Almaden Road. However, there are bicycle facilities in the area surrounding the project site.

**Class I Bikeway (Bike Path).** Class I bikeways are bike paths that are physically separated from motor vehicles and offer two-way bicycle travel on a separate path. The Highway 87 Bikeway is located in the project area and is a continuous multi-purpose pathway for pedestrians and bicycles that is separated from motor vehicles. It begins at Willow Street in the north and continues to Unified Way near Curtner Avenue, all alongside Highway 87. North of Willow Street, the trail continues to Downtown San Jose and is known as the Guadalupe River Trail. The nearest access point to the Guadalupe River Trail/Highway 87 Bikeway system is located at the Tamien LRT and Caltrain stations, approximately 1.1-mile northeast of the project site.

**Class II Bikeway (Bike Lane).** Class II bikeways are striped bike lanes on roadways that are marked by signage and pavement markings. Within the vicinity of the project site, striped bike lanes are present on the following roadway segments.

- Curtner Avenue, between Leigh Avenue to Monterey Road
- Bird Avenue, between Malone Road and Minnesota Avenue; between Willow Street and Virginia Street
- Vine Street, north of Alma Avenue
- Almaden Avenue, north of Alma Avenue
- Minnesota Avenue, west of Lelong Street

**Class III Bikeway (Bike Route).** Class III bikeways are bike routes and only have signs to help guide bicyclists on recommended routes to certain locations. In the vicinity of the project site, the following roadway segments are designated as bike routes.

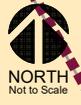
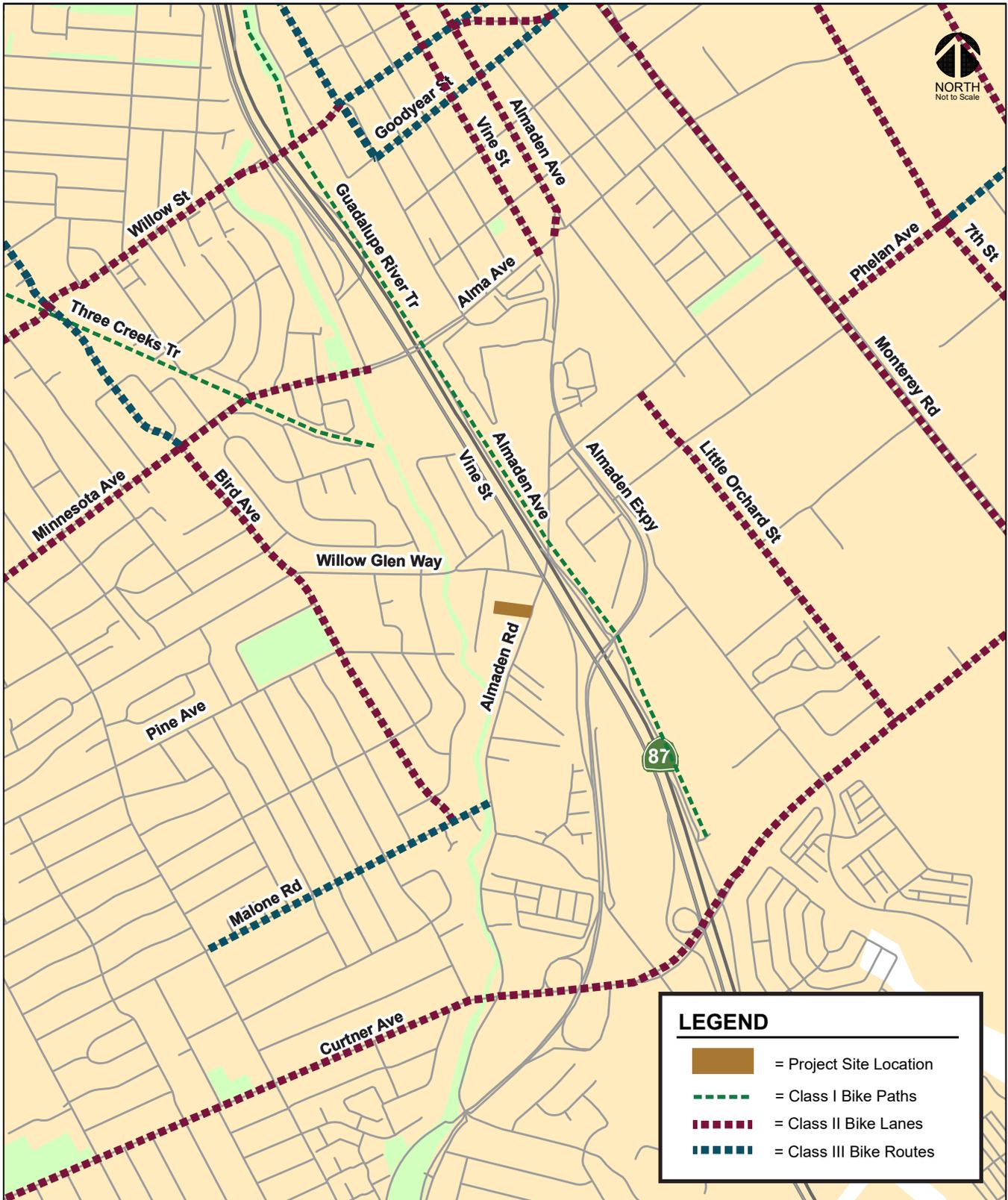
- Bird Avenue, between Minnesota Avenue and Willow Street
- Malone Road, between Lincoln Avenue and Bird Avenue

The existing bicycle facilities are shown in Figure 8.

**Figure 7**  
**Existing Pedestrian Facilities**



**Figure 8**  
**Existing Bicycle Facilities**



## **Existing Transit Services**

Existing transit services in the study area are provided by the Santa Clara Valley Transportation Authority VTA and Caltrain. The transit stations and local VTA bus lines near the project site are shown on Figure 9. The Tamien LRT and Caltrain stations are located between Lelong Street and Lick Avenue, north of Alma Avenue. The Curtner LRT station is located south of Curtner Avenue, east of Canoas Garden Avenue, approximately 1.2 miles south of the project site. The LRT and Caltrain services provide access to the Diridon Transit Center, located approximately two miles north of the project site at Cahill Street. Connections between local and regional bus routes, light rail lines, and commuter rail lines are provided within the Diridon Transit Center. These transit services are described below.

### **VTA Bus Service**

The nearest bus lines serving the project vicinity are listed in Table 2, including their terminus points, hours of operation, and commute hour headways. The nearest bus stops to the project site are located at the intersections of Bird Avenue/Minnesota Avenue (Local Route 56), Lincoln Avenue/Willow Glen Way (Local Route 64A), and Almaden Road/Curtner Avenue (Frequent Route 26).

### **VTA Light Rail Transit (LRT) Service**

The Santa Clara Valley Transportation Authority (VTA) currently operates the 42.2-mile VTA 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 Blue LRT line (Baypointe-Santa Teresa) is accessible from the Tamien and Curtner LRT Stations. A transfer point to the Green LRT line (Old Ironsides-Winchester) is provided at the Convention Center station in Downtown San Jose.

### **Caltrain Service**

Commuter rail service between San Francisco and Gilroy is provided by Caltrain, which currently operates 92 weekday trains that carry approximately 47,000 riders on an average weekday.

Caltrain service at the Tamien Station is provided between 4:55 AM and 9:37 PM in the northbound direction, and between 7:10 AM and 11:11 PM in the southbound direction. Many of the trains serving Tamien Station begin northbound service or terminate southbound service at Tamien Station, however extended service to Morgan Hill and Gilroy is provided during commute hours. Additional train service with more frequent headways to and from San Francisco is provided at the Diridon Transit Station.

### **Altamont Commuter Express Service (ACE)**

ACE provides commuter rail service between Stockton, Tracy, Pleasanton, and Diridon Transit Center during commute hours, Monday through Friday. Service is limited to four westbound trips in the morning and four eastbound trips in the afternoon and evening with headways averaging 60 minutes. ACE trains stop at the Diridon Station between 6:32 AM and 9:17 AM in the westbound direction, and between 3:35 PM and 6:38 PM in the eastbound direction.

### **Amtrak Service**

Amtrak provides daily commuter passenger train service along the 170-mile Capitol Corridor between the Sacramento region and the Bay Area, with stops in San Jose, Santa Clara, Fremont, Hayward, Oakland, Emeryville, Berkeley, Richmond, Martinez, Suisun City, Davis, Sacramento, Roseville, Rocklin, and Auburn. The Capitol Corridor trains stop at the Diridon Station eight times during the weekdays between approximately 7:38 AM and 11:55 PM in the westbound direction. In the eastbound direction, Amtrak stops at the Diridon Station seven times during the weekdays between 6:40 AM and 7:15 PM.

**Figure 9**  
**Existing Transit Services**



**Table 2**  
**Existing Transit Services**

Bus Route	Route Description	Hours of Operation	Headway <sup>1</sup>
Frequent Route 25	De Anza College to Alum Rock Transit Center via Valley Medical Center	5:12 AM - 12:33AM	12 min
Frequent Route 26	West Valley College to Eastridge Transit Center	5:13 AM - 12:18 AM	10 - 15 min
Local Route 56	Lockheed Martin to Tamien Station	5:08AM - 10:34 PM	30 - 35 min
Local Route 64A	McKee/White to Ohlone-Chynoweth Station	5:14 AM - 12:28 AM	30 min
Frequent Route 66	North Milpitas to Kaiser San Jose Medical Center	5:06 AM - 12:13 AM	10 - 15 min
Frequent Route 68	Gilroy Transit Center to San Jose Diridon Station	3:57 AM - 1:27 AM	12 - 20 min

**Notes:**  
<sup>1</sup> Approximate headways during peak commute periods.

### 3.

## CEQA Transportation Analysis

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This chapter describes the CEQA transportation analysis, including the VMT analysis methodology and significance criteria, potential project impacts on VMT, mitigation measures recommended to reduce significant impacts, and cumulative transportation impacts.

### CEQA Transportation Analysis Exemption Criteria

The City of San Jose *Transportation Analysis Handbook* identifies screening criteria that determines whether a CEQA transportation analysis would be required for development projects. The criteria are based on the type of project, characteristics, and/or location. If a project meets the City's screening criteria, the project is expected to result in less-than-significant VMT impacts and a detailed CEQA VMT analysis is not required.

#### Evaluation of Screening Criteria

The project site is not located within a Planned Growth Area with low VMT per capita, per the City's General Plan (see Figure 10). Additionally, the proposed project will not meet several of the VMT screening criteria as described below. Therefore, a detailed CEQA transportation analysis that evaluates the project's effects on VMT is required. A VMT evaluation for the project was completed using the *San José VMT Evaluation Tool*.

#### Planned Growth Areas

**Requirement:** *Located within a Planned Growth Area as defined in the Envision San José 2040 General Plan.*

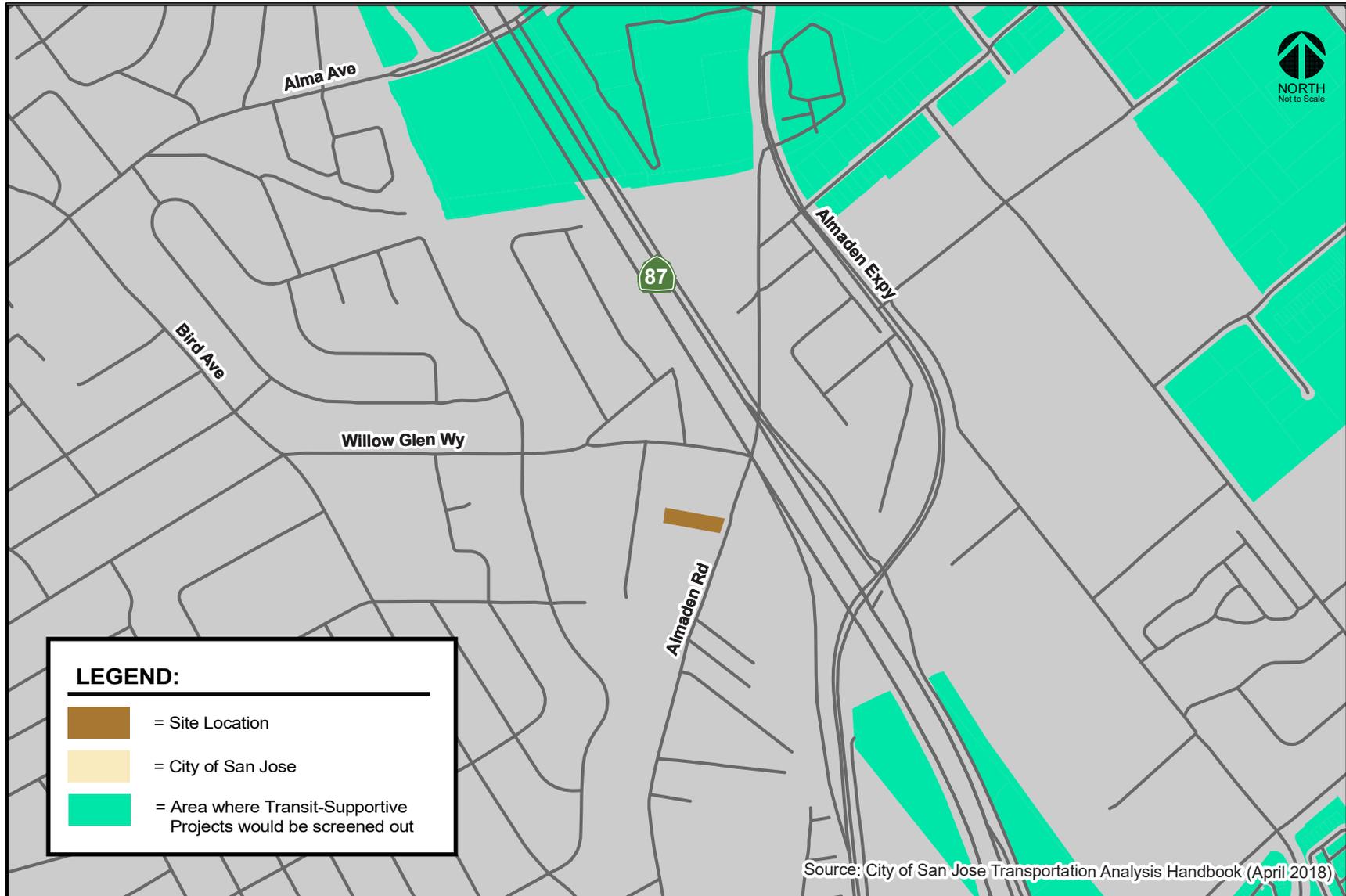
The project site is not located within a Planned Growth Area, per the General Plan. **The project will not meet this criterion.**

#### High-Quality Transit

**Requirement:** *Located within ½ a mile of an existing major transit stop or an existing stop along a high-quality transit corridor*

There are no existing major transit stops or existing stops along a high-quality transit corridor within ½-mile of the proposed project site. **The project will not meet this criterion.**

**Figure 10**  
**Low VMT per Capita Areas**



### **Low VMT**

**Requirement:** *Located in an area in which the per capita VMT is less than or equal to the CEQA significance threshold for the land use.*

The project site is located in an area with a VMT per capita that is higher than the CEQA significance threshold for residential uses (10.25 compared to the threshold VMT per capita of 10.12 for residential uses). **The project will not meet this criterion.**

### **Transit-Supporting Project Density**

**Requirement:** *Minimum of 35 units per acre for residential projects or components; if located in a Planned Growth Area that has a maximum density below 35 units per acre, the maximum density allowed in the Planned Growth Area must be met.*

A total of 64 units are proposed to be constructed on the 0.57-acre project site. The proposed development density will equate to 113 units per acre, exceeding the required minimum of 35 units per acre.

### **Parking**

**Requirement:** *No more than the minimum number of parking spaces required; if located in Urban Villages or Downtown, the number of parking spaces must be adjusted to the lowest amount allowed; however, if the parking is shared, publicly available, and/or “unbundled”, the number of parking spaces can be up to the zoned minimum.*

The project proposes a total of 87 parking spaces on-site which exceeds the required 86 spaces as calculated per the City code. **The project will not meet this criterion.**

### **Active Transportation**

**Requirement:** *Not negatively impact transit, bike or pedestrian infrastructure*

No negative impacts to transit, bike or pedestrian infrastructure are anticipated with the proposed development. Potential impacts to transit services, bike and pedestrian facilities within the project study area are discussed in Chapter 3.

## **VMT Analysis Methodology**

Per Council Policy 5-1, the effects of the proposed project on VMT was evaluated using the methodology outlined in the City’s *Transportation Analysis Handbook*. 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. Because the proposed project is relatively small and would not significantly alter existing traffic patterns, the evaluation tool is used to estimate the project VMT and determine whether the project would result in a significant VMT impact. Figure 11 shows the current VMT levels estimated by the City’s TDF model for residents in the immediate project area.

The 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.

**Figure 11**  
**VMT per Capita Heat Map in Project Area**



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 should be enforced through annual trip monitoring to assess the project's status in meeting the VMT reduction goals.

### Thresholds of Significance

If a project is found to have a significant impact on VMT, the impact must be reduced by modifying the project to reduce its VMT to an acceptable level (below the established thresholds of significance applicable to the project) and/or mitigating the impact through multimodal transportation improvements or establishing a Trip Cap.

Table 3 shows the VMT thresholds of significance for development projects, as established in the Transportation Analysis Policy.

Projects that include residential uses are said to create a significant adverse impact when the estimated project-generated VMT exceeds the existing citywide average VMT per capita minus 15 percent or existing regional average VMT per capita minus 15 percent, whichever is lower. Currently, the reported citywide average is 11.94 VMT per capita, which is less than the regional average. Therefore, a significant impact threshold of 10.12 VMT per capita is currently used for residential uses.

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

### VMT of Existing Land Uses

The results of the VMT analysis using the evaluation tool indicate that the existing VMT for residential uses in the project vicinity is 10.25 per capita. As shown in Table 3, the current citywide average VMT for residential uses is 11.91 per capita. Therefore, the VMT levels of existing uses in the project vicinity are currently less than the average VMT levels. Appendix A presents the evaluation tool summary report for the project.

### Project-Level VMT Impact Analysis

The City's Transportation Policy identifies an impact threshold of 15% below the citywide average per-capita VMT of 11.91. Thus, the proposed project would result in a significant impact if it results in VMT that exceeds per capita VMT of 10.12.

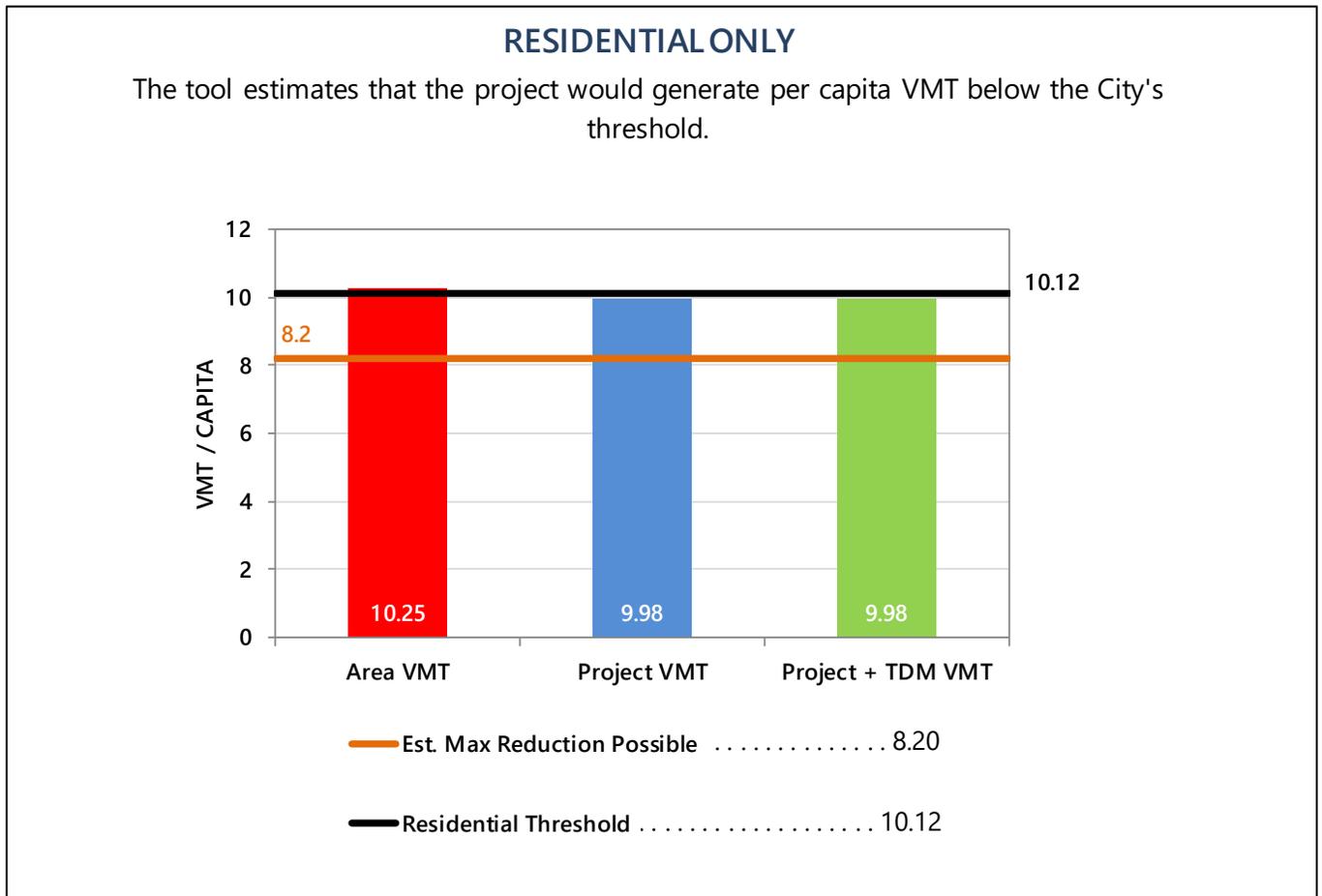
The results of the VMT evaluation, using the City's VMT Evaluation Tool, indicate that the proposed project is projected to generate VMT per capita (9.98) which is less than the existing VMT per capita in the project area and below the established VMT impact threshold. Figure 12 shows the VMT evaluation summary generated by the City of San Jose's VMT Evaluation Tool.

**Table 3**  
**CEQA VMT Analysis Significant Impact Criteria for Development Projects**

Type	Significance Criteria	Current Level	Threshold
<b>Residential Uses</b>	Project VMT per capita exceeds existing citywide average VMT per capita minus 15 percent <u>OR</u> existing regional average VMT per capita minus 15 percent, whichever is lower.	11.91 VMT per capita (Citywide Average)	10.12 VMT per capita
<b>General Employment Uses</b>	Project VMT per employee exceeds existing regional average VMT per employee minus 15 percent	14.37 VMT per employee (Regional Average)	12.21 VMT per employee
<b>Industrial Employment Uses</b>	Project VMT per employee exceeds existing regional average VMT per employee	14.37 VMT per employee (Regional Average)	14.37 VMT per employee
<b>Retail/ Hotel/ School Uses</b>	Net increase in existing regional total VMT	Regional Total VMT	Net Increase
<b>Public/Quasi-Public Uses</b>	In accordance with the most appropriate type(s) as determined by Public Works Director	Appropriate levels listed above	Appropriate thresholds listed above
<b>Mixed Uses</b>	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
<b>Change of Use or Additions to Existing Development</b>	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
<b>Area Plans</b>	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 José Transportation Analysis Handbook, April 2018.

**Figure 12**  
**VMT Analysis Summary**



**Cumulative (GP Consistency) Evaluation**

Projects 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 determined to be inconsistent with the General Plan, a cumulative impact analysis is required per the City's *Transportation Analysis Handbook*.

The project is consistent with the General Plan goals and policies because it is in close proximity to the Tamien LRT and Caltrain station that is located within one mile from the project site between Lelong Street and Lick Avenue, north of Alma Avenue. The Caltrain and LRT lines provide access to the Diridon Transit Center, located approximately two miles north of the project site. Connections between local and regional bus routes, light rail lines, and commuter rail lines are provided within the Diridon Transit Center.

Therefore, based on the project description, the proposed project would be consistent with the *Envision San José 2040 General Plan*. Thus, the project would be considered as part of the cumulative solution to meet the General Plan's long-range transportation goals and would result in a less-than-significant cumulative impact.

## 4. Local Transportation Analysis

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This chapter describes the local transportation analysis including the method by which project traffic is estimated, intersection operations analysis for existing, background, and background plus project scenarios, any adverse effects on study intersections caused by the project, intersection vehicle queuing analysis, freeway segment capacity, freeway ramp analysis, site access and on-site circulation review, effects on bicycle, pedestrian, and transit facilities, and parking.

### Project Description

As proposed, the project would demolish an existing multi-tenant residential building on-site and construct 64 condominium units, 15% of which will be designated affordable housing for moderate income. The project proposes one level of ground-level parking which would provide 87 parking spaces using stacked parking lifts. Vehicular access to the project site would be provided via a full-access driveway on Almaden Road.

### 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

##### Proposed Project Trips

Through empirical research, data have been collected that indicate the amount of traffic that can be expected to be generated by common land uses. Project trip generation was estimated by applying to the size and uses of the development the appropriate trip generation rates. The average trip generation rates for Multi-Family Housing – Mid Rise (Land Use 221) as published in the Institute of Transportation Engineers (ITE) *Trip Generation Manual, 10<sup>th</sup> Edition* (2017) were applied to the proposed number of residential units. Based on the trip generation rates and before any reductions, it is estimated that the project would generate 348 daily vehicle trips, with 23 trips (6 inbound and 17 outbound) during the AM peak-hour and 29 trips (18 inbound and 11 outbound) during the PM peak-hour.

## **Trip Reductions**

In accordance with San Jose's *Transportation Analysis Handbook* (April 2018, Section 4.8, "Intersection Operations Analysis"), the project is eligible for adjustments and reductions from the baseline (gross) trip generation described above.

Based on the 2018 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 Tool, the project site is located within a suburban area with multifamily housing. Therefore, the baseline project trips were adjusted to reflect a suburban mode share. A suburban area with multifamily housing is characterized as an area with average accessibility and vacancy, and low single-family housing stock. Residential developments within suburban areas with multifamily housing have a vehicle mode share of 88%. Thus, a 12% reduction was applied to the residential trips estimated to be generated by the proposed project.

Additionally, based on the San Jose VMT Evaluation Tool, the project is anticipated to generate 9.98 VMT per-capita in an area that currently generates approximately 10.25 VMT per-capita. It is assumed that every percent reduction from the existing per-capita VMT is equivalent to one percent reduction in peak-hour vehicle trips. Thus, the project trip estimates were reduced by three percent to reflect the reduction in peak hour trips.

## **Total Project Trips**

After applying the ITE trip rates and appropriate trip reductions, it is estimated that the project would generate an additional 298 daily vehicle trips, with 20 trips (5 inbound and 15 outbound) occurring during the AM peak hour and 26 trips (16 inbound and 10 outbound) occurring during the PM peak hour. The project trip generation estimates are presented in Table 4.

## **Trip Distribution and Trip Assignment**

The trip distribution pattern for the project was developed based on existing travel patterns on the surrounding roadway system and the locations of complementary land uses. The peak-hour vehicle trips generated by the project were assigned to the roadway network in accordance with the trip distribution pattern, with an emphasis on freeway access and project driveway location. Figure 13 shows the trip distribution pattern, and Figure 14 shows the trip assignment of project traffic on the local transportation network.

## **Intersection Operations Methodology**

This section presents the methods used to evaluate traffic operations at the study intersections. It includes descriptions of the data requirements, the analysis methodologies, the applicable level of service standards, and the criteria defining adverse effects at the study intersections.

The intersection operations analysis is intended to quantify the operations of intersections and to identify potential negative effects due to the addition of project traffic. However, a potential adverse effect on a study intersection is not considered a CEQA impact metric.

## **Study Intersections**

The study includes an analysis of AM and PM peak-hour traffic conditions for two signalized intersections within the City of San Jose. Intersections were selected for study if the project is expected to add 10 vehicle trips per hour per lane to a signalized intersection that meets one of the following criteria as outlined in the *Transportation Analysis Handbook*.

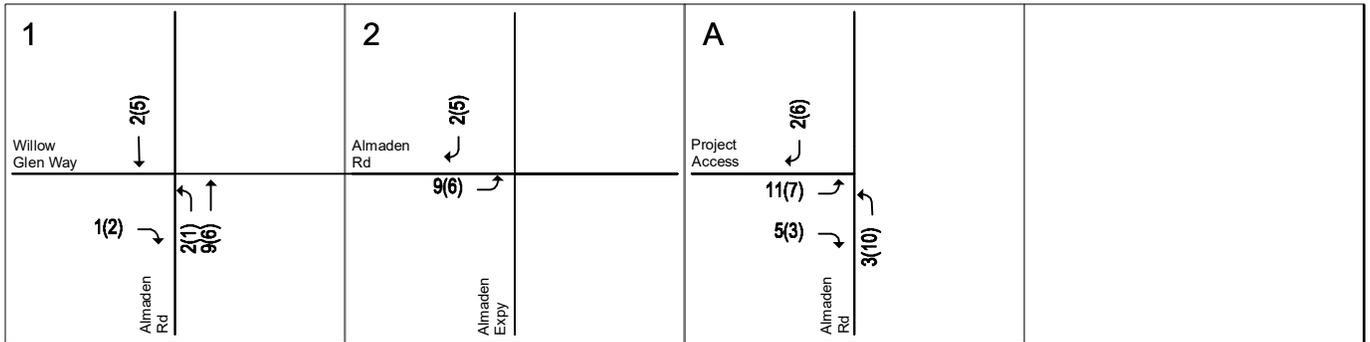
**Table 4  
Project Trip Generation Estimates**

Land Use	ITE Land Use Code	Location	% of Vehicle Mode Share	VMT <sup>3</sup>		% Reduction	Size	Daily		AM Peak Hour			PM Peak Hour								
				Existing	Project			Rate	Trip	Pk-Hr Rate	Split In	Split Out	Trip In	Trip Out	Trip Total	Pk-Hr Rate	Split In	Split Out	Trip In	Trip Out	Trip Total
<b>Proposed Land Uses</b>																					
Multifamily Housing (Mid-Rise) <sup>1</sup>	221						64 Dwelling Units	5.44	348	0.360	26%	74%	6	17	23	0.44	61%	39%	18	11	29
- Location Based Reduction <sup>2</sup>		Suburb with	88%			12%			-42				-1	-2	-3				-2	-1	-3
- VMT Reduction <sup>3</sup>		Multifamily Housing		10.25	9.98	3%			-8				0	0	0				0	0	0
<b>Net Project Trips</b>								<b>298</b>					<b>5</b>			<b>15</b>			<b>20</b>		
													<b>16</b>			<b>10</b>			<b>26</b>		
Notes:																					
<sup>1</sup> Source: ITE <i>Trip Generation Manual</i> , 10th Edition 2017, average trip generation rates.																					
<sup>2</sup> The project site is located within an suburb with multifamily housing based on the City of San Jose VMT Evaluation Tool (February 29, 2019). The location-based vehicle mode shares are obtained from Table 6 of the City of San Jose Transportation Analysis Handbook (April 2018). The trip reductions are based on the percent of mode share for all of the other modes of travel besides vehicle.																					
<sup>3</sup> VMT per capita for residential use. Existing and project VMTs were estimated using the City of San Jose VMT Evaluation Tool. It is assumed that every percent reduction in VMT per-capita is equivalent to one percent reduction in peak-hour vehicle trips.																					

**Figure 13**  
**Project Trip Distribution**



**Figure 14  
Project Trip Assignment**



**LEGEND:**

XX(XX) = AM(PM) Peak-Hour Traffic Volumes

- Within a ½-mile buffer from the project's property line;
- Outside a ½-mile buffer but within a one-mile buffer from the project AND currently operating at D or worse;
- Designated Congestion Management Program (CMP) facility outside of the City's Infill Opportunity Zones;
- Outside the City limits with the potential to be affected by the project, per the transportation standards of the corresponding external jurisdiction;
- With the potential to be affected by the project, per engineering judgement of Public Works.

Based on the above criteria, the following City of San Jose study intersections were selected and are shown in Figure 13.

1. Almaden Road and Willow Glen Way
2. Almaden Expressway and Almaden Road

### **Data Requirements**

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

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

### **Lane Configurations**

The existing lane configurations at the study intersections were determined by observations in the field and are shown on Figure 17. It is assumed in this analysis that the transportation network under background and background plus project conditions would be the same as the existing transportation network.

### **Traffic Volumes**

#### **Existing Conditions**

Existing peak hour traffic volumes at the study intersections were obtained from new traffic counts conducted on September 5, 2019. The existing peak-hour intersection volumes are shown on Figure 15. Intersection turning-movement counts conducted for this analysis are presented in Appendix B. Peak hour intersection turning movement volumes for all intersections and study scenarios are tabulated in Appendix D.

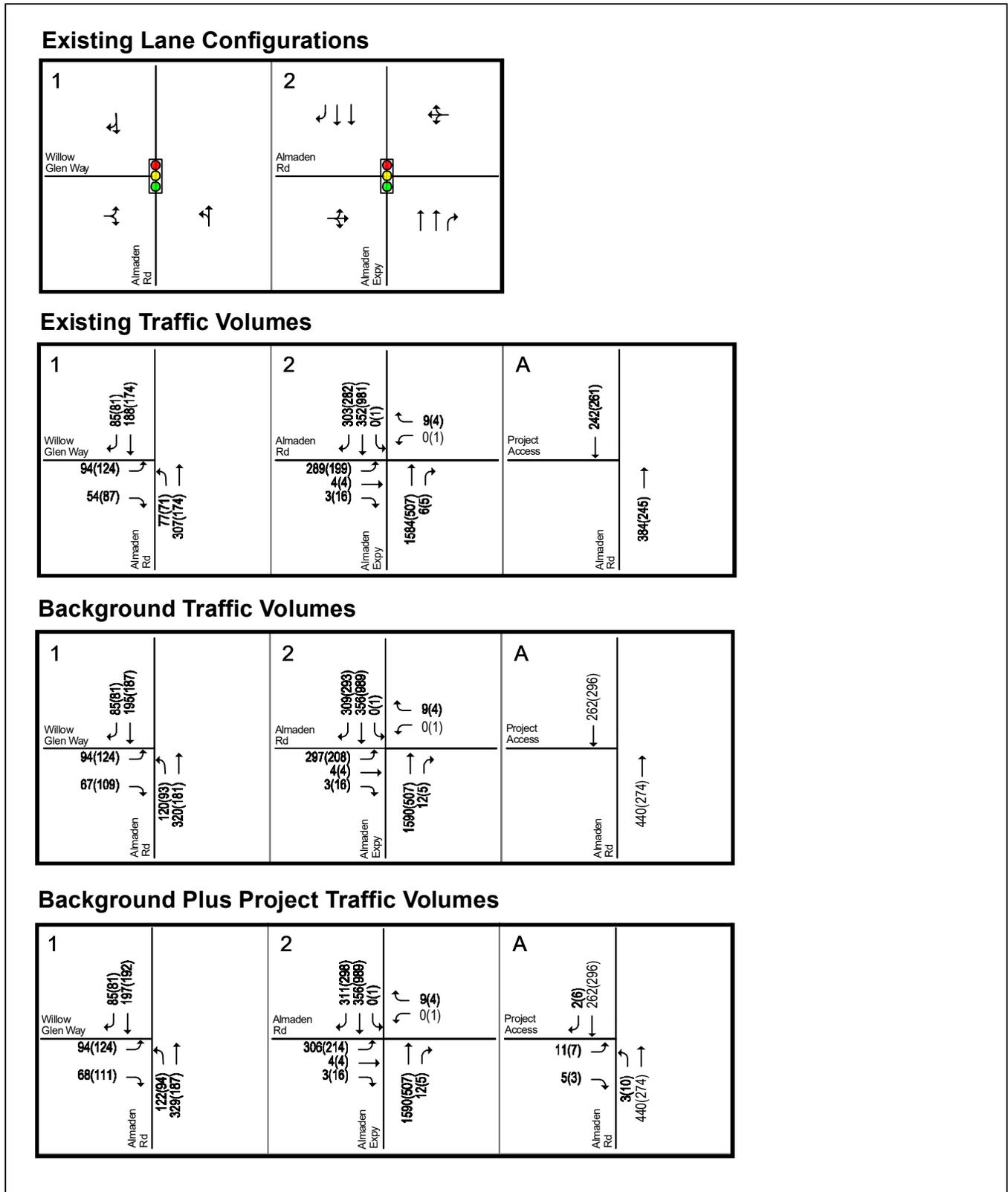
#### **Future Conditions**

Background peak hour traffic volumes were estimated by adding to existing volumes the estimated traffic from approved but not yet constructed developments. The added traffic from approved but not yet constructed developments was obtained from the City of San Jose's Approved Trips Inventory (ATI) database.

Background traffic volumes are shown in Figure 15. Project trips were added to background traffic volumes to obtain background plus project traffic volumes, also shown on Figure 15.

The approved project information is included in Appendix C. The approved trips, proposed project trips, and traffic volumes for all components of traffic are tabulated in Appendix D.

**Figure 15**  
**Existing Lane Configurations and Traffic Volumes for All Study Scenarios**



## Level of Service Standards and Analysis Methodologies

### Signalized Intersections

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.

All signalized study intersections were evaluated based on the *2000 Highway Capacity Manual* (HCM) level of service methodology using the TRAFFIX software. This method evaluates signalized intersection operations on the basis of average control delay time for all vehicles at the intersection. TRAFFIX is also the CMP-designated intersection level of service methodology, thus, the City of San Jose employs the CMP default values for the analysis parameters. The correlation between average control delay and level of service at signalized intersections is shown in Table 5.

Signalized study intersections are subject to the City of San Jose level of service standards. The City of San Jose has established LOS D as the minimum acceptable intersection operations standard for all signalized intersections unless superseded by an Area Development Policy.

### **City of San Jose Definition of Adverse Intersection Operations Effects**

According to the City of San Jose's *Transportation Analysis Handbook 2018*, an adverse effect on intersection operations occurs if for either peak hour:

3. 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
4. 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 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 are negative. In this case, the threshold is when the project increases the critical v/c value by 0.01 or more.

### Improvement Measures

An adverse intersection operations effect by City of San Jose standards may be addressed by implementing measures that would restore intersection level of service to background conditions or better. The City recommends prioritizing improvements related to alternative transportation modes, parking measures, and/or TDM measures. Improvements that increase vehicle capacity are secondary and must not have unacceptable effects on existing or planned transportation facilities. Unacceptable effects on existing or planned transportation facilities include the following:

- Inconsistent with the General Plan Transportation Network and Street Typologies;
- Reduction of any physical dimension of a transportation facility below the minimum design standards per the *San José Complete Streets Design Standards and Guidelines*; OR
- Substantial deterioration in the quality of existing or planned transportation facilities, including pedestrian, bicycle, and transit systems and facilities, as determined by the Director of Transportation.

**Table 5**  
**Signalized Intersection Level of Service Definitions Based on 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 most drivers occurring due to oversaturation, poor progression, or very long cycle lengths.	Greater than 80.0

Sources: Transportation Research Board, *2000 Highway Capacity Manual. Traffic Level of Service Analysis Guidelines*, Santa Clara County Transportation Authority Congestion Management Program, June 2003.

## Intersection Operations Analysis Results

The intersection level of service analysis is summarized in Table 6.

### Existing Intersection Operation Conditions

Intersection levels of service were evaluated against applicable City of San Jose operations standards. The results of the level of service analysis show both signalized study intersections currently operate at an acceptable LOS C or better during both the AM and PM peak hours, based on the City of San Jose intersection operations standard of LOS D. The level of service calculation sheets are included in Appendix E.

### Future Intersection Operation Conditions

The operations analysis shows that both signalized study intersections would continue to operate at an acceptable LOS C or better during both the AM and PM peak hours, based on the City of San Jose intersection operations standard of LOS D. The level of service calculation sheets are included in Appendix E.

**Table 6**  
**Intersection Level of Service Results**

Int. #	Intersection	LOS Standard	Peak Hour	Count Date	Existing		Background		Background Plus Project			
					Avg. Delay	LOS	Avg. Delay	LOS	Avg. Delay	LOS	Incr. In Crit. Delay	Incr. In Crit. V/C
1	Almaden Road and Willow Glen Way	D	AM	09/05/19	8.4	A	8.6	A	8.5	A	0.0	0.007
			PM	09/05/19	11.3	B	11.7	B	11.7	B	0.0	0.006
2	Almaden Expressway and Almaden Road	D	AM	09/05/19	20.7	C	21.0	C	21.5	C	0.5	0.005
			PM	09/05/19	17.1	B	17.5	B	17.8	B	0.3	0.004

Bold indicates unacceptable level of service.  
 Bold and boxed indicate adverse operations effect.

### Intersection Queuing Analysis

The analysis of intersection level of service operations was supplemented with a vehicle queuing analysis at intersections where the project would add a substantial 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

n = number of vehicles in the queue per lane

λ = 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 95<sup>th</sup> 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 95<sup>th</sup> 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 95<sup>th</sup> 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 95<sup>th</sup> percentile queue length would ensure that storage space would be exceeded only 5 percent of the time for a signalized movement. Queuing analysis was completed at the Almaden Expressway and Almaden Road intersection. The queuing analysis indicates that the existing turn pocket storage capacities will be adequate. The intersection queuing analysis is presented in Table 7.

### Site Access and On-Site Circulation

The evaluation of site access and circulation is based on the February 24, 2020 site plan prepared by Mayberry Workshop. Site access was evaluated to determine the adequacy of the site’s access point with regard to the following: traffic volume, delays, vehicle queues, geometric design, and corner sight distance. On-site vehicular circulation was reviewed in accordance with generally accepted traffic engineering standards and transportation planning principles. The site plan is shown on Figure 2.

### Project Driveway Design

Vehicular access to the project site will be provided via a full-access driveway on Almaden Road along the east project frontage, approximately 400 feet south of Willow Glen Way. The driveway is shown to be 26 feet wide and will meet the City’s minimum driveway width for residential two-way driveways.

**Table 7**  
**Queuing Analysis Summary**

Measurement	Almaden Expy/ Almaden Rd	
	EBL/T/R	EBL/T/R
	AM	PM
<b>Existing Conditions</b>		
Cycle/Delay <sup>1</sup> (sec)	128	122
Lanes	1	1
Volume (vph)	296	219
Volume (vphpl )	296	219
Avg. Queue (veh./ln.)	11	7
Avg. Queue <sup>2</sup> (ft./ln)	263	186
95th % . Queue (veh./ln.)	16	12
95th % . Queue (ft./ln)	400	300
Storage (ft./ ln.)	475	475
Adequate (Y/N)	YES	YES
<b>Background Conditions</b>		
Cycle/Delay <sup>1</sup> (sec)	128	122
Lanes	1	1
Volume (vph)	304	228
Volume (vphpl )	304	228
Avg. Queue (veh./ln.)	11	8
Avg. Queue <sup>2</sup> (ft./ln)	270	193
95th % . Queue (veh./ln.)	16	13
95th % . Queue (ft./ln)	400	325
Storage (ft./ ln.)	475	475
Adequate (Y/N)	YES	YES
<b>Background Plus Project Conditions</b>		
Cycle/Delay <sup>1</sup> (sec)	128	122
Lanes	1	1
Volume (vph)	313	234
Volume (vphpl )	313	234
Avg. Queue (veh./ln.)	11	8
Avg. Queue <sup>2</sup> (ft./ln)	278	198
95th % . Queue (veh./ln.)	17	13
95th % . Queue (ft./ln)	425	325
Storage (ft./ ln.)	475	475
Adequate (Y/N)	YES	YES
<sup>1</sup> Vehicle queue calculations based on cycle length for signalized intersections and control delay for unsignalized intersections. <sup>2</sup> Assumes 25 feet per vehicle in the queue. NB = Northbound, SB = Southbound, EB = Eastbound, WB = Westbound, R = Right, T = Through, L = Left.		

## **Sight Distance**

Adequate sight distance will be required at the project driveway along Almaden Road. The project access point 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 other vehicles traveling on Almaden Road. Any landscaping and signage should be located in such a way to ensure an unobstructed view for drivers exiting the site.

Adequate sight distance (sight distance triangles) should be provided at the project driveway in accordance with the *American Association of State Highway Transportation Officials (AASHTO)* standards. Sight distance triangles should be measured approximately 10 feet back from the traveled way. 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 and locate sufficient gaps in traffic. The minimum acceptable sight distance is often considered the AASHTO stopping sight distance. Sight distance requirements vary depending on the roadway speeds. Almaden Road has a posted speed limit of 35 miles per hour (mph). The AASHTO stopping sight distance for a facility with a posted speed limit of 35 mph is 250 feet. Thus, a driver exiting the proposed project driveway on Almaden Road must be able to see 250 feet to the north and south along Almaden Road in order to stop and avoid a collision.

Based on the project site plan and observations in the field, vehicles exiting the project site driveway on Almaden Road would be able to see approaching traffic on southbound Almaden Road, at least to Willow Glen Way located approximately 400 feet to the north and approaching traffic on northbound Almaden Road for at least 250 feet to the south. Therefore, it can be concluded that sight distance at the project driveway on Almaden Road would meet the AASHTO minimum stopping sight distance standards.

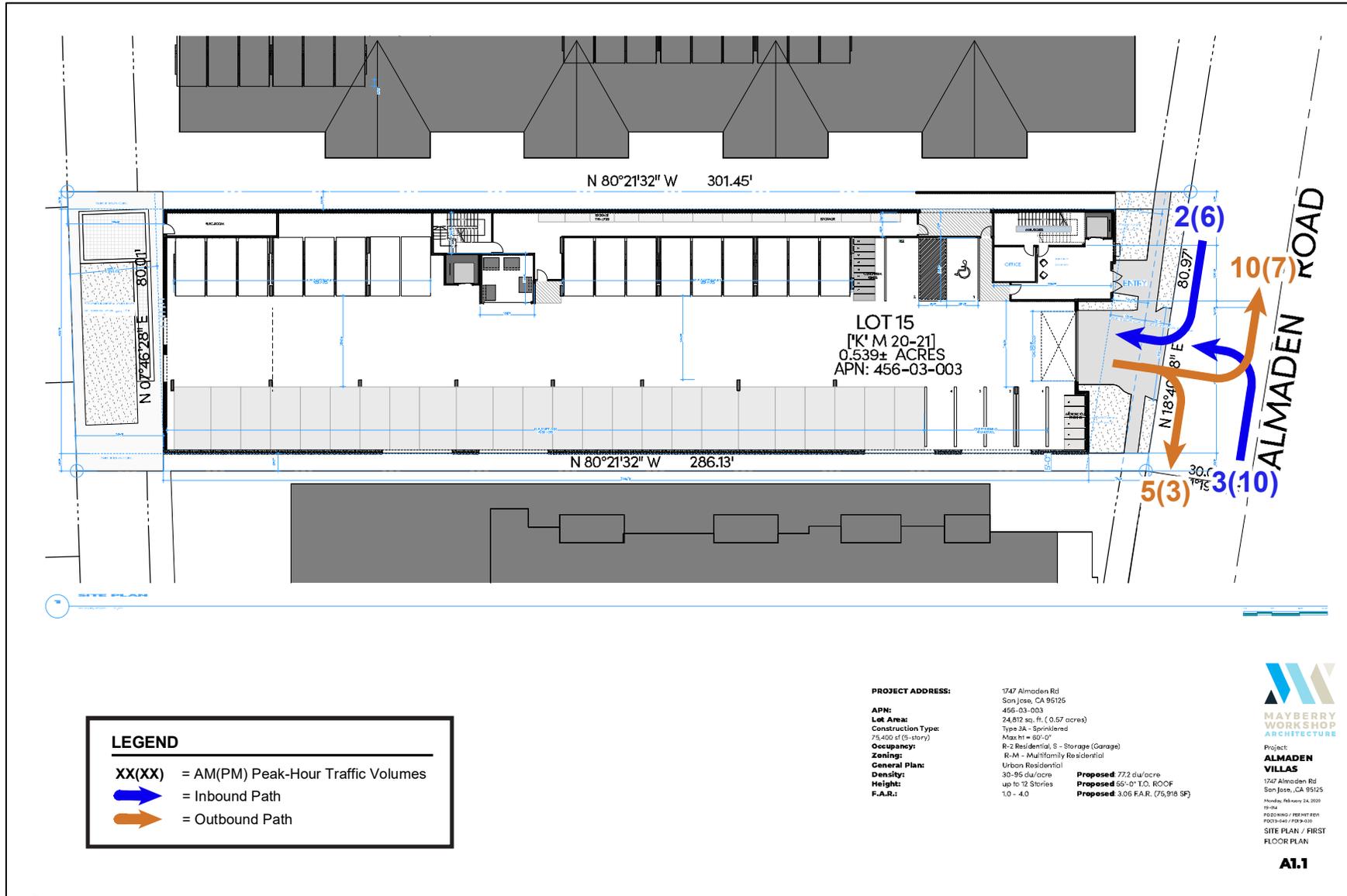
## **Project Driveway Operations**

Based on the project trip generation and trip assignment, it is estimated that a maximum of 16 inbound trips (during the PM peak hour) and 15 outbound trips (during the AM peak hour) would enter and exit the site at the primary access driveway. The estimated project trips at the project site driveway is shown on Figure 16.

The entrance to the on-site parking garage will be located approximately 25 feet west of Almaden Road. Based on the site plan, a gate will be located at the garage entrance. Given an average arrival rate of only one vehicle per five minutes throughout the PM peak-hour, no significant inbound queueing is expected at the gate. The City typically requires parking structure entrances to be located at least 50 feet from the face of the curb in order to provide adequate stacking space for at least two inbound vehicles. It is recommended that the gate be located a minimum of one car length back from the sidewalk (within the parking garage) to provide stacking space for one entering vehicle without blocking the sidewalk on Almaden Road.

As shown on Figure 16, a maximum of 10 inbound trips will enter the project driveway from northbound Almaden Road during the PM peak-hour, which equates to approximately one left-turning vehicle every six minutes. The left-turn movement will conflict with southbound traffic along Almaden Road, estimated to be approximately 296 vehicles during the PM peak-hour. With the low number of left-turning inbound vehicles and conflicting volume, the project is not expected to create significant queueing along northbound Almaden Road. The installation of a median lane on Almaden Road along the project frontage would not be feasible due to right-of-way constraints. It should also be noted that proposed improvements by the City on Almaden Road (discussed below) do not include the addition of a median lane along the project frontage.

**Figure 16**  
**Project Trips at Site Driveway**



## **On-Site Circulation**

On-site vehicular circulation was reviewed in accordance with the City of San Jose Zoning Code and generally accepted traffic engineering standards.

The entrance gate is shown to be 20 feet wide. The single drive aisle within the parking garage is shown to be 24 feet wide between the garage entrance and approximately 190 feet west of the entrance, while the remaining 75 feet of drive aisle space is shown to be 26 feet wide. The entrance gate and entire drive aisle will need to meet the City's minimum 26-foot wide requirement for two-way drive aisles. The project would provide 90-degree parking stalls with double-stacked parking lifts, shown in Figure 18. Based on information provided by the applicant, the mechanical lift of the proposed parking lift system (Klaus G61) will operate only within the footprint of the parking space and will not pull-out onto the drive aisle. Therefore, the proposed 26-foot wide drive aisle should provide adequate space to pull-into and back-out of the parking spaces. It should be noted, however, that this double-stacked parking system requires the lower level to be unoccupied before accessing or retrieving a vehicle on the upper level. The developer should coordinate with the City to determine if additional measures are necessary for the operation of parking lifts.

The single drive aisle terminates as a dead-end. Dead-ends are undesirable because vehicles must park at a parking space or perform a U-turn to exit the parking structure. Implementation of assigned parking would eliminate the need for residents to circulate the garage for available parking spaces and the dead-end aisle would not be problematic. However, accessing or retrieving vehicles parked at the parking spaces closest to the dead-end would be difficult due to limited turn-around space. The site plan should be adjusted to provide adequate turn-around space for vehicles at the end of the drive aisle. This adjustment will require the removal or relocation of planned parking spaces.

### **Bike and Pedestrian On-Site Circulation**

The project site plan shows access to the residential lobby from a new sidewalk along the east project frontage on Almaden Road. The sidewalk is proposed to be seven feet wide.

Bicycle parking would be provided within the parking level. Based on the site plan, short-term and long-term bicycle spaces would be located along the north side of the parking level with access provided via the residential lobby and a walkway located along the north side of the parking level.

### **Truck and Emergency Vehicle Access**

The project does not propose any fire access roads on-site. The vertical clearance of the ground-floor level is 15 feet, however the clearance at the entrance may be lower at the entrance gate. Therefore, emergency vehicles would have access to only the east project frontage along Almaden Road and would not meet the Fire Department requirement that access to all sides of the proposed building be provided by an emergency access road. The project applicant will need to work with the Fire Department to mitigate its non-conformance with the access requirement.

The site plan does not indicate the location of a trash enclosure. However, the trash enclosure will likely be located within the parking level or at the rear garden area along the west project frontage. Regardless of the trash enclosure location, trash bins will need to be wheeled out to Almaden Road for garbage truck pickup since trucks will not enter the garage.

The applicant should coordinate with the City to determine if on-street freight loading zones could be implemented along the project frontage on Almaden Road to accommodate delivery trucks. The implementation of a loading zone on Almaden Road will be evaluated at the implementation phase.

## Parking Supply

### Vehicular Parking

The City of San Jose Zoning Code (Section 20.90.060) indicates that the required parking spaces for multi-family residential units is dependent on the living unit size. The parking requirements that would apply to the project are as follows:

- 1.25 spaces per one-bedroom unit
- 1.7 spaces per two-bedroom unit
- 2.0 spaces per three-bedroom unit

The California State Housing Density Bonuses and Incentives Law allows for lower parking requirement rates for residential developments that provide affordable housing units. The State mandate requires no more than one parking space for studio and one-bedroom units. Standard City parking requirement rates do not exceed the state parking requirement rates for two- and three-bedroom units

Per State law and the City's standard parking requirements, the project would be required to provide 86 off-street parking spaces for the proposed 64 residential units, as shown on Table 8. The project is proposing to provide a total of 87 parking spaces on-site, which would exceed the minimum on-site parking requirement.

**Table 8**  
**Vehicle Parking Requirement**

Proposed Project		Parking Requirements <sup>1 2</sup>		Required
Unit Mix	Count	Land Use	Parking Ratio	Parking
1-bedroom unit	35 units	Multiple dwelling residential	1.00 spaces per one-bedroom unit	35
2-bedroom unit	25 units	Multiple dwelling residential	1.70 spaces per two-bedroom unit	43
3-bedroom unit	4 units	Multiple dwelling residential	2.00 spaces per three-bedroom unit	8
<b>Total</b>	<b>64 units</b>			<b>86</b>

Notes:

<sup>1</sup>City of San Jose Zoning Ordinance (20.90.060, Table 20-210)

<sup>2</sup>The City of San Jose parking code requires 1.25 on-site parking spaces for one-bedroom residential units. Per the California State Housing Density Bonuses and Incentives Law, the City may not require the project to provide more than one on-site parking space for studio and one-bedroom residential units.

### Bicycle Parking

According to the City's Bicycle Parking Standards (Chapter 20.90, Table 20-210), the project is required to provide bicycle parking for the 64 residential units at a rate of one bicycle parking space per four residential units. Of the required residential bicycle parking, City standards require that at least 60 percent be secured long-term bicycle spaces and at most 40 percent be short-term bicycle spaces. Based on these requirements, the project is required to provide a total of 16 bicycle parking spaces consisting of six short-term parking spaces and 10 long-term parking spaces. The City's definition of short-term and long-term bicycle parking is described below.

#### City of San Jose Long-Term and Short-Term Bicycle Parking

Long-term bicycle parking facilities are secure bicycle storage facilities for tenants of a building that fully enclose and protect bicycles and may include:

- A covered, access-controlled enclosure such as a fenced and gated area with short-term bicycle parking facilities,
- An access-controlled room with short-term bicycle parking facilities, and
- Individual bicycle lockers that securely enclose one bicycle per locker.

Short-term bicycle parking facilities are accessible and usable by visitors, guests, or business patrons and may include:

- Permanently anchored bicycle racks,
- Covered, lockable enclosures with permanently anchored racks for bicycles,
- Lockable bicycle rooms with permanently anchored racks, and
- Lockable, permanently anchored bicycle lockers.

All proposed bicycle spaces will be located within the ground-floor level of the parking garage. The project proposes to provide nine long-term bicycle parking spaces. If the project provides at least seven short-term bicycle parking spaces, the proposed bicycle parking of the project will meet the City's Bicycle Parking Standards.

## Pedestrian, Bicycle, and Transit Analysis

All new development projects in San Jose should encourage multi-modal travel, consistent with the goals 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 all 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.

The Envision 2040 General Plan identifies goals and policies that are dedicated to the enhancement of the transportation infrastructure, including public transit and pedestrian/bike facilities. The Transportation Policies contained in the General Plan create incentives for non-auto modes of travel while reducing the use of single-occupant automobile travel as generally described below:

- Through the entitlement process for new development, fund needed transportation improvements for all transportation modes, giving first consideration to improvement of bicycling walking, and transit facilities.
- Give priority to the funding of multimodal projects to provide the most benefit to all users of the transportation system.
- Encourage the use of non-automobile travel modes to reduce vehicle miles traveled (VMT)
- Consider the impact on the overall transportation system when evaluating the impacts of new developments.
- Increase substantially the proportion of travel modes other than single-occupant vehicles.

The City's General Plan identifies both walk and bicycle commute mode split targets as 15 percent or more by the year 2040. This level of pedestrian and bicycle mode share is a reasonable goal for the project, particularly if bus services are utilized in combination with bicycle commuting.

### Bicycle Facilities

There are no existing bicycle facilities in the immediate area of the project site. However, there are bicycle facilities in the area surrounding the project site (see Chapter 2 for details).

The bikeways within the vicinity of the project site would remain unchanged under project conditions. There are currently no bike lanes along Almaden Road in the vicinity of the project site. However, the City is proposing to install a bike lane along Almaden Road, as described below.

As previously described, the City's General Plan identifies a bicycle commute mode split target of 15 percent or more by the year 2040. This calculates to approximately two and three new bicycle trips during the AM and PM peak hours, respectively. This level of bicycle mode share is a reasonable goal for the project.

### **Bicycle and Pedestrian Facility Improvements**

The Envision 2040 General Plan identifies the following goals in regard to bicycling and pedestrians:

- Provide a continuous pedestrian and bicycle system to enhance connectivity throughout the City by completing missing segments.
- Build pedestrian and bicycle improvements at the same time as improvements for vehicular circulation.

The planned improvements discussed below will provide the project site with viable connections to surrounding pedestrian/bike and transit facilities and provide for a balanced transportation system as outlined in the Envision 2040 General Plan goals and policies. However, the full implementation of the improvements are beyond the means of the proposed project given that they may require right-of-way from adjacent properties. The project could be required to make a fair-share contribution towards the cost of the improvements since the identified improvements would be of benefit to the project.

The San Jose Bike Plan 2020 indicates that a variety of bicycle facilities are planned in the study area, some of which would benefit the project and adhere to the goals of the Envision 2040 General Plan. Of the planned facilities, the following are relevant to the project.

- Class II bike lanes along Almaden Road, along its entire extent
- Class I bike trail extension of the Guadalupe River Trail between Willow Street to South San Jose

The City is proposing improvements to Almaden Road that would include the installation of buffered bike lanes along both sides of the roadway (see Figure 17). Due to right-of-way limitations, Class II bike lanes cannot be installed at some segments of Almaden Road; these segments will feature pavement markings indicating a Class III shared bike lane. Along the project frontage, buffered bike lanes are proposed along both sides of the roadway. No curb ramp improvements or additional new sidewalks are proposed with the City's proposed pavement improvements.

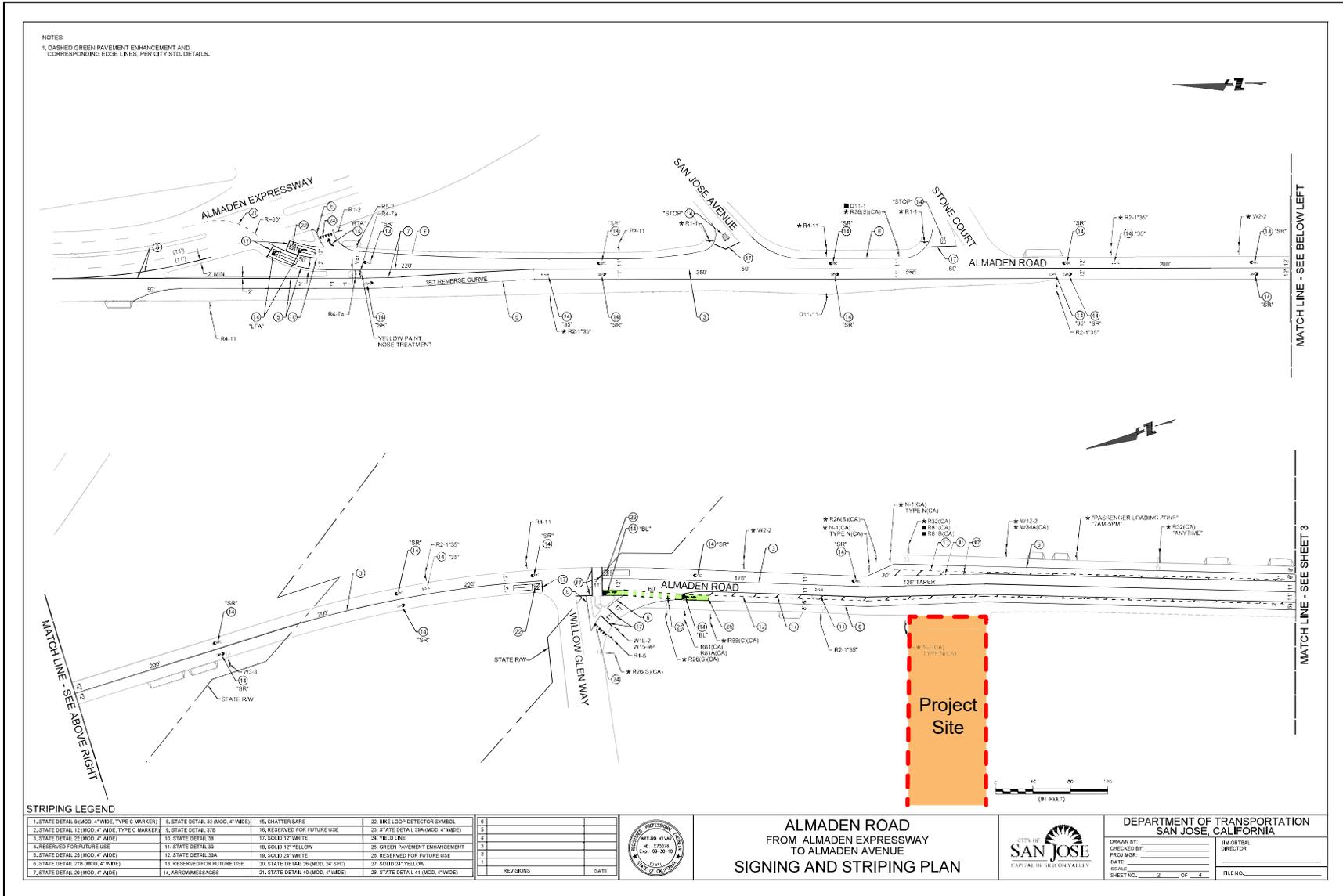
Additionally, the Guadalupe River Trail is proposed to be extended from its current terminus at Willow Street south to Chynoweth Avenue. The preferred alignment of the trail extension, as described in the trail's Master Plan (Virginia Street to Chynoweth Avenue; September 14, 2018) generally follows the east bank of the Guadalupe River. In the project vicinity, access to the trail would be provided via trailheads at Almaden Road, approximately 800 feet south of the project site, and at Willow Glen Way, approximately 900 feet west of Almaden Road. The extension would provide a direct route for bicycle-users and pedestrians from the project site to Tamien station and Downtown San Jose.

### **Pedestrian Facilities**

Pedestrian facilities in the study area consist of sidewalks, crosswalks, and pedestrian signals at signalized intersections (see Chapter 2 for details).

However, the network of pedestrian facilities is discontinuous in the general vicinity of the project site.

**Figure 17**  
**Proposed Almaden Road Improvements**



Curb ramps at the northwest and southwest corners of the Almaden Road and Malone Road intersection (located less than ½-mile from the project site) are not ADA-compatible. Additionally, there are currently no sidewalks available along the following roadway segments:

- West side of Almaden Road, between the north project boundary and Malone Road (including along the east project frontage)
- East side of Almaden Road, between Willow Glen Way and 250 feet south of Willow Glen Way
- East side of Almaden Road, between New Street and 250 feet north of New Street
- Both sides of Almaden Road, between Stone Court and Almaden Expressway
- Southeast corner of the Guadalupe Avenue/Willow Glen Way intersection (frontage of Willow Glen Way Market)

Pedestrian generators in the project vicinity include commercial areas and transit stops along Curtner Avenue, Alma Avenue, Tamien Station and Curtner Station. Access to Galarza Elementary School would be provided along Willow Glen Way. As shown on Figure 7, however, a 135-foot portion of sidewalk (and ADA-compatible ramp) is missing along the south side of Willow Glen Way, east of Guadalupe Avenue and along the north frontage of Willow Glen Way Market. In addition, some of the ramps along cross streets of Willow Glen Way (including Creek Drive and Arbor Drive) are not ADA compatible. It should also be noted that a crosswalk is not provided along the west leg of the Almaden Road/Willow Glen Way intersection. Therefore, the north-south crosswalk at the Cross Way/Willow Glen Way intersection provides the only means of accessing the north side of Willow Glen Way from the project site.

Willow Glen Middle School and Willow Glen High School are located along the Cottle Avenue, approximately 1.5 miles from the project site. Access to these schools via the shortest route along Almaden Road, south of the project, is limited due to missing sidewalks along portions of both sides of Almaden Road between the project site and Malone Road.

Continuous pedestrian access to the Tamien LRT and Caltrain stations is not provided via Almaden Road due to missing sidewalks on both sides of Almaden Road between Stone Court and Almaden Expressway.

### **Pedestrian Facility Improvements**

The project may be required to make a fair-share contribution towards the construction of some of the missing sidewalk segments in the project vicinity. The construction of the currently missing sidewalk along northbound Almaden Road between Willow Glen Way and 250 feet south of Willow Glen Way would provide a generally continuous route between the project site and area south, including Malone Road. Walking distances to Willow Glen Middle School and Willow Glen High School also would be reduced.

The project should also contribute to the improvement of intersection curb ramps along Willow Glen Way at its intersections with Guadalupe Avenue, Creek Drive, and Arbor Drive. There are also curb ramp improvements needed at the Almaden Road/Malone Road intersection, located less than ½-mile from the project site.

### **Transit Services**

The nearest bus stops to the project site are located at the intersections of Bird Avenue/Minnesota Avenue (Local Route 56), Lincoln Avenue/Willow Glen Way (Local Route 64A), and Almaden Road/Curtner Avenue (Frequent Route 26).

The Tamien LRT and Caltrain stations are located between Lelong Street and Lick Avenue north of Alma Avenue. The Curtner LRT station is located south of Curtner Avenue, east of Canoas Garden Avenue,

approximately 1.2 miles south of the project site. The LRT and Caltrain services provide access to the Diridon Transit Center, located approximately two miles north of the project site at Cahill Street. Connections between local and regional bus routes, light rail lines, and commuter rail lines are provided within the Diridon Transit Center.

Connections between local and regional bus routes, light rail lines, and commuter rail lines are provided within the Diridon Transit Center (see Chapter 2 for details). The new transit trips generated by the project are not expected to create demand in excess of the transit service that is currently provided.

## 5. Conclusions

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The transportation analysis of the project was evaluated following the standards and methodologies set forth in the City of San Jose's *Transportation Analysis Handbook 2018*, the Santa Clara Valley Transportation Authority (VTA) Congestion Management Program's *Transportation Impact Guidelines* (October 2014), and by the California Environmental Quality Act (CEQA). Based on the City of San Jose's Transportation Policy and *Transportation Analysis Handbook 2018*, the TA report for the project consists of a CEQA vehicle-miles-traveled (VMT) analysis and a supplemental Local Transportation Analysis (LTA).

### CEQA VMT Analysis

#### CEQA Transportation Analysis Exemption Criteria

The project site is not located within a Planned Growth Area, per the City's General Plan. Therefore, the proposed residential project would not meet the VMT screening criteria and a detailed CEQA transportation analysis that evaluates the project's effects on VMT is required.

#### Project-Level VMT Impact Analysis

The results of the VMT evaluation, using the City's VMT Evaluation Tool, indicate that the proposed project is projected to generate VMT per capita (9.98) which is less than the existing VMT per capita in the project area and below the established VMT impact threshold.

#### Cumulative (GP Consistency) Evaluation

Projects 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 determined to be inconsistent with the General Plan, a cumulative impact analysis is required per the City's *Transportation Analysis Handbook*.

The project is consistent with the General Plan goals and policies because it is in close proximity to the Tamien LRT and Caltrain station that is located within one mile from the project site between Lelong Street and Lick Avenue, north of Alma Avenue. The Caltrain and LRT lines provide access to the Diridon Transit Center, located approximately two miles north of the project site. Connections between local and regional bus routes, light rail lines, and commuter rail lines are provided within the Diridon Transit Center.

Therefore, based on the project description, the proposed project would be consistent with the *Envision*

*San José 2040 General Plan*. Thus, the project would be considered as part of the cumulative solution to meet the General Plan's long-range transportation goals and would result in a less-than-significant cumulative impact.

## Local Transportation Analysis

### Future Intersection Operation Conditions

The operations analysis shows that all signalized study intersections would continue to operate at an acceptable LOS C or better during both the AM and PM peak hours, under background conditions, and background plus project conditions.

### Site Access and On-Site Circulation

Site access was evaluated to determine the adequacy of the site's access points with regard to the following: traffic volume, delays, vehicle queues, geometric design, and corner sight distance. On-site vehicular circulation was reviewed in accordance with generally accepted traffic engineering standards and transportation planning principles.

#### **Recommended Site Access and On-Site Circulation Improvements**

Provide a 26-foot Wide Drive Aisle. The entrance gate and entire drive aisle will need to meet the City's minimum 26-foot wide requirement for two-way drive aisles.

Provide Turn-Around Space. The site plan should be adjusted to provide adequate turn-around space for vehicles at the end of the drive aisle. This adjustment will require the removal or relocation of planned parking spaces.

Emergency Vehicle Access. The project site design would not meet the Fire Department requirement that access to all sides of the proposed building be provided by an emergency access road. The project applicant will need to work with the Fire Department to mitigate its non-conformance with the access requirement.

Freight Loading Zone. The implementation of a loading zone on Almaden Road will be evaluated at the implementation phase.

### Parking Supply

#### **Vehicular Parking**

Per State law and the City's standard parking requirements, the project would be required to provide 86 off-street parking spaces for the proposed 64 residential units. The project is proposing to provide a total of 87 parking spaces on-site, which would exceed the minimum on-site parking requirement.

#### **Bicycle Parking**

According to the City's Bicycle Parking Standards (Chapter 20.90, Table 20-210), the project is required to provide a total of 16 bicycle parking spaces consisting of four short-term parking spaces and seven long-term parking spaces. All proposed bicycle spaces will be located within the ground-floor level of the parking garage. The project proposes to provide nine long-term bicycle parking spaces. If the project provides at least seven short-term bicycle parking spaces, the proposed bicycle parking of the project will meet the City's Bicycle Parking Standards.

## **Pedestrian, Bicycle, and Transit Analysis**

### **Pedestrian Facilities**

The network of pedestrian facilities is discontinuous in the general vicinity of the project site. Curb ramps at the northwest and southwest corners of the Almaden Road and Malone Road intersection (located less than ½-mile from the project site) are not ADA-compatible. Additionally, there are currently no sidewalks available along the following roadway segments:

- West side of Almaden Road, between the north project boundary and Malone Road (including along the east project frontage)
- East side of Almaden Road, between Willow Glen Way and 250 feet south of Willow Glen Way
- East side of Almaden Road, between New Street and 250 feet north of New Street
- Both sides of Almaden Road, between Stone Court and Almaden Expressway
- Southeast corner of the Guadalupe Avenue/Willow Glen Way intersection (frontage of Willow Glen Way Market)

Pedestrian generators in the project vicinity include commercial areas and transit stops along Curtner Avenue, Alma Avenue, Tamien Station and Curtner Station. Access to Galarza Elementary School would be provided along Willow Glen Way. However, a 135-foot portion of sidewalk (and ADA-compatible ramp) is missing along the south side of Willow Glen Way, east of Guadalupe Avenue and along the north frontage of Willow Glen Way Market. In addition, some of the ramps along cross streets of Willow Glen Way (including Creek Drive and Arbor Drive) are not ADA compatible.

Willow Glen Middle School and Willow Glen High School are located along the Cottle Avenue, approximately 1.5 miles from the project site. Access to these schools via the shortest route along Almaden Road, south of the project, is limited due to missing sidewalks along portions of both sides of Almaden Road between the project site and Malone Road.

Continuous pedestrian access to the Tamien LRT and Caltrain stations is not provided via Almaden Road due to missing sidewalks on both sides of Almaden Road between Stone Court and Almaden Expressway.

### **Bicycle Facilities**

There are no existing bicycle facilities in the immediate area of the project site. However, there are bicycle facilities in the area surrounding the project site. The bikeways within the vicinity of the project site would remain unchanged under project conditions. There are currently no bike lanes along Almaden Road in the vicinity of the project site.

However, the San Jose Bike Plan 2020 indicates that a variety of bicycle facilities are planned in the study area, some of which would benefit the project and adhere to the goals of the Envision 2040 General Plan. Of the planned facilities, the following are relevant to the project.

- Class II bike lanes along Almaden Road, along its entire extent
- Class I bike trail extension of the Guadalupe River Trail between Willow Street to South San Jose

The City is currently proposing to install a bike lane along Almaden Road. Along the project frontage, buffered bike lanes are proposed along both sides of the roadway.

Additionally, the Guadalupe River Trail is proposed to be extended from its current terminus at Willow Street south to Chynoweth Avenue. In the project vicinity, access to the trail would be provided via

trailheads at Almaden Road, approximately 800 feet south of the project site, and at Willow Glen Way, approximately 900 feet west of Almaden Road. The extension would provide a direct route for bicycle-users and pedestrians from the project site to Tamien Station and Downtown San Jose.

### **Transit Services**

The nearest bus stops to the project site are located at the intersections of Bird Avenue/Minnesota Avenue (Local Route 56), Lincoln Avenue/Willow Glen Way (Local Route 64A), and Almaden Road/Curtner Avenue (Frequent Route 26).

The Tamien LRT and Caltrain Stations are located between Lelong Street and Lick Avenue north of Alma Avenue. The Curtner LRT station is located south of Curtner Avenue, east of Canoas Garden Avenue, approximately 1.2 miles south of the project site. The LRT and Caltrain services provide access to the Diridon Transit Center, located approximately two miles north of the project site at Cahill Street. Connections between local and regional bus routes, light rail lines, and commuter rail lines are provided within the Diridon Transit Center.

Connections between local and regional bus routes, light rail lines, and commuter rail lines are provided within the Diridon Transit Center. The new transit trips generated by the project are not expected to create demand in excess of the transit service that is currently provided.

**1747 Almaden Road Residential Development TA  
Technical Appendices**

March 18, 2020

**Appendix A**  
**San Jose VMT Evaluation Tool Output Sheet**

# CITY OF SAN JOSE VEHICLE MILES TRAVELED EVALUATION TOOL SUMMARY REPORT

## PROJECT:

Name: 1747 Almaden Road Condominiums Developmen	Tool Version: 2/29/2019	Date: 3/3/2020
Location: 1747 Almaden Road, San Jose, CA		
Parcel: 45603003      Parcel Type: Suburb with Multifamily Housing		
Proposed Parking Spaces      Vehicles: 0      Bicycles: 0		

## LAND USE:

Residential:	Percent of All Residential Units		
Single Family      0 DU	Extremely Low Income ( ≤ 30% MFI)	0 % Affordable	
Multi Family      64 DU	Very Low Income ( > 30% MFI, ≤ 50% MFI)	0 % Affordable	
Subtotal      64 DU	Low Income ( > 50% MFI, ≤ 80% MFI)	15 % Affordable	
Office:      0 KSF			
Retail:      0 KSF			
Industrial:      0 KSF			

## VMT REDUCTION STRATEGIES

### Tier 1 - Project Characteristics

Increase Residential Density	
Existing Density (DU/Residential Acres in half-mile buffer) . . . . .	10
With Project Density (DU/Residential Acres in half-mile buffer) . . . . .	10
Increase Development Diversity	
Existing Activity Mix Index . . . . .	0.59
With Project Activity Mix Index . . . . .	0.58
Integrate Affordable and Below Market Rate	
Extremely Low Income BMR units . . . . .	0 %
Very Low Income BMR units . . . . .	0 %
Low Income BMR units . . . . .	15 %
Increase Employment Density	
Existing Density (Jobs/Commercial Acres in half-mile buffer) . . . . .	11
With Project Density (Jobs/Commercial Acres in half-mile buffer) . . . . .	11

### Tier 2 - Multimodal Infrastructure

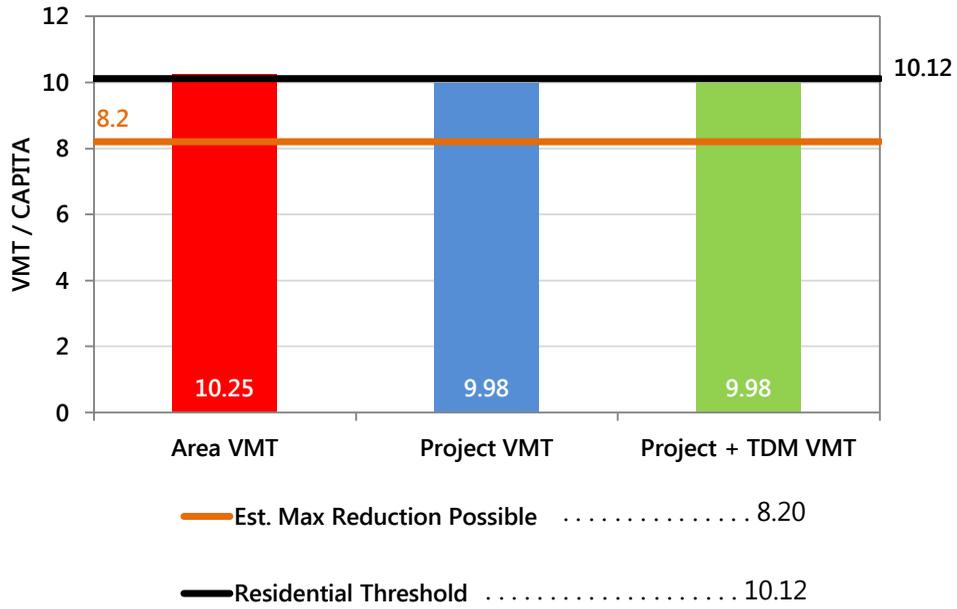
### Tier 3 - Parking

### Tier 4 - TDM Programs

# CITY OF SAN JOSE VEHICLE MILES TRAVELED EVALUATION TOOL SUMMARY REPORT

## RESIDENTIAL ONLY

The tool estimates that the project would generate per capita VMT below the City's threshold.



## **Appendix B**

### **Traffic Counts**



(303) 216-2439  
www.alltrafficdata.net

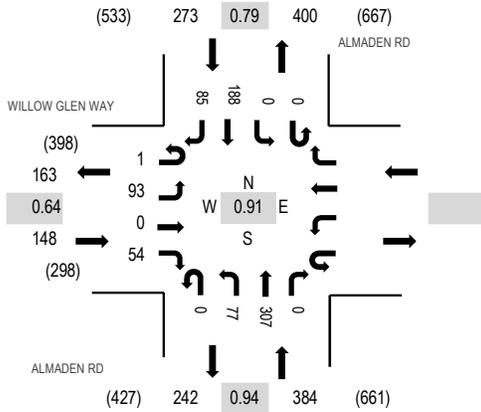
Location: 1 ALMADEN RD & WILLOW GLEN WAY AM

Date: Thursday, September 5, 2019

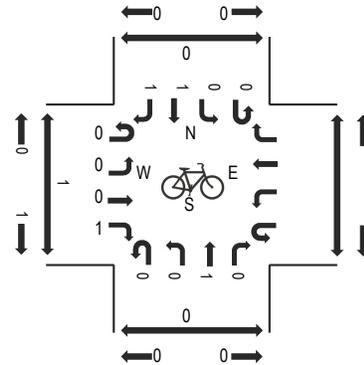
Peak Hour: 07:15 AM - 08:15 AM

Peak 15-Minutes: 07:15 AM - 07:30 AM

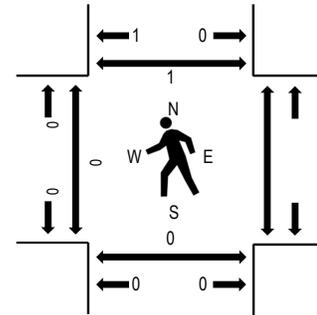
### Peak Hour - Motorized Vehicles



### Peak Hour - Bicycles



### Peak Hour - Pedestrians



Note: Total study counts contained in parentheses.

### Traffic Counts - Motorized Vehicles

Interval Start Time	WILLOW GLEN WAY Eastbound				Westbound			ALMADEN RD Northbound				ALMADEN RD Southbound				Total	Rolling Hour	Pedestrian Crossings			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru			Right	West	East	South
7:00 AM	0	9	0	5					0	18	42	0	0	0	66	14	154	789	0	2	0
7:15 AM	1	18	0	12					0	10	78	0	0	0	78	23	220	805	0	0	0
7:30 AM	0	28	0	12					0	27	70	0	0	0	47	29	213	709	0	0	0
7:45 AM	0	24	0	17					0	17	80	0	0	0	40	24	202	676	0	0	0
8:00 AM	0	23	0	13					0	23	79	0	0	0	23	9	170	703	0	0	1
8:15 AM	0	15	0	8					0	18	43	0	0	0	20	20	124		0	0	0
8:30 AM	0	28	0	18					0	32	52	0	0	0	19	31	180		0	0	0
8:45 AM	0	35	0	32					0	29	43	0	0	0	17	73	229		0	0	0

### Peak Rolling Hour Flow Rates

Vehicle Type	Eastbound				Westbound				Northbound				Southbound				Total				
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right					
Articulated Trucks	0	0	0	0					0	0	0	0	0	0	0	0	0				
Lights	1	90	0	51					0	76	299	0	0	0	182	82	781				
Mediums	0	3	0	3					0	1	8	0	0	0	6	3	24				
Total	1	93	0	54					0	77	307	0	0	0	188	85	805				





(303) 216-2439  
www.alltrafficdata.net

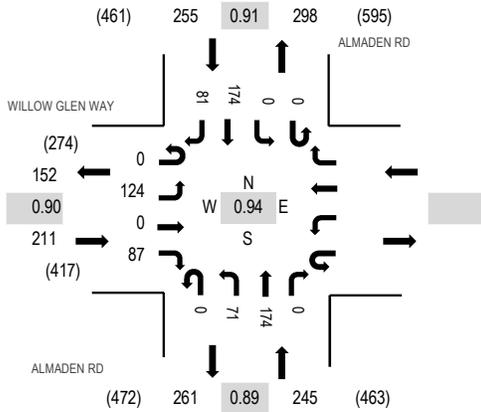
Location: 1 ALMADEN RD & WILLOW GLEN WAY PM

Date: Thursday, September 5, 2019

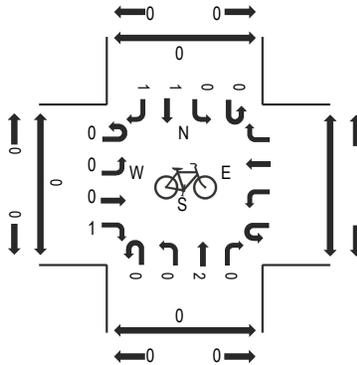
Peak Hour: 05:00 PM - 06:00 PM

Peak 15-Minutes: 05:30 PM - 05:45 PM

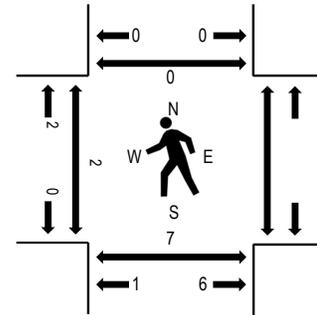
### Peak Hour - Motorized Vehicles



### Peak Hour - Bicycles



### Peak Hour - Pedestrians



Note: Total study counts contained in parentheses.

### Traffic Counts - Motorized Vehicles

Interval Start Time	WILLOW GLEN WAY				ALMADEN RD				ALMADEN RD				Total	Rolling Hour	Pedestrian Crossings			
	Eastbound		Westbound		Northbound		Southbound		Southbound		West	East			South	North		
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left							Thru	Right
4:00 PM	0	41	0	25	0	16	43	0	0	0	41	18	184	630	3	0	0	
4:15 PM	0	26	0	15	0	3	42	0	0	0	29	15	130	620	0	0	0	
4:30 PM	0	25	0	20	0	14	47	0	0	0	32	27	165	652	2	1	0	
4:45 PM	0	33	0	21	0	13	40	0	0	0	28	16	151	677	0	0	0	
5:00 PM	0	25	0	28	0	19	46	0	0	0	41	15	174	711	0	4	0	
5:15 PM	0	28	0	18	0	13	37	0	0	0	42	24	162		2	0	0	
5:30 PM	0	39	0	20	0	17	44	0	0	0	47	23	190		0	1	0	
5:45 PM	0	32	0	21	0	22	47	0	0	0	44	19	185		0	2	0	

### Peak Rolling Hour Flow Rates

Vehicle Type	Eastbound				Westbound				Northbound				Southbound				Total
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	
Articulated Trucks	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Lights	0	120	0	87	0	71	173	0	0	0	174	79	704				
Mediums	0	4	0	0	0	0	1	0	0	0	0	2	7				
Total	0	124	0	87	0	71	174	0	0	0	174	81	711				



(303) 216-2439  
www.alltrafficdata.net

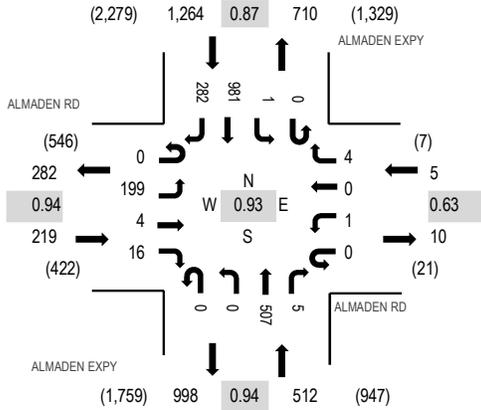
Location: 2 ALMADEN EXPY & ALMADEN RD PM

Date: Thursday, September 5, 2019

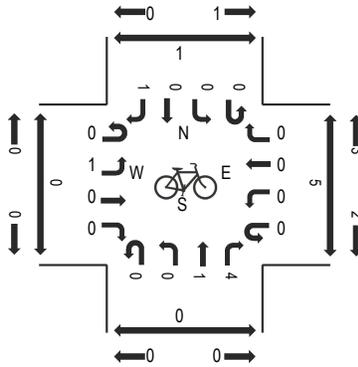
Peak Hour: 05:00 PM - 06:00 PM

Peak 15-Minutes: 05:15 PM - 05:30 PM

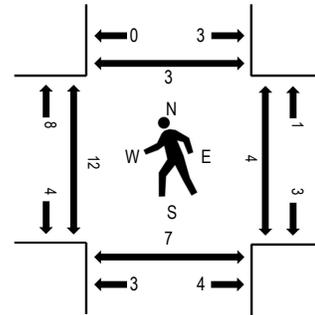
### Peak Hour - Motorized Vehicles



### Peak Hour - Bicycles



### Peak Hour - Pedestrians



Note: Total study counts contained in parentheses.

### Traffic Counts - Motorized Vehicles

Interval Start Time	ALMADEN RD Eastbound				ALMADEN RD Westbound				ALMADEN EXPY Northbound				ALMADEN EXPY Southbound				Total	Rolling Hour	Pedestrian Crossings			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right			West	East	South	North
4:00 PM	0	56	4	2	0	0	0	1	0	0	118	3	0	0	172	79	435	1,655	1	5	0	1
4:15 PM	0	40	0	3	0	0	0	0	0	0	115	0	0	1	182	75	416	1,703	0	7	2	0
4:30 PM	0	39	0	2	0	0	0	1	0	0	110	0	0	0	166	59	377	1,827	0	4	0	2
4:45 PM	0	52	1	4	0	0	0	0	0	0	87	2	0	0	230	51	427	1,924	0	1	0	0
5:00 PM	0	54	2	3	0	1	0	1	0	0	135	1	0	0	212	74	483	2,000	3	1	1	0
5:15 PM	0	43	0	7	0	0	0	0	0	0	125	2	0	0	293	70	540		3	0	0	0
5:30 PM	0	49	2	5	0	0	0	2	0	0	112	1	0	0	230	73	474		6	2	5	0
5:45 PM	0	53	0	1	0	0	0	1	0	0	135	1	0	1	246	65	503		0	1	1	3

### Peak Rolling Hour Flow Rates

Vehicle Type	Eastbound				Westbound				Northbound				Southbound				Total	
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right		
Articulated Trucks	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Lights	0	198	4	16	0	1	0	4	0	0	499	5	0	1	979	273	1,980	
Mediums	0	1	0	0	0	0	0	0	0	0	8	0	0	0	2	9	20	
Total	0	199	4	16	0	1	0	4	0	0	507	5	0	1	981	282	2,000	

**Appendix C**  
**Approved Trips Inventory**

**AM PROJECT TRIPS**

08/20/2019

**Intersection of :** Almaden Rd & Willow Glen Wy

**Traffic Node Number :** 3243

Permit No./Proposed Land Use/Description/Location	M09 NBL	M08 NBT	M07 NBR	M03 SBL	M02 SBT	M01 SBR	M12 EBL	M11 EBT	M10 EBR	M06 WBL	M05 WBT	M04 WBR
PDC13-034 (3-18759) Residential 1821 ALMADEN ROAD 1821 ALMADEN RD CONDOS	24	7	0	0	4	0	0	0	7	0	0	0
PDC15-023 (3-18998) Residential 1777-1797 ALMADEN ROAD 1777-1797 ALMADEN ROAD	19	6	0	0	3	0	0	0	6	0	0	0
<b>TOTAL:</b>	<b>43</b>	<b>13</b>	<b>0</b>	<b>0</b>	<b>7</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>13</b>	<b>0</b>	<b>0</b>	<b>0</b>

	LEFT	THRU	RIGHT
<b>NORTH</b>	0	7	0
<b>EAST</b>	0	0	0
<b>SOUTH</b>	43	13	0
<b>WEST</b>	0	0	13

**PM PROJECT TRIPS**

08/20/2019

**Intersection of :** Almaden Rd & Willow Glen Wy

**Traffic Node Number :** 3243

Permit No./Proposed Land Use/Description/Location	M09 NBL	M08 NBT	M07 NBR	M03 SBL	M02 SBT	M01 SBR	M12 EBL	M11 EBT	M10 EBR	M06 WBL	M05 WBT	M04 WBR
PDC13-034 (3-18759) Residential 1821 ALMADEN ROAD 1821 ALMADEN RD CONDOS	12	4	0	0	7	0	0	0	12	0	0	0
PDC15-023 (3-18998) Residential 1777-1797 ALMADEN ROAD 1777-1797 ALMADEN ROAD	10	3	0	0	6	0	0	0	10	0	0	0
<b>TOTAL:</b>	<b>22</b>	<b>7</b>	<b>0</b>	<b>0</b>	<b>13</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>22</b>	<b>0</b>	<b>0</b>	<b>0</b>

	LEFT	THRU	RIGHT
<b>NORTH</b>	0	13	0
<b>EAST</b>	0	0	0
<b>SOUTH</b>	22	7	0
<b>WEST</b>	0	0	22

**AM PROJECT TRIPS**

08/20/2019

**Intersection of :** Almaden Ex & Almaden Rd & La Rossa Cl

**Traffic Node Number :** 3245

Permit No./Proposed Land Use/Description/Location	M09 NBL	M08 NBT	M07 NBR	M03 SBL	M02 SBT	M01 SBR	M12 EBL	M11 EBT	M10 EBR	M06 WBL	M05 WBT	M04 WBR
H15-039 Retail/Commercial 1402 MONTEREY ROAD DCP	0	3	3	0	2	0	0	0	0	0	0	0
H16-013 (3-10278) Retail/Commercial 353 W JULIAN ST RIVER CORPORATE CENTER BLDG 3	0	3	3	0	2	0	0	0	0	0	0	0
PDC13-034 (3-18759) Residential 1821 ALMADEN ROAD 1821 ALMADEN RD CONDOS	0	0	0	0	0	3	3	0	0	0	0	0
PDC15-023 (3-18998) Residential 1777-1797 ALMADEN ROAD 1777-1797 ALMADEN ROAD	0	0	0	0	0	3	5	0	0	0	0	0
<b>TOTAL:</b>	<b>0</b>	<b>6</b>	<b>6</b>	<b>0</b>	<b>4</b>	<b>6</b>	<b>8</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>

	LEFT	THRU	RIGHT
<b>NORTH</b>	0	4	6
<b>EAST</b>	0	0	0
<b>SOUTH</b>	0	6	6
<b>WEST</b>	8	0	0

**PM PROJECT TRIPS**

08/20/2019

**Intersection of :** Almaden Ex & Almaden Rd & La Rossa Cl

**Traffic Node Number :** 3245

Permit No./Proposed Land Use/Description/Location	M09 NBL	M08 NBT	M07 NBR	M03 SBL	M02 SBT	M01 SBR	M12 EBL	M11 EBT	M10 EBR	M06 WBL	M05 WBT	M04 WBR
H15-039 Retail/Commercial 1402 MONTEREY ROAD DCP	0	0	0	0	4	0	0	0	0	0	0	0
H16-013 (3-10278) Retail/Commercial 353 W JULIAN ST RIVER CORPORATE CENTER BLDG 3	0	0	0	0	4	0	0	0	0	0	0	0
PDC13-034 (3-18759) Residential 1821 ALMADEN ROAD 1821 ALMADEN RD CONDOS	0	0	0	0	0	6	6	0	0	0	0	0
PDC15-023 (3-18998) Residential 1777-1797 ALMADEN ROAD 1777-1797 ALMADEN ROAD	0	0	0	0	0	5	3	0	0	0	0	0
<b>TOTAL:</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>8</b>	<b>11</b>	<b>9</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>

	LEFT	THRU	RIGHT
<b>NORTH</b>	0	8	11
<b>EAST</b>	0	0	0
<b>SOUTH</b>	0	0	0
<b>WEST</b>	9	0	0

**Appendix D**  
**Volume Summary**

Intersection Number: 1  
 Traffix Node Number: 3243  
 Intersection Name: Almaden Road and Willow Glen Way  
 Peak Hour: AM  
 Count Date: 9/5/19

Scenario:	Movements												Total
	North Approach			East Approach			South Approach			West Approach			
	RT	TH	LT	RT	TH	LT	RT	TH	LT	RT	TH	LT	
<b>Existing Conditions</b>	<b>85</b>	<b>188</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>307</b>	<b>77</b>	<b>54</b>	<b>0</b>	<b>94</b>	<b>805</b>
ATI	0	7	0	0	0	0	0	13	43	13	0	0	76
<b>Background Conditions</b>	<b>85</b>	<b>195</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>320</b>	<b>120</b>	<b>67</b>	<b>0</b>	<b>94</b>	<b>881</b>
Proposed Project Trips	0	2	0	0	0	0	0	9	2	1	0	0	14
<b>Background Plus Project Conditions</b>	<b>85</b>	<b>197</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>329</b>	<b>122</b>	<b>68</b>	<b>0</b>	<b>94</b>	<b>895</b>

Intersection Number: 2  
 Traffix Node Number: 3245  
 Intersection Name: Almaden Expressway and Almaden Road  
 Peak Hour: AM  
 Count Date: 9/5/19

Scenario:	Movements												Total
	North Approach			East Approach			South Approach			West Approach			
	RT	TH	LT	RT	TH	LT	RT	TH	LT	RT	TH	LT	
<b>Existing Conditions</b>	<b>303</b>	<b>352</b>	<b>0</b>	<b>9</b>	<b>0</b>	<b>0</b>	<b>6</b>	<b>1584</b>	<b>0</b>	<b>3</b>	<b>4</b>	<b>289</b>	<b>2550</b>
ATI	6	4	0	0	0	0	6	6	0	0	0	8	30
<b>Background Conditions</b>	<b>309</b>	<b>356</b>	<b>0</b>	<b>9</b>	<b>0</b>	<b>0</b>	<b>12</b>	<b>1590</b>	<b>0</b>	<b>3</b>	<b>4</b>	<b>297</b>	<b>2580</b>
Proposed Project Trips	2	0	0	0	0	0	0	0	0	0	0	9	11
<b>Background Plus Project Conditions</b>	<b>311</b>	<b>356</b>	<b>0</b>	<b>9</b>	<b>0</b>	<b>0</b>	<b>12</b>	<b>1590</b>	<b>0</b>	<b>3</b>	<b>4</b>	<b>306</b>	<b>2591</b>

Intersection Number: 3  
 Traffix Node Number: 1  
 Intersection Name: Almaden Road and Project Access  
 Peak Hour: AM  
 Count Date: 9/5/19

Scenario:	Movements												Total
	North Approach			East Approach			South Approach			West Approach			
	RT	TH	LT	RT	TH	LT	RT	TH	LT	RT	TH	LT	
<b>Existing Conditions</b>	<b>0</b>	<b>242</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>384</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>626</b>
ATI	0	20	0	0	0	0	0	56	0	0	0	0	76
<b>Background Conditions</b>	<b>0</b>	<b>262</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>440</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>702</b>
Proposed Project Trips	2	0	0	0	0	0	0	0	3	5	0	11	21
<b>Background Plus Project Conditions</b>	<b>2</b>	<b>262</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>440</b>	<b>3</b>	<b>5</b>	<b>0</b>	<b>11</b>	<b>723</b>

Intersection Number: 1  
 Traffix Node Number: 3243  
 Intersection Name: Almaden Road and Willow Glen Way  
 Peak Hour: PM  
 Count Date: 9/5/19

Scenario:	Movements												Total
	North Approach			East Approach			South Approach			West Approach			
	RT	TH	LT	RT	TH	LT	RT	TH	LT	RT	TH	LT	
<b>Existing Conditions</b>	<b>81</b>	<b>174</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>174</b>	<b>71</b>	<b>87</b>	<b>0</b>	<b>124</b>	<b>711</b>
ATI	0	13	0	0	0	0	0	7	22	22	0	0	64
<b>Background Conditions</b>	<b>81</b>	<b>187</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>181</b>	<b>93</b>	<b>109</b>	<b>0</b>	<b>124</b>	<b>775</b>
Proposed Project Trips	0	5	0	0	0	0	0	6	1	2	0	0	14
<b>Background Plus Project Conditions</b>	<b>81</b>	<b>192</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>187</b>	<b>94</b>	<b>111</b>	<b>0</b>	<b>124</b>	<b>789</b>

Intersection Number: 2  
 Traffix Node Number: 3245  
 Intersection Name: Almaden Expressway and Almaden Road  
 Peak Hour: PM  
 Count Date: 9/5/19

Scenario:	Movements												Total
	North Approach			East Approach			South Approach			West Approach			
	RT	TH	LT	RT	TH	LT	RT	TH	LT	RT	TH	LT	
<b>Existing Conditions</b>	<b>282</b>	<b>981</b>	<b>1</b>	<b>4</b>	<b>0</b>	<b>1</b>	<b>5</b>	<b>507</b>	<b>0</b>	<b>16</b>	<b>4</b>	<b>199</b>	<b>2000</b>
ATI	11	8	0	0	0	0	0	0	0	0	0	9	28
<b>Background Conditions</b>	<b>293</b>	<b>989</b>	<b>1</b>	<b>4</b>	<b>0</b>	<b>1</b>	<b>5</b>	<b>507</b>	<b>0</b>	<b>16</b>	<b>4</b>	<b>208</b>	<b>2028</b>
Proposed Project Trips	5	0	0	0	0	0	0	0	0	0	0	6	11
<b>Background Plus Project Conditions</b>	<b>298</b>	<b>989</b>	<b>1</b>	<b>4</b>	<b>0</b>	<b>1</b>	<b>5</b>	<b>507</b>	<b>0</b>	<b>16</b>	<b>4</b>	<b>214</b>	<b>2039</b>

Intersection Number: 3  
 Traffix Node Number: 1  
 Intersection Name: Almaden Road and Project Access  
 Peak Hour: PM  
 Count Date: 9/5/19

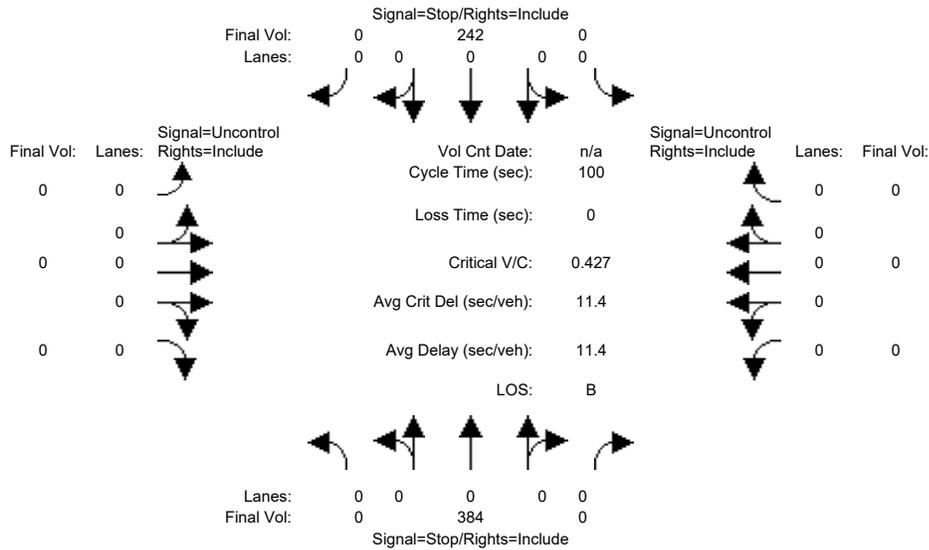
Scenario:	Movements												Total
	North Approach			East Approach			South Approach			West Approach			
	RT	TH	LT	RT	TH	LT	RT	TH	LT	RT	TH	LT	
<b>Existing Conditions</b>	<b>0</b>	<b>261</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>245</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>506</b>
ATI	0	35	0	0	0	0	0	29	0	0	0	0	64
<b>Background Conditions</b>	<b>0</b>	<b>296</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>274</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>570</b>
Proposed Project Trips	6	0	0	0	0	0	0	0	10	3	0	7	26
<b>Background Plus Project Conditions</b>	<b>6</b>	<b>296</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>274</b>	<b>10</b>	<b>3</b>	<b>0</b>	<b>7</b>	<b>596</b>

**Appendix E**  
**Intersection Level of Service Calculations**

1747 Almaden Road Residential Development
San Jose
Hexagon Transportation Consultants, Inc.

Level Of Service Computation Report
2000 HCM Unsignalized (Future Volume Alternative)
Existing (AM)

Intersection #1:



Approach: North Bound South Bound East Bound West Bound
Movement: L - T - R L - T - R L - T - R L - T - R

Volume Module:

Table with 13 columns representing traffic movements and rows for various volume metrics: Base Vol, Growth Adj, Initial Bse, Added Vol, ATI, Initial Fut, User Adj, PHF Adj, PHF Volume, Reduct Vol, Final Volume.

Critical Gap Module:

Table showing critical gap and follow-up time for each movement, with values like 6.5 and 4.0.

Capacity Module:

Table showing capacity-related metrics: Cnflct Vol, Potent Cap., Move Cap., and Volume/Cap.

Level Of Service Module:

Table showing Level of Service (LOS) metrics: 2Way95thQ, Control Del, LOS by Move, Movement, Shared Cap., Shared Queue, Shrd ConDel, Shared LOS, ApproachDel, and ApproachLOS.

Note: Queue reported is the number of cars per lane.

Peak Hour Delay Signal Warrant Report

\*\*\*\*\*
Intersection #1
\*\*\*\*\*
Future Volume Alternative: Peak Hour Warrant NOT Met
\*\*\*\*\*

Approach:	North Bound	South Bound	East Bound	West Bound
Movement:	L - T - R	L - T - R	L - T - R	L - T - R
Control:	Stop Sign	Stop Sign	Uncontrolled	Uncontrolled
Lanes:	0 0 1 0 0	0 0 1 0 0	0 0 0 0 0	0 0 0 0 0
Initial Vol:	0 384 0	0 242 0	0 0 0 0	0 0 0 0
ApproachDel:	11.9	10.5	xxxxxx	xxxxxx

Approach[northbound][lanes=1][control=Stop Sign]  
Signal Warrant Rule #1: [vehicle-hours=1.3]  
FAIL - Vehicle-hours less than 4 for one lane approach.  
Signal Warrant Rule #2: [approach volume=384]  
SUCCEED - Approach volume greater than or equal to 100 for one lane approach.  
Signal Warrant Rule #3: [approach count=2][total volume=626]  
FAIL - Total volume less than 650 for intersection  
with less than four approaches.

Approach[southbound][lanes=1][control=Stop Sign]  
Signal Warrant Rule #1: [vehicle-hours=0.7]  
FAIL - Vehicle-hours less than 4 for one lane approach.  
Signal Warrant Rule #2: [approach volume=242]  
SUCCEED - Approach volume greater than or equal to 100 for one lane approach.  
Signal Warrant Rule #3: [approach count=2][total volume=626]  
FAIL - Total volume less than 650 for intersection  
with less than four approaches.

SIGNAL WARRANT DISCLAIMER  
This peak hour signal warrant analysis should be considered solely as an "indicator" of the likelihood of an unsignalized intersection warranting a traffic signal in the future. Intersections that exceed this warrant are probably more likely to meet one or more of the other volume based signal warrant (such as the 4-hour or 8-hour warrants).

The peak hour warrant analysis in this report is not intended to replace a rigorous and complete traffic signal warrant analysis by the responsible jurisdiction. Consideration of the other signal warrants, which is beyond the scope of this software, may yield different results.

Peak Hour Volume Signal Warrant Report [Urban]

\*\*\*\*\*

Intersection #1  
\*\*\*\*\*

Future Volume Alternative: Peak Hour Warrant NOT Met

Approach:	North Bound	South Bound	East Bound	West Bound
Movement:	L - T - R	L - T - R	L - T - R	L - T - R
Control:	Stop Sign	Stop Sign	Uncontrolled	Uncontrolled
Lanes:	0 0 1 0 0	0 0 1 0 0	0 0 0 0 0	0 0 0 0 0
Initial Vol:	0 384 0	0 242 0	0 0 0 0	0 0 0 0

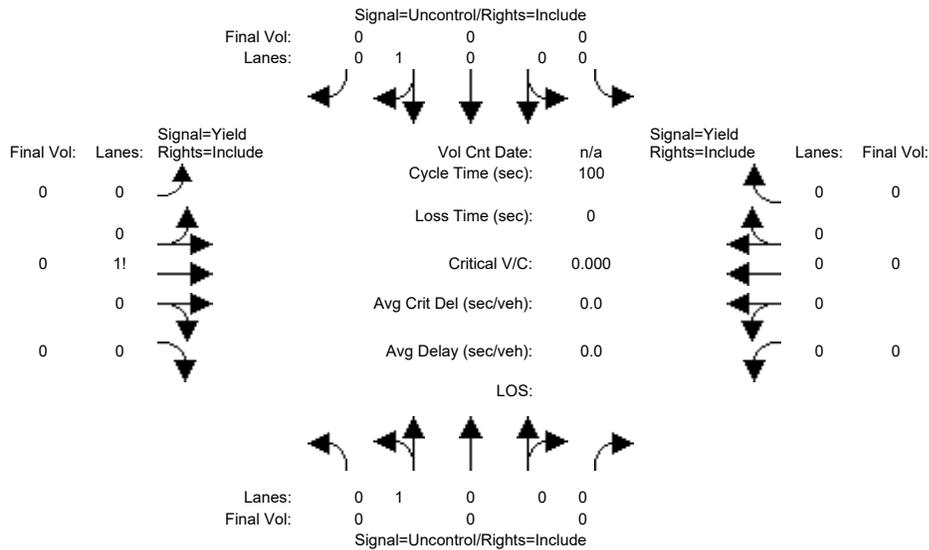
Major Street Volume: 0  
Minor Approach Volume: 384  
Minor Approach Volume Threshold: +Inf

SIGNAL WARRANT DISCLAIMER  
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1747 Almaden Road Residential Development  
 San Jose  
 Hexagon Transportation Consultants, Inc.  
 Level Of Service Computation Report  
 2000 HCM Unsignalized (Future Volume Alternative)  
 Background (AM)

Intersection #1:



Approach: North Bound South Bound East Bound West Bound  
 Movement: L - T - R L - T - R L - T - R L - T - R

Volume Module:

Base Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Growth Adj:	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Initial Bse:	0	0	0	0	0	0	0	0	0	0	0	0
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
ATI:	0	56	0	0	20	0	0	0	0	0	0	0
Initial Fut:	0	0	0	0	0	0	0	0	0	0	0	0
User Adj:	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
PHF Adj:	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
PHF Volume:	0	0	0	0	0	0	0	0	0	0	0	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
FinalVolume:	0	0	0	0	0	0	0	0	0	0	0	0

Critical Gap Module:

Critical Gp:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
FollowUpTim:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Capacity Module:

Cnflct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Potent Cap.:	0	0	0	0	0	0	0	0	0	0	0	0
Move Cap.:	1	1	1	1	1	1	1	1	1	1	1	1
Volume/Cap:	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Level Of Service Module:

2Way95thQ:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Control Del:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

LOS by Move:

Movement:	LT - LTR - RT					
Shared Cap.:	0	0	0	0	0	0
SharedQueue:	0.0	0.0	0.0	0.0	0.0	0.0
Shrd ConDel:	1.0	1.0	1.0	1.0	1.0	1.0
Shared LOS:						
ApproachDel:	0.0	0.0	0.0	0.0		
ApproachLOS:						

Note: Queue reported is the number of cars per lane.

Peak Hour Delay Signal Warrant Report

\*\*\*\*\*

Intersection #1

\*\*\*\*\*

Future Volume Alternative: Peak Hour Warrant NOT Met

-----

Approach:	North Bound				South Bound				East Bound				West Bound						
Movement:	L	T	R		L	T	R		L	T	R		L	T	R				
Control:	Uncontrolled				Uncontrolled				Yield Sign				Yield Sign						
Lanes:	0	1	0	0	0	0	0	1	0	0	0	1	0	0	0	0	0	0	0
Initial Vol:	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0			
ApproachDel:	0.0				0.0				0.0				0.0						

SIGNAL WARRANT DISCLAIMER

This peak hour signal warrant analysis should be considered solely as an "indicator" of the likelihood of an unsignalized intersection warranting a traffic signal in the future. Intersections that exceed this warrant are probably more likely to meet one or more of the other volume based signal warrant (such as the 4-hour or 8-hour warrants).

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Peak Hour Volume Signal Warrant Report [Urban]

\*\*\*\*\*

Intersection #1

\*\*\*\*\*

Future Volume Alternative: Peak Hour Warrant NOT Met

Approach:	North Bound				South Bound				East Bound				West Bound						
Movement:	L	T	R		L	T	R		L	T	R		L	T	R				
Control:	Uncontrolled				Uncontrolled				Yield Sign				Yield Sign						
Lanes:	0	1	0	0	0	0	0	1	0	0	0	1	0	0	0	0	0	0	0
Initial Vol:	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0			
Major Street Volume:					0														
Minor Approach Volume:					0														
Minor Approach Volume Threshold:	+Inf																		

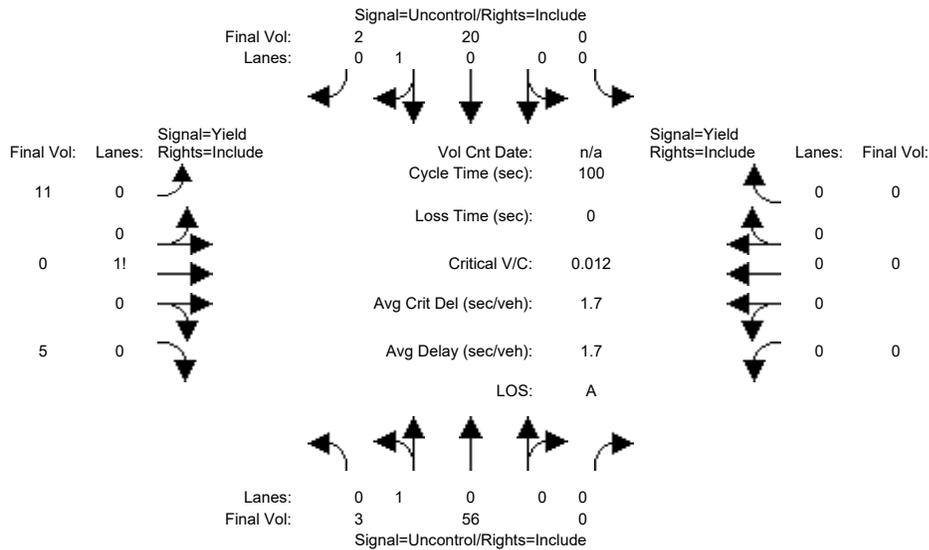
SIGNAL WARRANT DISCLAIMER

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1747 Almaden Road Residential Development  
 San Jose  
 Hexagon Transportation Consultants, Inc.  
 Level Of Service Computation Report  
 2000 HCM Unsignalized (Future Volume Alternative)  
 Background + P (AM)

Intersection #1:



Approach: North Bound South Bound East Bound West Bound  
 Movement: L - T - R L - T - R L - T - R L - T - R

Volume Module:

Base Vol:	0	0	0	0	0	0	0	0	0	0	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:	0	0	0	0	0	0	0	0	0	0	0	0
Added Vol:	3	0	0	0	0	2	11	0	5	0	0	0
ATI:	0	56	0	0	20	0	0	0	0	0	0	0
Initial Fut:	3	56	0	0	20	2	11	0	5	0	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:	3	56	0	0	20	2	11	0	5	0	0	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Final Volume:	3	56	0	0	20	2	11	0	5	0	0	0

Critical Gap Module:

Critical Gp:	4.1	xxxx	xxxxx	xxxxx	xxxx	xxxxx	6.4	6.5	6.2	xxxxx	xxxx	xxxxx
FollowUpTim:	2.2	xxxx	xxxxx	xxxxx	xxxx	xxxxx	3.5	4.0	3.3	xxxxx	xxxx	xxxxx

Capacity Module:

Cnflct Vol:	22	xxxx	xxxxx	xxxx	xxxx	xxxxx	83	83	21	xxxx	xxxx	xxxxx
Potent Cap.:	1607	xxxx	xxxxx	xxxx	xxxx	xxxxx	924	811	1062	xxxx	xxxx	xxxxx
Move Cap.:	1607	xxxx	xxxxx	xxxx	xxxx	xxxxx	922	810	1062	xxxx	xxxx	xxxxx
Volume/Cap:	0.00	xxxx	xxxx	xxxx	xxxx	xxxx	0.01	0.00	0.00	xxxx	xxxx	xxxx

Level Of Service Module:

2Way95thQ:	0.0	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
Control Del:	7.2	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
LOS by Move:	A	*	*	*	*	*	*	*	*	*	*	*
Movement:	LT - LTR - RT											
Shared Cap.:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	962	xxxxx	xxxx	xxxx	xxxxx
Shared Queue:	0.0	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	0.1	xxxxx	xxxxx	xxxx	xxxxx
Shrd ConDel:	7.2	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	8.8	xxxxx	xxxxx	xxxx	xxxxx
Shared LOS:	A	*	*	*	*	*	*	A	*	*	*	*
ApproachDel:	xxxxxx			xxxxxx			8.8			xxxxxx		
ApproachLOS:	*			*			A			*		

Note: Queue reported is the number of cars per lane.

Peak Hour Delay Signal Warrant Report

\*\*\*\*\*

Intersection #1

\*\*\*\*\*

Future Volume Alternative: Peak Hour Warrant NOT Met

-----|-----|-----|-----|-----|

Approach:	North Bound	South Bound	East Bound	West Bound
Movement:	L - T - R	L - T - R	L - T - R	L - T - R
Control:	Uncontrolled	Uncontrolled	Yield Sign	Yield Sign
Lanes:	0 1 0 0 0	0 0 0 1 0	0 0 1! 0 0	0 0 0 0 0
Initial Vol:	3 56 0	0 20 2	11 0 5	0 0 0 0
ApproachDel:	xxxxxx	xxxxxx	8.8	xxxxxx

Approach[eastbound][lanes=1][control=Yield Sign]  
 Signal Warrant Rule #1: [vehicle-hours=0.0]  
 FAIL - Controller not stop sign.  
 Signal Warrant Rule #2: [approach volume=16]  
 FAIL - Approach volume less than 100 for one lane approach.  
 Signal Warrant Rule #3: [approach count=3][total volume=97]  
 FAIL - Total volume less than 650 for intersection  
 with less than four approaches.

-----  
 SIGNAL WARRANT DISCLAIMER

This peak hour signal warrant analysis should be considered solely as an "indicator" of the likelihood of an unsignalized intersection warranting a traffic signal in the future. Intersections that exceed this warrant are probably more likely to meet one or more of the other volume based signal warrant (such as the 4-hour or 8-hour warrants).

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Peak Hour Volume Signal Warrant Report [Urban]

\*\*\*\*\*

Intersection #1

\*\*\*\*\*

Future Volume Alternative: Peak Hour Warrant NOT Met

Approach:	North Bound	South Bound	East Bound	West Bound
Movement:	L - T - R	L - T - R	L - T - R	L - T - R
Control:	Uncontrolled	Uncontrolled	Yield Sign	Yield Sign
Lanes:	0 1 0 0 0	0 0 0 1 0	0 0 1! 0 0	0 0 0 0 0
Initial Vol:	3 56 0	0 20 2	11 0 5	0 0 0 0

Major Street Volume: 81  
 Minor Approach Volume: 16  
 Minor Approach Volume Threshold: 890

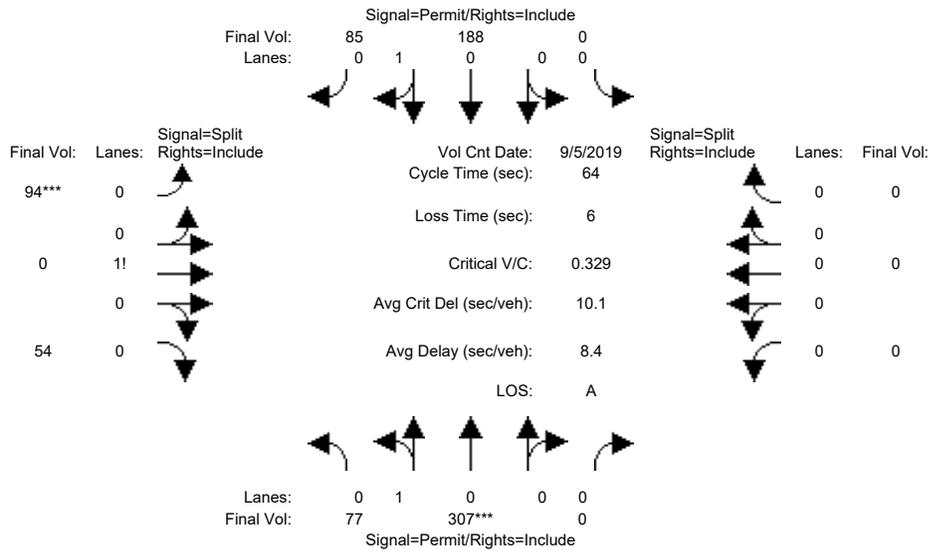
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 SIGNAL WARRANT DISCLAIMER

This peak hour signal warrant analysis should be considered solely as an "indicator" of the likelihood of an unsignalized intersection warranting a traffic signal in the future. Intersections that exceed this warrant are probably more likely to meet one or more of the other volume based signal warrant (such as the 4-hour or 8-hour warrants).

The peak hour warrant analysis in this report is not intended to replace a rigorous and complete traffic signal warrant analysis by the responsible jurisdiction. Consideration of the other signal warrants, which is beyond the scope of this software, may yield different results.

1747 Almaden Road Residential Development  
 San Jose  
 Hexagon Transportation Consultants, Inc.  
 Level Of Service Computation Report  
 2000 HCM Operations (Future Volume Alternative)  
 Existing (AM)

Intersection #3243: ALMADEN/WILLOW GLEN



Approach:	North Bound			South Bound			East Bound			West Bound		
	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	10	10	0	0	10	10	10	0	10	0	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:	>>	Count	Date:	5 Sep 2019	<<											
Base Vol:	77	307	0	0	188	85	94	0	54	0	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:	77	307	0	0	188	85	94	0	54	0	0	0				
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0				
ATI:	0	0	0	0	0	0	0	0	0	0	0	0				
Initial Fut:	77	307	0	0	188	85	94	0	54	0	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:	77	307	0	0	188	85	94	0	54	0	0	0				
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0				
Reduced Vol:	77	307	0	0	188	85	94	0	54	0	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				
Final Volume:	77	307	0	0	188	85	94	0	54	0	0	0				

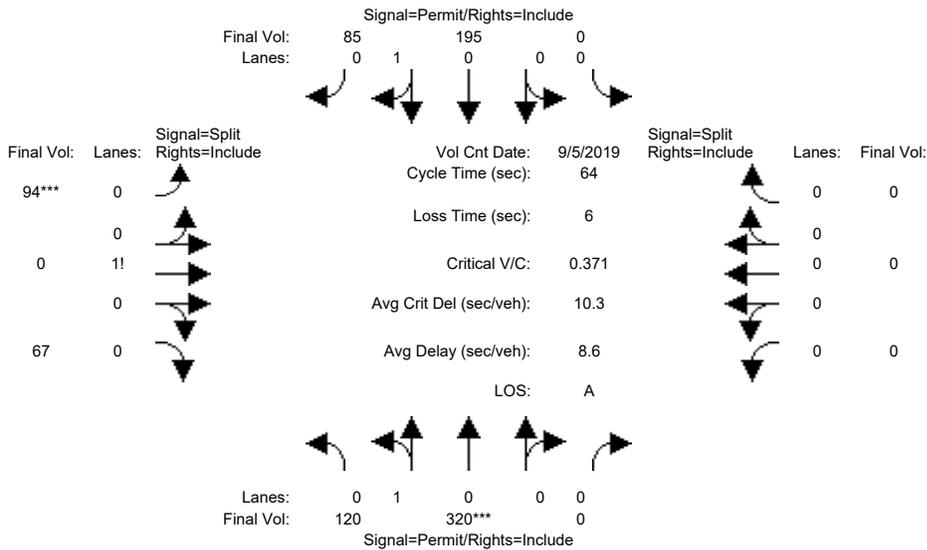
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.95	0.95	0.92	0.92	0.95	0.95	0.92	0.92	0.92	0.92	1.00	0.92
Lanes:	0.20	0.80	0.00	0.00	0.69	0.31	0.64	0.00	0.36	0.00	0.00	0.00
Final Sat.:	361	1439	0	0	1240	560	1111	0	639	0	0	0

Capacity Analysis Module:												
Vol/Sat:	0.21	0.21	0.00	0.00	0.15	0.15	0.08	0.00	0.08	0.00	0.00	0.00
Crit Moves:	****									****		
Green Time:	41.5	41.5	0.0	0.0	41.5	41.5	16.5	0.0	16.5	0.0	0.0	0.0
Volume/Cap:	0.33	0.33	0.00	0.00	0.23	0.23	0.33	0.00	0.33	0.00	0.00	0.00
Delay/Veh:	5.8	5.8	0.0	0.0	5.1	5.1	21.2	0.0	21.2	0.0	0.0	0.0
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
AdjDel/Veh:	5.8	5.8	0.0	0.0	5.1	5.1	21.2	0.0	21.2	0.0	0.0	0.0
LOS by Move:	A	A	A	A	A	A	C	A	C	A	A	A
HCM2kAvqQ:	4	4	0	0	2	2	3	0	3	0	0	0

Note: Queue reported is the number of cars per lane.

1747 Almaden Road Residential Development  
 San Jose  
 Hexagon Transportation Consultants, Inc.  
 Level Of Service Computation Report  
 2000 HCM Operations (Future Volume Alternative)  
 Background (AM)

Intersection #3243: ALMADEN/WILLOW GLEN



Approach:	North Bound			South Bound			East Bound			West Bound		
	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	10	10	0	0	10	10	10	0	10	0	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:	>>	Count	Date:	5 Sep 2019	<<							
Base Vol:	77	307	0	0	188	85	94	0	54	0	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:	77	307	0	0	188	85	94	0	54	0	0	0
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
ATI:	43	13	0	0	7	0	0	0	13	0	0	0
Initial Fut:	120	320	0	0	195	85	94	0	67	0	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:	120	320	0	0	195	85	94	0	67	0	0	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	120	320	0	0	195	85	94	0	67	0	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
Final Volume:	120	320	0	0	195	85	94	0	67	0	0	0

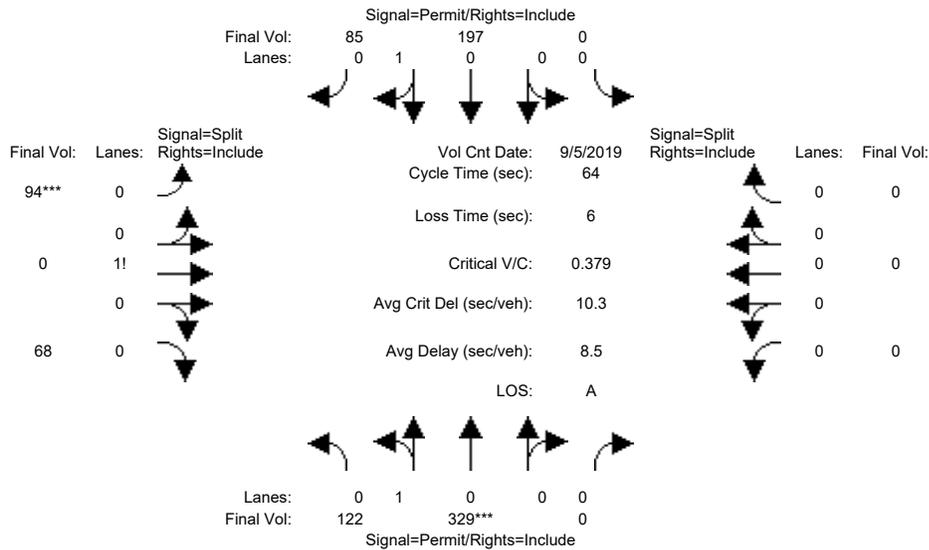
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.95	0.95	0.92	0.92	0.95	0.95	0.92	0.92	0.92	0.92	1.00	0.92
Lanes:	0.27	0.73	0.00	0.00	0.70	0.30	0.58	0.00	0.42	0.00	0.00	0.00
Final Sat.:	491	1309	0	0	1254	546	1022	0	728	0	0	0

Capacity Analysis Module:												
Vol/Sat:	0.24	0.24	0.00	0.00	0.16	0.16	0.09	0.00	0.09	0.00	0.00	0.00
Crit Moves:	****			****			****			****		
Green Time:	42.1	42.1	0.0	0.0	42.1	42.1	15.9	0.0	15.9	0.0	0.0	0.0
Volume/Cap:	0.37	0.37	0.00	0.00	0.24	0.24	0.37	0.00	0.37	0.00	0.00	0.00
Delay/Veh:	5.8	5.8	0.0	0.0	4.9	4.9	22.4	0.0	22.4	0.0	0.0	0.0
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
AdjDel/Veh:	5.8	5.8	0.0	0.0	4.9	4.9	22.4	0.0	22.4	0.0	0.0	0.0
LOS by Move:	A	A	A	A	A	A	C	A	C	A	A	A
HCM2kAvgQ:	4	4	0	0	2	2	3	0	3	0	0	0

Note: Queue reported is the number of cars per lane.

1747 Almaden Road Residential Development  
 San Jose  
 Hexagon Transportation Consultants, Inc.  
 Level Of Service Computation Report  
 2000 HCM Operations (Future Volume Alternative)  
 Background + P (AM)

Intersection #3243: ALMADEN/WILLOW GLEN



Approach:	North Bound			South Bound			East Bound			West Bound		
	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	10	10	0	0	10	10	10	0	10	0	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:	>>	Count	Date:	5 Sep 2019	<<							
Base Vol:	77	307	0	0	188	85	94	0	54	0	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:	77	307	0	0	188	85	94	0	54	0	0	0
Added Vol:	2	9	0	0	2	0	0	0	1	0	0	0
ATI:	43	13	0	0	7	0	0	0	13	0	0	0
Initial Fut:	122	329	0	0	197	85	94	0	68	0	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:	122	329	0	0	197	85	94	0	68	0	0	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	122	329	0	0	197	85	94	0	68	0	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:	122	329	0	0	197	85	94	0	68	0	0	0

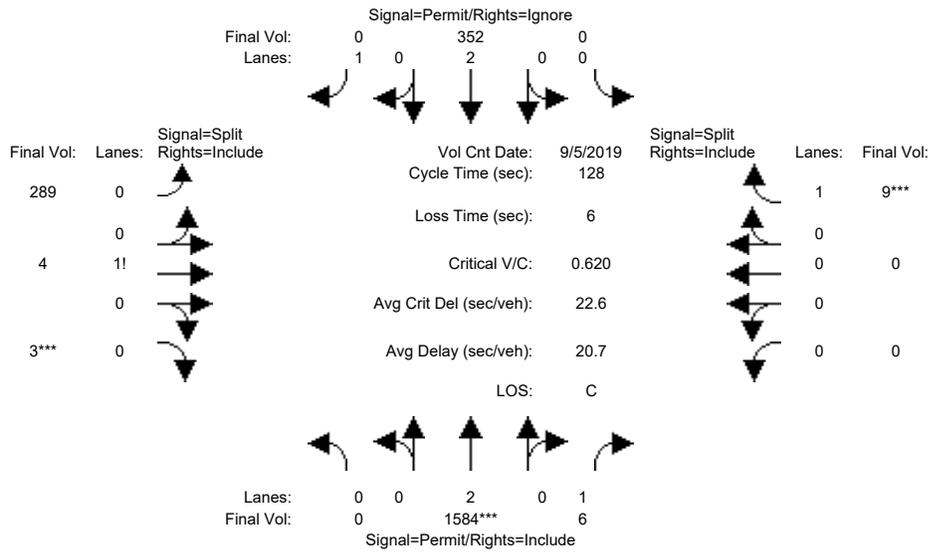
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.95	0.95	0.92	0.92	0.95	0.95	0.92	0.92	0.92	0.92	1.00	0.92
Lanes:	0.27	0.73	0.00	0.00	0.70	0.30	0.58	0.00	0.42	0.00	0.00	0.00
Final Sat.:	487	1313	0	0	1257	543	1015	0	735	0	0	0

Capacity Analysis Module:												
Vol/Sat:	0.25	0.25	0.00	0.00	0.16	0.16	0.09	0.00	0.09	0.00	0.00	0.00
Crit Moves:	****									****		
Green Time:	42.4	42.4	0.0	0.0	42.4	42.4	15.6	0.0	15.6	0.0	0.0	0.0
Volume/Cap:	0.38	0.38	0.00	0.00	0.24	0.24	0.38	0.00	0.38	0.00	0.00	0.00
Delay/Veh:	5.8	5.8	0.0	0.0	4.8	4.8	22.7	0.0	22.7	0.0	0.0	0.0
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
AdjDel/Veh:	5.8	5.8	0.0	0.0	4.8	4.8	22.7	0.0	22.7	0.0	0.0	0.0
LOS by Move:	A	A	A	A	A	A	C	A	C	A	A	A
HCM2kAvgQ:	4	4	0	0	2	2	3	0	3	0	0	0

Note: Queue reported is the number of cars per lane.

1747 Almaden Road Residential Development  
 San Jose  
 Hexagon Transportation Consultants, Inc.  
 Level Of Service Computation Report  
 2000 HCM Operations (Future Volume Alternative)  
 Existing (AM)

Intersection #3245: ALMADEN/ALMADEN(N)



Approach:	North Bound			South Bound			East Bound			West Bound		
	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	0	10	10	10	10	10	10	10	10	0	0	10
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:	>>	Count	Date:	5 Sep 2019	<<							
Base Vol:	0	1584	6	0	352	303	289	4	3	0	0	9
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:	0	1584	6	0	352	303	289	4	3	0	0	9
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
ATI:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	0	1584	6	0	352	303	289	4	3	0	0	9
User Adj:	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	0	1584	6	0	352	0	289	4	3	0	0	9
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	0	1584	6	0	352	0	289	4	3	0	0	9
PCE Adj:	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	0	1584	6	0	352	0	289	4	3	0	0	9

Saturation Flow Module:	Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	1.00	0.92	0.92	1.00	0.92	0.92	0.92	0.92	0.92	1.00	0.92
Lanes:	0.00	2.00	1.00	0.00	2.00	1.00	0.98	0.01	0.01	0.00	0.00	1.00
Final Sat.:	0	3800	1750	0	3800	1750	1709	24	18	0	0	1750

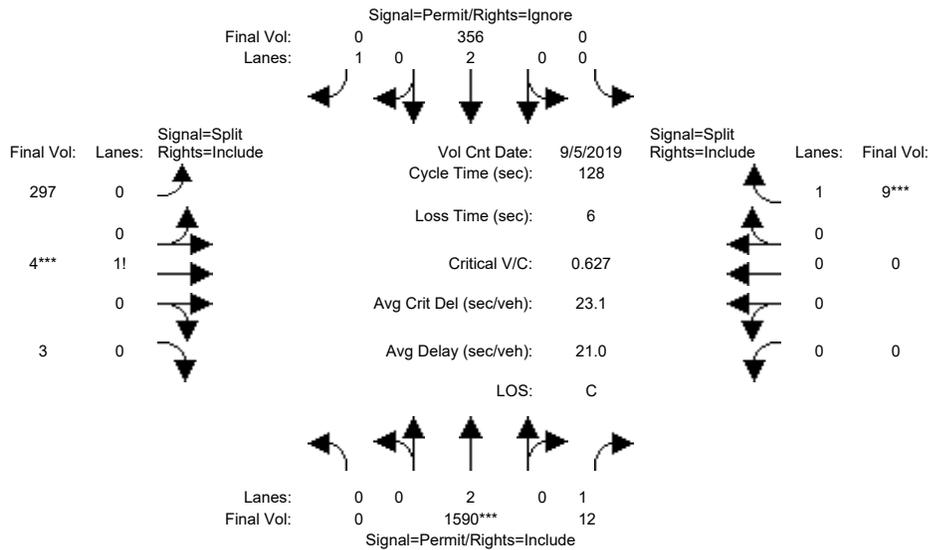
Capacity Analysis Module:	Vol/Sat:	0.00	0.42	0.00	0.00	0.09	0.00	0.17	0.17	0.17	0.00	0.00	0.01
Crit Moves:	****	****	****	****	****	****	****	****	****	****	****	****	****
Green Time:	0.0	79.7	79.7	0.0	79.7	0.0	32.3	32.3	32.3	0.0	0.0	10.0	
Volume/Cap:	0.00	0.67	0.01	0.00	0.15	0.00	0.67	0.67	0.67	0.00	0.00	0.07	
Delay/Veh:	0.0	17.2	9.2	0.0	10.2	0.0	50.9	50.9	50.9	0.0	0.0	55.6	
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	
AdjDel/Veh:	0.0	17.2	9.2	0.0	10.2	0.0	50.9	50.9	50.9	0.0	0.0	55.6	
LOS by Move:	A	B	A	A	B	A	D	D	D	A	A	E	
HCM2kAvgQ:	0	20	0	0	3	0	12	12	12	0	0	0	

Note: Queue reported is the number of cars per lane.

1747 Almaden Road Residential Development  
San Jose  
Hexagon Transportation Consultants, Inc.

Level Of Service Computation Report  
2000 HCM Operations (Future Volume Alternative)  
Background (AM)

Intersection #3245: ALMADEN/ALMADEN(N)

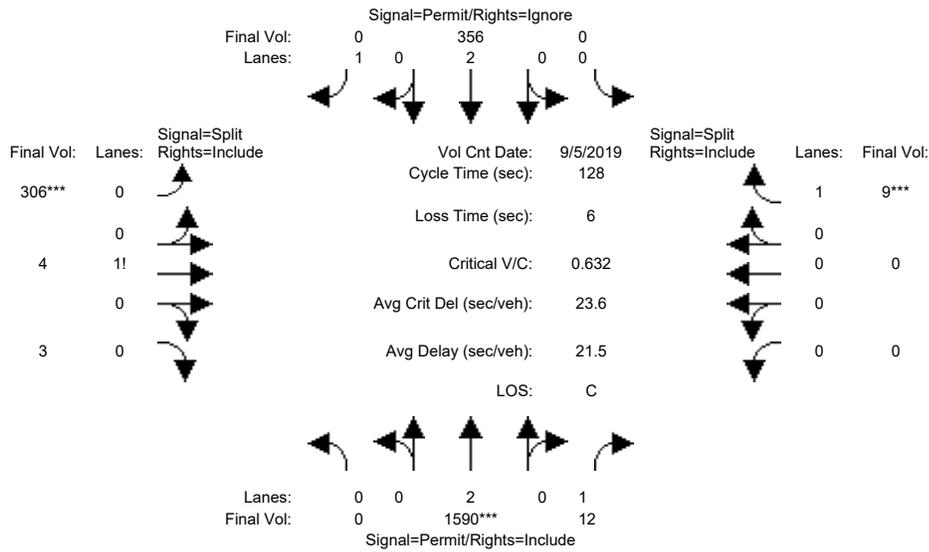


Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	0	10	10	10	10	10	10	10	10	0	0	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module: >> Count Date: 5 Sep 2019 <<												
Base Vol:	0	1584	6	0	352	303	289	4	3	0	0	9
Growth 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:	0	1584	6	0	352	303	289	4	3	0	0	9
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
ATI:	0	6	6	0	4	6	8	0	0	0	0	0
Initial Fut:	0	1590	12	0	356	309	297	4	3	0	0	9
User Adj:	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	0	1590	12	0	356	0	297	4	3	0	0	9
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	0	1590	12	0	356	0	297	4	3	0	0	9
PCE Adj:	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Volume:	0	1590	12	0	356	0	297	4	3	0	0	9
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	1.00	0.92	0.92	1.00	0.92	0.92	0.92	0.92	0.92	1.00	0.92
Lanes:	0.00	2.00	1.00	0.00	2.00	1.00	0.98	0.01	0.01	0.00	0.00	1.00
Final Sat.:	0	3800	1750	0	3800	1750	1710	23	17	0	0	1750
Capacity Analysis Module:												
Vol/Sat:	0.00	0.42	0.01	0.00	0.09	0.00	0.17	0.17	0.17	0.00	0.00	0.01
Crit Moves:	****			****			****			****		
Green Time:	0.0	79.1	79.1	0.0	79.1	0.0	32.9	32.9	32.9	0.0	0.0	10.0
Volume/Cap:	0.00	0.68	0.01	0.00	0.15	0.00	0.68	0.68	0.68	0.00	0.00	0.07
Delay/Veh:	0.0	17.6	9.4	0.0	10.4	0.0	50.7	50.7	50.7	0.0	0.0	55.6
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
AdjDel/Veh:	0.0	17.6	9.4	0.0	10.4	0.0	50.7	50.7	50.7	0.0	0.0	55.6
LOS by Move:	A	B	A	A	B	A	D	D	D	A	A	E
HCM2kAvqQ:	0	21	0	0	3	0	12	12	12	0	0	0

Note: Queue reported is the number of cars per lane.

1747 Almaden Road Residential Development  
 San Jose  
 Hexagon Transportation Consultants, Inc.  
 Level Of Service Computation Report  
 2000 HCM Operations (Future Volume Alternative)  
 Background + P (AM)

Intersection #3245: ALMADEN/ALMADEN(N)



Approach:	North Bound			South Bound			East Bound			West Bound		
	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	0	10	10	10	10	10	10	10	10	0	0	10
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:	>>	Count	Date:	5 Sep 2019	<<							
Base Vol:	0	1584	6	0	352	303	289	4	3	0	0	9
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:	0	1584	6	0	352	303	289	4	3	0	0	9
Added Vol:	0	0	0	0	0	2	9	0	0	0	0	0
ATI:	0	6	6	0	4	6	8	0	0	0	0	0
Initial Fut:	0	1590	12	0	356	311	306	4	3	0	0	9
User Adj:	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	0	1590	12	0	356	0	306	4	3	0	0	9
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	0	1590	12	0	356	0	306	4	3	0	0	9
PCE Adj:	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Volume:	0	1590	12	0	356	0	306	4	3	0	0	9

Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	1.00	0.92	0.92	1.00	0.92	0.92	0.92	0.92	0.92	1.00	0.92
Lanes:	0.00	2.00	1.00	0.00	2.00	1.00	0.98	0.01	0.01	0.00	0.00	1.00
Final Sat.:	0	3800	1750	0	3800	1750	1711	22	17	0	0	1750

Capacity Analysis Module:												
Vol/Sat:	0.00	0.42	0.01	0.00	0.09	0.00	0.18	0.18	0.18	0.00	0.00	0.01
Crit Moves:	****						****			****		
Green Time:	0.0	78.5	78.5	0.0	78.5	0.0	33.5	33.5	33.5	0.0	0.0	10.0
Volume/Cap:	0.00	0.68	0.01	0.00	0.15	0.00	0.68	0.68	0.68	0.00	0.00	0.07
Delay/Veh:	0.0	18.1	9.7	0.0	10.7	0.0	50.4	50.4	50.4	0.0	0.0	55.6
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
AdjDel/Veh:	0.0	18.1	9.7	0.0	10.7	0.0	50.4	50.4	50.4	0.0	0.0	55.6
LOS by Move:	A	B	A	A	B	A	D	D	D	A	A	E
HCM2kAvqQ:	0	21	0	0	3	0	13	13	13	0	0	0

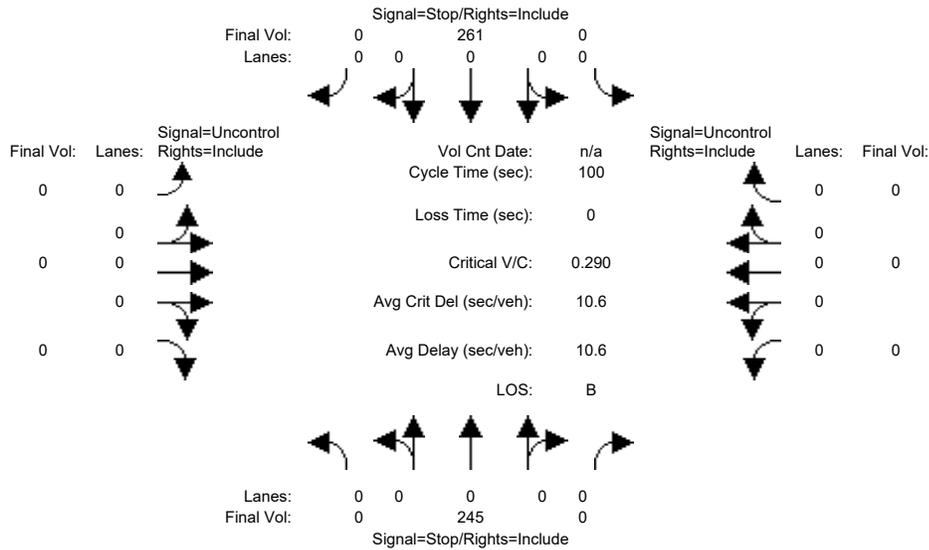
Note: Queue reported is the number of cars per lane.



1747 Almaden Road Residential Development
San Jose
Hexagon Transportation Consultants, Inc.

Level Of Service Computation Report
2000 HCM Unsignalized (Future Volume Alternative)
Existing (PM)

Intersection #1:



Approach: North Bound South Bound East Bound West Bound
Movement: L - T - R L - T - R L - T - R L - T - R

Volume Module:

Table with 13 columns representing volume components (Base Vol, Growth Adj, Initial Bse, Added Vol, ATI, Initial Fut, User Adj, PHF Adj, PHF Volume, Reduct Vol, Final Volume) and 12 rows representing different movement combinations.

Critical Gap Module:

Table showing critical gap values (xxxxx) and follow-up times (xxxxx) for various movement combinations.

Capacity Module:

Table showing capacity-related metrics (Cnflct Vol, Potent Cap., Move Cap., Volume/Cap) for different movements.

Level Of Service Module:

Table showing Level of Service (LOS) and delay metrics (2Way95thQ, Control Del, Shared Cap., Shared Queue, Shrd ConDel, Shared LOS, ApproachDel, ApproachLOS) for each movement.

Note: Queue reported is the number of cars per lane.

Peak Hour Delay Signal Warrant Report

\*\*\*\*\*
Intersection #1
\*\*\*\*\*
Future Volume Alternative: Peak Hour Warrant NOT Met
\*\*\*\*\*

Approach:	North Bound	South Bound	East Bound	West Bound
Movement:	L - T - R	L - T - R	L - T - R	L - T - R
Control:	Stop Sign	Stop Sign	Uncontrolled	Uncontrolled
Lanes:	0 0 1 0 0	0 0 1 0 0	0 0 0 0 0	0 0 0 0 0
Initial Vol:	0 245 0	0 261 0	0 0 0 0	0 0 0 0
ApproachDel:	10.5	10.6	xxxxxx	xxxxxx

Approach[northbound][lanes=1][control=Stop Sign]  
Signal Warrant Rule #1: [vehicle-hours=0.7]  
FAIL - Vehicle-hours less than 4 for one lane approach.  
Signal Warrant Rule #2: [approach volume=245]  
SUCCEED - Approach volume greater than or equal to 100 for one lane approach.  
Signal Warrant Rule #3: [approach count=2][total volume=506]  
FAIL - Total volume less than 650 for intersection  
with less than four approaches.

Approach[southbound][lanes=1][control=Stop Sign]  
Signal Warrant Rule #1: [vehicle-hours=0.8]  
FAIL - Vehicle-hours less than 4 for one lane approach.  
Signal Warrant Rule #2: [approach volume=261]  
SUCCEED - Approach volume greater than or equal to 100 for one lane approach.  
Signal Warrant Rule #3: [approach count=2][total volume=506]  
FAIL - Total volume less than 650 for intersection  
with less than four approaches.

SIGNAL WARRANT DISCLAIMER

This peak hour signal warrant analysis should be considered solely as an "indicator" of the likelihood of an unsignalized intersection warranting a traffic signal in the future. Intersections that exceed this warrant are probably more likely to meet one or more of the other volume based signal warrant (such as the 4-hour or 8-hour warrants).

The peak hour warrant analysis in this report is not intended to replace a rigorous and complete traffic signal warrant analysis by the responsible jurisdiction. Consideration of the other signal warrants, which is beyond the scope of this software, may yield different results.

Peak Hour Volume Signal Warrant Report [Urban]

\*\*\*\*\*

Intersection #1

\*\*\*\*\*

Future Volume Alternative: Peak Hour Warrant NOT Met

Approach:	North Bound	South Bound	East Bound	West Bound
Movement:	L - T - R	L - T - R	L - T - R	L - T - R
Control:	Stop Sign	Stop Sign	Uncontrolled	Uncontrolled
Lanes:	0 0 1 0 0	0 0 1 0 0	0 0 0 0 0	0 0 0 0 0
Initial Vol:	0 245 0	0 261 0	0 0 0 0	0 0 0 0

Major Street Volume: 0  
Minor Approach Volume: 261  
Minor Approach Volume Threshold: +Inf

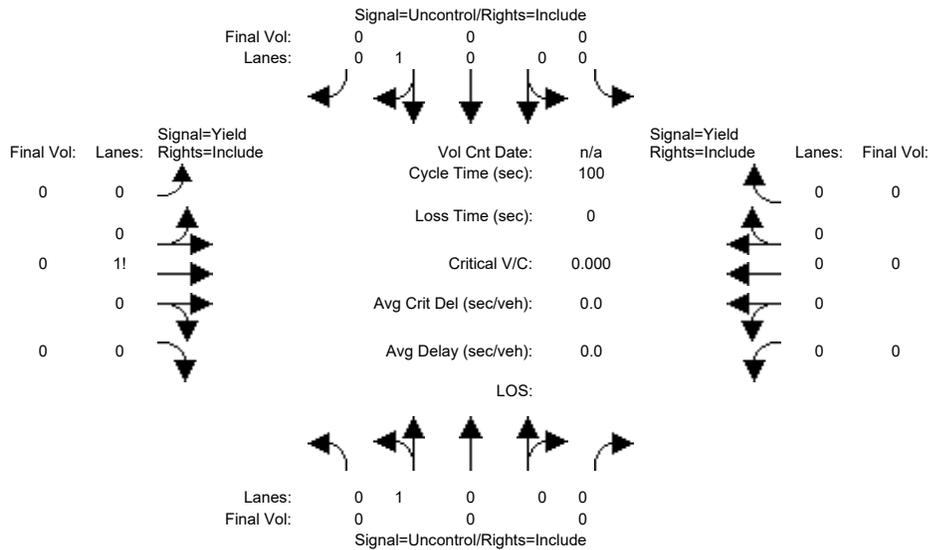
SIGNAL WARRANT DISCLAIMER

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1747 Almaden Road Residential Development  
 San Jose  
 Hexagon Transportation Consultants, Inc.  
 Level Of Service Computation Report  
 2000 HCM Unsignalized (Future Volume Alternative)  
 Background (PM)

Intersection #1:



Approach: North Bound South Bound East Bound West Bound  
 Movement: L - T - R L - T - R L - T - R L - T - R

Volume Module:

Base Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Growth Adj:	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Initial Bse:	0	0	0	0	0	0	0	0	0	0	0	0
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
ATI:	0	29	0	0	35	0	0	0	0	0	0	0
Initial Fut:	0	0	0	0	0	0	0	0	0	0	0	0
User Adj:	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
PHF Adj:	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
PHF Volume:	0	0	0	0	0	0	0	0	0	0	0	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
FinalVolume:	0	0	0	0	0	0	0	0	0	0	0	0

Critical Gap Module:

Critical Gp:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
FollowUpTim:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Capacity Module:

Cnflct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Potent Cap.:	0	0	0	0	0	0	0	0	0	0	0	0
Move Cap.:	1	1	1	1	1	1	1	1	1	1	1	1
Volume/Cap:	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Level Of Service Module:

2Way95thQ:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Control Del:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
LOS by Move:	LT - LTR - RT											
Shared Cap.:	0	0	0	0	0	0	0	0	0	0	0	0
SharedQueue:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Shrd ConDel:	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Shared LOS:	0.0			0.0			0.0			0.0		

Note: Queue reported is the number of cars per lane.

Peak Hour Delay Signal Warrant Report

\*\*\*\*\*

Intersection #1

\*\*\*\*\*

Future Volume Alternative: Peak Hour Warrant NOT Met

-----|-----|-----|-----|-----|

Approach:	North Bound				South Bound				East Bound				West Bound							
Movement:	L	T	R		L	T	R		L	T	R		L	T	R					
Control:	Uncontrolled				Uncontrolled				Yield Sign				Yield Sign							
Lanes:	0	1	0	0	0	0	0	1	0	0	0	1	0	0	0	0	0	0	0	
Initial Vol:	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
ApproachDel:	0.0				0.0				0.0				0.0							

SIGNAL WARRANT DISCLAIMER

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Peak Hour Volume Signal Warrant Report [Urban]

\*\*\*\*\*

Intersection #1

\*\*\*\*\*

Future Volume Alternative: Peak Hour Warrant NOT Met

Approach:	North Bound				South Bound				East Bound				West Bound							
Movement:	L	T	R		L	T	R		L	T	R		L	T	R					
Control:	Uncontrolled				Uncontrolled				Yield Sign				Yield Sign							
Lanes:	0	1	0	0	0	0	0	1	0	0	0	1	0	0	0	0	0	0	0	
Initial Vol:	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Major Street Volume:					0															
Minor Approach Volume:					0															
Minor Approach Volume Threshold:					+Inf															

SIGNAL WARRANT DISCLAIMER

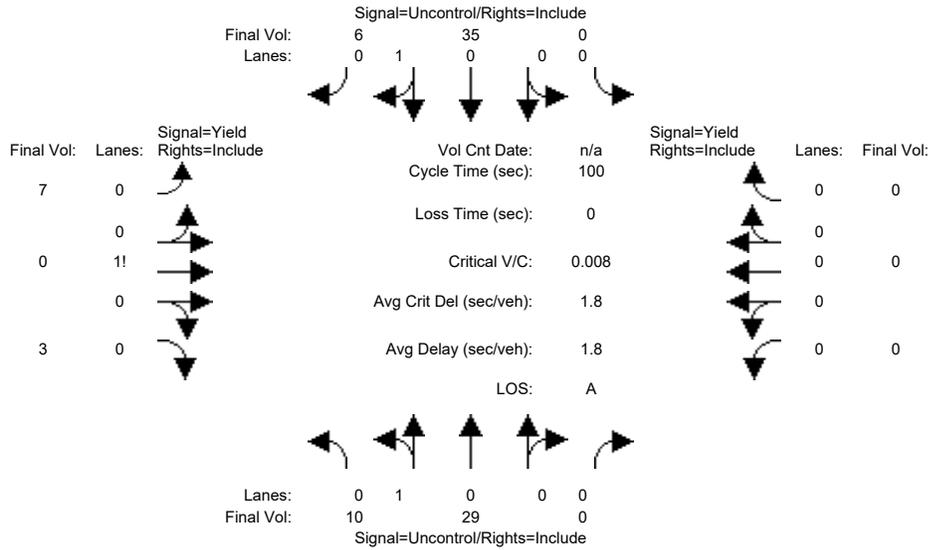
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1747 Almaden Road Residential Development
San Jose
Hexagon Transportation Consultants, Inc.

Level Of Service Computation Report
2000 HCM Unsignalized (Future Volume Alternative)
Background + P (PM)

Intersection #1:



Approach: North Bound South Bound East Bound West Bound
Movement: L - T - R L - T - R L - T - R L - T - R

Volume Module:

Table with 13 columns for volume metrics (Base Vol, Growth Adj, Initial Bse, Added Vol, ATI, Initial Fut, User Adj, PHF Adj, PHF Volume, Reduct Vol, Final Volume) across four approaches (North, South, East, West) and three movements (L, T, R).

Critical Gap Module:

Table with 13 columns for critical gap metrics (Critical Gp, FollowUpTim) across four approaches and three movements.

Capacity Module:

Table with 13 columns for capacity metrics (Cnflct Vol, Potent Cap., Move Cap., Volume/Cap) across four approaches and three movements.

Level Of Service Module:

Table with 13 columns for level of service metrics (2Way95thQ, Control Del, LOS by Move, Movement, Shared Cap., Shared Queue, Shrd ConDel, Shared LOS, ApproachDel, ApproachLOS) across four approaches and three movements.

Note: Queue reported is the number of cars per lane.

Peak Hour Delay Signal Warrant Report

\*\*\*\*\*

Intersection #1

\*\*\*\*\*

Future Volume Alternative: Peak Hour Warrant NOT Met

-----|-----|-----|-----|-----|

Approach:	North Bound	South Bound	East Bound	West Bound
Movement:	L - T - R	L - T - R	L - T - R	L - T - R
Control:	Uncontrolled	Uncontrolled	Yield Sign	Yield Sign
Lanes:	0 1 0 0 0	0 0 0 1 0	0 0 1! 0 0	0 0 0 0 0
Initial Vol:	10 29 0	0 35 6	7 0 3	0 0 0
ApproachDel:	xxxxxx	xxxxxx	8.8	xxxxxx

Approach[eastbound][lanes=1][control=Yield Sign]  
 Signal Warrant Rule #1: [vehicle-hours=0.0]  
 FAIL - Controller not stop sign.  
 Signal Warrant Rule #2: [approach volume=10]  
 FAIL - Approach volume less than 100 for one lane approach.  
 Signal Warrant Rule #3: [approach count=3][total volume=90]  
 FAIL - Total volume less than 650 for intersection  
 with less than four approaches.

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 SIGNAL WARRANT DISCLAIMER

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Peak Hour Volume Signal Warrant Report [Urban]

\*\*\*\*\*

Intersection #1

\*\*\*\*\*

Future Volume Alternative: Peak Hour Warrant NOT Met

Approach:	North Bound	South Bound	East Bound	West Bound
Movement:	L - T - R	L - T - R	L - T - R	L - T - R
Control:	Uncontrolled	Uncontrolled	Yield Sign	Yield Sign
Lanes:	0 1 0 0 0	0 0 0 1 0	0 0 1! 0 0	0 0 0 0 0
Initial Vol:	10 29 0	0 35 6	7 0 3	0 0 0

Major Street Volume: 80  
 Minor Approach Volume: 10  
 Minor Approach Volume Threshold: 893

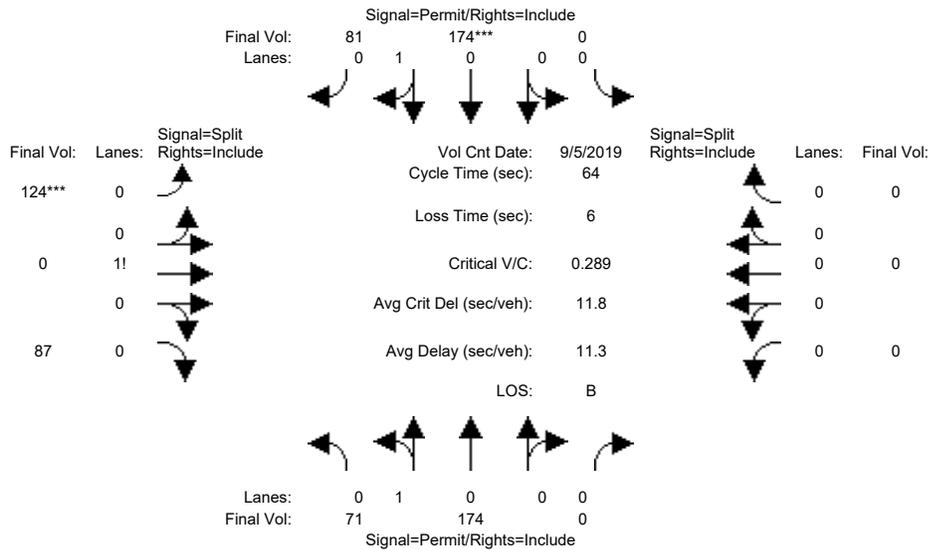
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 SIGNAL WARRANT DISCLAIMER

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1747 Almaden Road Residential Development  
 San Jose  
 Hexagon Transportation Consultants, Inc.  
 Level Of Service Computation Report  
 2000 HCM Operations (Future Volume Alternative)  
 Existing (PM)

Intersection #3243: ALMADEN/WILLOW GLEN



Approach:	North Bound			South Bound			East Bound			West Bound		
	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	10	10	0	0	10	10	10	0	10	0	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:	>>	Count	Date:	5 Sep 2019	<<							
Base Vol:	71	174	0	0	174	81	124	0	87	0	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:	71	174	0	0	174	81	124	0	87	0	0	0
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
ATI:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	71	174	0	0	174	81	124	0	87	0	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:	71	174	0	0	174	81	124	0	87	0	0	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	71	174	0	0	174	81	124	0	87	0	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
Final Volume:	71	174	0	0	174	81	124	0	87	0	0	0

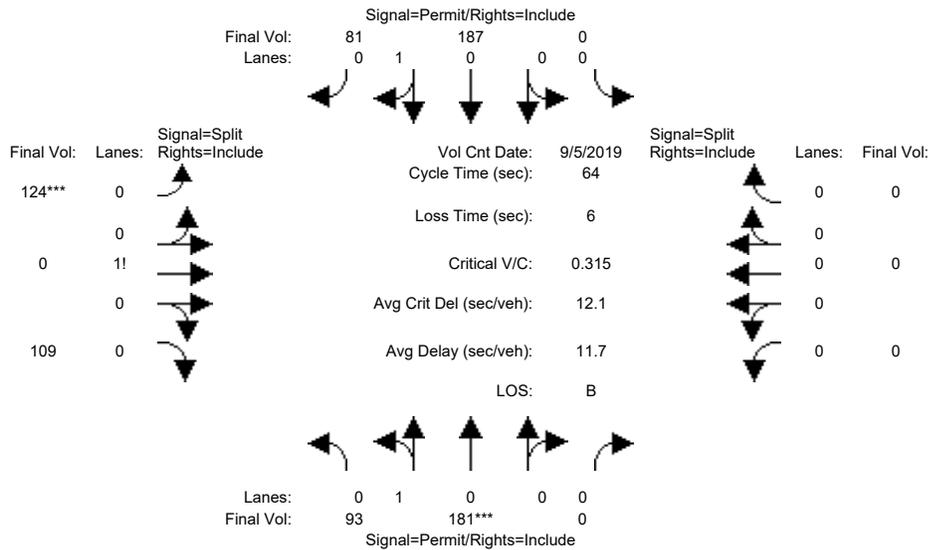
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.95	0.95	0.92	0.92	0.95	0.95	0.92	0.92	0.92	0.92	1.00	0.92
Lanes:	0.29	0.71	0.00	0.00	0.68	0.32	0.59	0.00	0.41	0.00	0.00	0.00
Final Sat.:	522	1278	0	0	1228	572	1028	0	722	0	0	0

Capacity Analysis Module:												
Vol/Sat:	0.14	0.14	0.00	0.00	0.14	0.14	0.12	0.00	0.12	0.00	0.00	0.00
Crit Moves:				****		****						
Green Time:	31.3	31.3	0.0	0.0	31.3	31.3	26.7	0.0	26.7	0.0	0.0	0.0
Volume/Cap:	0.28	0.28	0.00	0.00	0.29	0.29	0.29	0.00	0.29	0.00	0.00	0.00
Delay/Veh:	10.4	10.4	0.0	0.0	10.5	10.5	13.4	0.0	13.4	0.0	0.0	0.0
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
AdjDel/Veh:	10.4	10.4	0.0	0.0	10.5	10.5	13.4	0.0	13.4	0.0	0.0	0.0
LOS by Move:	B	B	A	A	B	B	B	A	B	A	A	A
HCM2kAvqQ:	3	3	0	0	3	3	3	0	3	0	0	0

Note: Queue reported is the number of cars per lane.

1747 Almaden Road Residential Development  
 San Jose  
 Hexagon Transportation Consultants, Inc.  
 Level Of Service Computation Report  
 2000 HCM Operations (Future Volume Alternative)  
 Background (PM)

Intersection #3243: ALMADEN/WILLOW GLEN



Approach:	North Bound			South Bound			East Bound			West Bound		
	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	10	10	0	0	10	10	10	0	10	0	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:	>>	Count	Date:	5 Sep 2019	<<							
Base Vol:	71	174	0	0	174	81	124	0	87	0	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:	71	174	0	0	174	81	124	0	87	0	0	0
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
ATI:	22	7	0	0	13	0	0	0	22	0	0	0
Initial Fut:	93	181	0	0	187	81	124	0	109	0	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:	93	181	0	0	187	81	124	0	109	0	0	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	93	181	0	0	187	81	124	0	109	0	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:	93	181	0	0	187	81	124	0	109	0	0	0

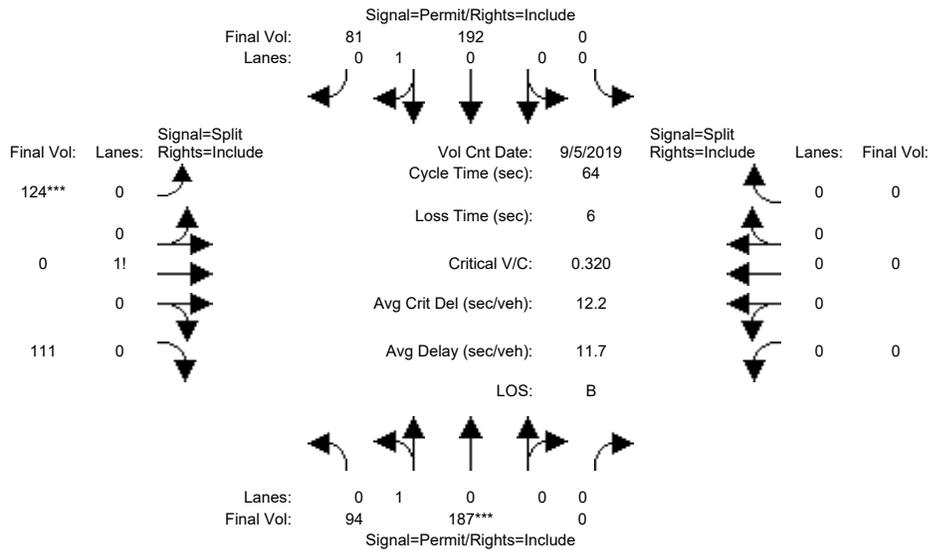
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.95	0.95	0.92	0.92	0.95	0.95	0.92	0.92	0.92	0.92	1.00	0.92
Lanes:	0.34	0.66	0.00	0.00	0.70	0.30	0.53	0.00	0.47	0.00	0.00	0.00
Final Sat.:	611	1189	0	0	1256	544	931	0	819	0	0	0

Capacity Analysis Module:												
Vol/Sat:	0.15	0.15	0.00	0.00	0.15	0.15	0.13	0.00	0.13	0.00	0.00	0.00
Crit Moves:	****			****			****			****		
Green Time:	30.9	30.9	0.0	0.0	30.9	30.9	27.1	0.0	27.1	0.0	0.0	0.0
Volume/Cap:	0.31	0.31	0.00	0.00	0.31	0.31	0.31	0.00	0.31	0.00	0.00	0.00
Delay/Veh:	11.0	11.0	0.0	0.0	11.0	11.0	13.4	0.0	13.4	0.0	0.0	0.0
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
AdjDel/Veh:	11.0	11.0	0.0	0.0	11.0	11.0	13.4	0.0	13.4	0.0	0.0	0.0
LOS by Move:	B	B	A	A	B	B	B	A	B	A	A	A
HCM2kAvqQ:	4	4	0	0	3	3	3	0	3	0	0	0

Note: Queue reported is the number of cars per lane.

1747 Almaden Road Residential Development  
 San Jose  
 Hexagon Transportation Consultants, Inc.  
 Level Of Service Computation Report  
 2000 HCM Operations (Future Volume Alternative)  
 Background + P (PM)

Intersection #3243: ALMADEN/WILLOW GLEN

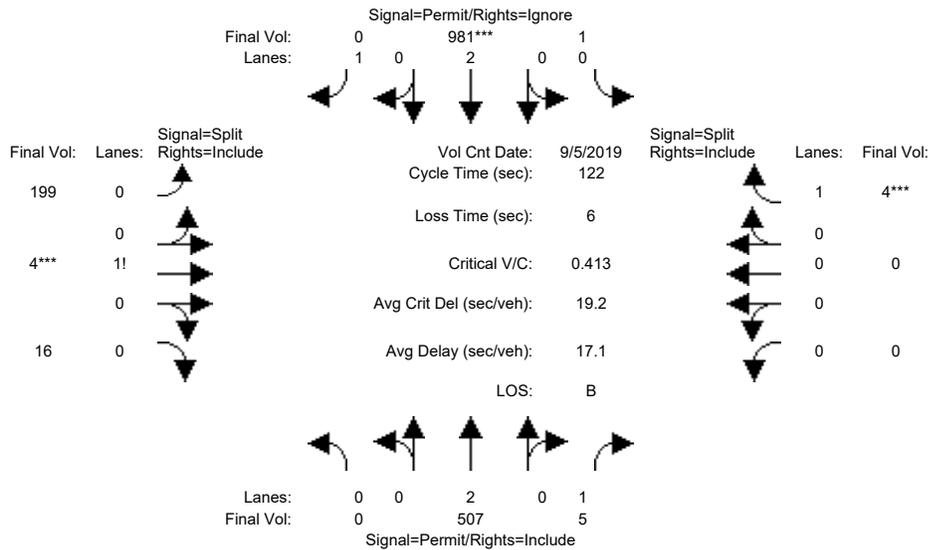


Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	10	10	0	0	10	10	10	0	10	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module: >> Count Date: 5 Sep 2019 <<												
Base Vol:	71	174	0	0	174	81	124	0	87	0	0	0
Growth Adj:	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:	71	174	0	0	174	81	124	0	87	0	0	0
Added Vol:	1	6	0	0	5	0	0	0	2	0	0	0
ATI:	22	7	0	0	13	0	0	0	22	0	0	0
Initial Fut:	94	187	0	0	192	81	124	0	111	0	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:	94	187	0	0	192	81	124	0	111	0	0	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	94	187	0	0	192	81	124	0	111	0	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:	94	187	0	0	192	81	124	0	111	0	0	0
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.95	0.95	0.92	0.92	0.95	0.95	0.92	0.92	0.92	0.92	1.00	0.92
Lanes:	0.33	0.67	0.00	0.00	0.70	0.30	0.53	0.00	0.47	0.00	0.00	0.00
Final Sat.:	602	1198	0	0	1266	534	923	0	827	0	0	0
Capacity Analysis Module:												
Vol/Sat:	0.16	0.16	0.00	0.00	0.15	0.15	0.13	0.00	0.13	0.00	0.00	0.00
Crit Moves:	****			****			****			****		
Green Time:	31.2	31.2	0.0	0.0	31.2	31.2	26.8	0.0	26.8	0.0	0.0	0.0
Volume/Cap:	0.32	0.32	0.00	0.00	0.31	0.31	0.32	0.00	0.32	0.00	0.00	0.00
Delay/Veh:	10.9	10.9	0.0	0.0	10.8	10.8	13.6	0.0	13.6	0.0	0.0	0.0
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
AdjDel/Veh:	10.9	10.9	0.0	0.0	10.8	10.8	13.6	0.0	13.6	0.0	0.0	0.0
LOS by Move:	B	B	A	A	B	B	B	A	B	A	A	A
HCM2kAvqQ:	4	4	0	0	3	3	4	0	4	0	0	0

Note: Queue reported is the number of cars per lane.

1747 Almaden Road Residential Development  
 San Jose  
 Hexagon Transportation Consultants, Inc.  
 Level Of Service Computation Report  
 2000 HCM Operations (Future Volume Alternative)  
 Existing (PM)

Intersection #3245: ALMADEN/ALMADEN(N)

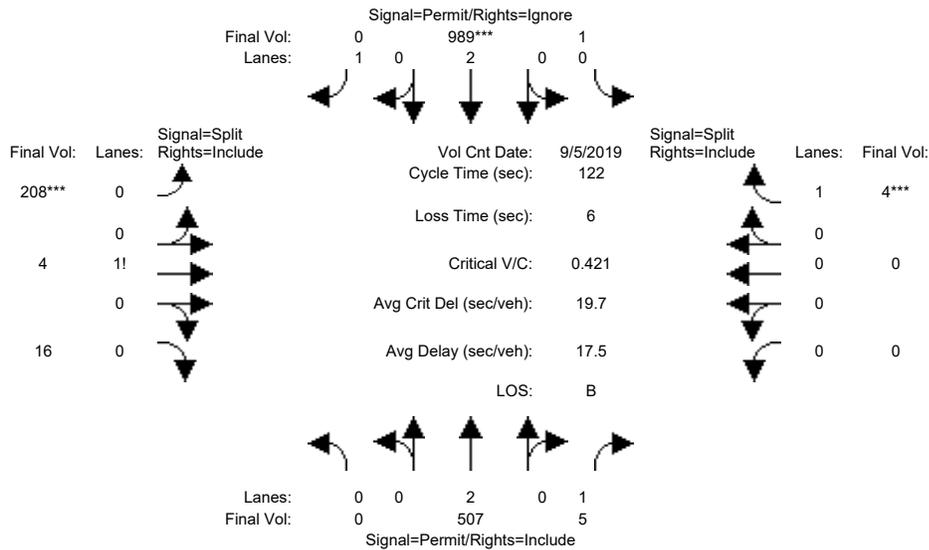


Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	0	10	10	10	10	10	10	10	10	0	0	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module: >> Count Date: 5 Sep 2019 <<												
Base Vol:	0	507	5	1	981	282	199	4	16	0	0	4
Growth 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:	0	507	5	1	981	282	199	4	16	0	0	4
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
ATI:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	0	507	5	1	981	282	199	4	16	0	0	4
User Adj:	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	0	507	5	1	981	0	199	4	16	0	0	4
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	0	507	5	1	981	0	199	4	16	0	0	4
PCE Adj:	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	0	507	5	1	981	0	199	4	16	0	0	4
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	1.00	0.92	0.95	0.97	0.92	0.92	0.92	0.92	0.92	1.00	0.92
Lanes:	0.00	2.00	1.00	0.01	1.99	1.00	0.91	0.02	0.07	0.00	0.00	1.00
Final Sat.:	0	3800	1750	4	3696	1750	1590	32	128	0	0	1750
Capacity Analysis Module:												
Vol/Sat:	0.00	0.13	0.00	0.27	0.27	0.00	0.13	0.13	0.13	0.00	0.00	0.00
Crit Moves:				****			****			****		
Green Time:	0.0	72.0	72.0	72.0	72.0	0.0	34.0	34.0	34.0	0.0	0.0	10.0
Volume/Cap:	0.00	0.23	0.00	0.45	0.45	0.00	0.45	0.45	0.45	0.00	0.00	0.03
Delay/Veh:	0.0	12.0	10.3	14.6	14.6	0.0	39.3	39.3	39.3	0.0	0.0	51.9
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
AdjDel/Veh:	0.0	12.0	10.3	14.6	14.6	0.0	39.3	39.3	39.3	0.0	0.0	51.9
LOS by Move:	A	B	B	B	B	A	D	D	D	A	A	D
HCM2kAvgQ:	0	4	0	10	10	0	7	7	7	0	0	0

Note: Queue reported is the number of cars per lane.

1747 Almaden Road Residential Development  
 San Jose  
 Hexagon Transportation Consultants, Inc.  
 Level Of Service Computation Report  
 2000 HCM Operations (Future Volume Alternative)  
 Background (PM)

Intersection #3245: ALMADEN/ALMADEN(N)



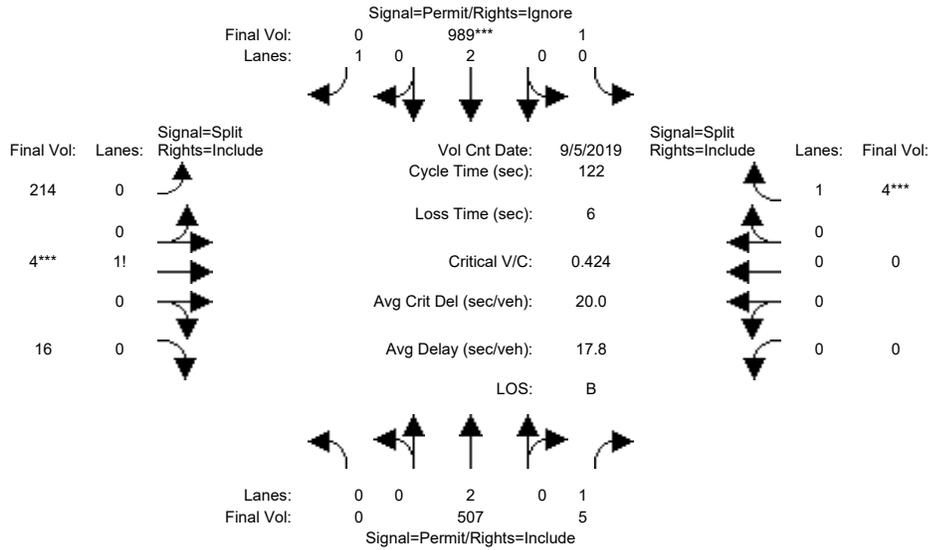
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	0	10	10	10	10	10	10	10	10	0	0	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module: >> Count Date: 5 Sep 2019 <<												
Base Vol:	0	507	5	1	981	282	199	4	16	0	0	4
Growth 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:	0	507	5	1	981	282	199	4	16	0	0	4
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
ATI:	0	0	0	0	8	11	9	0	0	0	0	0
Initial Fut:	0	507	5	1	989	293	208	4	16	0	0	4
User Adj:	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	0	507	5	1	989	0	208	4	16	0	0	4
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	0	507	5	1	989	0	208	4	16	0	0	4
PCE Adj:	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Volume:	0	507	5	1	989	0	208	4	16	0	0	4
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	1.00	0.92	0.95	0.97	0.92	0.92	0.92	0.92	0.92	1.00	0.92
Lanes:	0.00	2.00	1.00	0.01	1.99	1.00	0.91	0.02	0.07	0.00	0.00	1.00
Final Sat.:	0	3800	1750	4	3696	1750	1596	31	123	0	0	1750
Capacity Analysis Module:												
Vol/Sat:	0.00	0.13	0.00	0.27	0.27	0.00	0.13	0.13	0.13	0.00	0.00	0.00
Crit Moves:				****			****			****		
Green Time:	0.0	71.3	71.3	71.3	71.3	0.0	34.7	34.7	34.7	0.0	0.0	10.0
Volume/Cap:	0.00	0.23	0.00	0.46	0.46	0.00	0.46	0.46	0.46	0.00	0.00	0.03
Delay/Veh:	0.0	12.4	10.6	15.1	15.1	0.0	38.9	38.9	38.9	0.0	0.0	51.9
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
AdjDel/Veh:	0.0	12.4	10.6	15.1	15.1	0.0	38.9	38.9	38.9	0.0	0.0	51.9
LOS by Move:	A	B	B	B	B	A	D	D	D	A	A	D
HCM2kAvgQ:	0	4	0	11	11	0	8	8	8	0	0	0

Note: Queue reported is the number of cars per lane.

1747 Almaden Road Residential Development  
San Jose  
Hexagon Transportation Consultants, Inc.

Level Of Service Computation Report  
2000 HCM Operations (Future Volume Alternative)  
Background + P (PM)

Intersection #3245: ALMADEN/ALMADEN(N)



Approach:	North Bound			South Bound			East Bound			West Bound		
	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	0	10	10	10	10	10	10	10	10	0	0	10
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: >> Count Date: 5 Sep 2019 <<												
Base Vol:	0	507	5	1	981	282	199	4	16	0	0	4
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:	0	507	5	1	981	282	199	4	16	0	0	4
Added Vol:	0	0	0	0	0	5	6	0	0	0	0	0
ATI:	0	0	0	0	8	11	9	0	0	0	0	0
Initial Fut:	0	507	5	1	989	298	214	4	16	0	0	4
User Adj:	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	0	507	5	1	989	0	214	4	16	0	0	4
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	0	507	5	1	989	0	214	4	16	0	0	4
PCE Adj:	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Volume:	0	507	5	1	989	0	214	4	16	0	0	4
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	1.00	0.92	0.95	0.97	0.92	0.92	0.92	0.92	0.92	1.00	0.92
Lanes:	0.00	2.00	1.00	0.01	1.99	1.00	0.91	0.02	0.07	0.00	0.00	1.00
Final Sat.:	0	3800	1750	4	3696	1750	1600	30	120	0	0	1750
Capacity Analysis Module:												
Vol/Sat:	0.00	0.13	0.00	0.27	0.27	0.00	0.13	0.13	0.13	0.00	0.00	0.00
Crit Moves:				****			****			****		
Green Time:	0.0	70.7	70.7	70.7	70.7	0.0	35.3	35.3	35.3	0.0	0.0	10.0
Volume/Cap:	0.00	0.23	0.00	0.46	0.46	0.00	0.46	0.46	0.46	0.00	0.00	0.03
Delay/Veh:	0.0	12.7	10.8	15.5	15.5	0.0	38.6	38.6	38.6	0.0	0.0	51.9
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
AdjDel/Veh:	0.0	12.7	10.8	15.5	15.5	0.0	38.6	38.6	38.6	0.0	0.0	51.9
LOS by Move:	A	B	B	B	B	A	D	D	D	A	A	D
HCM2kAvgQ:	0	4	0	11	11	0	8	8	8	0	0	0

Note: Queue reported is the number of cars per lane.



## **Appendix F**

### **Queue Length Calculations**

Almaden Expy/Almaden Rd  
 EBL/T/R  
 AM  
 Existing Conditions  
 Avg. Queue Per Lane in Veh= 10.5  
 Percentile = 0.95 16

Almaden Expy/Almaden Rd  
 EBL/T/R  
 AM  
 Background Conditions  
 Avg. Queue Per Lane in Veh= 10.8  
 Percentile = 0.95 16

Almaden Expy/Almaden Rd  
 EBL/T/R  
 AM  
 Background Plus Project Conditions  
 Avg. Queue Per Lane in Veh= 11.1  
 Percentile = 0.95 17

Individual Probability	Cumulative Probability	Number of Queued Vehicles
0.0000	0.0000	0
0.0003	0.0003	1
0.0015	0.0018	2
0.0052	0.0070	3
0.0137	0.0208	4
0.0289	0.0497	5
0.0507	0.1004	6
0.0763	0.1766	7
0.1003	0.2770	8
0.1173	0.3943	9
0.1235	0.5177	10
0.1181	0.6358	11
0.1036	0.7394	12
0.0839	0.8233	13
0.0630	0.8864	14
0.0442	0.9306	15
0.0291	0.9597	16
0.0180	0.9777	17
0.0105	0.9882	18
0.0058	0.9941	19
0.0031	0.9971	20
0.0015	0.9987	21
0.0007	0.9994	22
0.0003	0.9997	23
0.0001	0.9999	24
0.0001	1.0000	25
0.0000	1.0000	26
0.0000	1.0000	27
0.0000	1.0000	28
0.0000	1.0000	29
0.0000	1.0000	30
0.0000	1.0000	31
0.0000	1.0000	32
0.0000	1.0000	33
0.0000	1.0000	34
0.0000	1.0000	35
0.0000	1.0000	36
0.0000	1.0000	37
0.0000	1.0000	38
0.0000	1.0000	39
0.0000	1.0000	40
0.0000	1.0000	41
0.0000	1.0000	42
0.0000	1.0000	43
0.0000	1.0000	44
0.0000	1.0000	45

Individual Probability	Cumulative Probability	Number of Queued Vehicles
0.0000	0.0000	0
0.0002	0.0002	1
0.0012	0.0014	2
0.0043	0.0057	3
0.0115	0.0172	4
0.0249	0.0420	5
0.0448	0.0868	6
0.0692	0.1560	7
0.0934	0.2494	8
0.1122	0.3616	9
0.1213	0.4829	10
0.1192	0.6021	11
0.1073	0.7094	12
0.0893	0.7987	13
0.0689	0.8676	14
0.0497	0.9172	15
0.0335	0.9508	16
0.0213	0.9721	17
0.0128	0.9849	18
0.0073	0.9922	19
0.0039	0.9961	20
0.0020	0.9982	21
0.0010	0.9992	22
0.0005	0.9996	23
0.0002	0.9998	24
0.0001	0.9999	25
0.0000	1.0000	26
0.0000	1.0000	27
0.0000	1.0000	28
0.0000	1.0000	29
0.0000	1.0000	30
0.0000	1.0000	31
0.0000	1.0000	32
0.0000	1.0000	33
0.0000	1.0000	34
0.0000	1.0000	35
0.0000	1.0000	36
0.0000	1.0000	37
0.0000	1.0000	38
0.0000	1.0000	39
0.0000	1.0000	40
0.0000	1.0000	41
0.0000	1.0000	42
0.0000	1.0000	43
0.0000	1.0000	44
0.0000	1.0000	45

Individual Probability	Cumulative Probability	Number of Queued Vehicles
0.0000	0.0000	0
0.0002	0.0002	1
0.0009	0.0011	2
0.0034	0.0045	3
0.0094	0.0138	4
0.0209	0.0347	5
0.0387	0.0735	6
0.0616	0.1351	7
0.0857	0.2207	8
0.1059	0.3267	9
0.1179	0.4446	10
0.1193	0.5639	11
0.1106	0.6745	12
0.0947	0.7692	13
0.0753	0.8445	14
0.0559	0.9004	15
0.0389	0.9392	16
0.0254	0.9646	17
0.0157	0.9804	18
0.0092	0.9896	19
0.0051	0.9947	20
0.0027	0.9974	21
0.0014	0.9988	22
0.0007	0.9995	23
0.0003	0.9998	24
0.0001	0.9999	25
0.0001	1.0000	26
0.0000	1.0000	27
0.0000	1.0000	28
0.0000	1.0000	29
0.0000	1.0000	30
0.0000	1.0000	31
0.0000	1.0000	32
0.0000	1.0000	33
0.0000	1.0000	34
0.0000	1.0000	35
0.0000	1.0000	36
0.0000	1.0000	37
0.0000	1.0000	38
0.0000	1.0000	39
0.0000	1.0000	40
0.0000	1.0000	41
0.0000	1.0000	42
0.0000	1.0000	43
0.0000	1.0000	44
0.0000	1.0000	45

Almaden Expy/Almaden Rd  
 EBL/T/R  
 PM  
 Existing Conditions  
 Avg. Queue Per Lane in Veh= 7.4  
 Percentile = 0.95 12

Almaden Expy/Almaden Rd  
 EBL/T/R  
 PM  
 Background Conditions  
 Avg. Queue Per Lane in Veh= 7.7  
 Percentile = 0.95 13

Almaden Expy/Almaden Rd  
 EBL/T/R  
 PM  
 Background Plus Project Conditions  
 Avg. Queue Per Lane in Veh= 7.9  
 Percentile = 0.95 13

Individual Probability	Cumulative Probability	Number of Queued Vehicles
0.0006	0.0006	0
0.0044	0.0050	1
0.0165	0.0215	2
0.0408	0.0623	3
0.0756	0.1379	4
0.1122	0.2501	5
0.1388	0.3889	6
0.1472	0.5361	7
0.1366	0.6727	8
0.1126	0.7853	9
0.0836	0.8689	10
0.0564	0.9253	11
0.0349	0.9601	12
0.0199	0.9800	13
0.0106	0.9906	14
0.0052	0.9958	15
0.0024	0.9982	16
0.0011	0.9993	17
0.0004	0.9997	18
0.0002	0.9999	19
0.0001	1.0000	20
0.0000	1.0000	21
0.0000	1.0000	22
0.0000	1.0000	23
0.0000	1.0000	24
0.0000	1.0000	25
0.0000	1.0000	26
0.0000	1.0000	27
0.0000	1.0000	28
0.0000	1.0000	29
0.0000	1.0000	30
0.0000	1.0000	31
0.0000	1.0000	32
0.0000	1.0000	33
0.0000	1.0000	34
0.0000	1.0000	35
0.0000	1.0000	36
0.0000	1.0000	37
0.0000	1.0000	38
0.0000	1.0000	39
0.0000	1.0000	40
0.0000	1.0000	41
0.0000	1.0000	42
0.0000	1.0000	43
0.0000	1.0000	44
0.0000	1.0000	45

Individual Probability	Cumulative Probability	Number of Queued Vehicles
0.0004	0.0004	0
0.0034	0.0038	1
0.0132	0.0170	2
0.0339	0.0509	3
0.0655	0.1164	4
0.1012	0.2176	5
0.1303	0.3479	6
0.1438	0.4917	7
0.1389	0.6306	8
0.1193	0.7499	9
0.0922	0.8421	10
0.0647	0.9068	11
0.0417	0.9485	12
0.0248	0.9732	13
0.0137	0.9869	14
0.0070	0.9940	15
0.0034	0.9974	16
0.0015	0.9989	17
0.0007	0.9996	18
0.0003	0.9998	19
0.0001	0.9999	20
0.0000	1.0000	21
0.0000	1.0000	22
0.0000	1.0000	23
0.0000	1.0000	24
0.0000	1.0000	25
0.0000	1.0000	26
0.0000	1.0000	27
0.0000	1.0000	28
0.0000	1.0000	29
0.0000	1.0000	30
0.0000	1.0000	31
0.0000	1.0000	32
0.0000	1.0000	33
0.0000	1.0000	34
0.0000	1.0000	35
0.0000	1.0000	36
0.0000	1.0000	37
0.0000	1.0000	38
0.0000	1.0000	39
0.0000	1.0000	40
0.0000	1.0000	41
0.0000	1.0000	42
0.0000	1.0000	43
0.0000	1.0000	44
0.0000	1.0000	45

Individual Probability	Cumulative Probability	Number of Queued Vehicles
0.0004	0.0004	0
0.0029	0.0032	1
0.0113	0.0145	2
0.0299	0.0444	3
0.0593	0.1037	4
0.0940	0.1977	5
0.1243	0.3220	6
0.1408	0.4628	7
0.1395	0.6023	8
0.1230	0.7253	9
0.0975	0.8228	10
0.0703	0.8931	11
0.0465	0.9395	12
0.0283	0.9678	13
0.0160	0.9839	14
0.0085	0.9924	15
0.0042	0.9966	16
0.0020	0.9985	17
0.0009	0.9994	18
0.0004	0.9998	19
0.0001	0.9999	20
0.0001	1.0000	21
0.0000	1.0000	22
0.0000	1.0000	23
0.0000	1.0000	24
0.0000	1.0000	25
0.0000	1.0000	26
0.0000	1.0000	27
0.0000	1.0000	28
0.0000	1.0000	29
0.0000	1.0000	30
0.0000	1.0000	31
0.0000	1.0000	32
0.0000	1.0000	33
0.0000	1.0000	34
0.0000	1.0000	35
0.0000	1.0000	36
0.0000	1.0000	37
0.0000	1.0000	38
0.0000	1.0000	39
0.0000	1.0000	40
0.0000	1.0000	41
0.0000	1.0000	42
0.0000	1.0000	43
0.0000	1.0000	44
0.0000	1.0000	45