APPENDIX G

Transportation Analysis Transportation Demand Management Plan

Little Portugal Gateway Mixed-Use Project Initial Study/MND







Little Portugal Gateway Mixed-Use Development



Transportation Analysis

Prepared for:

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Executive Summary

This report presents the results of a Transportation Analysis (TA) for the proposed mixed-use development at 1661-1665 Alum Rock Avenue in the City of San José. The 0.92 +/- acre project site is comprised of three parcels (APN 482-12-069, -070, -109) located north of Alum Rock Avenue between King Road and 34th Street. The project site is located within a planned growth area (Little Portugal Urban Village) per the Envision San Jose 2040 General Plan. According to the Envision San Jose 2040 General Plan, the Urban Village strategy fosters:

- Mixed residential and employment activities that are attractive to an innovative workforce
- Revitalization of underutilized properties that have access to existing infrastructure
- Densities that support transit use, bicycling, and walking
- High-quality urban design

The project proposes to demolish existing on-site buildings including a restaurant, tire store, used car dealership and several ancillary structures. As proposed, the mixed-use development would consist of 123 multi-family residential units and 13,897 square feet (s.f.) of commercial space. A total of 129 parking spaces for the residential use and 41 parking spaces for the retail use are proposed within the ground-floor level and two below-ground parking levels. Based on the site plan, on-site parking will be accessed by one ingress/egress driveway on Alum Rock Avenue with limited (right-in/right-out only) operations.

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.

The project site is located within a planned Growth Area (Little Portugal Urban Village) with low VMT per capita as identified by the City of San Jose. The proposed 13,897 s.f. of retail space is less than the 100,000 s.f. retail threshold screening criterion for local-serving retail. The residential component of the proposed project also will meet all of the applicable VMT screening criteria for residential developments as described in further detail in Chapter 3. Therefore, both the residential and retail components of the proposed project are screened from the evaluation of VMT and are considered to result in a less-than significant VMT impact.

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 and Little Portugal Urban Village goals and policies for the following reasons:

- The proposed residential uses for the project site are consistent with the Urban Village land use designation per the Little Portugal Urban Village plan.
- The proposed residential density (133 du/acre) exceeds the minimum 55 du/acre per the Little Portugal Urban Village plan.
- The project site is within walking distance (less than 400 feet) of the Alum Rock/King BRT Station.
- The project frontage along Alum Rock Avenue will be designed to be consistent with planned streetscape design features per the Little Portugal Urban Village plan, such as a minimum 16-foot wide sidewalk.

Therefore, based on the project description, the proposed project would be consistent with the *Urban Village Planning Concepts* and 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 five signalized 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 894 daily vehicle trips, with 46 trips (15 inbound and 31 outbound) occurring during the AM peak hour and 79 trips (43 inbound and 36 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 D or better during both the AM and PM peak hours, under background conditions, and background plus project conditions.

Intersection Queueing Analysis

The queuing analysis indicates that the projected maximum vehicle queue for the eastbound left-turn movement at the King Road and Alum Rock Avenue intersection currently occupies a majority of the 200-foot storage capacity during the PM peak hour and would continue to do so under background conditions during the PM peak hour. The addition of project traffic is projected to lengthen the projected queue by one vehicle, to a total of 9 vehicles (225 feet), during the PM peak hour. It should be noted that one vehicle extending out of the turn pocket occasionally during the peak-hours is not a significant operational issue.

This deficiency can only be resolved by providing additional storage capacity. Providing additional queue storage capacity for the eastbound left-turn movement at the Alum Rock Avenue/King Road intersection would require removal or existing bus lanes, or street widening along with narrowing of sidewalks along Alum Rock Avenue. The removal and/or alteration of improvements intended to encourage the use of multi-modal travel to accommodate vehicular demand is not consistent with the City's General Plan goals. Therefore, the extension of the eastbound left-turn pocket at this intersection is not recommended.

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

<u>Install Parking Garage Signage.</u> Since a barrier is not proposed between the commercial and residential parking area, it is recommended that signage be installed within the first below-ground parking level indicating that all spaces within the second below-ground parking level are assigned to the residential use.

<u>Provide Turn-Around Space</u>. The site plan should be adjusted to provide a looped drive aisle within the ground-floor parking level or provide adequate turn-around space for U-turning vehicles adjacent to the dead-end drive aisle. This adjustment will require the removal or relocation of planned parking spaces.

Recommend Trash Pick-Up. Trash bins will need to be wheeled out to the duc-out/drop off area just north of the project driveway, which will be accessible to garbage trucks for pickup.

Parking Supply

Vehicular Parking

Based on the City's standard parking requirements, the project is required to provide a total of 228 off-street parking spaces before any reductions. However, a 20 percent reduction can be granted for proposed projects within an Urban Village which provide bicycle parking spaces per City requirements. Based on the City's parking code and an application of a 20 percent Urban Village reduction, the required parking would be reduced to 184 spaces, consisting of 136 spaces for the residential use and 48 spaces for the commercial use.



The project is proposing to provide a total of 129 parking spaces for the residential use and 41 spaces for the commercial use, which would not meet the City's reduced parking requirements. However, the project proposes an on-site parking restriction program which will provide an additional 11 parking spaces for the residential use (between 6:00 PM and 8:00 AM) and an additional 25 parking spaces for the commercial use (between 8:00 AM and 6:00 PM). With the additional shared parking spaces, the residential use is provided a total of 140 parking spaces and the commercial use is provided a total of 66 parking spaces. Therefore, both uses will meet the City's reduced parking requirements with the implementation of an on-site shared parking program.

Evaluation of Project Parking Demand

Based on parking demand survey data, the peak parking demand for the entire project (both the residential and retail uses) is projected to exceed the total provided on-site parking between 7:00 PM to 9:00 PM. An additional eight parking spaces would be required to meet the project's total parking demand of 178 spaces between 7:00 PM to 8:00 PM, while one additional space would be needed to meet the demand of 171 spaces between 8:00 PM to 9:00 PM. Therefore, the proposed 170 on-site spaces would not be adequate to serve the project's parking demand. To reduce the projected parking demand, the project will be required to submit and have approved a transportation demand management program (TDM) by the City.

Recommended On-Site Parking Improvements

- It is recommended that the daytime hours of the parking restriction be extended to allow users of the commercial use to park on residential spaces until 7:00 PM.
- Signage should be installed within the first below-ground parking level indicating which of the residential parking spaces can be occupied by users of the commercial use during daytime hours.

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 36 bicycle parking spaces consisting of 14 short-term parking spaces and 22 long-term parking spaces. Short-term bicycle storage will be provided along the east frontage sidewalk and within an outdoor area located at the northeast corner of the project site. A long-term bicycle storage room will be located within the first below-ground level of the parking garage. The project proposes to provide a total of 36 bicycle parking spaces consisting of 14 short-term parking spaces and 22 long-term parking spaces. Therefore, the proposed bicycle parking of the project will meet the City's Bicycle Parking Standards.

Pedestrian, Bicycle, and Transit Analysis

Pedestrian Facilities

Pedestrian generators in the project vicinity include the Alum Rock/King BRT Station, commercial areas along Alum Rock Avenue, and bus stops along the Alum Rock Avenue and King Road corridors. The project site is within the service boundaries of Anne Darling Elementary School and Muwekma Ohlone Middle School which are part of the San Jose Unified School District. Anne Darling Elementary School is located approximately 0.65-mile north of the project site along 34th Street while Muwekma Ohlone Middle School is located approximately 3.5 miles (driving distance) west of the project site near Second Street and Hedding Street.

Existing sidewalks along Alum Rock Avenue, 34th Street, and King Road provide a pedestrian connection between the project site and pedestrian destinations in the project vicinity, including the Alum Rock/King BRT Station and Anne Darling Elementary School. Pedestrian access across US-101



is provided via sidewalks along the north and south sides of the Alum Rock Avenue overpass and crosswalks across the freeway ramp intersections.

Alum Rock Avenue has been designated as a Grand Boulevard within the Envision 2040 General Plan. Grand Boulevards are intended to serve as major transportation corridors with priority given to public transit. The City encourages developments to provide a minimum 20-foot wide sidewalk along most Grand Boulevard frontages. However, it should be noted that the proposed 16-foot sidewalk width along the project's Alum Rock Avenue frontage is consistent with the minimum frontage sidewalk width required by Little Portugal Urban Village plan.

Bicycle Facilities

The bikeways within the vicinity of the project site would remain unchanged under project conditions. There are currently no bike lanes along Alum Rock in the vicinity of the project site. However, there are bike lanes provided along San Antonio Street and King Road, less than ½ mile from the project site.

Due to right-of-way limitations, neither the San Jose Bike Plan 2020 nor the Little Portugal Urban Village plan suggest additional bicycle circulation improvements along Alum Rock Avenue in the project vicinity. However, there are relatively low vehicular volumes along many residential streets, such as 34th Street and Shortridge Avenue, which are conducive to bicycle usage.

Transit Services

The project site is adequately served by the existing VTA transit services. The project site is primarily served by seven VTA bus routes (22, 23, 64A, 64B, 77, 522, and 523). The nearest bus stops to the project site serve Frequent Routes 22 and 23, in addition to Rapid Route 523, and are located along both sides of Alum Rock Avenue at its intersection with King Road, adjacent to the south project site frontage. Rapid Route 522 is a bus rapid transit (BRT) service operating within dedicated bus-only lanes along the center median of Alum Rock Avenue and is served by platform bus stops between 34th Street and Capitol Avenue. The nearest eastbound and westbound bus stops serving Rapid Route 522 are located at the intersection of Alum Rock Avenue and King Road, less than 400 feet walking distance east of the project site.

The new transit trips generated by the project are not expected to create demand in excess of the transit service that is currently provided.

Trip Reduction (TDM Program)

The project's total parking demand is projected to exceed the project's parking supply by 8 parking spaces between the hours of 7:00 PM and 8:00 PM, even with the implementation of a shared parking program. To reduce the project's parking demand, TDM measures should be implemented to encourage future tenants of the residential development and future employees of the commercial use to utilize alternative transportation modes available in the area to reduce single occupancy vehicle trips and parking demand generated by the project. The TDM program should encourage multimodal travel and use of the extensive bus service and pedestrian/bicycle facilities in the immediate project area to the maximum extent possible. The applicant/property owner should manage the TDM program to ensure tenant participation. The project will be required to submit and have approved by the City its TDM program.



1. Introduction

This report presents the results of a Transportation Analysis (TA) for the proposed mixed-use development at 1661-1665 Alum Rock Avenue in the City of San José. The 0.92 +/- acre project site is comprised of three parcels (APN 482-12-069, -070, -109) located north of Alum Rock Avenue between King Road and 34th Street. The project site location and the surrounding study area are shown on Figure 1. The project site is located within a planned growth area (Little Portugal Urban Village) per the Envision San Jose 2040 General Plan. According to the Envision San Jose 2040 General Plan, the Urban Village strategy fosters:

- Mixed residential and employment activities that are attractive to an innovative workforce
- Revitalization of underutilized properties that have access to existing infrastructure
- Densities that support transit use, bicycling, and walking
- High-quality urban design

The project proposes to demolish existing on-site buildings including a restaurant, tire store, used car dealership and several ancillary structures. As proposed, the mixed-use development would consist of 123 multi-family residential units and 13,897 square feet (s.f.) of commercial space. A total of 129 parking spaces for the residential use and 41 parking spaces for the retail use are proposed within the ground-floor level and two below-ground parking levels. Based on the site plan, on-site parking will be accessed by one ingress/egress driveway on Alum Rock Avenue with limited (right-in/right-out only) operations. 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). 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-milestraveled (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

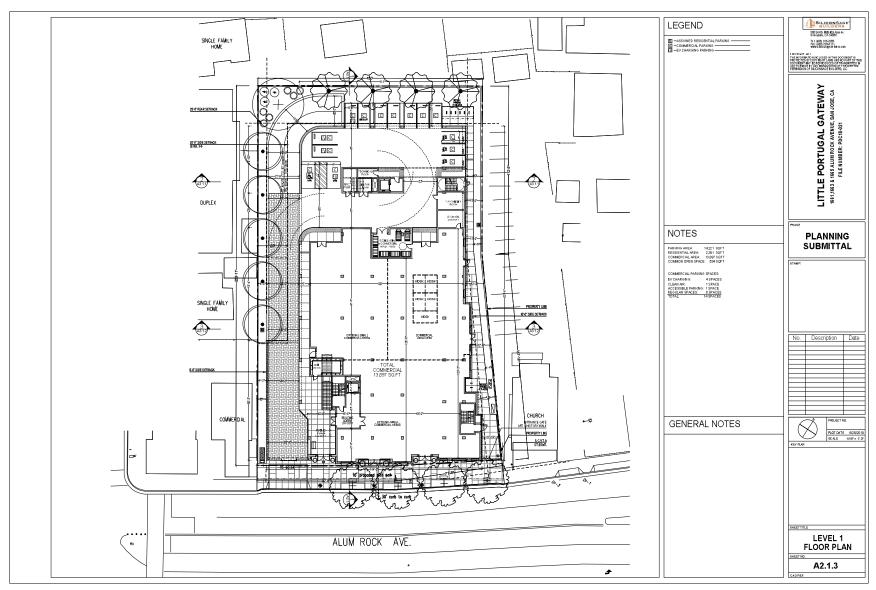


Figure 1
Site Location





Figure 2 Proposed Site Plan





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 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 Jose 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 greatest 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 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) residential and office 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.



Figure 3 VMT per Capita Heat Map in San Jose

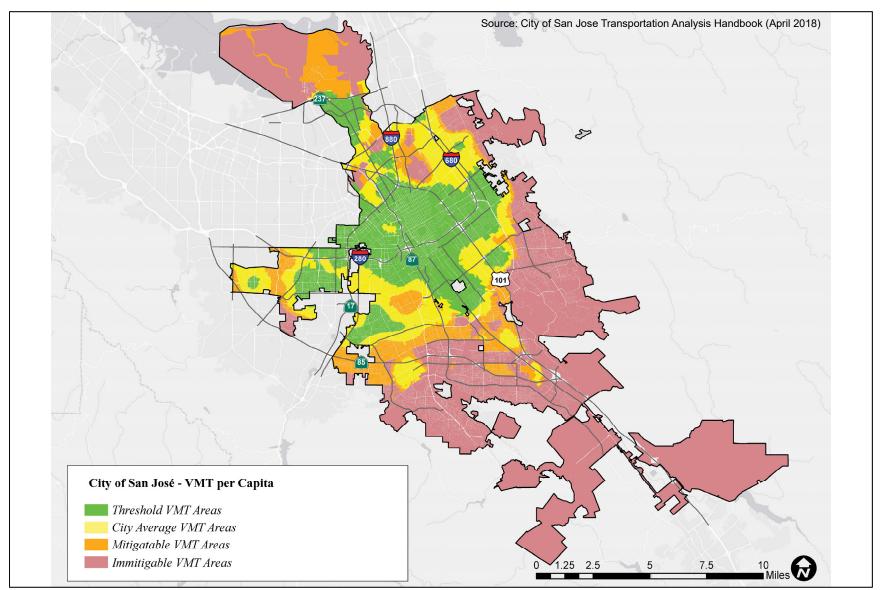




Figure 4 VMT per Job Heat Map in San Jose

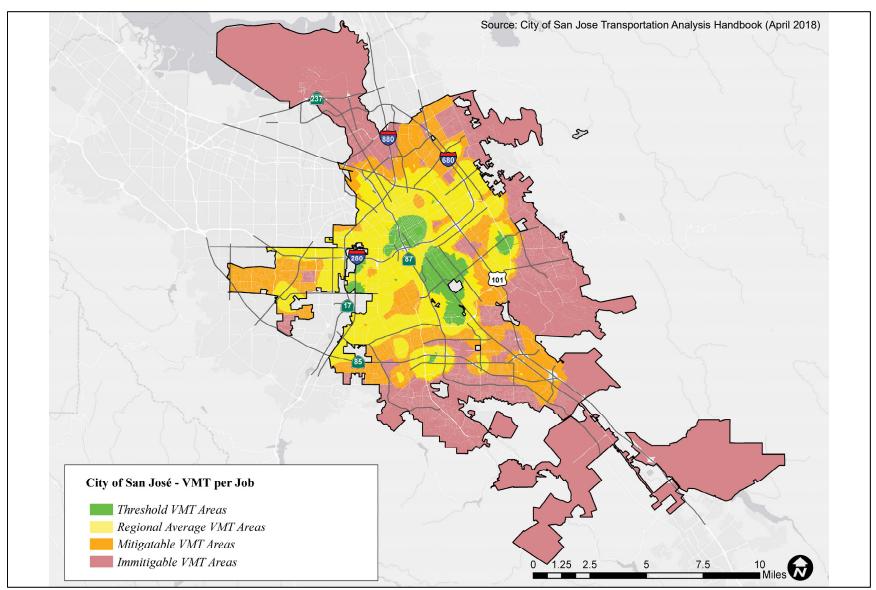




Figure 5 Low VMT per Capita Areas in San Jose

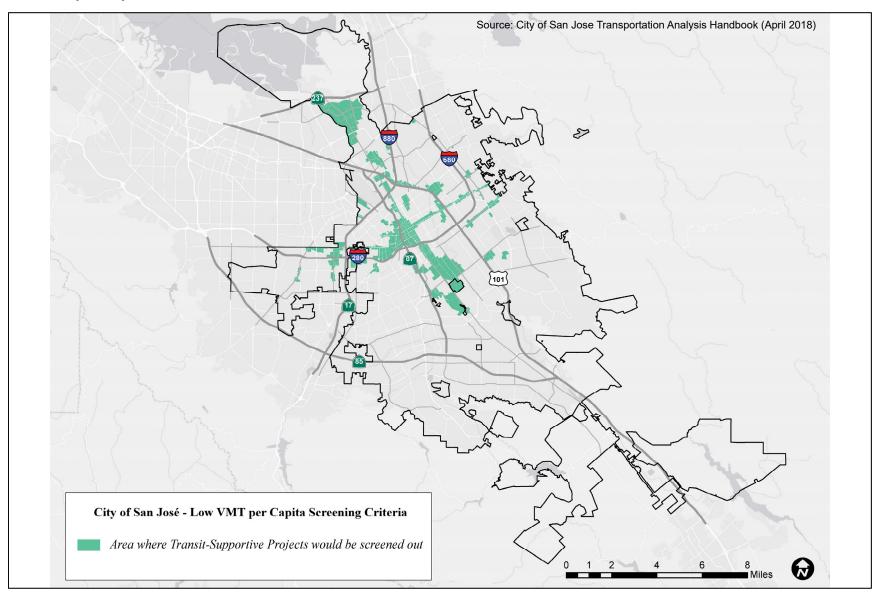




Figure 6 Low VMT per Job Areas in San Jose

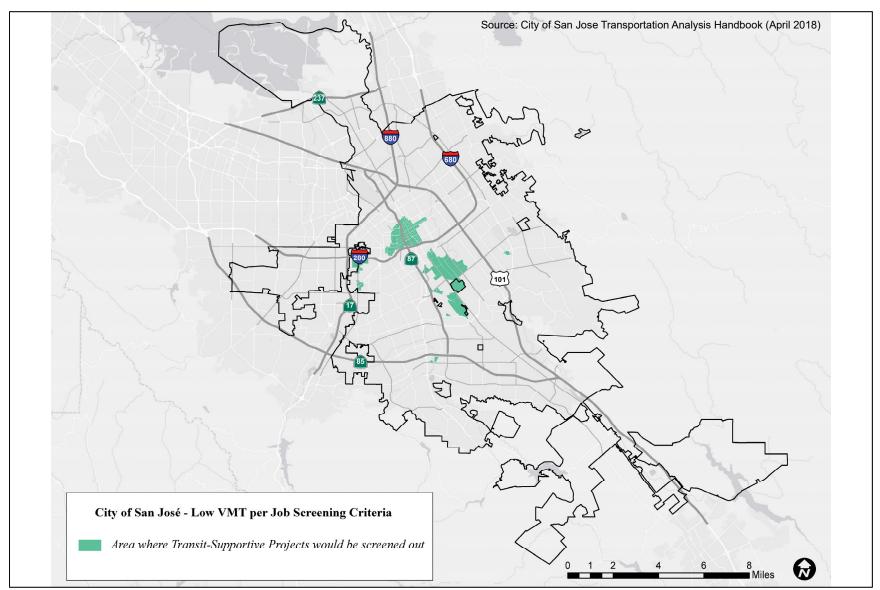




Table 1 CEQA VMT Analysis Screening Criteria for Development Projects

Туре	Screening Criteria			
Small Infill Projects	 Single-family detached housing of 15 units or less; <u>OR</u> Single-family attached or multi-family housing of 25 units or less; <u>OR</u> Office of 10,000 square feet of gross floor area or less; <u>OR</u> Industrial of 30,000 square feet of gross floor area or less 			
Local-Serving Retail	100,000 square feet of total gross floor area or less without drive-through operations			
Local-Serving Public Facilities	Local-serving public facilities			
Residential/Office Projects or Components	 Planned Growth Areas: Located within a Planned Growth Area as defined in the Envision San José 2040 General Plan; AND High-Quality Transit: Located within ½ a mile of an existing major transit stop or an existing stop along a high-quality transit corridor; AND Low VMT: Located in an area in which the per capita VMT is less than or equal to the CEQA significance threshold for the land use; AND Transit-Supporting Project Density: Minimum Gross Floor Area Ratio (FAR) of 0.75 for office projects or components; Minimum of 35 units per acre for residential projects or components; 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; AND Parking: 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; AND Active Transportation: Not negatively impact transit, bike or pedestrian infrastructure. 			
Restricted Affordable Residential Projects or Components	 Affordability: 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; AND Planned Growth Areas: Located within a Planned Growth Area as defined in the Envision San José 2040 General Plan; AND High Quality Transit: Located within ½ a mile of an existing major transit stop or an existing stop along a high quality transit corridor; AND Transit-Supportive Project Density: 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; AND Transportation Demand Management (TDM): 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; AND Parking: 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; AND Active Transportation: Not negatively impact transit, bike or pedestrian infrastructure. 			
Source: City of San José Transportation Analysis Handbook, April 2018.				
Source. Oity of San 30se Transportation Analysis Flandbook, April 2010.				



The project site is located within a planned Growth Area (Little Portugal Urban Village) with low VMT per capita as identified by the City of San Jose. The proposed 13,897 s.f. of retail space is less than the 100,000 s.f. retail threshold screening criterion for local-serving retail. The residential component of the proposed project also will meet all of the applicable VMT screening criteria for residential developments as described in further detail in Chapter 3. Therefore, both the residential and retail components of the proposed project are screened from the evaluation of VMT and are considered to result in a less-than significant VMT impact. However, a VMT evaluation for the project was completed using the *San José VMT Evaluation Tool* for informational purposes 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.

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 and freeway segments 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 new peak-hour intersection counts and the 2018 CMP Monitoring Report.
- 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

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 US 101, I-280 and I-680. These facilities are described below.

US-101 is an eight-lane freeway in the vicinity of the site. It extends northwest to San Francisco and south to Gilroy. North of Morgan Hill, US-101 has high occupancy vehicle (HOV) lanes in both directions. Access to the site from US-101is provided via its interchange with Alum Rock Avenue/Santa Clara Street.

I-280 is generally a north-south freeway that extends from I-80 in San Francisco to US 101 in San Jose. However, in San Jose, it is oriented in an east-west direction, and transitions to I-680 at US 101. In San Jose it is an eight-lane freeway with auxiliary lanes between some interchanges. The section of I-280 just north (west) of the Bascom Avenue overcrossing has six mixed-flow lanes and two high-occupancy-vehicle (HOV) lanes. I-280 provides access to the project site via US-101 and its extension as I-680.

I-680 is a north-south freeway that begins at US 101 in San Jose, where I-280 transitions to I-680, and ends at I80 in Solano County. The section of I-680 near the project site is an eight-lane freeway, with four mixed-flow lanes in both directions. I-680 provides access to the project site via US-101 and its interchange with Alum Rock Avenue. Access also is provided via an interchange with King Road.

Local access to the site is provided by Alum Rock Avenue, King Road, 33rd Street, and 34th Street. These roadways are described below.

Alum Rock Avenue is a four-lane east-west roadway in the vicinity of the project site and is a designated Grand Boulevard. It extends eastward from Downtown San Jose as Santa Clara Street to US-101, at which point it makes a transition to Alum Rock Avenue. In the project vicinity, Alum Rock Avenue has a posted speed limit of 30 mph with sidewalks and limited on-street parking on both sides of the street. Bike lanes are not provided. Bus-only lanes are located within the median of Alum Rock Avenue between 34th Street and Capitol Avenue. Alum Rock Avenue runs along the south project frontage and provides direct access to the project site via one right-in/right-out only driveway.

King Road is generally a four-lane north-south roadway that transitions from Lundy Avenue at its intersection with Commodore Drive (just south of Berryessa Road) and extends southward to Aborn Road, where it transitions to Silver Creek Road. King Road is a two-lane north-south roadway with a



center median lane between Alum Rock Avenue and St. James Street. In the project vicinity, King Road has a posted speed limit of 35 mph with sidewalks and bike lanes on both sides of the roadway. Access to the project site from King Road is provided via its intersection with Alum Rock Avenue.

34th Street is a two-lane north-south roadway that runs between McKee Road south to San Antonio Street. In the project vicinity, 34th Street has a posted speed limit of 25 mph. Sidewalks and on-street parking are provided along both sides of the roadway, however bike lanes are not provided. Access to the project site is provided via its intersection with Alum Rock Avenue.

33rd Street is a two-lane north-south roadway that runs between McKee Road south to San Antonio Street. Sidewalks and on-street parking are provided along both sides of 33rd Street, however bike lanes are not provided. Access to the project site is provided via its intersection with Alum Rock Avenue.

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 of sidewalks along all streets in the study area. Sidewalks are found along both sides of Alum Rock Avenue, 33rd Street, 34th Street, and King Road. Other pedestrian facilities in the project area include crosswalks and pedestrian push buttons at all signalized study intersections. However, curb ramps located at the US-101 ramp intersections at Alum Rock Avenue/Santa Clara Street are not ADA-compliant.

Pedestrian generators in the project vicinity include the Alum Rock/King BRT Station, commercial areas along Alum Rock Avenue, and bus stops along the Alum Rock Avenue and King Road corridors. The project site is within the service boundaries of Anne Darling Elementary School and Muwekma Ohlone Middle School which are part of the San Jose Unified School District. Anne Darling Elementary School is located approximately 0.65-mile north of the project site along 34th Street while Muwekma Ohlone Middle School is located approximately 3.5 miles (driving distance) west of the project site near Second Street and Hedding Street. Additionally, a charter school (Sunrise Middle School) is located on E. Julian Street approximately one mile west of the project site.

Existing sidewalks along Alum Rock Avenue, 34th Street, and King Road provide a pedestrian connection between the project site and pedestrian destinations in the project vicinity, including the Alum Rock/King BRT Station, Anne Darling Elementary School, and Sunrise Middle School. Pedestrian access across US-101 is provided via sidewalks along the north and south sides of the Alum Rock Avenue overpass and crosswalks across the freeway ramp intersections.

Overall, the existing network of sidewalks and crosswalks provides good connectivity and provides pedestrians with safe routes to transit services and other points of interest in the area.

Existing Bicycle Facilities

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.

- King Road, along its entire extent
- San Antonio Street, between King Road and Jackson Avenue; between 34th Street and Bonita Avenue



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.

- San Antonio Street, between King Road and 34th Street; west of Bonita Avenue
- Sunset Avenue, between San Antonio Street and Lavonne Avenue; between Lyons Drive and Story Road (a freeway crossing across I-680 is provided between Lavonne Avenue and Lyons Drive)

Although most of the residential streets near the project site (i.e., 34th Street) do not provide bike lanes or are designated as bike routes, due to their low traffic volumes, many of them are conducive to bicycle usage. The existing bicycle facilities are shown in Figure 7.

Existing Transit Services

Existing transit services in the study area are provided by the VTA and are shown on Figure 8. The project site is primarily served by seven VTA bus routes (22, 23, 64A, 64B, 77, 522, and 523). These bus lines are listed in Table 2, including their terminus points, hours of operation, and commute hour headways. The nearest bus stops to the project site serve Frequent Routes 22 and 23, in addition to Rapid Route 523, and are located along both sides of Alum Rock Avenue at its intersection with King Road, adjacent to the south project site frontage.

Rapid Route 522 is a bus rapid transit (BRT) service operating within dedicated bus-only lanes along the center median of Alum Rock Avenue and is served by platform bus stops between 34th Street and Capitol Avenue. The nearest eastbound and westbound bus stops serving Rapid Route 522 are located at the intersection of Alum Rock Avenue and King Road, less than 400 feet walking distance east of the project site. BRT stations serving Rapid Route 522 are enhanced bus stops consisting of upgraded shelters, live schedule displays, and passenger amenities. The Rapid 522 BRT line provides access to the Diridon Transit Center, located approximately three miles west 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. The Rapid 522 line also provides access to the Alum Rock Transit Center, located 1.5 miles east of the project site on Capitol Avenue, which provides access to LRT services.



Figure 7
Existing Bicycle Facilities

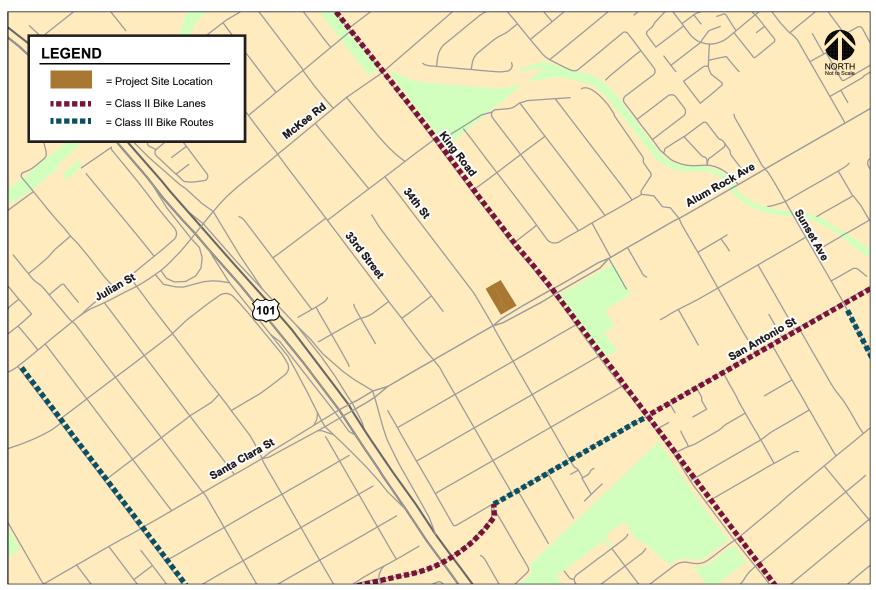




Figure 8
Existing Transit Services





Table 2 Existing Transit Services

Bus Route	Route Description	Hours of Operation	Nearest Stop	Headway ¹
Frequent Route 22	Palo Alto Transit Center to Eastridge Transit Center	24 hrs	Alum Rock/King	15 min
Frequent Route 23	DeAnza College to Alum Rock Transit Center via Stevens Creek	4:57 AM - 1:28 AM	Alum Rock/King	12 - 15 min
Local Route 64A	McKee & White to Ohlone-Chynoweth Station	5:14 AM - 12:28 AM	McKee/King	15 min
Local Route 64B	McKee & White to Almaden Expressway & Camden	5:55AM - 9:34 PM	McKee/King	15 min
Frequent Route 77	Milpitas BART to Eastridge via King	5:19 AM - 11:18 PM	King/Alum Rock	15 - 20 min
Rapid Route 522	Palo Alto Transit Center to Eastridge Transit Center	4:42 AM - 11:40 PM	Alum Rock/King	10 - 15 min
Rapid Route 523	Berryessa BART to Lockheed Martin via De Anza College	5:05 AM - 11:30 PM	Alum Rock/King	15 - 20 min

Notes:



¹Approximate headways during peak commute periods.

² Local Routes 64A and 64B provide frequent service between San Jose Diridon Station and McKee/White, with approximately 15-minute headways during peak commute periods.

3. **CEQA Transportation Analysis**

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 located within a planned Growth Area (Little Portugal Urban Village) with low VMT per capita as identified by the City of San Jose (see Figure 9).

The residential component of the proposed project will meet all of the applicable VMT screening criteria for residential developments as described below. Per the City of San Jose VMT screening criteria, retail projects of 100,000 square feet or less (without drive-thru operations) are considered local-serving and are screened from CEQA VMT evaluation. The proposed 13,897 s.f. of retail space is less than the 100,000 s.f. retail threshold screening criterion for local-serving retail and a detailed VMT analysis is not required.

Therefore, both the residential and retail components of the proposed project are screened from the evaluation of VMT and the project is considered to result in a less-than significant VMT impact. However, a VMT evaluation for the project was completed using the *San José VMT Evaluation Tool* for informational purposes.



Figure 9 Low VMT per Capita Areas





Planned Growth Areas

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

The project site is located within the Little Portugal Urban Village, per the General Plan.

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

The project site is located approximately 400 feet walking distance from the Alum Rock/King BRT Station near the intersection of King Road and Alum Rock Avenue. The BRT Station is a major transit stop providing access to the Rapid 522 bus rapid transit service provided by VTA.

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 within an Urban Village Area (Little Portugal) with low VMT per capita (8.99 compared to the threshold VMT per capita of 10.12 for residential uses).

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 123 units are proposed to be constructed on the 0.92-acre project site. The proposed development density will equate to 133 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 site is within the proposed Little Portugal Urban Village, which is subject to city-wide parking rates. The project proposes a total of 170 parking spaces on-site which will be less than the required 228 spaces as calculated per the City code and Urban Village reduction.

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 VMT evaluation tool is used to estimate the project VMT and determine whether the project would result in a significant VMT impact. Figure 10 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.
- 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.

The proposed project consists mainly of a residential development with complementary commercial land use (retail use). However, it is anticipated that the commercial use component of the proposed project would be local-serving and would not generate sufficient traffic to have an effect on the existing VMT in the project area. Therefore, VMT analysis was completed for only the proposed residential component of the project.

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.



Figure 10 VMT per Capita Heat Map in Project Area





Table 3
CEQA VMT Analysis Significant Impact Criteria for Development Projects

Туре	Significance Criteria	Current Level	Threshold		
Residential Uses	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		
General Employment Uses	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		
Industrial Employment Uses	Project VMT per employee exceeds existing regional average VMT per employee	14.37 VMT per employee (Regional Average)	14.37 VMT per employee		
Retail/ Hotel/ School Uses	Net increase in existing regional total VMT	Regional Total VMT	Net Increase		
Public/Quasi-Public Uses	In accordance with the most appropriate type(s) as determined by Public Works Director	Appropriate levels listed above	Appropriate thresholds listed above		
Mixed Uses	Evaluate each land use component of a mixed-use project independently, and apply the threshold of significance for each land use type included	Appropriate levels listed above	Appropriate thresholds listed above		
Change of Use or Additions to Existing Development	Evaluate the full site with the change of use or additions to existing development, and apply the threshold of significance for each project type included	Appropriate levels listed above	Appropriate thresholds listed above		
Area Plans	Evaluate each land use component of the area plan independently, and apply the threshold of significance for each land use type included	Appropriate levels listed above	Appropriate thresholds listed above		
Source: City of San José Transportation Analysis Handbook, April 2018.					

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 VMT evaluation tool indicate that the existing VMT for residential uses in the project vicinity is 8.99 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 percapita 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 (8.85) which is less than the existing VMT per capita in the project area and below the established VMT impact threshold.

The reduction in per-capita VMT could be indicative of the addition of residents to an area with extensive opportunities for the use of transit, bicycles, and other non-auto modes of travel. In addition, the project site is located within 400 feet of a BRT station and is supported by major bus stops, bicycle and pedestrian facilities in its immediate proximity. Therefore, a larger percentage of the residents of the project would likely use transit more regularly than the average transit usage for these land uses in Santa Clara County. The increase in transit usage would result in a reduction of the number of vehicular trips that will be added to the roadway system due to the proposed project.

Figure 11 shows the VMT evaluation summary generated by the City of San Jose's VMT Evaluation Tool.

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 site is located within the Little Portugal Urban Village. Urban villages were developed as one of the major strategies of the *Envision San José 2040 General Plan*. Urban villages are defined as walkable, bicycle-friendly, transit-oriented, mixed use settings that provide both housing and jobs, thus supporting the policies and goals of the General Plan.

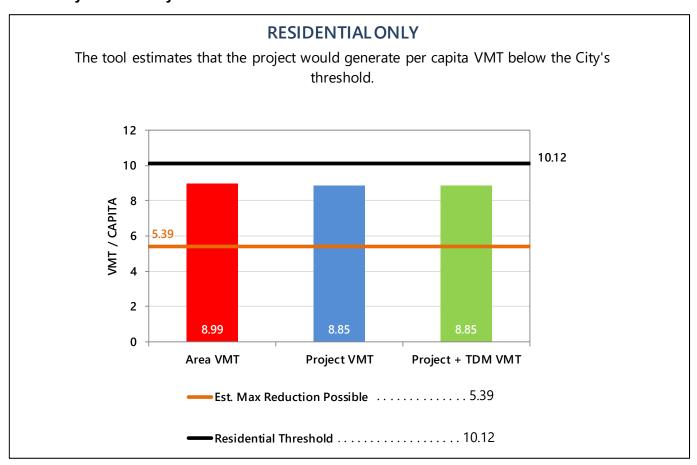
The project is consistent with the General Plan and Little Portugal Urban Village goals and policies for the following reasons:

- The proposed residential uses for the project site are consistent with the Urban Village land use designation per the Little Portugal Urban Village plan.
- The proposed residential density (133 du/acre) exceeds the minimum 55 du/acre per the Little Portugal Urban Village plan.
- The project site is within walking distance (less than 400 feet) of the Alum Rock/King BRT Station.
- The project frontage along Alum Rock Avenue will be designed to be consistent with planned streetscape design features per the Little Portugal Urban Village plan, such as a minimum 16foot wide sidewalk.

Therefore, based on the project description, the proposed project would be consistent with the *Urban Village Planning Concepts* and 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.



Figure 11 VMT Analysis Summary





4

Local Transportation Analysis

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, site access and on-site circulation review, effects on bicycle, pedestrian, and transit facilities, and parking.

Project Description

The project proposes to demolish existing on-site buildings including a restaurant, tire store, used car dealership and several ancillary structures. As proposed, the mixed-use development would consist of 123 multi-family residential units and 13,897 square feet (s.f.) of commercial space. A total of 129 parking spaces for the residential use and 41 parking spaces for the retail use are proposed within the ground-floor level and two below-ground parking levels. Based on the site plan, on-site parking will be accessed by one ingress/egress driveway on Alum Rock Avenue with limited (right-in/right-out only) operations.

The project site is located within an Urban Village (Little Portugal) per the Envision San Jose 2040 General Plan. Urban villages are walkable, bicycle-friendly, transit-oriented, mixed-use settings that provide both housing and jobs, thus supporting the General Plan's environmental goals.

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) and Shopping Center (Land Use 820) as published in



the Institute of Transportation Engineers (ITE) *Trip Generation Manual, 10th Edition* (2017) were applied to the proposed number of residential units and commercial square footage, respectively.

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.

A mixed-use development with complementary land uses such as residential and retail, will result in a reduction of external site trips. Thus, the number of vehicle trips generated for each use may be reduced, since a portion of the trips would not require entering or exiting the site. Therefore, based on VTA's recommended mixed-use reduction, a 15 percent trip reduction is applied for the housing/retail mixed use, based on the smaller retail component. The reduction is applied to the smaller of the two complimentary trip generators and the same number of trips is then subtracted from the larger trip generator.

Based on the San Jose Transportation Analysis Handbook 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 designated urban area with low access to transit. Therefore, the baseline project trips were adjusted to reflect an urban low-transit mode share. Urban low-transit is characterized as an area with good accessibility, low vacancy, and middle-aged housing stock. Residential developments and retail uses within urban low-transit areas have a vehicle mode share of 87%. Thus, a 13% reduction was applied to the residential and retail trips generated by the proposed project.

Additionally, based on the San Jose VMT Evaluation Tool, the project is anticipated to generate 8.85 VMT per-capita in an area that currently generates approximately 8.99 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 2 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 894 daily vehicle trips, with 46 trips (15 inbound and 31 outbound) occurring during the AM peak hour and 79 trips (43 inbound and 36 outbound) occurring during the PM peak hour. The project trip generation estimates are presented in Table 4.

Existing Site Trips

The project proposes to demolish existing structures on-site, which include the following uses:

- Apartment building 3,470 square feet
- Carport 1,178 square feet
- Restaurant 2,117 square feet
- Tire Store 1.897 square feet
- Automobile sales business and repair 1,475 square feet
- Garage to the rear 684 square feet

Trip credits (or reductions) for trips which are currently generated by existing uses on-site are typically applied to the estimated project trips. However, site observations indicate that on-site parking is limited. Thus, it is likely that a majority of vehicles generated by existing site uses are parked off-site, along



Table 4
Project Trip Generation Estimates

											AM Peak Hour				PM Peak Hour					
	ITE Land		% of Vehicle	VM	T ³	%		Dai	ily	Pk-Hr	Sp	lit		Trip		Pk-Hr	Split		Trip	
Land Use	Use Code	Location	Mode Share	Existing	Project	Reduction	Size	Rate	Trip	Rate	ln	Out	In	Out	Total	Rate	In Out	ln	Out	Total
Proposed Land Uses																				
Multifamily Housing (Mid-Rise) ¹	221						123 Dwelling Units	5.440	669	0.360	26%	74%	11	33	44	0.440	61% 39%	33	21	54
- Residential - Retail Internal Red	duction ²								-79				-1	-1	-2			-4	-4	-8
- Location Based Reduction ³		Urban Low Transi	it 87%			13%			-77				-1	-4	-5			-4	-2	-6
- VMT Reduction ⁴				8.99	8.85	2%			-8				0	0	0			0	0	0
Shopping Center ¹	820						13,897 Square Feet	37.750	525	0.940	62%	38%	8	5	13	3.810	48% 52%	25	28	53
- Residential - Retail Internal Red	duction ²					15%			-79				-1	-1	-2			-4	-4	-8
- Location Based Reduction ²		Urban Low Transi	it 87%			13%			-58				-1	-1	-2			-3	-3	-6
Baseline Vehicle Trips (Before	e Reductions	·)							1,194				19	38	57			58	49	107
Gross Project Trips		·					_		894				15	31	46			43	36	79

Notes:



¹ Source: ITE *Trip Generation Manual*, 10th Edition 2017, average trip generation rates.

² As prescribed by the Transportation Impact Analysis Guidelines from VTA (October 2014), the maximum trip reduction for a mixed-use development project with residential and retail is equal to 15% off the smaller trip generator.

³ The project site is located within an urban low-transit area 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.

⁴ 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.

adjacent residential roadways. Therefore, as a conservative measure, existing trip credits were not applied to the proposed project's trip generation estimates.

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. The distribution presumes a balanced distribution to the roadway network to the north, south, east, and west. Figure 12 shows the trip distribution pattern, and Figure 13 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 five 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*.

- 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 12.

- 1. King Road and Alum Rock Avenue *
- 2. 34th Street and Alum Rock Avenue
- 3. 33rd Street and Alum Rock Avenue
- 4. US 101 Northbound Ramps and Alum Rock Avenue *
- 5. US 101 Southbound Ramps and Santa Clara Street *



^{*} Denotes CMP intersection

Figure 12 Project Trip Distribution

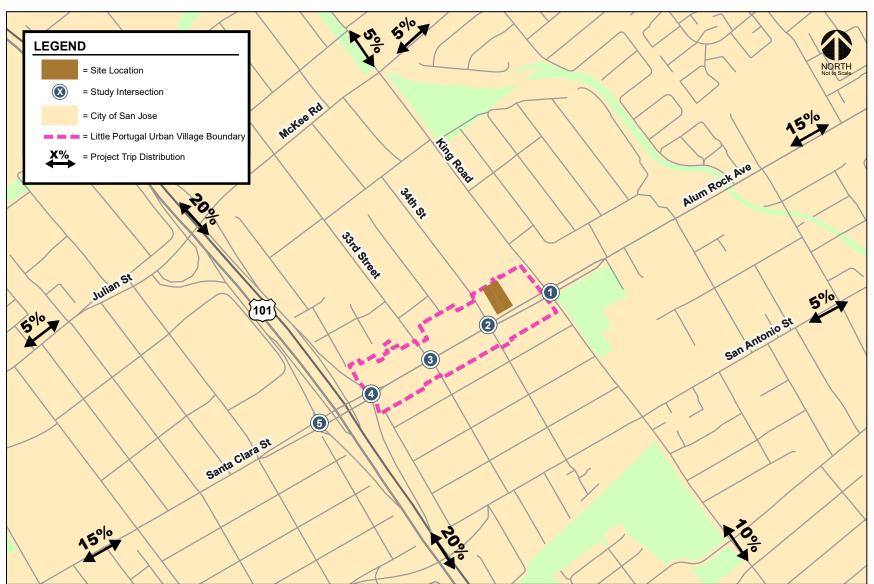
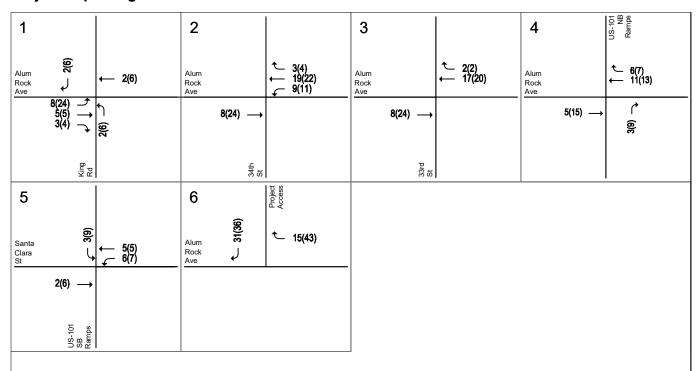




Figure 13 Project Trip Assignment





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 14. 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 the City of San Jose and new traffic counts conducted on October 22, 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 16. Project trips were added to background traffic volumes to obtain background plus project traffic volumes (see Figure 17).

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.

Level of Service Standards and Analysis Methodologies

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



Figure 14 Existing Lane Configurations

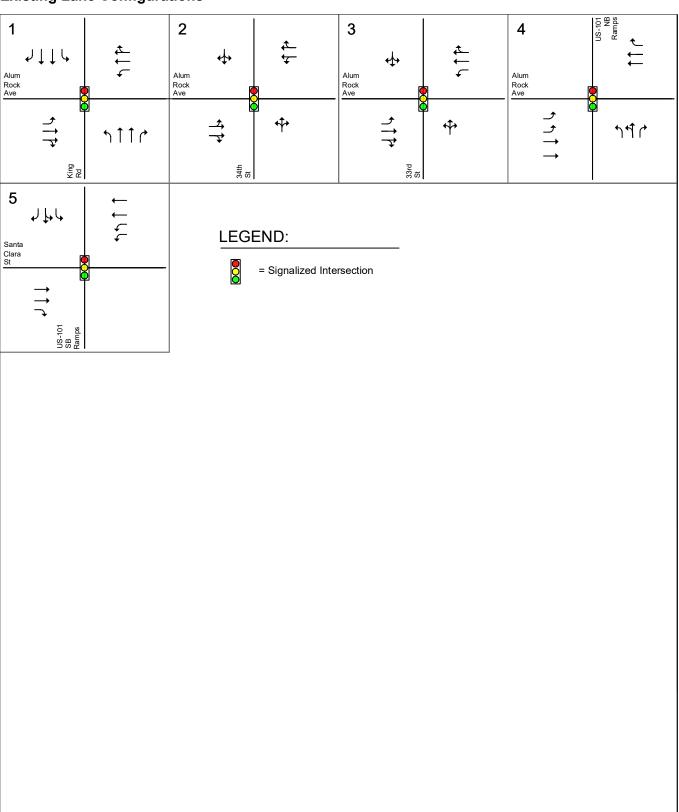




Figure 15 Existing Traffic Volumes

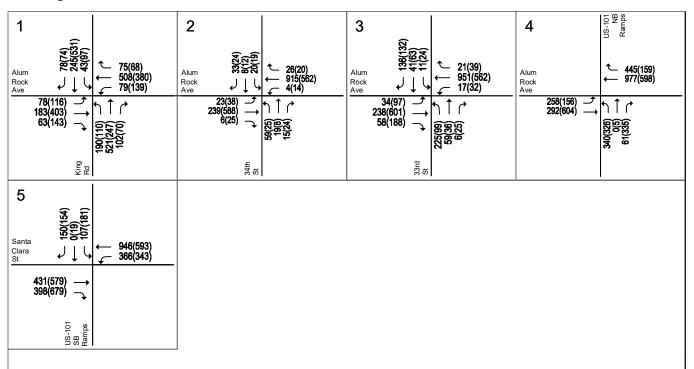




Figure 16
Background Traffic Volumes

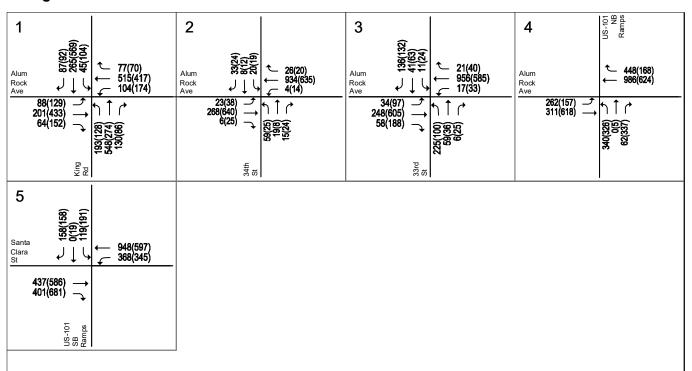




Figure 17
Background Plus Project Traffic Volumes

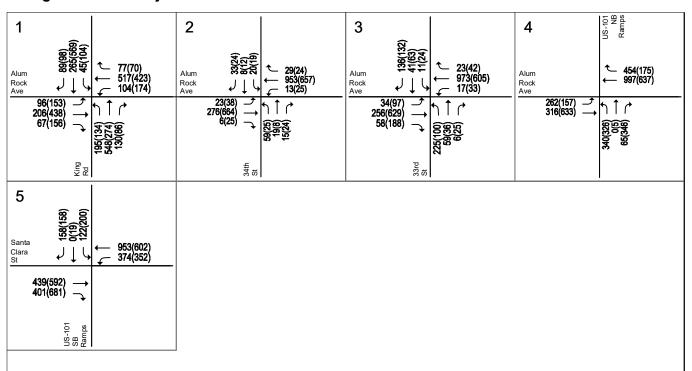




Table 5
Signalized Intersection Level of Service Definitions Based on Control Delay

Level of Service	Description	Average Control Delay per Vehicle (sec.)
А	Operations with very low delay occurring with favorable progression and/or short cycle lengths.	up to 10.0
В	Operations with low delay occurring with good progression and/or short cycle lengths.	10.1 to 20.0
С	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
	ransportation Research Board, 2000 Highway Capacity Manual. Tra uidelines, Santa Clara County Transportation Authority Congestion	

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:

- 1. The level of service at the intersection degrades from an acceptable level (LOS D or better) under background conditions to an unacceptable level under background plus project conditions, or
- 2. The level of service at the intersection is an unacceptable level (LOS E or F) under background conditions and the addition of project trips cause both the critical-movement delay at the intersection to increase by four 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.

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. All three of the CMP-designated study intersections are located within a designated Infill Opportunity Zone (IOZ) which allows them to be exempted from the CMP's intersection operations standards. However, the results of the level of service analysis show all signalized study intersections currently operate at an acceptable LOS D 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.

Observed Existing Traffic Conditions

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

At the intersection of 33rd Street and Alum Rock Avenue, the eastbound and westbound left-turn movements operate as concurrent (protected) turns and are followed by the eastbound and westbound through movements. During the PM peak-hour, it was observed that the westbound through-movement queue would occasionally extend past and block access to the westbound left-turn pocket during cycles with heavier traffic. However, the westbound through-movement typically cleared during the following cycle, thus allowing access to the left-turn pocket.

All other study intersections operate without any major operational problems.

Future Intersection Operation Conditions

The operations analysis shows that all signalized study intersections would continue to operate at an acceptable LOS D or better under background and background plus project conditions 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

					Exist	ting	Backgr	ound	Ва	ckgro	und Plus P	roject
Int.		LOS	Peak	Count	Avg.		Avg.		Avg.		Incr. In	Incr. In
#	Intersection	Standard	Hour	Date	Delay	LOS	Delay	LOS	Delay	LOS	Crit. Delay	Crit. V/C
1	King Road and Alum Rock Avenue* (This intersection is located within an IOZ)	None ¹	AM PM	04/17/19 12/13/18	34.7 36.9	C D	35.3 38.0	D D	35.5 38.4	D D	0.4 0.2	0.006 0.006
2	34th Street and Alum Rock Avenue	D	AM PM	10/22/19 10/22/19	24.0 28.7	C C	24.7 29.1	C C	24.7 29.3	C C	0.0 0.3	0.012 0.018
3	33rd Street and Alum Rock Avenue	D	AM PM	10/22/19 10/22/19	20.7 18.4	C B	20.7 18.4	C B	20.7 18.2	C B	-0.1 -0.1	0.006 0.007
4	US 101 Northbound Ramps and Alum Rock Avenue* (This intersection is located within an IOZ)	None ¹	AM PM	09/19/19 12/13/18	13.7 13.6	B B	13.7 13.6	B B	13.8 13.7	B B	0.1 0.2	0.005 0.013
5	US 101 Southbound Ramps and Santa Clara Street* (This intersection is located within an IOZ)	None ¹	AM PM	09/19/19 12/13/18	11.6 14.2	B B	11.8 14.4	B B	11.9 14.5	B B	0.0 0.2	0.003 0.005
	* Denotes CMP Intersection											



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 95th percentile maximum number of queued vehicles for a particular left-turn movement; (2) the estimated maximum number of vehicles in the queue is translated into a queue length, assuming 25 feet per vehicle; and (3) the estimated maximum queue length is compared to the existing or planned available storage capacity for the left-turn movement. This analysis thus provides a basis for estimating future turn pocket storage requirements at intersections.

For signalized intersections, the 95th percentile queue length value indicates that during the peak hour, a queue of this length or less would occur on 95 percent of the signal cycles. Or, a queue length larger than the 95th percentile queue would only occur on 5 percent of the signal cycles (about 3 cycles during the peak hour for a signal with a 60-second cycle length). Thus, turn pocket storage designs based on the 95th percentile queue length would ensure that storage space would be exceeded only 5 percent of the time for a signalized movement. The intersection queueing analysis is presented in Table 7.

King Road and Alum Rock Avenue

Eastbound Left-Turn

The queuing analysis indicates that the projected maximum vehicle queue for the eastbound left-turn movement at the King Road and Alum Rock Avenue intersection currently occupies a majority of the 200-foot storage capacity during the PM peak hour and would continue to do so under background conditions during the PM peak hour. The estimated 95th percentile vehicle queue for the eastbound left-turn movement is currently estimated at approximately 8 vehicles (200 feet) during the PM peak hour and is projected to remain at 8 vehicles under background conditions. The addition of project traffic is projected to lengthen the projected queue by one vehicle, to a total of 9 vehicles (225 feet), during the PM peak hour.

This deficiency can only be resolved by providing additional storage capacity. Providing additional queue storage capacity for the eastbound left-turn movement at the Alum Rock Avenue/King Road intersection would require removal or existing bus lanes, or street widening along with narrowing of sidewalks along Alum Rock Avenue. The removal and/or alteration of improvements intended to encourage the use of multi-modal travel to accommodate vehicular demand is not consistent with the City's General Plan goals. Therefore, the extension of the eastbound left-turn pocket at this intersection is not recommended.



Table 7
Queuing Analysis Summary

		Rock/ ng	US 101 N Alum	B Ramps/ Rock	US 101 SB Ramps Santa Clara		
Measurement	EBL AM	EBL PM	NBR AM	NBR PM	SBL/T	SBL/T PM	
	Alvi	PIVI	Alvi	PIVI	AW	PIVI	
Existing Conditions							
Cycle/Delay ¹ (sec)	124	124	56	56	60	70	
Lanes	1	1	1	1	2	2	
Volume (vph)	78	116	61	335	107	200	
Volume (vphpl)	78	116	61	335	54	100	
Avg. Queue (veh/ln.)	3	4	1	5	1	2	
Avg. Queue ² (ft./ln)	67	100	24	130	22	49	
95th %. Queue (veh/ln.)	6	8	3	9	3	4	
95th %. Queue (ft./ln)	150	200	75	225	75	100	
Storage (ft./ In.)	200	200	300	300	300	300	
Adequate (Y/N)	YES	YES	YES	YES	YES	YES	
Background Conditions							
Cycle/Delay ¹ (sec)	124	124	56	56	60	70	
anes	1	1	1	1	2	2	
Volume (vph)	88	129	62	337	119	210	
Volume (vphpl)	88	129	62	337	60	105	
Avg. Queue (veh/ln.)	3	4	1	5	1	2	
Avg. Queue ² (ft./ln)	76	111	24	131	25	51	
95th %. Queue (veh/ln.)	6	8	3	9	3	5	
95th %. Queue (ft./ln)	150	200	75	225	75	125	
Storage (ft./ In.)	200	200	300	300	300	300	
Adequate (Y/N)	YES	YES	YES	YES	YES	YES	
Background Plus Project Conditions							
Cycle/Delay ¹ (sec)	124	124	56	56	60	70	
_anes	1	1	1	1	2	2	
Volume (vph)	96	153	65	346	122	219	
Volume (vphpl)	96	153	65	346	61	110	
Avg. Queue (veh/ln.)	3	5	1	5	1	2	
Avg. Queue ² (ft./ln)	83	132	25	135	25	53	
95th %. Queue (veh/ln.)	7	9	3	9	3	5	
95th %. Queue (ft./ln)	175	225	75	225	75	125	
Storage (ft./ ln.)	200	200	300	300	300	300	
Adequate (Y/N)	YES	NO	YES	YES	YES	YES	

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

NB = Northbound, SB = Southbound, EB = Eastbound, WB = Westbound, R = Right, T = Through, L = Left.

Site Access and On-Site Circulation

The evaluation of site access and circulation is based on the June 25, 2019 site plan prepared by SiliconSage Builders. 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



² Assumes 25 feet per vehicle in the queue.

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 one driveway on Alum Rock Avenue along the south side of the project site, approximately 100 feet east of the 34th Street and Alum Rock Avenue intersection. Due to bus-only lanes located along the median of Alum Rock Avenue, driveway operations would be restricted to right-in/right-outs only. The project driveway, shown to be 26 feet wide, will meet the City's minimum driveway width for residential developments.

Sight Distance

Adequate sight distance will be required at the project driveway along Alum Rock Avenue. 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 Alum Rock Avenue. 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. Alum Rock Avenue has a posted speed limit of 30 miles per hour (mph). The AASHTO stopping sight distance for a facility with a posted speed limit of 30 mph is 200 feet. Thus, a driver exiting the proposed project driveway on Alum Rock Avenue must be able to see 200 feet to the east in order to stop and avoid a collision.

Based on the project site plan and observations in the field, vehicles making a right-turn out of the project site driveway would be able to see approaching traffic on westbound Alum Rock Avenue at least to King Road located approximately 400 feet to the east. Therefore, it can be concluded that the project driveway would meet the AASHTO minimum stopping sight distance standards.

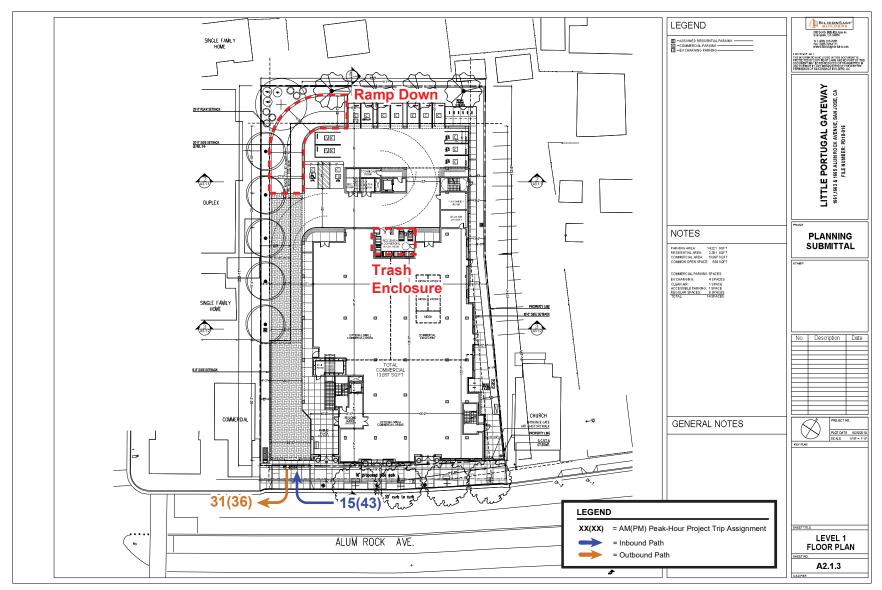
Project Driveway Operations

Based on the project trip generation and trip assignment, it is estimated that a maximum of 43 inbound trips (during the PM peak hour) and 36 outbound trips (during the PM 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 18.

The project driveway leads to a drive aisle which runs north along the west project frontage. Approximately 175 feet north of the driveway, an entrance to a ground-floor parking level is provided along the east side of the drive aisle. Just north of the ground-floor entrance, the north-south drive aisle continues as a ramp providing access to two below-ground parking levels. No gates are indicated on the site plan and no inbound queueing is expected into the parking levels. However, storage space for approximately seven vehicles would be provided between the ground-floor parking level entrance and the project driveway at Alum Rock Avenue.



Figure 18 Project Trips at Site Driveways





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 project driveway is shown to be 26 feet wide. The ground-floor drive aisle narrows to approximately 21 feet wide, starting approximately 50 feet north of Alum Rock Avenue. Although two-way drive aisles are typically required to provide 26 feet of width, the City has determined that the proposed 21-foot drive aisle width will be adequate to serve two-way traffic.

The project would provide 90-degree parking stalls at the ground-floor level and within the two below-ground parking level, shown in Figure 18 and Figure 19. On-site drive aisles adjacent to parking spaces are shown to be 26 feet wide and will meet the City's minimum requirement for two-way drive aisle width. However, portions of the drive aisle which are not adjacent to parking spaces are shown to be as narrow as 20 feet (i.e. at the ramps). Providing a 20-foot wide drive aisle may be acceptable, since the 26-foot requirement is intended to serve vehicles backing out of 90-degree parking spaces. The project should work with the City to determine if the proposed drive aisle widths will be acceptable.

The proposed parking space dimensions of 16 to 18 feet in length and 8 to 9 feet in width will meet the City's standards for full-sized and compact-size parking spaces. The City identifies full-size parking spaces as 18 feet long and 9 feet wide and compact parking spaces as 16 feet long and 8 feet wide.

In general, the proposed on-site circulation layout provides for a mostly continuous circulation within the parking garage. However, dead-end aisles are located within the northwest corner of the second belowground parking level and within the ground-floor level. Dead-ends are undesirable because vehicles must park at a parking space or perform a U-turn to exit the parking structure. However, the dead-end aisle within the second below-ground parking level should not be problematic, given that all parking spaces within the level will be assigned residential parking. Therefore, residential tenants will be familiar with the layout of the parking level and will not be circulating the garage searching for available spaces. Since a barrier is not proposed between the commercial and residential parking area, it is recommended that signage be installed within the first below-ground parking level indicating that all spaces within the second below-ground parking level are assigned to the residential use.

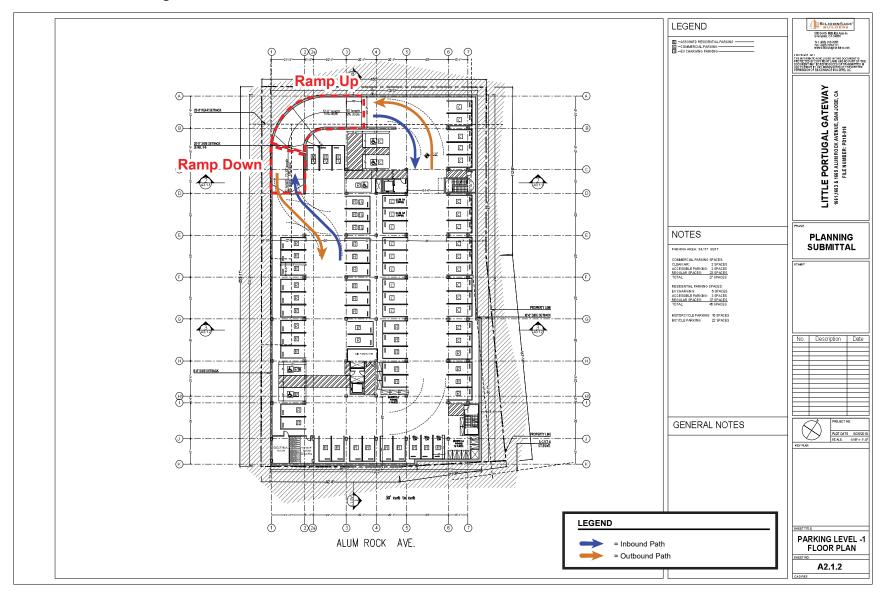
The ground-floor level, however, is shown to provide commercial parking. The site plan should be adjusted to provide a looped drive aisle within the parking level or provide adequate turn-around space for U-turning vehicles adjacent to the dead-end drive aisle. This adjustment will require the removal or relocation of planned parking spaces.

Bike and Pedestrian On-Site Circulation

The project site plan shows direct access to the ground-floor commercial use from the sidewalk along the south project frontage on Alum Rock Avenue. Pedestrian access to the residential lobby is provided via a public plaza located northeast of the project driveway. Sidewalks located along the west side of the proposed building (along the east side of the ground floor drive aisle), as well as along the east project frontage, would provide access to the ground-floor parking level. A stairwell along the east frontage sidewalk also would provide direct access to the above-ground residential floors. The existing sidewalk along the project frontage, which measures approximately 7 feet wide, is proposed to be re-constructed



Figure 19
Below-Ground Parking Level Plan





at 16 feet wide. The project fronts Alum Rock Avenue, a designated Grand Boulevard per the City's General Plan. The City encourages developments to provide a minimum 20-foot wide sidewalk along most Grand Boulevard frontages. However, it should be noted that the proposed 16-foot sidewalk width is consistent with the minimum frontage sidewalk width required by the Little Portugal Urban Village.

Bike racks are proposed along the east frontage sidewalk. The east frontage sidewalk is directly accessible from Alum Rock Avenue. A bicycle storage room with bike lockers would be provided within the first below-ground parking level of the garage. Access to the exterior of the garage is provided via elevators and stairways to the ground-floor level.

Truck and Emergency Vehicle Access

The drive aisle along the west project frontage would provide emergency vehicle access. It should be noted that any trucks or emergency vehicles entering the project driveway will need to reverse out of the driveway, since turn-around space is not provided along the drive aisle. Trucks and emergency vehicles will not enter the parking garage.

According to the City of San Jose Zoning Regulations, the project is not required to provide an off-street loading space for the residential nor the commercial uses. All loading activities will need to occur along adjacent roadways. An existing 25-foot on-street freight loading zone located along the south project site frontage could provide a nearby location for loading activities for the project site. However, it should be noted that the combined width of the loading zone and adjacent travel lane is less than 17 feet. Therefore, parking larger trucks along the on-street loading zone may interfere with the traffic operations of westbound Alum Rock Avenue.

The site plan shows a trash enclosure located within the ground-floor parking area. The parking level, however, would not provide garbage truck access, requiring trash bins to be wheeled out of the parking garage for pickup. The City does not support placing the trash bins along Alum Rock Avenue due to the narrow width of the roadway shoulder, as described above. Therefore, the trash bins will need to be wheeled out to the duc-out/drop off area just north of the project driveway, which will be accessible to garbage trucks for pickup.

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

Per the City's standard parking requirements, the project would be required to provide 168 off-street parking spaces for the proposed 123 residential units, as shown on Table 8. The 13,897 s.f. (11,812 s.f. of floor area) of retail space will be required to provide one off-street parking space per 200 square feet of floor area per the City's Zoning Regulations (Section 20.90.060 Table 20-190). Based on the City's parking code requirements, the project is required to provide 60 off-street parking spaces for the proposed retail use before any reductions.



Table 8
Vehicle Parking Requirement

Proposed Pro	oject	City of San Jos	e Park	ing Code ¹	General Required	Urban Village Required
Land Use	Size	Land Use		Parking Ratio	Parking	Parking ²
Residential	5 units	Multiple dwelling residential	1.25	spaces per studio unit	6	5
Residential	87 units	Multiple dwelling residential	1.25	spaces per one-bedroom unit	109	88
Residential	31 units	Multiple dwelling residential	1.70	spaces per two-bedroom unit	53	43
Residential Sub-Total	123 units				168	136
Retail ³	11,812 s.f.	Retail sales, goods, and merchandise	1.00	space per 200 s.f. of floor area	60	48
Total					228	184

Notes:

Based on the City's standard parking requirements, the project is required to provide a total of 228 offstreet parking spaces (see Table 8) before any reductions. However, a 20 percent reduction can be granted for proposed projects within an Urban Village which provide bicycle parking spaces per City requirements. Based on the City's parking code and an application of a 20 percent Urban Village reduction, the required parking would be reduced to 184 spaces, consisting of 136 spaces for the residential use and 48 spaces for the commercial use.

The project is proposing to provide a total of 129 parking spaces for the residential use and 41 spaces for the commercial use, which would not meet the City's reduced parking requirements. However, the project proposes an on-site parking restriction program which will provide an additional 11 parking spaces for the residential use (between 6:00 PM and 8:00 AM) and an additional 25 parking spaces for the commercial use (between 8:00 AM and 6:00 PM). The parking restrictions provide additional parking spaces for each use during hours when the complementary use typically experiences lower parking demand, as described below. With the additional shared parking spaces, the residential use is provided a total of 140 parking spaces and the commercial use is provided a total of 66 parking spaces. Therefore, both uses will meet the City's reduced parking requirements with the implementation of an on-site shared parking program.

Evaluation of Project Parking Demand

Since the proposed project is proposing to provide less on-site parking than required based on standard City parking requirements and implementation of a shared parking program, a review of the anticipated peak parking demand for the project site uses was completed. The peak parking demand for the project was determined based on survey results compiled by the Urban Land Institute and the methodology presented in their *Shared Parking* guide. The surveys evaluate parking demand characteristics for various land uses and identify hourly parking demand ratios for each land use. The parking demand for the proposed project is presented in Table 9.

Based on the parking demand survey data, the peak parking demand for the entire project (both the residential and retail uses) is projected to exceed the total provided on-site parking between 7:00 PM to 9:00 PM. An additional eight parking spaces would be required to meet the project's total parking



¹ City of San Jose Zoning Ordinance: Parking Spaces Required by Land Use

² Includes 20% allowable reduction of parking requirement in an Urban Village.

³ Per City Code 20.90.050, "Floor area" shall mean eighty-five percent of the "total gross floor area" of the building. Therefore, the floor area of the retail use (11,812 s.f.) is assumed to be 85% of the gross square footage (13,897 s.f.)

Table 9
Project Parking Demand

	Weekday											
	Ret	ail	Resid	ential	Combined Total							
Hour of Day	Customer	Demand ¹	Resident	Demand ¹	Demand ¹	Supply	Difference					
6:00 AM	1%	0	100%	136	136	170	34					
7:00 AM	5%	2	90%	122	124	170	46					
8:00 AM	15%	7	85%	116	123	170	47					
9:00 AM	35%	17	80%	109	126	170	44					
10:00 AM	65%	31	75%	102	133	170	37					
11:00 AM	85%	41	70%	95	136	170	34					
Noon	95%	46	65%	88	134	170	36					
1:00 PM	100%	48	70%	95	143	170	27					
2:00 PM	95%	46	70%	95	141	170	29					
3:00 PM	90%	43	70%	95	138	170	32					
4:00 PM	90%	43	75%	102	145	170	25					
5:00 PM	95%	46	85%	116	162	170	8					
6:00 PM	95%	46	90%	122	168	170	2					
7:00 PM	95%	46	97%	132	178	170	-8					
8:00 PM	80%	38	98%	133	171	170	-1					
9:00 PM	50%	24	99%	135	159	170	11					
10:00 PM	30%	14	100%	136	150	170	20					
11:00 PM	10%	5	100%	136	141	170	29					
Midnight	0%	0	100%	136	136	170	34					

Source: Urban Land Institute (ULI) Shared Parking, 2nd Edition, 2005. (Table 2-5)

demand of 178 spaces between 7:00 PM to 8:00 PM, while one additional space would be needed to meet the demand of 171 spaces between 8:00 PM to 9:00 PM. Therefore, the proposed 170 on-site spaces would not be adequate to serve the project's parking demand. To reduce the projected parking demand, the project will be required to submit and have approved a transportation demand management program (TDM) by the City. It should be noted, however, that the evaluation assumes a typical retail use for the proposed commercial space, with business hours that may extend beyond 7:00 PM. If the retail use were to end business hours before 7:00 PM, the on-site parking should be adequate to serve the residential use. Based on the parking analysis, the following are recommended:

- Based on the analysis, the commercial use will require 46 parking spaces between 6:00 PM to 7:00 PM, but will only be provided 41 parking spaces due to the shared parking restriction ending at 6:00 PM. During the same hour, the residential use is projected to require only 122 spaces out of the 129 assigned residential spaces, equating to seven vacant spaces. Therefore, it is recommended that the daytime hours of the parking restriction be extended to allow users of the commercial use to park on residential spaces until 7:00 PM.
- Signage should be installed within the first below-ground parking level indicating which of the residential parking spaces can be occupied by users of the commercial use during daytime hours.



¹Parking demand is based on the City of San Jose off-site parking requirements with the allowed 20% parking reduction for projects located within an Urban Village.

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 123 residential units at a rate of one bicycle parking space per four residential units. For the proposed 13,897 s.f. of retail use, bicycle parking spaces should be provided at a rate of one bicycle parking space per 3,000 s.f. of floor area (Table 20-190). This equates to a total requirement of 31 bicycle parking spaces for the residential use and 5 parking spaces for the retail use. 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. Of the required retail bicycle parking, City standards require that at least 80 percent be short-term bicycle spaces and at most 20 percent be secured long-term bicycle spaces. Based on these requirements, the project is required to provide a total of 36 bicycle parking spaces consisting of 14 short-term parking spaces and 22 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.

Short-term bicycle storage will be provided along the east frontage sidewalk and within an outdoor area located at the northeast corner of the project site. A long-term bicycle storage room will be located within the first below-ground level of the parking garage. The project proposes to provide a total of 36 bicycle parking spaces consisting of 14 short-term parking spaces and 22 long-term parking spaces. Therefore, 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 proposed project site is located within the Little Portugal Urban Village Boundary and fronts Alum Rock Avenue, which has been designated as a Grand Boulevard by the Envision San José 2040 General Plan. Sites within an Urban Village and located along a Grand Boulevard must incorporate



additional urban design and architectural elements that will facilitate a building with pedestrian orientated design and activate the pedestrian public right-of-way.

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.

Pedestrian Facilities

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

Pedestrian generators in the project vicinity include the Alum Rock/King BRT Station, commercial areas along Alum Rock Avenue, and bus stops along the Alum Rock Avenue and King Road corridors. The project site is within the service boundaries of Anne Darling Elementary School and Muwekma Ohlone Middle School which are part of the San Jose Unified School District. Anne Darling Elementary School is located approximately 0.65-mile north of the project site along 34th Street while Muwekma Ohlone Middle School is located approximately 3.5 miles (driving distance) west of the project site near Second Street and Hedding Street.

Existing sidewalks along Alum Rock Avenue, 34th Street, and King Road provide a pedestrian connection between the project site and pedestrian destinations in the project vicinity, including the Alum Rock/King BRT Station and Anne Darling Elementary School. Pedestrian access across US-101 is provided via sidewalks along the north and south sides of the Alum Rock Avenue overpass and crosswalks across the freeway ramp intersections.

Pedestrian Facility Improvements

Alum Rock Avenue has been designated as a Grand Boulevard within the Envision 2040 General Plan. Grand Boulevards are intended to serve as major transportation corridors with priority given to public transit. The City encourages developments to provide a minimum 20-foot wide sidewalk along most Grand Boulevard frontages. However, it should be noted that the proposed 16-foot sidewalk width along the project's Alum Rock Avenue frontage is consistent with the minimum frontage sidewalk width required by Little Portugal Urban Village plan.

Bicycle Facilities

There are several bike facilities in the immediate vicinity of 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 Alum Rock in the vicinity of the project site. However, there are bike lanes provided along San Antonio Street and King Road, less than ½ mile from the project site.

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 7 and 12 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.
- Give priority to pedestrian improvement projects that improve pedestrian safety, improve pedestrian access to and within the Urban Villages and other growth areas.

Due to right-of-way limitations, neither the San Jose Bike Plan 2020 nor the Little Portugal Urban Village plan suggest additional bicycle circulation improvements along Alum Rock Avenue in the project vicinity. However, there are relatively low vehicular volumes along many residential streets, such as 34th Street and Shortridge Avenue, which are conducive to bicycle usage.

Lower Silver Creek Trail

The Lower Silver Creek Trail is a partially-built pedestrian- and bike-only trail that is proposed to run between Lake Cunningham Park north to the Coyote Creek Trail (see Figure 20). The proposed trail alignment mostly follows the east/north bank of Coyote Creek. The nearest trailhead would be located along Alum Rock Avenue near Checkers Drive, approximately 0.4-mile east of the project site. The Lower Silver Creek Master Plan was approved on December 10, 2007.

Five Wounds Trail

The Five Wounds Trail is a partially-built pedestrian- and bike-only trail that is proposed to run between the intersection of Senter Road/Story Road north to the Berryessa BART station (see Figure 21). The proposed trail is located on a vacant City-owned property between Story Road and Selma Olinder Park near I-280. The next stretch is an existing widened sidewalk running north to William Street. The 1.5-mile stretch of trail that runs from William Street to US-101 and Lower Silver Creek is an abandoned railroad right-of-way currently owned by VTA.

The abandoned railroad right-of-way runs along the west side of 28th Street at Santa Clara Street, approximately ½ mile west of the project site. The proposed alignment would provide direct pedestrian and bicycle access between the project site and the planned Alum Rock/28th Street BART station, described below. The trail also would provide connections to other parts of the City's bicycle facility network, including the planned Lower Silver Creek Trail, the planned Three Creeks Trail (also on the former Western Pacific right-of way) and an expanded Coyote Creek Trail. It should be noted, however, that no City studies or master plans have been adopted for the Five Wounds Trail.

Transit Services

The project site is adequately served by the existing VTA transit services. The project site is primarily served by seven VTA bus routes (22, 23, 64A, 64B, 77, 522, and 523). The nearest bus stops to the



Figure 20 Lower Silver Creek Trail Alignment

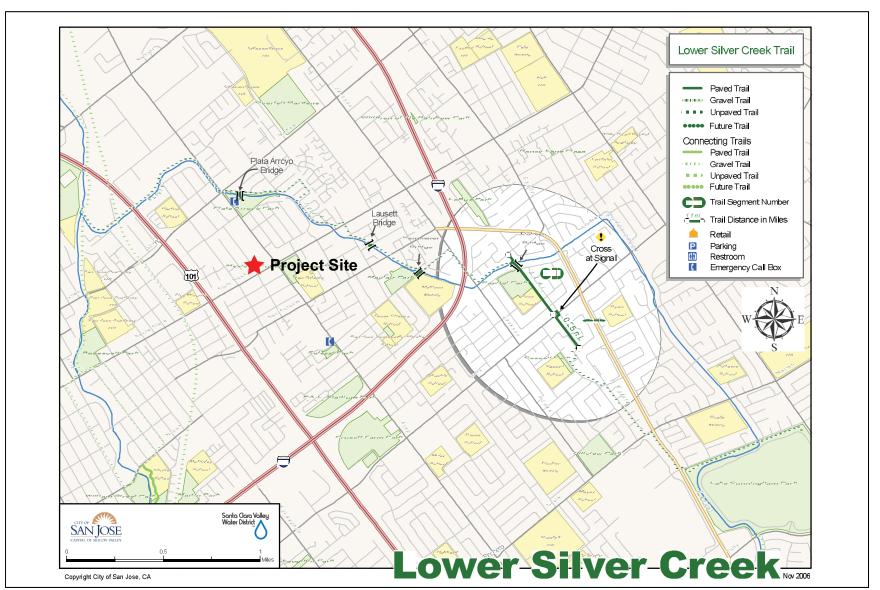
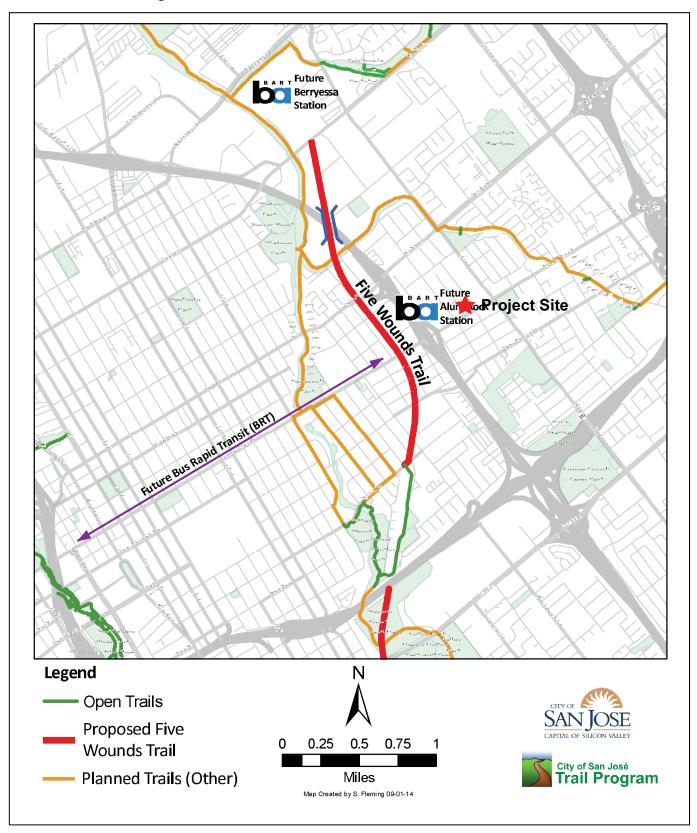




Figure 21 Five Wounds Trail Alignment





project site serve Frequent Routes 22 and 23, in addition to Rapid Route 523, and are located along both sides of Alum Rock Avenue at its intersection with King Road, adjacent to the south project site frontage.

Rapid Route 522 is a bus rapid transit (BRT) service operating within dedicated bus-only lanes along the center median of Alum Rock Avenue and is served by platform bus stops between 34th Street and Capitol Avenue. The nearest eastbound and westbound bus stops serving Rapid Route 522 are located at the intersection of Alum Rock Avenue and King Road, less than 400 feet walking distance east of the project site. BRT stations serving Rapid Route 522 are enhanced bus stops consisting of upgraded shelters, live schedule displays, and passenger amenities. The Rapid 522 BRT line provides access to the Diridon Transit Center, located approximately three miles west 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. The Rapid 522 line also provides access to the Alum Rock Transit Center, located 1.5 miles east of the project site on Capitol Avenue, which provides access to LRT services. The new transit trips generated by the project are not expected to create demand in excess of the transit service that is currently provided.

Alum Rock/28th Street BART Station

The Alum Rock/28th Street BART Station is planned to be located approximately ½-mile west of the project site. The site would be located east of 28th Street, west of US-101, and between Julian Street and Five Wounds Lane. The underground station is part of VTA's BART Silicon Valley Phase II Project that will bring BART train service from Berryessa/North San Jose through Downtown San Jose to the City of Santa Clara. Proposed station amenities include passenger and bus/shuttle drop-off areas. The Five Wounds Trail would be located along the west side of 28th Street across from the west frontage of the station. As discussed above, the planned Five Wounds Trail would provide direct access between the 28th Street/Alum Rock Station and Santa Clara Street.

Trip Reduction (TDM Program)

As described within the parking analysis, the project's total parking demand is projected to exceed the project's parking supply by 8 parking spaces between the hours of 7:00 PM and 8:00 PM, even with the implementation of a shared parking program. To reduce the project's parking demand, TDM measures should be implemented to encourage future tenants of the residential development and future employees of the commercial use to utilize alternative transportation modes available in the area to reduce single occupancy vehicle trips and parking demand generated by the project. The TDM program should encourage multimodal travel and use of the extensive bus service and pedestrian/bicycle facilities in the immediate project area to the maximum extent possible. The applicant/property owner should manage the TDM program to ensure tenant participation. The project will be required to submit and have approved by the City its TDM program. The project's TDM program is provided in Appendix G.

The project TDM program may include, but would not be limited to, the following, or alternative equivalent, elements to reduce vehicle trips:

- Smart Pass or Clipper Card for all employees, providing free rides on Santa Clara County's local transit agency, the Santa Clara Valley Transportation Authority (VTA)
- 25% Transit Subsidy for transit agencies other than the VTA, including Caltrain, ACE, Capitol Corridor, BART, MUNI, and other
- Monthly Vanpool Subsidy
- Commuter Tax Benefits through WageWorks offering pre-tax deduction per month for transit and pre-tax deduction per month for parking



- Free "Last Mile" Shuttles to local train systems (e.g. Caltrain, Amtrak, ACE)
- Free WiFi Commuter Buses direct from areas like San Francisco and the TriValley area
- Internal Carpool Matching Program utilizing zip code matching
- Regional Carpool Matching Program through 511
- Personalized Commute Assistance offered by a Commute Coordinator
- Preferred parking for Carpools and Vanpools located near entrances to every building
- Bicycle Lockers and/or Bicycle Racks near entrances to every building
- Showers for cyclists and pedestrians, offering clean towel service, complimentary toiletries, hair dryers, and ironing boards
- Intranet Site featuring transit, bike, ridesharing and telework information
- New Hire Orientation presentations focusing on commute alternatives from Day 1
- Centrally-Located Kiosks with transit schedules, bike and transit maps, and other commute alternative information
- *Periodic Events* which connect employees with local transit agencies and transportation organizations (e.g. Spare the Air Fair, Bike to Work Day)
- Onsite amenities which allow employees to complete errands without a car, such as bicycle repair, dry cleaning, oil changes, carwash, haircuts, dental services, cafeteria, coffee bars, fitness center, massage services, mail and shipping services, convenience store, ATM, gift store.



5. Conclusions

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 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.

The project site is located within a planned Growth Area (Little Portugal Urban Village) with low VMT per capita as identified by the City of San Jose. The proposed 13,897 s.f. of retail space is less than the 100,000 s.f. retail threshold screening criterion for local-serving retail. The residential component of the proposed project also will meet all of the applicable VMT screening criteria for residential developments as described in further detail in Chapter 3. Therefore, both the residential and retail components of the proposed project are screened from the evaluation of VMT and are considered to result in a less-than significant VMT impact.

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 and Little Portugal Urban Village goals and policies for the following reasons:

- The proposed residential uses for the project site are consistent with the Urban Village land use designation per the Little Portugal Urban Village plan.
- The proposed residential density (133 du/acre) exceeds the minimum 55 du/acre per the Little Portugal Urban Village plan.
- The project site is within walking distance (less than 400 feet) of the Alum Rock/King BRT Station.
- The project frontage along Alum Rock Avenue will be designed to be consistent with planned streetscape design features per the Little Portugal Urban Village plan, such as a minimum 16foot wide sidewalk.

Therefore, based on the project description, the proposed project would be consistent with the *Urban Village Planning Concepts* and 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 five signalized 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 894 daily vehicle trips, with 46 trips (15 inbound and 31 outbound) occurring during the AM peak hour and 79 trips (43 inbound and 36 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 D or better during both the AM and PM peak hours, under background conditions, and background plus project conditions.

Intersection Queueing Analysis

The queuing analysis indicates that the projected maximum vehicle queue for the eastbound left-turn movement at the King Road and Alum Rock Avenue intersection currently occupies a majority of the 200-foot storage capacity during the PM peak hour and would continue to do so under background conditions during the PM peak hour. The addition of project traffic is projected to lengthen the projected queue by one vehicle, to a total of 9 vehicles (225 feet), during the PM peak hour. It should be noted that one vehicle extending out of the turn pocket occasionally during the peak-hours is not a significant operational issue.

This deficiency can only be resolved by providing additional storage capacity. Providing additional queue storage capacity for the eastbound left-turn movement at the Alum Rock Avenue/King Road intersection would require removal or existing bus lanes, or street widening along with narrowing of



sidewalks along Alum Rock Avenue. The removal and/or alteration of improvements intended to encourage the use of multi-modal travel to accommodate vehicular demand is not consistent with the City's General Plan goals. Therefore, the extension of the eastbound left-turn pocket at this intersection is not recommended.

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

<u>Install Parking Garage Signage.</u> Since a barrier is not proposed between the commercial and residential parking area, it is recommended that signage be installed within the first below-ground parking level indicating that all spaces within the second below-ground parking level are assigned to the residential use.

<u>Provide Turn-Around Space</u>. The site plan should be adjusted to provide a looped drive aisle within the ground-floor parking level or provide adequate turn-around space for U-turning vehicles adjacent to the dead-end drive aisle. This adjustment will require the removal or relocation of planned parking spaces.

<u>Recommend Trash Pick-Up</u>. Trash bins will need to be wheeled out to the duc-out/drop off area just north of the project driveway, which will be accessible to garbage trucks for pickup.

Parking Supply

Vehicular Parking

Based on the City's standard parking requirements, the project is required to provide a total of 228 offstreet parking spaces before any reductions. However, a 20 percent reduction can be granted for proposed projects within an Urban Village which provide bicycle parking spaces per City requirements. Based on the City's parking code and an application of a 20 percent Urban Village reduction, the required parking would be reduced to 184 spaces, consisting of 136 spaces for the residential use and 48 spaces for the commercial use.

The project is proposing to provide a total of 129 parking spaces for the residential use and 41 spaces for the commercial use, which would not meet the City's reduced parking requirements. However, the project proposes an on-site parking restriction program which will provide an additional 11 parking spaces for the residential use (between 6:00 PM and 8:00 AM) and an additional 25 parking spaces for the commercial use (between 8:00 AM and 6:00 PM). With the additional shared parking spaces, the residential use is provided a total of 140 parking spaces and the commercial use is provided a total of 66 parking spaces. Therefore, both uses will meet the City's reduced parking requirements with the implementation of an on-site shared parking program.

Evaluation of Project Parking Demand

Based on parking demand survey data, the peak parking demand for the entire project (both the residential and retail uses) is projected to exceed the total provided on-site parking between 7:00 PM to 9:00 PM. An additional eight parking spaces would be required to meet the project's total parking demand of 178 spaces between 7:00 PM to 8:00 PM, while one additional space would be needed to meet the demand of 171 spaces between 8:00 PM to 9:00 PM. Therefore, the proposed 170 on-site spaces would not be adequate to serve the project's parking demand. To reduce the projected parking



demand, the project will be required to submit and have approved a transportation demand management program (TDM) by the City.

Recommended On-Site Parking Improvements

- It is recommended that the daytime hours of the parking restriction be extended to allow users of the commercial use to park on residential spaces until 7:00 PM.
- Signage should be installed within the first below-ground parking level indicating which of the residential parking spaces can be occupied by users of the commercial use during daytime hours.

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 36 bicycle parking spaces consisting of 14 short-term parking spaces and 22 long-term parking spaces. Short-term bicycle storage will be provided along the east frontage sidewalk and within an outdoor area located at the northeast corner of the project site. A long-term bicycle storage room will be located within the first below-ground level of the parking garage. The project proposes to provide a total of 36 bicycle parking spaces consisting of 14 short-term parking spaces and 22 long-term parking spaces. Therefore, the proposed bicycle parking of the project will meet the City's Bicycle Parking Standards.

Pedestrian, Bicycle, and Transit Analysis

Pedestrian Facilities

Pedestrian generators in the project vicinity include the Alum Rock/King BRT Station, commercial areas along Alum Rock Avenue, and bus stops along the Alum Rock Avenue and King Road corridors. The project site is within the service boundaries of Anne Darling Elementary School and Muwekma Ohlone Middle School which are part of the San Jose Unified School District. Anne Darling Elementary School is located approximately 0.65-mile north of the project site along 34th Street while Muwekma Ohlone Middle School is located approximately 3.5 miles (driving distance) west of the project site near Second Street and Hedding Street.

Existing sidewalks along Alum Rock Avenue, 34th Street, and King Road provide a pedestrian connection between the project site and pedestrian destinations in the project vicinity, including the Alum Rock/King BRT Station and Anne Darling Elementary School. Pedestrian access across US-101 is provided via sidewalks along the north and south sides of the Alum Rock Avenue overpass and crosswalks across the freeway ramp intersections.

Alum Rock Avenue has been designated as a Grand Boulevard within the Envision 2040 General Plan. Grand Boulevards are intended to serve as major transportation corridors with priority given to public transit. The City encourages developments to provide a minimum 20-foot wide sidewalk along most Grand Boulevard frontages. However, it should be noted that the proposed 16-foot sidewalk width along the project's Alum Rock Avenue frontage is consistent with the minimum frontage sidewalk width required by Little Portugal Urban Village plan.

Bicycle Facilities

The bikeways within the vicinity of the project site would remain unchanged under project conditions. There are currently no bike lanes along Alum Rock in the vicinity of the project site. However, there are bike lanes provided along San Antonio Street and King Road, less than ½ mile from the project site.

Due to right-of-way limitations, neither the San Jose Bike Plan 2020 nor the Little Portugal Urban Village plan suggest additional bicycle circulation improvements along Alum Rock Avenue in the project



vicinity. However, there are relatively low vehicular volumes along many residential streets, such as 34th Street and Shortridge Avenue, which are conducive to bicycle usage.

Transit Services

The project site is adequately served by the existing VTA transit services. The project site is primarily served by seven VTA bus routes (22, 23, 64A, 64B, 77, 522, and 523). The nearest bus stops to the project site serve Frequent Routes 22 and 23, in addition to Rapid Route 523, and are located along both sides of Alum Rock Avenue at its intersection with King Road, adjacent to the south project site frontage. Rapid Route 522 is a bus rapid transit (BRT) service operating within dedicated bus-only lanes along the center median of Alum Rock Avenue and is served by platform bus stops between 34th Street and Capitol Avenue. The nearest eastbound and westbound bus stops serving Rapid Route 522 are located at the intersection of Alum Rock Avenue and King Road, less than 400 feet walking distance east of the project site.

The new transit trips generated by the project are not expected to create demand in excess of the transit service that is currently provided.

Trip Reduction (TDM Program)

The project's total parking demand is projected to exceed the project's parking supply by 8 parking spaces between the hours of 7:00 PM and 8:00 PM, even with the implementation of a shared parking program. To reduce the project's parking demand, TDM measures should be implemented to encourage future tenants of the residential development and future employees of the commercial use to utilize alternative transportation modes available in the area to reduce single occupancy vehicle trips and parking demand generated by the project. The TDM program should encourage multimodal travel and use of the extensive bus service and pedestrian/bicycle facilities in the immediate project area to the maximum extent possible. The applicant/property owner should manage the TDM program to ensure tenant participation. The project will be required to submit and have approved by the City its TDM program.



Little Portugal Gateway Mixed-Use Development TA Technical Appendices

Appendix ASan Jose VMT Evaluation Tool Output Sheet

CITY OF SAN JOSE VEHICLE MILES TRAVELED EVALUATION TOOL SUMMARY REPORT

PROJECT:

Name: Little Portugal Gateway Mixed-Use Development Tool Version: 2/29/2019 Location: 1661-1665 Alum Rock Avenue, San Jose, CA Date: 1/21/2020

Parcel: 48121069 Parcel Type: Urban Low Transit

Proposed Parking Spaces Vehicles: 170 Bicycles: 0

LAND USE:

Reside	ential:		Percent of All Residential Units	
Si	ingle Family	0 DU	Extremely Low Income (< 30% MFI)	0 % Affordable
М	Iulti Family	123 DU	Very Low Income ($> 30\%$ MFI, $\leq 50\%$ MFI)	0 % Affordable
St	ubtotal	123 DU	Low Income (> 50% MFI, ≤ 80% MFI)	0 % Affordable
Office	:	0 KSF		
Retail:		13.9 KSF		
Indust	trial:	0 KSF		

VMT REDUCTION STRATEGIES

Tier 1 - Project Characteristics

Increase Residential Density	
Existing Density (DU/Residential Acres in half-mile buffer)	9
With Project Density (DU/Residential Acres in half-mile buffer)	10
Increase Development Diversity	
Existing Activity Mix Index	0.33
With Project Activity Mix Index	0.33
Integrate Affordable and Below Market Rate	
Extremely Low Income BMR units	0 %
Very Low Income BMR units	0 %
Low Income BMR units	0 %
Increase Employment Density	
Existing Density (Jobs/Commercial Acres in half-mile buffer)	26
With Project Density (Jobs/Commercial Acres in half-mile buffer)	27

Tier 2 - Multimodal Infrastructure

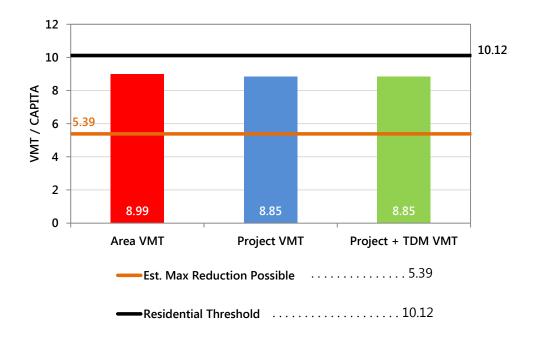
Tier 3 - Parking

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

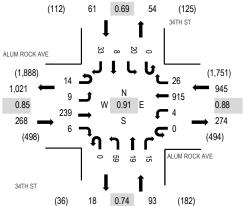


Location: 1 34TH ST & ALUM ROCK AVE AM

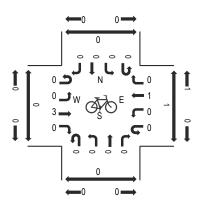
Date: Tuesday, October 22, 2019 **Peak Hour:** 07:45 AM - 08:45 AM

Peak 15-Minutes: 07:45 AM - 08:00 AM

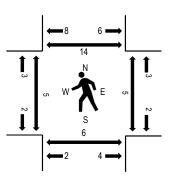
Peak Hour - Motorized Vehicles



Peak Hour - Bicycles



Peak Hour - Pedestrians



Note: Total study counts contained in parentheses.

Traffic Counts - Motorized Vehicles

Interval	AL	UM RO Eastb	OCK A\ ound	/E		JM RO Westb	CK AVE			34TH Northb				34TH Southl				Rolling	Ped	lestriar	n Crossii	ngs
Start Time	U-Turn	Left	Thru	Right	U-Turn	Left	Thru F	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	Total	Hour	West	East	South	North
7:00 AM	2	3	34	4	2	0	164	16	0	14	4	3	0	5	1	9	261	1,221	1	1	1	4
7:15 AM	3	3	45	3	1	2	172	6	0	12	5	2	0	1	1	6	262	1,297	0	0	0	2
7:30 AM	3	6	56	3	1	0	182	12	0	25	9	5	0	5	0	14	321	1,343	0	2	2	4
7:45 AM	8	1	71	2	0	0	219	11	0	23	9	9	0	8	4	12	377	1,367	0	1	0	3
8:00 AM	2	4	56	2	0	2	214	5	0	19	3	1	0	9	4	16	337	1,322	0	2	0	6
8:15 AM	1	2	60	1	0	0	218	3	0	9	6	4	0	1	0	3	308		1	1	5	2
8:30 AM	3	2	52	1	0	2	264	7	0	8	1	1	0	2	0	2	345		4	1	1	3
8:45 AM	7	2	52	4	1	0	243	4	0	8	1	1	0	6	0	3	332		1	0	1	1

		East	bound			Westk	oound			Northb	ound			South	bound		
Vehicle Type	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	Total
Articulated Trucks	0	0	0	0	0	0	3	0	0	0	0	0	0	0	0	0	3
Lights	14	9	215	6	0	4	881	24	0	59	19	15	0	20	8	32	1,306
Mediums	0	0	24	0	0	0	31	2	0	0	0	0	0	0	0	1	58
Total	14	9	239	6	0	4	915	26	0	59	19	15	0	20	8	33	1,367

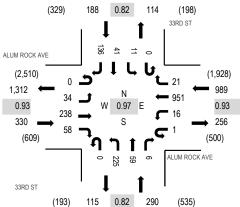


Location: 2 33RD ST & ALUM ROCK AVE AM

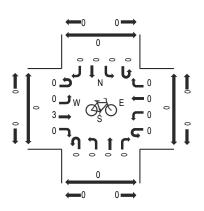
Date: Tuesday, October 22, 2019 **Peak Hour:** 07:30 AM - 08:30 AM

Peak 15-Minutes: 07:45 AM - 08:00 AM

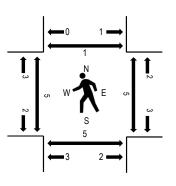
Peak Hour - Motorized Vehicles



Peak Hour - Bicycles



Peak Hour - Pedestrians



Note: Total study counts contained in parentheses.

Traffic Counts - Motorized Vehicles

Interval	AL	UM RO	OCK A\	/E		JM RO Westb	CK AVE			33RD Northb				33RE Southb				Rollina	Ped	lestriar	n Crossii	ngs
Start Time	U-Turn	Left	Thru	Right	U-Turn	Left	Thru F	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	Total	Hour	West	East	South	North
 7:00 AM	0	11	45	14	0	2	183	8	0	51	5	2	0	1	5	25	352	1,646	0	2	2	1
7:15 AM	0	0	50	9	0	6	197	3	0	61	14	4	0	0	6	27	377	1,747	2	5	3	0
7:30 AM	0	9	56	14	0	4	224	5	0	74	17	3	0	1	11	38	456	1,797	0	2	3	0
7:45 AM	0	9	74	6	0	3	239	3	0	48	19	0	0	6	10	44	461	1,793	1	1	0	0
8:00 AM	0	10	54	23	1	4	234	6	0	53	14	1	0	2	13	38	453	1,755	1	1	1	0
8:15 AM	0	6	54	15	0	5	254	7	0	50	9	2	0	2	7	16	427		3	1	1	1
8:30 AM	0	8	56	6	0	4	273	5	0	45	11	2	0	4	5	33	452		2	2	5	3
8:45 AM	0	9	65	6	1	9	243	5	0	38	5	7	0	7	6	22	423		0	2	0	1

		East	bound			West	oound			Northb	ound			South	bound		
Vehicle Type	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	Total
Articulated Trucks	0	0	2	0	0	0	4	0	0	1	0	0	0	0	0	0	7
Lights	0	34	213	58	1	16	923	21	0	222	59	6	0	11	40	136	1,740
Mediums	0	0	23	0	0	0	24	0	0	2	0	0	0	0	1	0	50
Total	0	34	238	58	1	16	951	21	0	225	59	6	0	11	41	136	1,797

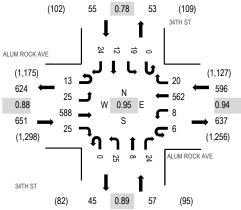


Location: 1 34TH ST & ALUM ROCK AVE PM

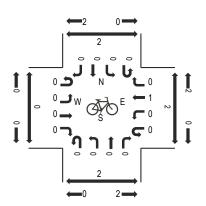
Date: Tuesday, October 22, 2019 **Peak Hour:** 05:00 PM - 06:00 PM

Peak 15-Minutes: 05:45 PM - 06:00 PM

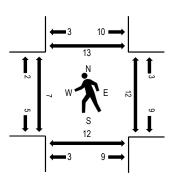
Peak Hour - Motorized Vehicles



Peak Hour - Bicycles



Peak Hour - Pedestrians



Note: Total study counts contained in parentheses.

Traffic Counts - Motorized Vehicles

	AL	UM RO	OCK A\	/E	ALU	JM RO	CK AVE			34TH	IST			34TF	1ST							
Interval		Eastb	ound			Westb	ound			Northb	ound			South	oound			Rolling	Ped	destriar	n Crossi	ngs
Start Time	U-Turn	Left	Thru	Right	U-Turn	Left	Thru f	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	Total	Hour	West	East	South	North
4:00 PM	5	8	140	6	5	1	135	3	0	5	1	5	0	7	1	5	327	1,263	1	3	2	5
4:15 PM	6	3	149	4	3	1	116	10	0	2	3	4	0	7	4	1	313	1,263	2	0	2	1
4:30 PM	8	8	154	5	3	2	124	4	0	4	1	3	0	6	0	2	324	1,288	2	0	0	4
4:45 PM	9	8	127	7	0	4	115	5	0	6	2	2	0	4	2	8	299	1,300	3	1	3	2
5:00 PM	2	9	138	5	2	1	129	7	0	7	1	8	0	11	2	5	327	1,359	3	2	2	0
5:15 PM	6	5	135	6	2	2	153	1	0	8	2	6	0	2	3	7	338		1	4	1	8
5:30 PM	2	5	145	9	2	3	138	6	0	7	3	4	0	1	4	7	336		2	6	6	3
5:45 PM	3	6	170	5	0	2	142	6	0	3	2	6	0	5	3	5	358		1	0	3	2

		East	bound			Westk	oound			Northb	ound			South	bound		
Vehicle Type	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	Total
Articulated Trucks	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	2
Lights	13	25	567	25	6	8	540	20	0	25	8	24	0	19	12	24	1,316
Mediums	0	0	19	0	0	0	22	0	0	0	0	0	0	0	0	0	41
Total	13	25	588	25	6	8	562	20	0	25	8	24	0	19	12	24	1,359

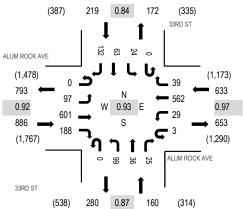


Location: 2 33RD ST & ALUM ROCK AVE PM

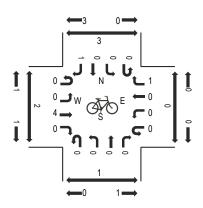
Date: Tuesday, October 22, 2019 **Peak Hour:** 05:00 PM - 06:00 PM

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

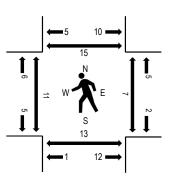
Peak Hour - Motorized Vehicles



Peak Hour - Bicycles



Peak Hour - Pedestrians



Note: Total study counts contained in parentheses.

Traffic Counts - Motorized Vehicles

	AL	UM RO	OCK A\	/E	ALU	JM RO	CK AVE			33RD	ST			33RI	OST							
Interval		Eastb	ound			Westb	ound			Northb	ound			South	bound			Rolling	Ped	lestriar	n Crossi	ings
Start Time	U-Turn	Left	Thru	Right	U-Turn	Left	Thru I	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	Total	Hour	West	East	South	North
4:00 PM	0	23	151	46	0	13	127	9	0	12	6	8	0	4	10	28	437	1,743	1	5	3	4
4:15 PM	0	33	152	40	1	7	102	10	0	24	7	7	0	5	8	23	419	1,759	4	2	3	1
4:30 PM	0	27	158	51	0	6	126	5	0	37	4	7	0	6	15	25	467	1,849	2	1	0	1
4:45 PM	1	22	130	47	0	8	121	5	0	27	12	3	0	5	7	32	420	1,845	2	3	0	1
5:00 PM	0	21	135	54	1	4	140	10	0	26	5	8	0	8	14	27	453	1,898	5	2	4	5
5:15 PM	0	35	157	48	0	12	140	11	0	32	14	6	0	4	13	37	509		1	1	1	3
5:30 PM	0	21	152	45	0	7	143	10	0	20	9	5	0	5	12	34	463		0	1	5	4
5:45 PM	0	20	157	41	2	6	139	8	0	21	8	6	0	7	24	34	473		5	3	3	3

		East	bound			Westk	ound			Northb	ound			South	bound		
Vehicle Type	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	Total
Articulated Trucks	0	0	1	0	0	0	0	0	0	0	0	0	0	0	1	0	2
Lights	0	97	582	188	3	29	541	39	0	99	35	25	0	24	61	132	1,855
Mediums	0	0	18	0	0	0	21	0	0	0	1	0	0	0	1	0	41
Total	0	97	601	188	3	29	562	39	0	99	36	25	0	24	63	132	1,898

Appendix C Approved Trips Inventory

AM PROJECT TRIPS

Intersection of : Alum Rock Av / NB	101 To Alum Ro	ck Rp	& NB 1	01 To	Santa	Clara	Rp					
Traffix Node Number : 3016												
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
NSJ LEGACY	0	0	0	0	0	0	4	16	0	0	4	1
NORTH SAN JOSE												
PDC02-082 (3-15360) Residential ALUM ROCK & MCCREERY (SW/C) BLACKWELL HOUSING	0	0	1	0	0	0	0	3	0	0	5	2

TOTAL: 0 0 1 0 0 0 4 19 0 0 9 3

	LEFT	THRU	RIGHT
NORTH	0	0	0
EAST	0	9	3
SOUTH	0	0	1
WEST	4	19	0

PM PROJECT TRIPS

Intersection of : Alum Rock Av / NB 101	To Alum Ro	ck Rp	& NB 1	01 To	Santa	Clara	Rp					
Traffix Node Number: 3016												
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
NSJ LEGACY	0	0	0	0	0	0	1	9	0	0	23	8
NORTH SAN JOSE												
PDC02-082 (3-15360)	0	0	2	0	0	0	0	5	0	0	3	1

ALUM ROCK & MCCREERY (SW/C)
BLACKWELL HOUSING

TOTAL: 0 0 2 0 0 0 1 14 0 0 26 9

	LEFT	THRU	RIGHT
NORTH	0	0	0
EAST	0	26	9
SOUTH	0	0	2
WEST	1	14	0

Residential

AM PROJECT TRIPS

Intersection of : SB 101 To Santa Clara Rp & E Santa Clara St

Traffix Node Number: 3023

11411111 11949 114111191 1 3023												
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
NSJ LEGACY	0	0	0	11	0	8	0	5	3	0	0	0
NORTH SAN JOSE												
PDC02-082 (3-15360) Residential ALUM ROCK & MCCREERY (SW/C) BLACKWELL HOUSING	0	0	0	1	0	0	0	1	0	2	2	0

TOTAL:	0	0	0	12	0	8	0	6	3	2	2	0

	LEFT	THRU	RIGHT
NORTH	12	0	8
EAST	2	2	0
SOUTH	0	0	0
WEST	0	6	3

PM PROJECT TRIPS

Intersection of : SB 101 To Santa Clara Rp & E Santa Clara St

Traffix Node Number : 3023

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
NSJ LEGACY	0	0	0	8	0	4	0	5	2	1	3	0
NORTH SAN JOSE												
PDC02-082 (3-15360) Residential ALUM ROCK & MCCREERY (SW/C) BLACKWELL HOUSING	0	0	0	2	0	0	0	2	0	1	1	0

TOTAL: 0 0 0 10 0 4 0 7 2 2 4 0

	LEFT	THRU	RIGHT
NORTH	10	0	4
EAST	2	4	0
SOUTH	0	0	0
WEST	0	7	2

AM PROJECT TRIPS

Intersection of : Alum Rock Av & N King Rd /	S Kin	g Rd										
Traffix Node Number : 3064												
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 WBF
DOWNTOWN LEGACY DOWNTOWN CORE DOWNTOWN STRATEGY PLAN 2000	0	0	0	0	0	0	0	0	0	0	0	0
NSJ LEGACY	3	11	1	0	1	0	1	7	1	0	1	0
NORTH SAN JOSE												
PDC02-082 (3-15360) Residential ALUM ROCK & MCCREERY (SW/C) BLACKWELL HOUSING	0	0	0	1	0	0	0	4	0	8	1	0
PDC03-093 (3-03081) Retail/Commercial MCKEE RD AND N JACKSON AV BJ REGIONAL MEDICAL CENTER	0	0	27	0	0	0	0	7	0	17	5	0
PDC03-108 OFF (3-16680) Retail/Commercial BOTH SIDES OF BERRYESSA RD WEST OF UNION PACIFI BERRYESSA FLEA MKT (OFFICE)	0	6	0	0	1	1	5	0	0	0	0	1
PDC03-108 RES (3-16680) Residential BOTH SIDES OF BERRYESSA, WEST OF UNION PACIFIC BERRYESSA FLEA MKT (RESIDENTIAL)	0	10	0	1	18	8	4	0	0	0	0	1
PDC03-108 RET (3-16680) Retail/Commercial BOTH SIDES OF BERRYESSA, WEST OF UNION PACIFIC BERRYESSA FLEA MKT (RETAIL)	0	0	0	0	0	0	0	0	0	0	0	0

TOTAL:	3	28		9	18	25	7	
	_			-	 			

	LEFT	THRU	RIGHT
NORTH	2	20	9
EAST	25	7	2
SOUTH	3	27	28
WEST	10	18	1

PM PROJECT TRIPS

Traffix Node Number : 3064												
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	M0 WB
DOWNTOWN LEGACY DOWNTOWN CORE DOWNTOWN STRATEGY PLAN 2000	2	3	2	1	7	1	1	11	3	2	9	1
NSJ LEGACY	3	4	3	3	15	2	0	2	0	1	6	0
NORTH SAN JOSE												
PDC02-082 (3-15360) Residential ALUM ROCK & MCCREERY (SW/C) BLACKWELL HOUSING	0	0	0	1	0	0	0	8	0	4	1	0
PDC03-093 (3-03081) Retail/Commercial MCKEE RD AND N JACKSON AV SJ REGIONAL MEDICAL CENTER	0	0	11	0	0	0	0	3	0	28	8	0
PDC03-108 OFF (3-16680) Retail/Commercial BOTH SIDES OF BERRYESSA RD WEST OF UNION PACIFI BERRYESSA FLEA MKT (OFFICE)	0	1	0	1	5	4	1	0	0	0	0	0
PDC03-108 RES (3-16680) Residential BOTH SIDES OF BERRYESSA, WEST OF UNION PACIFIC BERRYESSA FLEA MKT (RESIDENTIAL)	0	18	0	1	9	4	8	0	0	0	0	1
PDC03-108 RET (3-16680) Retail/Commercial BOTH SIDES OF BERRYESSA, WEST OF UNION PACIFIC BERRYESSA FLEA MKT (RETAIL)	13	1	0	0	2	7	3	6	6	0	13	0

TOTAL:	18	27	16	7	38	18	13	30	9	35	37	2

	LEFT	THRU	RIGHT
NORTH	7	38	18
EAST	35	37	2
SOUTH	18	27	16
WEST	13	30	9

AM PROJECT TRIPS

Intersection of : S 33rd St / N 33rd St & Alum Rock Av

Traffix Node Number: 3260

M09 M08 M07 M03 M02 M01 M12 M11 M10 M06 M05 M04 Permit No./Proposed Land NBL NBT NBR SBL SBT SBR EBL EBT EBR WBL WBT WBR Use/Description/Location NSJ Ω 0 0 0 0 0 0 0 0 5 0 10

LEGACY

NORTH SAN JOSE

TOTAL: 0 0 0 0 0 10 0 0 5 0

	LEFT	THRU	RIGHT
NORTH	0	0	0
EAST	0	5	0
SOUTH	0	0	0
WEST	0	10	0

PM PROJECT TRIPS	09/18/2019
	U 3 / 1 0 / 2 U 1 3

Intersection of : S 33rd St / N 33rd St & Alum Rock Av

Traffix Node Number: 3260

M09 M08 M07 M03 M02 M01 M12 M11 M10 M06 M05 M04 Permit No./Proposed Land NBL NBT NBR SBL SBT SBR EBL EBT EBR WBL WBT WBR Use/Description/Location NSJ 0 0 0 0 0 0 4 0 1 23 1

LEGACY

NORTH SAN JOSE

TOTAL: 1 0 0 0 0 0 4 0 1 23 1

	LEFT	THRU	RIGHT
NORTH	0	0	0
EAST	1	23	1
SOUTH	1	0	0
WEST	0	4	0

Appendix D Volume Summary

Little Portugal Mixed-Use AM Peak-Hour

Intersection Number: 1
Traffix Node Number: 3064

Intersection Name: King Road and Alum Rock Avenue*

Peak Hour: AM

Count Date: 4/17/19

					М	ovement	S						
_	No	orth Appro	oach	Eas	East Approach			South Approach			West Approach		
Scenario:	RT	TH	LT	RT	TH	LT	RT	TH	LT	RT	TH	LT	Total
Existing Conditions	78	245	43	75	508	79	102	521	190	63	183	78	2165
ATI	9	20	2	2	7	25	28	27	3	1	18	10	152
Background Conditions	87	265	45	77	515	104	130	548	193	64	201	88	2317
Proposed Project Trips	2	0	0	0	2	0	0	0	2	3	5	8	22
Background Plus Project Conditions	89	265	45	77	517	104	130	548	195	67	206	96	2339

Intersection Number: 2
Traffix Node Number: 100

Intersection Name: 34th Street and Alum Rock Avenue

Peak Hour: AM
Count Date: 10/22/19

<u> </u>	Movements												
	No	rth Appr	oach	Eas	st Appro	ach	Sou	South Approach			West Approach		
Scenario:	RT	TH	LT	RT	TH	LT	RT	TH	LT	RT	TH	LT	Total
Existing Conditions	33	8	20	26	915	4	15	19	59	6	239	23	1367
ATI	0	0	0	0	19	0	0	0	0	0	29	0	48
Background Conditions	33	8	20	26	934	4	15	19	59	6	268	23	1415
Proposed Project Trips	0	0	0	3	19	9	0	0	0	0	8	0	39
Background Plus Project Conditions	33	8	20	29	953	13	15	19	59	6	276	23	1454

Intersection Number: 3
Traffix Node Number: 3260

Intersection Name: 33rd Street and Alum Rock Avenue

Peak Hour: AM
Count Date: 10/22/19

					M	ovements	S						_
_	North Approach			Eas	East Approach			South Approach			West Approach		
Scenario:	RT	TH	LT	RT	TH	LT	RT	TH	LT	RT	TH	LT	Total
Existing Conditions	136	41	11	21	951	17	6	59	225	58	238	34	1797
ATI	0	0	0	0	5	0	0	0	0	0	10	0	15
Background Conditions	136	41	11	21	956	17	6	59	225	58	248	34	1812
Proposed Project Trips	0	0	0	2	17	0	0	0	0	0	8	0	27
Background Plus Project Conditions	136	41	11	23	973	17	6	59	225	58	256	34	1839

Little Portugal Mixed-Use AM Peak-Hour

Intersection Number: 4
Traffix Node Number: 3016

Intersection Name: US 101 Northbound Ramps and Alum Rock Avenue*

Peak Hour: AM
Count Date: 9/19/19

					M	ovement	S						
_	No	rth Appr	oach	Eas	East Approach			South Approach			West Approach		
Scenario:	RT	TH	LT	RT	TH	LT	RT	TH	LT	RT	TH	LT	Total
Existing Conditions	0	0	0	445	977	0	61	0	340	0	292	258	2373
ATI	0	0	0	3	9	0	1	0	0	0	19	4	36
Background Conditions	0	0	0	448	986	0	62	0	340	0	311	262	2409
Proposed Project Trips	0	0	0	6	11	0	3	0	0	0	5	0	25
Background Plus Project Conditions	0	0	0	454	997	0	65	0	340	0	316	262	2434

Intersection Number: 5
Traffix Node Number: 3023

Intersection Name: US 101 Southbound Ramps and Santa Clara Street*

Peak Hour: AM
Count Date: 9/19/19

					М	ovements	3						
-	North Approach			Eas	East Approach			South Approach			West Approach		
Scenario:	RT	TH	LT	RT	TH	LT	RT	TH	LT	RT	TH	LT	Total
Existing Conditions	150	0	107	0	946	366	0	0	0	398	431	0	2398
ATI	8	0	12	0	2	2	0	0	0	3	6	0	33
Background Conditions	158	0	119	0	948	368	0	0	0	401	437	0	2431
Proposed Project Trips	0	0	3	0	5	6	0	0	0	0	2	0	16
Background Plus Project Conditions	158	0	122	0	953	374	0	0	0	401	439	0	2447

Intersection Number: 6
Traffix Node Number: 200

Intersection Name: Project Access and Alum Rock Avenue

Peak Hour: AM
Count Date: 10/22/19

	Movements												
_	North Approach			Eas	East Approach			South Approach			West Approach		
Scenario:	RT	TH	LT	RT	ŤĤ	LT	RT	TH	LT	RT	TH	LT	Total
Existing Conditions	0	0	0	0	945	0	0	0	0	0	0	0	945
ATI	0	0	0	0	19	0	0	0	0	0	0	0	19
Background Conditions	0	0	0	0	964	0	0	0	0	0	0	0	964
Proposed Project Trips	31	0	0	15	0	0	0	0	0	0	0	0	46
Background Plus Project Conditions	31	0	0	15	964	0	0	0	0	0	0	0	1010

Little Portugal Mixed-Use PM Peak-Hour

Intersection Number: 1
Traffix Node Number: 3064

Intersection Name: King Road and Alum Rock Avenue*

Peak Hour: P

Count Date: 12/13/18

					М	ovements	3						
_	North Approach			Eas	East Approach			South Approach			West Approach		
cenario:	RT	TH	LT	RT	TH	LT	RT	TH	LT	RT	TH	LT	Total
Existing Conditions	74	531	97	68	380	139	70	247	110	143	403	116	2378
ATI	18	38	7	2	37	35	16	27	18	9	30	13	250
Background Conditions	92	569	104	70	417	174	86	274	128	152	433	129	2628
Proposed Project Trips	6	0	0	0	6	0	0	0	6	4	5	24	51
Background Plus Project Conditions	98	569	104	70	423	174	86	274	134	156	438	153	2679

Intersection Number: 2
Traffix Node Number: 100

Intersection Name: 34th Street and Alum Rock Avenue

Peak Hour: PM
Count Date: 10/22/19

					М	ovement	S						
	No	North Approach			East Approach			South Approach			West Approach		
Scenario:	RT	TH	LT	RT	TH	LT	RT	TH	LT	RT	TH	LT	Total
Existing Conditions	24	12	19	20	562	14	24	8	25	25	588	38	1359
AT	0	0	0	0	73	0	0	0	0	0	52	0	125
Background Conditions	24	12	19	20	635	14	24	8	25	25	640	38	1484
Proposed Project Trips	0	0	0	4	22	11	0	0	0	0	24	0	61
Background Plus Project Conditions	24	12	19	24	657	25	24	8	25	25	664	38	1545

Intersection Number: 3
Traffix Node Number: 3260

Intersection Name: 33rd Street and Alum Rock Avenue

Peak Hour: PM
Count Date: 10/22/19

					M	ovements	3						
_	No	rth Appr	oach	Eas	st Appro	ach	Sou	th Appr	oach	We	st Appro	ach	
Scenario:	RT	TH	LT	RT	TH	LT	RT	TH	LT	RT	TH	LT	Total
Existing Conditions	132	63	24	39	562	32	25	36	99	188	601	97	1898
ATI	0	0	0	1	23	1	0	0	1	0	4	0	30
Background Conditions	132	63	24	40	585	33	25	36	100	188	605	97	1928
Proposed Project Trips	0	0	0	2	20	0	0	0	0	0	24	0	46
Background Plus Project Conditions	132	63	24	42	605	33	25	36	100	188	629	97	1974

Little Portugal Mixed-Use PM Peak-Hour

Intersection Number: 4
Traffix Node Number: 3016

Intersection Name: US 101 Northbound Ramps and Alum Rock Avenue*

Peak Hour: PM
Count Date: 12/13/18

					Me	ovement	S						
_	No	rth Appr	oach	Eas	t Appro	ach	Sou	th Appı	oach	We	st Appr	oach	
Scenario:	RT	TH	LT	RT	ŤĤ	LT	RT	TH	LT	RT	TH	LT	Total
Existing Conditions	0	0	0	159	598	0	335	5	326	0	604	156	2183
ATI	0	0	0	9	26	0	2	0	0	0	14	1	52
Background Conditions	0	0	0	168	624	0	337	5	326	0	618	157	2235
Proposed Project Trips	0	0	0	7	13	0	9	0	0	0	15	0	44
Background Plus Project Conditions	0	0	0	175	637	0	346	5	326	0	633	157	2279

Intersection Number: 5
Traffix Node Number: 3023

Intersection Name: US 101 Southbound Ramps and Santa Clara Street*

Peak Hour: PM
Count Date: 12/13/18

					М	ovements	3						
	No	rth Appr	oach	Eas	st Appro	oach	Sou	th Appr	oach	We	st Appro	oach	
Scenario:	RT	TH	LT	RT	TH	LT	RT	TH	LT	RT	TH	LT	Total
Existing Conditions	154	19	181	0	593	343	0	0	0	679	579	0	2548
ATI	4	0	10	0	4	2	0	0	0	2	7	0	29
Background Conditions	158	19	191	0	597	345	0	0	0	681	586	0	2577
Proposed Project Trips	0	0	9	0	5	7	0	0	0	0	6	0	27
Background Plus Project Conditions	158	19	200	0	602	352	0	0	0	681	592	0	2604

Intersection Number: 6
Traffix Node Number: 200

Intersection Name: Project Access and Alum Rock Avenue

Peak Hour: PM Count Date: 10/22/19

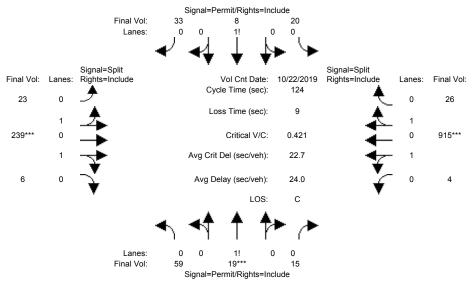
					M	ovement	S						
_	No	rth Appr	oach	Eas	st Appro	ach	Sou	th Appr	oach	We	st Appro	oach	
Scenario:	RT	TH	LT	RT	TH	LT	RT	TH	LT	RT	TH	LT	Total
Existing Conditions	0	0	0	0	596	0	0	0	0	0	0	0	596
ATI	0	0	0	0	73	0	0	0	0	0	0	0	73
Background Conditions	0	0	0	0	669	0	0	0	0	0	0	0	669
Proposed Project Trips	36	0	0	43	0	0	0	0	0	0	0	0	79
Background Plus Project Conditions	36	0	0	43	669	0	0	0	0	0	0	0	748

Appendix EIntersection Level of Service Calculations

1260 E. Santa Clara Mixed-Use San Jose

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

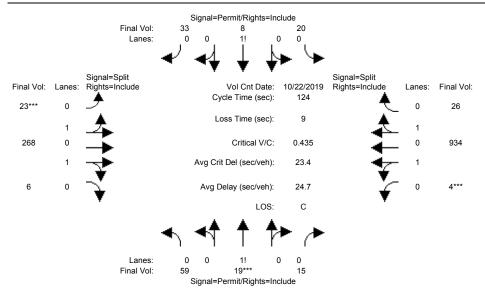
Intersection #100: ALUM ROCK/34TH



Approach: Movement:	No:	rth Bo	und - R	Son	uth Bo - T	ound - R	Ea	ast Bo - T	und - R	We	est Bo - T	und - R
Min. Green:	10	10	10	10	10				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	e: >>	Count	Date:	22 00	ct 201	.9 <<						
Base Vol:	59	19	15	20	8	33	23	239	6	4	915	26
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:	59	19	15	20	8	33	23	239	6	4	915	26
Added Vol:	0		0	0	0	0	0	0	0	0		0
ATI:	0		0	0	0	0	0	0	0	0	0	0
Initial Fut:	59	19	15	20	8	33	23	239	6	4	915	26
User Adj:			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:		19	15	20	8	33	23	239	6	4	915	26
Reduct Vol:	0	0	0	0	0	0	0	-	0	0	-	0
Reduced Vol:		19	15	20	8	33	23	239	6	4	915	26
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:							23		6			26
Saturation F	low M	odule:										
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	0.92	0.92	0.92	0.92	0.92	0.95	0.95	0.95	0.95	0.95	0.95
Lanes:			0.16			0.54			0.04		1.94	0.05
Final Sat.:			282			947			0 =		3486	99
Capacity Ana	-											
Vol/Sat:			0.05	0.03	0.03	0.03	0.07		0.07	0.26		0.26
Crit Moves:								****			****	
Green Time:			15.7		15.7			21.9	21.9		77.4	77.4
Volume/Cap:			0.42	0.28		0.28		0.42	0.42		0.42	0.42
Delay/Veh:			55.8	52.1		52.1		47.4	47.4		12.5	12.5
User DelAdj:				1.00		1.00		1.00	1.00		1.00	1.00
AdjDel/Veh:				52.1		52.1		47.4	47.4		12.5	12.5
LOS by Move:			_	D	_		D		D	В		В
		8	8	5	5	5	10		10	17	17	17
Note: Queue	repor	ted is	the n	umber	of ca	ırs per	lane					

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

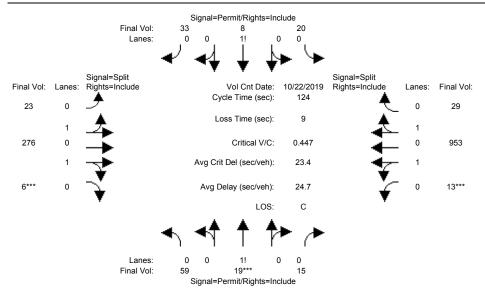
Intersection #100: ALUM ROCK/34TH



Approach: Movement:	L -	- T -	- R	L -	- T	- R	L -	- T	- R		T - R
Min. Green: Y+R:	10 4.0	10 4.0	10	10	10 4.0	10	10 4.0	10 4.0	10 4.0	10 4.0 4	10 10 .0 4.0
Volume Module											
Base Vol:	59	19	15	20	8	33	23	239	6	4 9	15 26
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:	59	19	15	20	8	33	23	239	6	4 9	15 26
Added Vol:	0	0	0	0	0	0	0	0	0	0	0 0
ATI:	0	0	0	0	0	0	0	29	0	0	19 0
Initial Fut:	59	19	15	20	8	33	23	268	6	4 9	34 26
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
PHF Volume:	59	19	15	20	8	33	23	268	6		34 26
	0	0	0	0	0	0	0	0	0	0	0 0
Reduced Vol:	59	19	15	20	8	33	23	268	6	4 9	34 26
_	1.00		1.00		1.00	1.00	1.00	1.00	1.00	1.00 1.	00 1.00
_	1.00		1.00		1.00	1.00		1.00	1.00	1.00 1.	
FinalVolume:		19	15	20	8	33	23	268	6		34 26
~											
Saturation F			1000	1000	1000	1 0 0 0	1 0 0 0	1000	1000	1000 10	00 1000
Sat/Lane:		1900	1900		1900	1900		1900	1900	1900 19	
Adjustment: Lanes:	0.92		0.92		0.92	0.92 0.54		1.81	0.95	0.95 0. 0.01 1.	
Final Sat.:	1110		282			947		3248	73	15 34	
Fillal Sat.:											
Capacity Anal				1		ı	ı		1	I	'
Vol/Sat:	_		0.05	0.03	0.03	0.03	0.08	0.08	0.08	0.27 0.	27 0.27
Crit Moves:							****			****	
Green Time:	15.1	15.1	15.1	15.1	15.1	15.1	23.5	23.5	23.5	76.3 76	.3 76.3
Volume/Cap:	0.43	0.43	0.43	0.29	0.29	0.29	0.43	0.43	0.43	0.43 0.	43 0.43
Delay/Veh:	56.8	56.8	56.8	52.8	52.8	52.8	46.4	46.4	46.4	13.1 13	.1 13.1
User DelAdj:			1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00 1.	00 1.00
AdjDel/Veh:	56.8	56.8	56.8	52.8	52.8	52.8	46.4	46.4	46.4	13.1 13	.1 13.1
LOS by Move:	E	E	E	D	D	D	D	D	D	В	В В
HCM2kAvgQ:	4	4	4	2	2	2	5	5	5	10	10 10
Note: Queue	report	ted is	the n	umber	of ca	rs per	lane	•			

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

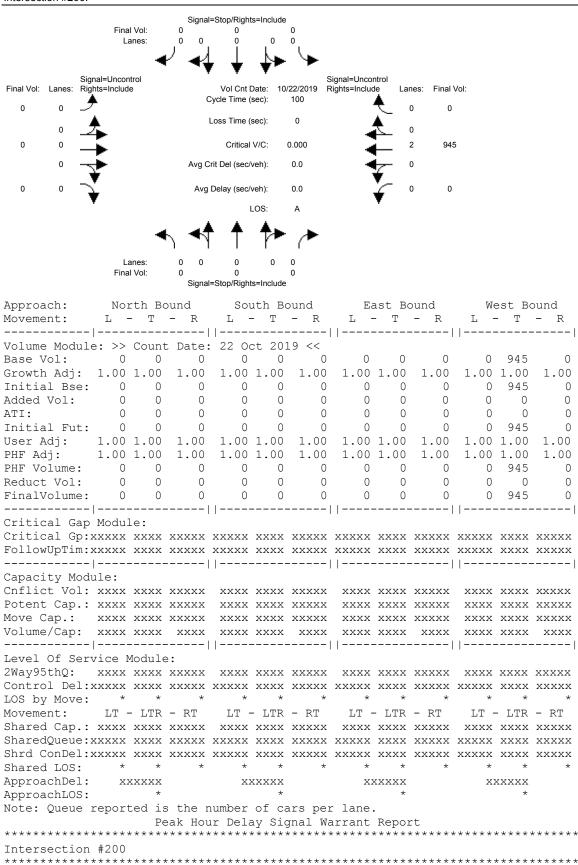
Intersection #100: ALUM ROCK/34TH



Approach: Movement:	L ·	- T ·	- R	L -	- Т	und - R	L -	- Т	- R	L -	T	- R
Min. Green: Y+R:	10 4.0	10 4.0	10 4.0	10	10 4.0	10 4.0	10 4.0	10 4.0	10 4.0	10 4.0	10 4.0	10 4.0
Volume Module												
Base Vol:	59	19	15	20	8	33	23	239	6	4	915	26
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:	59	19	15	20	8	33	23	239	6	4	915	26
Added Vol:	0	0	0	0	0	0	0	8	0	9	19	3
ATI:	0	0	0	0	0	0	0	29	0	0	19	0
Initial Fut:	59	19	15	20	8	33	23	276	6	13	953	29
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:	59	19	15	20	8	33	23	276	6	13	953	29
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	59	19	15	20	8	33	23	276	6	13	953	29
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
FinalVolume:		19	15	20	8	33	23	276	6	13		29
	1											
Saturation F												
Sat/Lane:		1900	1900		1900	1900		1900	1900	1900		1900
Adjustment:			0.92		0.92	0.92		0.95	0.95	0.95		0.95
Lanes:		0.20	0.16		0.13	0.54		1.81	0.04	0.03		0.06
Final Sat.:			282		230	947		3258	71		3448	105
Capacity Ana	-			0 00	0 00	0 00	0 00	0 00	0 00	0 00	0 00	0 00
Vol/Sat:		0.05	0.05	0.03	0.03	0.03	0.08	0.08	0.08	0.28	0.28	0.28
0110 110 100 .	1 4 0		1 4 0	1 4 0	1 4 0	1 4 0	00 5	00 5	****		56.5	56.5
	14.8		14.8		14.8	14.8		23.5	23.5	76.7		76.7
Volume/Cap:			0.45		0.29	0.29		0.45	0.45	0.45		0.45
_	57.6		57.6	53.4		53.4		46.6	46.6	13.1		13.1
User DelAdj:			1.00		1.00	1.00		1.00	1.00	1.00		1.00
AdjDel/Veh:			57.6		53.4	53.4		46.6	46.6	13.1		13.1
LOS by Move:		E 4	E	D 2	D	D 2	D	D 5	D 5	B 10	B	B 10
HCM2kAvgQ:	4		4		2		5	-	5	10	10	10
Note: Queue	repor	tea is	the n	umber	oi ca	rs per	⊥ane	•				

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

Intersection #200:



Future Volume Alternative: Peak Hour Warrant NOT Met

Approach:]	Nort	h Bo	oun	d	Č	Sout	h Bo	oun	d		Eas	t Bo	oun	d	M	est	Bour	nd
Movement:	L	-	T	-	R	L	-	Τ	_	R	L	-	T	_	R	L ·	- Т	. –	R
Control:		 Stop Sign					Sto	p S	ign		Ţ	Jnco	ntr	oll	ed	Un	cont	rol	Led
Lanes:	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0) 2	2 0	0
Initial Vol:		0	0		0		0	0		0		0	0		0	0	94	15	0
ApproachDel:		XXX	XXX				XXX	XXX				XXX	XXX			X	XXXX	X	

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 #200

Future Volume Alternative: Peak Hour Warrant NOT Met

Initial Vol: 0 0 0 0 0 0 0 0 0 0 945 0

Major Street Volume: 945
Minor Approach Volume: 0
Minor Approach Volume Threshold: 304

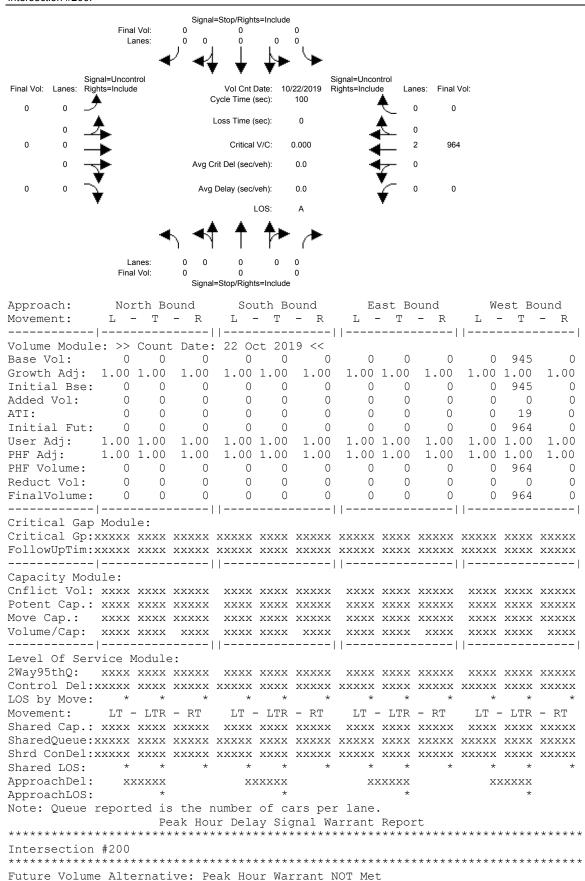
SIGNAL WARRANT DISCLAIMER

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.

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

Intersection #200:



										-											
Approach:	1	Jort	h B	oun	d	(Sout	:h B	oun	ıd		Eas	st B	our	ıd		We	st B	oun	.d	
Movement:	L	_	Т	_	R	L	_	T	_	R	L	-	T	_	R	L	_	T	-	R	
Control:		 Stop Sign					Sto	p S	ign	l	J	Jncc	ntr	011	.ed		Unc	ontr	011	ed	
Lanes:	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	
Initial Vol:		0	0		0		0	0		0		0	0		0		0	964		0	
ApproachDel:		XXX	XXX				XXX	XXXX				XXX	XXX				XX	XXXX			
															1	1				1	

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 #200

Future Volume Alternative: Peak Hour Warrant NOT Met

Major Street Volume: 964
Minor Approach Volume: 0
Minor Approach Volume Threshold: 297

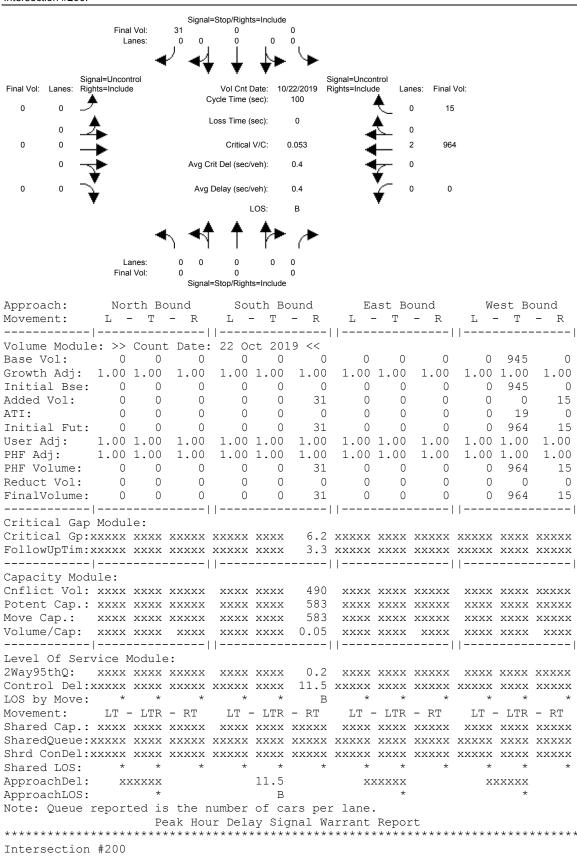
SIGNAL WARRANT DISCLAIMER

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.

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

Intersection #200:



Future Volume Alternative: Peak Hour Warrant NOT Met

Approach:	Nor	th B	oun	d	2	Sout	h B	oun	d		Eas	t B	oun	d		Wes	st B	oun	d
Movement:	L -	T	-	R	L	-	T	-	R	L	_	T	_	R	L	-	T	-	R
Control:	St	op S			Sto	p S	ign		Ţ	Jnco	ntr	011	ed	Ţ	Jnco	ontro	oll	ed	
Lanes:	0 0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	1	0
Initial Vol:	0	0		0		0	0		31		0	0		0		0	964		15
ApproachDel:	XX	XXXX				1	1.5				XXX	XXX				XXX	XXXX		

Approach[southbound][lanes=1][control=Stop Sign]

Signal Warrant Rule #1: [vehicle-hours=0.1]

FAIL - Vehicle-hours less than 4 for one lane approach.

Signal Warrant Rule #2: [approach volume=31]

FAIL - Approach volume less than 100 for one lane approach. Signal Warrant Rule #3: [approach count=2][total volume=1010]

SUCCEED - Total volume greater than or equal to 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 #200

Future Volume Alternative: Peak Hour Warrant NOT Met

Major Street Volume: 979
Minor Approach Volume: 31
Minor Approach Volume Threshold: 292

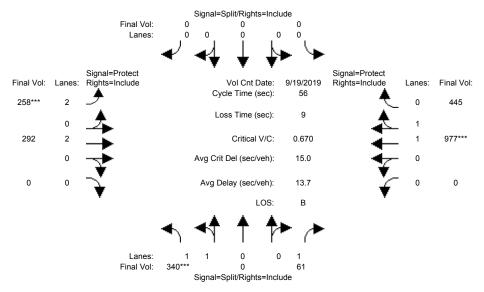
SIGNAL WARRANT DISCLAIMER

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.

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

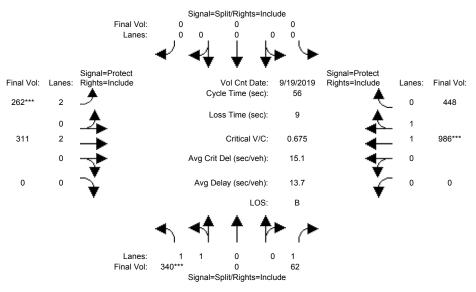
Intersection #3016: 101/ALUM ROCK



Approach: Movement:	L ·	- T ·	- R	L -	- T	und - R	L -	- Т	- R	West B L - T	- R
Min. Green: Y+R:	10	10 4.0	10	0 4.0	0 4.0	0 4.0	7 4.0	10 4.0	0 4.0	0 10	10
Volume Module											
Base Vol:	340	0	61	0	0	0	258	292	0	0 977	445
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:	340	0	61	0	0	0	258	292	0	0 977	445
Added Vol:	0	0	0	0	0	0	0	0	0	0 () 0
ATI:	0	0	0	0	0	0	0	0	0	0 (0
Initial Fut:	340	0	61	0	0	0	258	292	0	0 977	445
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	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00 1.00	
	340	0	61	0	0	0	258	292	0	0 977	
	0	0	0	0	0	0	0	0	0	0 (
Reduced Vol:	340	0	61	0	0	0	258	292	0	0 977	445
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	
FinalVolume:		0	61	0	0	0	258	292	0	0 977	
Saturation F											
Sat/Lane:			1900		1900	1900		1900	1900	1900 1900	
	0.93		0.92		1.00	0.92		1.00	0.92	0.92 0.99	
Lanes:		0.00	1.00		0.00	0.00		2.00	0.00	0.00 1.36	
Final Sat.:		0	1750	0	0	0		3800	0	0 2541	
Capacity Anal	_		e: 0.03	0 00	0.00	0.00	0 00	0.08	0.00	0.00 0.38	0.38
Vol/Sat: Crit Moves:	****	0.00	0.03	0.00	0.00	0.00	****	0.00	0.00	***	
Green Time:	10.0	0.0	10.0	0.0	0.0	0.0	7.0	27 0	0.0	0.0 30.0	
	0.54		0.20		0.00	0.00		0.12	0.00	0.00 0.72	
Delay/Veh:	21.8	0.00	19.9	0.0	0.0	0.0	27.3	3.5	0.0	0.00 0.72	
User DelAdi:			1.00		1.00	1.00		1.00	1.00	1.00 1.00	
AdjDel/Veh:	21.8	0.0	19.9	0.0	0.0	0.0	27.3		0.0	0.0 11.1	
_		0.0 A	19.9	0.0 A	0.0 A	0.0 A	27.3 C	3.3 A	0.0 A	A E	
HCM2k95thO:	7		2	0	0	0	5		0	0 18	
Note: Queue				-	-	-	-		0	0 10	, 10
gacac .	LOPOL		0110 11	~ C I	J1 00	TO PCE		•			

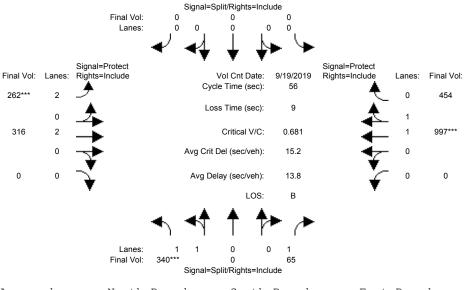
Level Of Service Computation Report 2000 HCM Operations (Future Volume Alternative) Background (AM)

Intersection #3016: 101/ALUM ROCK



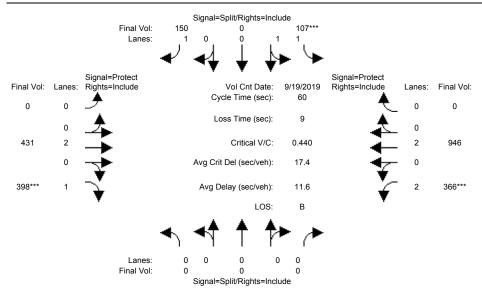
Approach: Movement:	L ·	- T	- R	L -	- T	und - R	L -	- T	- R	L -	- T	- R
Min. Green: Y+R:	10 4.0	10 4.0	10	0 4.0	0 4.0	0 4.0	7 4.0	10 4.0	0 4.0	0 4.0	10 4.0	10 4.0
Volume Module												
Base Vol:	340	0	61	0	0	0	258	292	0	0	977	445
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	340	0	61	0	0	0	258	292	0	0	977	445
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
ATI:	0	0	1	0	0	0	4	19	0	0	9	3
Initial Fut:	340	0	62	0	0	0	262	311	0	0	986	448
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
_		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:		0	62	0	0	0	262	311	0	0	986	448
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	340	0	62	0	0	0	262	311	0	0	986	448
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
FinalVolume:		0	62	0	0	0	262	311	0	0	986	448
Saturation F			1000	1000	1 0 0 0	1 0 0 0	1 0 0 0	1 0 0 0	1000	1000	1000	1000
Sat/Lane:		1900	1900		1900	1900		1900	1900		1900	1900
Adjustment:			0.92		1.00	0.92		1.00	0.92		0.99	0.95
Lanes: Final Sat.:	2.00 3550		1.00 1750	0.00		0.00		2.00	0.00		1.36 2543	0.64 1156
final Sat.:												
Capacity Anal				1		I	1		'	1		- 1
Vol/Sat:	-			0.00	0.00	0.00	0.08	0.08	0.00	0.00	0.39	0.39
	****						****				****	
Green Time:	10.0	0.0	10.0	0.0	0.0	0.0	7.0	37.0	0.0	0.0	30.0	30.0
Volume/Cap:	0.54	0.00	0.20	0.00	0.00	0.00	0.67	0.12	0.00	0.00	0.72	0.72
Delay/Veh:	21.8	0.0	19.9	0.0	0.0	0.0	27.7	3.5	0.0	0.0	11.2	11.2
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:	21.8	0.0	19.9	0.0	0.0	0.0	27.7	3.5	0.0	0.0	11.2	11.2
LOS by Move:	С	A	В	А	А	A	С	A	A	A	В	В
HCM2kAvgQ:	4	0	1	0	0	0	3	1	0	0	10	10
Note: Queue	repor	ted is	the n	umber	of ca	rs per	lane	•				

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



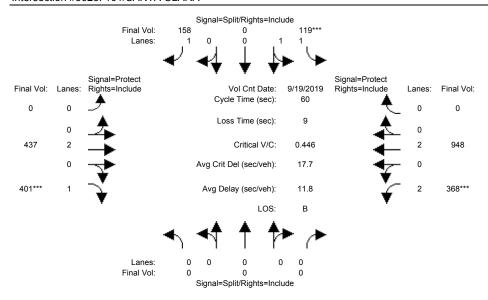
Approach: Movement:	L ·	- T ·	- R	L -	- T	und - R	L -	- T	- R	L -	- T	- R
Min. Green: Y+R:	10 4.0	10 4.0	10	0 4.0	0 4.0	0 4.0	7 4.0	10 4.0	0 4.0	0 4.0	10 4.0	10 4.0
Volume Module												
Base Vol:	340	0	61	0	0	0	258	292	0	0	977	445
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00
Initial Bse:		0	61	0	0	0	258	292	0	0	977	445
Added Vol:	0	0	3	0	0	0	0	5	0	0	11	6
ATI:	0	0	1	0	0	0	4	19	0	0	9	3
Initial Fut:	340	0	65	0	0	0	262	316	0	0	997	454
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:		0	65	0	0	0	262	316	0	0	997	454
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	340	0	65	0	0	0	262	316	0	0	997	454
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:		0	65	0	0	0	262	316	0	0	997	454
Saturation F												
Sat/Lane:		1900	1900		1900	1900		1900	1900		1900	1900
Adjustment:			0.92		1.00	0.92		1.00	0.92		0.99	0.95
	2.00		1.00		0.00	0.00		2.00	0.00		1.36	0.64
Final Sat.:			1750	0		0		3800	0		2541	1157
Capacity Anal												
Vol/Sat:	_			0 00	0.00	0.00	0 08	0.08	0.00	0 00	0.39	0.39
	****	0.00	0.04	0.00	0.00	0.00	****	0.00	0.00	0.00	****	0.59
CIIC HOVES.	10.0	0.0	10.0	0.0	0.0	0.0		37.0	0.0	0 0	30.0	30.0
Volume/Cap:			0.21		0.00	0.00		0.13	0.00		0.73	0.73
Delay/Veh:	21.8	0.0	20.0	0.0	0.0	0.0	27.7		0.0		11.4	11.4
User DelAdi:			1.00		1.00	1.00		1.00	1.00		1.00	1.00
AdiDel/Veh:		0.0	20.0	0.0	0.0	0.0	27.7		0.0		11.4	11.4
LOS by Move:		A	20.0	0.0 A	0.0 A	A	2 / · /		0.0 A	0.0 A		В
HCM2kAvqQ:	4		1	0	0	0	3		0	0	_	10
Note: Queue				umber						-	-	,
	_					-						

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



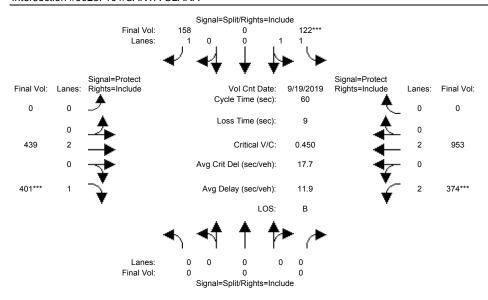
Approach: Movement:	L ·	- T	- R	L -	- T	- R	L -	- T	- R		- R
Min. Green:		0		10	10	10	0	10	10	7 1	
Y+R:		4.0			4.0			4.0			
Volume Module											
Base Vol:	0	0	0	107	201 0	150	0	431	398	366 94	6 0
Growth Adj:			1.00		1.00	1.00		1.00	1.00	1.00 1.0	
Initial Bse:			0	107	0	150	0	431	398	366 94	
Added Vol:	0		0	0	0	0	0	101	0		0 0
ATI:	0	-	0	0	0	0	0	0	0	-	0 0
Initial Fut:	-	-	0	107	0	150	0	431	398	366 94	-
User Adj:			1.00		1.00	1.00		1.00	1.00	1.00 1.0	-
PHF Adi:	1.00		1.00		1.00	1.00		1.00	1.00	1.00 1.0	
PHF Volume:			0	107	0	150	0	431	398	366 94	
Reduct Vol:			0	0		0	0	0	0		0 0
Reduced Vol:		0	0	107	0	150	0	431	398	366 94	6 0
PCE Adj:		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00 1.0	0 1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00 1.0	0 1.00
FinalVolume:	0	0	0	107	0	150	0	431	398	366 94	6 0
Saturation F											
Sat/Lane:		1900			1900	1900		1900	1900	1900 190	
Adjustment:				0.93		0.92		1.00	0.92	0.83 1.0	
Lanes:			0.00		0.00	1.00		2.00	1.00	2.00 2.0	
Final Sat.:			0	3550	0	1750	0		1750	3150 380	
Capacity Ana	-										
Vol/Sat:	0.00	0.00	0.00		0.00	0.09	0.00	0.11	0.23	0.12 0.2	5 0.00
Crit Moves:	0 0	0 0	0 0	****	0 0	44 -	0 0	0.6.0	****	****	
Green Time:			0.0	11.7			0.0		26.0	13.3 39.	
Volume/Cap:			0.00		0.00	0.44		0.26	0.52	0.52 0.3	
Delay/Veh:		0.0	0.0	20.2	0.0	22.2	0.0		13.1	21.3 4.	
User DelAdj:			1.00		1.00	1.00		1.00	1.00	1.00 1.0	
AdjDel/Veh:			0.0	20.2		22.2	0.0		13.1	21.3 4.	
LOS by Move: HCM2k95th0:	A 0		A 0	C 2	A 0	C 6	A 0	_	В 11		A A 8 0
~							-		ТТ	/	5 0
Note: Queue	rebor	tea IS	the n	unber	or ca	rs ber	Tane	•			

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



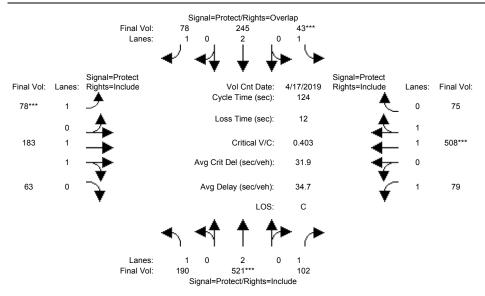
Approach:	No	rth Bo	und	Soi	ıth Bo	und	Ea	ast Bo	und	We	est Bo	und
Movement:												
		0							10		10	
Y+R:		4.0				4.0			4.0			
Volume Module Base Vol:	e: // 0		Date:	19 50	o 10∠ q€		0	431	398	366	946	0
Growth Adj:				1.00		1.00		1.00	1.00		1.00	1.00
Initial Bse:		0	0	107	0	150	0	431	398	366	946	0
Added Vol:		0	0	107	0	130	0	421	0	0	0	0
ATI:		0	0	12	0	8	0	-	3	2	2	0
Initial Fut:			0		0	158	0	437	401	368	948	0
User Adi:				1.00		1.00		1.00	1.00		1.00	1.00
PHF Adi:			1.00	1.00		1.00		1.00	1.00	1.00		1.00
PHF Volume:				119	0	158	0	437	401	368	948	0
Reduct Vol:				0	0	0	0		0	0		0
Reduced Vol:				119	0		0		401	368		0
PCE Adj:			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
FinalVolume:			0	119	0	158	0	437	401	368	948	0
Saturation F	low M	odule:										
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92			0.93		0.92	0.92	1.00	0.92	0.83	1.00	0.92
Lanes:			0.00	2.00	0.00	1.00	0.00	2.00	1.00	2.00	2.00	0.00
Final Sat.:			0				0		1750		3800	0
Capacity Ana	-											
Vol/Sat:	0.00	0.00	0.00		0.00	0.09	0.00	0.12	0.23		0.25	0.00
Crit Moves:				****					****	****		
			0.0	12.1			0.0		25.7		38.9	0.0
Volume/Cap:				0.17		0.45		0.27	0.53		0.39	0.00
Delay/Veh:			0.0	19.9		21.9	0.0		13.4	21.6	5.1	0.0
User DelAdj:				1.00		1.00		1.00	1.00		1.00	1.00
AdjDel/Veh:				19.9			0.0		13.4		5.1	0.0
LOS by Move:			A		A		A			C		A
J ~ .	0		0	, 1	0	-	0		6	3	4	0
Note: Queue	repor	ted is	the n	umber	oi ca	rs per	lane	•				

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



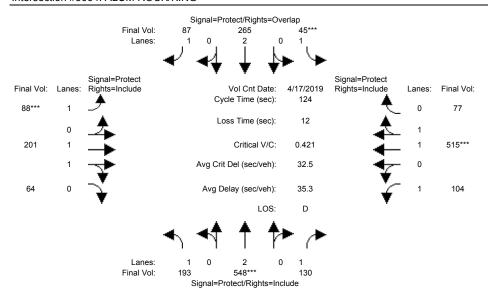
Approach:	No	rth Bo	und	Soi	ıth Bo	und	Ea	ast Bo	und	We	est Bo	und
Movement:												
		0						10			10	
Y+R:		4.0				4.0			4.0			
Volume Module Base Vol:	e: // 0		Date:	19 50	o 10∠ q€		0	431	398	366	946	0
Growth Adj:					1.00	1.00		1.00	1.00		1.00	1.00
Initial Bse:		0	0	107	0	150	0	431	398	366	946	0
Added Vol:		0	0	3	0	130	0		0	6		0
ATI:		0		12	0	8	0		3	2		0
Initial Fut:			0		0	158	0	439	401	374		0
User Adi:			1.00		1.00	1.00		1.00	1.00		1.00	1.00
PHF Adi:			1.00	1.00		1.00		1.00	1.00		1.00	1.00
PHF Volume:			0	122	0	158	0	439	401	374		0
Reduct Vol:				0	0	0	0		0	0		0
Reduced Vol:				122	0		0		401	374		0
PCE Adj:			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
FinalVolume:			0	122		158		439	401	374		0
Saturation F	low M	odule:										
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92			0.93		0.92	0.92	1.00	0.92	0.83	1.00	0.92
Lanes:			0.00	2.00	0.00	1.00	0.00	2.00	1.00	2.00	2.00	0.00
Final Sat.:			0				0		1750		3800	0
Capacity Ana	-											
Vol/Sat:	0.00	0.00	0.00		0.00	0.09	0.00	0.12	0.23		0.25	0.00
Crit Moves:				****					****	****		
			0.0	12.0			0.0		25.7		39.0	0.0
Volume/Cap:				0.17		0.45		0.27	0.54		0.39	0.00
Delay/Veh:			0.0	20.0	0.0	22.0	0.0		13.5	21.4		0.0
User DelAdj:				1.00		1.00		1.00	1.00		1.00	1.00
AdjDel/Veh:			0.0				0.0		13.5	21.4		0.0
LOS by Move:			A		A		A			C		A
J ~ .	0		0	, 1	0	-	0		6	4	4	0
Note: Queue	repor	ted is	the n	umber	oi ca	rs per	lane	•				

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



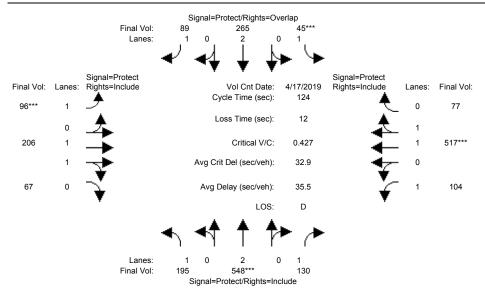
Approach: Movement:	L -	Т -	- R	L -	- T	- R	L -	- T	- R		T	- R
Min. Green: Y+R:	7 4.0	10 4.0	10 4.0	7 4.0	10 4.0	10 4.0	7 4.0	10 4.0	10 4.0	7 4.0	10 4.0	10 4.0
Volume Module												
Base Vol:	190	521	102	43	245	78	78	183	63	79	508	75
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	190	521	102	43	245	78	78	183	63	79	508	75
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:	190	521	102	43	245	78	78	183	63	79	508	75
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:	190	521	102	43	245	78	78	183	63	79	508	75
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	190	521	102	43	245	78	78	183	63	79	508	75
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:		521	102	43	245	78	78	183	63	79	508	75
Saturation F												
Sat/Lane:	1900		1900		1900	1900		1900	1900	1900		1900
Adjustment:			0.92	0.92		0.92		0.98	0.95	0.92 (0.95
Lanes:	1.00		1.00		2.00	1.00		1.47	0.53	1.00		0.26
Final Sat.:	1750		1750		3800	1750			947	1750		476
Capacity Anal												
Vol/Sat:	0.11			0 02	0.06	0.04	0 04	0.07	0.07	0.05 (0 16	0.16
Crit Moves:	0.11		0.00	****	0.00	0.04	****	0.07	0.07		****	0.10
Green Time:	28.6		42.2	7.6	21 2	34.9		36.6	36.6	25.6		48.5
Volume/Cap:			0.17	0.40		0.16		0.23	0.23	0.22		0.40
Delay/Veh:			28.8	58.5		33.6		33.1	33.1	41.2 2		27.5
User DelAdi:			1.00	1.00		1.00		1.00	1.00	1.00		1.00
AdjDel/Veh:			28.8		45.9	33.6		33.1	33.1	41.2		27.5
LOS by Move:		C C	20.0 C	50.5 E	D D	00.0 C	52.7 D	C C	73.1 C	71.2 2	27.3 C	27.3 C
HCM2k95thO:	13	14	6	4	9	5	7	-	7	6	15	15
Note: Queue				_		_			,	J		-5
			3					•				

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



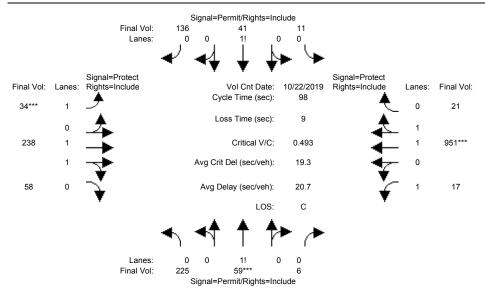
Approach:	No	rth Bo	und	Soi	ath Bo	ound	Εä	ast Bo	und	We	est Bo	und
Movement:											- T	
Min. Green:		10		7				10			10	10
Y+R:		4.0			4.0	4.0			4.0	4.0		4.0
Volume Module				-			=0	100	60		F 0 0	
Base Vol:	190	521	102	43		78	78	183	63	79	508	75
Growth Adj:			1.00		1.00	1.00		1.00	1.00		1.00	1.00
Initial Bse:		521	102	43	245	78	78	183	63	79	508	75
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
ATI:	3		28	2	20	9	10	18	1	25	7	2
Initial Fut:			130	45		87	88	201	64	104		77
User Adj:			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
PHF Volume:		548	130	45	265	87	88	201	64	104	515	77
	0	0	0	0	0	0	0	0	0	0	-	0
Reduced Vol:			130	45	265	87	88	201	64	104		77
_		1.00	1.00		1.00	1.00		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:			130		265	87	88	201	64	104		77
Saturation Fl												
Saturation F. Sat/Lane:		1900	1900	1000	1900	1900	1 0 0 0	1900	1900	1000	1900	1900
		1.00	0.92	0.92		0.92		0.98	0.95		0.98	0.95
_		2.00	1.00		2.00	1.00		1.50	0.50		1.73	0.95
Final Sat.:			1750		3800	1750		2806	893		3218	481
rinai sat												
Capacity Anal				ı		ļ	I		ı	1		ļ
Vol/Sat:	-		0.07	0 03	0.07	0.05	0 05	0.07	0.07	0 06	0.16	0.16
		****	0.07	****	0.07	0.00	****	0.07	0.07	0.00	****	0.10
		42.5	42.5	7.6	21 1	36.0	14 8	35.7	35.7	26 3	47.1	47.1
Volume/Cap:			0.22		0.41	0.17		0.25	0.25		0.42	0.42
Delay/Veh:			29.1	58.8		33.1		34.0	34.0		28.6	28.6
User DelAdj:			1.00	1.00		1.00		1.00	1.00		1.00	1.00
AdiDel/Veh:				58.8		33.1		34.0	34.0		28.6	28.6
LOS by Move:			23.1 C	50.0 E	D D	C C	D D	C C	C C	D		20.0 C
HCM2kAvqQ:		8	4	2	5		4			4		8
Note: Queue			_	_			_	_	1	-	9	9
gacac	- opor	224 15	0110 11		01 00	201	14110	•				

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



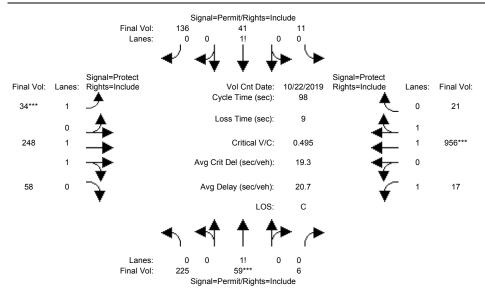
Approach: Movement:	L -	- T ·	- R	L -	- T	und - R	L -	- Т	- R	L -	- Т	- R
Min. Green: Y+R:	7 4.0	10 4.0	10	7 4.0	10 4.0	10	7 4.0	10 4.0	10 4.0	7 4.0	10 4.0	10 4.0
Volume Module												
Base Vol:	190	521	102	43	245	78	78	183	63	79	508	75
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	190	521	102	43	245	78	78	183	63	79	508	75
Added Vol:	2	0	0	0	0	2	8	5	3	0	2	0
ATI:	3	27	28	2	20	9	10	18	1	25	7	2
Initial Fut:	195	548	130	45	265	89	96	206	67	104	517	77
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:	195	548	130	45	265	89	96	206	67	104	517	77
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	195	548	130	45	265	89	96	206	67	104	517	77
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:			130	45	265	89	96	206	67	104	517	77
Saturation Fi												
Sat/Lane:	1900		1900		1900	1900		1900	1900	1900		1900
Adjustment:			0.92		1.00	0.92		0.98	0.95		0.98	0.95
Lanes:	1.00		1.00		2.00	1.00		1.50	0.50		1.73	0.27
Final Sat.:	1750		1750		3800	1750		2791	908		3220	480
Capacity Anal	_		e: 0.07	0 02	0 07	0 0 5	0 0 5	0 07	0 07	0 00	0 1 0	0 16
Vol/Sat:	0.11		0.07	****	0.07	0.05	****	0.07	0.07	0.06	****	0.16
Crit Moves: Green Time:	28.7		41.9	7.5	20 7	36.7		36.0	36.0	26 6	46.7	46.7
Volume/Cap:			0.22		0.42	0.17		0.25	0.25		0.43	0.43
Delay/Veh:			29.5		46.7	32.6		33.8	33.8		28.9	28.9
User DelAdi:			1.00		1.00	1.00		1.00	1.00	1.00		1.00
AdiDel/Veh:			29.5		46.7	32.6		33.8	33.8		28.9	28.9
LOS by Move:		32.0 C	29.3 C	39.0 E	40.7 D	32.0 C	J1.1	33.0 C	33.0 C	41.1	20.9 C	20.9 C
-	7		4	2	5	3	4	-	4	4	9	9
Note: Queue							_		1	7		,
mocc. gacac.	LCPOI	JCU 15	C11C 11	and C I	or ca	TO PCI	± unc	•				

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



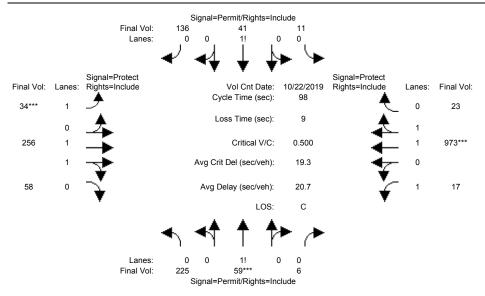
Approach: Movement:	L -	- T	- R	L -	- T	- R	L -	- Т	- R		- R
Min. Green: Y+R:	10 4.0	10 4.0	10	10 4.0	10 4.0	10	7 4.0	10 4.0	10 4.0	7 10 4.0 4.0	10
Volume Module											
Base Vol:	225	59	6	11	41	136	34	238	58	17 951	. 21
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00 1.00	1.00
Initial Bse:	225	59	6	11	41	136	34	238	58	17 951	. 21
Added Vol:	0	0	0	0	0	0	0	0	0	0 (0
ATI:	0	0	0	0	0	0	0	0	0	0 (0
Initial Fut:	225	59	6	11	41	136	34	238	58	17 951	. 21
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:	225	59	6	11	41	136	34	238	58	17 951	. 21
Reduct Vol:	0	0	0	0	0	0	0	0	0	0 0	0
Reduced Vol:	225	59	6	11	41	136	34	238	58	17 951	. 21
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:		59	6	11	41	136	34	238	58	17 951	. 21
Saturation F											
Sat/Lane:		1900	1900		1900	1900		1900	1900	1900 1900	
Adjustment:			0.92		0.92	0.92		0.98	0.95	0.92 0.97	
Lanes:	0.78		0.02		0.22	0.72		1.60	0.40	1.00 1.96	
Final Sat.:		356	36		382	1266			725	1750 3620	
Capacity Anal	-			0 11	0 11	0 11	0 00	0 00	0 00	0 01 0 04	
Vol/Sat:	0.17	U.1/ ****	0.17	0.11	0.11	0.11	U.UZ ****	0.08	0.08	0.01 0.26	
Crit Moves:	21 7		21 7	21 7	21 7	01 7		22 7	22 7		
Green Time:		31.7	31.7		31.7	31.7		33.7	33.7	23.6 50.3	
Volume/Cap:			0.51	0.33		0.33		0.23	0.23	0.04 0.51	
Delay/Veh:		27.7	27.7		25.5	25.5		23.0	23.0	28.6 16.0	
User DelAdj:			1.00		1.00	1.00		1.00	1.00	1.00 1.00	
AdjDel/Veh:			27.7	25.5 C	25.5	25.5			23.0	28.6 16.0 C E	
LOS by Move: HCM2k95th0:	14	C 14	C 14	9	C 9	C 9	D 2	C 6	C	C E	
Note: Queue							_	-	6	1 10	Τ 2
Note: Queue .	rebori	tea is	the fi	unber	or ca	rs ber	тапе	•			

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



Approach: Movement:	L -	Bound T - R	L -	- T	- R	L -	- T	- R	L -	T	- R
Min. Green: Y+R:	10 4.0 4	10 10 .0 4.0	10	10 4.0	10 4.0	7 4.0	10 4.0	10 4.0	7 4.0	10 4.0	10
Volume Module											
Base Vol:	225	59 6	11	41	136	34	238	58	17	951	21
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:	225	59 6	11	41	136	34	238	58	17	951	21
Added Vol:	0	0 0	0	0	0	0	0	0	0	0	0
ATI:	0	0 0	0	0	0	0	10	0	0	5	0
Initial Fut:	225	59 6	11	41	136	34	248	58	17	956	21
User Adj:				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
PHF Volume:		59 6	11	41	136	34	248	58	17	956	21
		0 0	0	0	0	0	0	0	0	0	0
Reduced Vol:		59 6	11	41	136	34	248	58	17	956	21
_	1.00 1.			1.00	1.00		1.00	1.00	1.00		1.00
_	1.00 1.			1.00	1.00		1.00	1.00	1.00		1.00
FinalVolume:		59 6	11	41	136	34	248	58	17	956	21
Catanatian D	1	'									
Saturation Fine Sat/Lane:	1900 19		1000	1900	1900	1000	1900	1900	1900	1000	1900
	0.92 0.			0.92	0.92		0.98	0.95	0.92 (0.95
Lanes:	0.78 0.			0.22	0.72		1.61	0.39	1.00		0.93
Final Sat.:	1358 3			382	1266			701	1750		80
Capacity Ana					,						
Vol/Sat:	0.17 0.	17 0.17	0.11	0.11	0.11	0.02	0.08	0.08	0.01	0.26	0.26
Crit Moves:	**	**				****			,	***	
Green Time:	31.6 31	.6 31.6	31.6	31.6	31.6	7.0	33.8	33.8	23.6	50.4	50.4
Volume/Cap:	0.51 0.	51 0.51	0.33	0.33	0.33	0.27	0.24	0.24	0.04 (0.51	0.51
Delay/Veh:	27.8 27	.8 27.8	25.5	25.5	25.5	44.3	23.1	23.1	28.5	16.0	16.0
User DelAdj:				1.00	1.00		1.00	1.00	1.00		1.00
AdjDel/Veh:				25.5	25.5	44.3	23.1	23.1	28.5	16.0	16.0
LOS by Move:		C C	С	С	С	D	С	С	С	В	В
HCM2kAvgQ:	8	8 8	5	5	5	1		3	0	10	10
Note: Queue	reported	is the r	number	of ca	ars per	lane	•				

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

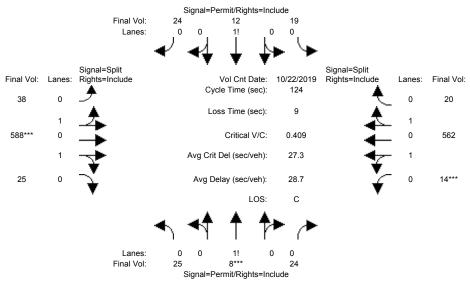


Approach: Movement:	L -	T - R	L -	- T	- R	L -	- T	- R		- R
Min. Green: Y+R:	10 4.0 4	10 10 .0 4.0	10	10 4.0	10 4.0	7 4.0	10 4.0	10 4.0	7 10 4.0 4.0	10 4.0
Volume Module										
Base Vol:	225	59 6	11	41	136	34	238	58	17 951	21
Growth Adj:	1.00 1.	00 1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00 1.00	1.00
Initial Bse:	225	59 6	11	41	136	34	238	58	17 951	21
Added Vol:	0	0 0	0	0	0	0	8	0	0 17	2
ATI:	0	0 0	0	0	0	0	10	0	0 5	0
Initial Fut:	225	59 6	11	41	136	34	256	58	17 973	23
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:		59 6	11	41	136	34	256	58	17 973	23
Reduct Vol:	0	0 0	0	0	0	0	0	0	0 0	0
Reduced Vol:	225	59 6	11	41	136	34	256	58	17 973	23
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
FinalVolume:		59 6	11	41	136	34		58	17 973	23
	1									
Saturation Fi										
Sat/Lane:	1900 19			1900	1900		1900	1900	1900 1900	
_	0.92 0.			0.92	0.92		0.98	0.95	0.92 0.97	
Lanes:	0.78 0.			0.22	0.72		1.62	0.38	1.00 1.95	
Final Sat.:	1358 3			382	1266		3016	683	1750 3614	
Compositus Amari										
Capacity Anal Vol/Sat:	0.17 0.		0 11	0.11	0.11	0 02	0.08	0.08	0.01 0.27	0.27
Crit Moves:	**		0.11	0.11	0.11	****	0.00	0.00	V.UI U.Z/	0.27
	31.2 31		21 2	31.2	31.2		34.0	34.0	23.8 50.8	50.8
Volume/Cap:				0.34	0.34		0.24	0.24	0.04 0.52	0.52
Delay/Veh:	28.1 28			25.8	25.8		23.0	23.0	28.4 15.8	15.8
User DelAdi:				1.00	1.00		1.00	1.00	1.00 1.00	1.00
AdiDel/Veh:				25.8	25.8		23.0	23.0	28.4 15.8	15.8
LOS by Move:		C C	23.0 C	23.0 C	23.0 C	44.3 D	23.0 C	23.0 C	C B	13.6
-	8	8 8	5	5	5	1			0 10	
Note: Queue						_		J	0 10	10
Note, Queue .	reborcea	TO CITE II	uninet	OI Ca	rs her	_ane	•			

1260 E. Santa Clara Mixed-Use San Jose

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

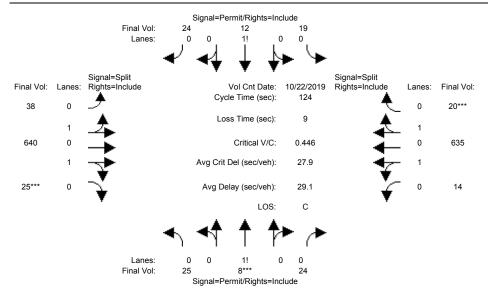
Intersection #100: ALUM ROCK/34TH



Approach: Movement:									und - R		est Bo - T	
movement.												
		10				10					10	
Y+R:		4.0				4.0			4.0		4.0	
Volume Module	e: >>	Count	Date:	22 00	ct 201	.9 <<						
Base Vol:	25	8	24	19	12	24	38	588	25	14	562	20
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:	25	8	24	19	12	24	38	588	25	14	562	20
Added Vol:	0	0		0		0	0		0	0	0	0
ATI:	0			0		0	0	0	0	0	0	0
Initial Fut:	25	8	24	19	12	24	38	588	25	14	562	20
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
PHF Volume:	25	8	24	19	12	24	38	588	25	14	562	20
Reduct Vol:			0	0		0	0	-	0	0	0	0
Reduced Vol:				19	12	24	38	588	25	14		20
PCE Adj:	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
FinalVolume:				19		24						20
Saturation Fi				1000	1000	1 0 0 0	1000	1000	1000	1000	1000	1000
Sat/Lane: Adjustment:		1900		1900		1900 0.92		1900	1900 0.95	0.95	1900	1900 0.95
Lanes:			0.92					1.80	0.93	0.95		0.93
Final Sat.:				605		764		3252				121
Capacity Anal				1		ı	ı		1	1		ı
Vol/Sat:	-			0.03	0.03	0.03	0.18	0.18	0.18	0.17	0.17	0.17
Crit Moves:								****		***		
	10.0		10.0	10.0	10.0	10.0	54.8	54.8	54.8	50.2	50.2	50.2
Volume/Cap:			0.40	0.39		0.39		0.41	0.41	0.41		0.41
Delay/Veh:			62.5	62.0	62.0	62.0		24.3	24.3	27.2	27.2	27.2
User DelAdj:			1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:			62.5	62.0	62.0	62.0	24.3	24.3	24.3	27.2	27.2	27.2
LOS by Move:				E	E	E	С	С	С	С	С	С
HCM2k95thQ:	6	6	6	6	6	6	16	16	16	15	15	15
Note: Queue	repor	ted is	the n	umber	of ca	ars per	lane	•				

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

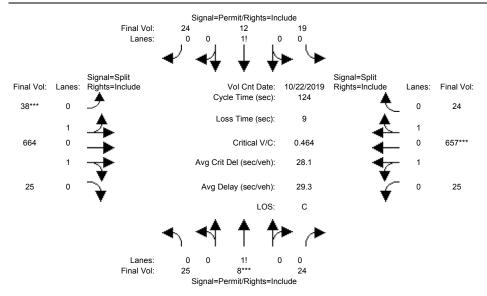
Intersection #100: ALUM ROCK/34TH



Approach: Movement:	L ·	- T -	- R	L -	- T	- R	L -	- T	- R	L - T	- R
Min. Green: Y+R:	10 4.0	10 4.0	10	10	10 4.0	10 4.0	10 4.0	10 4.0	10 4.0	10 10 4.0 4.0	10 4.0
Volume Module	e: >>	Count	Date:	22 00	ct 201	9 <<					
Base Vol:	25	8	24	19	12	24	38		25	14 562	20
Growth Adj:		1.00	1.00		1.00	1.00		1.00	1.00	1.00 1.00	1.00
Initial Bse:	25	8	24	19	12	24	38	588	25	14 562	20
Added Vol:	0	0	0	0	0	0	0	0	0	0 0	0
ATI:	0	0	0	0	0	0	0	52	0	0 73	0
Initial Fut:	25	8	24	19	12	24	38	640	25	14 635	20
User Adj:	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
	25	8	24	19	12	24	38	640	25	14 635	20
	0	0	0	0	0	0	0	0	0	0 0	0
Reduced Vol:	25	8	24	19	12	24	38	640	25	14 635	20
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:	25	8	24	19	12	24	38	640	25	14 635	20
Saturation F	low Mo	odule:									
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900 1900	1900
Adjustment:	0.92	0.92	0.92	0.92	0.92	0.92	0.95	0.95	0.95	0.95 0.95	0.95
Lanes:	0.44	0.14	0.42	0.34	0.22	0.44	0.11	1.82	0.07	0.04 1.90	0.06
Final Sat.:			737	605		764		3277	128	75 3417	
Capacity Anal	lysis	Module	e:								
Vol/Sat:			0.03	0.03	0.03	0.03	0.20	0.20	0.20	0.19 0.19	0.19
Crit Moves:		****							****		****
Green Time:	10.0	10.0	10.0	10.0	10.0	10.0	53.8	53.8	53.8	51.2 51.2	51.2
Volume/Cap:	0.40	0.40	0.40	0.39	0.39	0.39	0.45	0.45	0.45	0.45 0.45	0.45
Delay/Veh:	62.5	62.5	62.5	62.0	62.0	62.0	25.6	25.6	25.6	27.2 27.2	27.2
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:	62.5	62.5	62.5	62.0	62.0	62.0	25.6	25.6	25.6	27.2 27.2	27.2
LOS by Move:	E	E	E	E	E	E	С	С	С	C C	С
HCM2kAvgQ:	3	3	3	3	3	3	10	10	10	10 10	10
Note: Queue	repor	ted is	the n	umber	of ca	rs per	lane				

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

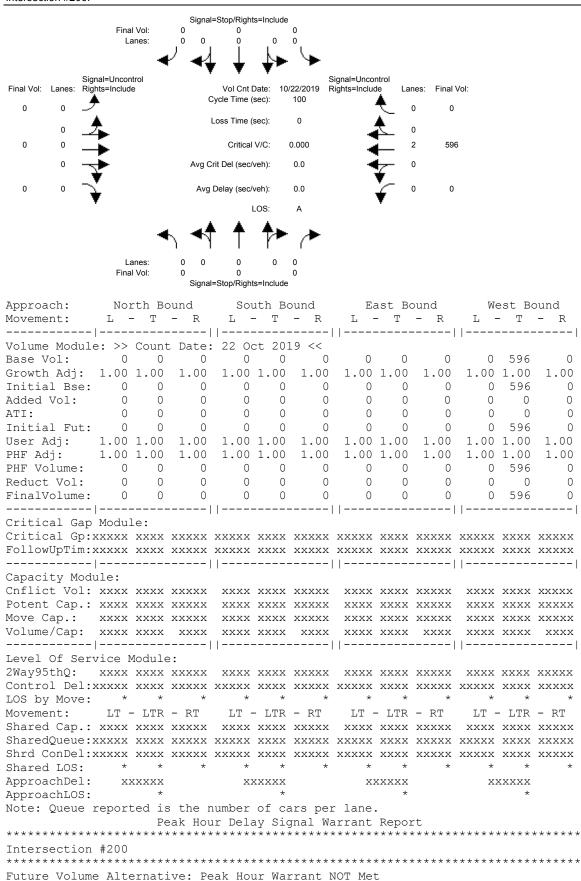
Intersection #100: ALUM ROCK/34TH



Approach: Movement:	L ·	- T ·	- R	L -	- T	- R	L -	- Т	- R		- R
Min. Green: Y+R:	10	10 4.0	10	10 4.0	10 4.0	10	10	10 4.0	10	10 1 4.0 4.	0 10 0 4.0
Volume Module											
Base Vol:	25	8	24	19	12	24	38	588	25	14 56	2 20
Growth Adj:		1.00	1.00		1.00	1.00		1.00	1.00	1.00 1.0	
Initial Bse:		8	24	19	12	24	38	588	25	14 56	
	0		0	0	0	0	0	2.4	0		2 4
ATI:	0	0	0	0	0	0	0	52	0		3 0
Initial Fut:	25	8	24	19	12	24	38	664	25	25 65	7 24
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00 1.0	0 1.00
PHF Adj:	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00 1.0	0 1.00
PHF Volume:	25	8	24	19	12	24	38	664	25	25 65	7 24
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0 0
Reduced Vol:	25	8	24	19	12	24	38	664	25	25 65	7 24
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00 1.0	0 1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00 1.0	0 1.00
FinalVolume:		8	24	19	12	24	38		25	25 65	
Saturation F											
Sat/Lane:		1900	1900		1900	1900		1900	1900	1900 190	
Adjustment:			0.92		0.92	0.92		0.95	0.95	0.95 0.9	
Lanes:		0.14	0.42		0.22	0.44		1.83	0.07		
Final Sat.:			737	605		764		3288	124	127 335	
Capacity Ana											
Vol/Sat:	_			0.03	0.03	0.03	0.20	0.20	0.20	0.20 0.2	0.20
Crit Moves:		****					****			***	
	10.0	10.0	10.0	10.0	10.0	10.0	53.3	53.3	53.3	51.7 51.	7 51.7
Volume/Cap:			0.40		0.39	0.39		0.47	0.47	0.47 0.4	
Delay/Veh:			62.5	62.0	62.0	62.0	26.3	26.3	26.3	27.3 27.	3 27.3
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00 1.0	0 1.00
AdjDel/Veh:	62.5	62.5	62.5	62.0	62.0	62.0		26.3	26.3	27.3 27.	3 27.3
LOS by Move:	E	E	E	E	E	E	С	С	С	С	C C
HCM2kAvgQ:	3	3	3	3	3	3	10	10	10	10 1	.0 10
Note: Queue	repor	ted is	the n	umber	of ca	rs per	lane				

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

Intersection #200:



Approach:	No							h B	oun	d		Eas	st B	oun	ıd		We	st B	oun	d
Movement:	L	-	Τ	-	R	L	-	Τ	-	R	L	-	Τ	-	R	L	-	T	-	R
Control:	5	Sto	p S	ign			Sto	p S	ign	l	Ţ	Jnco	ntr	011	.ed	Ţ	Jnc	ontr	oll	ed
Lanes:	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0
Initial Vol:	()	0		0		0	0		0		0	0		0		0	596		0
ApproachDel:	>	ΚΧΧ	XXX				XXX	XXXX				XXX	XXX				XX	XXXX		
															1	1				1

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 #200

Future Volume Alternative: Peak Hour Warrant NOT Met

Major Street Volume: 596
Minor Approach Volume: 0
Minor Approach Volume Threshold: 463

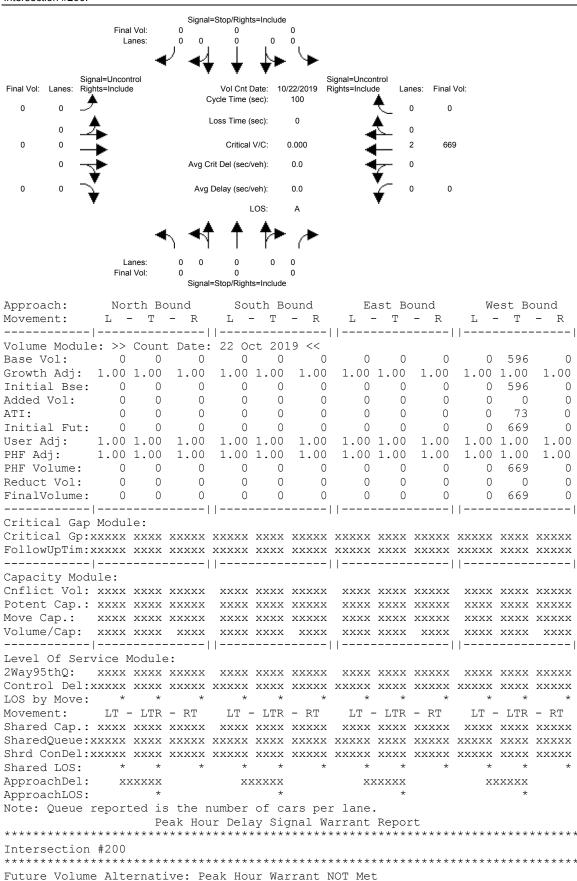
SIGNAL WARRANT DISCLAIMER

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

Intersection #200:



Approach:	1	North Bound L - T - R				2	Sout	h B	oun	d		Eas	t B	oun	d		Wes	st B	oun	d
Movement:	L	-	T	-	R	L	-	T	-	R	L	-	Τ	-	R	L	-	T	-	R
Control:		Sto	p S	ign			Sto	p S	ign		1	Unco	ntr	011	ed	Ţ	Jnc	ontr	oll	ed
Lanes:	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0
Initial Vol:		0	0		0		0	0		0		0	0		0		0	669		0
ApproachDel:		XXX	XXX				XXX	XXX				XXX	XXX				XXX	XXXX		

SIGNAL WARRANT DISCLAIMER

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Peak Hour Volume Signal Warrant Report [Urban]

Intersection #200

Future Volume Alternative: Peak Hour Warrant NOT Met

Major Street Volume: 669
Minor Approach Volume: 0
Minor Approach Volume Threshold: 423

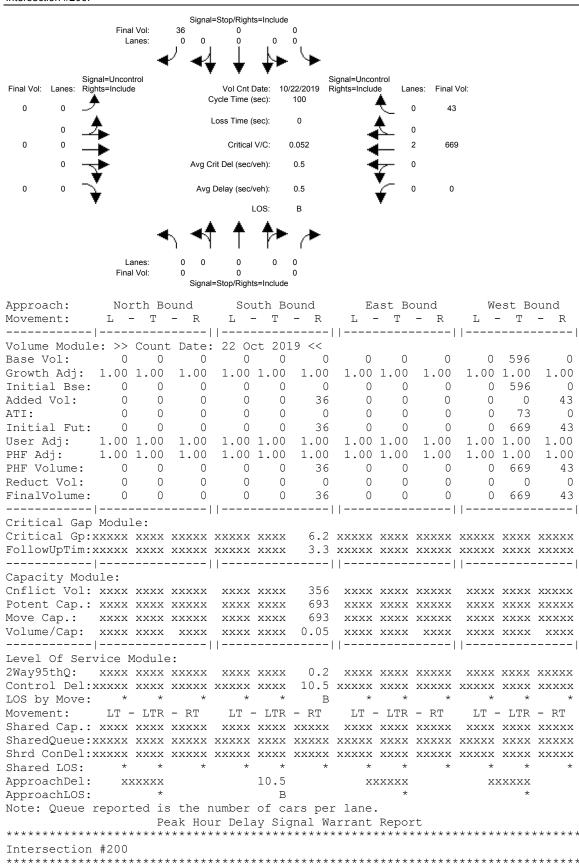
SIGNAL WARRANT DISCLAIMER

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

Intersection #200:



Future Volume Alternative: Peak Hour Warrant NOT Met

Approach:	North Bound	l S	outh Bo	und	East 1	Bound	West Bound	b
Movement:	L - T -	R L	- T	- R	L - T	- R	L - T -	R
Control:	Stop Sign		Stop Si	gn	Uncont	rolled	Uncontrolle	∍d
Lanes:	0 0 0 0	0 0	0 0	0 1	0 0 0	0 0	0 0 1 1	0
Initial Vol:	0 0	0	0 0	36	0	0 0	0 669	43
ApproachDel:	XXXXXX		10.5		XXXXX	X	XXXXXX	

Approach[southbound][lanes=1][control=Stop Sign]

Signal Warrant Rule #1: [vehicle-hours=0.1]

FAIL - Vehicle-hours less than 4 for one lane approach.

Signal Warrant Rule #2: [approach volume=36]

FAIL - Approach volume less than 100 for one lane approach.

Signal Warrant Rule #3: [approach count=2][total volume=748]

SUCCEED - Total volume greater than or equal to 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 #200

Future Volume Alternative: Peak Hour Warrant NOT Met

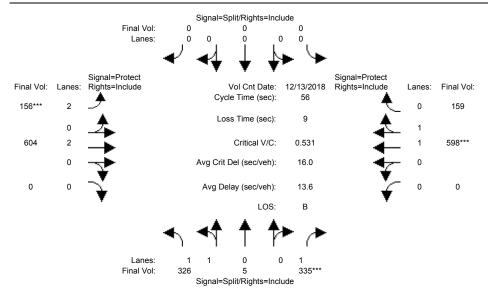
Major Street Volume: 712
Minor Approach Volume: 36
Minor Approach Volume Threshold: 402

SIGNAL WARRANT DISCLAIMER

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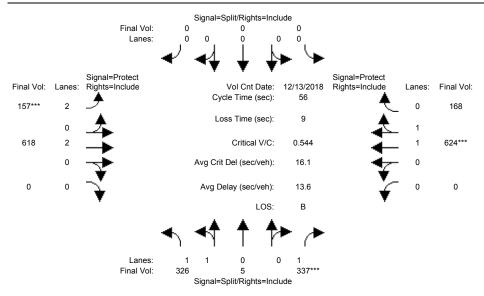
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Level Of Service Computation Report 2000 HCM Operations (Future Volume Alternative) Existing (PM)



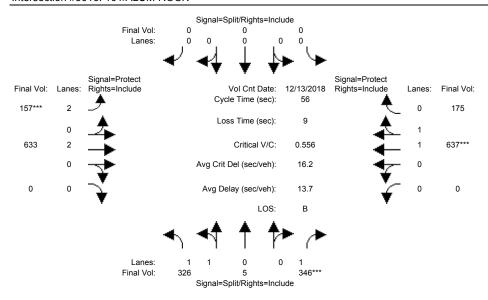
Approach: Movement:	L .	- T	- R	L -	- T	und - R	L -	- T	- R	L -	Т	- R
Min. Green: Y+R:	10	10 4.0	10	0 4.0	0 4.0	0 4.0	7 4.0	10 4.0	0 4.0	0 4.0	10 4.0	10
Volume Module										I		ı
Base Vol:	326	5	335	0	0	0	156	604	0	0	598	159
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	326	5	335	0	0	0	156	604	0	0	598	159
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:		5	335	0	0	0	156	604	0	0	598	159
User Adj:			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
PHF Volume:		5	335	0	0	0	156	604	0	0	598	159
	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:		5	335	0	0	0	156	604	0	0	598	159
_	1.00		1.00		1.00	1.00		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:		5	335	0	0	0	156	604	0	0	598	159
Saturation F	1											
Sat/Lane:		1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:			0.92	0.92		0.92		1.00	0.92	0.92		0.95
_	1.97		1.00		0.00	0.00		2.00	0.00	0.00		0.43
Final Sat.:			1750	0	0	0		3800	0		2922	777
Capacity Ana	lysis	Modul	e:									
Vol/Sat:	0.09	0.09	0.19	0.00	0.00	0.00	0.05	0.16	0.00	0.00	0.20	0.20
Crit Moves:			****				****				****	
Green Time:	19.3	19.3	19.3	0.0	0.0	0.0	7.0	27.7	0.0	0.0	20.7	20.7
Volume/Cap:	0.27	0.27	0.55	0.00	0.00	0.00	0.40	0.32	0.00	0.00	0.55	0.55
Delay/Veh:	13.4	13.4	16.0	0.0	0.0	0.0	23.2	8.6	0.0	0.0	14.5	14.5
User DelAdj:			1.00		1.00	1.00		1.00	1.00	1.00		1.00
AdjDel/Veh:			16.0	0.0	0.0	0.0	23.2		0.0		14.5	14.5
LOS by Move:		В	В	A	A	A	С		A	А	В	В
HCM2k95thQ:	5		11	0	0	0	3		0	0	10	10
Note: Queue	repor	ted is	the n	umber	of ca	rs per	1ane	•				

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



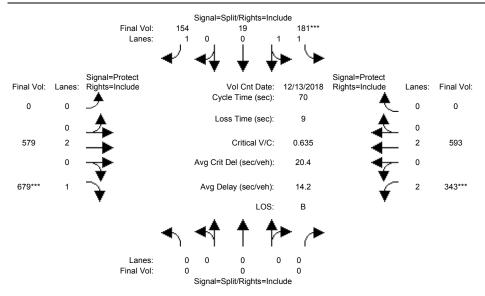
Approach: Movement:	L ·	- T	- R	L -	- T	und - R	L -	- T	- R	L -	- Т	- R
Min. Green: Y+R:	10	10 4.0	10 4.0	0 4.0	0 4.0	0 4.0	7 4.0	10 4.0	0 4.0	0 4.0	10 4.0	10
Volume Module												
Base Vol:	326	5	335	0	0	0	156	604	0	0	598	159
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	326	5	335	0	0	0	156	604	0	0	598	159
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
ATI:	0	0	2	0	0	0	1	14	0	0	26	9
Initial Fut:	326	5	337	0	0	0	157	618	0	0	624	168
User Adj:			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
PHF Volume:		5	337	0	0	0	157	618	0	0	624	168
	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:		5	337	0	0	0	157	618	0	0	624	168
_	1.00		1.00		1.00	1.00		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:		5	337	0	0	0	157	618	0	0		168
Saturation F	1											
Saturation F. Sat/Lane:		1900	1900	1 0 0 0	1900	1900	1 0 0 0	1900	1900	1 0 0 0	1900	1900
Adjustment:			0.92		1.00	0.92		1.00	0.92		0.98	0.95
_	1.97		1.00		0.00	0.00		2.00	0.00		1.56	0.44
Final Sat.:			1750	0.00	0	0.00		3800	0		2915	785
Capacity Ana												'
Vol/Sat:	0.09	0.09	0.19	0.00	0.00	0.00	0.05	0.16	0.00	0.00	0.21	0.21
Crit Moves:			****				****				****	
Green Time:	18.9	18.9	18.9	0.0	0.0	0.0	7.0	28.1	0.0	0.0	21.1	21.1
Volume/Cap:	0.28	0.28	0.57	0.00	0.00	0.00	0.40	0.32	0.00	0.00	0.57	0.57
Delay/Veh:	13.6	13.6	16.5	0.0	0.0	0.0	23.2	8.4	0.0	0.0	14.4	14.4
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:	13.6	13.6	16.5	0.0	0.0	0.0	23.2	8.4	0.0	0.0	14.4	14.4
LOS by Move:			В	A	А	A	С	A	A	A	В	В
HCM2kAvgQ:	2		6	0	0	0	1		0	0	6	6
Note: Queue	repor	ted is	the n	umber	of ca	rs per	lane	•				

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



Approach:	No	rth Bo	und	Soi	ıth Bo	und	Εä	ast Bo	ound	We	est Bo	und
Movement:												
Min. Green:		10							0		10	
Y+R:	4.0	4.0				4.0			4.0			
Volume Module												
Base Vol:	326	5	335	0	0	0	156		0	0	598	159
Growth Adj:		-		1.00	-	1.00		1.00	1.00		1.00	1.00
Initial Bse:		5	335	0	0	0	156	604	0	0	598	159
Added Vol:	0	0	9	0	0	0	0	15	0	0	13	7
ATI:	0		2	0	0	0	1		0	0		9
Initial Fut:		5	346	0	0	0	157	633	0	0	637	175
User Adi:				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:	326	5	346	0	0	0	157	633	0	0	637	175
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	326	5	346	0	0	0	157	633	0	0	637	175
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:			346	0	0	0	157		0	0		175
Saturation F												
Sat/Lane:		1900		1900		1900		1900	1900		1900	1900
Adjustment:				0.92		0.92		1.00	0.92		0.98	0.95
		0.03		0.00			2.00		0.00		1.56	0.44
Final Sat.:				. 0		0		3800		. 0		797
Capacity Anal Vol/Sat:	-			0 00	0.00	0.00	0 05	0.17	0.00	0 00	0.22	0.22
Crit Moves:	0.09	0.09	****	0.00	0.00	0.00	****	0.17	0.00	0.00	****	0.22
	19.0	10 0		0.0	0.0	0.0	7.0	28 0	0.0	0 0	21.0	21.0
Volume/Cap:			0.58	0.00		0.00		0.33	0.00		0.58	0.58
Delay/Veh:		13.6		0.0	0.0	0.0	23.2		0.0	0.0		14.6
User DelAdj:			1.00	1.00		1.00		1.00	1.00		1.00	1.00
AdiDel/Veh:				0.0		0.0		8.5	0.0		14.6	14.6
LOS by Move:		В		0.0 A		A		0.5 A	0.0 A	0.0 A		В
HCM2kAvqQ:		2	6	0	0	0	1			0		6
Note: Queue				-	-		_	-	3	· ·	,	,
						- 1 -						

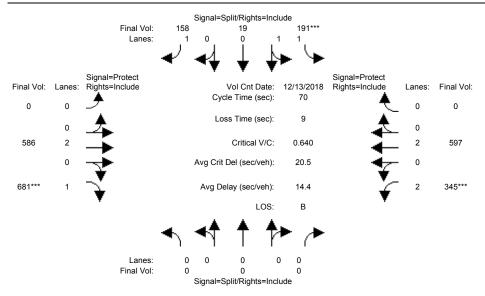
Level Of Service Computation Report 2000 HCM Operations (Future Volume Alternative) Existing (PM)



Movement:	L ·	- T	- R	L -	- T	- R	L -	- Т	- R		T ·	- R
Min. Green: Y+R:	0	0 4.0	0	10	10 4.0	10	0	10 4.0	10	7	10	0
1+K:												
Volume Module												
Base Vol:	0	0	0	181	19	154	0	579	679	343	593	0
Growth Adj:	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00 1		1.00
Initial Bse:	0	0	0	181	19	154	0	579	679	343	593	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:	0	0	0	181	19	154	0	579	679	343	593	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		1.00
PHF Volume:	0	0	0	181	19	154	0	579	679		593	0
Reduct Vol:			0	0	0	0	0	0	0	•	0	0
Reduced Vol:			0	181	19	154	0	579	679		593	0
PCE Adj:			1.00		1.00	1.00		1.00	1.00	1.00 1		1.00
MLF Adj:			1.00		1.00	1.00		1.00	1.00	1.00 1		1.00
FinalVolume:			0	181	19	154	0	579	679		593	0
Saturation Fi		1900	1000	1000	1900	1900	1 0 0 0	1900	1000	1000 1	000	1900
Adjustment:				0.93		0.92		1.00	1900 0.92	1900 1 0.83 1		0.92
Lanes:		0.00	0.92		0.95	1.00		2.00	1.00	2.00 2		0.92
Final Sat.:			0.00		337	1750	0.00		1750	3150 3		0.00
Capacity Anal				1		ı	1		ı	I		1
Vol/Sat:	-			0.06	0.06	0.09	0.00	0.15	0.39	0.11 0	.16	0.00
Crit Moves:				****					****	***		
Green Time:	0.0	0.0	0.0	10.0	10.0	10.0	0.0	39.8	39.8	11.2 5	1.0	0.0
Volume/Cap:	0.00	0.00	0.00	0.39	0.39	0.62	0.00	0.27	0.68	0.68 0	.21	0.00
Delay/Veh:		0.0	0.0	27.8	27.8	32.8	0.0	7.7	12.6	31.6	3.1	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:	0.0	0.0	0.0	27.8	27.8	32.8	0.0	7.7	12.6	31.6	3.1	0.0
LOS by Move:	A	A	A	С	С	С	A		В	С	A	A
HCM2k95thQ:	0		0	5	5	9	0		20	8	4	0
Note: Queue	repor	ted is	the n	umber	of ca	rs per	lane	•				

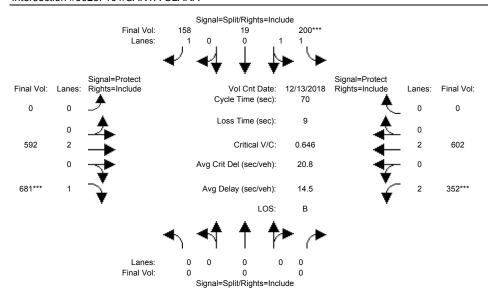
1260 E. Santa Clara Mixed-Use San Jose

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



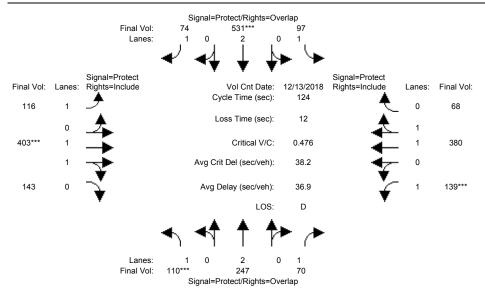
Approach: Movement:	L ·	- T ·	- R	L -	- T	- R	L -	- Т	- R	L -	т - :	R
Min. Green: Y+R:	0	0 4.0	0	10	10 4.0	10	0	10		7	10	0
Volume Module	e: >>	Count	Date:	13 De	ec 201	8 << 4	:30 -	5:30	PM			
Base Vol:	0	0	0	181	19	154	0	579	679	343	593	0
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00 1	.00 1.	00
Initial Bse:	0	0	0	181	19	154	0	579	679	343	593	0
Added Vol:	0	0	0	0	0	0	0		0	0	0	0
ATI:	0	-	0	10	0	4	0		2	_	4	0
Initial Fut:			0	191	19		0	586	681		597	0
User Adj:			1.00		1.00	1.00		1.00	1.00	1.00 1		
PHF Adj:	1.00		1.00		1.00	1.00		1.00	1.00	1.00 1		
PHF Volume:		0	0	191	19	158	0	586	681		597	0
Reduct Vol:			0	0	0	0	0	0	0	0	0	0
Reduced Vol:			0	191	19	158	0	586	681		597	-
PCE Adj:			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
FinalVolume:			0	191	19	158	0	586	681		597	0
Saturation Fi			1000	1 0 0 0	1 0 0 0	1 0 0 0	1 0 0 0	1 0 0 0	1000	1000 1	200 10	
Sat/Lane:		1900		0.93	1900	1900 0.92		1900	1900 0.92	1900 1:		92
Adjustment: Lanes:			0.92		0.95	1.00		2.00	1.00	2.00 2		92
Final Sat.:			0.00		321	1750	0.00		1750	3150 3		
rinai sat.:												
Capacity Anal				1		ı	1		ı	I		'
Vol/Sat:	-			0.06	0.06	0.09	0.00	0.15	0.39	0.11 0	.16 0.	00
Crit Moves:				****					****	****		
Green Time:	0.0	0.0	0.0	10.0	10.0	10.0	0.0	39.8	39.8	11.2 5	1.0 0	.0
Volume/Cap:			0.00		0.41	0.63		0.27	0.68	0.68 0		00
Delay/Veh:		0.0	0.0	27.9	27.9	33.4	0.0	7.8	12.7	31.6	3.1 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
AdjDel/Veh:	0.0	0.0	0.0	27.9	27.9	33.4	0.0	7.8	12.7	31.6	3.1 0	.0
LOS by Move:	A	A	A	С	С	С	A	A	В	С	A	Α
HCM2kAvgQ:	0	0	0	3	3	5	0	3	11	4	2	0
Note: Queue			the n	umber	of ca	rs per	lane	•				

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



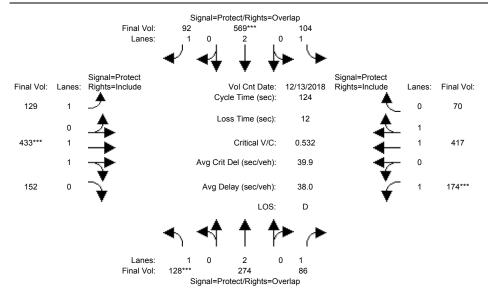
Approach:	No	rth Bo	und	Soi	ıth Bo	und	Εá	ast Bo	und	We	est Bo	und
Movement:												
										•		
Min. Green:		0		10				10		7		0
Y+R:	4.0	4.0	4.0			4.0		4.0			4.0	
Volume Modul												
Base Vol:	e. // 0		0	181	19	154	. 30 -		679	343	593	0
Growth Adj:				1.00		1.00	-	1.00	1.00	1.00		1.00
Initial Bse:			0	181	19	154	0	579	679	343	593	0
Added Vol:		0	0	9	0	0	0		0	7	5	0
ATI:	0	-		10	0	4	0	-	2	2	4	0
Initial Fut:			0	200	19	158	0	592	681	352	602	0
User Adj:			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
PHF Volume:	0	0	0	200	19	158	0	592	681	352	602	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:		0	0	200	19	158	0	592	681	352	602	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:			0	200	19	158	0		681			0
Saturation F												
Sat/Lane:		1900						1900	1900		1900	1900
Adjustment:				0.93		0.92		1.00	0.92		1.00	0.92
Lanes:		0.00						2.00	1.00		2.00	0.00
Final Sat.:		0					0		1750		3800	0
Capacity Ana												
Vol/Sat:	-			0 06	0 06	0.09	0 00	0 16	0.39	0 11	0.16	0.00
Crit Moves:	0.00	0.00	0.00	****	0.00	0.05	0.00	0.10	****	****	0.10	0.00
Green Time:	0 0	0 0	0 0	10 0	10.0	10.0	0.0	39 6	39.6	11 4	51.0	0.0
Volume/Cap:				0.43		0.63		0.28	0.69	0.69		0.00
Delay/Veh:	0.0	0.0	0.0	28.0		33.4	0.0	7.9	12.8	31.5	3.1	0.0
User DelAdj:	1.00	1.00		1.00		1.00		1.00	1.00	1.00		1.00
AdiDel/Veh:			0.0				0.0		12.8	31.5		0.0
LOS by Move:			А				А		В	С		А
		0	0	3	3		0		11	4	2	0
Note: Queue	ronor	tad ie	the n	umher	of ca	re nar	lano					

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



Approach: Movement:	L -	т -	- R	L -	- T	- R	L -	- Т	- R		- R
Min. Green: Y+R:	7 4.0	10 4.0	10 4.0	7 4.0	10 4.0	10 4.0	7 4.0	10 4.0	10 4.0	7 10 4.0 4.0	10 4.0
Volume Module											
Base Vol:	110	247	70	97	531	74	116	403	143	139 380	68
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:	110	247	70	97	531	74	116	403	143	139 380	68
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:	110	247	70	97	531	74	116	403	143	139 380	68
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:	110	247	70	97	531	74	116	403	143	139 380	68
Reduct Vol:	0	0	0	0	0	0	0	0	0	0 0	0
Reduced Vol:	110	247	70	97	531	74	116	403	143	139 380	68
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:	110	247	70	97	531	74	116	403	143	139 380	68
Saturation F	Low Mo	dule:									
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	0.98	0.95	0.92 0.98	0.95
Lanes:	1.00	2.00	1.00	1.00	2.00	1.00	1.00	1.46	0.54	1.00 1.69	0.31
Final Sat.:	1750	3800	1750	1750	3800	1750	1750	2730	969	1750 3138	562
Capacity Anal	lysis	Module									
Vol/Sat:		0.07	0.04	0.06	0.14	0.04	0.07	0.15	0.15	0.08 0.12	0.12
Crit Moves:	****				****			****		***	
Green Time:	16.4	31.1	51.8	21.7	36.4	57.4	20.9	38.5	38.5	20.7 38.2	
Volume/Cap:			0.10	0.32	0.48	0.09	0.39	0.48	0.48	0.48 0.39	
Delay/Veh:	51.4	37.4	22.0	45.2	36.3	18.7	46.7	34.9	34.9	48.0 34.0	34.0
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:	51.4	37.4	22.0	45.2	36.3	18.7	46.7	34.9	34.9	48.0 34.0	34.0
LOS by Move:		D	С	D	D	В	D	С	С	D C	
HCM2k95thQ:	8	7	3	7	16	3	9		16	11 13	13
Note: Queue	report	ed is	the n	umber	of ca	rs per	lane	•			

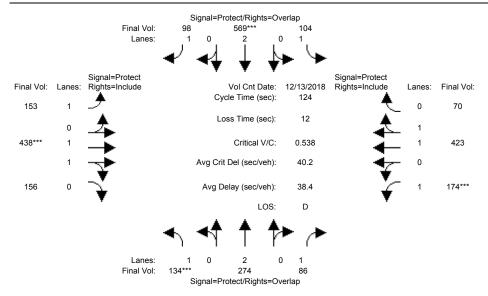
Level Of Service Computation Report 2000 HCM Operations (Future Volume Alternative) Background (PM)



Movement:	L ·	- T	- R	L -	- Т	und - R	L -	- Т	- R	L -	- T	- R
Min. Green: Y+R:	7 4.0	10 4.0	10	7 4.0	10 4.0	10 4.0	7 4.0	10 4.0	10 4.0	7 4.0	10 4.0	10 4.0
Volume Module												
Base Vol:	110	247	70	97	531	74	116	403	143	139	380	68
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:	110	247	70	97	531	74	116	403	143	139	380	68
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
ATI:	18	27	16	7	38	18	13	30	9	35	37	2
Initial Fut:	128	274	86	104	569	92	129	433	152	174	417	70
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:	128	274	86	104	569	92	129	433	152	174	417	70
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	128	274	86	104	569	92	129	433	152	174	417	70
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:			86	104	569	92	129	433	152	174	417	70
Saturation F												
Sat/Lane:		1900	1900		1900	1900		1900	1900		1900	1900
Adjustment:			0.92		1.00	0.92		0.98	0.95		0.98	0.95
Lanes:		2.00	1.00		2.00	1.00		1.47	0.53		1.70	0.30
Final Sat.:		3800	1750		3800	1750		2738	961		3168	532
Capacity Anal	_			0 06	0 1 5	0 0 5	0 0 0	0 16	0 16	0 10	0 10	0 10
Vol/Sat:		0.07	0.05	0.06	U.15	0.05	0.07	0.16	0.16	V.1U	0.13	0.13
OTIC HOVED.	****	000	E 0 1	00 0		F.C. F	01.6		26.0		00 5	20 5
Green Time:		29.9	53.1		34.9	56.5		36.9	36.9		38.5	38.5
	0.53		0.11		0.53	0.12		0.53	0.53		0.42	0.42
Delay/Veh:		38.7	21.4	45.2		19.5		36.9	36.9		34.2	34.2
User DelAdj:			1.00		1.00	1.00		1.00	1.00		1.00	1.00
AdjDel/Veh:			21.4		38.2	19.5		36.9	36.9		34.2	34.2
LOS by Move:	ם 5	D 4	C 2	D 4	D 9	B 2	D 5	D 10	D 10	D 7	C 8	C
HCM2kAvgQ:				_					10	/	Ø	8
Note: Queue	repor	tea is	ine n	umper	or ca	rs per	ıane	•				

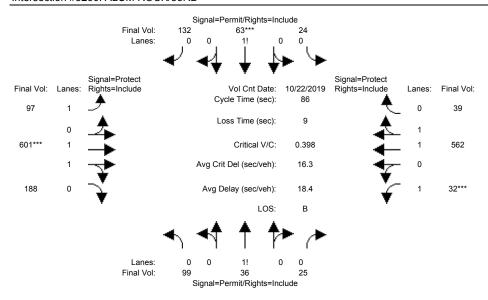
1260 E. Santa Clara Mixed-Use San Jose

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



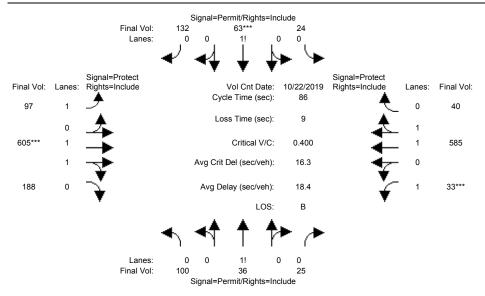
Movement:	L ·	- T	- R	L -	- T	- R	L -	- Т	- R	West Bound L - T - R			
Min. Green: Y+R:	7 4.0	10 4.0	10	7 4.0	10 4.0	10	7 4.0	10 4.0	10 4.0	7 4.0	10 4.0	10 4.0	
Volume Module													
Base Vol:	110	247	70	97	531	74	116	403	143	139	380	68	
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Initial Bse:	110	247	70	97	531	74	116	403	143	139	380	68	
Added Vol:	6	0	0	0	0	6	24	5	4	0	6	0	
ATI:	18	27	16	7	38	18	13	30	9	35	37	2	
Initial Fut:	134	274	86	104	569	98	153	438	156	174	423	70	
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:	134	274	86	104	569	98	153	438	156	174	423	70	
	0	0	0	0	0	0	0	0	0	0	0	0	
Reduced Vol:	134	274	86	104	569	98	153	438	156	174	423	70	
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:			86	104		98	153	438	156	174	423	70	
	1												
Saturation F			1000	1000	1 0 0 0	1000	1 0 0 0	1000	1000	1000	1000	1000	
Sat/Lane:		1900	1900		1900	1900		1900	1900	1900		1900	
Adjustment:			0.92		1.00	0.92		0.98	0.95	0.92		0.95	
Lanes:		2.00	1.00 1750		2.00	1.00 1750		1.46 2728	0.54 971	1.00	3174	0.29 525	
Final Sat.:		3800				1/50							
Capacity Anal										1			
Vol/Sat:	_			0.06	0.15	0.06	0.09	0.16	0.16	0.10	0.13	0.13	
	****	0.07	0.00	0.00	****	0.00	0.03	****	0.10	****	0.10	0.10	
Green Time:	17.6	30.0	52.9	22.1	34.5	58.2	23.7	37.0	37.0	22.9	36.2	36.2	
	0.54		0.12	0.33	0.54	0.12	0.46	0.54	0.54	0.54		0.46	
Delay/Veh:	51.8	38.6	21.5	45.1	38.6	18.6	45.4	36.9	36.9	47.6	36.2	36.2	
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:	51.8	38.6	21.5		38.6	18.6	45.4	36.9	36.9	47.6	36.2	36.2	
LOS by Move:	D	D	С	D	D	В	D	D	D	D	D	D	
HCM2kAvgQ:	5	4	2	4	9	2	6	10	10	7	8	8	
Note: Queue	repor	ted is	the n	umber	of ca	rs per	lane	•					

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



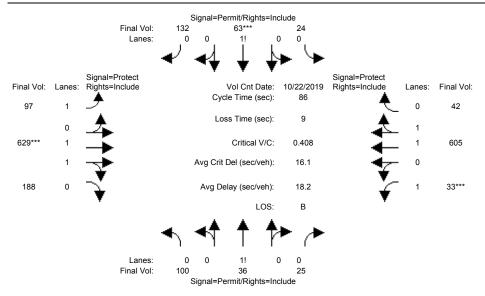
Approach:	und	Soi	ath Bo	und	Ea	ast Bo	und	West Bound				
Movement:		- T				- R					- T	
				•			•			•		
Min. Green:		10			10			10		7		10
Y+R:	4.0	4.0	4.0		4.0	4.0		4.0			4.0	4.0
Volume Modul							0.5	601	1.00	2.0	F.60	2.0
Base Vol:	99	36	25	24	63	132	97		188	32	562	39
Growth Adj:			1.00		1.00	1.00		1.00	1.00		1.00	1.00
Initial Bse:		36	25	24	63	132	97	601	188	32	562	39
Added Vol:	0		0	0	0	0	0	0	0	0	0	0
ATI:	0		0	0	0	0	0	0	0	0	0	0
Initial Fut:			25	24	63	132	97	601	188	32	562	39
User Adj:			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
PHF Volume:	99	36	25	24	63	132	97	601	188	32	562	39
	0		0	0	0	0	0	0	0	0	0	0
Reduced Vol:			25	24	63	132	97	601	188	32	562	39
_			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
FinalVolume:			25	24	63	132	97		188	32	562	39
	1											
Saturation F.												
Sat/Lane:		1900		1900		1900		1900	1900	1900		1900
_		0.92		0.92		0.92		0.98	0.95		0.98	0.95
Lanes:		0.22	0.16	0.11		0.60		1.51	0.49		1.87	0.13
Final Sat.:			273		503	1055			881		3460	240
Capacity Ana	-			0 10	0 10	0 10	0 0 6	0 01	0 01	0 00	0 16	0 16
Vol/Sat:	0.09	0.09	0.09	0.13	0.13	0.13	0.06	0.21	0.21	U.U∠ ****	0.16	0.16
Crit Moves:												
Green Time:		25.9	25.9		25.9	25.9		44.1	44.1		34.1	34.1
Volume/Cap:			0.30		0.42	0.42		0.42	0.42		0.41	0.41
Delay/Veh:		23.5	23.5		24.6	24.6		13.1	13.1		18.9	18.9
User DelAdj:			1.00		1.00	1.00		1.00	1.00	1.00		1.00
AdjDel/Veh:				24.6		24.6		13.1	13.1		18.9	18.9
LOS by Move:				С	С	C	С		В	D	В	В
~ -	7		7	10	10	10	5		12	2	11	11
Note: Queue	repor	ted is	the n	umber	of ca	rs per	lane	•				

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



Movement:	L -	Т -	- R	L -	- T	- R	L -	- T	- R	West Bound L - T - R			
Min. Green: Y+R:	10 4.0	10 4.0	10 4.0	10 4.0	10 4.0	10	7 4.0	10 4.0	10 4.0	7 4.0	10 4.0	10	
Volume Module						'							
Base Vol:	99	36	25	24	63	132	97	601	188	32	562	39	
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:	99	36	25	24	63	132	97	601	188	32	562	39	
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0	
ATI:	1	0	0	0	0	0	0	4	0	1	23	1	
Initial Fut:	100	36	25	24	63	132	97	605	188	33	585	40	
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:		36	25	24	63	132	97	605	188	33	585	40	
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0	
Reduced Vol:	100	36	25	24	63	132	97	605	188	33	585	40	
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:		36	25	24	63	132	97	605	188	33	585	40	
Saturation F													
Sat/Lane:	1900		1900		1900	1900		1900	1900		1900	1900	
Adjustment:			0.92		0.92	0.92		0.98	0.95		0.98	0.95	
Lanes:	0.62		0.16		0.29	0.60			0.49		1.87	0.13	
Final Sat.:	1087		272		503	1055			877		3463	237	
Capacity Anal Vol/Sat:	0.09			Λ 12	0.13	0 12	0 06	0.21	0.21	0 02	0.17	0.17	
Crit Moves:	0.09	0.09	0.09	0.13	****	0.13	0.00	****	0.21	****	0.17	0.17	
Green Time:	25.8	25 0	25.8	25 0	25.8	25.8	166	44.2	44.2	7.0	316	34.6	
	0.31		0.31		0.42	0.42		0.42	0.42		0.42	0.42	
Delay/Veh:	23.5		23.5		24.6	24.6		13.1	13.1		18.7	18.7	
User DelAdi:			1.00		1.00	1.00		1.00	1.00		1.00	1.00	
AdiDel/Veh:			23.5		24.6	24.6		13.1	13.1		18.7	18.7	
LOS by Move:		23.3 C	23.3 C	24.0 C	24.0 C	24.0 C	C	В	В	D	10.7	В	
HCM2kAvqQ:	3		3	5	5	5	2	_	6	1	6	6	
Note: Queue							_		3	_	3	3	
<u>.</u>	-10					- I							

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



Approach: North Bo	- R L	- T -	R L -	- T - F	R L -	T - R
Min. Green: 10 10 Y+R: 4.0 4.0	10 10 4.0 4.0	10 4.0	10 7 4.0 4.0	10 1 4.0 4	10 7 .0 4.0	10 10 4.0 4.0
Volume Module: >> Count	Date: 22 C	ct 2019	<<			
Base Vol: 99 36	25 24		132 97			562 39
Growth Adj: 1.00 1.00				1.00 1.0		
Initial Bse: 99 36	25 24		132 97			562 39
Added Vol: 0 0	0 0		0 0	24	0 0	20 2
ATI: 1 0	0 0	-	0 0	4	-	23 1
Initial Fut: 100 36	25 24		132 97			505 42
User Adj: 1.00 1.00						
PHF Adj: 1.00 1.00				1.00 1.0		
PHF Volume: 100 36	25 24	63	132 97	629 18		505 42
Reduct Vol: 0 0	0 0	0	0 0	0	0 0	0 0
Reduced Vol: 100 36	25 24	63	132 97	629 18	38 33	605 42
PCE Adj: 1.00 1.00	1.00 1.00	1.00 1	.00 1.00	1.00 1.0	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 1.0	00 1.00 1	.00 1.00
FinalVolume: 100 36	25 24	63	132 97	629 18	38 33	605 42
Saturation Flow Module:						
Sat/Lane: 1900 1900	1900 1900	1900 1	900 1900	1900 190	00 1900 1	900 1900
Adjustment: 0.92 0.92	0.92 0.92	0.92 0	0.92	0.98 0.9	95 0.92 0	.98 0.95
Lanes: 0.62 0.22	0.16 0.11	0.29 0	1.00	1.53 0.4	17 1.00 1	.87 0.13
Final Sat.: 1087 391	272 192	503 1	.055 1750	2848 85	51 1750 3	460 240
Capacity Analysis Modul	Le:					
Vol/Sat: 0.09 0.09	0.09 0.13	0.13 0	0.06	0.22 0.2	22 0.02 0	.17 0.17
Crit Moves:		***		***	****	
Green Time: 25.3 25.3	25.3 25.3	25.3 2	25.3 16.4	44.7 44	.7 7.0 3	5.3 35.3
Volume/Cap: 0.31 0.31	0.31 0.43	0.43 0	0.43 0.29	0.43 0.4	43 0.23 0	.43 0.43
Delay/Veh: 23.9 23.9	23.9 25.0	25.0 2	25.0 30.3	12.9 12	.9 37.8 1	3.3 18.3
User DelAdj: 1.00 1.00	1.00 1.00	1.00 1	.00 1.00	1.00 1.0	00 1.00 1	.00 1.00
AdjDel/Veh: 23.9 23.9			25.0 30.3	12.9 12	.9 37.8 1	3.3 18.3
LOS by Move: C C	C C	C	C C	В	B D	в в
HCM2kAvgQ: 3 3	3 5	5	5 2	7	7 1	6 6
Note: Queue reported is	s the number	of cars	per lane			

Appendix F Queue Length Calculations

Alum Rock/KingAlum Rock/KingAlum Rock/KingEBLEBLEBLAMAMAMExisting ConditionsBackground ConditionsBackground Plus P

Existing Conditions

Avg. Queue Per Lane in Veh=

Output

Discreptible = 0.95 6 Percentile = 0.95 6 Percentile = 0.95 6 Percentile = 0.95 7

		Number of		1	Number of			Number of
Individual	Cumulative	Queued	Individual	Cumulative	Queued	Individual	Cumulative	Queued
Probability	Probability	Vehicles	Probability	Probability	Vehicles	Probability	Probability	Vehicles
0.0681	0.0681	0	0.0483	0.0483	0	0.0366	0.0366	0
0.1830	0.2511	1	0.1463	0.1945	1	0.1211	0.1578	1
0.2458	0.4969	2	0.2217	0.4163	2	0.2003	0.3581	2
0.2201	0.7170	3	0.2240	0.6403	3	0.2208	0.5789	3
0.1479	0.8649	4	0.1697	0.8100	4	0.1825	0.7614	4
0.0794	0.9443	5	0.1029	0.9129	5	0.1207	0.8821	5
0.0356	0.9799	6	0.0520	0.9649	6	0.0665	0.9486	6
0.0137	0.9936	7	0.0225	0.9874	7	0.0314	0.9800	7
0.0046	0.9981	8	0.0085	0.9959	8	0.0130	0.9930	8
0.0014	0.9995	9	0.0029	0.9988	9	0.0048	0.9978	9
0.0004	0.9999	10	0.0009	0.9997	10	0.0016	0.9994	10
0.0001	1.0000	11	0.0002	0.9999	11	0.0005	0.9998	11
0.0000	1.0000	12	0.0001	1.0000	12	0.0001	1.0000	12
0.0000	1.0000	13	0.0000	1.0000	13	0.0000	1.0000	13
0.0000	1.0000	14	0.0000	1.0000	14	0.0000	1.0000	14
0.0000	1.0000	15	0.0000	1.0000	15	0.0000	1.0000	15
0.0000	1.0000	16	0.0000	1.0000	16	0.0000	1.0000	16
0.0000	1.0000	17	0.0000	1.0000	17	0.0000	1.0000	17
0.0000	1.0000	18	0.0000	1.0000	18	0.0000	1.0000	18
0.0000	1.0000	19	0.0000	1.0000	19	0.0000	1.0000	19
0.0000	1.0000	20	0.0000	1.0000	20	0.0000	1.0000	20
0.0000	1.0000	21	0.0000	1.0000	21	0.0000	1.0000	21
0.0000	1.0000	22	0.0000	1.0000	22	0.0000	1.0000	22
0.0000	1.0000	23	0.0000	1.0000	23	0.0000	1.0000	23
0.0000	1.0000	24	0.0000	1.0000	24	0.0000	1.0000	24
0.0000	1.0000	25	0.0000	1.0000	25	0.0000	1.0000	25
0.0000	1.0000	26	0.0000	1.0000	26	0.0000	1.0000	26
0.0000	1.0000	27	0.0000	1.0000	27	0.0000	1.0000	27
0.0000	1.0000	28	0.0000	1.0000	28	0.0000	1.0000	28
0.0000	1.0000	29	0.0000	1.0000	29	0.0000	1.0000	29
0.0000	1.0000	30	0.0000	1.0000	30	0.0000	1.0000	30
0.0000	1.0000	31	0.0000	1.0000	31	0.0000	1.0000	31
0.0000	1.0000	32	0.0000	1.0000	32	0.0000	1.0000	32
0.0000	1.0000	33	0.0000	1.0000	33	0.0000	1.0000	33
0.0000	1.0000	34	0.0000	1.0000	34	0.0000	1.0000	34
0.0000	1.0000	35	0.0000	1.0000	35	0.0000	1.0000	35
0.0000	1.0000	36	0.0000	1.0000	36	0.0000	1.0000	36
0.0000	1.0000	37	0.0000	1.0000	37	0.0000	1.0000	37
0.0000	1.0000	38	0.0000	1.0000	38	0.0000	1.0000	38
0.0000	1.0000	39	0.0000	1.0000	39	0.0000	1.0000	39
0.0000	1.0000	40	0.0000	1.0000	40	0.0000	1.0000	40
0.0000	1.0000	41	0.0000	1.0000	41	0.0000	1.0000	41
0.0000	1.0000	42	0.0000	1.0000	42	0.0000	1.0000	42
0.0000	1.0000	43	0.0000	1.0000	43	0.0000	1.0000	43
0.0000	1.0000	44	0.0000	1.0000	44	0.0000	1.0000	44
0.0000	1.0000	45	0.0000	1.0000	45	0.0000	1.0000	45

Queuing 12-06-19.xls 1/21/2020 M9

Alum Rock/KingAlum Rock/KingAlum Rock/KingEBLEBLEBLPMPMPMExisting ConditionsBackground ConditionsBackground Plus Project Conditions

_,			Daong. cana comanio			Daong. oana i lao i ii	0,000.00	
Avg. Queue Per Lane in Vo	eh=	4.0	Avg. Queue Per Lane	e in Veh=	4.4	Avg. Queue Per Lan	e in Veh=	5.3
Percentile =	0.95	8	Percentile =	0.95	8	Percentile =	0.95	9

		Number of	Ī			Number of	ı			Number of
Individual	Cumulative	Queued		Individual	Cumulative	Queued		Individual	Cumulative	Queued
		Vehicles				Vehicles		Probability	Probability	Vehicles
Probability	Probability			Probability	Probability			-	,	
0.0184	0.0184	0		0.0118	0.0118	0		0.0051	0.0051	0
0.0735	0.0919	1		0.0522	0.0640	1		0.0271	0.0323	1
0.1469	0.2388	2		0.1161	0.1801	2		0.0714	0.1037	2
0.1956	0.4343	3		0.1719	0.3519	3		0.1255	0.2291	3
0.1954	0.6297	4		0.1909	0.5429	4		0.1653	0.3945	4
0.1561	0.7858	5		0.1697	0.7126	5		0.1742	0.5687	5
0.1040	0.8898	6		0.1257	0.8382	6		0.1530	0.7217	6
0.0593	0.9491	7		0.0798	0.9180	7		0.1152	0.8370	7
0.0296	0.9788	8		0.0443	0.9623	8		0.0759	0.9128	8
0.0132	0.9919	9		0.0219	0.9842	9		0.0444	0.9573	9
0.0053	0.9972	10		0.0097	0.9939	10		0.0234	0.9807	10
0.0019	0.9991	11		0.0039	0.9978	11		0.0112	0.9919	11
0.0006	0.9997	12		0.0015	0.9993	12		0.0049	0.9969	12
0.0002	0.9999	13		0.0005	0.9998	13		0.0020	0.9989	13
0.0001	1.0000	14		0.0002	0.9999	14		0.0008	0.9996	14
0.0000	1.0000	15		0.0000	1.0000	15		0.0003	0.9999	15
0.0000	1.0000	16		0.0000	1.0000	16		0.0001	1.0000	16
0.0000	1.0000	17		0.0000	1.0000	17		0.0000	1.0000	17
0.0000	1.0000	18		0.0000	1.0000	18		0.0000	1.0000	18
0.0000	1.0000	19		0.0000	1.0000	19		0.0000	1.0000	19
0.0000	1.0000	20		0.0000	1.0000	20		0.0000	1.0000	20
0.0000	1.0000	21		0.0000	1.0000	21		0.0000	1.0000	21
0.0000	1.0000	22		0.0000	1.0000	22		0.0000	1.0000	22
0.0000	1.0000	23		0.0000	1.0000	23		0.0000	1.0000	23
0.0000	1.0000	24		0.0000	1.0000	24		0.0000	1.0000	24
0.0000	1.0000	25		0.0000	1.0000	25		0.0000	1.0000	25
0.0000	1.0000	26		0.0000	1.0000	26		0.0000	1.0000	26
0.0000	1.0000	27		0.0000	1.0000	27		0.0000	1.0000	27
0.0000	1.0000	28		0.0000	1.0000	28		0.0000	1.0000	28
0.0000	1.0000	29		0.0000	1.0000	29		0.0000	1.0000	29
0.0000	1.0000	30		0.0000	1.0000	30		0.0000	1.0000	30
0.0000	1.0000	31		0.0000	1.0000	31		0.0000	1.0000	31
0.0000	1.0000	32		0.0000	1.0000	32		0.0000	1.0000	32
0.0000	1.0000	33		0.0000	1.0000	33		0.0000	1.0000	33
0.0000	1.0000	34		0.0000	1.0000	34		0.0000	1.0000	34
0.0000	1.0000	35		0.0000	1.0000	35		0.0000	1.0000	35
0.0000	1.0000	36		0.0000	1.0000	36		0.0000	1.0000	36
0.0000	1.0000	37		0.0000	1.0000	37		0.0000	1.0000	37
0.0000	1.0000	38		0.0000	1.0000	38		0.0000	1.0000	38
0.0000	1.0000	39		0.0000	1.0000	39		0.0000	1.0000	39
0.0000	1.0000	40		0.0000	1.0000	40		0.0000	1.0000	40
0.0000	1.0000	41		0.0000	1.0000	41		0.0000	1.0000	41
0.0000	1.0000	42		0.0000	1.0000	42		0.0000	1.0000	42
0.0000	1.0000	43		0.0000	1.0000	43		0.0000	1.0000	43
0.0000	1.0000	44		0.0000	1.0000	44		0.0000	1.0000	44
0.0000	1.0000	45		0.0000	1.0000	45		0.0000	1.0000	45

Queuing 12-06-19.xls 1/21/2020 M10

US 101 NB Ramps/Alum Rock US 101 NB Ramps/Alum Rock US 101 NB Ramps/Alum Rock NBR NBR NBR AM ΑM ΑM **Existing Conditions Background Conditions** Background Plus Project Conditions Avg. Queue Per Lane in Veh= 0.9 Avg. Queue Per Lane in Veh= 1.0 Avg. Queue Per Lane in Veh=

	Percentile =	0.95	3		Percentile =	0.95	3	Percentile =	0.95
	Individual Probability	Cumulative Probability	Number of Queued Vehicles		Individual Probability	Cumulative Probability	Number of Queued Vehicles	Individual Probability	Cumulative Probability
	0.3872	0.3872	0		0.3812	0.3812	0	0.3638	0.3638
	0.3674	0.7546	1		0.3676	0.7488	1	0.3679	0.7317
	0.1743	0.9289	2		0.1773	0.9261	2	0.1860	0.9176
	0.0551	0.9840	3		0.0570	0.9831	3	0.0627	0.9803
	0.0131	0.9971	4		0.0137	0.9969	4	0.0158	0.9962
	0.0025	0.9995	5		0.0027	0.9995	5	0.0032	0.9994
	0.0004	0.9999	6		0.0004	0.9999	6	0.0005	0.9999
	0.0001	1.0000	7		0.0001	1.0000	7	0.0001	1.0000
	0.0000	1.0000	8		0.0000	1.0000	8	0.0000	1.0000
	0.0000	1.0000	9		0.0000	1.0000	9	0.0000	1.0000
ı	0.0000	1.0000	10		0.0000	1.0000	10	0.0000	1.0000
ı	0.0000	1.0000	11		0.0000	1.0000	11	0.0000	1.0000
	0.0000	1.0000	12		0.0000	1.0000	12	0.0000	1.0000
	0.0000	1.0000	13		0.0000	1.0000	13	0.0000	1.0000
	0.0000	1.0000	14		0.0000	1.0000	14	0.0000	1.0000
	0.0000	1.0000	15		0.0000	1.0000	15	0.0000	1.0000
ı	0.0000	1.0000	16		0.0000	1.0000	16	0.0000	1.0000
	0.0000	1.0000	17		0.0000	1.0000	17	0.0000	1.0000
	0.0000	1.0000	18		0.0000	1.0000	18	0.0000	1.0000
	0.0000	1.0000	19		0.0000	1.0000	19	0.0000	1.0000
	0.0000	1.0000	20		0.0000	1.0000	20	0.0000	1.0000
	0.0000	1.0000	21		0.0000	1.0000	21	0.0000	1.0000
	0.0000	1.0000	22		0.0000	1.0000	22	0.0000	1.0000
	0.0000	1.0000	23		0.0000	1.0000	23	0.0000	1.0000
	0.0000	1.0000	24		0.0000	1.0000	24	0.0000	1.0000
ı	0.0000	1.0000	25		0.0000	1.0000	25	0.0000	1.0000
	0.0000	1.0000	26		0.0000	1.0000	26	0.0000	1.0000
ı	0.0000	1.0000	27		0.0000	1.0000	27	0.0000	1.0000
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ı	0.0000	1.0000	32		0.0000	1.0000	32	0.0000	1.0000
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	0.0000	1.0000	34		0.0000	1.0000	34	0.0000	1.0000
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ı	0.0000	1.0000	40		0.0000	1.0000	40	0.0000	1.0000
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I	0.0000	1.0000	42		0.0000	1.0000	42	0.0000	1.0000
۱	0.0000	1.0000	43		0.0000	1.0000	43	0.0000	1.0000
ĺ	0.0000	1.0000	44		0.0000	1.0000	44	0.0000	1.0000
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1.0

Number of

Queued

Vehicles

1.0000

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0.95

9

Background Conditions
Avg. Queue Per Lane in Veh=
Percentile = 0.95 5.2 0.95 9

US 101 NB Ramps/Alum Rock NBR PM Background Plus Project Conditions Avg. Queue Per Lane in Veh=

Percentile =

5.4

9

0.95

		Number of	ı			Number of	l			Number of
Individual	Cumulative	Queued		Individual	Cumulative	Queued		Individual	Cumulative	Queued
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0.1517	0.7307	6		0.1524	0.7260	6		0.1552	0.7044	6
0.1130	0.8437	7		0.1142	0.8401	7		0.1194	0.8238	7
0.0736	0.9172	8		0.0748	0.9149	8		0.0803	0.9041	8
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0.0222	0.9821	10		0.0228	0.9814	10		0.0258	0.9779	10
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0.0046	0.9971	12		0.0048	0.9970	12		0.0057	0.9963	12
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0.0000	1.0000	22		0.0000	1.0000	22		0.0000	1.0000	22
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Avg. Queue Per Lane in Veh=
Percentile = 0.9 Background Conditions
Avg. Queue Per Lane in Veh=
Percentile = 0.98 Background Plus Project Conditions Avg. Queue Per Lane in Veh= 0.9 1.0 Percentile = 3

0.95

Percentile =	0.95	3	
		Number of	l i
Individual	Cumulative	Queued	
		Vehicles	
Probability	Probability		
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0.1630	0.9385	2	
0.0484	0.9869	3	
0.0108	0.9977	4	
0.0019	0.9997	5	
0.0003	1.0000	6	
0.0000	1.0000	7	
0.0000	1.0000	8	
0.0000	1.0000	9	
0.0000	1.0000	10	
0.0000	1.0000	11	
0.0000	1.0000	12	
0.0000	1.0000	13	
0.0000	1.0000	14	
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0.0000	1.0000	42	
0.0000	1.0000	43	
0.0000	1.0000	44	
0.0000	1.0000	45	

		Number of			Number of
Individual	Cumulative	Queued	Individual	Cumulative	Queued
Probability	Probability	Vehicles	Probability	Probability	Vehicles
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0.1824	0.9212	2	0.1870	0.9166	2
0.0603	0.9815	3	0.0634	0.9800	3
0.0149	0.9965	4	0.0161	0.9961	4
0.0030	0.9994	5	0.0033	0.9994	5
0.0005	0.9999	6	0.0006	0.9999	6
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Avg. Queue Per Lane in Veh=
Percentile = 0.95 Background Plus Project Conditions Avg. Queue Per Lane in Veh= 1.9 2.0 Percentile = 0.95 4 0.95 5 0.95

2.1

5

		Number of	1			Number of			Number of
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0.2705	0.6917	2		0.2706	0.6654	2	0.2696	0.6418	2
0.1753	0.8670	3		0.1841	0.8495	3	0.1913	0.8331	3
0.0852	0.9522	4		0.0940	0.9435	4	0.1018	0.9349	4
0.0331	0.9854	5		0.0384	0.9819	5	0.0434	0.9783	5
0.0107	0.9961	6		0.0131	0.9949	6	0.0154	0.9937	6
0.0030	0.9991	7		0.0038	0.9988	7	0.0047	0.9984	7
0.0007	0.9998	8		0.0010	0.9997	8	0.0012	0.9996	8
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0.0000	1.0000	10		0.0000	1.0000	10	0.0001	1.0000	10
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0.0000	1.0000	44		0.0000	1.0000	44	0.0000	1.0000	44
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Appendix GTransportation Demand Management (TDM) Plan







Little Portugal Gateway Mixed-Use Development

Draft Transportation Demand Management (TDM) Plan

Prepared for:

SiliconSage Builders

January 14, 2020











Hexagon Transportation Consultants, Inc.

Hexagon Office: 8070 Santa Teresa Boulevard, Suite 230

Gilroy, CA 95020

Hexagon Job Number: 20LD01

Phone: 408.846.7410



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

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Figure 3 Existing Bicycle Facilities	7
Figure 4 Existing Transit Facilities	



1. Introduction

Transportation Demand Management (TDM) is a combination of services, incentives, facilities, and actions that reduce single–occupant vehicle (SOV) trips to help relieve traffic congestion, parking demand, and air pollution problems. The purpose of TDM is to (1) reduce the amount of trips generated by new development; (2) promote more efficient utilization of existing transportation facilities and ensure that new developments are designed to maximize the potential for sustainable transportation usage; (3) reduce the parking demand generated by new development and allow for a reduction in parking supply; and (4) establish an ongoing monitoring and enforcement program to guarantee the desired trip and parking reductions are achieved.

This TDM plan has been prepared for the proposed mixed-use development located at 1661-1665 Alum Rock Avenue to satisfy the requirements outlined in Section 20.90.220 of the San Jose Code of Ordinances. The ordinance allows developments to reduce the required off-street parking up to a maximum of 50 percent, so long as the following requirements are met:

- The reduction in parking will not adversely affect surrounding projects
- The reduction in parking will not rely upon or reduce the public parking supply
- The project provides a detailed TDM plan and demonstrates that the TDM program can be maintained indefinitely

This TDM Plan addresses all the requirements of the City's ordinance and includes TDM measures designed to reduce the proposed project's parking demand. The TDM plan includes maintaining a kiosk of trip-planning resources, providing 100 percent unbundled parking for all residential spaces, providing VTA SmartPasses to residential tenants, and providing adequate on-site bicycle storage.

Project Description

The proposed project is located at 1661-1665 Alum Rock Avenue, between N. 34th Street and King Road, within a designated Urban Village (Little Portugal). According to the Envision San Jose 2040 General Plan, an Urban Village strategy fosters:

- Mixed residential and employment activities that are attractive to an innovative workforce
- Revitalization of underutilized properties that have access to existing infrastructure
- Densities that support transit use, bicycling, and walking
- High-quality urban design



The project proposes to demolish existing on-site buildings including a restaurant, tire store, used car dealership and several ancillary structures. As proposed, the mixed-use development would consist of 123 multi-family residential units and 13,897 square feet (s.f.) of commercial space. A total of 129 parking spaces for the residential use and 41 parking spaces for the retail use are proposed within the ground-floor level and two below-ground parking levels. Based on the site plan, on-site parking will be accessed by one ingress/egress driveway on Alum Rock Avenue with limited (right-in/right-out only) operations.

The project site location and the surrounding study area are shown on Figure 1. The project site plan is shown on Figure 2.

Location and Proximity to Transit

The project site is located adjacent to the Rapid 522 and Rapid 523 bus rapid transit (BRT) services which are served by a station located at the intersection of Alum Rock Avenue and King Road. Several VTA local and express route bus stops also are located within walking distance of the project site along Alum Rock Avenue and King Road. Chapter 2 describes the existing transit services in the study area.

Parking

Based on the City's standard parking requirements, the project is required to provide a total of 228 off-street parking spaces. However, the project is located in the Little Portugal Urban Village. The Urban Village Overlay automatically allows for a 20 percent reduction in parking. With the 20 percent reduction, the required parking would be reduced to 184 spaces, consisting of 136 spaces for the residential use and 48 spaces for the commercial use. The project is proposing a total of 129 parking spaces for the residential use and 41 spaces for the commercial use, which would not meet the City's reduced parking requirements.

However, a proposed shared on-site parking program will provide an additional 11 parking spaces for the residential use (between 6:00 PM and 8:00 AM) and an additional 25 parking spaces for the commercial use (between 8:00 AM and 6:00 PM). With the additional shared parking spaces, the residential use is provided a total of 140 parking spaces and the commercial use is provide a total of 66 parking spaces. Therefore, the proposed parking for both uses would meet the City's reduced parking requirements with the implementation of the on-site shared parking program.

Since the project is not requesting a reduction in required parking of greater than 20%, the project is not required to meet Code 20.90.220.A.1, Subsections c and d. However, the City is requiring the project to complete and have approved its TDM program for a maximum 20 percent reduction in off-street parking due to the limited availability of parking on surrounding streets.

Report Organization

The remainder of this report is divided into two chapters. Chapter 2 describes the transportation facilities and services in the vicinity of the project site. Chapter 3 describes the TDM measures that would be implemented for the proposed project, including the program for implementing and monitoring the TDM plan.





Figure 1 Site Location



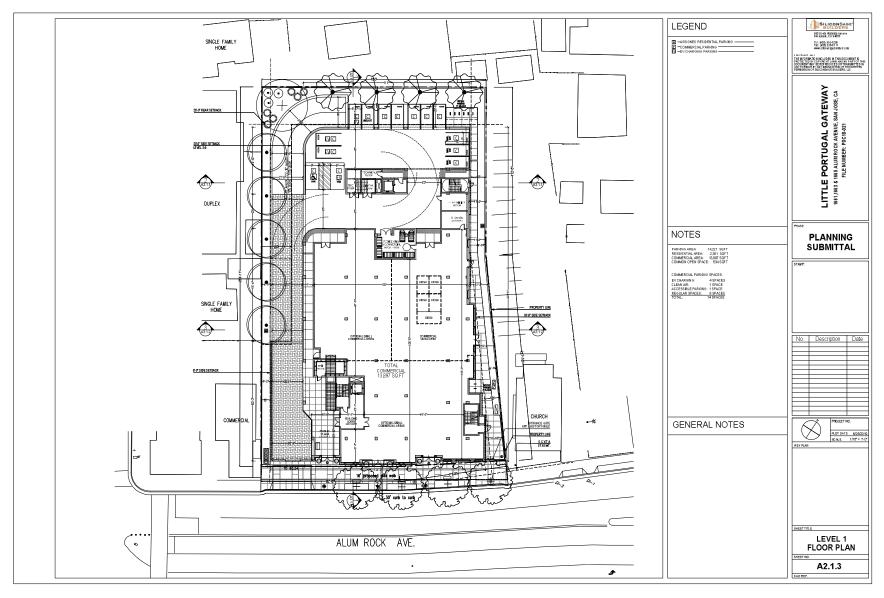


Figure 2 Project Site Plan



2.

Existing Transportation Facilities

This chapter describes the existing conditions for all of the major transportation facilities in the vicinity of the project site, including the roadway network, transit service, and bicycle and pedestrian facilities.

Existing Roadway Network

Regional access to the project site is provided via US 101 and I-680. These facilities are described below.

US-101 is an eight-lane freeway in the vicinity of the site. It extends northwest to San Francisco and south to Gilroy. North of Morgan Hill, US-101 has high occupancy vehicle (HOV) lanes in both directions. Access to the site is provided via its interchange with Alum Rock Avenue/Santa Clara Street.

I-680 is an eight-lane freeway in the vicinity of the site. It extends north to I-80 at Fairfield and south to US-101 in San Jose, at which point it makes a transition into I-280 north to San Francisco. Access to the site is provided via its interchange with Alum Rock Avenue.

Local access to the site is provided by Alum Rock Avenue/Santa Clara Street, King Road, 34th Street, McKee Road, and San Antonio Street. These roadways are described below.

Alum Rock Avenue is a divided four-lane east-west roadway in the vicinity of the project site and is a designated Grand Boulevard. It extends eastward from Downtown San Jose as Santa Clara Street to US-101, at which point it makes a transition into Alum Rock Avenue. In the project vicinity, Alum Rock has a posted speed limit of 35 mph with sidewalks with on-street parking on both sides of the street and no bike lanes. Bus-only lanes in the eastbound and westbound directions run along the center media of Alum Rock Avenue between 34th Street and Capitol Avenue. Alum Rock Avenue runs along the south project frontage and provides direct access to the project site via a right-in/right-out only driveway.

King Road is generally a four-lane north-south arterial roadway that transitions from Lundy Avenue at its intersection with Commodore Drive (just south of Berryessa Road) and extends southward to Aborn Road, where it transitions to Silver Creek Road. King Road is a two-lane north-south roadway between Alum Rock Avenue and St. James Street. In the project vicinity, King Road has a posted speed limit of 35 mph with sidewalks and bike lanes on both sides of the roadway. Access to the project site from King Road is provided via its intersection with Alum Rock Avenue.



34th Street is a two-lane north-south roadway that extends south from McKee Road south to San Antonio Street. In the project vicinity, 34th Street has a posted speed limit of 25 mph with sidewalks on both sides of the roadway and no bike lanes. Access to the project site from 34th Street is provided via its intersection with Alum Rock Avenue.

McKee Road is generally a four- to six-lane east-west roadway that transitions from Julian Street at its intersection with 28th Street (just west of US-101) and extends eastward to Alum Rock Avenue. In the project vicinity, McKee Road has a posted speed limit of 35 mph with sidewalks on both sides of the roadway and no bike lanes. Access to the project site from McKee Road is provided via its intersections with 34th Street and King Road.

San Antonio Street is a two-lane east-west roadway that begins at 17th Street and extends eastward to Jackson Avenue, where it transitions to Capitol Expressway. In the project vicinity, San Antonio Street has a posted speed limit of 35 mph with sidewalks and on-street parking on both sides of the roadway. Bike lanes are located along San Antonio Street between King Road and Jackson Avenue, while a designated bike route begins west of King Road. Access to the project site from San Antonio Street is provided via its intersections with 34th Street and King Road.

Existing Bicycle and Pedestrian Facilities

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.

- King Road, along its entire extent
- San Antonio Street, between King Road and Jackson Avenue; between 34th Street and Bonita Avenue
- Jackson Avenue, along its entire extent
- Capitol Avenue, along its entire extent

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.

- San Antonio Street, between King Road and 34th Street; west of Bonita Avenue
- Sunset Avenue, between San Antonio Street and Lavonne Avenue; between Lyons Drive and Story Road (a freeway crossing across I-680 is provided between Lavonne Avenue and Lyons Drive)

Although most of the residential streets near the project site (i.e., 34th Street) do not provide bike lanes or are designated as bike routes, due to their low traffic volumes, many of them are conducive to bicycle usage. The existing bicycle facilities are shown in Figure 3.

Pedestrian facilities near the project site consist mostly of sidewalks along the streets in the study area. Sidewalks are found along both sides of all streets near the project site, including Alum Rock Avenue and King Road. Other pedestrian facilities in the project area include crosswalks and pedestrian push buttons at all signalized study intersections. It should be noted, however, that ADA-compatible ramps are not installed at the two US-101 interchange intersections along Alum Rock Avenue/Santa Clara Street.

Overall, the existing network of sidewalks and crosswalks provides good connectivity and provides pedestrians with safe routes to transit services and other points of interest in the area.





Figure 3 Existing Bicycle Facilities



Existing Transit Service

Existing transit service to the study area is provided by the VTA and described below. The project site is primarily served by four VTA bus routes (22, 23, 522, 523). These bus lines, and additional lines within the project area, are listed in Table 1, including their terminus points, hours of operation, and commute hour headways. The nearest bus stops to the project site serve Local Routes 22 and 23 and are located along both sides of Alum Rock Avenue at its intersection with King Road, adjacent to the south project site frontage.

Rapid Route 522 is a bus rapid transit (BRT) service operating within dedicated bus-only lanes along the center median of Alum Rock Avenue and is served by platform bus stops between 34th Street and Capitol Avenue. The nearest eastbound and westbound bus stops serving Rapid Route 522 are located at the intersection of Alum Rock Avenue and King Road, less than 300 feet walking distance east of the project site. The Alum Rock/King bus station also is served by the Rapid Route 523, which runs along Santa Clara Street/Alum Rock Avenue between Downtown San Jose and King Road.

Table 1
Bus Transit Service

Bus Route	Route Description	Hours of Operation	Nearest Stop	Headway ¹
Frequent Route 22	Palo Alto Transit Center to Eastridge Transit Center	24 hrs	Alum Rock/King	15 min
Frequent Route 23	DeAnza College to Alum Rock Transit Center via Stevens Creek	4:57 AM - 1:28 AM	Alum Rock/King	12 - 15 min
Local Route 64A	McKee & White to Ohlone-Chynoweth Station	5:14 AM - 12:28 AM	McKee/King	15 min
Local Route 64B	McKee & White to Almaden Expressway & Camden	5:55AM - 9:34 PM	McKee/King	15 min
Frequent Route 77	Milpitas BART to Eastridge via King	5:19 AM - 11:18 PM	King/Alum Rock	15 - 20 min
Rapid Route 522	Palo Alto Transit Center to Eastridge Transit Center	4:42 AM - 11:40 PM	Alum Rock/Jackson	10 - 15 min
Rapid Route 523	Berryessa BART to Lockheed Martin via De Anza College	5:05 AM - 11:30 PM	Alum Rock/Jackson	15 - 20 min

Notes:



Approximate headways during peak commute periods.

² Local Routes 64A and 64B provide frequent service between San Jose Diridon Station and McKee/White, with approximately 15-minute headways during peak commute periods.



Figure 4 Existing Transit Facilities



3. TDM Plan

The TDM measures for the project were developed based on the parking reduction requirements outlined in Section 20.90.220 of the San Jose Code of Ordinances.

Implementation of the proposed TDM measures would encourage future residents and retail tenants taking alternative transportation modes (transit, bicycle, and carpool) to further reduce the SOV trips and parking demand generated by the project.

City of San Jose Parking Code

According to Section 20.90.220.A.1 of the San Jose Parking Code, a reduction in the required offstreet vehicle parking spaces of up to 20 percent is automatically allowed if the provisions of Subsections a and b are met. A reduction of up to 50 percent may be authorized if the project conforms to the requirements specified in Subsections a and b, and implements at least three TDM measures specified in Subsections c and d. Section 20.90.220.A.1 is outlined below.

Section 20.90.220.A.1 – Reduction in Required Off-street Parking Spaces

A. Alternative transportation.

- 1. A reduction in the required off-street vehicle parking spaces of up to fifty percent may be authorized with a development permit or a development exception if no development permit is required, for structures or uses that conform to all of the following and implement a total of at least three transportation demand management (TDM) measures as specified in the following provisions:
 - a. The structure or use is located within two thousand feet of a proposed or an existing rail station or bus rapid transit station, or an area designated as a Neighborhood Business District, or as an Urban Village, or as an area subject to an area development policy in the city's general plan or the use is listed in Section 20.90.220G.; and
 - b. The structure or use provides bicycle parking spaces in conformance with the requirements of Table 20-90.
 - c. For any reduction in the required off-street parking spaces that is more than twenty percent, the project shall be required to implement a transportation demand management (TDM) program that contains but is not limited to at least one of the following measures:



- i. Implement a carpool/vanpool or car-share program, e.g., carpool ride-matching for employees, assistance with vanpool formation, provision of vanpool or car-share vehicles, etc. and assign car pool, van pool and car-share parking at the most desirable onsite locations at the ratio set forth in the development permit or development exception considering type of use; or
- ii. Develop a transit use incentive program for employees and tenants, such as on-site distribution of passes or subsidized transit passes for local transit system (participation in the region-wide Clipper Card or VTA EcoPass system will satisfy this requirement).
- d. In addition to the requirements above in Section 20.90.220.A.1.c. for any reduction in the required off-street parking spaces that is more than twenty percent, the project shall be required to implement a transportation demand management (TDM) program that contains but is not limited to at least two of the following measures:
 - i. Implement a carpool/vanpool or car-share program, e.g., carpool ridematching for employees, assistance with vanpool formation, provision of vanpool or car-share vehicles, etc. and assign car pool, van pool and carshare parking at the most desirable on-site locations; or
 - ii. Develop a transit use incentive program for employees, such as on-site distribution of passes or subsidized transit passes for local transit system (participation in the region-wide Clipper Card or VTA EcoPass system will satisfy this requirement); or
 - iii. Provide preferential parking with charging facility for electric or alternatively-fueled vehicles; or
 - iv. Provide a guaranteed ride home program; or
 - v. Implement telecommuting and flexible work schedules; or
 - vi. Implement parking cash-out program for employees (non-driving employees receive transportation allowance equivalent to the value of subsidized parking); or
 - vii. Implement public information elements such as designation of an on-site TDM manager and education of employees regarding alternative transportation options; or
 - viii. Make available transportation during the day for emergency use by employees who commute on alternate transportation. (This service may be provided by access to company vehicles for private errands during the workday and/or combined with contractual or pre-paid use of taxicabs, shuttles, or other privately provided transportation); or
 - ix. Provide shuttle access to Caltrain stations; or
 - x. Provide or contract for on-site or nearby child-care services; or
 - xi. Incorporate on-site support services (food service, ATM, drycleaner, gymnasium, etc. where permitted in zoning districts); or
 - xii. Provide on-site showers and lockers; or



- xiii. Provide a bicycle-share program or free use of bicycles on-site that is available to all tenants of the site; or
- xiv. Unbundled parking; and
- e. For any project that requires a TDM program:
 - i. The decision maker for the project application shall first find in addition to other required findings that the project applicant has demonstrated that it can maintain the TDM program for the life of the project, and it is reasonably certain that the parking shall continue to be provided and maintained at the same location for the services of the building or use for which such parking is required, during the life of the building or use; and
 - ii. The decision maker for the project application also shall first find that the project applicant will provide replacement parking either on-site or off-site within reasonable walking distance for the parking required if the project fails to maintain a TDM program.

Compliance with the City Parking Code

The following sections describe how the project will comply with the City Parking Code.

Proximity to Transit

The project is located in a designated Urban Village area and is adjacent to the Rapid 522 and Rapid 523 bus rapid transit (BRT) services which are served by a station located at the intersection of Alum Rock Avenue and King Road. Several VTA local and express route bus stops also are located within walking distance of the project site along Alum Rock Avenue and King Road. Therefore, the project would conform to Subsection 20.90.220.A.1.a.

Bicycle Parking Requirement

The City's bicycle parking requirements for each of the project components (Section 20.90.060 Tables 20-190 and 20-210) are as follows: 1 parking space per 4 residential units and 1 parking space per 3,000 s.f. of retail floor area. Based on these standard parking requirements, the project is required to provide 35 off-street bicycle parking spaces consisting of 31 spaces for the residential units and 4 spaces for the retail use. The project site plan indicates a total of 36 bicycle parking spaces are proposed to be provided on-site. The proposed bicycle parking on-site will exceed the City's requirements and encourage the use of non-auto modes of travel and minimize the demand for on-site parking. Therefore, the project would comply with Subsection 20.90.220.A.1.b.

Vehicle Parking Requirement

The City's parking requirements for multiple-dwelling residential uses (Section 20.90.060 Table 20-210) are as follows: 1.25 parking spaces for studios or one-bedroom unit and 1.7 parking spaces for two-bedroom units. The project proposes 5 studios, 87 one-bedroom units, and 31 two-bedroom units. Based on the City's parking code requirements, the project would be required to provide 168 off-street parking spaces for the proposed residential units before any reductions.

The 13,897 s.f. (11,812 s.f. of floor area) of retail space will be required to provide one off-street parking space per 200 square feet of floor area per the City's Zoning Regulations (Section 20.90.060 Table 20-190). Based on the City's parking code requirements, the project is required to provide 60 off-street parking spaces for the proposed retail use before any reductions.

Based on the City's standard parking requirements, the project is required to provide a total of 228 off-street parking spaces (see Table 2). However, the project is located in the Little Portugal Urban



Table 2 Vehicle Parking Requirements

Proposed Project		City of San Jose	e Park	ing Code ¹	General Required	Urban Village Required
Land Use	Size	Land Use	Parking Ratio			Parking ²
Residential	5 units	Multiple dwelling residential	1.25	spaces per studio unit	6	5
Residential	87 units	Multiple dwelling residential	1.25	spaces per one-bedroom unit	109	88
Residential	31 units	Multiple dwelling residential	1.70	spaces per two-bedroom unit	53	43
Residential Sub-Total	123 units				168	136
Retail ³	11,812 s.f.	Retail sales, goods, and merchandise	1.00	space per 200 s.f. of floor area	60	48
Total					228	184

Notes:



¹City of San Jose Zoning Ordinance: Parking Spaces Required by Land Use

²Includes 20% allowable reduction of parking requirement in an Urban Village.

³The floor area of the retail use (11,812 s.f.) is assumed to be 85% of the gross square footage (13,897 s.f.)

Village. The Urban Village Overlay automatically allows for a 20 percent reduction in parking. With the 20 percent reduction, the required parking would be reduced to 184 spaces, consisting of 136 spaces for the residential use and 48 spaces for the commercial use. The project is proposing a total of 129 parking spaces for the residential use and 41 spaces for the commercial use, which would not meet the City's reduced parking requirements.

A proposed on-site parking restriction program will provide an additional 11 parking spaces for the residential use (between 6:00 PM and 8:00 AM) and an additional 25 parking spaces for the commercial use (between 8:00 AM and 6:00 PM). The parking restrictions provide additional parking spaces for each use during hours when the complementary use typically expriences lower parking demand, as described below. With the additional shared parking spaces, the residential use is provided a total of 140 parking spaces and the commercial use is provided a total of 66 parking spaces. Therefore, both uses will meet the City's reduced parking requirements with the implementation of an on-site shared parking program.

Since the project is not requesting a reduction in required parking of greater than 20%, the project is not required to meet Code 20.90.220.A.1, Subsections c and d. However, the City is requiring the project to complete and have approved its TDM program due to the limited availability of parking on surrounding streets.

Evaluation of Project Parking Demand

Since the proposed project is proposing to provide less on-site parking than required based on standard City parking requirements, a review of the anticipated peak parking demand for the project site uses was completed. The peak parking demand for the project was determined based on survey results compiled by the Urban Land Institute and the methodology presented in their *Shared Parking* guide. The surveys evaluate parking demand characteristics for various land uses and identify hourly parking demand ratios for each land use. The parking demand for the proposed project is presented in Table 3.

Based on the parking demand survey data, the maximum parking demand for the project is projected to exceed the total provided on-site parking between 7:00 PM to 9:00 PM. An additional eight parking spaces would be required to meet the project's total parking demand of 178 spaces between 7:00 PM to 8:00 PM, while one additional space would be needed to meet the demand of 171 spaces between 8:00 PM to 9:00 PM. Therefore, the proposed 170 on-site spaces would not be adequate to serve the project's parking demand. It should be noted, however, that the evaluation assumes a typical retail use for the proposed commercial space, with business hours extending beyond 7:00 PM. If the retail use were to end business hours before 7:00 PM, the on-site parking would be adequate to serve the residential use.

Recommended TDM Measures

The recommended TDM measures are intended to encourage future tenants of the residential development and future employees of the commercial use to utilize alternative transportation modes available in the area to reduce single occupancy vehicle trips and parking demand generated by the project. The specific TDM measures that are recommended for the project are described below and are based on the measures specified in Subsections 20.90.220.A.1.c and d. Additionally, the project needs to ensure that the TDM plan will be maintained for the life of the project, which is in compliance with Subsection 20.90.220.A.1.e.

Trip Planning Kiosk

This TDM Plan recommends a kiosk with information regarding non-auto transportation alternatives.



Table 3
Project Parking Demand

				Weekday			
	Retail Residential Combined Total						Total
Hour of Day	Customer	Demand ¹	Resident	Demand ¹	Demand ¹	Supply	Difference
6:00 AM	1%	0	100%	136	136	170	34
7:00 AM	5%	2	90%	122	124	170	46
8:00 AM	15%	7	85%	116	123	170	47
9:00 AM	35%	17	80%	109	126	170	44
10:00 AM	65%	31	75%	102	133	170	37
11:00 AM	85%	41	70%	95	136	170	34
Noon	95%	46	65%	88	134	170	36
1:00 PM	100%	48	70%	95	143	170	27
2:00 PM	95%	46	70%	95	141	170	29
3:00 PM	90%	43	70%	95	138	170	32
4:00 PM	90%	43	75%	102	145	170	25
5:00 PM	95%	46	85%	116	162	170	8
6:00 PM	95%	46	90%	122	168	170	2
7:00 PM	95%	46	97%	132	178	170	-8
8:00 PM	80%	38	98%	133	171	170	-1
9:00 PM	50%	24	99%	135	159	170	11
10:00 PM	30%	14	100%	136	150	170	20
11:00 PM	10%	5	100%	136	141	170	29
Midnight	0%	0	100%	136	136	170	34

Source: Urban Land Institute (ULI) Shared Parking, 2nd Edition, 2005. (Table 2-5)

The kiosk will include information about all the measures, services, and facilities discussed in this Plan, including:

- A summary of VTA and Caltrain services, including routes and schedules
- Online bicycling resources
- A local bikeways map
- Information about ridematching services (511.org, Zimride, and TwoGo).
- Information regarding online trip planning resources available in the Bay Area such as Dadnab, the 511 Transit Trip Planner, where to find real-time traffic conditions, etc.

The kiosk should be implemented and maintained by building management either as a physical display located on-site or as an online resource. If an online kiosk is provided, transportation news and commuter alerts could be posted online. Residents and commercial tenants would be able to access the online kiosk from their desk at work or from their home. TDM-related links and information will be posted on this forum, and the Transportation Coordinator will have host permissions to send tenants email notifications pertaining to the TDM Plan and measures.

The building developer would have responsibility for creating the kiosk as soon as the new building is ready for leasing. It is recommended that tenants be informed about the kiosk's location, either on-site or a link to a webpage, and the resources it provides upon move-in (i.e. as part of a



¹Parking demand is based on the City of San Jose off-site parking requirements with the allowed 20% parking reduction for projects located within an Urban Village.

Start New Search

Show Ferry Landings

Show Select Rail Stations/Stops

welcome packet). More specific information can be added later to reflect any programs specific to certain tenants.

Trip Planning Resources

There are several free trip planning resources that tenants may not be aware of. Information on these services should be included in online kiosk for new residential tenants and future employees of the commercial uses. These include:

511 Transit Trip Planner

Online transit trip planning services are available to the greater San Francisco Bay Area through 511.org. Users enter their starting and ending points, and either the desired starting or ending trip time. The service can build an itinerary that best suits the user's preferences for the fastest trip, fewest transfers, or least walking.

511 Mobile

Many popular features from 511.org can be accessed using smart phones or mobile devices. With 511 Mobile, commuters can: (1) receive real-time transit departure predictions, (2) plan a public transit trip, (3) check real-time traffic conditions on the live traffic map, and (4) get current driving times for the most popular routes in the Bay Area.

511 Carpool Calculator

The 511 Carpool Calculator is a 511-sponsored online calculator that determines the cost of commuting by driving alone. Users input commute details such as the number of miles traveled to and from work, vehicle mileage, fuel cost, parking costs, and bridge tolls. The tool then calculates solo commuting costs and vehicle CO2 emissions, as well as the potential savings by adding carpool partners.

511 RideMatch

The 511 RideMatch service provides an interactive, on-demand system that helps commuters find carpools, vanpools or bicycle partners. This free car and vanpool ride matching service helps commuters find others with similar routes and travel patterns with whom they may share a ride. Registered users are provided with a list of other commuters near their employment or residential ZIP code along with the closest cross street, email, phone number, and hours they are available to commute to and from work. Participants are then able to select and contact others with whom they wish to commute. The service also provides a list of existing carpools and vanpools in their residential area that may have vacancies. Ride matching assistance is also available through a number of peer-to-peer matching programs, such as Zimride, which utilize social networks to match commuters.

Dadnab

Dadnab.com enables Bay Area commuters to get transit directions by text message. Users send a text message with their origin, destination, and optional departure or arrival time and Dadnab replies with a detailed itinerary listing which buses or trains to take, stop locations, and departure times.



Unbundled Parking

The project will provide 100 percent unbundled parking for all residential spaces. Unbundled parking means separating the cost of parking from residential leases and allowing residents to choose whether or not to lease a parking space. With this approach those tenants without a vehicle would not be required to pay for parking that they do not want or need. This is the most equitable approach and would free up parking for those tenants that require a space and are willing to pay for it. The parking spaces will be priced to avoid tenants parking on the streets or in nearby parking lots. Unbundling residential parking costs from the cost of housing can reduce tenant vehicle ownership and parking demand and can be implemented on a month-to-month lease basis. With a lease, residents receive a monthly bill showing how much they are spending on a parking space and have the option to give up the space if they no longer need it.

Note that Policy TR-8.8 of the Envision San Jose 2040 General Plan calls for San Jose to "Promote use of unbundled private off-street parking associated with existing or new development, so that the sale or rental of a parking space is separated from the rental or sale price for a residential unit or for non-residential building square footage." In addition, Policy TR-10.1 states: "Explore development of a program... to require that parking spaces within new development in areas adjacent to transit and in all mixed-use projects be unbundled from rent or sale of the dwelling unit or building square footage."

Transit Subsidies

Subsidized transit passes are an extremely effective means of encouraging residents and employees to use transit rather than drive. Transit passes allow residents and employees to save money, as well as help them to avoid the stress of driving during commute periods. One way of doing this is to provide VTA SmartPasses to all residential tenants. SmartPasses will give tenants unlimited rides on VTA Bus, LRT and Express Bus service seven days a week. SmartPass is deeply discounted below the standard fares, making it an attractive low-cost benefit to residential communities.

Bicycle Programs

The project will provide adequate bicycle parking spaces for both the residential and commercial uses, per the City of San Jose Parking Code.

TDM Implementation and Monitoring

As previously stated, the primary purpose of the TDM plan is to reduce the proposed project's parking demand. Per Section 20.90.220 of the San Jose Code of Ordinances, monitoring progress would be necessary to ensure that the TDM measures are effective and continue to be successfully implemented.

The TDM plan would need to be re-evaluated annually for the life of the project. If it is determined that the parking reduction is not being achieved (i.e., the on-site parking garage reaches full capacity), additional TDM measures would need to be introduced to ensure that the parking demand is being addressed by the project without the burden being placed on outside entities.

Conclusions

The TDM measures to be implemented by the project include planning and design measures related to the attributes of the site location and on-site amenities. Such measures encourage walking, biking, and use of transit. The TDM plan includes maintaining a kiosk of trip-planning



resources, providing 100 percent unbundled parking for all residential spaces, providing VTA SmartPasses to residential tenants, and providing adequate on-site bicycle storage.

