Appendix F

Transportation Study

HEXAGON TRANSPORTATION CONSULTANTS, INC.

4146 Mitzi Drive
Residential Development

Transportation Analysis

Prepared for:

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Executive Summary

This report presents the results of the transportation analysis (TA) for the proposed residential homes at 4146 Mitzi Drive in the City of San Jose. The project proposes to construct a 40-unit apartment building and to convert a single-family residence into a multi-family building with 6 units. Thus, the project totals 46 dwelling units. The project would have a single driveway off Mitzi Drive leading to an underground parking garage serving all 46 units.

This study was conducted for the purpose of identifying the potential transportation impacts related to the proposed development. The transportation impacts of the project were evaluated following the standards and methodologies established in the City of San Jose's *Transportation Analysis Handbook.* Based on the City of San Jose's Transportation Analysis Policy and *Transportation Analysis Handbook*, the TA report for the project includes a CEQA transportation analysis and a local transportation analysis (LTA).

CEQA Transportation Impacts

Project Vehicle Miles Traveled (VMT) Analysis

The VMT generated by the project (8.52 VMT per capita) would be less than the threshold of 10.12 VMT per capita. Therefore, the project would not result in a significant transportation impact on VMT. Therefore, no mitigation measures are required to reduce VMT.

CEQA Cumulative Impacts

The project is consistent with the General Plan goals and policies for the following reasons:

- The project site is near bus stops on Saratoga Avenue and Williams Road and bicycle lanes on Williams Road.
- The project would increase the residential density in the project area.
- The project would provide bicycle parking.

Therefore, 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 Effects

Project Trip Generation

Vehicle trips that would be generated by the project were estimated using the trip generation rates published in the Institute of Transportation Engineers (ITE) *Trip Generation Manual*,10th Edition (2017), for Single-Family Detached Housing (Land Use Code 210) and Mid-Rise Multifamily Housing (Land Use Code 221).

The project is estimated to generate 209 daily vehicle trips, with 14 trips occurring during the AM peak hour and 17 trips occurring during the PM peak hour. Using the inbound/outbound splits contained in ITE's *Trip Generation Manual*, the project would produce 4 inbound and 10 outbound trips during the AM peak hour, and 10 inbound and 7 outbound trips during the PM peak hour.

Intersection Traffic Operations

The results of the analysis show that the signalized intersection of Saratoga Avenue and Williams Road intersection currently operates at an acceptable level of service (LOS D or better) during the AM and PM peak hour, which meets the San Jose standard (see Table ES-1).

The results of the analysis show that the left turn from Piper Drive to Saratoga Avenue operates at LOS F during the AM peak hour. However, the City of San Jose does not have a level of service standard for unsignalized intersections. The traffic count showed that there were only 17 vehicles making the left-turn movement during the AM peak hour. Field observations showed that there was a maximum queue of 2 vehicles making the left turn from Piper Drive onto Saratoga Avenue during the AM peak hour.

Other Transportation Issues

The proposed site plan shows adequate site access and on-site circulation. The project would enhance pedestrian circulation by providing sidewalks along its frontage, which are lacking today. The existing transit services and bicycle facilities are sufficient to serve the project.

Hexagon has the following recommendations resulting from the parking, site access, and circulation analysis.

- The project site plan should be revised to meet the City's minimum requirement of 26 feet for a two-way driveway.
- Since the stalls on the dead-end aisle are likely to be used by guests, turnaround space should be provided. This could be accomplished by removing one of the parking stalls.
- The bicycle parking should be moved to the ground floor.
- Landscaping near the driveway should be kept below three feet to maintain sight distance.

Table ES 1
Intersection Level of Service Summary

#	Intersection	Peak Hour	Count Date	Existing Conditions		Background Conditions						Cumulative Conditions	
						No Project		with Project				No Project	
				Delay (sec)[1]	LOS	Delay (sec)[1]	LOS	Delay (sec)[1]	LOS	Incr. in Critical Delay (sec)	Incr. in Critical V/C	Delay (sec)[1]	LOS
1	Ranchero Way and Williams Road (unsignalized)	AM	11/6/18	23.6	C	23.6	C	23.7	C	0.1	0.001	23.6	C
		PM	11/6/18	21.6	C	21.6	C	21.7	C	0.0	0.002	21.6	C
2	Saratoga Avenue and Piper Drive (unsignalized)	AM	11/6/18	**>90**	**F**	**>90**	**F**	**>90**	**F**	**0.2**	**0.038**	**>90**	**F**
		PM	11/6/18	41.3	E	41.3	E	41.4	E	0.1	0.024	43.3	E
3	Saratoga Avenue and Mitzi Drive (unsignalized)	AM	11/6/18	15.1	B	15.1	B	15.1	B	0.0	0.000	15.1	B
		PM	11/6/18	11.7	B	11.7	B	11.7	B	0.0	0.000	11.8	B
4	Piper Drive and Mitzi Drive (unsignalized)	AM	11/6/18	8.7	A	8.7	A	8.8	A	0.4	0.003	8.7	A
		PM	11/6/18	8.6	A	8.6	A	8.7	A	0.2	0.000	8.6	A
5	Ranchero Way and Mitzi Drive (unsignalized)	AM	11/6/18	9.2	A	9.2	A	9.2	A	0.0	0.000	9.2	A
		PM	11/6/18	9.2	A	9.2	A	9.3	A	0.0	0.000	9.2	A
6	Saratoga Avenue and Williams Road	AM	11/6/18	36.9	D	37.0	D	37.0	D	0.0	0.001	36.9	D
		PM	11/6/18	41.1	D	40.5	D	40.5	D	0.1	0.002	40.4	D

Note:
[1] Delays based on worst approach delay for unsignalized intersections and average delay for signalized intersections.
Bold indicates a substandard level of service.

1. Introduction

This report presents the results of the transportation analysis conducted for the proposed residential development located at 4146 Mitzi Road in San Jose, California (see Figure 1). The proposed project would consist of 46 apartments comprising a 40-unit building and conversion of the existing single-family residence on the site into a multi-family building with 6 units (see Figure 2). The project proposes a single driveway on Mitzi Lane leading to an underground parking garage serving all 46 units. This study was conducted for the purpose of satisfying the requirements of the California Environmental Quality Act (CEQA) and the City of San Jose. The potential impacts of the project were evaluated in accordance with the standards set forth by the City of San Jose.

Scope of Study

This study was conducted for the purpose of identifying the potential transportation impacts related to the proposed development. The potential impacts of the project were evaluated in accordance with the standards set forth by the City of San Jose and the Santa Clara Valley Transportation Authority CMP. A County Congestion Management Program (CMP) analysis was not required because the project would generate fewer than 100 peak hour trips.

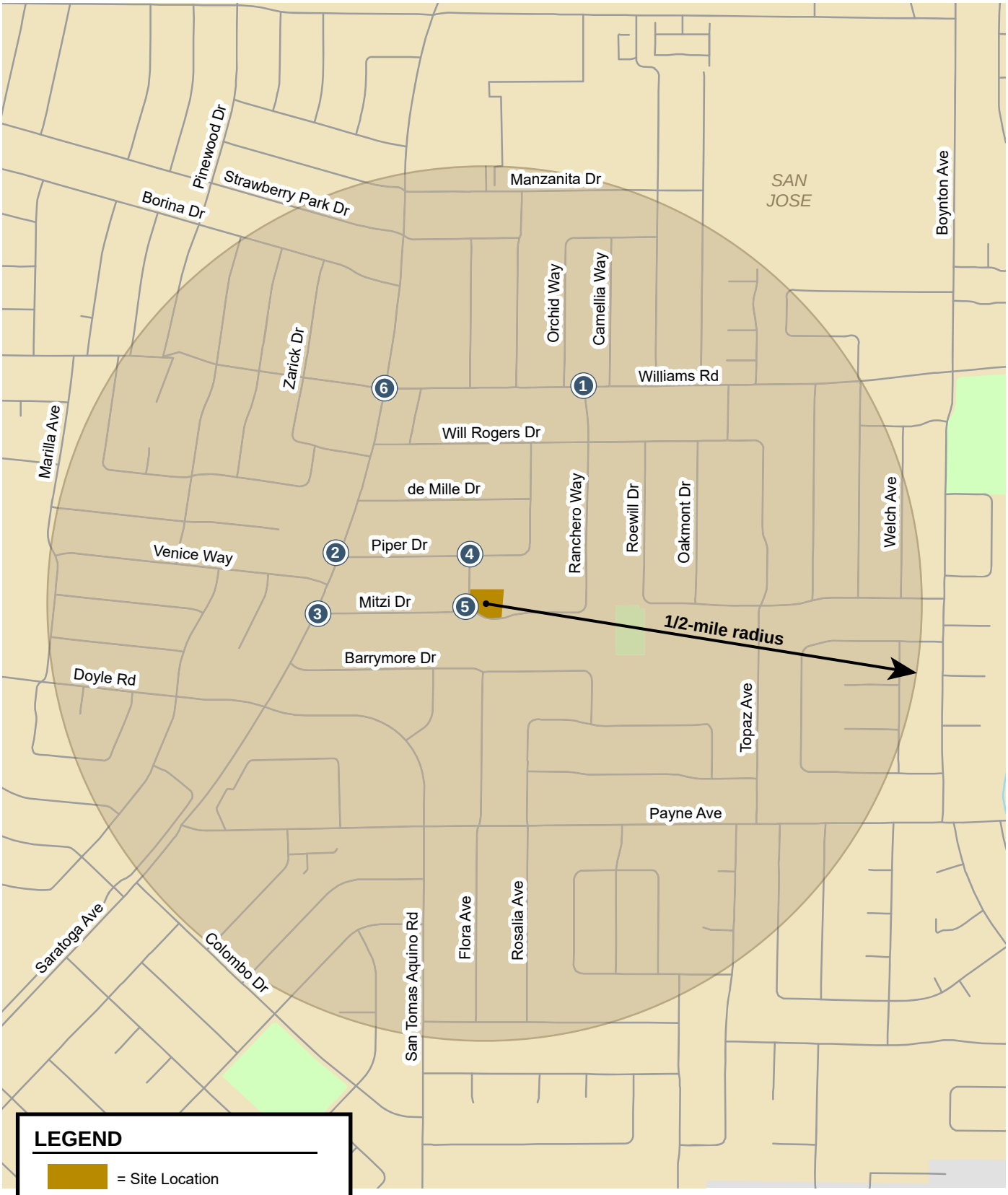


Figure 1
Site Location and Study Intersections

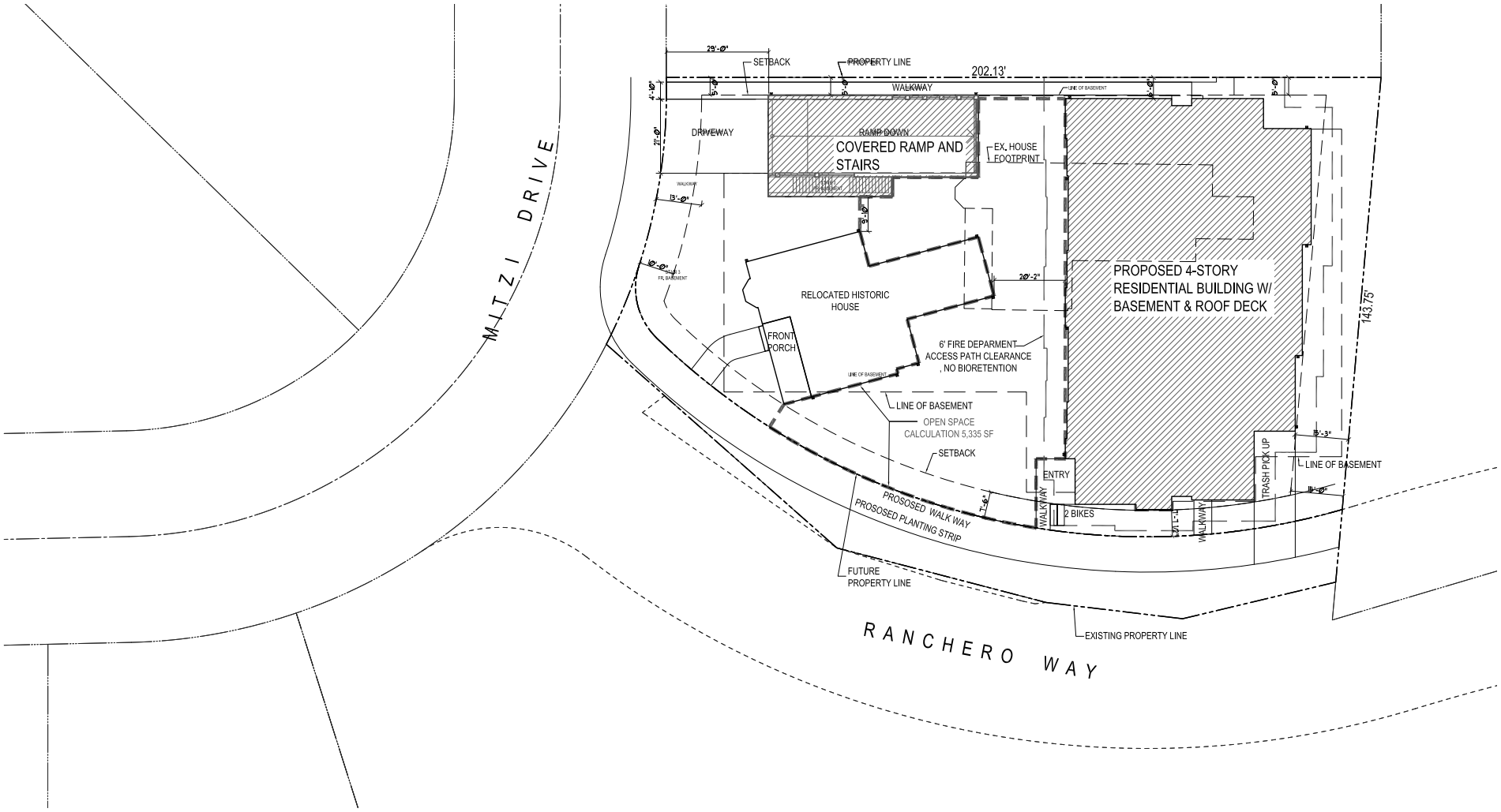


Figure 2
Site Plan

NORTH
Not to Scale

Transportation Policies

To align the City of San Jose's transportation analysis guidelines with State of California Senate Bill 743 (SB 743) and the City's goals as set forth in the Envision San Jose 2040 General Plan, the City of San Jose's adopted a new Transportation Analysis Policy (Council Policy 5-1) to replace the Transportation Level of Service Policy (Council Policy 5-3). The new policy establishes the thresholds for transportation impacts under California Environmental Quality Act (CEQA) based on vehicle miles traveled (VMT) instead of intersection level of service (LOS). The intent of this change is to shift the focus of transportation analysis under CEQA from vehicle delay and roadway auto capacity to a reduction in vehicle emissions, and the creation of robust multimodal networks that support integrated land uses. The new Transportation Analysis Policy took effect on March 29, 2018.

The new Transportation Analysis Policy aligns with the Envision San Jose 2040 General Plan which seeks to focus new development growth within Planned Growth Areas, bringing together office, residential, and service land uses to internalize trips and reduce VMT. VMT-based policies support dense, mixed-use, infill projects as established in the General Plan's Planned Growth Areas.
The Envision San Jose 2040 General Plan contains 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 includes an evaluation of VMT and potential impacts on transportation facilities in other jurisdictions including intersections in the City of San Jose.

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 the appropriate thresholds of significance based on the project location and type of development. When assessing a residential project, the project's VMT is divided by the number of residents expected to occupy the project to determine the VMT per capita. When assessing an office or industrial project, the project's VMT is divided by the number of employees.

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. Figures 3 and 4 show the current VMT levels estimated by the City for residents and workers, respectively, based on the locations of residences and jobs. Developments in the green-colored areas are estimated to have VMT levels that are below the thresholds of significance, while the pink-colored areas are estimated to have VMT levels that are above the thresholds of significance.

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

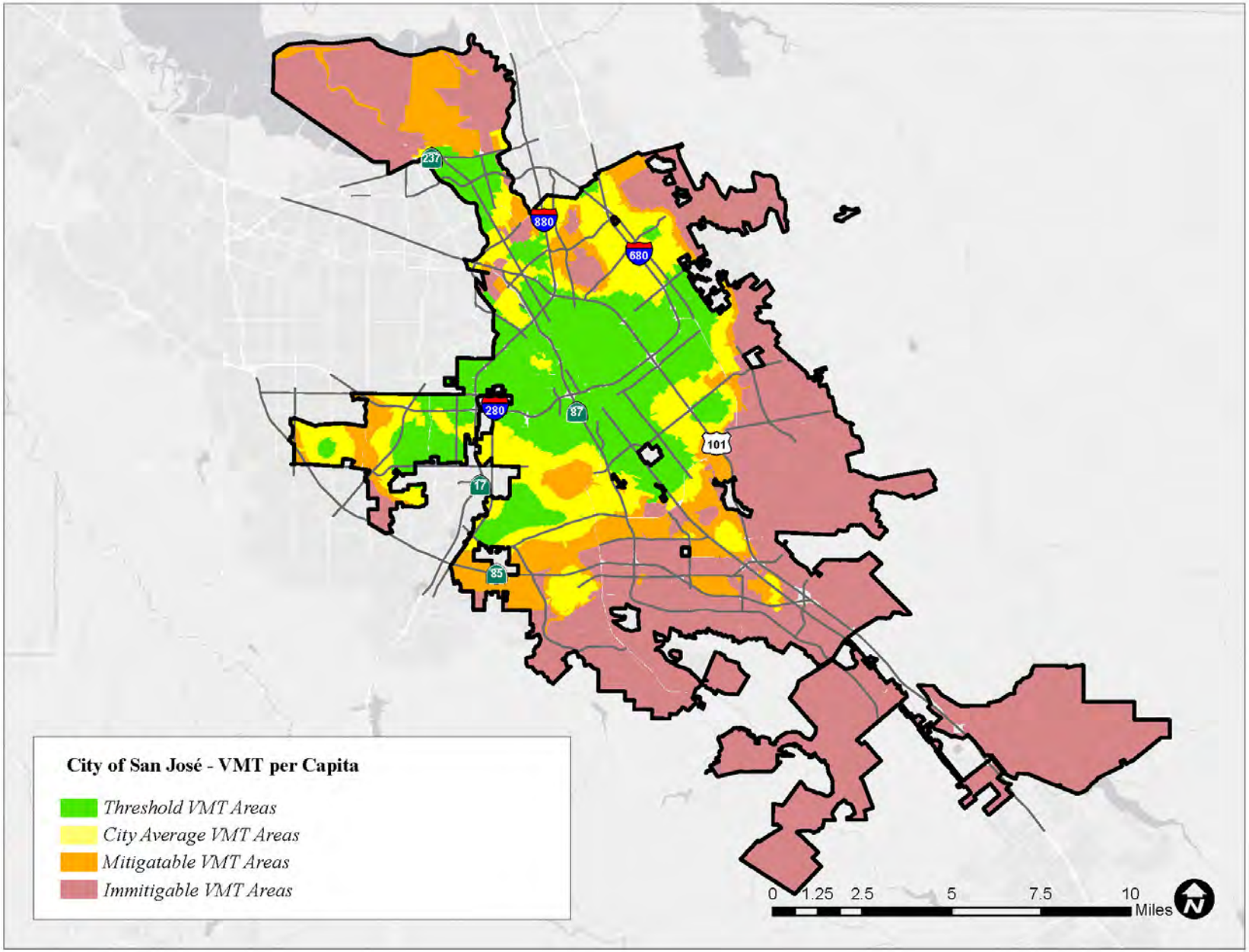
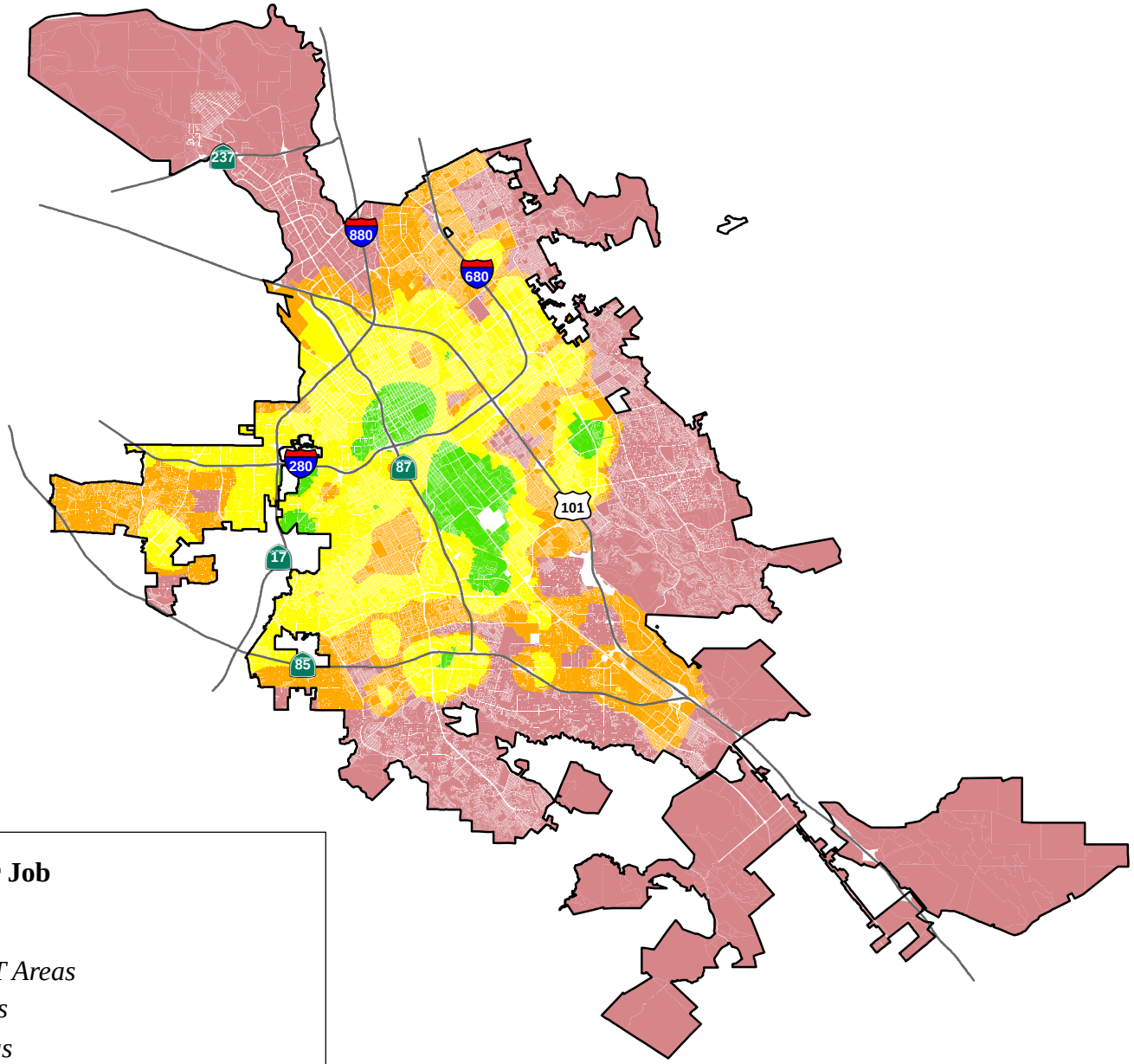


Figure 3
VMT Heat Map for Residents in San Jose

NORTH
Not to Scale



City of San José - VMT per Job

- *Threshold VMT Areas*
- *Regional Average VMT Areas*
- *Mitigatable VMT Areas*
- *Immitigable VMT Areas*

Figure 4
VMT Heat Map for Workers in San Jose

Screening for VMT Analysis

The *Transportation Analysis Handbook 2018* includes screening criteria for projects that are expected to result in less-than-significant VMT impacts. Projects that meet the screening criteria do not require a CEQA transportation analysis but may still be required to provide a Local Transportation Analysis (LTA).

The size of the proposed residential project does not qualify as a small infill project. Thus, the proposed project does not meet the screening criteria set forth in the *Transportation Analysis Handbook 2018*, and the project requires a detailed CEQA transportation analysis.

Local Transportation Analysis Scope

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

As part of the LTA, a project is required to conduct an intersection operations analysis for any signalized intersections within a half mile of the project and at any signalized intersections currently operating at LOS D or worse within one mile of the project. Unsignalized intersections were also analyzed to determine whether a traffic signal or other operational improvements would be warranted based on the peak-hour volume signal warrant (Warrant #3) described in the *2014 California Manual on Uniform Traffic Control Devices* (CA MUTCD). Therefore, the LTA analysis evaluates AM and PM peak-hour traffic operations conditions for the following intersections.

- Saratoga Avenue and Williams Road
- Ranchero Way and Williams Road (unsignalized)
- Saratoga Avenue and Piper Drive (unsignalized)
- Saratoga Avenue and Mitzi Drive (unsignalized)
- Piper Drive and Mitzi Drive (unsignalized)
- Ranchero Way and Mitzi Drive (unsignalized)

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 is expected to occur between 7:00 AM and 9:00 AM and the PM peak hour is expected to occur between 4:00 PM and 6:00 PM on a regular weekday. These are the peak commute hours during which most traffic congestion occurs on the roadways.

Intersection operations conditions were evaluated for the following scenarios:

- ***Existing Conditions.*** Existing traffic volumes at the study intersections were obtained from new traffic counts conducted in November 2018.
- ***Background Conditions*.** Background traffic volumes reflect traffic added by nearby approved projects that are not yet completed or occupied. The added traffic from approved but not yet completed developments was provided by the City of San Jose.
- ***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 plus project traffic volumes were estimated by adding to background traffic volumes the additional traffic generated by the project.

- ***Near-term Cumulative Conditions.*** Cumulative traffic volumes reflect projected traffic volumes projected to occur due to the approved development projects and other proposed but not yet approved (pending) development projects in the study area. Two proposed projects in the vicinity are as follows:
    - 700 Saratoga Avenue – A mixed-use residential development that includes 300 apartment units and 17,800 square feet (s.f.) of retail space.
    - 1777 Saratoga Avenue – A mixed-use project consisting of a 200-unit residential care facility for the elderly and a 35,000 square foot (s.f.) medical office building.

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.

VMT Analysis Methodology

Methodology

To determine whether a project would result in CEQA transportation impacts related to VMT, the City has developed the San Jose VMT Evaluation Tool (sketch tool) to streamline the analysis for residential, office, and industrial projects with local traffic. For larger projects with regional traffic, the City's Travel Demand Model can be used to determine project VMT. Because the proposed project is small and would generate local traffic, the sketch tool is used to estimate the project VMT and determine whether the project would result in a significant VMT impact.

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

The sketch 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 sketch 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.

Thresholds of Significance

Table 1 shows the thresholds of significance for development projects, as established in the Transportation Analysis Policy. The threshold of significance for the proposed project is based on the existing regional average VMT per capita for residential uses.

Table 1
Thresholds of Significance for Development Projects (March 2018)

Project Types	Significance Criteria	Current Level	Threshold
Residential Uses	Project VMT per capita exceeds existing citywide average VMT per capita minus 15 percent OR existing regional avearge 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 toal VMT.	Regional Total VMT	Net Increase
Public/Quasi-Public Uses	In accordance with most appropriate type(s) as determined by Public Works Director.	Apropriate levels listed above	Apropriate 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.	Apropriate levels listed above	Apropriate thresholds listed above
Chage of Use/ Additions to Existing Development	Evaluate the full site with the change of use or additions to existing development, and apply the threshold of significance for each project type included.	Apropriate levels listed above	Apropriate 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.	Apropriate levels listed above	Apropriate thresholds listed above

Source: City of San Jose, *2018 Transportation Analysis Handbook*, Table 2.

Intersection Operations Analysis Methodology

This section presents the methods used to determine the traffic operations conditions at the study intersections and the impacts of the project on intersection operations. It includes descriptions of the data requirements, the analysis methodologies, and the applicable level of service standards for identifying deficiencies.

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

Level of Service Standards and Analysis Methodologies

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

City of San Jose Signalized Intersections

The City of San Jose level of service methodology for signalized intersections is the 2000 *Highway Capacity Manual* (HCM) method. This method is applied using the TRAFFIX software. The 2000 HCM operations method evaluates signalized intersection operations on the basis of average control delay time for all vehicles at the intersection. Since TRAFFIX is also the CMP-designated intersection level of service methodology, the City of San Jose methodology employs the CMP default values for the analysis parameters. The City of San Jose level of service standard for signalized intersections is LOS D or better, whether or not the intersection is a CMP intersection. The correlation between average control delay and level of service is shown in Table 2.

City of San Jose Unsignalized Intersections

San Jose does not have a level of service standard for unsignalized intersections. The unsignalized study intersections were evaluated for operational issues. The unsignalized study intersection also were assessed to determine whether a traffic signal would be warranted based on the peak-hour volume signal warrant (Warrant #3) described in the *2014 California Manual on Uniform Traffic Control Devices* (CA MUTCD). This method provides an indication of whether traffic conditions and peak-hour traffic levels are, or would be, sufficient to justify installation of a traffic signal. Note that this is just one tool used to evaluate whether installation of a traffic signal would be justified. Intersections that meet the peak-hour warrant are subject to further analysis before determining that a traffic signal is necessary. Other types of traffic control devices, signage, or geometric changes may be preferable at unsignalized locations based on existing field conditions. The following unsignalized intersections were analyzed:

1. Ranchero Way and Williams Road
2. Saratoga Avenue and Piper Drive
3. Saratoga Avenue and Mitzi Drive
4. Piper Drive and Mitzi Drive
5. Ranchero Way and Mitzi Drive

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

Level of Service	Description	Average Control Delay Per Vehicle (Sec.)
A	Operations with very low delay occurring with favorable progression and/or short cycle lengths.	Up to 10.0
B	Operations with low delay occurring with good progression and/or short cycle lengths.	10.1 to 20.0
C	Operation 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	Operations with delays unacceptable to most drivers occurring due to over saturation, poor progression, or very long cycle lengths.	Greater than 80.0

Source: Transportation Research Board,*2000 Highway Capacity Manual*, (Washington, D.C., 2000)

Intersection Vehicle Queuing Analysis

For selected high-demand movements at the study intersections, the estimated maximum vehicle queues were compared to the existing or planned storage capacity. 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 calculated 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 per signal cycle for a particular movement; (2) the estimated maximum number of vehicles in the queue is translated into a queue length, assuming 25 feet per vehicle; and (3) the estimated maximum queue length is compared to the existing or planned available storage capacity for the movement.

For signalized intersections, the 95th percentile queue length value indicates that during the peak hour, a queue of this length or less would occur on 95 percent of the signal cycles. Or, a queue length larger than the 95th percentile queue would only occur on 5 percent of the signal cycles (about 3 cycles during

the peak hour for a signal with a 60-second cycle length). Therefore, left-turn pocket storage designs based on the 95th percentile queue length would ensure that storage space would be exceeded only 5 percent of the time for a signalized movement. Vehicle queuing at unsignalized intersections is evaluated based on the delay experienced at the specific study turn movement.

Adverse Intersection Operations Effects

The criteria used to determine intersection operations effects on signalized intersections are based on City of San Jose Level of Service standards.

The project is said to create a deficiency at a signalized intersection in the City of San Jose if for either peak hour:

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

An exception to rule #2 above applies when the addition of project trips reduces the amount of average delay for critical movements (i.e., the change in average delay for critical movements is negative). In this case, a deficiency is identified if there is an increase in the critical V/C value by .01 or more.

Report Organization

This report has a total of five chapters. Chapter 2 describes existing transportation conditions including VMT of the existing land uses in the proximity of the project, the existing roadway network, transit service, bicycle and pedestrian facilities. Chapter 3 describes the CEQA transportation analysis, including the project VMT and cumulative transportation analysis. Chapter 4 describes the local transportation analysis including the method by which project traffic is estimated, intersection operations analysis for background plus project conditions, 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 Conditions

This chapter describes the existing conditions for transportation facilities in the vicinity of the site, including the roadway network, transit service, pedestrian and bicycle facilities, and the existing levels of service of the key intersections in the study area.

VMT of Existing Land Uses

To determine whether a project would result in CEQA transportation impacts related to VMT, the City has developed the San Jose VMT Evaluation Tool (sketch tool) to streamline the analysis for residential, office, and industrial projects.

Based on the sketch tool and the project's APN, the existing VMT for residential uses in the project vicinity is 8.52 per capita. As shown in Table 1, the current citywide average VMT for residential use is 11.91 per capita. Therefore, the VMT levels of existing uses in the project vicinity are less than the average VMT levels. Figure 5 shows the heat map of the project site. Appendix A presents the sketch tool summary report for the project.

Existing Roadway Network

Local roadways in the vicinity of the site include Saratoga Avenue, Mitzi Drive, Ranchero Way, Williams Road, and Piper Drive. These roadways are described below.

Saratoga Avenue is a north-south arterial roadway that extends between Saratoga-Sunnyvale Road/Los Gatos-Saratoga Road to the south and Fallon Avenue to the north. Saratoga Avenue has a posted speed limit of 40 mph and is six lanes wide in the project vicinity.

Mitzi Drive is a local roadway that extends east-west between Saratoga Drive and Ranchero Way and bends north-south between Ranchero Way and Piper Drive. Mitzi Drive has a posted speed limit of 25 mph and is two lanes wide. Mitzi Drive generally has sidewalks on both sides of the street, but discontinuous sidewalks exist on one side of Mitzi Drive near the project site.

Ranchero Way is a local roadway that extends between Mitzi Drive and Williams Road. Ranchero Way has a posted speed limit of 25 mph and is two lanes wide. Ranchero Way runs east-west and then runs north-south at a 90-degree bend approximately 700 feet east of Mitzi Drive. Ranchero Way has a constrained width along the project frontage, and parking is not allowed. Also, sidewalks do not exist along the project frontage.

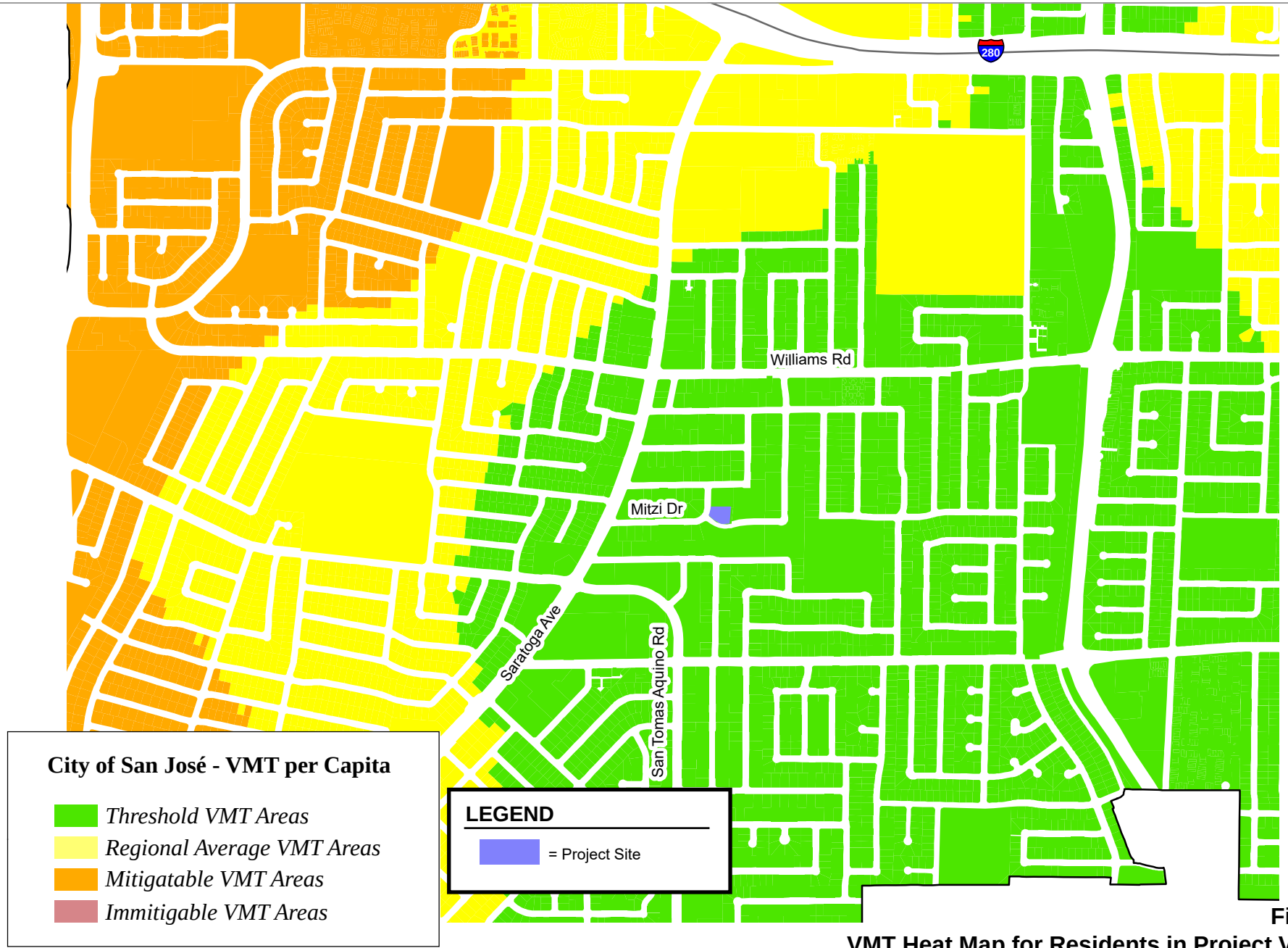


Figure 5
VMT Heat Map for Residents in Project Vicinity

Williams Road is an arterial roadway that extends between Moorpark Avenue to the west and Daniel Way to the east. Williams Road has a posted speed limit of 35 mph and is two lanes wide with a two-way left-turn lane in the project vicinity. In the vicinity of the project site, Williams Road provides bike lanes in both directions and has sidewalks and on-street parking allowed on both sides of the street.

Piper Drive is a local roadway that extends between Saratoga Avenue to the west and Leslie Drive to the east. Piper Drive has a posted speed limit of 25 mph and is two lanes wide. There are sidewalks and on-street parking on both sides of the street.

Existing Pedestrian and Bicycle Facilities

Pedestrian facilities consist of sidewalks, crosswalks, and pedestrian signals at signalized intersections. In the project vicinity, sidewalks exist along all nearby streets except along the project frontage. Marked crosswalks with pedestrian signal heads and push buttons are provided at the signalized intersection of Saratoga Avenue and Williams Road. Overall, the existing network of sidewalks and crosswalks in the immediate vicinity of the project site has good connectivity and provides pedestrians with safe routes to other points of interest in the study area, including nearby bus stops on Saratoga Avenue and Williams Road.

In the vicinity of the project, bike lanes (Class II Bikeway) exist on Williams Road from Moorpark Avenue to Daniel Way.

Existing Transit Service

Transit service to the study area is provided by the Santa Clara Valley Transportation Authority (VTA). This is described below.

Local Route 25 provides service between De Anza College and the Alum Rock Transit Center via Valley Medical Center. Route 25 operates along Williams Road in the project study area, with 20-minute headways during the weekday peak commute hours and 30-minute headways during most of the days on weekends. The closest bus stop is located on Williams Road near Saratoga Avenue.

Local Route 57 provides service between West Valley College and Great America. Route 57 operates along Saratoga Avenue in the project study area, with 30-minute headways during the weekday peak commute hours and weekends. The closest bus stop is located on Saratoga Avenue near Mitzi Drive.

Local Route 58 provides service between West Valley College and Alviso. Route 58 operates along Saratoga Avenue in the project study area, with 30-minute headways during the weekday peak commute hours. The closest bus stop is located on Saratoga Avenue near Mitzi Drive.

Existing Intersection Lane Configurations

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

Existing Traffic Volumes

Existing AM and PM peak hour traffic volumes for the six study intersections were obtained from new manual turning-movement counts conducted in November 2018. The existing peak-hour intersection

volumes are shown in Figure 7. Intersection turning-movement counts conducted for this analysis are presented in Appendix B.

Existing Intersection Traffic Operations

Intersection traffic operations were evaluated against City of San Jose standards. The results of the intersection level of service analysis under existing conditions are summarized in Table 3.

The results of the analysis show that the Saratoga Avenue and Williams Road intersection operates at an acceptable level of service (LOS D or better) during the AM and PM peak hour.

The results of the analysis show that the left turn from Piper Drive to Saratoga Avenue operates at LOS F during the AM peak hour. However, the City of San Jose does not have a level of service standard for unsignalized intersections. The traffic counts showed that there were only 17 vehicles making the left-turn movement during the AM peak hour. Field observations showed a maximum queue of 2 vehicles making the left turn from Piper Drive onto Saratoga Avenue during the AM peak hour.

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

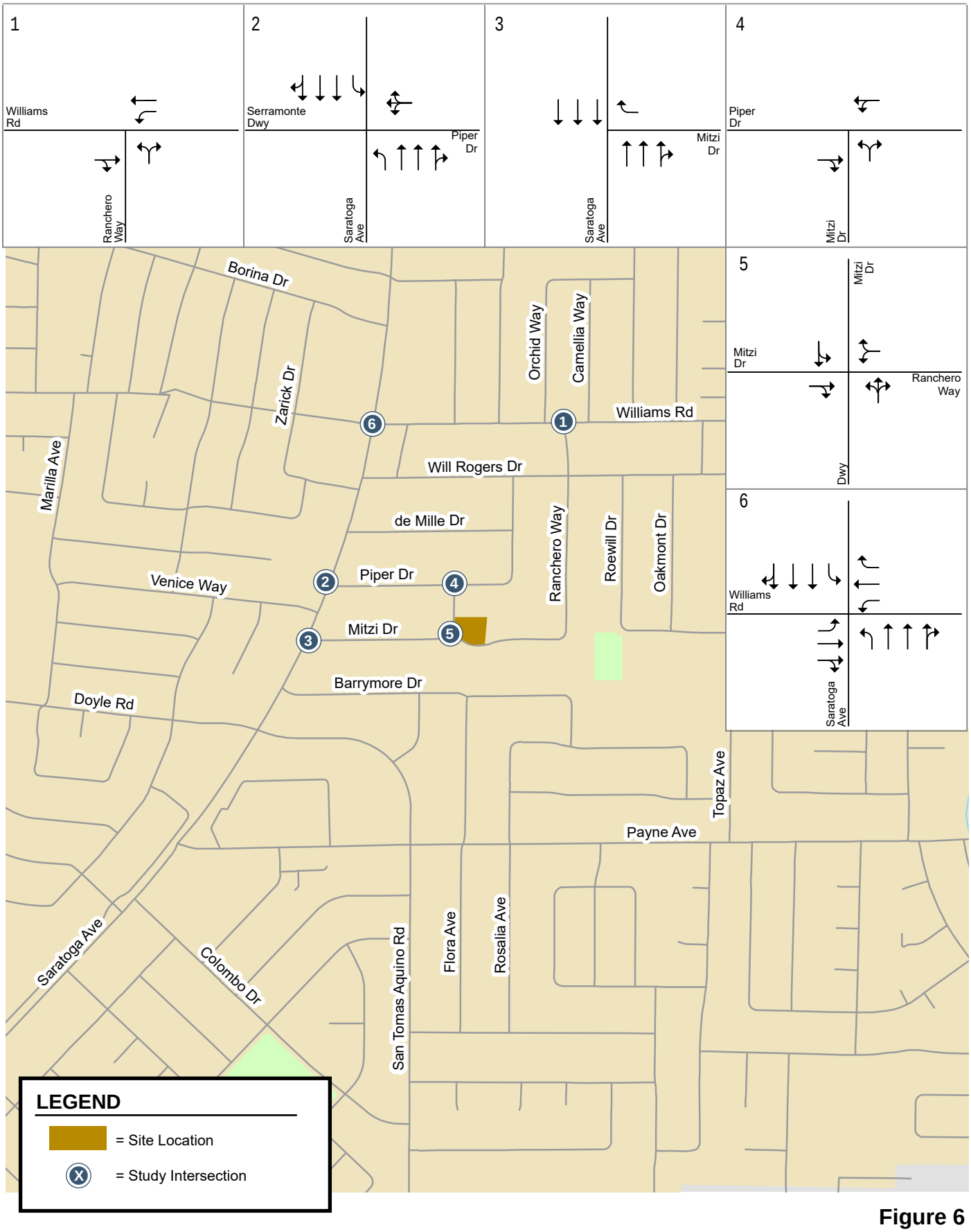


Figure 6
Existing Lane Configurations

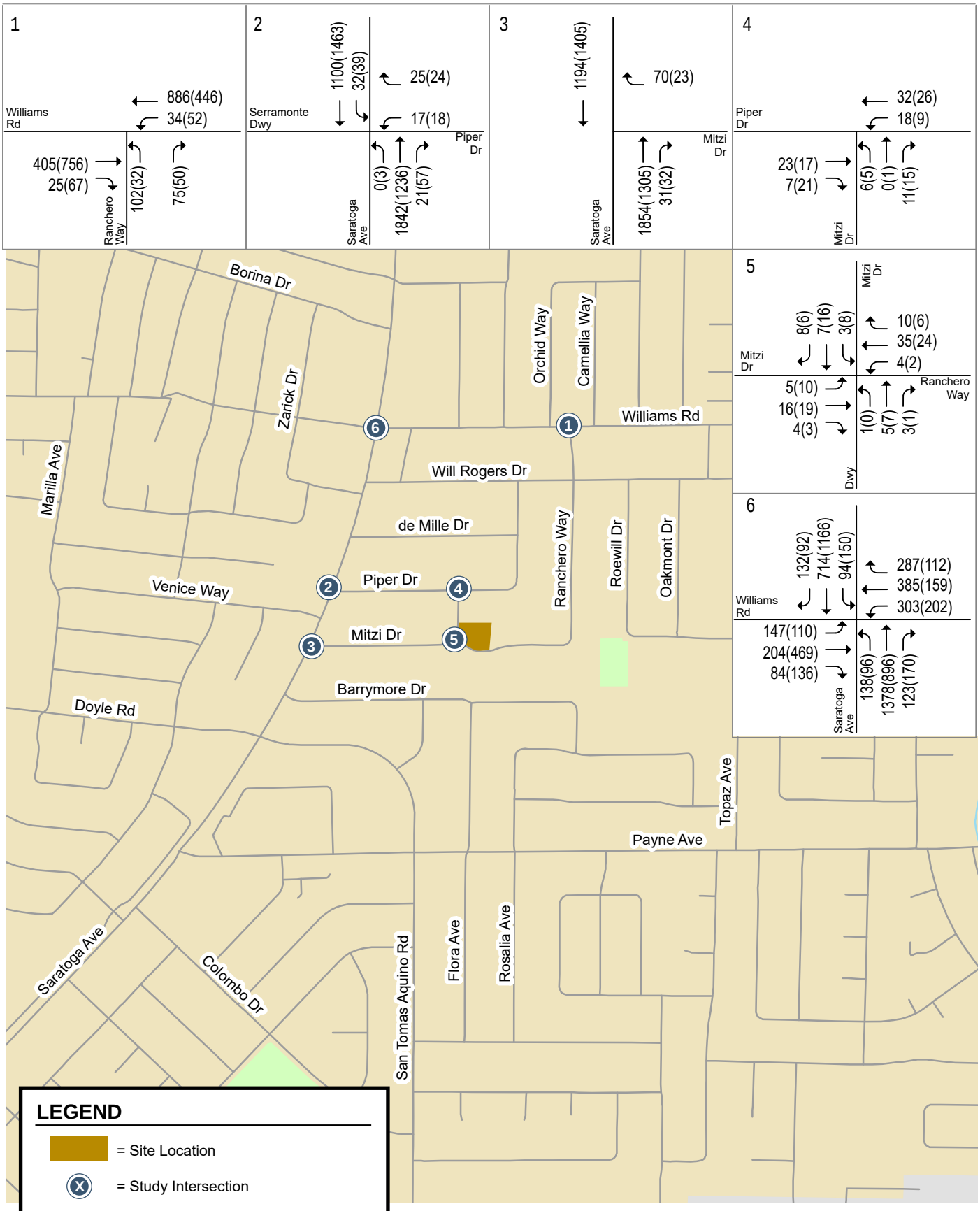


Figure 7
Existing Traffic Volumes

Table 3
Existing Intersection Levels of Service

Study Number	Intersection	Peak Hour	Count Date	Existing Conditions Delay (sec)[1]	Existing Conditions LOS
1	Ranchero Way and Williams Road (unsignalized)	AM	11/06/18	23.6	C
		PM	11/06/18	21.6	C
2	Saratoga Avenue and Piper Drive (unsignalized)	AM	11/06/18	**>90**	**F**
		PM	11/06/18	41.3	E
3	Saratoga Avenue and Mitzi Drive (unsignalized)	AM	11/06/18	15.1	B
		PM	11/06/18	11.7	B
4	Piper Drive and Mitzi Drive (unsignalized)	AM	11/06/18	8.7	A
		PM	11/06/18	8.6	A
5	Ranchero Way and Mitzi Drive (unsignalized)	AM	11/06/18	9.2	A
		PM	11/06/18	9.2	A
6	Saratoga Avenue and Williams Road	AM	11/06/18	36.9	D
		PM	11/06/18	41.1	D

Note:
1 Delays based on worst approach delay for unsignalized intersections and average delay for signalized intersections.
Bold indicates a substandard level of service.

Observed Existing Traffic Conditions

Traffic conditions were observed in the field 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 level of service, and (2) to identify any locations where the level of service analysis does not accurately reflect actual existing traffic conditions. AM and PM field observations conducted in October 2018 revealed that overall the study intersections operate well, and the level of service calculations accurately reflect existing conditions. However, operational issues were observed during the commute peak hours as described below.

Saratoga Avenue & Williams Road

During the AM peak hour, traffic in the westbound through direction spills back to Desert Isle Drive, approximately 730 feet east of Saratoga Avenue. Westbound through traffic requires multiple cycles to cross the intersection. The westbound left turn traffic also spills back to the next intersection, Larson Way, which is approximately 150 feet east of Saratoga Avenue. However, the westbound left turn queue does clear with each signal cycle.

During the PM peak hour, traffic in the eastbound through direction occasionally requires multiple cycles to cross the intersection. These conditions are typical of LOS D operations.

3. CEQA Transportation Analysis

This chapter describes the CEQA transportation analysis, including the project VMT analysis and cumulative transportation analysis.

Project-Level VMT Analysis

The project-level impact analysis under CEQA uses the VMT metric to evaluate a project's transportation impacts by comparing against the VMT thresholds of significance as established in the Transportation Analysis Policy. The San Jose VMT Evaluation Tool (sketch tool) is used to estimate the project VMT, based on the project location (APN), type of development, project description, and proposed trip reduction measures, if any. The threshold of significance for residential uses (see Table 1) is used for the VMT analysis. The VMT threshold is 10.12 VMT per resident, which is a 15% reduction from the existing citywide average VMT level.

The project VMT estimated by the sketch tool is 8.52 per capita. The project VMT would not exceed the threshold of 10.12 VMT per capita. Therefore, the project's VMT impact is considered less than significant. Appendix A presents the sketch tool summary report for the project.

Cumulative Impact Analysis

Projects must demonstrate consistency with the Envision San Jose 2040 General Plan to address cumulative impacts. Consistency with the City's General Plan is based on the project's density, design, and conformance to the General Plan goals and policies. The project is consistent with the General Plan goals and policies for the following reasons:

- The project site is near bus stops on Saratoga Avenue and Williams Road and is near bicycle lanes on Williams Road.
- The project would increase the residential density in the project area.
- The project would provide bicycle parking.

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

4.
Local Transportation Analysis

This chapter describes the local transportation analysis including the method by which project traffic is estimated, intersection operations analysis for background plus project conditions, 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.

Intersection Operations Analysis

The San Jose Intersection analysis methodology and standards are described in Chapter 1.

Project Trip Estimates

Trip Generation

Through empirical research, data have been collected that quantify the amount of traffic produced by many different types of land use. There are standard trip generation rates that can be applied to help predict the future traffic increases that would result from a new development. The magnitude of traffic added to the roadway system by a particular development is estimated by multiplying the applicable trip generation rates by the size of the development. Trip generation rates for new development proposed within the City of San Jose typically are estimated using the trip rates published in the Institute of Transportation Engineers' (ITE) *Trip Generation Manual*, 10th Edition. The ITE trip generation rates for Single-Family Detached Housing (Land Use 210) and Mid-Rise Multi-Family Housing (Land Use 221) were utilized for the proposed project.

Table 4 shows that, before reductions, the project would generate 249 gross daily vehicle trips, with 16 gross trips occurring during the AM peak hour and 21 gross trips occurring during the PM peak hour.

Trip Adjustments and 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 trip generation described above. Based on the 2018 San Jose guidelines, the project qualifies for a location-based adjustment. The location-based adjustment reflects the project's vehicle mode share based on the place type in which the project is located per the San Jose Travel Demand Model. The project's place type was obtained from the *San Jose VMT Evaluation Tool.* Based on the Tool, the project site is located within a designated suburban with multifamily homes area. Therefore, the baseline project trips were adjusted to reflect a suburban multifamily homes mode share. According to the handbook Table 6, residential developments within suburban with multifamily homes areas have a

vehicle mode share of 88 percent. Thus, a 12 percent reduction was applied to the multifamily housing trips generated by the proposed project.

According to the *Transportation Analysis Handbook*, the VMT reduction resulting from implementing the VMT reduction strategies in the sketch tool should be included as part of the trip generation estimates. A 0.5% reduction was applied based on the project-specific VMT reductions obtained from the City's VMT sketch tool.

The existing single-family home can be credited against the proposed multifamily housing development. The existing home's trip generation was based on the average rates published by ITE. Based on ITE rates, it is estimated that the existing home is generating 9 daily trips with 1 trip occurring in the AM peak hour and 1 trip occurring in the PM peak hour.

Net Project Trips

After applying the ITE trip rates, appropriate trip reductions, and existing site trip credits, the project would generate 209 new daily vehicle trips, with 14 new trips occurring during the AM peak hour and 17 new trips occurring during the PM peak hour. Using the inbound/outbound splits contained in ITE's *Trip Generation Manual*, the project would produce 4 inbound and 10 outbound trips during the AM peak hour, and 10 inbound and 7 outbound trips during the PM peak hour (See Table 4).

Table 4
Project Trip Generation Estimates

			Daily		AM Peak Hour				PM Peak Hour			
Land Use	**Size**	**Unit**	**Rate**	**Trips**	**Rate**	**In**	**Out**	**Total**	**Rate**	**In**	**Out**	**Total**
Proposed Uses												
Mutlifamily Housing[1]	46	DU	5.41	249	0.35	4	12	16	0.46	13	8	21
Location-based Adjustments (Suburban with Multifamily Homes - 12%) [2]				*(30)*		*0*	*(1)*	*(1)*		*(2)*	*(1)*	*(3)*
Project-Specific Adjustments (0.5%) [3]				*(1)*		*0*	*0*	*0*		*0*	*0*	*0*
Total				**218**		**4**	**11**	**15**		**11**	**7**	**18**
Existing Use												
Single Family Home[4]	1.0	DU	9.44	(9)	0.74	0	(1)	(1)	0.99	(1)	0	(1)
Net Project Trips				**209**		**4**	**10**	**14**		**10**	**7**	**17**

Notes:
Trip rates for multifamily uses are from the ITE Trip Generation Manual, 10th Edition, 2017.
1. Mid-Rise Multifamily Housing (Land Use 221), average rates expressed in trips per dwelling unit (DU) are used.
2. A 12% reduction was applied based on the location-based vehicle mode share percentage outputs (Table 6 of the City's Transportation Analysis Handbook, 2018) produced from the San Jose Travel Demand Model for the place type Suburban with Multifamily Homes.
3. A 0.5% reduction was applied based on the VMT reductions obtained from the City's VMT sketch tool.
4. Single-Family Detached Housing (Land Use 210), average rates expressed in trips per dwelling unit (DU) are used.

Trip Distribution and Assignment

The trip distribution patterns for the project were estimated based on existing travel patterns on the surrounding roadway system and the locations of complementary land uses (see Figure 8).
The peak-hour vehicle trips associated with the project were added to the roadway network in accordance with the trip distribution pattern, the roadway network connections, and the locations of project driveways (see Figure 9). All project trips would enter and exit the project site via a driveway on Mitzi Drive.

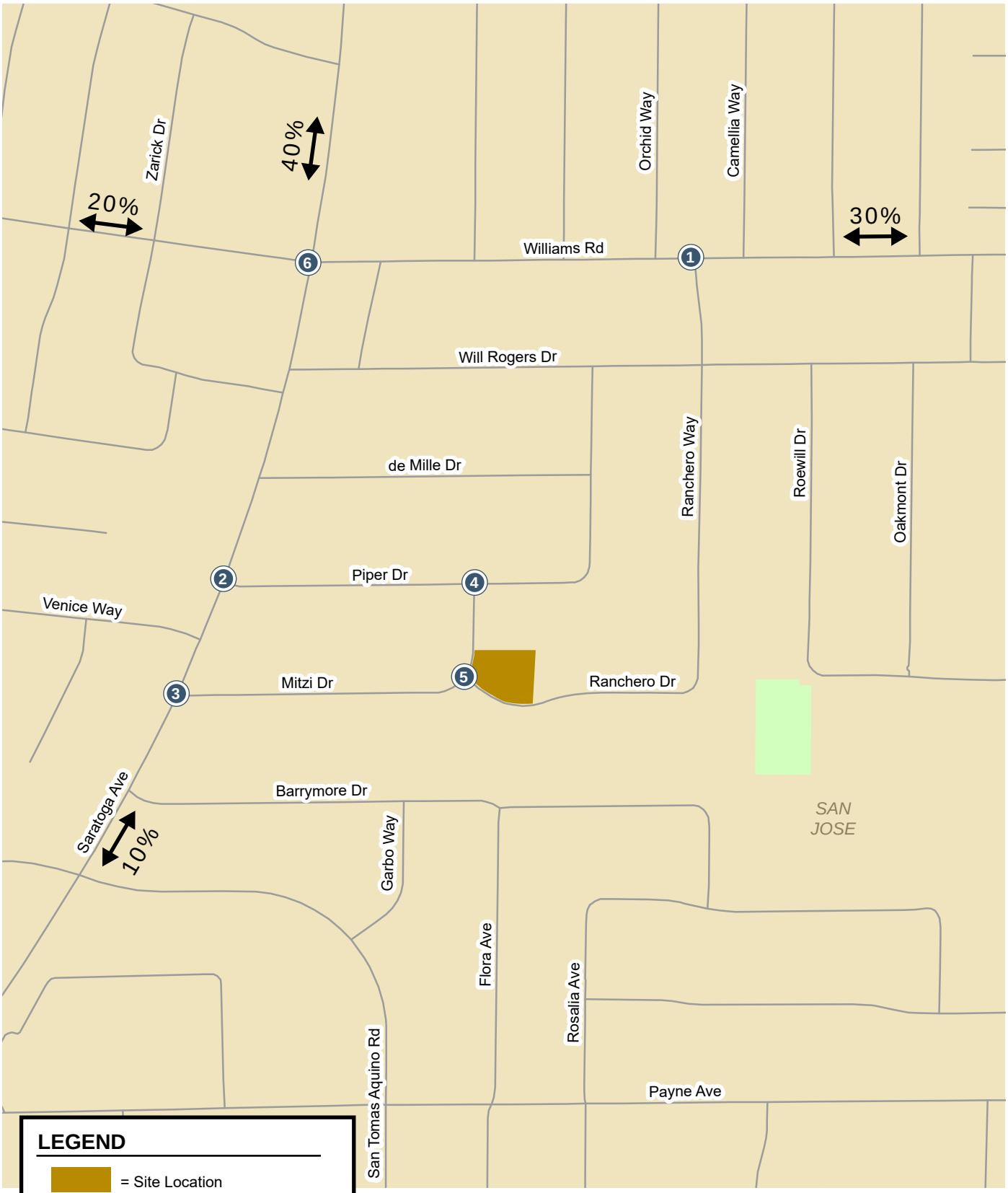


Figure 8
Project Trip Distribution

NORTH
Not to Scale

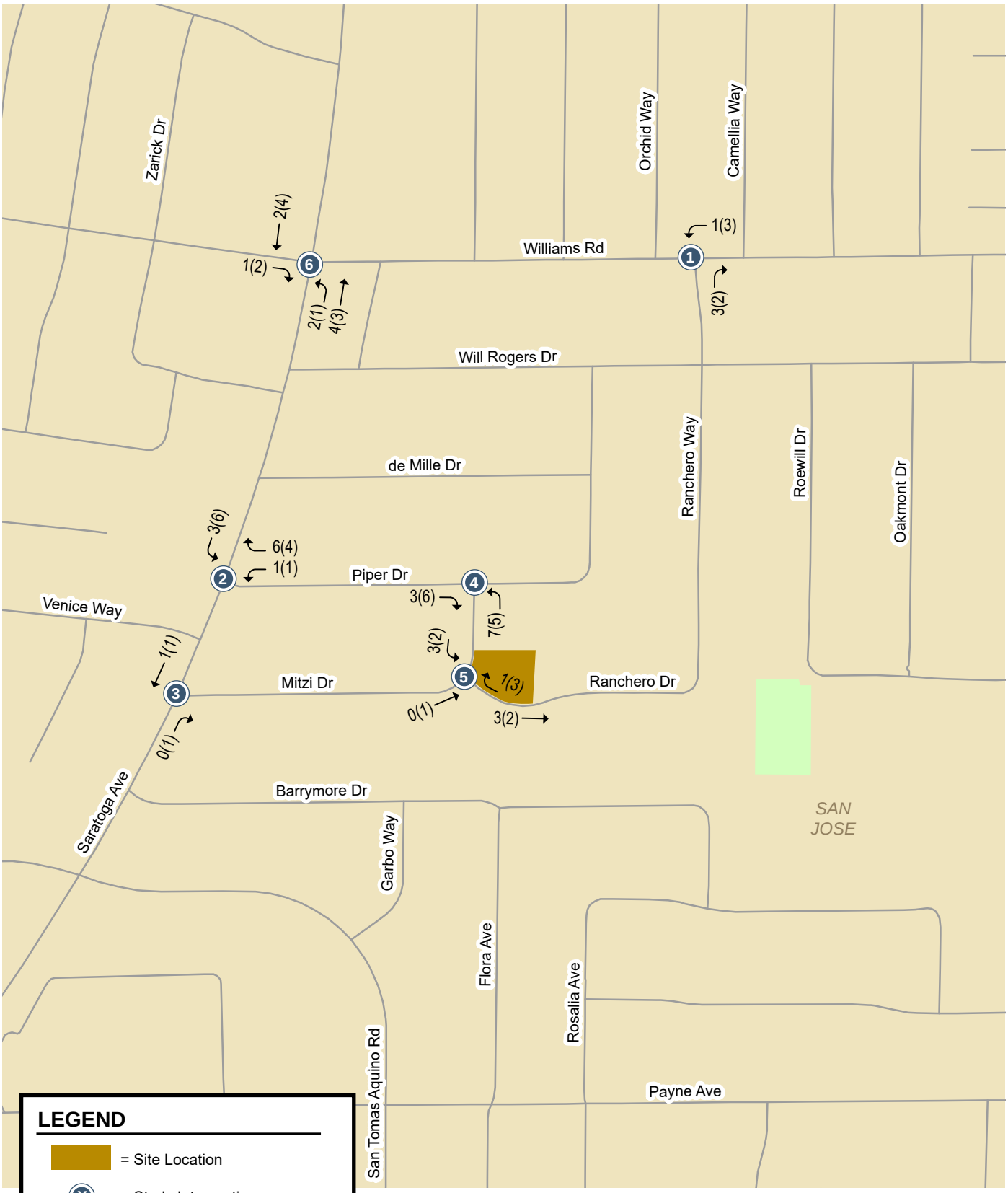


Figure 9
Project Trip Assignment

Roadway Network under Background and Project

The roadway network under background conditions and background plus project conditions would be the same as the existing roadway network because: 1) there are no approved projects in the area that would alter the existing roadway network, and 2) the project would not alter the existing roadway network.

Traffic Volumes under Background and Project Conditions

Background peak hour traffic volumes were estimated by adding to existing volumes the estimated traffic from approved but not yet constructed developments. The approved but not yet constructed trips are included in Appendix E. The added traffic from approved but not yet constructed developments was obtained from the City of San Jose. Background traffic volumes are shown on Figure 10.

Project trips were added to background traffic volumes to obtain background plus project traffic volumes (see Figure 11).

Traffic Volumes under Near-Term Cumulative Conditions

There are two proposed developments in the project vicinity that, if approved and built, would add traffic to some of the study intersections. These proposed developments are as follows:

- 700 Saratoga Avenue – A mixed-use residential development that includes 300 apartment units and 17,800 square feet (s.f.) of retail space.
- 1777 Saratoga Avenue – A mixed-use project consisting of a 200-unit residential care facility for the elderly and a 35,000 square foot (s.f.) medical office building.

The trips generated by these projects were estimated using the trip rates published in the Institute of Transportation Engineers' (ITE) *Trip Generation Manual*, 10th Edition, and added to the Background volumes. Near-term cumulative traffic volumes are shown on Figure 12.

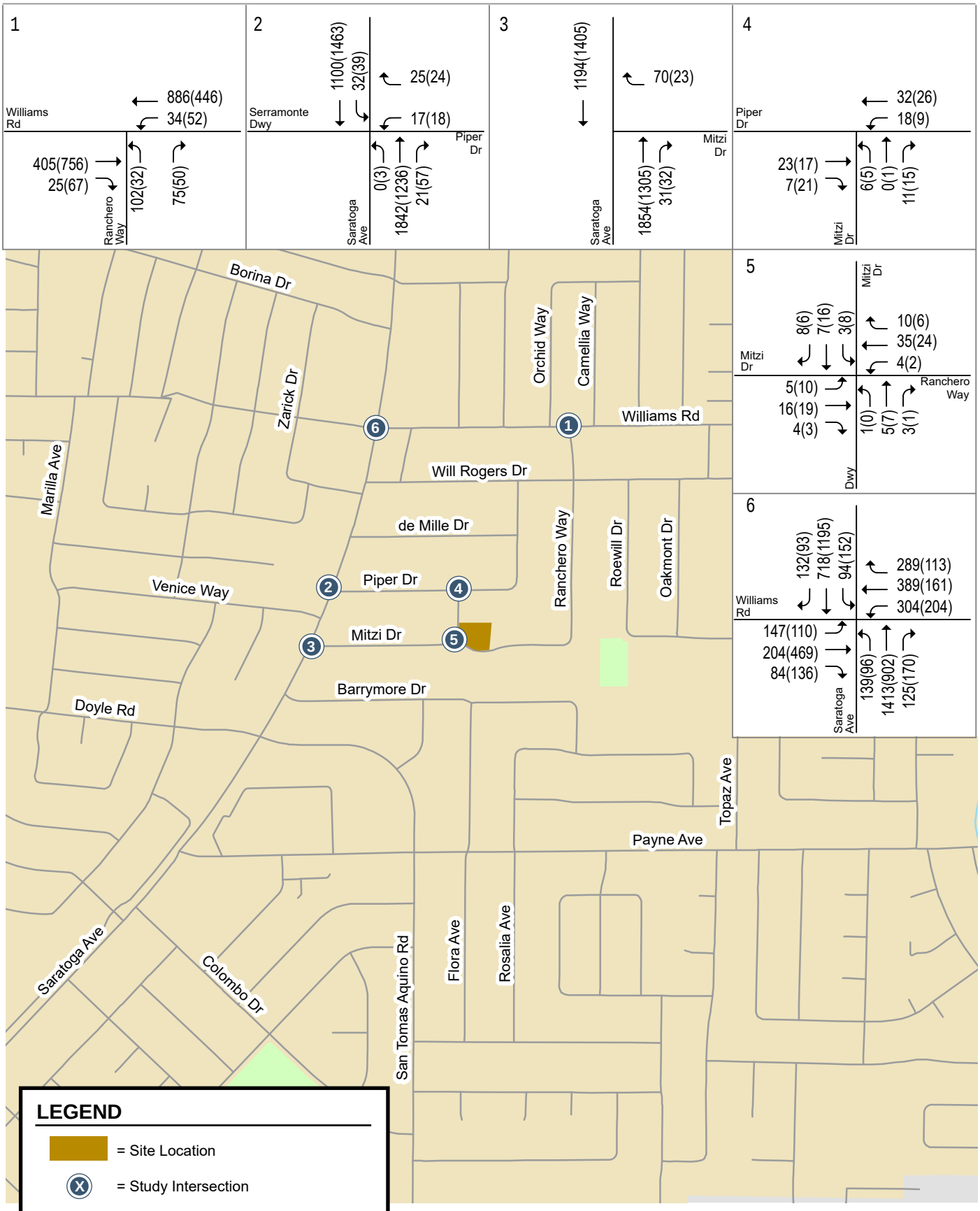


Figure 10
Background Traffic Volumes

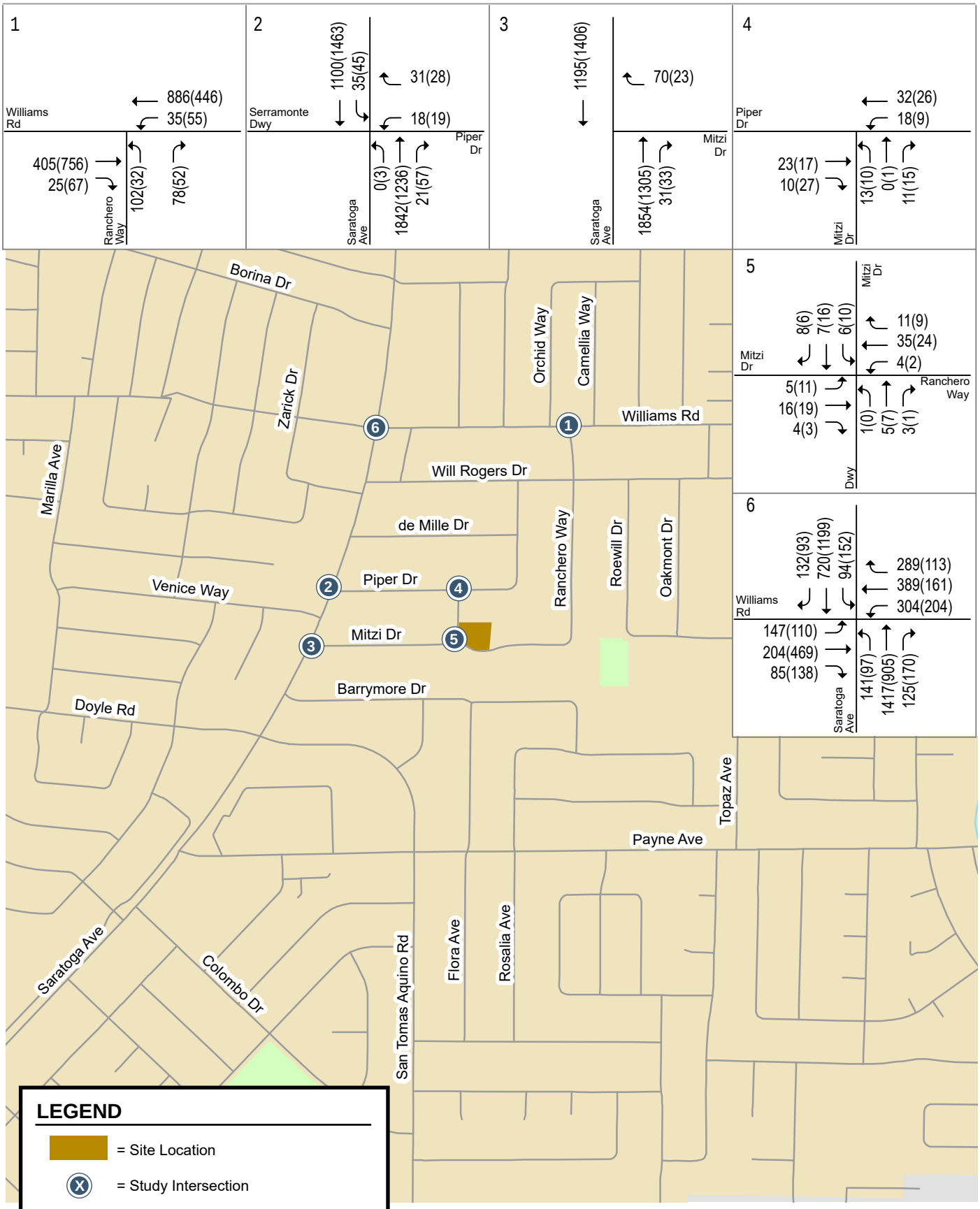


Figure 11
Background Plus Project Traffic Volumes

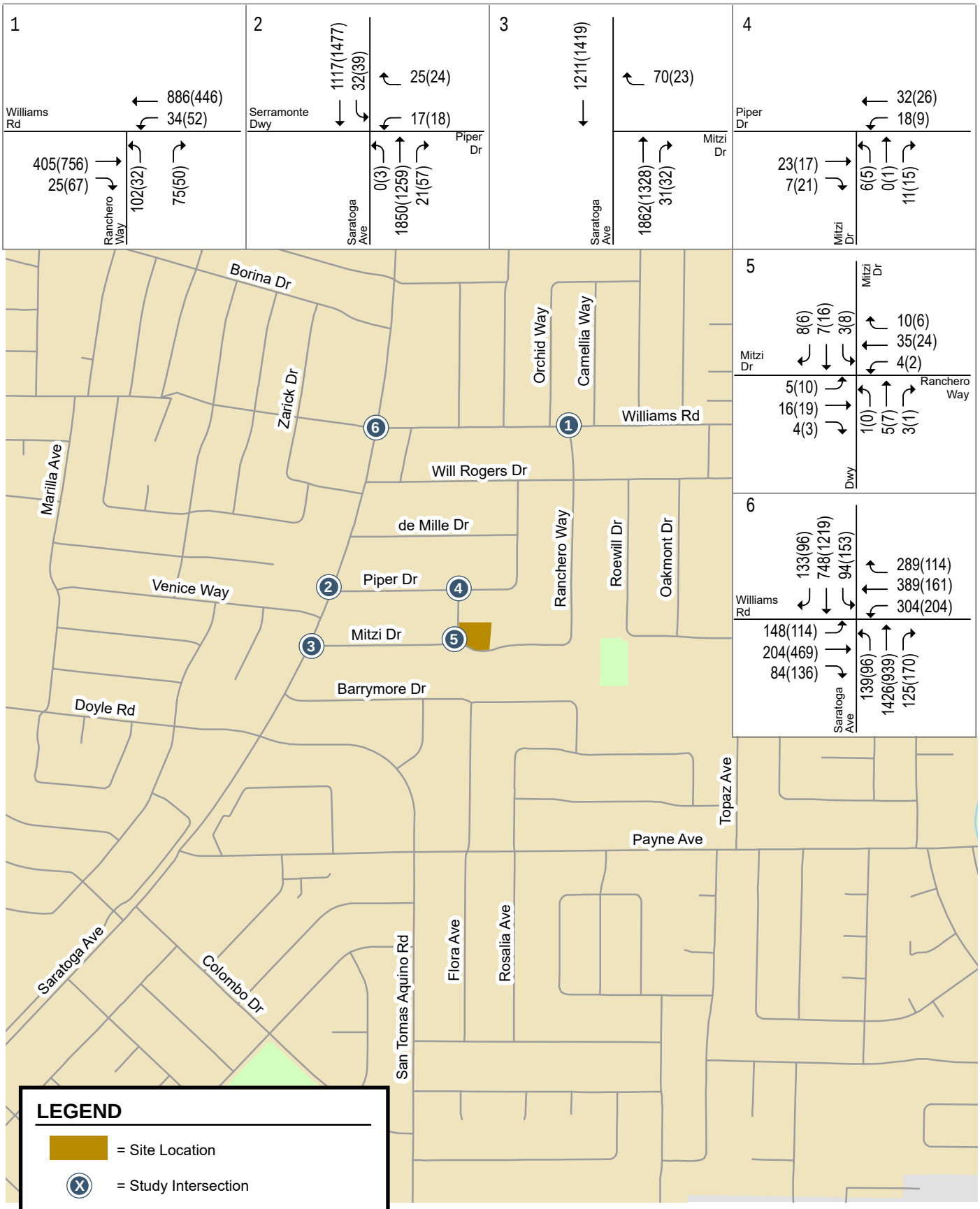


Figure 12
Cumulative Project Traffic Volumes

Intersection Traffic Operations under Background and Project Conditions

Intersection traffic operations at the study intersections were evaluated against the City of San Jose level of service standard (LOS D). The City of San Jose does not have a level of service standard for unsignalized intersections. The results of the intersection level of service analysis (see Table 5) show that the signalized intersection of Saratoga Avenue and Williams Road would operate at an acceptable level of service, LOS D or better, during the AM and PM peak hours under background and background plus project conditions.

The results of the intersection level of service analysis show that the left turn from Piper Drive to Saratoga Avenue operates at LOS F. Based on the traffic counts, there are only 17 vehicles that experience LOS F during the AM peak hour. Field observations showed a maximum queue of 2 vehicles making the left turn. It should be noted that vehicles can take an alternative route to travel southbound on Saratoga Avenue. Vehicles exiting the project site could use Ranchero Way to make a left turn onto Williams Road and then make a left turn at the signalized intersection of Saratoga Avenue and Williams Road.

Peak-Hour Signal Warrant Analysis

The Saratoga Avenue/Piper Drive intersection was evaluated on the basis of the Peak-Hour Volume Signal Warrant, (Warrant #3 – Part B) described in the California *Manual on Uniform Traffic Control Devices* (MUTCD), 2014 Edition. This method provides an indication whether peak-hour traffic volumes are, or would be, sufficient to justify installation of a traffic signal. Intersections that meet the peak hour warrant are subject to further analysis before determining that a traffic signal is necessary. Other options such as traffic control devices, signage, or geometric changes may be preferable based on existing field conditions.

The results of the signal warrant checks indicate that the AM and PM peak-hour volumes at the intersection would not meet the signal warrant under existing, background, background plus project, or cumulative conditions. The peak-hour signal warrant sheets are contained in Appendix D. Field observations showed that there were no difficulties for the left-turn traffic on Piper Drive to find gaps in traffic and make turns, and the vehicle queues and delay for the westbound traffic on Piper Drive were found to be acceptable.

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

Table 5
Background Plus Project Intersection Levels of Service

Study Number	Intersection	Peak Hour	Background Conditions					
			No Project		With Project			
			Delay (sec)[1]	LOS	Delay (sec)[1]	LOS	Incr. in Critical Delay (sec)	Incr. In Crit. V/C
1	Ranchero Way and Williams Road (unsignalized)	AM	23.6	C	23.7	C	0.1	0.001
		PM	21.6	C	21.7	C	0.0	0.002
2	Saratoga Avenue and Piper Drive (unsignalized)	AM	**>90**	**F**	**>90**	**F**	**0.2**	**0.038**
		PM	41.3	E	41.4	E	0.1	0.024
3	Saratoga Avenue and Mitzi Drive (unsignalized)	AM	15.1	C	15.1	C	0.0	0.000
		PM	11.7	B	11.7	B	0.0	0.000
4	Piper Drive and Mitzi Drive (unsignalized)	AM	8.7	A	8.8	A	0.4	0.003
		PM	8.6	A	8.7	A	0.2	0.000
5	Ranchero Way and Mitzi Drive (unsignalized)	AM	9.2	A	9.2	A	0.0	0.000
		PM	9.2	A	9.3	A	0.0	0.000
6	Saratoga Avenue and Williams Road	AM	37.0	D	37.0	D	0.0	0.001
		PM	40.5	D	40.5	D	0.1	0.002

Note:
[1] Delays based on worst approach delay for unsignalized intersections and average delay for signalized intersections.
Bold indicates a substandard level of service.

Intersection Traffic Operations under Cumulative Conditions

Intersection traffic operations at the study intersections were evaluated against the City of San Jose level of service standard (LOS D). The City of San Jose does not have a level of service standard for unsignalized intersections. The results of the intersection level of service analysis (see Table 6) show that the signalized intersection of Saratoga Avenue and Williams Road would operate at an acceptable level of service, LOS D or better, during the AM and PM peak hours under cumulative conditions.

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

Table 6
Cumulative Intersection Levels of Service

Study Number	Intersection	Peak Hour	Cumulative Conditions No Project Delay (sec)[1]	Cumulative Conditions No Project LOS
1	Ranchero Way and Williams Road (unsignalized)	AM	23.6	C
		PM	21.6	C
2	Saratoga Avenue and Piper Drive (unsignalized)	AM	**>90**	**F**
		PM	43.3	E
3	Saratoga Avenue and Mitzi Drive (unsignalized)	AM	15.1	C
		PM	11.8	B
4	Piper Drive and Mitzi Drive (unsignalized)	AM	8.7	A
		PM	8.6	A
5	Ranchero Way and Mitzi Drive (unsignalized)	AM	9.2	A
		PM	9.2	A
6	Saratoga Avenue and Williams Road	AM	36.9	D
		PM	40.4	D

Note:
[1] Delays based on worst approach delay for unsignalized intersections and average delay for signalized intersections.
Bold indicates a substandard level of service.

Vehicle Queuing Analysis

Based on where the project would add trips, vehicle queuing was analyzed for four left-turn pockets at the Saratoga Avenue/Williams Road intersection, the Saratoga Avenue/Piper Drive intersection, and the Ranchero Way/Williams Road intersection (see Table 7). The queuing analysis indicates that the four left-turn pockets operate adequately during the AM and PM peak hours for existing, background, background plus project, and cumulative conditions.

Table 7
Intersection Vehicle Queuing Analysis Results

Measurement	Saratoga Avenue and Williams Road NBL AM	Saratoga Avenue and Williams Road NBL PM	Ranchero Way and Williams Road WBL AM	Ranchero Way and Williams Road WBL PM	Saratoga Avenue and Piper Drive WBL AM	Saratoga Avenue and Piper Drive WBL PM	Saratoga Avenue and Piper Drive SBL AM	Saratoga Avenue and Piper Drive SBL PM
Existing								
Cycle/Delay [1] (sec)	120	130	8.3	9.7	93	93	17.1	12.1
Volume (vphpl)	138	96	34	52	17	18	32	39
Total 95th %. Queue (veh.)	8	7	1	1	2	2	1	1
Total 95th %. Queue (ft.) [2]	200	175	25	25	50	50	25	25
Total Storage	300	300	75	75	50	50	200	200
Adequate (Y/N)	Y	Y	Y	Y	Y	Y	Y	Y
Background								
Cycle/Delay [1] (sec)	120	130	8.3	9.7	93	93	17.1	12.1
Volume (vphpl)	139	96	34	52	17	18	32	39
Total 95th %. Queue (veh.)	8	7	1	1	2	2	1	1
Total 95th %. Queue (ft.) [2]	200	175	25	25	50	50	25	25
Total Storage	300	300	75	75	50	50	200	200
Adequate (Y/N)	Y	Y	Y	Y	Y	Y	Y	Y
Background Plus Project								
Cycle/Delay [1] (sec)	120	130	8.3	9.7	93	93	17.1	12.1
Volume (vphpl)	141	97	35	55	18	19	34	45
Total 95th %. Queue (veh.)	9	7	1	1	2	2	1	1
Total 95th %. Queue (ft.) [2]	225	175	25	25	50	50	25	25
Total Storage	300	300	75	75	50	50	200	200
Adequate (Y/N)	Y	Y	Y	Y	Y	Y	Y	Y
Cumulative								
Cycle/Delay [1] (sec)	120	130	8.3	9.7	93	93	17.1	12.1
Volume (vphpl)	139	96	34	52	17	18	32	39
Avg. Queue (veh/ln.)	4.6	3.5	0.1	0.1	0.4	0.5	0.2	0.1
Avg. Queue [2] (ft./ln)	116	87	2	4	11	12	4	3
95th %. Queue (veh/ln.)	8	7	0	0	2	2	1	1
95th %. Queue (ft./ln)	200	175	0	0	50	50	25	25
Storage (ft./ ln.)	300	300	75	75	50	50	200	200
Adequate (Y/N)	Y	Y	Y	Y	Y	Y	Y	Y

Notes:
WBL = westbound left movement; NBL = northbound left movement; SBL = southbound left movement
[1] Vehicle queue calculations based on cycle length for signalized intersections and worst approach delay for unsignalized intersections.
[2] Assumes 25 Feet Per Vehicle Queued.

Vehicular Access and Circulation

The site access and circulation evaluation is based on the June 28, 2018 site plan prepared by Anderson Architects, Inc. (see Figure 13). Site access and on-site vehicular circulation were reviewed in accordance with generally accepted traffic engineering standards.

Site Access

The project generated traffic would access the site via a full-access driveway on Mitzi Drive that leads to the underground parking garage. As shown in Table 4, there would be 4 inbound and 10 outbound trips at the full-access driveway during the AM peak hour, and 10 inbound and 7 outbound trips during the PM peak hour. This modest volume of traffic would not face any delays in getting into and out of the garage.

The project proposes to adjust the property line back from the existing property line. This would significantly widen Ranchero Way along its frontage to match to the adjacent curb line. This would enhance pedestrian circulation by providing a sidewalk and would allow room for on-street parking along Ranchero Way, which Ranchero Way currently lacks.

According to the City of San Jose Department of Transportation (DOT) Geometric Design Guidelines, the typical width for a two-way driveway for a residential (multi-family) building is 26 feet wide. The main two-way driveway on Mitzi Drive is shown to be approximately 21 feet wide, which does not meet City Standard. Thus, the driveway should be widened to 26 feet to meet the City requirement.

Sight Distance

The proposed project driveway should be free and clear of any obstructions to optimize sight distance. Providing the appropriate sight distance reduces the likelihood of a collision at the driveway and provides drivers with the ability to locate sufficient gaps in traffic and exit the site. There are no landscaping features shown on the site plan between Ranchero Way and the driveway. It is recommended that landscaping near the driveway be kept below three feet to maintain sight distance. The main driveway leads to the underground parking lot that should remain clear of any obstructions for optimum sight distance. Vehicles using the driveway would have sufficient sight distance in both directions on Mitzi Drive and would be able to see vehicles on Ranchero Way.

On-Site Circulation

On-site vehicular circulation was reviewed in accordance with generally accepted traffic engineering standards. The project would have a full-access driveway on Mitzi Drive that leads to an underground parking garage. In the underground parking garage, there would be a drive aisle that leads to the parking spaces and the stacked parking spaces. The perimeter drive aisle would have 90-degree perpendicular parking spaces. The drive aisle width (26 feet) would provide sufficient space for vehicles to back out of the of the parking stalls. Generally, the proposed plan would provide vehicle traffic with adequate connectivity through the parking areas. However, the site plan shows one fairly long dead-end parking aisle. Generally, dead-end aisles are undesirable because vehicles finding all parking spaces occupied would need to back out. The site plan does not show sufficient space to turn around at the end of the dead-end aisle. Since the stalls on the dead-end aisle are likely to be used by guests, turnaround space should be provided. This could be accomplished by removing one of the parking stalls.

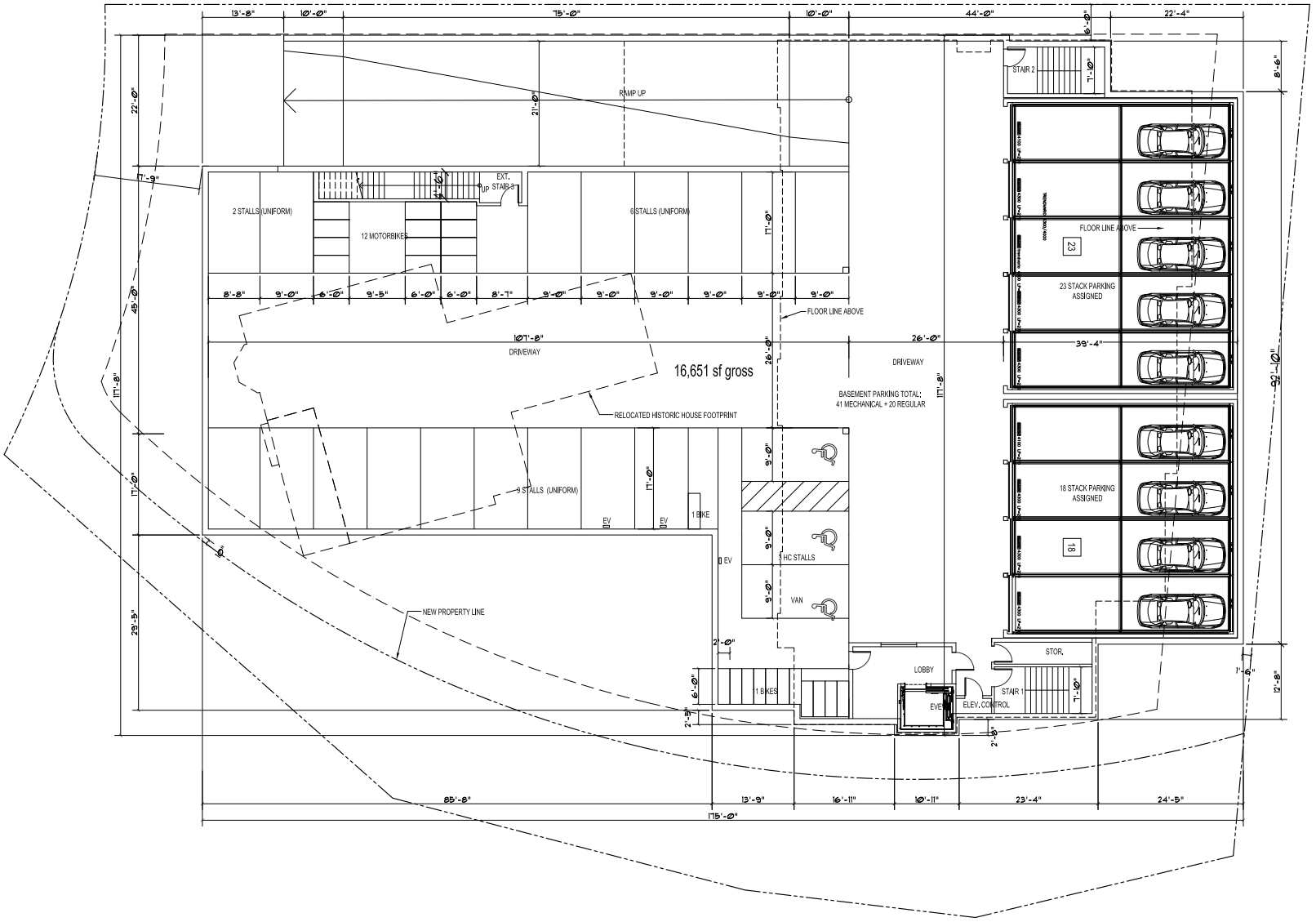


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Figure 13
Basement Plan

HEXAGON

NORTH
Not to Scale

The project proposes to install two stacked parking systems in the underground parking garage. The stacked parking system is using the Klaus 4100 model and 4300 model stackers. The stackers are proposed to hold 18 and 23 parking spaces, respectively. According to the manufacturer's website, the dimensions of the sliding door are approximately 2500 mm wide by 2000 mm high (8.2 ft by 6.6 ft). The means that the stacked parking system can accommodate most vehicles except large SUVs and trucks.

Truck Access and Circulation

Loading

The project is not proposing any off-street loading spaces. According to the City of San Jose parking standards (San Jose Municipal Code Chapter 20.70), multifamily residential units greater than 50 units are required to provide at least one off-street loading space. Since the project is proposing 46 multifamily units, the project is not required to provide an off-street loading space. On-street parking is allowed on the adjacent streets that could be used for moving vehicles.

Garbage Collection

The site plan shows the trash room to be located on the ground floor near the southeast corner of the project site. Garbage collection activities for the project are not expected to occur on site due to access limitations. Thus, the trash bins should be moved to the curb along Ranchero Way on designated garbage collection days. The trash bins also should be removed from the public right-of-way immediately after garbage pickup as to not impact pedestrian or traffic operations.

Emergency Vehicle Access

Emergency vehicle (EVA) access would be provided along Ranchero Way and Mitzi Lane and at the project driveway. The City of San Jose Fire Code requires driveways to provide at least 20 feet for fire access. The project driveway would measure approximately 21 feet wide, and therefore would comply with the City's fire code.

Pedestrian, Bicycle and Transit Facilities

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.

Pedestrian Access and Circulation

The existing network of sidewalks and crosswalks in the immediate vicinity of the project site has good connectivity and provides pedestrians with safe routes to various points of interest in the study area, including nearby bus stops on Saratoga Avenue and Williams Road. The project would provide sidewalks along its frontage, which now are lacking. The closest school to the site is Anderson Elementary School, which is located west of the project site. However, the walking distance to the school is more than ½ mile, so it is unlikely that students would walk to school.

Bicycle Access and Circulation

There are bike lanes on Williams Road. The local streets of Mitzi Drive, Ranchero Way, and Piper Drive carry low traffic volume and are conducive to bicyclists. The project would provide on-site bicycle parking. The existing bike lanes provide bicyclists with safe routes to various points of interest in the study area, including nearby bus stops on Saratoga Avenue and Williams Road and Anderson Elementary School. The elementary school is just over ½ mile from the project site, and bicyclists could ride there using bike lanes and low-volume residential streets.

Transit Service

The site is well-served by bus transit. There are three VTA local bus lines (Route 25, 57 and 58) that serve the immediate project area. The bus stops closest to the project site are on Saratoga Avenue at Mitzi Drive. The bus routes run throughout the day and on weekends with 15-30 minute headways.

Neighborhood Interface

The project site is situated adjacent to an existing residential neighborhood. The effect the project would have on local streets was evaluated for Mitzi Drive and Ranchero Way.

The average daily traffic (ADT) volumes on three roadway segments and the estimated daily trips added to these roadway segments as a result of the project are shown below in Table 8. Since the City of San Jose has no established standard or significance threshold regarding daily traffic on neighborhood streets, the roadway volume data are presented here for informational purposes.

Table 8
Average Daily Traffic on Surrounding Streets

Roadway Segment	Existing Weekday ADT Counts [1]	Daily Project Trips	Existing + Project Volumes	% Change
Mitzi Drive b/t Saratoga Avenue and Ranchero Way	***829***	***10***	***839***	**1.2%**
Ranchero Way b/t Mitzi Drive and Will Rogers Drive	***873***	***52***	***925***	**6.0%**
Mitzi Drive b/t Piper Drive and Ranchero Way	***501***	***114***	***615***	**22.8%**

Notes:
1. 24-hour tube counts were conducted November 6, 2018.

Based on the assignment of project generated trips, the project is expected to add 10 daily trips to Mitzi Drive east of Saratoga Avenue, 52 daily trips to Ranchero Way east of Mitzi Drive, and 114 daily trips to Mitzi Drive north of Ranchero Way.

Construction Activities

Typical activities related to the construction of any development could include lane narrowing and/or lane closures and sidewalk closures. Since the site has no sidewalks, it is unlikely that construction would affect pedestrian facilities. In the event of any type of street closure, clear signage (e.g., closure and detour signs) must be provided to ensure vehicles and bicyclists are able to adequately reach their

intended destinations safely. The project would be required to submit a construction management plan for City approval that addresses schedule, closures/detours, staging, parking, and truck routes.

Parking

Parking provided on the site was evaluated based on the City of San Jose parking standards (San Jose Municipal Code Chapter 20.90, Table 20-190). The vehicle parking requirement for multifamily residential use is 1.25 spaces per studio and 1-bedroom unit, inclusive of guest spaces. The project proposes 46 units. Therefore, the project is required to provide a minimum of 58 on-site parking spaces. The project proposes 61 on-site parking spaces, which exceeds the City's parking requirement. As described earlier, the garage includes a dead-end aisle that should provide turn-around space. That would result in the loss of one space. The project still would meet the City's parking requirement. 41 of the parking spaces would be supplied in mechanical parking stackers, and there would be 19 regular spaces. Guests should be assigned to the regular spaces because it is unlikely that guests would be familiar with the operation of the stackers.

The bicycle parking requirement for a multifamily housing use is one space per 4 units. The project proposes 46 units, so the project is required to provide 12 bicycle parking spaces. The site plan shows 12 bicycle parking spaces in the underground parking garage and 2 bicycle parking spaces on the ground floor, which would meet the City's bicycle parking requirement. Also, the steep garage ramp would be difficult for bicycles, and the use of the elevator for bicycles would be awkward. The bicycle parking should be relocated to the ground floor.

The motorcycle parking requirement for a multifamily housing use is one space per 4 units. The project proposes 46 units, so the project is required to provide 12 motorcycle parking spaces. The site plan shows 12 motorcycle parking spaces in the underground parking garage, which would meet the City's motorcycle parking requirement.

5. Conclusions

This study was conducted for the purpose of identifying the potential transportation impacts related to the proposed development. The transportation impacts of the project were evaluated following the standards and methodologies established in the City of San Jose's *Transportation Analysis Handbook.* Based on the City of San Jose's Transportation Analysis Policy and *Transportation Analysis Handbook*, the TA report for the project includes a CEQA transportation analysis and a local transportation analysis (LTA).

CEQA Transportation Impacts

Project Vehicle Miles Traveled (VMT) Analysis

Because the VMT generated by the project (8.52 per resident) is less than the threshold of 10.12 VMT per capita, the project would not result in a significant transportation impact on VMT, and mitigation measures are not required to reduce the VMT.

CEQA Cumulative Impacts

The project is consistent with the General Plan goals and policies for the following reasons:

- The project site is near bus stops and bicycle lanes on Williams Road.
- The project would increase the residential density in the project area.
- The project would provide bicycle parking.

Therefore, 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 Effects

Intersection Traffic Operations

The results of the analysis show that the Saratoga Avenue and Williams Road intersection operates at an acceptable level of service (LOS D or better) during the AM and PM peak hour.

The results of the analysis show that the left turn from Piper Drive to Saratoga Avenue operates at LOS F during the AM peak hour. However, the City of San Jose does not have a level of service standard for unsignalized intersections. Motorists have an alternative route to travel to southbound Saratoga Avenue. Vehicles exiting the project site can use Ranchero Way to make a left turn onto Williams Road

and then make a left turn at the signalized intersection of Saratoga Avenue and Williams Road. Field observations showed a vehicle queue of 2 vehicles making the left turn from Piper Drive to Saratoga Avenue. The results of the signal warrant analysis indicate that the AM and PM peak-hour volumes at the intersection would not meet the signal warrant.

Other Transportation Issues

The site plan shows adequate site access and on-site circulation, and no significant operational issues are expected to occur as a result of the project. The project would enhance pedestrian circulation by building sidewalks along its frontage where none exist today. The existing transit and bicycle facilities in the study area are sufficient to serve the project.

Hexagon has the following recommendations resulting from the parking, site access, and circulation analysis.

- The project site plan should be revised to meet the City's minimum requirement of 26 feet for a two-way driveway.
- Since the stalls on the dead-end aisle are likely to be used by guests, turnaround space should be provided. This could be accomplished by removing one of the parking stalls.
- The bicycle parking should be moved to the ground floor.
- Landscaping near the driveway should be kept below three feet to maintain sight distance.

4146 Mitzi Drive

Technical Appendices

November 29, 2018

Appendix A

San Jose VMT Evaluation Tool Summary Report

CITY OF SAN JOSE VEHICLE MILES TRAVELED EVALUATION TOOL SUMMARY REPORT

PROJECT:

Name: Mitzi Apartments
Location: 4146 Mitzi Drive
Parcel: 29916001 Parcel Type: Suburb with Multifamily Housing
Proposed Parking: Vehicles: 61 Bicycles: 12

Tool Version: 3/14/2018
Date: 11/6/2018

LAND USE:

Residential:		Percent of All Residential Units	
Single Family	0 DU	Extremely Low Income (≤ 30% MFI)	0 % Affordable
Multi Family	46 DU	Very Low Income (> 30% MFI, ≤ 50% MFI)	0 % Affordable
Subtotal	46 DU	Low Income (> 50% MFI, ≤ 80% MFI)	0 % Affordable
Office:	0 KSF		
Retail:	0 KSF		
Industrial:	0 KSF		

VMT REDUCTION STRATEGIES

Tier 1 - Project Characteristics

Increase Residential Density
- Existing Density (DU/Residential Acres in half-mile buffer) 9
- With Project Density (DU/Residential Acres in half-mile buffer) 9

Increase Development Diversity
- Existing Activity Mix Index 0.30
- With Project Activity Mix Index 0.30

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) 11
- With Project Density (Jobs/Commercial Acres in half-mile buffer) 11

Tier 2 - Multimodal Infrastructure

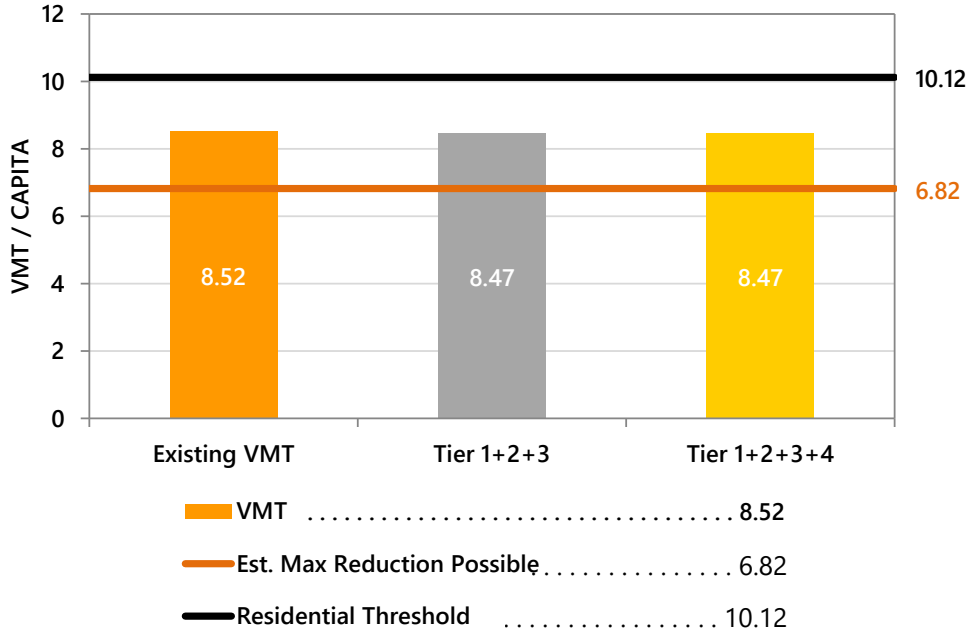
Tier 3 - Parking

Tier 4 - TDM Programs

CITY OF SAN JOSE VEHICLE MILES TRAVELED EVALUATION TOOL SUMMARY REPORT

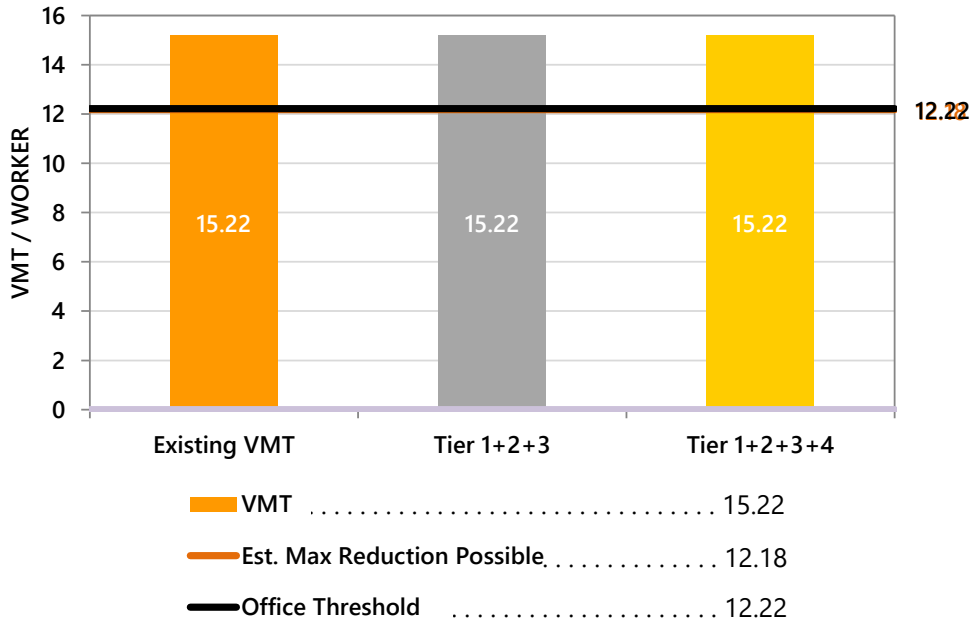
RESIDENTIAL ONLY

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



EMPLOYMENT ONLY

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



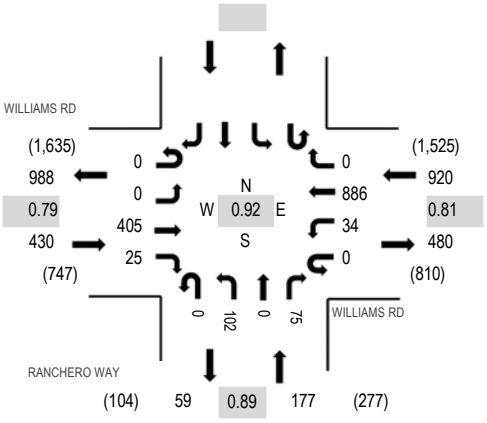
Appendix B

Traffic Counts

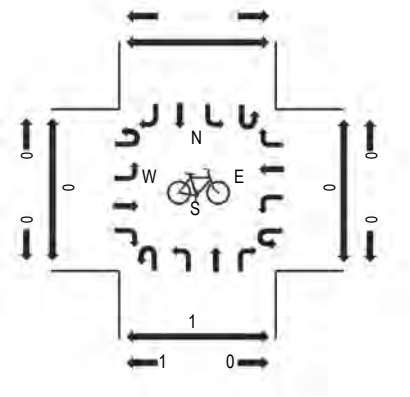
All Traffic Data Services Inc.
(303) 216-2439
www.alltrafficdata.net

Location: 1 RANCHERO WAY & WILLIAMS RD AM
Date: Tuesday, November 6, 2018
Peak Hour: 07:15 AM - 08:15 AM
Peak 15-Minutes: 07:30 AM - 07:45 AM

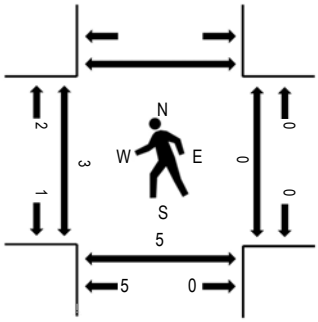
Peak Hour - All Vehicles



Peak Hour - Bicycles



Peak Hour - Pedestrians



Note: Total study counts contained in parentheses.

Traffic Counts

Interval Start Time	WILLIAMS RD Eastbound				WILLIAMS RD Westbound				RANCHERO WAY Northbound				Southbound				Total	Rolling Hour	Pedestrian Crossings			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right			West	East	South	North
7:00 AM	0	0	39	4	0	6	168	0	0	20	0	8					245	1,382	1	0	2	
7:15 AM	0	0	54	6	0	3	204	0	0	27	0	13					307	1,527	3	0	1	
7:30 AM	0	0	76	6	0	8	277	0	0	30	0	20					417	1,506	0	0	1	
7:45 AM	0	0	152	7	0	6	203	0	0	24	0	21					413	1,362	0	0	1	
8:00 AM	0	0	123	6	0	17	202	0	0	21	0	21					390	1,167	0	0	2	
8:15 AM	0	0	112	5	0	9	137	0	0	13	0	10					286		0	0	6	
8:30 AM	0	0	91	5	0	10	144	0	0	18	0	5					273		1	0	1	
8:45 AM	0	0	56	5	0	1	130	0	0	17	0	9					218		2	0	1	

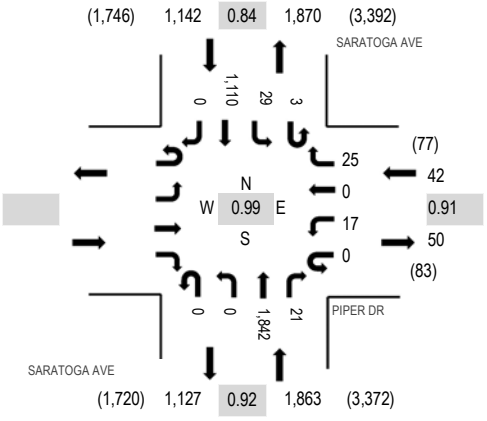
Peak Rolling Hour Flow Rates

Vehicle Type	Eastbound				Westbound				Northbound				Southbound				Total
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	
Articulated Trucks	0	0	0	0	0	0	2	0	0	0	0	0					2
Lights	0	0	394	25	0	34	875	0	0	102	0	74					1,504
Mediums	0	0	11	0	0	0	9	0	0	0	0	1					21
Total	0	0	405	25	0	34	886	0	0	102	0	75					1,527

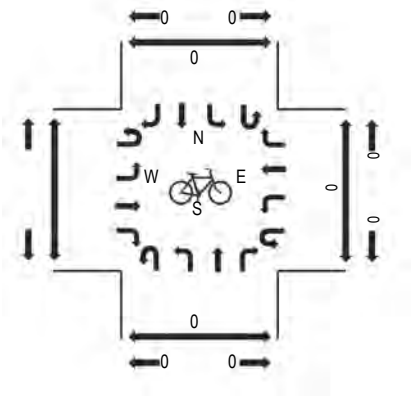
All Traffic Data Services Inc.
(303) 216-2439
www.alltrafficdata.net

Location: 2 SARATOGA AVE & PIPER DR AM
Date: Tuesday, November 6, 2018
Peak Hour: 07:30 AM - 08:30 AM
Peak 15-Minutes: 07:30 AM - 07:45 AM

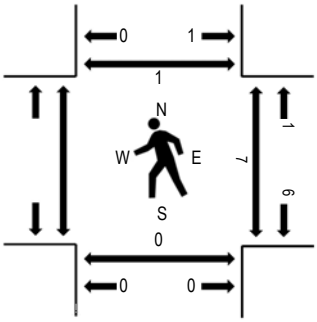
Peak Hour - All Vehicles



Peak Hour - Bicycles



Peak Hour - Pedestrians



Note: Total study counts contained in parentheses.

Traffic Counts

Interval Start Time	PIPER DR Eastbound				PIPER DR Westbound				SARATOGA AVE Northbound				SARATOGA AVE Southbound					Rolling Hour	Pedestrian Crossings			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	Total		West	East	South	North
7:00 AM					0	4	0	9	0	0	281	2	0	7	124	0	427	2,403		0	0	0
7:15 AM					0	1	0	10	0	0	320	4	0	4	116	0	455	2,738		1	0	0
7:30 AM					0	4	0	10	0	0	475	2	0	8	267	0	766	3,047		3	0	1
7:45 AM					0	8	0	5	0	0	443	6	2	7	284	0	755	2,969		3	0	0
8:00 AM					0	1	0	4	0	0	413	6	0	11	327	0	762	2,792		1	0	0
8:15 AM					0	4	0	6	0	0	511	7	1	3	232	0	764			0	0	0
8:30 AM					0	2	0	5	0	0	505	5	2	1	168	0	688			1	0	0
8:45 AM					0	2	0	2	0	0	388	4	0	6	176	0	578			4	0	0

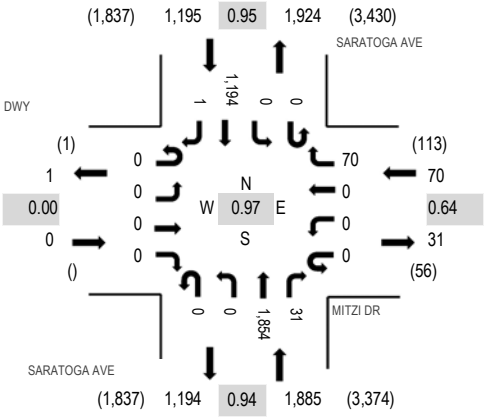
Peak Rolling Hour Flow Rates

Vehicle Type	Eastbound				Westbound				Northbound				Southbound				Total
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	
Articulated Trucks					0	0	0	0	0	0	8	0	0	1	9	0	18
Lights					0	16	0	23	0	0	1,810	21	3	27	1,075	0	2,975
Mediums					0	1	0	2	0	0	24	0	0	1	26	0	54
Total					0	17	0	25	0	0	1,842	21	3	29	1,110	0	3,047

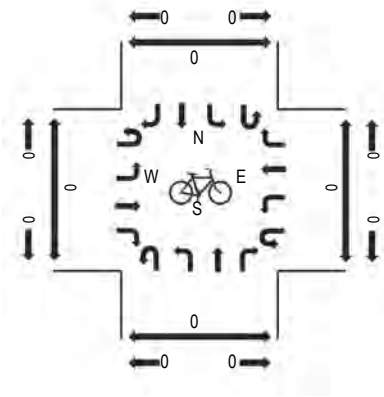
All Traffic Data Services Inc.
(303) 216-2439
www.alltrafficdata.net

Location: 3 SARATOGA AVE & MITZI DR AM
Date: Tuesday, November 6, 2018
Peak Hour: 07:30 AM - 08:30 AM
Peak 15-Minutes: 08:15 AM - 08:30 AM

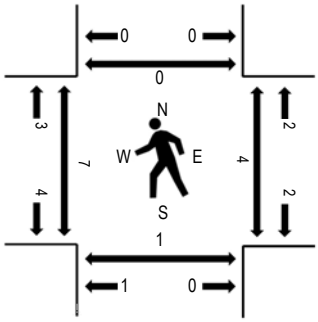
Peak Hour - All Vehicles



Peak Hour - Bicycles



Peak Hour - Pedestrians



Note: Total study counts contained in parentheses.

Traffic Counts

Interval Start Time	DWY Eastbound				MITZI DR Westbound				SARATOGA AVE Northbound				SARATOGA AVE Southbound					Rolling Hour	Pedestrian Crossings			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	Total		West	East	South	North
7:00 AM	0	0	0	0	0	0	0	15	0	0	276	9	0	0	137	0	437	2,463	1	1	1	0
7:15 AM	0	0	0	0	0	0	0	10	0	0	317	10	0	0	135	0	472	2,814	5	2	1	0
7:30 AM	0	0	0	0	0	0	0	28	0	0	437	7	0	0	288	0	760	3,150	1	2	1	0
7:45 AM	0	0	0	0	0	0	0	18	0	0	456	7	0	0	313	0	794	3,080	4	0	0	0
8:00 AM	0	0	0	0	0	0	0	16	0	0	449	10	0	0	312	1	788	2,861	2	2	0	0
8:15 AM	0	0	0	0	0	0	0	8	0	0	512	7	0	0	281	0	808		0	0	0	0
8:30 AM	0	0	0	0	0	1	0	10	0	0	499	2	0	0	178	0	690		0	2	0	0
8:45 AM	0	0	0	0	0	0	0	7	0	0	372	4	0	0	192	0	575		2	3	1	0

Peak Rolling Hour Flow Rates

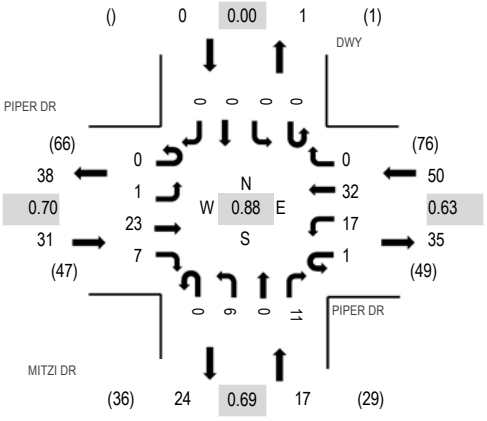
Vehicle Type	Eastbound				Westbound				Northbound				Southbound				Total
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	
Articulated Trucks	0	0	0	0	0	0	0	0	0	0	8	0	0	0	10	0	18
Lights	0	0	0	0	0	0	0	67	0	0	1,821	31	0	0	1,162	1	3,082
Mediums	0	0	0	0	0	0	0	3	0	0	25	0	0	0	22	0	50
Total	0	0	0	0	0	0	0	70	0	0	1,854	31	0	0	1,194	1	3,150

All Traffic Data Services Inc.

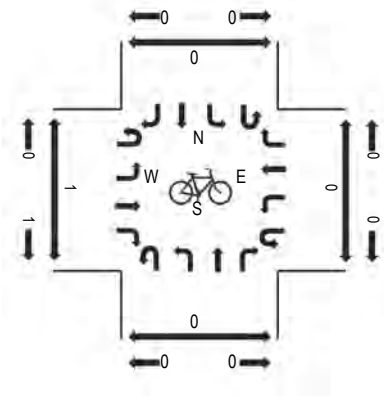
(303) 216-2439
www.alltrafficdata.net

Location: 4 MITZI DR & PIPER DR AM
Date: Tuesday, November 6, 2018
Peak Hour: 07:30 AM - 08:30 AM
Peak 15-Minutes: 07:30 AM - 07:45 AM

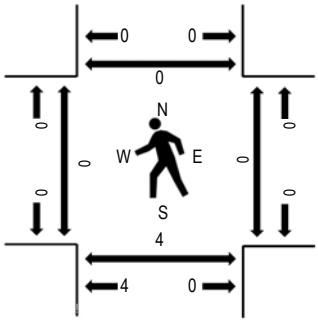
Peak Hour - All Vehicles



Peak Hour - Bicycles



Peak Hour - Pedestrians



Note: Total study counts contained in parentheses.

Traffic Counts

Interval Start Time	PIPER DR Eastbound				PIPER DR Westbound				MITZI DR Northbound				DWY Southbound				Total	Rolling Hour	Pedestrian Crossings			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right			West	East	South	North
7:00 AM	0	0	2	4	0	1	4	0	0	2	0	1	0	0	0	0	14	89	0	0	1	0
7:15 AM	0	0	1	1	0	1	9	0	0	5	0	3	0	0	0	0	20	96	0	0	0	0
7:30 AM	0	0	5	0	0	7	13	0	0	1	0	2	0	0	0	0	28	98	0	0	1	0
7:45 AM	0	0	9	2	0	5	5	0	0	2	0	4	0	0	0	0	27	81	0	0	1	0
8:00 AM	0	0	5	3	1	2	5	0	0	2	0	3	0	0	0	0	21	63	0	0	0	0
8:15 AM	0	1	4	2	0	3	9	0	0	1	0	2	0	0	0	0	22		0	0	2	0
8:30 AM	0	0	2	2	0	2	5	0	0	0	0	0	0	0	0	0	11		0	0	2	2
8:45 AM	0	0	4	0	0	1	3	0	0	0	0	1	0	0	0	0	9		0	0	0	1

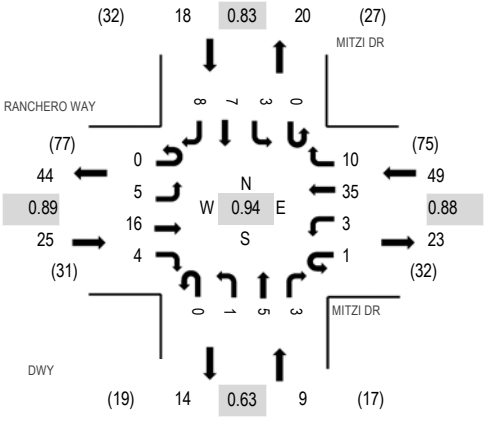
Peak Rolling Hour Flow Rates

Vehicle Type	Eastbound				Westbound				Northbound				Southbound				Total
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	
Articulated Trucks	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Lights	0	1	22	6	1	17	31	0	0	6	0	10	0	0	0	0	94
Mediums	0	0	1	1	0	0	1	0	0	0	0	1	0	0	0	0	4
Total	0	1	23	7	1	17	32	0	0	6	0	11	0	0	0	0	98

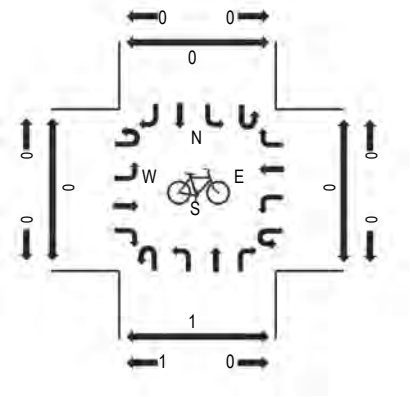
All Traffic Data Services Inc.
(303) 216-2439
www.alltrafficdata.net

Location: 5 DWY & MITZI DR AM
Date: Tuesday, November 6, 2018
Peak Hour: 07:15 AM - 08:15 AM
Peak 15-Minutes: 07:30 AM - 07:45 AM

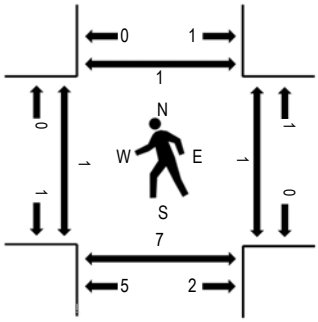
Peak Hour - All Vehicles



Peak Hour - Bicycles



Peak Hour - Pedestrians



Note: Total study counts contained in parentheses.

Traffic Counts

Interval Start Time	RANCHERO WAY Eastbound				MITZI DR Westbound				DWY Northbound				MITZI DR Southbound					Rolling Hour	Pedestrian Crossings			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	Total		West	East	South	North
7:00 AM	0	0	1	0	0	0	6	2	0	2	1	0	0	1	1	3	17	92	0	2	1	1
7:15 AM	0	1	3	1	0	0	8	5	0	0	2	0	0	2	2	0	24	101	0	1	4	0
7:30 AM	0	1	3	2	1	2	9	2	0	0	0	1	0	0	1	5	27	92	1	0	0	1
7:45 AM	0	2	5	0	0	0	9	1	0	0	1	1	0	1	2	2	24	78	0	0	2	0
8:00 AM	0	1	5	1	0	1	9	2	0	1	2	1	0	0	2	1	26	63	0	0	1	0
8:15 AM	0	0	2	0	0	1	6	0	0	0	1	1	0	1	2	1	15		0	0	2	0
8:30 AM	0	0	2	0	0	0	5	0	0	1	0	1	1	0	1	2	13		1	0	4	0
8:45 AM	0	1	0	0	0	0	6	0	0	0	1	0	0	0	0	1	9		1	0	2	0

Peak Rolling Hour Flow Rates

Vehicle Type	Eastbound				Westbound				Northbound				Southbound				Total
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	
Articulated Trucks	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Lights	0	5	16	4	1	3	33	9	0	1	5	3	0	3	7	6	96
Mediums	0	0	0	0	0	0	2	1	0	0	0	0	0	0	0	2	5
Total	0	5	16	4	1	3	35	10	0	1	5	3	0	3	7	8	101

All Traffic Data Services Inc.
(303) 216-2439
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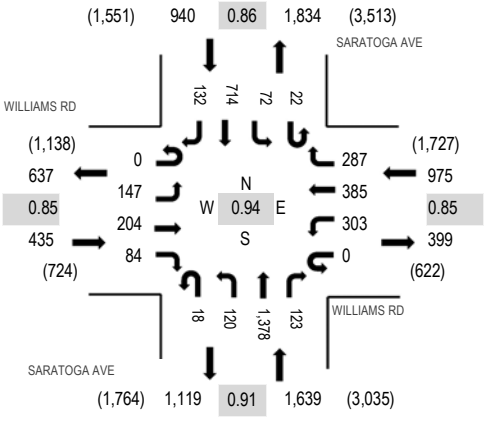
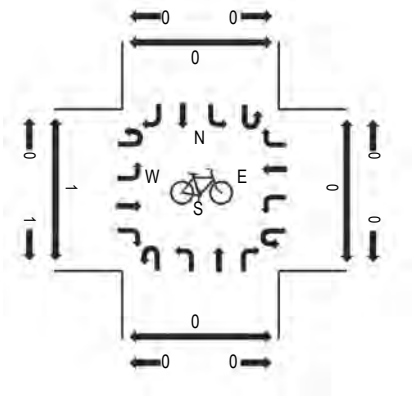
Location: 6 SARATOGA AVE & WILLIAMS RD AM
Date: Tuesday, November 6, 2018
Peak Hour: 07:30 AM - 08:30 AM
Peak 15-Minutes: 08:00 AM - 08:15 AM

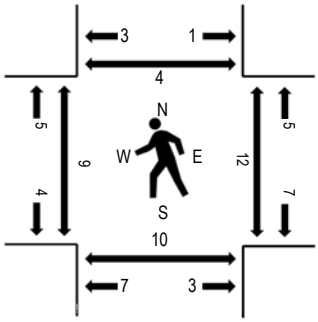
Peak Hour - All Vehicles



Peak Hour - Bicycles



Peak Hour - Pedestrians



Note: Total study counts contained in parentheses.

Traffic Counts

Interval Start Time	WILLIAMS RD Eastbound				WILLIAMS RD Westbound				SARATOGA AVE Northbound				SARATOGA AVE Southbound					Rolling Hour	Pedestrian Crossings			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	Total		West	East	South	North
7:00 AM	0	27	14	12	0	34	71	80	5	9	246	12	5	14	89	8	626	3,309	2	1	4	2
7:15 AM	0	34	28	8	0	41	111	83	1	20	267	11	14	11	84	26	739	3,742	3	0	4	0
7:30 AM	0	31	30	21	0	86	116	103	3	31	313	25	7	8	140	32	946	3,989	2	3	1	2
7:45 AM	0	31	61	19	0	76	102	57	3	33	296	49	4	20	196	51	998	3,969	3	5	4	0
8:00 AM	0	38	53	21	0	100	103	65	8	30	344	24	7	21	213	32	1,059	3,728	2	1	3	0
8:15 AM	0	47	60	23	0	41	64	62	4	26	425	25	4	23	165	17	986		2	3	2	2
8:30 AM	0	38	35	18	0	37	85	51	4	24	432	21	8	17	129	27	926		3	0	1	2
8:45 AM	0	36	28	11	0	38	65	56	3	27	297	17	5	15	131	28	757		7	3	1	3

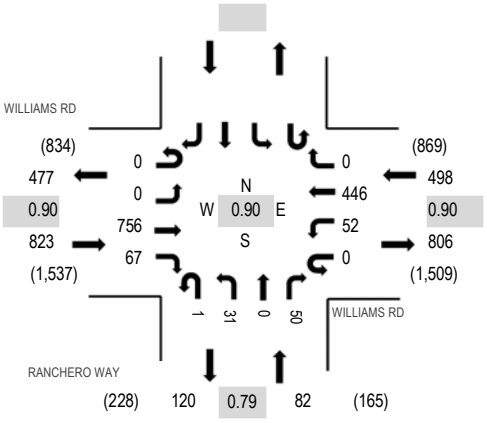
Peak Rolling Hour Flow Rates

Vehicle Type	Eastbound				Westbound				Northbound				Southbound				Total
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	
Articulated Trucks	0	0	0	0	0	1	0	0	1	0	5	0	0	0	5	0	12
Lights	0	145	202	83	0	299	381	284	17	118	1,353	116	22	71	687	132	3,910
Mediums	0	2	2	1	0	3	4	3	0	2	20	7	0	1	22	0	67
Total	0	147	204	84	0	303	385	287	18	120	1,378	123	22	72	714	132	3,989

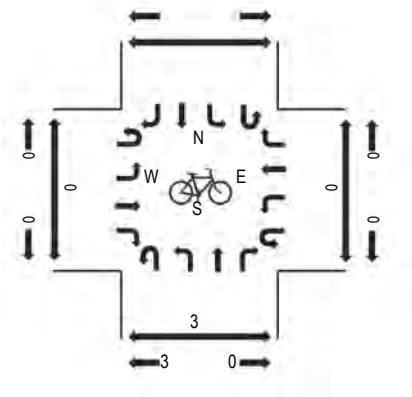
All Traffic Data Services Inc.
(303) 216-2439
www.alltrafficdata.net

Location: 1 RANCHERO WAY & WILLIAMS RD PM
Date: Tuesday, November 6, 2018
Peak Hour: 05:00 PM - 05:00 PM
Peak 15-Minutes: 05:30 PM - 05:45 PM

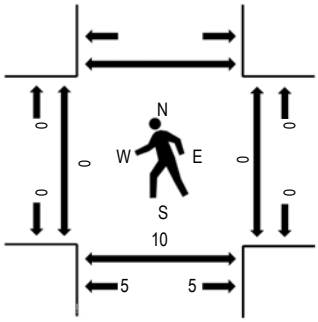
Peak Hour - All Vehicles



Peak Hour - Bicycles



Peak Hour - Pedestrians



Note: Total study counts contained in parentheses.

Traffic Counts

Interval Start Time	WILLIAMS RD Eastbound				WILLIAMS RD Westbound				RANCHERO WAY Northbound				Southbound				Total	Rolling Hour	Pedestrian Crossings			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right			West	East	South	North
4:00 PM	0	0	160	15	0	12	72	0	0	3	0	10					272	1,168	0	0	1	
4:15 PM	0	0	157	17	0	16	78	0	0	8	0	18					294	1,219	0	0	0	
4:30 PM	0	0	157	18	0	5	82	0	0	3	0	14					279	1,278	0	0	7	
4:45 PM	0	0	170	20	0	5	101	0	0	10	0	17					323	1,387	0	0	1	
5:00 PM	0	0	173	19	0	12	105	0	0	4	0	10					323	1,403	0	0	5	
5:15 PM	0	0	187	16	0	16	111	0	0	7	0	16					353		0	0	3	
5:30 PM	0	0	216	12	0	14	125	0	1	8	0	12					388		0	0	0	
5:45 PM	0	0	180	20	0	10	105	0	0	12	0	12					339		0	0	2	

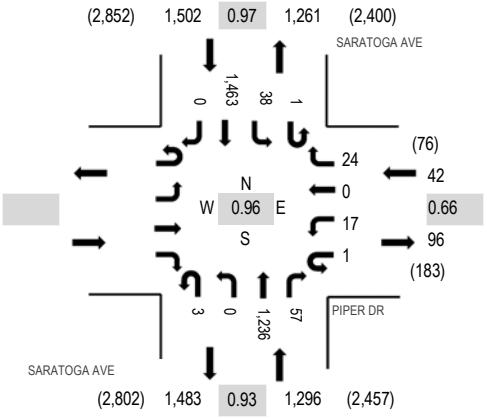
Peak Rolling Hour Flow Rates

Vehicle Type	Eastbound				Westbound				Northbound				Southbound				Total
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	
Articulated Trucks	0	0	0	0	0	0	0	0	0	0	0	0					0
Lights	0	0	751	67	0	52	444	0	1	31	0	50					1,396
Mediums	0	0	5	0	0	0	2	0	0	0	0	0					7
Total	0	0	756	67	0	52	446	0	1	31	0	50					1,403

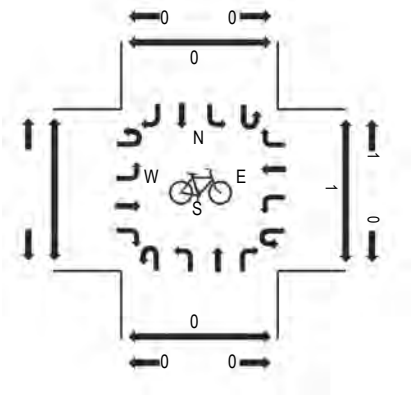
All Traffic Data Services Inc.
(303) 216-2439
www.alltrafficdata.net

Location: 2 SARATOGA AVE & PIPER DR PM
Date: Tuesday, November 6, 2018
Peak Hour: 05:00 PM - 06:00 PM
Peak 15-Minutes: 05:30 PM - 05:45 PM

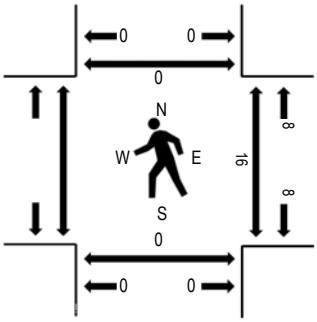
Peak Hour - All Vehicles



Peak Hour - Bicycles



Peak Hour - Pedestrians



Note: Total study counts contained in parentheses.

Traffic Counts

Interval Start Time	Eastbound				PIPER DR Westbound				SARATOGA AVE Northbound				SARATOGA AVE Southbound					Rolling Hour	Pedestrian Crossings			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	Total		West	East	South	North
4:00 PM					0	5	0	2	0	0	277	9	2	13	276	0	584	2,545		2	0	0
4:15 PM					0	6	0	8	0	0	278	11	0	10	368	0	681	2,690		5	0	0
4:30 PM					0	3	0	3	0	0	286	11	0	9	320	0	632	2,697		2	0	0
4:45 PM					0	2	0	5	0	0	278	11	0	13	339	0	648	2,801		2	0	0
5:00 PM					0	3	0	8	1	0	330	17	1	7	362	0	729	2,840		7	0	0
5:15 PM					0	4	0	3	0	0	307	15	0	11	348	0	688			2	0	0
5:30 PM					1	7	0	8	2	0	313	17	0	8	380	0	736			4	0	0
5:45 PM					0	3	0	5	0	0	286	8	0	12	373	0	687			3	0	0

Peak Rolling Hour Flow Rates

Vehicle Type	Eastbound				Westbound				Northbound				Southbound				Total
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	
Articulated Trucks					0	0	0	0	0	0	4	0	0	0	0	0	4
Lights					1	17	0	23	3	0	1,220	56	1	38	1,451	0	2,810
Mediums					0	0	0	1	0	0	12	1	0	0	12	0	26
Total					1	17	0	24	3	0	1,236	57	1	38	1,463	0	2,840

All Traffic Data Services Inc.
(303) 216-2439
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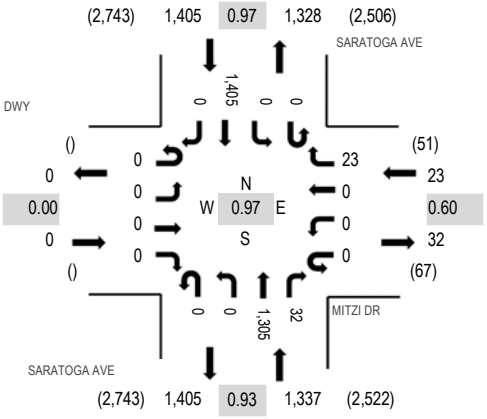
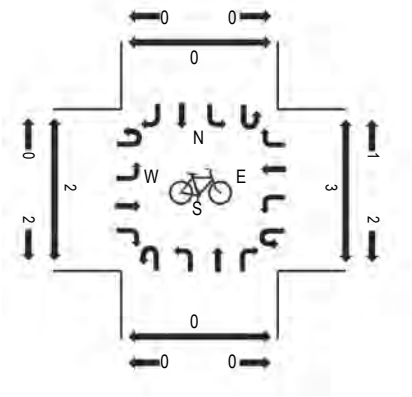
Location: 3 SARATOGA AVE & MITZI DR PM
Date: Tuesday, November 6, 2018
Peak Hour: 04:45 PM - 05:45 PM
Peak 15-Minutes: 05:00 PM - 05:15 PM

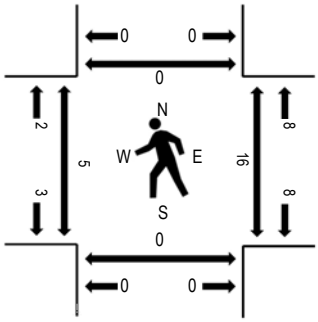
Peak Hour - All Vehicles



Peak Hour - Bicycles



Peak Hour - Pedestrians



Note: Total study counts contained in parentheses.

Traffic Counts

Interval Start Time	DWY Eastbound				MITZI DR Westbound				SARATOGA AVE Northbound				SARATOGA AVE Southbound					Rolling Hour	Pedestrian Crossings			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	Total		West	East	South	North
4:00 PM	0	0	0	0	0	0	0	9	0	0	266	10	0	0	327	0	612	2,567	1	3	0	0
4:15 PM	0	0	0	0	0	0	0	12	0	0	288	9	0	0	340	0	649	2,667	1	4	0	0
4:30 PM	0	0	0	0	0	0	0	4	0	0	299	6	0	0	329	0	638	2,730	0	2	0	0
4:45 PM	0	0	0	0	0	0	0	3	0	0	306	5	0	0	354	0	668	2,765	2	1	0	0
5:00 PM	0	0	0	0	0	0	0	10	0	0	336	4	0	0	362	0	712	2,749	2	6	0	0
5:15 PM	0	0	0	0	0	0	0	6	0	0	347	12	0	0	347	0	712		0	4	0	0
5:30 PM	0	0	0	0	0	0	0	4	0	0	316	11	0	0	342	0	673		1	5	0	0
5:45 PM	0	0	0	0	0	0	0	3	0	0	297	10	0	0	342	0	652		1	4	2	0

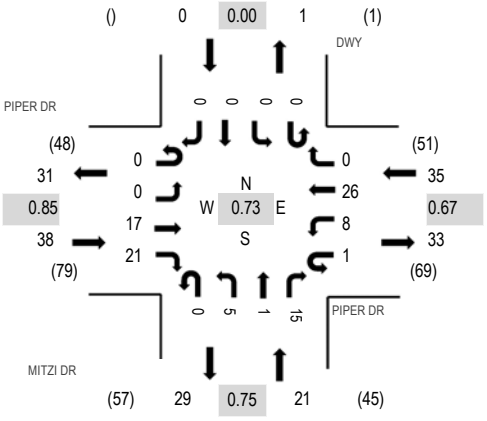
Peak Rolling Hour Flow Rates

Vehicle Type	Eastbound				Westbound				Northbound				Southbound				Total
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	
Articulated Trucks	0	0	0	0	0	0	0	0	0	0	6	0	0	0	1	0	7
Lights	0	0	0	0	0	0	0	23	0	0	1,286	32	0	0	1,397	0	2,738
Mediums	0	0	0	0	0	0	0	0	0	0	13	0	0	0	7	0	20
Total	0	0	0	0	0	0	0	23	0	0	1,305	32	0	0	1,405	0	2,765

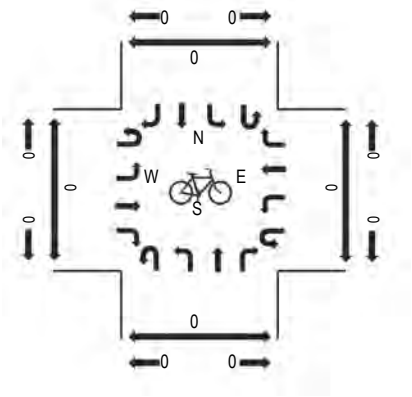
All Traffic Data Services Inc.
(303) 216-2439
www.alltrafficdata.net

Location: 4 MITZI DR & PIPER DR PM
Date: Tuesday, November 6, 2018
Peak Hour: 05:00 PM - 06:00 PM
Peak 15-Minutes: 05:45 PM - 06:00 PM

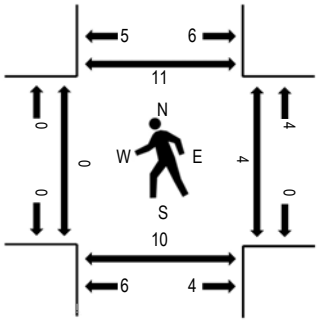
Peak Hour - All Vehicles



Peak Hour - Bicycles



Peak Hour - Pedestrians



Note: Total study counts contained in parentheses.

Traffic Counts

Interval Start Time	PIPER DR Eastbound				PIPER DR Westbound				MITZI DR Northbound				DWY Southbound					Rolling Hour	Pedestrian Crossings			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	Total		West	East	South	North
4:00 PM	0	0	9	3	0	0	2	0	0	2	0	2	0	0	0	0	18	81	0	0	3	0
4:15 PM	1	0	5	5	0	2	1	0	0	2	0	5	0	0	0	0	21	81	0	0	1	5
4:30 PM	0	0	4	5	0	4	3	0	0	2	0	3	0	0	0	0	21	84	0	0	1	0
4:45 PM	0	0	3	6	0	3	1	0	0	3	0	5	0	0	0	0	21	83	0	0	1	0
5:00 PM	0	0	1	8	0	1	7	0	0	0	0	1	0	0	0	0	18	94	0	3	1	3
5:15 PM	0	0	8	3	0	5	2	0	0	2	0	4	0	0	0	0	24		0	0	3	0
5:30 PM	0	0	3	5	1	0	6	0	0	1	0	4	0	0	0	0	20		0	0	5	0
5:45 PM	0	0	5	5	0	2	11	0	0	2	1	6	0	0	0	0	32		0	1	1	8

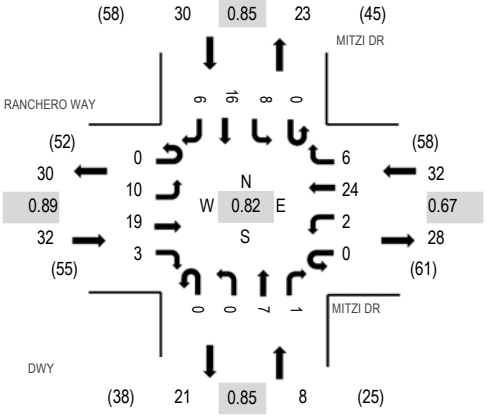
Peak Rolling Hour Flow Rates

Vehicle Type	Eastbound				Westbound				Northbound				Southbound				Total
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	
Articulated Trucks	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Lights	0	0	17	21	1	8	26	0	0	5	1	14	0	0	0	0	93
Mediums	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1
Total	0	0	17	21	1	8	26	0	0	5	1	15	0	0	0	0	94

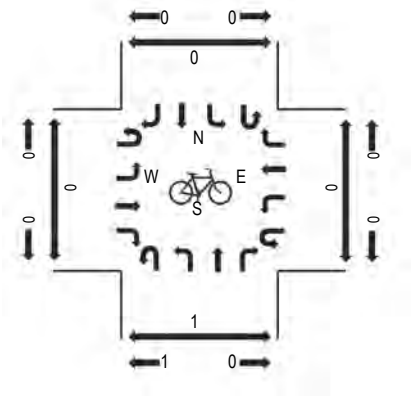
All Traffic Data Services Inc.
(303) 216-2439
www.alltrafficdata.net

Location: 5 DWY & MITZI DR PM
Date: Tuesday, November 6, 2018
Peak Hour: 05:00 PM - 06:00 PM
Peak 15-Minutes: 05:15 PM - 05:30 PM

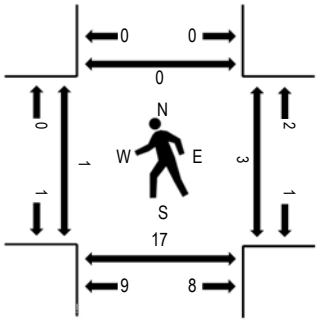
Peak Hour - All Vehicles



Peak Hour - Bicycles



Peak Hour - Pedestrians



Note: Total study counts contained in parentheses.

Traffic Counts

Interval Start Time	RANCHERO WAY Eastbound				MITZI DR Westbound				DWY Northbound				MITZI DR Southbound					Rolling Hour	Pedestrian Crossings			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	Total		West	East	South	North
4:00 PM	0	1	4	1	1	0	5	1	0	2	2	0	0	2	0	0	19	94	0	0	2	0
4:15 PM	0	2	3	0	0	4	3	4	1	1	0	2	0	2	3	2	27	97	0	2	5	0
4:30 PM	0	0	6	1	0	0	2	1	0	1	3	0	0	5	3	2	24	101	0	1	2	0
4:45 PM	0	2	3	0	0	0	2	3	0	0	3	2	0	3	4	2	24	101	2	0	2	0
5:00 PM	0	1	4	3	0	0	6	0	0	0	0	0	0	2	4	2	22	102	0	0	3	0
5:15 PM	0	2	7	0	0	1	8	3	0	0	2	1	0	2	5	0	31		1	0	6	0
5:30 PM	0	3	6	0	0	0	5	1	0	0	3	0	0	1	3	2	24		0	1	7	0
5:45 PM	0	4	2	0	0	1	5	2	0	0	2	0	0	3	4	2	25		0	2	1	0

Peak Rolling Hour Flow Rates

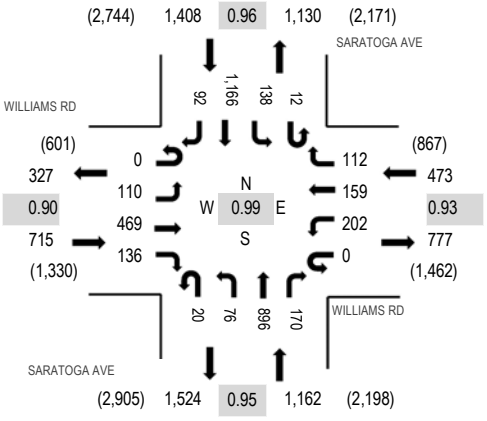
Vehicle Type	Eastbound				Westbound				Northbound				Southbound				Total
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	
Articulated Trucks	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Lights	0	10	19	3	0	2	24	6	0	0	6	1	0	8	16	6	101
Mediums	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1
Total	0	10	19	3	0	2	24	6	0	0	7	1	0	8	16	6	102

All Traffic Data Services Inc.

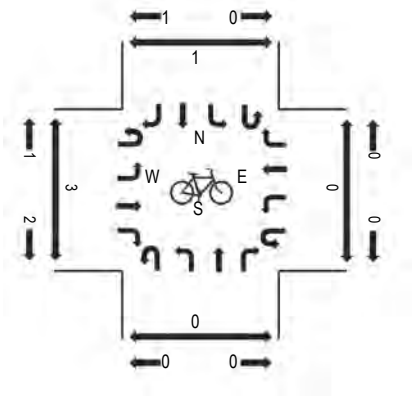
(303) 216-2439
www.alltrafficdata.net

Location: 6 SARATOGA AVE & WILLIAMS RD PM
Date: Tuesday, November 6, 2018
Peak Hour: 04:45 PM - 05:45 PM
Peak 15-Minutes: 05:00 PM - 05:15 PM

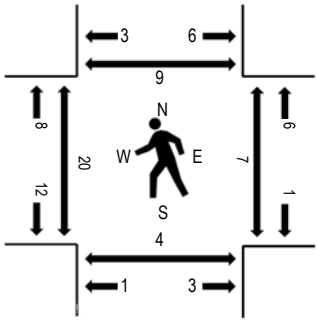
Peak Hour - All Vehicles



Peak Hour - Bicycles



Peak Hour - Pedestrians



Note: Total study counts contained in parentheses.

Traffic Counts

Interval Start Time	WILLIAMS RD Eastbound				WILLIAMS RD Westbound				SARATOGA AVE Northbound				SARATOGA AVE Southbound					Rolling Hour	Pedestrian Crossings			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	Total		West	East	South	North
4:00 PM	0	23	115	24	0	28	23	52	2	15	161	29	8	32	261	20	793	3,412	5	3	8	2
4:15 PM	0	16	95	19	0	38	24	21	4	26	230	29	6	40	312	17	877	3,571	2	1	1	3
4:30 PM	0	26	99	23	0	40	30	20	3	14	203	28	3	30	278	26	823	3,635	2	5	11	4
4:45 PM	0	29	112	28	0	44	37	28	5	18	202	41	1	30	321	23	919	3,758	3	3	0	0
5:00 PM	0	31	101	44	0	50	30	25	8	21	250	33	3	39	289	28	952	3,727	2	3	3	2
5:15 PM	0	27	134	39	0	53	44	32	5	18	217	52	6	35	255	24	941		8	1	1	5
5:30 PM	0	23	122	25	0	55	48	27	2	19	227	44	2	34	301	17	946		7	0	0	2
5:45 PM	0	14	125	36	0	48	44	26	7	17	230	38	2	25	258	18	888		7	0	0	3

Peak Rolling Hour Flow Rates

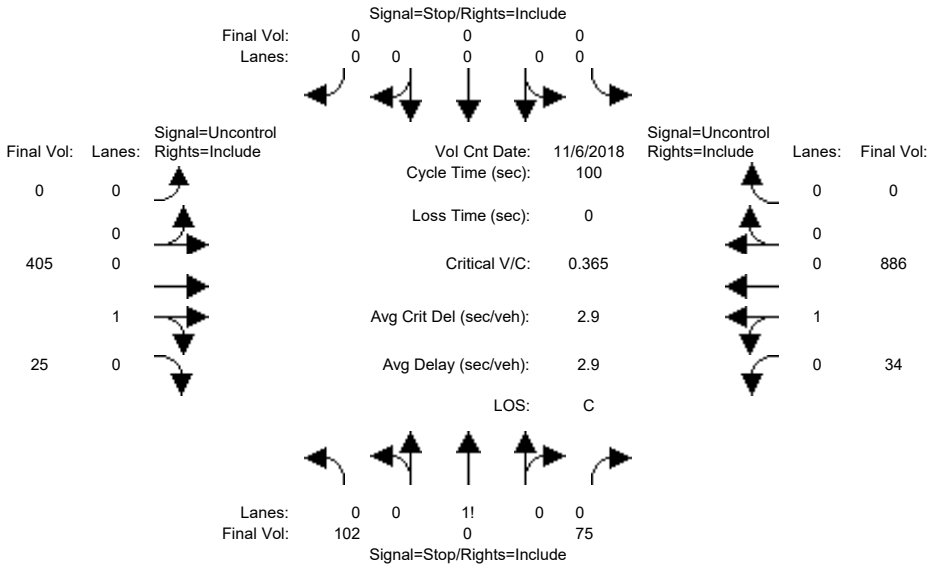
Vehicle Type	Eastbound				Westbound				Northbound				Southbound				Total
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	
Articulated Trucks	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	0	2
Lights	0	110	464	136	0	201	157	112	20	76	883	168	12	137	1,157	92	3,725
Mediums	0	0	5	0	0	1	2	0	0	0	12	2	0	1	8	0	31
Total	0	110	469	136	0	202	159	112	20	76	896	170	12	138	1,166	92	3,758

Appendix C

Level of Service Calculations

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

Intersection #1: Ranchero Way/Williams Road




```
Street Name:           Ranchero Way                  Williams Road
Approach:      North Bound      South Bound      East Bound      West Bound
Movement:     L  -  T  -  R    L  -  T  -  R    L  -  T  -  R    L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Volume Module: >> Count Date: 6 Nov 2018 << 7:15 AM - 8:15AM
Base Vol:     102    0    75     0    0     0     0  405    25    34  886     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:  102    0    75     0    0     0     0  405    25    34  886     0
Added Vol:      0    0     0     0    0     0     0    0     0     0    0     0
PasserByVol:    0    0     0     0    0     0     0    0     0     0    0     0
Initial Fut:  102    0    75     0    0     0     0  405    25    34  886     0
User Adj:    1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
PHF Adj:     1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
PHF Volume:   102    0    75     0    0     0     0  405    25    34  886     0
Reduct Vol:     0    0     0     0    0     0     0    0     0     0    0     0
FinalVolume:  102    0    75     0    0     0     0  405    25    34  886     0
------------|---------------||---------------||---------------||---------------|
Critical Gap Module:
Critical Gp:  6.4  6.5   6.2 xxxxx xxxx xxxxx xxxxx xxxx xxxxx   4.1 xxxx xxxxx
FollowUpTim:  3.5  4.0   3.3 xxxxx xxxx xxxxx xxxxx xxxx xxxxx   2.2 xxxx xxxxx
------------|---------------||---------------||---------------||---------------|
Capacity Module:
Cnflict Vol: 1372 1372   418  xxxx xxxx xxxxx  xxxx xxxx xxxxx   430 xxxx xxxxx
Potent Cap.:  163  147   640  xxxx xxxx xxxxx  xxxx xxxx xxxxx  1140 xxxx xxxxx
Move Cap.:    159  143   640  xxxx xxxx xxxxx  xxxx xxxx xxxxx  1140 xxxx xxxxx
Total Cap:    279  251 xxxxx   214  247 xxxxx  xxxx xxxx xxxxx  xxxx xxxx xxxxx
Volume/Cap:  0.37 0.00  0.12  xxxx xxxx  xxxx  xxxx xxxx  xxxx  0.03 xxxx  xxxx
------------|---------------||---------------||---------------||---------------|
Level Of Service Module:
2Way95thQ:   xxxx xxxx xxxxx  xxxx xxxx xxxxx  xxxx xxxx xxxxx   0.1 xxxx xxxxx
Control Del:xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx   8.3 xxxx xxxxx
LOS by Move:    *    *      *     *    *      *     *    *      *     A    *      *
Movement:     LT - LTR - RT    LT - LTR - RT    LT - LTR - RT    LT - LTR - RT
Shared Cap.: xxxx  367 xxxxx  xxxx xxxx xxxxx  xxxx xxxx xxxxx  xxxx xxxx xxxxx
SharedQueue:xxxxx  2.5 xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx   0.1 xxxx xxxxx
Shrd ConDel:xxxxx 23.6 xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx   8.3 xxxx xxxxx
Shared LOS:     *    C      *     *    *      *     *    *      *     A    *      *
ApproachDel:      23.6           xxxxxx           xxxxxx           xxxxxx
ApproachLOS:         C              *                *                *
Note: Queue reported is the number of cars per lane.
-----------|---------------|---------------|---------------|---------------|
HevVeh:             0%              0%              0%              0%
Grade:              0%              0%              0%              0%
Peds/Hour:          0               0               0               0
Pedestrian Walk Speed: 4.00 feet/sec
LaneWidth:       12 feet         12 feet         12 feet         12 feet
Time Period: 0.25 hour
Upstream Signals:
Link Index:                                      #45
Dist(miles):                                     0.000
Speed (mph):                                      0.00
SignalIndex:                                     #3793
Cycle Time:                                          0 secs
InitVolume:                                    0     0
Saturation:                                    0     0
ArrivalType:                                   0     0
G/C:                                        0.00  0.00
*** Computation 1: Time for Queue to Clear at Each Upstream Intersection
P:                                         0.000 0.000
gq1:                                        0.00  0.00
gq2:                                        0.00  0.00
gq:                                         0.00  0.00
*** Computation 2: Time Intersection Blocked Because of Upstream Platoons
alpha:                                             0.000
beta:                                              0.000
ta (secs):                                         0.000
F:                                                 0.000
f:                                         0.000 0.000
vcmax:                                         0     0
vcg:                                           0     0
vcmin:                                         0     0
tp:                                          0.0   0.0
p:                                                 0.000
*** Computation 3: Platoon Event Periods
pdom/psubo:                                        0.000/0.000/Unconstrained
*** Computation 4: Conflicting Flows During Each Unblocked Period
InitCnflVol:1372  1372   418 1409  1384   886    0 xxxxx xxxxx  430 xxxxx xxxxx
AdjCnflVol: 1372  1372   418 1409  1384   886    0 xxxxx xxxxx  430 xxxxx xxxxx
UpstreamAdj:1.00 1.000 1.000 1.00 1.000 1.000 1.00 x.xxx x.xxx 1.00 x.xxx x.xxx
ConflictVol:1372  1372   418 1409  1384   886    0 xxxxx xxxxx  430 xxxxx xxxxx
*** Computation 5: Capacity for Subject Movement During Unblocked Period
```

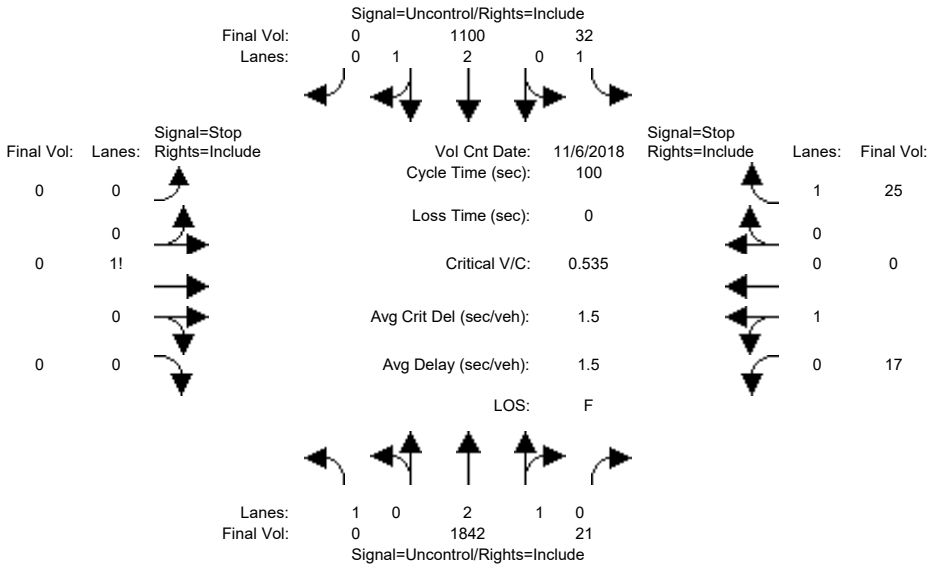
```
InitPotCap:  163   147   640  117   145   346 1636 xxxxx xxxxx 1140 xxxxx xxxxx
UpstreamAdj:1.00 1.000 1.000 1.00 1.000 1.000 1.00 x.xxx x.xxx 1.00 x.xxx x.xxx
Potent Cap.: 163   147   640  117   145   346 1636 xxxxx xxxxx 1140 xxxxx xxxxx
-----------|---------------|---------------|---------------|---------------|
Two-Stage Gap Acceptance [Median Type: TWLTL][Median Storage: 1 car]
-----------|---------------|---------------|---------------|---------------|
Two-Stage Gap Acceptance - Stage One Module:
InitCfltVol: 418   418 xxxxx  954   954 xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx
UpstreamSat:   0     0 xxxxx    0     0 xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx
UpstreamAdj:1.00  1.00 xxxxx 1.00  1.00 xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx
Cnflict Vol: 418   418 xxxxx  954   954 xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx
InitPotCap:  669   594 xxxxx  313   340 xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx
UpstreamAdj:1.00  1.00 xxxxx 1.00  1.00 xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx
Potent Cap.: 669   594 xxxxx  313   340 xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx
Move Cap.:   669   594 xxxxx  304   330 xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx
-----------|---------------|---------------|---------------|---------------|
Two-Stage Gap Acceptance - Stage Two Module:
InitCfltVol: 954   954 xxxxx  455   430 xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx
UpstreamSat:   0     0 xxxxx    0     0 xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx
UpstreamAdj:1.00  1.00 xxxxx 1.00  1.00 xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx
Cnflict Vol: 954   954 xxxxx  455   430 xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx
InitPotCap:  377   340 xxxxx  589   587 xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx
UpstreamAdj:1.00  1.00 xxxxx 1.00  1.00 xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx
Potent Cap.: 377   340 xxxxx  589   587 xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx
Move Cap.:   366   330 xxxxx  520   587 xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx
                     Peak Hour Delay Signal Warrant Report
********************************************************************************
Intersection #1 Ranchero Way/Williams Road
********************************************************************************
Future Volume Alternative: Peak Hour Warrant NOT Met
------------|---------------||---------------||---------------||---------------|
Approach:       North Bound       South Bound       East Bound       West Bound
Movement:     L  -  T  -  R     L  -  T  -  R     L  -  T  -  R     L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:        Stop Sign         Stop Sign       Uncontrolled     Uncontrolled
Lanes:        0  0  1! 0  0     0  0  0  0  0     0  0  0  1  0     0  1  0  0  0
Initial Vol:  102    0    75     0    0     0     0  405    25    34  886     0
ApproachDel:      23.6            xxxxxx            xxxxxx            xxxxxx
------------|---------------||---------------||---------------||---------------|
Approach[northbound][lanes=1][control=Stop Sign]
Signal Warrant Rule #1: [vehicle-hours=1.2]
   FAIL - Vehicle-hours less than 4 for one lane approach.
Signal Warrant Rule #2: [approach volume=177]
   SUCCEED - Approach volume greater than or equal to 100 for one lane approach.
Signal Warrant Rule #3: [approach count=3][total volume=1527]
   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 #1 Ranchero Way/Williams Road
********************************************************************************
Future Volume Alternative: Peak Hour Warrant Met
------------|---------------||---------------||---------------||---------------|
Approach:       North Bound       South Bound       East Bound       West Bound
Movement:     L  -  T  -  R     L  -  T  -  R     L  -  T  -  R     L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:        Stop Sign         Stop Sign       Uncontrolled     Uncontrolled
Lanes:        0  0  1! 0  0     0  0  0  0  0     0  0  0  1  0     0  1  0  0  0
Initial Vol:  102    0    75     0    0     0     0  405    25    34  886     0
------------|---------------||---------------||---------------||---------------|
Major Street Volume:             1350
Minor Approach Volume:           177
Minor Approach Volume Threshold: 139
--------------------------------------------------------------------------------
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)
Existing AM

Intersection #2: Saratoga Avenue/Piper Drive




```
Street Name:         Saratoga Avenue                  Piper Drive
Approach:      North Bound     South Bound      East Bound      West Bound
Movement:     L  -  T  -  R    L  -  T  -  R    L  -  T  -  R    L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Volume Module: >> Count Date: 6 Nov 2018 << 7:30 AM - 8:30 AM
Base Vol:       0 1842    21    32 1100     0     0    0     0    17    0    25
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 1842    21    32 1100     0     0    0     0    17    0    25
Added Vol:      0    0     0     0    0     0     0    0     0     0    0     0
PasserByVol:    0    0     0     0    0     0     0    0     0     0    0     0
Initial Fut:    0 1842    21    32 1100     0     0    0     0    17    0    25
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 1842    21    32 1100     0     0    0     0    17    0    25
Reduct Vol:     0    0     0     0    0     0     0    0     0     0    0     0
FinalVolume:    0 1842    21    32 1100     0     0    0     0    17    0    25
------------|---------------||---------------||---------------||---------------|
Critical Gap Module:
Critical Gp:xxxxx xxxx xxxxx   4.1 xxxx xxxxx   7.5  6.5   6.9   6.8  6.5   6.9
FollowUpTim:xxxxx xxxx xxxxx   2.2 xxxx xxxxx   3.5  4.0   3.3   3.5  4.0   3.3
------------|---------------||---------------||---------------||---------------|
Capacity Module:
Cnflict Vol: xxxx xxxx xxxxx  1863 xxxx xxxxx  1778 3027   367  2283 3017   625
Potent Cap.: xxxx xxxx xxxxx   328 xxxx xxxxx    53   13   636    34   13   433
Move Cap.:   xxxx xxxx xxxxx   328 xxxx xxxxx    46   12   636    32   12   433
Volume/Cap:  xxxx xxxx  xxxx  0.10 xxxx  xxxx  0.00 0.00  0.00  0.54 0.00  0.06
------------|---------------||---------------||---------------||---------------|
Level Of Service Module:
2Way95thQ:   xxxx xxxx xxxxx   0.3 xxxx xxxxx  xxxx xxxx xxxxx  xxxx xxxx   0.2
Control Del:xxxxx xxxx xxxxx  17.1 xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx  13.8
LOS by Move:    *    *     *     C    *     *     *    *     *     *    *     B
Movement:     LT - LTR - RT    LT - LTR - RT    LT - LTR - RT    LT - LTR - RT
Shared Cap.: xxxx xxxx xxxxx  xxxx xxxx xxxxx  xxxx    0 xxxxx    32 xxxx xxxxx
SharedQueue:xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx   1.8 xxxx xxxxx
Shrd ConDel:xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx 209.3 xxxx xxxxx
Shared LOS:     *    *     *     *    *     *     *    *     *     F    *     *
ApproachDel:    xxxxxx           xxxxxx           xxxxxx              93.0
ApproachLOS:         *                *                *                 F
Note: Queue reported is the number of cars per lane.
-----------|---------------|---------------|---------------|---------------|
HevVeh:             0%              0%              0%              0%
Grade:              0%              0%              0%              0%
Peds/Hour:          0               0               0               0
Pedestrian Walk Speed: 4.00 feet/sec
LaneWidth:       12 feet         12 feet         12 feet         12 feet
Time Period: 0.25 hour
Upstream Signals:
Link Index:                      #42
Dist(miles):                     0.000
Speed (mph):                      0.00
SignalIndex:                     #3793
Cycle Time:                          0 secs
InitVolume:                    0     0
Saturation:                    0     0
ArrivalType:                   0     0
G/C:                        0.00  0.00
*** Computation 1: Time for Queue to Clear at Each Upstream Intersection
P:                          0.000 0.000
gq1:                         0.00  0.00
gq2:                         0.00  0.00
gq:                          0.00  0.00
*** Computation 2: Time Intersection Blocked Because of Upstream Platoons
alpha:                           0.000
beta:                            0.000
ta (secs):                       0.000
F:                               0.000
f:                          0.000 0.000
vcmax:                         0     0
vcg:                           0     0
vcmin:                         0     0
tp:                          0.0   0.0
p:                               0.000
*** Computation 3: Platoon Event Periods
pdom/psubo:      0.000/0.000/Unconstrained
*** Computation 4: Conflicting Flows During Each Unblocked Period
InitCnflVol:   0 xxxxx xxxxx 1863 xxxxx xxxxx 1778  3027   367 2283  3017   625
AdjCnflVol:    0 xxxxx xxxxx 1863 xxxxx xxxxx 1778  3027   367 2283  3017   625
UpstreamAdj:1.00 x.xxx x.xxx 1.00 x.xxx x.xxx 1.00 1.000 1.000 1.00 1.000 1.000
ConflictVol:   0 xxxxx xxxxx 1863 xxxxx xxxxx 1778  3027   367 2283  3017   625
*** Computation 5: Capacity for Subject Movement During Unblocked Period
InitPotCap: 1636 xxxxx xxxxx  328 xxxxx xxxxx   53    13   636   34    13   433
```

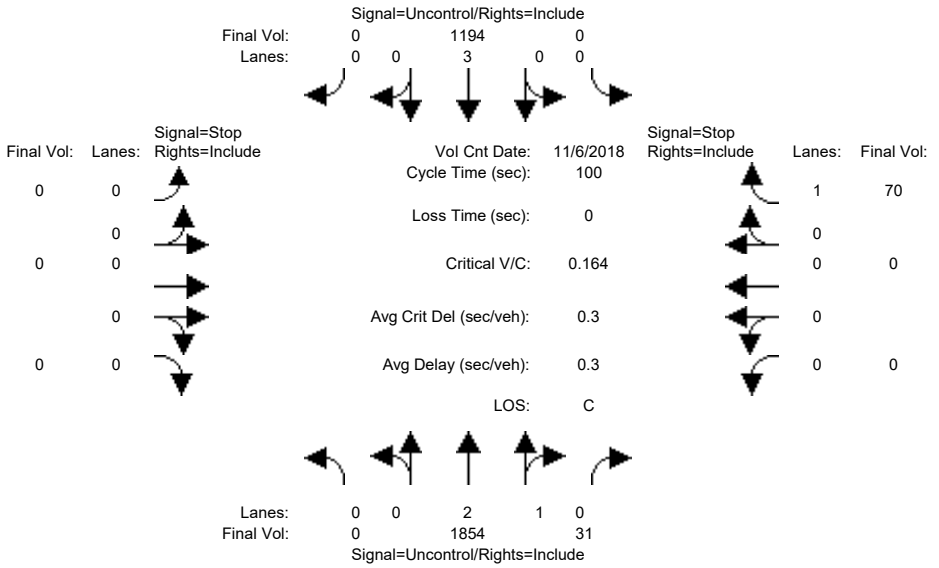
```
UpstreamAdj:1.00 x.xxx x.xxx 1.00 x.xxx x.xxx 1.00 1.000 1.000 1.00 1.000 1.000
Potent Cap.:1636 xxxxx xxxxx  328 xxxxx xxxxx   53    13   636   34    13   433
                    Peak Hour Delay Signal Warrant Report
*******************************************************************************
Intersection #2 Saratoga Avenue/Piper Drive
*******************************************************************************
Future Volume Alternative: Peak Hour Warrant NOT Met
------------|---------------||---------------||---------------||---------------|
Approach:       North Bound      South Bound       East Bound       West Bound
Movement:     L  -  T  -  R    L  -  T  -  R    L  -  T  -  R    L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:       Uncontrolled     Uncontrolled      Stop Sign        Stop Sign
Lanes:        1  0  2  1  0    1  0  2  1  0    0  0  1! 0  0    0  1  0  0  1
Initial Vol:    0 1842    21    32 1100     0     0    0     0    17    0    25
ApproachDel:    xxxxxx           xxxxxx           xxxxxx             93.0
------------|---------------||---------------||---------------||---------------|
Approach[westbound][lanes=2][control=Stop Sign]
Signal Warrant Rule #1: [vehicle-hours=1.1]
   FAIL - Vehicle-hours less than 5 for two or more lane approach.
Signal Warrant Rule #2: [approach volume=42]
   FAIL - Approach volume less than 150 for two or more lane approach.
Signal Warrant Rule #3: [approach count=3][total volume=3037]
   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 #2 Saratoga Avenue/Piper Drive
*******************************************************************************
Future Volume Alternative: Peak Hour Warrant NOT Met
------------|---------------||---------------||---------------||---------------|
Approach:       North Bound      South Bound       East Bound       West Bound
Movement:     L  -  T  -  R    L  -  T  -  R    L  -  T  -  R    L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:       Uncontrolled     Uncontrolled      Stop Sign        Stop Sign
Lanes:        1  0  2  1  0    1  0  2  1  0    0  0  1! 0  0    0  1  0  0  1
Initial Vol:    0 1842    21    32 1100     0     0    0     0    17    0    25
------------|---------------||---------------||---------------||---------------|
Major Street Volume:             2995
Minor Approach Volume:           42
Minor Approach Volume Threshold: -98 [less than minimum of 150]
-------------------------------------------------------------------------------
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)
Existing AM

Intersection #3: Saratoga Avenue/Mitzi Drive




```
Street Name:         Saratoga Avenue                    Mitzi Drive
Approach:      North Bound      South Bound      East Bound       West Bound
Movement:     L  -  T  -  R    L  -  T  -  R    L  -  T  -  R    L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Volume Module: >> Count Date: 6 Nov 2018 << 7:30 AM - 8:30 AM
Base Vol:       0 1854    31     0 1194     0     0    0     0     0    0    70
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 1854    31     0 1194     0     0    0     0     0    0    70
Added Vol:      0    0     0     0    0     0     0    0     0     0    0     0
PasserByVol:    0    0     0     0    0     0     0    0     0     0    0     0
Initial Fut:    0 1854    31     0 1194     0     0    0     0     0    0    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:     0 1854    31     0 1194     0     0    0     0     0    0    70
Reduct Vol:     0    0     0     0    0     0     0    0     0     0    0     0
FinalVolume:    0 1854    31     0 1194     0     0    0     0     0    0    70
------------|---------------||---------------||---------------||---------------|
Critical Gap Module:
Critical Gp:xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx   6.9
FollowUpTim:xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx   3.3
------------|---------------||---------------||---------------||---------------|
Capacity Module:
Cnflict Vol: xxxx xxxx xxxxx  xxxx xxxx xxxxx  xxxx xxxx xxxxx  xxxx xxxx   634
Potent Cap.: xxxx xxxx xxxxx  xxxx xxxx xxxxx  xxxx xxxx xxxxx  xxxx xxxx   427
Move Cap.:   xxxx xxxx xxxxx  xxxx xxxx xxxxx  xxxx xxxx xxxxx  xxxx xxxx   427
Volume/Cap:  xxxx xxxx  xxxx  xxxx xxxx  xxxx  xxxx xxxx  xxxx  xxxx xxxx  0.16
------------|---------------||---------------||---------------||---------------|
Level Of Service Module:
2Way95thQ:   xxxx xxxx xxxxx  xxxx xxxx xxxxx  xxxx xxxx xxxxx  xxxx xxxx   0.6
Control Del:xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx  15.1
LOS by Move:    *    *     *     *    *     *     *    *     *     *    *     C
Movement:     LT - LTR - RT    LT - LTR - RT    LT - LTR - RT    LT - LTR - RT
Shared Cap.: xxxx xxxx xxxxx  xxxx xxxx xxxxx  xxxx xxxx xxxxx  xxxx xxxx xxxxx
SharedQueue:xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx
Shrd ConDel:xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx
Shared LOS:     *    *     *     *    *     *     *    *     *     *    *     *
ApproachDel:    xxxxxx           xxxxxx           xxxxxx             15.1
ApproachLOS:         *                *                *                C
Note: Queue reported is the number of cars per lane.
-----------|---------------|---------------|---------------|---------------|
HevVeh:             0%              0%              0%              0%
Grade:              0%              0%              0%              0%
Peds/Hour:          0               0               0               0
Pedestrian Walk Speed: 4.00 feet/sec
LaneWidth:       12 feet         12 feet         12 feet         12 feet
Time Period: 0.25 hour
Upstream Signals:
Link Index:                      #42
Dist(miles):                     0.000
Speed (mph):                      0.00
SignalIndex:                     #3793
Cycle Time:                          0 secs
InitVolume:                    0     0
Saturation:                    0     0
ArrivalType:                   0     0
G/C:                        0.00  0.00
*** Computation 1: Time for Queue to Clear at Each Upstream Intersection
P:                          0.000 0.000
gq1:                         0.00  0.00
gq2:                         0.00  0.00
gq:                          0.00  0.00
*** Computation 2: Time Intersection Blocked Because of Upstream Platoons
alpha:                           0.000
beta:                            0.000
ta (secs):                       0.000
F:                               0.000
f:                          0.000 0.000
vcmax:                         0     0
vcg:                           0     0
vcmin:                         0     0
tp:                          0.0   0.0
p:                               0.000
*** Computation 3: Platoon Event Periods
pdom/psubo:      0.000/0.000/Unconstrained
*** Computation 4: Conflicting Flows During Each Unblocked Period
InitCnflVol:   0 xxxxx xxxxx    0 xxxxx xxxxx 1812  3079   398 2268  3064   634
AdjCnflVol:    0 xxxxx xxxxx    0 xxxxx xxxxx 1812  3079   398 2268  3064   634
UpstreamAdj:1.00 x.xxx x.xxx 1.00 x.xxx x.xxx 1.00 1.000 1.000 1.00 1.000 1.000
ConflictVol:   0 xxxxx xxxxx    0 xxxxx xxxxx 1812  3079   398 2268  3064   634
*** Computation 5: Capacity for Subject Movement During Unblocked Period
InitPotCap: 1636 xxxxx xxxxx 1636 xxxxx xxxxx   50    12   607   35    13   427
```

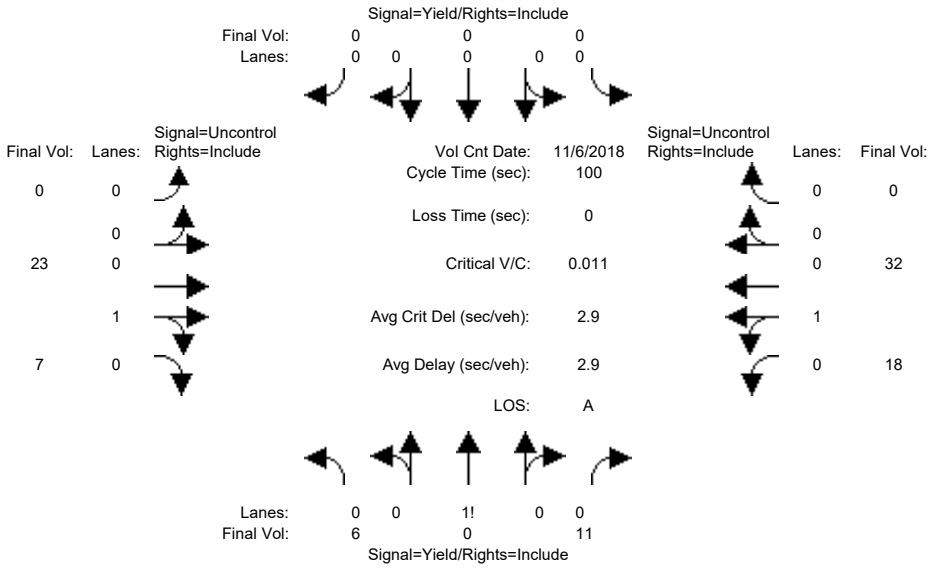
```
UpstreamAdj:1.00 x.xxx x.xxx 1.00 x.xxx x.xxx 1.00 1.000 1.000 1.00 1.000 1.000
Potent Cap.:1636 xxxxx xxxxx 1636 xxxxx xxxxx   50    12   607   35    13   427
                    Peak Hour Delay Signal Warrant Report
*******************************************************************************
Intersection #3 Saratoga Avenue/Mitzi Drive
*******************************************************************************
Future Volume Alternative: Peak Hour Warrant NOT Met
------------|---------------||---------------||---------------||---------------|
Approach:       North Bound      South Bound       East Bound       West Bound
Movement:     L  -  T  -  R    L  -  T  -  R    L  -  T  -  R    L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:       Uncontrolled     Uncontrolled      Stop Sign        Stop Sign
Lanes:        0  0  2  1  0    0  0  3  0  0    0  0  0  0  0    0  0  0  0  1
Initial Vol:    0 1854    31     0 1194     0     0    0     0     0    0    70
ApproachDel:    xxxxxx           xxxxxx           xxxxxx             15.1
------------|---------------||---------------||---------------||---------------|
Approach[westbound][lanes=1][control=Stop Sign]
Signal Warrant Rule #1: [vehicle-hours=0.3]
   FAIL - Vehicle-hours less than 4 for one lane approach.
Signal Warrant Rule #2: [approach volume=70]
   FAIL - Approach volume less than 100 for one lane approach.
Signal Warrant Rule #3: [approach count=3][total volume=3149]
   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 #3 Saratoga Avenue/Mitzi Drive
*******************************************************************************
Future Volume Alternative: Peak Hour Warrant NOT Met
------------|---------------||---------------||---------------||---------------|
Approach:       North Bound      South Bound       East Bound       West Bound
Movement:     L  -  T  -  R    L  -  T  -  R    L  -  T  -  R    L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:       Uncontrolled     Uncontrolled      Stop Sign        Stop Sign
Lanes:        0  0  2  1  0    0  0  3  0  0    0  0  0  0  0    0  0  0  0  1
Initial Vol:    0 1854    31     0 1194     0     0    0     0     0    0    70
------------|---------------||---------------||---------------||---------------|
Major Street Volume:             3079
Minor Approach Volume:           70
Minor Approach Volume Threshold: -103 [less than minimum of 100]
-------------------------------------------------------------------------------
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)
Existing AM

Intersection #4: Mitzi Drive/Piper Drive




```
Street Name:            Mitzi Drive                    Piper Drive
Approach:       North Bound      South Bound      East Bound       West Bound
Movement:     L  -  T  -  R    L  -  T  -  R    L  -  T  -  R    L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Volume Module: >> Count Date: 6 Nov 2018 << 7:30 AM - 8:30 AM
Base Vol:       6    0    11     0    0     0     0   23     7    18   32     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:    6    0    11     0    0     0     0   23     7    18   32     0
Added Vol:      0    0     0     0    0     0     0    0     0     0    0     0
PasserByVol:    0    0     0     0    0     0     0    0     0     0    0     0
Initial Fut:    6    0    11     0    0     0     0   23     7    18   32     0
User Adj:    1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
PHF Adj:     1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
PHF Volume:     6    0    11     0    0     0     0   23     7    18   32     0
Reduct Vol:     0    0     0     0    0     0     0    0     0     0    0     0
FinalVolume:    6    0    11     0    0     0     0   23     7    18   32     0
------------|---------------||---------------||---------------||---------------|
Critical Gap Module:
Critical Gp:  6.4  6.5   6.2 xxxxx xxxx xxxxx xxxxx xxxx xxxxx   4.1 xxxx xxxxx
FollowUpTim:  3.5  4.0   3.3 xxxxx xxxx xxxxx xxxxx xxxx xxxxx   2.2 xxxx xxxxx
------------|---------------||---------------||---------------||---------------|
Capacity Module:
Cnflict Vol:   95   95    27  xxxx xxxx xxxxx  xxxx xxxx xxxxx    30 xxxx xxxxx
Potent Cap.:  910  799  1055  xxxx xxxx xxxxx  xxxx xxxx xxxxx  1596 xxxx xxxxx
Move Cap.:    902  790  1055  xxxx xxxx xxxxx  xxxx xxxx xxxxx  1596 xxxx xxxxx
Volume/Cap:  0.01 0.00  0.01  xxxx xxxx  xxxx  xxxx xxxx  xxxx  0.01 xxxx  xxxx
------------|---------------||---------------||---------------||---------------|
Level Of Service Module:
2Way95thQ:   xxxx xxxx xxxxx  xxxx xxxx xxxxx  xxxx xxxx xxxxx   0.0 xxxx xxxxx
Control Del:xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx   7.3 xxxx xxxxx
LOS by Move:    *    *     *     *    *     *     *    *     *     A    *     *
Movement:     LT - LTR - RT    LT - LTR - RT    LT - LTR - RT    LT - LTR - RT
Shared Cap.: xxxx  995 xxxxx  xxxx xxxx xxxxx  xxxx xxxx xxxxx  xxxx xxxx xxxxx
SharedQueue:xxxxx  0.1 xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx   0.0 xxxx xxxxx
Shrd ConDel:xxxxx  8.7 xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx   7.3 xxxx xxxxx
Shared LOS:     *    A     *     *    *     *     *    *     *     A    *     *
ApproachDel:       8.7           xxxxxx           xxxxxx           xxxxxx
ApproachLOS:         A             *                *                *
Note: Queue reported is the number of cars per lane.
------------|---------------|---------------|---------------|---------------|
HevVeh:             0%              0%              0%              0%
Grade:              0%              0%              0%              0%
Peds/Hour:          0               0               0               0
Pedestrian Walk Speed: 4.00 feet/sec
LaneWidth:       12 feet         12 feet         12 feet         12 feet
Time Period: 0.25 hour
                    Peak Hour Delay Signal Warrant Report
*******************************************************************************
Intersection #4 Mitzi Drive/Piper Drive
*******************************************************************************
Future Volume Alternative: Peak Hour Warrant NOT Met
------------|---------------||---------------||---------------||---------------|
Approach:       North Bound      South Bound      East Bound       West Bound
Movement:     L  -  T  -  R    L  -  T  -  R    L  -  T  -  R    L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:        Yield Sign       Yield Sign      Uncontrolled     Uncontrolled
Lanes:        0  0  1! 0  0    0  0  0  0  0    0  0  0  1  0    0  1  0  0  0
Initial Vol:    6    0    11     0    0     0     0   23     7    18   32     0
ApproachDel:       8.7           xxxxxx           xxxxxx           xxxxxx
------------|---------------||---------------||---------------||---------------|
Approach[northbound][lanes=1][control=Yield Sign]
Signal Warrant Rule #1: [vehicle-hours=0.0]
   FAIL - Controller not stop sign.
Signal Warrant Rule #2: [approach volume=17]
   FAIL - Approach volume less than 100 for one lane approach.
Signal Warrant Rule #3: [approach count=3][total volume=97]
   FAIL - Total volume less than 650 for intersection
          with less than four approaches.
-------------------------------------------------------------------------------
SIGNAL WARRANT DISCLAIMER
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"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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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]
```
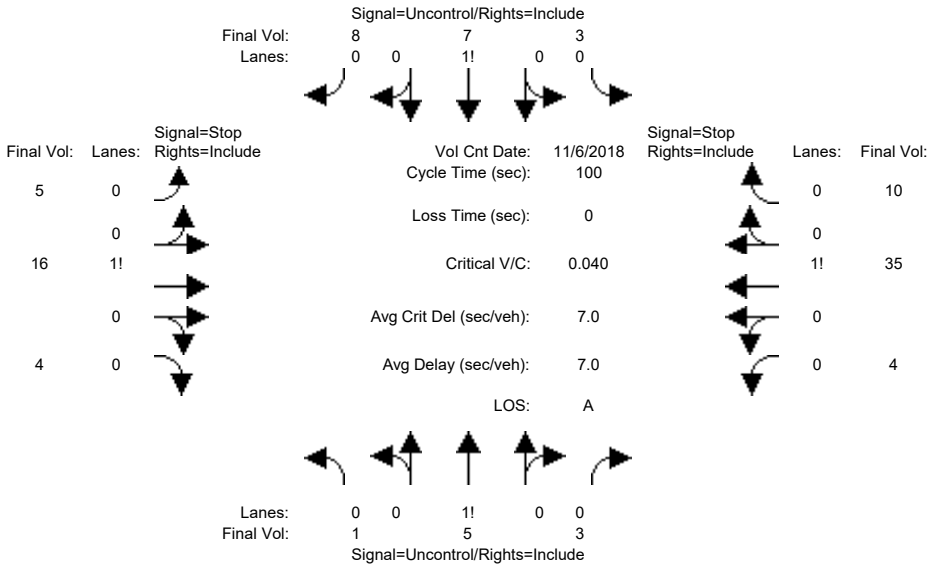

```
********************************************************************************
Intersection #4 Mitzi Drive/Piper Drive
********************************************************************************
Future Volume Alternative: Peak Hour Warrant NOT Met
------------|---------------||---------------||---------------||---------------|
Approach:       North Bound      South Bound       East Bound       West Bound
Movement:     L  -  T  -  R    L  -  T  -  R    L  -  T  -  R    L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:       Yield Sign       Yield Sign       Uncontrolled     Uncontrolled
Lanes:       0  0  1! 0  0    0  0  0  0  0    0  0  0  1  0    0  1  0  0  0
Initial Vol:    6    0    11     0    0     0     0   23     7    18   32     0
------------|---------------||---------------||---------------||---------------|
Major Street Volume:             80
Minor Approach Volume:           17
Minor Approach Volume Threshold: 893
------------------------------------------------------------------------------
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)
Existing AM

Intersection #5: Mitzi Drive/Ranchero Way




```
Street Name:           Mitzi Drive                    Ranchero Way
Approach:      North Bound      South Bound      East Bound       West Bound
Movement:     L  -  T  -  R    L  -  T  -  R    L  -  T  -  R    L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Volume Module: >> Count Date: 6 Nov 2018 << 7:15 AM - 8:15 AM
Base Vol:       1    5     3     3    7     8     5   16     4     4   35    10
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:    1    5     3     3    7     8     5   16     4     4   35    10
Added Vol:      0    0     0     0    0     0     0    0     0     0    0     0
PasserByVol:    0    0     0     0    0     0     0    0     0     0    0     0
Initial Fut:    1    5     3     3    7     8     5   16     4     4   35    10
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:     1    5     3     3    7     8     5   16     4     4   35    10
Reduct Vol:     0    0     0     0    0     0     0    0     0     0    0     0
FinalVolume:    1    5     3     3    7     8     5   16     4     4   35    10
------------|---------------||---------------||---------------||---------------|
Critical Gap Module:
Critical Gp:  4.1 xxxx xxxxx   4.1 xxxx xxxxx   7.1  6.5   6.2   7.1  6.5   6.2
FollowUpTim:  2.2 xxxx xxxxx   2.2 xxxx xxxxx   3.5  4.0   3.3   3.5  4.0   3.3
------------|---------------||---------------||---------------||---------------|
Capacity Module:
Cnflict Vol:   15 xxxx xxxxx     8 xxxx xxxxx    48   27    11    36   30     7
Potent Cap.: 1616 xxxx xxxxx  1625 xxxx xxxxx   958  870  1076   976  867  1082
Move Cap.:   1616 xxxx xxxxx  1625 xxxx xxxxx   918  868  1076   957  865  1082
Volume/Cap:  0.00 xxxx  xxxx  0.00 xxxx  xxxx  0.01 0.02  0.00  0.00 0.04  0.01
------------|---------------||---------------||---------------||---------------|
Level Of Service Module:
2Way95thQ:    0.0 xxxx xxxxx   0.0 xxxx xxxxx  xxxx xxxx xxxxx  xxxx xxxx xxxxx
Control Del:  7.2 xxxx xxxxx   7.2 xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx
LOS by Move:    A    *     *     A    *     *     *    *     *     *    *     *
Movement:     LT - LTR - RT    LT - LTR - RT    LT - LTR - RT    LT - LTR - RT
Shared Cap.: xxxx xxxx xxxxx  xxxx xxxx xxxxx  xxxx  906 xxxxx  xxxx  910 xxxxx
SharedQueue:xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx  0.1 xxxxx xxxxx  0.2 xxxxx
Shrd ConDel:xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx  9.1 xxxxx xxxxx  9.2 xxxxx
Shared LOS:     *    *     *     *    *     *     *    A     *     *    A     *
ApproachDel:    xxxxxx           xxxxxx               9.1              9.2
ApproachLOS:         *                *                A                A
Note: Queue reported is the number of cars per lane.
-----------|---------------|---------------|---------------|---------------|
HevVeh:             0%              0%              0%              0%
Grade:              0%              0%              0%              0%
Peds/Hour:          0               0               0               0
Pedestrian Walk Speed: 4.00 feet/sec
LaneWidth:       12 feet         12 feet         12 feet         12 feet
Time Period: 0.25 hour
                  Peak Hour Delay Signal Warrant Report
*******************************************************************************
Intersection #5 Mitzi Drive/Ranchero Way
*******************************************************************************
Future Volume Alternative: Peak Hour Warrant NOT Met
------------|---------------||---------------||---------------||---------------|
Approach:      North Bound      South Bound      East Bound       West Bound
Movement:     L  -  T  -  R    L  -  T  -  R    L  -  T  -  R    L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:       Uncontrolled     Uncontrolled      Stop Sign        Stop Sign
Lanes:        0  0  1! 0  0    0  0  1! 0  0    0  0  1! 0  0    0  0  1! 0  0
Initial Vol:    1    5     3     3    7     8     5   16     4     4   35    10
ApproachDel:    xxxxxx           xxxxxx               9.1              9.2
------------|---------------||---------------||---------------||---------------|
Approach[eastbound][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=25]
   FAIL - Approach volume less than 100 for one lane approach.
Signal Warrant Rule #3: [approach count=4][total volume=101]
   FAIL - Total volume less than 650 for intersection
          with less than four approaches.
-------------------------------------------------------------------------------
Approach[westbound][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=49]
   FAIL - Approach volume less than 100 for one lane approach.
Signal Warrant Rule #3: [approach count=4][total volume=101]
   FAIL - Total volume less than 650 for intersection
          with less than four approaches.
-------------------------------------------------------------------------------
SIGNAL WARRANT DISCLAIMER
This peak hour signal warrant analysis should be considered solely as an
"indicator" of the likelihood of an unsignalized intersection warranting
```


a traffic signal in the future. Intersections that exceed this warrant
are probably more likely to meet one or more of the other volume based
signal warrant (such as the 4-hour or 8-hour warrants).

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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 #5 Mitzi Drive/Ranchero Way

****

Future Volume Alternative: Peak Hour Warrant NOT Met

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Uncontrolled			Uncontrolled			Stop Sign			Stop Sign		
Lanes:	0 0	1! 0	0	0 0	1! 0	0	0 0	1! 0	0	0 0	1! 0	0
Initial Vol:	1	5	3	3	7	8	5	16	4	4	35	10

Major Street Volume: 27
Minor Approach Volume: 49
Minor Approach Volume Threshold: 1183

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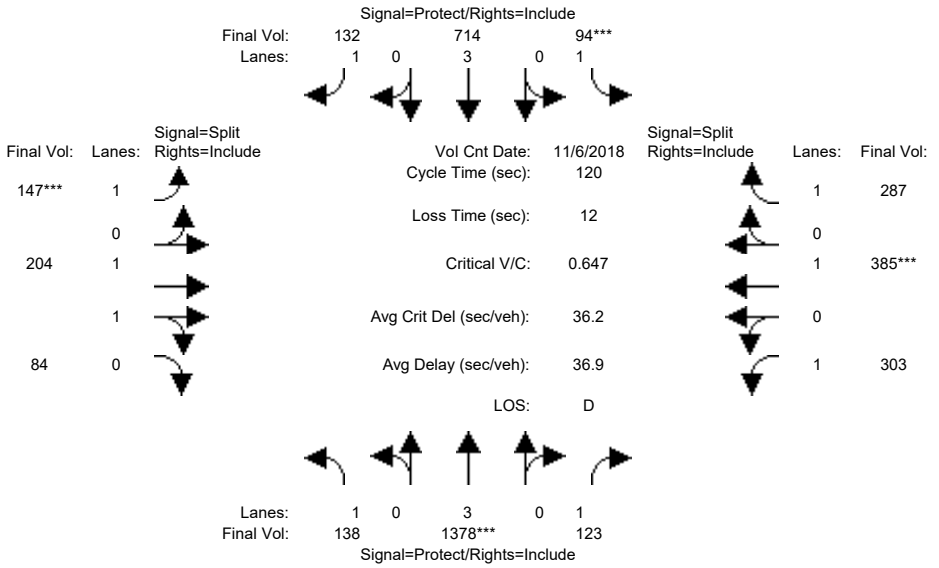
"indicator" of the likelihood of an unsignalized intersection warranting
a traffic signal in the future. Intersections that exceed this warrant
are probably more likely to meet one or more of the other volume based
signal warrant (such as the 4-hour or 8-hour warrants).

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 #3793: Saratoga Avenue/Williams Road

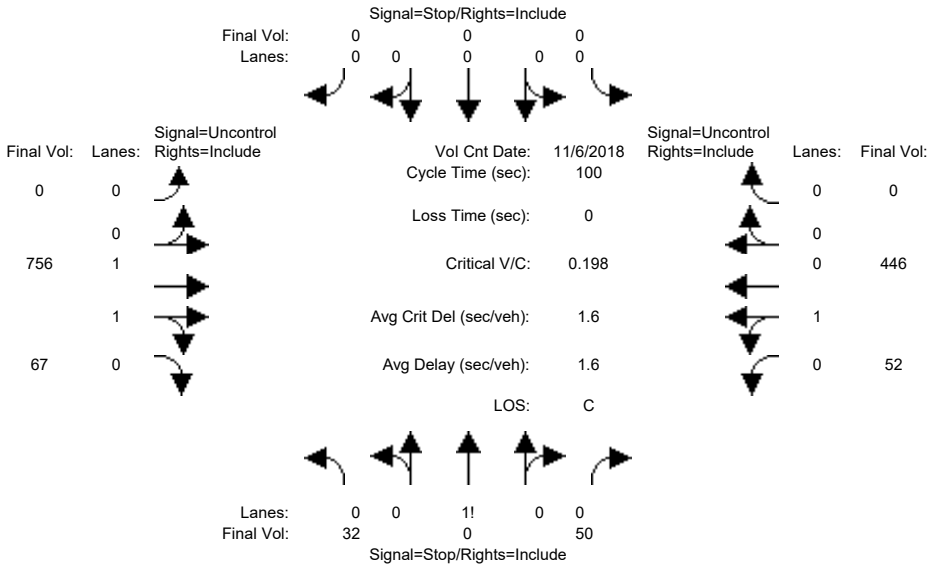


Street Name:	Saratoga Avenue						Williams Road					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	7	10	10	7	10	10	10	10	10	10	10	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module: >> Count Date: 6 Nov 2018 << 7:30 AM - 8:30 AM												
Base Vol:	138	1378	123	94	714	132	147	204	84	303	385	287
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:	138	1378	123	94	714	132	147	204	84	303	385	287
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	138	1378	123	94	714	132	147	204	84	303	385	287
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:	138	1378	123	94	714	132	147	204	84	303	385	287
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	138	1378	123	94	714	132	147	204	84	303	385	287
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:	138	1378	123	94	714	132	147	204	84	303	385	287
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	1.00	0.92	0.92	1.00	0.92	0.92	0.98	0.95	0.92	1.00	0.92
Lanes:	1.00	3.00	1.00	1.00	3.00	1.00	1.00	1.40	0.60	1.00	1.00	1.00
Final Sat.:	1750	5700	1750	1750	5700	1750	1750	2620	1079	1750	1900	1750
Capacity Analysis Module:												
Vol/Sat:	0.08	0.24	0.07	0.05	0.13	0.08	0.08	0.08	0.08	0.17	0.20	0.16
Crit Moves:		****		****			****				****	
Green Time:	21.2	44.9	44.9	10.0	33.6	33.6	15.6	15.6	15.6	37.6	37.6	37.6
Volume/Cap:	0.45	0.65	0.19	0.65	0.45	0.27	0.65	0.60	0.60	0.55	0.65	0.52
Uniform Del:	44.2	31.0	25.3	53.3	35.5	33.6	49.6	49.3	49.3	34.2	35.5	33.8
IncremntDel:	1.0	0.7	0.1	9.7	0.2	0.3	6.3	2.1	2.1	1.2	2.5	0.9
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay 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
Delay/Veh:	45.2	31.7	25.4	63.0	35.7	33.9	55.9	51.4	51.4	35.4	38.0	34.8
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:	45.2	31.7	25.4	63.0	35.7	33.9	55.9	51.4	51.4	35.4	38.0	34.8
LOS by Move:	D	C	C	E	D	C	E	D	D	D	D	C
HCM2k95thQ:	10	25	6	9	14	8	13	12	12	19	23	18

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

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

Intersection #1: Ranchero Way/Williams Road




```
Street Name:            Ranchero Way                    Williams Road
Approach:       North Bound      South Bound      East Bound       West Bound
Movement:     L  -  T  -  R    L  -  T  -  R    L  -  T  -  R    L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Volume Module: >> Count Date: 6 Nov 2018 << 5:00 PM - 6:00 PM
Base Vol:      32    0    50     0    0     0     0  756    67    52  446     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:   32    0    50     0    0     0     0  756    67    52  446     0
Added Vol:      0    0     0     0    0     0     0    0     0     0    0     0
PasserByVol:    0    0     0     0    0     0     0    0     0     0    0     0
Initial Fut:   32    0    50     0    0     0     0  756    67    52  446     0
User Adj:    1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
PHF Adj:     1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
PHF Volume:    32    0    50     0    0     0     0  756    67    52  446     0
Reduct Vol:     0    0     0     0    0     0     0    0     0     0    0     0
FinalVolume:   32    0    50     0    0     0     0  756    67    52  446     0
------------|---------------||---------------||---------------||---------------|
Critical Gap Module:
Critical Gp:  6.4  6.5   6.2 xxxxx xxxx xxxxx xxxxx xxxx xxxxx   4.1 xxxx xxxxx
FollowUpTim:  3.5  4.0   3.3 xxxxx xxxx xxxxx xxxxx xxxx xxxxx   2.2 xxxx xxxxx
------------|---------------||---------------||---------------||---------------|
Capacity Module:
Cnflict Vol: 1340 1340   412  xxxx xxxx xxxxx  xxxx xxxx xxxxx   823 xxxx xxxxx
Potent Cap.:  170  154   645  xxxx xxxx xxxxx  xxxx xxxx xxxxx   816 xxxx xxxxx
Move Cap.:    162  144   645  xxxx xxxx xxxxx  xxxx xxxx xxxxx   816 xxxx xxxxx
Volume/Cap:  0.20 0.00  0.08  xxxx xxxx  xxxx  xxxx xxxx  xxxx  0.06 xxxx  xxxx
------------|---------------||---------------||---------------||---------------|
Level Of Service Module:
2Way95thQ:   xxxx xxxx xxxxx  xxxx xxxx xxxxx  xxxx xxxx xxxxx   0.2 xxxx xxxxx
Control Del:xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx   9.7 xxxx xxxxx
LOS by Move:    *    *     *     *    *     *     *    *     *     A    *     *
Movement:     LT - LTR - RT    LT - LTR - RT    LT - LTR - RT    LT - LTR - RT
Shared Cap.: xxxx  297 xxxxx  xxxx xxxx xxxxx  xxxx xxxx xxxxx  xxxx xxxx xxxxx
SharedQueue:xxxxx  1.1 xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx   0.2 xxxx xxxxx
Shrd ConDel:xxxxx 21.6 xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx   9.7 xxxx xxxxx
Shared LOS:     *    C     *     *    *     *     *    *     *     A    *     *
ApproachDel:      21.6           xxxxxx           xxxxxx           xxxxxx
ApproachLOS:         C             *                *                *
Note: Queue reported is the number of cars per lane.
-----------|---------------|---------------|---------------|---------------|
HevVeh:             0%              0%              0%              0%
Grade:              0%              0%              0%              0%
Peds/Hour:          0               0               0               0
Pedestrian Walk Speed: 4.00 feet/sec
LaneWidth:       12 feet         12 feet         12 feet         12 feet
Time Period: 0.25 hour
Upstream Signals:
Link Index:                                      #45
Dist(miles):                                     0.000
Speed (mph):                                      0.00
SignalIndex:                                     #3793
Cycle Time:                                          0 secs
InitVolume:                                    0     0
Saturation:                                    0     0
ArrivalType:                                   0     0
G/C:                                        0.00  0.00
*** Computation 1: Time for Queue to Clear at Each Upstream Intersection
P:                                          0.000 0.000
gq1:                                         0.00  0.00
gq2:                                         0.00  0.00
gq:                                          0.00  0.00
*** Computation 2: Time Intersection Blocked Because of Upstream Platoons
alpha:                                             0.000
beta:                                              0.000
ta (secs):                                         0.000
F:                                                 0.000
f:                                          0.000 0.000
vcmax:                                         0     0
vcg:                                           0     0
vcmin:                                         0     0
tp:                                          0.0   0.0
p:                                                 0.000
*** Computation 3: Platoon Event Periods
pdom/psubo:                                          0.000/0.000/Unconstrained
*** Computation 4: Conflicting Flows During Each Unblocked Period
InitCnflVol:1340  1340   412  928  1373   446    0 xxxxx xxxxx  823 xxxxx xxxxx
AdjCnflVol: 1340  1340   412  928  1373   446    0 xxxxx xxxxx  823 xxxxx xxxxx
UpstreamAdj:1.00 1.000 1.000 1.00 1.000 1.000 1.00 x.xxx x.xxx 1.00 x.xxx x.xxx
ConflictVol:1340  1340   412  928  1373   446    0 xxxxx xxxxx  823 xxxxx xxxxx
*** Computation 5: Capacity for Subject Movement During Unblocked Period
InitPotCap:  170   154   645  250   147   617 1636 xxxxx xxxxx  816 xxxxx xxxxx
```

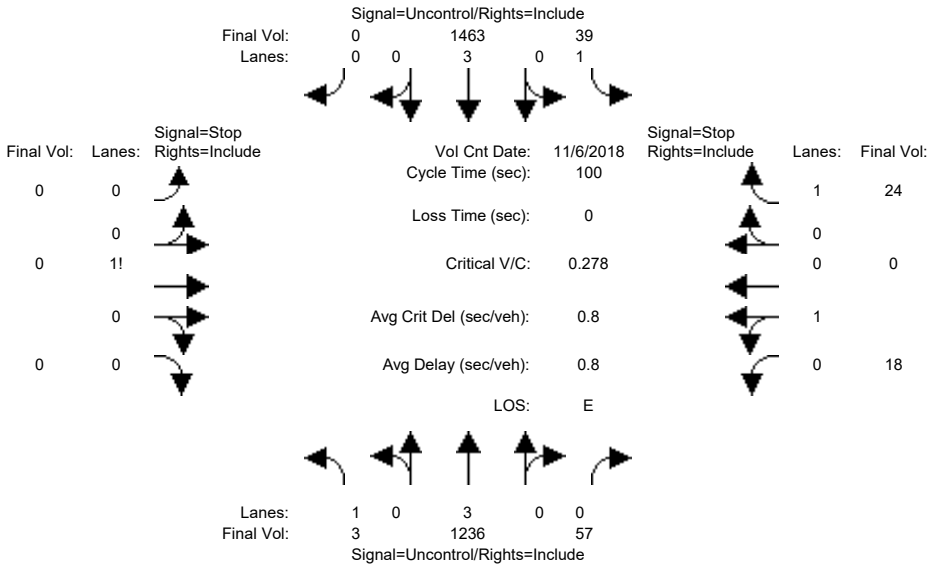
```
UpstreamAdj:1.00 1.000 1.000 1.00 1.000 1.000 1.00 x.xxx x.xxx 1.00 x.xxx x.xxx
Potent Cap.: 170   154   645  250   147   617 1636 xxxxx xxxxx  816 xxxxx xxxxx
                    Peak Hour Delay Signal Warrant Report
********************************************************************************
Intersection #1 Ranchero Way/Williams Road
********************************************************************************
Future Volume Alternative: Peak Hour Warrant NOT Met
------------|---------------||---------------||---------------||---------------|
Approach:       North Bound      South Bound       East Bound       West Bound
Movement:     L  -  T  -  R    L  -  T  -  R    L  -  T  -  R    L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:         Stop Sign        Stop Sign       Uncontrolled     Uncontrolled
Lanes:        0  0  1! 0  0    0  0  0  0  0    0  0  1  1  0    0  1  0  0  0
Initial Vol:   32    0    50     0    0     0     0  756    67    52  446     0
ApproachDel:      21.6           xxxxxx           xxxxxx           xxxxxx
------------|---------------||---------------||---------------||---------------|
Approach[northbound][lanes=1][control=Stop Sign]
Signal Warrant Rule #1: [vehicle-hours=0.5]
   FAIL - Vehicle-hours less than 4 for one lane approach.
Signal Warrant Rule #2: [approach volume=82]
   FAIL - Approach volume less than 100 for one lane approach.
Signal Warrant Rule #3: [approach count=3][total volume=1403]
   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 #1 Ranchero Way/Williams Road
********************************************************************************
Future Volume Alternative: Peak Hour Warrant NOT Met
------------|---------------||---------------||---------------||---------------|
Approach:       North Bound      South Bound       East Bound       West Bound
Movement:     L  -  T  -  R    L  -  T  -  R    L  -  T  -  R    L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:         Stop Sign        Stop Sign       Uncontrolled     Uncontrolled
Lanes:        0  0  1! 0  0    0  0  0  0  0    0  0  1  1  0    0  1  0  0  0
Initial Vol:   32    0    50     0    0     0     0  756    67    52  446     0
------------|---------------||---------------||---------------||---------------|
Major Street Volume:             1321
Minor Approach Volume:           82
Minor Approach Volume Threshold: 189
--------------------------------------------------------------------------------
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)
Existing PM

Intersection #2: Saratoga Avenue/Piper Drive




```
Street Name:         Saratoga Avenue                  Piper Drive
Approach:      North Bound      South Bound      East Bound       West Bound
Movement:     L  -  T  -  R    L  -  T  -  R    L  -  T  -  R    L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Volume Module: >> Count Date: 6 Nov 2018 << 5:00 PM - 6:00 PM
Base Vol:       3 1236    57    39 1463     0     0    0     0    18    0    24
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:    3 1236    57    39 1463     0     0    0     0    18    0    24
Added Vol:      0    0     0     0    0     0     0    0     0     0    0     0
PasserByVol:    0    0     0     0    0     0     0    0     0     0    0     0
Initial Fut:    3 1236    57    39 1463     0     0    0     0    18    0    24
User Adj:    1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
PHF Adj:     1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
PHF Volume:     3 1236    57    39 1463     0     0    0     0    18    0    24
Reduct Vol:     0    0     0     0    0     0     0    0     0     0    0     0
FinalVolume:    3 1236    57    39 1463     0     0    0     0    18    0    24
------------|---------------||---------------||---------------||---------------|
Critical Gap Module:
Critical Gp:  4.1 xxxx xxxxx   4.1 xxxx xxxxx   7.5  6.5   6.9   6.8  6.5   6.9
FollowUpTim:  2.2 xxxx xxxxx   2.2 xxxx xxxxx   3.5  4.0   3.3   3.5  4.0   3.3
------------|---------------||---------------||---------------||---------------|
Capacity Module:
Cnflict Vol: 1463 xxxx xxxxx  1293 xxxx xxxxx  1959 2840   488  1836 2812   441
Potent Cap.:  468 xxxx xxxxx   543 xxxx xxxxx    39   18   531    69   18   570
Move Cap.:    468 xxxx xxxxx   543 xxxx xxxxx    35   16   531    65   17   570
Volume/Cap:  0.01 xxxx  xxxx  0.07 xxxx  xxxx  0.00 0.00  0.00  0.28 0.00  0.04
------------|---------------||---------------||---------------||---------------|
Level Of Service Module:
2Way95thQ:    0.0 xxxx xxxxx   0.2 xxxx xxxxx  xxxx xxxx xxxxx  xxxx xxxx   0.1
Control Del: 12.7 xxxx xxxxx  12.1 xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx  11.6
LOS by Move:    B    *     *     B    *     *     *    *     *     *    *     B
Movement:     LT - LTR - RT    LT - LTR - RT    LT - LTR - RT    LT - LTR - RT
Shared Cap.: xxxx xxxx xxxxx  xxxx xxxx xxxxx  xxxx    0 xxxxx    65 xxxx xxxxx
SharedQueue:xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx   1.0 xxxx xxxxx
Shrd ConDel:xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx  80.9 xxxx xxxxx
Shared LOS:     *    *     *     *    *     *     *    *     *     F    *     *
ApproachDel:    xxxxxx           xxxxxx           xxxxxx             41.3
ApproachLOS:         *                *                *                E
Note: Queue reported is the number of cars per lane.
-----------|---------------|---------------|---------------|---------------|
HevVeh:             0%              0%              0%              0%
Grade:              0%              0%              0%              0%
Peds/Hour:          0               0               0               0
Pedestrian Walk Speed: 4.00 feet/sec
LaneWidth:       12 feet         12 feet         12 feet         12 feet
Time Period: 0.25 hour
Upstream Signals:
Link Index:                      #42
Dist(miles):                     0.000
Speed (mph):                      0.00
SignalIndex:                     #3793
Cycle Time:                          0 secs
InitVolume:                    0     0
Saturation:                    0     0
ArrivalType:                   0     0
G/C:                        0.00  0.00
*** Computation 1: Time for Queue to Clear at Each Upstream Intersection
P:                          0.000 0.000
gq1:                         0.00  0.00
gq2:                         0.00  0.00
gq:                          0.00  0.00
*** Computation 2: Time Intersection Blocked Because of Upstream Platoons
alpha:                           0.000
beta:                            0.000
ta (secs):                       0.000
F:                               0.000
f:                          0.000 0.000
vcmax:                         0     0
vcg:                           0     0
vcmin:                         0     0
tp:                          0.0   0.0
p:                               0.000
*** Computation 3: Platoon Event Periods
pdom/psubo:      0.000/0.000/Unconstrained
*** Computation 4: Conflicting Flows During Each Unblocked Period
InitCnflVol:1463 xxxxx xxxxx 1293 xxxxx xxxxx 1959  2840   488 1836  2812   441
AdjCnflVol: 1463 xxxxx xxxxx 1293 xxxxx xxxxx 1959  2840   488 1836  2812   441
UpstreamAdj:1.00 x.xxx x.xxx 1.00 x.xxx x.xxx 1.00 1.000 1.000 1.00 1.000 1.000
ConflictVol:1463 xxxxx xxxxx 1293 xxxxx xxxxx 1959  2840   488 1836  2812   441
*** Computation 5: Capacity for Subject Movement During Unblocked Period
InitPotCap:  468 xxxxx xxxxx  543 xxxxx xxxxx   39    18   531   69    18   570
```

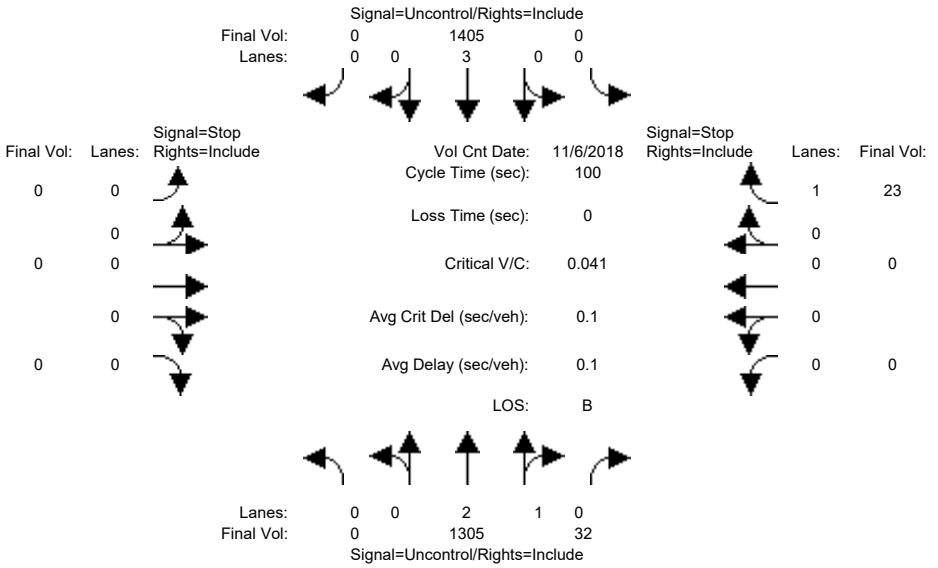
```
UpstreamAdj:1.00 x.xxx x.xxx 1.00 x.xxx x.xxx 1.00 1.000 1.000 1.00 1.000 1.000
Potent Cap.: 468 xxxxx xxxxx  543 xxxxx xxxxx   39    18   531   69    18   570
                    Peak Hour Delay Signal Warrant Report
********************************************************************************
Intersection #2 Saratoga Avenue/Piper Drive
********************************************************************************
Future Volume Alternative: Peak Hour Warrant NOT Met
------------|---------------||---------------||---------------||---------------|
Approach:       North Bound      South Bound       East Bound       West Bound
Movement:     L  -  T  -  R    L  -  T  -  R    L  -  T  -  R    L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:       Uncontrolled     Uncontrolled      Stop Sign        Stop Sign
Lanes:        1  0  2  1  0    1  0  3  0  0    0  0  1! 0  0    0  1  0  0  1
Initial Vol:    3 1236    57    39 1463     0     0    0     0    18    0    24
ApproachDel:    xxxxxx           xxxxxx           xxxxxx             41.3
------------|---------------||---------------||---------------||---------------|
Approach[westbound][lanes=2][control=Stop Sign]
Signal Warrant Rule #1: [vehicle-hours=0.5]
   FAIL - Vehicle-hours less than 5 for two or more lane approach.
Signal Warrant Rule #2: [approach volume=42]
   FAIL - Approach volume less than 150 for two or more lane approach.
Signal Warrant Rule #3: [approach count=3][total volume=2840]
   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 #2 Saratoga Avenue/Piper Drive
********************************************************************************
Future Volume Alternative: Peak Hour Warrant NOT Met
------------|---------------||---------------||---------------||---------------|
Approach:       North Bound      South Bound       East Bound       West Bound
Movement:     L  -  T  -  R    L  -  T  -  R    L  -  T  -  R    L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:       Uncontrolled     Uncontrolled      Stop Sign        Stop Sign
Lanes:        1  0  2  1  0    1  0  3  0  0    0  0  1! 0  0    0  1  0  0  1
Initial Vol:    3 1236    57    39 1463     0     0    0     0    18    0    24
------------|---------------||---------------||---------------||---------------|
Major Street Volume:              2798
Minor Approach Volume:            42
Minor Approach Volume Threshold: -68 [less than minimum of 150]
--------------------------------------------------------------------------------
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)
Existing PM

Intersection #3: Saratoga Avenue/Mitzi Drive




```
Street Name:         Saratoga Avenue                  Mitzi Drive
Approach:      North Bound      South Bound      East Bound      West Bound
Movement:     L  -  T  -  R    L  -  T  -  R    L  -  T  -  R    L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Volume Module: >> Count Date: 6 Nov 2018 << 4:45 PM - 5:45 PM
Base Vol:       0 1305    32     0 1405     0     0     0     0     0     0    23
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 1305    32     0 1405     0     0     0     0     0     0    23
Added Vol:      0     0     0     0     0     0     0     0     0     0     0     0
PasserByVol:    0     0     0     0     0     0     0     0     0     0     0     0
Initial Fut:    0 1305    32     0 1405     0     0     0     0     0     0    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:     0 1305    32     0 1405     0     0     0     0     0     0    23
Reduct Vol:     0     0     0     0     0     0     0     0     0     0     0     0
FinalVolume:    0 1305    32     0 1405     0     0     0     0     0     0    23
------------|---------------||---------------||---------------||---------------|
Critical Gap Module:
Critical Gp:xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx   6.9
FollowUpTim:xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx   3.3
------------|---------------||---------------||---------------||---------------|
Capacity Module:
Cnflict Vol: xxxx xxxx xxxxx  xxxx xxxx xxxxx  xxxx xxxx xxxxx  xxxx xxxx   451
Potent Cap.: xxxx xxxx xxxxx  xxxx xxxx xxxxx  xxxx xxxx xxxxx  xxxx xxxx   561
Move Cap.:   xxxx xxxx xxxxx  xxxx xxxx xxxxx  xxxx xxxx xxxxx  xxxx xxxx   561
Volume/Cap:  xxxx xxxx  xxxx  xxxx xxxx  xxxx  xxxx xxxx  xxxx  xxxx xxxx  0.04
------------|---------------||---------------||---------------||---------------|
Level Of Service Module:
2Way95thQ:   xxxx xxxx xxxxx  xxxx xxxx xxxxx  xxxx xxxx xxxxx  xxxx xxxx   0.1
Control Del:xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx  11.7
LOS by Move:    *     *     *     *     *     *     *     *     *     *     *     B
Movement:     LT - LTR - RT    LT - LTR - RT    LT - LTR - RT    LT - LTR - RT
Shared Cap.: xxxx xxxx xxxxx  xxxx xxxx xxxxx  xxxx xxxx xxxxx  xxxx xxxx xxxxx
SharedQueue:xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx
Shrd ConDel:xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx
Shared LOS:     *     *     *     *     *     *     *     *     *     *     *     *
ApproachDel:    xxxxxx           xxxxxx           xxxxxx             11.7
ApproachLOS:         *                *                *                B
Note: Queue reported is the number of cars per lane.
-----------|---------------|---------------|---------------|---------------|
HevVeh:             0%              0%              0%              0%
Grade:              0%              0%              0%              0%
Peds/Hour:          0               0               0               0
Pedestrian Walk Speed: 4.00 feet/sec
LaneWidth:       12 feet         12 feet         12 feet         12 feet
Time Period: 0.25 hour
Upstream Signals:
Link Index:                      #42
Dist(miles):                     0.000
Speed (mph):                      0.00
SignalIndex:                     #3793
Cycle Time:                          0 secs
InitVolume:                    0     0
Saturation:                    0     0
ArrivalType:                   0     0
G/C:                        0.00  0.00
*** Computation 1: Time for Queue to Clear at Each Upstream Intersection
P:                          0.000 0.000
gq1:                         0.00  0.00
gq2:                         0.00  0.00
gq:                          0.00  0.00
*** Computation 2: Time Intersection Blocked Because of Upstream Platoons
alpha:                           0.000
beta:                            0.000
ta (secs):                       0.000
F:                               0.000
f:                          0.000 0.000
vcmax:                         0     0
vcg:                           0     0
vcmin:                         0     0
tp:                          0.0   0.0
p:                               0.000
*** Computation 3: Platoon Event Periods
pdom/psubo:      0.000/0.000/Unconstrained
*** Computation 4: Conflicting Flows During Each Unblocked Period
InitCnflVol:   0 xxxxx xxxxx    0 xxxxx xxxxx 1840  2742   468 1789  2726   451
AdjCnflVol:    0 xxxxx xxxxx    0 xxxxx xxxxx 1840  2742   468 1789  2726   451
UpstreamAdj:1.00 x.xxx x.xxx 1.00 x.xxx x.xxx 1.00 1.000 1.000 1.00 1.000 1.000
ConflictVol:   0 xxxxx xxxxx    0 xxxxx xxxxx 1840  2742   468 1789  2726   451
*** Computation 5: Capacity for Subject Movement During Unblocked Period
InitPotCap: 1636 xxxxx xxxxx 1636 xxxxx xxxxx   48    20   547   74    21   561
```

```
UpstreamAdj:1.00 x.xxx x.xxx 1.00 x.xxx x.xxx 1.00 1.000 1.000 1.00 1.000 1.000
Potent Cap.:1636 xxxxx xxxxx 1636 xxxxx xxxxx   48    20   547   74    21   561
                    Peak Hour Delay Signal Warrant Report
*******************************************************************************
Intersection #3 Saratoga Avenue/Mitzi Drive
*******************************************************************************
Future Volume Alternative: Peak Hour Warrant NOT Met
------------|---------------||---------------||---------------||---------------|
Approach:       North Bound      South Bound       East Bound       West Bound
Movement:     L  -  T  -  R    L  -  T  -  R    L  -  T  -  R    L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:       Uncontrolled     Uncontrolled      Stop Sign        Stop Sign
Lanes:        0  0  2  1  0    0  0  3  0  0    0  0  0  0  0    0  0  0  0  1
Initial Vol:    0 1305    32     0 1405     0     0    0     0     0    0    23
ApproachDel:    xxxxxx           xxxxxx           xxxxxx             11.7
------------|---------------||---------------||---------------||---------------|
Approach[westbound][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=23]
   FAIL - Approach volume less than 100 for one lane approach.
Signal Warrant Rule #3: [approach count=3][total volume=2765]
   SUCCEED - Total volume greater than or equal to 650 for intersection
             with less than four approaches.
-------------------------------------------------------------------------------
SIGNAL WARRANT DISCLAIMER
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"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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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 #3 Saratoga Avenue/Mitzi Drive
*******************************************************************************
Future Volume Alternative: Peak Hour Warrant NOT Met
------------|---------------||---------------||---------------||---------------|
Approach:       North Bound      South Bound       East Bound       West Bound
Movement:     L  -  T  -  R    L  -  T  -  R    L  -  T  -  R    L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:       Uncontrolled     Uncontrolled      Stop Sign        Stop Sign
Lanes:        0  0  2  1  0    0  0  3  0  0    0  0  0  0  0    0  0  0  0  1
Initial Vol:    0 1305    32     0 1405     0     0    0     0     0    0    23
------------|---------------||---------------||---------------||---------------|
Major Street Volume:             2742
Minor Approach Volume:           23
Minor Approach Volume Threshold: -63 [less than minimum of 100]
-------------------------------------------------------------------------------
SIGNAL WARRANT DISCLAIMER
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"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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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.
```
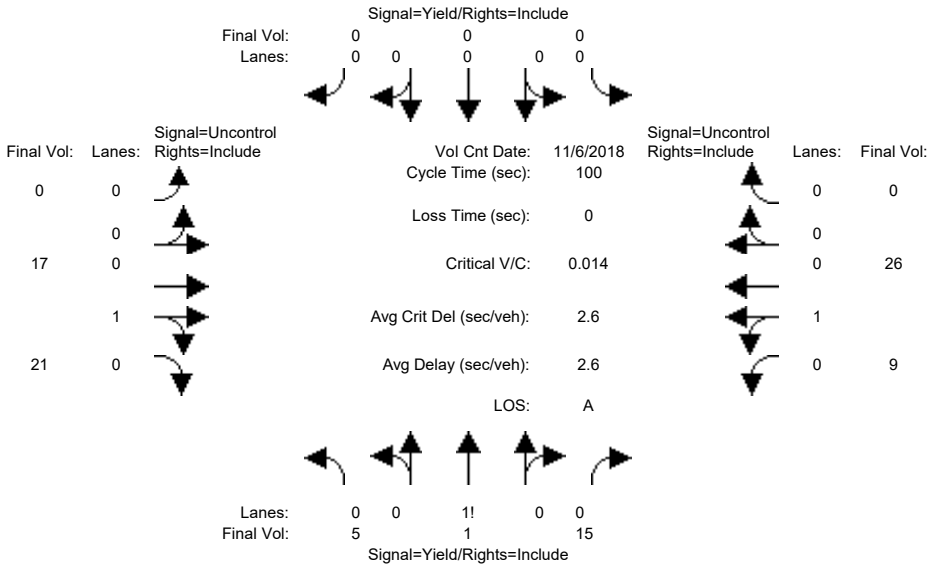


Level Of Service Computation Report
2000 HCM Unsignalized (Future Volume Alternative)
Existing PM

Intersection #4: Mitzi Drive/Piper Drive




```
Street Name:            Mitzi Drive                    Piper Drive
Approach:       North Bound      South Bound      East Bound       West Bound
Movement:     L  -  T  -  R    L  -  T  -  R    L  -  T  -  R    L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Volume Module: >> Count Date: 6 Nov 2018 << 5:00 PM - 6:00 PM
Base Vol:       5    1    15     0    0     0     0   17    21     9   26     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:    5    1    15     0    0     0     0   17    21     9   26     0
Added Vol:      0    0     0     0    0     0     0    0     0     0    0     0
PasserByVol:    0    0     0     0    0     0     0    0     0     0    0     0
Initial Fut:    5    1    15     0    0     0     0   17    21     9   26     0
User Adj:    1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
PHF Adj:     1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
PHF Volume:     5    1    15     0    0     0     0   17    21     9   26     0
Reduct Vol:     0    0     0     0    0     0     0    0     0     0    0     0
FinalVolume:    5    1    15     0    0     0     0   17    21     9   26     0
------------|---------------||---------------||---------------||---------------|
Critical Gap Module:
Critical Gp:  6.4  6.5   6.2 xxxxx xxxx xxxxx xxxxx xxxx xxxxx   4.1 xxxx xxxxx
FollowUpTim:  3.5  4.0   3.3 xxxxx xxxx xxxxx xxxxx xxxx xxxxx   2.2 xxxx xxxxx
------------|---------------||---------------||---------------||---------------|
Capacity Module:
Cnflict Vol:   72   72    28  xxxx xxxx xxxxx  xxxx xxxx xxxxx    38 xxxx xxxxx
Potent Cap.:  938  823  1054  xxxx xxxx xxxxx  xxxx xxxx xxxxx  1585 xxxx xxxxx
Move Cap.:    934  818  1054  xxxx xxxx xxxxx  xxxx xxxx xxxxx  1585 xxxx xxxxx
Volume/Cap:  0.01 0.00  0.01  xxxx xxxx  xxxx  xxxx xxxx  xxxx  0.01 xxxx  xxxx
------------|---------------||---------------||---------------||---------------|
Level Of Service Module:
2Way95thQ:   xxxx xxxx xxxxx  xxxx xxxx xxxxx  xxxx xxxx xxxxx   0.0 xxxx xxxxx
Control Del:xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx   7.3 xxxx xxxxx
LOS by Move:    *    *     *     *    *     *     *    *     *     A    *     *
Movement:     LT - LTR - RT    LT - LTR - RT    LT - LTR - RT    LT - LTR - RT
Shared Cap.: xxxx 1009 xxxxx  xxxx xxxx xxxxx  xxxx xxxx xxxxx  xxxx xxxx xxxxx
SharedQueue:xxxxx  0.1 xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx   0.0 xxxx xxxxx
Shrd ConDel:xxxxx  8.6 xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx   7.3 xxxx xxxxx
Shared LOS:     *    A     *     *    *     *     *    *     *     A    *     *
ApproachDel:       8.6           xxxxxx           xxxxxx           xxxxxx
ApproachLOS:         A             *                *                *
Note: Queue reported is the number of cars per lane.
-----------|---------------|---------------|---------------|---------------|
HevVeh:             0%              0%              0%              0%
Grade:              0%              0%              0%              0%
Peds/Hour:          0               0               0               0
Pedestrian Walk Speed: 4.00 feet/sec
LaneWidth:       12 feet         12 feet         12 feet         12 feet
Time Period: 0.25 hour
                  Peak Hour Delay Signal Warrant Report
*******************************************************************************
Intersection #4 Mitzi Drive/Piper Drive
*******************************************************************************
Future Volume Alternative: Peak Hour Warrant NOT Met
------------|---------------||---------------||---------------||---------------|
Approach:       North Bound      South Bound      East Bound       West Bound
Movement:     L  -  T  -  R    L  -  T  -  R    L  -  T  -  R    L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:        Yield Sign       Yield Sign      Uncontrolled     Uncontrolled
Lanes:        0  0  1! 0  0    0  0  0  0  0    0  0  0  1  0    0  1  0  0  0
Initial Vol:    5    1    15     0    0     0     0   17    21     9   26     0
ApproachDel:       8.6           xxxxxx           xxxxxx           xxxxxx
------------|---------------||---------------||---------------||---------------|
Approach[northbound][lanes=1][control=Yield Sign]
Signal Warrant Rule #1: [vehicle-hours=0.1]
   FAIL - Controller not stop sign.
Signal Warrant Rule #2: [approach volume=21]
   FAIL - Approach volume less than 100 for one lane approach.
Signal Warrant Rule #3: [approach count=3][total volume=94]
   FAIL - Total volume less than 650 for intersection
          with less than four approaches.
-------------------------------------------------------------------------------
SIGNAL WARRANT DISCLAIMER
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"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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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 #4 Mitzi Drive/Piper Drive
********************************************************************************
Future Volume Alternative: Peak Hour Warrant NOT Met
------------|---------------||---------------||---------------||---------------|
Approach:       North Bound      South Bound       East Bound       West Bound
Movement:     L  -  T  -  R    L  -  T  -  R    L  -  T  -  R    L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:       Yield Sign       Yield Sign       Uncontrolled     Uncontrolled
Lanes:       0  0  1! 0  0    0  0  0  0  0    0  0  0  1  0    0  1  0  0  0
Initial Vol:    5    1    15     0    0     0     0   17    21     9   26     0
------------|---------------||---------------||---------------||---------------|
Major Street Volume:             73
Minor Approach Volume:           21
Minor Approach Volume Threshold: 917
------------------------------------------------------------------------------
SIGNAL WARRANT DISCLAIMER
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"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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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.
```
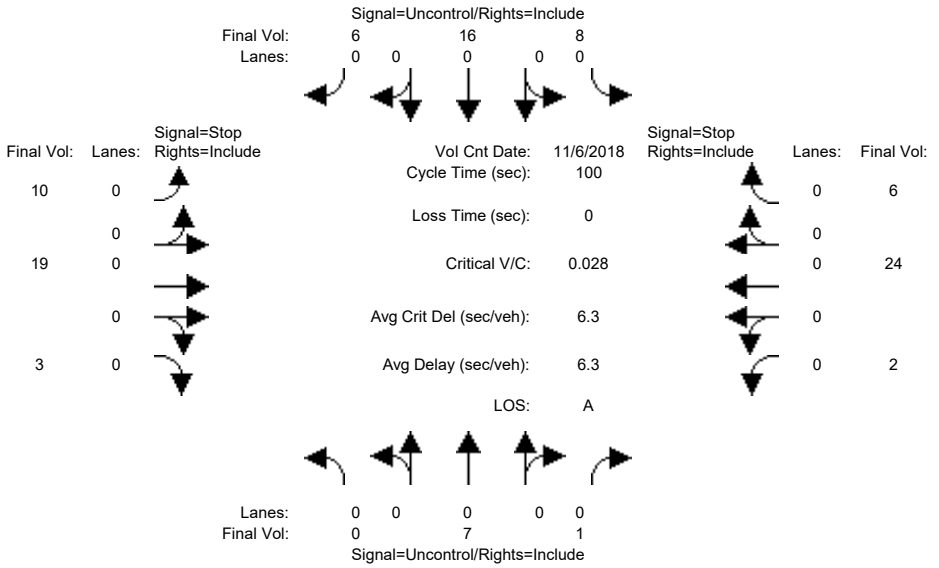


Level Of Service Computation Report
2000 HCM Unsignalized (Future Volume Alternative)
Existing PM

Intersection #5: Mitzi Drive/Ranchero Way




```
Street Name:           Mitzi Drive                    Ranchero Way
Approach:      North Bound      South Bound      East Bound       West Bound
Movement:     L  -  T  -  R    L  -  T  -  R    L  -  T  -  R    L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Volume Module: >> Count Date: 6 Nov 2018 << 5:00 PM - 6:00 PM
Base Vol:       0    7     1     8   16     6    10   19     3     2   24     6
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    7     1     8   16     6    10   19     3     2   24     6
Added Vol:      0    0     0     0    0     0     0    0     0     0    0     0
PasserByVol:    0    0     0     0    0     0     0    0     0     0    0     0
Initial Fut:    0    7     1     8   16     6    10   19     3     2   24     6
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    7     1     8   16     6    10   19     3     2   24     6
Reduct Vol:     0    0     0     0    0     0     0    0     0     0    0     0
FinalVolume:    0    7     1     8   16     6    10   19     3     2   24     6
------------|---------------||---------------||---------------||---------------|
Critical Gap Module:
Critical Gp:xxxxx xxxx xxxxx   4.1 xxxx xxxxx   7.1  6.5   6.2   7.1  6.5   6.2
FollowUpTim:xxxxx xxxx xxxxx   2.2 xxxx xxxxx   3.5  4.0   3.3   3.5  4.0   3.3
------------|---------------||---------------||---------------||---------------|
Capacity Module:
Cnflict Vol: xxxx xxxx xxxxx     8 xxxx xxxxx    58   43    19    54   46     8
Potent Cap.: xxxx xxxx xxxxx  1625 xxxx xxxxx   944  853  1065   950  850  1081
Move Cap.:   xxxx xxxx xxxxx  1625 xxxx xxxxx   915  849  1065   927  846  1081
Volume/Cap:  xxxx xxxx  xxxx  0.00 xxxx  xxxx  0.01 0.02  0.00  0.00 0.03  0.01
------------|---------------||---------------||---------------||---------------|
Level Of Service Module:
2Way95thQ:   xxxx xxxx xxxxx   0.0 xxxx xxxxx  xxxx xxxx xxxxx  xxxx xxxx xxxxx
Control Del:xxxxx xxxx xxxxx   7.2 xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx
LOS by Move:    *    *     *     A    *     *     *    *     *     *    *     *
Movement:     LT - LTR - RT    LT - LTR - RT    LT - LTR - RT    LT - LTR - RT
Shared Cap.: xxxx xxxx xxxxx  xxxx xxxx xxxxx  xxxx  886 xxxxx  xxxx  887 xxxxx
SharedQueue:xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx  0.1 xxxxx xxxxx  0.1 xxxxx
Shrd ConDel:xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx  9.2 xxxxx xxxxx  9.2 xxxxx
Shared LOS:     *    *     *     *    *     *     *    A     *     *    A     *
ApproachDel:    xxxxxx           xxxxxx               9.2              9.2
ApproachLOS:         *              *                  A                A
Note: Queue reported is the number of cars per lane.
-----------|---------------|---------------|---------------|---------------|
HevVeh:             0%              0%              0%              0%
Grade:              0%              0%              0%              0%
Peds/Hour:          0               0               0               0
Pedestrian Walk Speed: 4.00 feet/sec
LaneWidth:       12 feet         12 feet         12 feet         12 feet
Time Period: 0.25 hour
                    Peak Hour Delay Signal Warrant Report
*******************************************************************************
Intersection #5 Mitzi Drive/Ranchero Way
*******************************************************************************
Future Volume Alternative: Peak Hour Warrant NOT Met
------------|---------------||---------------||---------------||---------------|
Approach:      North Bound      South Bound      East Bound       West Bound
Movement:     L  -  T  -  R    L  -  T  -  R    L  -  T  -  R    L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:       Uncontrolled     Uncontrolled      Stop Sign        Stop Sign
Lanes:        0  0  0  1  0    0  0  1! 0  0    0  0  1! 0  0    0  0  1! 0  0
Initial Vol:    0    7     1     8   16     6    10   19     3     2   24     6
ApproachDel:    xxxxxx           xxxxxx               9.2              9.2
------------|---------------||---------------||---------------||---------------|
Approach[eastbound][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=32]
   FAIL - Approach volume less than 100 for one lane approach.
Signal Warrant Rule #3: [approach count=4][total volume=102]
   FAIL - Total volume less than 650 for intersection
          with less than four approaches.
-------------------------------------------------------------------------------
Approach[westbound][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=32]
   FAIL - Approach volume less than 100 for one lane approach.
Signal Warrant Rule #3: [approach count=4][total volume=102]
   FAIL - Total volume less than 650 for intersection
          with less than four approaches.
-------------------------------------------------------------------------------
SIGNAL WARRANT DISCLAIMER
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"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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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 #5 Mitzi Drive/Ranchero Way

****

Future Volume Alternative: Peak Hour Warrant NOT Met

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	- T	- R	L	- T	- R	L	- T	- R	L	- T	- R
Control:	Uncontrolled			Uncontrolled			Stop Sign			Stop Sign		
Lanes:	0 0	0 1	0	0 0	1! 0	0	0 0	1! 0	0	0 0	1! 0	0
Initial Vol:	0	7	1	8	16	6	10	19	3	2	24	6

Major Street Volume: 38
Minor Approach Volume: 32
Minor Approach Volume Threshold: 1092

SIGNAL WARRANT DISCLAIMER
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a traffic signal in the future. Intersections that exceed this warrant
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signal warrant (such as the 4-hour or 8-hour warrants).

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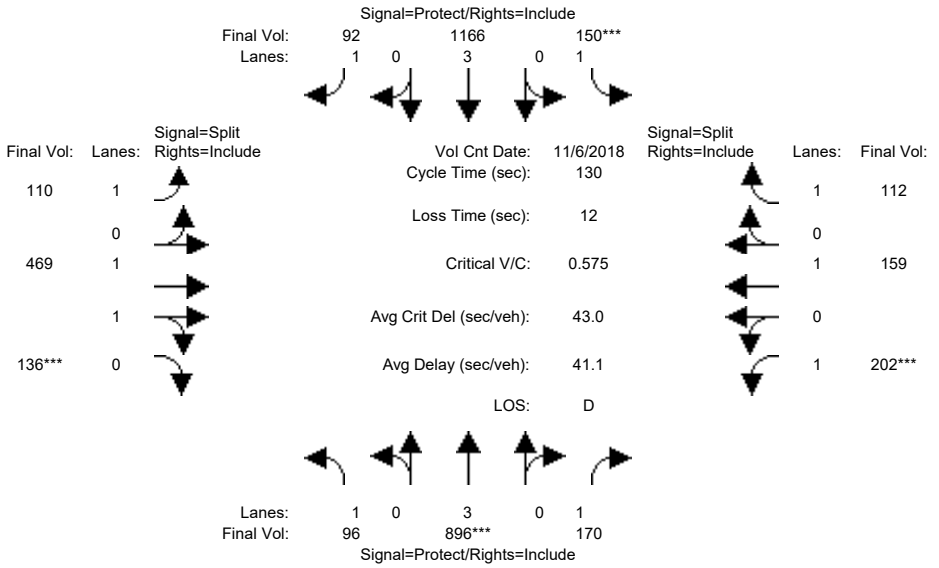
jurisdiction. Consideration of the other signal warrants, which is beyond
the scope of this software, may yield different results.

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

Intersection #3793: Saratoga Avenue/Williams Road

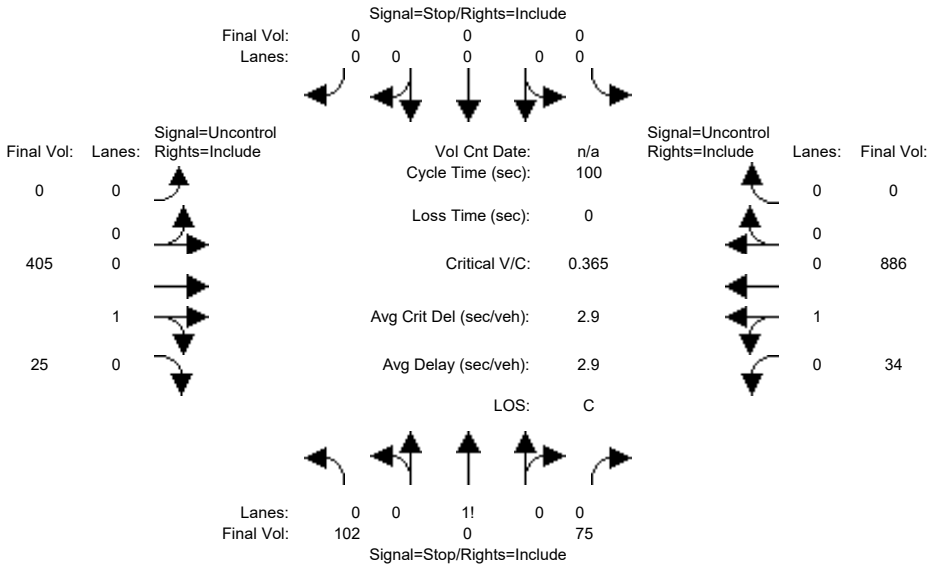


Street Name:	Saratoga Avenue						Williams Road					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L - T - R			L - T - R			L - T - R			L - T - R		
Min. Green:	7	10	10	7	10	10	10	10	10	10	10	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module: >> Count Date: 6 Nov 2018 << 4:45 PM - 5:45 PM												
Base Vol:	96	896	170	150	1166	92	110	469	136	202	159	112
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:	96	896	170	150	1166	92	110	469	136	202	159	112
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	96	896	170	150	1166	92	110	469	136	202	159	112
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:	96	896	170	150	1166	92	110	469	136	202	159	112
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	96	896	170	150	1166	92	110	469	136	202	159	112
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:	96	896	170	150	1166	92	110	469	136	202	159	112
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	1.00	0.92	0.92	1.00	0.92	0.92	0.98	0.95	0.92	1.00	0.92
Lanes:	1.00	3.00	1.00	1.00	3.00	1.00	1.00	1.54	0.46	1.00	1.00	1.00
Final Sat.:	1750	5700	1750	1750	5700	1750	1750	2868	832	1750	1900	1750
Capacity Analysis Module:												
Vol/Sat:	0.05	0.16	0.10	0.09	0.20	0.05	0.06	0.16	0.16	0.12	0.08	0.06
Crit Moves:		****		****					****	****		
Green Time:	11.6	35.5	35.5	19.4	43.3	43.3	37.0	37.0	37.0	26.1	26.1	26.1
Volume/Cap:	0.61	0.57	0.36	0.57	0.61	0.16	0.22	0.57	0.57	0.57	0.42	0.32
Uniform Del:	57.0	40.7	38.0	51.5	36.3	30.5	35.5	39.8	39.8	46.9	45.3	44.4
IncremntDel:	7.1	0.5	0.5	3.1	0.6	0.1	0.2	0.8	0.8	2.3	0.7	0.5
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay 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
Delay/Veh:	64.1	41.2	38.5	54.6	36.9	30.6	35.7	40.6	40.6	49.3	46.1	44.9
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	64.1	41.2	38.5	54.6	36.9	30.6	35.7	40.6	40.6	49.3	46.1	44.9
LOS by Move:	E	D	D	D	D	C	D	D	D	D	D	D
HCM2k95thQ:	10	19	11	13	24	5	7	20	20	16	11	8

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

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

Intersection #1: Ranchero Way/Williams Road




```
Street Name:           Ranchero Way                  Williams Road
Approach:       North Bound      South Bound      East Bound      West Bound
Movement:     L  -  T  -  R    L  -  T  -  R    L  -  T  -  R    L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Volume Module:
Base Vol:     102    0    75     0    0     0     0  405    25    34  886     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:  102    0    75     0    0     0     0  405    25    34  886     0
Added Vol:      0    0     0     0    0     0     0    0     0     0    0     0
PasserByVol:    0    0     0     0    0     0     0    0     0     0    0     0
Initial Fut:  102    0    75     0    0     0     0  405    25    34  886     0
User Adj:    1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
PHF Adj:     1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
PHF Volume:   102    0    75     0    0     0     0  405    25    34  886     0
Reduct Vol:     0    0     0     0    0     0     0    0     0     0    0     0
FinalVolume:  102    0    75     0    0     0     0  405    25    34  886     0
------------|---------------||---------------||---------------||---------------|
Critical Gap Module:
Critical Gp:  6.4  6.5   6.2 xxxxx xxxx xxxxx xxxxx xxxx xxxxx   4.1 xxxx xxxxx
FollowUpTim:  3.5  4.0   3.3 xxxxx xxxx xxxxx xxxxx xxxx xxxxx   2.2 xxxx xxxxx
------------|---------------||---------------||---------------||---------------|
Capacity Module:
Cnflict Vol: 1372 1372   418  xxxx xxxx xxxxx  xxxx xxxx xxxxx   430 xxxx xxxxx
Potent Cap.:  163  147   640  xxxx xxxx xxxxx  xxxx xxxx xxxxx  1140 xxxx xxxxx
Move Cap.:    159  143   640  xxxx xxxx xxxxx  xxxx xxxx xxxxx  1140 xxxx xxxxx
Total Cap:    279  251 xxxxx   214  247 xxxxx  xxxx xxxx xxxxx  xxxx xxxx xxxxx
Volume/Cap:  0.37 0.00  0.12  xxxx xxxx  xxxx  xxxx xxxx  xxxx  0.03 xxxx  xxxx
------------|---------------||---------------||---------------||---------------|
Level Of Service Module:
2Way95thQ:   xxxx xxxx xxxxx  xxxx xxxx xxxxx  xxxx xxxx xxxxx   0.1 xxxx xxxxx
Control Del:xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx   8.3 xxxx xxxxx
LOS by Move:    *    *     *     *    *     *     *    *     *     A    *     *
Movement:     LT - LTR - RT    LT - LTR - RT    LT - LTR - RT    LT - LTR - RT
Shared Cap.: xxxx  367 xxxxx  xxxx xxxx xxxxx  xxxx xxxx xxxxx  xxxx xxxx xxxxx
SharedQueue:xxxxx  2.5 xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx   0.1 xxxx xxxxx
Shrd ConDel:xxxxx 23.6 xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx   8.3 xxxx xxxxx
Shared LOS:     *    C     *     *    *     *     *    *     *     A    *     *
ApproachDel:     23.6          xxxxxx           xxxxxx           xxxxxx
ApproachLOS:        C             *                *                *
Note: Queue reported is the number of cars per lane.
-----------|---------------|---------------|---------------|---------------|
HevVeh:             0%              0%              0%              0%
Grade:              0%              0%              0%              0%
Peds/Hour:          0               0               0               0
Pedestrian Walk Speed: 4.00 feet/sec
LaneWidth:       12 feet         12 feet         12 feet         12 feet
Time Period: 0.25 hour
Upstream Signals:
Link Index:                                      #45
Dist(miles):                                     0.000
Speed (mph):                                      0.00
SignalIndex:                                     #3793
Cycle Time:                                         0 secs
InitVolume:                                   0     0
Saturation:                                   0     0
ArrivalType:                                  0     0
G/C:                                       0.00  0.00
*** Computation 1: Time for Queue to Clear at Each Upstream Intersection
P:                                        0.000 0.000
gq1:                                       0.00  0.00
gq2:                                       0.00  0.00
gq:                                        0.00  0.00
*** Computation 2: Time Intersection Blocked Because of Upstream Platoons
alpha:                                           0.000
beta:                                            0.000
ta (secs):                                       0.000
F:                                               0.000
f:                                        0.000 0.000
vcmax:                                        0     0
vcg:                                          0     0
vcmin:                                        0     0
tp:                                         0.0   0.0
p:                                               0.000
*** Computation 3: Platoon Event Periods
pdom/psubo:                                   0.000/0.000/Unconstrained
*** Computation 4: Conflicting Flows During Each Unblocked Period
InitCnflVol:1372  1372   418 1409  1384   886    0 xxxxx xxxxx  430 xxxxx xxxxx
AdjCnflVol: 1372  1372   418 1409  1384   886    0 xxxxx xxxxx  430 xxxxx xxxxx
UpstreamAdj:1.00 1.000 1.000 1.00 1.000 1.000 1.00 x.xxx x.xxx 1.00 x.xxx x.xxx
ConflictVol:1372  1372   418 1409  1384   886    0 xxxxx xxxxx  430 xxxxx xxxxx
*** Computation 5: Capacity for Subject Movement During Unblocked Period
```

```
InitPotCap:  163   147   640  117   145   346 1636 xxxxx xxxxx 1140 xxxxx xxxxx
UpstreamAdj:1.00 1.000 1.000 1.00 1.000 1.000 1.00 x.xxx x.xxx 1.00 x.xxx x.xxx
Potent Cap.: 163   147   640  117   145   346 1636 xxxxx xxxxx 1140 xxxxx xxxxx
-----------|---------------|---------------|---------------|---------------|
Two-Stage Gap Acceptance [Median Type: TWLTL][Median Storage: 1 car]
-----------|---------------|---------------|---------------|---------------|
Two-Stage Gap Acceptance - Stage One Module:
InitCfltVol: 418   418 xxxxx  954   954 xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx
UpstreamSat:   0     0 xxxxx    0     0 xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx
UpstreamAdj:1.00  1.00 xxxxx 1.00  1.00 xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx
Cnflict Vol: 418   418 xxxxx  954   954 xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx
InitPotCap:  669   594 xxxxx  313   340 xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx
UpstreamAdj:1.00  1.00 xxxxx 1.00  1.00 xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx
Potent Cap.: 669   594 xxxxx  313   340 xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx
Move Cap.:   669   594 xxxxx  304   330 xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx
-----------|---------------|---------------|---------------|---------------|
Two-Stage Gap Acceptance - Stage Two Module:
InitCfltVol: 954   954 xxxxx  455   430 xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx
UpstreamSat:   0     0 xxxxx    0     0 xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx
UpstreamAdj:1.00  1.00 xxxxx 1.00  1.00 xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx
Cnflict Vol: 954   954 xxxxx  455   430 xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx
InitPotCap:  377   340 xxxxx  589   587 xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx
UpstreamAdj:1.00  1.00 xxxxx 1.00  1.00 xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx
Potent Cap.: 377   340 xxxxx  589   587 xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx
Move Cap.:   366   330 xxxxx  520   587 xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx
                     Peak Hour Delay Signal Warrant Report
********************************************************************************
Intersection #1 Ranchero Way/Williams Road
********************************************************************************
Future Volume Alternative: Peak Hour Warrant NOT Met
------------|---------------||---------------||---------------||---------------|
Approach:       North Bound       South Bound       East Bound       West Bound
Movement:     L  -  T  -  R     L  -  T  -  R     L  -  T  -  R     L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:        Stop Sign         Stop Sign       Uncontrolled     Uncontrolled
Lanes:        0  0  1! 0  0     0  0  0  0  0     0  0  0  1  0     0  1  0  0  0
Initial Vol:  102    0    75     0    0     0     0  405    25    34  886     0
ApproachDel:      23.6            xxxxxx            xxxxxx            xxxxxx
------------|---------------||---------------||---------------||---------------|
Approach[northbound][lanes=1][control=Stop Sign]
Signal Warrant Rule #1: [vehicle-hours=1.2]
   FAIL - Vehicle-hours less than 4 for one lane approach.
Signal Warrant Rule #2: [approach volume=177]
   SUCCEED - Approach volume greater than or equal to 100 for one lane approach.
Signal Warrant Rule #3: [approach count=3][total volume=1527]
   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 #1 Ranchero Way/Williams Road
********************************************************************************
Future Volume Alternative: Peak Hour Warrant Met
------------|---------------||---------------||---------------||---------------|
Approach:       North Bound       South Bound       East Bound       West Bound
Movement:     L  -  T  -  R     L  -  T  -  R     L  -  T  -  R     L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:        Stop Sign         Stop Sign       Uncontrolled     Uncontrolled
Lanes:        0  0  1! 0  0     0  0  0  0  0     0  0  0  1  0     0  1  0  0  0
Initial Vol:  102    0    75     0    0     0     0  405    25    34  886     0
------------|---------------||---------------||---------------||---------------|
Major Street Volume:             1350
Minor Approach Volume:           177
Minor Approach Volume Threshold: 139
--------------------------------------------------------------------------------
SIGNAL WARRANT DISCLAIMER
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"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.
```
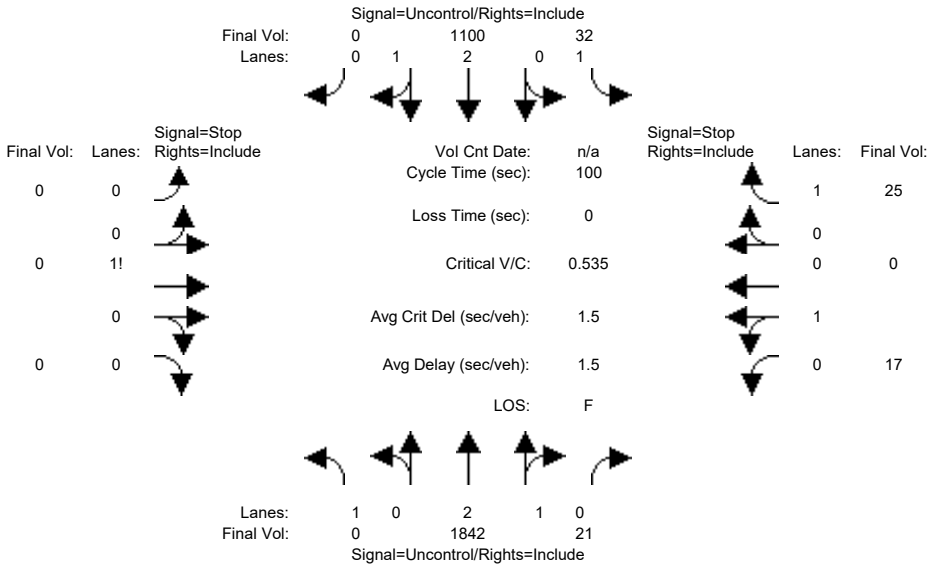

Level Of Service Computation Report
2000 HCM Unsignalized (Future Volume Alternative)
Background AM

Intersection #2: Saratoga Avenue/Piper Drive

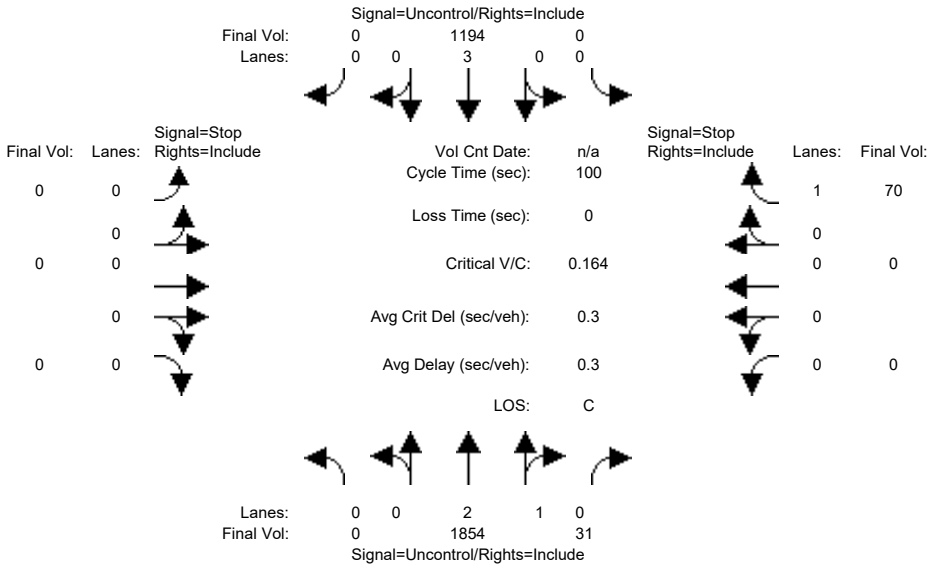



```
Street Name:         Saratoga Avenue                  Piper Drive
Approach:       North Bound      South Bound      East Bound       West Bound
Movement:     L  -  T  -  R    L  -  T  -  R    L  -  T  -  R    L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Volume Module:
Base Vol:       0 1842    21     32 1100     0     0     0     0    17     0    25
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 1842    21     32 1100     0     0     0     0    17     0    25
Added Vol:      0    0     0      0    0     0     0     0     0     0     0     0
PasserByVol:    0    0     0      0    0     0     0     0     0     0     0     0
Initial Fut:    0 1842    21     32 1100     0     0     0     0    17     0    25
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 1842    21     32 1100     0     0     0     0    17     0    25
Reduct Vol:     0    0     0      0    0     0     0     0     0     0     0     0
FinalVolume:    0 1842    21     32 1100     0     0     0     0    17     0    25
------------|---------------||---------------||---------------||---------------|
Critical Gap Module:
Critical Gp:xxxxx xxxx xxxxx   4.1 xxxx xxxxx   7.5  6.5   6.9   6.8  6.5   6.9
FollowUpTim:xxxxx xxxx xxxxx   2.2 xxxx xxxxx   3.5  4.0   3.3   3.5  4.0   3.3
------------|---------------||---------------||---------------||---------------|
Capacity Module:
Cnflict Vol: xxxx xxxx xxxxx  1863 xxxx xxxxx  1778 3027   367  2283 3017   625
Potent Cap.: xxxx xxxx xxxxx   328 xxxx xxxxx    53   13   636    34   13   433
Move Cap.:   xxxx xxxx xxxxx   328 xxxx xxxxx    46   12   636    32   12   433
Volume/Cap:  xxxx xxxx  xxxx  0.10 xxxx  xxxx  0.00 0.00  0.00  0.54 0.00  0.06
------------|---------------||---------------||---------------||---------------|
Level Of Service Module:
2Way95thQ:   xxxx xxxx xxxxx   0.3 xxxx xxxxx  xxxx xxxx xxxxx  xxxx xxxx   0.2
Control Del:xxxxx xxxx xxxxx  17.1 xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx  13.8
LOS by Move:    *    *     *     C    *     *     *    *     *     *    *     B
Movement:     LT - LTR - RT    LT - LTR - RT    LT - LTR - RT    LT - LTR - RT
Shared Cap.: xxxx xxxx xxxxx  xxxx xxxx xxxxx  xxxx    0 xxxxx    32 xxxx xxxxx
SharedQueue:xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx   1.8 xxxx xxxxx
Shrd ConDel:xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx 209.3 xxxx xxxxx
Shared LOS:     *    *     *     *    *     *     *    *     *     F    *     *
ApproachDel:    xxxxxx           xxxxxx           xxxxxx             93.0
ApproachLOS:         *                *                *                F
Note: Queue reported is the number of cars per lane.
-----------|---------------|---------------|---------------|---------------|
HevVeh:             0%              0%              0%              0%
Grade:              0%              0%              0%              0%
Peds/Hour:          0               0               0               0
Pedestrian Walk Speed: 4.00 feet/sec
LaneWidth:       12 feet         12 feet         12 feet         12 feet
Time Period: 0.25 hour
Upstream Signals:
Link Index:                      #42
Dist(miles):                     0.000
Speed (mph):                      0.00
SignalIndex:                     #3793
Cycle Time:                          0 secs
InitVolume:                    0     0
Saturation:                    0     0
ArrivalType:                   0     0
G/C:                        0.00  0.00
*** Computation 1: Time for Queue to Clear at Each Upstream Intersection
P:                          0.000 0.000
gq1:                         0.00  0.00
gq2:                         0.00  0.00
gq:                          0.00  0.00
*** Computation 2: Time Intersection Blocked Because of Upstream Platoons
alpha:                           0.000
beta:                            0.000
ta (secs):                       0.000
F:                               0.000
f:                          0.000 0.000
vcmax:                         0     0
vcg:                           0     0
vcmin:                         0     0
tp:                          0.0   0.0
p:                               0.000
*** Computation 3: Platoon Event Periods
pdom/psubo:      0.000/0.000/Unconstrained
*** Computation 4: Conflicting Flows During Each Unblocked Period
InitCnflVol:   0 xxxxx xxxxx 1863 xxxxx xxxxx 1778  3027   367 2283  3017   625
AdjCnflVol:    0 xxxxx xxxxx 1863 xxxxx xxxxx 1778  3027   367 2283  3017   625
UpstreamAdj:1.00 x.xxx x.xxx 1.00 x.xxx x.xxx 1.00 1.000 1.000 1.00 1.000 1.000
ConflictVol:   0 xxxxx xxxxx 1863 xxxxx xxxxx 1778  3027   367 2283  3017   625
*** Computation 5: Capacity for Subject Movement During Unblocked Period
InitPotCap: 1636 xxxxx xxxxx  328 xxxxx xxxxx   53    13   636   34    13   433
```

```
UpstreamAdj:1.00 x.xxx x.xxx 1.00 x.xxx x.xxx 1.00 1.000 1.000 1.00 1.000 1.000
Potent Cap.:1636 xxxxx xxxxx  328 xxxxx xxxxx   53    13   636   34    13   433
                    Peak Hour Delay Signal Warrant Report
*******************************************************************************
Intersection #2 Saratoga Avenue/Piper Drive
*******************************************************************************
Future Volume Alternative: Peak Hour Warrant NOT Met
------------|---------------||---------------||---------------||---------------|
Approach:       North Bound      South Bound       East Bound       West Bound
Movement:     L  -  T  -  R    L  -  T  -  R    L  -  T  -  R    L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:       Uncontrolled     Uncontrolled      Stop Sign        Stop Sign
Lanes:        1  0  2  1  0    1  0  2  1  0    0  0  1! 0  0    0  1  0  0  1
Initial Vol:    0 1842    21    32 1100     0     0    0     0    17    0    25
ApproachDel:    xxxxxx           xxxxxx           xxxxxx             93.0
------------|---------------||---------------||---------------||---------------|
Approach[westbound][lanes=2][control=Stop Sign]
Signal Warrant Rule #1: [vehicle-hours=1.1]
   FAIL - Vehicle-hours less than 5 for two or more lane approach.
Signal Warrant Rule #2: [approach volume=42]
   FAIL - Approach volume less than 150 for two or more lane approach.
Signal Warrant Rule #3: [approach count=3][total volume=3037]
   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 #2 Saratoga Avenue/Piper Drive
*******************************************************************************
Future Volume Alternative: Peak Hour Warrant NOT Met
------------|---------------||---------------||---------------||---------------|
Approach:       North Bound      South Bound       East Bound       West Bound
Movement:     L  -  T  -  R    L  -  T  -  R    L  -  T  -  R    L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:       Uncontrolled     Uncontrolled      Stop Sign        Stop Sign
Lanes:        1  0  2  1  0    1  0  2  1  0    0  0  1! 0  0    0  1  0  0  1
Initial Vol:    0 1842    21    32 1100     0     0    0     0    17    0    25
------------|---------------||---------------||---------------||---------------|
Major Street Volume:             2995
Minor Approach Volume:           42
Minor Approach Volume Threshold: -98 [less than minimum of 150]
-------------------------------------------------------------------------------
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 #3: Saratoga Avenue/Mitzi Drive




```
Street Name:         Saratoga Avenue                    Mitzi Drive
Approach:       North Bound      South Bound      East Bound       West Bound
Movement:     L  -  T  -  R    L  -  T  -  R    L  -  T  -  R    L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Volume Module:
Base Vol:       0 1854    31     0 1194     0     0     0     0     0     0    70
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 1854    31     0 1194     0     0     0     0     0     0    70
Added Vol:      0     0     0     0     0     0     0     0     0     0     0     0
PasserByVol:    0     0     0     0     0     0     0     0     0     0     0     0
Initial Fut:    0 1854    31     0 1194     0     0     0     0     0     0    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:     0 1854    31     0 1194     0     0     0     0     0     0    70
Reduct Vol:     0     0     0     0     0     0     0     0     0     0     0     0
FinalVolume:    0 1854    31     0 1194     0     0     0     0     0     0    70
------------|---------------||---------------||---------------||---------------|
Critical Gap Module:
Critical Gp:xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx   6.9
FollowUpTim:xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx   3.3
------------|---------------||---------------||---------------||---------------|
Capacity Module:
Cnflict Vol: xxxx xxxx xxxxx  xxxx xxxx xxxxx  xxxx xxxx xxxxx  xxxx xxxx   634
Potent Cap.: xxxx xxxx xxxxx  xxxx xxxx xxxxx  xxxx xxxx xxxxx  xxxx xxxx   427
Move Cap.:   xxxx xxxx xxxxx  xxxx xxxx xxxxx  xxxx xxxx xxxxx  xxxx xxxx   427
Volume/Cap:  xxxx xxxx  xxxx  xxxx xxxx  xxxx  xxxx xxxx  xxxx  xxxx xxxx  0.16
------------|---------------||---------------||---------------||---------------|
Level Of Service Module:
2Way95thQ:   xxxx xxxx xxxxx  xxxx xxxx xxxxx  xxxx xxxx xxxxx  xxxx xxxx   0.6
Control Del:xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx  15.1
LOS by Move:    *     *     *     *     *     *     *     *     *     *     *     C
Movement:     LT - LTR - RT    LT - LTR - RT    LT - LTR - RT    LT - LTR - RT
Shared Cap.: xxxx xxxx xxxxx  xxxx xxxx xxxxx  xxxx xxxx xxxxx  xxxx xxxx xxxxx
SharedQueue:xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx
Shrd ConDel:xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx
Shared LOS:     *     *     *     *     *     *     *     *     *     *     *     *
ApproachDel:    xxxxxx           xxxxxx           xxxxxx             15.1
ApproachLOS:         *                *                *                C
Note: Queue reported is the number of cars per lane.
-----------|---------------|---------------|---------------|---------------|
HevVeh:             0%              0%              0%              0%
Grade:              0%              0%              0%              0%
Peds/Hour:          0               0               0               0
Pedestrian Walk Speed: 4.00 feet/sec
LaneWidth:       12 feet         12 feet         12 feet         12 feet
Time Period: 0.25 hour
Upstream Signals:
Link Index:                      #42
Dist(miles):                     0.000
Speed (mph):                      0.00
SignalIndex:                     #3793
Cycle Time:                          0 secs
InitVolume:                    0     0
Saturation:                    0     0
ArrivalType:                   0     0
G/C:                        0.00  0.00
*** Computation 1: Time for Queue to Clear at Each Upstream Intersection
P:                          0.000 0.000
gq1:                         0.00  0.00
gq2:                         0.00  0.00
gq:                          0.00  0.00
*** Computation 2: Time Intersection Blocked Because of Upstream Platoons
alpha:                           0.000
beta:                            0.000
ta (secs):                       0.000
F:                               0.000
f:                          0.000 0.000
vcmax:                         0     0
vcg:                           0     0
vcmin:                         0     0
tp:                          0.0   0.0
p:                               0.000
*** Computation 3: Platoon Event Periods
pdom/psubo:      0.000/0.000/Unconstrained
*** Computation 4: Conflicting Flows During Each Unblocked Period
InitCnflVol:   0 xxxxx xxxxx    0 xxxxx xxxxx 1812  3079   398 2268  3064   634
AdjCnflVol:    0 xxxxx xxxxx    0 xxxxx xxxxx 1812  3079   398 2268  3064   634
UpstreamAdj:1.00 x.xxx x.xxx 1.00 x.xxx x.xxx 1.00 1.000 1.000 1.00 1.000 1.000
ConflictVol:   0 xxxxx xxxxx    0 xxxxx xxxxx 1812  3079   398 2268  3064   634
*** Computation 5: Capacity for Subject Movement During Unblocked Period
InitPotCap: 1636 xxxxx xxxxx 1636 xxxxx xxxxx   50    12   607   35    13   427
```

```
UpstreamAdj:1.00 x.xxx x.xxx 1.00 x.xxx x.xxx 1.00 1.000 1.000 1.00 1.000 1.000
Potent Cap.:1636 xxxxx xxxxx 1636 xxxxx xxxxx   50    12   607   35    13   427
                    Peak Hour Delay Signal Warrant Report
*******************************************************************************
Intersection #3 Saratoga Avenue/Mitzi Drive
*******************************************************************************
Future Volume Alternative: Peak Hour Warrant NOT Met
------------|---------------||---------------||---------------||---------------|
Approach:       North Bound      South Bound       East Bound       West Bound
Movement:     L  -  T  -  R    L  -  T  -  R    L  -  T  -  R    L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:       Uncontrolled     Uncontrolled      Stop Sign        Stop Sign
Lanes:        0  0  2  1  0    0  0  3  0  0    0  0  0  0  0    0  0  0  0  1
Initial Vol:    0 1854    31     0 1194     0     0    0     0     0    0    70
ApproachDel:    xxxxxx           xxxxxx           xxxxxx             15.1
------------|---------------||---------------||---------------||---------------|
Approach[westbound][lanes=1][control=Stop Sign]
Signal Warrant Rule #1: [vehicle-hours=0.3]
   FAIL - Vehicle-hours less than 4 for one lane approach.
Signal Warrant Rule #2: [approach volume=70]
   FAIL - Approach volume less than 100 for one lane approach.
Signal Warrant Rule #3: [approach count=3][total volume=3149]
   SUCCEED - Total volume greater than or equal to 650 for intersection
             with less than four approaches.
-------------------------------------------------------------------------------
SIGNAL WARRANT DISCLAIMER
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"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 #3 Saratoga Avenue/Mitzi Drive
*******************************************************************************
Future Volume Alternative: Peak Hour Warrant NOT Met
------------|---------------||---------------||---------------||---------------|
Approach:       North Bound      South Bound       East Bound       West Bound
Movement:     L  -  T  -  R    L  -  T  -  R    L  -  T  -  R    L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:       Uncontrolled     Uncontrolled      Stop Sign        Stop Sign
Lanes:        0  0  2  1  0    0  0  3  0  0    0  0  0  0  0    0  0  0  0  1
Initial Vol:    0 1854    31     0 1194     0     0    0     0     0    0    70
------------|---------------||---------------||---------------||---------------|
Major Street Volume:              3079
Minor Approach Volume:            70
Minor Approach Volume Threshold: -103 [less than minimum of 100]
-------------------------------------------------------------------------------
SIGNAL WARRANT DISCLAIMER
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"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.
```
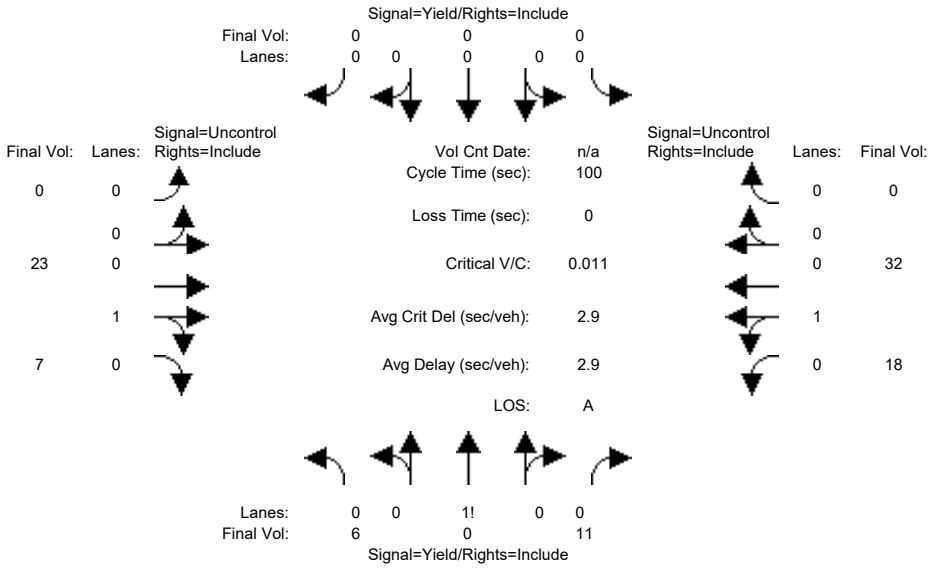


Level Of Service Computation Report
2000 HCM Unsignalized (Future Volume Alternative)
Background AM

Intersection #4: Mitzi Drive/Piper Drive




```
Street Name:            Mitzi Drive                    Piper Drive
Approach:       North Bound      South Bound      East Bound       West Bound
Movement:     L  -  T  -  R    L  -  T  -  R    L  -  T  -  R    L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Volume Module:
Base Vol:       6     0    11      0     0     0      0    23      7    18    32     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:    6     0    11      0     0     0      0    23      7    18    32     0
Added Vol:      0     0     0      0     0     0      0     0      0     0     0     0
PasserByVol:    0     0     0      0     0     0      0     0      0     0     0     0
Initial Fut:    6     0    11      0     0     0      0    23      7    18    32     0
User Adj:    1.00  1.00  1.00   1.00  1.00  1.00   1.00  1.00   1.00  1.00  1.00  1.00
PHF Adj:     1.00  1.00  1.00   1.00  1.00  1.00   1.00  1.00   1.00  1.00  1.00  1.00
PHF Volume:     6     0    11      0     0     0      0    23      7    18    32     0
Reduct Vol:     0     0     0      0     0     0      0     0      0     0     0     0
FinalVolume:    6     0    11      0     0     0      0    23      7    18    32     0
------------|---------------||---------------||---------------||---------------|
Critical Gap Module:
Critical Gp:  6.4   6.5   6.2 xxxxx xxxx xxxxx xxxxx xxxx xxxxx   4.1 xxxx xxxxx
FollowUpTim:  3.5   4.0   3.3 xxxxx xxxx xxxxx xxxxx xxxx xxxxx   2.2 xxxx xxxxx
------------|---------------||---------------||---------------||---------------|
Capacity Module:
Cnflict Vol:   95    95    27  xxxx xxxx xxxxx  xxxx xxxx xxxxx    30 xxxx xxxxx
Potent Cap.:  910   799  1055  xxxx xxxx xxxxx  xxxx xxxx xxxxx  1596 xxxx xxxxx
Move Cap.:    902   790  1055  xxxx xxxx xxxxx  xxxx xxxx xxxxx  1596 xxxx xxxxx
Volume/Cap:  0.01  0.00  0.01  xxxx xxxx  xxxx  xxxx xxxx  xxxx  0.01 xxxx  xxxx
------------|---------------||---------------||---------------||---------------|
Level Of Service Module:
2Way95thQ:   xxxx xxxx xxxxx  xxxx xxxx xxxxx  xxxx xxxx xxxxx   0.0 xxxx xxxxx
Control Del:xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx   7.3 xxxx xxxxx
LOS by Move:    *     *     *      *     *     *      *     *     *     A     *     *
Movement:     LT - LTR - RT    LT - LTR - RT    LT - LTR - RT    LT - LTR - RT
Shared Cap.: xxxx  995 xxxxx  xxxx xxxx xxxxx  xxxx xxxx xxxxx  xxxx xxxx xxxxx
SharedQueue:xxxxx  0.1 xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx   0.0 xxxx xxxxx
Shrd ConDel:xxxxx  8.7 xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx   7.3 xxxx xxxxx
Shared LOS:     *     A     *      *     *     *      *     *     A     *     *
ApproachDel:       8.7           xxxxxx           xxxxxx           xxxxxx
ApproachLOS:         A              *                *                *
Note: Queue reported is the number of cars per lane.
-----------|---------------|---------------|---------------|---------------|
HevVeh:             0%              0%              0%              0%
Grade:              0%              0%              0%              0%
Peds/Hour:          0               0               0               0
Pedestrian Walk Speed: 4.00 feet/sec
LaneWidth:       12 feet         12 feet         12 feet         12 feet
Time Period: 0.25 hour
                    Peak Hour Delay Signal Warrant Report
*******************************************************************************
Intersection #4 Mitzi Drive/Piper Drive
*******************************************************************************
Future Volume Alternative: Peak Hour Warrant NOT Met
------------|---------------||---------------||---------------||---------------|
Approach:       North Bound      South Bound      East Bound       West Bound
Movement:     L  -  T  -  R    L  -  T  -  R    L  -  T  -  R    L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:        Yield Sign       Yield Sign      Uncontrolled     Uncontrolled
Lanes:        0  0  1! 0  0    0  0  0  0  0    0  0  0  1  0    0  1  0  0  0
Initial Vol:    6     0    11      0     0     0      0    23      7    18    32     0
ApproachDel:       8.7           xxxxxx           xxxxxx           xxxxxx
------------|---------------||---------------||---------------||---------------|
Approach[northbound][lanes=1][control=Yield Sign]
Signal Warrant Rule #1: [vehicle-hours=0.0]
   FAIL - Controller not stop sign.
Signal Warrant Rule #2: [approach volume=17]
   FAIL - Approach volume less than 100 for one lane approach.
Signal Warrant Rule #3: [approach count=3][total volume=97]
   FAIL - Total volume less than 650 for intersection
          with less than four approaches.
-------------------------------------------------------------------------------
SIGNAL WARRANT DISCLAIMER
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"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 #4 Mitzi Drive/Piper Drive
********************************************************************************
Future Volume Alternative: Peak Hour Warrant NOT Met
------------|---------------||---------------||---------------||---------------|
Approach:       North Bound      South Bound       East Bound       West Bound
Movement:     L  -  T  -  R    L  -  T  -  R    L  -  T  -  R    L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:       Yield Sign       Yield Sign       Uncontrolled     Uncontrolled
Lanes:       0  0  1! 0  0    0  0  0  0  0    0  0  0  1  0    0  1  0  0  0
Initial Vol:    6    0    11     0    0     0     0   23     7    18   32     0
------------|---------------||---------------||---------------||---------------|
Major Street Volume:             80
Minor Approach Volume:           17
Minor Approach Volume Threshold: 893
------------------------------------------------------------------------------
SIGNAL WARRANT DISCLAIMER
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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.
```
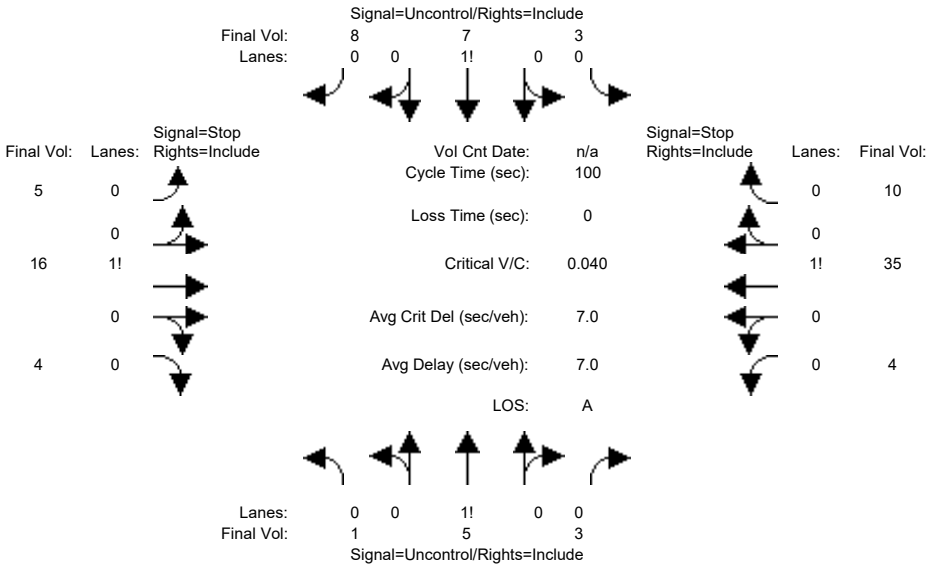


Level Of Service Computation Report
2000 HCM Unsignalized (Future Volume Alternative)
Background AM

Intersection #5: Mitzi Drive/Ranchero Way




```
Street Name:           Mitzi Drive                    Ranchero Way
Approach:      North Bound      South Bound      East Bound       West Bound
Movement:     L  -  T  -  R    L  -  T  -  R    L  -  T  -  R    L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Volume Module:
Base Vol:       1     5     3     3     7     8     5   16     4     4   35    10
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:    1     5     3     3     7     8     5   16     4     4   35    10
Added Vol:      0     0     0     0     0     0     0    0     0     0    0     0
PasserByVol:    0     0     0     0     0     0     0    0     0     0    0     0
Initial Fut:    1     5     3     3     7     8     5   16     4     4   35    10
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:     1     5     3     3     7     8     5   16     4     4   35    10
Reduct Vol:     0     0     0     0     0     0     0    0     0     0    0     0
FinalVolume:    1     5     3     3     7     8     5   16     4     4   35    10
------------|---------------||---------------||---------------||---------------|
Critical Gap Module:
Critical Gp:  4.1 xxxx xxxxx   4.1 xxxx xxxxx   7.1  6.5   6.2   7.1  6.5   6.2
FollowUpTim:  2.2 xxxx xxxxx   2.2 xxxx xxxxx   3.5  4.0   3.3   3.5  4.0   3.3
------------|---------------||---------------||---------------||---------------|
Capacity Module:
Cnflict Vol:   15 xxxx xxxxx     8 xxxx xxxxx    48   27    11    36   30     7
Potent Cap.: 1616 xxxx xxxxx  1625 xxxx xxxxx   958  870  1076   976  867  1082
Move Cap.:   1616 xxxx xxxxx  1625 xxxx xxxxx   918  868  1076   957  865  1082
Volume/Cap:  0.00 xxxx  xxxx  0.00 xxxx  xxxx  0.01 0.02  0.00  0.00 0.04  0.01
------------|---------------||---------------||---------------||---------------|
Level Of Service Module:
2Way95thQ:    0.0 xxxx xxxxx   0.0 xxxx xxxxx  xxxx xxxx xxxxx  xxxx xxxx xxxxx
Control Del:  7.2 xxxx xxxxx   7.2 xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx
LOS by Move:    A     *     *     A     *     *     *    *     *     *    *     *
Movement:     LT - LTR - RT    LT - LTR - RT    LT - LTR - RT    LT - LTR - RT
Shared Cap.: xxxx xxxx xxxxx  xxxx xxxx xxxxx  xxxx  906 xxxxx  xxxx  910 xxxxx
SharedQueue:xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx  0.1 xxxxx xxxxx  0.2 xxxxx
Shrd ConDel:xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx  9.1 xxxxx xxxxx  9.2 xxxxx
Shared LOS:     *     *     *     *     *     *     A     *     *     A     *
ApproachDel:    xxxxxx           xxxxxx               9.1               9.2
ApproachLOS:         *                *                 A                 A
Note: Queue reported is the number of cars per lane.
-----------|---------------|---------------|---------------|---------------|
HevVeh:             0%              0%              0%              0%
Grade:              0%              0%              0%              0%
Peds/Hour:          0               0               0               0
Pedestrian Walk Speed: 4.00 feet/sec
LaneWidth:       12 feet         12 feet         12 feet         12 feet
Time Period: 0.25 hour
                    Peak Hour Delay Signal Warrant Report
*******************************************************************************
Intersection #5 Mitzi Drive/Ranchero Way
*******************************************************************************
Future Volume Alternative: Peak Hour Warrant NOT Met
------------|---------------||---------------||---------------||---------------|
Approach:      North Bound      South Bound      East Bound       West Bound
Movement:     L  -  T  -  R    L  -  T  -  R    L  -  T  -  R    L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:       Uncontrolled     Uncontrolled      Stop Sign        Stop Sign
Lanes:        0  0  1! 0  0    0  0  1! 0  0    0  0  1! 0  0    0  0  1! 0  0
Initial Vol:    1     5     3     3     7     8     5   16     4     4   35    10
ApproachDel:    xxxxxx           xxxxxx               9.1               9.2
------------|---------------||---------------||---------------||---------------|
Approach[eastbound][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=25]
   FAIL - Approach volume less than 100 for one lane approach.
Signal Warrant Rule #3: [approach count=4][total volume=101]
   FAIL - Total volume less than 650 for intersection
          with less than four approaches.
-------------------------------------------------------------------------------
Approach[westbound][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=49]
   FAIL - Approach volume less than 100 for one lane approach.
Signal Warrant Rule #3: [approach count=4][total volume=101]
   FAIL - Total volume less than 650 for intersection
          with less than four approaches.
-------------------------------------------------------------------------------
SIGNAL WARRANT DISCLAIMER
This peak hour signal warrant analysis should be considered solely as an
"indicator" of the likelihood of an unsignalized intersection warranting
```

a traffic signal in the future. Intersections that exceed this warrant
are probably more likely to meet one or more of the other volume based
signal warrant (such as the 4-hour or 8-hour warrants).

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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 #5 Mitzi Drive/Ranchero Way

****

Future Volume Alternative: Peak Hour Warrant NOT Met

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	- T	- R	L	- T	- R	L	- T	- R	L	- T	- R
Control:	Uncontrolled			Uncontrolled			Stop Sign			Stop Sign		
Lanes:	0	0 1! 0	0	0	0 1! 0	0	0	0 1! 0	0	0	0 1! 0	0
Initial Vol:	1	5	3	3	7	8	5	16	4	4	35	10

Major Street Volume: 27
Minor Approach Volume: 49
Minor Approach Volume Threshold: 1183

SIGNAL WARRANT DISCLAIMER
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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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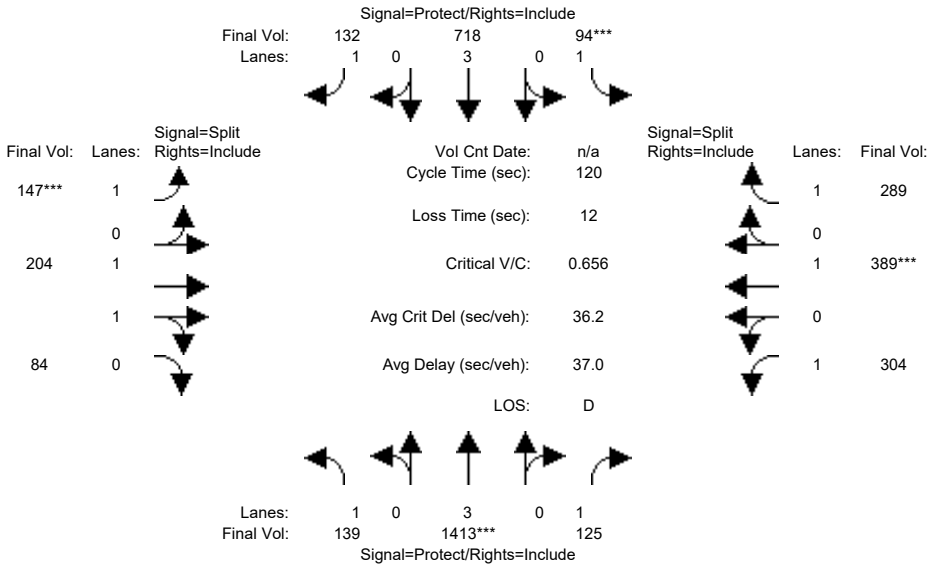
jurisdiction. Consideration of the other signal warrants, which is beyond
the scope of this software, may yield different results.

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

Intersection #3793: Saratoga Avenue/Williams Road

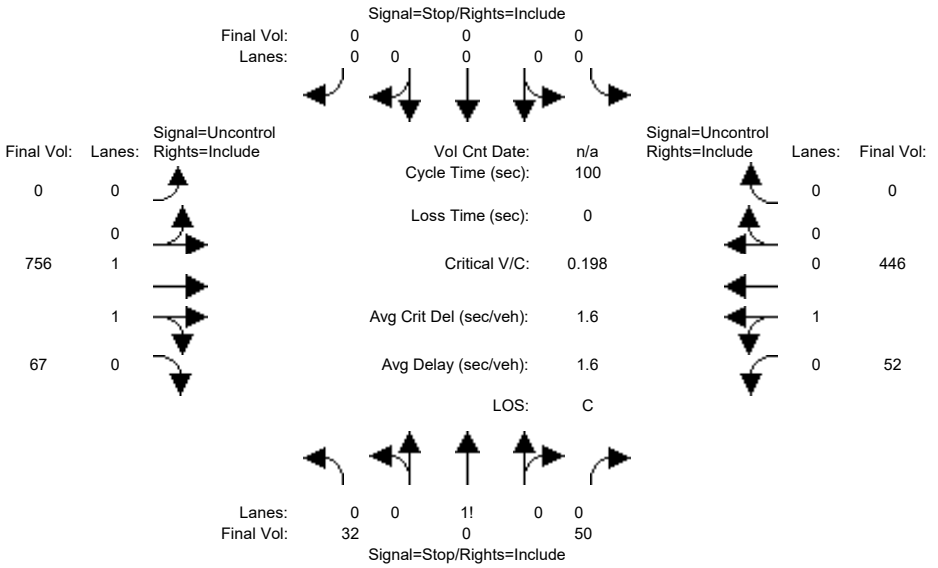


Street Name:	Saratoga Avenue						Williams Road					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	7	10	10	7	10	10	10	10	10	10	10	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module:												
Base Vol:	139	1413	125	94	718	132	147	204	84	304	389	289
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:	139	1413	125	94	718	132	147	204	84	304	389	289
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	139	1413	125	94	718	132	147	204	84	304	389	289
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:	139	1413	125	94	718	132	147	204	84	304	389	289
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	139	1413	125	94	718	132	147	204	84	304	389	289
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:	139	1413	125	94	718	132	147	204	84	304	389	289
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	1.00	0.92	0.92	1.00	0.92	0.92	0.98	0.95	0.92	1.00	0.92
Lanes:	1.00	3.00	1.00	1.00	3.00	1.00	1.00	1.40	0.60	1.00	1.00	1.00
Final Sat.:	1750	5700	1750	1750	5700	1750	1750	2620	1079	1750	1900	1750
Capacity Analysis Module:												
Vol/Sat:	0.08	0.25	0.07	0.05	0.13	0.08	0.08	0.08	0.08	0.17	0.20	0.17
Crit Moves:		****		****			****				****	
Green Time:	21.3	45.4	45.4	9.8	33.8	33.8	15.4	15.4	15.4	37.5	37.5	37.5
Volume/Cap:	0.45	0.66	0.19	0.66	0.45	0.27	0.66	0.61	0.61	0.56	0.66	0.53
Uniform Del:	44.1	30.9	25.0	53.4	35.4	33.5	49.8	49.5	49.5	34.4	35.7	34.0
IncremntDel:	1.0	0.7	0.1	10.5	0.2	0.3	6.9	2.3	2.3	1.3	2.7	1.0
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay 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
Delay/Veh:	45.1	31.6	25.1	64.0	35.6	33.7	56.7	51.8	51.8	35.6	38.4	35.0
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:	45.1	31.6	25.1	64.0	35.6	33.7	56.7	51.8	51.8	35.6	38.4	35.0
LOS by Move:	D	C	C	E	D	C	E	D	D	D	D	C
HCM2k95thQ:	10	26	7	9	14	8	13	12	12	19	23	18

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

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

Intersection #1: Ranchero Way/Williams Road




```
Street Name:            Ranchero Way                    Williams Road
Approach:       North Bound      South Bound      East Bound      West Bound
Movement:     L  -  T  -  R    L  -  T  -  R    L  -  T  -  R    L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Volume Module:
Base Vol:      32    0    50     0    0     0     0  756    67    52  446     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:   32    0    50     0    0     0     0  756    67    52  446     0
Added Vol:      0    0     0     0    0     0     0    0     0     0    0     0
PasserByVol:    0    0     0     0    0     0     0    0     0     0    0     0
Initial Fut:   32    0    50     0    0     0     0  756    67    52  446     0
User Adj:    1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
PHF Adj:     1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
PHF Volume:    32    0    50     0    0     0     0  756    67    52  446     0
Reduct Vol:     0    0     0     0    0     0     0    0     0     0    0     0
FinalVolume:   32    0    50     0    0     0     0  756    67    52  446     0
------------|---------------||---------------||---------------||---------------|
Critical Gap Module:
Critical Gp:  6.4  6.5   6.2 xxxxx xxxx xxxxx xxxxx xxxx xxxxx   4.1 xxxx xxxxx
FollowUpTim:  3.5  4.0   3.3 xxxxx xxxx xxxxx xxxxx xxxx xxxxx   2.2 xxxx xxxxx
------------|---------------||---------------||---------------||---------------|
Capacity Module:
Cnflict Vol: 1340 1340   412  xxxx xxxx xxxxx  xxxx xxxx xxxxx   823 xxxx xxxxx
Potent Cap.:  170  154   645  xxxx xxxx xxxxx  xxxx xxxx xxxxx   816 xxxx xxxxx
Move Cap.:    162  144   645  xxxx xxxx xxxxx  xxxx xxxx xxxxx   816 xxxx xxxxx
Volume/Cap:  0.20 0.00  0.08  xxxx xxxx  xxxx  xxxx xxxx  xxxx  0.06 xxxx  xxxx
------------|---------------||---------------||---------------||---------------|
Level Of Service Module:
2Way95thQ:   xxxx xxxx xxxxx  xxxx xxxx xxxxx  xxxx xxxx xxxxx   0.2 xxxx xxxxx
Control Del:xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx   9.7 xxxx xxxxx
LOS by Move:    *    *     *     *    *     *     *    *     *     A    *     *
Movement:     LT - LTR - RT    LT - LTR - RT    LT - LTR - RT    LT - LTR - RT
Shared Cap.: xxxx  297 xxxxx  xxxx xxxx xxxxx  xxxx xxxx xxxxx  xxxx xxxx xxxxx
SharedQueue:xxxxx  1.1 xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx   0.2 xxxx xxxxx
Shrd ConDel:xxxxx 21.6 xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx   9.7 xxxx xxxxx
Shared LOS:     *    C     *     *    *     *     *    *     *     A    *     *
ApproachDel:      21.6           xxxxxx           xxxxxx           xxxxxx
ApproachLOS:         C             *                *                *
Note: Queue reported is the number of cars per lane.
-----------|---------------|---------------|---------------|---------------|
HevVeh:             0%              0%              0%              0%
Grade:              0%              0%              0%              0%
Peds/Hour:          0               0               0               0
Pedestrian Walk Speed: 4.00 feet/sec
LaneWidth:       12 feet         12 feet         12 feet         12 feet
Time Period: 0.25 hour
Upstream Signals:
Link Index:                                      #45
Dist(miles):                                     0.000
Speed (mph):                                      0.00
SignalIndex:                                     #3793
Cycle Time:                                          0 secs
InitVolume:                                    0     0
Saturation:                                    0     0
ArrivalType:                                   0     0
G/C:                                        0.00  0.00
*** Computation 1: Time for Queue to Clear at Each Upstream Intersection
P:                                          0.000 0.000
gq1:                                         0.00  0.00
gq2:                                         0.00  0.00
gq:                                          0.00  0.00
*** Computation 2: Time Intersection Blocked Because of Upstream Platoons
alpha:                                          0.000
beta:                                           0.000
ta (secs):                                      0.000
F:                                              0.000
f:                                          0.000 0.000
vcmax:                                         0     0
vcg:                                           0     0
vcmin:                                         0     0
tp:                                          0.0   0.0
p:                                              0.000
*** Computation 3: Platoon Event Periods
pdom/psubo:                                        0.000/0.000/Unconstrained
*** Computation 4: Conflicting Flows During Each Unblocked Period
InitCnflVol:1340  1340   412  928  1373   446    0 xxxxx xxxxx  823 xxxxx xxxxx
AdjCnflVol: 1340  1340   412  928  1373   446    0 xxxxx xxxxx  823 xxxxx xxxxx
UpstreamAdj:1.00 1.000 1.000 1.00 1.000 1.000 1.00 x.xxx x.xxx 1.00 x.xxx x.xxx
ConflictVol:1340  1340   412  928  1373   446    0 xxxxx xxxxx  823 xxxxx xxxxx
*** Computation 5: Capacity for Subject Movement During Unblocked Period
InitPotCap:  170   154   645  250   147   617 1636 xxxxx xxxxx  816 xxxxx xxxxx
```

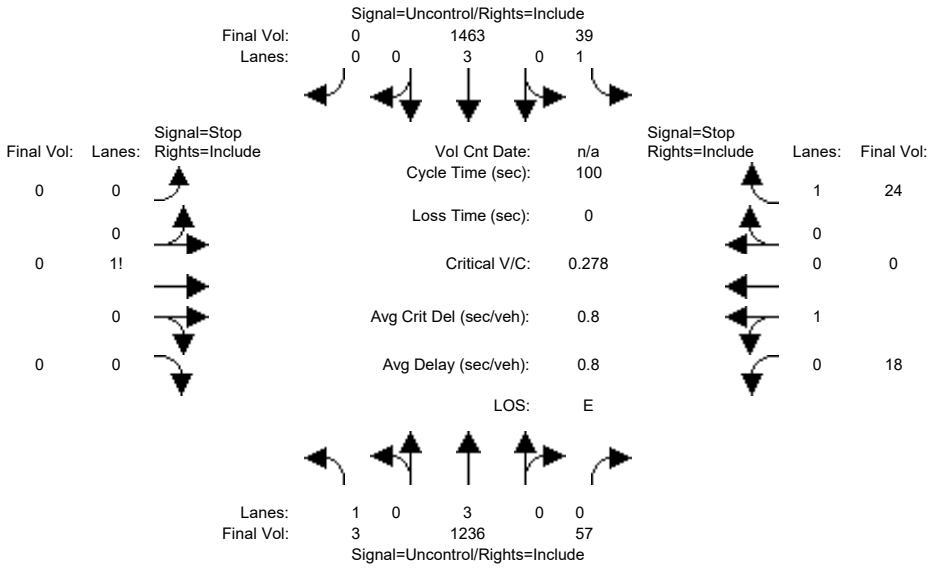
```
UpstreamAdj:1.00 1.000 1.000 1.00 1.000 1.000 1.00 x.xxx x.xxx 1.00 x.xxx x.xxx
Potent Cap.: 170   154   645  250   147   617 1636 xxxxx xxxxx  816 xxxxx xxxxx
                    Peak Hour Delay Signal Warrant Report
*******************************************************************************
Intersection #1 Ranchero Way/Williams Road
*******************************************************************************
Future Volume Alternative: Peak Hour Warrant NOT Met
------------|---------------||---------------||---------------||---------------|
Approach:       North Bound      South Bound       East Bound       West Bound
Movement:     L  -  T  -  R    L  -  T  -  R    L  -  T  -  R    L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:         Stop Sign        Stop Sign       Uncontrolled     Uncontrolled
Lanes:        0  0  1! 0  0    0  0  0  0  0    0  0  1  1  0    0  1  0  0  0
Initial Vol:   32    0    50     0    0     0     0  756    67    52  446     0
ApproachDel:      21.6           xxxxxx           xxxxxx           xxxxxx
------------|---------------||---------------||---------------||---------------|
Approach[northbound][lanes=1][control=Stop Sign]
Signal Warrant Rule #1: [vehicle-hours=0.5]
   FAIL - Vehicle-hours less than 4 for one lane approach.
Signal Warrant Rule #2: [approach volume=82]
   FAIL - Approach volume less than 100 for one lane approach.
Signal Warrant Rule #3: [approach count=3][total volume=1403]
   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 #1 Ranchero Way/Williams Road
*******************************************************************************
Future Volume Alternative: Peak Hour Warrant NOT Met
------------|---------------||---------------||---------------||---------------|
Approach:       North Bound      South Bound       East Bound       West Bound
Movement:     L  -  T  -  R    L  -  T  -  R    L  -  T  -  R    L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:         Stop Sign        Stop Sign       Uncontrolled     Uncontrolled
Lanes:        0  0  1! 0  0    0  0  0  0  0    0  0  1  1  0    0  1  0  0  0
Initial Vol:   32    0    50     0    0     0     0  756    67    52  446     0
------------|---------------||---------------||---------------||---------------|
Major Street Volume:             1321
Minor Approach Volume:           82
Minor Approach Volume Threshold: 189
-------------------------------------------------------------------------------
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 PM

Intersection #2: Saratoga Avenue/Piper Drive




```
Street Name:         Saratoga Avenue                  Piper Drive
Approach:       North Bound      South Bound      East Bound       West Bound
Movement:     L  -  T  -  R    L  -  T  -  R    L  -  T  -  R    L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Volume Module:
Base Vol:       3 1236    57    39 1463     0     0     0     0    18     0    24
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:    3 1236    57    39 1463     0     0     0     0    18     0    24
Added Vol:      0    0     0     0    0     0     0     0     0     0     0     0
PasserByVol:    0    0     0     0    0     0     0     0     0     0     0     0
Initial Fut:    3 1236    57    39 1463     0     0     0     0    18     0    24
User Adj:    1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
PHF Adj:     1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
PHF Volume:     3 1236    57    39 1463     0     0     0     0    18     0    24
Reduct Vol:     0    0     0     0    0     0     0     0     0     0     0     0
FinalVolume:    3 1236    57    39 1463     0     0     0     0    18     0    24
------------|---------------||---------------||---------------||---------------|
Critical Gap Module:
Critical Gp:  4.1 xxxx xxxxx   4.1 xxxx xxxxx   7.5  6.5   6.9   6.8  6.5   6.9
FollowUpTim:  2.2 xxxx xxxxx   2.2 xxxx xxxxx   3.5  4.0   3.3   3.5  4.0   3.3
------------|---------------||---------------||---------------||---------------|
Capacity Module:
Cnflict Vol: 1463 xxxx xxxxx  1293 xxxx xxxxx  1959 2840   488  1836 2812   441
Potent Cap.:  468 xxxx xxxxx   543 xxxx xxxxx    39   18   531    69   18   570
Move Cap.:    468 xxxx xxxxx   543 xxxx xxxxx    35   16   531    65   17   570
Volume/Cap:  0.01 xxxx  xxxx  0.07 xxxx  xxxx  0.00 0.00  0.00  0.28 0.00  0.04
------------|---------------||---------------||---------------||---------------|
Level Of Service Module:
2Way95thQ:    0.0 xxxx xxxxx   0.2 xxxx xxxxx  xxxx xxxx xxxxx  xxxx xxxx   0.1
Control Del: 12.7 xxxx xxxxx  12.1 xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx  11.6
LOS by Move:    B    *     *     B    *     *     *    *     *     *    *     B
Movement:     LT - LTR - RT    LT - LTR - RT    LT - LTR - RT    LT - LTR - RT
Shared Cap.: xxxx xxxx xxxxx  xxxx xxxx xxxxx  xxxx    0 xxxxx    65 xxxx xxxxx
SharedQueue:xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx   1.0 xxxx xxxxx
Shrd ConDel:xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx  80.9 xxxx xxxxx
Shared LOS:     *    *     *     *    *     *     *    *     *     F    *     *
ApproachDel:    xxxxxx           xxxxxx           xxxxxx             41.3
ApproachLOS:         *                *                *                E
Note: Queue reported is the number of cars per lane.
-----------|---------------|---------------|---------------|---------------|
HevVeh:             0%              0%              0%              0%
Grade:              0%              0%              0%              0%
Peds/Hour:          0               0               0               0
Pedestrian Walk Speed: 4.00 feet/sec
LaneWidth:       12 feet         12 feet         12 feet         12 feet
Time Period: 0.25 hour
Upstream Signals:
Link Index:                        #42
Dist(miles):                       0.000
Speed (mph):                        0.00
SignalIndex:                       #3793
Cycle Time:                            0 secs
InitVolume:                      0     0
Saturation:                      0     0
ArrivalType:                     0     0
G/C:                          0.00  0.00
*** Computation 1: Time for Queue to Clear at Each Upstream Intersection
P:                           0.000 0.000
gq1:                          0.00  0.00
gq2:                          0.00  0.00
gq:                           0.00  0.00
*** Computation 2: Time Intersection Blocked Because of Upstream Platoons
alpha:                             0.000
beta:                              0.000
ta (secs):                         0.000
F:                                 0.000
f:                           0.000 0.000
vcmax:                           0     0
vcg:                             0     0
vcmin:                           0     0
tp:                            0.0   0.0
p:                                 0.000
*** Computation 3: Platoon Event Periods
pdom/psubo:      0.000/0.000/Unconstrained
*** Computation 4: Conflicting Flows During Each Unblocked Period
InitCnflVol:1463 xxxxx xxxxx 1293 xxxxx xxxxx 1959  2840   488 1836  2812   441
AdjCnflVol: 1463 xxxxx xxxxx 1293 xxxxx xxxxx 1959  2840   488 1836  2812   441
UpstreamAdj:1.00 x.xxx x.xxx 1.00 x.xxx x.xxx 1.00 1.000 1.000 1.00 1.000 1.000
ConflictVol:1463 xxxxx xxxxx 1293 xxxxx xxxxx 1959  2840   488 1836  2812   441
*** Computation 5: Capacity for Subject Movement During Unblocked Period
InitPotCap:  468 xxxxx xxxxx  543 xxxxx xxxxx   39    18   531   69    18   570
```

```
UpstreamAdj:1.00 x.xxx x.xxx 1.00 x.xxx x.xxx 1.00 1.000 1.000 1.00 1.000 1.000
Potent Cap.: 468 xxxxx xxxxx  543 xxxxx xxxxx   39    18   531   69    18   570
                    Peak Hour Delay Signal Warrant Report
*******************************************************************************
Intersection #2 Saratoga Avenue/Piper Drive
*******************************************************************************
Future Volume Alternative: Peak Hour Warrant NOT Met
------------|---------------||---------------||---------------||---------------|
Approach:       North Bound      South Bound       East Bound       West Bound
Movement:     L  -  T  -  R    L  -  T  -  R    L  -  T  -  R    L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:       Uncontrolled     Uncontrolled      Stop Sign        Stop Sign
Lanes:        1  0  2  1  0    1  0  3  0  0    0  0  1! 0  0    0  1  0  0  1
Initial Vol:    3 1236    57    39 1463     0     0    0     0    18    0    24
ApproachDel:    xxxxxx           xxxxxx           xxxxxx             41.3
------------|---------------||---------------||---------------||---------------|
Approach[westbound][lanes=2][control=Stop Sign]
Signal Warrant Rule #1: [vehicle-hours=0.5]
   FAIL - Vehicle-hours less than 5 for two or more lane approach.
Signal Warrant Rule #2: [approach volume=42]
   FAIL - Approach volume less than 150 for two or more lane approach.
Signal Warrant Rule #3: [approach count=3][total volume=2840]
   SUCCEED - Total volume greater than or equal to 650 for intersection
             with less than four approaches.
-------------------------------------------------------------------------------
SIGNAL WARRANT DISCLAIMER
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"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 #2 Saratoga Avenue/Piper Drive
*******************************************************************************
Future Volume Alternative: Peak Hour Warrant NOT Met
------------|---------------||---------------||---------------||---------------|
Approach:       North Bound      South Bound       East Bound       West Bound
Movement:     L  -  T  -  R    L  -  T  -  R    L  -  T  -  R    L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:       Uncontrolled     Uncontrolled      Stop Sign        Stop Sign
Lanes:        1  0  2  1  0    1  0  3  0  0    0  0  1! 0  0    0  1  0  0  1
Initial Vol:    3 1236    57    39 1463     0     0    0     0    18    0    24
------------|---------------||---------------||---------------||---------------|
Major Street Volume:             2798
Minor Approach Volume:           42
Minor Approach Volume Threshold: -68 [less than minimum of 150]
-------------------------------------------------------------------------------
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.
```
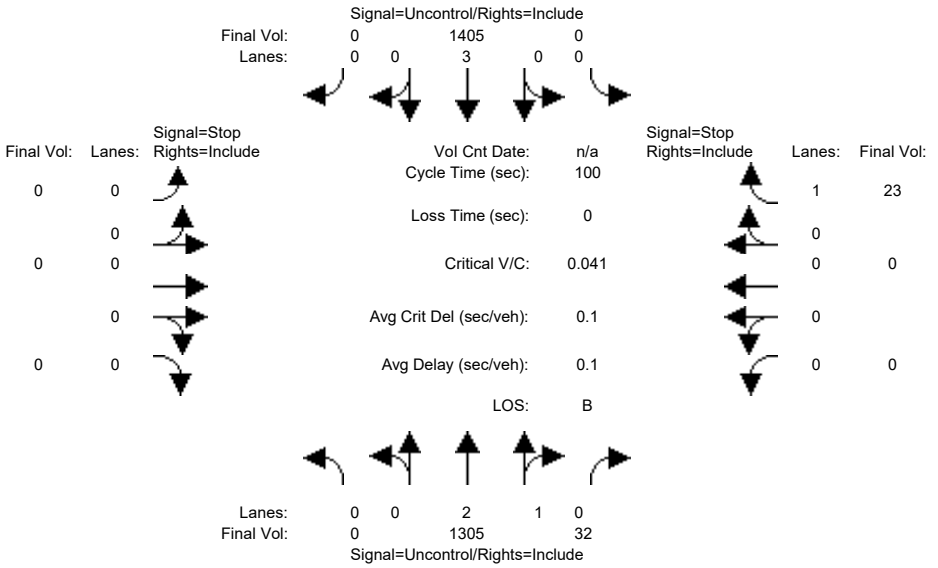


Level Of Service Computation Report
2000 HCM Unsignalized (Future Volume Alternative)
Background PM

Intersection #3: Saratoga Avenue/Mitzi Drive




```
Street Name:          Saratoga Avenue                    Mitzi Drive
Approach:       North Bound      South Bound      East Bound       West Bound
Movement:     L  -  T  -  R    L  -  T  -  R    L  -  T  -  R    L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Volume Module:
Base Vol:       0 1305    32     0 1405     0     0     0     0     0     0    23
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 1305    32     0 1405     0     0     0     0     0     0    23
Added Vol:      0    0     0     0    0     0     0     0     0     0     0     0
PasserByVol:    0    0     0     0    0     0     0     0     0     0     0     0
Initial Fut:    0 1305    32     0 1405     0     0     0     0     0     0    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:     0 1305    32     0 1405     0     0     0     0     0     0    23
Reduct Vol:     0    0     0     0    0     0     0     0     0     0     0     0
FinalVolume:    0 1305    32     0 1405     0     0     0     0     0     0    23
------------|---------------||---------------||---------------||---------------|
Critical Gap Module:
Critical Gp:xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx   6.9
FollowUpTim:xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx   3.3
------------|---------------||---------------||---------------||---------------|
Capacity Module:
Cnflict Vol: xxxx xxxx xxxxx  xxxx xxxx xxxxx  xxxx xxxx xxxxx  xxxx xxxx   451
Potent Cap.: xxxx xxxx xxxxx  xxxx xxxx xxxxx  xxxx xxxx xxxxx  xxxx xxxx   561
Move Cap.:   xxxx xxxx xxxxx  xxxx xxxx xxxxx  xxxx xxxx xxxxx  xxxx xxxx   561
Volume/Cap:  xxxx xxxx  xxxx  xxxx xxxx  xxxx  xxxx xxxx  xxxx  xxxx xxxx  0.04
------------|---------------||---------------||---------------||---------------|
Level Of Service Module:
2Way95thQ:   xxxx xxxx xxxxx  xxxx xxxx xxxxx  xxxx xxxx xxxxx  xxxx xxxx   0.1
Control Del:xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx  11.7
LOS by Move:    *    *     *     *    *     *     *    *     *     *    *     B
Movement:     LT - LTR - RT    LT - LTR - RT    LT - LTR - RT    LT - LTR - RT
Shared Cap.: xxxx xxxx xxxxx  xxxx xxxx xxxxx  xxxx xxxx xxxxx  xxxx xxxx xxxxx
SharedQueue:xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx
Shrd ConDel:xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx
Shared LOS:     *    *     *     *    *     *     *    *     *     *    *     *
ApproachDel:    xxxxxx           xxxxxx           xxxxxx             11.7
ApproachLOS:         *                *                *                B
Note: Queue reported is the number of cars per lane.
-----------|---------------|---------------|---------------|---------------|
HevVeh:             0%              0%              0%              0%
Grade:              0%              0%              0%              0%
Peds/Hour:          0               0               0               0
Pedestrian Walk Speed: 4.00 feet/sec
LaneWidth:       12 feet         12 feet         12 feet         12 feet
Time Period: 0.25 hour
Upstream Signals:
Link Index:                      #42
Dist(miles):                     0.000
Speed (mph):                      0.00
SignalIndex:                     #3793
Cycle Time:                          0 secs
InitVolume:                    0     0
Saturation:                    0     0
ArrivalType:                   0     0
G/C:                        0.00  0.00
*** Computation 1: Time for Queue to Clear at Each Upstream Intersection
P:                          0.000 0.000
gq1:                         0.00  0.00
gq2:                         0.00  0.00
gq:                          0.00  0.00
*** Computation 2: Time Intersection Blocked Because of Upstream Platoons
alpha:                           0.000
beta:                            0.000
ta (secs):                       0.000
F:                               0.000
f:                          0.000 0.000
vcmax:                         0     0
vcg:                           0     0
vcmin:                         0     0
tp:                          0.0   0.0
p:                               0.000
*** Computation 3: Platoon Event Periods
pdom/psubo:      0.000/0.000/Unconstrained
*** Computation 4: Conflicting Flows During Each Unblocked Period
InitCnflVol:   0 xxxxx xxxxx    0 xxxxx xxxxx 1840  2742   468 1789  2726   451
AdjCnflVol:    0 xxxxx xxxxx    0 xxxxx xxxxx 1840  2742   468 1789  2726   451
UpstreamAdj:1.00 x.xxx x.xxx 1.00 x.xxx x.xxx 1.00 1.000 1.000 1.00 1.000 1.000
ConflictVol:   0 xxxxx xxxxx    0 xxxxx xxxxx 1840  2742   468 1789  2726   451
*** Computation 5: Capacity for Subject Movement During Unblocked Period
InitPotCap: 1636 xxxxx xxxxx 1636 xxxxx xxxxx   48    20   547   74    21   561
```

```
UpstreamAdj:1.00 x.xxx x.xxx 1.00 x.xxx x.xxx 1.00 1.000 1.000 1.00 1.000 1.000
Potent Cap.:1636 xxxxx xxxxx 1636 xxxxx xxxxx   48    20   547   74    21   561
                    Peak Hour Delay Signal Warrant Report
*******************************************************************************
Intersection #3 Saratoga Avenue/Mitzi Drive
*******************************************************************************
Future Volume Alternative: Peak Hour Warrant NOT Met
------------|---------------||---------------||---------------||---------------|
Approach:       North Bound      South Bound       East Bound       West Bound
Movement:     L  -  T  -  R    L  -  T  -  R    L  -  T  -  R    L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:       Uncontrolled     Uncontrolled      Stop Sign        Stop Sign
Lanes:        0  0  2  1  0    0  0  3  0  0    0  0  0  0  0    0  0  0  0  1
Initial Vol:    0 1305    32     0 1405     0     0    0     0     0    0    23
ApproachDel:    xxxxxx           xxxxxx           xxxxxx             11.7
------------|---------------||---------------||---------------||---------------|
Approach[westbound][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=23]
   FAIL - Approach volume less than 100 for one lane approach.
Signal Warrant Rule #3: [approach count=3][total volume=2765]
   SUCCEED - Total volume greater than or equal to 650 for intersection
             with less than four approaches.
-------------------------------------------------------------------------------
SIGNAL WARRANT DISCLAIMER
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"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 #3 Saratoga Avenue/Mitzi Drive
*******************************************************************************
Future Volume Alternative: Peak Hour Warrant NOT Met
------------|---------------||---------------||---------------||---------------|
Approach:       North Bound      South Bound       East Bound       West Bound
Movement:     L  -  T  -  R    L  -  T  -  R    L  -  T  -  R    L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:       Uncontrolled     Uncontrolled      Stop Sign        Stop Sign
Lanes:        0  0  2  1  0    0  0  3  0  0    0  0  0  0  0    0  0  0  0  1
Initial Vol:    0 1305    32     0 1405     0     0    0     0     0    0    23
------------|---------------||---------------||---------------||---------------|
Major Street Volume:             2742
Minor Approach Volume:           23
Minor Approach Volume Threshold: -63 [less than minimum of 100]
-------------------------------------------------------------------------------
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.
```
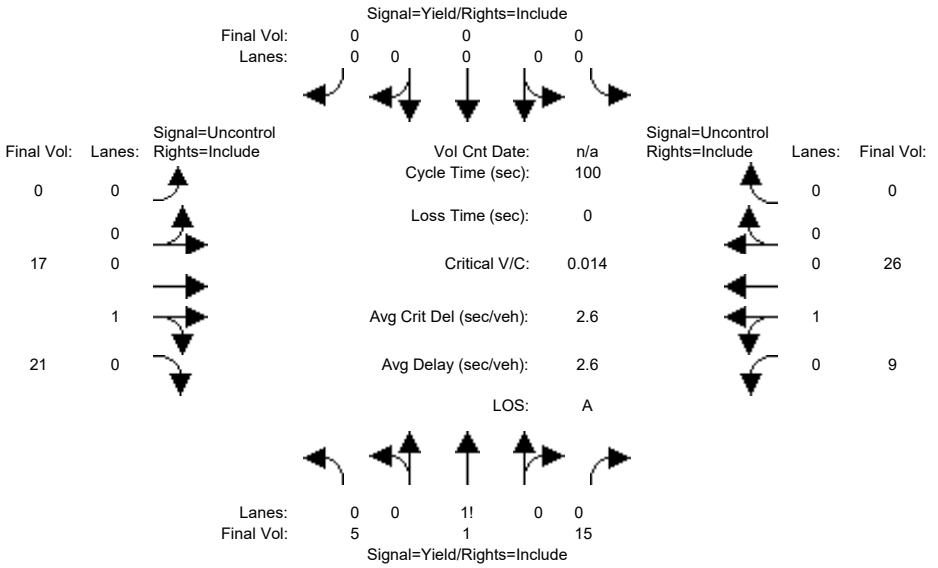


Level Of Service Computation Report
2000 HCM Unsignalized (Future Volume Alternative)
Background PM

Intersection #4: Mitzi Drive/Piper Drive




```
Street Name:           Mitzi Drive                    Piper Drive
Approach:      North Bound      South Bound      East Bound      West Bound
Movement:     L  -  T  -  R    L  -  T  -  R    L  -  T  -  R    L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Volume Module:
Base Vol:       5     1    15     0     0     0     0    17    21     9    26     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:    5     1    15     0     0     0     0    17    21     9    26     0
Added Vol:      0     0     0     0     0     0     0     0     0     0     0     0
PasserByVol:    0     0     0     0     0     0     0     0     0     0     0     0
Initial Fut:    5     1    15     0     0     0     0    17    21     9    26     0
User Adj:    1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
PHF Adj:     1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
PHF Volume:     5     1    15     0     0     0     0    17    21     9    26     0
Reduct Vol:     0     0     0     0     0     0     0     0     0     0     0     0
FinalVolume:    5     1    15     0     0     0     0    17    21     9    26     0
------------|---------------||---------------||---------------||---------------|
Critical Gap Module:
Critical Gp:  6.4  6.5   6.2 xxxxx xxxx xxxxx xxxxx xxxx xxxxx   4.1 xxxx xxxxx
FollowUpTim:  3.5  4.0   3.3 xxxxx xxxx xxxxx xxxxx xxxx xxxxx   2.2 xxxx xxxxx
------------|---------------||---------------||---------------||---------------|
Capacity Module:
Cnflict Vol:   72   72    28  xxxx xxxx xxxxx  xxxx xxxx xxxxx    38 xxxx xxxxx
Potent Cap.:  938  823  1054  xxxx xxxx xxxxx  xxxx xxxx xxxxx  1585 xxxx xxxxx
Move Cap.:    934  818  1054  xxxx xxxx xxxxx  xxxx xxxx xxxxx  1585 xxxx xxxxx
Volume/Cap:  0.01 0.00  0.01  xxxx xxxx  xxxx  xxxx xxxx  xxxx  0.01 xxxx  xxxx
------------|---------------||---------------||---------------||---------------|
Level Of Service Module:
2Way95thQ:   xxxx xxxx xxxxx  xxxx xxxx xxxxx  xxxx xxxx xxxxx   0.0 xxxx xxxxx
Control Del:xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx   7.3 xxxx xxxxx
LOS by Move:    *     *      *     *     *      *     *     *      A     *      *
Movement:     LT - LTR - RT    LT - LTR - RT    LT - LTR - RT    LT - LTR - RT
Shared Cap.: xxxx 1009 xxxxx  xxxx xxxx xxxxx  xxxx xxxx xxxxx  xxxx xxxx xxxxx
SharedQueue:xxxxx  0.1 xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx   0.0 xxxx xxxxx
Shrd ConDel:xxxxx  8.6 xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx   7.3 xxxx xxxxx
Shared LOS:     *     A      *     *     *      *     *     *      A     *      *
ApproachDel:       8.6           xxxxxx           xxxxxx           xxxxxx
ApproachLOS:         A             *                *                *
Note: Queue reported is the number of cars per lane.
-----------|---------------|---------------|---------------|---------------|
HevVeh:             0%              0%              0%              0%
Grade:              0%              0%              0%              0%
Peds/Hour:          0               0               0               0
Pedestrian Walk Speed: 4.00 feet/sec
LaneWidth:       12 feet         12 feet         12 feet         12 feet
Time Period: 0.25 hour
                    Peak Hour Delay Signal Warrant Report
*******************************************************************************
Intersection #4 Mitzi Drive/Piper Drive
*******************************************************************************
Future Volume Alternative: Peak Hour Warrant NOT Met
------------|---------------||---------------||---------------||---------------|
Approach:      North Bound      South Bound      East Bound      West Bound
Movement:     L  -  T  -  R    L  -  T  -  R    L  -  T  -  R    L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:       Yield Sign       Yield Sign      Uncontrolled     Uncontrolled
Lanes:        0  0  1! 0  0    0  0  0  0  0    0  0  0  1  0    0  1  0  0  0
Initial Vol:    5     1    15     0     0     0     0    17    21     9    26     0
ApproachDel:       8.6           xxxxxx           xxxxxx           xxxxxx
------------|---------------||---------------||---------------||---------------|
Approach[northbound][lanes=1][control=Yield Sign]
Signal Warrant Rule #1: [vehicle-hours=0.1]
   FAIL - Controller not stop sign.
Signal Warrant Rule #2: [approach volume=21]
   FAIL - Approach volume less than 100 for one lane approach.
Signal Warrant Rule #3: [approach count=3][total volume=94]
   FAIL - Total volume less than 650 for intersection
          with less than four approaches.
-------------------------------------------------------------------------------
SIGNAL WARRANT DISCLAIMER
This peak hour signal warrant analysis should be considered solely as an
"indicator" of the likelihood of an unsignalized intersection warranting
a traffic signal in the future.  Intersections that exceed this warrant
are probably more likely to meet one or more of the other volume based
signal warrant (such as the 4-hour or 8-hour warrants).

The peak hour warrant analysis in this report is not intended to replace
a rigorous and complete traffic signal warrant analysis by the responsible
jurisdiction.  Consideration of the other signal warrants, which is beyond
the scope of this software, may yield different results.
                Peak Hour Volume Signal Warrant Report [Urban]
```

```
*******************************************************************************
Intersection #4 Mitzi Drive/Piper Drive
*******************************************************************************
Future Volume Alternative: Peak Hour Warrant NOT Met
------------|---------------||---------------||---------------||---------------|
Approach:       North Bound      South Bound       East Bound       West Bound
Movement:     L  -  T  -  R    L  -  T  -  R    L  -  T  -  R    L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:       Yield Sign       Yield Sign       Uncontrolled     Uncontrolled
Lanes:       0  0  1! 0  0    0  0  0  0  0    0  0  0  1  0    0  1  0  0  0
Initial Vol:    5    1    15     0    0     0     0   17    21     9   26     0
------------|---------------||---------------||---------------||---------------|
Major Street Volume:             73
Minor Approach Volume:           21
Minor Approach Volume Threshold: 917
-------------------------------------------------------------------------------
SIGNAL WARRANT DISCLAIMER
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"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.
```
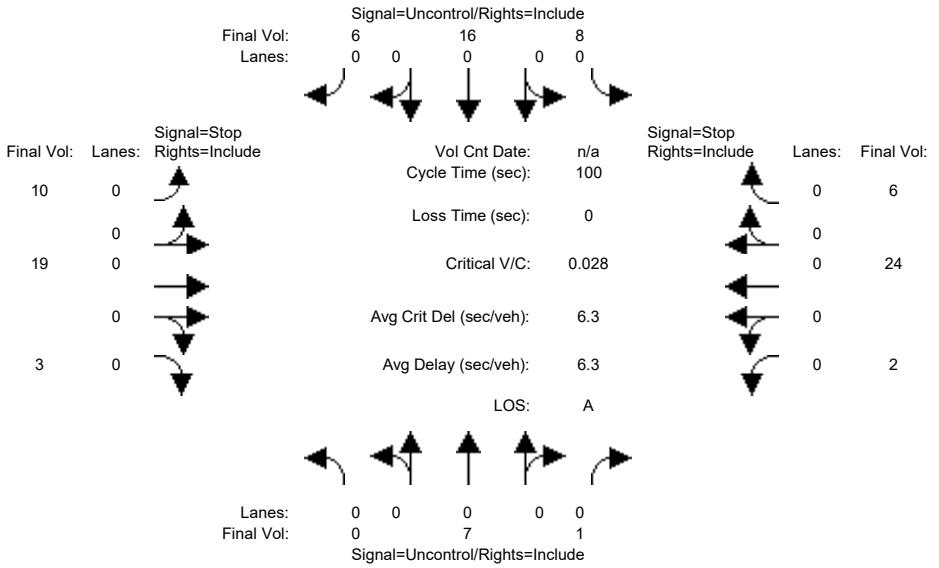


Level Of Service Computation Report
2000 HCM Unsignalized (Future Volume Alternative)
Background PM

Intersection #5: Mitzi Drive/Ranchero Way




```
Street Name:           Mitzi Drive                    Ranchero Way
Approach:      North Bound      South Bound      East Bound       West Bound
Movement:     L  -  T  -  R    L  -  T  -  R    L  -  T  -  R    L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Volume Module:
Base Vol:       0     7     1     8    16     6    10    19     3     2    24     6
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     7     1     8    16     6    10    19     3     2    24     6
Added Vol:      0     0     0     0     0     0     0     0     0     0     0     0
PasserByVol:    0     0     0     0     0     0     0     0     0     0     0     0
Initial Fut:    0     7     1     8    16     6    10    19     3     2    24     6
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     7     1     8    16     6    10    19     3     2    24     6
Reduct Vol:     0     0     0     0     0     0     0     0     0     0     0     0
FinalVolume:    0     7     1     8    16     6    10    19     3     2    24     6
------------|---------------||---------------||---------------||---------------|
Critical Gap Module:
Critical Gp:xxxxx xxxx xxxxx   4.1 xxxx xxxxx   7.1  6.5   6.2   7.1  6.5   6.2
FollowUpTim:xxxxx xxxx xxxxx   2.2 xxxx xxxxx   3.5  4.0   3.3   3.5  4.0   3.3
------------|---------------||---------------||---------------||---------------|
Capacity Module:
Cnflict Vol: xxxx xxxx xxxxx     8 xxxx xxxxx    58   43    19    54   46     8
Potent Cap.: xxxx xxxx xxxxx  1625 xxxx xxxxx   944  853  1065   950  850  1081
Move Cap.:   xxxx xxxx xxxxx  1625 xxxx xxxxx   915  849  1065   927  846  1081
Volume/Cap:  xxxx xxxx  xxxx  0.00 xxxx  xxxx  0.01 0.02  0.00  0.00 0.03  0.01
------------|---------------||---------------||---------------||---------------|
Level Of Service Module:
2Way95thQ:   xxxx xxxx xxxxx   0.0 xxxx xxxxx  xxxx xxxx xxxxx  xxxx xxxx xxxxx
Control Del:xxxxx xxxx xxxxx   7.2 xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx
LOS by Move:    *     *     *     A     *     *     *     *     *     *     *     *
Movement:     LT - LTR - RT    LT - LTR - RT    LT - LTR - RT    LT - LTR - RT
Shared Cap.: xxxx xxxx xxxxx  xxxx xxxx xxxxx  xxxx  886 xxxxx  xxxx  887 xxxxx
SharedQueue:xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx  0.1 xxxxx xxxxx  0.1 xxxxx
Shrd ConDel:xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx  9.2 xxxxx xxxxx  9.2 xxxxx
Shared LOS:     *     *     *     *     *     *     A     *     *     A     *
ApproachDel:    xxxxxx           xxxxxx               9.2               9.2
ApproachLOS:         *                *                 A                 A
Note: Queue reported is the number of cars per lane.
-----------|---------------|---------------|---------------|---------------|
HevVeh:             0%              0%              0%              0%
Grade:              0%              0%              0%              0%
Peds/Hour:          0               0               0               0
Pedestrian Walk Speed: 4.00 feet/sec
LaneWidth:       12 feet         12 feet         12 feet         12 feet
Time Period: 0.25 hour
                    Peak Hour Delay Signal Warrant Report
*******************************************************************************
Intersection #5 Mitzi Drive/Ranchero Way
*******************************************************************************
Future Volume Alternative: Peak Hour Warrant NOT Met
------------|---------------||---------------||---------------||---------------|
Approach:      North Bound      South Bound      East Bound       West Bound
Movement:     L  -  T  -  R    L  -  T  -  R    L  -  T  -  R    L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:       Uncontrolled     Uncontrolled      Stop Sign        Stop Sign
Lanes:        0  0  0  1  0    0  0  1! 0  0    0  0  1! 0  0    0  0  1! 0  0
Initial Vol:    0     7     1     8    16     6    10    19     3     2    24     6
ApproachDel:    xxxxxx           xxxxxx               9.2               9.2
------------|---------------||---------------||---------------||---------------|
Approach[eastbound][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=32]
   FAIL - Approach volume less than 100 for one lane approach.
Signal Warrant Rule #3: [approach count=4][total volume=102]
   FAIL - Total volume less than 650 for intersection
          with less than four approaches.
-------------------------------------------------------------------------------
Approach[westbound][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=32]
   FAIL - Approach volume less than 100 for one lane approach.
Signal Warrant Rule #3: [approach count=4][total volume=102]
   FAIL - Total volume less than 650 for intersection
          with less than four approaches.
-------------------------------------------------------------------------------
SIGNAL WARRANT DISCLAIMER
This peak hour signal warrant analysis should be considered solely as an
"indicator" of the likelihood of an unsignalized intersection warranting
```

a traffic signal in the future. Intersections that exceed this warrant
are probably more likely to meet one or more of the other volume based
signal warrant (such as the 4-hour or 8-hour warrants).

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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 #5 Mitzi Drive/Ranchero Way

****

Future Volume Alternative: Peak Hour Warrant NOT Met

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	- T	- R	L	- T	- R	L	- T	- R	L	- T	- R
Control:	Uncontrolled			Uncontrolled			Stop Sign			Stop Sign		
Lanes:	0 0	0 1	0	0 0	1! 0	0	0 0	1! 0	0	0 0	1! 0	0
Initial Vol:	0	7	1	8	16	6	10	19	3	2	24	6

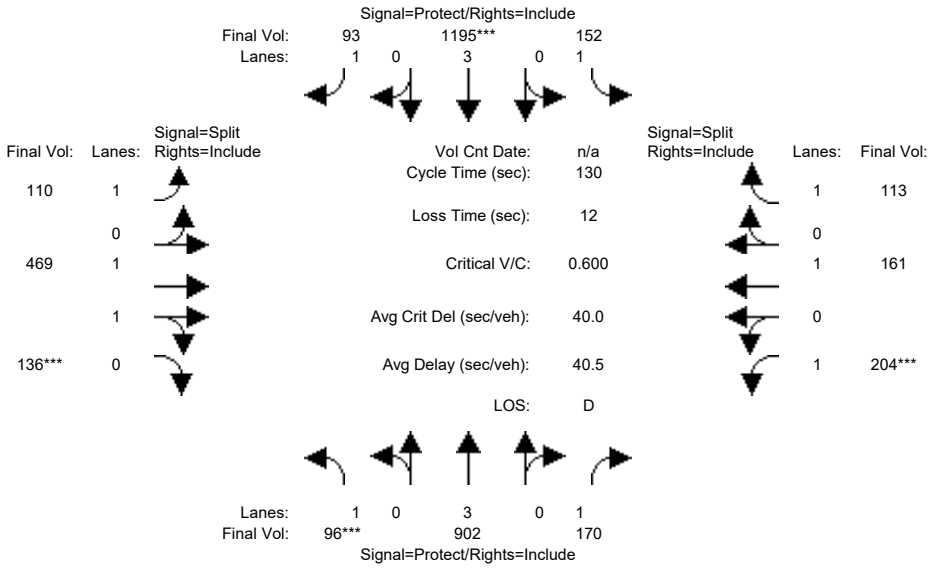
Major Street Volume: 38
Minor Approach Volume: 32
Minor Approach Volume Threshold: 1092

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)
Background PM

Intersection #3793: Saratoga Avenue/Williams Road

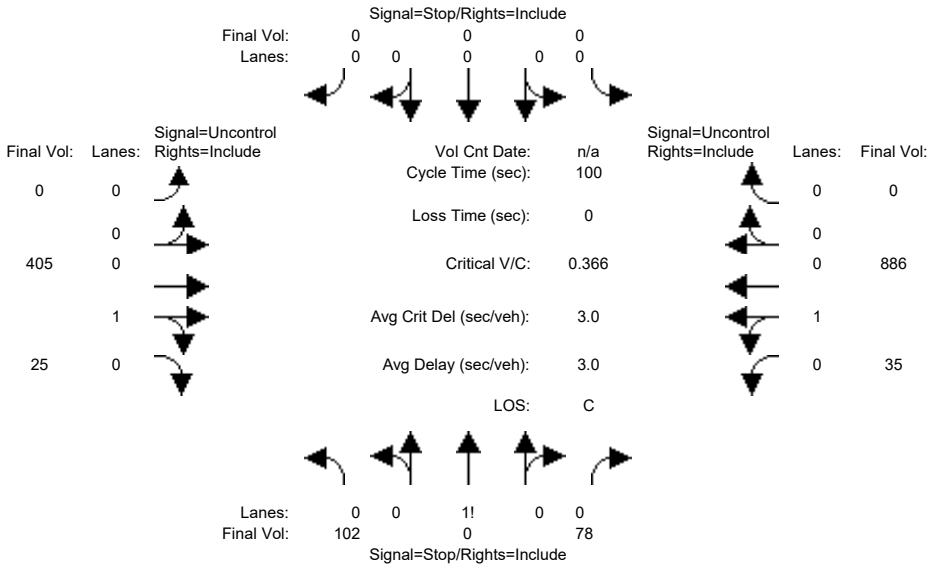


Street Name:	Saratoga Avenue						Williams Road					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	7	10	10	7	10	10	10	10	10	10	10	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module:												
Base Vol:	96	902	170	152	1195	93	110	469	136	204	161	113
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:	96	902	170	152	1195	93	110	469	136	204	161	113
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	96	902	170	152	1195	93	110	469	136	204	161	113
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:	96	902	170	152	1195	93	110	469	136	204	161	113
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	96	902	170	152	1195	93	110	469	136	204	161	113
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:	96	902	170	152	1195	93	110	469	136	204	161	113
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	1.00	0.92	0.92	1.00	0.92	0.92	0.98	0.95	0.92	1.00	0.92
Lanes:	1.00	3.00	1.00	1.00	3.00	1.00	1.00	1.54	0.46	1.00	1.00	1.00
Final Sat.:	1750	5700	1750	1750	5700	1750	1750	2868	832	1750	1900	1750
Capacity Analysis Module:												
Vol/Sat:	0.05	0.16	0.10	0.09	0.21	0.05	0.06	0.16	0.16	0.12	0.08	0.06
Crit Moves:	****				****				****	****		
Green Time:	11.9	37.0	37.0	20.3	45.4	45.4	35.4	35.4	35.4	25.3	25.3	25.3
Volume/Cap:	0.60	0.56	0.34	0.56	0.60	0.15	0.23	0.60	0.60	0.60	0.44	0.33
Uniform Del:	56.8	39.5	36.8	50.7	34.8	29.1	36.7	41.1	41.1	47.8	46.1	45.1
IncremntDel:	6.2	0.4	0.4	2.5	0.5	0.1	0.2	1.0	1.0	3.0	0.8	0.6
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay 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
Delay/Veh:	63.0	39.9	37.3	53.2	35.3	29.2	37.0	42.1	42.1	50.7	46.9	45.7
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:	63.0	39.9	37.3	53.2	35.3	29.2	37.0	42.1	42.1	50.7	46.9	45.7
LOS by Move:	E	D	D	D	D	C	D	D	D	D	D	D
HCM2k95thQ:	10	19	11	13	24	5	7	20	20	16	11	8

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

Level Of Service Computation Report
2000 HCM Unsignalized (Future Volume Alternative)
Bkgrd+Project AM

Intersection #1: Ranchero Way/Williams Road

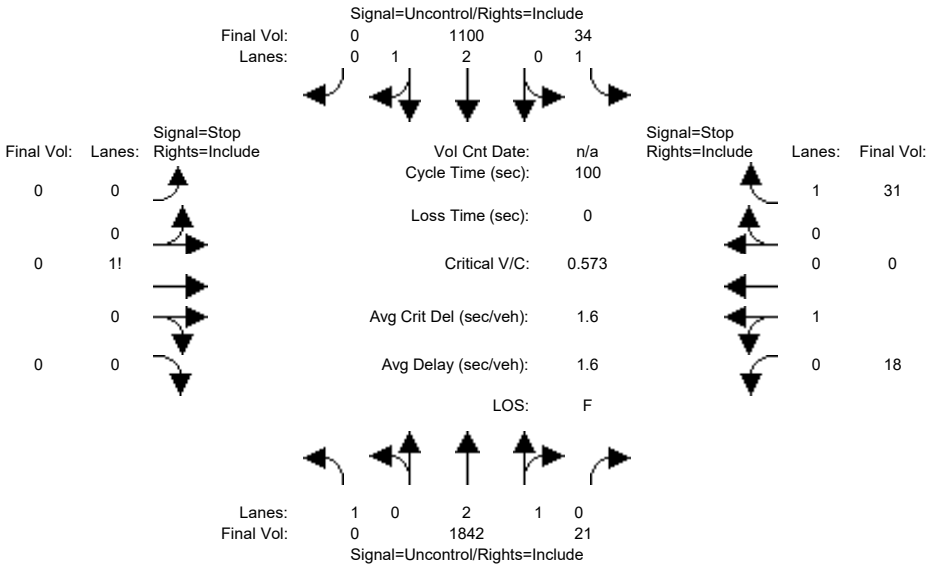



```
Street Name:           Ranchero Way                  Williams Road
Approach:       North Bound      South Bound      East Bound      West Bound
Movement:     L  -  T  -  R    L  -  T  -  R    L  -  T  -  R    L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Volume Module:
Base Vol:     102    0    75     0    0     0     0  405    25    34  886     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:  102    0    75     0    0     0     0  405    25    34  886     0
Added Vol:      0    0     3     0    0     0     0    0     0     1    0     0
PasserByVol:    0    0     0     0    0     0     0    0     0     0    0     0
Initial Fut:  102    0    78     0    0     0     0  405    25    35  886     0
User Adj:    1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
PHF Adj:     1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
PHF Volume:   102    0    78     0    0     0     0  405    25    35  886     0
Reduct Vol:     0    0     0     0    0     0     0    0     0     0    0     0
FinalVolume:  102    0    78     0    0     0     0  405    25    35  886     0
------------|---------------||---------------||---------------||---------------|
Critical Gap Module:
Critical Gp:  6.4  6.5   6.2 xxxxx xxxx xxxxx xxxxx xxxx xxxxx   4.1 xxxx xxxxx
FollowUpTim:  3.5  4.0   3.3 xxxxx xxxx xxxxx xxxxx xxxx xxxxx   2.2 xxxx xxxxx
------------|---------------||---------------||---------------||---------------|
Capacity Module:
Cnflict Vol: 1374 1374   418  xxxx xxxx xxxxx  xxxx xxxx xxxxx   430 xxxx xxxxx
Potent Cap.:  162  147   640  xxxx xxxx xxxxx  xxxx xxxx xxxxx  1140 xxxx xxxxx
Move Cap.:    158  142   640  xxxx xxxx xxxxx  xxxx xxxx xxxxx  1140 xxxx xxxxx
Total Cap:    279  250 xxxxx   212  246 xxxxx  xxxx xxxx xxxxx  xxxx xxxx xxxxx
Volume/Cap:  0.37 0.00  0.12  xxxx xxxx  xxxx  xxxx xxxx  xxxx  0.03 xxxx  xxxx
------------|---------------||---------------||---------------||---------------|
Level Of Service Module:
2Way95thQ:   xxxx xxxx xxxxx  xxxx xxxx xxxxx  xxxx xxxx xxxxx   0.1 xxxx xxxxx
Control Del:xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx   8.3 xxxx xxxxx
LOS by Move:    *    *     *     *    *     *     *    *     *     A    *     *
Movement:     LT - LTR - RT    LT - LTR - RT    LT - LTR - RT    LT - LTR - RT
Shared Cap.: xxxx  369 xxxxx  xxxx xxxx xxxxx  xxxx xxxx xxxxx  xxxx xxxx xxxxx
SharedQueue:xxxxx  2.6 xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx   0.1 xxxx xxxxx
Shrd ConDel:xxxxx 23.7 xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx   8.3 xxxx xxxxx
Shared LOS:     *    C     *     *    *     *     *    *     *     A    *     *
ApproachDel:      23.7           xxxxxx           xxxxxx           xxxxxx
ApproachLOS:         C              *                *                *
Note: Queue reported is the number of cars per lane.
-----------|---------------|---------------|---------------|---------------|
HevVeh:             0%              0%              0%              0%
Grade:              0%              0%              0%              0%
Peds/Hour:          0               0               0               0
Pedestrian Walk Speed: 4.00 feet/sec
LaneWidth:       12 feet         12 feet         12 feet         12 feet
Time Period: 0.25 hour
Upstream Signals:
Link Index:                                      #45
Dist(miles):                                     0.000
Speed (mph):                                      0.00
SignalIndex:                                     #3793
Cycle Time:                                          0 secs
InitVolume:                                    0     0
Saturation:                                    0     0
ArrivalType:                                   0     0
G/C:                                        0.00  0.00
*** Computation 1: Time for Queue to Clear at Each Upstream Intersection
P:                                         0.000 0.000
gq1:                                        0.00  0.00
gq2:                                        0.00  0.00
gq:                                         0.00  0.00
*** Computation 2: Time Intersection Blocked Because of Upstream Platoons
alpha:                                             0.000
beta:                                              0.000
ta (secs):                                         0.000
F:                                                 0.000
f:                                         0.000 0.000
vcmax:                                         0     0
vcg:                                           0     0
vcmin:                                         0     0
tp:                                          0.0   0.0
p:                                                 0.000
*** Computation 3: Platoon Event Periods
pdom/psubo:                                      0.000/0.000/Unconstrained
*** Computation 4: Conflicting Flows During Each Unblocked Period
InitCnflVol:1374  1374   418 1413  1386   886    0 xxxxx xxxxx  430 xxxxx xxxxx
AdjCnflVol: 1374  1374   418 1413  1386   886    0 xxxxx xxxxx  430 xxxxx xxxxx
UpstreamAdj:1.00 1.000 1.000 1.00 1.000 1.000 1.00 x.xxx x.xxx 1.00 x.xxx x.xxx
ConflictVol:1374  1374   418 1413  1386   886    0 xxxxx xxxxx  430 xxxxx xxxxx
*** Computation 5: Capacity for Subject Movement During Unblocked Period
```

```
InitPotCap:  162   147   640  117   144   346 1636 xxxxx xxxxx 1140 xxxxx xxxxx
UpstreamAdj:1.00 1.000 1.000 1.00 1.000 1.000 1.00 x.xxx x.xxx 1.00 x.xxx x.xxx
Potent Cap.: 162   147   640  117   144   346 1636 xxxxx xxxxx 1140 xxxxx xxxxx
-----------|---------------|---------------|---------------|---------------|
Two-Stage Gap Acceptance [Median Type: TWLTL][Median Storage: 1 car]
-----------|---------------|---------------|---------------|---------------|
Two-Stage Gap Acceptance - Stage One Module:
InitCfltVol: 418   418 xxxxx  956   956 xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx
UpstreamSat:   0     0 xxxxx    0     0 xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx
UpstreamAdj:1.00  1.00 xxxxx 1.00  1.00 xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx
Cnflict Vol: 418   418 xxxxx  956   956 xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx
InitPotCap:  669   594 xxxxx  313   339 xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx
UpstreamAdj:1.00  1.00 xxxxx 1.00  1.00 xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx
Potent Cap.: 669   594 xxxxx  313   339 xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx
Move Cap.:   669   594 xxxxx  303   329 xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx
-----------|---------------|---------------|---------------|---------------|
Two-Stage Gap Acceptance - Stage Two Module:
InitCfltVol: 956   956 xxxxx  457   430 xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx
UpstreamSat:   0     0 xxxxx    0     0 xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx
UpstreamAdj:1.00  1.00 xxxxx 1.00  1.00 xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx
Cnflict Vol: 956   956 xxxxx  457   430 xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx
InitPotCap:  376   339 xxxxx  588   587 xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx
UpstreamAdj:1.00  1.00 xxxxx 1.00  1.00 xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx
Potent Cap.: 376   339 xxxxx  588   587 xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx
Move Cap.:   365   329 xxxxx  516   587 xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx
                     Peak Hour Delay Signal Warrant Report
********************************************************************************
Intersection #1 Ranchero Way/Williams Road
********************************************************************************
Future Volume Alternative: Peak Hour Warrant NOT Met
------------|---------------||---------------||---------------||---------------|
Approach:       North Bound       South Bound       East Bound       West Bound
Movement:     L  -  T  -  R     L  -  T  -  R     L  -  T  -  R     L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:        Stop Sign         Stop Sign       Uncontrolled     Uncontrolled
Lanes:        0  0  1! 0  0     0  0  0  0  0     0  0  0  1  0     0  1  0  0  0
Initial Vol:  102    0    78     0    0     0      0  405    25     35  886     0
ApproachDel:      23.7            xxxxxx            xxxxxx            xxxxxx
------------|---------------||---------------||---------------||---------------|
Approach[northbound][lanes=1][control=Stop Sign]
Signal Warrant Rule #1: [vehicle-hours=1.2]
   FAIL - Vehicle-hours less than 4 for one lane approach.
Signal Warrant Rule #2: [approach volume=180]
   SUCCEED - Approach volume greater than or equal to 100 for one lane approach.
Signal Warrant Rule #3: [approach count=3][total volume=1531]
   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 #1 Ranchero Way/Williams Road
********************************************************************************
Future Volume Alternative: Peak Hour Warrant Met
------------|---------------||---------------||---------------||---------------|
Approach:       North Bound       South Bound       East Bound       West Bound
Movement:     L  -  T  -  R     L  -  T  -  R     L  -  T  -  R     L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:        Stop Sign         Stop Sign       Uncontrolled     Uncontrolled
Lanes:        0  0  1! 0  0     0  0  0  0  0     0  0  0  1  0     0  1  0  0  0
Initial Vol:  102    0    78     0    0     0      0  405    25     35  886     0
------------|---------------||---------------||---------------||---------------|
Major Street Volume:             1351
Minor Approach Volume:           180
Minor Approach Volume Threshold: 139
--------------------------------------------------------------------------------
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)
Bkgrd+Project AM

Intersection #2: Saratoga Avenue/Piper Drive

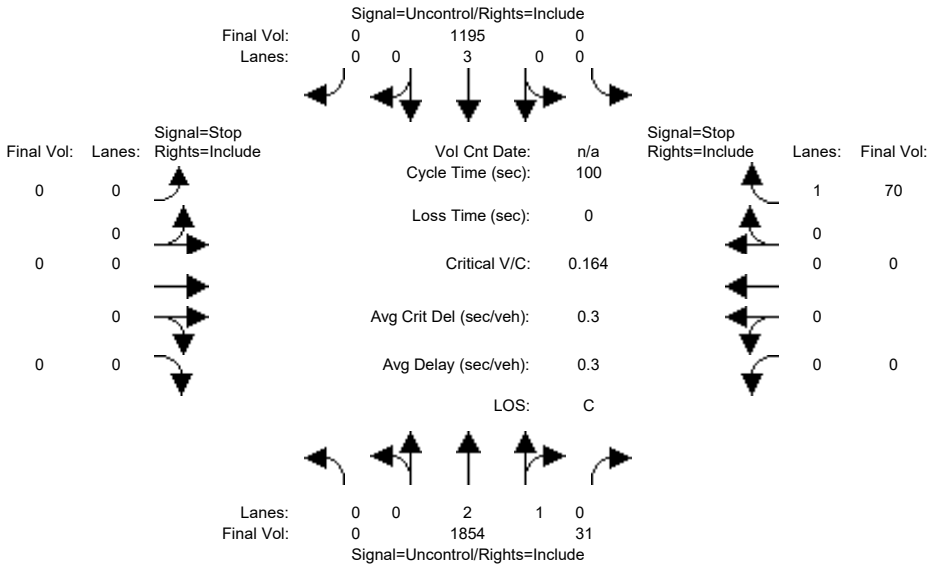



```
Street Name:         Saratoga Avenue                  Piper Drive
Approach:       North Bound      South Bound      East Bound       West Bound
Movement:     L  -  T  -  R    L  -  T  -  R    L  -  T  -  R    L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Volume Module:
Base Vol:       0 1842    21     32 1100     0     0     0     0    17     0    25
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 1842    21     32 1100     0     0     0     0    17     0    25
Added Vol:      0     0     0      2     0     0     0     0     0     1     0     6
PasserByVol:    0     0     0      0     0     0     0     0     0     0     0     0
Initial Fut:    0 1842    21     34 1100     0     0     0     0    18     0    31
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 1842    21     34 1100     0     0     0     0    18     0    31
Reduct Vol:     0     0     0      0     0     0     0     0     0     0     0     0
FinalVolume:    0 1842    21     34 1100     0     0     0     0    18     0    31
------------|---------------||---------------||---------------||---------------|
Critical Gap Module:
Critical Gp:xxxxx xxxx xxxxx   4.1 xxxx xxxxx   7.5  6.5   6.9   6.8  6.5   6.9
FollowUpTim:xxxxx xxxx xxxxx   2.2 xxxx xxxxx   3.5  4.0   3.3   3.5  4.0   3.3
------------|---------------||---------------||---------------||---------------|
Capacity Module:
Cnflict Vol: xxxx xxxx xxxxx  1863 xxxx xxxxx  1782 3031   367  2287 3021   625
Potent Cap.: xxxx xxxx xxxxx   328 xxxx xxxxx    53   13   636    34   13   433
Move Cap.:   xxxx xxxx xxxxx   328 xxxx xxxxx    45   12   636    31   12   433
Volume/Cap:  xxxx xxxx  xxxx  0.10 xxxx  xxxx  0.00 0.00  0.00  0.57 0.00  0.07
------------|---------------||---------------||---------------||---------------|
Level Of Service Module:
2Way95thQ:   xxxx xxxx xxxxx   0.3 xxxx xxxxx  xxxx xxxx xxxxx  xxxx xxxx   0.2
Control Del:xxxxx xxxx xxxxx  17.2 xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx  14.0
LOS by Move:    *    *     *     C    *     *     *    *     *     *    *     B
Movement:     LT - LTR - RT    LT - LTR - RT    LT - LTR - RT    LT - LTR - RT
Shared Cap.: xxxx xxxx xxxxx  xxxx xxxx xxxxx  xxxx    0 xxxxx    31 xxxx xxxxx
SharedQueue:xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx   1.9 xxxx xxxxx
Shrd ConDel:xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx 220.6 xxxx xxxxx
Shared LOS:     *    *     *     *    *     *     *    *     *     F    *     *
ApproachDel:    xxxxxx           xxxxxx           xxxxxx             89.9
ApproachLOS:         *                *                *                F
Note: Queue reported is the number of cars per lane.
-----------|---------------|---------------|---------------|---------------|
HevVeh:             0%              0%              0%              0%
Grade:              0%              0%              0%              0%
Peds/Hour:          0               0               0               0
Pedestrian Walk Speed: 4.00 feet/sec
LaneWidth:       12 feet         12 feet         12 feet         12 feet
Time Period: 0.25 hour
Upstream Signals:
Link Index:                      #42
Dist(miles):                     0.000
Speed (mph):                      0.00
SignalIndex:                     #3793
Cycle Time:                          0 secs
InitVolume:                    0     0
Saturation:                    0     0
ArrivalType:                   0     0
G/C:                        0.00  0.00
*** Computation 1: Time for Queue to Clear at Each Upstream Intersection
P:                          0.000 0.000
gq1:                         0.00  0.00
gq2:                         0.00  0.00
gq:                          0.00  0.00
*** Computation 2: Time Intersection Blocked Because of Upstream Platoons
alpha:                           0.000
beta:                            0.000
ta (secs):                       0.000
F:                               0.000
f:                          0.000 0.000
vcmax:                         0     0
vcg:                           0     0
vcmin:                         0     0
tp:                          0.0   0.0
p:                               0.000
*** Computation 3: Platoon Event Periods
pdom/psubo:      0.000/0.000/Unconstrained
*** Computation 4: Conflicting Flows During Each Unblocked Period
InitCnflVol:   0 xxxxx xxxxx 1863 xxxxx xxxxx 1782  3031   367 2287  3021   625
AdjCnflVol:    0 xxxxx xxxxx 1863 xxxxx xxxxx 1782  3031   367 2287  3021   625
UpstreamAdj:1.00 x.xxx x.xxx 1.00 x.xxx x.xxx 1.00 1.000 1.000 1.00 1.000 1.000
ConflictVol:   0 xxxxx xxxxx 1863 xxxxx xxxxx 1782  3031   367 2287  3021   625
*** Computation 5: Capacity for Subject Movement During Unblocked Period
InitPotCap: 1636 xxxxx xxxxx  328 xxxxx xxxxx   53    13   636   34    13   433
```

```
UpstreamAdj:1.00 x.xxx x.xxx 1.00 x.xxx x.xxx 1.00 1.000 1.000 1.00 1.000 1.000
Potent Cap.:1636 xxxxx xxxxx  328 xxxxx xxxxx   53    13   636   34    13   433
                    Peak Hour Delay Signal Warrant Report
*******************************************************************************
Intersection #2 Saratoga Avenue/Piper Drive
*******************************************************************************
Future Volume Alternative: Peak Hour Warrant NOT Met
------------|---------------||---------------||---------------||---------------|
Approach:       North Bound      South Bound       East Bound       West Bound
Movement:     L  -  T  -  R    L  -  T  -  R    L  -  T  -  R    L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:       Uncontrolled     Uncontrolled      Stop Sign        Stop Sign
Lanes:        1  0  2  1  0    1  0  2  1  0    0  0  1! 0  0    0  1  0  0  1
Initial Vol:    0 1842    21    34 1100     0     0    0     0    18    0    31
ApproachDel:    xxxxxx           xxxxxx           xxxxxx             89.9
------------|---------------||---------------||---------------||---------------|
Approach[westbound][lanes=2][control=Stop Sign]
Signal Warrant Rule #1: [vehicle-hours=1.2]
   FAIL - Vehicle-hours less than 5 for two or more lane approach.
Signal Warrant Rule #2: [approach volume=49]
   FAIL - Approach volume less than 150 for two or more lane approach.
Signal Warrant Rule #3: [approach count=3][total volume=3046]
   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 #2 Saratoga Avenue/Piper Drive
*******************************************************************************
Future Volume Alternative: Peak Hour Warrant NOT Met
------------|---------------||---------------||---------------||---------------|
Approach:       North Bound      South Bound       East Bound       West Bound
Movement:     L  -  T  -  R    L  -  T  -  R    L  -  T  -  R    L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:       Uncontrolled     Uncontrolled      Stop Sign        Stop Sign
Lanes:        1  0  2  1  0    1  0  2  1  0    0  0  1! 0  0    0  1  0  0  1
Initial Vol:    0 1842    21    34 1100     0     0    0     0    18    0    31
------------|---------------||---------------||---------------||---------------|
Major Street Volume:              2997
Minor Approach Volume:            49
Minor Approach Volume Threshold: -98 [less than minimum of 150]
-------------------------------------------------------------------------------
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)
Bkgrd+Project AM

Intersection #3: Saratoga Avenue/Mitzi Drive

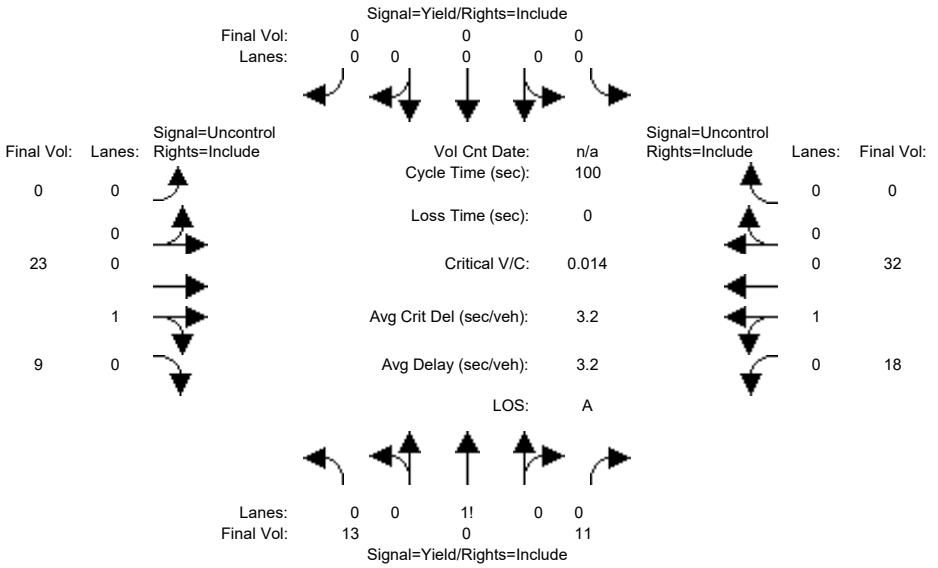



```
Street Name:         Saratoga Avenue                  Mitzi Drive
Approach:       North Bound      South Bound      East Bound       West Bound
Movement:     L  -  T  -  R    L  -  T  -  R    L  -  T  -  R    L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Volume Module:
Base Vol:       0 1854    31     0 1194     0     0     0     0     0     0    70
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 1854    31     0 1194     0     0     0     0     0     0    70
Added Vol:      0     0     0     0    1     0     0     0     0     0     0     0
PasserByVol:    0     0     0     0    0     0     0     0     0     0     0     0
Initial Fut:    0 1854    31     0 1195     0     0     0     0     0     0    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:     0 1854    31     0 1195     0     0     0     0     0     0    70
Reduct Vol:     0     0     0     0    0     0     0     0     0     0     0     0
FinalVolume:    0 1854    31     0 1195     0     0     0     0     0     0    70
------------|---------------||---------------||---------------||---------------|
Critical Gap Module:
Critical Gp:xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx   6.9
FollowUpTim:xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx   3.3
------------|---------------||---------------||---------------||---------------|
Capacity Module:
Cnflict Vol: xxxx xxxx xxxxx  xxxx xxxx xxxxx  xxxx xxxx xxxxx  xxxx xxxx   634
Potent Cap.: xxxx xxxx xxxxx  xxxx xxxx xxxxx  xxxx xxxx xxxxx  xxxx xxxx   427
Move Cap.:   xxxx xxxx xxxxx  xxxx xxxx xxxxx  xxxx xxxx xxxxx  xxxx xxxx   427
Volume/Cap:  xxxx xxxx  xxxx  xxxx xxxx  xxxx  xxxx xxxx  xxxx  xxxx xxxx  0.16
------------|---------------||---------------||---------------||---------------|
Level Of Service Module:
2Way95thQ:   xxxx xxxx xxxxx  xxxx xxxx xxxxx  xxxx xxxx xxxxx  xxxx xxxx   0.6
Control Del:xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx  15.1
LOS by Move:    *     *     *     *     *     *     *     *     *     *     *     C
Movement:     LT - LTR - RT    LT - LTR - RT    LT - LTR - RT    LT - LTR - RT
Shared Cap.: xxxx xxxx xxxxx  xxxx xxxx xxxxx  xxxx xxxx xxxxx  xxxx xxxx xxxxx
SharedQueue:xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx
Shrd ConDel:xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx
Shared LOS:     *     *     *     *     *     *     *     *     *     *     *     *
ApproachDel:    xxxxxx           xxxxxx           xxxxxx             15.1
ApproachLOS:         *                *                *                C
Note: Queue reported is the number of cars per lane.
-----------|---------------|---------------|---------------|---------------|
HevVeh:             0%              0%              0%              0%
Grade:              0%              0%              0%              0%
Peds/Hour:          0               0               0               0
Pedestrian Walk Speed: 4.00 feet/sec
LaneWidth:       12 feet         12 feet         12 feet         12 feet
Time Period: 0.25 hour
Upstream Signals:
Link Index:                      #42
Dist(miles):                     0.000
Speed (mph):                      0.00
SignalIndex:                     #3793
Cycle Time:                          0 secs
InitVolume:                    0     0
Saturation:                    0     0
ArrivalType:                   0     0
G/C:                        0.00  0.00
*** Computation 1: Time for Queue to Clear at Each Upstream Intersection
P:                          0.000 0.000
gq1:                         0.00  0.00
gq2:                         0.00  0.00
gq:                          0.00  0.00
*** Computation 2: Time Intersection Blocked Because of Upstream Platoons
alpha:                           0.000
beta:                            0.000
ta (secs):                       0.000
F:                               0.000
f:                          0.000 0.000
vcmax:                         0     0
vcg:                           0     0
vcmin:                         0     0
tp:                          0.0   0.0
p:                               0.000
*** Computation 3: Platoon Event Periods
pdom/psubo:      0.000/0.000/Unconstrained
*** Computation 4: Conflicting Flows During Each Unblocked Period
InitCnflVol:   0 xxxxx xxxxx    0 xxxxx xxxxx 1813  3080   398 2268  3065   634
AdjCnflVol:    0 xxxxx xxxxx    0 xxxxx xxxxx 1813  3080   398 2268  3065   634
UpstreamAdj:1.00 x.xxx x.xxx 1.00 x.xxx x.xxx 1.00 1.000 1.000 1.00 1.000 1.000
ConflictVol:   0 xxxxx xxxxx    0 xxxxx xxxxx 1813  3080   398 2268  3065   634
*** Computation 5: Capacity for Subject Movement During Unblocked Period
InitPotCap: 1636 xxxxx xxxxx 1636 xxxxx xxxxx   50    12   607   35    13   427
```

```
UpstreamAdj:1.00 x.xxx x.xxx 1.00 x.xxx x.xxx 1.00 1.000 1.000 1.00 1.000 1.000
Potent Cap.:1636 xxxxx xxxxx 1636 xxxxx xxxxx   50    12   607   35    13   427
                    Peak Hour Delay Signal Warrant Report
*******************************************************************************
Intersection #3 Saratoga Avenue/Mitzi Drive
*******************************************************************************
Future Volume Alternative: Peak Hour Warrant NOT Met
------------|---------------||---------------||---------------||---------------|
Approach:       North Bound      South Bound       East Bound       West Bound
Movement:     L  -  T  -  R    L  -  T  -  R    L  -  T  -  R    L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:       Uncontrolled     Uncontrolled      Stop Sign        Stop Sign
Lanes:        0  0  2  1  0    0  0  3  0  0    0  0  0  0  0    0  0  0  0  1
Initial Vol:    0 1854    31     0 1195     0     0    0     0     0    0    70
ApproachDel:    xxxxxx           xxxxxx           xxxxxx             15.1
------------|---------------||---------------||---------------||---------------|
Approach[westbound][lanes=1][control=Stop Sign]
Signal Warrant Rule #1: [vehicle-hours=0.3]
   FAIL - Vehicle-hours less than 4 for one lane approach.
Signal Warrant Rule #2: [approach volume=70]
   FAIL - Approach volume less than 100 for one lane approach.
Signal Warrant Rule #3: [approach count=3][total volume=3150]
   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 #3 Saratoga Avenue/Mitzi Drive
*******************************************************************************
Future Volume Alternative: Peak Hour Warrant NOT Met
------------|---------------||---------------||---------------||---------------|
Approach:       North Bound      South Bound       East Bound       West Bound
Movement:     L  -  T  -  R    L  -  T  -  R    L  -  T  -  R    L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:       Uncontrolled     Uncontrolled      Stop Sign        Stop Sign
Lanes:        0  0  2  1  0    0  0  3  0  0    0  0  0  0  0    0  0  0  0  1
Initial Vol:    0 1854    31     0 1195     0     0    0     0     0    0    70
------------|---------------||---------------||---------------||---------------|
Major Street Volume:             3080
Minor Approach Volume:           70
Minor Approach Volume Threshold: -103 [less than minimum of 100]
-------------------------------------------------------------------------------
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)
Bkgrd+Project AM

Intersection #4: Mitzi Drive/Piper Drive

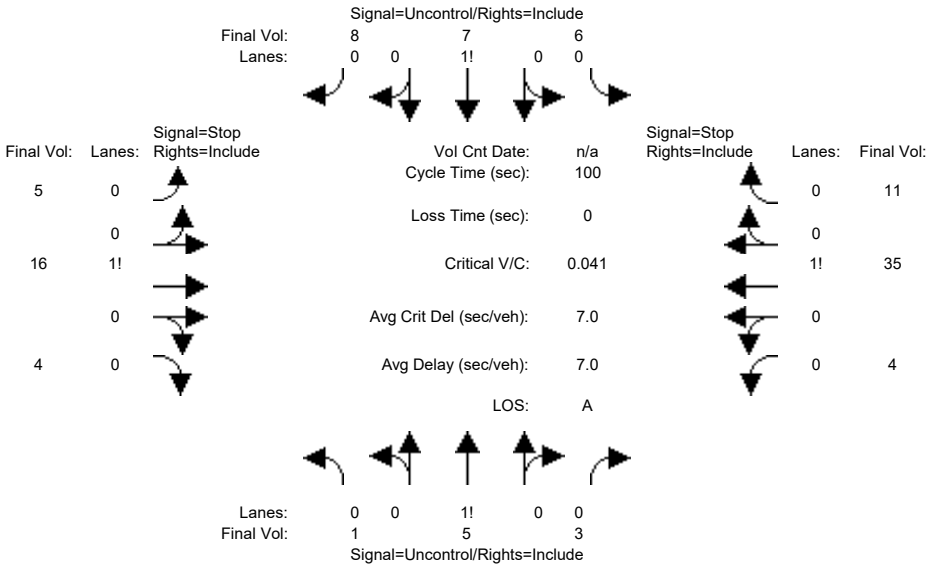



```
Street Name:            Mitzi Drive                    Piper Drive
Approach:       North Bound      South Bound      East Bound       West Bound
Movement:     L  -  T  -  R    L  -  T  -  R    L  -  T  -  R    L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Volume Module:
Base Vol:       6     0    11      0     0     0      0    23     7    18    32     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:    6     0    11      0     0     0      0    23     7    18    32     0
Added Vol:      7     0     0      0     0     0      0     0     2     0     0     0
PasserByVol:    0     0     0      0     0     0      0     0     0     0     0     0
Initial Fut:   13     0    11      0     0     0      0    23     9    18    32     0
User Adj:    1.00  1.00  1.00   1.00  1.00  1.00   1.00  1.00  1.00  1.00  1.00  1.00
PHF Adj:     1.00  1.00  1.00   1.00  1.00  1.00   1.00  1.00  1.00  1.00  1.00  1.00
PHF Volume:    13     0    11      0     0     0      0    23     9    18    32     0
Reduct Vol:     0     0     0      0     0     0      0     0     0     0     0     0
FinalVolume:   13     0    11      0     0     0      0    23     9    18    32     0
------------|---------------||---------------||---------------||---------------|
Critical Gap Module:
Critical Gp:  6.4   6.5   6.2 xxxxx xxxx xxxxx xxxxx xxxx xxxxx   4.1 xxxx xxxxx
FollowUpTim:  3.5   4.0   3.3 xxxxx xxxx xxxxx xxxxx xxxx xxxxx   2.2 xxxx xxxxx
------------|---------------||---------------||---------------||---------------|
Capacity Module:
Cnflict Vol:   96   96    28  xxxx xxxx xxxxx  xxxx xxxx xxxxx    32 xxxx xxxxx
Potent Cap.:  909  798  1054  xxxx xxxx xxxxx  xxxx xxxx xxxxx  1593 xxxx xxxxx
Move Cap.:    901  789  1054  xxxx xxxx xxxxx  xxxx xxxx xxxxx  1593 xxxx xxxxx
Volume/Cap:  0.01 0.00  0.01  xxxx xxxx  xxxx  xxxx xxxx  xxxx  0.01 xxxx  xxxx
------------|---------------||---------------||---------------||---------------|
Level Of Service Module:
2Way95thQ:   xxxx xxxx xxxxx  xxxx xxxx xxxxx  xxxx xxxx xxxxx   0.0 xxxx xxxxx
Control Del:xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx   7.3 xxxx xxxxx
LOS by Move:    *     *      *      *     *      *      *     *      A     *      *
Movement:     LT - LTR - RT    LT - LTR - RT    LT - LTR - RT    LT - LTR - RT
Shared Cap.: xxxx  965 xxxxx  xxxx xxxx xxxxx  xxxx xxxx xxxxx  xxxx xxxx xxxxx
SharedQueue:xxxxx  0.1 xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx   0.0 xxxx xxxxx
Shrd ConDel:xxxxx  8.8 xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx   7.3 xxxx xxxxx
Shared LOS:     *     A      *      *     *      *      *     *      A     *      *
ApproachDel:       8.8            xxxxxx            xxxxxx            xxxxxx
ApproachLOS:         A             *                 *                 *
Note: Queue reported is the number of cars per lane.
-----------|---------------|---------------|---------------|---------------|
HevVeh:              0%              0%              0%              0%
Grade:               0%              0%              0%              0%
Peds/Hour:           0               0               0               0
Pedestrian Walk Speed: 4.00 feet/sec
LaneWidth:       12 feet         12 feet         12 feet         12 feet
Time Period: 0.25 hour
                    Peak Hour Delay Signal Warrant Report
*******************************************************************************
Intersection #4 Mitzi Drive/Piper Drive
*******************************************************************************
Future Volume Alternative: Peak Hour Warrant NOT Met
------------|---------------||---------------||---------------||---------------|
Approach:       North Bound      South Bound      East Bound       West Bound
Movement:     L  -  T  -  R    L  -  T  -  R    L  -  T  -  R    L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:        Yield Sign       Yield Sign       Uncontrolled     Uncontrolled
Lanes:        0  0  1! 0  0    0  0  0  0  0    0  0  0  1  0    0  1  0  0  0
Initial Vol:   13    0    11     0     0     0      0    23     9    18    32     0
ApproachDel:       8.8            xxxxxx            xxxxxx            xxxxxx
------------|---------------||---------------||---------------||---------------|
Approach[northbound][lanes=1][control=Yield Sign]
Signal Warrant Rule #1: [vehicle-hours=0.1]
   FAIL - Controller not stop sign.
Signal Warrant Rule #2: [approach volume=24]
   FAIL - Approach volume less than 100 for one lane approach.
Signal Warrant Rule #3: [approach count=3][total volume=106]
   FAIL - Total volume less than 650 for intersection
          with less than four approaches.
-------------------------------------------------------------------------------
SIGNAL WARRANT DISCLAIMER
This peak hour signal warrant analysis should be considered solely as an
"indicator" of the likelihood of an unsignalized intersection warranting
a traffic signal in the future.  Intersections that exceed this warrant
are probably more likely to meet one or more of the other volume based
signal warrant (such as the 4-hour or 8-hour warrants).

The peak hour warrant analysis in this report is not intended to replace
a rigorous and complete traffic signal warrant analysis by the responsible
jurisdiction.  Consideration of the other signal warrants, which is beyond
the scope of this software, may yield different results.
                 Peak Hour Volume Signal Warrant Report [Urban]
```

```
********************************************************************************
Intersection #4 Mitzi Drive/Piper Drive
********************************************************************************
Future Volume Alternative: Peak Hour Warrant NOT Met
------------|---------------||---------------||---------------||---------------|
Approach:       North Bound      South Bound       East Bound       West Bound
Movement:     L  -  T  -  R    L  -  T  -  R    L  -  T  -  R    L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:       Yield Sign       Yield Sign       Uncontrolled     Uncontrolled
Lanes:       0  0  1! 0  0    0  0  0  0  0    0  0  0  1  0    0  1  0  0  0
Initial Vol:   13    0    11     0    0     0     0   23     9    18   32     0
------------|---------------||---------------||---------------||---------------|
Major Street Volume:             82
Minor Approach Volume:           24
Minor Approach Volume Threshold: 886
-------------------------------------------------------------------------------
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)
Bkgrd+Project AM

Intersection #5: Mitzi Drive/Ranchero Way



Street Name:	Mitzi Drive						Ranchero Way					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Volume Module:												
Base Vol:	1	5	3	3	7	8	5	16	4	4	35	10
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:	1	5	3	3	7	8	5	16	4	4	35	10
Added Vol:	0	0	0	3	0	0	0	0	0	0	0	1
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	1	5	3	6	7	8	5	16	4	4	35	11
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:	1	5	3	6	7	8	5	16	4	4	35	11
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
FinalVolume:	1	5	3	6	7	8	5	16	4	4	35	11
Critical Gap Module:												
Critical Gp:	4.1	xxxx	xxxxx	4.1	xxxx	xxxxx	7.1	6.5	6.2	7.1	6.5	6.2
FollowUpTim:	2.2	xxxx	xxxxx	2.2	xxxx	xxxxx	3.5	4.0	3.3	3.5	4.0	3.3
Capacity Module:												
Cnflict Vol:	15	xxxx	xxxxx	8	xxxx	xxxxx	55	33	11	42	36	7
Potent Cap.:	1616	xxxx	xxxxx	1625	xxxx	xxxxx	948	864	1076	967	861	1082
Move Cap.:	1616	xxxx	xxxxx	1625	xxxx	xxxxx	907	860	1076	947	857	1082
Volume/Cap:	0.00	xxxx	xxxx	0.00	xxxx	xxxx	0.01	0.02	0.00	0.00	0.04	0.01
Level Of Service Module:												
2Way95thQ:	0.0	xxxx	xxxxx	0.0	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
Control Del:	7.2	xxxx	xxxxx	7.2	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
LOS by Move:	A	*	*	A	*	*	*	*	*	*	*	*
Movement:	LT	LTR	RT	LT	LTR	RT	LT	LTR	RT	LT	LTR	RT
Shared Cap.:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	898	xxxxx	xxxx	905	xxxxx
SharedQueue:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	0.1	xxxxx	xxxxx	0.2	xxxxx
Shrd ConDel:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	9.1	xxxxx	xxxxx	9.2	xxxxx
Shared LOS:	*	*	*	*	*	*	*	A	*	*	A	*
ApproachDel:	xxxxxx			xxxxxx			9.1			9.2		
ApproachLOS:	*			*			A			A		

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

HevVeh:	0%	0%	0%	0%
Grade:	0%	0%	0%	0%
Peds/Hour:	0	0	0	0

Pedestrian Walk Speed: 4.00 feet/sec

LaneWidth:	12 feet	12 feet	12 feet	12 feet

Time Period: 0.25 hour

Peak Hour Delay Signal Warrant Report

Intersection #5 Mitzi Drive/Ranchero Way

Future Volume Alternative: Peak Hour Warrant NOT Met

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Uncontrolled			Uncontrolled			Stop Sign			Stop Sign		
Lanes:	0	0	1! 0	0	0	0	1! 0	0	0	0	1! 0	0
Initial Vol:	1	5	3	6	7	8	5	16	4	4	35	11
ApproachDel:	xxxxxx			xxxxxx			9.1			9.2		

Approach[eastbound][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=25]
FAIL - Approach volume less than 100 for one lane approach.
Signal Warrant Rule #3: [approach count=4][total volume=105]
FAIL - Total volume less than 650 for intersection
with less than four approaches.

Approach[westbound][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=50]
FAIL - Approach volume less than 100 for one lane approach.
Signal Warrant Rule #3: [approach count=4][total volume=105]
FAIL - Total volume less than 650 for intersection
with less than four approaches.

SIGNAL WARRANT DISCLAIMER
This peak hour signal warrant analysis should be considered solely as an
"indicator" of the likelihood of an unsignalized intersection warranting

a traffic signal in the future. Intersections that exceed this warrant
are probably more likely to meet one or more of the other volume based
signal warrant (such as the 4-hour or 8-hour warrants).

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

Peak Hour Volume Signal Warrant Report [Urban]

****

Intersection #5 Mitzi Drive/Ranchero Way

****

Future Volume Alternative: Peak Hour Warrant NOT Met

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	- T	- R	L	- T	- R	L	- T	- R	L	- T	- R
Control:	Uncontrolled			Uncontrolled			Stop Sign			Stop Sign		
Lanes:	0	0 1! 0	0	0	0 1! 0	0	0	0 1! 0	0	0	0 1! 0	0
Initial Vol:	1	5	3	6	7	8	5	16	4	4	35	11

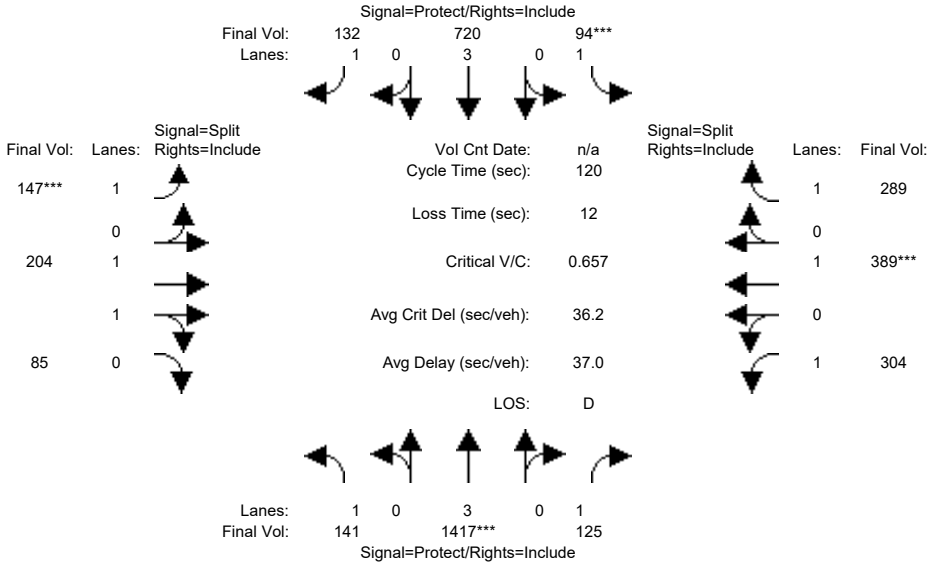
Major Street Volume: 30
Minor Approach Volume: 50
Minor Approach Volume Threshold: 1155

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)
Bkgrd+Project AM

Intersection #3793: Saratoga Avenue/Williams Road

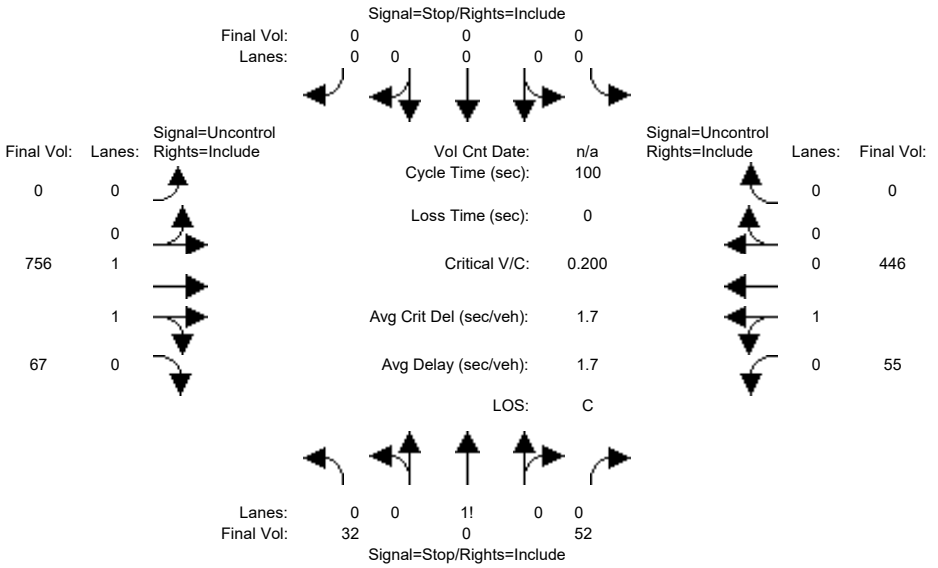


Street Name:	Saratoga Avenue						Williams Road					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	7	10	10	7	10	10	10	10	10	10	10	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module:												
Base Vol:	139	1413	125	94	718	132	147	204	84	304	389	289
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:	139	1413	125	94	718	132	147	204	84	304	389	289
Added Vol:	2	4	0	0	2	0	0	0	1	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	141	1417	125	94	720	132	147	204	85	304	389	289
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:	141	1417	125	94	720	132	147	204	85	304	389	289
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	141	1417	125	94	720	132	147	204	85	304	389	289
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:	141	1417	125	94	720	132	147	204	85	304	389	289
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	1.00	0.92	0.92	1.00	0.92	0.92	0.98	0.95	0.92	1.00	0.92
Lanes:	1.00	3.00	1.00	1.00	3.00	1.00	1.00	1.40	0.60	1.00	1.00	1.00
Final Sat.:	1750	5700	1750	1750	5700	1750	1750	2611	1088	1750	1900	1750
Capacity Analysis Module:												
Vol/Sat:	0.08	0.25	0.07	0.05	0.13	0.08	0.08	0.08	0.08	0.17	0.20	0.17
Crit Moves:		****		****			****				****	
Green Time:	21.5	45.4	45.4	9.8	33.7	33.7	15.3	15.3	15.3	37.4	37.4	37.4
Volume/Cap:	0.45	0.66	0.19	0.66	0.45	0.27	0.66	0.61	0.61	0.56	0.66	0.53
Uniform Del:	44.0	30.8	25.0	53.5	35.5	33.5	49.8	49.5	49.5	34.4	35.7	34.0
IncremntDel:	1.0	0.7	0.1	10.6	0.2	0.3	6.9	2.3	2.3	1.3	2.7	1.0
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay 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
Delay/Veh:	45.0	31.6	25.1	64.1	35.7	33.8	56.7	51.8	51.8	35.7	38.4	35.0
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:	45.0	31.6	25.1	64.1	35.7	33.8	56.7	51.8	51.8	35.7	38.4	35.0
LOS by Move:	D	C	C	E	D	C	E	D	D	D	D	D
HCM2k95thQ:	10	26	7	10	14	8	13	12	12	19	23	18

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

Level Of Service Computation Report
2000 HCM Unsignalized (Future Volume Alternative)
Bkgrd+Project PM

Intersection #1: Ranchero Way/Williams Road




```
Street Name:           Ranchero Way                  Williams Road
Approach:       North Bound      South Bound      East Bound      West Bound
Movement:     L  -  T  -  R    L  -  T  -  R    L  -  T  -  R    L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Volume Module:
Base Vol:      32     0    50     0     0     0     0   756    67    52   446     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:   32     0    50     0     0     0     0   756    67    52   446     0
Added Vol:      0     0     2     0     0     0     0     0     0     3     0     0
PasserByVol:    0     0     0     0     0     0     0     0     0     0     0     0
Initial Fut:   32     0    52     0     0     0     0   756    67    55   446     0
User Adj:    1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00
PHF Adj:     1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00
PHF Volume:    32     0    52     0     0     0     0   756    67    55   446     0
Reduct Vol:     0     0     0     0     0     0     0     0     0     0     0     0
FinalVolume:   32     0    52     0     0     0     0   756    67    55   446     0
------------|---------------||---------------||---------------||---------------|
Critical Gap Module:
Critical Gp:  6.4   6.5   6.2 xxxxx xxxx xxxxx xxxxx xxxx xxxxx   4.1 xxxx xxxxx
FollowUpTim:  3.5   4.0   3.3 xxxxx xxxx xxxxx xxxxx xxxx xxxxx   2.2 xxxx xxxxx
------------|---------------||---------------||---------------||---------------|
Capacity Module:
Cnflict Vol: 1346 1346   412  xxxx xxxx xxxxx  xxxx xxxx xxxxx   823 xxxx xxxxx
Potent Cap.:  169  153   645  xxxx xxxx xxxxx  xxxx xxxx xxxxx   816 xxxx xxxxx
Move Cap.:    160  142   645  xxxx xxxx xxxxx  xxxx xxxx xxxxx   816 xxxx xxxxx
Volume/Cap:  0.20 0.00  0.08  xxxx xxxx  xxxx  xxxx xxxx  xxxx  0.07 xxxx  xxxx
------------|---------------||---------------||---------------||---------------|
Level Of Service Module:
2Way95thQ:   xxxx xxxx xxxxx  xxxx xxxx xxxxx  xxxx xxxx xxxxx   0.2 xxxx xxxxx
Control Del:xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx   9.7 xxxx xxxxx
LOS by Move:    *     *      *      *     *      *      *     *      A     *      *
Movement:     LT - LTR - RT    LT - LTR - RT    LT - LTR - RT    LT - LTR - RT
Shared Cap.: xxxx  299 xxxxx  xxxx xxxx xxxxx  xxxx xxxx xxxxx  xxxx xxxx xxxxx
SharedQueue:xxxxx  1.1 xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx   0.2 xxxx xxxxx
Shrd ConDel:xxxxx 21.7 xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx   9.7 xxxx xxxxx
Shared LOS:     *     C      *      *     *      *      *     *      A     *      *
ApproachDel:      21.7           xxxxxx           xxxxxx           xxxxxx
ApproachLOS:         C             *                *                *
Note: Queue reported is the number of cars per lane.
-----------|---------------|---------------|---------------|---------------|
HevVeh:             0%              0%              0%              0%
Grade:              0%              0%              0%              0%
Peds/Hour:          0               0               0               0
Pedestrian Walk Speed: 4.00 feet/sec
LaneWidth:       12 feet         12 feet         12 feet         12 feet
Time Period: 0.25 hour
Upstream Signals:
Link Index:                                      #45
Dist(miles):                                     0.000
Speed (mph):                                      0.00
SignalIndex:                                     #3793
Cycle Time:                                          0 secs
InitVolume:                                    0     0
Saturation:                                    0     0
ArrivalType:                                   0     0
G/C:                                        0.00  0.00
*** Computation 1: Time for Queue to Clear at Each Upstream Intersection
P:                                          0.000 0.000
gq1:                                         0.00  0.00
gq2:                                         0.00  0.00
gq:                                          0.00  0.00
*** Computation 2: Time Intersection Blocked Because of Upstream Platoons
alpha:                                          0.000
beta:                                           0.000
ta (secs):                                      0.000
F:                                              0.000
f:                                          0.000 0.000
vcmax:                                         0     0
vcg:                                           0     0
vcmin:                                         0     0
tp:                                          0.0   0.0
p:                                              0.000
*** Computation 3: Platoon Event Periods
pdom/psubo:                                        0.000/0.000/Unconstrained
*** Computation 4: Conflicting Flows During Each Unblocked Period
InitCnflVol:1346  1346   412  934  1379   446    0 xxxxx xxxxx  823 xxxxx xxxxx
AdjCnflVol: 1346  1346   412  934  1379   446    0 xxxxx xxxxx  823 xxxxx xxxxx
UpstreamAdj:1.00 1.000 1.000 1.00 1.000 1.000 1.00 x.xxx x.xxx 1.00 x.xxx x.xxx
ConflictVol:1346  1346   412  934  1379   446    0 xxxxx xxxxx  823 xxxxx xxxxx
*** Computation 5: Capacity for Subject Movement During Unblocked Period
InitPotCap:  169   153   645  248   146   617 1636 xxxxx xxxxx  816 xxxxx xxxxx
```

```
UpstreamAdj:1.00 1.000 1.000 1.00 1.000 1.000 1.00 x.xxx x.xxx 1.00 x.xxx x.xxx
Potent Cap.: 169   153   645  248   146   617 1636 xxxxx xxxxx  816 xxxxx xxxxx
                    Peak Hour Delay Signal Warrant Report
********************************************************************************
Intersection #1 Ranchero Way/Williams Road
********************************************************************************
Future Volume Alternative: Peak Hour Warrant NOT Met
------------|---------------||---------------||---------------||---------------|
Approach:       North Bound      South Bound       East Bound       West Bound
Movement:     L  -  T  -  R    L  -  T  -  R    L  -  T  -  R    L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:         Stop Sign        Stop Sign       Uncontrolled     Uncontrolled
Lanes:        0  0  1! 0  0    0  0  0  0  0    0  0  1  1  0    0  1  0  0  0
Initial Vol:   32    0    52     0    0     0     0  756    67    55  446     0
ApproachDel:      21.7           xxxxxx           xxxxxx           xxxxxx
------------|---------------||---------------||---------------||---------------|
Approach[northbound][lanes=1][control=Stop Sign]
Signal Warrant Rule #1: [vehicle-hours=0.5]
   FAIL - Vehicle-hours less than 4 for one lane approach.
Signal Warrant Rule #2: [approach volume=84]
   FAIL - Approach volume less than 100 for one lane approach.
Signal Warrant Rule #3: [approach count=3][total volume=1408]
   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 #1 Ranchero Way/Williams Road
********************************************************************************
Future Volume Alternative: Peak Hour Warrant NOT Met
------------|---------------||---------------||---------------||---------------|
Approach:       North Bound      South Bound       East Bound       West Bound
Movement:     L  -  T  -  R    L  -  T  -  R    L  -  T  -  R    L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:         Stop Sign        Stop Sign       Uncontrolled     Uncontrolled
Lanes:        0  0  1! 0  0    0  0  0  0  0    0  0  1  1  0    0  1  0  0  0
Initial Vol:   32    0    52     0    0     0     0  756    67    55  446     0
------------|---------------||---------------||---------------||---------------|
Major Street Volume:             1324
Minor Approach Volume:           84
Minor Approach Volume Threshold: 188
--------------------------------------------------------------------------------
SIGNAL WARRANT DISCLAIMER
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"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.
```
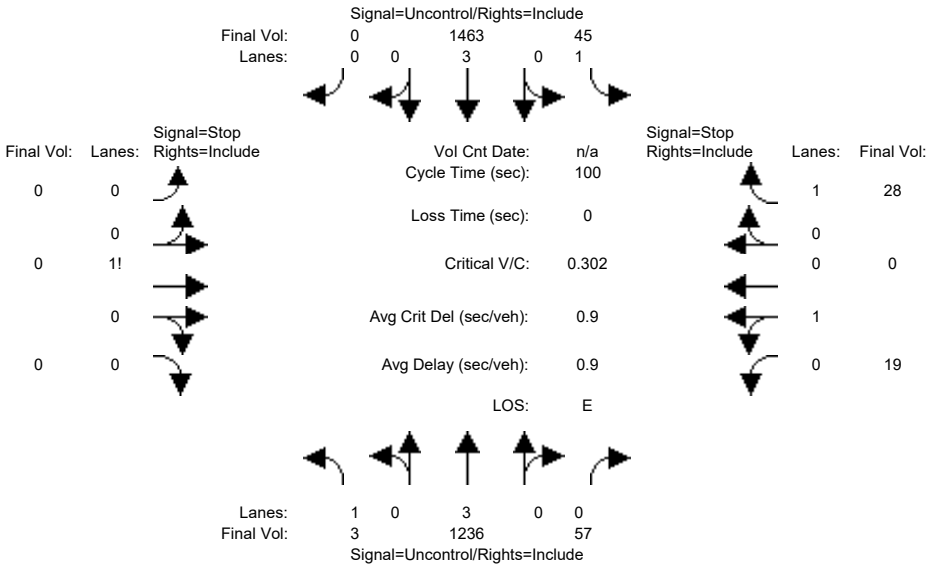


Level Of Service Computation Report
2000 HCM Unsignalized (Future Volume Alternative)
Bkgrd+Project PM

Intersection #2: Saratoga Avenue/Piper Drive




```
Street Name:         Saratoga Avenue                  Piper Drive
Approach:       North Bound      South Bound      East Bound       West Bound
Movement:     L  -  T  -  R    L  -  T  -  R    L  -  T  -  R    L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Volume Module:
Base Vol:       3 1236    57    39 1463     0     0     0     0    18     0    24
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:    3 1236    57    39 1463     0     0     0     0    18     0    24
Added Vol:      0    0     0     6    0     0     0     0     0     1     0     4
PasserByVol:    0    0     0     0    0     0     0     0     0     0     0     0
Initial Fut:    3 1236    57    45 1463     0     0     0     0    19     0    28
User Adj:    1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
PHF Adj:     1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
PHF Volume:     3 1236    57    45 1463     0     0     0     0    19     0    28
Reduct Vol:     0    0     0     0    0     0     0     0     0     0     0     0
FinalVolume:    3 1236    57    45 1463     0     0     0     0    19     0    28
------------|---------------||---------------||---------------||---------------|
Critical Gap Module:
Critical Gp:  4.1 xxxx xxxxx   4.1 xxxx xxxxx   7.5  6.5   6.9   6.8  6.5   6.9
FollowUpTim:  2.2 xxxx xxxxx   2.2 xxxx xxxxx   3.5  4.0   3.3   3.5  4.0   3.3
------------|---------------||---------------||---------------||---------------|
Capacity Module:
Cnflict Vol: 1463 xxxx xxxxx  1293 xxxx xxxxx  1971 2852   488  1848 2824   441
Potent Cap.:  468 xxxx xxxxx   543 xxxx xxxxx    38   17   531    68   18   570
Move Cap.:    468 xxxx xxxxx   543 xxxx xxxxx    34   16   531    63   16   570
Volume/Cap:  0.01 xxxx  xxxx  0.08 xxxx  xxxx  0.00 0.00  0.00  0.30 0.00  0.05
------------|---------------||---------------||---------------||---------------|
Level Of Service Module:
2Way95thQ:    0.0 xxxx xxxxx   0.3 xxxx xxxxx  xxxx xxxx xxxxx  xxxx xxxx   0.2
Control Del: 12.7 xxxx xxxxx  12.2 xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx  11.6
LOS by Move:    B    *     *     B    *     *     *    *     *     *    *     B
Movement:     LT - LTR - RT    LT - LTR - RT    LT - LTR - RT    LT - LTR - RT
Shared Cap.: xxxx xxxx xxxxx  xxxx xxxx xxxxx  xxxx    0 xxxxx    63 xxxx xxxxx
SharedQueue:xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx   1.1 xxxx xxxxx
Shrd ConDel:xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx  85.3 xxxx xxxxx
Shared LOS:     *    *     *     *    *     *     *    *     *     F    *     *
ApproachDel:    xxxxxx           xxxxxx           xxxxxx             41.4
ApproachLOS:         *                *                *                E
Note: Queue reported is the number of cars per lane.
-----------|---------------|---------------|---------------|---------------|
HevVeh:             0%              0%              0%              0%
Grade:              0%              0%              0%              0%
Peds/Hour:          0               0               0               0
Pedestrian Walk Speed: 4.00 feet/sec
LaneWidth:       12 feet         12 feet         12 feet         12 feet
Time Period: 0.25 hour
Upstream Signals:
Link Index:                      #42
Dist(miles):                     0.000
Speed (mph):                      0.00
SignalIndex:                     #3793
Cycle Time:                          0 secs
InitVolume:                    0     0
Saturation:                    0     0
ArrivalType:                   0     0
G/C:                        0.00  0.00
*** Computation 1: Time for Queue to Clear at Each Upstream Intersection
P:                          0.000 0.000
gq1:                         0.00  0.00
gq2:                         0.00  0.00
gq:                          0.00  0.00
*** Computation 2: Time Intersection Blocked Because of Upstream Platoons
alpha:                           0.000
beta:                            0.000
ta (secs):                       0.000
F:                               0.000
f:                          0.000 0.000
vcmax:                         0     0
vcg:                           0     0
vcmin:                         0     0
tp:                          0.0   0.0
p:                               0.000
*** Computation 3: Platoon Event Periods
pdom/psubo:      0.000/0.000/Unconstrained
*** Computation 4: Conflicting Flows During Each Unblocked Period
InitCnflVol:1463 xxxxx xxxxx 1293 xxxxx xxxxx 1971  2852   488 1848  2824   441
AdjCnflVol: 1463 xxxxx xxxxx 1293 xxxxx xxxxx 1971  2852   488 1848  2824   441
UpstreamAdj:1.00 x.xxx x.xxx 1.00 x.xxx x.xxx 1.00 1.000 1.000 1.00 1.000 1.000
ConflictVol:1463 xxxxx xxxxx 1293 xxxxx xxxxx 1971  2852   488 1848  2824   441
*** Computation 5: Capacity for Subject Movement During Unblocked Period
InitPotCap:  468 xxxxx xxxxx  543 xxxxx xxxxx   38    17   531   68    18   570
```

```
UpstreamAdj:1.00 x.xxx x.xxx 1.00 x.xxx x.xxx 1.00 1.000 1.000 1.00 1.000 1.000
Potent Cap.: 468 xxxxx xxxxx  543 xxxxx xxxxx   38    17   531   68    18   570
                    Peak Hour Delay Signal Warrant Report
*******************************************************************************
Intersection #2 Saratoga Avenue/Piper Drive
*******************************************************************************
Future Volume Alternative: Peak Hour Warrant NOT Met
------------|---------------||---------------||---------------||---------------|
Approach:       North Bound      South Bound       East Bound       West Bound
Movement:     L  -  T  -  R    L  -  T  -  R    L  -  T  -  R    L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:       Uncontrolled     Uncontrolled      Stop Sign        Stop Sign
Lanes:        1  0  2  1  0    1  0  3  0  0    0  0  1! 0  0    0  1  0  0  1
Initial Vol:    3 1236    57    45 1463     0     0    0     0    19    0    28
ApproachDel:    xxxxxx           xxxxxx           xxxxxx             41.4
------------|---------------||---------------||---------------||---------------|
Approach[westbound][lanes=2][control=Stop Sign]
Signal Warrant Rule #1: [vehicle-hours=0.5]
   FAIL - Vehicle-hours less than 5 for two or more lane approach.
Signal Warrant Rule #2: [approach volume=47]
   FAIL - Approach volume less than 150 for two or more lane approach.
Signal Warrant Rule #3: [approach count=3][total volume=2851]
   SUCCEED - Total volume greater than or equal to 650 for intersection
             with less than four approaches.
-------------------------------------------------------------------------------
SIGNAL WARRANT DISCLAIMER
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"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 #2 Saratoga Avenue/Piper Drive
*******************************************************************************
Future Volume Alternative: Peak Hour Warrant NOT Met
------------|---------------||---------------||---------------||---------------|
Approach:       North Bound      South Bound       East Bound       West Bound
Movement:     L  -  T  -  R    L  -  T  -  R    L  -  T  -  R    L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:       Uncontrolled     Uncontrolled      Stop Sign        Stop Sign
Lanes:        1  0  2  1  0    1  0  3  0  0    0  0  1! 0  0    0  1  0  0  1
Initial Vol:    3 1236    57    45 1463     0     0    0     0    19    0    28
------------|---------------||---------------||---------------||---------------|
Major Street Volume:             2804
Minor Approach Volume:           47
Minor Approach Volume Threshold: -69 [less than minimum of 150]
-------------------------------------------------------------------------------
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.
```
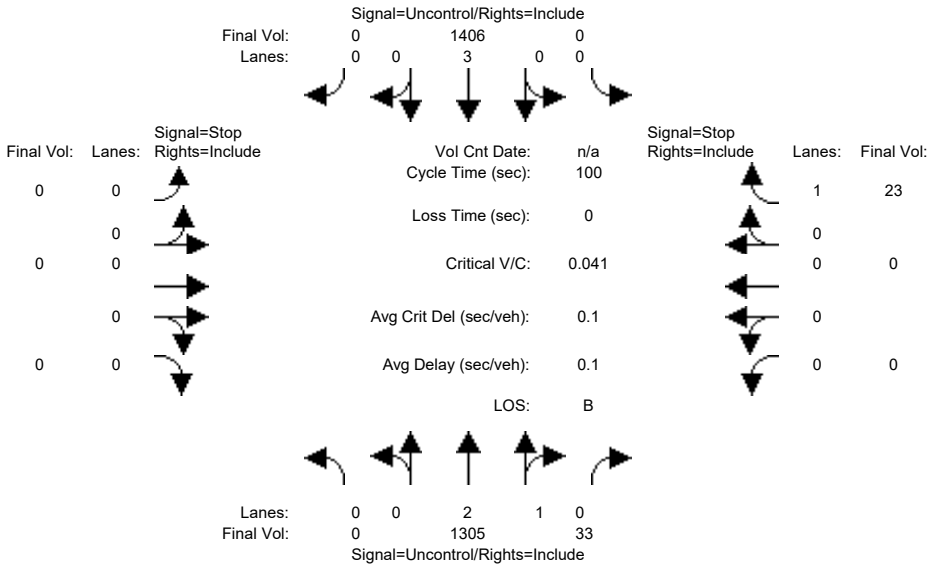


Level Of Service Computation Report
2000 HCM Unsignalized (Future Volume Alternative)
Bkgrd+Project PM

Intersection #3: Saratoga Avenue/Mitzi Drive




```
Street Name:         Saratoga Avenue                  Mitzi Drive
Approach:       North Bound      South Bound      East Bound       West Bound
Movement:     L  -  T  -  R    L  -  T  -  R    L  -  T  -  R    L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Volume Module:
Base Vol:       0 1305    32     0 1405     0     0     0     0     0     0    23
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 1305    32     0 1405     0     0     0     0     0     0    23
Added Vol:      0    0     1     0    1     0     0     0     0     0     0     0
PasserByVol:    0    0     0     0    0     0     0     0     0     0     0     0
Initial Fut:    0 1305    33     0 1406     0     0     0     0     0     0    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:     0 1305    33     0 1406     0     0     0     0     0     0    23
Reduct Vol:     0    0     0     0    0     0     0     0     0     0     0     0
FinalVolume:    0 1305    33     0 1406     0     0     0     0     0     0    23
------------|---------------||---------------||---------------||---------------|
Critical Gap Module:
Critical Gp:xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx   6.9
FollowUpTim:xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx   3.3
------------|---------------||---------------||---------------||---------------|
Capacity Module:
Cnflict Vol: xxxx xxxx xxxxx  xxxx xxxx xxxxx  xxxx xxxx xxxxx  xxxx xxxx   452
Potent Cap.: xxxx xxxx xxxxx  xxxx xxxx xxxxx  xxxx xxxx xxxxx  xxxx xxxx   561
Move Cap.:   xxxx xxxx xxxxx  xxxx xxxx xxxxx  xxxx xxxx xxxxx  xxxx xxxx   561
Volume/Cap:  xxxx xxxx  xxxx  xxxx xxxx  xxxx  xxxx xxxx  xxxx  xxxx xxxx  0.04
------------|---------------||---------------||---------------||---------------|
Level Of Service Module:
2Way95thQ:   xxxx xxxx xxxxx  xxxx xxxx xxxxx  xxxx xxxx xxxxx  xxxx xxxx   0.1
Control Del:xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx  11.7
LOS by Move:    *    *     *     *    *     *     *    *     *     *    *     B
Movement:     LT - LTR - RT    LT - LTR - RT    LT - LTR - RT    LT - LTR - RT
Shared Cap.: xxxx xxxx xxxxx  xxxx xxxx xxxxx  xxxx xxxx xxxxx  xxxx xxxx xxxxx
SharedQueue:xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx
Shrd ConDel:xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx
Shared LOS:     *    *     *     *    *     *     *    *     *     *    *     *
ApproachDel:    xxxxxx           xxxxxx           xxxxxx             11.7
ApproachLOS:         *                *                *                B
Note: Queue reported is the number of cars per lane.
-----------|---------------|---------------|---------------|---------------|
HevVeh:             0%              0%              0%              0%
Grade:              0%              0%              0%              0%
Peds/Hour:          0               0               0               0
Pedestrian Walk Speed: 4.00 feet/sec
LaneWidth:       12 feet         12 feet         12 feet         12 feet
Time Period: 0.25 hour
Upstream Signals:
Link Index:                      #42
Dist(miles):                     0.000
Speed (mph):                      0.00
SignalIndex:                     #3793
Cycle Time:                          0 secs
InitVolume:                    0     0
Saturation:                    0     0
ArrivalType:                   0     0
G/C:                        0.00  0.00
*** Computation 1: Time for Queue to Clear at Each Upstream Intersection
P:                          0.000 0.000
gq1:                         0.00  0.00
gq2:                         0.00  0.00
gq:                          0.00  0.00
*** Computation 2: Time Intersection Blocked Because of Upstream Platoons
alpha:                           0.000
beta:                            0.000
ta (secs):                       0.000
F:                               0.000
f:                          0.000 0.000
vcmax:                         0     0
vcg:                           0     0
vcmin:                         0     0
tp:                          0.0   0.0
p:                               0.000
*** Computation 3: Platoon Event Periods
pdom/psubo:      0.000/0.000/Unconstrained
*** Computation 4: Conflicting Flows During Each Unblocked Period
InitCnflVol:   0 xxxxx xxxxx    0 xxxxx xxxxx 1841  2744   469 1790  2728   452
AdjCnflVol:    0 xxxxx xxxxx    0 xxxxx xxxxx 1841  2744   469 1790  2728   452
UpstreamAdj:1.00 x.xxx x.xxx 1.00 x.xxx x.xxx 1.00 1.000 1.000 1.00 1.000 1.000
ConflictVol:   0 xxxxx xxxxx    0 xxxxx xxxxx 1841  2744   469 1790  2728   452
*** Computation 5: Capacity for Subject Movement During Unblocked Period
InitPotCap: 1636 xxxxx xxxxx 1636 xxxxx xxxxx   48    20   547   74    21   561
```

```
UpstreamAdj:1.00 x.xxx x.xxx 1.00 x.xxx x.xxx 1.00 1.000 1.000 1.00 1.000 1.000
Potent Cap.:1636 xxxxx xxxxx 1636 xxxxx xxxxx   48    20   547   74    21   561
                    Peak Hour Delay Signal Warrant Report
*******************************************************************************
Intersection #3 Saratoga Avenue/Mitzi Drive
*******************************************************************************
Future Volume Alternative: Peak Hour Warrant NOT Met
------------|---------------||---------------||---------------||---------------|
Approach:       North Bound      South Bound       East Bound       West Bound
Movement:     L  -  T  -  R    L  -  T  -  R    L  -  T  -  R    L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:       Uncontrolled     Uncontrolled      Stop Sign        Stop Sign
Lanes:        0  0  2  1  0    0  0  3  0  0    0  0  0  0  0    0  0  0  0  1
Initial Vol:    0 1305    33     0 1406     0     0    0     0     0    0    23
ApproachDel:    xxxxxx           xxxxxx           xxxxxx             11.7
------------|---------------||---------------||---------------||---------------|
Approach[westbound][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=23]
   FAIL - Approach volume less than 100 for one lane approach.
Signal Warrant Rule #3: [approach count=3][total volume=2767]
   SUCCEED - Total volume greater than or equal to 650 for intersection
             with less than four approaches.
-------------------------------------------------------------------------------
SIGNAL WARRANT DISCLAIMER
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"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 #3 Saratoga Avenue/Mitzi Drive
*******************************************************************************
Future Volume Alternative: Peak Hour Warrant NOT Met
------------|---------------||---------------||---------------||---------------|
Approach:       North Bound      South Bound       East Bound       West Bound
Movement:     L  -  T  -  R    L  -  T  -  R    L  -  T  -  R    L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:       Uncontrolled     Uncontrolled      Stop Sign        Stop Sign
Lanes:        0  0  2  1  0    0  0  3  0  0    0  0  0  0  0    0  0  0  0  1
Initial Vol:    0 1305    33     0 1406     0     0    0     0     0    0    23
------------|---------------||---------------||---------------||---------------|
Major Street Volume:             2744
Minor Approach Volume:           23
Minor Approach Volume Threshold: -63 [less than minimum of 100]
-------------------------------------------------------------------------------
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.
```
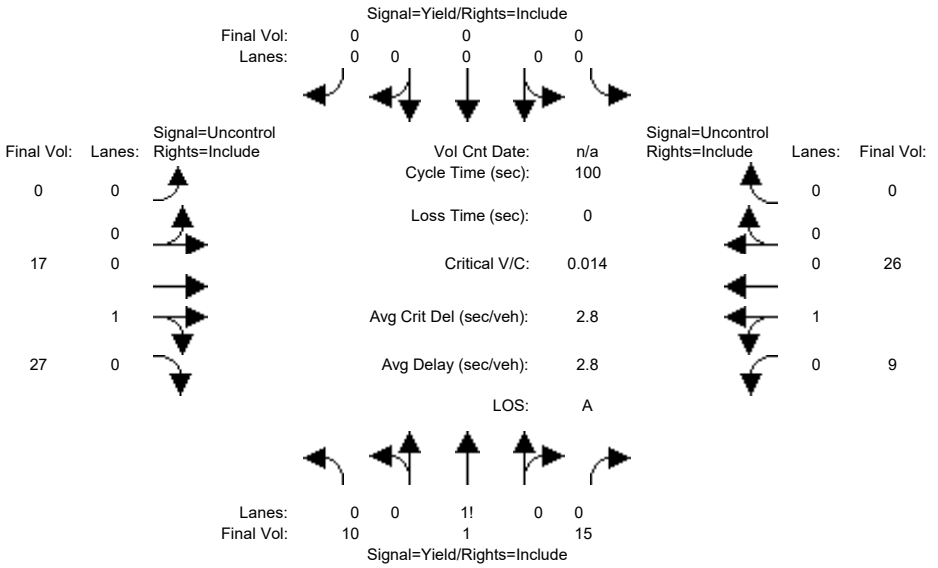


Level Of Service Computation Report
2000 HCM Unsignalized (Future Volume Alternative)
Bkgrd+Project PM

Intersection #4: Mitzi Drive/Piper Drive




```
Street Name:            Mitzi Drive                    Piper Drive
Approach:       North Bound      South Bound      East Bound       West Bound
Movement:     L  -  T  -  R    L  -  T  -  R    L  -  T  -  R    L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Volume Module:
Base Vol:       5     1    15     0     0     0     0    17    21     9    26     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:    5     1    15     0     0     0     0    17    21     9    26     0
Added Vol:      5     0     0     0     0     0     0     0     6     0     0     0
PasserByVol:    0     0     0     0     0     0     0     0     0     0     0     0
Initial Fut:   10     1    15     0     0     0     0    17    27     9    26     0
User Adj:    1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
PHF Adj:     1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
PHF Volume:    10     1    15     0     0     0     0    17    27     9    26     0
Reduct Vol:     0     0     0     0     0     0     0     0     0     0     0     0
FinalVolume:   10     1    15     0     0     0     0    17    27     9    26     0
------------|---------------||---------------||---------------||---------------|
Critical Gap Module:
Critical Gp:  6.4  6.5   6.2 xxxxx xxxx xxxxx xxxxx xxxx xxxxx   4.1 xxxx xxxxx
FollowUpTim:  3.5  4.0   3.3 xxxxx xxxx xxxxx xxxxx xxxx xxxxx   2.2 xxxx xxxxx
------------|---------------||---------------||---------------||---------------|
Capacity Module:
Cnflict Vol:   75   75    31  xxxx xxxx xxxxx  xxxx xxxx xxxxx    44 xxxx xxxxx
Potent Cap.:  934  820  1050  xxxx xxxx xxxxx  xxxx xxxx xxxxx  1577 xxxx xxxxx
Move Cap.:    930  815  1050  xxxx xxxx xxxxx  xxxx xxxx xxxxx  1577 xxxx xxxxx
Volume/Cap:  0.01 0.00  0.01  xxxx xxxx  xxxx  xxxx xxxx  xxxx  0.01 xxxx  xxxx
------------|---------------||---------------||---------------||---------------|
Level Of Service Module:
2Way95thQ:   xxxx xxxx xxxxx  xxxx xxxx xxxxx  xxxx xxxx xxxxx   0.0 xxxx xxxxx
Control Del:xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx   7.3 xxxx xxxxx
LOS by Move:    *     *      *      *     *      *     *     *      *     A     *     *
Movement:     LT - LTR - RT    LT - LTR - RT    LT - LTR - RT    LT - LTR - RT
Shared Cap.: xxxx  990 xxxxx  xxxx xxxx xxxxx  xxxx xxxx xxxxx  xxxx xxxx xxxxx
SharedQueue:xxxxx  0.1 xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx   0.0 xxxx xxxxx
Shrd ConDel:xxxxx  8.7 xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx   7.3 xxxx xxxxx
Shared LOS:     *     A      *      *     *      *     *     *      A     *     *
ApproachDel:       8.7            xxxxxx            xxxxxx            xxxxxx
ApproachLOS:         A             *                 *                 *
Note: Queue reported is the number of cars per lane.
-----------|---------------|---------------|---------------|---------------|
HevVeh:             0%              0%              0%              0%
Grade:              0%              0%              0%              0%
Peds/Hour:          0               0               0               0
Pedestrian Walk Speed: 4.00 feet/sec
LaneWidth:       12 feet         12 feet         12 feet         12 feet
Time Period: 0.25 hour
                    Peak Hour Delay Signal Warrant Report
*******************************************************************************
Intersection #4 Mitzi Drive/Piper Drive
*******************************************************************************
Future Volume Alternative: Peak Hour Warrant NOT Met
------------|---------------||---------------||---------------||---------------|
Approach:       North Bound      South Bound      East Bound       West Bound
Movement:     L  -  T  -  R    L  -  T  -  R    L  -  T  -  R    L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:        Yield Sign       Yield Sign      Uncontrolled     Uncontrolled
Lanes:        0  0  1! 0  0    0  0  0  0  0    0  0  0  1  0    0  1  0  0  0
Initial Vol:   10     1    15     0     0     0     0    17    27     9    26     0
ApproachDel:       8.7            xxxxxx            xxxxxx            xxxxxx
------------|---------------||---------------||---------------||---------------|
Approach[northbound][lanes=1][control=Yield Sign]
Signal Warrant Rule #1: [vehicle-hours=0.1]
   FAIL - Controller not stop sign.
Signal Warrant Rule #2: [approach volume=26]
   FAIL - Approach volume less than 100 for one lane approach.
Signal Warrant Rule #3: [approach count=3][total volume=105]
   FAIL - Total volume less than 650 for intersection
          with less than four approaches.
-------------------------------------------------------------------------------
SIGNAL WARRANT DISCLAIMER
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"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 #4 Mitzi Drive/Piper Drive
*******************************************************************************
Future Volume Alternative: Peak Hour Warrant NOT Met
------------|---------------||---------------||---------------||---------------|
Approach:       North Bound      South Bound       East Bound       West Bound
Movement:     L  -  T  -  R    L  -  T  -  R    L  -  T  -  R    L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:       Yield Sign       Yield Sign       Uncontrolled     Uncontrolled
Lanes:       0  0  1! 0  0    0  0  0  0  0    0  0  0  1  0    0  1  0  0  0
Initial Vol:   10    1    15     0    0     0     0   17    27     9   26     0
------------|---------------||---------------||---------------||---------------|
Major Street Volume:             79
Minor Approach Volume:           26
Minor Approach Volume Threshold: 896
-------------------------------------------------------------------------------
SIGNAL WARRANT DISCLAIMER
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"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.
```
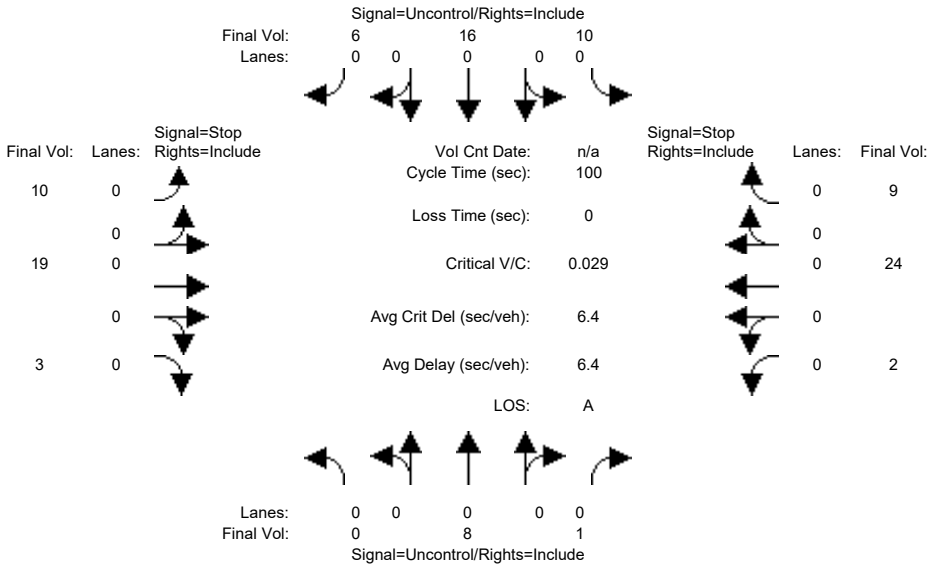


Level Of Service Computation Report
2000 HCM Unsignalized (Future Volume Alternative)
Bkgrd+Project PM

Intersection #5: Mitzi Drive/Ranchero Way




```
Street Name:            Mitzi Drive                    Ranchero Way
Approach:       North Bound      South Bound      East Bound       West Bound
Movement:     L  -  T  -  R    L  -  T  -  R    L  -  T  -  R    L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Volume Module:
Base Vol:       0     7     1     8    16     6    10    19     3     2    24     6
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     7     1     8    16     6    10    19     3     2    24     6
Added Vol:      0     1     0     2     0     0     0     0     0     0     0     3
PasserByVol:    0     0     0     0     0     0     0     0     0     0     0     0
Initial Fut:    0     8     1    10    16     6    10    19     3     2    24     9
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     8     1    10    16     6    10    19     3     2    24     9
Reduct Vol:     0     0     0     0     0     0     0     0     0     0     0     0
FinalVolume:    0     8     1    10    16     6    10    19     3     2    24     9
------------|---------------||---------------||---------------||---------------|
Critical Gap Module:
Critical Gp:xxxxx xxxx xxxxx   4.1 xxxx xxxxx   7.1  6.5   6.2   7.1  6.5   6.2
FollowUpTim:xxxxx xxxx xxxxx   2.2 xxxx xxxxx   3.5  4.0   3.3   3.5  4.0   3.3
------------|---------------||---------------||---------------||---------------|
Capacity Module:
Cnflict Vol: xxxx xxxx xxxxx     9 xxxx xxxxx    64   48    19    59   51     9
Potent Cap.: xxxx xxxx xxxxx  1624 xxxx xxxxx   935  847  1065   943  845  1079
Move Cap.:   xxxx xxxx xxxxx  1624 xxxx xxxxx   903  842  1065   920  840  1079
Volume/Cap:  xxxx xxxx  xxxx  0.01 xxxx  xxxx  0.01 0.02  0.00  0.00 0.03  0.01
------------|---------------||---------------||---------------||---------------|
Level Of Service Module:
2Way95thQ:   xxxx xxxx xxxxx   0.0 xxxx xxxxx  xxxx xxxx xxxxx  xxxx xxxx xxxxx
Control Del:xxxxx xxxx xxxxx   7.2 xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx
LOS by Move:    *     *     *     A     *     *     *     *     *     *     *     *
Movement:     LT - LTR - RT    LT - LTR - RT    LT - LTR - RT    LT - LTR - RT
Shared Cap.: xxxx xxxx xxxxx  xxxx xxxx xxxxx  xxxx  878 xxxxx  xxxx  895 xxxxx
SharedQueue:xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx  0.1 xxxxx xxxxx  0.1 xxxxx
Shrd ConDel:xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx  9.3 xxxxx xxxxx  9.2 xxxxx
Shared LOS:     *     *     *     *     *     *     A     *     *     A     *
ApproachDel:    xxxxxx           xxxxxx               9.3               9.2
ApproachLOS:         *                *                 A                 A
Note: Queue reported is the number of cars per lane.
-----------|---------------|---------------|---------------|---------------|
HevVeh:             0%              0%              0%              0%
Grade:              0%              0%              0%              0%
Peds/Hour:          0               0               0               0
Pedestrian Walk Speed: 4.00 feet/sec
LaneWidth:       12 feet         12 feet         12 feet         12 feet
Time Period: 0.25 hour
                    Peak Hour Delay Signal Warrant Report
*******************************************************************************
Intersection #5 Mitzi Drive/Ranchero Way
*******************************************************************************
Future Volume Alternative: Peak Hour Warrant NOT Met
------------|---------------||---------------||---------------||---------------|
Approach:       North Bound      South Bound      East Bound       West Bound
Movement:     L  -  T  -  R    L  -  T  -  R    L  -  T  -  R    L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:        Uncontrolled     Uncontrolled      Stop Sign        Stop Sign
Lanes:        0  0  0  1  0    0  0  1! 0  0    0  0  1! 0  0    0  0  1! 0  0
Initial Vol:    0     8     1    10    16     6    10    19     3     2    24     9
ApproachDel:    xxxxxx           xxxxxx               9.3               9.2
------------|---------------||---------------||---------------||---------------|
Approach[eastbound][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=32]
   FAIL - Approach volume less than 100 for one lane approach.
Signal Warrant Rule #3: [approach count=4][total volume=108]
   FAIL - Total volume less than 650 for intersection
          with less than four approaches.
-------------------------------------------------------------------------------
Approach[westbound][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=35]
   FAIL - Approach volume less than 100 for one lane approach.
Signal Warrant Rule #3: [approach count=4][total volume=108]
   FAIL - Total volume less than 650 for intersection
          with less than four approaches.
-------------------------------------------------------------------------------
SIGNAL WARRANT DISCLAIMER
This peak hour signal warrant analysis should be considered solely as an
"indicator" of the likelihood of an unsignalized intersection warranting
```


a traffic signal in the future. Intersections that exceed this warrant
are probably more likely to meet one or more of the other volume based
signal warrant (such as the 4-hour or 8-hour warrants).

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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 #5 Mitzi Drive/Ranchero Way

****

Future Volume Alternative: Peak Hour Warrant NOT Met

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	- T	- R	L	- T	- R	L	- T	- R	L	- T	- R
Control:	Uncontrolled			Uncontrolled			Stop Sign			Stop Sign		
Lanes:	0 0	0 1	0	0 0	1! 0	0	0 0	1! 0	0	0 0	1! 0	0
Initial Vol:	0	8	1	10	16	6	10	19	3	2	24	9

Major Street Volume: 41
Minor Approach Volume: 35
Minor Approach Volume Threshold: 1071

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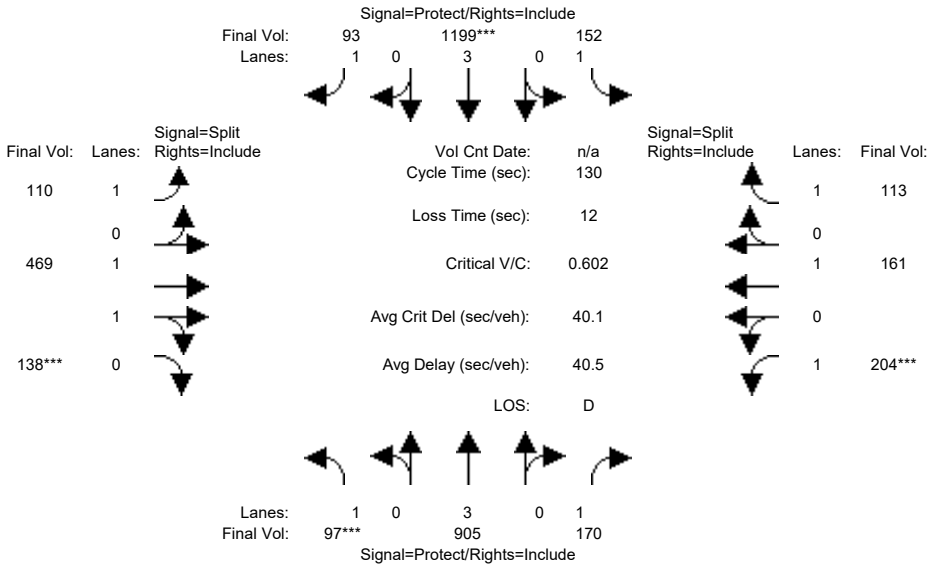
"indicator" of the likelihood of an unsignalized intersection warranting
a traffic signal in the future. Intersections that exceed this warrant
are probably more likely to meet one or more of the other volume based
signal warrant (such as the 4-hour or 8-hour warrants).

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)
Bkgrd+Project PM

Intersection #3793: Saratoga Avenue/Williams Road

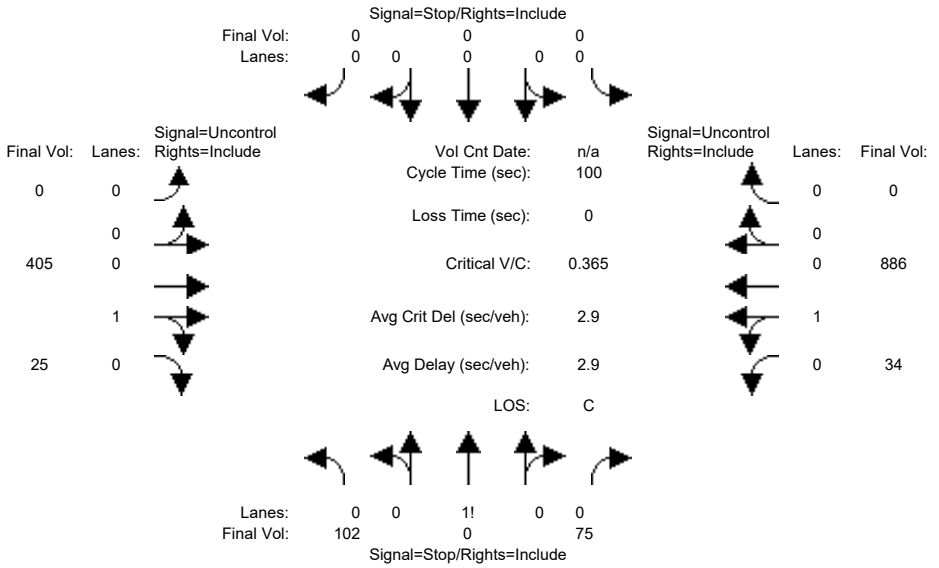


Street Name:	Saratoga Avenue						Williams Road					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	7	10	10	7	10	10	10	10	10	10	10	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module:												
Base Vol:	96	902	170	152	1195	93	110	469	136	204	161	113
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:	96	902	170	152	1195	93	110	469	136	204	161	113
Added Vol:	1	3	0	0	4	0	0	0	2	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	97	905	170	152	1199	93	110	469	138	204	161	113
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:	97	905	170	152	1199	93	110	469	138	204	161	113
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	97	905	170	152	1199	93	110	469	138	204	161	113
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:	97	905	170	152	1199	93	110	469	138	204	161	113
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	1.00	0.92	0.92	1.00	0.92	0.92	0.98	0.95	0.92	1.00	0.92
Lanes:	1.00	3.00	1.00	1.00	3.00	1.00	1.00	1.53	0.47	1.00	1.00	1.00
Final Sat.:	1750	5700	1750	1750	5700	1750	1750	2858	841	1750	1900	1750
Capacity Analysis Module:												
Vol/Sat:	0.06	0.16	0.10	0.09	0.21	0.05	0.06	0.16	0.16	0.12	0.08	0.06
Crit Moves:	****				****				****	****		
Green Time:	12.0	37.1	37.1	20.3	45.4	45.4	35.4	35.4	35.4	25.2	25.2	25.2
Volume/Cap:	0.60	0.56	0.34	0.56	0.60	0.15	0.23	0.60	0.60	0.60	0.44	0.33
Uniform Del:	56.7	39.5	36.8	50.7	34.8	29.1	36.7	41.1	41.1	47.8	46.2	45.2
IncremntDel:	6.3	0.4	0.4	2.5	0.5	0.1	0.2	1.0	1.0	3.0	0.8	0.6
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay 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
Delay/Veh:	63.0	39.9	37.2	53.2	35.4	29.2	37.0	42.2	42.2	50.9	47.0	45.8
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:	63.0	39.9	37.2	53.2	35.4	29.2	37.0	42.2	42.2	50.9	47.0	45.8
LOS by Move:	E	D	D	D	D	C	D	D	D	D	D	D
HCM2k95thQ:	10	19	11	13	24	5	7	20	20	16	11	9

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

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

Intersection #1: Ranchero Way/Williams Road




```
Street Name:           Ranchero Way                  Williams Road
Approach:       North Bound      South Bound      East Bound      West Bound
Movement:     L  -  T  -  R    L  -  T  -  R    L  -  T  -  R    L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Volume Module:
Base Vol:     102    0    75     0    0     0     0  405    25    34  886     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:  102    0    75     0    0     0     0  405    25    34  886     0
Added Vol:      0    0     0     0    0     0     0    0     0     0    0     0
PasserByVol:    0    0     0     0    0     0     0    0     0     0    0     0
Initial Fut:  102    0    75     0    0     0     0  405    25    34  886     0
User Adj:    1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
PHF Adj:     1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
PHF Volume:   102    0    75     0    0     0     0  405    25    34  886     0
Reduct Vol:     0    0     0     0    0     0     0    0     0     0    0     0
FinalVolume:  102    0    75     0    0     0     0  405    25    34  886     0
------------|---------------||---------------||---------------||---------------|
Critical Gap Module:
Critical Gp:  6.4  6.5   6.2 xxxxx xxxx xxxxx xxxxx xxxx xxxxx   4.1 xxxx xxxxx
FollowUpTim:  3.5  4.0   3.3 xxxxx xxxx xxxxx xxxxx xxxx xxxxx   2.2 xxxx xxxxx
------------|---------------||---------------||---------------||---------------|
Capacity Module:
Cnflict Vol: 1372 1372   418  xxxx xxxx xxxxx  xxxx xxxx xxxxx   430 xxxx xxxxx
Potent Cap.:  163  147   640  xxxx xxxx xxxxx  xxxx xxxx xxxxx  1140 xxxx xxxxx
Move Cap.:    159  143   640  xxxx xxxx xxxxx  xxxx xxxx xxxxx  1140 xxxx xxxxx
Total Cap:    279  251 xxxxx   214  247 xxxxx  xxxx xxxx xxxxx  xxxx xxxx xxxxx
Volume/Cap:  0.37 0.00  0.12  xxxx xxxx  xxxx  xxxx xxxx  xxxx  0.03 xxxx  xxxx
------------|---------------||---------------||---------------||---------------|
Level Of Service Module:
2Way95thQ:   xxxx xxxx xxxxx  xxxx xxxx xxxxx  xxxx xxxx xxxxx   0.1 xxxx xxxxx
Control Del:xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx   8.3 xxxx xxxxx
LOS by Move:    *    *     *     *    *     *     *    *     *     A    *     *
Movement:     LT - LTR - RT    LT - LTR - RT    LT - LTR - RT    LT - LTR - RT
Shared Cap.: xxxx  367 xxxxx  xxxx xxxx xxxxx  xxxx xxxx xxxxx  xxxx xxxx xxxxx
SharedQueue:xxxxx  2.5 xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx   0.1 xxxx xxxxx
Shrd ConDel:xxxxx 23.6 xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx   8.3 xxxx xxxxx
Shared LOS:     *    C     *     *    *     *     *    *     *     A    *     *
ApproachDel:     23.6          xxxxxx           xxxxxx           xxxxxx
ApproachLOS:        C             *                *                *
Note: Queue reported is the number of cars per lane.
-----------|---------------|---------------|---------------|---------------|
HevVeh:             0%              0%              0%              0%
Grade:              0%              0%              0%              0%
Peds/Hour:          0               0               0               0
Pedestrian Walk Speed: 4.00 feet/sec
LaneWidth:       12 feet         12 feet         12 feet         12 feet
Time Period: 0.25 hour
Upstream Signals:
Link Index:                                      #45
Dist(miles):                                     0.000
Speed (mph):                                      0.00
SignalIndex:                                     #3793
Cycle Time:                                         0 secs
InitVolume:                                   0     0
Saturation:                                   0     0
ArrivalType:                                  0     0
G/C:                                       0.00  0.00
*** Computation 1: Time for Queue to Clear at Each Upstream Intersection
P:                                        0.000 0.000
gq1:                                       0.00  0.00
gq2:                                       0.00  0.00
gq:                                        0.00  0.00
*** Computation 2: Time Intersection Blocked Because of Upstream Platoons
alpha:                                           0.000
beta:                                            0.000
ta (secs):                                       0.000
F:                                               0.000
f:                                        0.000 0.000
vcmax:                                        0     0
vcg:                                          0     0
vcmin:                                        0     0
tp:                                         0.0   0.0
p:                                               0.000
*** Computation 3: Platoon Event Periods
pdom/psubo:                                   0.000/0.000/Unconstrained
*** Computation 4: Conflicting Flows During Each Unblocked Period
InitCnflVol:1372  1372   418 1409  1384   886    0 xxxxx xxxxx  430 xxxxx xxxxx
AdjCnflVol: 1372  1372   418 1409  1384   886    0 xxxxx xxxxx  430 xxxxx xxxxx
UpstreamAdj:1.00 1.000 1.000 1.00 1.000 1.000 1.00 x.xxx x.xxx 1.00 x.xxx x.xxx
ConflictVol:1372  1372   418 1409  1384   886    0 xxxxx xxxxx  430 xxxxx xxxxx
*** Computation 5: Capacity for Subject Movement During Unblocked Period
```

```
InitPotCap:  163   147   640  117   145   346 1636 xxxxx xxxxx 1140 xxxxx xxxxx
UpstreamAdj:1.00 1.000 1.000 1.00 1.000 1.000 1.00 x.xxx x.xxx 1.00 x.xxx x.xxx
Potent Cap.: 163   147   640  117   145   346 1636 xxxxx xxxxx 1140 xxxxx xxxxx
-----------|---------------|---------------|---------------|---------------|
Two-Stage Gap Acceptance [Median Type: TWLTL][Median Storage: 1 car]
-----------|---------------|---------------|---------------|---------------|
Two-Stage Gap Acceptance - Stage One Module:
InitCfltVol: 418   418 xxxxx  954   954 xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx
UpstreamSat:   0     0 xxxxx    0     0 xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx
UpstreamAdj:1.00  1.00 xxxxx 1.00  1.00 xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx
Cnflict Vol: 418   418 xxxxx  954   954 xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx
InitPotCap:  669   594 xxxxx  313   340 xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx
UpstreamAdj:1.00  1.00 xxxxx 1.00  1.00 xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx
Potent Cap.: 669   594 xxxxx  313   340 xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx
Move Cap.:   669   594 xxxxx  304   330 xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx
-----------|---------------|---------------|---------------|---------------|
Two-Stage Gap Acceptance - Stage Two Module:
InitCfltVol: 954   954 xxxxx  455   430 xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx
UpstreamSat:   0     0 xxxxx    0     0 xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx
UpstreamAdj:1.00  1.00 xxxxx 1.00  1.00 xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx
Cnflict Vol: 954   954 xxxxx  455   430 xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx
InitPotCap:  377   340 xxxxx  589   587 xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx
UpstreamAdj:1.00  1.00 xxxxx 1.00  1.00 xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx
Potent Cap.: 377   340 xxxxx  589   587 xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx
Move Cap.:   366   330 xxxxx  520   587 xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx
                     Peak Hour Delay Signal Warrant Report
*******************************************************************************
Intersection #1 Ranchero Way/Williams Road
*******************************************************************************
Future Volume Alternative: Peak Hour Warrant NOT Met
------------|---------------||---------------||---------------||---------------|
Approach:       North Bound       South Bound       East Bound       West Bound
Movement:     L  -  T  -  R     L  -  T  -  R     L  -  T  -  R     L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:         Stop Sign         Stop Sign       Uncontrolled     Uncontrolled
Lanes:         0  0  1! 0  0     0  0  0  0  0     0  0  0  1  0     0  1  0  0  0
Initial Vol:   102    0    75     0    0     0      0  405    25     34  886     0
ApproachDel:       23.6            xxxxxx            xxxxxx            xxxxxx
------------|---------------||---------------||---------------||---------------|
Approach[northbound][lanes=1][control=Stop Sign]
Signal Warrant Rule #1: [vehicle-hours=1.2]
   FAIL - Vehicle-hours less than 4 for one lane approach.
Signal Warrant Rule #2: [approach volume=177]
   SUCCEED - Approach volume greater than or equal to 100 for one lane approach.
Signal Warrant Rule #3: [approach count=3][total volume=1527]
   SUCCEED - Total volume greater than or equal to 650 for intersection
             with less than four approaches.
-------------------------------------------------------------------------------
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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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a rigorous and complete traffic signal warrant analysis by the responsible
jurisdiction.  Consideration of the other signal warrants, which is beyond
the scope of this software, may yield different results.
                Peak Hour Volume Signal Warrant Report [Urban]
*******************************************************************************
Intersection #1 Ranchero Way/Williams Road
*******************************************************************************
Future Volume Alternative: Peak Hour Warrant Met
------------|---------------||---------------||---------------||---------------|
Approach:       North Bound       South Bound       East Bound       West Bound
Movement:     L  -  T  -  R     L  -  T  -  R     L  -  T  -  R     L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:         Stop Sign         Stop Sign       Uncontrolled     Uncontrolled
Lanes:         0  0  1! 0  0     0  0  0  0  0     0  0  0  1  0     0  1  0  0  0
Initial Vol:   102    0    75     0    0     0      0  405    25     34  886     0
------------|---------------||---------------||---------------||---------------|
Major Street Volume:             1350
Minor Approach Volume:           177
Minor Approach Volume Threshold: 139
-------------------------------------------------------------------------------
SIGNAL WARRANT DISCLAIMER
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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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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.
```
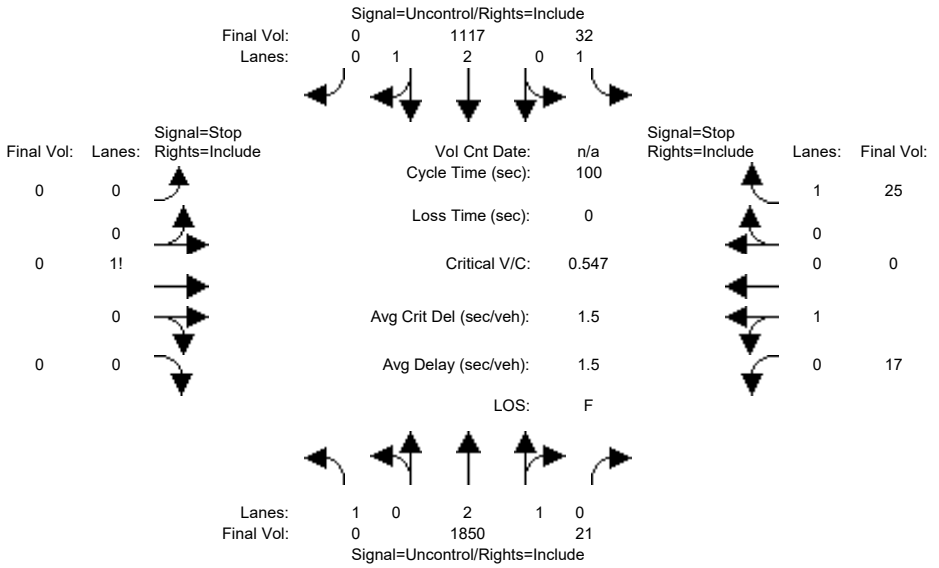

Level Of Service Computation Report
2000 HCM Unsignalized (Future Volume Alternative)
Cumulative AM

Intersection #2: Saratoga Avenue/Piper Drive




```
Street Name:         Saratoga Avenue                  Piper Drive
Approach:       North Bound      South Bound      East Bound       West Bound
Movement:     L  -  T  -  R    L  -  T  -  R    L  -  T  -  R    L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Volume Module:
Base Vol:       0 1850    21     32 1117     0      0     0     0     17     0    25
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 1850    21     32 1117     0      0     0     0     17     0    25
Added Vol:      0     0     0      0     0     0      0     0     0      0     0     0
PasserByVol:    0     0     0      0     0     0      0     0     0      0     0     0
Initial Fut:    0 1850    21     32 1117     0      0     0     0     17     0    25
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 1850    21     32 1117     0      0     0     0     17     0    25
Reduct Vol:     0     0     0      0     0     0      0     0     0      0     0     0
FinalVolume:    0 1850    21     32 1117     0      0     0     0     17     0    25
------------|---------------||---------------||---------------||---------------|
Critical Gap Module:
Critical Gp:xxxxx xxxx xxxxx   4.1 xxxx xxxxx   7.5  6.5   6.9   6.8  6.5   6.9
FollowUpTim:xxxxx xxxx xxxxx   2.2 xxxx xxxxx   3.5  4.0   3.3   3.5  4.0   3.3
------------|---------------||---------------||---------------||---------------|
Capacity Module:
Cnflict Vol: xxxx xxxx xxxxx  1871 xxxx xxxxx  1798 3052   372  2297 3042   627
Potent Cap.: xxxx xxxx xxxxx   326 xxxx xxxxx    51   13   631    34   13   431
Move Cap.:   xxxx xxxx xxxxx   326 xxxx xxxxx    45   12   631    31   12   431
Volume/Cap:  xxxx xxxx  xxxx  0.10 xxxx  xxxx  0.00 0.00  0.00  0.00 0.55 0.00  0.06
------------|---------------||---------------||---------------||---------------|
Level Of Service Module:
2Way95thQ:   xxxx xxxx xxxxx   0.3 xxxx xxxxx  xxxx xxxx xxxxx  xxxx xxxx   0.2
Control Del:xxxxx xxxx xxxxx  17.2 xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx  13.9
LOS by Move:    *    *     *     C    *     *     *    *     *     *    *     B
Movement:     LT - LTR - RT    LT - LTR - RT    LT - LTR - RT    LT - LTR - RT
Shared Cap.: xxxx xxxx xxxxx  xxxx xxxx xxxxx  xxxx    0 xxxxx    31 xxxx xxxxx
SharedQueue:xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx   1.8 xxxx xxxxx
Shrd ConDel:xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx 216.3 xxxx xxxxx
Shared LOS:     *    *     *     *    *     *     *    *     *     F    *     *
ApproachDel:    xxxxxx           xxxxxx           xxxxxx              95.8
ApproachLOS:         *                *                *                 F
Note: Queue reported is the number of cars per lane.
-----------|---------------|---------------|---------------|---------------|
HevVeh:             0%              0%              0%              0%
Grade:              0%              0%              0%              0%
Peds/Hour:          0               0               0               0
Pedestrian Walk Speed: 4.00 feet/sec
LaneWidth:       12 feet         12 feet         12 feet         12 feet
Time Period: 0.25 hour
Upstream Signals:
Link Index:                      #42
Dist(miles):                     0.000
Speed (mph):                      0.00
SignalIndex:                     #3793
Cycle Time:                          0 secs
InitVolume:                    0     0
Saturation:                    0     0
ArrivalType:                   0     0
G/C:                        0.00  0.00
*** Computation 1: Time for Queue to Clear at Each Upstream Intersection
P:                          0.000 0.000
gq1:                         0.00  0.00
gq2:                         0.00  0.00
gq:                          0.00  0.00
*** Computation 2: Time Intersection Blocked Because of Upstream Platoons
alpha:                           0.000
beta:                            0.000
ta (secs):                       0.000
F:                               0.000
f:                          0.000 0.000
vcmax:                         0     0
vcg:                           0     0
vcmin:                         0     0
tp:                          0.0   0.0
p:                               0.000
*** Computation 3: Platoon Event Periods
pdom/psubo:      0.000/0.000/Unconstrained
*** Computation 4: Conflicting Flows During Each Unblocked Period
InitCnflVol:   0 xxxxx xxxxx 1871 xxxxx xxxxx 1798  3052   372 2297  3042   627
AdjCnflVol:    0 xxxxx xxxxx 1871 xxxxx xxxxx 1798  3052   372 2297  3042   627
UpstreamAdj:1.00 x.xxx x.xxx 1.00 x.xxx x.xxx 1.00 1.000 1.000 1.00 1.000 1.000
ConflictVol:   0 xxxxx xxxxx 1871 xxxxx xxxxx 1798  3052   372 2297  3042   627
*** Computation 5: Capacity for Subject Movement During Unblocked Period
InitPotCap: 1636 xxxxx xxxxx  326 xxxxx xxxxx   51    13   631   34    13   431
```

```
UpstreamAdj:1.00 x.xxx x.xxx 1.00 x.xxx x.xxx 1.00 1.000 1.000 1.00 1.000 1.000
Potent Cap.:1636 xxxxx xxxxx  326 xxxxx xxxxx   51    13   631   34    13   431
                    Peak Hour Delay Signal Warrant Report
*******************************************************************************
Intersection #2 Saratoga Avenue/Piper Drive
*******************************************************************************
Future Volume Alternative: Peak Hour Warrant NOT Met
------------|---------------||---------------||---------------||---------------|
Approach:       North Bound      South Bound       East Bound       West Bound
Movement:     L  -  T  -  R    L  -  T  -  R    L  -  T  -  R    L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:       Uncontrolled     Uncontrolled      Stop Sign        Stop Sign
Lanes:        1  0  2  1  0    1  0  2  1  0    0  0  1! 0  0    0  1  0  0  1
Initial Vol:    0 1850    21    32 1117     0     0    0     0    17    0    25
ApproachDel:    xxxxxx           xxxxxx           xxxxxx             95.8
------------|---------------||---------------||---------------||---------------|
Approach[westbound][lanes=2][control=Stop Sign]
Signal Warrant Rule #1: [vehicle-hours=1.1]
   FAIL - Vehicle-hours less than 5 for two or more lane approach.
Signal Warrant Rule #2: [approach volume=42]
   FAIL - Approach volume less than 150 for two or more lane approach.
Signal Warrant Rule #3: [approach count=3][total volume=3062]
   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 #2 Saratoga Avenue/Piper Drive
*******************************************************************************
Future Volume Alternative: Peak Hour Warrant NOT Met
------------|---------------||---------------||---------------||---------------|
Approach:       North Bound      South Bound       East Bound       West Bound
Movement:     L  -  T  -  R    L  -  T  -  R    L  -  T  -  R    L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:       Uncontrolled     Uncontrolled      Stop Sign        Stop Sign
Lanes:        1  0  2  1  0    1  0  2  1  0    0  0  1! 0  0    0  1  0  0  1
Initial Vol:    0 1850    21    32 1117     0     0    0     0    17    0    25
------------|---------------||---------------||---------------||---------------|
Major Street Volume:              3020
Minor Approach Volume:            42
Minor Approach Volume Threshold: -101 [less than minimum of 150]
-------------------------------------------------------------------------------
SIGNAL WARRANT DISCLAIMER
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"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.
```
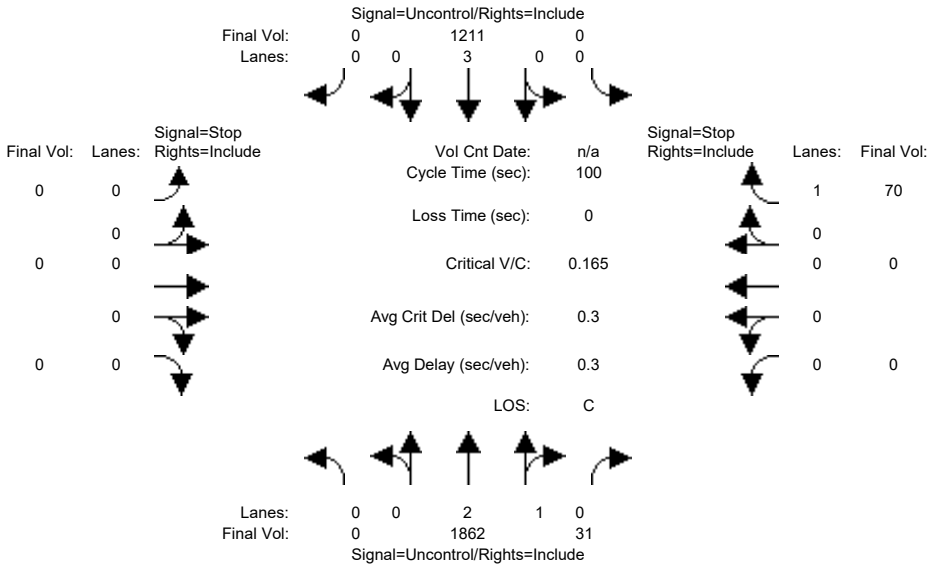


Level Of Service Computation Report
2000 HCM Unsignalized (Future Volume Alternative)
Cumulative AM

Intersection #3: Saratoga Avenue/Mitzi Drive




```
Street Name:         Saratoga Avenue                    Mitzi Drive
Approach:       North Bound      South Bound      East Bound       West Bound
Movement:     L  -  T  -  R    L  -  T  -  R    L  -  T  -  R    L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Volume Module:
Base Vol:       0 1862    31     0 1211     0     0     0     0     0     0    70
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 1862    31     0 1211     0     0     0     0     0     0    70
Added Vol:      0     0     0     0     0     0     0     0     0     0     0     0
PasserByVol:    0     0     0     0     0     0     0     0     0     0     0     0
Initial Fut:    0 1862    31     0 1211     0     0     0     0     0     0    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:     0 1862    31     0 1211     0     0     0     0     0     0    70
Reduct Vol:     0     0     0     0     0     0     0     0     0     0     0     0
FinalVolume:    0 1862    31     0 1211     0     0     0     0     0     0    70
------------|---------------||---------------||---------------||---------------|
Critical Gap Module:
Critical Gp:xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx   6.9
FollowUpTim:xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx   3.3
------------|---------------||---------------||---------------||---------------|
Capacity Module:
Cnflict Vol: xxxx xxxx xxxxx  xxxx xxxx xxxxx  xxxx xxxx xxxxx  xxxx xxxx   636
Potent Cap.: xxxx xxxx xxxxx  xxxx xxxx xxxxx  xxxx xxxx xxxxx  xxxx xxxx   425
Move Cap.:   xxxx xxxx xxxxx  xxxx xxxx xxxxx  xxxx xxxx xxxxx  xxxx xxxx   425
Volume/Cap:  xxxx xxxx  xxxx  xxxx xxxx  xxxx  xxxx xxxx  xxxx  xxxx xxxx  0.16
------------|---------------||---------------||---------------||---------------|
Level Of Service Module:
2Way95thQ:   xxxx xxxx xxxxx  xxxx xxxx xxxxx  xxxx xxxx xxxxx  xxxx xxxx   0.6
Control Del:xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx  15.1
LOS by Move:    *     *     *     *     *     *     *     *     *     *     *     C
Movement:     LT - LTR - RT    LT - LTR - RT    LT - LTR - RT    LT - LTR - RT
Shared Cap.: xxxx xxxx xxxxx  xxxx xxxx xxxxx  xxxx xxxx xxxxx  xxxx xxxx xxxxx
SharedQueue:xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx
Shrd ConDel:xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx
Shared LOS:     *     *     *     *     *     *     *     *     *     *     *     *
ApproachDel:    xxxxxx           xxxxxx           xxxxxx             15.1
ApproachLOS:         *                *                *                C
Note: Queue reported is the number of cars per lane.
-----------|---------------|---------------|---------------|---------------|
HevVeh:             0%              0%              0%              0%
Grade:              0%              0%              0%              0%
Peds/Hour:          0               0               0               0
Pedestrian Walk Speed: 4.00 feet/sec
LaneWidth:       12 feet         12 feet         12 feet         12 feet
Time Period: 0.25 hour
Upstream Signals:
Link Index:                      #42
Dist(miles):                     0.000
Speed (mph):                      0.00
SignalIndex:                     #3793
Cycle Time:                          0 secs
InitVolume:                    0     0
Saturation:                    0     0
ArrivalType:                   0     0
G/C:                        0.00  0.00
*** Computation 1: Time for Queue to Clear at Each Upstream Intersection
P:                          0.000 0.000
gq1:                         0.00  0.00
gq2:                         0.00  0.00
gq:                          0.00  0.00
*** Computation 2: Time Intersection Blocked Because of Upstream Platoons
alpha:                           0.000
beta:                            0.000
ta (secs):                       0.000
F:                               0.000
f:                          0.000 0.000
vcmax:                         0     0
vcg:                           0     0
vcmin:                         0     0
tp:                          0.0   0.0
p:                               0.000
*** Computation 3: Platoon Event Periods
pdom/psubo:      0.000/0.000/Unconstrained
*** Computation 4: Conflicting Flows During Each Unblocked Period
InitCnflVol:   0 xxxxx xxxxx    0 xxxxx xxxxx 1832  3104   404 2281  3089   636
AdjCnflVol:    0 xxxxx xxxxx    0 xxxxx xxxxx 1832  3104   404 2281  3089   636
UpstreamAdj:1.00 x.xxx x.xxx 1.00 x.xxx x.xxx 1.00 1.000 1.000 1.00 1.000 1.000
ConflictVol:   0 xxxxx xxxxx    0 xxxxx xxxxx 1832  3104   404 2281  3089   636
*** Computation 5: Capacity for Subject Movement During Unblocked Period
InitPotCap: 1636 xxxxx xxxxx 1636 xxxxx xxxxx   48    12   602   34    12   425
```

```
UpstreamAdj:1.00 x.xxx x.xxx 1.00 x.xxx x.xxx 1.00 1.000 1.000 1.00 1.000 1.000
Potent Cap.:1636 xxxxx xxxxx 1636 xxxxx xxxxx   48    12   602   34    12   425
                    Peak Hour Delay Signal Warrant Report
*******************************************************************************
Intersection #3 Saratoga Avenue/Mitzi Drive
*******************************************************************************
Future Volume Alternative: Peak Hour Warrant NOT Met
------------|---------------||---------------||---------------||---------------|
Approach:       North Bound      South Bound       East Bound       West Bound
Movement:     L  -  T  -  R    L  -  T  -  R    L  -  T  -  R    L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:       Uncontrolled     Uncontrolled      Stop Sign        Stop Sign
Lanes:        0  0  2  1  0    0  0  3  0  0    0  0  0  0  0    0  0  0  0  1
Initial Vol:    0 1862    31     0 1211     0     0    0     0     0    0    70
ApproachDel:    xxxxxx           xxxxxx           xxxxxx             15.1
------------|---------------||---------------||---------------||---------------|
Approach[westbound][lanes=1][control=Stop Sign]
Signal Warrant Rule #1: [vehicle-hours=0.3]
   FAIL - Vehicle-hours less than 4 for one lane approach.
Signal Warrant Rule #2: [approach volume=70]
   FAIL - Approach volume less than 100 for one lane approach.
Signal Warrant Rule #3: [approach count=3][total volume=3174]
   SUCCEED - Total volume greater than or equal to 650 for intersection
             with less than four approaches.
-------------------------------------------------------------------------------
SIGNAL WARRANT DISCLAIMER
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"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 #3 Saratoga Avenue/Mitzi Drive
*******************************************************************************
Future Volume Alternative: Peak Hour Warrant NOT Met
------------|---------------||---------------||---------------||---------------|
Approach:       North Bound      South Bound       East Bound       West Bound
Movement:     L  -  T  -  R    L  -  T  -  R    L  -  T  -  R    L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:       Uncontrolled     Uncontrolled      Stop Sign        Stop Sign
Lanes:        0  0  2  1  0    0  0  3  0  0    0  0  0  0  0    0  0  0  0  1
Initial Vol:    0 1862    31     0 1211     0     0    0     0     0    0    70
------------|---------------||---------------||---------------||---------------|
Major Street Volume:             3104
Minor Approach Volume:           70
Minor Approach Volume Threshold: -105 [less than minimum of 100]
-------------------------------------------------------------------------------
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.
```
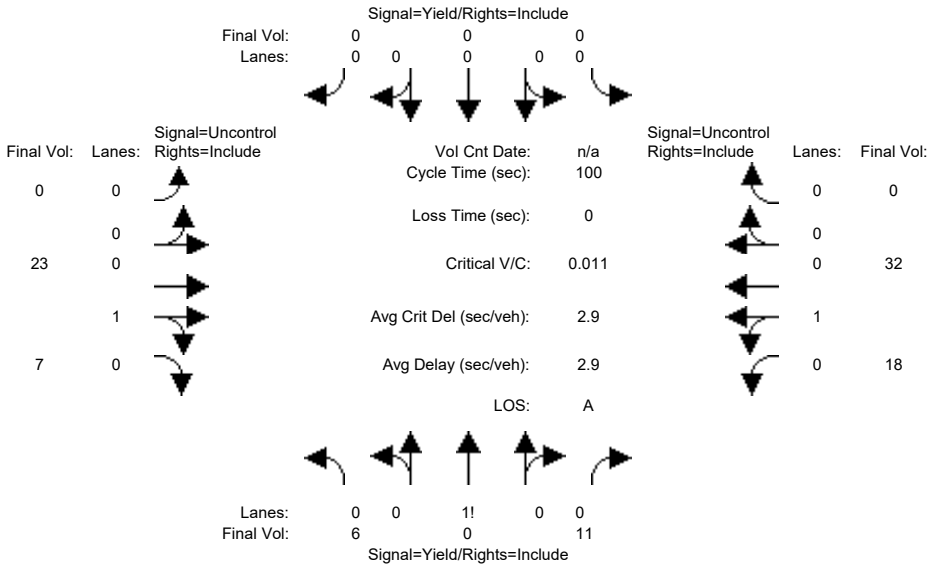


Level Of Service Computation Report
2000 HCM Unsignalized (Future Volume Alternative)
Cumulative AM

Intersection #4: Mitzi Drive/Piper Drive




```
Street Name:            Mitzi Drive                    Piper Drive
Approach:       North Bound      South Bound      East Bound       West Bound
Movement:     L  -  T  -  R    L  -  T  -  R    L  -  T  -  R    L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Volume Module:
Base Vol:       6     0    11      0     0     0      0    23      7    18    32     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:    6     0    11      0     0     0      0    23      7    18    32     0
Added Vol:      0     0     0      0     0     0      0     0      0     0     0     0
PasserByVol:    0     0     0      0     0     0      0     0      0     0     0     0
Initial Fut:    6     0    11      0     0     0      0    23      7    18    32     0
User Adj:    1.00  1.00  1.00   1.00  1.00  1.00   1.00  1.00   1.00  1.00  1.00  1.00
PHF Adj:     1.00  1.00  1.00   1.00  1.00  1.00   1.00  1.00   1.00  1.00  1.00  1.00
PHF Volume:     6     0    11      0     0     0      0    23      7    18    32     0
Reduct Vol:     0     0     0      0     0     0      0     0      0     0     0     0
FinalVolume:    6     0    11      0     0     0      0    23      7    18    32     0
------------|---------------||---------------||---------------||---------------|
Critical Gap Module:
Critical Gp:  6.4   6.5   6.2 xxxxx xxxx xxxxx xxxxx xxxx xxxxx   4.1 xxxx xxxxx
FollowUpTim:  3.5   4.0   3.3 xxxxx xxxx xxxxx xxxxx xxxx xxxxx   2.2 xxxx xxxxx
------------|---------------||---------------||---------------||---------------|
Capacity Module:
Cnflict Vol:   95    95    27  xxxx xxxx xxxxx  xxxx xxxx xxxxx    30 xxxx xxxxx
Potent Cap.:  910   799  1055  xxxx xxxx xxxxx  xxxx xxxx xxxxx  1596 xxxx xxxxx
Move Cap.:    902   790  1055  xxxx xxxx xxxxx  xxxx xxxx xxxxx  1596 xxxx xxxxx
Volume/Cap:  0.01  0.00  0.01  xxxx xxxx  xxxx  xxxx xxxx  xxxx  0.01 xxxx  xxxx
------------|---------------||---------------||---------------||---------------|
Level Of Service Module:
2Way95thQ:   xxxx xxxx xxxxx  xxxx xxxx xxxxx  xxxx xxxx xxxxx   0.0 xxxx xxxxx
Control Del:xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx   7.3 xxxx xxxxx
LOS by Move:    *     *     *      *     *     *      *     *     *     A     *     *
Movement:     LT - LTR - RT    LT - LTR - RT    LT - LTR - RT    LT - LTR - RT
Shared Cap.: xxxx  995 xxxxx  xxxx xxxx xxxxx  xxxx xxxx xxxxx  xxxx xxxx xxxxx
SharedQueue:xxxxx  0.1 xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx   0.0 xxxx xxxxx
Shrd ConDel:xxxxx  8.7 xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx   7.3 xxxx xxxxx
Shared LOS:     *     A     *      *     *     *      *     *     A     *     *
ApproachDel:       8.7           xxxxxx           xxxxxx           xxxxxx
ApproachLOS:         A              *                *                *
Note: Queue reported is the number of cars per lane.
-----------|---------------|---------------|---------------|---------------|
HevVeh:              0%              0%              0%              0%
Grade:               0%              0%              0%              0%
Peds/Hour:           0               0               0               0
Pedestrian Walk Speed: 4.00 feet/sec
LaneWidth:       12 feet         12 feet         12 feet         12 feet
Time Period: 0.25 hour
                    Peak Hour Delay Signal Warrant Report
*******************************************************************************
Intersection #4 Mitzi Drive/Piper Drive
*******************************************************************************
Future Volume Alternative: Peak Hour Warrant NOT Met
------------|---------------||---------------||---------------||---------------|
Approach:       North Bound      South Bound      East Bound       West Bound
Movement:     L  -  T  -  R    L  -  T  -  R    L  -  T  -  R    L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:        Yield Sign       Yield Sign      Uncontrolled     Uncontrolled
Lanes:        0  0  1! 0  0    0  0  0  0  0    0  0  0  1  0    0  1  0  0  0
Initial Vol:    6     0    11      0     0     0      0    23      7    18    32     0
ApproachDel:       8.7           xxxxxx           xxxxxx           xxxxxx
------------|---------------||---------------||---------------||---------------|
Approach[northbound][lanes=1][control=Yield Sign]
Signal Warrant Rule #1: [vehicle-hours=0.0]
   FAIL - Controller not stop sign.
Signal Warrant Rule #2: [approach volume=17]
   FAIL - Approach volume less than 100 for one lane approach.
Signal Warrant Rule #3: [approach count=3][total volume=97]
   FAIL - Total volume less than 650 for intersection
          with less than four approaches.
-------------------------------------------------------------------------------
SIGNAL WARRANT DISCLAIMER
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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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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 #4 Mitzi Drive/Piper Drive
********************************************************************************
Future Volume Alternative: Peak Hour Warrant NOT Met
------------|---------------||---------------||---------------||---------------|
Approach:       North Bound      South Bound       East Bound       West Bound
Movement:     L  -  T  -  R    L  -  T  -  R    L  -  T  -  R    L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:       Yield Sign       Yield Sign       Uncontrolled     Uncontrolled
Lanes:       0  0  1! 0  0    0  0  0  0  0    0  0  0  1  0    0  1  0  0  0
Initial Vol:    6    0    11     0    0     0     0   23     7    18   32     0
------------|---------------||---------------||---------------||---------------|
Major Street Volume:             80
Minor Approach Volume:           17
Minor Approach Volume Threshold: 893
-------------------------------------------------------------------------------
SIGNAL WARRANT DISCLAIMER
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"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.
```
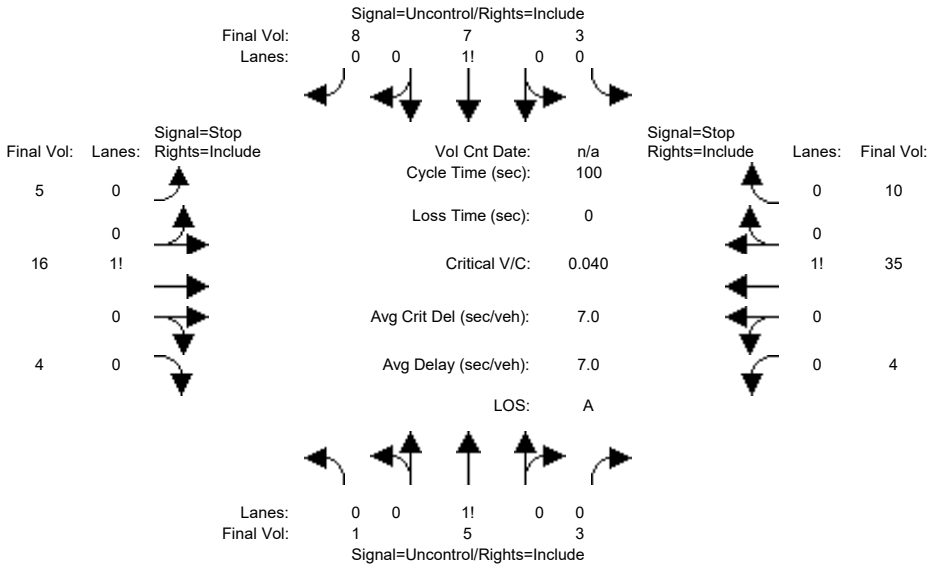


Level Of Service Computation Report
2000 HCM Unsignalized (Future Volume Alternative)
Cumulative AM

Intersection #5: Mitzi Drive/Ranchero Way




```
Street Name:           Mitzi Drive                    Ranchero Way
Approach:      North Bound      South Bound      East Bound       West Bound
Movement:     L  -  T  -  R    L  -  T  -  R    L  -  T  -  R    L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Volume Module:
Base Vol:       1     5     3     3     7     8     5   16     4     4   35    10
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:    1     5     3     3     7     8     5   16     4     4   35    10
Added Vol:      0     0     0     0     0     0     0    0     0     0    0     0
PasserByVol:    0     0     0     0     0     0     0    0     0     0    0     0
Initial Fut:    1     5     3     3     7     8     5   16     4     4   35    10
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:     1     5     3     3     7     8     5   16     4     4   35    10
Reduct Vol:     0     0     0     0     0     0     0    0     0     0    0     0
FinalVolume:    1     5     3     3     7     8     5   16     4     4   35    10
------------|---------------||---------------||---------------||---------------|
Critical Gap Module:
Critical Gp:  4.1 xxxx xxxxx   4.1 xxxx xxxxx   7.1  6.5   6.2   7.1  6.5   6.2
FollowUpTim:  2.2 xxxx xxxxx   2.2 xxxx xxxxx   3.5  4.0   3.3   3.5  4.0   3.3
------------|---------------||---------------||---------------||---------------|
Capacity Module:
Cnflict Vol:   15 xxxx xxxxx     8 xxxx xxxxx    48   27    11    36   30     7
Potent Cap.: 1616 xxxx xxxxx  1625 xxxx xxxxx   958  870  1076   976  867  1082
Move Cap.:   1616 xxxx xxxxx  1625 xxxx xxxxx   918  868  1076   957  865  1082
Volume/Cap:  0.00 xxxx  xxxx  0.00 xxxx  xxxx  0.01 0.02  0.00  0.00 0.04  0.01
------------|---------------||---------------||---------------||---------------|
Level Of Service Module:
2Way95thQ:    0.0 xxxx xxxxx   0.0 xxxx xxxxx  xxxx xxxx xxxxx  xxxx xxxx xxxxx
Control Del:  7.2 xxxx xxxxx   7.2 xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx
LOS by Move:    A     *     *     A     *     *     *    *     *     *    *     *
Movement:     LT - LTR - RT    LT - LTR - RT    LT - LTR - RT    LT - LTR - RT
Shared Cap.: xxxx xxxx xxxxx  xxxx xxxx xxxxx  xxxx  906 xxxxx  xxxx  910 xxxxx
SharedQueue:xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx  0.1 xxxxx xxxxx  0.2 xxxxx
Shrd ConDel:xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx  9.1 xxxxx xxxxx  9.2 xxxxx
Shared LOS:     *     *     *     *     *     *     A     *     *     A     *
ApproachDel:    xxxxxx           xxxxxx              9.1              9.2
ApproachLOS:         *                *               A                A
Note: Queue reported is the number of cars per lane.
-----------|---------------|---------------|---------------|---------------|
HevVeh:             0%              0%              0%              0%
Grade:              0%              0%              0%              0%
Peds/Hour:          0               0               0               0
Pedestrian Walk Speed: 4.00 feet/sec
LaneWidth:       12 feet         12 feet         12 feet         12 feet
Time Period: 0.25 hour
                    Peak Hour Delay Signal Warrant Report
*******************************************************************************
Intersection #5 Mitzi Drive/Ranchero Way
*******************************************************************************
Future Volume Alternative: Peak Hour Warrant NOT Met
------------|---------------||---------------||---------------||---------------|
Approach:      North Bound      South Bound      East Bound       West Bound
Movement:     L  -  T  -  R    L  -  T  -  R    L  -  T  -  R    L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:       Uncontrolled     Uncontrolled      Stop Sign        Stop Sign
Lanes:        0  0  1! 0  0    0  0  1! 0  0    0  0  1! 0  0    0  0  1! 0  0
Initial Vol:    1     5     3     3     7     8     5   16     4     4   35    10
ApproachDel:    xxxxxx           xxxxxx              9.1              9.2
------------|---------------||---------------||---------------||---------------|
Approach[eastbound][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=25]
   FAIL - Approach volume less than 100 for one lane approach.
Signal Warrant Rule #3: [approach count=4][total volume=101]
   FAIL - Total volume less than 650 for intersection
          with less than four approaches.
-------------------------------------------------------------------------------
Approach[westbound][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=49]
   FAIL - Approach volume less than 100 for one lane approach.
Signal Warrant Rule #3: [approach count=4][total volume=101]
   FAIL - Total volume less than 650 for intersection
          with less than four approaches.
-------------------------------------------------------------------------------
SIGNAL WARRANT DISCLAIMER
This peak hour signal warrant analysis should be considered solely as an
"indicator" of the likelihood of an unsignalized intersection warranting
```


a traffic signal in the future. Intersections that exceed this warrant
are probably more likely to meet one or more of the other volume based
signal warrant (such as the 4-hour or 8-hour warrants).

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

Peak Hour Volume Signal Warrant Report [Urban]

****

Intersection #5 Mitzi Drive/Ranchero Way

****

Future Volume Alternative: Peak Hour Warrant NOT Met

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	- T	- R	L	- T	- R	L	- T	- R	L	- T	- R
Control:	Uncontrolled			Uncontrolled			Stop Sign			Stop Sign		
Lanes:	0	0 1! 0	0	0	0 1! 0	0	0	0 1! 0	0	0	0 1! 0	0
Initial Vol:	1	5	3	3	7	8	5	16	4	4	35	10

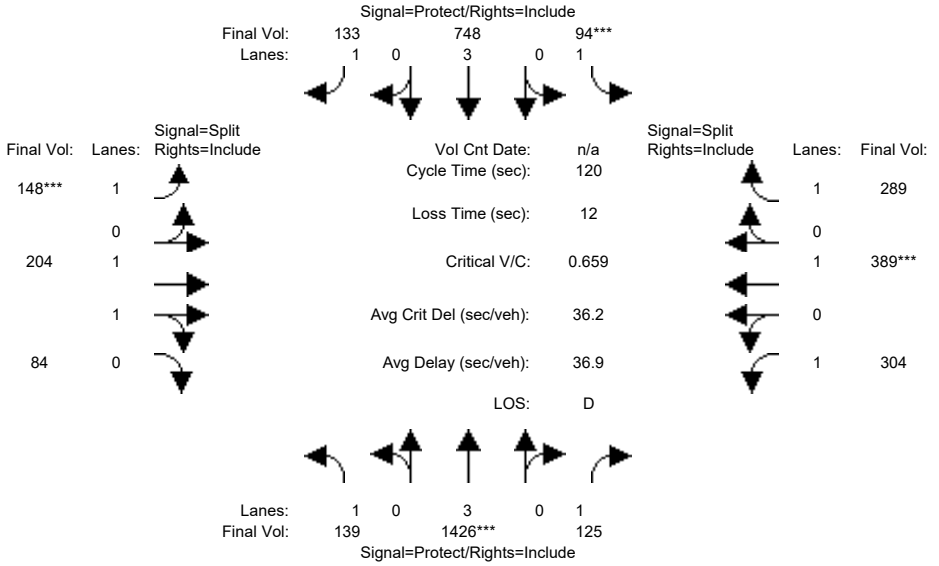
Major Street Volume: 27
Minor Approach Volume: 49
Minor Approach Volume Threshold: 1183

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)
Cumulative AM

Intersection #3793: Saratoga Avenue/Williams Road

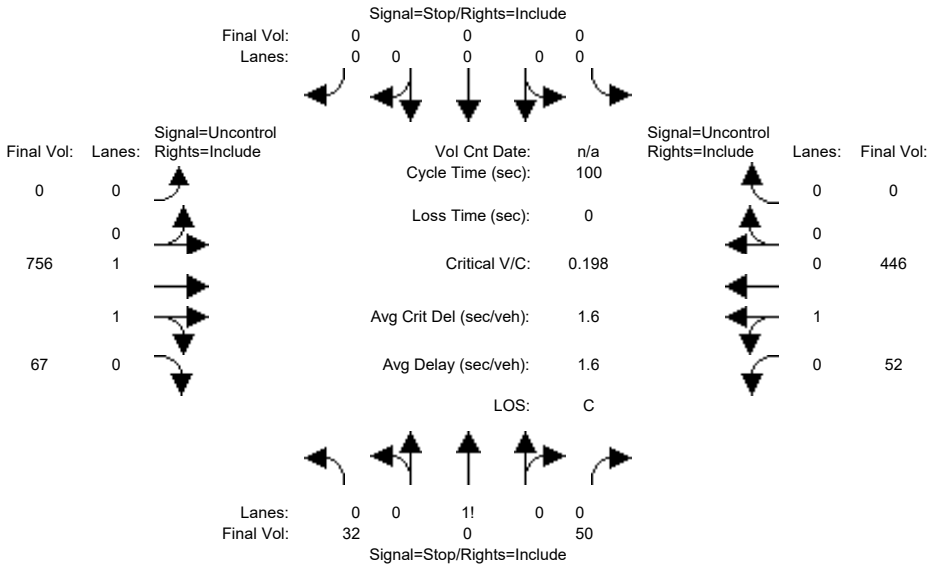


Street Name:	Saratoga Avenue						Williams Road					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	7	10	10	7	10	10	10	10	10	10	10	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module:												
Base Vol:	139	1426	125	94	748	133	148	204	84	304	389	289
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:	139	1426	125	94	748	133	148	204	84	304	389	289
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	139	1426	125	94	748	133	148	204	84	304	389	289
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:	139	1426	125	94	748	133	148	204	84	304	389	289
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	139	1426	125	94	748	133	148	204	84	304	389	289
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:	139	1426	125	94	748	133	148	204	84	304	389	289
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	1.00	0.92	0.92	1.00	0.92	0.92	0.98	0.95	0.92	1.00	0.92
Lanes:	1.00	3.00	1.00	1.00	3.00	1.00	1.00	1.40	0.60	1.00	1.00	1.00
Final Sat.:	1750	5700	1750	1750	5700	1750	1750	2620	1079	1750	1900	1750
Capacity Analysis Module:												
Vol/Sat:	0.08	0.25	0.07	0.05	0.13	0.08	0.08	0.08	0.08	0.17	0.20	0.17
Crit Moves:		****		****			****				****	
Green Time:	20.9	45.5	45.5	9.8	34.5	34.5	15.4	15.4	15.4	37.3	37.3	37.3
Volume/Cap:	0.46	0.66	0.19	0.66	0.46	0.26	0.66	0.61	0.61	0.56	0.66	0.53
Uniform Del:	44.5	30.8	24.9	53.5	35.1	33.0	49.8	49.4	49.4	34.5	35.9	34.2
IncremntDel:	1.1	0.8	0.1	10.8	0.2	0.3	7.0	2.3	2.3	1.3	2.7	1.0
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay 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
Delay/Veh:	45.6	31.6	25.0	64.3	35.3	33.3	56.8	51.7	51.7	35.8	38.6	35.2
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:	45.6	31.6	25.0	64.3	35.3	33.3	56.8	51.7	51.7	35.8	38.6	35.2
LOS by Move:	D	C	C	E	D	C	E	D	D	D	D	D
HCM2k95thQ:	10	26	7	10	14	8	13	12	12	19	23	18

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

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

Intersection #1: Ranchero Way/Williams Road

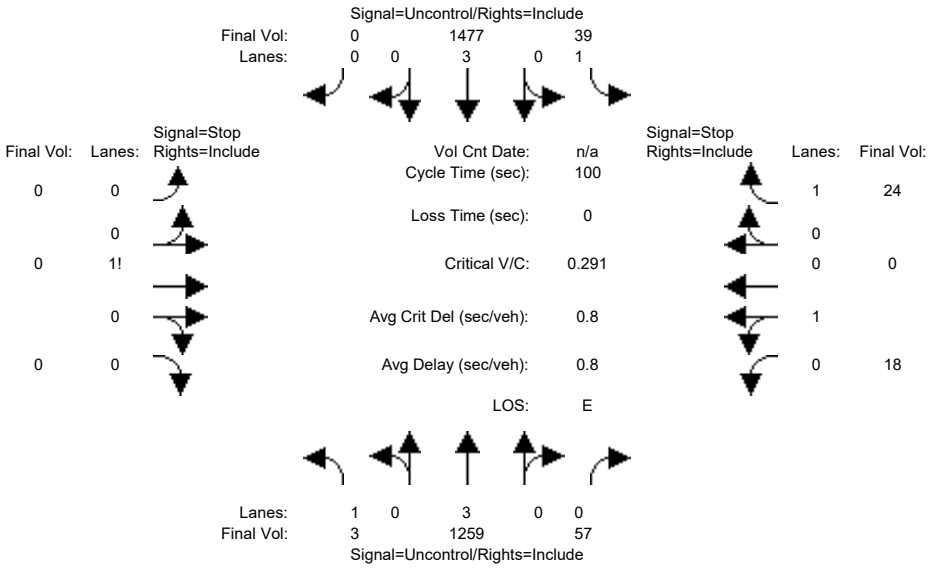



```
Street Name:            Ranchero Way                  Williams Road
Approach:       North Bound      South Bound      East Bound      West Bound
Movement:     L  -  T  -  R    L  -  T  -  R    L  -  T  -  R    L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Volume Module:
Base Vol:      32    0    50     0    0     0     0  756    67    52  446     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:   32    0    50     0    0     0     0  756    67    52  446     0
Added Vol:      0    0     0     0    0     0     0    0     0     0    0     0
PasserByVol:    0    0     0     0    0     0     0    0     0     0    0     0
Initial Fut:   32    0    50     0    0     0     0  756    67    52  446     0
User Adj:    1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
PHF Adj:     1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
PHF Volume:    32    0    50     0    0     0     0  756    67    52  446     0
Reduct Vol:     0    0     0     0    0     0     0    0     0     0    0     0
FinalVolume:   32    0    50     0    0     0     0  756    67    52  446     0
------------|---------------||---------------||---------------||---------------|
Critical Gap Module:
Critical Gp:  6.4  6.5   6.2 xxxxx xxxx xxxxx xxxxx xxxx xxxxx   4.1 xxxx xxxxx
FollowUpTim:  3.5  4.0   3.3 xxxxx xxxx xxxxx xxxxx xxxx xxxxx   2.2 xxxx xxxxx
------------|---------------||---------------||---------------||---------------|
Capacity Module:
Cnflict Vol: 1340 1340   412  xxxx xxxx xxxxx  xxxx xxxx xxxxx   823 xxxx xxxxx
Potent Cap.:  170  154   645  xxxx xxxx xxxxx  xxxx xxxx xxxxx   816 xxxx xxxxx
Move Cap.:    162  144   645  xxxx xxxx xxxxx  xxxx xxxx xxxxx   816 xxxx xxxxx
Volume/Cap:  0.20 0.00  0.08  xxxx xxxx  xxxx  xxxx xxxx  xxxx  0.06 xxxx  xxxx
------------|---------------||---------------||---------------||---------------|
Level Of Service Module:
2Way95thQ:   xxxx xxxx xxxxx  xxxx xxxx xxxxx  xxxx xxxx xxxxx   0.2 xxxx xxxxx
Control Del:xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx   9.7 xxxx xxxxx
LOS by Move:    *    *     *     *    *     *     *    *     *     A    *     *
Movement:     LT - LTR - RT    LT - LTR - RT    LT - LTR - RT    LT - LTR - RT
Shared Cap.: xxxx  297 xxxxx  xxxx xxxx xxxxx  xxxx xxxx xxxxx  xxxx xxxx xxxxx
SharedQueue:xxxxx  1.1 xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx   0.2 xxxx xxxxx
Shrd ConDel:xxxxx 21.6 xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx   9.7 xxxx xxxxx
Shared LOS:     *    C     *     *    *     *     *    *     *     A    *     *
ApproachDel:      21.6           xxxxxx           xxxxxx           xxxxxx
ApproachLOS:         C             *                *                *
Note: Queue reported is the number of cars per lane.
-----------|---------------|---------------|---------------|---------------|
HevVeh:             0%              0%              0%              0%
Grade:              0%              0%              0%              0%
Peds/Hour:          0               0               0               0
Pedestrian Walk Speed: 4.00 feet/sec
LaneWidth:       12 feet         12 feet         12 feet         12 feet
Time Period: 0.25 hour
Upstream Signals:
Link Index:                                      #45
Dist(miles):                                     0.000
Speed (mph):                                      0.00
SignalIndex:                                     #3793
Cycle Time:                                          0 secs
InitVolume:                                    0     0
Saturation:                                    0     0
ArrivalType:                                   0     0
G/C:                                        0.00  0.00
*** Computation 1: Time for Queue to Clear at Each Upstream Intersection
P:                                          0.000 0.000
gq1:                                         0.00  0.00
gq2:                                         0.00  0.00
gq:                                          0.00  0.00
*** Computation 2: Time Intersection Blocked Because of Upstream Platoons
alpha:                                          0.000
beta:                                           0.000
ta (secs):                                      0.000
F:                                              0.000
f:                                          0.000 0.000
vcmax:                                         0     0
vcg:                                           0     0
vcmin:                                         0     0
tp:                                          0.0   0.0
p:                                              0.000
*** Computation 3: Platoon Event Periods
pdom/psubo:                                        0.000/0.000/Unconstrained
*** Computation 4: Conflicting Flows During Each Unblocked Period
InitCnflVol:1340  1340   412  928  1373   446    0 xxxxx xxxxx  823 xxxxx xxxxx
AdjCnflVol: 1340  1340   412  928  1373   446    0 xxxxx xxxxx  823 xxxxx xxxxx
UpstreamAdj:1.00 1.000 1.000 1.00 1.000 1.000 1.00 x.xxx x.xxx 1.00 x.xxx x.xxx
ConflictVol:1340  1340   412  928  1373   446    0 xxxxx xxxxx  823 xxxxx xxxxx
*** Computation 5: Capacity for Subject Movement During Unblocked Period
InitPotCap:  170   154   645  250   147   617 1636 xxxxx xxxxx  816 xxxxx xxxxx
```

```
UpstreamAdj:1.00 1.000 1.000 1.00 1.000 1.000 1.00 x.xxx x.xxx 1.00 x.xxx x.xxx
Potent Cap.: 170   154   645  250   147   617 1636 xxxxx xxxxx  816 xxxxx xxxxx
                    Peak Hour Delay Signal Warrant Report
********************************************************************************
Intersection #1 Ranchero Way/Williams Road
********************************************************************************
Future Volume Alternative: Peak Hour Warrant NOT Met
------------|---------------||---------------||---------------||---------------|
Approach:       North Bound      South Bound       East Bound       West Bound
Movement:     L  -  T  -  R    L  -  T  -  R    L  -  T  -  R    L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:         Stop Sign        Stop Sign       Uncontrolled     Uncontrolled
Lanes:        0  0  1! 0  0    0  0  0  0  0    0  0  1  1  0    0  1  0  0  0
Initial Vol:   32    0    50     0    0     0     0  756    67    52  446     0
ApproachDel:      21.6           xxxxxx           xxxxxx           xxxxxx
------------|---------------||---------------||---------------||---------------|
Approach[northbound][lanes=1][control=Stop Sign]
Signal Warrant Rule #1: [vehicle-hours=0.5]
   FAIL - Vehicle-hours less than 4 for one lane approach.
Signal Warrant Rule #2: [approach volume=82]
   FAIL - Approach volume less than 100 for one lane approach.
Signal Warrant Rule #3: [approach count=3][total volume=1403]
   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 #1 Ranchero Way/Williams Road
********************************************************************************
Future Volume Alternative: Peak Hour Warrant NOT Met
------------|---------------||---------------||---------------||---------------|
Approach:       North Bound      South Bound       East Bound       West Bound
Movement:     L  -  T  -  R    L  -  T  -  R    L  -  T  -  R    L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:         Stop Sign        Stop Sign       Uncontrolled     Uncontrolled
Lanes:        0  0  1! 0  0    0  0  0  0  0    0  0  1  1  0    0  1  0  0  0
Initial Vol:   32    0    50     0    0     0     0  756    67    52  446     0
------------|---------------||---------------||---------------||---------------|
Major Street Volume:             1321
Minor Approach Volume:           82
Minor Approach Volume Threshold: 189
--------------------------------------------------------------------------------
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)
Cumulative PM

Intersection #2: Saratoga Avenue/Piper Drive

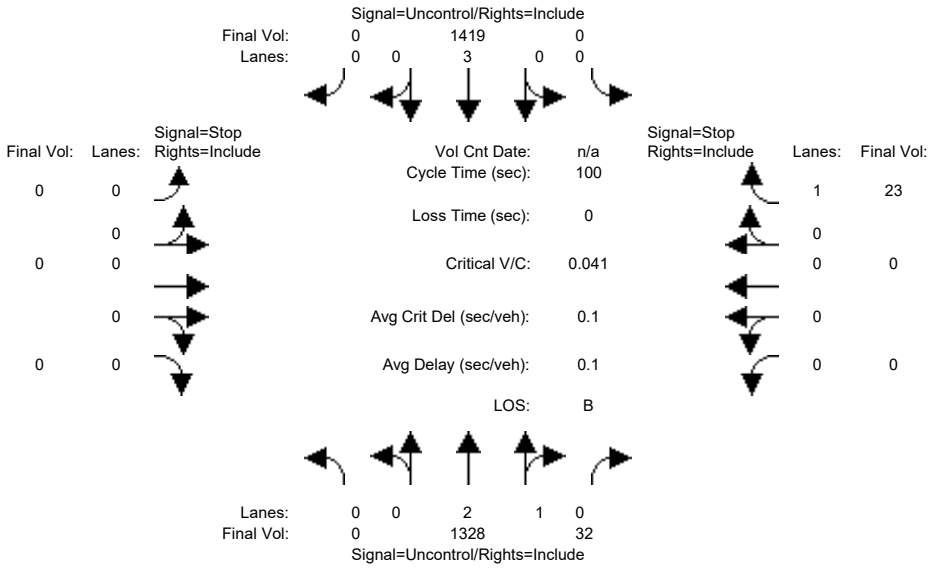



```
Street Name:         Saratoga Avenue                  Piper Drive
Approach:       North Bound      South Bound      East Bound       West Bound
Movement:     L  -  T  -  R    L  -  T  -  R    L  -  T  -  R    L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Volume Module:
Base Vol:       3 1259    57    39 1477     0     0     0     0    18     0    24
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:    3 1259    57    39 1477     0     0     0     0    18     0    24
Added Vol:      0    0     0     0    0     0     0     0     0     0     0     0
PasserByVol:    0    0     0     0    0     0     0     0     0     0     0     0
Initial Fut:    3 1259    57    39 1477     0     0     0     0    18     0    24
User Adj:    1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
PHF Adj:     1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
PHF Volume:     3 1259    57    39 1477     0     0     0     0    18     0    24
Reduct Vol:     0    0     0     0    0     0     0     0     0     0     0     0
FinalVolume:    3 1259    57    39 1477     0     0     0     0    18     0    24
------------|---------------||---------------||---------------||---------------|
Critical Gap Module:
Critical Gp:  4.1 xxxx xxxxx   4.1 xxxx xxxxx   7.5  6.5   6.9   6.8  6.5   6.9
FollowUpTim:  2.2 xxxx xxxxx   2.2 xxxx xxxxx   3.5  4.0   3.3   3.5  4.0   3.3
------------|---------------||---------------||---------------||---------------|
Capacity Module:
Cnflict Vol: 1477 xxxx xxxxx  1316 xxxx xxxxx  1981 2877   492  1864 2849   448
Potent Cap.:  462 xxxx xxxxx   532 xxxx xxxxx    37   17   528    66   17   564
Move Cap.:    462 xxxx xxxxx   532 xxxx xxxxx    34   15   528    62   16   564
Volume/Cap:  0.01 xxxx  xxxx  0.07 xxxx  xxxx  0.00 0.00  0.00  0.29 0.00  0.04
------------|---------------||---------------||---------------||---------------|
Level Of Service Module:
2Way95thQ:    0.0 xxxx xxxxx   0.2 xxxx xxxxx  xxxx xxxx xxxxx  xxxx xxxx   0.1
Control Del: 12.8 xxxx xxxxx  12.3 xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx  11.7
LOS by Move:    B    *     *     B    *     *     *    *     *     *    *     B
Movement:     LT - LTR - RT    LT - LTR - RT    LT - LTR - RT    LT - LTR - RT
Shared Cap.: xxxx xxxx xxxxx  xxxx xxxx xxxxx  xxxx    0 xxxxx    62 xxxx xxxxx
SharedQueue:xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx   1.0 xxxx xxxxx
Shrd ConDel:xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx  85.4 xxxx xxxxx
Shared LOS:     *    *     *     *    *     *     *    *     *     F    *     *
ApproachDel:    xxxxxx           xxxxxx           xxxxxx             43.3
ApproachLOS:         *                *                *                E
Note: Queue reported is the number of cars per lane.
-----------|---------------|---------------|---------------|---------------|
HevVeh:             0%              0%              0%              0%
Grade:              0%              0%              0%              0%
Peds/Hour:          0               0               0               0
Pedestrian Walk Speed: 4.00 feet/sec
LaneWidth:       12 feet         12 feet         12 feet         12 feet
Time Period: 0.25 hour
Upstream Signals:
Link Index:                        #42
Dist(miles):                       0.000
Speed (mph):                        0.00
SignalIndex:                       #3793
Cycle Time:                            0 secs
InitVolume:                      0     0
Saturation:                      0     0
ArrivalType:                     0     0
G/C:                          0.00  0.00
*** Computation 1: Time for Queue to Clear at Each Upstream Intersection
P:                           0.000 0.000
gq1:                          0.00  0.00
gq2:                          0.00  0.00
gq:                           0.00  0.00
*** Computation 2: Time Intersection Blocked Because of Upstream Platoons
alpha:                             0.000
beta:                              0.000
ta (secs):                         0.000
F:                                 0.000
f:                           0.000 0.000
vcmax:                           0     0
vcg:                             0     0
vcmin:                           0     0
tp:                            0.0   0.0
p:                                 0.000
*** Computation 3: Platoon Event Periods
pdom/psubo:      0.000/0.000/Unconstrained
*** Computation 4: Conflicting Flows During Each Unblocked Period
InitCnflVol:1477 xxxxx xxxxx 1316 xxxxx xxxxx 1981  2877   492 1864  2849   448
AdjCnflVol: 1477 xxxxx xxxxx 1316 xxxxx xxxxx 1981  2877   492 1864  2849   448
UpstreamAdj:1.00 x.xxx x.xxx 1.00 x.xxx x.xxx 1.00 1.000 1.000 1.00 1.000 1.000
ConflictVol:1477 xxxxx xxxxx 1316 xxxxx xxxxx 1981  2877   492 1864  2849   448
*** Computation 5: Capacity for Subject Movement During Unblocked Period
InitPotCap:  462 xxxxx xxxxx  532 xxxxx xxxxx   37    17   528   66    17   564
```

```
UpstreamAdj:1.00 x.xxx x.xxx 1.00 x.xxx x.xxx 1.00 1.000 1.000 1.00 1.000 1.000
Potent Cap.: 462 xxxxx xxxxx  532 xxxxx xxxxx   37    17   528   66    17   564
                    Peak Hour Delay Signal Warrant Report
*******************************************************************************
Intersection #2 Saratoga Avenue/Piper Drive
*******************************************************************************
Future Volume Alternative: Peak Hour Warrant NOT Met
------------|---------------||---------------||---------------||---------------|
Approach:       North Bound      South Bound       East Bound       West Bound
Movement:     L  -  T  -  R    L  -  T  -  R    L  -  T  -  R    L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:       Uncontrolled     Uncontrolled      Stop Sign        Stop Sign
Lanes:        1  0  2  1  0    1  0  3  0  0    0  0  1! 0  0    0  1  0  0  1
Initial Vol:    3 1259    57    39 1477     0     0    0     0    18    0    24
ApproachDel:    xxxxxx           xxxxxx           xxxxxx             43.3
------------|---------------||---------------||---------------||---------------|
Approach[westbound][lanes=2][control=Stop Sign]
Signal Warrant Rule #1: [vehicle-hours=0.5]
   FAIL - Vehicle-hours less than 5 for two or more lane approach.
Signal Warrant Rule #2: [approach volume=42]
   FAIL - Approach volume less than 150 for two or more lane approach.
Signal Warrant Rule #3: [approach count=3][total volume=2877]
   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 #2 Saratoga Avenue/Piper Drive
*******************************************************************************
Future Volume Alternative: Peak Hour Warrant NOT Met
------------|---------------||---------------||---------------||---------------|
Approach:       North Bound      South Bound       East Bound       West Bound
Movement:     L  -  T  -  R    L  -  T  -  R    L  -  T  -  R    L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:       Uncontrolled     Uncontrolled      Stop Sign        Stop Sign
Lanes:        1  0  2  1  0    1  0  3  0  0    0  0  1! 0  0    0  1  0  0  1
Initial Vol:    3 1259    57    39 1477     0     0    0     0    18    0    24
------------|---------------||---------------||---------------||---------------|
Major Street Volume:             2835
Minor Approach Volume:           42
Minor Approach Volume Threshold: -74 [less than minimum of 150]
-------------------------------------------------------------------------------
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)
Cumulative PM

Intersection #3: Saratoga Avenue/Mitzi Drive




```
Street Name:         Saratoga Avenue                    Mitzi Drive
Approach:       North Bound      South Bound      East Bound       West Bound
Movement:     L  -  T  -  R    L  -  T  -  R    L  -  T  -  R    L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Volume Module:
Base Vol:       0 1328    32     0 1419     0     0     0     0     0     0    23
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 1328    32     0 1419     0     0     0     0     0     0    23
Added Vol:      0    0     0     0    0     0     0     0     0     0     0     0
PasserByVol:    0    0     0     0    0     0     0     0     0     0     0     0
Initial Fut:    0 1328    32     0 1419     0     0     0     0     0     0    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:     0 1328    32     0 1419     0     0    0     0     0     0    23
Reduct Vol:     0    0     0     0    0     0     0    0     0     0     0     0
FinalVolume:    0 1328    32     0 1419     0     0    0     0     0     0    23
------------|---------------||---------------||---------------||---------------|
Critical Gap Module:
Critical Gp:xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx   6.9
FollowUpTim:xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx   3.3
------------|---------------||---------------||---------------||---------------|
Capacity Module:
Cnflict Vol: xxxx xxxx xxxxx  xxxx xxxx xxxxx  xxxx xxxx xxxxx  xxxx xxxx   459
Potent Cap.: xxxx xxxx xxxxx  xxxx xxxx xxxxx  xxxx xxxx xxxxx  xxxx xxxx   555
Move Cap.:   xxxx xxxx xxxxx  xxxx xxxx xxxxx  xxxx xxxx xxxxx  xxxx xxxx   555
Volume/Cap:  xxxx xxxx  xxxx  xxxx xxxx  xxxx  xxxx xxxx  xxxx  xxxx xxxx  0.04
------------|---------------||---------------||---------------||---------------|
Level Of Service Module:
2Way95thQ:   xxxx xxxx xxxxx  xxxx xxxx xxxxx  xxxx xxxx xxxxx  xxxx xxxx   0.1
Control Del:xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx  11.8
LOS by Move:    *    *     *     *    *     *     *    *     *     *    *     B
Movement:     LT - LTR - RT    LT - LTR - RT    LT - LTR - RT    LT - LTR - RT
Shared Cap.: xxxx xxxx xxxxx  xxxx xxxx xxxxx  xxxx xxxx xxxxx  xxxx xxxx xxxxx
SharedQueue:xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx
Shrd ConDel:xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx
Shared LOS:     *    *     *     *    *     *     *    *     *     *    *     *
ApproachDel:    xxxxxx           xxxxxx           xxxxxx             11.8
ApproachLOS:         *                *                *                B
Note: Queue reported is the number of cars per lane.
-----------|---------------|---------------|---------------|---------------|
HevVeh:             0%              0%              0%              0%
Grade:              0%              0%              0%              0%
Peds/Hour:          0               0               0               0
Pedestrian Walk Speed: 4.00 feet/sec
LaneWidth:       12 feet         12 feet         12 feet         12 feet
Time Period: 0.25 hour
Upstream Signals:
Link Index:                      #42
Dist(miles):                     0.000
Speed (mph):                      0.00
SignalIndex:                     #3793
Cycle Time:                          0 secs
InitVolume:                    0     0
Saturation:                    0     0
ArrivalType:                   0     0
G/C:                        0.00  0.00
*** Computation 1: Time for Queue to Clear at Each Upstream Intersection
P:                          0.000 0.000
gq1:                         0.00  0.00
gq2:                         0.00  0.00
gq:                          0.00  0.00
*** Computation 2: Time Intersection Blocked Because of Upstream Platoons
alpha:                           0.000
beta:                            0.000
ta (secs):                       0.000
F:                               0.000
f:                          0.000 0.000
vcmax:                         0     0
vcg:                           0     0
vcmin:                         0     0
tp:                          0.0   0.0
p:                               0.000
*** Computation 3: Platoon Event Periods
pdom/psubo:      0.000/0.000/Unconstrained
*** Computation 4: Conflicting Flows During Each Unblocked Period
InitCnflVol:   0 xxxxx xxxxx    0 xxxxx xxxxx 1862  2779   473 1817  2763   459
AdjCnflVol:    0 xxxxx xxxxx    0 xxxxx xxxxx 1862  2779   473 1817  2763   459
UpstreamAdj:1.00 x.xxx x.xxx 1.00 x.xxx x.xxx 1.00 1.000 1.000 1.00 1.000 1.000
ConflictVol:   0 xxxxx xxxxx    0 xxxxx xxxxx 1862  2779   473 1817  2763   459
*** Computation 5: Capacity for Subject Movement During Unblocked Period
InitPotCap: 1636 xxxxx xxxxx 1636 xxxxx xxxxx   46    19   543   71    20   555
```

```
UpstreamAdj:1.00 x.xxx x.xxx 1.00 x.xxx x.xxx 1.00 1.000 1.000 1.00 1.000 1.000
Potent Cap.:1636 xxxxx xxxxx 1636 xxxxx xxxxx   46    19   543   71    20   555
                    Peak Hour Delay Signal Warrant Report
*******************************************************************************
Intersection #3 Saratoga Avenue/Mitzi Drive
*******************************************************************************
Future Volume Alternative: Peak Hour Warrant NOT Met
------------|---------------||---------------||---------------||---------------|
Approach:       North Bound      South Bound       East Bound       West Bound
Movement:     L  -  T  -  R    L  -  T  -  R    L  -  T  -  R    L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:       Uncontrolled     Uncontrolled      Stop Sign        Stop Sign
Lanes:        0  0  2  1  0    0  0  3  0  0    0  0  0  0  0    0  0  0  0  1
Initial Vol:    0 1328    32     0 1419     0     0    0     0     0    0    23
ApproachDel:    xxxxxx           xxxxxx           xxxxxx             11.8
------------|---------------||---------------||---------------||---------------|
Approach[westbound][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=23]
   FAIL - Approach volume less than 100 for one lane approach.
Signal Warrant Rule #3: [approach count=3][total volume=2802]
   SUCCEED - Total volume greater than or equal to 650 for intersection
             with less than four approaches.
-------------------------------------------------------------------------------
SIGNAL WARRANT DISCLAIMER
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"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 #3 Saratoga Avenue/Mitzi Drive
*******************************************************************************
Future Volume Alternative: Peak Hour Warrant NOT Met
------------|---------------||---------------||---------------||---------------|
Approach:       North Bound      South Bound       East Bound       West Bound
Movement:     L  -  T  -  R    L  -  T  -  R    L  -  T  -  R    L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:       Uncontrolled     Uncontrolled      Stop Sign        Stop Sign
Lanes:        0  0  2  1  0    0  0  3  0  0    0  0  0  0  0    0  0  0  0  1
Initial Vol:    0 1328    32     0 1419     0     0    0     0     0    0    23
------------|---------------||---------------||---------------||---------------|
Major Street Volume:             2779
Minor Approach Volume:           23
Minor Approach Volume Threshold: -67 [less than minimum of 100]
-------------------------------------------------------------------------------
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.
```
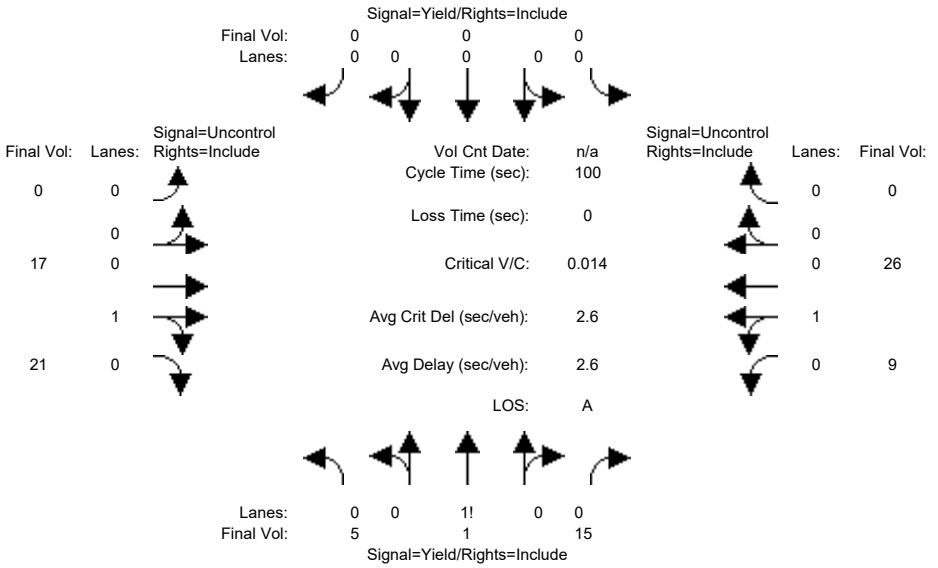


Level Of Service Computation Report
2000 HCM Unsignalized (Future Volume Alternative)
Cumulative PM

Intersection #4: Mitzi Drive/Piper Drive



Street Name:	Mitzi Drive						Piper Drive					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Volume Module:												
Base Vol:	5	1	15	0	0	0	0	17	21	9	26	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:	5	1	15	0	0	0	0	17	21	9	26	0
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	5	1	15	0	0	0	0	17	21	9	26	0
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	5	1	15	0	0	0	0	17	21	9	26	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
FinalVolume:	5	1	15	0	0	0	0	17	21	9	26	0
Critical Gap Module:												
Critical Gp:	6.4	6.5	6.2	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	4.1	xxxx	xxxxx
FollowUpTim:	3.5	4.0	3.3	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	2.2	xxxx	xxxxx
Capacity Module:												
Cnflict Vol:	72	72	28	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	38	xxxx	xxxxx
Potent Cap.:	938	823	1054	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	1585	xxxx	xxxxx
Move Cap.:	934	818	1054	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	1585	xxxx	xxxxx
Volume/Cap:	0.01	0.00	0.01	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	0.01	xxxx	xxxx
Level Of Service Module:												
2Way95thQ:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	0.0	xxxx	xxxxx
Control Del:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	7.3	xxxx	xxxxx
LOS by Move:	*	*	*	*	*	*	*	*	*	A	*	*
Movement:	LT -	LTR -	RT	LT -	LTR -	RT	LT -	LTR -	RT	LT -	LTR -	RT
Shared Cap.:	xxxx	1009	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
SharedQueue:	xxxxx	0.1	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	0.0	xxxx	xxxxx
Shrd ConDel:	xxxxx	8.6	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	7.3	xxxx	xxxxx
Shared LOS:	*	A	*	*	*	*	*	*	*	A	*	*
ApproachDel:		8.6		xxxxxx			xxxxxx			xxxxxx		
ApproachLOS:		A		*			*			*		

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

HevVeh:	0%	0%	0%	0%
Grade:	0%	0%	0%	0%
Peds/Hour:	0	0	0	0

Pedestrian Walk Speed: 4.00 feet/sec

LaneWidth:	12 feet	12 feet	12 feet	12 feet

Time Period: 0.25 hour

Peak Hour Delay Signal Warrant Report

****

Intersection #4 Mitzi Drive/Piper Drive

****

Future Volume Alternative: Peak Hour Warrant NOT Met

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	T	R		L	T	R		L	T	R		L	T	R	
Control:	Yield Sign				Yield Sign				Uncontrolled				Uncontrolled			
Lanes:	0	0	1!	0	0	0	0	0	0	0	0	1	0	0	1	0	0	0
Initial Vol:	5	1	15		0	0	0		0	17	21		9	26	0	
ApproachDel:	8.6				xxxxxx				xxxxxx				xxxxxx			

Approach[northbound][lanes=1][control=Yield Sign]
Signal Warrant Rule #1: [vehicle-hours=0.1]
FAIL - Controller not stop sign.
Signal Warrant Rule #2: [approach volume=21]
FAIL - Approach volume less than 100 for one lane approach.
Signal Warrant Rule #3: [approach count=3][total volume=94]
FAIL - Total volume less than 650 for intersection
with less than four approaches.

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

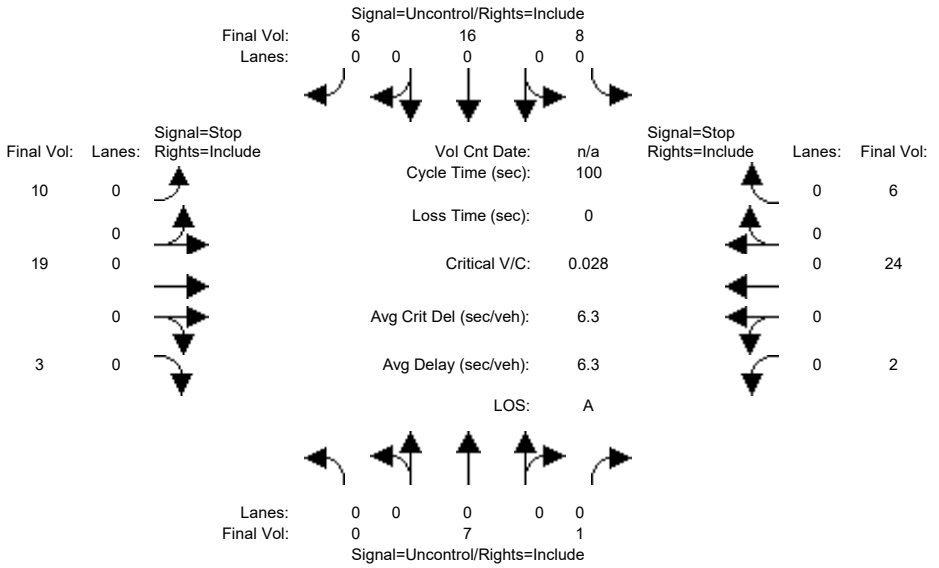
The peak hour warrant analysis in this report is not intended to replace a rigorous and complete traffic signal warrant analysis by the responsible jurisdiction. Consideration of the other signal warrants, which is beyond the scope of this software, may yield different results.

Peak Hour Volume Signal Warrant Report [Urban]

```
*****************************************************************************
Intersection #4 Mitzi Drive/Piper Drive
*****************************************************************************
Future Volume Alternative: Peak Hour Warrant NOT Met
------------|---------------||---------------||---------------||---------------|
Approach:       North Bound      South Bound       East Bound       West Bound
Movement:     L  -  T  -  R    L  -  T  -  R    L  -  T  -  R    L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:       Yield Sign       Yield Sign       Uncontrolled     Uncontrolled
Lanes:       0  0  1! 0  0    0  0  0  0  0    0  0  0  1  0    0  1  0  0  0
Initial Vol:    5    1    15     0    0     0     0   17    21     9   26     0
------------|---------------||---------------||---------------||---------------|
Major Street Volume:             73
Minor Approach Volume:           21
Minor Approach Volume Threshold: 917
-----------------------------------------------------------------------------
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)
Cumulative PM

Intersection #5: Mitzi Drive/Ranchero Way




```
Street Name:           Mitzi Drive                    Ranchero Way
Approach:      North Bound      South Bound      East Bound       West Bound
Movement:     L  -  T  -  R    L  -  T  -  R    L  -  T  -  R    L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Volume Module:
Base Vol:       0     7     1     8    16     6    10    19     3     2    24     6
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     7     1     8    16     6    10    19     3     2    24     6
Added Vol:      0     0     0     0     0     0     0     0     0     0     0     0
PasserByVol:    0     0     0     0     0     0     0     0     0     0     0     0
Initial Fut:    0     7     1     8    16     6    10    19     3     2    24     6
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     7     1     8    16     6    10    19     3     2    24     6
Reduct Vol:     0     0     0     0     0     0     0     0     0     0     0     0
FinalVolume:    0     7     1     8    16     6    10    19     3     2    24     6
------------|---------------||---------------||---------------||---------------|
Critical Gap Module:
Critical Gp:xxxxx xxxx xxxxx   4.1 xxxx xxxxx   7.1  6.5   6.2   7.1  6.5   6.2
FollowUpTim:xxxxx xxxx xxxxx   2.2 xxxx xxxxx   3.5  4.0   3.3   3.5  4.0   3.3
------------|---------------||---------------||---------------||---------------|
Capacity Module:
Cnflict Vol: xxxx xxxx xxxxx     8 xxxx xxxxx    58   43    19    54   46     8
Potent Cap.: xxxx xxxx xxxxx  1625 xxxx xxxxx   944  853  1065   950  850  1081
Move Cap.:   xxxx xxxx xxxxx  1625 xxxx xxxxx   915  849  1065   927  846  1081
Volume/Cap:  xxxx xxxx  xxxx  0.00 xxxx  xxxx  0.01 0.02  0.00  0.00 0.03  0.01
------------|---------------||---------------||---------------||---------------|
Level Of Service Module:
2Way95thQ:   xxxx xxxx xxxxx   0.0 xxxx xxxxx  xxxx xxxx xxxxx  xxxx xxxx xxxxx
Control Del:xxxxx xxxx xxxxx   7.2 xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx
LOS by Move:    *     *     *     A     *     *     *     *     *     *     *     *
Movement:     LT - LTR - RT    LT - LTR - RT    LT - LTR - RT    LT - LTR - RT
Shared Cap.: xxxx xxxx xxxxx  xxxx xxxx xxxxx  xxxx  886 xxxxx  xxxx  887 xxxxx
SharedQueue:xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx  0.1 xxxxx xxxxx  0.1 xxxxx
Shrd ConDel:xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx  9.2 xxxxx xxxxx  9.2 xxxxx
Shared LOS:     *     *     *     *     *     *     A     *     *     A     *
ApproachDel:    xxxxxx           xxxxxx               9.2               9.2
ApproachLOS:         *                *                 A                 A
Note: Queue reported is the number of cars per lane.
-----------|---------------|---------------|---------------|---------------|
HevVeh:             0%              0%              0%              0%
Grade:              0%              0%              0%              0%
Peds/Hour:          0               0               0               0
Pedestrian Walk Speed: 4.00 feet/sec
LaneWidth:       12 feet         12 feet         12 feet         12 feet
Time Period: 0.25 hour
                    Peak Hour Delay Signal Warrant Report
*******************************************************************************
Intersection #5 Mitzi Drive/Ranchero Way
*******************************************************************************
Future Volume Alternative: Peak Hour Warrant NOT Met
------------|---------------||---------------||---------------||---------------|
Approach:      North Bound      South Bound      East Bound       West Bound
Movement:     L  -  T  -  R    L  -  T  -  R    L  -  T  -  R    L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:       Uncontrolled     Uncontrolled      Stop Sign        Stop Sign
Lanes:        0  0  0  1  0    0  0  1! 0  0    0  0  1! 0  0    0  0  1! 0  0
Initial Vol:    0     7     1     8    16     6    10    19     3     2    24     6
ApproachDel:    xxxxxx           xxxxxx               9.2               9.2
------------|---------------||---------------||---------------||---------------|
Approach[eastbound][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=32]
   FAIL - Approach volume less than 100 for one lane approach.
Signal Warrant Rule #3: [approach count=4][total volume=102]
   FAIL - Total volume less than 650 for intersection
          with less than four approaches.
-------------------------------------------------------------------------------
Approach[westbound][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=32]
   FAIL - Approach volume less than 100 for one lane approach.
Signal Warrant Rule #3: [approach count=4][total volume=102]
   FAIL - Total volume less than 650 for intersection
          with less than four approaches.
-------------------------------------------------------------------------------
SIGNAL WARRANT DISCLAIMER
This peak hour signal warrant analysis should be considered solely as an
"indicator" of the likelihood of an unsignalized intersection warranting
```


a traffic signal in the future. Intersections that exceed this warrant
are probably more likely to meet one or more of the other volume based
signal warrant (such as the 4-hour or 8-hour warrants).

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

Peak Hour Volume Signal Warrant Report [Urban]

****

Intersection #5 Mitzi Drive/Ranchero Way

****

Future Volume Alternative: Peak Hour Warrant NOT Met

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	- T	- R	L	- T	- R	L	- T	- R	L	- T	- R
Control:	Uncontrolled			Uncontrolled			Stop Sign			Stop Sign		
Lanes:	0 0	0 1	0	0 0	1! 0	0	0 0	1! 0	0	0 0	1! 0	0
Initial Vol:	0	7	1	8	16	6	10	19	3	2	24	6

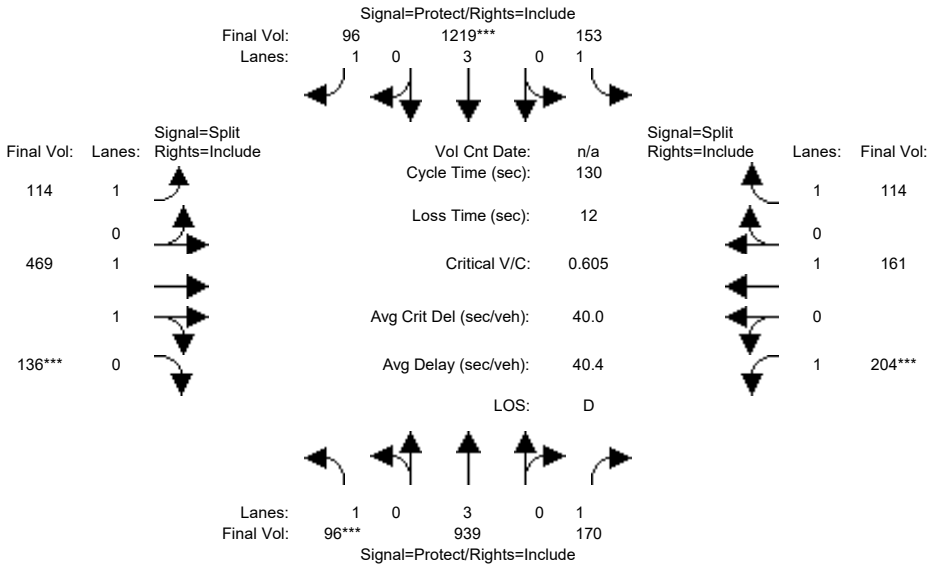
Major Street Volume: 38
Minor Approach Volume: 32
Minor Approach Volume Threshold: 1092

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)
Cumulative PM

Intersection #3793: Saratoga Avenue/Williams Road



Street Name:	Saratoga Avenue						Williams Road					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	7	10	10	7	10	10	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:												
Base Vol:	96	939	170	153	1219	96	114	469	136	204	161	114
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:	96	939	170	153	1219	96	114	469	136	204	161	114
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	96	939	170	153	1219	96	114	469	136	204	161	114
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:	96	939	170	153	1219	96	114	469	136	204	161	114
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	96	939	170	153	1219	96	114	469	136	204	161	114
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:	96	939	170	153	1219	96	114	469	136	204	161	114
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	1.00	0.92	0.92	1.00	0.92	0.92	0.98	0.95	0.92	1.00	0.92
Lanes:	1.00	3.00	1.00	1.00	3.00	1.00	1.00	1.54	0.46	1.00	1.00	1.00
Final Sat.:	1750	5700	1750	1750	5700	1750	1750	2868	832	1750	1900	1750
Capacity Analysis Module:												
Vol/Sat:	0.05	0.16	0.10	0.09	0.21	0.05	0.07	0.16	0.16	0.12	0.08	0.07
Crit Moves:	****				****				****	****		
Green Time:	11.8	37.7	37.7	20.0	46.0	46.0	35.2	35.2	35.2	25.1	25.1	25.1
Volume/Cap:	0.60	0.57	0.33	0.57	0.60	0.16	0.24	0.60	0.60	0.60	0.44	0.34
Uniform Del:	56.9	39.2	36.3	51.0	34.5	28.7	37.0	41.4	41.4	47.9	46.3	45.3
IncremntDel:	6.5	0.5	0.4	2.8	0.5	0.1	0.3	1.1	1.1	3.1	0.8	0.6
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay 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
Delay/Veh:	63.3	39.7	36.6	53.8	35.1	28.8	37.3	42.4	42.4	51.0	47.1	45.9
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	63.3	39.7	36.6	53.8	35.1	28.8	37.3	42.4	42.4	51.0	47.1	45.9
LOS by Move:	E	D	D	D	D	C	D	D	D	D	D	D
HCM2k95thQ:	10	20	11	13	24	6	8	20	20	16	11	9

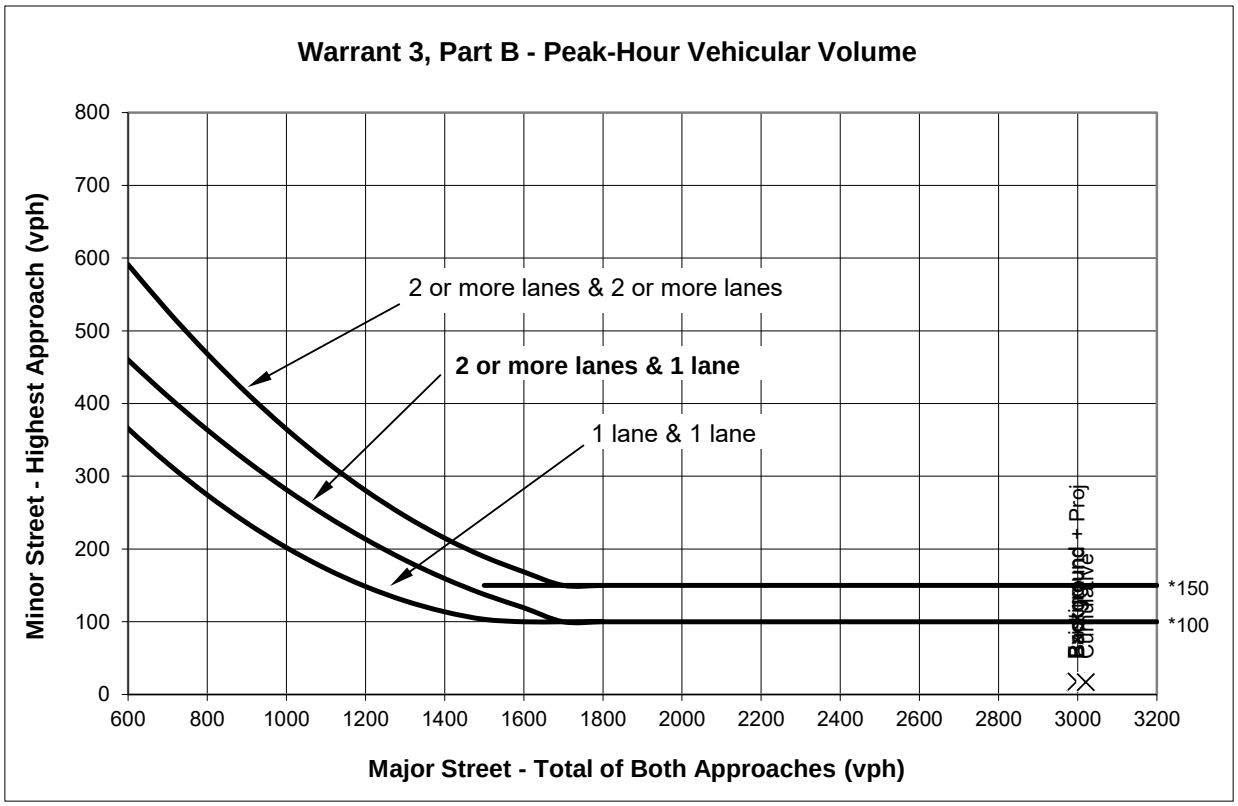
Note: Queue reported is the number of cars per lane.

Appendix D

Signal Warrant Sheets

Saratoga Avenue and Piper Drive

Saratoga Avenue and Piper Drive **AM PEAK PERIOD**



Source: Figure 4C-3 *California Manual on Uniform Traffic Control Devices for Streets and Highways (FHWA's MUTCD 2010 Edition, as amended for use in California)* .

* Note: 150 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 100 vph applies as the lower threshold volume for a minor-street approach with one lane.

Warrant 3, Part B - Peak-Hour Vehicular Volume

		Approach Lanes		AM PEAK PERIOD							
		One	2 or More	Existing	Background	Background + Proj	Cumulative				
Major Street - Both Approaches	Saratoga Avenue		X	2995	2995	2997	3020				
Minor Street - Highest Approach	Piper Drive	X		17	17	18	17				
Signal Warranted Based on Part B - Peak-Hour Volumes?				**No**	**No**	**No**	**No**				

*Warrant is satisfied if plotted points fall above the appropriate curve in graph above.
Note 1: Right turn volume was removed from the minor WB approach.

Saratoga Avenue and Piper Drive

TRAFFIC SIGNAL WARRANTS WORKSHEET

Analyst: JW date: 11/19/18

Major Street: Saratoga Avenue — Critical Approach Speed* (mph) 40

Minor Street: Piper Drive — Critical Approach Speed* (mph) 25

**Posted Speed.*

Critical speed of major street traffic > 50 mph (64 km/h)........................ ☐
or
In built up area of isolated community of < 10,000 population........................ ☐ } **Rural (R)**

☑ **Urban (U)**

AM PEAK PERIOD

Warrant 3 - Peak Hour

The need for a traffic control signal should be considered if an engineering study finds that the criteria in either of the following two categories (Parts A and B) are met:

PART A

(All parts 1, 2, and 3 below must be satisfied)

	AM PEAK PERIOD							
	Existing	Background	Background + Proj	Cumulative				
Minor Street Approach Direction w/ Highest Delay	WB	WB	WB	WB				
Highest Minor Street Average Delay (sec/veh)	93.0	93.0	89.9	95.8				
Corresponding Minor Street Approach Volume (veh/hr)	42	42	49	42				
Minor Street Total Delay (veh-hrs)	1.1	1.1	1.2	1.1				
Total Entering Volume (veh/hr)	3037	3037	3046	3062				
1. The total delay experienced for traffic on one minor street approach controlled by a STOP sign equals or exceeds 4 vehicle-hours for a 1-lane approach and 5 vehicle-hours for a 2-lane approach; AND	No	No	No	No				
2. The volume on the same minor street approach equals or exceeds 100 vph for 1 moving lane of traffic or 150 vph for 2 moving lanes; AND	No	No	No	No				
3. The total entering volume serviced during the hour equals or exceeds 800 vph for intersections with 4 or more approaches or 650 vph for intersections with 3 approaches.	Yes	Yes	Yes	Yes				
Signal Warranted based on Part A?	**No**	**No**	**No**	**No**				

PART B

		Approach Lanes: One	Approach Lanes: 2 or More	AM PEAK PERIOD: Existing	Background	Background + Proj	Cumulative				
Major Street - Both Approaches	Saratoga Avenue		X	2995	2995	2997	3020				
Minor Street - Highest Approach	Piper Drive	X		17	17	18	17				
Signal Warranted based on Part B?				**No**	**No**	**No**	**No**				

The Warrant is satisfied if the plotted point for vehicles per hour on the major street (both approaches) and the corresponding per hour higher vehicle volume minor street approach (one direction only) for one hour (any four consecutive 15-minute periods) fall above the applicable curves in California MUTCD Figure 4C-3 or 4C-4.

Source: California Manual on Uniform Traffic Control Devices for Streets and Highways (FHWA's MUTCD 2010 Edition, as amended for use in California)

Appendix E

San Jose Approved Trips Inventory

Intersection of: SARATOGA/WILLIAMS

Traffix Node Number: 3793

Permit No. / 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 NORTH SAN JOSE	1	35	2	0	4	0	0	0	0	1	4	2
TOTAL:	**1**	**35**	**2**	**0**	**4**	**0**	**0**	**0**	**0**	**1**	**4**	**2**

	LEFT	THRU	RIGHT
NORTH	0	4	0
EAST	1	4	2
SOUTH	1	35	2
WEST	0	0	0

Permit No. / 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 NORTH SAN JOSE	0	6	0	2	29	1	0	0	0	2	2	1
TOTAL:	**0**	**6**	**0**	**2**	**29**	**1**	**0**	**0**	**0**	**2**	**2**	**1**

	LEFT	THRU	RIGHT
NORTH	2	29	1
EAST	2	2	1
SOUTH	0	6	0
WEST	0	0	0