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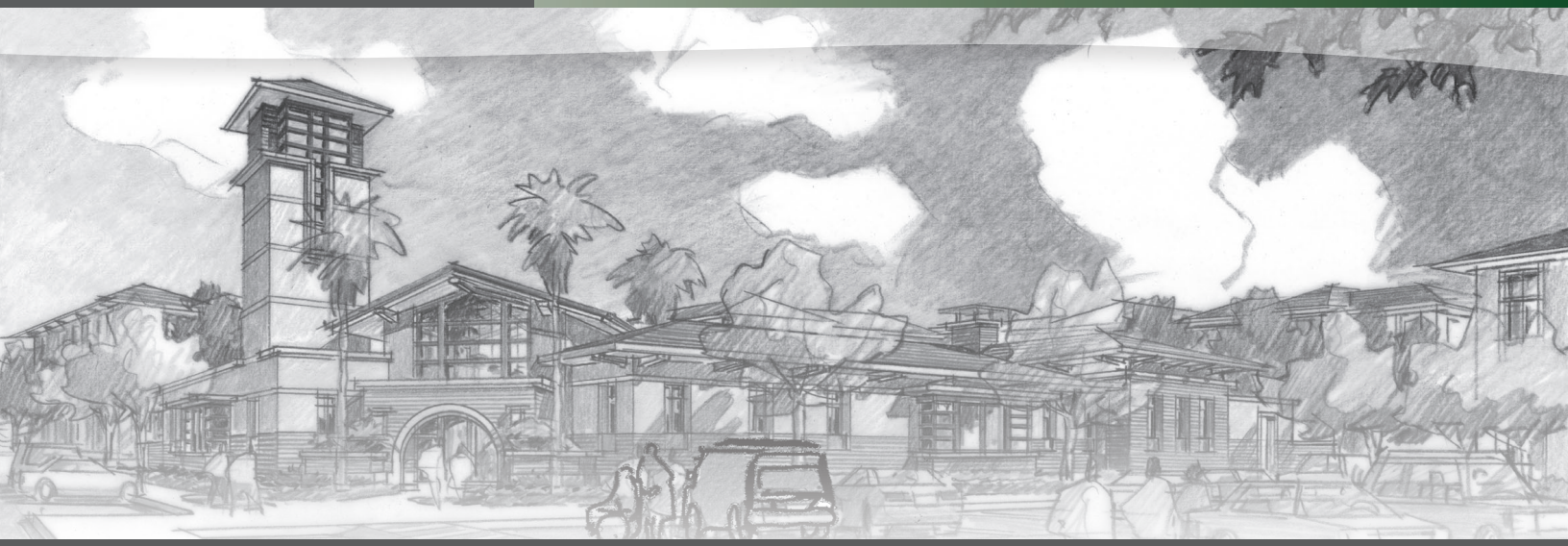

Transportation Impact Analysis

Parc 55 Community Plan

Prepared for:

The City of Fremont

May 2015

0K14-0001

Transportation Impact Analysis

Parc 55 Community Plan

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OK14-0001

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EXECUTIVE SUMMARY

This report summarizes the analysis and findings of the Transportation Impact Analysis (TIA) for the Parc 55 Master Plan Age Restricted project in Fremont, California.

PROJECT DESCRIPTION

The project site is located east of I-880, west of I-680, and south of SR-262 (Mission Boulevard). The Parc 55 project plans to build across multiple parcels along Mission Falls Court directly south of Warren Avenue. The site is currently home to several office buildings, some of which are unoccupied. The proposed project will construct 560 for-sale and rental senior residential units and a 15,000-square foot public senior community center. The current site is occupied by 292,063 square feet of office buildings with another 80,000 square feet of office potential under the current general plan and zoning regulations.

The proposed project is estimated to generate about 2,433 daily trips, 143 AM peak-hour trips and 181 PM peak-hour trips. The allowable 372,000 square feet of office space as designated in the General Plan would generate 4,103 daily trips, 580 AM peak-hour trips and 554 PM peak-hour trips. Therefore, the proposed project would generate 41% fewer daily trips (75% fewer in the AM and 67% fewer in the PM).

FINDINGS

Project impacts on the study area roadway facilities were determined by measuring the effect Project traffic would have on seven intersections in the vicinity of the site during the morning (7:00 to 9:00 AM) and evening (4:00 to 6:00 PM) peak periods. Conditions were evaluated under Existing, Background, and Cumulative Conditions, both without and with the Project.

Based on the projected reduction in trips due to the proposed senior housing project, the analysis concludes that the Project will not have any impacts to the surrounding roadway facilities. If a senior center is not included, the Project could include up to 625 senior residential units with no impacts.

1. INTRODUCTION

This report presents the results of the transportation impact analysis (TIA) for the proposed 23-acre Parc 55 Master Plan Age Restricted community center, also referred to as "Parc 55" or "the Project". Parc 55 is located in the southern part of the City of Fremont just south of Mission Boulevard. The site is roughly bounded by Warren Avenue to the north, Warm Springs Boulevard to the east, and railroad tracks/I-880 to the west. The overall vision of the community is to provide a broad spectrum of senior residential options that integrate active and passive recreation areas. The Project will create a pedestrian-friendly community that is within walking distance to support services and neighborhood retail. The Project also seeks to be complementary to the surrounding Warm Springs residential community.

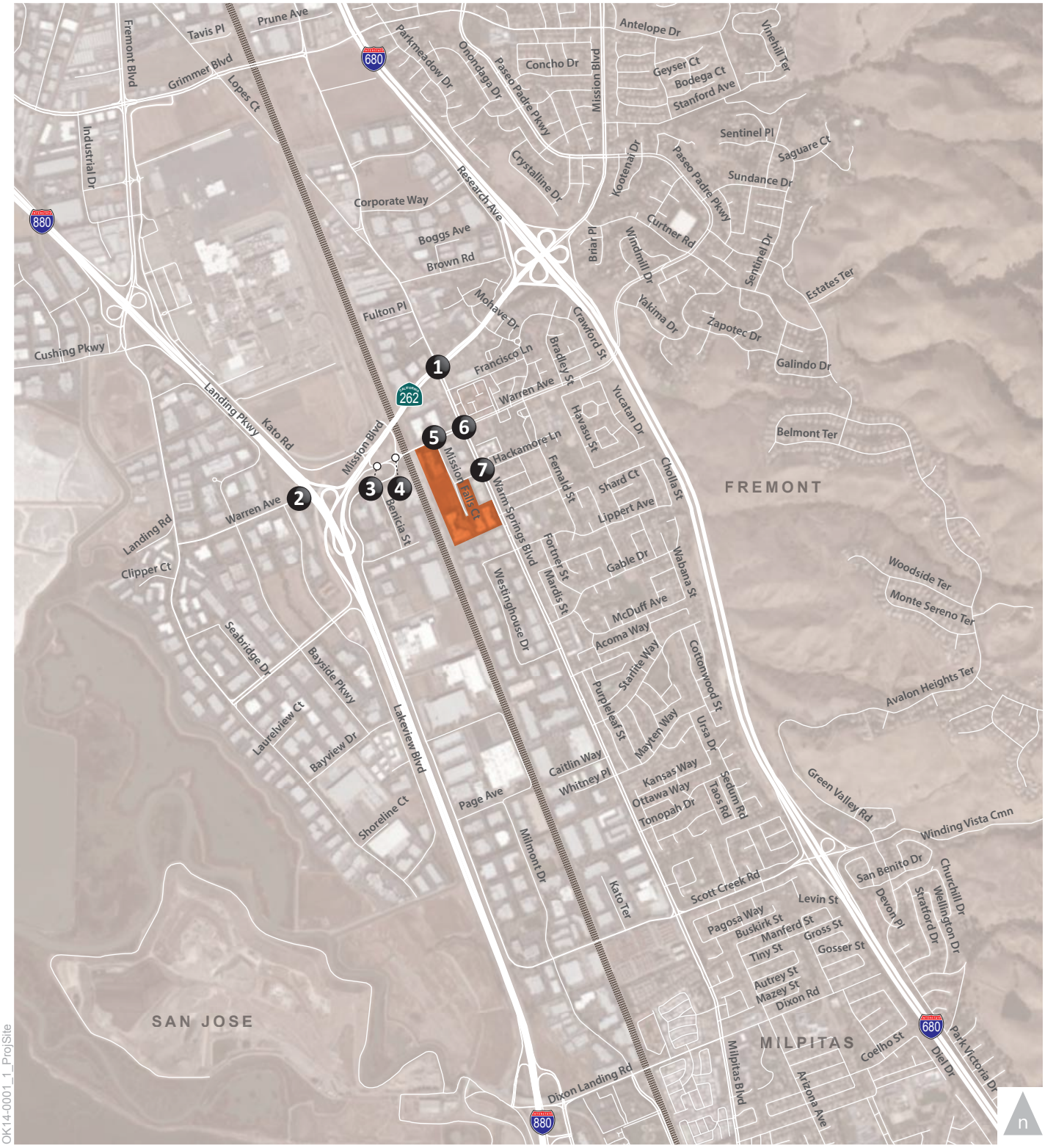
Figure 1 presents the Project location, surrounding roadway system, and study intersections. The purpose of the TIA is to describe the transportation benefits of Parc 55, identify potentially significant adverse impacts on the surrounding transportation system, and recommend mitigation measures in compliance with the California Environmental Quality Act (CEQA).

PROJECT DESCRIPTION

The project site is located across multiple parcels along Mission Falls Court south of Warren Avenue in Fremont, California. The site is currently home to several office buildings, some of which are unoccupied. The proposed project will construct 560 for-sale senior residential units (including affordable and garden flat apartments, suite-flats, bungalow townhomes, and single family detached cottages) and a 15,000-square foot public senior community center, which will replace the existing land uses. The Parc 55 conceptual site plan is shown on **Figure 2**. **Table 1** summarizes the proposed land uses and their sizes based on the independent variable (e.g., number of residential units) used in the vehicle trip generation estimates. A new traffic signal at the intersection of Mission Falls Court and Warm Springs Boulevard will be installed as part of the Project.

TABLE 1:
PARC 55 COMMUNITY LAND USE SUMMARY

Land Use	Size
Senior For-Sale Units	**560 units**
Affordable Apartments	110
Garden Flat Apartments	245
Suite - Flats	68
Bungalows – Townhomes	75
Cottages – Single Family Detached	62
Public Senior Community Center	**15,000 square feet**



OK14-0001_1_ProjSite

LEGEND

Proposed Study Intersection

Project Site

Figure 1

Project Site and Proposed Study Intersection Locations

OK14-0001_2_ConSitePlan

Site Plan Source: KTGY Group, Inc.

Figure 2

Conceptual Site Plan

TRAFFIC ANALYSIS LOCATIONS

The analysis of how Parc 55 would affect the surrounding transportation system is focused on the roadway system. Operations of key signalized intersections are evaluated before and after traffic generated by the anticipated land uses is added. Unsignalized intersections are evaluated by assessing the peak hour traffic signal warrant. The Project generates fewer than 100 peak-hour vehicle trips. Therefore a detailed analysis of the Congestion Management Program-designated facilities (I-680, I-880, and SR 262 – Mission Boulevard, and Warm Springs Boulevard) is not required and the project's impact to these facilities is considered less-than-significant.

STUDY INTERSECTIONS

The following 7 intersections are included in the analysis:

1. Warm Springs Boulevard and Mission Boulevard
2. I-880 Southbound (SB) Ramps and Warren Avenue
3. I-880 Northbound (NB) Ramps and Warren Avenue
4. Kato Road and Warren Avenue
5. Mission Falls Court and Warren Avenue *(unsignalized)*
6. Warm Springs Boulevard and Warren Avenue
7. Warm Springs Boulevard and Mission Falls Lane/Hackamore Lane *(unsignalized)*

INTERSECTION ANALYSIS SCENARIOS

The study intersections are evaluated for the following scenarios:

- **Scenario 1: Existing Conditions** – Existing volumes obtained from traffic counts.
- **Scenario 2**: **Background Conditions** – Existing traffic volumes plus traffic from approved but not yet constructed and unoccupied developments in the area.
- **Scenario 3**: **Background Plus Project Conditions** – Background volumes plus traffic generated by Parc 55 at build-out.
- **Scenario 4**: **Cumulative Conditions** – General Plan build-out for the horizon year 2035.
- **Scenario 5**: **Cumulative Plus Project Conditions** – Traffic projections from Scenario 4 plus Parc 55 traffic.

INTERSECTION ANALYSIS METHODS

Intersection operations are described with the term level of service (LOS), a qualitative description of traffic flow based on such factors as speed, travel time, delay, and freedom to maneuver. Six levels are defined from LOS A, or free flow operating conditions, to LOS F, or severely congested operating conditions. LOS E represents "at capacity" operations. When traffic volumes exceed the intersection capacity, stop-and-go conditions result, and operations are designated as LOS F.

The methodology used to assess the levels of service (LOS) at the study intersections is described below.

Signalized Intersections

The LOS analysis method for signalized intersections approved by the City of Fremont analyzes intersection operations based on average control vehicular delay, as described in Chapter 16 of the 2000 *Highway Capacity Manual* (*HCM*) published by the Transportation Research Board. Control delay includes initial deceleration delay, queue move-up time, stopped delay, and final acceleration delay. The average control delay for signalized intersections is calculated using version 7.9 of the TRAFFIX analysis software and is correlated to a LOS designation as shown in **Table 2**.

It should be noted that calculated delays in excess of 120 seconds are not considered an accurate representation of intersection performance, other than to note that the intersection experiences long delays.

All of the study intersections are under City of Fremont jurisdiction and, therefore, are analyzed based on the City's LOS D standard.

TABLE 2
SIGNALIZED INTERSECTION LOS CRITERIA

Level of Service	Description	Delay in Seconds
A	Progression is extremely favorable and most vehicles arrive during the green phase. Most vehicles do not stop at all. Short cycle lengths may also contribute to low delay.	< 10.0
B	Progression is good, cycle lengths are short, or both. More vehicles stop than with LOS A, causing higher levels of average delay.	> 10.0 to 20.0
C	Higher congestion may result from fair progression, longer cycle lengths, or both. Individual cycle failures may begin to appear at this level, though many still pass through the intersection without stopping.	> 20.0 to 35.0
D	The influence of congestion becomes more noticeable. Longer delays may result from some combination of unfavorable progression, long cycle lengths, or high V/C ratios . Many vehicles stop, and the proportion of vehicles not stopping declines. Individual cycle failures are noticeable.	> 35.0 to 55.0
E	This level is considered by many agencies to be the limit of acceptable delay. These high delay values generally indicate poor progression, long cycle lengths, and high V/C ratios. Individual cycle failures are frequent occurrences.	> 55.0 to 80.0
F	This level is considered unacceptable with oversaturation, which is when arrival flow rates exceed the capacity of the intersection. This level may also occur at high V/C ratios below 1.0 with many individual cycle failures. Poor progression and long cycle lengths may also be contributing factors to such delay levels.	> 80.0

Unsignalized Intersections

There are two existing unsignalized study intersections, Mission Falls Court/Warren Avenue and Warm Springs Boulevard/Mission Falls Lane/Hackamore Lane. (A traffic signal will be installed at the intersection of Mission Falls Court and Warm Springs Boulevard as part of the Project.) These intersections were evaluated by assessing whether they meet the thresholds for the peak-hour volume traffic signal warrant from the *Manual on Uniform Traffic Control Devices* (MUTCD, 2003). Detailed signal warrant analysis spreadsheets are included in **Appendix C.**

Signal warrant analyses are intended to examine the general correlation between the projected traffic volumes and the need to install new traffic signals. Existing and future traffic projections are compared against a sub-set of the standard traffic signal warrants recommended in the Federal Highway

Administration *Manual on Uniform Traffic Control Devices* (MUTCD) and associated State guidelines. This analysis should not serve as the only basis for deciding whether and when to install a signal. To reach such a decision, the full set of warrants should be investigated based on field-measured, rather than forecast, traffic data and a thorough study of traffic and roadway conditions by an experienced engineer. Furthermore, the decision to install a signal should not be based solely upon the warrants, since the installation of signals can lead to certain types of collisions. The responsible State or local agency should undertake regular monitoring of actual traffic conditions and accident data, and timely re-evaluation of the full set of warrants in order to prioritize and program intersections for signalization.

REGULATORY SETTING AND LEVELS OF SERVICE STANDARDS

Regulatory agencies and their transportation policies, including level of service standards that affect the project area are discussed in this section. These standards were used to determine significant impacts and to develop appropriate mitigation measures.

CITY OF FREMONT

The City of Fremont's *2011 General Plan* defines the minimum acceptable LOS for the operations of the City's intersections and roadway segments. For the identified signalized study intersections in the City's jurisdiction the minimum acceptable AM/PM peak hour level of service is LOS D. Locations with a worse LOS than these standards are considered to operate unacceptably. All of the study intersections are under City of Fremont jurisdiction; and therefore are analyzed based on the City's LOS standard.

The current City *General Plan* was adopted in December 2011. The *General Plan* policies and implementation programs listed below are relevant to the transportation and circulation implications of the proposed project:

- Design major streets to balance the needs of automobiles with the needs of pedestrians, bicyclists, and transit users. Over time, all Fremont's corridors should evolve into multi-modal streets that offer safe and attractive choices among different travel modes. (Policy 3-1.1)
- As appropriate, apply street design and development standards that require transit-supportive facilities such as bus stop curb extensions, bus shelters, benches, lighting, sidewalks and convenient access to bus stops. (Policy 3-1.3)
- Incorporate provisions for pedestrians and bicycles on city streets to facilitate and encourage safe walking and cycling throughout the city. Landscaping should reduce wind, provide a buffer to adjacent roadways, and stimulate visual interest. Provide visually appealing, energy-efficient street lighting to ensure night-time safety. (Policy 3-1.5)

- Require the provision of sidewalks in all new development, including infill development and redevelopment, in order to eventually complete the City's sidewalk network. Sidewalks shall be required on both sides of all public streets, except in hillside areas where a single sidewalk may be adequate. Sidewalks and direct pedestrian connections between uses should also be provided in parking lots. (Policy 3-1.7)

- Support land use choices and transportation investments which reduce the necessity of driving and create a community that is more walkable and serviceable by public transportation. Land use decisions should recognize the opportunities and constraints presented by the city's transportation system, including road capacity, transit availability, and pedestrian and bicycle mobility. (Policy 3-2.1)

- Enhance bicycle circulation, access, and safety throughout Fremont, particularly in the City Center, the Town Centers, around existing and planned BART stations, and near schools and other public facilities. Barriers and impediments to bicycle travel should be reduced. (Policy 3-2.4)

- Maintain and implement City master plans for pedestrian and bicycle travel, and use these plans as the basis for network development. These plans implement the General Plan but are not formally adopted as part of the General Plan. Any change or update to these plans does not require a General Plan Amendment. (Policy 3-2.5)

- Improve connectivity between transit modes, especially transfers from rail to bus, to reduce waiting time and improve the feasibility of using transit. (Policy 3-2.8)

- Maintain the data needed to assess roadway safety and performance, including the safety of bicyclists and pedestrians as well as motorists. (Policy 3-3.7)

- Limit access to parkways and arterials from abutting parcels to maintain capacity, efficiency, and traffic safety. Standards for driveways, curb cuts, and medians should reflect the primary function of these streets for cross-town traffic circulation. (Policy 3-3.8)

- Adopt variable standards for traffic speed and travel delay that recognize the character of adjacent land uses, the functions of different streets, the different modes of transportation on a street or corridor, and other community development goals. The following standards shall apply (Policy 3-4.2):

    - For locations outside of the City Center, Town Centers, and Warm Springs/South Fremont BART station area (as depicted on the Future Land Use Map), peak hour levels of service for signalized intersections should generally be maintained at Level of Service (LOS) "D" for minor arterials and collector streets, and LOS "E" for regional (CMA network) arterials. The design and construction of new signalized intersections and roadways in areas outside the City Center, Town Centers, and Warm Springs/South Fremont BART station area should achieve a target operational capacity of midpoint LOS D or better upon completion.

  - For locations within the City Center, Town Centers, and Irvington and Warm Springs/South Fremont BART station areas, and within PDA boundaries peak hour LOS "E" or "F" may be acceptable. In these locations, the efficiency and convenience of vehicular operations must be balanced with the goal of increasing transit use, bicycling, and walking. (Policy 3-4.2)

- In addition to the conditions stated in Policy 3-4.2, allow decreased levels of speed and convenience on a case by case basis in areas where (Policy 3-4.3):
  - Widening or altering a roadway would conflict with environmental, historic, or community character objectives
  - A significant cause of the congestion is regional traffic beyond the City's control;
  - Substantial transportation improvements have already been required and further mitigation is not feasible;
  - There are other factors related to accommodation of pedestrians, bicyclists, and public transit, and road improvements that may be substantially detrimental to the desired capacity, convenience, safety, or efficiency of these other travel modes; or
  - Congestion is of a limited duration due to special events or organized activities at local public facilities. (Policy 3-4.3)
- Require new development to mitigate its impacts on mobility conditions through traffic impact fees, street and intersection improvements, transportation demand management programs, and other measures. (Policy 3-4.4) Manage on-street parking to ensure the efficient use of curbside space, avoid conflicts with residents and neighborhoods, and provide adequate customer parking for local businesses. (Policy 3-7.1)
- Apply parking requirements and standards for residential and commercial development which adequately respond to demand and minimize adverse effects on neighboring properties. (Policy 3-7.2)
- Strongly encourage the concept of shared parking (and shared parking agreements) for land uses where peak parking demand occurs at different times of the day, thereby reducing the aggregate number of spaces required. (Policy 3-7.3)
- Require the provision of secured bicycle parking at (or near) all new or substantially modified commercial or industrial development projects, education and recreational facilities, BART stations, and transit centers. In commercial areas, bicycle parking may be consolidated in racks serving multiple businesses to create a cleaner and more attractive street appearance. At larger employment centers and BART stations, lockers and showers should be encouraged to facilitate bicycle use. (Policy 3-7.4)

ALAMEDA COUNTY TRANSPORTATION COMMISSION (ALAMEDA CTC)

The Alameda County Transportation Commission (Alameda CTC) requires analysis of project impacts to the Metropolitan Transportation System (MTS) roadways in Alameda County if the project generates more than 100 PM peak-hour vehicle trips. The MTS facilities in the study area are Mission Boulevard, Warm Springs Boulevard, I-880, and I-680. The project generates fewer than 100 net peak-hour hour trips, as shown in **Table 3** below**,** and therefore the impacts to the MTS facilities are considered less-than-significant.

TABLE 3
VEHICLE TRIP GENERATION RATES AND ESTIMATES FOR MTS ANALYSIS

Land Use	ITE Code	Size	Daily		AM Peak Hour				PM Peak Hour			
			Rate	Trips	Rate[1]	In	Out	Total	Rate	In	Out	Total
Existing Vehicle Trips (A)[2]												
Office – mostly unoccupied	General Office Building (710)					62	15	77		15	68	83
Project Trips												
Senior For-Sale Units	Senior Adult Housing-Attached (252)	560 Units	3.44	1,926	0.20	38	74	112	0.25	76	64	140
Public Senior Center	Recreational Community Center (495)	15 KSF	33.82	507	2.05	20	11	31	2.74	20	21	41
Total Project Vehicle Trips (B)				2,433		58	85	143		96	85	181
Total Net New Trips (C = B – A)				--		**-4**	**70**	**66**		**81**	**17**	**98**

Notes:
1. Rate per unit, including dwelling unit or ksf
2. Existing vehicle trips of project site (Address: 47300 Mission Falls Court)

Sources: *Trip Generation Manual* (9th Edition), Fehr & Peers, 2015

CALTRANS

The California Department of Transportation (Caltrans) recommends a target LOS at the threshold between LOS C and LOS D for their facilities. If the location under existing conditions operates worse than the appropriate target LOS, then the existing LOS should be maintained. The Project would add only small amounts of traffic to the freeway system therefore impacts to Caltrans facilities are considered less-than-significant.

METROPOLITAN TRANSPORTATION COMMISSION (MTC)

The majority of federal, state, and local financing available for transportation projects is allocated at the regional level by the MTC, the transportation planning, coordinating, and financing agency for the nine-county Bay Area. The current Regional Transportation Plan, which is combined with the region's Sustainable Communities Strategy (SCS), is known as Plan Bay Area and was adopted by MTC in July 2013.

Plan Bay Area specifies a detailed set of investments and strategies throughout the region from 2013 through 2040 to maintain, manage, and improve the surface transportation system. Plan Bay Area specifies how anticipated federal, state, and local transportation funds will be spent in the Bay Area during the next 25 years. Most of this "committed funding" will go toward maintaining the region's existing transportation infrastructure.

BAY AREA AIR QUALITY MANAGEMENT DISTRICT (BAAQMD)

The BAAQMD is the regional agency with the authority to develop and enforce regulations for the control of air pollution throughout the Bay Area. The Clean Air Plan is BAAQMD's plan for reducing the emissions of air pollutants that lead to ozone. BAAQMD has also published CEQA Guidelines for the purpose of evaluating the air quality impact of projects and plans. One of the criteria that the Guidelines describe is that plans, including Specific Plans, must demonstrate reasonable efforts to implement transportation control measures (TCM) included in the Clean Air Plan that identify local governments as the implementing agencies. On-road motor vehicles are the largest source of air pollution in the Bay Area. To address the impact of vehicles, the California Clean Air Act requires air districts to adopt, implement, and enforce TCMs.

SIGNIFICANCE CRITERIA

The impact criteria used in this analysis are described in the following sections.

SIGNALIZED INTERSECTIONS

A significant project impact to a signalized City of Fremont intersection occurs if the project results in one of the following:

- Causes an intersection to deteriorate from acceptable LOS D operations or better under Background Conditions to unacceptable LOS E or F operations under Background Plus Project Conditions; or
- Increases the average delay by four seconds or more at an intersection operating at LOS E or F under Background Conditions to.

A significant cumulative impact occurs when an intersection degrades to LOS E or F under Cumulative Plus Project Conditions compared to Background Conditions. A project causes a considerable contribution to a significant cumulative impact if the project increases the average delay by four seconds or more.

UNSIGNALIZED INTERSECTIONS

The impacts of the proposed project on an unsignalized intersection are considered significant if the contribution of project traffic is at least five percent of the total traffic, *and* if the addition of project traffic results in the intersection meeting the peak hour signal warrant.

If the intersection already meets the peak hour signal warrant under No Project conditions, the impacts of the proposed project are considered significant if the project contributes at least five percent of the total traffic.

REPORT ORGANIZATION

The analysis input and results are presented in the following report chapters:

- **Chapter 2** describes the Existing Conditions for the transportation system serving the study area and the current operating conditions of the study intersections.
- **Chapter 3** presents estimated travel demand characteristics for the Project, including the amount of traffic added to the surrounding roadways.
- **Chapter 4** describes the Background Conditions, or conditions with traffic generated by approved developments in the area, and the associated operating conditions of the study intersections with and without project traffic.
- **Chapter 5** discusses operations of the roadway system under 2035 Cumulative Conditions.

- **Chapter 6** discusses the project site access, on-site circulation, and parking.
- **Chapter 7** discusses construction impacts**.**

2. EXISTING CONDITIONS

This chapter describes the existing transportation facilities in the study area and presents current operations of the study intersections.

EXISTING ROADWAY NETWORK

STREET NETWORK

Figure 1 shows the Parc 55 project area and the surrounding roadway system. Regional access is provided via I-680, I-880, and SR 262 (Mission Boulevard). Local thoroughfares in the vicinity include Warm Springs Boulevard and Warren Avenue. Local access to the site is provided by Mission Falls Court and Mission Falls Lane.

I-680 is a north-south freeway ranging from four to eight lanes and extending from I-280 in San Jose to I-80 in Vallejo. In the vicinity of the site it has three mixed-flow lanes in the northbound direction and three mixed-flow lanes plus one High Occupancy Vehicle/ High Occupancy Toll (HOV/HOT)lane in the southbound direction. It provides site access via the Mission Boulevard exit. I-680 is congested in the southbound during the morning commute period and in the northbound direction during the evening peak commute period. The Express (HOT) lane on southbound I-680 between SR 84 in Pleasanton and SR 237 in Milpitas alleviates some of congestion in the southbound direction by allowing solo drivers to use the HOV lane for a toll (that varies depending on the level of congestion), from 5:00 am to 8:00 pm, Monday through Friday. An Express Lane is planned for the northbound direction. Average daily traffic volumes on I-680 range from 119,000 to 140,000 vehicles between Scott Creek Road and Auto Mall Parkway[1].

I-880 is a parallel freeway to I-680, extending from SR 17 in San Jose to I-80 in Oakland. It provides site access via the Warren Avenue exit. In the project vicinity it has three mixed-flow lanes and one HOV lane in each direction. HOV lanes are enforced between 5:00 am and 9:00 am and 3:00 pm and 7:00 pm, Monday through Friday. I-880 is frequently congested in both directions during the peak commute periods, primarily in the southbound direction in the morning and the northbound direction in the evening.. I-880 has an average daily vehicle volume between 167,000 and 205,000 vehicles.

[1] State of California, Department of Transportation, Traffic Operations Division, 2011 Traffic Volumes

SR 262/Mission Boulevard has two to three lanes in each direction and primarily runs east-west, connecting I-680 and I-880 just north of the project. It carries approximately 63,000 vehicles per day.

Warm Springs Boulevard is a north-south arterial that extends north from Scott Creek Road in Milpitas where it becomes N. Milpitas Boulevard to Washington Boulevard in Fremont where it becomes Driscoll Road. Warm Springs Boulevard forms the eastern edge of the project site and provides direct access to the eastern project driveway. It has two lanes in each direction near the project site.

Warren Avenue is an east-west arterial that extends from Fremont Boulevard in the west to just past I-680 where it turns into Paseo Padre Parkway. Warren Avenue has two lanes in each direction and provides direct access to the northern entrance of the project. Currently, Santa Clara County Transportation Authority (VTA) has a grade separation project on Warren Avenue between Kato Road and Mission Falls Court as part of the BART project to San Jose. This segment of Warren Avenue is closed until August 2014.

Mission Falls Court is a two-lane, north-south road that extends from Warren Avenue to a court in the middle of the project site. It provides direct access to project.

Mission Falls Lane is a two-lane, east-west road extending between Mission Falls Court and Warm Springs Boulevard.

INTERSECTION VOLUMES, LEVELS OF SERVICE, AND SIGNAL WARRANTS

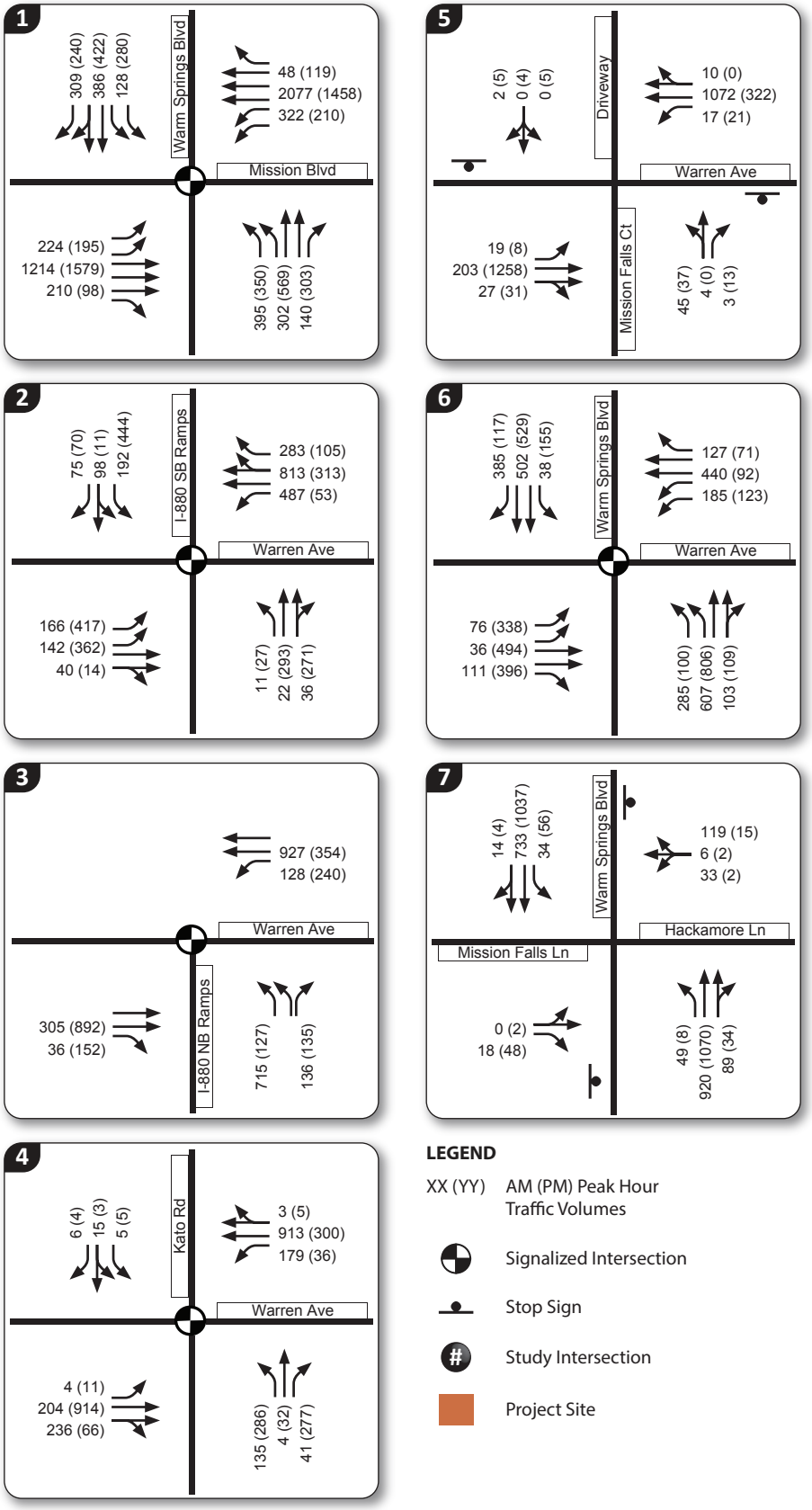
Existing Intersection Volumes

The temporary closure of the segment of Warren Avenue between Kato Road and Mission Falls Court has affected traffic patterns in the vicinity of the project site. Therefore both historic traffic counts representing conditions with Warren Avenue open and new traffic counts were used to develop "existing" traffic volumes at the study intersection. Counts conducted in April and May 2011 during the morning and evening commute periods (7:00 am to 9:00 am and 4:00 pm to 6:00 pm) were obtained from City staff. Per the direction of City staff, the 2011 counts plus a growth rate of 1 percent per year were used to reflect 2014 conditions. t. **Appendix A** contains the traffic counts. The volumes obtained from the historic counts with the growth rate were compared to counts conducted in 2014 and were found to be consistent and therefore are appropriate for this analysis. The existing AM and PM peak hour turning movement volumes at the intersections, and their lane configurations and traffic control devices, are presented on **Figures 3.**

Existing Intersection Levels of Service

The operations of the signalized intersections were evaluated with level of service calculations. The results are presented in **Table 4**. **Appendix B** contains the level of service calculation sheets. These calculation sheets include detailed input data and report the delay experienced by vehicle drivers for the intersection as a whole, on each approach, and for individual movements. An intersection approach corresponds to all of the lanes approaching from one direction and movements refer to the designated turn (left or right) or through for each lane (or lane group).

All signalized study intersections operate at acceptable levels of service (LOS D or better).



LEGEND

XX (YY) AM (PM) Peak Hour Traffic Volumes

Signalized Intersection

Stop Sign

Study Intersection

Project Site

OK14-0001_3_ExVol

Figure 3

Existing
Peak Hour Intersection Volumes, Lane Configurations and Traffic Control

TABLE 4: EXISTING SIGNALIZED INTERSECTION LEVELS OF SERVICE

Intersection	Control[1]	Peak Hour	Delay (seconds)	LOS
1. Warm Springs Blvd/Mission Blvd	Signal	AM PM	29.7 48.5	C D
2. I-880 SB Ramps/Warren Ave	Signal	AM PM	27.2 41.5	C D
3. I-880 NB Ramps/Warren Ave	Signal	AM PM	19.2 17.7	B B
4. Kato Rd/Warren Ave	Signal	AM PM	18.2 23.3	B C
6. Warm Springs Blvd/Warren Ave	Signal	AM PM	27.7 31.6	C C

Source: Fehr & Peers, 2015

Traffic Signal Warrants

The peak hour traffic signal warrant was evaluated for the following unsignalized intersections:

5. Mission Falls Court/Warren Avenue
7. Warm Springs Boulevard/Mission Falls Lane/Hackamore Lane

Existing volumes at the Warm Springs Boulevard/Mission Falls Lane/Hackamore Lane meet the threshold for a signal warrant but volumes at Mission Falls Court/Warren Avenue do not.

Signal warrant worksheets are provided in **Appendix C**.

EXISTING TRANSIT SERVICE

The City of Fremont encourages the use of transit as an alternative mode of transportation and is primarily served by two major transit providers: Bay Area Rapid Transit (BART) and Alameda-Contra Costa Transit (AC Transit). BART provides commuter rail service and AC Transit provides local and regional bus service. The Santa Clara Valley Transportation Authority (VTA), which is the primary transit provider for Santa Clara County, also provides some regional bus access to the City of Fremont. Transit service and facilities - bus routes, major bus stops, BART tracks, and the BART station - are shown on **Figure 4**. The City of Fremont is served by intercity commuter rail transit - Amtrak and Altamont Commuter Express, and paratransit services for seniors and people with disabilities. **Table 5** summarizes hours of operation and service frequencies for the routes near the Parc 55 site.

AC TRANSIT

The Alameda-Contra Costa Transit District (AC Transit) operates several local bus lines and one supplementary bus line within south Fremont. Local Routes 215 and 217 serve the project area and provide extensive service throughout the day, serving stops between the Fremont BART station and Milpitas in the south and Hayward in the north. Route 217 also provides weekend service. Supplementary Route 623 provides limited weekday service serving Horner Jr. and Irvington Sr. High Schools in Fremont.

ALTAMONT COMMUTER EXPRESS (ACE) AND AMTRAK CAPITOL CORRIDOR

The Altamont Commuter Express (ACE) provides weekday train service between San Jose and Stockton. Trains run westbound in the morning and eastbound in the evening. The Fremont station and Great America station are located approximately four miles north and ten miles south of the project site, respectively.

The Capital Corridor is a passenger train system operated by Amtrak that provides service to 16 stations in 8 Northern California counties, from San Jose in Santa Clara County to Colfax in Placer County. Similar to the Altamont Commuter Express, the Capitol Corridor stops at the Fremont station and Great America station. On weekdays, seven eastbound and seven westbound trains serve the Fremont station.

TABLE 5: EXISTING TRANSIT SERVICES

Route	From	To	Weekdays		Weekends	
			Operating Hours	Peak Headway (minutes)	Operating Hours	Headway (minutes)
***AC Transit*[2]**						
215	Fremont BART	Warren Ave. & Landing Pkwy.	5:53am-8:46pm	45	No service	No service
217	Fremont BART	Great Mall Light Rail Station	5:15am-10:55pm	30	7:00am-7:55pm	40
623	Horner Jr. High School	Milpitas Blvd. & Dixon Landing Rd.	7:14am-3:34pm	n/a: only one trip per peak period	No service	No service
***Bay Area Rapid Transit (BART)*[2]**						
BART[3]	Fremont	Richmond/ Daly City	4:00am-12:00am	10	5:54am-12:00am	15

Notes:

1. Schedule reflects service as of April 2014
2. Schedule reflects service as of April 2014

Sources: AC Transit, BART, April 2014.

OK14-0001_4_TransitFac

LEGEND

Santa Clara Valley Transportation Authority (VTA)

AC Transit

Project Site

Figure 4

Existing Transit Facilities

SANTA CLARA VALLEY TRANSPORTATION AUTHORITY (VTA)

The Santa Clara Valley Transportation Authority (VTA) operates several bus routes within the vicinity of the project area, all of which travel through Fremont to serve the Fremont BART station. Based on its Express Bus Business Plan (2011) VTA plans to operate five bus lines to the Warm Springs/South Fremont BART Station, including existing routes 120, 180, and 181, and new routes 193 and 194. A second tier of bus routes is planned as demand grows, including Express 192, which will serve the Warm Springs/South Fremont BART station. Bus routes that currently terminate at the Fremont BART station will be re-routed to terminate at the Warm Springs/South Fremont BART station, once the station opens in 2015. Similarly, once the Berryessa and Milpitas BART stations open, the Express lines serving the Warm Springs/South Fremont station will likely be re-routed to serve the Berryessa and Milpitas stations.

BAY AREA RAPID TRANSIT DISTRICT (BART)

BART operates train service throughout the San Francisco Bay Area. The system currently extends from Millbrae to San Francisco pn the peninsula, San Francisco to Oakland, and from Oakland to Richmond, Pittsburg, Dublin, and Fremont in the East Bay. San Francisco and Oakland are connected by an underwater tube. Altogether BART connects 44 stations with 104 miles of tracks. The average weekday ridership in 2013 was 392,000 passengers. There are two BART lines that serve Fremont: the Richmond-Fremont Line and the Daly City-Fremont Line; the Fremont station is the current terminus of those lines, although both will extend to the Warm Springs/South Fremont station once opened in 2015. On weekdays BART operates trains every five to fifteen minutes. The Fremont-Daly City line does not operate on weekday evenings or Sundays. Passengers bound for stations on other lines can transfer at particular stations. Passengers can also transfer between other local and regional transit providers, such as the Caltrain at the Millbrae BART station and Muni Metro stations at four BART stations in San Francisco.

When completed, the Warm Springs/South Fremont BART station will have approximately 2,000 parking spaces. Bicycle parking will provided with bike racks and bike lockers. Bus access will be provided via a bus transfer facility located within the station area.

PARATRANSIT

City of Fremont Paratransit and East Bay Paratransit are door-to-door alternative transit services for seniors and persons with disabilities that are prevented from using regular transit services. Services are provided during the same hours that BART and AC Transit operate. Applicants are required to submit a form and go through a review process to be eligible for services.

EXISTING PEDESTRIAN AND BICYCLE FACILITIES

EXISTING PEDESTRIAN FACILITIES

Pedestrian facilities include sidewalks, crosswalks, pedestrian signals, and off-street paths that are meant to provide safe and convenient routes for pedestrians to access destinations such as institutions, businesses, public transportation, and recreation facilities. In general, a network of sidewalks, crosswalks, and curb ramps are provided in the vicinity of the project site, although several gaps exist.

The following is a summary of pedestrian facility gaps adjacent to the project:

- Kato Road – intermittent sidewalks, only on one side of the street
- Warm Springs Boulevard – lack of continuous sidewalks between Warren Avenue and Pontiac Way
- Warren Avenue – sidewalks provided directly west of Warm Springs Boulevard but do not extend to Mission Falls Court
- Mission Falls Lane – lack of continuous sidewalks along the north side; no street lights, no marked pedestrian crossings
- Mission Falls Court – intermittent sidewalk coverage, only on the east side of the road; no marked pedestrian crossings

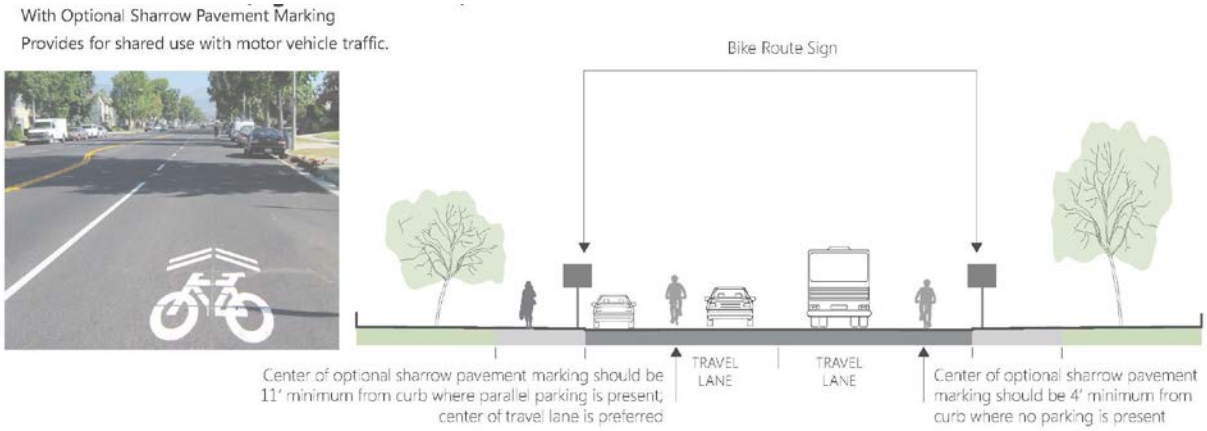
EXISTING BICYCLE FACILITIES

The 2012 City of Fremont Bicycle Master Plan references the following three bikeway classifications from Chapter 1000 of the Caltrans *Highway Design Manual*:

Class I Multi-Use Path provides for bicycle travel on a paved right-of-way completely separated from any street or highway.

Class II Bike Lane provides a striped and stenciled lane for one-way travel on a street or highway.

Class III Bike Route provides for shared use with pedestrian or motor vehicle traffic and is identified only by signing.



A few Class II bike facilities exist within the area; they include Warm Springs Boulevard, Fremont Boulevard and Grimmer Boulevard. These connect with other nearby Class III bike facilities on Paseo Padre Parkway, Warren Avenue, and Kato Road. Existing bicycle facilities are shown on **Figure 5**.

The *City of Fremont Bicycle Master Plan* (October 2011) identifies the following planned improvements adjacent to the project site:

- East Warren Avenue – Class II bicycle lanes from the Union Pacific Railroad (UPRR) track continuing to the east
- Warm Springs Boulevard – Class II bicycle lanes to the north of Warren Boulevard
- UPRR Rail Trail – Class I multi-use path

OK14-0001_5_BikeFac

LEGEND

- Separated Bike Lane
- Class II Bike Lane
- Class III Bike Route
- Project Site

Figure 5

Existing Bicycle Facilities

3. PROJECT TRAFFIC

VEHICLE TRIP GENERATION METHODOLOGY

Fehr & Peers developed initial vehicle trip estimates for the Project using appropriate information published in the Institute of Transportation Engineers' (ITE) *Trip Generation Manual*, 9th Edition (2012). For the proposed project, trip generation estimates were developed using the trip rates for "Senior Adult Housing" (ITE Land Use 252) and "Recreational Community Center" (ITE Land Use 495). The Project is estimated to generate about 2,433 daily trips, 143 AM peak-hour trips (58 inbound and 85 outbound) and 181 PM peak-hour trips (96 inbound and 85 outbound).

The previously approved 372,000 square feet of office potential for the site as designated in the General Plan would generate 4,103 daily trips, 580 AM peak-hour trips (511 inbound and 69 outbound) and 554 PM peak-hour trips (94 inbound and 460 outbound). The proposed project would generate 41% fewer daily trips (75% fewer in the AM and 67% fewer in the PM peak hours). Therefore, the project adds fewer vehicles to the roadway system than the allowable use for the site. The trip generation estimates for the previously approved development size, the proposed project, and the net trips are presented in **Table 6**.

TRIP DISTRIBUTION AND ASSIGNMENT

The directions of approach and departure of project trips were based on the locations of complementary land uses, existing travel patterns in the area, and patterns used in other studies. Project-generated trips were assigned to the surrounding transportation network based on the general directions of approach and departure illustrated in **Figure 6**.

The net new project trips, project trips minus fully-occupied office trips, were assigned to the roadway system based on the directions of approach and departure discussed above and the locations of the project driveways. **Figure 7** shows the number of net project trips assigned to each turning movement at each study intersection.

TABLE 6: PROJECT VEHICLE TRIP GENERATION RATES AND ESTIMATES

Land Use	ITE Code	Size	Daily		AM Peak Hour				PM Peak Hour			
			Rate	Trips	Rate[1]	In	Out	Total	Rate	In	Out	Total
Parc 55 Project (A)												
Senior For-Sale Units	Senior Adult Housing-Attached (252)	560 Units	3.44	1,926	0.20	38	74	112	0.25	76	64	140
Public Senior Center	Recreational Community Center (495)	15 KSF	33.82	507	2.05	20	11	31	2.74	20	21	41
Total Project Vehicle Trips (A)				**2,433**		**58**	**85**	**143**		**96**	**85**	**181**
Mission Falls Court Fully-Occupied Office (B)												
Office	General Office Building (710)	372 ksf	11.03	4,103	1.56	511	69	580	1.49	94	460	554
Total General Plan Vehicle Trips (B)				**4,103**		**511**	**69**	**580**		**94**	**460**	**554**
Total Net New Trips (C = A-B)				-1,670		-453	16	-437		2	-375	-373

Notes:
1. Rate per unit, including dwelling unit or ksf
Sources: *Trip Generation Manual* (9th Edition), Fehr & Peers, 2015

Figure 6 Trip Distribution

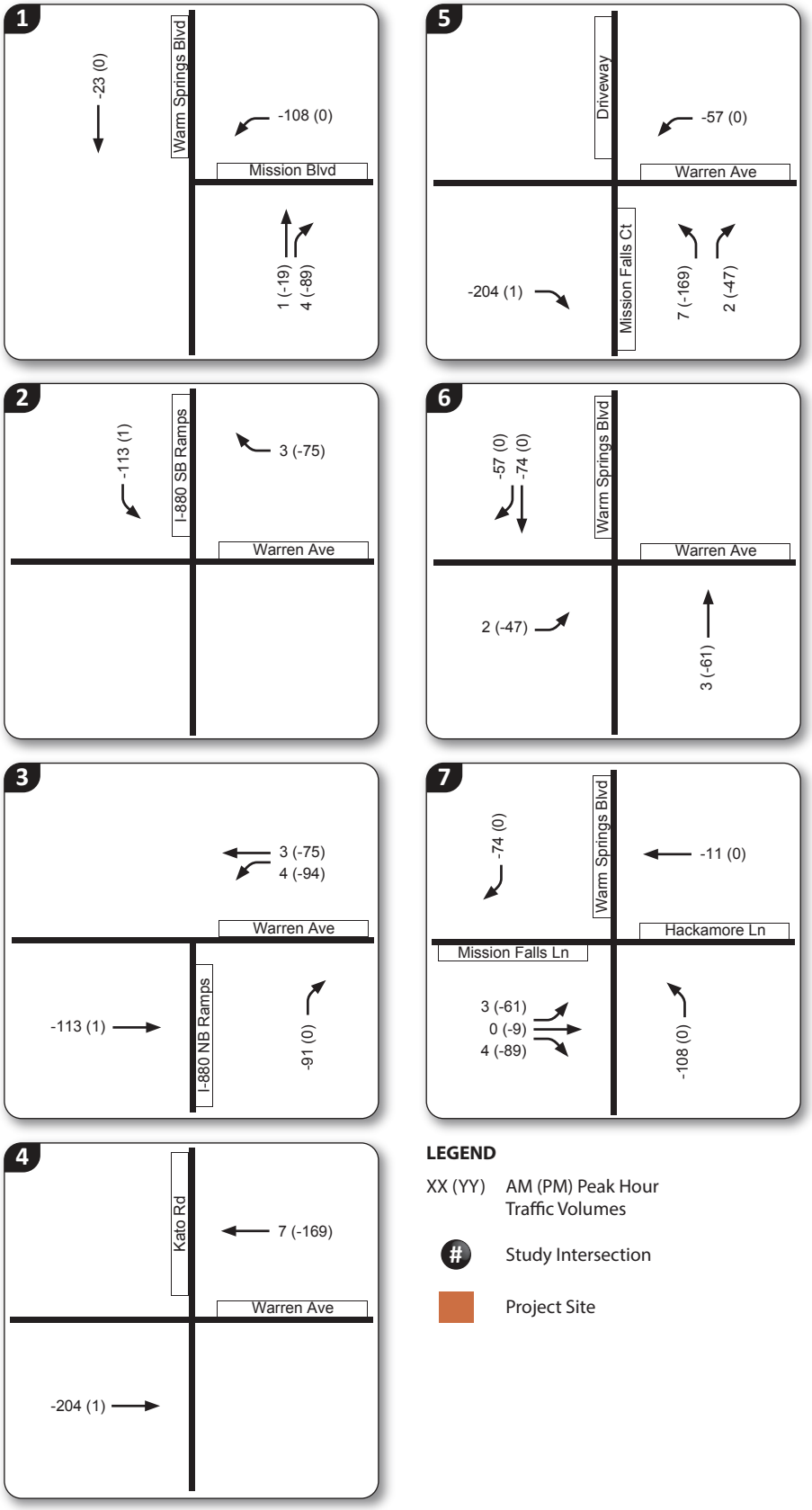


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Figure 7

Project Trip Assignment

4. BACKGROUND CONDITIONS (WITH AND WITHOUT THE PROJECT)

This chapter describes intersection operations under Background Conditions, with and without traffic generated by build-out of the Project. Background Conditions include existing traffic volumes plus estimates of traffic generated by approved but not yet constructed (or occupied) developments in the project vicinity. This scenario includes traffic generated by build-out of the Warm Springs/South Fremont Community Plan, which will occur over many years and traffic generated by fully-occupied offices at Mission Falls Court.

PLANNED TRANSPORTATION SYSTEM IMPROVEMENTS

ROADWAY SYSTEM

Roadway Improvements

A Project Study Report (PSR) was previously initiated for the Mission Boulevard/I-680 interchange and was being led by the Alameda County Transportation Commission (Alameda CTC). Improvements considered include widening of Mission Boulevard between Warm Springs Boulevard and I-680 to six lanes, improvements to the I-680 ramps and improvements to the Warm Springs Boulevard / Mission Boulevard intersection for better automobile access. Since this project is still in its planning stage and the PSR is currently on-hold, no improvements are included under Background Conditions.

The City of Fremont is leading the Warm Springs Boulevard Widening project between Reliance Way and Mission Boulevard. The project will widen the street to provide two traffic lanes plus a bicycle lane in each direction, install landscaped median islands, install curbs, gutters, and sidewalks on both sides of the street, provide new signing, striping, and pavement markings, install additional street lights, and construct storm drain system infrastructure along the street.

Intersection Improvements

The following intersection lane configuration changes are included in the analysis of Background Conditions:

- Mission Boulevard/Warm Springs Boulevard intersection (from the Warm Springs Community Plan): convert southbound shared through/right-turn lane to a through lane

BAY AREA RAPID TRANSIT (BART)

The Warm Springs/South Fremont station will be the new station at the end of the 5.4-miles of new tracks south of the existing Fremont station. The extension is part of a larger three-phase expansion project to extend BART from Fremont to the Warm Springs/South Fremont station, Berryessa District, and finally to Downtown San Jose. The Warm Springs/South Fremont station is projected to open in 2015, and will be the first station completed in the expansion project. As such, it will act as the terminus station until the Berryessa extension, which includes two new stations – Milpitas and Berryessa, opening in 2018; then the Warm Springs/South Fremont station will operate as a typical station. The Warm Springs/South Fremont station will include an island platform with overhead concourse intermodal access to VTA and AC Transit buses, a taxi stand, and a passenger drop off area. The station will provide 2,000 parking spaces plus bicycle lockers.

PEDESTRIAN AND BICYCLE IMPROVEMENTS

The City of Fremont Bicycle Master Plan was adopted in 2012. The Bicycle Plan includes proposed bicycle facilities near the plan area. These proposed facilities are listed below.

- Class II Bicycle Lanes on the following street segments:
    - Fremont Boulevard between Industrial Place and W. Warren Avenue
    - Warm Springs Boulevard north of W. Warren Avenue to Washington Boulevard
    - E. Warren Avenue east of the UPRR tracks
    - Kato Road, south of W. Warren Avenue
- Class I Multi-Use Paths on the following:
    - Connecting Cushing Parkway to the path west of Fremont Boulevard
    - Along the UPRR railroad tracks

BACKGROUND TRAFFIC ESTIMATES

Traffic volumes for Background Conditions were estimated by adding traffic generated by approved but not yet constructed projects in the vicinity of the site (including full build-out of office space on the site) to existing volumes. A list of approved projects was obtained from the City of Fremont. The vehicle trips added to the transportation system from the approved projects were either obtained from their TIAs or estimated by using average rates/regression equations from the Institute of Transportation Engineers' (ITE) *Trip Generation Manual* (9th Edition). Some of the office uses on the project site are occupied and are generating traffic.

Table 7 summarizes the approved projects and their AM and PM peak-hour vehicle trip estimates. The resulting background traffic volumes are presented on **Figure 8**.

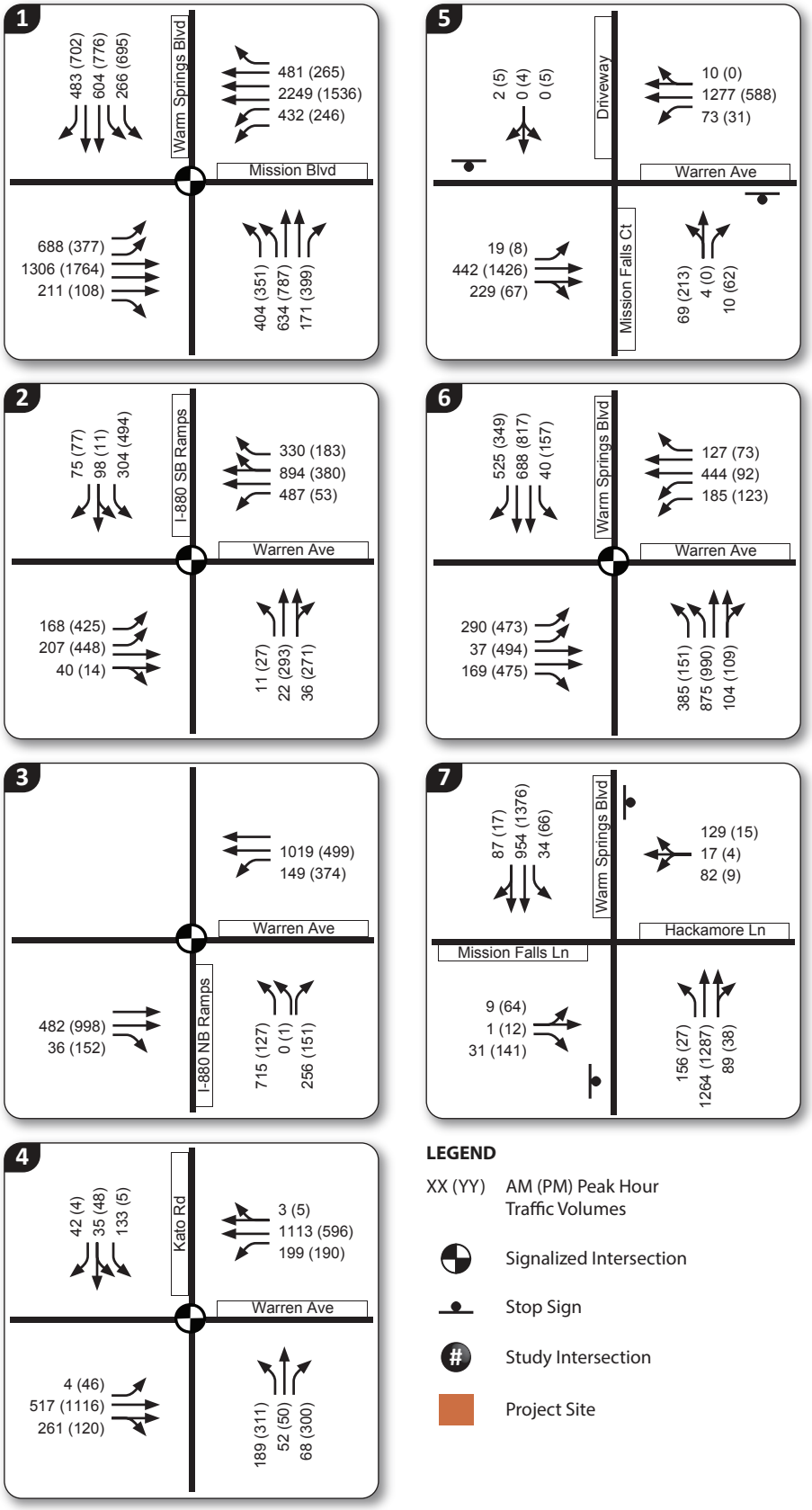
TABLE 7: APPROVED DEVELOPMENTS

Project Name	Location	Description	AM Peak Hour Trips	PM Peak Hour Trips
Mission Falls Court	Mission Falls Ct/Warren Ave	372 ksf office	503	471
Delta Products	Fremont Blvd./Cushing Parkway	178 ksf R&D	218	191
Thermo Fisher Scientific	45600 Fremont Boulevard	53 ksf office/R&D 53 ksf warehouse 169 ksf manufacturing	205	198
Hackamore Residential	303 Hackamore Lane	37 single family dus	28	37
Warm Springs/South Fremont BART Station	Warm Springs Boulevard/Grimmer Boulevard	Transit Station	600	600
Warm Springs/South Fremont Community Plan	Adjacent to Tesla factory	Mixed Use	6,074	6,060
Homelegelance New Construction	2710 Lakeview Court	94.5 ksf warehouse	28	30

Source: City of Fremont, April 2014; Fehr & Peers, May 2015.

BACKGROUND INTERSECTION LEVELS OF SERVICE

Table 8 presents the LOS calculation results for the study intersections under Background Conditions. The LOS calculation sheets are contained in **Appendix B**. Under Background Conditions, all study intersections meet the City of Fremont's minimum acceptable peak-hour LOS standard of D except for Warms Spring Boulevard/Mission Boulevard which is projected to operate at LOS E in the AM peak hour.



OK14-0001_8_BackVol

Figure 8

Background
Peak Hour Intersection Volumes, Lane Configurations and Traffic Control

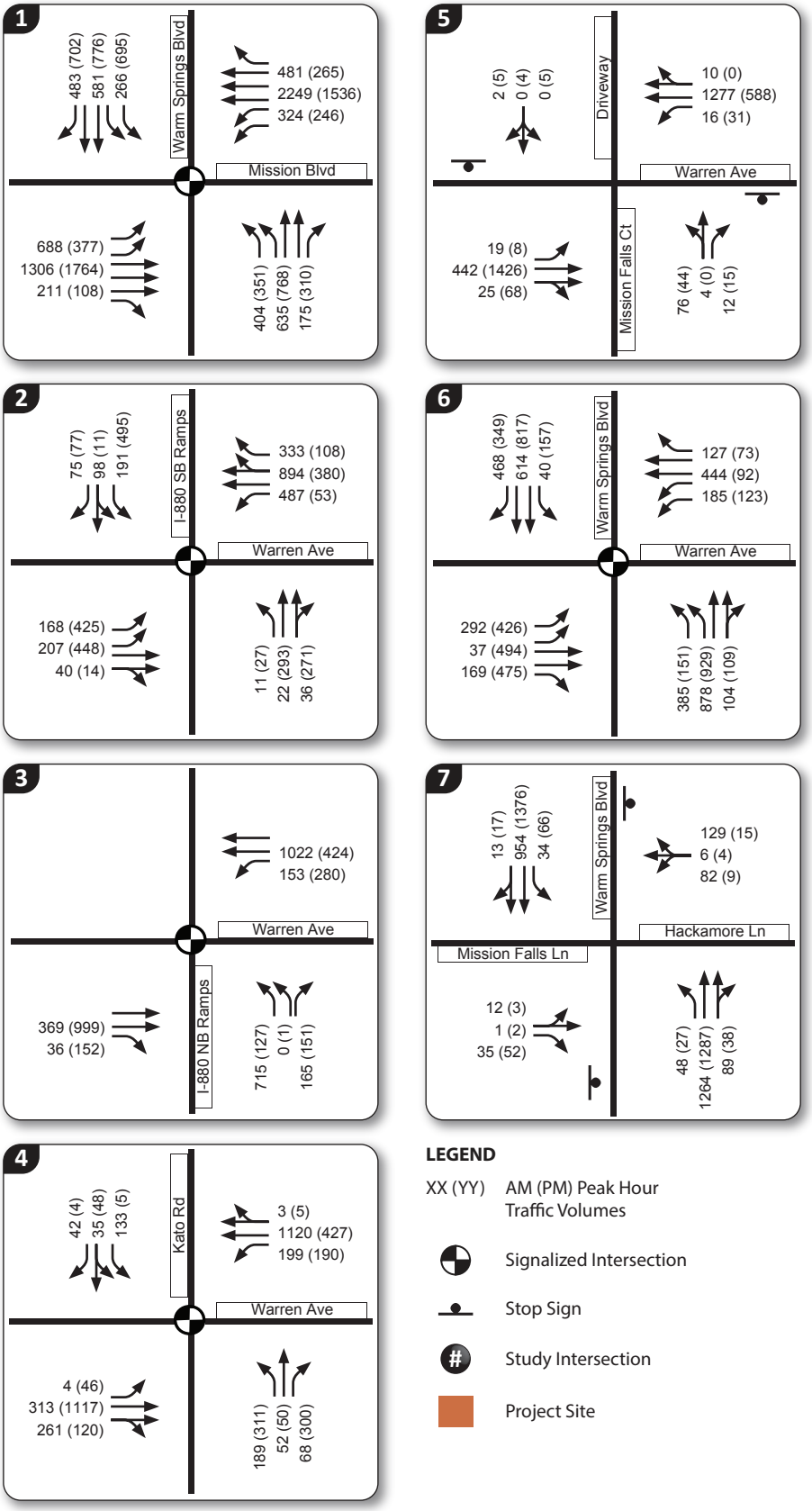
BACKGROUND PLUS PROJECT TRAFFIC ESTIMATES

The net new project trips described in **Table 6** and shown on **Figure 7** were added to the background traffic volumes. The resulting Background plus Project traffic volumes are presented on **Figure 9**.

BACKGROUND PLUS PROJECT INTERSECTION LEVELS OF SERVICE

Intersection levels of service were calculated with the net traffic added by build-out of the Project to evaluate the operating conditions of the intersections and to identify potential impacts. The results of the LOS calculations for Background and Background plus Project Conditions are presented in **Table 8**. The corresponding LOS calculation sheets are included in **Appendix B**.

Under Background plus Project Conditions, all intersections remain at an acceptable LOS except the intersection of Warm Spring Boulevard and Mission Boulevard, which is projected to maintain LOS E operations in the AM peak hour. However, the addition of project traffic will not increase the delay by more than four seconds. Therefore the project's impact at all intersections is considered **less-than-significant.**



OK14-0001_9_Back+ProjVol

Figure 9

Background Plus Project
Peak Hour Intersection Volumes, Lane Configurations and Traffic Control

TABLE 8: BACKGROUND AND BACKGROUND PLUS PROJECT SIGNALIZED INTERSECTION LEVELS OF SERVICE

Intersection	Control	Peak Hour	Background		Background + Project			Significant Impact	
			Delay	LOS	Delay	LOS	Δ Delay	AM	PM
1. Warm Springs Blvd/Mission Blvd	Signal	AM PM	**55.7** 54.0	**E** D	**55.9** 53.7	**E** D	+0.2 -0.3	No	No
2. I-880 SB Ramps/Warren Ave	Signal	AM PM	29.6 42.2	C D	27.3 42.0	C D	-2.3 -0.2	No	No
3. I-880 NB Ramps/Warren Ave	Signal	AM PM	19.8 19.7	B B	19.5 18.3	B B	-0.2 -1.4	No	No
4. Kato Rd/Warren Ave	Signal	AM PM	25.0 29.1	C C	24.4 30.2	C C	-0.6 +1.1	No	No
6. Warm Springs Blvd/Warren Ave	Signal	AM PM	30.5 32.4	C C	30.9 32.3	C C	+0.4 -0.1	No	No
7.Warm Springs Blvd/Mission Falls Ln	Signal	AM PM	*Unsignalized*		12.2 5.1	B A	*N/A*	No	No

Notes:
1. Intersections operating at unacceptable levels are shown in **bold.**

Source: Fehr & Peers, 2015

Traffic Signal Warrants

The peak hour traffic signal warrant was evaluated under Background Conditions for the following unsignalized intersections:

5. Mission Falls Court/Warren Avenue
7. Warm Springs Boulevard/Mission Falls Lane/Hackamore Lane

The Mission Falls Court/Warren Avenue intersection meets the signal warrant under Background (No Project) Conditions in the PM peak hour. With the net reduction in trips due to the Project , the warrant is no longer met under Background Plus Project Conditions. Therefore, the project's impact is **less-than-significant**.

The Warm Springs Boulevard/Mission Falls Lane/Hackamore Lane intersection meets the signal warrant under Background No Project Conditions in the AM peak hour. The intersection will be signalized under Background Plus Project Conditions as part of the project. Therefore, the project's impact is **less-than-significant.**

Signal warrant worksheets are provided in **Appendix C**.

5. 2035 CUMULATIVE CONDITIONS

This chapter presents the results of the intersection LOS calculations under 2035 Cumulative Conditions. This chapter also describes the procedure used to determine the Cumulative Baseline and Cumulative Plus Project traffic volumes. Cumulative project impacts are identified by assessing whether the project's traffic contribution is considerable for those intersections projected to operate at unacceptable levels under Cumulative with Project Conditions.

2035 CUMULATIVE TRAFFIC ESTIMATES

Cumulative Conditions represent the build-out of the City's General Plan in year 2035. Projected cumulative traffic volumes were obtained from the *Draft Mission Falls Court Traffic Impact Study*, which covered all seven of the intersections studied for Parc 55. The Mission Falls Court study obtained cumulative volumes from the City's General Plan, the City's travel forecast model, and the completed and approved *Creekside Land Development Project Traffic Impact Analysis*.

Figure 10 illustrates the Cumulative baseline intersection lane configurations and **Figure 11** shows the peak hour turning movement volumes.

The net new project trips described in **Table 6** and shown on **Figure 7** were added to the Cumulative baseline traffic volumes. The resulting Cumulative plus Project traffic volumes are presented on **Figure 11**.

2035 CUMULATIVE TRANSPORTATION IMPROVEMENTS

City staff provided information regarding the roadway system improvements that would be added under Cumulative Conditions. The resulting intersection lane configuration changes are discussed.

FREEWAY IMPROVEMENTS

As part of a future phase of the I-680 Express Lane project, a High Occupancy Toll (HOT) or "Express" lane will be added to the northbound section of I-680 between Calaveras Boulevard and SR 84.

INTERSECTION IMPROVEMENTS

The lane configuration at the intersection of Warm Springs Boulevard and Warren Avenue will be modified. A second left-turn lane will be added on the southbound approach for a total of two left-turn lanes.

2035 CUMULATIVE INTERSECTION LEVELS OF SERVICE

The intersection LOS results are summarized in **Table 9**. The corresponding LOS calculation sheets are included in **Appendix B**. The intersections projected to operate at unacceptable LOS E or F under Cumulative No Project and Cumulative Plus Project Conditions are:

1. Mission Boulevard/Warm Springs Boulevard (AM and PM)
2. I-880 Southbound Ramps/Warren Ave (PM)
3. I-880 Northbound Ramps/Warren Ave (PM)
4. Warren Avenue/Kato Road (PM)

For all of these intersections, the addition of project traffic will not increase delay by more than four seconds, and therefore the impacts are **less-than-significant**.

Traffic Signal Warrants

The peak hour traffic signal warrants were evaluated under Cumulative Conditions for the following unsignalized intersections:

5. Mission Falls Court/Warren Avenue
7. Warm Springs Boulevard/Mission Falls Lane/Hackamore Lane

The Mission Falls Court/Warren Avenue intersection meets the signal warrant under Cumulative No Project in the PM peak hour. Under Plus Project conditions, the intersection continues to meet the signal warrant requirements, but there is a net reduction in trips. Therefore, the project's impact is **less-than-significant**.

The Warm Springs Boulevard/Mission Falls Lane/Hackamore Lane intersection meets the signal warrant under Cumulative No Project Conditions in the AM peak hour. The intersection will be signalized under Cumulative Plus Project conditions as part of the project. Therefore, the project's impact is **less-than-significant.**

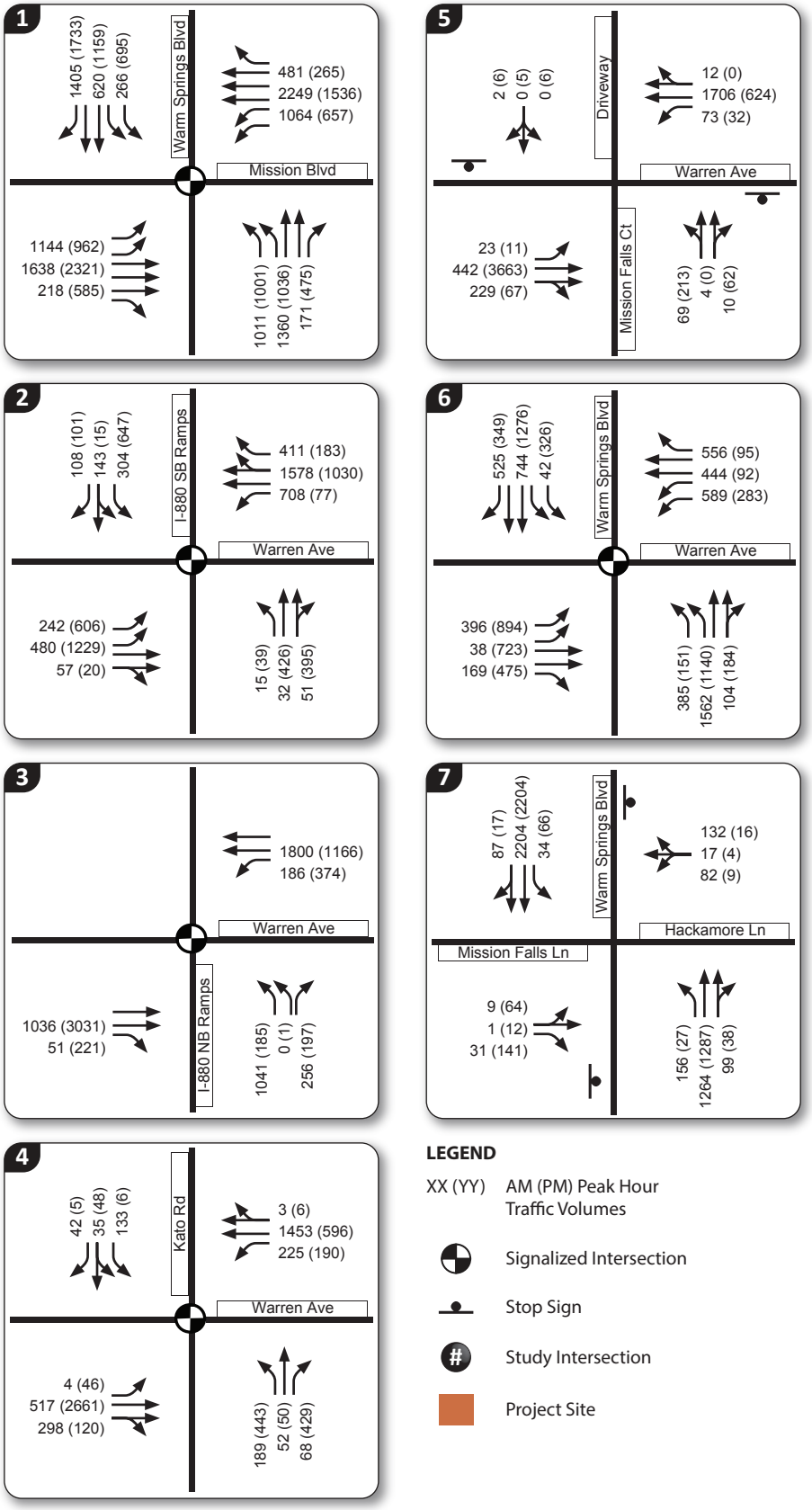
Signal warrant worksheets are provided in **Appendix C**.

TABLE 9: CUMULATIVE AND CUMULATIVE PLUS PROJECT SIGNALIZED INTERSECTION LEVELS OF SERVICE

Intersection	Control	Peak Hour	Cumulative		Cumulative + Project			Significant Impact	
			Delay	LOS	Delay	LOS	Δ Del.	AM	PM
1. Warm Springs Blvd/Mission Blvd	Signal	AM PM	**312.1** **320.3**	**F** **F**	**304.8** **322.6**	**F** **F**	-7.3 +2.3	No	No
2. I-880 SB Ramps/Warren Ave	Signal	AM PM	35.0 **70.8**	C **E**	31.9 **71.1**	C **E**	-3.1 +0.3	No	No
3. I-880 NB Ramps/Warren Ave	Signal	AM PM	24.9 **75.2**	C **E**	24.8 59.1	C E	-0.1 -16.1	No	No
4. Kato Rd/Warren Ave	Signal	AM PM	22.3 **110.3**	C **F**	22.3 **114.3**	C **F**	0.0 +3.98	No	No
6. Warm Springs Blvd/Warren Ave	Signal	AM PM	45.6 37.7	D D	45.2 37.2	D D	-0.1 -0.5	No	No
7. Warm Springs Blvd/Mission Falls Ln	Signal	AM PM	*Unsignalized*		11.9 2.4	B A	*N/A*	No	No

Notes:
1. Intersections operating at unacceptable levels are shown in **bold.**

Source: Fehr & Peers, 2015



LEGEND

XX (YY) AM (PM) Peak Hour Traffic Volumes

Signalized Intersection

Stop Sign

Study Intersection

Project Site

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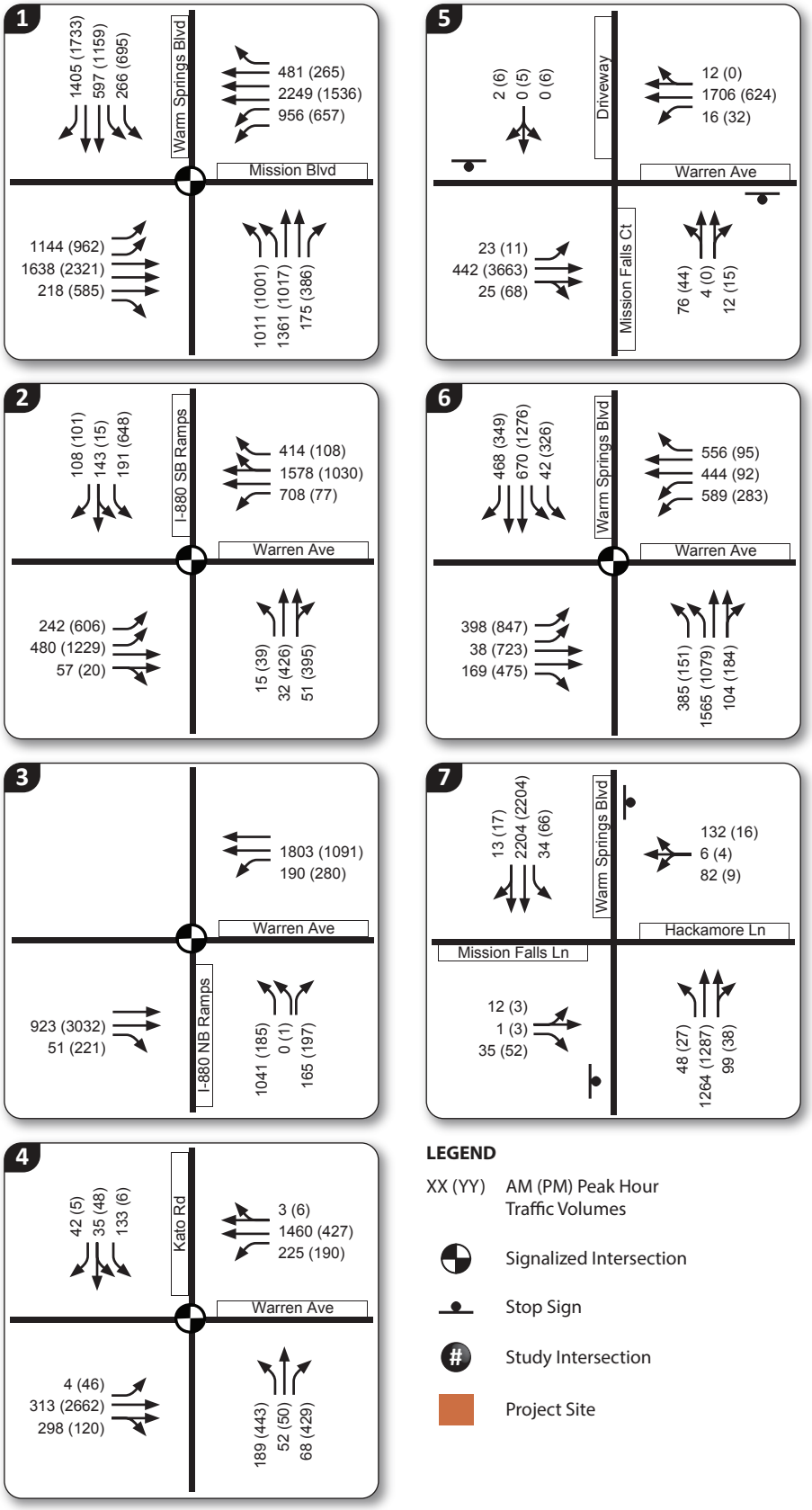
Figure 10

Cumulative
Peak Hour Intersection Volumes, Lane Configurations and Traffic Control



OK14-0001_11_Cumu+ProjVol

Figure 11

Cumulative Plus Project
Peak Hour Intersection Volumes, Lane Configurations and Traffic Control

7. SITE ACCESS, ON-SITE CIRCULATION, AND PARKING

The draft conceptual site plan, provided by East Warren Park, LLC, dated March 16, 2015, was used to assess the adequacy of the project's access and and on-site circulation for all modes. The site plan is shown in **Figure 2**.

PEDESTRIANS

The Project provides sidewalks throughout the community. The use of 5-foot sidewalks separated from the street is a best practice, providing a high degree of comfort to pedestrians and allowing any driveway slopes to take place outside of the sidewalks.

Marked crosswalks are present throughout the project site. Directional curb ramps should also be used throughout and crosswalks should be marked at the Mission Falls Lane and Warren Avenue intersection. Crosswalks should be marked at onsite intersections where pedestrian crossings would occur.

BICYCLES

No bicycle facilities are planned within the site, which is appropriate given the residential nature of the internal roadways. Cyclists riding on these relatively low volume and low speed streets should be comfortable sharing or taking the travel lanes. While not a requirement, the provision of at least two inverted U or similar bike racks at various locations throughout the project site to provide short-term bicycle parking would be beneficial.

TRANSIT

Currently, there are multiple AC Transit bus routes that provide direct access to the project site via Warren Avenue and Warms Springs Boulevard. Additionally, the planned Warm Springs/South Fremont BART station will be located less than a mile north of the project site just north of Mission Boulevard. Local bus access to BART will be provided via a bus transfer facility located within the station area.

VEHICLES

The site plan provides adequate normal and emergency vehicle circulation with multiple points of entry along Mission Falls Court. Vehicular circulation further benefits from multiple external access points with connections to both Warm Springs Boulevard and Warren Avenue.

Large trucks would not be regular users of the site, but they will need to access the site when residents move in and out. Internal roadways should be sized to accommodate fire trucks, which would also accommodate garbage trucks. Since larger trucks will be infrequent users of the site, and wider streets and intersections wiould encourage passenger vehicles to speed, large trucks may be allowed to cross center lines, if needed. Parking should be restricted within 50 feet of the Project entrances, and if landscaped medians or other entry treatments are proposed, a 20-foot clear area should be provided.

PARKING

The Project includes senior housing multi-unit buildings and a public senior center. The City of Fremont's off-street parking requirements for senior citizen housing are 1 covered space for every 2 units (0.5 space per unit), plus one required guest space for every 2 units (Chapter 18.183 of the City of Fremont Municipal Code). For the senior center, the City's requirements for health clubs was used, which require a minimum of 10 spaces, plus two additional spaces per KSF in excess of 1,000 square feet. The senior center would therefore require 20 parking spaces.

Based on the above requirements, there should be at least 580 total spaces provided by the Project. The Project will provide sufficient parking to meet City requirements. Additionally, it is recommended that parking be allowed on the streets within the development.

8. CONSTRUCTION IMPACTS

Off-site intersection impacts of the proposed Project were found to be less-than-significant based on the significance criteria. However, there could be temporary, although significant impacts during the construction phase of the Project.

Potential transportation system impacts during the construction phase of the proposed project include the potential to disrupt traffic flows on area roadways. Additional impacts may result during the construction phase of the proposed project, when there are heavy-duty construction vehicles sharing the roadway with normal vehicle traffic, creating potential conflicts between incompatible uses. Construction impacts would be temporary in nature; however, this impact is considered ***potentially significant***.

> ***Mitigation Measure:*** Although construction impacts are expected to be temporary, development of a construction management plan would reduce the potential for construction vehicle conflicts with other roadway users. The plan should include:

- Project staging plan to maximize on-site storage of materials and equipment
- A set of comprehensive traffic control measures, including scheduling of major truck trips and deliveries to avoid peak hours; lane closure proceedings; signs, cones, and other warning devices for drivers; and designation of construction access routes
- Permitted construction hours
- Location of construction staging
- Identification of parking areas for construction employees, site visitors, and inspectors, including on-site locations and along neighboring roadways.
- Provisions for street sweeping to remove construction related debris on public streets

Implementation of the construction management plan would reduce the temporary construction impact to a ***less-than-significant*** level.

APPENDIX A:
EXISITING TRAFFIC COUNTS

NOTE: ALL COUNTS TAKEN APRIL - MAY 2011

AM Peak Hour - Existing Conditions

Intersection Volume Report
Base Volume

Node	Intersection	Northbound L	Northbound T	Northbound R	Southbound L	Southbound T	Southbound R	Eastbound L	Eastbound T	Eastbound R	Westbound L	Westbound T	Westbound R
1	Warm Springs	201	158	10	21	609	150	66	162	498	215	366	53
* 2	Warm Springs	383	293	135	124	374	300	217	1178	203	312	2016	46
* 3	Warm Springs	276	589	100	36	487	373	73	34	107	179	427	123
* 4	Warm Springs	47	893	86	33	711	13	0	0	17	32	5	115
5	Warm Springs	119	913	3	14	688	49	2	0	2	114	0	16
6	Warm Springs	6	868	104	39	593	86	11	0	4	139	0	165
7	Warm Springs	0	993	9	48	718	0	0	0	0	38	0	105
8	Warm Springs	37	1000	9	2	537	304	18	0	14	35	2	58
9	Warm Springs	42	302	191	160	321	164	96	56	24	425	1075	577
10	Scott Creek/I	0	0	0	46	11	1008	0	219	302	77	1022	0
12	Scott Creek/I	0	0	0	0	0	849	0	102	0	0	252	0
13	Scott Creek/I	0	0	35	0	0	0	167	102	0	0	252	78
* 14	Warren Ave/I-	10	21	34	186	95	72	161	137	38	472	789	274
* 15	Warren Ave/I-	694	0	132	0	0	0	0	296	34	124	900	0
* 16	Warren Ave/Ka	131	3	39	4	14	5	3	198	229	173	886	2
* 17	Warren Ave/Mi	43	3	2	0	0	1	18	197	26	16	1040	9
18	Mission Blvd/	0	0	12	0	0	0	0	1119	291	0	0	0
19	Mission Blvd/	0	0	0	0	0	1072	0	0	0	0	1781	216
20	Mission Blvd/	0	0	0	0	0	1045	0	0	0	0	1011	33
21	Mission Blvd/	0	0	127	0	0	0	0	157	964	0	0	0
22	Mission Blvd/	68	33	150	49	73	42	18	1191	70	164	2496	67
23	Milmont Dr/Ka	110	104	95	18	65	1	0	23	64	750	307	177
24	Milmont Dr/Di	158	25	190	16	61	658	372	372	8	184	1155	16
25	N Milpitas Bl	424	283	90	129	214	547	190	299	230	67	358	141
26	Dixon Landing	145	16	479	18	0	46	0	140	105	61	1682	318
27	California Ci	57	201	0	0	125	34	482	0	195	0	0	0

PM Peak Hour - Existing Conditions

Intersection Volume Report
Base Volume

Node	Intersection	Northbound L	Northbound T	Northbound R	Southbound L	Southbound T	Southbound R	Eastbound L	Eastbound T	Eastbound R	Westbound L	Westbound T	Westbound R
1	Warm Springs	321	647	85	25	337	55	267	273	399	53	141	16
* 2	Warm Springs	339	552	294	271	409	233	189	1533	95	203	1415	115
* 3	Warm Springs	97	782	105	150	513	113	328	479	384	119	89	68
4	Warm Springs	7	1038	33	54	1006	3	0	1	46	1	1	14
5	Warm Springs	28	1071	2	0	1024	33	1	0	3	11	0	9
6	Warm Springs	36	999	25	85	900	25	72	3	23	28	0	51
7	Warm Springs	0	1013	38	88	843	0	0	0	0	13	0	35
8	Warm Springs	53	981	46	9	693	199	45	1	37	22	3	30
9	Warm Springs	24	554	372	340	347	65	263	746	71	215	97	294
10	Scott Creek/I	0	0	0	81	1	199	0	879	685	44	394	0
12	Scott Creek/I	0	0	0	0	0	329	0	207	0	0	0	0
13	Scott Creek/I	0	0	65	0	0	0	762	207	0	0	111	41
* 14	Warren Ave/I-	26	284	263	431	10	67	404	351	13	51	303	101
* 15	Warren Ave/I-	123	0	131	0	0	0	0	866	147	233	343	0
* 16	Warren Ave/Ka	277	31	268	4	2	3	10	887	64	34	291	4
* 17	Warren Ave/Mi	35	0	12	4	3	4	7	1221	30	20	312	0
18	Mission Blvd/	0	0	37	0	0	0	0	1617	833	0	0	0
19	Mission Blvd/	0	0	0	0	0	997	0	0	0	0	846	122
20	Mission Blvd/	0	0	0	0	0	506	0	0	0	0	420	12
21	Mission Blvd/	0	0	896	0	0	0	0	744	859	0	0	0
22	Mission Blvd/	103	46	295	150	57	36	44	2015	79	221	1520	117
23	Milmont Dr/Ka	185	24	725	84	99	3	1	189	95	168	58	8
24	Milmont Dr/Di	52	70	171	38	41	316	831	1064	71	173	415	18
25	N Milpitas Bl	342	519	57	192	297	223	453	360	387	51	109	126
26	Dixon Landing	120	108	721	20	0	7	0	1174	567	31	670	217
27	California Ci	17	277	0	0	181	415	665	0	121	0	0	0

#2 WARM SPRINGS / MISSION BLVD

#3 WARM SPRINGS / WARREN AVE.

#4 WARM SPRINGS / HACKAMORE / MISSION FALLS LN. (UNSIGNALIZED)

#14 WARREN AVE / I-880 SB RAMPS

#15 WARREN AVE / I-880 NB RAMPS

#16 WARREN AVE / KATO RD

#17 WARREN AVE / MISSION FALLS CT. (UNSIGNALIZED)

APPENDIX B:
INTERSECTION LEVEL OF SERVICE CALCULATIONS

APPENDIX C:
SIGNAL WARRANT ANALYSIS SPREADSHEETS

EX AM
Parc 55 Community

Scenario Report

Scenario:	Existing AM
Command:	EX AM
Volume:	EX AM
Geometry:	EX AM
Impact Fee:	Default Impact Fee
Trip Generation:	No Project
Trip Distribution:	Project
Paths:	Default Path
Routes:	Default Route
Configuration:	Default Configuration

Impact Analysis Report
Level Of Service

Intersection	Base LOS	Base Del/ Veh	Base V/ C	Future LOS	Future Del/ Veh	Future V/ C	Change in D/V
# 1 Warm Springs Blvd/Mission Blvd	C	29.7	0.585	C	29.7	0.585	+ 0.000
# 2 I-880 SB Ramps/Warren Ave	C	27.2	0.478	C	27.2	0.478	+ 0.000
# 3 I-880 NB Ramps/Warren Ave	B	19.2	0.461	B	19.2	0.461	+ 0.000
# 4 Kato Rd/Warren Ave	B	18.2	0.339	B	18.2	0.339	+ 0.000
# 5 Mission Falls Ct/Warren Ave	C	22.7	0.000	C	22.7	0.000	+ 0.000
# 6 Warm Springs Blvd/Warren Ave	C	27.7	0.463	C	27.7	0.463	+ 0.000
# 7 Warm Springs Blvd/Mission Fall	B	10.9	0.407	B	10.9	0.407	+ 0.000

Level Of Service Computation Report
Page 2

2000 HCM Operations Method (Future Volume Alternative)

****

Intersection #1 Warm Springs Blvd/Mission Blvd

****

Cycle (sec): 100 Critical Vol./Cap.(X): 0.585
Loss Time (sec): 0 (Y+R=4.0 sec) Average Delay (sec/veh): 29.7
Optimal Cycle: 59 Level Of Service: C

****

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	- R	L	-	T	- R	L	-	T	- R	L	-	T	- R
Control:	Protected				Protected				Protected				Protected			
Rights:	Include				Include				Include				Include			
Min. Green:	14	14	0		15	13	0		14	15	0		15	15	0	
Lanes:	2 0	2 0	1		2 0	1 1	1		2 0	3 0	1		2 0	3 0	1	
Volume Module:																
Base Vol:	395	302	140		128	386	309		224	1214	210		322	2077	48	
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:	395	302	140		128	386	309		224	1214	210		322	2077	48	
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:	395	302	140		128	386	309		224	1214	210		322	2077	48	
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:	395	302	140		128	386	309		224	1214	210		322	2077	48	
Reduct Vol:	0	0	0		0	0	0		0	0	0		0	0	0	
Reduced Vol:	395	302	140		128	386	309		224	1214	210		322	2077	48	
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:	395	302	140		128	386	309		224	1214	210		322	2077	48	
Saturation Flow Module:																
Sat/Lane:	1900	1900	1900		1900	1900	1900		1900	1900	1900		1900	1900	1900	
Adjustment:	0.92	0.95	0.85		0.92	0.89	0.89		0.92	0.91	0.85		0.92	0.91	0.85	
Lanes:	2.00	2.00	1.00		2.00	1.67	1.33		2.00	3.00	1.00		2.00	3.00	1.00	
Final Sat.:	3502	3610	1615		3502	2806	2246		3502	5187	1615		3502	5187	1615	
Capacity Analysis Module:																
Vol/Sat:	0.11	0.08	0.09		0.04	0.14	0.14		0.06	0.23	0.13		0.09	0.40	0.03	
Crit Moves:		****			****				****					****		
Green/Cycle:	0.15	0.14	0.14		0.15	0.14	0.14		0.14	0.43	0.43		0.28	0.57	0.57	
Volume/Cap:	0.77	0.60	0.62		0.24	0.96	0.96		0.46	0.54	0.30		0.33	0.70	0.05	
Delay/Veh:	48.2	42.3	45.7		37.7	65.8	65.8		40.2	21.3	18.7		29.0	16.2	9.6	
User DelAdj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
AdjDel/Veh:	48.2	42.3	45.7		37.7	65.8	65.8		40.2	21.3	18.7		29.0	16.2	9.6	
LOS by Move:	D	D	D		D	E	E		D	C	B		C	B	A	
HCM2kAvgQ:	8	5	5		2	12	12		4	10	4		4	17	1	

****

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

****

EX AM
Parc 55 Community

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

****

Intersection #2 I-880 SB Ramps/Warren Ave

```
*******************************************************************************
Cycle (sec):         120                  Critical Vol./Cap.(X):         0.478
Loss Time (sec):      16 (Y+R=4.0 sec)    Average Delay (sec/veh):        27.2
Optimal Cycle:        48                  Level Of Service:                C
*******************************************************************************
Approach:      North Bound      South Bound       East Bound       West Bound
Movement:     L  -  T  -  R    L  -  T  -  R    L  -  T  -  R    L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:       Split Phase      Split Phase       Protected        Protected
Rights:           Include          Include          Include          Include
Min. Green:     0    6     0     0    6     0     4    8     0     4    8     0
Lanes:        1  0  1  1  0    1  1  0  0  1    2  0  1  1  0    1  0  1  1  1
------------|---------------||---------------||---------------||---------------|
Volume Module:
Base Vol:      11   22    36   192   98    75   166  142    40   487  813   283
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:   11   22    36   192   98    75   166  142    40   487  813   283
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:   11   22    36   192   98    75   166  142    40   487  813   283
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:    11   22    36   192   98    75   166  142    40   487  813   283
Reduct Vol:     0    0     0     0    0     0     0    0     0     0    0     0
Reduced Vol:   11   22    36   192   98    75   166  142    40   487  813   283
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:   11   22    36   192   98    75   166  142    40   487  813   283
------------|---------------||---------------||---------------||---------------|
Saturation Flow Module:
Sat/Lane:    1900 1900  1900  1900 1900  1900  1900 1900  1900  1900 1900  1900
Adjustment:  0.95 0.86  0.86  0.97 0.97  0.85  0.92 0.92  0.92  0.95 0.91  0.91
Lanes:       1.00 1.00  1.00  1.32 0.68  1.00  2.00 1.56  0.44  1.00 2.00  1.00
Final Sat.:  1805 1637  1637  2435 1243  1615  3502 2724   767  1805 3469  1735
------------|---------------||---------------||---------------||---------------|
Capacity Analysis Module:
Vol/Sat:     0.01 0.01  0.02  0.08 0.08  0.05  0.05 0.05  0.05  0.27 0.23  0.16
Crit Moves:        ****        ****                   ****        ****
Green/Cycle: 0.05 0.05  0.05  0.16 0.16  0.16  0.11 0.11  0.11  0.55 0.55  0.55
Volume/Cap:  0.12 0.27  0.44  0.49 0.49  0.29  0.43 0.49  0.49  0.49 0.43  0.30
Delay/Veh:   55.1 55.6  57.7  46.5 46.5  44.9  50.6 51.6  51.6  17.0 16.3  14.8
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:  55.1 55.6  57.7  46.5 46.5  44.9  50.6 51.6  51.6  17.0 16.3  14.8
LOS by Move:   E    E     E     D    D     D     D    D     D     B    B     B
HCM2kAvgQ:      0    1     2     5    5     3     3    4     4    11    9     6
*******************************************************************************
Note: Queue reported is the number of cars per lane.
*******************************************************************************
```


EX AM
Parc 55 Community

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

```
*******************************************************************************
Intersection #3 I-880 NB Ramps/Warren Ave
*******************************************************************************
Cycle (sec):         104                  Critical Vol./Cap.(X):         0.461
Loss Time (sec):       0 (Y+R=4.0 sec)    Average Delay (sec/veh):        19.2
```

```
Optimal Cycle:        42                Level Of Service:                    B
*******************************************************************************
Approach:      North Bound      South Bound       East Bound       West Bound
Movement:     L  -  T  -  R    L  -  T  -  R    L  -  T  -  R    L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:        Protected        Protected        Protected        Protected
Rights:           Include          Include          Include          Include
Min. Green:     8    0     0     0    0     0     0   10     0     4   10    10
Lanes:        2  0  0  0  1    0  0  0  0  0    0  0  2  0  1    1  0  2  0  0
------------|---------------||---------------||---------------||---------------|
Volume Module:
Base Vol:     715    0   136     0    0     0     0  305    36   128  927     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:  715    0   136     0    0     0     0  305    36   128  927     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:  715    0   136     0    0     0     0  305    36   128  927     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:   715    0   136     0    0     0     0  305    36   128  927     0
Reduct Vol:     0    0     0     0    0     0     0    0     0     0    0     0
Reduced Vol:  715    0   136     0    0     0     0  305    36   128  927     0
PCE Adj:     1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
MLF Adj:     1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
FinalVolume:  715    0   136     0    0     0     0  305    36   128  927     0
------------|---------------||---------------||---------------||---------------|
Saturation Flow Module:
Sat/Lane:    1900 1900  1900  1900 1900  1900  1900 1900  1900  1900 1900  1900
Adjustment:  0.92 1.00  0.85  1.00 1.00  1.00  1.00 0.95  0.85  0.95 0.95  1.00
Lanes:       2.00 0.00  1.00  0.00 0.00  0.00  0.00 2.00  1.00  1.00 2.00  0.00
Final Sat.:  3502    0  1615     0    0     0     0 3610  1615  1805 3610     0
------------|---------------||---------------||---------------||---------------|
Capacity Analysis Module:
Vol/Sat:     0.20 0.00  0.08  0.00 0.00  0.00  0.00 0.08  0.02  0.07 0.26  0.00
Crit Moves:  ****                              ****                    ****
Green/Cycle: 0.44 0.00  0.44  0.00 0.00  0.00  0.00 0.32  0.32  0.24 0.56  0.00
Volume/Cap:  0.46 0.00  0.19  0.00 0.00  0.00  0.00 0.26  0.07  0.30 0.46  0.00
Delay/Veh:   20.5  0.0  17.7   0.0  0.0   0.0   0.0 26.3  24.6  33.0 13.9   0.0
User DelAdj: 1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
AdjDel/Veh:  20.5  0.0  17.7   0.0  0.0   0.0   0.0 26.3  24.6  33.0 13.9   0.0
LOS by Move:   C    A     B     A    A     A     A    C     C     C    B     A
HCM2kAvgQ:      8    0     3     0    0     0     0    4     1     3    9     0
*******************************************************************************
Note: Queue reported is the number of cars per lane.
*******************************************************************************


  Traffix 7.9.0415 (c) 2007 Dowling Assoc. Licensed to FEHR & PEERS,  LAFAYETTE♀
Existing AM                 Fri May 29, 2015 15:02:14                 Page 6-1
-------------------------------------------------------------------------------
                                    EX AM
                                Parc 55 Community
-------------------------------------------------------------------------------
                      Level Of Service Computation Report
           2000 HCM Operations Method (Future Volume Alternative)
*******************************************************************************
Intersection #4 Kato Rd/Warren Ave
*******************************************************************************
Cycle (sec):         124                Critical Vol./Cap.(X):         0.339
Loss Time (sec):       0 (Y+R=4.0 sec)  Average Delay (sec/veh):        18.2
Optimal Cycle:        34                Level Of Service:                    B
*******************************************************************************
Approach:      North Bound      South Bound       East Bound       West Bound
```

```
Movement:     L  -  T  -  R    L  -  T  -  R    L  -  T  -  R    L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:       Split Phase      Split Phase       Protected         Protected
Rights:           Include          Include          Include           Include
Min. Green:     6    0    0     0    6    0     4    8    0     4    8    0
Lanes:        1  0  1  0  1    1  1  0  0  1    1  0  1  1  0    1  0  1  1  0
------------|---------------||---------------||---------------||---------------|
Volume Module:
Base Vol:     135    4   41     5   15    6     4  204  236   179  913    3
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:  135    4   41     5   15    6     4  204  236   179  913    3
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:  135    4   41     5   15    6     4  204  236   179  913    3
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:   135    4   41     5   15    6     4  204  236   179  913    3
Reduct Vol:     0    0    0     0    0    0     0    0    0     0    0    0
Reduced Vol:  135    4   41     5   15    6     4  204  236   179  913    3
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:  135    4   41     5   15    6     4  204  236   179  913    3
------------|---------------||---------------||---------------||---------------|
Saturation Flow Module:
Sat/Lane:    1900 1900 1900  1900 1900 1900  1900 1900 1900  1900 1900 1900
Adjustment:  0.95 1.00 0.85  0.99 0.99 0.85  0.95 0.87 0.87  0.95 0.95 0.95
Lanes:       1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.99 0.01
Final Sat.:  1805 1900 1615  1877 1877 1615  1805 1661 1661  1805 3598   12
------------|---------------||---------------||---------------||---------------|
Capacity Analysis Module:
Vol/Sat:     0.07 0.00 0.03  0.00 0.01 0.00  0.00 0.12 0.14  0.10 0.25 0.25
Crit Moves:  ****                ****        ****                 ****
Green/Cycle: 0.21 0.21 0.21  0.05 0.05 0.05  0.03 0.44 0.44  0.31 0.71 0.71
Volume/Cap:  0.36 0.01 0.12  0.06 0.17 0.08  0.07 0.28 0.33  0.33 0.36 0.36
Delay/Veh:   42.5 38.9 39.9  56.4 57.2 56.8  58.7 22.5 23.0  33.6  7.1  7.1
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:  42.5 38.9 39.9  56.4 57.2 56.8  58.7 22.5 23.0  33.6  7.1  7.1
LOS by Move:   D    D    D     E    E    E     E    C    C     C    A    A
HCM2kAvgQ:     5    0    1     0    1    0     0    5    6     5    7    7
*******************************************************************************
Note: Queue reported is the number of cars per lane.
*******************************************************************************
```


EX AM
Parc 55 Community

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

```
*******************************************************************************
Intersection #5 Mission Falls Ct/Warren Ave
*******************************************************************************
Average Delay (sec/veh):      1.1       Worst Case Level Of Service: C[ 22.7]
*******************************************************************************
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
Rights:           Include          Include          Include           Include
Lanes:        0  1  0  0  1    0  0  0  0  1    1  0  1  1  0    1  0  1  1  0
```

```
------------|---------------||---------------||---------------||---------------|
Volume Module:
Base Vol:      45    4     3     0    0     2    19  203    27    17 1072    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:   45    4     3     0    0     2    19  203    27    17 1072    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:   45    4     3     0    0     2    19  203    27    17 1072    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:    45    4     3     0    0     2    19  203    27    17 1072    10
Reduct Vol:     0    0     0     0    0     0     0    0     0     0    0     0
FinalVolume:   45    4     3     0    0     2    19  203    27    17 1072    10
------------|---------------||---------------||---------------||---------------|
Critical Gap Module:
Critical Gp:  7.5  6.5   6.9 xxxxx xxxx   6.9   4.1 xxxx xxxxx   4.1 xxxx xxxxx
FollowUpTim:  3.5  4.0   3.3 xxxxx xxxx   3.3   2.2 xxxx xxxxx   2.2 xxxx xxxxx
------------|---------------||---------------||---------------||---------------|
Capacity Module:
Cnflict Vol:  825 1371   115  xxxx xxxx   541  1082 xxxx xxxxx   230 xxxx xxxxx
Potent Cap.:  268  148   922  xxxx xxxx   491   652 xxxx xxxxx  1350 xxxx xxxxx
Move Cap.:    259  141   922  xxxx xxxx   491   652 xxxx xxxxx  1350 xxxx xxxxx
Volume/Cap:  0.17 0.03  0.00  xxxx xxxx  0.00  0.03 xxxx  xxxx  0.01 xxxx  xxxx
------------|---------------||---------------||---------------||---------------|
Level Of Service Module:
2Way95thQ:   xxxx xxxx   0.0  xxxx xxxx   0.0   0.1 xxxx xxxxx   0.0 xxxx xxxxx
Control Del:xxxxx xxxx   8.9 xxxxx xxxx  12.4  10.7 xxxx xxxxx   7.7 xxxx xxxxx
LOS by Move:   *    *     A     *    *     B     B    *     *     A    *     *
Movement:     LT - LTR - RT    LT - LTR - RT    LT - LTR - RT    LT - LTR - RT
Shared Cap.:  242 xxxx xxxxx  xxxx xxxx xxxxx  xxxx xxxx xxxxx  xxxx xxxx xxxxx
SharedQueue:  0.7 xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx
Shrd ConDel: 23.6 xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx
Shared LOS:    C    *     *     *    *     *     *    *     *     *    *     *
ApproachDel:      22.7             12.4           xxxxxx           xxxxxx
ApproachLOS:        C                B                *                *
*******************************************************************************
Note: Queue reported is the number of cars per lane.
*******************************************************************************
```


EX AM
Parc 55 Community

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

```
*******************************************************************************
Intersection #6 Warm Springs Blvd/Warren Ave
*******************************************************************************
Cycle (sec):         120                Critical Vol./Cap.(X):         0.463
Loss Time (sec):       0 (Y+R=4.0 sec)  Average Delay (sec/veh):        27.7
Optimal Cycle:        42                Level Of Service:                  C
*******************************************************************************
Approach:      North Bound      South Bound       East Bound       West Bound
Movement:     L  -  T  -  R    L  -  T  -  R    L  -  T  -  R    L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:        Protected        Protected        Protected        Protected
Rights:           Include          Include          Include          Include
Min. Green:     4   10     0     4   10     0     4   10     0     4   10     0
Lanes:        2  0  1  1  0    1  0  2  0  1    2  0  2  0  1    2  0  2  0  1
```

```
------------|---------------||---------------||---------------||---------------|
Volume Module:
Base Vol:     285  607   103    38  502   385    76   36   111   185  440   127
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:  285  607   103    38  502   385    76   36   111   185  440   127
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:  285  607   103    38  502   385    76   36   111   185  440   127
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:   285  607   103    38  502   385    76   36   111   185  440   127
Reduct Vol:     0    0     0     0    0     0     0    0     0     0    0     0
Reduced Vol:  285  607   103    38  502   385    76   36   111   185  440   127
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:  285  607   103    38  502   385    76   36   111   185  440   127
------------|---------------||---------------||---------------||---------------|
Saturation Flow Module:
Sat/Lane:    1900 1900  1900  1900 1900  1900  1900 1900  1900  1900 1900  1900
Adjustment:  0.92 0.93  0.93  0.95 0.95  0.85  0.92 0.95  0.85  0.92 0.95  0.85
Lanes:       2.00 1.71  0.29  1.00 2.00  1.00  2.00 2.00  1.00  2.00 2.00  1.00
Final Sat.:  3502 3018   512  1805 3610  1615  3502 3610  1615  3502 3610  1615
------------|---------------||---------------||---------------||---------------|
Capacity Analysis Module:
Vol/Sat:     0.08 0.20  0.20  0.02 0.14  0.24  0.02 0.01  0.07  0.05 0.12  0.08
Crit Moves:  ****                         ****  ****                    ****
Green/Cycle: 0.18 0.59  0.59  0.10 0.51  0.51  0.05 0.19  0.19  0.12 0.26  0.26
Volume/Cap:  0.46 0.34  0.34  0.21 0.27  0.46  0.46 0.05  0.36  0.44 0.46  0.30
Delay/Veh:   44.9 12.6  12.6  50.5 16.5  19.0  57.8 39.8  43.0  49.8 37.5  35.8
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:  44.9 12.6  12.6  50.5 16.5  19.0  57.8 39.8  43.0  49.8 37.5  35.8
LOS by Move:   D    B     B     D    B     B     E    D     D     D    D     D
HCM2kAvgQ:      5    7     7     1    5     9     2    1     4     4    7     4
*******************************************************************************
Note: Queue reported is the number of cars per lane.
*******************************************************************************
```

```
  Traffix 7.9.0415 (c) 2007 Dowling Assoc. Licensed to FEHR & PEERS,  LAFAYETTE♀
Existing AM                 Fri May 29, 2015 15:02:14                  Page 9-1
-------------------------------------------------------------------------------
                                     EX AM
                                 Parc 55 Community
-------------------------------------------------------------------------------
                       Level Of Service Computation Report
             2000 HCM Operations Method (Future Volume Alternative)
*******************************************************************************
Intersection #7 Warm Springs Blvd/Mission Falls Ln/Hackamore Ln
*******************************************************************************
Cycle (sec):         100                 Critical Vol./Cap.(X):         0.407
Loss Time (sec):       0 (Y+R=4.0 sec)  Average Delay (sec/veh):        10.9
Optimal Cycle:        38                 Level Of Service:                  B
*******************************************************************************
Approach:      North Bound      South Bound       East Bound       West Bound
Movement:     L  -  T  -  R    L  -  T  -  R    L  -  T  -  R    L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:        Protected        Protected        Protected        Protected
Rights:           Include          Include          Include          Include
Min. Green:     0    0     0     0    0     0     0    0     0     0    0     0
Lanes:        1  0  1  1  0    1  0  1  1  0    0  1  0  0  1    0  0  1! 0  0
------------|---------------||---------------||---------------||---------------|
Volume Module:
Base Vol:      49  920    89    34  733    14     0    0    18    33    6   119
```

```
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:   49  920    89    34  733    14     0    0    18    33    6   119
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:   49  920    89    34  733    14     0    0    18    33    6   119
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:    49  920    89    34  733    14     0    0    18    33    6   119
Reduct Vol:     0    0     0     0    0     0     0    0     0     0    0     0
Reduced Vol:   49  920    89    34  733    14     0    0    18    33    6   119
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:   49  920    89    34  733    14     0    0    18    33    6   119
------------|---------------||---------------||---------------||---------------|
Saturation Flow Module:
Sat/Lane:    1900 1900  1900  1900 1900  1900  1900 1900  1900  1900 1900  1900
Adjustment:  0.95 0.94  0.94  0.95 0.95  0.95  1.00 1.00  0.85  0.89 0.89  0.89
Lanes:       1.00 1.82  0.18  1.00 1.96  0.04  0.00 1.00  1.00  0.21 0.04  0.75
Final Sat.:  1805 3249   314  1805 3532    67     0 1900  1615   353   64  1272
------------|---------------||---------------||---------------||---------------|
Capacity Analysis Module:
Vol/Sat:     0.03 0.28  0.28  0.02 0.21  0.21  0.00 0.00  0.01  0.09 0.09  0.09
Crit Moves:       ****        ****                        ****  ****
Green/Cycle: 0.09 0.70  0.70  0.05 0.66  0.66  0.00 0.00  0.03  0.23 0.26  0.26
Volume/Cap:  0.32 0.41  0.41  0.41 0.32  0.32  0.00 0.00  0.41  0.41 0.36  0.36
Delay/Veh:   44.1  6.5   6.5  49.6  7.5   7.5   0.0  0.0  53.8  33.4 30.9  30.9
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:  44.1  6.5   6.5  49.6  7.5   7.5   0.0  0.0  53.8  33.4 30.9  30.9
LOS by Move:   D    A     A     D    A     A     A    A     D     C    C     C
HCM2kAvgQ:      2    7     7     2    5     5     0    0     1     4    4     4
*******************************************************************************
Note: Queue reported is the number of cars per lane.
*******************************************************************************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```

Scenario Report

Scenario:	Existing PM
Command:	EX PM
Volume:	EX PM
Geometry:	EX PM
Impact Fee:	Default Impact Fee
Trip Generation:	No Project
Trip Distribution:	Project
Paths:	Default Path
Routes:	Default Route
Configuration:	Default Configuration

Impact Analysis Report
Level Of Service

Intersection	Base LOS	Base Del/ Veh	Base V/ C	Future LOS	Future Del/ Veh	Future V/ C	Change in D/V
# 1 Warm Springs Blvd/Mission Blvd	C	30.2	0.632	C	30.2	0.632	+ 0.000
# 2 I-880 SB Ramps/Warren Ave	D	41.5	0.581	D	41.5	0.581	+ 0.000
# 3 I-880 NB Ramps/Warren Ave	B	17.7	0.464	B	17.7	0.464	+ 0.000
# 4 Kato Rd/Warren Ave	C	23.3	0.468	C	23.3	0.468	+ 0.000
# 5 Mission Falls Ct/Warren Ave	F	65.1	0.000	F	65.1	0.000	+ 0.000
# 6 Warm Springs Blvd/Warren Ave	C	31.6	0.624	C	31.6	0.624	+ 0.000
# 7 Warm Springs Blvd/Mission Fall	A	4.5	0.379	A	4.5	0.379	+ 0.000

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

****

Intersection #1 Warm Springs Blvd/Mission Blvd

```
*******************************************************************************
Cycle (sec):         100                  Critical Vol./Cap.(X):         0.632
Loss Time (sec):       0 (Y+R=4.0 sec)  Average Delay (sec/veh):        30.2
Optimal Cycle:        62                  Level Of Service:                 C
*******************************************************************************
Approach:      North Bound      South Bound       East Bound       West Bound
Movement:     L  -  T  -  R    L  -  T  -  R    L  -  T  -  R    L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:        Protected        Protected        Protected        Protected
Rights:           Include          Include          Include          Include
Min. Green:    14   14     0    15   13     0    14   15     0    15   15     0
Lanes:        2  0  2  0  1    2  0  1  1  1    2  0  3  0  1    2  0  3  0  1
------------|---------------||---------------||---------------||---------------|
Volume Module:
Base Vol:     350  569   303   280  422   240   195 1579    98   210 1458   119
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:  350  569   303   280  422   240   195 1579    98   210 1458   119
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:  350  569   303   280  422   240   195 1579    98   210 1458   119
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:   350  569   303   280  422   240   195 1579    98   210 1458   119
Reduct Vol:     0    0     0     0    0     0     0    0     0     0    0     0
Reduced Vol:  350  569   303   280  422   240   195 1579    98   210 1458   119
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:  350  569   303   280  422   240   195 1579    98   210 1458   119
------------|---------------||---------------||---------------||---------------|
Saturation Flow Module:
Sat/Lane:    1900 1900  1900  1900 1900  1900  1900 1900  1900  1900 1900  1900
Adjustment:  0.92 0.95  0.85  0.92 0.90  0.90  0.92 0.91  0.85  0.92 0.91  0.85
Lanes:       2.00 2.00  1.00  2.00 1.91  1.09  2.00 3.00  1.00  2.00 3.00  1.00
Final Sat.:  3502 3610  1615  3502 3265  1857  3502 5187  1615  3502 5187  1615
------------|---------------||---------------||---------------||---------------|
Capacity Analysis Module:
Vol/Sat:     0.10 0.16  0.19  0.08 0.13  0.13  0.06 0.30  0.06  0.06 0.28  0.07
Crit Moves:              ****  ****                  ****        ****
Green/Cycle: 0.22 0.27  0.27  0.15 0.20  0.20  0.19 0.43  0.43  0.15 0.39  0.39
Volume/Cap:  0.46 0.59  0.70  0.53 0.64  0.64  0.29 0.70  0.14  0.40 0.72  0.19
Uniform Del: 34.1 31.9  33.1  39.3 36.7  36.7  34.4 23.1  17.1  38.4 25.9  20.1
IncremntDel:  0.4  1.0   5.2   1.1  1.4   1.4   0.2  1.0   0.1   0.5  1.3   0.1
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:   34.6 32.9  38.3  40.3 38.1  38.1  34.6 24.1  17.2  38.9 27.3  20.3
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:  34.6 32.9  38.3  40.3 38.1  38.1  34.6 24.1  17.2  38.9 27.3  20.3
LOS by Move:   C    C     D     D    D     D     C    C     B     D    C     C
HCM2kAvgQ:      5    9    10     5    8     8     3   15     2     3   15     2
*******************************************************************************
Note: Queue reported is the number of cars per lane.

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Existing PM                Fri May 29, 2015 15:02:24                 Page 4-1
-------------------------------------------------------------------------------
-------------------------------------------------------------------------------
                        Level Of Service Computation Report
             2000 HCM Operations Method (Future Volume Alternative)
*******************************************************************************
Intersection #2 I-880 SB Ramps/Warren Ave
*******************************************************************************
Cycle (sec):         120                  Critical Vol./Cap.(X):         0.581
```

```
Loss Time (sec):      16 (Y+R=4.0 sec)  Average Delay (sec/veh):        41.5
Optimal Cycle:        57                Level Of Service:                   D
*******************************************************************************
Approach:      North Bound      South Bound       East Bound       West Bound
Movement:     L  -  T  -  R    L  -  T  -  R    L  -  T  -  R    L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:       Split Phase      Split Phase       Protected        Protected
Rights:           Include          Include          Include          Include
Min. Green:     0    6     0     0    6     0     4    8     0     4    8     0
Lanes:        1  0  1  1  0    1  1  0  0  1    2  0  1  1  0    1  0  1  1  1
------------|---------------||---------------||---------------||---------------|
Volume Module:
Base Vol:      27  293   271   444   11    70   417  362    14    53  313   105
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:   27  293   271   444   11    70   417  362    14    53  313   105
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:   27  293   271   444   11    70   417  362    14    53  313   105
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:    27  293   271   444   11    70   417  362    14    53  313   105
Reduct Vol:     0    0     0     0    0     0     0    0     0     0    0     0
Reduced Vol:   27  293   271   444   11    70   417  362    14    53  313   105
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:   27  293   271   444   11    70   417  362    14    53  313   105
------------|---------------||---------------||---------------||---------------|
Saturation Flow Module:
Sat/Lane:    1900 1900  1900  1900 1900  1900  1900 1900  1900  1900 1900  1900
Adjustment:  0.95 0.88  0.88  0.95 0.95  0.85  0.92 0.94  0.94  0.95 0.91  0.91
Lanes:       1.00 1.04  0.96  1.95 0.05  1.00  2.00 1.93  0.07  1.00 2.00  1.00
Final Sat.:  1805 1740  1610  3534   88  1615  3502 3455   134  1805 3473  1736
------------|---------------||---------------||---------------||---------------|
Capacity Analysis Module:
Vol/Sat:     0.01 0.17  0.17  0.13 0.13  0.04  0.12 0.10  0.10  0.03 0.09  0.06
Crit Moves:               ****  ****              ****                    ****
Green/Cycle: 0.29 0.29  0.29  0.22 0.22  0.22  0.21 0.27  0.27  0.09 0.16  0.16
Volume/Cap:  0.05 0.58  0.58  0.58 0.58  0.20  0.58 0.38  0.38  0.34 0.58  0.39
Uniform Del: 30.7 36.4  36.4  42.1 42.1  38.5  43.0 35.4  35.4  51.5 47.1  45.6
IncremntDel:  0.0  0.9   0.9   1.1  1.1   0.3   1.2  0.3   0.3   1.3  1.2   0.2
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:   30.8 37.3  37.3  43.2 43.2  38.8  44.2 35.6  35.6  52.8 48.3  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:  30.8 37.3  37.3  43.2 43.2  38.8  44.2 35.6  35.6  52.8 48.3  45.8
LOS by Move:   C    D     D     D    D     D     D    D     D     D    D     D
HCM2kAvgQ:      1   10    10     8    8     2     8    6     6     2    6     4
*******************************************************************************
Note: Queue reported is the number of cars per lane.

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-------------------------------------------------------------------------------
                      Level Of Service Computation Report
           2000 HCM Operations Method (Future Volume Alternative)
*******************************************************************************
Intersection #3 I-880 NB Ramps/Warren Ave
*******************************************************************************
Cycle (sec):         104                Critical Vol./Cap.(X):         0.464
Loss Time (sec):       0 (Y+R=4.0 sec)  Average Delay (sec/veh):        17.7
Optimal Cycle:        43                Level Of Service:                   B
*******************************************************************************
```

```
Approach:      North Bound      South Bound       East Bound       West Bound
Movement:     L  -  T  -  R    L  -  T  -  R    L  -  T  -  R    L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:        Protected        Protected        Protected        Protected
Rights:           Include          Include          Include          Include
Min. Green:     8    0     0     0    0     0     0   10     0     4   10    10
Lanes:        2  0  0  0  1    0  0  0  0  0    0  0  2  0  1    1  0  2  0  0
------------|---------------||---------------||---------------||---------------|
Volume Module:
Base Vol:     127    0   135     0    0     0     0  892   152   240  354     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:  127    0   135     0    0     0     0  892   152   240  354     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:  127    0   135     0    0     0     0  892   152   240  354     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:   127    0   135     0    0     0     0  892   152   240  354     0
Reduct Vol:     0    0     0     0    0     0     0    0     0     0    0     0
Reduced Vol:  127    0   135     0    0     0     0  892   152   240  354     0
PCE Adj:     1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
MLF Adj:     1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
FinalVolume:  127    0   135     0    0     0     0  892   152   240  354     0
------------|---------------||---------------||---------------||---------------|
Saturation Flow Module:
Sat/Lane:    1900 1900  1900  1900 1900  1900  1900 1900  1900  1900 1900  1900
Adjustment:  0.92 1.00  0.85  1.00 1.00  1.00  1.00 0.95  0.85  0.95 0.95  1.00
Lanes:       2.00 0.00  1.00  0.00 0.00  0.00  0.00 2.00  1.00  1.00 2.00  0.00
Final Sat.:  3502    0  1615     0    0     0     0 3610  1615  1805 3610     0
------------|---------------||---------------||---------------||---------------|
Capacity Analysis Module:
Vol/Sat:     0.04 0.00  0.08  0.00 0.00  0.00  0.00 0.25  0.09  0.13 0.10  0.00
Crit Moves:             ****                        ****        ****
Green/Cycle: 0.18 0.00  0.18  0.00 0.00  0.00  0.00 0.53  0.53  0.29 0.82  0.00
Volume/Cap:  0.20 0.00  0.46  0.00 0.00  0.00  0.00 0.46  0.18  0.46 0.12  0.00
Uniform Del: 36.3  0.0  38.1   0.0  0.0   0.0   0.0 15.1  12.5  30.5  1.9   0.0
IncremntDel:  0.2  0.0   1.2   0.0  0.0   0.0   0.0  0.2   0.1   0.7  0.0   0.0
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 0.00  1.00  0.00 0.00  0.00  0.00 1.00  1.00  1.00 1.00  0.00
Delay/Veh:   36.4  0.0  39.3   0.0  0.0   0.0   0.0 15.2  12.6  31.2  1.9   0.0
User DelAdj: 1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
AdjDel/Veh:  36.4  0.0  39.3   0.0  0.0   0.0   0.0 15.2  12.6  31.2  1.9   0.0
LOS by Move:   D    A     D     A    A     A     A    B     B     C    A     A
HCM2kAvgQ:       2    0     4     0    0     0     0    9     2     7    1     0
*******************************************************************************
Note: Queue reported is the number of cars per lane.

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-------------------------------------------------------------------------------
                      Level Of Service Computation Report
            2000 HCM Operations Method (Future Volume Alternative)
*******************************************************************************
Intersection #4 Kato Rd/Warren Ave
*******************************************************************************
Cycle (sec):         124                Critical Vol./Cap.(X):         0.468
Loss Time (sec):       0 (Y+R=4.0 sec)  Average Delay (sec/veh):        23.3
Optimal Cycle:        43                Level Of Service:                  C
*******************************************************************************
Approach:      North Bound      South Bound       East Bound       West Bound
Movement:     L  -  T  -  R    L  -  T  -  R    L  -  T  -  R    L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
```

```
Control:       Split Phase      Split Phase       Protected        Protected
Rights:           Include          Include          Include          Include
Min. Green:     6    0    0     0    6    0     4    8    0     4    8    0
Lanes:        1  0  1  0  1    1  1  0  0  1    1  0  1  1  0    1  0  1  1  0
------------|---------------||---------------||---------------||---------------|
Volume Module:
Base Vol:     286   32  277     5    3    4    11  914   66    36  300    5
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:  286   32  277     5    3    4    11  914   66    36  300    5
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:  286   32  277     5    3    4    11  914   66    36  300    5
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:   286   32  277     5    3    4    11  914   66    36  300    5
Reduct Vol:     0    0    0     0    0    0     0    0    0     0    0    0
Reduced Vol:  286   32  277     5    3    4    11  914   66    36  300    5
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:  286   32  277     5    3    4    11  914   66    36  300    5
------------|---------------||---------------||---------------||---------------|
Saturation Flow Module:
Sat/Lane:    1900 1900 1900  1900 1900 1900  1900 1900 1900  1900 1900 1900
Adjustment:  0.95 1.00 0.85  0.97 0.97 0.85  0.95 0.94 0.94  0.95 0.95 0.95
Lanes:       1.00 1.00 1.00  1.25 0.75 1.00  1.00 1.87 0.13  1.00 1.97 0.03
Final Sat.:  1805 1900 1615  2304 1382 1615  1805 3333  241  1805 3544   59
------------|---------------||---------------||---------------||---------------|
Capacity Analysis Module:
Vol/Sat:     0.16 0.02 0.17  0.00 0.00 0.00  0.01 0.27 0.27  0.02 0.08 0.08
Crit Moves:             ****       ****             ****       ****
Green/Cycle: 0.35 0.35 0.35  0.05 0.05 0.05  0.17 0.56 0.56  0.04 0.44 0.44
Volume/Cap:  0.45 0.05 0.49  0.04 0.04 0.05  0.04 0.49 0.49  0.49 0.19 0.19
Uniform Del: 31.1 26.6 31.6  56.3 56.3 56.3  43.4 16.5 16.5  58.2 21.6 21.6
IncremntDel:  0.5  0.0  0.7   0.1  0.1  0.3   0.1  0.2  0.2   5.0  0.1  0.1
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:   31.6 26.6 32.2  56.4 56.4 56.6  43.5 16.7 16.7  63.3 21.7 21.7
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:  31.6 26.6 32.2  56.4 56.4 56.6  43.5 16.7 16.7  63.3 21.7 21.7
LOS by Move:   C    C    C     E    E    E     D    B    B     E    C    C
HCM2kAvgQ:     8    1    8     0    0    0     0   12   12     2    4    4
*******************************************************************************
Note: Queue reported is the number of cars per lane.
```



```
-------------------------------------------------------------------------------
-------------------------------------------------------------------------------
                     Level Of Service Computation Report
          2000 HCM Unsignalized Method (Future Volume Alternative)
*******************************************************************************
Intersection #5 Mission Falls Ct/Warren Ave
*******************************************************************************
Average Delay (sec/veh):      2.3       Worst Case Level Of Service: F[ 65.1]
*******************************************************************************
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
Rights:           Include          Include          Include          Include
Lanes:        0  1  0  1  0    0  0  1! 0  0    1  0  1  1  0    1  0  1  1  0
------------|---------------||---------------||---------------||---------------|
Volume Module:
```

```
Base Vol:       37    0    13     5    4     5     8 1258    31    21  322     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:    37    0    13     5    4     5     8 1258    31    21  322     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:    37    0    13     5    4     5     8 1258    31    21  322     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:     37    0    13     5    4     5     8 1258    31    21  322     0
Reduct Vol:      0    0     0     0    0     0     0    0     0     0    0     0
FinalVolume:    37    0    13     5    4     5     8 1258    31    21  322     0
------------|---------------||---------------||---------------||---------------|
Critical Gap Module:
Critical Gp:   7.5  6.5   6.9   7.5  6.5   6.9   4.1 xxxx xxxxx   4.1 xxxx xxxxx
FollowUpTim:   3.5  4.0   3.3   3.5  4.0   3.3   2.2 xxxx xxxxx   2.2 xxxx xxxxx
------------|---------------||---------------||---------------||---------------|
Capacity Module:
Cnflict Vol: 1495 1654   645  1009 1669   161   322 xxxx xxxxx  1289 xxxx xxxxx
Potent Cap.:   87   99   420   197   97   862  1249 xxxx xxxxx   545 xxxx xxxxx
Move Cap.:     81   95   420   185   93   862  1249 xxxx xxxxx   545 xxxx xxxxx
Volume/Cap:  0.46 0.00  0.03  0.03 0.04  0.01  0.01 xxxx  xxxx  0.04 xxxx  xxxx
------------|---------------||---------------||---------------||---------------|
Level Of Service Module:
2Way95thQ:   xxxx xxxx xxxxx  xxxx xxxx xxxxx   0.0 xxxx xxxxx   0.1 xxxx xxxxx
Control Del:xxxxx xxxx xxxxx xxxxx xxxx xxxxx   7.9 xxxx xxxxx  11.9 xxxx xxxxx
LOS by Move:   *    *     *     *    *     *     A    *     *     B    *     *
Movement:     LT - LTR - RT    LT - LTR - RT    LT - LTR - RT    LT - LTR - RT
Shared Cap.:   81 xxxx   420  xxxx  184 xxxxx  xxxx xxxx xxxxx  xxxx xxxx xxxxx
SharedQueue:  1.9 xxxx   0.1 xxxxx  0.2 xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx
Shrd ConDel: 83.1 xxxx  13.8 xxxxx 26.1 xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx
Shared LOS:    F    *     B     *    D     *     *    *     *     *    *     *
ApproachDel:      65.1             26.1           xxxxxx           xxxxxx
ApproachLOS:        F               D               *                *
********************************************************************************
Note: Queue reported is the number of cars per lane.
********************************************************************************
```

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--------------------------------------------------------------------------------
                      Level Of Service Computation Report
             2000 HCM Operations Method (Future Volume Alternative)
********************************************************************************
Intersection #6 Warm Springs Blvd/Warren Ave
********************************************************************************
Cycle (sec):         120                 Critical Vol./Cap.(X):         0.624
Loss Time (sec):       0 (Y+R=4.0 sec)  Average Delay (sec/veh):        31.6
Optimal Cycle:        61                 Level Of Service:                C
********************************************************************************
Approach:      North Bound      South Bound       East Bound       West Bound
Movement:     L  -  T  -  R    L  -  T  -  R    L  -  T  -  R    L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:        Protected        Protected        Protected        Protected
Rights:           Include          Include          Include          Include
Min. Green:     4   10     0    4   10     0    4   10     0    4   10     0
Lanes:        2  0  1  1  0    1  0  2  0  1    2  0  2  0  1    2  0  2  0  1
------------|---------------||---------------||---------------||---------------|
Volume Module:
```

```
Base Vol:      100  806   109   155  529   117   338  494   396   123   92    71
Growth Adj:   1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
Initial Bse:   100  806   109   155  529   117   338  494   396   123   92    71
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:   100  806   109   155  529   117   338  494   396   123   92    71
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:    100  806   109   155  529   117   338  494   396   123   92    71
Reduct Vol:      0    0     0     0    0     0     0    0     0     0    0     0
Reduced Vol:   100  806   109   155  529   117   338  494   396   123   92    71
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:   100  806   109   155  529   117   338  494   396   123   92    71
------------|---------------||---------------||---------------||---------------|
Saturation Flow Module:
Sat/Lane:     1900 1900  1900  1900 1900  1900  1900 1900  1900  1900 1900  1900
Adjustment:   0.92 0.93  0.93  0.95 0.95  0.85  0.92 0.95  0.85  0.92 0.95  0.85
Lanes:        2.00 1.76  0.24  1.00 2.00  1.00  2.00 2.00  1.00  2.00 2.00  1.00
Final Sat.:   3502 3123   422  1805 3610  1615  3502 3610  1615  3502 3610  1615
------------|---------------||---------------||---------------||---------------|
Capacity Analysis Module:
Vol/Sat:      0.03 0.26  0.26  0.09 0.15  0.07  0.10 0.14  0.25  0.04 0.03  0.04
Crit Moves:        ****        ****                        ****  ****
Green/Cycle:  0.10 0.41  0.41  0.14 0.45  0.45  0.24 0.39  0.39  0.06 0.21  0.21
Volume/Cap:   0.28 0.62  0.62  0.62 0.33  0.16  0.40 0.35  0.62  0.62 0.12  0.21
Uniform Del:  49.8 27.8  27.8  48.8 21.4  19.6  38.3 25.6  29.3  55.4 38.6  39.4
IncremntDel:   0.4  0.9   0.9   4.9  0.1   0.1   0.3  0.1   2.0   6.1  0.1   0.3
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:    50.2 28.7  28.7  53.7 21.5  19.8  38.6 25.8  31.3  61.5 38.7  39.7
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:   50.2 28.7  28.7  53.7 21.5  19.8  38.6 25.8  31.3  61.5 38.7  39.7
LOS by Move:    D    C     C     D    C     B     D    C     C     E    D     D
HCM2kAvgQ:      2   14    14     6    6     3     6    7    12     3    1     2
*******************************************************************************
Note: Queue reported is the number of cars per lane.
```



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-------------------------------------------------------------------------------
-------------------------------------------------------------------------------
                     Level Of Service Computation Report
            2000 HCM Operations Method (Future Volume Alternative)
*******************************************************************************
Intersection #7 Warm Springs Blvd/Mission Falls Ln/Hackamore Ln
*******************************************************************************
Cycle (sec):         100                Critical Vol./Cap.(X):         0.379
Loss Time (sec):       0 (Y+R=4.0 sec)  Average Delay (sec/veh):         4.5
Optimal Cycle:        37                Level Of Service:                  A
*******************************************************************************
Approach:      North Bound      South Bound       East Bound       West Bound
Movement:     L  -  T  -  R    L  -  T  -  R    L  -  T  -  R    L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:        Protected        Protected        Protected        Protected
Rights:           Include          Include          Include          Include
Min. Green:     0    0     0     0    0     0     0    0     0     0    0     0
Lanes:        1  0  1  1  0    1  0  1  1  0    0  1  0  0  1    0  0  1! 0  0
------------|---------------||---------------||---------------||---------------|
Volume Module:
Base Vol:       8 1070    34    56 1037     4     0    2    48     2    2    15
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:    8 1070    34    56 1037     4     0    2    48     2    2    15
```

```
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:     8 1070    34    56 1037     4     0    2    48     2    2    15
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:      8 1070    34    56 1037     4     0    2    48     2    2    15
Reduct Vol:      0    0     0     0    0     0     0    0     0     0    0     0
Reduced Vol:     8 1070    34    56 1037     4     0    2    48     2    2    15
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:     8 1070    34    56 1037     4     0    2    48     2    2    15
------------|---------------||---------------||---------------||---------------|
Saturation Flow Module:
Sat/Lane:     1900 1900  1900  1900 1900  1900  1900 1900  1900  1900 1900  1900
Adjustment:   0.95 0.95  0.95  0.95 0.95  0.95  1.00 1.00  0.85  0.89 0.89  0.89
Lanes:        1.00 1.94  0.06  1.00 1.99  0.01  0.00 1.00  1.00  0.11 0.10  0.79
Final Sat.:   1805 3481   111  1805 3593    14     0 1900  1615   178  178  1333
------------|---------------||---------------||---------------||---------------|
Capacity Analysis Module:
Vol/Sat:      0.00 0.31  0.31  0.03 0.29  0.29  0.00 0.00  0.03  0.01 0.01  0.01
Crit Moves:        ****        ****                        ****  ****
Green/Cycle:  0.01 0.81  0.81  0.08 0.88  0.88  0.00 0.08  0.08  0.03 0.11  0.11
Volume/Cap:   0.33 0.38  0.38  0.38 0.33  0.33  0.00 0.01  0.38  0.38 0.10  0.10
Uniform Del:  48.9  2.6   2.6  43.5  1.0   1.0   0.0 42.5  43.8  47.6 40.2  40.2
IncremntDel:   7.8  0.1   0.1   1.6  0.1   0.1   0.0  0.0   1.9   4.8  0.3   0.3
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  0.00 1.00  1.00  1.00 1.00  1.00
Delay/Veh:    56.6  2.7   2.7  45.1  1.1   1.1   0.0 42.6  45.7  52.4 40.5  40.5
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:   56.6  2.7   2.7  45.1  1.1   1.1   0.0 42.6  45.7  52.4 40.5  40.5
LOS by Move:    E    A     A     D    A     A     A    D     D     D    D     D
HCM2kAvgQ:      1    5     5     2    3     3     0    0     2     1    1     1
*******************************************************************************
Note: Queue reported is the number of cars per lane.

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```

Scenario Report

Scenario:	Existing plus Project AM
Command:	EX+P AM
Volume:	EX AM
Geometry:	EX AM
Impact Fee:	Default Impact Fee
Trip Generation:	Project AM
Trip Distribution:	Project
Paths:	Default Path
Routes:	Default Route
Configuration:	Default Configuration

Impact Analysis Report
Level Of Service

Intersection	Base LOS	Base Del/ Veh	Base V/ C	Future LOS	Future Del/ Veh	Future V/ C	Change in
# 1 Warm Springs Blvd/Mission Blvd	C	29.7	0.585	C	29.2	0.585	-0.496 D/V
# 2 I-880 SB Ramps/Warren Ave	C	27.2	0.478	C	24.7	0.448	-2.511 D/V
# 3 I-880 NB Ramps/Warren Ave	B	19.2	0.461	B	18.8	0.462	-0.405 D/V
# 4 Kato Rd/Warren Ave	B	18.2	0.339	B	17.6	0.341	-0.579 D/V
# 5 Mission Falls Ct/Warren Ave	C	22.7	0.000	C	21.0	0.000	-1.754 D/V
# 6 Warm Springs Blvd/Warren Ave	C	27.7	0.463	C	28.4	0.429	+ 0.681 D/V
# 7 Warm Springs Blvd/Mission Fall	B	10.9	0.407	A	9.0	0.406	-1.946 D/V

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

****

Intersection #1 Warm Springs Blvd/Mission Blvd

```
*******************************************************************************
Cycle (sec):         100                  Critical Vol./Cap.(X):         0.585
Loss Time (sec):       0 (Y+R=4.0 sec)  Average Delay (sec/veh):        29.2
Optimal Cycle:        59                  Level Of Service:                 C
*******************************************************************************
Approach:      North Bound      South Bound       East Bound       West Bound
Movement:     L  -  T  -  R    L  -  T  -  R    L  -  T  -  R    L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:        Protected        Protected        Protected        Protected
Rights:           Include          Include          Include          Include
Min. Green:    14   14     0    15   13     0    14   15     0    15   15     0
Lanes:        2  0  2  0  1    2  0  1  1  1    2  0  3  0  1    2  0  3  0  1
------------|---------------||---------------||---------------||---------------|
Volume Module:
Base Vol:     395  302   140   128  386   309   224 1214   210   322 2077    48
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:  395  302   140   128  386   309   224 1214   210   322 2077    48
Added Vol:      0    1     4     0  -23     0     0    0     0  -108    0     0
PasserByVol:    0    0     0     0    0     0     0    0     0     0    0     0
Initial Fut:  395  303   144   128  363   309   224 1214   210   214 2077    48
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:   395  303   144   128  363   309   224 1214   210   214 2077    48
Reduct Vol:     0    0     0     0    0     0     0    0     0     0    0     0
Reduced Vol:  395  303   144   128  363   309   224 1214   210   214 2077    48
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:  395  303   144   128  363   309   224 1214   210   214 2077    48
------------|---------------||---------------||---------------||---------------|
Saturation Flow Module:
Sat/Lane:    1900 1900  1900  1900 1900  1900  1900 1900  1900  1900 1900  1900
Adjustment:  0.92 0.95  0.85  0.92 0.88  0.88  0.92 0.91  0.85  0.92 0.91  0.85
Lanes:       2.00 2.00  1.00  2.00 1.62  1.38  2.00 3.00  1.00  2.00 3.00  1.00
Final Sat.:  3502 3610  1615  3502 2723  2318  3502 5187  1615  3502 5187  1615
------------|---------------||---------------||---------------||---------------|
Capacity Analysis Module:
Vol/Sat:     0.11 0.08  0.09  0.04 0.13  0.13  0.06 0.23  0.13  0.06 0.40  0.03
Crit Moves:       ****        ****              ****                   ****
Green/Cycle: 0.15 0.14  0.14  0.15 0.14  0.14  0.14 0.43  0.43  0.28 0.57  0.57
Volume/Cap:  0.76 0.60  0.64  0.24 0.94  0.94  0.46 0.54  0.30  0.22 0.70  0.05
Uniform Del: 40.9 40.4  40.6  37.5 42.5  42.5  39.5 21.0  18.5  27.8 15.4   9.5
IncremntDel:  6.4  2.0   5.9   0.2 20.8  20.8   0.7  0.3   0.2   0.1  0.8   0.0
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:   47.3 42.4  46.5  37.7 63.3  63.3  40.2 21.3  18.7  27.9 16.2   9.6
User DelAdj: 1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
AdjDel/Veh:  47.3 42.4  46.5  37.7 63.3  63.3  40.2 21.3  18.7  27.9 16.2   9.6
LOS by Move:   D    D     D     D    E     E     D    C     B     C    B     A
HCM2kAvgQ:      8    6     5     2   11    11     4   10     4     3   17     1
*******************************************************************************
Note: Queue reported is the number of cars per lane.
```

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

```
*******************************************************************************
Intersection #2 I-880 SB Ramps/Warren Ave
*******************************************************************************
Cycle (sec):         120                  Critical Vol./Cap.(X):         0.448
```

```
Loss Time (sec):      16 (Y+R=4.0 sec)  Average Delay (sec/veh):        24.7
Optimal Cycle:        46                Level Of Service:                   C
*******************************************************************************
Approach:      North Bound      South Bound       East Bound       West Bound
Movement:     L  -  T  -  R    L  -  T  -  R    L  -  T  -  R    L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:       Split Phase      Split Phase       Protected        Protected
Rights:           Include          Include          Include          Include
Min. Green:     0    6     0     0    6     0     4    8     0     4    8     0
Lanes:        1  0  1  1  0    1  1  0  0  1    2  0  1  1  0    1  0  1  1  1
------------|---------------||---------------||---------------||---------------|
Volume Module:
Base Vol:      11   22    36   192   98    75   166  142    40   487  813   283
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:   11   22    36   192   98    75   166  142    40   487  813   283
Added Vol:      0    0     0  -113    0     0     0    0     0     0    0     3
PasserByVol:    0    0     0     0    0     0     0    0     0     0    0     0
Initial Fut:   11   22    36    79   98    75   166  142    40   487  813   286
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:    11   22    36    79   98    75   166  142    40   487  813   286
Reduct Vol:     0    0     0     0    0     0     0    0     0     0    0     0
Reduced Vol:   11   22    36    79   98    75   166  142    40   487  813   286
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:   11   22    36    79   98    75   166  142    40   487  813   286
------------|---------------||---------------||---------------||---------------|
Saturation Flow Module:
Sat/Lane:    1900 1900  1900  1900 1900  1900  1900 1900  1900  1900 1900  1900
Adjustment:  0.95 0.86  0.86  0.98 0.98  0.85  0.92 0.92  0.92  0.95 0.91  0.91
Lanes:       1.00 1.00  1.00  1.00 1.00  1.00  2.00 1.56  0.44  1.00 2.00  1.00
Final Sat.:  1805 1637  1637  1858 1858  1615  3502 2724   767  1805 3469  1735
------------|---------------||---------------||---------------||---------------|
Capacity Analysis Module:
Vol/Sat:     0.01 0.01  0.02  0.04 0.05  0.05  0.05 0.05  0.05  0.27 0.23  0.16
Crit Moves:        ****             ****             ****             ****
Green/Cycle: 0.05 0.05  0.05  0.11 0.11  0.11  0.12 0.11  0.11  0.59 0.58  0.58
Volume/Cap:  0.12 0.27  0.44  0.37 0.46  0.40  0.40 0.46  0.46  0.46 0.40  0.28
Uniform Del: 54.5 54.9  55.4  49.1 49.6  49.3  49.0 49.7  49.7  13.9 13.6  12.5
IncremntDel:  0.6  0.7   2.3   0.5  0.9   1.4   0.6  0.8   0.8   0.3  0.1   0.0
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:   55.1 55.6  57.7  49.6 50.5  50.7  49.6 50.6  50.6  14.3 13.7  12.5
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:  55.1 55.6  57.7  49.6 50.5  50.7  49.6 50.6  50.6  14.3 13.7  12.5
LOS by Move:   E    E     E     D    D     D     D    D     D     B    B     B
HCM2kAvgQ:     0    1     2     3    4     3     3    4     4    10    8     5
*******************************************************************************
Note: Queue reported is the number of cars per lane.

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-------------------------------------------------------------------------------
                      Level Of Service Computation Report
           2000 HCM Operations Method (Future Volume Alternative)
*******************************************************************************
Intersection #3 I-880 NB Ramps/Warren Ave
*******************************************************************************
Cycle (sec):         104                Critical Vol./Cap.(X):         0.462
Loss Time (sec):       0 (Y+R=4.0 sec)  Average Delay (sec/veh):        18.8
Optimal Cycle:        42                Level Of Service:                   B
*******************************************************************************
```

```
Approach:      North Bound      South Bound       East Bound       West Bound
Movement:     L  -  T  -  R    L  -  T  -  R    L  -  T  -  R    L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:        Protected        Protected        Protected        Protected
Rights:           Include          Include          Include          Include
Min. Green:     8    0     0     0    0     0     0   10     0     4   10    10
Lanes:        2  0  0  0  1    0  0  0  0  0    0  0  2  0  1    1  0  2  0  0
------------|---------------||---------------||---------------||---------------|
Volume Module:
Base Vol:     715    0   136     0    0     0     0  305    36   128  927     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:  715    0   136     0    0     0     0  305    36   128  927     0
Added Vol:      0    0   -91     0    0     0     0 -113     0     4    3     0
PasserByVol:    0    0     0     0    0     0     0    0     0     0    0     0
Initial Fut:  715    0    45     0    0     0     0  192    36   132  930     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:   715    0    45     0    0     0     0  192    36   132  930     0
Reduct Vol:     0    0     0     0    0     0     0    0     0     0    0     0
Reduced Vol:  715    0    45     0    0     0     0  192    36   132  930     0
PCE Adj:     1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
MLF Adj:     1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
FinalVolume:  715    0    45     0    0     0     0  192    36   132  930     0
------------|---------------||---------------||---------------||---------------|
Saturation Flow Module:
Sat/Lane:    1900 1900  1900  1900 1900  1900  1900 1900  1900  1900 1900  1900
Adjustment:  0.92 1.00  0.85  1.00 1.00  1.00  1.00 0.95  0.85  0.95 0.95  1.00
Lanes:       2.00 0.00  1.00  0.00 0.00  0.00  0.00 2.00  1.00  1.00 2.00  0.00
Final Sat.:  3502    0  1615     0    0     0     0 3610  1615  1805 3610     0
------------|---------------||---------------||---------------||---------------|
Capacity Analysis Module:
Vol/Sat:     0.20 0.00  0.03  0.00 0.00  0.00  0.00 0.05  0.02  0.07 0.26  0.00
Crit Moves:  ****                               ****                    ****
Green/Cycle: 0.44 0.00  0.44  0.00 0.00  0.00  0.00 0.32  0.32  0.24 0.56  0.00
Volume/Cap:  0.46 0.00  0.06  0.00 0.00  0.00  0.00 0.17  0.07  0.30 0.46  0.00
Uniform Del: 20.3  0.0  16.6   0.0  0.0   0.0   0.0 25.6  24.8  32.3 13.7   0.0
IncremntDel:  0.2  0.0   0.0   0.0  0.0   0.0   0.0  0.1   0.1   0.4  0.2   0.0
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 0.00  1.00  0.00 0.00  0.00  0.00 1.00  1.00  1.00 1.00  0.00
Delay/Veh:   20.6  0.0  16.7   0.0  0.0   0.0   0.0 25.7  24.9  32.7 13.9   0.0
User DelAdj: 1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
AdjDel/Veh:  20.6  0.0  16.7   0.0  0.0   0.0   0.0 25.7  24.9  32.7 13.9   0.0
LOS by Move:   C    A     B     A    A     A     A    C     C     C    B     A
HCM2kAvgQ:      8    0     1     0    0     0     0    2     1     4    9     0
*******************************************************************************
Note: Queue reported is the number of cars per lane.

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-------------------------------------------------------------------------------
                      Level Of Service Computation Report
            2000 HCM Operations Method (Future Volume Alternative)
*******************************************************************************
Intersection #4 Kato Rd/Warren Ave
*******************************************************************************
Cycle (sec):         124                Critical Vol./Cap.(X):         0.341
Loss Time (sec):       0 (Y+R=4.0 sec)  Average Delay (sec/veh):        17.6
Optimal Cycle:        35                Level Of Service:                   B
*******************************************************************************
Approach:      North Bound      South Bound       East Bound       West Bound
Movement:     L  -  T  -  R    L  -  T  -  R    L  -  T  -  R    L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
```

```
Control:       Split Phase      Split Phase       Protected        Protected
Rights:           Include          Include          Include          Include
Min. Green:     6    0     0     0    6     0     4    8     0     4    8     0
Lanes:        1  0  1  0  1    1  1  0  0  1    1  0  1  1  0    1  0  1  1  0
------------|---------------||---------------||---------------||---------------|
Volume Module:
Base Vol:     135    4    41     5   15     6     4  204   236   179  913     3
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:  135    4    41     5   15     6     4  204   236   179  913     3
Added Vol:      0    0     0     0    0     0     0 -204     0     0    7     0
PasserByVol:    0    0     0     0    0     0     0    0     0     0    0     0
Initial Fut:  135    4    41     5   15     6     4    0   236   179  920     3
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:   135    4    41     5   15     6     4    0   236   179  920     3
Reduct Vol:     0    0     0     0    0     0     0    0     0     0    0     0
Reduced Vol:  135    4    41     5   15     6     4    0   236   179  920     3
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:  135    4    41     5   15     6     4    0   236   179  920     3
------------|---------------||---------------||---------------||---------------|
Saturation Flow Module:
Sat/Lane:    1900 1900  1900  1900 1900  1900  1900 1900  1900  1900 1900  1900
Adjustment:  0.95 1.00  0.85  0.99 0.99  0.85  0.95 0.95  0.81  0.95 0.95  0.95
Lanes:       1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.99  0.01
Final Sat.:  1805 1900  1615  1877 1877  1615  1805 1805  1534  1805 3598    12
------------|---------------||---------------||---------------||---------------|
Capacity Analysis Module:
Vol/Sat:     0.07 0.00  0.03  0.00 0.01  0.00  0.00 0.00  0.15  0.10 0.26  0.26
Crit Moves:  ****                 ****        ****                   ****
Green/Cycle: 0.21 0.21  0.21  0.05 0.05  0.05  0.03 0.00  0.45  0.29 0.71  0.71
Volume/Cap:  0.36 0.01  0.12  0.06 0.17  0.08  0.07 0.00  0.34  0.34 0.36  0.36
Uniform Del: 42.0 39.0  39.9  56.3 56.6  56.4  58.2  0.0  22.0  34.6  6.9   6.9
IncremntDel:  0.6  0.0   0.2   0.1  0.6   0.4   0.5  0.0   0.3   0.4  0.1   0.1
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 0.00  1.00  1.00 1.00  1.00
Delay/Veh:   42.6 39.0  40.1  56.4 57.2  56.8  58.7  0.0  22.3  34.9  7.0   7.0
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:  42.6 39.0  40.1  56.4 57.2  56.8  58.7  0.0  22.3  34.9  7.0   7.0
LOS by Move:   D    D     D     E    E     E     E    A     C     C    A     A
HCM2kAvgQ:      5    0     1     0    1     0     0    0     6     5    7     7
*******************************************************************************
Note: Queue reported is the number of cars per lane.

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-------------------------------------------------------------------------------
                      Level Of Service Computation Report
           2000 HCM Unsignalized Method (Future Volume Alternative)
*******************************************************************************
Intersection #5 Mission Falls Ct/Warren Ave
*******************************************************************************
Average Delay (sec/veh):      1.1       Worst Case Level Of Service: C[ 21.0]
*******************************************************************************
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
Rights:           Include          Include          Include          Include
Lanes:        0  1  0  0  1    0  0  0  0  1    1  0  1  1  0    1  0  1  1  0
------------|---------------||---------------||---------------||---------------|
Volume Module:
```

```
Base Vol:       45    4     3     0    0     2    19  203    27    17 1072    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:    45    4     3     0    0     2    19  203    27    17 1072    10
Added Vol:       7    0     2     0    0     0     0    0  -204   -57    0     0
PasserByVol:     0    0     0     0    0     0     0    0     0     0    0     0
Initial Fut:    52    4     5     0    0     2    19  203  -177   -40 1072    10
User Adj:     1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  0.00  0.00 1.00  1.00
PHF Adj:      1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  0.00  0.00 1.00  1.00
PHF Volume:     52    4     5     0    0     2    19  203     0     0 1072    10
Reduct Vol:      0    0     0     0    0     0     0    0     0     0    0     0
FinalVolume:    52    4     5     0    0     2    19  203     0     0 1072    10
------------|---------------||---------------||---------------||---------------|
Critical Gap Module:
Critical Gp:   7.5  6.5   6.9 xxxxx xxxx   6.9   4.1 xxxx xxxxx xxxxx xxxx xxxxx
FollowUpTim:   3.5  4.0   3.3 xxxxx xxxx   3.3   2.2 xxxx xxxxx xxxxx xxxx xxxxx
------------|---------------||---------------||---------------||---------------|
Capacity Module:
Cnflict Vol:   777 1323   102  xxxx xxxx   541  1082 xxxx xxxxx  xxxx xxxx xxxxx
Potent Cap.:   290  158   940  xxxx xxxx   491   652 xxxx xxxxx  xxxx xxxx xxxxx
Move Cap.:     283  153   940  xxxx xxxx   491   652 xxxx xxxxx  xxxx xxxx xxxxx
Volume/Cap:   0.18 0.03  0.01  xxxx xxxx  0.00  0.03 xxxx  xxxx  xxxx xxxx  xxxx
------------|---------------||---------------||---------------||---------------|
Level Of Service Module:
2Way95thQ:    xxxx xxxx   0.0  xxxx xxxx   0.0   0.1 xxxx xxxxx  xxxx xxxx xxxxx
Control Del:xxxxx xxxx   8.8 xxxxx xxxx  12.4  10.7 xxxx xxxxx xxxxx xxxx xxxxx
LOS by Move:    *    *     A     *    *     B     B    *     *     *    *     *
Movement:     LT - LTR - RT    LT - LTR - RT    LT - LTR - RT    LT - LTR - RT
Shared Cap.:  267 xxxx xxxxx  xxxx xxxx xxxxx  xxxx xxxx xxxxx  xxxx xxxx xxxxx
SharedQueue:  0.8 xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx
Shrd ConDel: 22.1 xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx
Shared LOS:    C    *     *     *    *     *     *    *     *     *    *     *
ApproachDel:      21.0             12.4           xxxxxx           xxxxxx
ApproachLOS:        C                B                *                *
*******************************************************************************
Note: Queue reported is the number of cars per lane.
*******************************************************************************
```

```
  Traffix 7.9.0415 (c) 2007 Dowling Assoc. Licensed to FEHR & PEERS,  LAFAYETTE♀
Existing plus Project AM   Fri May 29, 2015 15:02:36                 Page 8-1
-------------------------------------------------------------------------------
-------------------------------------------------------------------------------
                      Level Of Service Computation Report
            2000 HCM Operations Method (Future Volume Alternative)
*******************************************************************************
Intersection #6 Warm Springs Blvd/Warren Ave
*******************************************************************************
Cycle (sec):         120                 Critical Vol./Cap.(X):         0.429
Loss Time (sec):       0 (Y+R=4.0 sec)  Average Delay (sec/veh):        28.4
Optimal Cycle:        40                 Level Of Service:                C
*******************************************************************************
Approach:      North Bound      South Bound       East Bound       West Bound
Movement:     L  -  T  -  R    L  -  T  -  R    L  -  T  -  R    L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:        Protected        Protected        Protected        Protected
Rights:           Include          Include          Include          Include
Min. Green:     4   10     0     4   10     0     4   10     0     4   10     0
Lanes:        2  0  1  1  0    1  0  2  0  1    2  0  2  0  1    2  0  2  0  1
------------|---------------||---------------||---------------||---------------|
Volume Module:
```

```
Base Vol:      285  607   103    38  502   385    76   36   111   185  440   127
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:   285  607   103    38  502   385    76   36   111   185  440   127
Added Vol:       0    3     0     0  -74   -57     2    0     0     0    0     0
PasserByVol:     0    0     0     0    0     0     0    0     0     0    0     0
Initial Fut:   285  610   103    38  428   328    78   36   111   185  440   127
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:    285  610   103    38  428   328    78   36   111   185  440   127
Reduct Vol:      0    0     0     0    0     0     0    0     0     0    0     0
Reduced Vol:   285  610   103    38  428   328    78   36   111   185  440   127
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:   285  610   103    38  428   328    78   36   111   185  440   127
------------|---------------||---------------||---------------||---------------|
Saturation Flow Module:
Sat/Lane:     1900 1900  1900  1900 1900  1900  1900 1900  1900  1900 1900  1900
Adjustment:   0.92 0.93  0.93  0.95 0.95  0.85  0.92 0.95  0.85  0.92 0.95  0.85
Lanes:        2.00 1.71  0.29  1.00 2.00  1.00  2.00 2.00  1.00  2.00 2.00  1.00
Final Sat.:   3502 3021   510  1805 3610  1615  3502 3610  1615  3502 3610  1615
------------|---------------||---------------||---------------||---------------|
Capacity Analysis Module:
Vol/Sat:      0.08 0.20  0.20  0.02 0.12  0.20  0.02 0.01  0.07  0.05 0.12  0.08
Crit Moves:   ****                         ****  ****                   ****
Green/Cycle:  0.19 0.57  0.57  0.09 0.47  0.47  0.05 0.21  0.21  0.13 0.28  0.28
Volume/Cap:   0.43 0.35  0.35  0.22 0.25  0.43  0.43 0.05  0.33  0.40 0.43  0.28
Uniform Del:  42.9 13.9  13.9  50.3 18.8  20.8  55.2 38.2  40.6  47.9 35.0  33.4
IncremntDel:   0.4  0.1   0.1   0.7  0.1   0.4   1.6  0.0   0.6   0.6  0.3   0.3
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:    43.3 14.0  14.0  51.0 18.9  21.2  56.8 38.3  41.2  48.5 35.3  33.7
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:   43.3 14.0  14.0  51.0 18.9  21.2  56.8 38.3  41.2  48.5 35.3  33.7
LOS by Move:    D    B     B     D    B     C     E    D     D     D    D     C
HCM2kAvgQ:      5    7     7     1    5     8     2    1     4     4    7     4
*******************************************************************************
Note: Queue reported is the number of cars per lane.
```



```
-------------------------------------------------------------------------------
-------------------------------------------------------------------------------
                    Level Of Service Computation Report
          2000 HCM Operations Method (Future Volume Alternative)
*******************************************************************************
Intersection #7 Warm Springs Blvd/Mission Falls Ln/Hackamore Ln
*******************************************************************************
Cycle (sec):         100                Critical Vol./Cap.(X):         0.406
Loss Time (sec):       0 (Y+R=4.0 sec)  Average Delay (sec/veh):         9.0
Optimal Cycle:        38                Level Of Service:                  A
*******************************************************************************
Approach:      North Bound      South Bound       East Bound       West Bound
Movement:     L  -  T  -  R    L  -  T  -  R    L  -  T  -  R    L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:        Protected        Protected        Protected        Protected
Rights:           Include          Include          Include          Include
Min. Green:     0    0     0     0    0     0     0    0     0     0    0     0
Lanes:        1  0  1  1  0    1  0  1  1  0    0  1  0  0  1    0  0  1! 0  0
------------|---------------||---------------||---------------||---------------|
Volume Module:
Base Vol:      49  920    89    34  733    14     0    0    18    33    6   119
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:   49  920    89    34  733    14     0    0    18    33    6   119
```

```
Added Vol:   -108    0     0     0    0   -74     3    0     4     0  -11     0
PasserByVol:    0    0     0     0    0     0     0    0     0     0    0     0
Initial Fut:  -59  920    89    34  733   -60     3    0    22    33   -5   119
User Adj:    0.00 1.00  1.00  1.00 1.00  0.00  1.00 1.00  1.00  1.00 0.00  1.00
PHF Adj:     0.00 1.00  1.00  1.00 1.00  0.00  1.00 1.00  1.00  1.00 0.00  1.00
PHF Volume:     0  920    89    34  733     0     3    0    22    33    0   119
Reduct Vol:     0    0     0     0    0     0     0    0     0     0    0     0
Reduced Vol:    0  920    89    34  733     0     3    0    22    33    0   119
PCE Adj:     0.00 1.00  1.00  1.00 1.00  0.00  1.00 1.00  1.00  1.00 0.00  1.00
MLF Adj:     0.00 1.00  1.00  1.00 1.00  0.00  1.00 1.00  1.00  1.00 0.00  1.00
FinalVolume:    0  920    89    34  733     0     3    0    22    33    0   119
------------|---------------||---------------||---------------||---------------|
Saturation Flow Module:
Sat/Lane:    1900 1900  1900  1900 1900  1900  1900 1900  1900  1900 1900  1900
Adjustment:  1.00 0.94  0.94  0.95 0.95  0.95  0.95 1.00  0.85  0.88 1.00  0.88
Lanes:       1.00 1.82  0.18  1.00 2.00  0.00  1.00 0.00  1.00  0.22 0.00  0.78
Final Sat.:  1900 3249   314  1805 3610     0  1809    0  1615   365    0  1315
------------|---------------||---------------||---------------||---------------|
Capacity Analysis Module:
Vol/Sat:     0.00 0.28  0.28  0.02 0.20  0.00  0.00 0.00  0.01  0.09 0.00  0.09
Crit Moves:       ****        ****                        ****  ****
Green/Cycle: 0.00 0.70  0.70  0.05 0.74  0.00  0.00 0.00  0.03  0.22 0.00  0.25
Volume/Cap:  0.00 0.41  0.41  0.41 0.27  0.00  0.36 0.00  0.41  0.41 0.00  0.36
Uniform Del:  0.0  6.4   6.4  46.3  4.1   0.0  49.6  0.0  47.3  33.2  0.0  30.8
IncremntDel:  0.0  0.1   0.1   3.2  0.1   0.0  24.5  0.0   4.9   0.7  0.0   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:   0.00 1.00  1.00  1.00 1.00  0.00  1.00 0.00  1.00  1.00 0.00  1.00
Delay/Veh:    0.0  6.5   6.5  49.5  4.2   0.0  74.2  0.0  52.3  33.9  0.0  31.3
User DelAdj: 1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
AdjDel/Veh:   0.0  6.5   6.5  49.5  4.2   0.0  74.2  0.0  52.3  33.9  0.0  31.3
LOS by Move:    A    A     A     D    A     A     E    A     D     C    A     C
HCM2kAvgQ:      0    7     7     2    4     0     0    0     1     4    0     4
*******************************************************************************
Note: Queue reported is the number of cars per lane.

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```

Scenario Report

Scenario:	Existing plus Project PM
Command:	EX+P PM
Volume:	EX PM
Geometry:	EX PM
Impact Fee:	Default Impact Fee
Trip Generation:	Project PM
Trip Distribution:	Project
Paths:	Default Path
Routes:	Default Route
Configuration:	Default Configuration

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Impact Analysis Report
Level Of Service

Intersection	Base LOS	Base Del/ Veh	Base V/ C	Future LOS	Future Del/ Veh	Future V/ C	Change in
# 1 Warm Springs Blvd/Mission Blvd	C	30.2	0.632	C	29.2	0.597	-0.996 D/V
# 2 I-880 SB Ramps/Warren Ave	D	41.5	0.581	D	41.4	0.578	-0.158 D/V
# 3 I-880 NB Ramps/Warren Ave	B	17.7	0.464	B	15.5	0.412	-2.205 D/V
# 4 Kato Rd/Warren Ave	C	23.3	0.468	C	23.6	0.468	+ 0.249 D/V
# 5 Mission Falls Ct/Warren Ave	F	65.1	0.000	C	24.5	0.000	-40.599 D/V
# 6 Warm Springs Blvd/Warren Ave	C	31.6	0.624	C	31.5	0.607	-0.133 D/V
# 7 Warm Springs Blvd/Mission Fall	A	4.5	0.379	A	2.4	0.350	-2.059 D/V

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

****

Intersection #1 Warm Springs Blvd/Mission Blvd

```
*******************************************************************************
Cycle (sec):         100                  Critical Vol./Cap.(X):         0.597
Loss Time (sec):       0 (Y+R=4.0 sec)  Average Delay (sec/veh):        29.2
Optimal Cycle:        59                  Level Of Service:                 C
*******************************************************************************
Approach:      North Bound      South Bound       East Bound       West Bound
Movement:     L  -  T  -  R    L  -  T  -  R    L  -  T  -  R    L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:        Protected        Protected        Protected        Protected
Rights:           Include          Include          Include          Include
Min. Green:    14   14     0    15   13     0    14   15     0    15   15     0
Lanes:        2  0  2  0  1    2  0  1  1  1    2  0  3  0  1    2  0  3  0  1
------------|---------------||---------------||---------------||---------------|
Volume Module:
Base Vol:     350  569   303   280  422   240   195 1579    98   210 1458   119
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:  350  569   303   280  422   240   195 1579    98   210 1458   119
Added Vol:      0  -19   -89     0    0     0     0    0     0     0    0     0
PasserByVol:    0    0     0     0    0     0     0    0     0     0    0     0
Initial Fut:  350  550   214   280  422   240   195 1579    98   210 1458   119
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:   350  550   214   280  422   240   195 1579    98   210 1458   119
Reduct Vol:     0    0     0     0    0     0     0    0     0     0    0     0
Reduced Vol:  350  550   214   280  422   240   195 1579    98   210 1458   119
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:  350  550   214   280  422   240   195 1579    98   210 1458   119
------------|---------------||---------------||---------------||---------------|
Saturation Flow Module:
Sat/Lane:    1900 1900  1900  1900 1900  1900  1900 1900  1900  1900 1900  1900
Adjustment:  0.92 0.95  0.85  0.92 0.90  0.90  0.92 0.91  0.85  0.92 0.91  0.85
Lanes:       2.00 2.00  1.00  2.00 1.91  1.09  2.00 3.00  1.00  2.00 3.00  1.00
Final Sat.:  3502 3610  1615  3502 3265  1857  3502 5187  1615  3502 5187  1615
------------|---------------||---------------||---------------||---------------|
Capacity Analysis Module:
Vol/Sat:     0.10 0.15  0.13  0.08 0.13  0.13  0.06 0.30  0.06  0.06 0.28  0.07
Crit Moves:        ****        ****                  ****        ****
Green/Cycle: 0.20 0.23  0.23  0.15 0.18  0.18  0.20 0.47  0.47  0.15 0.41  0.41
Volume/Cap:  0.50 0.65  0.57  0.53 0.70  0.70  0.27 0.65  0.13  0.40 0.68  0.18
Uniform Del: 35.7 34.7  33.9  39.3 38.2  38.2  33.5 20.5  15.1  38.4 24.1  18.7
IncremntDel:  0.6  1.8   2.0   1.1  2.4   2.4   0.2  0.6   0.1   0.5  0.9   0.1
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:   36.2 36.5  35.9  40.3 40.5  40.5  33.7 21.1  15.2  38.9 25.0  18.8
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:  36.2 36.5  35.9  40.3 40.5  40.5  33.7 21.1  15.2  38.9 25.0  18.8
LOS by Move:   D    D     D     D    D     D     C    C     B     D    C     B
HCM2kAvgQ:     5    9     6     5    8     8     3   14     2     3   14     2
*******************************************************************************
```

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

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

```
*******************************************************************************
Intersection #2 I-880 SB Ramps/Warren Ave
*******************************************************************************
Cycle (sec):         120                  Critical Vol./Cap.(X):         0.578
```

```
Loss Time (sec):      16 (Y+R=4.0 sec)  Average Delay (sec/veh):        41.4
Optimal Cycle:        57                Level Of Service:                   D
*******************************************************************************
Approach:      North Bound      South Bound       East Bound       West Bound
Movement:     L  -  T  -  R    L  -  T  -  R    L  -  T  -  R    L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:       Split Phase      Split Phase       Protected        Protected
Rights:           Include          Include          Include          Include
Min. Green:     0    6     0     0    6     0     4    8     0     4    8     0
Lanes:        1  0  1  1  0    1  1  0  0  1    2  0  1  1  0    1  0  1  1  1
------------|---------------||---------------||---------------||---------------|
Volume Module:
Base Vol:      27  293   271   444   11    70   417  362    14    53  313   105
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:   27  293   271   444   11    70   417  362    14    53  313   105
Added Vol:      0    0     0     1    0     0     0    0     0     0    0   -75
PasserByVol:    0    0     0     0    0     0     0    0     0     0    0     0
Initial Fut:   27  293   271   445   11    70   417  362    14    53  313    30
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:    27  293   271   445   11    70   417  362    14    53  313    30
Reduct Vol:     0    0     0     0    0     0     0    0     0     0    0     0
Reduced Vol:   27  293   271   445   11    70   417  362    14    53  313    30
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:   27  293   271   445   11    70   417  362    14    53  313    30
------------|---------------||---------------||---------------||---------------|
Saturation Flow Module:
Sat/Lane:    1900 1900  1900  1900 1900  1900  1900 1900  1900  1900 1900  1900
Adjustment:  0.95 0.88  0.88  0.95 0.95  0.85  0.92 0.94  0.94  0.95 0.94  0.94
Lanes:       1.00 1.04  0.96  1.95 0.05  1.00  2.00 1.93  0.07  1.00 2.00  1.00
Final Sat.:  1805 1740  1610  3534   87  1615  3502 3455   134  1805 3563  1782
------------|---------------||---------------||---------------||---------------|
Capacity Analysis Module:
Vol/Sat:     0.01 0.17  0.17  0.13 0.13  0.04  0.12 0.10  0.10  0.03 0.09  0.02
Crit Moves:              ****       ****        ****                   ****
Green/Cycle: 0.29 0.29  0.29  0.22 0.22  0.22  0.21 0.27  0.27  0.09 0.15  0.15
Volume/Cap:  0.05 0.58  0.58  0.58 0.58  0.20  0.58 0.39  0.39  0.34 0.58  0.11
Uniform Del: 30.6 36.3  36.3  42.0 42.0  38.4  42.9 35.6  35.6  51.6 47.3  43.9
IncremntDel:  0.0  0.9   0.9   1.1  1.1   0.3   1.2  0.3   0.3   1.3  1.4   0.0
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:   30.6 37.1  37.1  43.1 43.1  38.7  44.1 35.8  35.8  52.9 48.7  43.9
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:  30.6 37.1  37.1  43.1 43.1  38.7  44.1 35.8  35.8  52.9 48.7  43.9
LOS by Move:   C    D     D     D    D     D     D    D     D     D    D     D
HCM2kAvgQ:      1   10    10     8    8     2     8    6     6     2    6     1
*******************************************************************************
Note: Queue reported is the number of cars per lane.

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Existing plus Project PM   Fri May 29, 2015 15:02:49                 Page 5-1
-------------------------------------------------------------------------------
-------------------------------------------------------------------------------
                       Level Of Service Computation Report
            2000 HCM Operations Method (Future Volume Alternative)
*******************************************************************************
Intersection #3 I-880 NB Ramps/Warren Ave
*******************************************************************************
Cycle (sec):         104                Critical Vol./Cap.(X):         0.412
Loss Time (sec):       0 (Y+R=4.0 sec)  Average Delay (sec/veh):        15.5
Optimal Cycle:        39                Level Of Service:                   B
*******************************************************************************
```

```
Approach:      North Bound      South Bound       East Bound       West Bound
Movement:     L  -  T  -  R    L  -  T  -  R    L  -  T  -  R    L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:        Protected        Protected        Protected        Protected
Rights:           Include          Include          Include          Include
Min. Green:     8    0     0     0    0     0     0   10     0     4   10    10
Lanes:        2  0  0  0  1    0  0  0  0  0    0  0  2  0  1    1  0  2  0  0
------------|---------------||---------------||---------------||---------------|
Volume Module:
Base Vol:     127    0   135     0    0     0     0  892   152   240  354     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:  127    0   135     0    0     0     0  892   152   240  354     0
Added Vol:      0    0     0     0    0     0     0    1     0   -94  -75     0
PasserByVol:    0    0     0     0    0     0     0    0     0     0    0     0
Initial Fut:  127    0   135     0    0     0     0  893   152   146  279     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:   127    0   135     0    0     0     0  893   152   146  279     0
Reduct Vol:     0    0     0     0    0     0     0    0     0     0    0     0
Reduced Vol:  127    0   135     0    0     0     0  893   152   146  279     0
PCE Adj:     1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
MLF Adj:     1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
FinalVolume:  127    0   135     0    0     0     0  893   152   146  279     0
------------|---------------||---------------||---------------||---------------|
Saturation Flow Module:
Sat/Lane:    1900 1900  1900  1900 1900  1900  1900 1900  1900  1900 1900  1900
Adjustment:  0.92 1.00  0.85  1.00 1.00  1.00  1.00 0.95  0.85  0.95 0.95  1.00
Lanes:       2.00 0.00  1.00  0.00 0.00  0.00  0.00 2.00  1.00  1.00 2.00  0.00
Final Sat.:  3502    0  1615     0    0     0     0 3610  1615  1805 3610     0
------------|---------------||---------------||---------------||---------------|
Capacity Analysis Module:
Vol/Sat:     0.04 0.00  0.08  0.00 0.00  0.00  0.00 0.25  0.09  0.08 0.08  0.00
Crit Moves:             ****                        ****        ****
Green/Cycle: 0.20 0.00  0.20  0.00 0.00  0.00  0.00 0.60  0.60  0.20 0.80  0.00
Volume/Cap:  0.18 0.00  0.41  0.00 0.00  0.00  0.00 0.41  0.16  0.41 0.10  0.00
Uniform Del: 34.3  0.0  36.0   0.0  0.0   0.0   0.0 11.0   9.2  36.5  2.3   0.0
IncremntDel:  0.1  0.0   0.8   0.0  0.0   0.0   0.0  0.1   0.1   0.8  0.0   0.0
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 0.00  1.00  0.00 0.00  0.00  0.00 1.00  1.00  1.00 1.00  0.00
Delay/Veh:   34.4  0.0  36.9   0.0  0.0   0.0   0.0 11.1   9.2  37.3  2.3   0.0
User DelAdj: 1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
AdjDel/Veh:  34.4  0.0  36.9   0.0  0.0   0.0   0.0 11.1   9.2  37.3  2.3   0.0
LOS by Move:   C    A     D     A    A     A     A    B     A     D    A     A
HCM2kAvgQ:      2    0     4     0    0     0     0    8     2     4    1     0
*******************************************************************************
Note: Queue reported is the number of cars per lane.

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-------------------------------------------------------------------------------
-------------------------------------------------------------------------------
                      Level Of Service Computation Report
            2000 HCM Operations Method (Future Volume Alternative)
*******************************************************************************
Intersection #4 Kato Rd/Warren Ave
*******************************************************************************
Cycle (sec):         124                Critical Vol./Cap.(X):         0.468
Loss Time (sec):       0 (Y+R=4.0 sec)  Average Delay (sec/veh):        23.6
Optimal Cycle:        43                Level Of Service:                  C
*******************************************************************************
Approach:      North Bound      South Bound       East Bound       West Bound
Movement:     L  -  T  -  R    L  -  T  -  R    L  -  T  -  R    L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
```

```
Control:       Split Phase      Split Phase       Protected        Protected
Rights:           Include          Include          Include          Include
Min. Green:     6    0     0     0    6     0     4    8     0     4    8     0
Lanes:        1  0  1  0  1    1  1  0  0  1    1  0  1  1  0    1  0  1  1  0
------------|---------------||---------------||---------------||---------------|
Volume Module:
Base Vol:     286   32   277     5    3     4    11  914    66    36  300     5
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:  286   32   277     5    3     4    11  914    66    36  300     5
Added Vol:      0    0     0     0    0     0     0    1     0     0 -169     0
PasserByVol:    0    0     0     0    0     0     0    0     0     0    0     0
Initial Fut:  286   32   277     5    3     4    11  915    66    36  131     5
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:   286   32   277     5    3     4    11  915    66    36  131     5
Reduct Vol:     0    0     0     0    0     0     0    0     0     0    0     0
Reduced Vol:  286   32   277     5    3     4    11  915    66    36  131     5
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:  286   32   277     5    3     4    11  915    66    36  131     5
------------|---------------||---------------||---------------||---------------|
Saturation Flow Module:
Sat/Lane:    1900 1900  1900  1900 1900  1900  1900 1900  1900  1900 1900  1900
Adjustment:  0.95 1.00  0.85  0.97 0.97  0.85  0.95 0.94  0.94  0.95 0.94  0.94
Lanes:       1.00 1.00  1.00  1.25 0.75  1.00  1.00 1.87  0.13  1.00 1.93  0.07
Final Sat.:  1805 1900  1615  2304 1382  1615  1805 3333   240  1805 3456   132
------------|---------------||---------------||---------------||---------------|
Capacity Analysis Module:
Vol/Sat:     0.16 0.02  0.17  0.00 0.00  0.00  0.01 0.27  0.27  0.02 0.04  0.04
Crit Moves:              ****       ****              ****        ****
Green/Cycle: 0.35 0.35  0.35  0.05 0.05  0.05  0.20 0.56  0.56  0.04 0.40  0.40
Volume/Cap:  0.45 0.05  0.49  0.04 0.04  0.05  0.03 0.49  0.49  0.49 0.09  0.09
Uniform Del: 31.1 26.6  31.6  56.3 56.3  56.3  39.9 16.5  16.5  58.2 23.1  23.1
IncremntDel:  0.5  0.0   0.7   0.1  0.1   0.3   0.0  0.2   0.2   5.1  0.0   0.0
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:   31.6 26.7  32.3  56.4 56.4  56.6  39.9 16.7  16.7  63.3 23.2  23.2
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:  31.6 26.7  32.3  56.4 56.4  56.6  39.9 16.7  16.7  63.3 23.2  23.2
LOS by Move:   C    C     C     E    E     E     D    B     B     E    C     C
HCM2kAvgQ:     8    1     8     0    0     0     0   12    12     2    2     2
*******************************************************************************
Note: Queue reported is the number of cars per lane.
```



```
-------------------------------------------------------------------------------
-------------------------------------------------------------------------------
                     Level Of Service Computation Report
          2000 HCM Unsignalized Method (Future Volume Alternative)
*******************************************************************************
Intersection #5 Mission Falls Ct/Warren Ave
*******************************************************************************
Average Delay (sec/veh):      0.4       Worst Case Level Of Service: C[ 24.5]
*******************************************************************************
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
Rights:           Include          Include          Include          Include
Lanes:        0  1  0  1  0    0  0  1! 0  0    1  0  1  1  0    1  0  1  1  0
------------|---------------||---------------||---------------||---------------|
Volume Module:
```

```
Base Vol:       37    0    13     5    4     5     8 1258    31    21  322     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:    37    0    13     5    4     5     8 1258    31    21  322     0
Added Vol:    -169    0   -47     0    0     0     0    0     1     0    0     0
PasserByVol:     0    0     0     0    0     0     0    0     0     0    0     0
Initial Fut:  -132    0   -34     5    4     5     8 1258    32    21  322     0
User Adj:     0.00 1.00  0.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
PHF Adj:      0.00 1.00  0.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
PHF Volume:      0    0     0     5    4     5     8 1258    32    21  322     0
Reduct Vol:      0    0     0     0    0     0     0    0     0     0    0     0
FinalVolume:     0    0     0     5    4     5     8 1258    32    21  322     0
------------|---------------||---------------||---------------||---------------|
Critical Gap Module:
Critical Gp:   7.5  6.5   6.9   6.8  6.5   6.9   4.1 xxxx xxxxx   4.1 xxxx xxxxx
FollowUpTim:   3.5  4.0   3.3   3.5  4.0   3.3   2.2 xxxx xxxxx   2.2 xxxx xxxxx
------------|---------------||---------------||---------------||---------------|
Capacity Module:
Cnflict Vol: 1495 1654   645  1009 1670   161   322 xxxx xxxxx  1290 xxxx xxxxx
Potent Cap.:   87   99   420   240   97   862  1249 xxxx xxxxx   544 xxxx xxxxx
Move Cap.:     80   95   420   232   93   862  1249 xxxx xxxxx   544 xxxx xxxxx
Volume/Cap:  0.00 0.00  0.00  0.02 0.04  0.01  0.01 xxxx  xxxx  0.04 xxxx  xxxx
------------|---------------||---------------||---------------||---------------|
Level Of Service Module:
2Way95thQ:   xxxx xxxx xxxxx  xxxx xxxx xxxxx   0.0 xxxx xxxxx   0.1 xxxx xxxxx
Control Del:xxxxx xxxx xxxxx xxxxx xxxx xxxxx   7.9 xxxx xxxxx  11.9 xxxx xxxxx
LOS by Move:   *    *     *     *    *     *     A    *     *     B    *     *
Movement:     LT - LTR - RT    LT - LTR - RT    LT - LTR - RT    LT - LTR - RT
Shared Cap.:    0 xxxx     0  xxxx  199 xxxxx  xxxx xxxx xxxxx  xxxx xxxx xxxxx
SharedQueue:xxxxx xxxx xxxxx xxxxx  0.2 xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx
Shrd ConDel:xxxxx xxxx xxxxx xxxxx 24.5 xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx
Shared LOS:    *    *     *     *    C     *     *    *     *     *    *     *
ApproachDel:    xxxxxx             24.5           xxxxxx           xxxxxx
ApproachLOS:       *                C              *                *
*******************************************************************************
Note: Queue reported is the number of cars per lane.
*******************************************************************************
```

```
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-------------------------------------------------------------------------------
-------------------------------------------------------------------------------
                      Level Of Service Computation Report
             2000 HCM Operations Method (Future Volume Alternative)
*******************************************************************************
Intersection #6 Warm Springs Blvd/Warren Ave
*******************************************************************************
Cycle (sec):         120                 Critical Vol./Cap.(X):         0.607
Loss Time (sec):       0 (Y+R=4.0 sec)  Average Delay (sec/veh):        31.5
Optimal Cycle:        58                 Level Of Service:                C
*******************************************************************************
Approach:      North Bound      South Bound       East Bound       West Bound
Movement:     L  -  T  -  R    L  -  T  -  R    L  -  T  -  R    L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:        Protected        Protected        Protected        Protected
Rights:           Include          Include          Include          Include
Min. Green:     4   10     0     4   10     0     4   10     0     4   10     0
Lanes:        2  0  1  1  0    1  0  2  0  1    2  0  2  0  1    2  0  2  0  1
------------|---------------||---------------||---------------||---------------|
Volume Module:
```

```
Base Vol:      100  806   109   155  529   117   338  494   396   123   92    71
Growth Adj:   1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
Initial Bse:   100  806   109   155  529   117   338  494   396   123   92    71
Added Vol:       0  -61     0     0    0     0   -47    0     0     0    0     0
PasserByVol:     0    0     0     0    0     0     0    0     0     0    0     0
Initial Fut:   100  745   109   155  529   117   291  494   396   123   92    71
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:    100  745   109   155  529   117   291  494   396   123   92    71
Reduct Vol:      0    0     0     0    0     0     0    0     0     0    0     0
Reduced Vol:   100  745   109   155  529   117   291  494   396   123   92    71
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:   100  745   109   155  529   117   291  494   396   123   92    71
------------|---------------||---------------||---------------||---------------|
Saturation Flow Module:
Sat/Lane:     1900 1900  1900  1900 1900  1900  1900 1900  1900  1900 1900  1900
Adjustment:   0.92 0.93  0.93  0.95 0.95  0.85  0.92 0.95  0.85  0.92 0.95  0.85
Lanes:        2.00 1.74  0.26  1.00 2.00  1.00  2.00 2.00  1.00  2.00 2.00  1.00
Final Sat.:   3502 3089   452  1805 3610  1615  3502 3610  1615  3502 3610  1615
------------|---------------||---------------||---------------||---------------|
Capacity Analysis Module:
Vol/Sat:      0.03 0.24  0.24  0.09 0.15  0.07  0.08 0.14  0.25  0.04 0.03  0.04
Crit Moves:        ****        ****                        ****  ****
Green/Cycle:  0.10 0.40  0.40  0.14 0.44  0.44  0.23 0.40  0.40  0.06 0.23  0.23
Volume/Cap:   0.29 0.61  0.61  0.61 0.33  0.17  0.36 0.34  0.61  0.61 0.11  0.19
Uniform Del:  50.1 28.7  28.7  48.4 22.2  20.4  38.8 24.7  28.3  55.2 36.4  37.1
IncremntDel:   0.5  0.8   0.8   4.2  0.1   0.1   0.3  0.1   1.7   5.2  0.1   0.2
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:    50.5 29.5  29.5  52.6 22.3  20.5  39.0 24.9  29.9  60.4 36.5  37.4
User DelAdj:  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
AdjDel/Veh:   50.5 29.5  29.5  52.6 22.3  20.5  39.0 24.9  29.9  60.4 36.5  37.4
LOS by Move:    D    C     C     D    C     C     D    C     C     E    D     D
HCM2kAvgQ:      2   13    13     6    7     3     5    6    12     3    1     2
*******************************************************************************
Note: Queue reported is the number of cars per lane.
```



```
-------------------------------------------------------------------------------
-------------------------------------------------------------------------------
                    Level Of Service Computation Report
          2000 HCM Operations Method (Future Volume Alternative)
*******************************************************************************
Intersection #7 Warm Springs Blvd/Mission Falls Ln/Hackamore Ln
*******************************************************************************
Cycle (sec):          100                Critical Vol./Cap.(X):         0.350
Loss Time (sec):        0 (Y+R=4.0 sec)  Average Delay (sec/veh):         2.4
Optimal Cycle:         35                Level Of Service:                  A
*******************************************************************************
Approach:      North Bound      South Bound       East Bound       West Bound
Movement:     L  -  T  -  R    L  -  T  -  R    L  -  T  -  R    L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:        Protected        Protected        Protected        Protected
Rights:           Include          Include          Include          Include
Min. Green:     0    0     0     0    0     0     0    0     0     0    0     0
Lanes:        1  0  1  1  0    1  0  1  1  0    0  1  0  0  1    0  0  1! 0  0
------------|---------------||---------------||---------------||---------------|
Volume Module:
Base Vol:       8 1070    34    56 1037     4     0    2    48     2    2    15
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:    8 1070    34    56 1037     4     0    2    48     2    2    15
```

```
Added Vol:       0    0     0     0    0     0   -61   -9   -89     0    0     0
PasserByVol:     0    0     0     0    0     0     0    0     0     0    0     0
Initial Fut:     8 1070    34    56 1037     4   -61   -7   -41     2    2    15
User Adj:     1.00 1.00  1.00  1.00 1.00  1.00  0.00 0.00  0.00  1.00 1.00  1.00
PHF Adj:      1.00 1.00  1.00  1.00 1.00  1.00  0.00 0.00  0.00  1.00 1.00  1.00
PHF Volume:      8 1070    34    56 1037     4     0    0     0     2    2    15
Reduct Vol:      0    0     0     0    0     0     0    0     0     0    0     0
Reduced Vol:     8 1070    34    56 1037     4     0    0     0     2    2    15
PCE Adj:      1.00 1.00  1.00  1.00 1.00  1.00  0.00 0.00  0.00  1.00 1.00  1.00
MLF Adj:      1.00 1.00  1.00  1.00 1.00  1.00  0.00 0.00  0.00  1.00 1.00  1.00
FinalVolume:     8 1070    34    56 1037     4     0    0     0     2    2    15
------------|---------------||---------------||---------------||---------------|
Saturation Flow Module:
Sat/Lane:     1900 1900  1900  1900 1900  1900  1900 1900  1900  1900 1900  1900
Adjustment:   0.95 0.95  0.95  0.95 0.95  0.95  1.00 1.00  1.00  0.88 0.88  0.88
Lanes:        1.00 1.94  0.06  1.00 1.99  0.01  0.00 1.00  1.00  0.10 0.11  0.79
Final Sat.:   1805 3481   111  1805 3593    14     0 1900  1900   176  176  1321
------------|---------------||---------------||---------------||---------------|
Capacity Analysis Module:
Vol/Sat:      0.00 0.31  0.31  0.03 0.29  0.29  0.00 0.00  0.00  0.01 0.01  0.01
Crit Moves:        ****        ****                              ****
Green/Cycle:  0.01 0.88  0.88  0.09 0.95  0.95  0.00 0.00  0.00  0.03 0.03  0.03
Volume/Cap:   0.30 0.35  0.35  0.35 0.30  0.30  0.00 0.00  0.00  0.35 0.35  0.35
Uniform Del:  48.8  1.1   1.1  42.9  0.2   0.2   0.0  0.0   0.0  47.3 47.3  47.3
IncremntDel:   6.4  0.1   0.1   1.3  0.1   0.1   0.0  0.0   0.0   3.9  3.9   3.9
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  0.00 0.00  0.00  1.00 1.00  1.00
Delay/Veh:    55.1  1.1   1.1  44.2  0.2   0.2   0.0  0.0   0.0  51.2 51.2  51.2
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:   55.1  1.1   1.1  44.2  0.2   0.2   0.0  0.0   0.0  51.2 51.2  51.2
LOS by Move:    E    A     A     D    A     A     A    A     A     D    D     D
HCM2kAvgQ:      1    3     3     2    1     1     0    0     0     1    1     1
*******************************************************************************
Note: Queue reported is the number of cars per lane.

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```

Scenario Report

Scenario:	Background AM
Command:	BASE AM
Volume:	BASE AM
Geometry:	BASE AM
Impact Fee:	Default Impact Fee
Trip Generation:	No Project
Trip Distribution:	Project
Paths:	Default Path
Routes:	Default Route
Configuration:	Default Configuration

Background AM.txt
Impact Analysis Report
Level Of Service

Intersection	Base LOS	Base Del/ Veh	Base V/ C	Future LOS	Future Del/ Veh	Future V/ C	Change in
# 1 Warm Springs Blvd/Mission Blvd	E	55.7	1.045	E	55.7	1.045	+ 0.000 D/V
# 2 I-880 SB Ramps/Warren Ave	C	29.6	0.534	C	29.6	0.534	+ 0.000 D/V
# 3 I-880 NB Ramps/Warren Ave	B	19.8	0.486	B	19.8	0.486	+ 0.000 D/V
# 4 Kato Rd/Warren Ave	C	25.0	0.488	C	25.0	0.488	+ 0.000 D/V
# 5 Mission Falls Ct/Warren Ave	F	109.9	0.000	F	109.9	0.000	+ 0.000 D/V
# 6 Warm Springs Blvd/Warren Ave	C	30.5	0.641	C	30.5	0.641	+ 0.000 D/V
# 7 Warm Springs Blvd/Mission Fall	B	15.3	0.549	B	15.3	0.549	+ 0.000 D/V

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

****

Intersection #1 Warm Springs Blvd/Mission Blvd

```
*******************************************************************************
Cycle (sec):         100                  Critical Vol./Cap.(X):         1.045
Loss Time (sec):       0 (Y+R=4.0 sec)  Average Delay (sec/veh):        55.7
Optimal Cycle:       180                  Level Of Service:                 E
*******************************************************************************
Approach:      North Bound      South Bound       East Bound       West Bound
Movement:     L  -  T  -  R    L  -  T  -  R    L  -  T  -  R    L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:        Protected        Protected        Protected        Protected
Rights:           Include          Include          Include          Include
Min. Green:    14   14     0    15   13     0    14   15     0    15   15     0
Lanes:        2  0  2  0  1    2  0  2  0  1    2  0  3  0  1    2  0  3  0  1
------------|---------------||---------------||---------------||---------------|
Volume Module:
Base Vol:     404  634   171   266  604   483   688 1306   211   432 2249   481
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:  404  634   171   266  604   483   688 1306   211   432 2249   481
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:  404  634   171   266  604   483   688 1306   211   432 2249   481
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:   404  634   171   266  604   483   688 1306   211   432 2249   481
Reduct Vol:     0    0     0     0    0     0     0    0     0     0    0     0
Reduced Vol:  404  634   171   266  604   483   688 1306   211   432 2249   481
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:  404  634   171   266  604   483   688 1306   211   432 2249   481
------------|---------------||---------------||---------------||---------------|
Saturation Flow Module:
Sat/Lane:    1900 1900  1900  1900 1900  1900  1900 1900  1900  1900 1900  1900
Adjustment:  0.92 0.95  0.85  0.92 0.95  0.85  0.92 0.91  0.85  0.92 0.91  0.85
Lanes:       2.00 2.00  1.00  2.00 2.00  1.00  2.00 3.00  1.00  2.00 3.00  1.00
Final Sat.:  3502 3610  1615  3502 3610  1615  3502 5187  1615  3502 5187  1615
------------|---------------||---------------||---------------||---------------|
Capacity Analysis Module:
Vol/Sat:     0.12 0.18  0.11  0.08 0.17  0.30  0.20 0.25  0.13  0.12 0.43  0.30
Crit Moves:  ****                         ****  ****                  ****
Green/Cycle: 0.14 0.22  0.22  0.19 0.28  0.28  0.18 0.37  0.37  0.22 0.40  0.40
Volume/Cap:  0.82 0.78  0.47  0.40 0.60  1.08  1.08 0.69  0.36  0.57 1.08  0.74
Uniform Del: 41.8 36.4  33.6  35.3 31.4  36.2  40.9 26.9  23.2  34.9 29.9  25.5
IncremntDel: 10.9  4.9   1.0   0.4  1.1  65.9  59.3  1.1   0.4   1.0 45.4   4.6
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:   52.7 41.4  34.6  35.7 32.5 102.0 100.2 28.0  23.5  35.9 75.4  30.1
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:  52.7 41.4  34.6  35.7 32.5 102.0 100.2 28.0  23.5  35.9 75.4  30.1
LOS by Move:   D    D     C     D    C     F     F    C     C     D    E     C
HCM2kAvgQ:      9   12     5     4    9    24    18   13     5     7   38    14
*******************************************************************************
Note: Queue reported is the number of cars per lane.
```

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

```
*******************************************************************************
Intersection #2 I-880 SB Ramps/Warren Ave
*******************************************************************************
Cycle (sec):         120                  Critical Vol./Cap.(X):         0.534
```

```
Loss Time (sec):      16 (Y+R=4.0 sec)  Average Delay (sec/veh):        29.6
Optimal Cycle:        53                Level Of Service:                  C
*******************************************************************************
Approach:      North Bound      South Bound       East Bound       West Bound
Movement:     L  -  T  -  R    L  -  T  -  R    L  -  T  -  R    L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:       Split Phase      Split Phase       Protected        Protected
Rights:           Include          Include          Include          Include
Min. Green:     0    6     0     0    6     0     4    8     0     4    8     0
Lanes:        1  0  1  1  0    1  1  0  0  1    2  0  1  1  0    1  0  1  1  1
------------|---------------||---------------||---------------||---------------|
Volume Module:
Base Vol:      11   22    36   304   98    75   168  207    40   487  894   330
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:   11   22    36   304   98    75   168  207    40   487  894   330
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:   11   22    36   304   98    75   168  207    40   487  894   330
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:    11   22    36   304   98    75   168  207    40   487  894   330
Reduct Vol:     0    0     0     0    0     0     0    0     0     0    0     0
Reduced Vol:   11   22    36   304   98    75   168  207    40   487  894   330
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:   11   22    36   304   98    75   168  207    40   487  894   330
------------|---------------||---------------||---------------||---------------|
Saturation Flow Module:
Sat/Lane:    1900 1900  1900  1900 1900  1900  1900 1900  1900  1900 1900  1900
Adjustment:  0.95 0.86  0.86  0.96 0.96  0.85  0.92 0.93  0.93  0.95 0.91  0.91
Lanes:       1.00 1.00  1.00  1.51 0.49  1.00  2.00 1.68  0.32  1.00 2.00  1.00
Final Sat.:  1805 1637  1637  2770  893  1615  3502 2953   571  1805 3466  1733
------------|---------------||---------------||---------------||---------------|
Capacity Analysis Module:
Vol/Sat:     0.01 0.01  0.02  0.11 0.11  0.05  0.05 0.07  0.07  0.27 0.26  0.19
Crit Moves:        ****        ****                  ****        ****
Green/Cycle: 0.05 0.05  0.05  0.20 0.20  0.20  0.10 0.13  0.13  0.49 0.52  0.52
Volume/Cap:  0.12 0.27  0.44  0.55 0.55  0.23  0.50 0.55  0.55  0.55 0.50  0.37
Uniform Del: 54.5 54.9  55.4  43.2 43.2  40.3  51.4 49.1  49.1  21.4 18.6  17.0
IncremntDel:  0.6  0.7   2.3   0.9  0.9   0.4   1.1  1.5   1.5   0.7  0.2   0.1
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:   55.1 55.6  57.7  44.1 44.1  40.7  52.6 50.6  50.6  22.1 18.7  17.1
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:  55.1 55.6  57.7  44.1 44.1  40.7  52.6 50.6  50.6  22.1 18.7  17.1
LOS by Move:   E    E     E     D    D     D     D    D     D     C    B     B
HCM2kAvgQ:      0    1     2     7    7     2     4    5     5    13   11     7
*******************************************************************************
Note: Queue reported is the number of cars per lane.

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-------------------------------------------------------------------------------
                      Level Of Service Computation Report
           2000 HCM Operations Method (Future Volume Alternative)
*******************************************************************************
Intersection #3 I-880 NB Ramps/Warren Ave
*******************************************************************************
Cycle (sec):         104                Critical Vol./Cap.(X):         0.486
Loss Time (sec):       0 (Y+R=4.0 sec)  Average Delay (sec/veh):        19.8
Optimal Cycle:        44                Level Of Service:                  B
*******************************************************************************
```

```
Approach:      North Bound      South Bound       East Bound       West Bound
Movement:     L  -  T  -  R    L  -  T  -  R    L  -  T  -  R    L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:        Protected        Protected        Protected        Protected
Rights:           Include          Include          Include          Include
Min. Green:     8    0     0     0    0     0     0   10     0     4   10    10
Lanes:        2  0  0  0  1    0  0  0  0  0    0  0  2  0  1    1  0  2  0  0
------------|---------------||---------------||---------------||---------------|
Volume Module:
Base Vol:     715    0   256     0    0     0     0  482    36   149 1019     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:  715    0   256     0    0     0     0  482    36   149 1019     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:  715    0   256     0    0     0     0  482    36   149 1019     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:   715    0   256     0    0     0     0  482    36   149 1019     0
Reduct Vol:     0    0     0     0    0     0     0    0     0     0    0     0
Reduced Vol:  715    0   256     0    0     0     0  482    36   149 1019     0
PCE Adj:     1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
MLF Adj:     1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
FinalVolume:  715    0   256     0    0     0     0  482    36   149 1019     0
------------|---------------||---------------||---------------||---------------|
Saturation Flow Module:
Sat/Lane:    1900 1900  1900  1900 1900  1900  1900 1900  1900  1900 1900  1900
Adjustment:  0.92 1.00  0.85  1.00 1.00  1.00  1.00 0.95  0.85  0.95 0.95  1.00
Lanes:       2.00 0.00  1.00  0.00 0.00  0.00  0.00 2.00  1.00  1.00 2.00  0.00
Final Sat.:  3502    0  1615     0    0     0     0 3610  1615  1805 3610     0
------------|---------------||---------------||---------------||---------------|
Capacity Analysis Module:
Vol/Sat:     0.20 0.00  0.16  0.00 0.00  0.00  0.00 0.13  0.02  0.08 0.28  0.00
Crit Moves:  ****                               ****                    ****
Green/Cycle: 0.42 0.00  0.42  0.00 0.00  0.00  0.00 0.36  0.36  0.22 0.58  0.00
Volume/Cap:  0.49 0.00  0.38  0.00 0.00  0.00  0.00 0.37  0.06  0.37 0.49  0.00
Uniform Del: 22.0  0.0  20.8   0.0  0.0   0.0   0.0 24.7  21.9  34.3 12.8   0.0
IncremntDel:  0.3  0.0   0.4   0.0  0.0   0.0   0.0  0.2   0.0   0.6  0.2   0.0
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 0.00  1.00  0.00 0.00  0.00  0.00 1.00  1.00  1.00 1.00  0.00
Delay/Veh:   22.3  0.0  21.2   0.0  0.0   0.0   0.0 24.9  21.9  34.9 12.9   0.0
User DelAdj: 1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
AdjDel/Veh:  22.3  0.0  21.2   0.0  0.0   0.0   0.0 24.9  21.9  34.9 12.9   0.0
LOS by Move:   C    A     C     A    A     A     A    C     C     C    B     A
HCM2kAvgQ:      9    0     6     0    0     0     0    6     1     4   10     0
*******************************************************************************
Note: Queue reported is the number of cars per lane.

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-------------------------------------------------------------------------------
-------------------------------------------------------------------------------
                      Level Of Service Computation Report
            2000 HCM Operations Method (Future Volume Alternative)
*******************************************************************************
Intersection #4 Kato Rd/Warren Ave
*******************************************************************************
Cycle (sec):         124                Critical Vol./Cap.(X):         0.488
Loss Time (sec):       0 (Y+R=4.0 sec)  Average Delay (sec/veh):        25.0
Optimal Cycle:        45                Level Of Service:                  C
*******************************************************************************
Approach:      North Bound      South Bound       East Bound       West Bound
Movement:     L  -  T  -  R    L  -  T  -  R    L  -  T  -  R    L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
```

```
Control:       Split Phase      Split Phase       Protected        Protected
Rights:           Include          Include          Include          Include
Min. Green:     6    0     0     0    6     0     4    8     0     4    8     0
Lanes:        1  0  1  0  1    1  1  0  0  1    1  0  1  1  0    1  0  1  1  0
------------|---------------||---------------||---------------||---------------|
Volume Module:
Base Vol:     189   52    68   133   35    42     4  517   261   199 1113     3
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:  189   52    68   133   35    42     4  517   261   199 1113     3
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:  189   52    68   133   35    42     4  517   261   199 1113     3
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:   189   52    68   133   35    42     4  517   261   199 1113     3
Reduct Vol:     0    0     0     0    0     0     0    0     0     0    0     0
Reduced Vol:  189   52    68   133   35    42     4  517   261   199 1113     3
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:  189   52    68   133   35    42     4  517   261   199 1113     3
------------|---------------||---------------||---------------||---------------|
Saturation Flow Module:
Sat/Lane:    1900 1900  1900  1900 1900  1900  1900 1900  1900  1900 1900  1900
Adjustment:  0.95 1.00  0.85  0.96 0.96  0.85  0.95 0.90  0.90  0.95 0.95  0.95
Lanes:       1.00 1.00  1.00  1.58 0.42  1.00  1.00 1.33  0.67  1.00 1.99  0.01
Final Sat.:  1805 1900  1615  2894  762  1615  1805 2279  1151  1805 3600    10
------------|---------------||---------------||---------------||---------------|
Capacity Analysis Module:
Vol/Sat:     0.10 0.03  0.04  0.05 0.05  0.03  0.00 0.23  0.23  0.11 0.31  0.31
Crit Moves:  ****                 ****             ****        ****
Green/Cycle: 0.21 0.21  0.21  0.09 0.09  0.09  0.07 0.47  0.47  0.23 0.63  0.63
Volume/Cap:  0.49 0.13  0.20  0.49 0.49  0.28  0.03 0.49  0.49  0.49 0.49  0.49
Uniform Del: 42.7 39.3  39.9  53.3 53.3  52.2  54.3 22.9  22.9  41.7 12.6  12.6
IncremntDel:  1.0  0.1   0.3   1.1  1.1   1.0   0.1  0.2   0.2   0.9  0.2   0.2
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:   43.7 39.5  40.2  54.4 54.4  53.2  54.4 23.2  23.2  42.7 12.7  12.7
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:  43.7 39.5  40.2  54.4 54.4  53.2  54.4 23.2  23.2  42.7 12.7  12.7
LOS by Move:   D    D     D     D    D     D     D    C     C     D    B     B
HCM2kAvgQ:     7    2     2     4    4     2     0   11    11     7   12    12
*******************************************************************************
Note: Queue reported is the number of cars per lane.
```



```
-------------------------------------------------------------------------------
-------------------------------------------------------------------------------
                     Level Of Service Computation Report
          2000 HCM Unsignalized Method (Future Volume Alternative)
*******************************************************************************
Intersection #5 Mission Falls Ct/Warren Ave
*******************************************************************************
Average Delay (sec/veh):      4.8       Worst Case Level Of Service: F[109.9]
*******************************************************************************
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
Rights:           Include          Include          Include          Include
Lanes:        0  1  0  1  0    0  0  0  0  1    1  0  1  1  0    1  0  1  1  0
------------|---------------||---------------||---------------||---------------|
Volume Module:
```

```
Base Vol:       69    4    10     0    0     2    19  442   229    73 1277    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:    69    4    10     0    0     2    19  442   229    73 1277    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:    69    4    10     0    0     2    19  442   229    73 1277    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:     69    4    10     0    0     2    19  442   229    73 1277    10
Reduct Vol:      0    0     0     0    0     0     0    0     0     0    0     0
FinalVolume:    69    4    10     0    0     2    19  442   229    73 1277    10
------------|---------------||---------------||---------------||---------------|
Critical Gap Module:
Critical Gp:   7.5  6.5   6.9 xxxxx xxxx   6.9   4.1 xxxx xxxxx   4.1 xxxx xxxxx
FollowUpTim:   3.5  4.0   3.3 xxxxx xxxx   3.3   2.2 xxxx xxxxx   2.2 xxxx xxxxx
------------|---------------||---------------||---------------||---------------|
Capacity Module:
Cnflict Vol: 1379 2028   336  xxxx xxxx   644  1287 xxxx xxxxx   671 xxxx xxxxx
Potent Cap.:  106   58   666  xxxx xxxx   421   546 xxxx xxxxx   929 xxxx xxxxx
Move Cap.:     96   52   666  xxxx xxxx   421   546 xxxx xxxxx   929 xxxx xxxxx
Volume/Cap:  0.72 0.08  0.02  xxxx xxxx  0.00  0.03 xxxx  xxxx  0.08 xxxx  xxxx
------------|---------------||---------------||---------------||---------------|
Level Of Service Module:
2Way95thQ:   xxxx xxxx xxxxx  xxxx xxxx   0.0   0.1 xxxx xxxxx   0.3 xxxx xxxxx
Control Del:xxxxx xxxx xxxxx xxxxx xxxx  13.6  11.8 xxxx xxxxx   9.2 xxxx xxxxx
LOS by Move:   *    *     *     *    *     B     B    *     *     A    *     *
Movement:     LT - LTR - RT    LT - LTR - RT    LT - LTR - RT    LT - LTR - RT
Shared Cap.:   92 xxxx   152  xxxx xxxx xxxxx  xxxx xxxx xxxxx  xxxx xxxx xxxxx
SharedQueue:  4.2 xxxx   0.3 xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx
Shrd ConDel:125.0 xxxx  31.1 xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx
Shared LOS:    F    *     D     *    *     *     *    *     *     *    *     *
ApproachDel:     109.9             13.6           xxxxxx           xxxxxx
ApproachLOS:        F                B               *                *
*******************************************************************************
Note: Queue reported is the number of cars per lane.
*******************************************************************************
```

```
  Traffix 7.9.0415 (c) 2007 Dowling Assoc. Licensed to FEHR & PEERS,  LAFAYETTE♀
Background AM              Fri May 29, 2015 15:02:58                 Page 8-1
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-------------------------------------------------------------------------------
                      Level Of Service Computation Report
             2000 HCM Operations Method (Future Volume Alternative)
*******************************************************************************
Intersection #6 Warm Springs Blvd/Warren Ave
*******************************************************************************
Cycle (sec):         120                 Critical Vol./Cap.(X):         0.641
Loss Time (sec):       0 (Y+R=4.0 sec)  Average Delay (sec/veh):        30.5
Optimal Cycle:        63                 Level Of Service:                 C
*******************************************************************************
Approach:      North Bound      South Bound       East Bound       West Bound
Movement:     L  -  T  -  R    L  -  T  -  R    L  -  T  -  R    L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:        Protected        Protected        Protected        Protected
Rights:           Include          Include          Include          Include
Min. Green:     4   10     0     4   10     0     4   10     0     4   10     0
Lanes:        2  0  1  1  0    1  0  2  0  1    2  0  2  0  1    2  0  2  0  1
------------|---------------||---------------||---------------||---------------|
Volume Module:
```

```
Base Vol:      385  875   104    40  688   525   290   37   169   185  444   127
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:   385  875   104    40  688   525   290   37   169   185  444   127
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:   385  875   104    40  688   525   290   37   169   185  444   127
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:    385  875   104    40  688   525   290   37   169   185  444   127
Reduct Vol:      0    0     0     0    0     0     0    0     0     0    0     0
Reduced Vol:   385  875   104    40  688   525   290   37   169   185  444   127
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:   385  875   104    40  688   525   290   37   169   185  444   127
------------|---------------||---------------||---------------||---------------|
Saturation Flow Module:
Sat/Lane:     1900 1900  1900  1900 1900  1900  1900 1900  1900  1900 1900  1900
Adjustment:   0.92 0.93  0.93  0.95 0.95  0.85  0.92 0.95  0.85  0.92 0.95  0.85
Lanes:        2.00 1.79  0.21  1.00 2.00  1.00  2.00 2.00  1.00  2.00 2.00  1.00
Final Sat.:   3502 3175   377  1805 3610  1615  3502 3610  1615  3502 3610  1615
------------|---------------||---------------||---------------||---------------|
Capacity Analysis Module:
Vol/Sat:      0.11 0.28  0.28  0.02 0.19  0.33  0.08 0.01  0.10  0.05 0.12  0.08
Crit Moves:   ****                         ****  ****                  ****
Green/Cycle:  0.17 0.61  0.61  0.07 0.51  0.51  0.13 0.21  0.21  0.11 0.19  0.19
Volume/Cap:   0.64 0.46  0.46  0.30 0.38  0.64  0.64 0.05  0.49  0.49 0.64  0.41
Uniform Del:  46.3 12.9  12.9  52.7 18.0  21.6  49.6 37.5  41.5  50.4 44.7  42.5
IncremntDel:   2.3  0.2   0.2   1.3  0.1   1.7   3.1  0.0   1.1   1.0  2.0   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:    48.6 13.0  13.0  54.0 18.1  23.3  52.7 37.5  42.6  51.4 46.7  43.4
User DelAdj:  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
AdjDel/Veh:   48.6 13.0  13.0  54.0 18.1  23.3  52.7 37.5  42.6  51.4 46.7  43.4
LOS by Move:    D    B     B     D    B     C     D    D     D     D    D     D
HCM2kAvgQ:      8   10    10     2    8    14     6    1     6     4    9     4
*******************************************************************************
Note: Queue reported is the number of cars per lane.
```



```
-------------------------------------------------------------------------------
-------------------------------------------------------------------------------
                    Level Of Service Computation Report
          2000 HCM Operations Method (Future Volume Alternative)
*******************************************************************************
Intersection #7 Warm Springs Blvd/Mission Falls Ln/Hackamore Ln
*******************************************************************************
Cycle (sec):         100                Critical Vol./Cap.(X):         0.549
Loss Time (sec):       0 (Y+R=4.0 sec)  Average Delay (sec/veh):        15.3
Optimal Cycle:        51                Level Of Service:                 B
*******************************************************************************
Approach:      North Bound      South Bound       East Bound       West Bound
Movement:     L  -  T  -  R    L  -  T  -  R    L  -  T  -  R    L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:        Protected        Protected        Protected        Protected
Rights:           Include          Include          Include          Include
Min. Green:     0    0     0     0    0     0     0    0     0     0    0     0
Lanes:        1  0  1  1  0    1  0  1  1  0    0  1  0  0  1    0  0  1! 0  0
------------|---------------||---------------||---------------||---------------|
Volume Module:
Base Vol:     156 1264    89    34  954    87     9    1    31    82   17   129
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:  156 1264    89    34  954    87     9    1    31    82   17   129
```

```
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:   156 1264    89    34  954    87     9    1    31    82   17   129
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:    156 1264    89    34  954    87     9    1    31    82   17   129
Reduct Vol:      0    0     0     0    0     0     0    0     0     0    0     0
Reduced Vol:   156 1264    89    34  954    87     9    1    31    82   17   129
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:   156 1264    89    34  954    87     9    1    31    82   17   129
------------|---------------||---------------||---------------||---------------|
Saturation Flow Module:
Sat/Lane:     1900 1900  1900  1900 1900  1900  1900 1900  1900  1900 1900  1900
Adjustment:   0.95 0.94  0.94  0.95 0.94  0.94  0.96 0.96  0.85  0.91 0.91  0.91
Lanes:        1.00 1.87  0.13  1.00 1.83  0.17  0.90 0.10  1.00  0.36 0.07  0.57
Final Sat.:   1805 3339   235  1805 3265   298  1636  182  1615   620  129   975
------------|---------------||---------------||---------------||---------------|
Capacity Analysis Module:
Vol/Sat:      0.09 0.38  0.38  0.02 0.29  0.29  0.01 0.01  0.02  0.13 0.13  0.13
Crit Moves:        ****        ****                        ****  ****
Green/Cycle:  0.17 0.69  0.69  0.03 0.56  0.56  0.01 0.03  0.03  0.24 0.26  0.26
Volume/Cap:   0.52 0.55  0.55  0.55 0.52  0.52  0.50 0.16  0.55  0.55 0.50  0.50
Uniform Del:  38.1  7.7   7.7  47.5 13.8  13.8  49.2 46.8  47.5  33.2 31.1  31.1
IncremntDel:   1.7  0.3   0.3  10.0  0.3   0.3  18.2  1.2  11.0   1.6  0.9   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:    39.8  8.0   8.0  57.6 14.0  14.0  67.4 48.0  58.4  34.8 32.0  32.0
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:   39.8  8.0   8.0  57.6 14.0  14.0  67.4 48.0  58.4  34.8 32.0  32.0
LOS by Move:    D    A     A     E    B     B     E    D     E     C    C     C
HCM2kAvgQ:      5   11    11     2   11    11     1    0     2     7    6     6
*******************************************************************************
Note: Queue reported is the number of cars per lane.

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```

Scenario Report

Scenario:	Background PM
Command:	BASE PM
Volume:	BASE PM
Geometry:	BASE PM
Impact Fee:	Default Impact Fee
Trip Generation:	No Project
Trip Distribution:	Project
Paths:	Default Path
Routes:	Default Route
Configuration:	Default Configuration

Impact Analysis Report
Level Of Service

Intersection	Base LOS	Base Del/ Veh	Base V/ C	Future LOS	Future Del/ Veh	Future V/ C	Change in D/V
# 1 Warm Springs Blvd/Mission Blvd	D	54.0	0.945	D	54.0	0.945	+ 0.000
# 2 I-880 SB Ramps/Warren Ave	D	42.2	0.623	D	42.2	0.623	+ 0.000
# 3 I-880 NB Ramps/Warren Ave	B	19.7	0.581	B	19.7	0.581	+ 0.000
# 4 Kato Rd/Warren Ave	C	29.1	0.664	C	29.1	0.664	+ 0.000
# 5 Mission Falls Ct/Warren Ave	F	OVRFL	0.000	F	OVRFL	0.000	+ 0.000
# 6 Warm Springs Blvd/Warren Ave	C	32.4	0.725	C	32.4	0.725	+ 0.000
# 7 Warm Springs Blvd/Mission Fall	A	9.5	0.509	A	9.5	0.509	+ 0.000

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

****

Intersection #1 Warm Springs Blvd/Mission Blvd

```
*******************************************************************************
Cycle (sec):         100                  Critical Vol./Cap.(X):         0.945
Loss Time (sec):       0 (Y+R=4.0 sec)    Average Delay (sec/veh):        54.0
Optimal Cycle:       180                  Level Of Service:                  D
*******************************************************************************
Approach:      North Bound      South Bound       East Bound       West Bound
Movement:     L  -  T  -  R    L  -  T  -  R    L  -  T  -  R    L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:        Protected        Protected        Protected        Protected
Rights:           Include          Include          Include          Include
Min. Green:    14   14     0    15   13     0    14   15     0    15   15     0
Lanes:        2  0  2  0  1    2  0  2  0  1    2  0  3  0  1    2  0  3  0  1
------------|---------------||---------------||---------------||---------------|
Volume Module:
Base Vol:     351  787   399   695  776   702   377 1764   108   246 1536   265
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:  351  787   399   695  776   702   377 1764   108   246 1536   265
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:  351  787   399   695  776   702   377 1764   108   246 1536   265
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:   351  787   399   695  776   702   377 1764   108   246 1536   265
Reduct Vol:     0    0     0     0    0     0     0    0     0     0    0     0
Reduced Vol:  351  787   399   695  776   702   377 1764   108   246 1536   265
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:  351  787   399   695  776   702   377 1764   108   246 1536   265
------------|---------------||---------------||---------------||---------------|
Saturation Flow Module:
Sat/Lane:    1900 1900  1900  1900 1900  1900  1900 1900  1900  1900 1900  1900
Adjustment:  0.92 0.95  0.85  0.92 0.95  0.85  0.92 0.91  0.85  0.92 0.91  0.85
Lanes:       2.00 2.00  1.00  2.00 2.00  1.00  2.00 3.00  1.00  2.00 3.00  1.00
Final Sat.:  3502 3610  1615  3502 3610  1615  3502 5187  1615  3502 5187  1615
------------|---------------||---------------||---------------||---------------|
Capacity Analysis Module:
Vol/Sat:     0.10 0.22  0.25  0.20 0.21  0.43  0.11 0.34  0.07  0.07 0.30  0.16
Crit Moves:  ****                          ****        ****        ****
Green/Cycle: 0.14 0.30  0.30  0.24 0.40  0.40  0.15 0.31  0.31  0.15 0.31  0.31
Volume/Cap:  0.72 0.73  0.83  0.83 0.54  1.09  0.73 1.09  0.21  0.47 0.94  0.52
Uniform Del: 41.1 31.5  32.7  36.0 23.1  30.1  40.7 34.4  25.4  38.9 33.5  28.2
IncremntDel:  5.0  2.6  11.3   6.8  0.4  62.9   5.1 51.6   0.2   0.7 11.7   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:   46.1 34.0  44.0  42.9 23.5  93.0  45.8 86.0  25.6  39.5 45.2  29.2
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:  46.1 34.0  44.0  42.9 23.5  93.0  45.8 86.0  25.6  39.5 45.2  29.2
LOS by Move:   D    C     D     D    C     F     D    F     C     D    D     C
HCM2kAvgQ:      7   13    14    13   10    33     7   31     2     4   22     7
*******************************************************************************
Note: Queue reported is the number of cars per lane.

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Background PM              Fri May 29, 2015 15:03:16                 Page 4-1
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-------------------------------------------------------------------------------
                       Level Of Service Computation Report
            2000 HCM Operations Method (Future Volume Alternative)
*******************************************************************************
Intersection #2 I-880 SB Ramps/Warren Ave
*******************************************************************************
Cycle (sec):         120                  Critical Vol./Cap.(X):         0.623
```

```
Loss Time (sec):      16 (Y+R=4.0 sec)  Average Delay (sec/veh):        42.2
Optimal Cycle:        62                Level Of Service:                   D
*******************************************************************************
Approach:      North Bound      South Bound       East Bound       West Bound
Movement:     L  -  T  -  R    L  -  T  -  R    L  -  T  -  R    L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:       Split Phase      Split Phase       Protected        Protected
Rights:           Include          Include          Include          Include
Min. Green:     0    6     0     0    6     0     4    8     0     4    8     0
Lanes:        1  0  1  1  0    1  1  0  0  1    2  0  1  1  0    1  0  1  1  1
------------|---------------||---------------||---------------||---------------|
Volume Module:
Base Vol:      27  293   271   494   11    77   425  448    14    53  380   183
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:   27  293   271   494   11    77   425  448    14    53  380   183
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:   27  293   271   494   11    77   425  448    14    53  380   183
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:    27  293   271   494   11    77   425  448    14    53  380   183
Reduct Vol:     0    0     0     0    0     0     0    0     0     0    0     0
Reduced Vol:   27  293   271   494   11    77   425  448    14    53  380   183
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:   27  293   271   494   11    77   425  448    14    53  380   183
------------|---------------||---------------||---------------||---------------|
Saturation Flow Module:
Sat/Lane:    1900 1900  1900  1900 1900  1900  1900 1900  1900  1900 1900  1900
Adjustment:  0.95 0.88  0.88  0.95 0.95  0.85  0.92 0.95  0.95  0.95 0.90  0.90
Lanes:       1.00 1.04  0.96  1.96 0.04  1.00  2.00 1.94  0.06  1.00 2.00  1.00
Final Sat.:  1805 1740  1610  3543   79  1615  3502 3487   109  1805 3433  1717
------------|---------------||---------------||---------------||---------------|
Capacity Analysis Module:
Vol/Sat:     0.01 0.17  0.17  0.14 0.14  0.05  0.12 0.13  0.13  0.03 0.11  0.11
Crit Moves:              ****       ****        ****                   ****
Green/Cycle: 0.27 0.27  0.27  0.22 0.22  0.22  0.19 0.30  0.30  0.08 0.18  0.18
Volume/Cap:  0.06 0.62  0.62  0.62 0.62  0.21  0.62 0.43  0.43  0.38 0.62  0.60
Uniform Del: 32.4 38.4  38.4  42.0 42.0  38.0  44.3 34.1  34.1  52.7 45.6  45.4
IncremntDel:  0.0  1.4   1.4   1.5  1.5   0.3   1.8  0.3   0.3   1.8  1.4   1.1
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:   32.5 39.8  39.8  43.5 43.5  38.2  46.1 34.4  34.4  54.5 47.0  46.5
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:  32.5 39.8  39.8  43.5 43.5  38.2  46.1 34.4  34.4  54.5 47.0  46.5
LOS by Move:   C    D     D     D    D     D     D    C     C     D    D     D
HCM2kAvgQ:      1   10    10     9    9     2     8    7     7     2    8     7
*******************************************************************************
Note: Queue reported is the number of cars per lane.

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Background PM              Fri May 29, 2015 15:03:16                 Page 5-1
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                      Level Of Service Computation Report
           2000 HCM Operations Method (Future Volume Alternative)
*******************************************************************************
Intersection #3 I-880 NB Ramps/Warren Ave
*******************************************************************************
Cycle (sec):         104                Critical Vol./Cap.(X):         0.581
Loss Time (sec):       0 (Y+R=4.0 sec)  Average Delay (sec/veh):        19.7
Optimal Cycle:        54                Level Of Service:                   B
*******************************************************************************
```

```
Approach:      North Bound      South Bound       East Bound       West Bound
Movement:     L  -  T  -  R    L  -  T  -  R    L  -  T  -  R    L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:        Protected        Protected        Protected        Protected
Rights:           Include          Include          Include          Include
Min. Green:     8    0     0     0    0     0     0   10     0     4   10    10
Lanes:        1  1  0  1  0    0  0  0  0  0    0  0  2  0  1    1  0  2  0  0
------------|---------------||---------------||---------------||---------------|
Volume Module:
Base Vol:     127    1   151     0    0     0     0  998   152   374  499     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:  127    1   151     0    0     0     0  998   152   374  499     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:  127    1   151     0    0     0     0  998   152   374  499     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:   127    1   151     0    0     0     0  998   152   374  499     0
Reduct Vol:     0    0     0     0    0     0     0    0     0     0    0     0
Reduced Vol:  127    1   151     0    0     0     0  998   152   374  499     0
PCE Adj:     1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
MLF Adj:     1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
FinalVolume:  127    1   151     0    0     0     0  998   152   374  499     0
------------|---------------||---------------||---------------||---------------|
Saturation Flow Module:
Sat/Lane:    1900 1900  1900  1900 1900  1900  1900 1900  1900  1900 1900  1900
Adjustment:  0.81 0.81  0.81  1.00 1.00  1.00  1.00 0.95  0.85  0.95 0.95  1.00
Lanes:       1.98 0.02  1.00  0.00 0.00  0.00  0.00 2.00  1.00  1.00 2.00  0.00
Final Sat.:  3068   24  1546     0    0     0     0 3610  1615  1805 3610     0
------------|---------------||---------------||---------------||---------------|
Capacity Analysis Module:
Vol/Sat:     0.04 0.04  0.10  0.00 0.00  0.00  0.00 0.28  0.09  0.21 0.14  0.00
Crit Moves:             ****                        ****        ****
Green/Cycle: 0.17 0.17  0.17  0.00 0.00  0.00  0.00 0.48  0.48  0.36 0.83  0.00
Volume/Cap:  0.25 0.25  0.58  0.00 0.00  0.00  0.00 0.58  0.20  0.58 0.17  0.00
Uniform Del: 37.5 37.5  39.9   0.0  0.0   0.0   0.0 19.8  15.8  27.2  1.7   0.0
IncremntDel:  0.1  0.1   1.8   0.0  0.0   0.0   0.0  0.5   0.1   1.4  0.0   0.0
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  0.00 0.00  0.00  0.00 1.00  1.00  1.00 1.00  0.00
Delay/Veh:   37.7 37.7  41.7   0.0  0.0   0.0   0.0 20.3  15.9  28.5  1.7   0.0
User DelAdj: 1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
AdjDel/Veh:  37.7 37.7  41.7   0.0  0.0   0.0   0.0 20.3  15.9  28.5  1.7   0.0
LOS by Move:   D    D     D     A    A     A     A    C     B     C    A     A
HCM2kAvgQ:     2    2     6     0    0     0     0   12     3    10    2     0
*******************************************************************************
Note: Queue reported is the number of cars per lane.

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-------------------------------------------------------------------------------
                      Level Of Service Computation Report
            2000 HCM Operations Method (Future Volume Alternative)
*******************************************************************************
Intersection #4 Kato Rd/Warren Ave
*******************************************************************************
Cycle (sec):         124                Critical Vol./Cap.(X):         0.664
Loss Time (sec):       0 (Y+R=4.0 sec)  Average Delay (sec/veh):        29.1
Optimal Cycle:        68                Level Of Service:                  C
*******************************************************************************
Approach:      North Bound      South Bound       East Bound       West Bound
Movement:     L  -  T  -  R    L  -  T  -  R    L  -  T  -  R    L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
```

```
Control:       Split Phase      Split Phase       Protected        Protected
Rights:           Include          Include          Include          Include
Min. Green:     6    0     0     0    6     0     4    8     0     4    8     0
Lanes:        1  0  1  0  1    1  1  0  0  1    1  0  1  1  0    1  0  1  1  0
------------|---------------||---------------||---------------||---------------|
Volume Module:
Base Vol:     311   50   300     5   48     4    46 1116   120   190  596     5
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:  311   50   300     5   48     4    46 1116   120   190  596     5
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:  311   50   300     5   48     4    46 1116   120   190  596     5
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:   311   50   300     5   48     4    46 1116   120   190  596     5
Reduct Vol:     0    0     0     0    0     0     0    0     0     0    0     0
Reduced Vol:  311   50   300     5   48     4    46 1116   120   190  596     5
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:  311   50   300     5   48     4    46 1116   120   190  596     5
------------|---------------||---------------||---------------||---------------|
Saturation Flow Module:
Sat/Lane:    1900 1900  1900  1900 1900  1900  1900 1900  1900  1900 1900  1900
Adjustment:  0.95 1.00  0.85  1.00 1.00  0.85  0.95 0.94  0.94  0.95 0.95  0.95
Lanes:       1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.81  0.19  1.00 1.98  0.02
Final Sat.:  1805 1900  1615  1891 1891  1615  1805 3211   345  1805 3576    30
------------|---------------||---------------||---------------||---------------|
Capacity Analysis Module:
Vol/Sat:     0.17 0.03  0.19  0.00 0.03  0.00  0.03 0.35  0.35  0.11 0.17  0.17
Crit Moves:              ****       ****              ****        ****
Green/Cycle: 0.28 0.28  0.28  0.05 0.05  0.05  0.11 0.52  0.52  0.16 0.57  0.57
Volume/Cap:  0.62 0.10  0.67  0.05 0.52  0.05  0.23 0.67  0.67  0.67 0.29  0.29
Uniform Del: 39.2 33.3  39.8  56.3 57.6  56.3  50.5 22.1  22.1  49.3 14.1  14.1
IncremntDel:  2.4  0.1   4.0   0.0  5.0   0.3   0.6  1.0   1.0   6.1  0.1   0.1
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:   41.6 33.4  43.8  56.3 62.6  56.6  51.1 23.1  23.1  55.4 14.1  14.1
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:  41.6 33.4  43.8  56.3 62.6  56.6  51.1 23.1  23.1  55.4 14.1  14.1
LOS by Move:   D    C     D     E    E     E     D    C     C     E    B     B
HCM2kAvgQ:    11    1    11     0    3     0     2   19    19     8    6     6
*******************************************************************************
Note: Queue reported is the number of cars per lane.

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                      Level Of Service Computation Report
           2000 HCM Unsignalized Method (Future Volume Alternative)
*******************************************************************************
Intersection #5 Mission Falls Ct/Warren Ave
*******************************************************************************
Average Delay (sec/veh):    179.1       Worst Case Level Of Service: F[1564.4]
*******************************************************************************
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
Rights:           Include          Include          Include          Include
Lanes:        0  1  0  1  0    0  0  1! 0  0    1  0  1  1  0    1  0  1  1  0
------------|---------------||---------------||---------------||---------------|
Volume Module:
```

```
Base Vol:      213    0    62     5    4     5     8 1426    67    31  588     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:   213    0    62     5    4     5     8 1426    67    31  588     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:   213    0    62     5    4     5     8 1426    67    31  588     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:    213    0    62     5    4     5     8 1426    67    31  588     0
Reduct Vol:      0    0     0     0    0     0     0    0     0     0    0     0
FinalVolume:   213    0    62     5    4     5     8 1426    67    31  588     0
------------|---------------||---------------||---------------||---------------|
Critical Gap Module:
Critical Gp:   7.5  6.5   6.9   7.5  6.5   6.9   4.1 xxxx xxxxx   4.1 xxxx xxxxx
FollowUpTim:   3.5  4.0   3.3   3.5  4.0   3.3   2.2 xxxx xxxxx   2.2 xxxx xxxxx
------------|---------------||---------------||---------------||---------------|
Capacity Module:
Cnflict Vol: 1834 2126   747  1379 2159   294   588 xxxx xxxxx  1493 xxxx xxxxx
Potent Cap.:   48   51   360   106   48   708   997 xxxx xxxxx   456 xxxx xxxxx
Move Cap.:     42   47   360    82   45   708   997 xxxx xxxxx   456 xxxx xxxxx
Volume/Cap:  5.05 0.00  0.17  0.06 0.09  0.01  0.01 xxxx  xxxx  0.07 xxxx  xxxx
------------|---------------||---------------||---------------||---------------|
Level Of Service Module:
2Way95thQ:   xxxx xxxx xxxxx  xxxx xxxx xxxxx   0.0 xxxx xxxxx   0.2 xxxx xxxxx
Control Del:xxxxx xxxx xxxxx xxxxx xxxx xxxxx   8.6 xxxx xxxxx  13.5 xxxx xxxxx
LOS by Move:   *    *     *     *    *     *     A    *     *     B    *     *
Movement:     LT - LTR - RT    LT - LTR - RT    LT - LTR - RT    LT - LTR - RT
Shared Cap.:   42 xxxx   360  xxxx   89 xxxxx  xxxx xxxx xxxxx  xxxx xxxx xxxxx
SharedQueue: 24.6 xxxx   0.6 xxxxx  0.5 xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx
Shrd ConDel: 2015 xxxx  17.1 xxxxx 53.0 xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx
Shared LOS:    F    *     C     *    F     *     *    *     *     *    *     *
ApproachDel:    1564.4             53.0           xxxxxx           xxxxxx
ApproachLOS:        F                F               *                *
*******************************************************************************
Note: Queue reported is the number of cars per lane.
*******************************************************************************
```

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-------------------------------------------------------------------------------
                      Level Of Service Computation Report
             2000 HCM Operations Method (Future Volume Alternative)
*******************************************************************************
Intersection #6 Warm Springs Blvd/Warren Ave
*******************************************************************************
Cycle (sec):         120                Critical Vol./Cap.(X):         0.725
Loss Time (sec):       0 (Y+R=4.0 sec)  Average Delay (sec/veh):        32.4
Optimal Cycle:        83                Level Of Service:                 C
*******************************************************************************
Approach:      North Bound      South Bound       East Bound       West Bound
Movement:     L  -  T  -  R    L  -  T  -  R    L  -  T  -  R    L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:        Protected        Protected        Protected        Protected
Rights:           Include          Include          Include          Include
Min. Green:     4   10     0     4   10     0     4   10     0     4   10     0
Lanes:        2  0  1  1  0    1  0  2  0  1    2  0  2  0  1    2  0  2  0  1
------------|---------------||---------------||---------------||---------------|
Volume Module:
```

```
Base Vol:      151  990   109   157  817   349   473  494   475   123   92    73
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:   151  990   109   157  817   349   473  494   475   123   92    73
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:   151  990   109   157  817   349   473  494   475   123   92    73
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:    151  990   109   157  817   349   473  494   475   123   92    73
Reduct Vol:      0    0     0     0    0     0     0    0     0     0    0     0
Reduced Vol:   151  990   109   157  817   349   473  494   475   123   92    73
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:   151  990   109   157  817   349   473  494   475   123   92    73
------------|---------------||---------------||---------------||---------------|
Saturation Flow Module:
Sat/Lane:     1900 1900  1900  1900 1900  1900  1900 1900  1900  1900 1900  1900
Adjustment:   0.92 0.94  0.94  0.95 0.95  0.85  0.92 0.95  0.85  0.92 0.95  0.85
Lanes:        2.00 1.80  0.20  1.00 2.00  1.00  2.00 2.00  1.00  2.00 2.00  1.00
Final Sat.:   3502 3203   353  1805 3610  1615  3502 3610  1615  3502 3610  1615
------------|---------------||---------------||---------------||---------------|
Capacity Analysis Module:
Vol/Sat:      0.04 0.31  0.31  0.09 0.23  0.22  0.14 0.14  0.29  0.04 0.03  0.05
Crit Moves:        ****        ****                       ****  ****
Green/Cycle:  0.09 0.43  0.43  0.12 0.46  0.46  0.28 0.41  0.41  0.05 0.17  0.17
Volume/Cap:   0.49 0.73  0.73  0.73 0.49  0.47  0.48 0.34  0.73  0.73 0.15  0.26
Uniform Del:  52.2 28.6  28.6  50.9 22.7  22.4  35.9 24.6  30.0  56.3 42.1  43.0
IncremntDel:   1.3  1.8   1.8  11.6  0.2   0.5   0.4  0.1   4.0  14.4  0.1   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:    53.5 30.4  30.4  62.5 23.0  22.9  36.3 24.7  34.1  70.7 42.2  43.5
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:   53.5 30.4  30.4  62.5 23.0  22.9  36.3 24.7  34.1  70.7 42.2  43.5
LOS by Move:    D    C     C     E    C     C     D    C     C     E    D     D
HCM2kAvgQ:      3   18    18     7   11     9     8    6    16     4    2     2
*******************************************************************************
Note: Queue reported is the number of cars per lane.

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                      Level Of Service Computation Report
            2000 HCM Operations Method (Future Volume Alternative)
*******************************************************************************
Intersection #7 Warm Springs Blvd/Mission Falls Ln/Hackamore Ln
*******************************************************************************
Cycle (sec):         100                Critical Vol./Cap.(X):         0.509
Loss Time (sec):       0 (Y+R=4.0 sec)  Average Delay (sec/veh):         9.5
Optimal Cycle:        46                Level Of Service:                  A
*******************************************************************************
Approach:      North Bound      South Bound       East Bound       West Bound
Movement:     L  -  T  -  R    L  -  T  -  R    L  -  T  -  R    L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:        Protected        Protected        Protected        Protected
Rights:           Include          Include          Include          Include
Min. Green:     0    0     0     0    0     0     0    0     0     0    0     0
Lanes:        1  0  1  1  0    1  0  1  1  0    0  1  0  0  1    0  0  1! 0  0
------------|---------------||---------------||---------------||---------------|
Volume Module:
Base Vol:      27 1287    38    66 1376    17    64   12   141     9    4    15
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:   27 1287    38    66 1376    17    64   12   141     9    4    15
```

```
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:    27 1287    38    66 1376    17    64   12   141     9    4    15
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:     27 1287    38    66 1376    17    64   12   141     9    4    15
Reduct Vol:      0    0     0     0    0     0     0    0     0     0    0     0
Reduced Vol:    27 1287    38    66 1376    17    64   12   141     9    4    15
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:    27 1287    38    66 1376    17    64   12   141     9    4    15
------------|---------------||---------------||---------------||---------------|
Saturation Flow Module:
Sat/Lane:     1900 1900  1900  1900 1900  1900  1900 1900  1900  1900 1900  1900
Adjustment:   0.95 0.95  0.95  0.95 0.95  0.95  0.96 0.96  0.85  0.91 0.91  0.91
Lanes:        1.00 1.94  0.06  1.00 1.98  0.02  0.84 0.16  1.00  0.32 0.14  0.54
Final Sat.:   1805 3492   103  1805 3559    44  1536  288  1615   558  248   929
------------|---------------||---------------||---------------||---------------|
Capacity Analysis Module:
Vol/Sat:      0.01 0.37  0.37  0.04 0.39  0.39  0.04 0.04  0.09  0.02 0.02  0.02
Crit Moves:        ****        ****                        ****  ****
Green/Cycle:  0.03 0.72  0.72  0.07 0.77  0.77  0.15 0.17  0.17  0.03 0.06  0.06
Volume/Cap:   0.50 0.51  0.51  0.51 0.50  0.50  0.28 0.24  0.51  0.51 0.28  0.28
Uniform Del:  47.8  6.0   6.0  44.7  4.4   4.4  38.0 35.8  37.6  47.6 45.2  45.2
IncremntDel:   7.5  0.2   0.2   3.3  0.2   0.2   0.6  0.4   1.6   7.6  1.6   1.6
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:    55.3  6.2   6.2  48.0  4.6   4.6  38.6 36.2  39.1  55.3 46.8  46.8
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:   55.3  6.2   6.2  48.0  4.6   4.6  38.6 36.2  39.1  55.3 46.8  46.8
LOS by Move:    E    A     A     D    A     A     D    D     D     E    D     D
HCM2kAvgQ:      2    9     9     3    9     9     2    2     5     2    1     1
*******************************************************************************
Note: Queue reported is the number of cars per lane.

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Scenario Report

Scenario:	Background plus Project AM
Command:	BASE+P AM
Volume:	BASE AM
Geometry:	BASE AM
Impact Fee:	Default Impact Fee
Trip Generation:	Project AM
Trip Distribution:	Project
Paths:	Default Path
Routes:	Default Route
Configuration:	Default Configuration

Impact Analysis Report
Level Of Service

Intersection	Base LOS	Base Del/ Veh	Base V/ C	Future LOS	Future Del/ Veh	Future V/ C	Change in
# 1 Warm Springs Blvd/Mission Blvd	E	55.7	1.045	E	55.9	1.045	+ 0.228 D/V
# 2 I-880 SB Ramps/Warren Ave	C	29.6	0.534	C	27.3	0.498	-2.316 D/V
# 3 I-880 NB Ramps/Warren Ave	B	19.8	0.486	B	19.5	0.487	-0.209 D/V
# 4 Kato Rd/Warren Ave	C	25.0	0.488	C	24.4	0.464	-0.547 D/V
# 5 Mission Falls Ct/Warren Ave	F	109.9	0.000	F	54.3	0.000	-55.602 D/V
# 6 Warm Springs Blvd/Warren Ave	C	30.5	0.641	C	30.9	0.606	+ 0.376 D/V
# 7 Warm Springs Blvd/Mission Fall	B	15.3	0.549	B	12.2	0.546	-3.108 D/V

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

****

Intersection #1 Warm Springs Blvd/Mission Blvd

```
*******************************************************************************
Cycle (sec):         100                  Critical Vol./Cap.(X):         1.045
Loss Time (sec):       0 (Y+R=4.0 sec)  Average Delay (sec/veh):        55.9
Optimal Cycle:       180                  Level Of Service:                 E
*******************************************************************************
Approach:      North Bound      South Bound       East Bound       West Bound
Movement:     L  -  T  -  R    L  -  T  -  R    L  -  T  -  R    L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:        Protected        Protected        Protected        Protected
Rights:           Include          Include          Include          Include
Min. Green:    14   14     0    15   13     0    14   15     0    15   15     0
Lanes:        2  0  2  0  1    2  0  2  0  1    2  0  3  0  1    2  0  3  0  1
------------|---------------||---------------||---------------||---------------|
Volume Module:
Base Vol:     404  634   171   266  604   483   688 1306   211   432 2249   481
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:  404  634   171   266  604   483   688 1306   211   432 2249   481
Added Vol:      0    1     4     0  -23     0     0    0     0  -108    0     0
PasserByVol:    0    0     0     0    0     0     0    0     0     0    0     0
Initial Fut:  404  635   175   266  581   483   688 1306   211   324 2249   481
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:   404  635   175   266  581   483   688 1306   211   324 2249   481
Reduct Vol:     0    0     0     0    0     0     0    0     0     0    0     0
Reduced Vol:  404  635   175   266  581   483   688 1306   211   324 2249   481
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:  404  635   175   266  581   483   688 1306   211   324 2249   481
------------|---------------||---------------||---------------||---------------|
Saturation Flow Module:
Sat/Lane:    1900 1900  1900  1900 1900  1900  1900 1900  1900  1900 1900  1900
Adjustment:  0.92 0.95  0.85  0.92 0.95  0.85  0.92 0.91  0.85  0.92 0.91  0.85
Lanes:       2.00 2.00  1.00  2.00 2.00  1.00  2.00 3.00  1.00  2.00 3.00  1.00
Final Sat.:  3502 3610  1615  3502 3610  1615  3502 5187  1615  3502 5187  1615
------------|---------------||---------------||---------------||---------------|
Capacity Analysis Module:
Vol/Sat:     0.12 0.18  0.11  0.08 0.16  0.30  0.20 0.25  0.13  0.09 0.43  0.30
Crit Moves:  ****                         ****  ****                  ****
Green/Cycle: 0.14 0.22  0.22  0.19 0.28  0.28  0.18 0.37  0.37  0.22 0.40  0.40
Volume/Cap:  0.82 0.78  0.48  0.40 0.58  1.08  1.08 0.69  0.36  0.42 1.08  0.74
Uniform Del: 41.8 36.4  33.7  35.3 31.2  36.2  40.9 26.9  23.2  33.7 29.9  25.5
IncremntDel: 10.9  5.0   1.0   0.4  0.9  65.9  59.3  1.1   0.4   0.4 45.4   4.6
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:   52.7 41.4  34.7  35.7 32.0 102.0 100.2 28.0  23.5  34.1 75.4  30.1
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:  52.7 41.4  34.7  35.7 32.0 102.0 100.2 28.0  23.5  34.1 75.4  30.1
LOS by Move:   D    D     C     D    C     F     F    C     C     C    E     C
HCM2kAvgQ:      9   12     5     4    9    24    18   13     5     5   38    14
*******************************************************************************
```

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

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

```
*******************************************************************************
Intersection #2 I-880 SB Ramps/Warren Ave
*******************************************************************************
Cycle (sec):         120                  Critical Vol./Cap.(X):         0.498
```

```
Loss Time (sec):      16 (Y+R=4.0 sec)  Average Delay (sec/veh):        27.3
Optimal Cycle:        50                Level Of Service:                  C
*******************************************************************************
Approach:      North Bound      South Bound       East Bound       West Bound
Movement:     L  -  T  -  R    L  -  T  -  R    L  -  T  -  R    L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:       Split Phase      Split Phase       Protected        Protected
Rights:           Include          Include          Include          Include
Min. Green:     0    6     0     0    6     0     4    8     0     4    8     0
Lanes:        1  0  1  1  0    1  1  0  0  1    2  0  1  1  0    1  0  1  1  1
------------|---------------||---------------||---------------||---------------|
Volume Module:
Base Vol:      11   22    36   304   98    75   168  207    40   487  894   330
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:   11   22    36   304   98    75   168  207    40   487  894   330
Added Vol:      0    0     0  -113    0     0     0    0     0     0    0     3
PasserByVol:    0    0     0     0    0     0     0    0     0     0    0     0
Initial Fut:   11   22    36   191   98    75   168  207    40   487  894   333
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:    11   22    36   191   98    75   168  207    40   487  894   333
Reduct Vol:     0    0     0     0    0     0     0    0     0     0    0     0
Reduced Vol:   11   22    36   191   98    75   168  207    40   487  894   333
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:   11   22    36   191   98    75   168  207    40   487  894   333
------------|---------------||---------------||---------------||---------------|
Saturation Flow Module:
Sat/Lane:    1900 1900  1900  1900 1900  1900  1900 1900  1900  1900 1900  1900
Adjustment:  0.95 0.86  0.86  0.97 0.97  0.85  0.92 0.93  0.93  0.95 0.91  0.91
Lanes:       1.00 1.00  1.00  1.32 0.68  1.00  2.00 1.68  0.32  1.00 2.00  1.00
Final Sat.:  1805 1637  1637  2431 1247  1615  3502 2953   571  1805 3462  1731
------------|---------------||---------------||---------------||---------------|
Capacity Analysis Module:
Vol/Sat:     0.01 0.01  0.02  0.08 0.08  0.05  0.05 0.07  0.07  0.27 0.26  0.19
Crit Moves:        ****             ****             ****             ****
Green/Cycle: 0.05 0.05  0.05  0.15 0.15  0.15  0.10 0.14  0.14  0.53 0.56  0.56
Volume/Cap:  0.12 0.27  0.44  0.51 0.51  0.30  0.46 0.51  0.51  0.51 0.46  0.34
Uniform Del: 54.5 54.9  55.4  46.7 46.7  45.1  50.6 48.1  48.1  18.4 15.7  14.4
IncremntDel:  0.6  0.7   2.3   0.8  0.8   0.7   0.9  0.9   0.9   0.5  0.1   0.1
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:   55.1 55.6  57.7  47.5 47.5  45.8  51.5 49.0  49.0  18.9 15.8  14.5
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:  55.1 55.6  57.7  47.5 47.5  45.8  51.5 49.0  49.0  18.9 15.8  14.5
LOS by Move:   E    E     E     D    D     D     D    D     D     B    B     B
HCM2kAvgQ:      0    1     2     5    5     3     4    5     5    12   10     7
*******************************************************************************
Note: Queue reported is the number of cars per lane.

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                      Level Of Service Computation Report
           2000 HCM Operations Method (Future Volume Alternative)
*******************************************************************************
Intersection #3 I-880 NB Ramps/Warren Ave
*******************************************************************************
Cycle (sec):         104                Critical Vol./Cap.(X):         0.487
Loss Time (sec):       0 (Y+R=4.0 sec)  Average Delay (sec/veh):        19.5
Optimal Cycle:        44                Level Of Service:                  B
*******************************************************************************
```

```
Approach:      North Bound      South Bound       East Bound       West Bound
Movement:     L  -  T  -  R    L  -  T  -  R    L  -  T  -  R    L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:        Protected        Protected        Protected        Protected
Rights:           Include          Include          Include          Include
Min. Green:     8    0     0     0    0     0     0   10     0     4   10    10
Lanes:        2  0  0  0  1    0  0  0  0  0    0  0  2  0  1    1  0  2  0  0
------------|---------------||---------------||---------------||---------------|
Volume Module:
Base Vol:     715    0   256     0    0     0     0  482    36   149 1019     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:  715    0   256     0    0     0     0  482    36   149 1019     0
Added Vol:      0    0   -91     0    0     0     0 -113     0     4    3     0
PasserByVol:    0    0     0     0    0     0     0    0     0     0    0     0
Initial Fut:  715    0   165     0    0     0     0  369    36   153 1022     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:   715    0   165     0    0     0     0  369    36   153 1022     0
Reduct Vol:     0    0     0     0    0     0     0    0     0     0    0     0
Reduced Vol:  715    0   165     0    0     0     0  369    36   153 1022     0
PCE Adj:     1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
MLF Adj:     1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
FinalVolume:  715    0   165     0    0     0     0  369    36   153 1022     0
------------|---------------||---------------||---------------||---------------|
Saturation Flow Module:
Sat/Lane:    1900 1900  1900  1900 1900  1900  1900 1900  1900  1900 1900  1900
Adjustment:  0.92 1.00  0.85  1.00 1.00  1.00  1.00 0.95  0.85  0.95 0.95  1.00
Lanes:       2.00 0.00  1.00  0.00 0.00  0.00  0.00 2.00  1.00  1.00 2.00  0.00
Final Sat.:  3502    0  1615     0    0     0     0 3610  1615  1805 3610     0
------------|---------------||---------------||---------------||---------------|
Capacity Analysis Module:
Vol/Sat:     0.20 0.00  0.10  0.00 0.00  0.00  0.00 0.10  0.02  0.08 0.28  0.00
Crit Moves:  ****                               ****                    ****
Green/Cycle: 0.42 0.00  0.42  0.00 0.00  0.00  0.00 0.32  0.32  0.26 0.58  0.00
Volume/Cap:  0.49 0.00  0.24  0.00 0.00  0.00  0.00 0.32  0.07  0.32 0.49  0.00
Uniform Del: 22.1  0.0  19.5   0.0  0.0   0.0   0.0 27.0  24.8  30.8 12.7   0.0
IncremntDel:  0.3  0.0   0.2   0.0  0.0   0.0   0.0  0.2   0.1   0.4  0.2   0.0
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 0.00  1.00  0.00 0.00  0.00  0.00 1.00  1.00  1.00 1.00  0.00
Delay/Veh:   22.3  0.0  19.7   0.0  0.0   0.0   0.0 27.1  24.8  31.2 12.9   0.0
User DelAdj: 1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
AdjDel/Veh:  22.3  0.0  19.7   0.0  0.0   0.0   0.0 27.1  24.8  31.2 12.9   0.0
LOS by Move:   C    A     B     A    A     A     A    C     C     C    B     A
HCM2kAvgQ:      9    0     3     0    0     0     0    5     1     4   10     0
*******************************************************************************
Note: Queue reported is the number of cars per lane.

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-------------------------------------------------------------------------------
                      Level Of Service Computation Report
            2000 HCM Operations Method (Future Volume Alternative)
*******************************************************************************
Intersection #4 Kato Rd/Warren Ave
*******************************************************************************
Cycle (sec):         124                Critical Vol./Cap.(X):         0.464
Loss Time (sec):       0 (Y+R=4.0 sec)  Average Delay (sec/veh):        24.4
Optimal Cycle:        43                Level Of Service:                  C
*******************************************************************************
Approach:      North Bound      South Bound       East Bound       West Bound
Movement:     L  -  T  -  R    L  -  T  -  R    L  -  T  -  R    L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
```

```
Control:       Split Phase      Split Phase       Protected        Protected
Rights:           Include          Include          Include          Include
Min. Green:     6    0     0     0    6     0     4    8     0     4    8     0
Lanes:        1  0  1  0  1    1  1  0  0  1    1  0  1  1  0    1  0  1  1  0
------------|---------------||---------------||---------------||---------------|
Volume Module:
Base Vol:     189   52    68   133   35    42     4  517   261   199 1113     3
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:  189   52    68   133   35    42     4  517   261   199 1113     3
Added Vol:      0    0     0     0    0     0     0 -204     0     0    7     0
PasserByVol:    0    0     0     0    0     0     0    0     0     0    0     0
Initial Fut:  189   52    68   133   35    42     4  313   261   199 1120     3
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:   189   52    68   133   35    42     4  313   261   199 1120     3
Reduct Vol:     0    0     0     0    0     0     0    0     0     0    0     0
Reduced Vol:  189   52    68   133   35    42     4  313   261   199 1120     3
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:  189   52    68   133   35    42     4  313   261   199 1120     3
------------|---------------||---------------||---------------||---------------|
Saturation Flow Module:
Sat/Lane:    1900 1900  1900  1900 1900  1900  1900 1900  1900  1900 1900  1900
Adjustment:  0.95 1.00  0.85  0.96 0.96  0.85  0.95 0.89  0.89  0.95 0.95  0.95
Lanes:       1.00 1.00  1.00  1.58 0.42  1.00  1.00 1.09  0.91  1.00 1.99  0.01
Final Sat.:  1805 1900  1615  2894  762  1615  1805 1835  1530  1805 3600    10
------------|---------------||---------------||---------------||---------------|
Capacity Analysis Module:
Vol/Sat:     0.10 0.03  0.04  0.05 0.05  0.03  0.00 0.17  0.17  0.11 0.31  0.31
Crit Moves:  ****                 ****        ****                   ****
Green/Cycle: 0.22 0.22  0.22  0.10 0.10  0.10  0.03 0.42  0.42  0.27 0.65  0.65
Volume/Cap:  0.48 0.12  0.19  0.48 0.48  0.27  0.07 0.41  0.41  0.41 0.48  0.48
Uniform Del: 42.2 38.8  39.4  53.1 53.1  52.0  58.2 25.5  25.5  37.3 10.9  10.9
IncremntDel:  0.9  0.1   0.3   1.0  1.0   0.9   0.5  0.2   0.2   0.6  0.2   0.2
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:   43.1 39.0  39.7  54.1 54.1  52.9  58.7 25.7  25.7  37.8 11.1  11.1
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:  43.1 39.0  39.7  54.1 54.1  52.9  58.7 25.7  25.7  37.8 11.1  11.1
LOS by Move:   D    D     D     D    D     D     E    C     C     D    B     B
HCM2kAvgQ:     7    2     2     4    4     2     0    8     8     6   11    11
*******************************************************************************
Note: Queue reported is the number of cars per lane.
```



```
-------------------------------------------------------------------------------
-------------------------------------------------------------------------------
                      Level Of Service Computation Report
           2000 HCM Unsignalized Method (Future Volume Alternative)
*******************************************************************************
Intersection #5 Mission Falls Ct/Warren Ave
*******************************************************************************
Average Delay (sec/veh):      2.9       Worst Case Level Of Service: F[ 54.3]
*******************************************************************************
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
Rights:           Include          Include          Include          Include
Lanes:        0  1  0  1  0    0  0  0  0  1    1  0  1  1  0    1  0  1  1  0
------------|---------------||---------------||---------------||---------------|
Volume Module:
```

```
Base Vol:       69    4    10     0    0     2    19  442   229    73 1277    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:    69    4    10     0    0     2    19  442   229    73 1277    10
Added Vol:       7    0     2     0    0     0     0    0  -204   -57    0     0
PasserByVol:     0    0     0     0    0     0     0    0     0     0    0     0
Initial Fut:    76    4    12     0    0     2    19  442    25    16 1277    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:     76    4    12     0    0     2    19  442    25    16 1277    10
Reduct Vol:      0    0     0     0    0     0     0    0     0     0    0     0
FinalVolume:    76    4    12     0    0     2    19  442    25    16 1277    10
------------|---------------||---------------||---------------||---------------|
Critical Gap Module:
Critical Gp:   7.5  6.5   6.9 xxxxx xxxx   6.9   4.1 xxxx xxxxx   4.1 xxxx xxxxx
FollowUpTim:   3.5  4.0   3.3 xxxxx xxxx   3.3   2.2 xxxx xxxxx   2.2 xxxx xxxxx
------------|---------------||---------------||---------------||---------------|
Capacity Module:
Cnflict Vol: 1163 1812   234  xxxx xxxx   644  1287 xxxx xxxxx   467 xxxx xxxxx
Potent Cap.:  152   79   775  xxxx xxxx   421   546 xxxx xxxxx  1105 xxxx xxxxx
Move Cap.:    146   76   775  xxxx xxxx   421   546 xxxx xxxxx  1105 xxxx xxxxx
Volume/Cap:  0.52 0.05  0.02  xxxx xxxx  0.00  0.03 xxxx  xxxx  0.01 xxxx  xxxx
------------|---------------||---------------||---------------||---------------|
Level Of Service Module:
2Way95thQ:   xxxx xxxx xxxxx  xxxx xxxx   0.0   0.1 xxxx xxxxx   0.0 xxxx xxxxx
Control Del:xxxxx xxxx xxxxx xxxxx xxxx  13.6  11.8 xxxx xxxxx   8.3 xxxx xxxxx
LOS by Move:   *    *     *     *    *     B     B    *     *     A    *     *
Movement:     LT - LTR - RT    LT - LTR - RT    LT - LTR - RT    LT - LTR - RT
Shared Cap.:  139 xxxx   234  xxxx xxxx xxxxx  xxxx xxxx xxxxx  xxxx xxxx xxxxx
SharedQueue:  2.9 xxxx   0.2 xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx
Shrd ConDel: 60.9 xxxx  21.5 xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx
Shared LOS:    F    *     C     *    *     *     *    *     *     *    *     *
ApproachDel:      54.3             13.6           xxxxxx           xxxxxx
ApproachLOS:        F               B               *                *
*******************************************************************************
Note: Queue reported is the number of cars per lane.
*******************************************************************************
```

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                      Level Of Service Computation Report
             2000 HCM Operations Method (Future Volume Alternative)
*******************************************************************************
Intersection #6 Warm Springs Blvd/Warren Ave
*******************************************************************************
Cycle (sec):         120                 Critical Vol./Cap.(X):         0.606
Loss Time (sec):       0 (Y+R=4.0 sec)  Average Delay (sec/veh):        30.9
Optimal Cycle:        58                 Level Of Service:                 C
*******************************************************************************
Approach:      North Bound      South Bound       East Bound       West Bound
Movement:     L  -  T  -  R    L  -  T  -  R    L  -  T  -  R    L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:        Protected        Protected        Protected        Protected
Rights:           Include          Include          Include          Include
Min. Green:     4   10     0     4   10     0     4   10     0     4   10     0
Lanes:        2  0  1  1  0    1  0  2  0  1    2  0  2  0  1    2  0  2  0  1
------------|---------------||---------------||---------------||---------------|
Volume Module:
```

```
Base Vol:     385  875   104    40  688   525   290   37   169   185  444   127
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:  385  875   104    40  688   525   290   37   169   185  444   127
Added Vol:      0    3     0     0  -74   -57     2    0     0     0    0     0
PasserByVol:    0    0     0     0    0     0     0    0     0     0    0     0
Initial Fut:  385  878   104    40  614   468   292   37   169   185  444   127
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:   385  878   104    40  614   468   292   37   169   185  444   127
Reduct Vol:     0    0     0     0    0     0     0    0     0     0    0     0
Reduced Vol:  385  878   104    40  614   468   292   37   169   185  444   127
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:  385  878   104    40  614   468   292   37   169   185  444   127
------------|---------------||---------------||---------------||---------------|
Saturation Flow Module:
Sat/Lane:    1900 1900  1900  1900 1900  1900  1900 1900  1900  1900 1900  1900
Adjustment:  0.92 0.93  0.93  0.95 0.95  0.85  0.92 0.95  0.85  0.92 0.95  0.85
Lanes:       2.00 1.79  0.21  1.00 2.00  1.00  2.00 2.00  1.00  2.00 2.00  1.00
Final Sat.:  3502 3176   376  1805 3610  1615  3502 3610  1615  3502 3610  1615
------------|---------------||---------------||---------------||---------------|
Capacity Analysis Module:
Vol/Sat:     0.11 0.28  0.28  0.02 0.17  0.29  0.08 0.01  0.10  0.05 0.12  0.08
Crit Moves:  ****                          ****  ****                  ****
Green/Cycle: 0.18 0.59  0.59  0.07 0.48  0.48  0.14 0.23  0.23  0.11 0.20  0.20
Volume/Cap:  0.61 0.47  0.47  0.31 0.36  0.61  0.61 0.05  0.46  0.46 0.61  0.39
Uniform Del: 45.2 14.0  14.0  53.0 19.7  23.0  48.7 36.3  40.1  49.7 43.5  41.4
IncremntDel:  1.7  0.2   0.2   1.4  0.1   1.4   2.2  0.0   0.9   0.8  1.5   0.8
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:   46.9 14.2  14.2  54.4 19.8  24.4  50.9 36.3  41.0  50.5 44.9  42.1
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:  46.9 14.2  14.2  54.4 19.8  24.4  50.9 36.3  41.0  50.5 44.9  42.1
LOS by Move:   D    B     B     D    B     C     D    D     D     D    D     D
HCM2kAvgQ:      7   11    11     2    7    13     6    1     6     4    9     4
*******************************************************************************
Note: Queue reported is the number of cars per lane.
```



```
-------------------------------------------------------------------------------
-------------------------------------------------------------------------------
                     Level Of Service Computation Report
            2000 HCM Operations Method (Future Volume Alternative)
*******************************************************************************
Intersection #7 Warm Springs Blvd/Mission Falls Ln/Hackamore Ln
*******************************************************************************
Cycle (sec):         100                Critical Vol./Cap.(X):         0.546
Loss Time (sec):       0 (Y+R=4.0 sec)  Average Delay (sec/veh):        12.2
Optimal Cycle:        50                Level Of Service:                  B
*******************************************************************************
Approach:      North Bound      South Bound       East Bound       West Bound
Movement:     L  -  T  -  R    L  -  T  -  R    L  -  T  -  R    L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:        Protected        Protected        Protected        Protected
Rights:           Include          Include          Include          Include
Min. Green:     0    0     0     0    0     0     0    0     0     0    0     0
Lanes:        1  0  1  1  0    1  0  1  1  0    0  1  0  0  1    0  0  1! 0  0
------------|---------------||---------------||---------------||---------------|
Volume Module:
Base Vol:     156 1264    89    34  954    87     9    1    31    82   17   129
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:  156 1264    89    34  954    87     9    1    31    82   17   129
```

```
Added Vol:   -108    0     0     0    0   -74     3    0     4     0  -11     0
PasserByVol:    0    0     0     0    0     0     0    0     0     0    0     0
Initial Fut:   48 1264    89    34  954    13    12    1    35    82    6   129
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:    48 1264    89    34  954    13    12    1    35    82    6   129
Reduct Vol:     0    0     0     0    0     0     0    0     0     0    0     0
Reduced Vol:   48 1264    89    34  954    13    12    1    35    82    6   129
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:   48 1264    89    34  954    13    12    1    35    82    6   129
------------|---------------||---------------||---------------||---------------|
Saturation Flow Module:
Sat/Lane:    1900 1900  1900  1900 1900  1900  1900 1900  1900  1900 1900  1900
Adjustment:  0.95 0.94  0.94  0.95 0.95  0.95  0.96 0.96  0.85  0.90 0.90  0.90
Lanes:       1.00 1.87  0.13  1.00 1.97  0.03  0.92 0.08  1.00  0.38 0.03  0.59
Final Sat.:  1805 3339   235  1805 3554    48  1677  140  1615   648   47  1019
------------|---------------||---------------||---------------||---------------|
Capacity Analysis Module:
Vol/Sat:     0.03 0.38  0.38  0.02 0.27  0.27  0.01 0.01  0.02  0.13 0.13  0.13
Crit Moves:       ****        ****                          ****  ****
Green/Cycle: 0.07 0.69  0.69  0.03 0.66  0.66  0.01 0.04  0.04  0.23 0.26  0.26
Volume/Cap:  0.41 0.55  0.55  0.55 0.41  0.41  0.49 0.18  0.55  0.55 0.49  0.49
Uniform Del: 44.8  7.5   7.5  47.5  7.8   7.8  48.9 46.4  47.1  33.8 31.6  31.6
IncremntDel:  2.3  0.3   0.3   9.7  0.1   0.1  13.7  1.2   9.4   1.6  0.9   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:   47.1  7.8   7.8  57.2  7.9   7.9  62.6 47.6  56.6  35.4 32.5  32.5
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:  47.1  7.8   7.8  57.2  7.9   7.9  62.6 47.6  56.6  35.4 32.5  32.5
LOS by Move:   D    A     A     E    A     A     E    D     E     D    C     C
HCM2kAvgQ:      2   11    11     2    7     7     1    1     2     6    6     6
*******************************************************************************
Note: Queue reported is the number of cars per lane.

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```

Scenario Report

Scenario:	Background plus Project PM
Command:	BASE+P PM
Volume:	BASE PM
Geometry:	BASE PM
Impact Fee:	Default Impact Fee
Trip Generation:	Project PM
Trip Distribution:	Project
Paths:	Default Path
Routes:	Default Route
Configuration:	Default Configuration

Impact Analysis Report
Level Of Service

Intersection	Base LOS	Base Del/ Veh	Base V/ C	Future LOS	Future Del/ Veh	Future V/ C	Change in
# 1 Warm Springs Blvd/Mission Blvd	D	54.0	0.945	D	53.7	0.945	-0.303 D/V
# 2 I-880 SB Ramps/Warren Ave	D	42.2	0.623	D	42.0	0.621	-0.229 D/V
# 3 I-880 NB Ramps/Warren Ave	B	19.7	0.581	B	18.3	0.530	-1.406 D/V
# 4 Kato Rd/Warren Ave	C	29.1	0.664	C	30.2	0.664	+ 1.118 D/V
# 5 Mission Falls Ct/Warren Ave	F	OVRFL	0.000	F	228.6	0.000	-1335.799 D
# 6 Warm Springs Blvd/Warren Ave	C	32.4	0.725	C	32.3	0.708	-0.121 D/V
# 7 Warm Springs Blvd/Mission Fall	A	9.5	0.509	A	5.1	0.453	-4.425 D/V

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

****

Intersection #1 Warm Springs Blvd/Mission Blvd

```
*******************************************************************************
Cycle (sec):         100                  Critical Vol./Cap.(X):         0.945
Loss Time (sec):       0 (Y+R=4.0 sec)  Average Delay (sec/veh):        53.7
Optimal Cycle:       180                  Level Of Service:                 D
*******************************************************************************
Approach:      North Bound      South Bound       East Bound       West Bound
Movement:     L  -  T  -  R    L  -  T  -  R    L  -  T  -  R    L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:        Protected        Protected        Protected        Protected
Rights:           Include          Include          Include          Include
Min. Green:    14   14     0    15   13     0    14   15     0    15   15     0
Lanes:        2  0  2  0  1    2  0  2  0  1    2  0  3  0  1    2  0  3  0  1
------------|---------------||---------------||---------------||---------------|
Volume Module:
Base Vol:     351  787   399   695  776   702   377 1764   108   246 1536   265
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:  351  787   399   695  776   702   377 1764   108   246 1536   265
Added Vol:      0  -19   -89     0    0     0     0    0     0     0    0     0
PasserByVol:    0    0     0     0    0     0     0    0     0     0    0     0
Initial Fut:  351  768   310   695  776   702   377 1764   108   246 1536   265
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:   351  768   310   695  776   702   377 1764   108   246 1536   265
Reduct Vol:     0    0     0     0    0     0     0    0     0     0    0     0
Reduced Vol:  351  768   310   695  776   702   377 1764   108   246 1536   265
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:  351  768   310   695  776   702   377 1764   108   246 1536   265
------------|---------------||---------------||---------------||---------------|
Saturation Flow Module:
Sat/Lane:    1900 1900  1900  1900 1900  1900  1900 1900  1900  1900 1900  1900
Adjustment:  0.92 0.95  0.85  0.92 0.95  0.85  0.92 0.91  0.85  0.92 0.91  0.85
Lanes:       2.00 2.00  1.00  2.00 2.00  1.00  2.00 3.00  1.00  2.00 3.00  1.00
Final Sat.:  3502 3610  1615  3502 3610  1615  3502 5187  1615  3502 5187  1615
------------|---------------||---------------||---------------||---------------|
Capacity Analysis Module:
Vol/Sat:     0.10 0.21  0.19  0.20 0.21  0.43  0.11 0.34  0.07  0.07 0.30  0.16
Crit Moves:  ****                          ****        ****        ****
Green/Cycle: 0.14 0.28  0.28  0.26 0.40  0.40  0.15 0.31  0.31  0.15 0.31  0.31
Volume/Cap:  0.72 0.76  0.69  0.76 0.54  1.09  0.73 1.09  0.21  0.47 0.94  0.52
Uniform Del: 41.1 33.1  32.2  34.2 23.1  30.1  40.7 34.4  25.4  38.9 33.5  28.2
IncremntDel:  5.0  3.5   4.5   3.9  0.4  62.9   5.1 51.6   0.2   0.7 11.7   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:   46.1 36.6  36.7  38.1 23.5  93.0  45.8 86.0  25.6  39.5 45.2  29.2
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:  46.1 36.6  36.7  38.1 23.5  93.0  45.8 86.0  25.6  39.5 45.2  29.2
LOS by Move:   D    D     D     D    C     F     D    F     C     D    D     C
HCM2kAvgQ:      7   13    10    12   10    33     7   31     2     4   22     7
*******************************************************************************
Note: Queue reported is the number of cars per lane.
```

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

```
*******************************************************************************
Intersection #2 I-880 SB Ramps/Warren Ave
*******************************************************************************
Cycle (sec):         120                  Critical Vol./Cap.(X):         0.621
```

```
Loss Time (sec):      16 (Y+R=4.0 sec)  Average Delay (sec/veh):        42.0
Optimal Cycle:        62                Level Of Service:                   D
*******************************************************************************
Approach:      North Bound      South Bound       East Bound       West Bound
Movement:     L  -  T  -  R    L  -  T  -  R    L  -  T  -  R    L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:       Split Phase      Split Phase       Protected        Protected
Rights:           Include          Include          Include          Include
Min. Green:     0    6     0     0    6     0     4    8     0     4    8     0
Lanes:        1  0  1  1  0    1  1  0  0  1    2  0  1  1  0    1  0  1  1  1
------------|---------------||---------------||---------------||---------------|
Volume Module:
Base Vol:      27  293   271   494   11    77   425  448    14    53  380   183
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:   27  293   271   494   11    77   425  448    14    53  380   183
Added Vol:      0    0     0     1    0     0     0    0     0     0    0   -75
PasserByVol:    0    0     0     0    0     0     0    0     0     0    0     0
Initial Fut:   27  293   271   495   11    77   425  448    14    53  380   108
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:    27  293   271   495   11    77   425  448    14    53  380   108
Reduct Vol:     0    0     0     0    0     0     0    0     0     0    0     0
Reduced Vol:   27  293   271   495   11    77   425  448    14    53  380   108
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:   27  293   271   495   11    77   425  448    14    53  380   108
------------|---------------||---------------||---------------||---------------|
Saturation Flow Module:
Sat/Lane:    1900 1900  1900  1900 1900  1900  1900 1900  1900  1900 1900  1900
Adjustment:  0.95 0.88  0.88  0.95 0.95  0.85  0.92 0.95  0.95  0.95 0.92  0.92
Lanes:       1.00 1.04  0.96  1.96 0.04  1.00  2.00 1.94  0.06  1.00 2.00  1.00
Final Sat.:  1805 1740  1610  3543   79  1615  3502 3487   109  1805 3491  1745
------------|---------------||---------------||---------------||---------------|
Capacity Analysis Module:
Vol/Sat:     0.01 0.17  0.17  0.14 0.14  0.05  0.12 0.13  0.13  0.03 0.11  0.06
Crit Moves:               ****  ****              ****                    ****
Green/Cycle: 0.27 0.27  0.27  0.22 0.22  0.22  0.20 0.29  0.29  0.08 0.18  0.18
Volume/Cap:  0.06 0.62  0.62  0.62 0.62  0.21  0.62 0.44  0.44  0.38 0.62  0.35
Uniform Del: 32.4 38.3  38.3  41.9 41.9  37.8  44.2 34.3  34.3  52.7 45.8  43.5
IncremntDel:  0.0  1.3   1.3   1.5  1.5   0.3   1.8  0.3   0.3   1.8  1.5   0.2
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:   32.4 39.7  39.7  43.4 43.4  38.1  46.0 34.6  34.6  54.5 47.3  43.7
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:  32.4 39.7  39.7  43.4 43.4  38.1  46.0 34.6  34.6  54.5 47.3  43.7
LOS by Move:   C    D     D     D    D     D     D    C     C     D    D     D
HCM2kAvgQ:      1   10    10     9    9     2     8    7     7     2    8     4
*******************************************************************************
Note: Queue reported is the number of cars per lane.

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Background plus Project PM Fri May 29, 2015 15:03:39                 Page 5-1
-------------------------------------------------------------------------------
-------------------------------------------------------------------------------
                      Level Of Service Computation Report
           2000 HCM Operations Method (Future Volume Alternative)
*******************************************************************************
Intersection #3 I-880 NB Ramps/Warren Ave
*******************************************************************************
Cycle (sec):         104                Critical Vol./Cap.(X):         0.530
Loss Time (sec):       0 (Y+R=4.0 sec)  Average Delay (sec/veh):        18.3
Optimal Cycle:        48                Level Of Service:                   B
*******************************************************************************
```

```
Approach:      North Bound      South Bound       East Bound       West Bound
Movement:     L  -  T  -  R    L  -  T  -  R    L  -  T  -  R    L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:        Protected        Protected        Protected        Protected
Rights:           Include          Include          Include          Include
Min. Green:     8    0     0     0    0     0     0   10     0     4   10    10
Lanes:        1  1  0  1  0    0  0  0  0  0    0  0  2  0  1    1  0  2  0  0
------------|---------------||---------------||---------------||---------------|
Volume Module:
Base Vol:     127    1   151     0    0     0     0  998   152   374  499     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:  127    1   151     0    0     0     0  998   152   374  499     0
Added Vol:      0    0     0     0    0     0     0    1     0   -94  -75     0
PasserByVol:    0    0     0     0    0     0     0    0     0     0    0     0
Initial Fut:  127    1   151     0    0     0     0  999   152   280  424     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:   127    1   151     0    0     0     0  999   152   280  424     0
Reduct Vol:     0    0     0     0    0     0     0    0     0     0    0     0
Reduced Vol:  127    1   151     0    0     0     0  999   152   280  424     0
PCE Adj:     1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
MLF Adj:     1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
FinalVolume:  127    1   151     0    0     0     0  999   152   280  424     0
------------|---------------||---------------||---------------||---------------|
Saturation Flow Module:
Sat/Lane:    1900 1900  1900  1900 1900  1900  1900 1900  1900  1900 1900  1900
Adjustment:  0.81 0.81  0.81  1.00 1.00  1.00  1.00 0.95  0.85  0.95 0.95  1.00
Lanes:       1.98 0.02  1.00  0.00 0.00  0.00  0.00 2.00  1.00  1.00 2.00  0.00
Final Sat.:  3068   24  1546     0    0     0     0 3610  1615  1805 3610     0
------------|---------------||---------------||---------------||---------------|
Capacity Analysis Module:
Vol/Sat:     0.04 0.04  0.10  0.00 0.00  0.00  0.00 0.28  0.09  0.16 0.12  0.00
Crit Moves:             ****                        ****        ****
Green/Cycle: 0.18 0.18  0.18  0.00 0.00  0.00  0.00 0.52  0.52  0.29 0.82  0.00
Volume/Cap:  0.22 0.22  0.53  0.00 0.00  0.00  0.00 0.53  0.18  0.53 0.14  0.00
Uniform Del: 36.1 36.1  38.3   0.0  0.0   0.0   0.0 16.4  13.1  30.8  2.0   0.0
IncremntDel:  0.1  0.1   1.0   0.0  0.0   0.0   0.0  0.3   0.1   1.0  0.0   0.0
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  0.00 0.00  0.00  0.00 1.00  1.00  1.00 1.00  0.00
Delay/Veh:   36.2 36.2  39.4   0.0  0.0   0.0   0.0 16.7  13.2  31.8  2.0   0.0
User DelAdj: 1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
AdjDel/Veh:  36.2 36.2  39.4   0.0  0.0   0.0   0.0 16.7  13.2  31.8  2.0   0.0
LOS by Move:   D    D     D     A    A     A     A    B     B     C    A     A
HCM2kAvgQ:     2    2     5     0    0     0     0   11     3     8    2     0
*******************************************************************************
Note: Queue reported is the number of cars per lane.

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-------------------------------------------------------------------------------
                      Level Of Service Computation Report
            2000 HCM Operations Method (Future Volume Alternative)
*******************************************************************************
Intersection #4 Kato Rd/Warren Ave
*******************************************************************************
Cycle (sec):         124                Critical Vol./Cap.(X):         0.664
Loss Time (sec):       0 (Y+R=4.0 sec)  Average Delay (sec/veh):        30.2
Optimal Cycle:        68                Level Of Service:                  C
*******************************************************************************
Approach:      North Bound      South Bound       East Bound       West Bound
Movement:     L  -  T  -  R    L  -  T  -  R    L  -  T  -  R    L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
```

```
Control:       Split Phase      Split Phase       Protected        Protected
Rights:           Include          Include          Include          Include
Min. Green:     6    0     0     0    6     0     4    8     0     4    8     0
Lanes:        1  0  1  0  1    1  1  0  0  1    1  0  1  1  0    1  0  1  1  0
------------|---------------||---------------||---------------||---------------|
Volume Module:
Base Vol:     311   50   300     5   48     4    46 1116   120   190  596     5
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:  311   50   300     5   48     4    46 1116   120   190  596     5
Added Vol:      0    0     0     0    0     0     0    1     0     0 -169     0
PasserByVol:    0    0     0     0    0     0     0    0     0     0    0     0
Initial Fut:  311   50   300     5   48     4    46 1117   120   190  427     5
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:   311   50   300     5   48     4    46 1117   120   190  427     5
Reduct Vol:     0    0     0     0    0     0     0    0     0     0    0     0
Reduced Vol:  311   50   300     5   48     4    46 1117   120   190  427     5
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:  311   50   300     5   48     4    46 1117   120   190  427     5
------------|---------------||---------------||---------------||---------------|
Saturation Flow Module:
Sat/Lane:    1900 1900  1900  1900 1900  1900  1900 1900  1900  1900 1900  1900
Adjustment:  0.95 1.00  0.85  1.00 1.00  0.85  0.95 0.94  0.94  0.95 0.95  0.95
Lanes:       1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.81  0.19  1.00 1.98  0.02
Final Sat.:  1805 1900  1615  1891 1891  1615  1805 3211   345  1805 3561    42
------------|---------------||---------------||---------------||---------------|
Capacity Analysis Module:
Vol/Sat:     0.17 0.03  0.19  0.00 0.03  0.00  0.03 0.35  0.35  0.11 0.12  0.12
Crit Moves:              ****       ****              ****        ****
Green/Cycle: 0.28 0.28  0.28  0.05 0.05  0.05  0.14 0.52  0.52  0.16 0.53  0.53
Volume/Cap:  0.62 0.10  0.67  0.05 0.52  0.05  0.18 0.67  0.67  0.67 0.23  0.23
Uniform Del: 39.2 33.3  39.8  56.3 57.6  56.3  46.7 22.1  22.1  49.3 15.4  15.4
IncremntDel:  2.4  0.1   4.0   0.0  5.0   0.3   0.3  1.0   1.0   6.2  0.1   0.1
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:   41.6 33.4  43.8  56.3 62.6  56.6  47.0 23.1  23.1  55.4 15.5  15.5
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:  41.6 33.4  43.8  56.3 62.6  56.6  47.0 23.1  23.1  55.4 15.5  15.5
LOS by Move:   D    C     D     E    E     E     D    C     C     E    B     B
HCM2kAvgQ:    11    1    11     0    3     0     2   19    19     8    4     4
*******************************************************************************
Note: Queue reported is the number of cars per lane.

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-------------------------------------------------------------------------------
                       Level Of Service Computation Report
            2000 HCM Unsignalized Method (Future Volume Alternative)
*******************************************************************************
Intersection #5 Mission Falls Ct/Warren Ave
*******************************************************************************
Average Delay (sec/veh):      6.7       Worst Case Level Of Service: F[228.6]
*******************************************************************************
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
Rights:           Include          Include          Include          Include
Lanes:        0  1  0  1  0    0  0  1! 0  0    1  0  1  1  0    1  0  1  1  0
------------|---------------||---------------||---------------||---------------|
Volume Module:
```

```
Base Vol:      213    0    62     5    4     5     8 1426    67    31  588     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:   213    0    62     5    4     5     8 1426    67    31  588     0
Added Vol:    -169    0   -47     0    0     0     0    0     1     0    0     0
PasserByVol:     0    0     0     0    0     0     0    0     0     0    0     0
Initial Fut:    44    0    15     5    4     5     8 1426    68    31  588     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:     44    0    15     5    4     5     8 1426    68    31  588     0
Reduct Vol:      0    0     0     0    0     0     0    0     0     0    0     0
FinalVolume:    44    0    15     5    4     5     8 1426    68    31  588     0
------------|---------------||---------------||---------------||---------------|
Critical Gap Module:
Critical Gp:   7.5  6.5   6.9   7.5  6.5   6.9   4.1 xxxx xxxxx   4.1 xxxx xxxxx
FollowUpTim:   3.5  4.0   3.3   3.5  4.0   3.3   2.2 xxxx xxxxx   2.2 xxxx xxxxx
------------|---------------||---------------||---------------||---------------|
Capacity Module:
Cnflict Vol: 1834 2126   747  1379 2160   294   588 xxxx xxxxx  1494 xxxx xxxxx
Potent Cap.:   48   51   360   106   48   708   997 xxxx xxxxx   455 xxxx xxxxx
Move Cap.:     42   47   360    95   44   708   997 xxxx xxxxx   455 xxxx xxxxx
Volume/Cap:  1.04 0.00  0.04  0.05 0.09  0.01  0.01 xxxx  xxxx  0.07 xxxx  xxxx
------------|---------------||---------------||---------------||---------------|
Level Of Service Module:
2Way95thQ:   xxxx xxxx xxxxx  xxxx xxxx xxxxx   0.0 xxxx xxxxx   0.2 xxxx xxxxx
Control Del:xxxxx xxxx xxxxx xxxxx xxxx xxxxx   8.6 xxxx xxxxx  13.5 xxxx xxxxx
LOS by Move:   *    *     *     *    *     *     A    *     *     B    *     *
Movement:     LT - LTR - RT    LT - LTR - RT    LT - LTR - RT    LT - LTR - RT
Shared Cap.:   42 xxxx   360  xxxx   94 xxxxx  xxxx xxxx xxxxx  xxxx xxxx xxxxx
SharedQueue:  4.2 xxxx   0.1 xxxxx  0.5 xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx
Shrd ConDel:301.3 xxxx  15.4 xxxxx 50.1 xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx
Shared LOS:    F    *     C     *    F     *     *    *     *     *    *     *
ApproachDel:     228.6             50.1           xxxxxx           xxxxxx
ApproachLOS:        F                F               *                *
*******************************************************************************
Note: Queue reported is the number of cars per lane.
*******************************************************************************
```

```
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-------------------------------------------------------------------------------
                      Level Of Service Computation Report
             2000 HCM Operations Method (Future Volume Alternative)
*******************************************************************************
Intersection #6 Warm Springs Blvd/Warren Ave
*******************************************************************************
Cycle (sec):         120                 Critical Vol./Cap.(X):         0.708
Loss Time (sec):       0 (Y+R=4.0 sec)  Average Delay (sec/veh):        32.3
Optimal Cycle:        78                 Level Of Service:                C
*******************************************************************************
Approach:      North Bound      South Bound       East Bound       West Bound
Movement:     L  -  T  -  R    L  -  T  -  R    L  -  T  -  R    L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:        Protected        Protected        Protected        Protected
Rights:           Include          Include          Include          Include
Min. Green:     4   10     0     4   10     0     4   10     0     4   10     0
Lanes:        2  0  1  1  0    1  0  2  0  1    2  0  2  0  1    2  0  2  0  1
------------|---------------||---------------||---------------||---------------|
Volume Module:
```

```
Base Vol:      151  990   109   157  817   349   473  494   475   123   92    73
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:   151  990   109   157  817   349   473  494   475   123   92    73
Added Vol:       0  -61     0     0    0     0   -47    0     0     0    0     0
PasserByVol:     0    0     0     0    0     0     0    0     0     0    0     0
Initial Fut:   151  929   109   157  817   349   426  494   475   123   92    73
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:    151  929   109   157  817   349   426  494   475   123   92    73
Reduct Vol:      0    0     0     0    0     0     0    0     0     0    0     0
Reduced Vol:   151  929   109   157  817   349   426  494   475   123   92    73
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:   151  929   109   157  817   349   426  494   475   123   92    73
------------|---------------||---------------||---------------||---------------|
Saturation Flow Module:
Sat/Lane:     1900 1900  1900  1900 1900  1900  1900 1900  1900  1900 1900  1900
Adjustment:   0.92 0.93  0.93  0.95 0.95  0.85  0.92 0.95  0.85  0.92 0.95  0.85
Lanes:        2.00 1.79  0.21  1.00 2.00  1.00  2.00 2.00  1.00  2.00 2.00  1.00
Final Sat.:   3502 3179   373  1805 3610  1615  3502 3610  1615  3502 3610  1615
------------|---------------||---------------||---------------||---------------|
Capacity Analysis Module:
Vol/Sat:      0.04 0.29  0.29  0.09 0.23  0.22  0.12 0.14  0.29  0.04 0.03  0.05
Crit Moves:        ****        ****                        ****  ****
Green/Cycle:  0.09 0.41  0.41  0.12 0.45  0.45  0.28 0.42  0.42  0.05 0.19  0.19
Volume/Cap:   0.50 0.71  0.71  0.71 0.50  0.48  0.44 0.33  0.71  0.71 0.13  0.24
Uniform Del:  52.4 29.3  29.3  50.6 23.5  23.2  35.8 23.8  29.1  56.2 40.5  41.3
IncremntDel:   1.4  1.6   1.6  10.1  0.3   0.5   0.3  0.1   3.5  12.7  0.1   0.4
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:    53.8 30.9  30.9  60.7 23.7  23.7  36.1 23.9  32.6  68.8 40.6  41.7
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:   53.8 30.9  30.9  60.7 23.7  23.7  36.1 23.9  32.6  68.8 40.6  41.7
LOS by Move:    D    C     C     E    C     C     D    C     C     E    D     D
HCM2kAvgQ:      3   17    17     7   11     9     7    6    15     4    1     2
*******************************************************************************
Note: Queue reported is the number of cars per lane.
```



```
-------------------------------------------------------------------------------
-------------------------------------------------------------------------------
                     Level Of Service Computation Report
            2000 HCM Operations Method (Future Volume Alternative)
*******************************************************************************
Intersection #7 Warm Springs Blvd/Mission Falls Ln/Hackamore Ln
*******************************************************************************
Cycle (sec):         100                Critical Vol./Cap.(X):         0.453
Loss Time (sec):       0 (Y+R=4.0 sec)  Average Delay (sec/veh):         5.1
Optimal Cycle:        42                Level Of Service:                  A
*******************************************************************************
Approach:      North Bound      South Bound       East Bound       West Bound
Movement:     L  -  T  -  R    L  -  T  -  R    L  -  T  -  R    L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:        Protected        Protected        Protected        Protected
Rights:           Include          Include          Include          Include
Min. Green:     0    0     0     0    0     0     0    0     0     0    0     0
Lanes:        1  0  1  1  0    1  0  1  1  0    0  1  0  0  1    0  0  1! 0  0
------------|---------------||---------------||---------------||---------------|
Volume Module:
Base Vol:      27 1287    38    66 1376    17    64   12   141     9    4    15
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:   27 1287    38    66 1376    17    64   12   141     9    4    15
```

```
Added Vol:       0    0     0     0    0     0   -61   -9   -89     0    0     0
PasserByVol:     0    0     0     0    0     0     0    0     0     0    0     0
Initial Fut:    27 1287    38    66 1376    17     3    3    52     9    4    15
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:     27 1287    38    66 1376    17     3    3    52     9    4    15
Reduct Vol:      0    0     0     0    0     0     0    0     0     0    0     0
Reduced Vol:    27 1287    38    66 1376    17     3    3    52     9    4    15
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:    27 1287    38    66 1376    17     3    3    52     9    4    15
------------|---------------||---------------||---------------||---------------|
Saturation Flow Module:
Sat/Lane:     1900 1900  1900  1900 1900  1900  1900 1900  1900  1900 1900  1900
Adjustment:   0.95 0.95  0.95  0.95 0.95  0.95  0.98 0.98  0.85  0.91 0.91  0.91
Lanes:        1.00 1.94  0.06  1.00 1.98  0.02  0.50 0.50  1.00  0.32 0.14  0.54
Final Sat.:   1805 3492   103  1805 3559    44   927  927  1615   558  248   929
------------|---------------||---------------||---------------||---------------|
Capacity Analysis Module:
Vol/Sat:      0.01 0.37  0.37  0.04 0.39  0.39  0.00 0.00  0.03  0.02 0.02  0.02
Crit Moves:        ****        ****                        ****  ****
Green/Cycle:  0.03 0.81  0.81  0.08 0.86  0.86  0.02 0.07  0.07  0.04 0.09  0.09
Volume/Cap:   0.45 0.45  0.45  0.45 0.45  0.45  0.18 0.05  0.45  0.45 0.18  0.18
Uniform Del:  47.4  2.8   2.8  43.9  1.6   1.6  48.4 43.3  44.6  47.3 42.2  42.2
IncremntDel:   5.3  0.1   0.1   2.2  0.1   0.1   2.6  0.1   2.8   5.2  0.6   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:    52.7  2.9   2.9  46.1  1.7   1.7  51.0 43.4  47.4  52.5 42.8  42.8
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:   52.7  2.9   2.9  46.1  1.7   1.7  51.0 43.4  47.4  52.5 42.8  42.8
LOS by Move:    D    A     A     D    A     A     D    D     D     D    D     D
HCM2kAvgQ:      1    7     7     3    5     5     0    0     2     1    1     1
*******************************************************************************
Note: Queue reported is the number of cars per lane.

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```

Scenario Report

Scenario:	Cumulative No Project AM
Command:	CUM AM
Volume:	CUM AM
Geometry:	CUM AM
Impact Fee:	Default Impact Fee
Trip Generation:	No Project
Trip Distribution:	Project
Paths:	Default Path
Routes:	Default Route
Configuration:	Default Configuration

Cum AM.txt
Impact Analysis Report
Level Of Service

Intersection	Base LOS	Base Del/ Veh	Base V/ C	Future LOS	Future Del/ Veh	Future V/ C	Change in D/V
# 1 Warm Springs Blvd/Mission Blvd	F	312.1	1.919	F	312.1	1.919	+ 0.000
# 2 I-880 SB Ramps/Warren Ave	C	35.0	0.790	C	35.0	0.790	+ 0.000
# 3 I-880 NB Ramps/Warren Ave	C	24.9	0.796	C	24.9	0.796	+ 0.000
# 4 Kato Rd/Warren Ave	C	22.3	0.556	C	22.3	0.556	+ 0.000
# 5 Mission Falls Ct/Warren Ave	F	265.1	0.000	F	265.1	0.000	+ 0.000
# 6 Warm Springs Blvd/Warren Ave	D	45.6	0.935	D	45.6	0.935	+ 0.000
# 7 Warm Springs Blvd/Mission Fall	B	17.5	0.878	B	17.5	0.878	+ 0.000

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

****

Intersection #1 Warm Springs Blvd/Mission Blvd

```
*******************************************************************************
Cycle (sec):         100                  Critical Vol./Cap.(X):         1.919
Loss Time (sec):       0 (Y+R=4.0 sec)  Average Delay (sec/veh):       312.1
Optimal Cycle:       180                  Level Of Service:                F
*******************************************************************************
Approach:      North Bound      South Bound       East Bound       West Bound
Movement:     L  -  T  -  R    L  -  T  -  R    L  -  T  -  R    L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:        Protected        Protected        Protected        Protected
Rights:           Include          Include          Include          Include
Min. Green:    14   14     0    15   13     0    14   15     0    15   15     0
Lanes:        2  0  2  0  1    2  0  2  0  1    2  0  3  0  1    2  0  3  0  1
------------|---------------||---------------||---------------||---------------|
Volume Module:
Base Vol:    1011 1360   171   266  620  1405  1144 1638   218  1064 2249   481
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: 1011 1360   171   266  620  1405  1144 1638   218  1064 2249   481
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: 1011 1360   171   266  620  1405  1144 1638   218  1064 2249   481
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:  1011 1360   171   266  620  1405  1144 1638   218  1064 2249   481
Reduct Vol:     0    0     0     0    0     0     0    0     0     0    0     0
Reduced Vol: 1011 1360   171   266  620  1405  1144 1638   218  1064 2249   481
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: 1011 1360   171   266  620  1405  1144 1638   218  1064 2249   481
------------|---------------||---------------||---------------||---------------|
Saturation Flow Module:
Sat/Lane:    1900 1900  1900  1900 1900  1900  1900 1900  1900  1900 1900  1900
Adjustment:  0.92 0.95  0.85  0.92 0.95  0.85  0.92 0.91  0.85  0.92 0.91  0.85
Lanes:       2.00 2.00  1.00  2.00 2.00  1.00  2.00 3.00  1.00  2.00 3.00  1.00
Final Sat.:  3502 3610  1615  3502 3610  1615  3502 5187  1615  3502 5187  1615
------------|---------------||---------------||---------------||---------------|
Capacity Analysis Module:
Vol/Sat:     0.29 0.38  0.11  0.08 0.17  0.87  0.33 0.32  0.13  0.30 0.43  0.30
Crit Moves:  ****                         ****  ****                  ****
Green/Cycle: 0.15 0.43  0.43  0.17 0.45  0.45  0.17 0.20  0.20  0.19 0.23  0.23
Volume/Cap:  1.92 0.87  0.25  0.44 0.38  1.92  1.92 1.56  0.67  1.56 1.92  1.32
Uniform Del: 42.5 25.9  18.1  37.1 18.0  27.3  41.5 39.9  36.8  40.3 38.7  38.7
IncremntDel:420.6  5.7   0.2   0.5  0.1 418.6 419.7  258   5.3 260.9  417 161.3
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:  463.0 31.6  18.2  37.6 18.2 445.9 461.2  298  42.1 301.2  455 200.0
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: 463.0 31.6  18.2  37.6 18.2 445.9 461.2  298  42.1 301.2  455 200.0
LOS by Move:   F    C     B     D    B     F     F    F     D     F    F     F
HCM2kAvgQ:    48   23     3     4    7   125    54   46     7    42   74    31
*******************************************************************************
Note: Queue reported is the number of cars per lane.
```

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

```
*******************************************************************************
Intersection #2 I-880 SB Ramps/Warren Ave
*******************************************************************************
Cycle (sec):         120                  Critical Vol./Cap.(X):         0.790
```

```
Loss Time (sec):      16 (Y+R=4.0 sec)  Average Delay (sec/veh):        35.0
Optimal Cycle:        90                Level Of Service:                  C
*******************************************************************************
Approach:      North Bound      South Bound       East Bound       West Bound
Movement:     L  -  T  -  R    L  -  T  -  R    L  -  T  -  R    L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:       Split Phase      Split Phase       Protected        Protected
Rights:           Include          Include          Include          Include
Min. Green:     0    6     0     0    6     0     4    8     0     4    8     0
Lanes:        1  0  1  1  0    1  1  0  0  1    2  0  1  1  0    1  0  1  1  1
------------|---------------||---------------||---------------||---------------|
Volume Module:
Base Vol:      15   32    51   304  143   108   242  480    57   708 1578   411
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:   15   32    51   304  143   108   242  480    57   708 1578   411
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:   15   32    51   304  143   108   242  480    57   708 1578   411
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:    15   32    51   304  143   108   242  480    57   708 1578   411
Reduct Vol:     0    0     0     0    0     0     0    0     0     0    0     0
Reduced Vol:   15   32    51   304  143   108   242  480    57   708 1578   411
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:   15   32    51   304  143   108   242  480    57   708 1578   411
------------|---------------||---------------||---------------||---------------|
Saturation Flow Module:
Sat/Lane:    1900 1900  1900  1900 1900  1900  1900 1900  1900  1900 1900  1900
Adjustment:  0.95 0.86  0.86  0.97 0.97  0.85  0.92 0.93  0.93  0.95 0.92  0.92
Lanes:       1.00 1.00  1.00  1.36 0.64  1.00  2.00 1.79  0.21  1.00 2.00  1.00
Final Sat.:  1805 1639  1639  2499 1176  1615  3502 3175   377  1805 3498  1749
------------|---------------||---------------||---------------||---------------|
Capacity Analysis Module:
Vol/Sat:     0.01 0.02  0.03  0.12 0.12  0.07  0.07 0.15  0.15  0.39 0.45  0.23
Crit Moves:        ****        ****                 ****        ****
Green/Cycle: 0.05 0.05  0.05  0.15 0.15  0.15  0.09 0.19  0.19  0.48 0.58  0.58
Volume/Cap:  0.17 0.39  0.62  0.81 0.81  0.45  0.78 0.81  0.81  0.81 0.78  0.41
Uniform Del: 54.6 55.2  55.9  49.4 49.4  46.5  53.5 46.9  46.9  26.5 19.4  13.9
IncremntDel:  0.9  1.2   8.8   9.1  9.1   1.3  11.9  7.7   7.7   6.0  1.6   0.1
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:   55.5 56.4  64.7  58.5 58.5  47.8  65.5 54.6  54.6  32.5 21.0  14.0
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:  55.5 56.4  64.7  58.5 58.5  47.8  65.5 54.6  54.6  32.5 21.0  14.0
LOS by Move:   E    E     E     E    E     D     E    D     D     C    C     B
HCM2kAvgQ:      1    2     3    10   10     4     6   12    12    24   24     9
*******************************************************************************
Note: Queue reported is the number of cars per lane.

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-------------------------------------------------------------------------------
-------------------------------------------------------------------------------
                      Level Of Service Computation Report
           2000 HCM Operations Method (Future Volume Alternative)
*******************************************************************************
Intersection #3 I-880 NB Ramps/Warren Ave
*******************************************************************************
Cycle (sec):           0                Critical Vol./Cap.(X):          0.796
Loss Time (sec):       0 (Y+R=4.0 sec)  Average Delay (sec/veh):         24.9
Optimal Cycle:       112                Level Of Service:                  C
*******************************************************************************
```

```
Approach:      North Bound      South Bound       East Bound       West Bound
Movement:     L  -  T  -  R    L  -  T  -  R    L  -  T  -  R    L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:        Protected        Protected        Protected        Protected
Rights:           Include          Include          Include          Include
Min. Green:     0    0     0     0    0     0     0    0     0     0    0     0
Lanes:        2  0  0  0  1    0  0  0  0  0    0  0  2  0  1    1  0  2  0  0
------------|---------------||---------------||---------------||---------------|
Volume Module:
Base Vol:    1041    0   256     0    0     0     0 1036    51   186 1800     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: 1041    0   256     0    0     0     0 1036    51   186 1800     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: 1041    0   256     0    0     0     0 1036    51   186 1800     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:  1041    0   256     0    0     0     0 1036    51   186 1800     0
Reduct Vol:     0    0     0     0    0     0     0    0     0     0    0     0
Reduced Vol: 1041    0   256     0    0     0     0 1036    51   186 1800     0
PCE Adj:     1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
MLF Adj:     1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
FinalVolume: 1041    0   256     0    0     0     0 1036    51   186 1800     0
------------|---------------||---------------||---------------||---------------|
Saturation Flow Module:
Sat/Lane:    1900 1900  1900  1900 1900  1900  1900 1900  1900  1900 1900  1900
Adjustment:  0.92 1.00  0.85  1.00 1.00  1.00  1.00 0.95  0.85  0.95 0.95  1.00
Lanes:       2.00 0.00  1.00  0.00 0.00  0.00  0.00 2.00  1.00  1.00 2.00  0.00
Final Sat.:  3502    0  1615     0    0     0     0 3610  1615  1805 3610     0
------------|---------------||---------------||---------------||---------------|
Capacity Analysis Module:
Vol/Sat:     0.30 0.00  0.16  0.00 0.00  0.00  0.00 0.29  0.03  0.10 0.50  0.00
Crit Moves:  ****                               ****                    ****
Green/Cycle: 0.37 0.00  0.37  0.00 0.00  0.00  0.00 0.46  0.46  0.17 0.63  0.00
Volume/Cap:  0.80 0.00  0.42  0.00 0.00  0.00  0.00 0.62  0.07  0.62 0.80  0.00
Uniform Del: 31.3  0.0  26.1   0.0  0.0   0.0   0.0 22.8  16.8  43.5 15.6   0.0
IncremntDel:  3.5  0.0   0.5   0.0  0.0   0.0   0.0  0.7   0.0   4.0  2.0   0.0
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 0.00  1.00  0.00 0.00  0.00  0.00 1.00  1.00  1.00 1.00  0.00
Delay/Veh:   34.8  0.0  26.6   0.0  0.0   0.0   0.0 23.6  16.8  47.5 17.6   0.0
User DelAdj: 1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
AdjDel/Veh:  34.8  0.0  26.6   0.0  0.0   0.0   0.0 23.6  16.8  47.5 17.6   0.0
LOS by Move:   C    A     C     A    A     A     A    C     B     D    B     A
HCM2kAvgQ:    18    0     7     0    0     0     0   14     1     7   25     0
*******************************************************************************
Note: Queue reported is the number of cars per lane.

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-------------------------------------------------------------------------------
                      Level Of Service Computation Report
            2000 HCM Operations Method (Future Volume Alternative)
*******************************************************************************
Intersection #4 Kato Rd/Warren Ave
*******************************************************************************
Cycle (sec):         124                Critical Vol./Cap.(X):         0.556
Loss Time (sec):       0 (Y+R=4.0 sec)  Average Delay (sec/veh):        22.3
Optimal Cycle:        51                Level Of Service:                  C
*******************************************************************************
Approach:      North Bound      South Bound       East Bound       West Bound
Movement:     L  -  T  -  R    L  -  T  -  R    L  -  T  -  R    L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
```

```
Control:       Split Phase      Split Phase       Protected        Protected
Rights:           Include          Include          Include          Include
Min. Green:     6    0     0     0    6     0     4    8     0     4    8     0
Lanes:        1  0  1  0  1    1  1  0  0  1    1  0  1  1  0    1  0  1  1  0
------------|---------------||---------------||---------------||---------------|
Volume Module:
Base Vol:     189   52    68   133   35    42     4  517   298   225 1453     3
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:  189   52    68   133   35    42     4  517   298   225 1453     3
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:  189   52    68   133   35    42     4  517   298   225 1453     3
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:   189   52    68   133   35    42     4  517   298   225 1453     3
Reduct Vol:     0    0     0     0    0     0     0    0     0     0    0     0
Reduced Vol:  189   52    68   133   35    42     4  517   298   225 1453     3
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:  189   52    68   133   35    42     4  517   298   225 1453     3
------------|---------------||---------------||---------------||---------------|
Saturation Flow Module:
Sat/Lane:    1900 1900  1900  1900 1900  1900  1900 1900  1900  1900 1900  1900
Adjustment:  0.95 1.00  0.85  0.96 0.96  0.85  0.95 0.90  0.90  0.95 0.95  0.95
Lanes:       1.00 1.00  1.00  1.58 0.42  1.00  1.00 1.27  0.73  1.00 1.99  0.01
Final Sat.:  1805 1900  1615  2894  762  1615  1805 2164  1247  1805 3603     7
------------|---------------||---------------||---------------||---------------|
Capacity Analysis Module:
Vol/Sat:     0.10 0.03  0.04  0.05 0.05  0.03  0.00 0.24  0.24  0.12 0.40  0.40
Crit Moves:  ****                 ****        ****                   ****
Green/Cycle: 0.18 0.18  0.18  0.08 0.08  0.08  0.03 0.48  0.48  0.25 0.70  0.70
Volume/Cap:  0.57 0.15  0.23  0.57 0.57  0.32  0.07 0.49  0.49  0.49 0.57  0.57
Uniform Del: 46.2 42.6  43.2  55.0 55.0  53.8  58.2 21.7  21.7  39.6  9.1   9.1
IncremntDel:  2.4  0.2   0.4   2.7  2.7   1.5   0.5  0.2   0.2   0.8  0.3   0.3
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:   48.7 42.8  43.6  57.7 57.7  55.3  58.7 21.9  21.9  40.4  9.4   9.4
User DelAdj: 1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
AdjDel/Veh:  48.7 42.8  43.6  57.7 57.7  55.3  58.7 21.9  21.9  40.4  9.4   9.4
LOS by Move:   D    D     D     E    E     E     E    C     C     D    A     A
HCM2kAvgQ:     7    2     2     4    4     2     0   11    11     8   14    14
*******************************************************************************
Note: Queue reported is the number of cars per lane.

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-------------------------------------------------------------------------------
                      Level Of Service Computation Report
           2000 HCM Unsignalized Method (Future Volume Alternative)
*******************************************************************************
Intersection #5 Mission Falls Ct/Warren Ave
*******************************************************************************
Average Delay (sec/veh):      9.1       Worst Case Level Of Service: F[265.1]
*******************************************************************************
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
Rights:           Include          Include          Include          Include
Lanes:        0  1  0  1  0    0  0  0  0  1    1  0  1  1  0    1  0  1  1  0
------------|---------------||---------------||---------------||---------------|
Volume Module:
```

```
Base Vol:      69    4    10     0    0     2    23  442   229    73 1706    12
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:   69    4    10     0    0     2    23  442   229    73 1706    12
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:   69    4    10     0    0     2    23  442   229    73 1706    12
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:    69    4    10     0    0     2    23  442   229    73 1706    12
Reduct Vol:     0    0     0     0    0     0     0    0     0     0    0     0
FinalVolume:   69    4    10     0    0     2    23  442   229    73 1706    12
------------|---------------||---------------||---------------||---------------|
Critical Gap Module:
Critical Gp:  7.5  6.5   6.9 xxxxx xxxx   6.9   4.1 xxxx xxxxx   4.1 xxxx xxxxx
FollowUpTim:  3.5  4.0   3.3 xxxxx xxxx   3.3   2.2 xxxx xxxxx   2.2 xxxx xxxxx
------------|---------------||---------------||---------------||---------------|
Capacity Module:
Cnflict Vol: 1602 2467   336  xxxx xxxx   859  1718 xxxx xxxxx   671 xxxx xxxxx
Potent Cap.:   72   31   666  xxxx xxxx   304   374 xxxx xxxxx   929 xxxx xxxxx
Move Cap.:     64   27   666  xxxx xxxx   304   374 xxxx xxxxx   929 xxxx xxxxx
Volume/Cap:  1.07 0.15  0.02  xxxx xxxx  0.01  0.06 xxxx  xxxx  0.08 xxxx  xxxx
------------|---------------||---------------||---------------||---------------|
Level Of Service Module:
2Way95thQ:   xxxx xxxx xxxxx  xxxx xxxx   0.0   0.2 xxxx xxxxx   0.3 xxxx xxxxx
Control Del:xxxxx xxxx xxxxx xxxxx xxxx  16.9  15.3 xxxx xxxxx   9.2 xxxx xxxxx
LOS by Move:   *    *     *     *    *     C     C    *     *     A    *     *
Movement:     LT - LTR - RT    LT - LTR - RT    LT - LTR - RT    LT - LTR - RT
Shared Cap.:   60 xxxx    84  xxxx xxxx xxxxx  xxxx xxxx xxxxx  xxxx xxxx xxxxx
SharedQueue:  6.1 xxxx   0.6 xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx
Shrd ConDel:305.3 xxxx  55.9 xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx
Shared LOS:    F    *     F     *    *     *     *    *     *     *    *     *
ApproachDel:     265.1             16.9           xxxxxx           xxxxxx
ApproachLOS:        F                C               *                *
********************************************************************************
Note: Queue reported is the number of cars per lane.
********************************************************************************
```

```
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--------------------------------------------------------------------------------
                      Level Of Service Computation Report
             2000 HCM Operations Method (Future Volume Alternative)
********************************************************************************
Intersection #6 Warm Springs Blvd/Warren Ave
********************************************************************************
Cycle (sec):         120                Critical Vol./Cap.(X):         0.935
Loss Time (sec):       0 (Y+R=4.0 sec)  Average Delay (sec/veh):        45.6
Optimal Cycle:       180                Level Of Service:                 D
********************************************************************************
Approach:      North Bound      South Bound       East Bound       West Bound
Movement:     L  -  T  -  R    L  -  T  -  R    L  -  T  -  R    L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:        Protected        Protected        Protected        Protected
Rights:           Include          Include          Include          Include
Min. Green:     4   10     0     4   10     0     4   10     0     4   10     0
Lanes:        2  0  1  1  0    2  0  2  0  1    2  0  2  0  1    2  0  2  0  1
------------|---------------||---------------||---------------||---------------|
Volume Module:
```

```
Base Vol:      385 1562   104    42  744   525   396   38   169   589  444   556
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:   385 1562   104    42  744   525   396   38   169   589  444   556
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:   385 1562   104    42  744   525   396   38   169   589  444   556
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:    385 1562   104    42  744   525   396   38   169   589  444   556
Reduct Vol:      0    0     0     0    0     0     0    0     0     0    0     0
Reduced Vol:   385 1562   104    42  744   525   396   38   169   589  444   556
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:   385 1562   104    42  744   525   396   38   169   589  444   556
------------|---------------||---------------||---------------||---------------|
Saturation Flow Module:
Sat/Lane:     1900 1900  1900  1900 1900  1900  1900 1900  1900  1900 1900  1900
Adjustment:   0.92 0.94  0.94  0.92 0.95  0.85  0.92 0.95  0.85  0.92 0.95  0.85
Lanes:        2.00 1.88  0.12  2.00 2.00  1.00  2.00 2.00  1.00  2.00 2.00  1.00
Final Sat.:   3502 3354   223  3502 3610  1615  3502 3610  1615  3502 3610  1615
------------|---------------||---------------||---------------||---------------|
Capacity Analysis Module:
Vol/Sat:      0.11 0.47  0.47  0.01 0.21  0.33  0.11 0.01  0.10  0.17 0.12  0.34
Crit Moves:        ****        ****              ****                       ****
Green/Cycle:  0.13 0.49  0.49  0.03 0.39  0.39  0.12 0.18  0.18  0.30 0.36  0.36
Volume/Cap:   0.83 0.95  0.95  0.36 0.53  0.83  0.95 0.06  0.57  0.57 0.34  0.95
Uniform Del:  50.8 29.5  29.5  56.7 28.2  33.2  52.6 40.4  44.7  35.8 28.0  37.4
IncremntDel:  12.4 12.5  12.5   1.9  0.4   9.5  32.7  0.0   2.6   0.8  0.2  26.4
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 42.0  42.0  58.6 28.6  42.6  85.2 40.4  47.3  36.6 28.1  63.8
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:   63.3 42.0  42.0  58.6 28.6  42.6  85.2 40.4  47.3  36.6 28.1  63.8
LOS by Move:    E    D     D     E    C     D     F    D     D     D    C     E
HCM2kAvgQ:     10   36    36     1   11    20    11    1     6    10    6    25
*******************************************************************************
Note: Queue reported is the number of cars per lane.

  Traffix 7.9.0415 (c) 2007 Dowling Assoc. Licensed to FEHR & PEERS,  LAFAYETTE♀
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-------------------------------------------------------------------------------
                      Level Of Service Computation Report
            2000 HCM Operations Method (Future Volume Alternative)
*******************************************************************************
Intersection #7 Warm Springs Blvd/Mission Falls Ln/Hackamore Ln
*******************************************************************************
Cycle (sec):         100                Critical Vol./Cap.(X):         0.878
Loss Time (sec):       0 (Y+R=4.0 sec)  Average Delay (sec/veh):        17.5
Optimal Cycle:       180                Level Of Service:                 B
*******************************************************************************
Approach:      North Bound      South Bound       East Bound       West Bound
Movement:     L  -  T  -  R    L  -  T  -  R    L  -  T  -  R    L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:        Protected        Protected        Protected        Protected
Rights:           Include          Include          Include          Include
Min. Green:     0    0     0     0    0     0     0    0     0     0    0     0
Lanes:        1  0  1  1  0    1  0  1  1  0    0  1  0  0  1    0  0  1! 0  0
------------|---------------||---------------||---------------||---------------|
Volume Module:
Base Vol:      156 1264    99    34 2204    87     9    1    31    82   17   132
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:   156 1264    99    34 2204    87     9    1    31    82   17   132
```

```
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:   156 1264    99    34 2204    87     9    1    31    82   17   132
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:    156 1264    99    34 2204    87     9    1    31    82   17   132
Reduct Vol:      0    0     0     0    0     0     0    0     0     0    0     0
Reduced Vol:   156 1264    99    34 2204    87     9    1    31    82   17   132
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:   156 1264    99    34 2204    87     9    1    31    82   17   132
------------|---------------||---------------||---------------||---------------|
Saturation Flow Module:
Sat/Lane:     1900 1900  1900  1900 1900  1900  1900 1900  1900  1900 1900  1900
Adjustment:   0.95 0.94  0.94  0.95 0.94  0.94  0.96 0.96  0.85  0.91 0.91  0.91
Lanes:        1.00 1.85  0.15  1.00 1.92  0.08  0.90 0.10  1.00  0.35 0.07  0.58
Final Sat.:   1805 3311   259  1805 3452   136  1636  182  1615   612  127   985
------------|---------------||---------------||---------------||---------------|
Capacity Analysis Module:
Vol/Sat:      0.09 0.38  0.38  0.02 0.64  0.64  0.01 0.01  0.02  0.13 0.13  0.13
Crit Moves:   ****                 ****                    ****  ****
Green/Cycle:  0.10 0.79  0.79  0.04 0.73  0.73  0.01 0.02  0.02  0.15 0.17  0.17
Volume/Cap:   0.88 0.49  0.49  0.49 0.88  0.88  0.80 0.25  0.88  0.88 0.80  0.80
Uniform Del:  44.5  3.7   3.7  47.1 10.3  10.3  49.6 48.1  48.8  41.5 40.0  40.0
IncremntDel:  35.6  0.1   0.1   5.2  3.7   3.7 147.8  3.3 102.8  26.7 14.5  14.5
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:    80.1  3.8   3.8  52.3 14.0  14.0 197.4 51.4 151.6  68.1 54.5  54.5
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:   80.1  3.8   3.8  52.3 14.0  14.0 197.4 51.4 151.6  68.1 54.5  54.5
LOS by Move:    F    A     A     D    B     B     F    D     F     E    D     D
HCM2kAvgQ:      8    8     8     2   31    31     1    1     3    10    9     9
*******************************************************************************
Note: Queue reported is the number of cars per lane.

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```

Scenario Report

Scenario:	Cumulative No Project PM
Command:	CUM PM
Volume:	CUM PM
Geometry:	CUM PM
Impact Fee:	Default Impact Fee
Trip Generation:	No Project
Trip Distribution:	Project
Paths:	Default Path
Routes:	Default Route
Configuration:	Default Configuration

Impact Analysis Report
Level Of Service

Intersection	Base LOS	Base Del/ Veh	Base V/ C	Future LOS	Future Del/ Veh	Future V/ C	Change in D/V
# 1 Warm Springs Blvd/Mission Blvd	F	320.3	1.994	F	320.3	1.994	+ 0.000
# 2 I-880 SB Ramps/Warren Ave	E	70.8	1.030	E	70.8	1.030	+ 0.000
# 3 I-880 NB Ramps/Warren Ave	E	75.2	1.174	E	75.2	1.174	+ 0.000
# 4 Kato Rd/Warren Ave	F	110.3	1.171	F	110.3	1.171	+ 0.000
# 5 Mission Falls Ct/Warren Ave	F	OVRFL	0.000	F	OVRFL	0.000	+ 0.000
# 6 Warm Springs Blvd/Warren Ave	D	37.7	0.843	D	37.7	0.843	+ 0.000
# 7 Warm Springs Blvd/Mission Fall	A	8.7	0.735	A	8.7	0.735	+ 0.000

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

****

Intersection #1 Warm Springs Blvd/Mission Blvd

```
*******************************************************************************
Cycle (sec):         100                  Critical Vol./Cap.(X):         1.994
Loss Time (sec):       0 (Y+R=4.0 sec)    Average Delay (sec/veh):       320.3
Optimal Cycle:       180                  Level Of Service:                  F
*******************************************************************************
Approach:      North Bound      South Bound       East Bound       West Bound
Movement:     L  -  T  -  R    L  -  T  -  R    L  -  T  -  R    L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:        Protected        Protected        Protected        Protected
Rights:           Include          Include          Include          Include
Min. Green:    14   14     0    15   13     0    14   15     0    15   15     0
Lanes:        2  0  2  0  1    2  0  2  0  1    2  0  3  0  1    2  0  3  0  1
------------|---------------||---------------||---------------||---------------|
Volume Module:
Base Vol:    1001 1036   475   695 1159  1733   962 2321   585   657 1536   265
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: 1001 1036   475   695 1159  1733   962 2321   585   657 1536   265
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: 1001 1036   475   695 1159  1733   962 2321   585   657 1536   265
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:  1001 1036   475   695 1159  1733   962 2321   585   657 1536   265
Reduct Vol:     0    0     0     0    0     0     0    0     0     0    0     0
Reduced Vol: 1001 1036   475   695 1159  1733   962 2321   585   657 1536   265
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: 1001 1036   475   695 1159  1733   962 2321   585   657 1536   265
------------|---------------||---------------||---------------||---------------|
Saturation Flow Module:
Sat/Lane:    1900 1900  1900  1900 1900  1900  1900 1900  1900  1900 1900  1900
Adjustment:  0.92 0.95  0.85  0.92 0.95  0.85  0.92 0.91  0.85  0.92 0.91  0.85
Lanes:       2.00 2.00  1.00  2.00 2.00  1.00  2.00 3.00  1.00  2.00 3.00  1.00
Final Sat.:  3502 3610  1615  3502 3610  1615  3502 5187  1615  3502 5187  1615
------------|---------------||---------------||---------------||---------------|
Capacity Analysis Module:
Vol/Sat:     0.29 0.29  0.29  0.20 0.32  1.07  0.27 0.45  0.36  0.19 0.30  0.16
Crit Moves:  ****                         ****        ****        ****
Green/Cycle: 0.14 0.38  0.38  0.26 0.50  0.50  0.17 0.21  0.21  0.15 0.19  0.19
Volume/Cap:  2.04 0.75  0.77  0.77 0.64  2.14  1.59 2.14  1.73  1.25 1.59  0.88
Uniform Del: 43.0 26.7  27.0  34.3 18.3  24.9  41.4 39.6  39.6  42.5 40.7  39.6
IncremntDel:475.9  2.3   5.8   4.0  0.8 517.9 273.5  517 342.3 127.9  271  24.6
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:  518.9 29.0  32.8  38.4 19.1 542.8 314.8  556 381.9 170.4  311  64.2
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: 518.9 29.0  32.8  38.4 19.1 542.8 314.8  556 381.9 170.4  311  64.2
LOS by Move:   F    C     C     D    B     F     F    F     F     F    F     E
HCM2kAvgQ:    49   16    14    12   14   165    39   82    49    21   44    11
*******************************************************************************
```

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

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

```
*******************************************************************************
Intersection #2 I-880 SB Ramps/Warren Ave
*******************************************************************************
Cycle (sec):         120                  Critical Vol./Cap.(X):         1.030
```

```
Loss Time (sec):      16 (Y+R=4.0 sec)  Average Delay (sec/veh):        70.8
Optimal Cycle:       180                Level Of Service:                   E
*******************************************************************************
Approach:      North Bound      South Bound       East Bound       West Bound
Movement:     L  -  T  -  R    L  -  T  -  R    L  -  T  -  R    L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:       Split Phase      Split Phase       Protected        Protected
Rights:           Include          Include          Include          Include
Min. Green:     0    6     0     0    6     0     4    8     0     4    8     0
Lanes:        1  0  1  1  0    1  1  0  0  1    2  0  1  1  0    1  0  1  1  1
------------|---------------||---------------||---------------||---------------|
Volume Module:
Base Vol:      39  426   395   647   15   101   606 1229    20    77 1030   183
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:   39  426   395   647   15   101   606 1229    20    77 1030   183
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:   39  426   395   647   15   101   606 1229    20    77 1030   183
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:    39  426   395   647   15   101   606 1229    20    77 1030   183
Reduct Vol:     0    0     0     0    0     0     0    0     0     0    0     0
Reduced Vol:   39  426   395   647   15   101   606 1229    20    77 1030   183
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:   39  426   395   647   15   101   606 1229    20    77 1030   183
------------|---------------||---------------||---------------||---------------|
Saturation Flow Module:
Sat/Lane:    1900 1900  1900  1900 1900  1900  1900 1900  1900  1900 1900  1900
Adjustment:  0.95 0.88  0.88  0.95 0.95  0.85  0.92 0.95  0.95  0.95 0.93  0.93
Lanes:       1.00 1.04  0.96  1.95 0.05  1.00  2.00 1.97  0.03  1.00 2.00  1.00
Final Sat.:  1805 1738  1612  3539   82  1615  3502 3545    58  1805 3527  1763
------------|---------------||---------------||---------------||---------------|
Capacity Analysis Module:
Vol/Sat:     0.02 0.25  0.25  0.18 0.18  0.06  0.17 0.35  0.35  0.04 0.29  0.10
Crit Moves:        ****             ****        ****                   ****
Green/Cycle: 0.24 0.24  0.24  0.18 0.18  0.18  0.17 0.40  0.40  0.05 0.28  0.28
Volume/Cap:  0.09 1.03  1.03  1.03 1.03  0.35  1.03 0.86  0.86  0.86 1.03  0.37
Uniform Del: 35.6 45.7  45.7  49.4 49.4  43.3  49.9 32.8  32.8  56.6 43.0  34.4
IncremntDel:  0.1 39.9  39.9  43.5 43.5   0.8  45.1  5.6   5.6  53.1 34.3   0.1
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:   35.7 85.6  85.6  92.9 92.9  44.1  95.0 38.4  38.4 109.7 77.3  34.4
User DelAdj: 1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
AdjDel/Veh:  35.7 85.6  85.6  92.9 92.9  44.1  95.0 38.4  38.4 109.7 77.3  34.4
LOS by Move:   D    F     F     F    F     D     F    D     D     F    E     C
HCM2kAvgQ:      1   23    23    18   18     3    17   25    25     5   27     6
*******************************************************************************
Note: Queue reported is the number of cars per lane.

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-------------------------------------------------------------------------------
                       Level Of Service Computation Report
            2000 HCM Operations Method (Future Volume Alternative)
*******************************************************************************
Intersection #3 I-880 NB Ramps/Warren Ave
*******************************************************************************
Cycle (sec):         100                Critical Vol./Cap.(X):         1.174
Loss Time (sec):       0 (Y+R=4.0 sec)  Average Delay (sec/veh):        75.2
Optimal Cycle:       180                Level Of Service:                   E
*******************************************************************************
```

```
Approach:      North Bound      South Bound       East Bound       West Bound
Movement:     L  -  T  -  R    L  -  T  -  R    L  -  T  -  R    L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:        Protected        Protected        Protected        Protected
Rights:           Include          Include          Include          Include
Min. Green:     0    0     0     0    0     0     0    0     0     0    0     0
Lanes:        1  1  0  1  0    0  0  0  0  0    0  0  2  0  1    1  0  2  0  0
------------|---------------||---------------||---------------||---------------|
Volume Module:
Base Vol:     185    1   197     0    0     0     0 3031   221   374 1166     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:  185    1   197     0    0     0     0 3031   221   374 1166     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:  185    1   197     0    0     0     0 3031   221   374 1166     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:   185    1   197     0    0     0     0 3031   221   374 1166     0
Reduct Vol:     0    0     0     0    0     0     0    0     0     0    0     0
Reduced Vol:  185    1   197     0    0     0     0 3031   221   374 1166     0
PCE Adj:     1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
MLF Adj:     1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
FinalVolume:  185    1   197     0    0     0     0 3031   221   374 1166     0
------------|---------------||---------------||---------------||---------------|
Saturation Flow Module:
Sat/Lane:    1900 1900  1900  1900 1900  1900  1900 1900  1900  1900 1900  1900
Adjustment:  0.81 0.81  0.81  1.00 1.00  1.00  1.00 0.95  0.85  0.95 0.95  1.00
Lanes:       1.99 0.01  1.00  0.00 0.00  0.00  0.00 2.00  1.00  1.00 2.00  0.00
Final Sat.:  3075   17  1546     0    0     0     0 3610  1615  1805 3610     0
------------|---------------||---------------||---------------||---------------|
Capacity Analysis Module:
Vol/Sat:     0.06 0.06  0.13  0.00 0.00  0.00  0.00 0.84  0.14  0.21 0.32  0.00
Crit Moves:             ****                        ****        ****
Green/Cycle: 0.11 0.11  0.11  0.00 0.00  0.00  0.00 0.72  0.72  0.18 0.89  0.00
Volume/Cap:  0.55 0.55  1.17  0.00 0.00  0.00  0.00 1.17  0.19  1.17 0.36  0.00
Uniform Del: 42.3 42.3  44.6   0.0  0.0   0.0   0.0 14.2   4.7  41.2  0.9   0.0
IncremntDel:  1.0  1.0 105.9   0.0  0.0   0.0   0.0 82.9   0.1 106.5  0.1   0.0
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  0.00 0.00  0.00  0.00 1.00  1.00  1.00 1.00  0.00
Delay/Veh:   43.3 43.3 150.5   0.0  0.0   0.0   0.0 97.1   4.8 147.6  0.9   0.0
User DelAdj: 1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
AdjDel/Veh:  43.3 43.3 150.5   0.0  0.0   0.0   0.0 97.1   4.8 147.6  0.9   0.0
LOS by Move:   D    D     F     A    A     A     A    F     A     F    A     A
HCM2kAvgQ:     4    4    13     0    0     0     0   80     2    22    3     0
*******************************************************************************
Note: Queue reported is the number of cars per lane.

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-------------------------------------------------------------------------------
                      Level Of Service Computation Report
            2000 HCM Operations Method (Future Volume Alternative)
*******************************************************************************
Intersection #4 Kato Rd/Warren Ave
*******************************************************************************
Cycle (sec):         124                Critical Vol./Cap.(X):         1.171
Loss Time (sec):       0 (Y+R=4.0 sec)  Average Delay (sec/veh):       110.3
Optimal Cycle:       180                Level Of Service:                  F
*******************************************************************************
Approach:      North Bound      South Bound       East Bound       West Bound
Movement:     L  -  T  -  R    L  -  T  -  R    L  -  T  -  R    L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
```

```
Control:       Split Phase      Split Phase       Protected        Protected
Rights:           Include          Include          Include          Include
Min. Green:     6    0     0     0    6     0     4    8     0     4    8     0
Lanes:        1  0  1  0  1    1  1  0  0  1    1  0  1  1  0    1  0  1  1  0
------------|---------------||---------------||---------------||---------------|
Volume Module:
Base Vol:     443   50   429     6   48     5    46 2661   120   190  596     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:  443   50   429     6   48     5    46 2661   120   190  596     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:  443   50   429     6   48     5    46 2661   120   190  596     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:   443   50   429     6   48     5    46 2661   120   190  596     6
Reduct Vol:     0    0     0     0    0     0     0    0     0     0    0     0
Reduced Vol:  443   50   429     6   48     5    46 2661   120   190  596     6
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:  443   50   429     6   48     5    46 2661   120   190  596     6
------------|---------------||---------------||---------------||---------------|
Saturation Flow Module:
Sat/Lane:    1900 1900  1900  1900 1900  1900  1900 1900  1900  1900 1900  1900
Adjustment:  0.95 1.00  0.85  0.99 0.99  0.85  0.95 0.94  0.94  0.95 0.95  0.95
Lanes:       1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.91  0.09  1.00 1.98  0.02
Final Sat.:  1805 1900  1615  1889 1889  1615  1805 3434   155  1805 3570    36
------------|---------------||---------------||---------------||---------------|
Capacity Analysis Module:
Vol/Sat:     0.25 0.03  0.27  0.00 0.03  0.00  0.03 0.78  0.78  0.11 0.17  0.17
Crit Moves:              ****       ****              ****        ****
Green/Cycle: 0.22 0.22  0.22  0.05 0.05  0.05  0.12 0.64  0.64  0.09 0.61  0.61
Volume/Cap:  1.11 0.12  1.20  0.07 0.53  0.06  0.22 1.20  1.20  1.20 0.27  0.27
Uniform Del: 48.3 38.7  48.3  56.3 57.6  56.3  49.4 22.1  22.1  56.6 11.2  11.2
IncremntDel: 79.2  0.1 115.6   0.0  4.9   0.3   0.5 96.3  96.3 137.0  0.1   0.1
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:  127.6 38.8 163.9  56.4 62.5  56.7  50.0  118 118.4 193.6 11.2  11.2
User DelAdj: 1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
AdjDel/Veh: 127.6 38.8 163.9  56.4 62.5  56.7  50.0  118 118.4 193.6 11.2  11.2
LOS by Move:   F    D     F     E    E     E     D    F     F     F    B     B
HCM2kAvgQ:    26    2    28     0    3     0     2   87    87    14    5     5
*******************************************************************************
Note: Queue reported is the number of cars per lane.

  Traffix 7.9.0415 (c) 2007 Dowling Assoc. Licensed to FEHR & PEERS,  LAFAYETTE♀
Cumulative No Project PM   Fri May 29, 2015 15:03:50                 Page 7-1
-------------------------------------------------------------------------------
-------------------------------------------------------------------------------
                      Level Of Service Computation Report
           2000 HCM Unsignalized Method (Future Volume Alternative)
*******************************************************************************
Intersection #5 Mission Falls Ct/Warren Ave
*******************************************************************************
Average Delay (sec/veh): OVERFLOW       Worst Case Level Of Service: F[xxxxx]
*******************************************************************************
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
Rights:           Include          Include          Include          Include
Lanes:        0  1  0  1  0    0  0  1! 0  0    1  0  1  1  0    1  0  1  1  0
------------|---------------||---------------||---------------||---------------|
Volume Module:
```

```
Base Vol:      213    0    62     6    5     6    11 3663    67    32  624     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:   213    0    62     6    5     6    11 3663    67    32  624     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:   213    0    62     6    5     6    11 3663    67    32  624     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:    213    0    62     6    5     6    11 3663    67    32  624     0
Reduct Vol:      0    0     0     0    0     0     0    0     0     0    0     0
FinalVolume:   213    0    62     6    5     6    11 3663    67    32  624     0
------------|---------------||---------------||---------------||---------------|
Critical Gap Module:
Critical Gp:   7.5  6.5   6.9   7.5  6.5   6.9   4.1 xxxx xxxxx   4.1 xxxx xxxxx
FollowUpTim:   3.5  4.0   3.3   3.5  4.0   3.3   2.2 xxxx xxxxx   2.2 xxxx xxxxx
------------|---------------||---------------||---------------||---------------|
Capacity Module:
Cnflict Vol: 4097 4407  1865  2542 4440   312   624 xxxx xxxxx  3730 xxxx xxxxx
Potent Cap.:    1    2    64    14    1   690   967 xxxx xxxxx    59 xxxx xxxxx
Move Cap.:      0    1    64     0    1   690   967 xxxx xxxxx    59 xxxx xxxxx
Volume/Cap:  xxxx 0.00  0.97 26.55 7.43  0.01  0.01 xxxx  xxxx  0.54 xxxx  xxxx
------------|---------------||---------------||---------------||---------------|
Level Of Service Module:
2Way95thQ:   xxxx xxxx xxxxx  xxxx xxxx xxxxx   0.0 xxxx xxxxx   2.2 xxxx xxxxx
Control Del:xxxxx xxxx xxxxx xxxxx xxxx xxxxx   8.8 xxxx xxxxx 121.4 xxxx xxxxx
LOS by Move:   *    *     *     *    *     *     A    *     *     F    *     *
Movement:     LT - LTR - RT    LT - LTR - RT    LT - LTR - RT    LT - LTR - RT
Shared Cap.:    0 xxxx    64  xxxx    1 xxxxx  xxxx xxxx xxxxx  xxxx xxxx xxxxx
SharedQueue:xxxxx xxxx   4.7 xxxxx  3.8 xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx
Shrd ConDel:xxxxx xxxx 212.2 xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx
Shared LOS:    *    *     F     *    F     *     *    *     *     *    *     *
ApproachDel:    xxxxxx           xxxxxx           xxxxxx           xxxxxx
ApproachLOS:        F                F                *                *
*******************************************************************************
Note: Queue reported is the number of cars per lane.
*******************************************************************************
```

```
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Cumulative No Project PM   Fri May 29, 2015 15:03:50                 Page 8-1
-------------------------------------------------------------------------------
-------------------------------------------------------------------------------
                      Level Of Service Computation Report
             2000 HCM Operations Method (Future Volume Alternative)
*******************************************************************************
Intersection #6 Warm Springs Blvd/Warren Ave
*******************************************************************************
Cycle (sec):         120                Critical Vol./Cap.(X):         0.843
Loss Time (sec):       0 (Y+R=4.0 sec)  Average Delay (sec/veh):        37.7
Optimal Cycle:       145                Level Of Service:                 D
*******************************************************************************
Approach:      North Bound      South Bound       East Bound       West Bound
Movement:     L  -  T  -  R    L  -  T  -  R    L  -  T  -  R    L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:        Protected        Protected        Protected        Protected
Rights:           Include          Include          Include          Include
Min. Green:     4   10     0    4   10     0    4   10     0    4   10     0
Lanes:        2  0  1  1  0    2  0  2  0  1    2  0  2  0  1    2  0  2  0  1
------------|---------------||---------------||---------------||---------------|
Volume Module:
```

```
Base Vol:      151 1140   184   326 1276   349   894  723   475   283   92    95
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:   151 1140   184   326 1276   349   894  723   475   283   92    95
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:   151 1140   184   326 1276   349   894  723   475   283   92    95
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:    151 1140   184   326 1276   349   894  723   475   283   92    95
Reduct Vol:      0    0     0     0    0     0     0    0     0     0    0     0
Reduced Vol:   151 1140   184   326 1276   349   894  723   475   283   92    95
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:   151 1140   184   326 1276   349   894  723   475   283   92    95
------------|---------------||---------------||---------------||---------------|
Saturation Flow Module:
Sat/Lane:     1900 1900  1900  1900 1900  1900  1900 1900  1900  1900 1900  1900
Adjustment:   0.92 0.93  0.93  0.92 0.95  0.85  0.92 0.95  0.85  0.92 0.95  0.85
Lanes:        2.00 1.72  0.28  2.00 2.00  1.00  2.00 2.00  1.00  2.00 2.00  1.00
Final Sat.:   3502 3043   491  3502 3610  1615  3502 3610  1615  3502 3610  1615
------------|---------------||---------------||---------------||---------------|
Capacity Analysis Module:
Vol/Sat:      0.04 0.37  0.37  0.09 0.35  0.22  0.26 0.20  0.29  0.08 0.03  0.06
Crit Moves:        ****        ****                       ****  ****
Green/Cycle:  0.06 0.44  0.44  0.11 0.49  0.49  0.34 0.35  0.35  0.10 0.11  0.11
Volume/Cap:   0.71 0.84  0.84  0.84 0.71  0.44  0.76 0.57  0.84  0.84 0.23  0.54
Uniform Del:  55.4 29.6  29.6  52.3 23.7  19.5  35.6 31.8  36.0  53.4 48.8  50.6
IncremntDel:  11.0  4.3   4.3  15.3  1.4   0.4   3.0  0.6  11.1  17.3  0.3   3.3
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:    66.4 33.9  33.9  67.7 25.1  19.9  38.6 32.4  47.1  70.6 49.1  53.8
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:   66.4 33.9  33.9  67.7 25.1  19.9  38.6 32.4  47.1  70.6 49.1  53.8
LOS by Move:    E    C     C     E    C     B     D    C     D     E    D     D
HCM2kAvgQ:      4   25    25     9   20     8    16   12    19     8    2     4
*******************************************************************************
Note: Queue reported is the number of cars per lane.
```



```
-------------------------------------------------------------------------------
-------------------------------------------------------------------------------
                    Level Of Service Computation Report
          2000 HCM Operations Method (Future Volume Alternative)
*******************************************************************************
Intersection #7 Warm Springs Blvd/Mission Falls Ln/Hackamore Ln
*******************************************************************************
Cycle (sec):         100                Critical Vol./Cap.(X):         0.735
Loss Time (sec):       0 (Y+R=4.0 sec)  Average Delay (sec/veh):         8.7
Optimal Cycle:        86                Level Of Service:                  A
*******************************************************************************
Approach:      North Bound      South Bound       East Bound       West Bound
Movement:     L  -  T  -  R    L  -  T  -  R    L  -  T  -  R    L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:        Protected        Protected        Protected        Protected
Rights:           Include          Include          Include          Include
Min. Green:     0    0     0     0    0     0     0    0     0     0    0     0
Lanes:        1  0  1  1  0    1  0  1  1  0    0  1  0  0  1    0  0  1! 0  0
------------|---------------||---------------||---------------||---------------|
Volume Module:
Base Vol:      27 1287    38    66 2204    17    64   12   141     9    4    16
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:   27 1287    38    66 2204    17    64   12   141     9    4    16
```

```
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:    27 1287    38    66 2204    17    64   12   141     9    4    16
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:     27 1287    38    66 2204    17    64   12   141     9    4    16
Reduct Vol:      0    0     0     0    0     0     0    0     0     0    0     0
Reduced Vol:    27 1287    38    66 2204    17    64   12   141     9    4    16
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:    27 1287    38    66 2204    17    64   12   141     9    4    16
------------|---------------||---------------||---------------||---------------|
Saturation Flow Module:
Sat/Lane:     1900 1900  1900  1900 1900  1900  1900 1900  1900  1900 1900  1900
Adjustment:   0.95 0.95  0.95  0.95 0.95  0.95  0.96 0.96  0.85  0.91 0.91  0.91
Lanes:        1.00 1.94  0.06  1.00 1.98  0.02  0.84 0.16  1.00  0.31 0.14  0.55
Final Sat.:   1805 3492   103  1805 3579    28  1536  288  1615   537  239   955
------------|---------------||---------------||---------------||---------------|
Capacity Analysis Module:
Vol/Sat:      0.01 0.37  0.37  0.04 0.62  0.62  0.04 0.04  0.09  0.02 0.02  0.02
Crit Moves:   ****                 ****                   ****  ****
Green/Cycle:  0.02 0.78  0.78  0.08 0.84  0.84  0.10 0.12  0.12  0.02 0.04  0.04
Volume/Cap:   0.73 0.47  0.47  0.47 0.73  0.73  0.41 0.35  0.73  0.73 0.41  0.41
Uniform Del:  48.7  3.8   3.8  44.2  3.4   3.4  42.2 40.5  42.5  48.6 46.8  46.8
IncremntDel:  54.8  0.1   0.1   2.5  1.0   1.0   1.5  1.0  13.7  51.9  3.9   3.9
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:   103.5  3.9   3.9  46.7  4.4   4.4  43.7 41.5  56.3 100.4 50.7  50.7
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:  103.5  3.9   3.9  46.7  4.4   4.4  43.7 41.5  56.3 100.4 50.7  50.7
LOS by Move:    F    A     A     D    A     A     D    D     E     F    D     D
HCM2kAvgQ:      2    8     8     3   16    16     3    2     6     2    1     1
*******************************************************************************
Note: Queue reported is the number of cars per lane.

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```

Scenario Report

Scenario:	Cumulative plus Project AM
Command:	CUM+P AM
Volume:	CUM AM
Geometry:	CUM AM
Impact Fee:	Default Impact Fee
Trip Generation:	Project AM
Trip Distribution:	Project
Paths:	Default Path
Routes:	Default Route
Configuration:	Default Configuration

CUM+P AM.txt
Impact Analysis Report
Level Of Service

Intersection	Base LOS	Base Del/ Veh	Base V/ C	Future LOS	Future Del/ Veh	Future V/ C	Change in
# 1 Warm Springs Blvd/Mission Blvd	F	312.1	1.919	F	304.8	1.919	-7.296 D/V
# 2 I-880 SB Ramps/Warren Ave	C	35.0	0.790	C	31.9	0.754	-3.090 D/V
# 3 I-880 NB Ramps/Warren Ave	C	24.9	0.796	C	24.8	0.797	-0.125 D/V
# 4 Kato Rd/Warren Ave	C	22.3	0.556	C	22.3	0.558	+ 0.071 D/V
# 5 Mission Falls Ct/Warren Ave	F	265.1	0.000	F	127.2	0.000	-137.895 D/
# 6 Warm Springs Blvd/Warren Ave	D	45.6	0.935	D	45.2	0.936	-0.387 D/V
# 7 Warm Springs Blvd/Mission Fall	B	17.5	0.878	B	11.9	0.791	-5.603 D/V

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

****

Intersection #1 Warm Springs Blvd/Mission Blvd

```
*******************************************************************************
Cycle (sec):         100                  Critical Vol./Cap.(X):         1.919
Loss Time (sec):       0 (Y+R=4.0 sec)    Average Delay (sec/veh):       304.8
Optimal Cycle:       180                  Level Of Service:                  F
*******************************************************************************
Approach:      North Bound      South Bound       East Bound       West Bound
Movement:     L  -  T  -  R    L  -  T  -  R    L  -  T  -  R    L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:        Protected        Protected        Protected        Protected
Rights:           Include          Include          Include          Include
Min. Green:    14   14     0    15   13     0    14   15     0    15   15     0
Lanes:        2  0  2  0  1    2  0  2  0  1    2  0  3  0  1    2  0  3  0  1
------------|---------------||---------------||---------------||---------------|
Volume Module:
Base Vol:    1011 1360   171   266  620  1405  1144 1638   218  1064 2249   481
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: 1011 1360   171   266  620  1405  1144 1638   218  1064 2249   481
Added Vol:      0    1     4     0  -23     0     0    0     0  -108    0     0
PasserByVol:    0    0     0     0    0     0     0    0     0     0    0     0
Initial Fut: 1011 1361   175   266  597  1405  1144 1638   218   956 2249   481
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:  1011 1361   175   266  597  1405  1144 1638   218   956 2249   481
Reduct Vol:     0    0     0     0    0     0     0    0     0     0    0     0
Reduced Vol: 1011 1361   175   266  597  1405  1144 1638   218   956 2249   481
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: 1011 1361   175   266  597  1405  1144 1638   218   956 2249   481
------------|---------------||---------------||---------------||---------------|
Saturation Flow Module:
Sat/Lane:    1900 1900  1900  1900 1900  1900  1900 1900  1900  1900 1900  1900
Adjustment:  0.92 0.95  0.85  0.92 0.95  0.85  0.92 0.91  0.85  0.92 0.91  0.85
Lanes:       2.00 2.00  1.00  2.00 2.00  1.00  2.00 3.00  1.00  2.00 3.00  1.00
Final Sat.:  3502 3610  1615  3502 3610  1615  3502 5187  1615  3502 5187  1615
------------|---------------||---------------||---------------||---------------|
Capacity Analysis Module:
Vol/Sat:     0.29 0.38  0.11  0.08 0.17  0.87  0.33 0.32  0.13  0.27 0.43  0.30
Crit Moves:  ****                         ****  ****                  ****
Green/Cycle: 0.15 0.43  0.43  0.17 0.45  0.45  0.17 0.21  0.21  0.18 0.23  0.23
Volume/Cap:  1.92 0.87  0.25  0.44 0.36  1.92  1.92 1.49  0.64  1.49 1.92  1.32
Uniform Del: 42.5 25.9  18.1  37.1 17.9  27.3  41.5 39.4  35.8  40.8 38.7  38.7
IncremntDel:420.6  5.7   0.2   0.5  0.1 418.6 419.7  224   3.9 227.0  417 161.3
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:  463.0 31.6  18.3  37.6 18.0 445.9 461.2  263  39.7 267.8  455 200.0
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: 463.0 31.6  18.3  37.6 18.0 445.9 461.2  263  39.7 267.8  455 200.0
LOS by Move:   F    C     B     D    B     F     F    F     D     F    F     F
HCM2kAvgQ:    48   23     3     4    6   125    54   44     7    37   74    31
*******************************************************************************
Note: Queue reported is the number of cars per lane.

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-------------------------------------------------------------------------------
-------------------------------------------------------------------------------
                       Level Of Service Computation Report
            2000 HCM Operations Method (Future Volume Alternative)
*******************************************************************************
Intersection #2 I-880 SB Ramps/Warren Ave
*******************************************************************************
Cycle (sec):         120                  Critical Vol./Cap.(X):         0.754
```

```
Loss Time (sec):      16 (Y+R=4.0 sec)  Average Delay (sec/veh):        31.9
Optimal Cycle:        82                Level Of Service:                  C
*******************************************************************************
Approach:      North Bound      South Bound       East Bound       West Bound
Movement:     L  -  T  -  R    L  -  T  -  R    L  -  T  -  R    L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:       Split Phase      Split Phase       Protected        Protected
Rights:           Include          Include          Include          Include
Min. Green:     0    6     0     0    6     0     4    8     0     4    8     0
Lanes:        1  0  1  1  0    1  1  0  0  1    2  0  1  1  0    1  0  1  1  1
------------|---------------||---------------||---------------||---------------|
Volume Module:
Base Vol:      15   32    51   304  143   108   242  480    57   708 1578   411
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:   15   32    51   304  143   108   242  480    57   708 1578   411
Added Vol:      0    0     0  -113    0     0     0    0     0     0    0     3
PasserByVol:    0    0     0     0    0     0     0    0     0     0    0     0
Initial Fut:   15   32    51   191  143   108   242  480    57   708 1578   414
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:    15   32    51   191  143   108   242  480    57   708 1578   414
Reduct Vol:     0    0     0     0    0     0     0    0     0     0    0     0
Reduced Vol:   15   32    51   191  143   108   242  480    57   708 1578   414
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:   15   32    51   191  143   108   242  480    57   708 1578   414
------------|---------------||---------------||---------------||---------------|
Saturation Flow Module:
Sat/Lane:    1900 1900  1900  1900 1900  1900  1900 1900  1900  1900 1900  1900
Adjustment:  0.95 0.86  0.86  0.97 0.97  0.85  0.92 0.93  0.93  0.95 0.92  0.92
Lanes:       1.00 1.00  1.00  1.14 0.86  1.00  2.00 1.79  0.21  1.00 2.00  1.00
Final Sat.:  1805 1639  1639  2112 1581  1615  3502 3175   377  1805 3498  1749
------------|---------------||---------------||---------------||---------------|
Capacity Analysis Module:
Vol/Sat:     0.01 0.02  0.03  0.09 0.09  0.07  0.07 0.15  0.15  0.39 0.45  0.24
Crit Moves:        ****        ****                 ****        ****
Green/Cycle: 0.05 0.05  0.05  0.12 0.12  0.12  0.09 0.19  0.19  0.51 0.61  0.61
Volume/Cap:  0.17 0.39  0.62  0.78 0.78  0.57  0.74 0.78  0.78  0.78 0.74  0.39
Uniform Del: 54.6 55.2  55.9  51.5 51.5  50.2  53.0 45.8  45.8  24.2 16.9  12.1
IncremntDel:  0.9  1.2   8.8   8.6  8.6   4.3   8.9  5.5   5.5   4.2  1.2   0.0
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:   55.5 56.4  64.7  60.1 60.1  54.5  61.9 51.4  51.4  28.4 18.0  12.2
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:  55.5 56.4  64.7  60.1 60.1  54.5  61.9 51.4  51.4  28.4 18.0  12.2
LOS by Move:   E    E     E     E    E     D     E    D     D     C    B     B
HCM2kAvgQ:      1    2     3     8    8     5     6   12    12    22   23     8
*******************************************************************************
Note: Queue reported is the number of cars per lane.

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-------------------------------------------------------------------------------
                       Level Of Service Computation Report
            2000 HCM Operations Method (Future Volume Alternative)
*******************************************************************************
Intersection #3 I-880 NB Ramps/Warren Ave
*******************************************************************************
Cycle (sec):           0                Critical Vol./Cap.(X):          0.797
Loss Time (sec):       0 (Y+R=4.0 sec)  Average Delay (sec/veh):         24.8
Optimal Cycle:       112                Level Of Service:                  C
*******************************************************************************
```

```
Approach:      North Bound      South Bound       East Bound       West Bound
Movement:     L  -  T  -  R    L  -  T  -  R    L  -  T  -  R    L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:        Protected        Protected        Protected        Protected
Rights:           Include          Include          Include          Include
Min. Green:     0    0     0     0    0     0     0    0     0     0    0     0
Lanes:        2  0  0  0  1    0  0  0  0  0    0  0  2  0  1    1  0  2  0  0
------------|---------------||---------------||---------------||---------------|
Volume Module:
Base Vol:    1041    0   256     0    0     0     0 1036    51   186 1800     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: 1041    0   256     0    0     0     0 1036    51   186 1800     0
Added Vol:      0    0   -91     0    0     0     0 -113     0     4    3     0
PasserByVol:    0    0     0     0    0     0     0    0     0     0    0     0
Initial Fut: 1041    0   165     0    0     0     0  923    51   190 1803     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:  1041    0   165     0    0     0     0  923    51   190 1803     0
Reduct Vol:     0    0     0     0    0     0     0    0     0     0    0     0
Reduced Vol: 1041    0   165     0    0     0     0  923    51   190 1803     0
PCE Adj:     1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
MLF Adj:     1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
FinalVolume: 1041    0   165     0    0     0     0  923    51   190 1803     0
------------|---------------||---------------||---------------||---------------|
Saturation Flow Module:
Sat/Lane:    1900 1900  1900  1900 1900  1900  1900 1900  1900  1900 1900  1900
Adjustment:  0.92 1.00  0.85  1.00 1.00  1.00  1.00 0.95  0.85  0.95 0.95  1.00
Lanes:       2.00 0.00  1.00  0.00 0.00  0.00  0.00 2.00  1.00  1.00 2.00  0.00
Final Sat.:  3502    0  1615     0    0     0     0 3610  1615  1805 3610     0
------------|---------------||---------------||---------------||---------------|
Capacity Analysis Module:
Vol/Sat:     0.30 0.00  0.10  0.00 0.00  0.00  0.00 0.26  0.03  0.11 0.50  0.00
Crit Moves:  ****                               ****                    ****
Green/Cycle: 0.37 0.00  0.37  0.00 0.00  0.00  0.00 0.44  0.44  0.18 0.63  0.00
Volume/Cap:  0.80 0.00  0.27  0.00 0.00  0.00  0.00 0.58  0.07  0.58 0.80  0.00
Uniform Del: 31.3  0.0  24.5   0.0  0.0   0.0   0.0 23.3  17.9  41.8 15.6   0.0
IncremntDel:  3.5  0.0   0.2   0.0  0.0   0.0   0.0  0.5   0.0   2.5  2.1   0.0
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 0.00  1.00  0.00 0.00  0.00  0.00 1.00  1.00  1.00 1.00  0.00
Delay/Veh:   34.8  0.0  24.8   0.0  0.0   0.0   0.0 23.8  17.9  44.3 17.6   0.0
User DelAdj: 1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
AdjDel/Veh:  34.8  0.0  24.8   0.0  0.0   0.0   0.0 23.8  17.9  44.3 17.6   0.0
LOS by Move:   C    A     C     A    A     A     A    C     B     D    B     A
HCM2kAvgQ:    18    0     4     0    0     0     0   13     1     7   26     0
*******************************************************************************
Note: Queue reported is the number of cars per lane.

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-------------------------------------------------------------------------------
                      Level Of Service Computation Report
            2000 HCM Operations Method (Future Volume Alternative)
*******************************************************************************
Intersection #4 Kato Rd/Warren Ave
*******************************************************************************
Cycle (sec):         124                Critical Vol./Cap.(X):         0.558
Loss Time (sec):       0 (Y+R=4.0 sec)  Average Delay (sec/veh):        22.3
Optimal Cycle:        52                Level Of Service:                  C
*******************************************************************************
Approach:      North Bound      South Bound       East Bound       West Bound
Movement:     L  -  T  -  R    L  -  T  -  R    L  -  T  -  R    L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
```

```
Control:       Split Phase      Split Phase       Protected        Protected
Rights:           Include          Include          Include          Include
Min. Green:     6    0     0     0    6     0     4    8     0     4    8     0
Lanes:        1  0  1  0  1    1  1  0  0  1    1  0  1  1  0    1  0  1  1  0
------------|---------------||---------------||---------------||---------------|
Volume Module:
Base Vol:     189   52    68   133   35    42     4  517   298   225 1453     3
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:  189   52    68   133   35    42     4  517   298   225 1453     3
Added Vol:      0    0     0     0    0     0     0 -204     0     0    7     0
PasserByVol:    0    0     0     0    0     0     0    0     0     0    0     0
Initial Fut:  189   52    68   133   35    42     4  313   298   225 1460     3
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:   189   52    68   133   35    42     4  313   298   225 1460     3
Reduct Vol:     0    0     0     0    0     0     0    0     0     0    0     0
Reduced Vol:  189   52    68   133   35    42     4  313   298   225 1460     3
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:  189   52    68   133   35    42     4  313   298   225 1460     3
------------|---------------||---------------||---------------||---------------|
Saturation Flow Module:
Sat/Lane:    1900 1900  1900  1900 1900  1900  1900 1900  1900  1900 1900  1900
Adjustment:  0.95 1.00  0.85  0.96 0.96  0.85  0.95 0.88  0.88  0.95 0.95  0.95
Lanes:       1.00 1.00  1.00  1.58 0.42  1.00  1.00 1.02  0.98  1.00 1.99  0.01
Final Sat.:  1805 1900  1615  2894  762  1615  1805 1714  1632  1805 3603     7
------------|---------------||---------------||---------------||---------------|
Capacity Analysis Module:
Vol/Sat:     0.10 0.03  0.04  0.05 0.05  0.03  0.00 0.18  0.18  0.12 0.41  0.41
Crit Moves:  ****                 ****        ****                   ****
Green/Cycle: 0.18 0.18  0.18  0.08 0.08  0.08  0.03 0.44  0.44  0.30 0.71  0.71
Volume/Cap:  0.57 0.15  0.23  0.57 0.57  0.33  0.07 0.42  0.42  0.42 0.57  0.57
Uniform Del: 46.3 42.6  43.3  55.0 55.0  53.9  58.2 23.9  23.9  34.8  9.0   9.0
IncremntDel:  2.5  0.2   0.4   2.8  2.8   1.5   0.5  0.2   0.2   0.5  0.3   0.3
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:   48.8 42.8  43.7  57.8 57.8  55.3  58.7 24.1  24.1  35.3  9.4   9.4
User DelAdj: 1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
AdjDel/Veh:  48.8 42.8  43.7  57.8 57.8  55.3  58.7 24.1  24.1  35.3  9.4   9.4
LOS by Move:   D    D     D     E    E     E     E    C     C     D    A     A
HCM2kAvgQ:     7    2     2     4    4     2     0    8     8     7   14    14
*******************************************************************************
Note: Queue reported is the number of cars per lane.

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-------------------------------------------------------------------------------
                      Level Of Service Computation Report
           2000 HCM Unsignalized Method (Future Volume Alternative)
*******************************************************************************
Intersection #5 Mission Falls Ct/Warren Ave
*******************************************************************************
Average Delay (sec/veh):      5.3       Worst Case Level Of Service: F[127.2]
*******************************************************************************
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
Rights:           Include          Include          Include          Include
Lanes:        0  1  0  1  0    0  0  0  0  1    1  0  1  1  0    1  0  1  1  0
------------|---------------||---------------||---------------||---------------|
Volume Module:
```

```
Base Vol:       69    4    10     0    0     2    23  442   229    73 1706    12
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:    69    4    10     0    0     2    23  442   229    73 1706    12
Added Vol:       7    0     2     0    0     0     0    0  -204   -57    0     0
PasserByVol:     0    0     0     0    0     0     0    0     0     0    0     0
Initial Fut:    76    4    12     0    0     2    23  442    25    16 1706    12
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:     76    4    12     0    0     2    23  442    25    16 1706    12
Reduct Vol:      0    0     0     0    0     0     0    0     0     0    0     0
FinalVolume:    76    4    12     0    0     2    23  442    25    16 1706    12
------------|---------------||---------------||---------------||---------------|
Critical Gap Module:
Critical Gp:   7.5  6.5   6.9 xxxxx xxxx   6.9   4.1 xxxx xxxxx   4.1 xxxx xxxxx
FollowUpTim:   3.5  4.0   3.3 xxxxx xxxx   3.3   2.2 xxxx xxxxx   2.2 xxxx xxxxx
------------|---------------||---------------||---------------||---------------|
Capacity Module:
Cnflict Vol: 1386 2251   234  xxxx xxxx   859  1718 xxxx xxxxx   467 xxxx xxxxx
Potent Cap.:  104   42   775  xxxx xxxx   304   374 xxxx xxxxx  1105 xxxx xxxxx
Move Cap.:     98   39   775  xxxx xxxx   304   374 xxxx xxxxx  1105 xxxx xxxxx
Volume/Cap:  0.78 0.10  0.02  xxxx xxxx  0.01  0.06 xxxx  xxxx  0.01 xxxx  xxxx
------------|---------------||---------------||---------------||---------------|
Level Of Service Module:
2Way95thQ:   xxxx xxxx xxxxx  xxxx xxxx   0.0   0.2 xxxx xxxxx   0.0 xxxx xxxxx
Control Del:xxxxx xxxx xxxxx xxxxx xxxx  16.9  15.3 xxxx xxxxx   8.3 xxxx xxxxx
LOS by Move:   *    *     *     *    *     C     C    *     *     A    *     *
Movement:     LT - LTR - RT    LT - LTR - RT    LT - LTR - RT    LT - LTR - RT
Shared Cap.:   91 xxxx   135  xxxx xxxx xxxxx  xxxx xxxx xxxxx  xxxx xxxx xxxxx
SharedQueue:  4.8 xxxx   0.4 xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx
Shrd ConDel:145.7 xxxx  35.1 xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx
Shared LOS:    F    *     E     *    *     *     *    *     *     *    *     *
ApproachDel:     127.2             16.9           xxxxxx           xxxxxx
ApproachLOS:        F                C              *                *
*******************************************************************************
Note: Queue reported is the number of cars per lane.
*******************************************************************************
```



```
-------------------------------------------------------------------------------
-------------------------------------------------------------------------------
                     Level Of Service Computation Report
            2000 HCM Operations Method (Future Volume Alternative)
*******************************************************************************
Intersection #6 Warm Springs Blvd/Warren Ave
*******************************************************************************
Cycle (sec):         120                Critical Vol./Cap.(X):         0.936
Loss Time (sec):       0 (Y+R=4.0 sec)  Average Delay (sec/veh):        45.2
Optimal Cycle:       180                Level Of Service:                 D
*******************************************************************************
Approach:      North Bound      South Bound       East Bound       West Bound
Movement:     L  -  T  -  R    L  -  T  -  R    L  -  T  -  R    L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:        Protected        Protected        Protected        Protected
Rights:           Include          Include          Include          Include
Min. Green:     4   10     0     4   10     0     4   10     0     4   10     0
Lanes:        2  0  1  1  0    2  0  2  0  1    2  0  2  0  1    2  0  2  0  1
------------|---------------||---------------||---------------||---------------|
Volume Module:
```

```
Base Vol:     385 1562   104    42  744   525   396   38   169   589  444   556
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:  385 1562   104    42  744   525   396   38   169   589  444   556
Added Vol:      0    3     0     0  -74   -57     2    0     0     0    0     0
PasserByVol:    0    0     0     0    0     0     0    0     0     0    0     0
Initial Fut:  385 1565   104    42  670   468   398   38   169   589  444   556
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:   385 1565   104    42  670   468   398   38   169   589  444   556
Reduct Vol:     0    0     0     0    0     0     0    0     0     0    0     0
Reduced Vol:  385 1565   104    42  670   468   398   38   169   589  444   556
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:  385 1565   104    42  670   468   398   38   169   589  444   556
------------|---------------||---------------||---------------||---------------|
Saturation Flow Module:
Sat/Lane:    1900 1900  1900  1900 1900  1900  1900 1900  1900  1900 1900  1900
Adjustment:  0.92 0.94  0.94  0.92 0.95  0.85  0.92 0.95  0.85  0.92 0.95  0.85
Lanes:       2.00 1.88  0.12  2.00 2.00  1.00  2.00 2.00  1.00  2.00 2.00  1.00
Final Sat.:  3502 3355   223  3502 3610  1615  3502 3610  1615  3502 3610  1615
------------|---------------||---------------||---------------||---------------|
Capacity Analysis Module:
Vol/Sat:     0.11 0.47  0.47  0.01 0.19  0.29  0.11 0.01  0.10  0.17 0.12  0.34
Crit Moves:       ****        ****              ****                       ****
Green/Cycle: 0.14 0.49  0.49  0.03 0.38  0.38  0.12 0.18  0.18  0.30 0.36  0.36
Volume/Cap:  0.77 0.96  0.96  0.36 0.49  0.77  0.96 0.06  0.57  0.57 0.34  0.96
Uniform Del: 49.5 29.5  29.5  56.7 28.5  32.7  52.6 40.4  44.7  35.8 28.0  37.5
IncremntDel:  7.0 12.7  12.7   1.9  0.3   5.8  32.9  0.0   2.6   0.8  0.2  26.7
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:   56.5 42.2  42.2  58.6 28.8  38.5  85.5 40.4  47.3  36.6 28.2  64.2
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:  56.5 42.2  42.2  58.6 28.8  38.5  85.5 40.4  47.3  36.6 28.2  64.2
LOS by Move:   E    D     D     E    C     D     F    D     D     D    C     E
HCM2kAvgQ:      9   36    36     1   10    17    11    1     6    10    6    25
*******************************************************************************
Note: Queue reported is the number of cars per lane.
```



```
-------------------------------------------------------------------------------
-------------------------------------------------------------------------------
                     Level Of Service Computation Report
            2000 HCM Operations Method (Future Volume Alternative)
*******************************************************************************
Intersection #7 Warm Springs Blvd/Mission Falls Ln/Hackamore Ln
*******************************************************************************
Cycle (sec):         100                Critical Vol./Cap.(X):         0.791
Loss Time (sec):       0 (Y+R=4.0 sec)  Average Delay (sec/veh):        11.9
Optimal Cycle:       109                Level Of Service:                 B
*******************************************************************************
Approach:      North Bound      South Bound       East Bound       West Bound
Movement:     L  -  T  -  R    L  -  T  -  R    L  -  T  -  R    L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:        Protected        Protected        Protected        Protected
Rights:           Include          Include          Include          Include
Min. Green:     0    0     0     0    0     0     0    0     0     0    0     0
Lanes:        1  0  1  1  0    1  0  1  1  0    0  1  0  0  1    0  0  1! 0  0
------------|---------------||---------------||---------------||---------------|
Volume Module:
Base Vol:     156 1264    99    34 2204    87     9    1    31    82   17   132
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:  156 1264    99    34 2204    87     9    1    31    82   17   132
```

```
Added Vol:   -108    0     0     0    0   -74     3    0     4     0  -11     0
PasserByVol:    0    0     0     0    0     0     0    0     0     0    0     0
Initial Fut:   48 1264    99    34 2204    13    12    1    35    82    6   132
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:    48 1264    99    34 2204    13    12    1    35    82    6   132
Reduct Vol:     0    0     0     0    0     0     0    0     0     0    0     0
Reduced Vol:   48 1264    99    34 2204    13    12    1    35    82    6   132
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:   48 1264    99    34 2204    13    12    1    35    82    6   132
------------|---------------||---------------||---------------||---------------|
Saturation Flow Module:
Sat/Lane:    1900 1900  1900  1900 1900  1900  1900 1900  1900  1900 1900  1900
Adjustment:  0.95 0.94  0.94  0.95 0.95  0.95  0.96 0.96  0.85  0.90 0.90  0.90
Lanes:       1.00 1.85  0.15  1.00 1.99  0.01  0.92 0.08  1.00  0.37 0.03  0.60
Final Sat.:  1805 3311   259  1805 3585    21  1677  140  1615   639   47  1029
------------|---------------||---------------||---------------||---------------|
Capacity Analysis Module:
Vol/Sat:     0.03 0.38  0.38  0.02 0.61  0.61  0.01 0.01  0.02  0.13 0.13  0.13
Crit Moves:  ****                 ****                    ****  ****
Green/Cycle: 0.03 0.77  0.77  0.04 0.78  0.78  0.01 0.03  0.03  0.16 0.18  0.18
Volume/Cap:  0.79 0.49  0.49  0.49 0.79  0.79  0.71 0.26  0.79  0.79 0.71  0.71
Uniform Del: 48.0  4.2   4.2  47.1  6.5   6.5  49.4 47.6  48.3  40.3 38.6  38.6
IncremntDel: 49.3  0.1   0.1   5.5  1.6   1.6  84.0  2.8  62.1  14.2  7.7   7.7
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:   97.3  4.3   4.3  52.6  8.1   8.1 133.4 50.4 110.4  54.5 46.4  46.4
User DelAdj: 1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
AdjDel/Veh:  97.3  4.3   4.3  52.6  8.1   8.1 133.4 50.4 110.4  54.5 46.4  46.4
LOS by Move:   F    A     A     D    A     A     F    D     F     D    D     D
HCM2kAvgQ:      3    8     8     2   22    22     1    1     3     9    8     8
*******************************************************************************
Note: Queue reported is the number of cars per lane.

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```

Scenario Report

Scenario:	Cumulative plus Project PM
Command:	CUM+P PM
Volume:	CUM PM
Geometry:	CUM PM
Impact Fee:	Default Impact Fee
Trip Generation:	Project PM
Trip Distribution:	Project
Paths:	Default Path
Routes:	Default Route
Configuration:	Default Configuration

CUM+P PM Mitigated.txt
Impact Analysis Report
Level Of Service

Intersection	Base LOS	Base Del/ Veh	Base V/ C	Future LOS	Future Del/ Veh	Future V/ C	Change in
# 1 Warm Springs Blvd/Mission Blvd	F	320.3	1.994	F	322.6	1.994	+ 2.334 D/V
# 2 I-880 SB Ramps/Warren Ave	E	70.8	1.030	E	71.1	1.028	+ 0.276 D/V
# 3 I-880 NB Ramps/Warren Ave	E	75.2	1.174	E	59.1	1.122	-16.145 D/V
# 4 Kato Rd/Warren Ave	F	110.3	1.171	F	114.3	1.172	+ 3.982 D/V
# 5 Mission Falls Ct/Warren Ave	F	OVRFL	0.000	F	OVRFL	0.000	-5.2E+0306
# 6 Warm Springs Blvd/Warren Ave	D	37.7	0.843	D	37.2	0.826	-0.528 D/V
# 7 Warm Springs Blvd/Mission Fall	A	8.7	0.735	A	4.7	0.680	-4.045 D/V

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

****

Intersection #1 Warm Springs Blvd/Mission Blvd

```
*******************************************************************************
Cycle (sec):         100                  Critical Vol./Cap.(X):         1.994
Loss Time (sec):       0 (Y+R=4.0 sec)    Average Delay (sec/veh):       322.6
Optimal Cycle:       180                  Level Of Service:                  F
*******************************************************************************
Approach:      North Bound      South Bound       East Bound       West Bound
Movement:     L  -  T  -  R    L  -  T  -  R    L  -  T  -  R    L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:        Protected        Protected        Protected        Protected
Rights:           Include          Include          Include          Include
Min. Green:    14   14     0    15   13     0    14   15     0    15   15     0
Lanes:        2  0  2  0  1    2  0  2  0  1    2  0  3  0  1    2  0  3  0  1
------------|---------------||---------------||---------------||---------------|
Volume Module:
Base Vol:    1001 1036   475   695 1159  1733   962 2321   585   657 1536   265
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: 1001 1036   475   695 1159  1733   962 2321   585   657 1536   265
Added Vol:      0  -19   -89     0    0     0     0    0     0     0    0     0
PasserByVol:    0    0     0     0    0     0     0    0     0     0    0     0
Initial Fut: 1001 1017   386   695 1159  1733   962 2321   585   657 1536   265
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:  1001 1017   386   695 1159  1733   962 2321   585   657 1536   265
Reduct Vol:     0    0     0     0    0     0     0    0     0     0    0     0
Reduced Vol: 1001 1017   386   695 1159  1733   962 2321   585   657 1536   265
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: 1001 1017   386   695 1159  1733   962 2321   585   657 1536   265
------------|---------------||---------------||---------------||---------------|
Saturation Flow Module:
Sat/Lane:    1900 1900  1900  1900 1900  1900  1900 1900  1900  1900 1900  1900
Adjustment:  0.92 0.95  0.85  0.92 0.95  0.85  0.92 0.91  0.85  0.92 0.91  0.85
Lanes:       2.00 2.00  1.00  2.00 2.00  1.00  2.00 3.00  1.00  2.00 3.00  1.00
Final Sat.:  3502 3610  1615  3502 3610  1615  3502 5187  1615  3502 5187  1615
------------|---------------||---------------||---------------||---------------|
Capacity Analysis Module:
Vol/Sat:     0.29 0.28  0.24  0.20 0.32  1.07  0.27 0.45  0.36  0.19 0.30  0.16
Crit Moves:  ****                         ****       ****        ****
Green/Cycle: 0.14 0.38  0.38  0.26 0.50  0.50  0.17 0.21  0.21  0.15 0.19  0.19
Volume/Cap:  2.04 0.75  0.64  0.75 0.64  2.14  1.59 2.14  1.73  1.25 1.59  0.88
Uniform Del: 43.0 27.1  25.6  33.7 18.3  24.9  41.4 39.6  39.6  42.5 40.7  39.6
IncremntDel:475.9  2.4   2.2   3.4  0.8 517.9 273.5  517 342.3 127.9  271  24.6
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:  518.9 29.5  27.8  37.1 19.1 542.8 314.8  556 381.9 170.4  311  64.2
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: 518.9 29.5  27.8  37.1 19.1 542.8 314.8  556 381.9 170.4  311  64.2
LOS by Move:   F    C     C     D    B     F     F    F     F     F    F     E
HCM2kAvgQ:    49   16    10    12   14   165    39   82    49    21   44    11
*******************************************************************************
Note: Queue reported is the number of cars per lane.
```

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

```
*******************************************************************************
Intersection #2 I-880 SB Ramps/Warren Ave
*******************************************************************************
Cycle (sec):         120                  Critical Vol./Cap.(X):         1.028
```

```
Loss Time (sec):      16 (Y+R=4.0 sec)  Average Delay (sec/veh):        71.1
Optimal Cycle:       180                Level Of Service:                   E
*******************************************************************************
Approach:      North Bound      South Bound       East Bound       West Bound
Movement:     L  -  T  -  R    L  -  T  -  R    L  -  T  -  R    L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:       Split Phase      Split Phase       Protected        Protected
Rights:           Include          Include          Include          Include
Min. Green:     0    6     0     0    6     0     4    8     0     4    8     0
Lanes:        1  0  1  1  0    1  1  0  0  1    2  0  1  1  0    1  0  1  1  1
------------|---------------||---------------||---------------||---------------|
Volume Module:
Base Vol:      39  426   395   647   15   101   606 1229    20    77 1030   183
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:   39  426   395   647   15   101   606 1229    20    77 1030   183
Added Vol:      0    0     0     1    0     0     0    0     0     0    0   -75
PasserByVol:    0    0     0     0    0     0     0    0     0     0    0     0
Initial Fut:   39  426   395   648   15   101   606 1229    20    77 1030   108
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:    39  426   395   648   15   101   606 1229    20    77 1030   108
Reduct Vol:     0    0     0     0    0     0     0    0     0     0    0     0
Reduced Vol:   39  426   395   648   15   101   606 1229    20    77 1030   108
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:   39  426   395   648   15   101   606 1229    20    77 1030   108
------------|---------------||---------------||---------------||---------------|
Saturation Flow Module:
Sat/Lane:    1900 1900  1900  1900 1900  1900  1900 1900  1900  1900 1900  1900
Adjustment:  0.95 0.88  0.88  0.95 0.95  0.85  0.92 0.95  0.95  0.95 0.94  0.94
Lanes:       1.00 1.04  0.96  1.95 0.05  1.00  2.00 1.97  0.03  1.00 2.00  1.00
Final Sat.:  1805 1738  1612  3539   82  1615  3502 3545    58  1805 3559  1780
------------|---------------||---------------||---------------||---------------|
Capacity Analysis Module:
Vol/Sat:     0.02 0.25  0.25  0.18 0.18  0.06  0.17 0.35  0.35  0.04 0.29  0.06
Crit Moves:        ****        ****              ****                    ****
Green/Cycle: 0.24 0.24  0.24  0.18 0.18  0.18  0.17 0.40  0.40  0.05 0.28  0.28
Volume/Cap:  0.09 1.03  1.03  1.03 1.03  0.35  1.03 0.87  0.87  0.87 1.03  0.22
Uniform Del: 35.6 45.7  45.7  49.3 49.3  43.2  49.9 33.0  33.0  56.6 43.1  33.0
IncremntDel:  0.1 39.1  39.1  42.7 42.7   0.7  44.3  5.7   5.7  53.9 34.3   0.0
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:   35.7 84.8  84.8  92.0 92.0  44.0  94.2 38.7  38.7 110.5 77.4  33.0
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:  35.7 84.8  84.8  92.0 92.0  44.0  94.2 38.7  38.7 110.5 77.4  33.0
LOS by Move:   D    F     F     F    F     D     F    D     D     F    E     C
HCM2kAvgQ:      1   23    23    18   18     3    17   25    25     5   27     3
*******************************************************************************
Note: Queue reported is the number of cars per lane.

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-------------------------------------------------------------------------------
-------------------------------------------------------------------------------
                      Level Of Service Computation Report
           2000 HCM Operations Method (Future Volume Alternative)
*******************************************************************************
Intersection #3 I-880 NB Ramps/Warren Ave
*******************************************************************************
Cycle (sec):         100                Critical Vol./Cap.(X):         1.122
Loss Time (sec):       0 (Y+R=4.0 sec)  Average Delay (sec/veh):        59.1
Optimal Cycle:       180                Level Of Service:                   E
*******************************************************************************
```

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Lanes:	1 1	0 1	0	0 0	0 0	0	0 0	2 0	1	1 0	2 0	0
Volume Module:												
Base Vol:	185	1	197	0	0	0	0	3031	221	374	1166	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:	185	1	197	0	0	0	0	3031	221	374	1166	0
Added Vol:	0	0	0	0	0	0	0	1	0	-94	-75	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	185	1	197	0	0	0	0	3032	221	280	1091	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:	185	1	197	0	0	0	0	3032	221	280	1091	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	185	1	197	0	0	0	0	3032	221	280	1091	0
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	185	1	197	0	0	0	0	3032	221	280	1091	0
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.81	0.81	0.81	1.00	1.00	1.00	1.00	0.95	0.85	0.95	0.95	1.00
Lanes:	1.99	0.01	1.00	0.00	0.00	0.00	0.00	2.00	1.00	1.00	2.00	0.00
Final Sat.:	3075	17	1546	0	0	0	0	3610	1615	1805	3610	0
Capacity Analysis Module:												
Vol/Sat:	0.06	0.06	0.13	0.00	0.00	0.00	0.00	0.84	0.14	0.16	0.30	0.00
Crit Moves:			****					****		****		
Green/Cycle:	0.11	0.11	0.11	0.00	0.00	0.00	0.00	0.75	0.75	0.14	0.89	0.00
Volume/Cap:	0.53	0.53	1.12	0.00	0.00	0.00	0.00	1.12	0.18	1.12	0.34	0.00
Uniform Del:	41.8	41.8	44.3	0.0	0.0	0.0	0.0	12.6	3.7	43.1	0.9	0.0
IncremntDel:	0.7	0.7	86.1	0.0	0.0	0.0	0.0	60.6	0.1	93.9	0.1	0.0
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	0.00	0.00	0.00	0.00	1.00	1.00	1.00	1.00	0.00
Delay/Veh:	42.6	42.6	130.4	0.0	0.0	0.0	0.0	73.2	3.7	137.0	1.0	0.0
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	42.6	42.6	130.4	0.0	0.0	0.0	0.0	73.2	3.7	137.0	1.0	0.0
LOS by Move:	D	D	F	A	A	A	A	E	A	F	A	A
HCM2kAvgQ:	4	4	12	0	0	0	0	73	2	16	3	0

****

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

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

****

Intersection #4 Kato Rd/Warren Ave

****

Cycle (sec): 124 Critical Vol./Cap.(X): 1.172
Loss Time (sec): 0 (Y+R=4.0 sec) Average Delay (sec/veh): 114.3
Optimal Cycle: 180 Level Of Service: F

****

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

```
Control:       Split Phase      Split Phase       Protected        Protected
Rights:           Include          Include          Include          Include
Min. Green:     6    0     0     0    6     0     4    8     0     4    8     0
Lanes:        1  0  1  0  1    1  1  0  0  1    1  0  1  1  0    1  0  1  1  0
------------|---------------||---------------||---------------||---------------|
Volume Module:
Base Vol:     443   50   429     6   48     5    46 2661   120   190  596     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:  443   50   429     6   48     5    46 2661   120   190  596     6
Added Vol:      0    0     0     0    0     0     0    1     0     0 -169     0
PasserByVol:    0    0     0     0    0     0     0    0     0     0    0     0
Initial Fut:  443   50   429     6   48     5    46 2662   120   190  427     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:   443   50   429     6   48     5    46 2662   120   190  427     6
Reduct Vol:     0    0     0     0    0     0     0    0     0     0    0     0
Reduced Vol:  443   50   429     6   48     5    46 2662   120   190  427     6
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:  443   50   429     6   48     5    46 2662   120   190  427     6
------------|---------------||---------------||---------------||---------------|
Saturation Flow Module:
Sat/Lane:    1900 1900  1900  1900 1900  1900  1900 1900  1900  1900 1900  1900
Adjustment:  0.95 1.00  0.85  0.99 0.99  0.85  0.95 0.94  0.94  0.95 0.95  0.95
Lanes:       1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.91  0.09  1.00 1.97  0.03
Final Sat.:  1805 1900  1615  1889 1889  1615  1805 3434   155  1805 3553    50
------------|---------------||---------------||---------------||---------------|
Capacity Analysis Module:
Vol/Sat:     0.25 0.03  0.27  0.00 0.03  0.00  0.03 0.78  0.78  0.11 0.12  0.12
Crit Moves:              ****       ****              ****        ****
Green/Cycle: 0.22 0.22  0.22  0.05 0.05  0.05  0.15 0.64  0.64  0.09 0.58  0.58
Volume/Cap:  1.11 0.12  1.20  0.07 0.53  0.06  0.16 1.20  1.20  1.20 0.21  0.21
Uniform Del: 48.3 38.7  48.3  56.3 57.6  56.3  45.5 22.1  22.1  56.6 12.6  12.6
IncremntDel: 79.3  0.1 115.7   0.0  4.9   0.3   0.3 96.4  96.4 137.1  0.1   0.1
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:  127.7 38.8 164.0  56.4 62.5  56.7  45.7  118 118.5 193.7 12.7  12.7
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: 127.7 38.8 164.0  56.4 62.5  56.7  45.7  118 118.5 193.7 12.7  12.7
LOS by Move:   F    D     F     E    E     E     D    F     F     F    B     B
HCM2kAvgQ:    26    2    28     0    3     0     2   87    87    14    4     4
*******************************************************************************
Note: Queue reported is the number of cars per lane.
```



```
-------------------------------------------------------------------------------
-------------------------------------------------------------------------------
                     Level Of Service Computation Report
          2000 HCM Unsignalized Method (Future Volume Alternative)
*******************************************************************************
Intersection #5 Mission Falls Ct/Warren Ave
*******************************************************************************
Average Delay (sec/veh): OVERFLOW      Worst Case Level Of Service: F[xxxxx]
*******************************************************************************
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
Rights:           Include          Include          Include          Include
Lanes:        0  1  0  1  0    0  0  1! 0  0    1  0  1  1  0    1  0  1  1  0
------------|---------------||---------------||---------------||---------------|
Volume Module:
```

```
Base Vol:     213    0    62     6    5     6    11 3663    67    32  624     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:  213    0    62     6    5     6    11 3663    67    32  624     0
Added Vol:   -169    0   -47     0    0     0     0    0     1     0    0     0
PasserByVol:    0    0     0     0    0     0     0    0     0     0    0     0
Initial Fut:   44    0    15     6    5     6    11 3663    68    32  624     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:    44    0    15     6    5     6    11 3663    68    32  624     0
Reduct Vol:     0    0     0     0    0     0     0    0     0     0    0     0
FinalVolume:   44    0    15     6    5     6    11 3663    68    32  624     0
------------|---------------||---------------||---------------||---------------|
Critical Gap Module:
Critical Gp:  7.5  6.5   6.9   7.5  6.5   6.9   4.1 xxxx xxxxx   4.1 xxxx xxxxx
FollowUpTim:  3.5  4.0   3.3   3.5  4.0   3.3   2.2 xxxx xxxxx   2.2 xxxx xxxxx
------------|---------------||---------------||---------------||---------------|
Capacity Module:
Cnflict Vol: 4098 4407  1866  2542 4441   312   624 xxxx xxxxx  3731 xxxx xxxxx
Potent Cap.:    1    2    64    14    1   690   967 xxxx xxxxx    59 xxxx xxxxx
Move Cap.:      0    1    64     6    1   690   967 xxxx xxxxx    59 xxxx xxxxx
Volume/Cap:  xxxx 0.00  0.24  0.99 7.45  0.01  0.01 xxxx  xxxx  0.54 xxxx  xxxx
------------|---------------||---------------||---------------||---------------|
Level Of Service Module:
2Way95thQ:   xxxx xxxx xxxxx  xxxx xxxx xxxxx   0.0 xxxx xxxxx   2.2 xxxx xxxxx
Control Del:xxxxx xxxx xxxxx xxxxx xxxx xxxxx   8.8 xxxx xxxxx 121.6 xxxx xxxxx
LOS by Move:   *    *     *     *    *     *     A    *     *     F    *     *
Movement:     LT - LTR - RT    LT - LTR - RT    LT - LTR - RT    LT - LTR - RT
Shared Cap.:    0 xxxx    64  xxxx    2 xxxxx  xxxx xxxx xxxxx  xxxx xxxx xxxxx
SharedQueue:xxxxx xxxx   0.8 xxxxx  3.6 xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx
Shrd ConDel:xxxxx xxxx  78.0 xxxxx 6572 xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx
Shared LOS:    *    *     F     *    F     *     *    *     *     *    *     *
ApproachDel:    xxxxxx           6572.3           xxxxxx           xxxxxx
ApproachLOS:        F               F                *                *
*******************************************************************************
Note: Queue reported is the number of cars per lane.
*******************************************************************************
```

```
  Traffix 7.9.0415 (c) 2007 Dowling Assoc. Licensed to FEHR & PEERS,  LAFAYETTE♀
Cumulative plus Project PM Fri May 29, 2015 15:04:03                 Page 8-1
-------------------------------------------------------------------------------
-------------------------------------------------------------------------------
                      Level Of Service Computation Report
             2000 HCM Operations Method (Future Volume Alternative)
*******************************************************************************
Intersection #6 Warm Springs Blvd/Warren Ave
*******************************************************************************
Cycle (sec):         120                 Critical Vol./Cap.(X):         0.826
Loss Time (sec):       0 (Y+R=4.0 sec)  Average Delay (sec/veh):        37.2
Optimal Cycle:       131                 Level Of Service:                 D
*******************************************************************************
Approach:      North Bound      South Bound       East Bound       West Bound
Movement:     L  -  T  -  R    L  -  T  -  R    L  -  T  -  R    L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:        Protected        Protected        Protected        Protected
Rights:           Include          Include          Include          Include
Min. Green:     4   10     0     4   10     0     4   10     0     4   10     0
Lanes:        2  0  1  1  0    2  0  2  0  1    2  0  2  0  1    2  0  2  0  1
------------|---------------||---------------||---------------||---------------|
Volume Module:
```

```
Base Vol:     151 1140   184   326 1276   349   894  723   475   283   92    95
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:  151 1140   184   326 1276   349   894  723   475   283   92    95
Added Vol:      0  -61     0     0    0     0   -47    0     0     0    0     0
PasserByVol:    0    0     0     0    0     0     0    0     0     0    0     0
Initial Fut:  151 1079   184   326 1276   349   847  723   475   283   92    95
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:   151 1079   184   326 1276   349   847  723   475   283   92    95
Reduct Vol:     0    0     0     0    0     0     0    0     0     0    0     0
Reduced Vol:  151 1079   184   326 1276   349   847  723   475   283   92    95
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:  151 1079   184   326 1276   349   847  723   475   283   92    95
------------|---------------||---------------||---------------||---------------|
Saturation Flow Module:
Sat/Lane:    1900 1900  1900  1900 1900  1900  1900 1900  1900  1900 1900  1900
Adjustment:  0.92 0.93  0.93  0.92 0.95  0.85  0.92 0.95  0.85  0.92 0.95  0.85
Lanes:       2.00 1.71  0.29  2.00 2.00  1.00  2.00 2.00  1.00  2.00 2.00  1.00
Final Sat.:  3502 3016   514  3502 3610  1615  3502 3610  1615  3502 3610  1615
------------|---------------||---------------||---------------||---------------|
Capacity Analysis Module:
Vol/Sat:     0.04 0.36  0.36  0.09 0.35  0.22  0.24 0.20  0.29  0.08 0.03  0.06
Crit Moves:        ****        ****                        ****  ****
Green/Cycle: 0.06 0.43  0.43  0.11 0.49  0.49  0.34 0.36  0.36  0.10 0.12  0.12
Volume/Cap:  0.73 0.83  0.83  0.83 0.73  0.44  0.72 0.56  0.83  0.83 0.22  0.51
Uniform Del: 55.5 30.0  30.0  52.1 24.5  20.2  34.7 31.1  35.2  53.1 48.1  49.8
IncremntDel: 12.1  3.8   3.8  13.3  1.6   0.4   2.1  0.6   9.5  15.1  0.3   2.2
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:   67.6 33.8  33.8  65.4 26.0  20.6  36.8 31.7  44.8  68.2 48.3  52.0
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:  67.6 33.8  33.8  65.4 26.0  20.6  36.8 31.7  44.8  68.2 48.3  52.0
LOS by Move:   E    C     C     E    C     C     D    C     D     E    D     D
HCM2kAvgQ:      4   23    23     8   20     8    15   11    18     8    2     4
*******************************************************************************
Note: Queue reported is the number of cars per lane.
```



```
-------------------------------------------------------------------------------
-------------------------------------------------------------------------------
                     Level Of Service Computation Report
            2000 HCM Operations Method (Future Volume Alternative)
*******************************************************************************
Intersection #7 Warm Springs Blvd/Mission Falls Ln/Hackamore Ln
*******************************************************************************
Cycle (sec):         100                Critical Vol./Cap.(X):         0.680
Loss Time (sec):       0 (Y+R=4.0 sec)  Average Delay (sec/veh):         4.7
Optimal Cycle:        71                Level Of Service:                  A
*******************************************************************************
Approach:      North Bound      South Bound       East Bound       West Bound
Movement:     L  -  T  -  R    L  -  T  -  R    L  -  T  -  R    L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:        Protected        Protected        Protected        Protected
Rights:           Include          Include          Include          Include
Min. Green:     0    0     0     0    0     0     0    0     0     0    0     0
Lanes:        1  0  1  1  0    1  0  1  1  0    0  1  0  0  1    0  0  1! 0  0
------------|---------------||---------------||---------------||---------------|
Volume Module:
Base Vol:      27 1287    38    66 2204    17    64   12   141     9    4    16
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:   27 1287    38    66 2204    17    64   12   141     9    4    16
```

```
Added Vol:       0    0     0     0    0     0   -61   -9   -89     0    0     0
PasserByVol:     0    0     0     0    0     0     0    0     0     0    0     0
Initial Fut:    27 1287    38    66 2204    17     3    3    52     9    4    16
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:     27 1287    38    66 2204    17     3    3    52     9    4    16
Reduct Vol:      0    0     0     0    0     0     0    0     0     0    0     0
Reduced Vol:    27 1287    38    66 2204    17     3    3    52     9    4    16
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:    27 1287    38    66 2204    17     3    3    52     9    4    16
------------|---------------||---------------||---------------||---------------|
Saturation Flow Module:
Sat/Lane:     1900 1900  1900  1900 1900  1900  1900 1900  1900  1900 1900  1900
Adjustment:   0.95 0.95  0.95  0.95 0.95  0.95  0.98 0.98  0.85  0.91 0.91  0.91
Lanes:        1.00 1.94  0.06  1.00 1.98  0.02  0.50 0.50  1.00  0.31 0.14  0.55
Final Sat.:   1805 3492   103  1805 3579    28   927  927  1615   537  239   955
------------|---------------||---------------||---------------||---------------|
Capacity Analysis Module:
Vol/Sat:      0.01 0.37  0.37  0.04 0.62  0.62  0.00 0.00  0.03  0.02 0.02  0.02
Crit Moves:   ****                 ****                   ****  ****
Green/Cycle:  0.02 0.84  0.84  0.08 0.91  0.91  0.01 0.05  0.05  0.02 0.06  0.06
Volume/Cap:   0.68 0.44  0.44  0.44 0.68  0.68  0.28 0.07  0.68  0.68 0.28  0.28
Uniform Del:  48.5  1.9   1.9  43.6  1.2   1.2  49.0 45.5  46.9  48.4 44.9  44.9
IncremntDel:  38.5  0.1   0.1   2.0  0.6   0.6   6.9  0.3  22.0  36.3  1.4   1.4
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:    87.1  2.0   2.0  45.6  1.7   1.7  55.9 45.9  68.9  84.7 46.3  46.3
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:   87.1  2.0   2.0  45.6  1.7   1.7  55.9 45.9  68.9  84.7 46.3  46.3
LOS by Move:    F    A     A     D    A     A     E    D     E     F    D     D
HCM2kAvgQ:      2    6     6     2   10    10     0    0     3     2    1     1
*******************************************************************************
Note: Queue reported is the number of cars per lane.

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FEHR PEERS

Sheet No	1	of	1

Project	Parc 55
Scenario	Existing
Peak Hour	AM

Major Street	Warren Ave
Minor Street	Mission Falls Ct

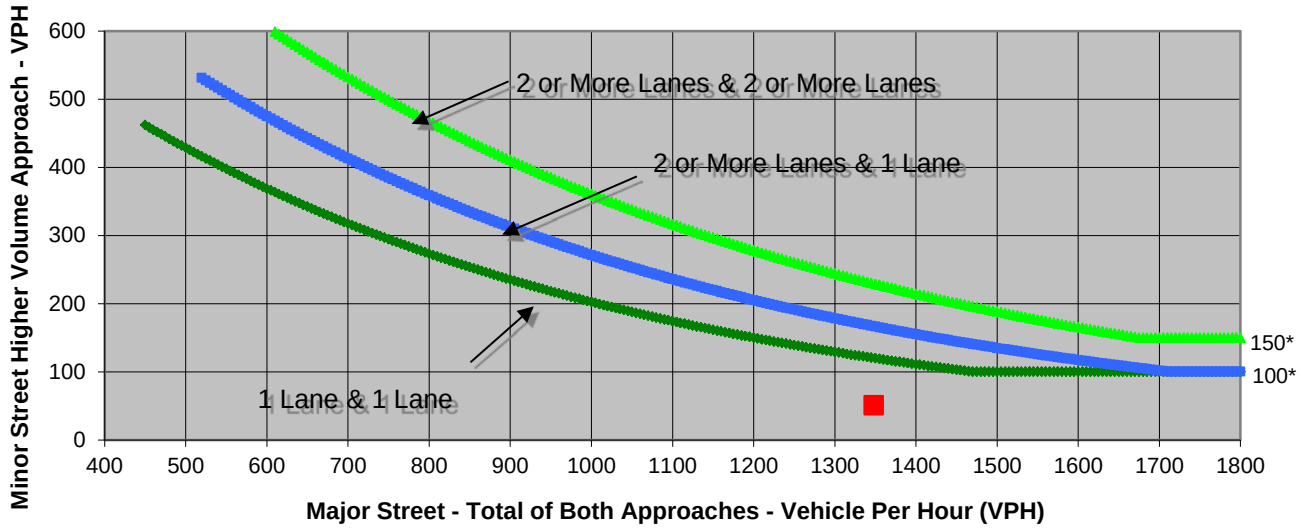
Turn Movement Volumes

	NB	SB	EB	WB
Left	45	0	19	17
Through	4	0	203	1,072
Right	2	2	27	10
Total	51	2	249	1,099

Major Street Direction

	North/South
x	East/West

Figure 4C-3. Warrant 3, Peak Hour



* 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.

Source: *California Manual on Uniform Traffic Control Devices*, Caltrans, 2012

	Major Street	Minor Street	Warrant Met
	Warren Ave	Mission Falls Ct	
Number of Approach Lanes	**2**	**1**	**NO**
Traffic Volume (VPH) *	**1,348**	**51**	

* Note: Traffic Volume for Major Street is Total Volume of Both Approches.
Traffic Volume for Minor Street is the Volume of High Volume Approach.

FEHR PEERS

Sheet No	1	of	1

Project	Parc 55
Scenario	Existing
Peak Hour	PM

Major Street	Warren Ave
Minor Street	Mission Falls Ct

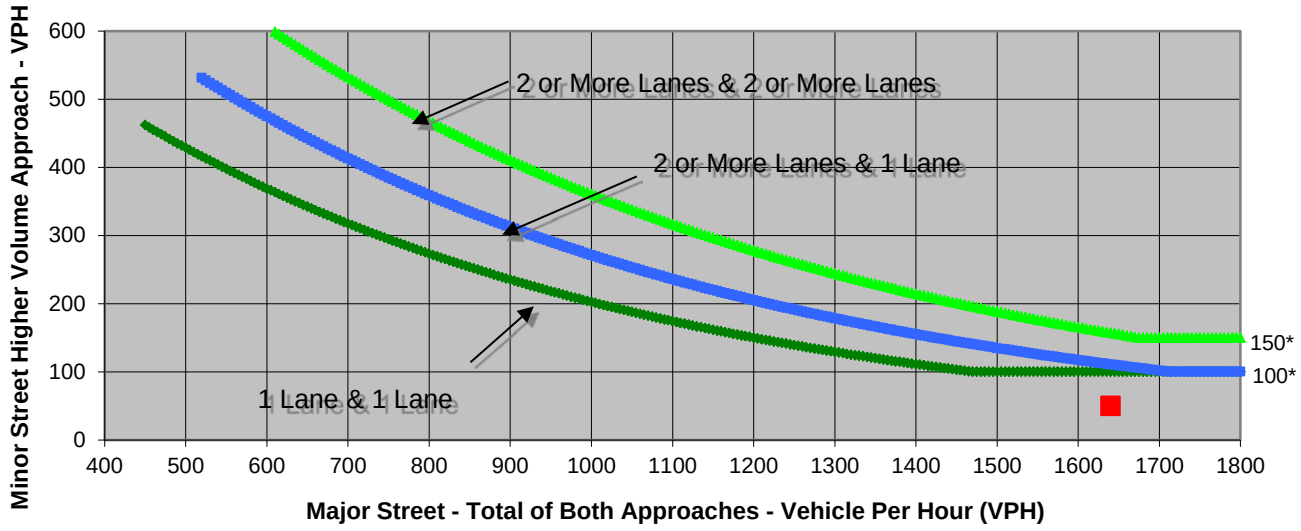
Turn Movement Volumes

	NB	SB	EB	WB
Left	37	5	8	21
Through	0	4	1,258	322
Right	13	5	31	0
Total	50	14	1,297	343

Major Street Direction

	North/South
x	East/West

Figure 4C-3. Warrant 3, Peak Hour



* 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.

Source: *California Manual on Uniform Traffic Control Devices*, Caltrans, 2012

	Major Street	Minor Street	Warrant Met
	Warren Ave	Mission Falls Ct	
Number of Approach Lanes	**2**	**1**	**NO**
Traffic Volume (VPH) *	**1,640**	**50**	

* Note: Traffic Volume for Major Street is Total Volume of Both Approches.
Traffic Volume for Minor Street is the Volume of High Volume Approach.

FEHR PEERS

Sheet No	1	of	1

Project	Fully Occupied Office Alternative
Scenario	Background
Peak Hour	AM

Major Street	Warren Ave
Minor Street	Mission Falls Ct

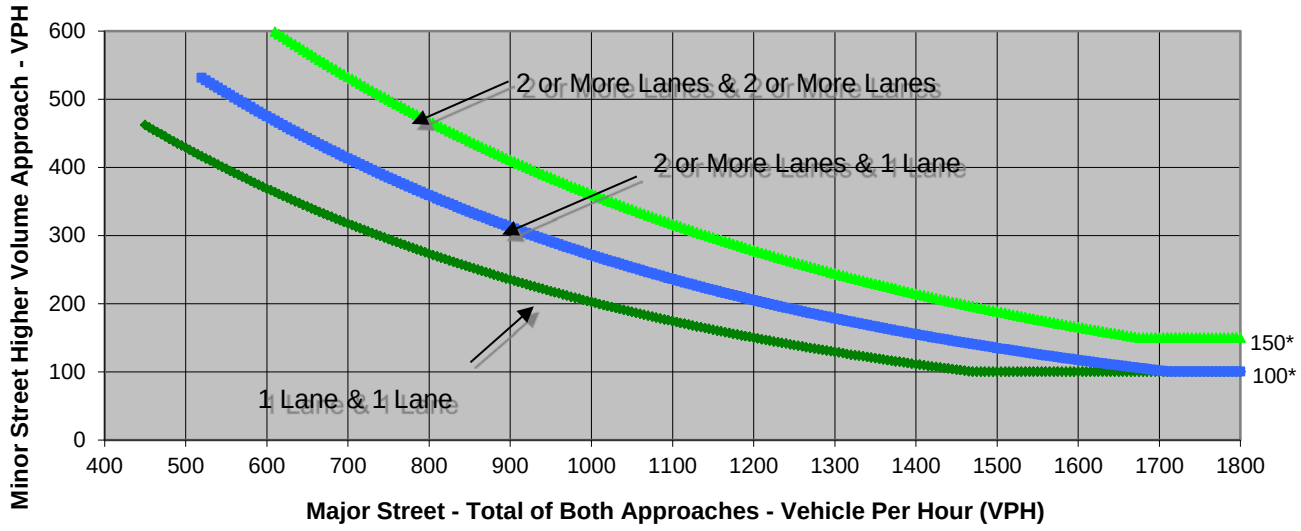
Turn Movement Volumes

	NB	SB	EB	WB
Left	69	0	19	73
Through	4	0	442	1,277
Right	10	2	229	10
Total	83	2	690	1,360

Major Street Direction

	North/South
x	East/West

Figure 4C-3. Warrant 3, Peak Hour



* 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.

Source: *California Manual on Uniform Traffic Control Devices*, Caltrans, 2012

	Major Street	Minor Street	Warrant Met
	Warren Ave	Mission Falls Ct	
Number of Approach Lanes	**2**	**1**	**NO**
Traffic Volume (VPH) *	**2,050**	**83**	

* Note: Traffic Volume for Major Street is Total Volume of Both Approches.
Traffic Volume for Minor Street is the Volume of High Volume Approach.

FEHR PEERS

Sheet No	1	of	1

Project	Fully Occupied Office Alternative
Scenario	Background
Peak Hour	PM

Major Street	Warren Ave
Minor Street	Mission Falls Ct

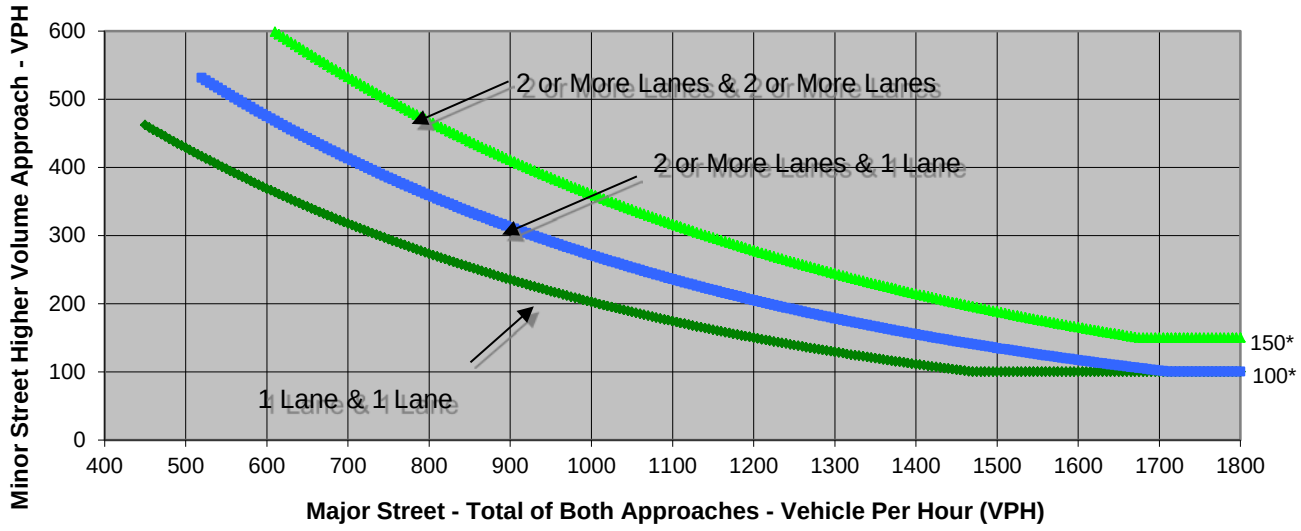
Turn Movement Volumes

	NB	SB	EB	WB
Left	213	5	8	31
Through	0	4	1,426	588
Right	62	5	67	0
Total	275	14	1,501	619

Major Street Direction

	North/South
x	East/West

Figure 4C-3. Warrant 3, Peak Hour



* 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.

Source: *California Manual on Uniform Traffic Control Devices*, Caltrans, 2012

	Major Street	Minor Street	Warrant Met
	Warren Ave	Mission Falls Ct	
Number of Approach Lanes	**2**	**1**	**YES**
Traffic Volume (VPH) *	**2,120**	**275**	

* Note: Traffic Volume for Major Street is Total Volume of Both Approches.
Traffic Volume for Minor Street is the Volume of High Volume Approach.

FEHR PEERS

Sheet No	1	of	1

Project	Fully Occupied Office Alternative
Scenario	Background + P
Peak Hour	AM

Major Street	Warren Ave
Minor Street	Mission Falls Ct

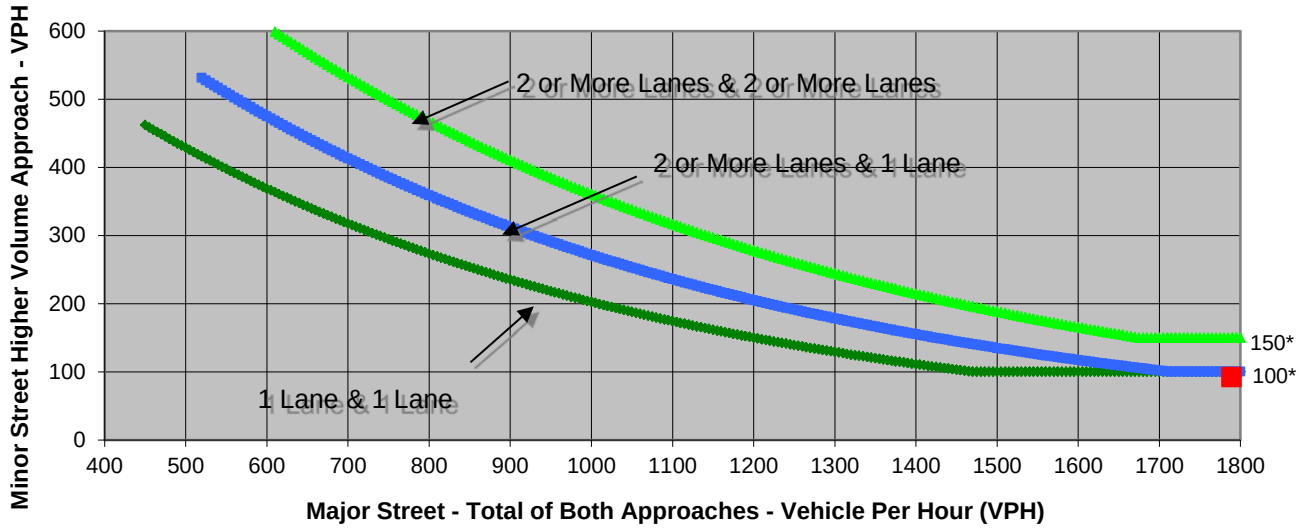
Turn Movement Volumes

	NB	SB	EB	WB
Left	76	0	19	16
Through	4	0	442	1,277
Right	12	2	25	10
Total	92	2	486	1,303

Major Street Direction

	North/South
x	East/West

Figure 4C-3. Warrant 3, Peak Hour



* 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.

Source: *California Manual on Uniform Traffic Control Devices*, Caltrans, 2012

	Major Street	Minor Street	Warrant Met
	Warren Ave	Mission Falls Ct	
Number of Approach Lanes	**2**	**1**	**NO**
Traffic Volume (VPH) *	**1,789**	**92**	

* Note: Traffic Volume for Major Street is Total Volume of Both Approches.
Traffic Volume for Minor Street is the Volume of High Volume Approach.

FEHR PEERS

Sheet No	1	of	1

Project	Fully Occupied Office Alternative
Scenario	Background +P
Peak Hour	PM

Major Street	Warren Ave
Minor Street	Mission Falls Ct

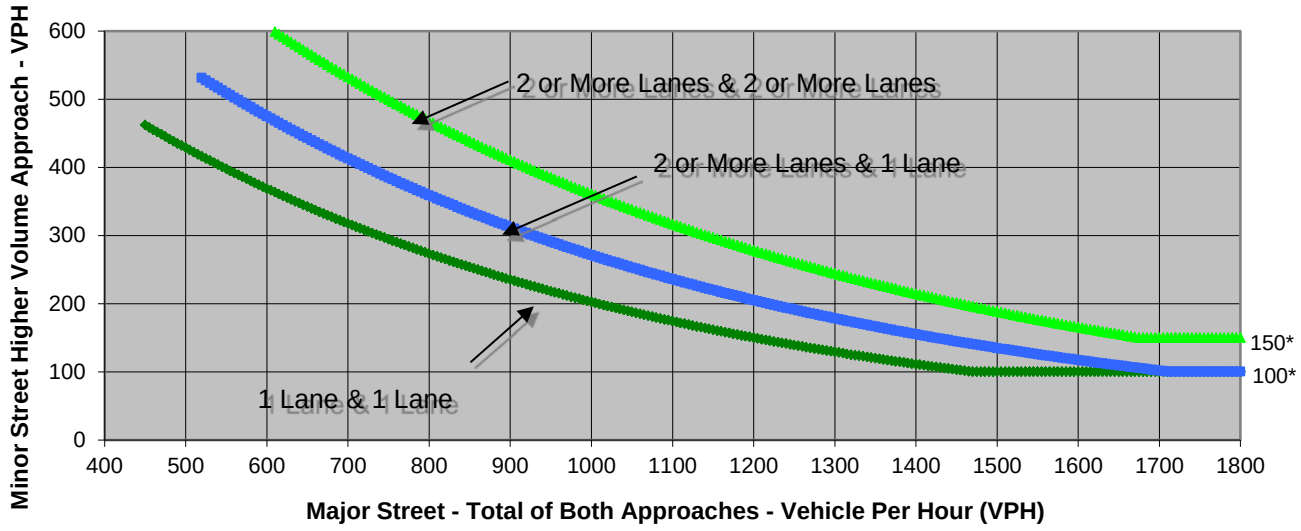
Turn Movement Volumes

	NB	SB	EB	WB
Left	44	5	8	31
Through	0	4	1,426	588
Right	15	5	68	0
Total	59	14	1,502	619

Major Street Direction

	North/South
x	East/West

Figure 4C-3. Warrant 3, Peak Hour



* 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.

Source: *California Manual on Uniform Traffic Control Devices*, Caltrans, 2012

	Major Street	Minor Street	Warrant Met
	Warren Ave	Mission Falls Ct	
Number of Approach Lanes	**2**	**1**	**NO**
Traffic Volume (VPH) *	**2,121**	**59**	

* Note: Traffic Volume for Major Street is Total Volume of Both Approches.
Traffic Volume for Minor Street is the Volume of High Volume Approach.

FEHR PEERS

Sheet No	1	of	1

Project	Fully Occupied Office Alternative
Scenario	Cumulative
Peak Hour	AM

Major Street	Warren Ave
Minor Street	Mission Falls Ct

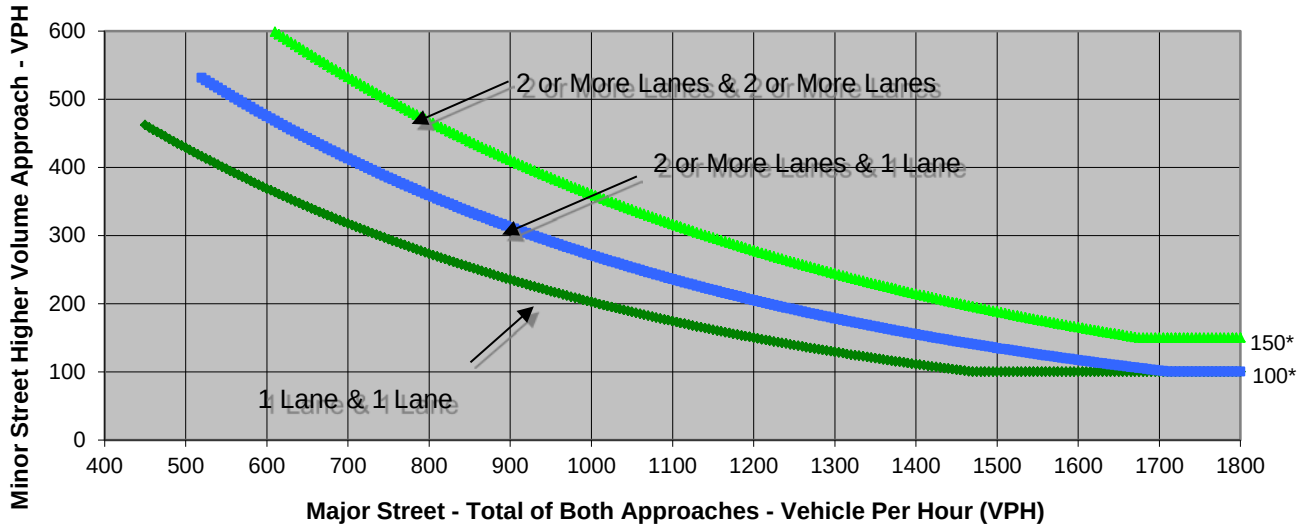
Turn Movement Volumes

	NB	SB	EB	WB
Left	69	0	23	73
Through	4	0	442	1,706
Right	10	2	229	12
Total	83	2	694	1,791

Major Street Direction

	North/South
x	East/West

Figure 4C-3. Warrant 3, Peak Hour



* 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.

Source: *California Manual on Uniform Traffic Control Devices*, Caltrans, 2012

	Major Street	Minor Street	Warrant Met
	Warren Ave	Mission Falls Ct	
Number of Approach Lanes	**2**	**1**	**NO**
Traffic Volume (VPH) *	**2,485**	**83**	

* Note: Traffic Volume for Major Street is Total Volume of Both Approches.
Traffic Volume for Minor Street is the Volume of High Volume Approach.

FEHR PEERS

Sheet No	1	of	1

Project	Fully Occupied Office Alternative
Scenario	Cumulative
Peak Hour	AM

Major Street	Warren Ave
Minor Street	Mission Falls Ct

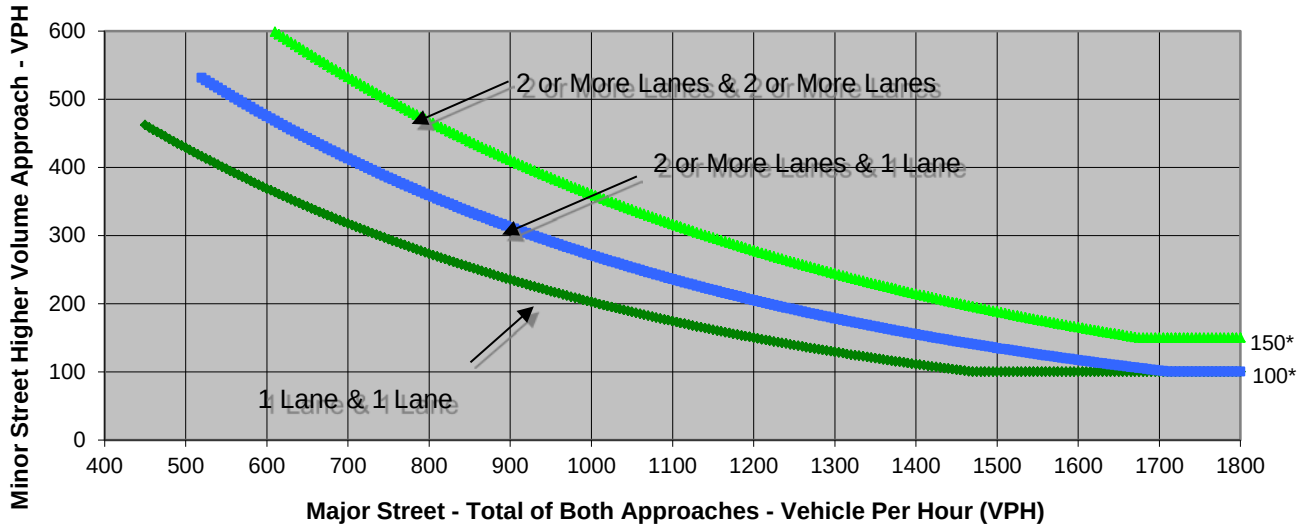
Turn Movement Volumes

	NB	SB	EB	WB
Left	213	6	11	32
Through	0	5	3,663	624
Right	62	6	67	0
Total	275	17	3,741	656

Major Street Direction

	North/South
x	East/West

Figure 4C-3. Warrant 3, Peak Hour



* 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.

Source: *California Manual on Uniform Traffic Control Devices*, Caltrans, 2012

	Major Street	Minor Street	Warrant Met
	Warren Ave	Mission Falls Ct	
Number of Approach Lanes	**2**	**1**	**YES**
Traffic Volume (VPH) *	**4,397**	**275**	

* Note: Traffic Volume for Major Street is Total Volume of Both Approches.
Traffic Volume for Minor Street is the Volume of High Volume Approach.

FEHR PEERS

Sheet No	1	of	1

Project	Fully Occupied Office Alternative
Scenario	Cumulative + P
Peak Hour	AM

Major Street	Warren Ave
Minor Street	Mission Falls Ct

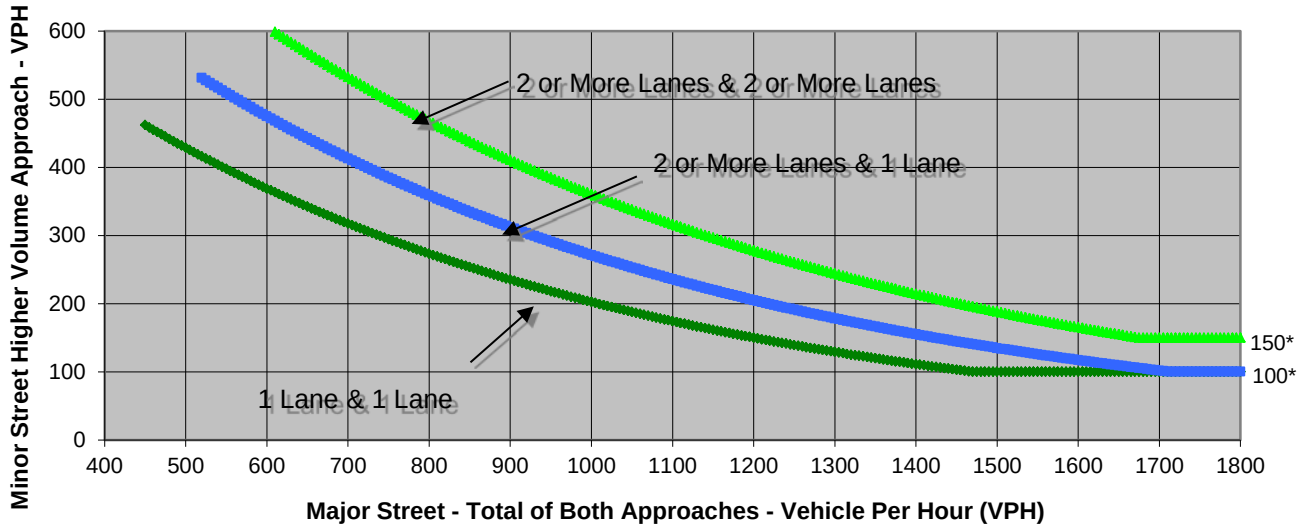
Turn Movement Volumes

	NB	SB	EB	WB
Left	76	0	23	16
Through	4	0	442	1,706
Right	12	2	25	12
Total	92	2	490	1,734

Major Street Direction

	North/South
x	East/West

Figure 4C-3. Warrant 3, Peak Hour



* 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.

Source: *California Manual on Uniform Traffic Control Devices*, Caltrans, 2012

	Major Street	Minor Street	Warrant Met
	Warren Ave	Mission Falls Ct	
Number of Approach Lanes	**2**	**1**	**NO**
Traffic Volume (VPH) *	**2,224**	**92**	

* Note: Traffic Volume for Major Street is Total Volume of Both Approches.
Traffic Volume for Minor Street is the Volume of High Volume Approach.

FEHR PEERS

Sheet No	1	of	1

Project	Fully Occupied Office Alternative
Scenario	Cumulative + P
Peak Hour	PM

Major Street	Warren Ave
Minor Street	Mission Falls Ct

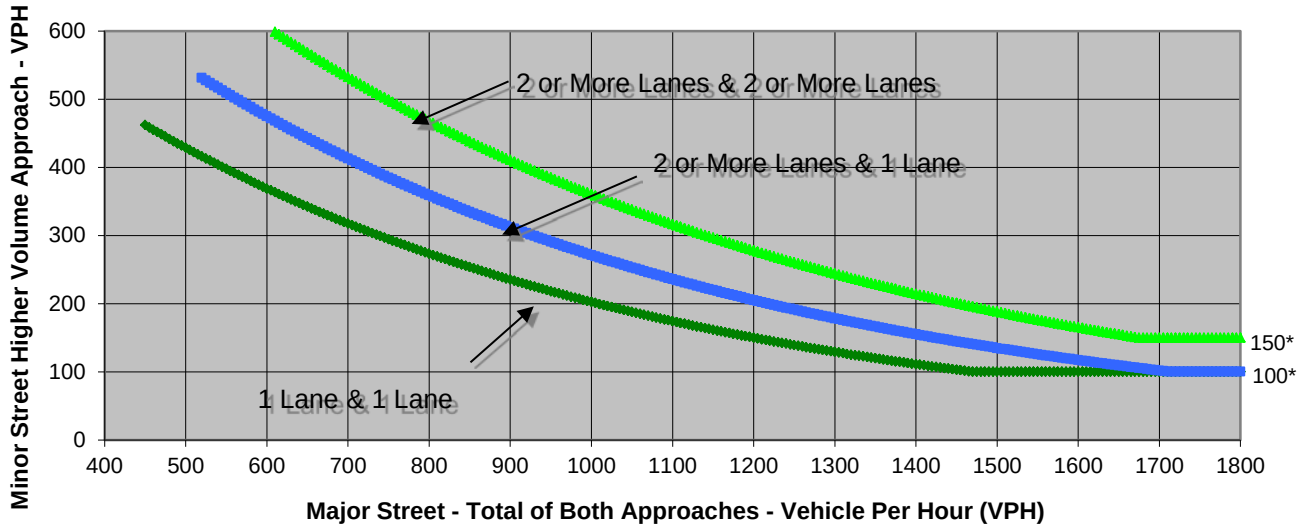
Turn Movement Volumes

	NB	SB	EB	WB
Left	213	6	11	32
Through	0	5	3,663	624
Right	62	6	67	0
Total	275	17	3,741	656

Major Street Direction

	North/South
x	East/West

Figure 4C-3. Warrant 3, Peak Hour



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Source: *California Manual on Uniform Traffic Control Devices*, Caltrans, 2012

	Major Street	Minor Street	Warrant Met
	Warren Ave	Mission Falls Ct	
Number of Approach Lanes	**2**	**1**	**YES**
Traffic Volume (VPH) *	**4,397**	**275**	

* Note: Traffic Volume for Major Street is Total Volume of Both Approches.
Traffic Volume for Minor Street is the Volume of High Volume Approach.

FEHR PEERS

Sheet No	1	of	1

Project	Parc 55
Scenario	Existing
Peak Hour	AM

Major Street	Warm Springs Blvd
Minor Street	Mission Falls Ln/Hackamore Ln

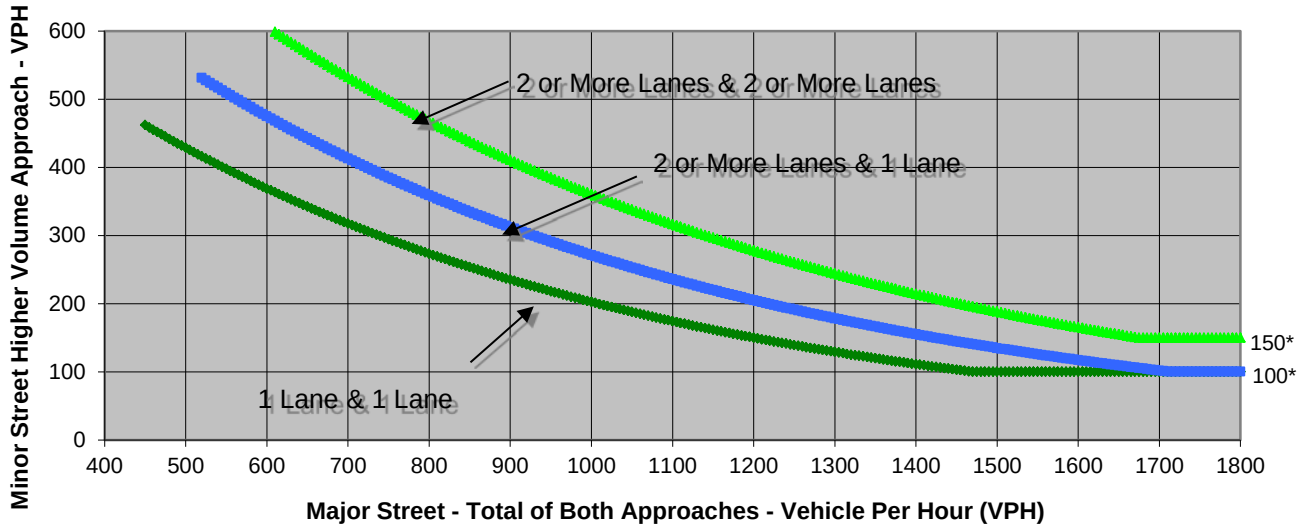
Turn Movement Volumes

	NB	SB	EB	WB
Left	49	34	0	33
Through	920	733	0	6
Right	89	14	18	119
Total	1,058	781	18	158

Major Street Direction

x	North/South
	East/West

Figure 4C-3. Warrant 3, Peak Hour



* 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.

Source: *California Manual on Uniform Traffic Control Devices*, Caltrans, 2012

	Major Street	Minor Street	Warrant Met
	Warm Springs Blvd	Mission Falls Ln/Hackamore Ln	
Number of Approach Lanes	**2**	**1**	**YES**
Traffic Volume (VPH) *	**1,839**	**158**	

* Note: Traffic Volume for Major Street is Total Volume of Both Approches.
Traffic Volume for Minor Street is the Volume of High Volume Approach.

FEHR PEERS

Sheet No	1	of	1

Project	Parc 55
Scenario	Existing
Peak Hour	PM

Major Street	Warm Springs Blvd
Minor Street	Mission Falls Ln/Hackamore Ln

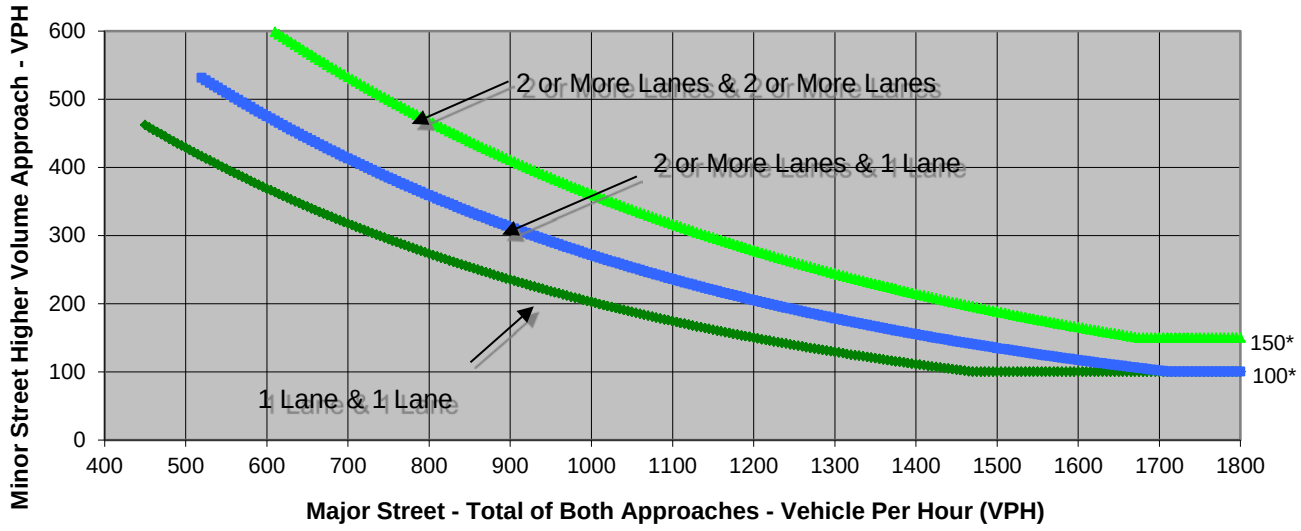
Turn Movement Volumes

	NB	SB	EB	WB
Left	8	56	0	2
Through	1,070	1,037	2	2
Right	34	4	48	15
Total	1,112	1,097	50	19

Major Street Direction

x	North/South
	East/West

Figure 4C-3. Warrant 3, Peak Hour



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Source: *California Manual on Uniform Traffic Control Devices*, Caltrans, 2012

	Major Street	Minor Street	Warrant Met
	Warm Springs Blvd	Mission Falls Ln/Hackamore Ln	
Number of Approach Lanes	**2**	**1**	**NO**
Traffic Volume (VPH) *	**2,209**	**50**	

* Note: Traffic Volume for Major Street is Total Volume of Both Approches.
Traffic Volume for Minor Street is the Volume of High Volume Approach.

FEHR PEERS

Sheet No	1	of	1

Project	Fully Occupied Office Alternative
Scenario	Background
Peak Hour	AM

Major Street	Warm Springs Blvd
Minor Street	Mission Falls Ln/Hackamore Ln

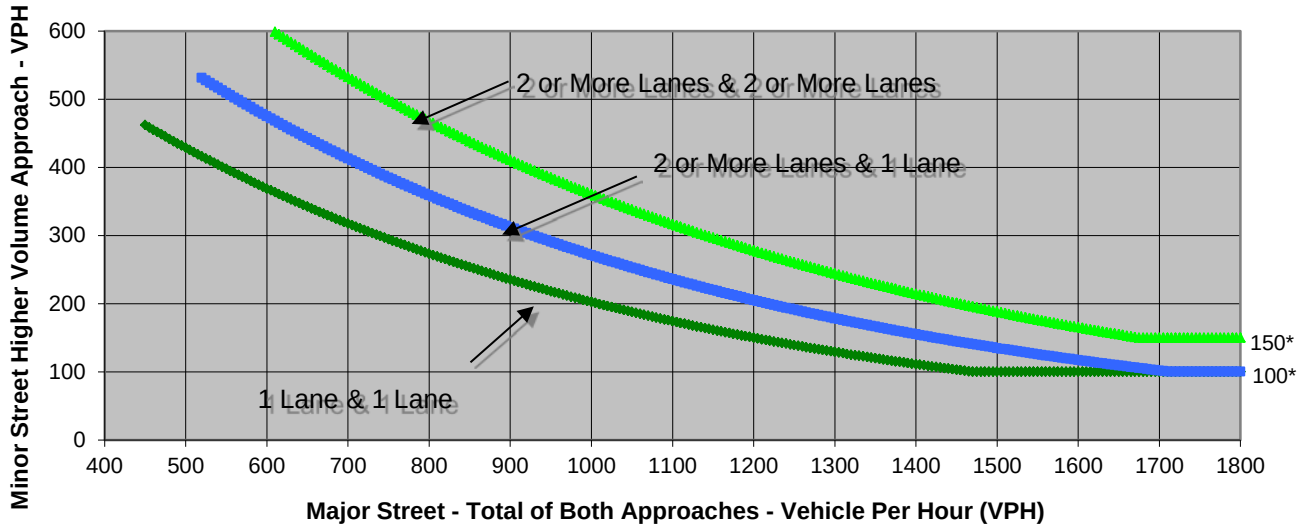
Turn Movement Volumes

	NB	SB	EB	WB
Left	156	34	9	82
Through	1,264	954	1	17
Right	89	87	31	129
Total	1,509	1,075	41	228

Major Street Direction

x	North/South
	East/West

Figure 4C-3. Warrant 3, Peak Hour



* 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.

Source: *California Manual on Uniform Traffic Control Devices*, Caltrans, 2012

	Major Street	Minor Street	Warrant Met
	Warm Springs Blvd	Mission Falls Ln/Hackamore Ln	
Number of Approach Lanes	**2**	**1**	**YES**
Traffic Volume (VPH) *	**2,584**	**228**	

* Note: Traffic Volume for Major Street is Total Volume of Both Approches.
Traffic Volume for Minor Street is the Volume of High Volume Approach.

FEHR PEERS

Sheet No	1	of	1

Project	Fully Occupied Office Alternative
Scenario	Background
Peak Hour	PM

Major Street	Warm Springs Blvd
Minor Street	Mission Falls Ln/Hackamore Ln

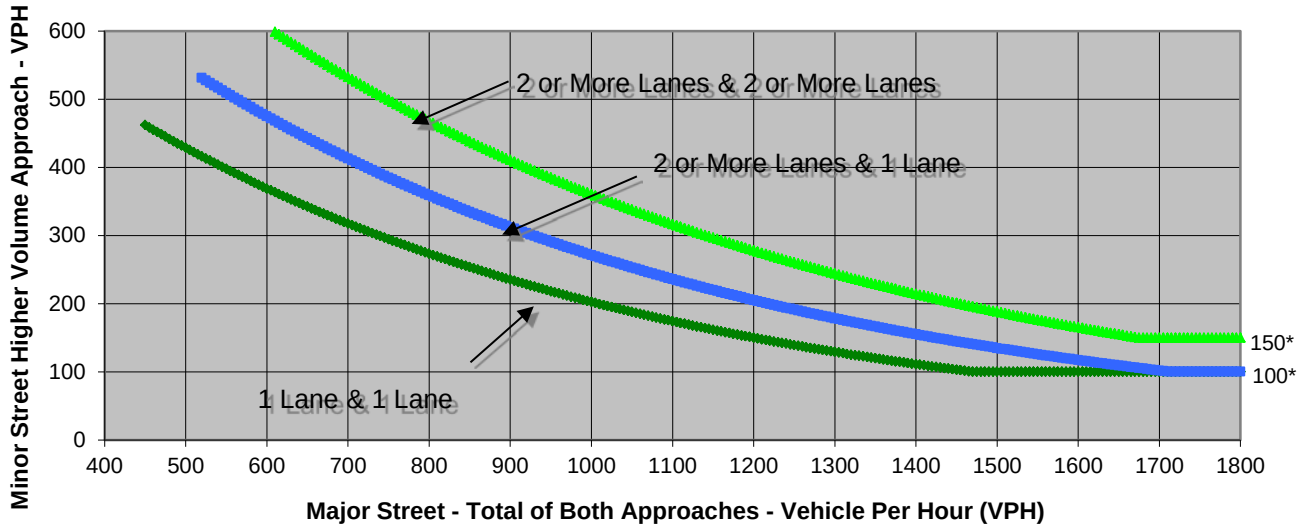
Turn Movement Volumes

	NB	SB	EB	WB
Left	27	66	64	9
Through	1,287	1,376	12	4
Right	38	17	141	15
Total	1,352	1,459	217	28

Major Street Direction

x	North/South
	East/West

Figure 4C-3. Warrant 3, Peak Hour



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Source: *California Manual on Uniform Traffic Control Devices*, Caltrans, 2012

	Major Street	Minor Street	Warrant Met
	Warm Springs Blvd	Mission Falls Ln/Hackamore Ln	
Number of Approach Lanes	**2**	**1**	**YES**
Traffic Volume (VPH) *	**2,811**	**217**	

* Note: Traffic Volume for Major Street is Total Volume of Both Approches.
Traffic Volume for Minor Street is the Volume of High Volume Approach.

FEHR PEERS

Sheet No	1	of	1

Project	Fully Occupied Office Alternative
Scenario	Cumulative
Peak Hour	AM

Major Street	Warm Springs Blvd
Minor Street	Mission Falls Ln/Hackamore Ln

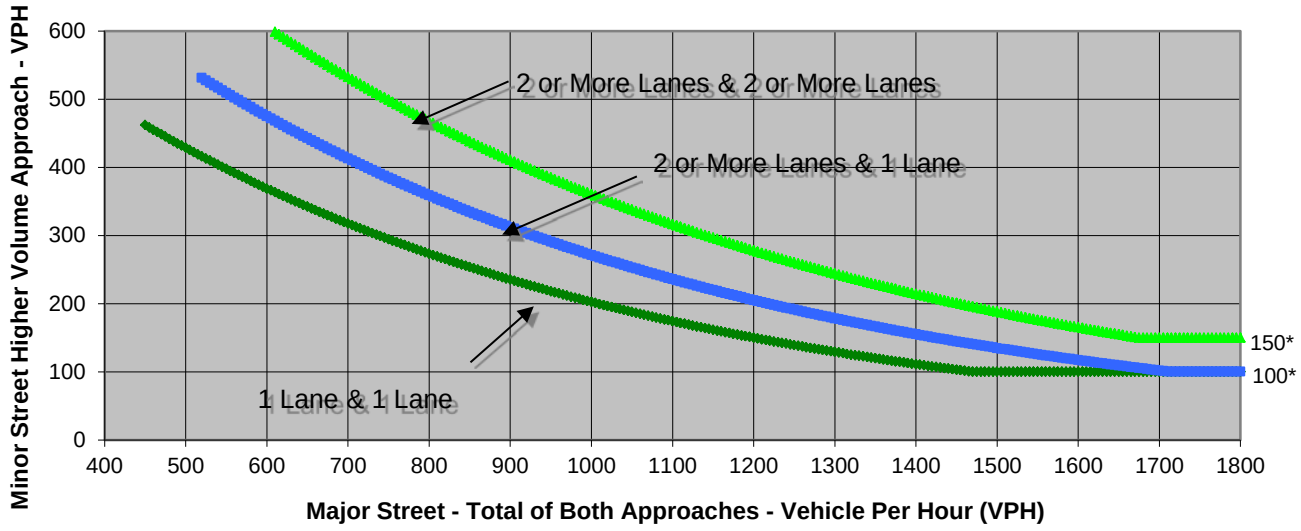
Turn Movement Volumes

	NB	SB	EB	WB
Left	156	34	9	82
Through	1,264	2,204	1	17
Right	99	87	31	132
Total	1,519	2,325	41	231

Major Street Direction

x	North/South
	East/West

Figure 4C-3. Warrant 3, Peak Hour



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Source: *California Manual on Uniform Traffic Control Devices*, Caltrans, 2012

	Major Street	Minor Street	Warrant Met
	Warm Springs Blvd	Mission Falls Ln/Hackamore Ln	
Number of Approach Lanes	**2**	**1**	**YES**
Traffic Volume (VPH) *	**3,844**	**231**	

* Note: Traffic Volume for Major Street is Total Volume of Both Approches.
Traffic Volume for Minor Street is the Volume of High Volume Approach.

FEHR PEERS

Sheet No	1	of	1

Project	Fully Occupied Office Alternative
Scenario	Cumulative
Peak Hour	PM

Major Street	Warm Springs Blvd
Minor Street	Mission Falls Ln/Hackamore Ln

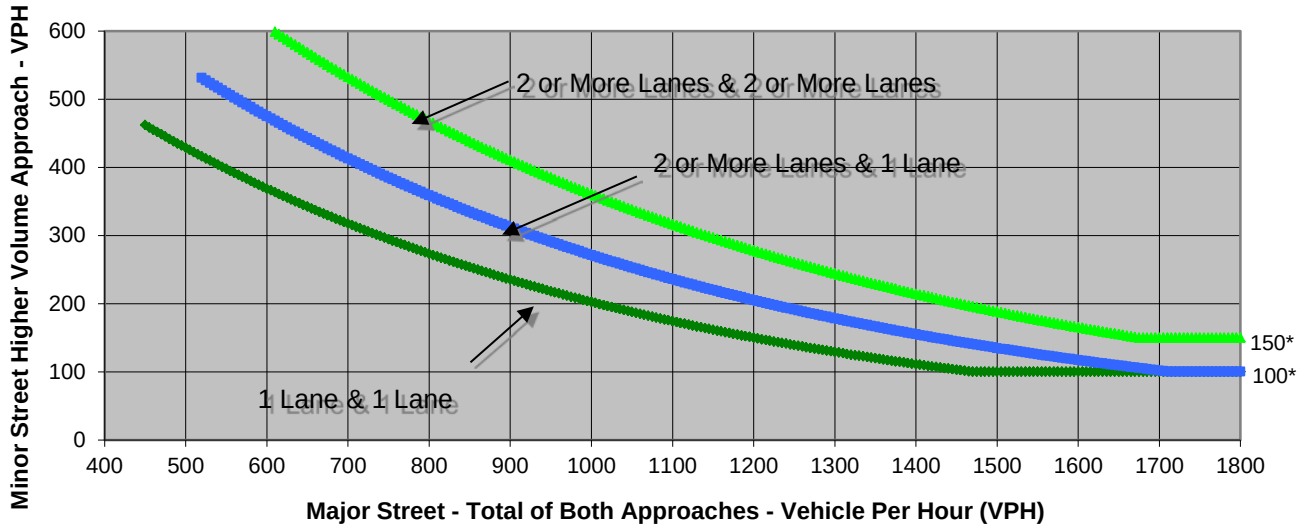
Turn Movement Volumes

	NB	SB	EB	WB
Left	27	66	64	9
Through	1,287	2,204	12	4
Right	38	17	141	16
Total	1,352	2,287	217	29

Major Street Direction

x	North/South
	East/West

Figure 4C-3. Warrant 3, Peak Hour



* 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.

Source: *California Manual on Uniform Traffic Control Devices*, Caltrans, 2012

	Major Street	Minor Street	Warrant Met
	Warm Springs Blvd	Mission Falls Ln/Hackamore Ln	
Number of Approach Lanes	**2**	**1**	**YES**
Traffic Volume (VPH) *	**3,639**	**217**	

* Note: Traffic Volume for Major Street is Total Volume of Both Approches.
Traffic Volume for Minor Street is the Volume of High Volume Approach.