



May 10, 2006  
(Revised 01/02/07)

transportation planning • traffic engineering  
acoustical engineering • parking studies

Mr. David Agnew  
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Laguna Hills, CA 92653

**Subject: Ontario Walmart Super Store Traffic Impact Study (Updated)**

Dear Mr. Agnew:

RK ENGINEERING GROUP, INC. (RK) is pleased to submit the updated Ontario Walmart Traffic Impact Study. The project is located at the northwest corner of the intersection of Mountain Avenue at 5th Street in the City of Ontario. The project site is proposed to be developed with a 190,803 square foot Walmart Super Store. The site currently has a gas station and video rental store in operation (which will both remain in place) and two vacant buildings.

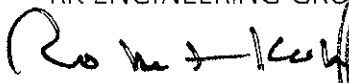
This report provides a summary of the findings, analysis procedures and evaluation of the project area with respect to on-site and off-site traffic impacts pursuant to the City of Ontario, County of San Bernardino, and the San Bernardino Association of Governments (SANBAG) Congestion Management Program requirements.

The purpose of this traffic impact study is to review existing and Project Buildout (Year 2008) without project, with 1997 Specific Plan project, with the existing vacant project and with the proposed project.

RK is pleased to provide this updated traffic study to David Evans & Associates for the proposed project in the City of Ontario. If you have any questions regarding this study, please do not hesitate to contact us.

Sincerely,

RK ENGINEERING GROUP, INC.



Robert Kahn, P.E.  
Principal



Allison Goedecke, M.B.A.  
Senior Transportation Planner

Attachments

**ONTARIO WALMART SUPER STORE (UPDATED)  
TRAFFIC IMPACT STUDY  
City of Ontario, California**

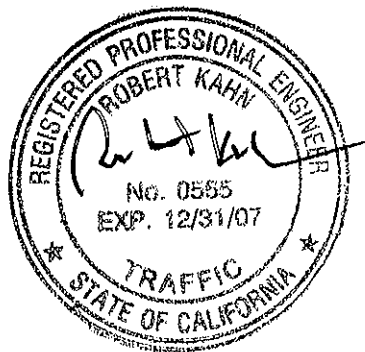
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## **1.0 Introduction**

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This report summarizes the traffic impact study conducted to assess the impacts of the potential land uses at the project site. The project is located at the northwest corner of Mountain Avenue at 5th Street in the City of Ontario. The location of the project site is presented on Exhibit A.

### **1.1 Project Overview**

The proposed Ontario Walmart Super Store is located at the northwest corner of Mountain Avenue at 5th Street in the City of Ontario (see Exhibit A).

The project site is proposed to be developed with a 190,803 square foot Walmart Super Store. The site currently has a gas station and a video store in operation (which will both remain in place) and two vacant buildings. Exhibit B illustrates the project site plan.

The project site previously contained a free standing discount store, supermarket, and toy store. The 1997 Specific Plan for the site assumed a retail commercial shopping center at the project site.

Additional detailed discussion of the roadway network features of the project and its traffic generation characteristics will be provided in subsequent sections of this report.

## 1.2 Study Area

The study area intersections which have been designated by the City staff for evaluation include the following intersections:

<b>North-South Street</b>	<b>East-West Street</b>
Benson Avenue	6th Street 5th Street
Jasmine Avenue	5th Street
Helen Avenue	5th Street
Elderberry Court	5th Street
Mountain Avenue	8th Street 7th Street I-10 Westbound Ramps 1-10 Eastbound Ramps 6th Street 5th Street 4th Street Holt Boulevard
San Antonio Avenue	6th Street 5th Street

Exhibit C shows the existing number of through lanes and Intersection Controls at study intersections.

## 1.3 Overall Analysis Methodology

As described previously, traffic conditions are evaluated in this report for Existing conditions, Project Buildout (Year 2008) Without Project, Project Buildout (Year 2008) With 1997 Specific Plan Project, Project Buildout (Year 2008) With Existing Vacant Project and Project Buildout (Year 2008) With Proposed Project.



Traffic count data was collected by RK ENGINEERING GROUP, INC. in January 2006 specifically for this study. Appendix A provides the turning movements at study area intersections. Exhibit D shows the existing traffic volumes.

Project Buildout Year is planned for Year 2008. In order to account for ambient area-wide growth, an annual growth rate of 2% has been utilized. Therefore, a total growth rate of 4% has been used with the existing traffic counts to determine Project Buildout (Year 2008) Without Project volumes.

Project traffic volumes (per scenario) were then added to the future year background volumes. The result of this traffic forecasting procedure is a series of traffic volumes suitable for traffic operations analysis.

#### **1.4 Traffic Operations Analysis**

The current technical guide to the evaluation of traffic operations is the 2000 Highway Capacity Manual (HCM) (Transportation Research Board Special Report 209). The HCM defines level of service as a qualitative measure which describes operational conditions within a traffic stream, generally in terms of such factors as speed and travel time, freedom to maneuver, traffic interruptions, comfort and convenience, and safety. The criteria used to evaluate LOS (Level of Service) conditions vary based on the type of roadway and whether the traffic flow is considered interrupted or uninterrupted.

The definitions of level of service for uninterrupted flow (flow unrestrained by the existence of traffic control devices) are:

- LOS A represents free flow. Individual users are virtually unaffected by the presence of others in the traffic stream.
- LOS B is in the range of stable flow, but the presence of other users in the traffic stream begins to be noticeable. Freedom to select desired speeds is relatively unaffected, but there is a slight decline in the freedom to maneuver.
- LOS C is in the range of stable flow, but marks the beginning of the range of flow in which the operation of individual users becomes significantly affected by interactions with others in the traffic stream.
- LOS D represents high-density but stable flow. Speed and freedom to maneuver are severely restricted, and the driver experiences a generally poor level of comfort and convenience.
- LOS E represents operating conditions at or near the capacity level. All speeds are reduced to a low, but relatively uniform value. Small increases in flow will cause breakdowns in traffic movement.
- LOS F is used to define forced or breakdown flow. This condition exists wherever the amount of traffic approaching a point exceeds the amount which can traverse the point. Queues form behind such locations.

Uninterrupted flow is generally found only on limited access (freeway) facilities in urban areas.

The definitions of level of service for interrupted traffic flow (flow restrained by the existence of traffic signals and other traffic control devices) differ slightly depending on the type of traffic control.

The level of service is typically dependent on the quality of traffic flow at the intersections along a roadway. The HCM methodology expresses the level of service at an intersection in terms of delay time for the various intersection approaches. The HCM uses different procedures depending on the type of intersection control. The levels of service determined in this study are calculated using the HCM methodology.

For signalized intersections, average control delay per vehicle is used to determine level of service. Levels of service at signalized study intersections have been evaluated using the HCM intersection analysis program.

Study area intersections which are stop sign controlled with stop control on the minor street only have been analyzed using the two-way stop controlled unsignalized intersection analysis methodology of the HCM. For these intersections, the calculation of level of service is dependent on the occurrence of gaps occurring in the traffic flow of the main street. Using data collected describing the intersection configuration and traffic volumes at these locations, the level of service has been calculated. The Level of Service is determined based on the worst individual movement or movements sharing a single lane. The relationship between the level of service and the delay is different than for signalized intersections.

Because some intersections are all-way stop controlled, the ability of vehicles to enter the intersection is not controlled by the occurrence of gaps in the flow of the main street. All-way stop controlled (AWSC) intersections have been evaluated using the HCM Methodology for this type of multi-way stop controlled intersection configuration. The level of service criteria for this type of intersection analysis is also based on average control delay per vehicle for the overall intersection.

The level of services are defined in terms of average delay for the intersection analysis methodology as follows:

Level of Service	Average Total Delay per Vehicle (Seconds)	
	Signalized	Unsignalized
A	0 to 10.00	0 to 10.00
B	10.01 to 20.00	10.01 to 15.00
C	20.01 to 35.00	15.01 to 25.00
D	35.01 to 55.00	25.01 to 35.00
E	55.01 to 80.00	35.01 to 50.00
F	80.01 and up	50.01 and up

Per CMP, signalized intersections are considered deficient (LOS F) if the overall intersection critical V/C ratio equals or exceeds 1.0, even if the level of service defined by the delay value is below the defined LOS standard. Per the City of Ontario, the level of service threshold is LOS D.

The LOS analysis for signalized intersections has been performed using optimized signal timing. This analysis has included an assumed lost time of two seconds per phase in accordance with 2003 San Bernardino CMP recommended default values. Signal timing optimization has considered pedestrian safety and signal coordination requirements. Appropriate time for pedestrian crossings have also been considered in the signalized intersection analysis.

For analysis, saturation flow rates of 1,800 vehicles per hour of green (vphg) for through and right turn lanes and 1,700 vehicles for single left turn lane, 1,600 vehicles per lane for dual left turn lanes have been assumed for capacity analysis. These are the default values recommended by the CMP guidelines.

The peak hour traffic volumes have been adjusted to peak 15 minute volumes for analysis purposes using the existing observed peak 15 minute to peak hour factors for all scenarios analyzed. For Existing conditions the existing peak hour factors have been used and for future conditions a peak hour factor of 0.95 has been used.

## **1.5 Definition of Deficiency**

The following definitions of deficiencies have been developed in accordance with the City of Ontario General Plan CMP requirements.

The definition of an intersection deficiency has been obtained from the City of Ontario. The peak hour intersection operations of LOS D or better are generally acceptable. Therefore, any intersection operating at LOS E to F will be considered deficient.

## **1.6 Definition of Significant Impact**

The following definition of significant impacts have been developed in accordance with the City of Ontario General Plan CMP requirements.

The identification of significant impacts is a requirement of CEQA, and is not directly addressed in the CMP document. The City of Ontario General Plan and Circulation Element have been adopted in accordance with CEQA requirements, and any roadway improvements within the City of Ontario, which are consistent with these documents, are not considered a significant impact, as long as the project contributes its "Fair Share" funding for improvements.

A traffic impact is considered significant if the project: 1) contributes measurable traffic; and 2) substantially and adversely changes the level of service at any location projected to experience deficient operations under foreseeable cumulative

conditions, where feasible improvements consistent with the City of Ontario General Plan cannot be constructed.



## **2.0 Project Description**

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This section describes the project land uses and traffic characteristics for each of the future conditions years analyzed.

### **2.1 Project Description**

The project site plan was previously presented on Exhibit B. The project site is proposed to be developed with a 190,803 square foot Walmart Super Store. The site currently has a gas station and video rental store in operation (which will both remain in place) and two vacant buildings.

This study will also analyze future conditions with the planned uses from the 1997 Specific Plan and the uses that are currently at the site (although currently vacant).

### **2.2 Project Traffic**

The traffic related to the project has been calculated in accordance with the following accepted procedural steps:

- Trip Generation
- Trip Distribution
- Traffic Assignment

These steps are described in detail below.

### **2.3 Project Trip Generation**

The Institute of Transportation Engineers (ITE) Trip Generation Manual (7th Edition) has been used to calculate the overall quantity of traffic which the project site is estimated to generate. Table 1 presents the rates which have been obtained from the ITE Trip Generation Manual.

Table 2 summarizes the projected trip generation for the proposed project development. The proposed development is projected to generate a net total of approximately 7,981 trip-ends per day with 301 vehicles per hour during the AM peak hour and 629 vehicles per hour during the PM peak hour. Based upon the ITE Trip Generation Handbook (March 2001) approximately 15% of the Walmart project's traffic will be "pass-by" trips.

Table 3 also shows the trip generation for the 1997 Specific Plan land uses and Table 4 shows the trip generation for the existing vacant land uses. Table 5 shows a comparison of the proposed project and the other land use scenarios. As shown on Table 5, the proposed project is projected to generate less PM peak hour traffic and ADT (Average Daily Traffic) than the other two land use scenarios. The PM peak hour traffic is the critical time period in this area.

### **2.4 Project Trip Distribution and Assignment**

The trip distribution and assignment process represents the directional orientation of traffic to and from the project site. Trip distribution is heavily influenced by the geographical location of the site, the location of commercial, employment and residential opportunities and the proximity to the regional freeway system.

The project traffic distribution is shown on Exhibit E.

## **2.5 Project Traffic Volumes**

The project traffic volume forecasts have been developed by applying the trip generation, distribution, and traffic assignment calculations. The ADT volumes attributable to the project and the peak hour project traffic forecasts are depicted on Exhibit F.

## **2.6 Project Access**

The proposed project will have access to Mountain Avenue and 5th Street. The access to the project is shown in the project site plan (Exhibit B).

## **3.0 Existing Conditions**

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This section of the report summarizes existing roadway and traffic conditions in the study area. The existing conditions at the study intersections and roadway are presented on Exhibit C. The number of through travel lanes for existing roadways and intersection controls are presented, along with existing traffic count data collected for this study. This data was used to analyze existing traffic operations in the study area.

### **3.1 Existing Roadway System**

The number of through travel lanes for existing roadways and intersection controls within the study area are presented on Exhibit C.

### **3.2 Existing Peak Hour Traffic and Average Daily Traffic Volumes**

Existing intersection volumes are based upon manual AM and PM peak hour turning movement counts conducted specifically for RK and are shown on Exhibit D. In addition, mid-day traffic volumes were collected at the intersections of Jasmine Avenue at 5th Street and Helen Avenue at 5th Street during the two-hour period of 1:30 PM and 3:30 PM in order to coincide with school dismissal at El Camino Elementary School at 2:05 PM. Peak hour traffic count worksheets are included in Appendix A.

Exhibit D also depicts the average daily traffic (ADT) volumes in the study area. ADT volumes have been collected by RK specifically for this study.

**3.3 Existing Traffic Operations**

Existing peak hour traffic operations have been evaluated for the peak hour of traffic at the study area intersections. The results of this analysis are summarized in Table 6, along with the existing intersection geometric and traffic control devices at each study area location.

All of the study area intersections analyzed currently operates at Level of Service D or better during the peak hours, except for the following intersections that currently operate at an unacceptable Level of Service during the peak hours:

<b>North-South Street</b>	<b>East-West Street</b>
Mountain Avenue	8th Street 6th Street Holt Avenue

Level of service worksheets for Existing conditions are included in Appendix B.

## 4.0 Project Buildout (Year 2008) Traffic Conditions and Operations Analysis

This chapter of the report describes the traffic conditions for the future year traffic volume forecasts and presents the resulting traffic volumes, which will be used for future traffic operations analysis. Future traffic conditions without the project are presented first followed by future traffic conditions with the project.

### 4.1 Project Buildout (Year 2008) Without Project

Project Buildout (Year 2008) Without Project traffic has been determined by utilizing a 2% annual growth rate to account for ambient growth in the study area for a total growth rate of 4%. The growth rate was obtained by the City Traffic Department. The City did not have any other significant cumulative projects in the study area. The Project Buildout (Year 2008) Without Project PM peak hour intersection volumes and average daily traffic are shown on Exhibit G

The intersection operations analysis for Project Buildout (Year 2008) Without Project traffic conditions with existing geometrics is summarized in Table 7. As presented in Table 7, all study area intersections are projected to operate at Level of Service D or better during the peak hours, except the following intersections that are projected to operate at unacceptable Levels of Service:

North-South Street	East-West Street
Mountain Avenue	8th Street 6th Street Holt Avenue

HCM calculation worksheets for Project Buildout (Year 2008) Without Project conditions are included in Appendix C.



#### 4.2 Project Buildout (Year 2008) With 1997 Specific Plan Uses

Project Buildout (Year 2008) With 1997 Specific Plan Uses traffic has been determined by adding trip generation from the 1997 Specific Plan land uses to Project Buildout (Year 2008) Without Project traffic volumes. Project Buildout (Year 2008) With 1997 Specific Plan Uses peak hour intersection volumes and average daily traffic are shown on Exhibit H.

The intersection operations analysis for Project Buildout (Year 2008) With 1997 Specific Plan Uses traffic conditions is summarized in Table 5. As presented in Table 8, all study area intersections are projected to operate at Level of Service D or better during the peak hours, except the following intersections that are projected to operate at unacceptable Levels of Service:

North-South Street	East-West Street
Mountain Avenue	8th Street 6th Street Holt Avenue

HCM calculation worksheets for Project Buildout (Year 2008) With 1997 Specific Plan Uses conditions are included in Appendix D.

#### 4.3 Project Buildout (Year 2008) With Existing Uses

Project Buildout (Year 2008) With Existing Uses traffic has been determined by adding trip generation from the Existing land uses (which are currently vacant) to Project Buildout (Year 2008) Without Project traffic volumes. Project Buildout (Year 2008) With Existing Uses peak hour intersection volumes and average daily traffic are shown on Exhibit I.

The intersection operations analysis for Project Buildout (Year 2008) With Existing Uses traffic conditions is summarized in Table 9. As presented in Table 9, all study area intersections are projected to operate at Level of Service D or better during the peak hours, except the following intersections that are projected to operate at unacceptable Levels of Service:

North-South Street	East-West Street
Mountain Avenue	8th Street 6th Street Holt Avenue

HCM calculation worksheets for Project Buildout (Year 2008) With Existing Uses conditions are included in Appendix E.

#### 4.4 Project Buildout (Year 2008) With Proposed Project

Project Buildout (Year 2008) With Proposed Project traffic has been determined by adding trip generation from the proposed project (Walmart Super Store) land uses to Project Buildout (Year 2008) Without Project traffic volumes. Project Buildout (Year 2008) With Proposed Project peak hour intersection volumes and average daily traffic are shown on Exhibit J.

The intersection operations analysis for Project Buildout (Year 2008) With Proposed Project traffic conditions is summarized in Table 10. As presented in Table 10, all study area intersections are projected to operate at Level of Service D or better during the peak hours, except the following intersections that are projected to operate at unacceptable Levels of Service:

North-South Street	East-West Street
Mountain Avenue	8th Street 6th Street Holt Avenue

HCM calculation worksheets for Project Buildout (Year 2008) With Proposed Project conditions are included in Appendix F.

Traffic signals are not projected to be warranted at any of the unsignalized study area intersections through Project Buildout Plus Project conditions (see Appendix G for traffic signal warrant worksheets)

## **5.0 Project Transportation Fee Participation**

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The project is required to participate in the City of Ontario's DIF (Development Impact Fee) program. The reason for this is that the original site development did not participate in this fee program.

The DIF fee will be used to improve intersection and roadway improvements in the City of Ontario. This would include those mitigation measures identified in this report.

## **6.0 Special Issues**

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### **6.1 School Crossing**

There are two public elementary schools in the vicinity of the site. One school is located west of the project on 5th Street and the other school is located on Hawthorne Street east of the project. However, the project is anticipated to only contribute a minor amount of traffic (5% of the project traffic) to 5th Street adjacent to the school and a nominal amount of traffic to Hawthorne Street east of the project. The vast majority of the project traffic will be oriented to Mountain Avenue primarily towards the I-10 Freeway based upon the traffic analysis. Currently there are school markings and traffic signage meeting MUTCD standards by the schools. In addition, there are adult crossing guards. With these measures in place, it is not projected that the Walmart project will have a significant impact to the schools.

### **6.2 Truck Trips**

Trucks which will utilize the site will be using Mountain Avenue, a primary arterial roadway, and 5th Street between Mountain and the site's west side for access to the proposed project. This truck route does not impact sensitive land uses such as residential, schools or parks. Designated through truck routes for the project will not be along 5th or 4th Streets in order to minimize impacts to the surrounding park and land uses. The designated truck route will be along Mountain Avenue towards the I-10 Freeway. These truck routes are not projected to have a significant impact to local residents or the schools and parks in this area.

### **6.3 Site Access**

Site access has been reviewed and the recommended access to the site is shown in Exhibit L. Both right in/out and full access driveways are shown on Exhibit L. This

should include the installation of a traffic signal at the project's full access at Mountain Avenue and Hawthorne Avenue. This will include the installation of a traffic actuated traffic signal and traffic signal interconnect at the project full access at Mountain Avenue and Hawthorne Avenue. The interconnect would allow for the operation of coordinated traffic flow, along Mountain Avenue. The spacing of signalized intersections with the Hawthorne Avenue traffic signal would be at one eighth mile, which is adequate to ensure coordinated traffic flow along Mountain Avenue. This spacing is greater than what currently occurs near the I-10 Freeway. Also, to minimize the opportunity for cut through traffic on Hawthorne Avenue the east leg of the intersection will be limited to right turns in and right turns out only.

#### **6.4 City of Chino Intersections and Roadway Segments**

The City of Chino has requested an analysis of the intersections of Mountain Avenue at Walnut Avenue, Mountain Avenue at the SR-60 Freeway East and West Bound Freeway Ramps and a segment analysis for Mountain Avenue from Walnut Avenue to the SR-60 Freeway. These intersections and roadway segments have not been included in the traffic study, because the project will have minimal traffic contribution and impacts to those locations. Those intersections and segments are located approximately 3.75 miles south of the project site. Based upon the project trip generation and trip distribution, it is anticipated that there will be minimal traffic associated from the project at these intersections and roadway segments. It is anticipated that the PM peak hour traffic volume from the project will be less than 30 vehicles per hour. Therefore, no further traffic analysis is necessary.

#### **6.5 Anthony Munoz Park**

Anthony Munoz Park is located to the west of the project, south of 5th Street and north of 4th Street. The traffic study analyzed the traffic impacts at the intersection of Elderberry Court and 5th Street as part of the traffic study. This intersection is adjacent to the park. This intersection would operate at Level of Service B during



the AM/PM peak hour periods both without and with the project. There would be less than one-half second delay increase at this intersection as a result of the project; therefore, there would be no adverse traffic impact created as a result of the project. Again, as previously noted, only about five percent of the project traffic is anticipated to occur along 5th Street and three percent along 4th Street. Project traffic conflicts with pedestrians will be minimal in comparison to existing traffic flows along these east/west roadways.

## **6.6 Traffic Impact to San Antonio Avenue**

Traffic impacts to San Antonio Avenue at 5th and 6th Streets were included in the traffic analysis. The intersection of San Antonio Avenue at 6th Street is projected to operate at Level of Service B during the AM and PM peak hour With the Project. The intersection of San Antonio Avenue at 5th Street is anticipated to operate at Level of Service C during the AM peak hour and B during the PM peak hour. These are acceptable levels of service based upon City standards. The incremental increase in delay caused by the project is insignificant and would represent less than a half second increase in delay during the AM/PM peak hours at these intersections with the project. No adverse traffic impacts to San Antonio Avenue are anticipated as a result of the project.

## **6.7 Traffic Impact at Palmetto and 6th Street**

The intersection of Palmetto at 6th Street is located north east of the proposed project. However, no project traffic is anticipated to travel through this intersection. The primary route to the north will be on Mountain Avenue towards the I-10 Freeway. No change in traffic impacts are anticipated at this intersection as a result of the project.

## **6.8 Mountain Avenue at Hawthorne Street Improvements**

As previously noted, this intersection of Mountain Avenue at Hawthorne Street will be signalized with the proposed project. The traffic signal will be interconnected to the traffic signals at Mountain Avenue at 6th Street and Mountain Avenue at 5th Street to ensure coordinated traffic flow occurs along Mountain Avenue. The installation of the traffic signal will greatly improve existing operations and level of service at this intersection. It will allow for controlled left turn movements at the intersection, which will be a major safety improvement. Furthermore, it will provide for a controlled pedestrian crossing at Mountain Avenue that will benefit the existing residential community in the area. Also, to minimize the opportunity for cut through traffic on Hawthorne Avenue the east leg of the intersection will be limited to right turns in and right turns out only. The installation of the traffic signal will have a positive impact to traffic flow and safety at this location.

## **6.9 Other Unsignalized Intersections**

Intersections where additional traffic controls (i.e. traffic signals) are not warranted as part of the traffic study, will operate at acceptable levels of service with the project. As shown in Table 10, the level of service at these intersections which are not controlled by traffic signals are projected to operate at acceptable levels of service during the AM and PM peak hours with the proposed project. Therefore, no level of service problems are anticipated at any of these unsignalized intersections. Unsignalized intersections should be monitored to determine future warrants for a traffic signal.

## **6.10 Impacts to Public Transit**

It is not anticipated that the proposed project would cause any adverse impacts to public transit in the area. The proposed shopping center will be an attraction and therefore would likely increase ridership for existing public transit routes in the area.

As a result of additional ridership by employees and customers. This is a positive project impact as it offers the opportunity to increase transit utilization as a result of this project. Existing transit routes along Mountain Avenue could adequately serve the proposed project site from a public transit standpoint.

### **6.11 Alternative Routes to Mountain Avenue**

Mountain Avenue will serve as the primary access route to and from the project because of its location and its existing interchange to the I-10 Freeway and to the SR-60 Freeway further to the south. Other parallel routes such as Benson Avenue and San Antonio Avenue will carry some project traffic as indicated in the project trip distribution shown in Exhibit E. These will primarily serve as feeder routes to the residential neighborhoods which will utilize the proposed project. No major amount of traffic is anticipated on the parallel routes to Mountain Avenue as a result of the project.

### **6.12 Traffic Analysis Time Frames**

The traffic study was based upon conventional weekday morning (7:00-9:00 AM) and afternoon (4:00-6:00 PM) peak hours. These are the typical peak hours when thru traffic is the greatest and a project potentially could impact the operation of nearby intersections and roadway segments the most. Other times of day generally have less thru traffic and also the traffic generated by the project is less at these times. Therefore, night time traffic is not anticipated to be an issue, since thru traffic movements are significantly less than both the AM and PM peak hours, which were studied in the traffic study. However, at the intersection of Jasmine at 5th Street and Helen at 5th Street afternoon peak hours of 1:30 PM to 3:30 PM have been analyzed in order to coincide with the nearby school dismissal as a worst case scenario. Both of these intersections are projected to operate at acceptable levels of service with the project.

### **6.13 Traffic Signal Timing**

Traffic signal timing at Mountain Avenue and I-10 Freeway ramps will occur in the future by Caltrans and SANBAG. The adjusted timing at these ramps will improve traffic signal coordination along Mountain Avenue. These timing improvements will help to minimize delay and better accommodate traffic flows both, without or with the proposed project. As previously mentioned, the traffic signal interconnect associated with the intersection of the traffic signal at Mountain Avenue at Hawthorne Street will help to achieve traffic signal coordination in this area for the segment of Mountain Avenue.

## **7.0 Summary and Recommendations**

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### **7.1 Summary**

A summary of the level of service analysis for each condition is included in Table 11.

The proposed Walmart Super Store project is projected to generate a net total of 7,981 trips per day, with 301 net trips in the AM peak hour and 629 net trips in the PM peak hour.

The proposed project will generate fewer PM peak hour trips and ADT than the existing uses and those planned in the 1997 Specific Plan. This is especially important, since all of the future intersection deficiencies occur during the PM peak hour.

### **7.2 Recommendations**

The recommendations in this section address on-site improvements, off-site improvements, and the phasing of all necessary study area transportation improvements.

Exhibit K depicts the recommended improvements. Site access recommendations are included in Exhibit L.

Complete all internal circulation per City standards.

Install a traffic signal at the project's full access at Mountain Avenue and Hawthorne Street.

At the intersection of Mountain Avenue at 8th Street, pay fair-share to implement protected traffic signal phasing in all directions through the payment of DIF fees.

At the intersection of Mountain Avenue at 6th Street, pay fair-share to construct northbound thru lane through the payment of DIF fees.

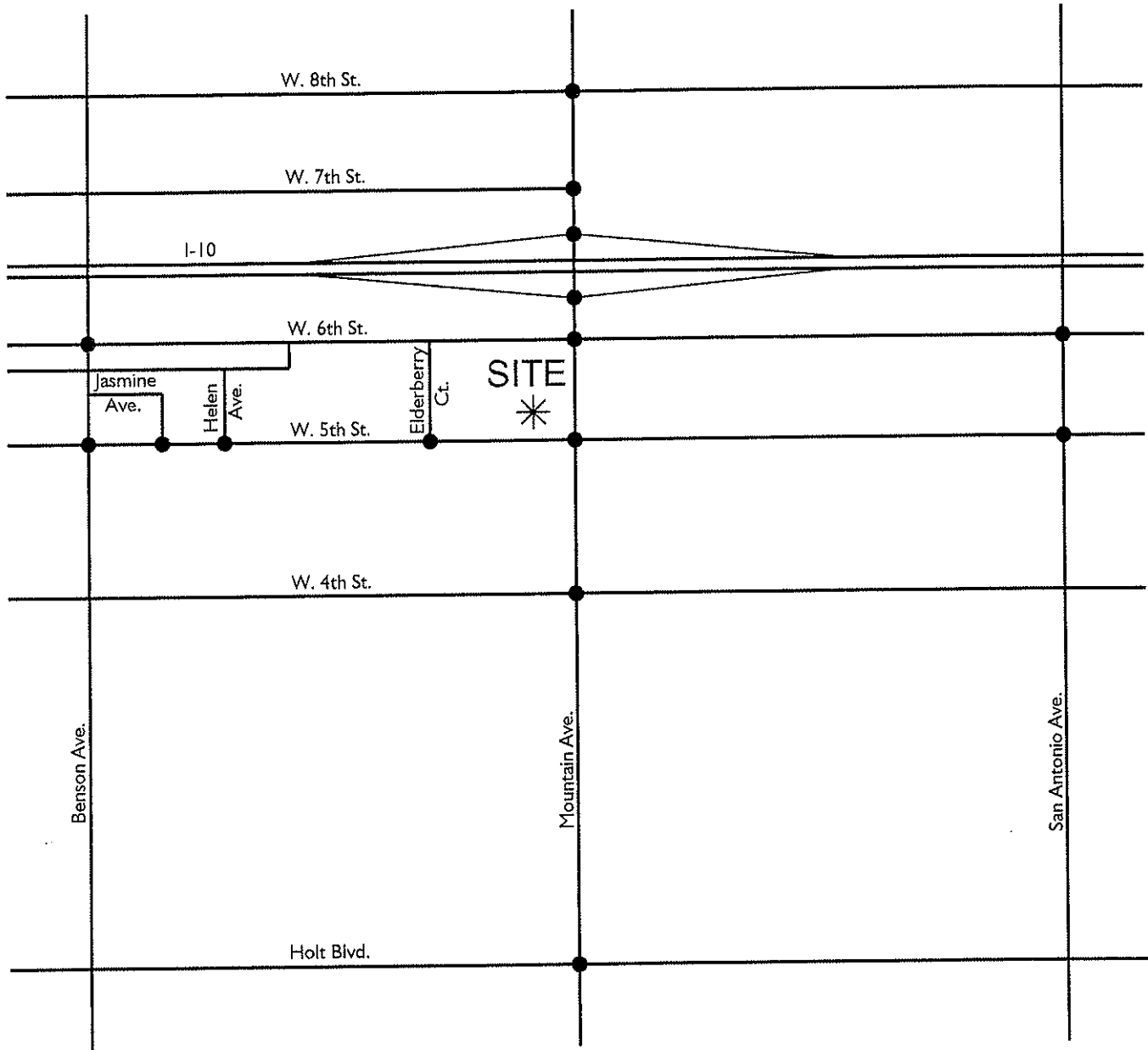
At the intersection of Mountain Avenue at Holt Boulevard, pay fair-share to install additional left turn lanes in all directions and additional northbound and southbound thru lanes through the payment of DIF fees.

Sight distance at the project accesses should be reviewed with respect to standard Caltrans/County of San Bernardino/City of Ontario sight distance standards at the time of preparation of final grading, landscape and street improvement plans.

### **7.3 Transportation System Management Actions**

The project should comply with any adopted Transportation Demand Management requirements of the City of Ontario. This could include provisions for bike racks, employee carpool parking, and other transportation demand management techniques which can encourage the use of alternative modes of transportation.

# Exhibit A Location Map



**Legend:**

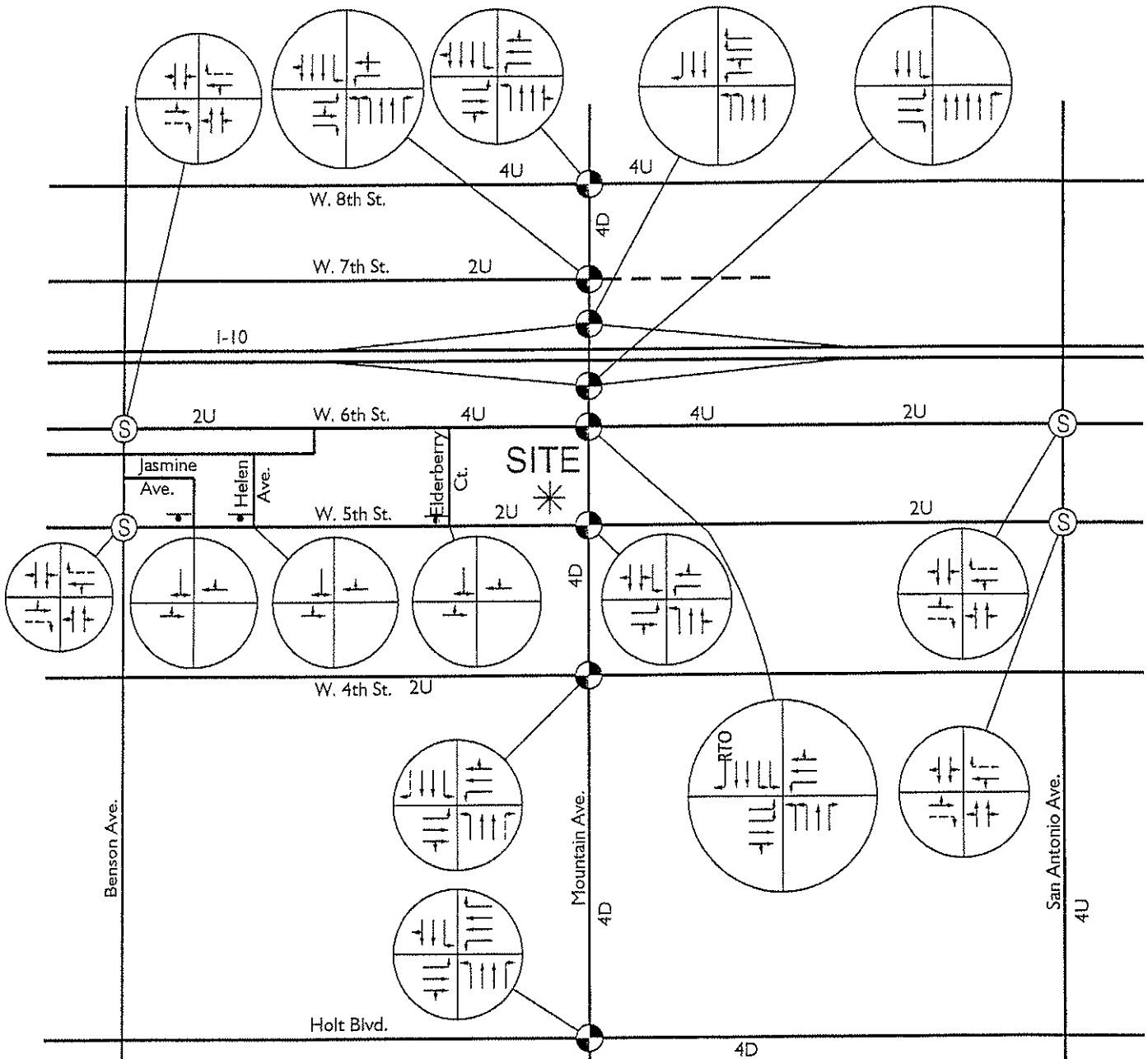
● = Study Area Intersection







# Exhibit C Existing Number of Thru Lanes and Intersection Controls

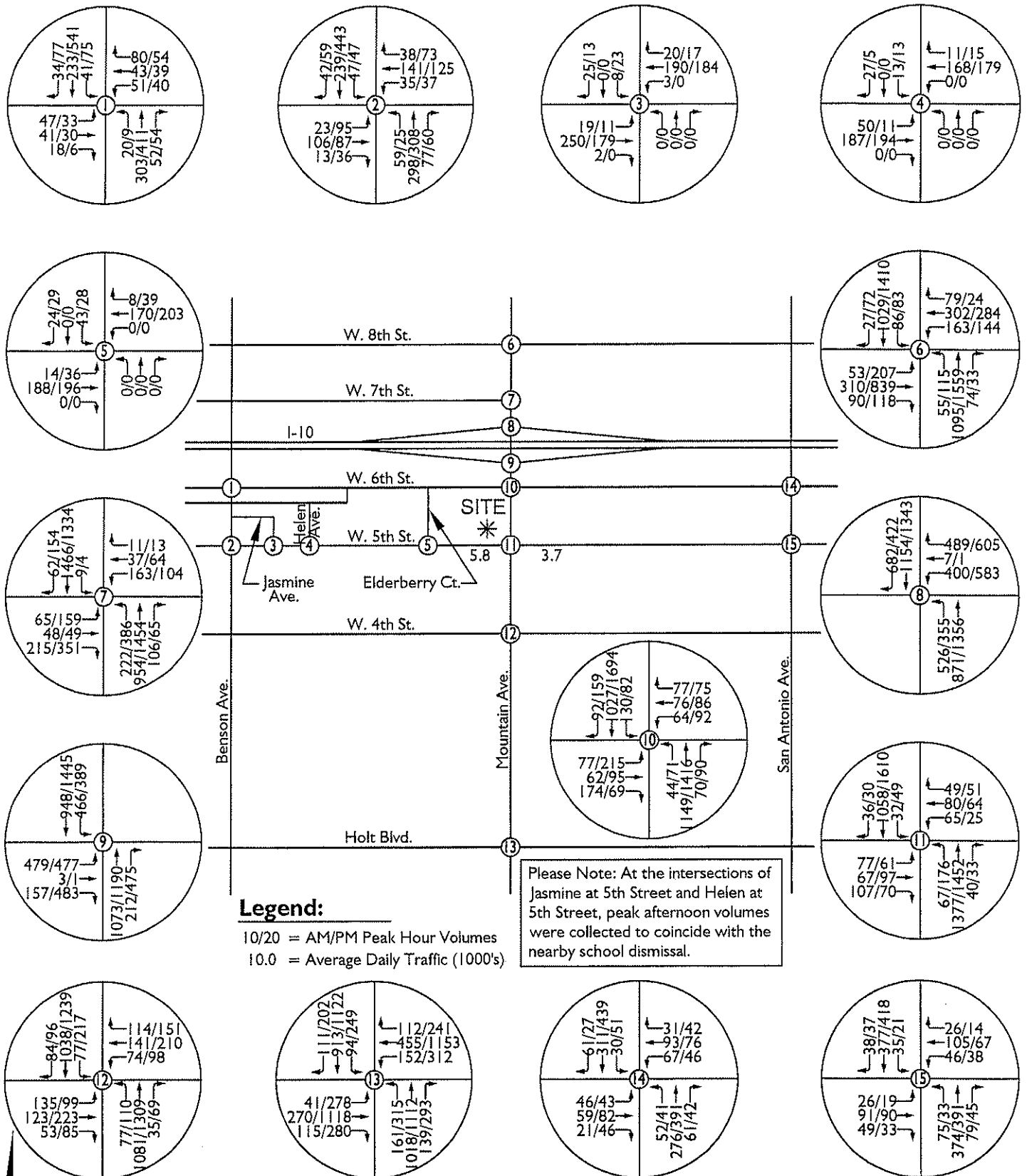


**Legend:**

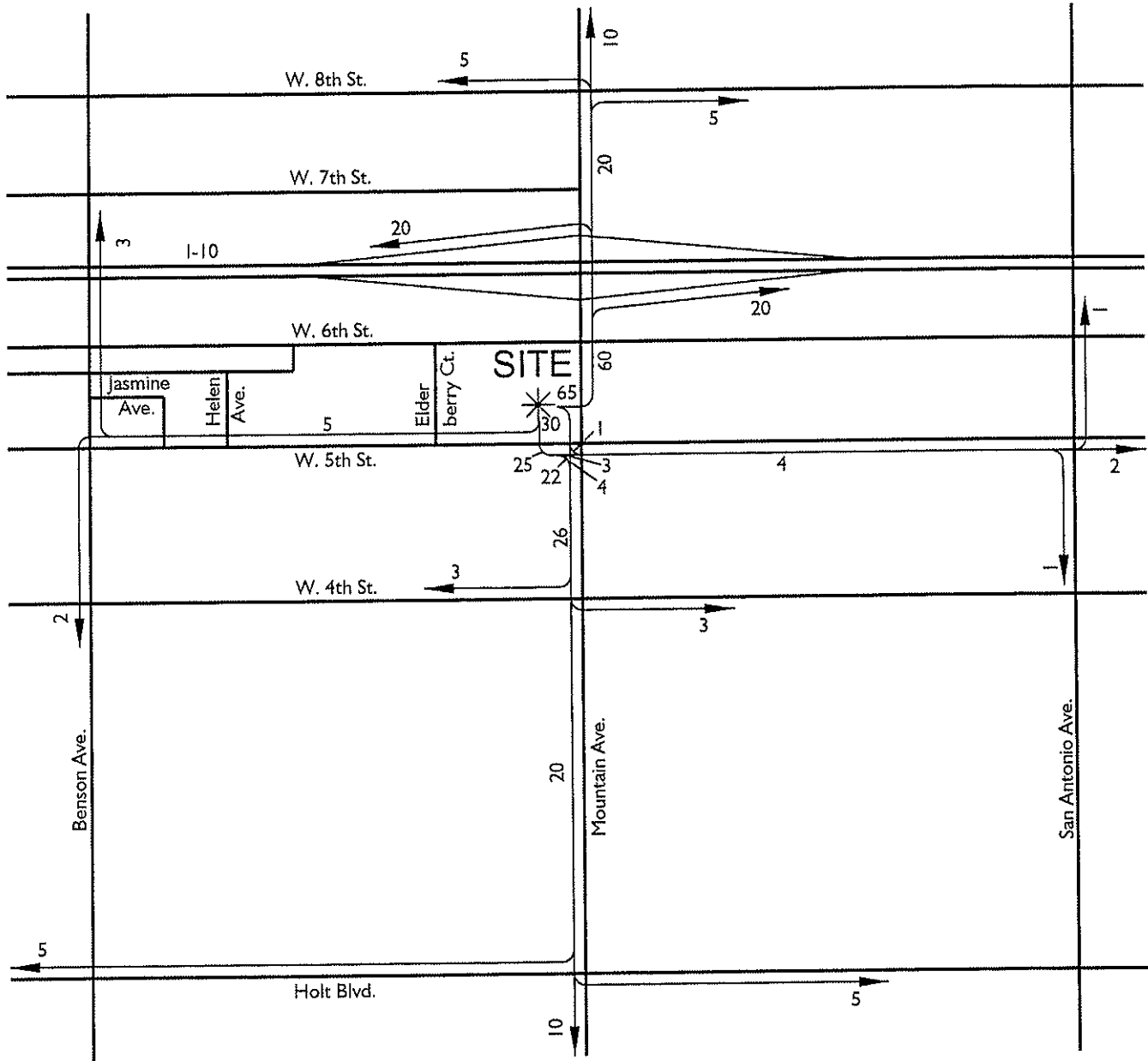
- = Traffic Signal
- Ⓢ = All Way Stop
- ▼ = Stop Sign
- 4 = Number of Lanes
- D = Divided
- U = Undivided
- ↳ RTO = Right Turn Overlap



# Exhibit D Existing Traffic Volumes



# Exhibit E Project Trip Distribution

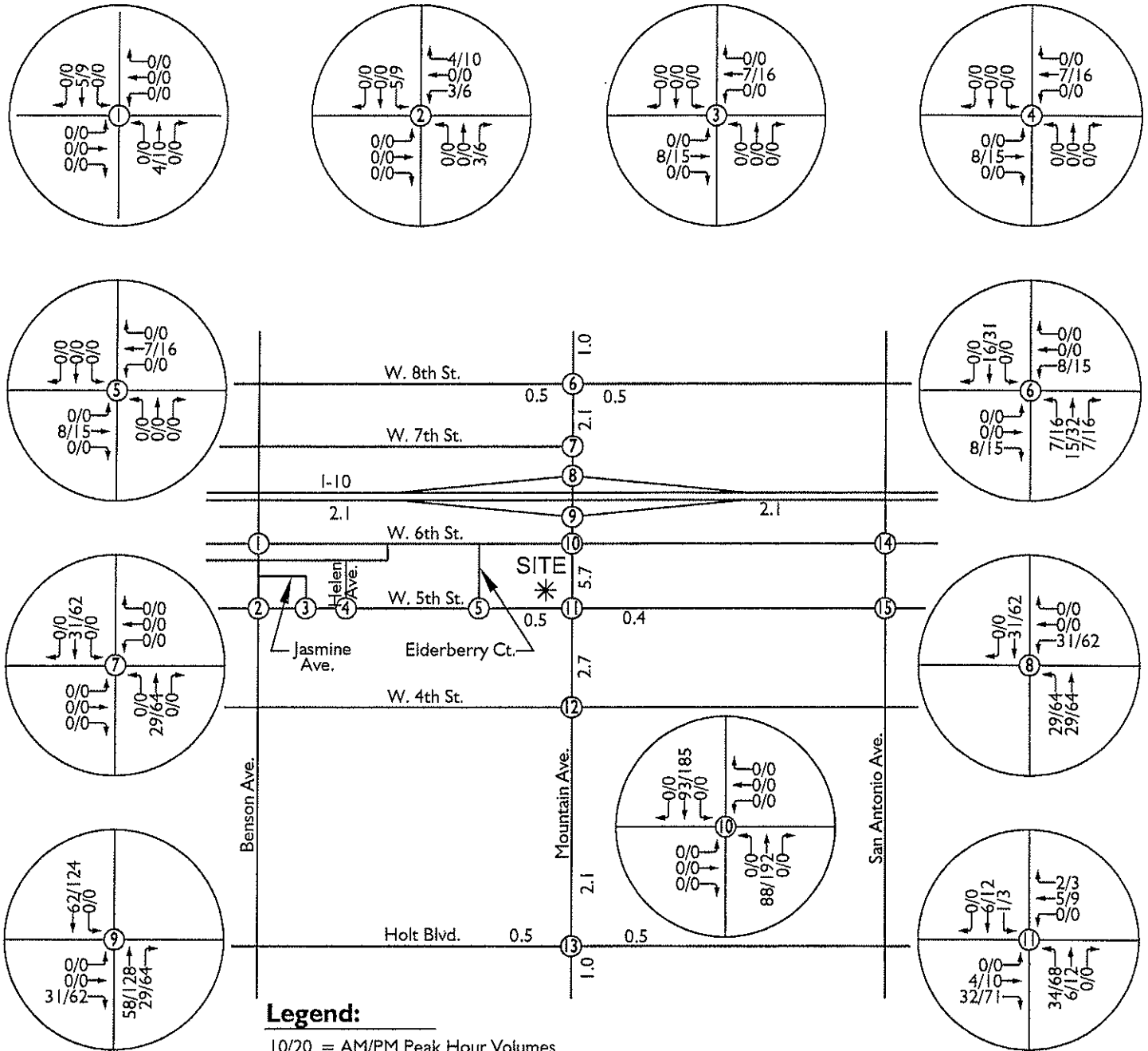


**Legend:**

10 = Percent to/from Project



# Exhibit F Project Traffic Volumes

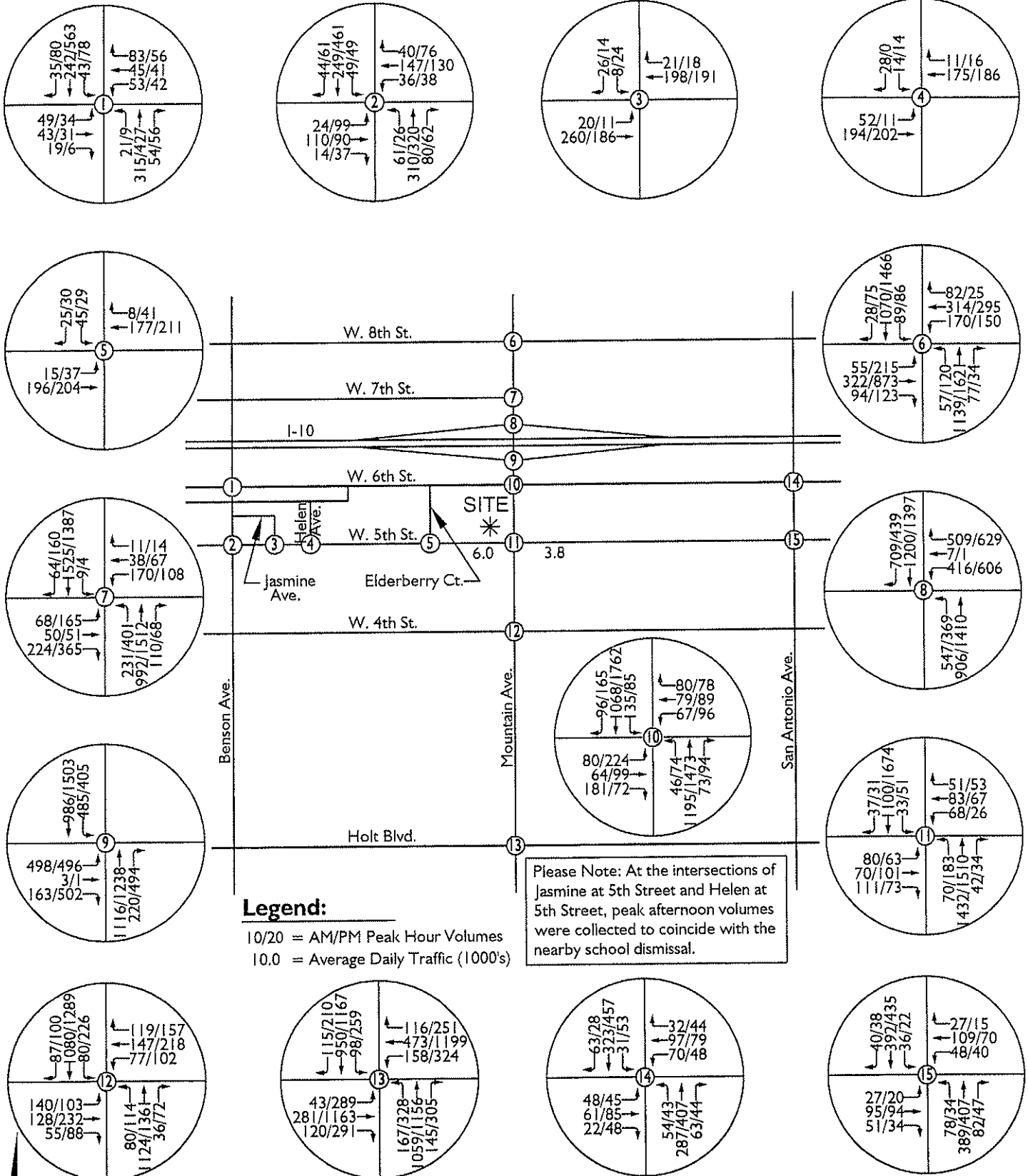


**Legend:**

10/20 = AM/PM Peak Hour Volumes  
10.0 = Average Daily Traffic (1000's)

# Exhibit G

## Project Buildout (Year 2008) Without Project Traffic Volumes



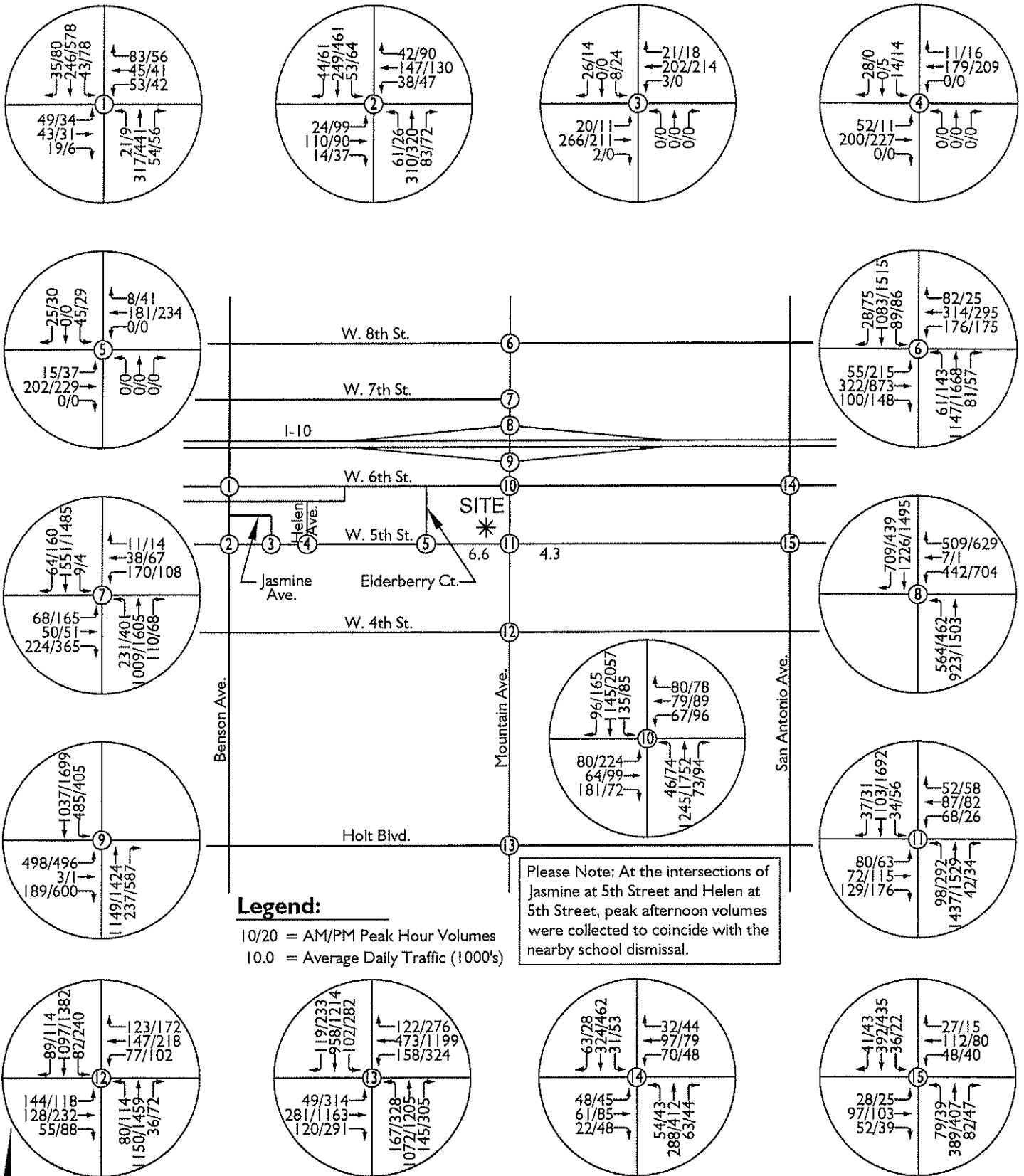
**Legend:**

10/20 = AM/PM Peak Hour Volumes  
10.0 = Average Daily Traffic (1000's)

Please Note: At the intersections of Jasmine at 5th Street and Helen at 5th Street, peak afternoon volumes were collected to coincide with the nearby school dismissal.

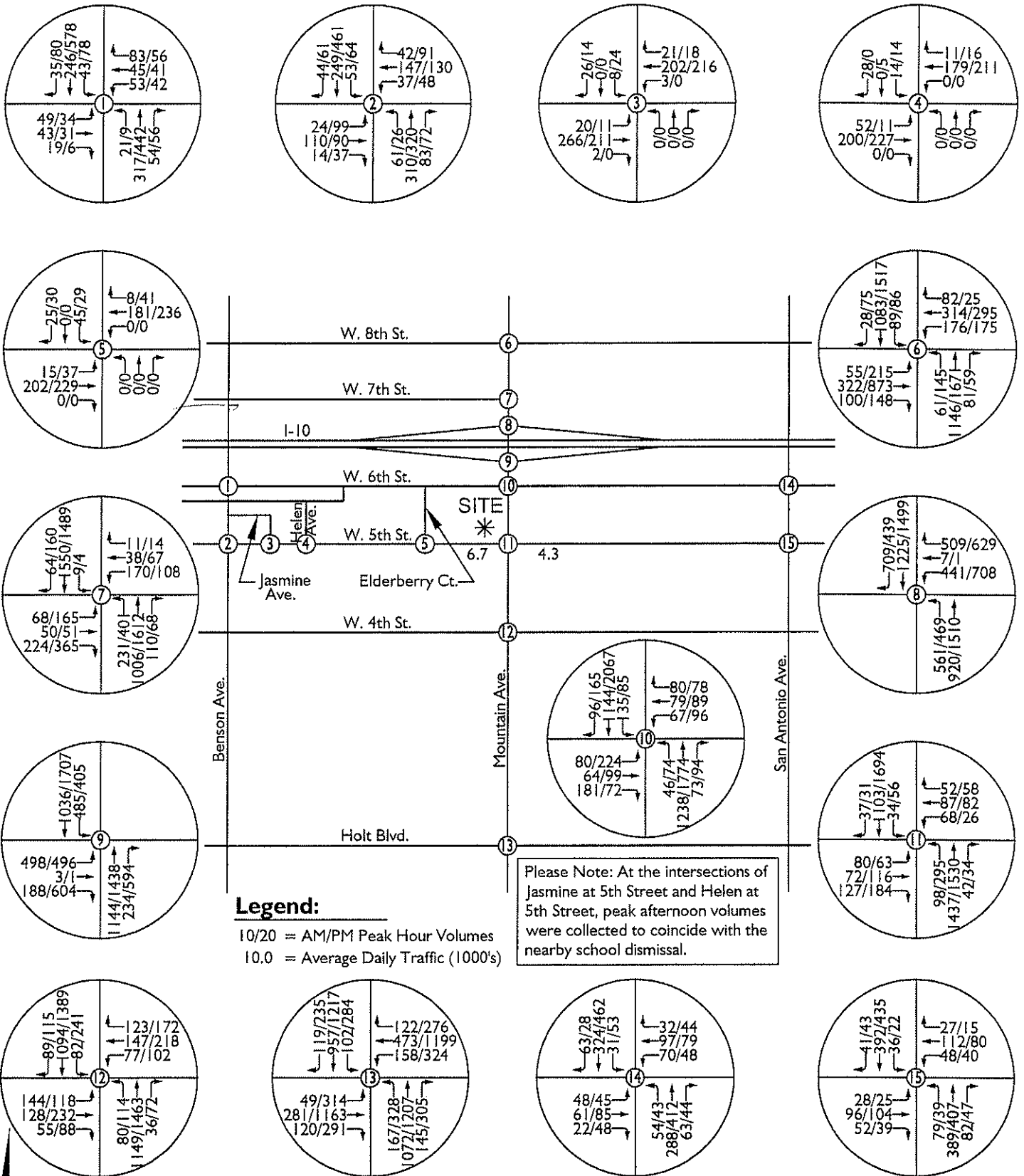
# Exhibit H

## Project Buildout (Year 2008) with 1997 Specific Plan Land Use



# Exhibit I

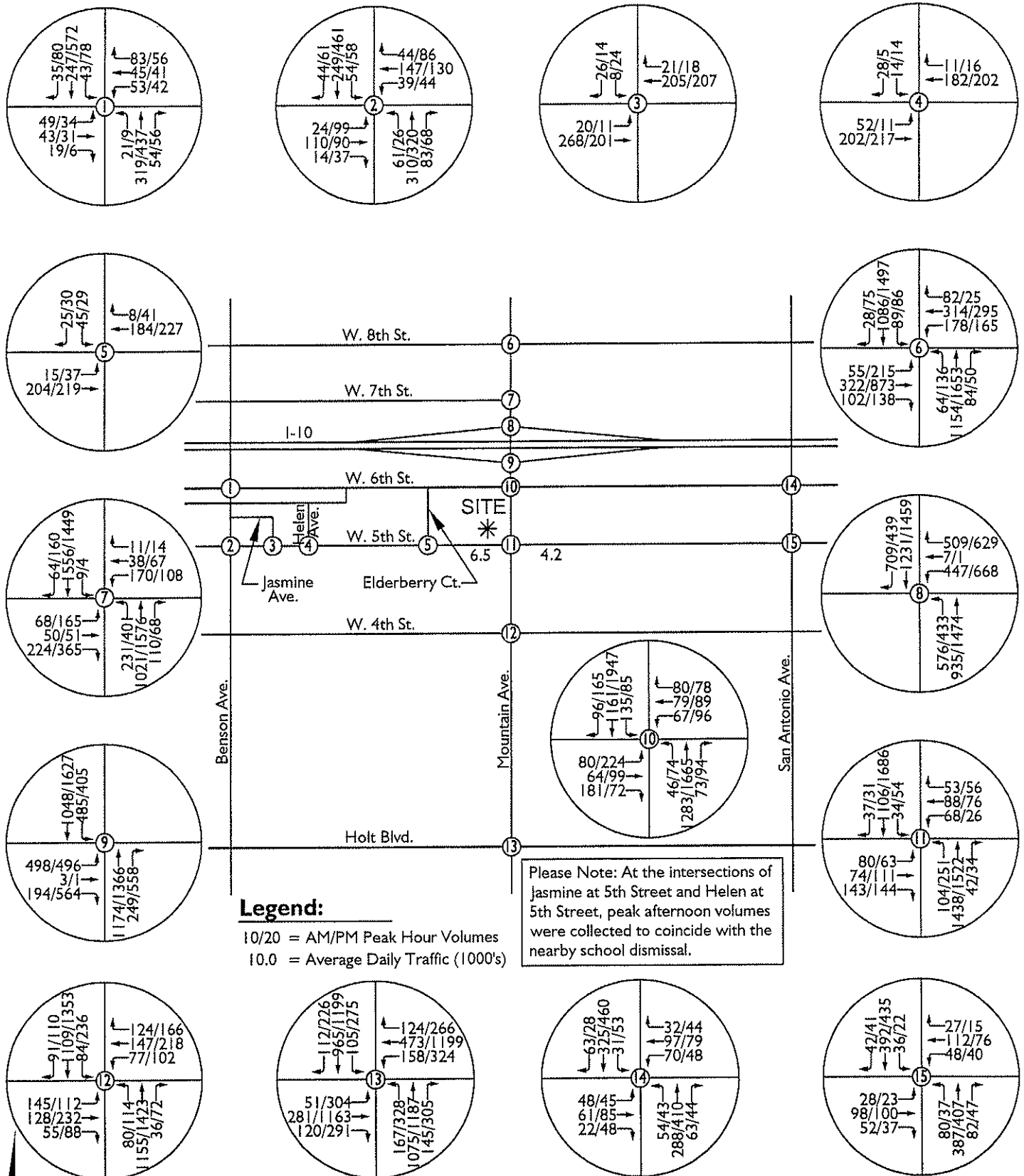
## Project Buildout (Year 2008) with Existing Plan Land Use



# Exhibit J

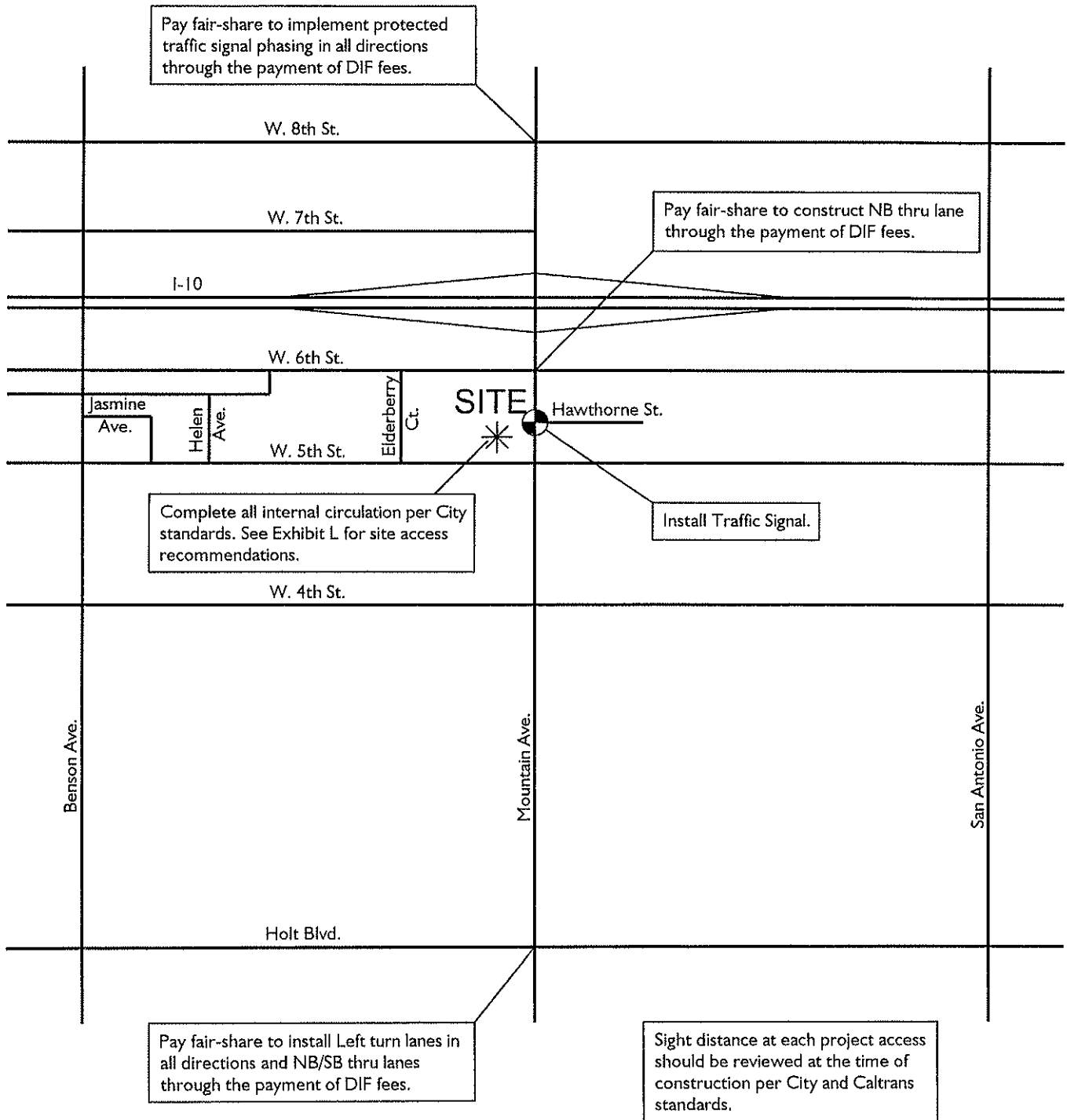
## Project Buildout (Year 2008)

### With Proposed Project Traffic Volumes

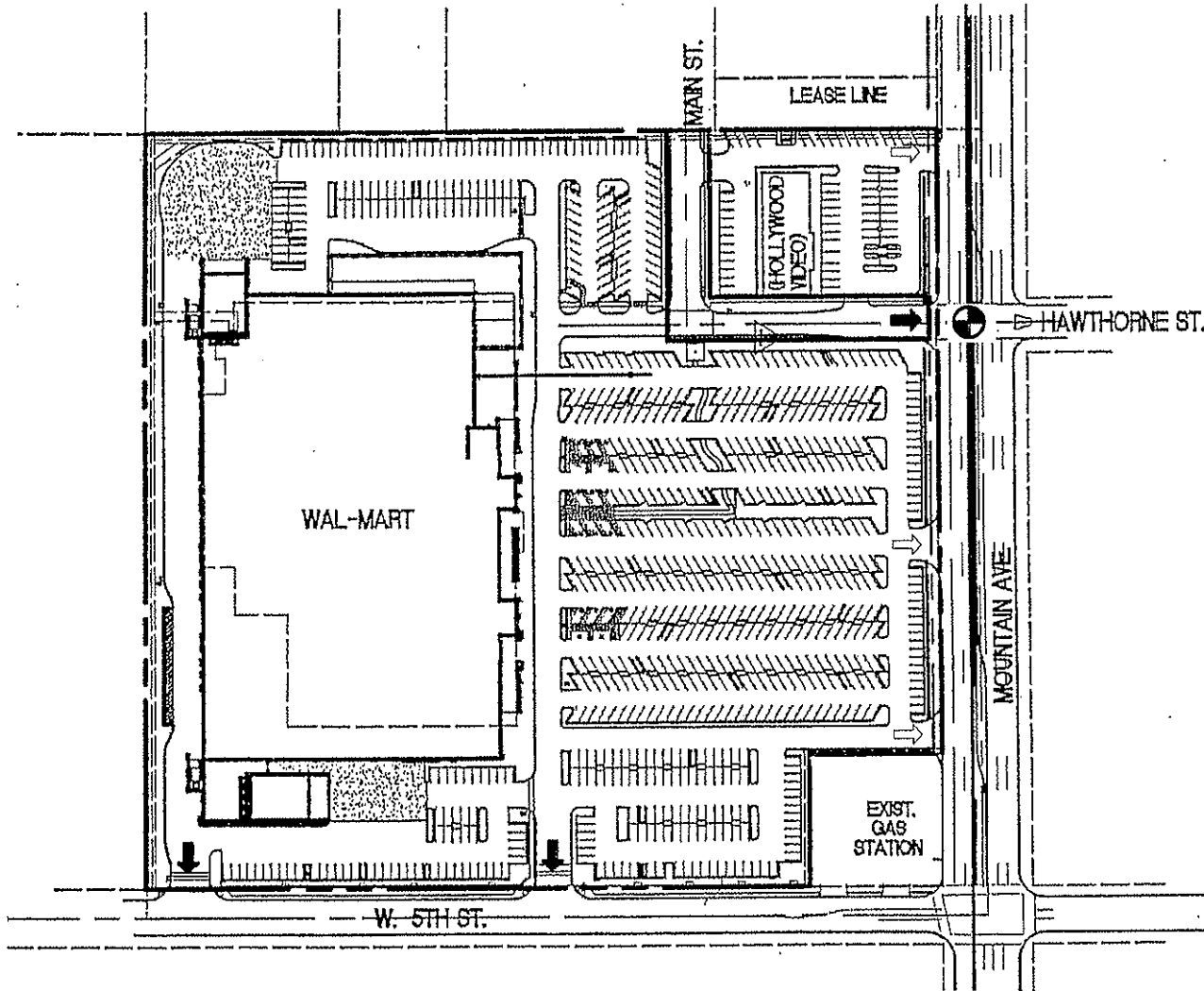




# Exhibit K Recommendations



# Exhibit L Recommended Access



**Legend:**

- ⊕ = Traffic Signal
- ➔ = Full Access
- ↔ = Right In/Out Access



**TABLE 1**  
**Trip Generation Rates<sup>1</sup>**

Land Use	Units <sup>2</sup>	Peak Hour				Daily
		AM		PM		
		In	Out	In	Out	
Free Standing Discount Super Store	TSF	0.94	0.90	1.90	1.97	49.21
Shopping Center (265.368 TSF)	TSF	0.65	0.41	2.16	2.34	48.26
Free Standing Discount Store	TSF	0.57	0.27	2.53	2.53	56.02
Supermarket	TSF	1.98	1.27	5.33	5.12	102.24
Toy Superstore	TSF	0.00	0.00	2.50	2.50	49.9 <sup>3</sup>

<sup>1</sup> Source: Institute of Transportation Engineers (ITE), *Trip Generation, 7th Edition*, 2003.

<sup>2</sup> TSF = Thousand Square Feet

**TABLE 2**  
**Project Trip Generation**

Land Use	Quantity	Units <sup>1</sup>	Peak Hour				Daily
			AM		PM		
			In	Out	In	Out	
Free Standing Discount Super Store	190.803	TSF	179	172	363	376	9,389
Less Pass by Trips (15%)			-24	-26	-54	-56	-1,408
<b>Proposed With Pass-by Project Total</b>			<b>155</b>	<b>146</b>	<b>309</b>	<b>320</b>	<b>7,981</b>

<sup>1</sup> TSF = Thousand Square Feet

**TABLE 3**  
**1997 Specific Plan Trip Generation**

Land Use	Quantity	Units <sup>1</sup>	Peak Hour				Daily
			AM		PM		
			In	Out	In	Out	
Shopping Center	265.368	TSF	171	110	572	620	12,807
Less Pass by Trips	(25%)		-43	-27	-81	-155	-3202
<b>1997 Specific Plan Project Total (With Pass-by)</b>			<b>128</b>	<b>83</b>	<b>491</b>	<b>465</b>	<b>9,605</b>

**TABLE 4**  
**Existing Trip Generation**

Land Use	Quantity	Units <sup>1</sup>	Peak Hour				Daily
			AM		PM		
			In	Out	In	Out	
Free Standing Discount Store (Target)	107,320	TSF	61	29	272	272	6,012
Supermarket (Food 4 Less)	43,700	TSF	87	55	233	224	4,468
Toy Superstore (Toys R Us)	37,765	TSF	0	0	94	94	1,800
Subtotal w/o Pass by			148	84	599	590	12,360
Less Pass by Trips (15%)			-22	-13	-90	-89	1,854
<b>Existing Project Total (With Pass-by)</b>			<b>126</b>	<b>71</b>	<b>509</b>	<b>501</b>	<b>10,506</b>

1 TSF = Thousand Square Feet

**TABLE 5**  
**Project Trip Comparison**

	Peak Hour				Daily
	In	Out	In	Out	
Proposed Project Net Total	155	146	309	320	7,981
1997 Specific Plan Net Total	128	83	491	465	9,605
<b>Difference</b>	<b>+27</b>	<b>+63</b>	<b>-182</b>	<b>-145</b>	<b>-1,624</b>
Proposed Project Net Total	155	146	309	320	7,981
Existing Uses Net Total	126	71	509	501	10,506
<b>Difference</b>	<b>+29</b>	<b>+75</b>	<b>-200</b>	<b>-181</b>	<b>-2,525</b>

**TABLE 6**  
**Intersection Analysis For Existing Conditions**

Intersection	Traffic Control <sup>3</sup>	Intersection Approach Lane(s) <sup>1</sup>												Delay <sup>2</sup> (Seconds)		Level of Service	
		Northbound			Southbound			Eastbound			Westbound			AM	PM	AM	PM
		L	T	R	L	T	R	L	T	R	L	T	R				
Benson Avenue (NS) at:																	
• 6th Street (EW)	AWS	0.5	1	0.5	0.5	1	0.5	0.5	0.5	1	0.5	0.5	1	12.7	15.6	B	C
• 5th Street (EW)	AWS	0.5	1	0.5	0.5	1	0.5	0.5	0.5	1	0.5	0.5	1	13.8	17.3	B	C
Jasmine Avenue (NS) at:																	
• 5th Street (EW) <sup>4</sup>	CSS	0	0	0	0	1	0	0.5	0.5	0	0	0.5	0.5	11.5	12.2	B	B
Helen Avenue (NS) at:																	
• 5th Street (EW) <sup>4</sup>	CSS	0	0	0	0	1	0	0.5	0.5	0	0	0.5	0.5	12.0	11.4	B	B
Elderberry Court (NS) at:																	
• 5th Street (EW)	CSS	0	0	0	0	1	0	0.5	0.5	0	0	0.5	0.5	13.0	11.6	B	B
Mountain Avenue (NS) at:																	
• 8th Street (EW)	TS	1	2.5	0.5	1	2.5	0.5	1	1.5	0.5	1	1.5	0.5	40.2	101.7	D	F
• 7th Street (EW)	TS	2	2	1	1	2.5	0.5	1.5	0.5	1	1	0.5	0.5	20.2	23.8	C	C
• I-10 Westbound Ramps (EW)	TS	2	2	0	0	2	1	0	0	0	1.5	0.5	2	42.8	34.2	D	C
• I-10 Eastbound Ramps (EW)	TS	0	4	1	1	2	0	1	1	1	0	0	0	40.7	36.2	D	D
• 6th Street (EW)	TS	2	1	1	2	2	1>	2	1.5	0.5	1	1.5	0.5	77.4	109.6	E	F
• 5th Street (EW)	TS	1	1.5	0.5	1.5	1	0.5	1	0.5	0.5	1	0.5	0.5	18.3	22.6	B	C
• 4th Street (EW)	TS	1	2	1	1	2	1	1	1.5	0.5	1	1.5	0.5	17.8	21.7	B	C
• Holt Boulevard (EW)	TS	1	2	1	1	1.5	0.5	1	1.5	0.5	1	2	1	33.2	127.0	C	F
San Antonio Avenue (NS) at:																	
• 6th Street (EW)	AWS	0.5	1	0.5	0.5	1	0.5	0.5	0.5	1	0.5	0.5	1	13.6	15.0	B	B
• 5th Street (EW)	AWS	0.5	1	0.5	0.5	1	0.5	0.5	0.5	1	0.5	0.5	1	16.9	14.4	C	B

<sup>1</sup> When a right turn lane is designated, the lane can either be striped or unstriped. To function as a right turn lane there must be sufficient width for right turning vehicles to travel outside the through lanes. Where "1" is indicated for the through movement and "0"s are indicated for R/L movements, the R and/or L turns are shared with the through movement.

L = Left; T = Through; R = Right; > = Right Turn Overlap; >> = Free Right Turn; **bold** = Improvement

<sup>2</sup> Analysis Software: Traffix, Version 7.7 R2. Per the 2000 Highway Capacity Manual, overall average intersection delay and level of service are shown for intersections with traffic signal or all-way stop control. For intersections with cross-street stop control, the delay and level of service for the worst individual movement (or movements sharing a single lane) are shown.

<sup>3</sup> TS = Traffic Signal  
CSS = Cross Street Stop  
AWS = All Way Stop

<sup>4</sup> The intersections of Jasmine at 5th Street and Helen at 5th Street have been analyzed in the afternoon, rather than the PM peak hour in order to coincide with the nearby school dismissal schedule.



TABLE 7

Intersection Analysis For Project Buildout (Year 2008) Without Project Conditions

Intersection	Traffic Control <sup>3</sup>	Intersection Approach Lane(s) <sup>1</sup>												Delay <sup>2</sup> (Seconds)		Level of Service	
		Northbound			Southbound			Eastbound			Westbound			AM	PM	AM	PM
		L	T	R	L	T	R	L	T	R	L	T	R				
Benson Avenue (NS) at:																	
• 6th Street (EW)	AWS	0.5	1	0.5	0.5	1	0.5	0.5	0.5	1	0.5	0.5	1	11.0	15.6	B	C
• 5th Street (EW)	AWS	0.5	1	0.5	0.5	1	0.5	0.5	0.5	1	0.5	0.5	1	12.8	16.4	B	C
Jasmine Avenue (NS) at:																	
• 5th Street (EW) <sup>4</sup>	CSS	0	0	0	0	1	0	0.5	0.5	0	0	0.5	0.5	10.3	10.9	B	B
Helen Avenue (NS) at:																	
• 5th Street (EW) <sup>4</sup>	CSS	0	0	0	0	1	0	0.5	0.5	0	0	0.5	0.5	10.4	11.7	B	B
Elderberry Court (NS) at:																	
• 5th Street (EW)	CSS	0	0	0	0	1	0	0.5	0.5	0	0	0.5	0.5	11.2	11.5	B	B
Mountain Avenue (NS) at:																	
• 8th Street (EW)	TS	1	2.5	0.5	1	2.5	0.5	1	1.5	0.5	1	1.5	0.5	41.6	117.6	D	F
• 7th Street (EW)	TS	2	2	1	1	2.5	0.5	1.5	0.5	1	1	0.5	0.5	20.9	26.4	C	C
• I-10 Westbound Ramps (EW)	TS	2	2	0	0	2	1	0	0	0	1.5	0.5	2	39.8	41.1	D	D
• I-10 Eastbound Ramps (EW)	TS	0	4	1	1	2	0	1	1	1	0	0	0	33.0	35.5	C	D
• 6th Street (EW)	TS	2	1	1	2	2	1>	2	1.5	0.5	1	1.5	0.5	74.8	122.3	E	F
• 5th Street (EW)	TS	1	1.5	0.5	1.5	1	0.5	1	0.5	0.5	1	0.5	0.5	18.0	23.1	B	C
• 4th Street (EW)	TS	1	2	1	1	2	1	1	1.5	0.5	1	1.5	0.5	18.0	23.4	B	C
• Holt Boulevard (EW)	TS	1	2	1	1	1.5	0.5	1	1.5	0.5	1	2	1	31.9	167.8	C	F
San Antonio Avenue (NS) at:																	
• 6th Street (EW)	AWS	0.5	1	0.5	0.5	1	0.5	0.5	0.5	1	0.5	0.5	1	12.5	14.8	B	B
• 5th Street (EW)	AWS	0.5	1	0.5	0.5	1	0.5	0.5	0.5	1	0.5	0.5	1	15.1	13.3	C	B

<sup>1</sup> When a right turn lane is designated, the lane can either be striped or unstriped. To function as a right turn lane there must be sufficient width for right turning vehicles to travel outside the through lanes. Where "1" is indicated for the through movement and "0"s are indicated for R/L movements, the R and/or L turns are shared with the through movement.

L = Left; T = Through; R = Right; > = Right Turn Overlap; >> = Free Right Turn; Bold = Improvement

<sup>2</sup> Analysis Software: Traffix, Version 7.7 R2. Per the 2000 Highway Capacity Manual, overall average intersection delay and level of service are shown for intersections with traffic signal or all-way stop control. For intersections with cross-street stop control, the delay and level of service for the worst individual movement (or movements sharing a single lane) are shown.

<sup>3</sup> TS = Traffic Signal  
 CSS = Cross Street Stop  
 AWS = All Way Stop

<sup>4</sup> The intersections of Jasmine at 5th Street and Helen at 5th Street have been analyzed in the afternoon, rather than the PM peak hour in order to coincide with the nearby school dismissal schedule.

TABLE 8

Intersection Analysis For Project Buildout (Year 2008) With 1997 Specific Plan Conditions

Intersection	Traffic Control <sup>3</sup>	Intersection Approach Lane(s) <sup>1</sup>												Delay <sup>2</sup> (Seconds)		Level of Service			
		Northbound			Southbound			Eastbound			Westbound			AM	PM	AM	PM		
		L	T	R	L	T	R	L	T	R	L	T	R						
Benson Avenue (NS) at:																			
• 6th Street (EW)	AWS	0.5	1	0.5	0.5	1	0.5	0.5	0.5	0.5	0.5	1	0.5	0.5	1	11.0	16.1	B	C
• 5th Street (EW)	AWS	0.5	1	0.5	0.5	1	0.5	0.5	0.5	0.5	0.5	1	0.5	0.5	1	12.9	17.2	B	C
Jasmine Avenue (NS) at:																			
• 5th Street (EW) <sup>4</sup>	CSS	0	0	0	0	1	0	0.5	0.5	0	0	0.5	0.5	0.5	0.5	10.4	11.2	B	B
Helen Avenue (NS) at:																			
• 5th Street (EW) <sup>4</sup>	CSS	0	0	0	0	1	0	0.5	0.5	0	0	0.5	0.5	0.5	0.5	10.5	12.2	B	B
Elderberry Court (NS) at:																			
• 5th Street (EW)	CSS	0	0	0	0	1	0	0.5	0.5	0	0	0.5	0.5	0.5	0.5	11.2	11.9	B	B
Mountain Avenue (NS) at:																			
• 8th Street (EW) w/o improvements	TS	1	2.5	0.5	1	2.5	0.5	1	1.5	0.5	1	1.5	0.5	1	1.5	42.7	135.2	D	F
- With improvements	TS <sup>5</sup>	1	2.5	0.5	1	2.5	0.5	1	1.5	0.5	1	1.5	0.5	1	1.5	27.3	46.0	C	D
• 7th Street (EW)	TS	2	2	1	1	2.5	0.5	1.5	0.5	1	1	0.5	0.5	20.8	26.4	C	C		
• I-10 Westbound Ramps (EW)	TS	2	2	0	0	2	1	0	0	0	1.5	0.5	2	40.6	49.9	D	D		
• I-10 Eastbound Ramps (EW)	TS	0	4	1	1	2	0	1	1	1	0	0	0	33.1	43.8	C	D		
• 6th Street (EW) w/o improvements	TS	2	1	1	2	2	1>	2	1.5	0.5	1	1.5	0.5	83.3	195.2	F	F		
- With improvements <sup>6</sup>	TS	2	<u>2</u>	1	2	2	1>	2	1.5	0.5	1	1.5	0.5	26.4	63.9	C	E		
• 5th Street (EW)	TS	1	1.5	0.5	1.5	1	0.5	1	0.5	0.5	1	0.5	0.5	18.5	32.3	B	C		
• 4th Street (EW)	TS	1	2	1	1	2	1	1	1.5	0.5	1	1.5	0.5	18.0	24.2	B	C		
• Holt Boulevard (EW) w/o improvements	TS	1	2	1	1	1.5	0.5	1	1.5	0.5	1	2	1	31.5	175.4	C	F		
- With improvements	TS	<u>2</u>	<u>3</u>	1	<u>2</u>	<u>3</u>	1	<u>2</u>	1.5	0.5	<u>2</u>	2	1	24.0	52.8	C	D		
San Antonio Avenue (NS) at:																			
• 6th Street (EW)	AWS	0.5	1	0.5	0.5	1	0.5	0.5	0.5	1	0.5	0.5	1	12.5	15.0	B	B		
• 5th Street (EW)	AWS	0.5	1	0.5	0.5	1	0.5	0.5	0.5	1	0.5	0.5	1	15.3	13.8	C	B		

<sup>1</sup> When a right turn lane is designated, the lane can either be striped or unstriped. To function as a right turn lane there must be sufficient width for right turning vehicles to travel outside the through lanes. Where "1" is indicated for the through movement and "0"s are indicated for R/L movements, the R and/or L turns are shared with the through movement.

L = Left; T = Through; R = Right; > = Right Turn Overlap; >> = Free Right Turn; **Underline** = Improvement

<sup>2</sup> Analysis Software: Traffix, Version 7.7 R2. Per the 2000 Highway Capacity Manual, overall average intersection delay and level of service are shown for intersections with traffic signal or all-way stop control. For intersections with cross-street stop control, the delay and level of service for the worst individual movement (or movements sharing a single lane) are shown.

<sup>3</sup> TS = Traffic Signal  
 CSS = Cross Street Stop  
 AWS = All Way Stop

<sup>4</sup> The intersections of Jasmine at 5th Street and Helen at 5th Street have been analyzed in the afternoon, rather than the PM peak hour in order to coincide with the nearby school dismissal schedule.

<sup>5</sup> Intersection controlled by stop-sign. Delay shown is for most constrained movement.

<sup>6</sup> Improvements shown are those needed to mitigate with the proposed project. With the 1997 Specific Plan land use, additional mitigation would be required to meet LOS standards.

TABLE 9

Intersection Analysis For Project Buildout (Year 2008) With Existing Project Conditions

Intersection	Traffic Control <sup>3</sup>	Intersection Approach Lane(s) <sup>1</sup>												Delay <sup>2</sup> (Seconds)		Level of Service	
		Northbound			Southbound			Eastbound			Westbound			AM	PM	AM	PM
		L	T	R	L	T	R	L	T	R	L	T	R				
Benson Avenue (NS) at:																	
• 6th Street (EW)	AV/S	0.5	1	0.5	0.5	1	0.5	0.5	0.5	0.5	0.5	1	11.0	16.1	B	C	
• 5th Street (EW)	AWS	0.5	1	0.5	0.5	1	0.5	0.5	0.5	0.5	0.5	1	12.9	17.2	B	C	
Jasmine Avenue (NS) at:																	
• 5th Street (EW) <sup>4</sup>	CSS	0	0	0	0	1	0	0.5	0.5	0	0	0.5	0.5	10.4	11.3	B	B
Helen Avenue (NS) at:																	
• 5th Street (EW) <sup>4</sup>	CSS	0	0	0	0	1	0	0.5	0.5	0	0	0.5	0.5	10.5	12.2	B	B
Elderberry Court (NS) at:																	
• 5th Street (EW)	CSS	0	0	0	0	1	0	0.5	0.5	0	0	0.5	0.5	11.2	11.9	B	B
Mountain Avenue (NS) at:																	
• 8th Street (EW) w/o improvements	TS	1	2.5	0.5	1	2.5	0.5	1	1.5	0.5	1	1.5	0.5	42.6	135.7	D	F
- With improvements	TS <sup>5</sup>	1	2.5	0.5	1	2.5	0.5	1	1.5	0.5	1	1.5	0.5	27.3	46.2	C	D
• 7th Street (EW)	TS	2	2	1	1	2.5	0.5	1.5	0.5	1	1	0.5	0.5	20.8	26.5	C	C
• I-10 Westbound Ramps (EW)	TS	2	2	0	0	2	1	0	0	0	1.5	0.5	2	40.6	50.3	D	D
• I-10 Eastbound Ramps (EW)	TS	0	4	1	1	2	0	1	1	1	0	0	0	33.0	44.5	C	D
• 6th Street (EW) w/o improvements	TS	2	1	1	2	2	1>	2	1.5	0.5	1	1.5	0.5	82.0	200.6	F	F
- With improvements <sup>6</sup>	TS	2	<u>2</u>	1	2	2	1>	2	1.5	0.5	1	1.5	0.5	26.3	65.7	C	E
• 5th Street (EW)	TS	1	1.5	0.5	1.5	1	0.5	1	0.5	0.5	1	0.5	0.5	18.4	33.0	B	C
• 4th Street (EW)	TS	1	2	1	1	2	1	1	1.5	0.5	1	1.5	0.5	18.0	24.3	B	C
• Holt Boulevard (EW) w/o improvements	TS	1	2	1	1	1.5	0.5	1	1.5	0.5	1	2	1	31.5	176.1	C	F
- With improvements	TS	<u>2</u>	<u>3</u>	1	<u>2</u>	<u>3</u>	1	<u>2</u>	1.5	0.5	<u>2</u>	2	1	24.0	52.9	C	D
San Antonio Avenue (NS) at:																	
• 6th Street (EW)	AWS	0.5	1	0.5	0.5	1	0.5	0.5	0.5	1	0.5	0.5	1	12.5	15.0	B	B
• 5th Street (EW)	AV/S	0.5	1	0.5	0.5	1	0.5	0.5	0.5	1	0.5	0.5	1	15.3	13.8	C	B

<sup>1</sup> When a right turn lane is designated, the lane can either be striped or unstriped. To function as a right turn lane there must be sufficient width for right turning vehicles to travel outside the through lanes. Where "1" is indicated for the through movement and "0"s are indicated for R/L movements, the R and/or L turns are shared with the through movement.

L = Left; T = Through; R = Right; > = Right Turn Overlap; >> = Free Right Turn; **Underline** = Improvement

<sup>2</sup> Analysis Software: Traffix, Version 7.7 R2. Per the 2000 Highway Capacity Manual, overall average intersection delay and level of service are shown for intersections with traffic signal or all-way stop control. For intersections with cross-street stop control, the delay and level of service for the worst individual movement (or movements sharing a single lane) are shown.

<sup>3</sup> TS = Traffic Signal  
 CSS = Cross Street Stop  
 AWS = All Way Stop

<sup>4</sup> The intersections of Jasmine at 5th Street and Helen at 5th Street have been analyzed in the afternoon, rather than the PM peak hour in order to coincide with the nearby school dismissal schedule.

<sup>5</sup> The mitigation at the intersection of Mountain Avenue at 8th Street only required changing the traffic signal to protected phasing in all directions. No additional lanes are projected to be required

<sup>6</sup> Improvements shown are those needed to mitigate with the proposed project. With the existing project land uses, additional mitigation would be required to meet LOS standards.

TABLE 10

Intersection Analysis For Project Buildout (Year 2008) With Proposed Project Conditions

Intersection	Traffic Control <sup>3</sup>	Intersection Approach Lane(s) <sup>1</sup>												Delay <sup>2</sup> (Seconds)		Level of Service	
		Northbound			Southbound			Eastbound			Westbound			AM	PM	AM	PM
		L	T	R	L	T	R	L	T	R	L	T	R				
Benson Avenue (NS) at:																	
• 6th Street (EW)	AWS	0.5	1	0.5	0.5	1	0.5	0.5	1	0.5	0.5	1	11.0	15.9	B	C	
• 5th Street (EW)	AWS	0.5	1	0.5	0.5	1	0.5	0.5	1	0.5	0.5	1	12.9	16.9	B	C	
Jasmine Avenue (NS) at:																	
• 5th Street (EW) <sup>4</sup>	CSS	0	0	0	0	1	0	0.5	0.5	0	0	0.5	0.5	10.4	11.1	B	B
Helen Avenue (NS) at:																	
• 5th Street (EW) <sup>4</sup>	CSS	0	0	0	0	1	0	0.5	0.5	0	0	0.5	0.5	10.5	12.0	B	B
Elderberry Court (NS) at:																	
• 5th Street (EW)	CSS	0	0	0	0	1	0	0.5	0.5	0	0	0.5	0.5	11.3	11.8	B	B
Mountain Avenue (NS) at:																	
• 8th Street (EW) w/o improvements	TS	1	2.5	0.5	1	2.5	0.5	1	1.5	0.5	1	1.5	0.5	43.1	128.3	D	F
- With improvements	TS <sup>5</sup>	1	2.5	0.5	1	2.5	0.5	1	1.5	0.5	1	1.5	0.5	27.5	43.8	C	D
• 7th Street (EW)	TS	2	2	1	1	2.5	0.5	1.5	0.5	1	1	0.5	0.5	21.1	26.1	C	C
• I-10 Westbound Ramps (EW)	TS	2	2	0	0	2	1	0	0	0	1.5	0.5	2	40.9	46.5	D	D
• I-10 Eastbound Ramps (EW)	TS	0	4	1	1	2	0	1	1	1	0	0	0	33.3	40.2	C	D
• 6th Street (EW) w/o improvements	TS	2	1	1	2	2	1>	2	1.5	0.5	1	1.5	0.5	90.7	169.3	F	F
- With improvements	TS	2	<u>2</u>	1	2	2	1>	2	1.5	0.5	1	1.5	0.5	26.5	51.4	C	D
• 5th Street (EW)	TS	1	1.5	0.5	1.5	1	0.5	1	0.5	0.5	1	0.5	0.5	18.8	27.9	B	C
• 4th Street (EW)	TS	1	2	1	1	2	1	1	1.5	0.5	1	1.5	0.5	18.2	23.7	B	C
• Holt Boulevard (EW) w/o improvements	TS	1	2	1	1	1.5	0.5	1	1.5	0.5	1	2	1	32.4	171.0	C	F
- With improvements	TS	<u>2</u>	<u>3</u>	1	<u>2</u>	<u>3</u>	1	<u>2</u>	1.5	0.5	<u>2</u>	2	1	24.0	51.9	C	D
San Antonio Avenue (NS) at:																	
• 6th Street (EW)	AWS	0.5	1	0.5	0.5	1	0.5	0.5	0.5	1	0.5	0.5	1	12.5	14.9	B	B
• 5th Street (EW)	AWS	0.5	1	0.5	0.5	1	0.5	0.5	0.5	1	0.5	0.5	1	15.3	13.6	C	B

<sup>1</sup> When a right turn lane is designated, the lane can either be striped or unstriped. To function as a right turn lane there must be sufficient width for right turning vehicles to travel outside the through lanes. Where "1" is indicated for the through movement and "0"s are indicated for R/L movements, the R and/or L turns are shared with the through movement.

L = Left; T = Through; R = Right; > = Right Turn Overlap; >> = Free Right Turn; **Underlined** = Improvement

<sup>2</sup> Analysis Software: Traffix, Version 7.7 R2. Per the 2000 Highway Capacity Manual, overall average intersection delay and level of service are shown for intersections with traffic signal or all-way stop control. For intersections with cross-street stop control, the delay and level of service for the worst individual movement (or movements sharing a single lane) are shown.

<sup>3</sup> TS = Traffic Signal  
 CSS = Cross Street Stop  
 AWS = All Way Stop

<sup>4</sup> The intersections of Jasmine at 5th Street and Helen at 5th Street have been analyzed in the afternoon, rather than the PM peak hour in order to coincide with the nearby school dismissal schedule.

<sup>5</sup> The mitigation at the intersection of Mountain Avenue at 8th Street only required changing the traffic signal to protected phasing in all directions. No additional lanes are projected to be required

**TABLE 11**  
**Summary Intersection Analysis**

Intersection	Existing Conditions				Project Buildout (Year 2008) Without Project				Project Buildout (Year 2008) With 1997 Specific Plan				Project Buildout (Year 2008) With Existing Project				Project Buildout (Year 2008) With Proposed Project				Project Buildout (Year 2008) With Proposed Project With Improvements							
	Delay <sup>1</sup> (Seconds)		LOS <sup>2</sup>		Delay <sup>1</sup> (Seconds)		LOS <sup>2</sup>		Delay <sup>1</sup> (Seconds)		LOS <sup>2</sup>		Delay <sup>1</sup> (Seconds)		LOS <sup>2</sup>		Delay <sup>1</sup> (Seconds)		LOS <sup>2</sup>		Delay <sup>1</sup> (Seconds)		LOS <sup>2</sup>					
Benson Avenue (NS) at:																												
• 6th Street (EW)	12.7	15.6	B	C	11.0	15.6	B	C	11.0	16.1	B	C	11.0	16.1	B	C	11.0	15.9	B	C								
• 5th Street (EW)	13.8	17.3	B	C	12.8	16.4	B	C	12.9	17.2	B	C	12.9	17.2	B	C	12.9	16.9	B	C								
Jasmine Avenue (NS) at:																												
• 5th Street (EW)	11.5	12.2	B	B	10.3	10.9	B	B	10.4	11.2	B	B	10.4	11.3	B	B	10.4	11.1	B	B								
Helen Avenue (NS) at:																												
• 5th Street (EW)	12.0	11.4	B	B	10.4	11.7	B	B	10.5	12.2	B	B	10.5	12.2	B	B	10.5	12.0	B	B								
Elderberry Court (NS) at:																												
• 5th Street (EW)	13.0	11.6	B	B	11.2	11.5	B	B	11.2	11.9	B	B	11.2	11.9	B	B	11.3	11.8	B	B								
Mountain Avenue (NS) at:																												
• 8th Street (EW)	40.2	101.7	D	F	41.6	117.6	D	F	42.7	135.2	D	F	42.6	135.7	D	F	43.1	128.3	D	F								
• 7th Street (EW)	20.2	23.8	C	C	20.9	26.4	C	C	20.8	26.4	C	C	20.8	26.5	C	C	21.1	26.1	C	C	27.5	43.8	C	D				
• I-10 Westbound Ramps (EW)	42.8	34.2	D	C	39.8	41.1	D	D	40.6	49.9	D	D	40.6	50.3	D	D	40.9	46.5	D	D	26.5	51.4	C	D				
• I-10 Eastbound Ramps (EW)	40.7	36.2	D	D	33.0	35.5	C	D	33.1	43.8	C	D	33.0	44.5	C	D	33.3	40.2	C	D								
• 6th Street (EW)	77.4	109.6	E	F	74.8	122.3	E	F	83.3	195.2	F	F	82.0	200.6	F	F	90.7	169.3	F	F								
• 5th Street (EW)	18.3	22.6	B	C	18.0	23.1	B	C	18.5	32.3	B	C	18.4	33.0	B	C	18.8	27.9	B	C								
• 4th Street (EW)	17.8	21.7	B	C	18.0	23.4	B	C	18.0	24.2	B	C	18.0	24.3	B	C	18.2	23.7	B	C								
• Holt Boulevard (EW)	33.2	127.0	C	F	31.9	167.8	C	F	31.5	175.4	C	F	31.5	176.1	C	F	32.4	171.0	C	F	24.0	51.9	C	D				
San Antonio Avenue (NS) at:																												
• 6th Street (EW)	13.6	15.0	B	B	12.5	14.8	B	B	12.5	15.0	B	B	12.5	15.0	B	B	12.5	14.9	B	B								
• 5th Street (EW)	16.9	14.4	C	B	15.1	13.3	C	B	15.3	13.8	C	B	15.3	13.8	C	B	15.3	13.6	C	B								

<sup>1</sup> Analysis Software: Traffix, Version 7.6. Per the 2000 Highway Capacity Manual, overall average intersection delay and level of service are shown for intersections with traffic signal or all-way stop control. For intersections with cross-street stop control, the delay and level of service for the worst

<sup>2</sup> LOS = Level of Service

<sup>3</sup> -- = Delay High, Intersection Unstable, Level of Service F.

<sup>4</sup> The intersections of Jasmine at 5th Street and Helen at 5th Street have been analyzed in the afternoon, rather than the PM peak hour in order to coincide with the nearby school dismissal schedule.

## **Appendix A**

Traffic Count Worksheets

# Intersection Turning Movement

Prepared by: Southland Car Counters

N-S STREET: Benson Ave.

DATE: 01/25/2006

LOCATION: City of Ontario

E-W STREET: 6th St.

DAY: WEDNESDAY

PROJECT# 06-3043-003

LANES:	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			TOTAL
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	
6:00 AM	0	2	0	0	2	0	0	1	0	0	1	0	
6:15 AM													
6:30 AM													
6:45 AM													
7:00 AM	1	44	6	4	40	5	10	3	0	12	2	13	140
7:15 AM	3	66	9	9	45	5	16	11	9	9	16	12	210
7:30 AM	10	75	22	9	60	11	7	11	7	19	10	22	263
7:45 AM	6	107	13	12	85	8	14	11	1	12	11	25	305
8:00 AM	1	55	8	11	43	10	10	8	1	11	6	21	185
8:15 AM	4	67	6	6	47	11	11	5	1	5	2	13	178
8:30 AM	2	81	4	4	48	8	8	4	0	1	2	10	172
8:45 AM	1	57	4	3	46	4	14	5	0	4	6	15	159
9:00 AM													
9:15 AM													
9:30 AM													
9:45 AM													
10:00 AM													
10:15 AM													
10:30 AM													
10:45 AM													
11:00 AM													
11:15 AM													
11:30 AM													
11:45 AM													

TOTAL VOLUMES =	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
	28	552	72	58	414	62	90	58	19	73	55	131	1612

AM Peak Hr Begins at: 7:15 AM

PEAK VOLUMES =	20	303	52	41	233	34	47	41	18	51	43	80	963
PEAK HR. FACTOR:	0.744			0.733			0.736			0.853			0.789

CONTROL: 4-Way Stop

# Intersection Turning Movement

Prepared by: Southland Car Counters

N-S STREET: Benson Ave.

DATE: 01/25/2006

LOCATION: City of Ontario

E-W STREET: 6th St.

DAY: WEDNESDAY

PROJECT# 06-3043-003

LANES:	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			TOTAL
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	
	0	2	0	0	2	0	0	1	0	0	1	0	
1:00 PM													
1:15 PM													
1:30 PM													
1:45 PM													
2:00 PM													
2:15 PM													
2:30 PM													
2:45 PM													
3:00 PM													
3:15 PM													
3:30 PM													
3:45 PM													
4:00 PM	4	101	18	11	135	18	7	5	0	8	4	16	327
4:15 PM	2	104	6	11	103	15	11	2	3	12	9	14	292
4:30 PM	4	92	18	14	128	24	6	10	5	13	10	13	337
4:45 PM	3	89	16	20	130	19	10	9	0	8	16	23	343
5:00 PM	1	113	13	27	138	13	8	7	1	10	7	14	352
5:15 PM	1	117	7	14	145	21	9	4	0	9	6	4	337
5:30 PM	6	3	14	20	99	31	21	7	4	9	15	20	249
5:45 PM	5	98	12	13	91	26	17	5	4	7	18	16	312
6:00 PM													
6:15 PM													
6:30 PM													
6:45 PM													

TOTAL VOLUMES =	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
	26	717	104	130	969	167	89	49	17	76	85	120	2549

PM Peak Hr Begins at: 430 PM

PEAK VOLUMES =	9	411	54	75	541	77	33	30	6	40	39	54	1369
PEAK HR. FACTOR:		0.933			0.963			0.821			0.707		0.972

CONTROL: 4-Way Stop



# Intersection Turning Movement

Prepared by: Southland Car Counters

N-S STREET: Benson Ave.

DATE: 01/25/2006

LOCATION: City of Ontario

E-W STREET: 5th St.

DAY: WEDNESDAY

PROJECT# 06-3043-004

LANES:	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			TOTAL
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	
	0	2	0	0	2	0	0	1	0	0	1	0	
6:00 AM													
6:15 AM													
6:30 AM													
6:45 AM													
7:00 AM	10	38	15	9	35	11	8	27	3	14	27	9	206
7:15 AM	20	50	36	21	47	17	2	33	3	11	32	11	283
7:30 AM	19	79	20	12	58	12	5	37	2	9	49	10	312
7:45 AM	13	95	16	8	72	8	9	19	3	7	32	12	294
8:00 AM	7	74	5	6	62	5	7	17	5	8	28	5	229
8:15 AM	6	55	5	4	53	8	12	11	1	3	16	11	185
8:30 AM	6	41	4	4	38	6	6	10	4	0	17	11	147
8:45 AM	9	50	3	3	45	3	6	8	5	4	17	12	165
9:00 AM													
9:15 AM													
9:30 AM													
9:45 AM													
10:00 AM													
10:15 AM													
10:30 AM													
10:45 AM													
11:00 AM													
11:15 AM													
11:30 AM													
11:45 AM													

TOTAL VOLUMES =	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
	90	482	104	67	410	70	55	162	26	56	218	81	1821

AM Peak Hr Begins at: 715 AM

PEAK VOLUMES =	59	298	77	47	239	42	23	106	13	35	141	38	1118
PEAK HR. FACTOR:		0.875			0.932			0.807			0.787		0.896

CONTROL: 4-Way Stop

# Intersection Turning Movement

Prepared by: Southland Car Counters

N-S STREET: Benson Ave.

DATE: 01/25/2006

LOCATION: City of Ontario

E-W STREET: 5th St.

DAY: WEDNESDAY

PROJECT# 06-3043-004

LANES:	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			TOTAL
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	
	0	2	0	0	2	0	0	1	0	0	1	0	
1:00 PM													
1:15 PM													
1:30 PM													
1:45 PM													
2:00 PM													
2:15 PM													
2:30 PM													
2:45 PM													
3:00 PM													
3:15 PM													
3:30 PM													
3:45 PM													
4:00 PM	10	81	14	8	117	10	18	24	4	8	16	19	329
4:15 PM	7	72	18	10	100	2	21	31	6	2	11	14	294
4:30 PM	4	70	20	21	106	17	16	25	9	5	36	21	350
4:45 PM	8	73	11	13	103	19	14	23	8	7	40	17	336
5:00 PM	4	79	6	18	113	16	28	21	12	6	23	19	345
5:15 PM	7	71	19	12	126	13	26	19	4	13	30	23	363
5:30 PM	6	85	24	4	101	11	27	24	12	11	32	14	351
5:45 PM	6	83	18	3	86	15	23	22	8	5	49	16	334
6:00 PM													
6:15 PM													
6:30 PM													
6:45 PM													

TOTAL VOLUMES =	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
	52	614	130	89	852	103	173	189	63	57	237	143	2702

PM Peak Hr Begins at: 4:45 PM

PEAK VOLUMES =	25	308	60	47	443	59	95	87	36	37	125	73	1395
PEAK HR. FACTOR:		0.854			0.909			0.865			0.890		0.961

CONTROL: 4-Way Stop

# Intersection Turning Movement

Prepared by: Southland Car Counters

N-S STREET: Jasmine Ave.

DATE: 01/25/2006

LOCATION: City of Ontario

E-W STREET: 5 th St.

DAY: WEDNESDAY

PROJECT# 06-3043-001

LANES:	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			TOTAL
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	
	0	1	0	0	1	0	0	1	0	0	1	0	
6:00 AM													
6:15 AM													
6:30 AM													
6:45 AM													
7:00 AM				0		5	2	40	0	2	38	4	91
7:15 AM				1		3	6	85	0	1	51	3	150
7:30 AM				6		10	6	93	2	0	65	11	193
7:45 AM				1		7	5	32	0	0	36	2	83
8:00 AM				1		0	0	29	0	0	38	1	69
8:15 AM				1		1	0	18	0	0	29	1	50
8:30 AM				1		2	2	18	0	0	21	0	44
8:45 AM				1		2	0	12	0	0	31	0	46
9:00 AM													
9:15 AM													
9:30 AM													
9:45 AM													
10:00 AM													
10:15 AM													
10:30 AM													
10:45 AM													
11:00 AM													
11:15 AM													
11:30 AM													
11:45 AM													

TOTAL VOLUMES =	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
	0	0	0	12	0	30	21	327	2	3	309	22	726

AM Peak Hr Begins at: 700 AM

PEAK VOLUMES =	0	0	0	8	0	25	19	250	2	3	190	20	517
PEAK HR. FACTOR:		0.000			0.516			0.671			0.701		0.670

CONTROL: 1-Way Stop S

# Intersection Turning Movement

Prepared by: Southland Car Counters

N-S STREET: Jasmine Ave.

DATE: 01/25/2006

LOCATION: City of Ontario

E-W STREET: 5 th St.

DAY: WEDNESDAY

PROJECT# 06-3043-001

LANES:	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			TOTAL
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	
	0	1	0	0	1	0	0	1	0	0	1	0	
12:00 PM													
12:15 PM													
12:30 PM													
12:45 PM													
1:00 PM													
1:15 PM													
1:30 PM				0		3	7	37			27	3	77
1:45 PM				0		5	5	44			19	3	76
2:00 PM				17		9	9	46			39	11	131
2:15 PM				3		1	0	53			62	5	124
2:30 PM				1		2	0	36			38	1	78
2:45 PM				2		1	2	44			45	0	94
3:00 PM				1		0	1	54			44	1	101
3:15 PM				0		2	1	39			56	0	98
3:30 PM													
3:45 PM													
4:00 PM													
4:15 PM													
4:30 PM													
4:45 PM													

TOTAL VOLUMES =	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
	0	0	0	24	0	23	25	353	0	0	330	24	779

NOON Peak Hr Begins at: 1200 PM

PEAK VOLUMES =	0	0	0	23	0	13	11	179	0	0	184	17	427
PEAK HR. FACTOR:		0.000		0.346				0.000			0.750		0.815

CONTROL: 1-Way Stop S

*864*

# Intersection Turning Movement

Prepared by: Southland Car Counters

N-S STREET: Helen Ave.

DATE: 01/25/2006

LOCATION: City of Ontario

E-W STREET: 5 th St.

DAY: WEDNESDAY

PROJECT# 06-3043-002

LANES:	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			TOTAL
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	
6:00 AM	0	1	0	0	1	0	0	1	0	0	1	0	
6:15 AM													
6:30 AM													
6:45 AM													
7:00 AM				3		3	3	27			28	5	69
7:15 AM				3		12	12	54			54	1	136
7:30 AM				6		9	27	81			53	7	183
7:45 AM				1		2	5	27			28	1	64
8:00 AM				3		4	6	25			33	2	73
8:15 AM				2		7	5	24			35	3	76
8:30 AM				4		5	7	19			27	2	64
8:45 AM				7		4	3	15			22	3	54
9:00 AM													
9:15 AM													
9:30 AM													
9:45 AM													
10:00 AM													
10:15 AM													
10:30 AM													
10:45 AM													
11:00 AM													
11:15 AM													
11:30 AM													
11:45 AM													

TOTAL VOLUMES =	NL 0	NT 0	NR 0	SL 29	ST 0	SR 46	EL 68	ET 272	ER 0	WL 0	WT 280	WR 24	TOTAL 719
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AM Peak Hr Begins at: 7:15 AM

PEAK VOLUMES =	0	0	0	13	0	27	50	187	0	0	168	11	456
PEAK HR. FACTOR:	0.000			0.667			0.549			0.746			0.623

CONTROL: 1-Way Stop S

# Intersection Turning Movement

Prepared by: Southland Car Counters

N-S STREET: Helen Ave.

DATE: 01/25/2006

LOCATION: City of Ontario

E-W STREET: 5 th St.

DAY: WEDNESDAY

PROJECT# 06-3043-002

LANES:	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			TOTAL
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	
12:00 PM	0	1	0	0	1	0	0	1	0	0	1	0	
12:15 PM													
12:30 PM													
12:45 PM													
1:00 PM													
1:15 PM													
1:30 PM				4		3	1	24		27	1		60
1:45 PM				3		3	3	40		31	4		84
2:00 PM				3		4	7	35		28	2		79
2:15 PM				3		5	4	46		37	4		99
2:30 PM				3		0	2	44		39	1		89
2:45 PM				5		1	2	41		37	7		93
3:00 PM				3		2	3	52		58	5		123
3:15 PM				2		2	4	57		45	2		112
3:30 PM													
3:45 PM													
4:00 PM													
4:15 PM													
4:30 PM													
4:45 PM													

TOTAL VOLUMES =	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
	0	0	0	26	0	20	26	339	0	0	302	26	739

NOON Peak Hr Begins at: 1230 PM

PEAK VOLUMES =	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
	0	0	0	13	0	5	11	194	0	0	179	15	417
PEAK HR. FACTOR:	0.000			0.750			0.000			0.770			0.848

1840

CONTROL: 1-Way Stop S

# Intersection Turning Movement

Prepared by: Southland Car Counters

N-S STREET: Elberberry Ct.

DATE: 01/25/2006

LOCATION: City of Ontario

E-W STREET: 5th St.

DAY: WEDNESDAY

PROJECT# 06-3043-013

LANES:	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			TOTAL
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	
	0	1	0	0	1	0	0	1	0	0	1	0	
6:00 AM													
6:15 AM													
6:30 AM													
6:45 AM													
7:00 AM				8		2	2	25			30	1	68
7:15 AM				11		4	3	52			53	1	124
7:30 AM				10		7	2	87			55	3	164
7:45 AM				13		10	5	27			29	2	86
8:00 AM				9		3	4	22			33	2	73
8:15 AM				8		3	4	23			35	4	77
8:30 AM				12		4	1	22			23	4	66
8:45 AM				9		3	3	17			23	0	55
9:00 AM													
9:15 AM													
9:30 AM													
9:45 AM													
10:00 AM													
10:15 AM													
10:30 AM													
10:45 AM													
11:00 AM													
11:15 AM													
11:30 AM													
11:45 AM													

TOTAL VOLUMES =	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
	0	0	0	80	0	36	24	275	0	0	281	17	713

AM Peak Hr Begins at: 7:15 AM

PEAK VOLUMES =	0	0	0	43	0	24	14	188	0	0	170	8	447
PEAK HR. FACTOR:		0.000			0.728			0.567			0.767		0.681

CONTROL: 1-Way Stop S

# Intersection Turning Movement

Prepared by: Southland Car Counters

N-S STREET: Elberberry Ct.

DATE: 01/25/2006

LOCATION: City of Ontario

E-W STREET: 5th St.

DAY: WEDNESDAY

PROJECT# 06-3043-013

LANES:	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			TOTAL
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	
	0	1	0	0	1	0	0	1	0	0	1	0	
1:00 PM													
1:15 PM													
1:30 PM													
1:45 PM													
2:00 PM													
2:15 PM													
2:30 PM													
2:45 PM													
3:00 PM													
3:15 PM													
3:30 PM													
3:45 PM													
4:00 PM				16		2	8	34			53	14	127
4:15 PM				5		4	4	51			44	8	116
4:30 PM				8		1	5	25			40	3	82
4:45 PM				9		5	5	30			41	7	97
5:00 PM				7		3	4	54			52	10	130
5:15 PM				10		8	10	44			58	8	138
5:30 PM				6		10	11	51			48	12	138
5:45 PM				5		8	11	47			45	9	125
6:00 PM													
6:15 PM													
6:30 PM													
6:45 PM													

TOTAL VOLUMES =	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
	0	0	0	66	0	41	58	336	0	0	381	71	953

PM Peak Hr Begins at: 500 PM

PEAK VOLUMES =	0	0	0	28	0	29	36	196	0	0	203	39	531
PEAK HR. FACTOR:		0.000			0.792			0.935			0.917		0.962

CONTROL: 1-Way Stop S



# Intersection Turning Movement

Prepared by: Southland Car Counters

N-S STREET: Mountain Ave.

DATE: 01/25/2006

LOCATION: City of Ontario

E-W STREET: 8th St.

DAY: WEDNESDAY

PROJECT# 06-3043-005

LANES:	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			TOTAL
	NL 1	NT 3	NR 0	SL 1	ST 3	SR 0	EL 1	ET 2	ER 0	WL 1	WT 2	WR 0	
6:00 AM													
6:15 AM													
6:30 AM													
6:45 AM													
7:00 AM	10	148	8	9	212	6	10	15	16	16	38	8	496
7:15 AM	16	192	21	14	226	3	24	51	15	31	52	20	665
7:30 AM	17	216	18	17	329	5	20	72	24	43	82	19	862
7:45 AM	16	277	16	24	281	10	13	52	30	41	86	18	864
8:00 AM	11	280	23	22	213	9	12	83	14	50	66	28	811
8:15 AM	11	322	17	23	206	3	8	103	22	29	68	14	826
8:30 AM	18	243	20	20	220	1	24	51	12	32	55	25	721
8:45 AM	11	260	14	23	200	2	27	53	13	30	61	5	699
9:00 AM													
9:15 AM													
9:30 AM													
9:45 AM													
10:00 AM													
10:15 AM													
10:30 AM													
10:45 AM													
11:00 AM													
11:15 AM													
11:30 AM													
11:45 AM													

TOTAL VOLUMES =	NL 110	NT 1938	NR 137	SL 152	ST 1887	SR 39	EL 138	ET 480	ER 146	WL 272	WT 508	WR 137	TOTAL 5944
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AM Peak Hr Begins at: 730 AM

PEAK VOLUMES =	55	1095	74	86	1029	27	53	310	90	163	302	79	3363
PEAK HR. FACTOR:		0.874			0.813			0.852			0.938		0.973

CONTROL: Signalized

# Intersection Turning Movement

Prepared by: Southland Car Counters

N-S STREET: Mountain Ave.

DATE: 01/25/2006

LOCATION: City of Ontario

E-W STREET: 8th St.

DAY: WEDNESDAY

PROJECT# 06-3043-005

LANES:	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			TOTAL
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	
	1	3	0	1	3	0	1	2	0	1	2	0	
1:00 PM													
1:15 PM													
1:30 PM													
1:45 PM													
2:00 PM													
2:15 PM													
2:30 PM													
2:45 PM													
3:00 PM													
3:15 PM													
3:30 PM													
3:45 PM													
4:00 PM	25	324	12	22	301	10	60	91	21	36	66	10	978
4:15 PM	36	359	8	23	329	11	42	157	25	36	65	5	1096
4:30 PM	33	382	13	25	365	13	23	134	27	40	73	11	1139
4:45 PM	38	365	6	22	314	13	40	171	28	36	106	3	1142
5:00 PM	18	470	8	17	368	20	65	237	27	48	81	8	1367
5:15 PM	26	342	8	25	368	24	43	193	12	29	82	7	1159
5:30 PM	33	385	10	22	324	12	69	220	46	32	54	2	1209
5:45 PM	38	362	7	19	350	16	30	189	33	35	67	7	1153
6:00 PM													
6:15 PM													
6:30 PM													
6:45 PM													

TOTAL VOLUMES =	NL 247	NT 2989	NR 72	SL 175	ST 2719	SR 119	EL 372	ET 1392	ER 219	WL 292	WT 594	WR 53	TOTAL 9243
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PM Peak Hr Begins at: 500 PM

PEAK VOLUMES =	115	1559	33	83	1410	72	207	839	118	144	284	24	4888
PEAK HR. FACTOR:		0.860			0.938			0.869			0.825		0.894

CONTROL: Signalized

# Intersection Turning Movement

Prepared by: Southland Car Counters

N-S STREET: Mountain Ave.

DATE: 1/25/2006

LOCATION: City of Ontario

E-W STREET: 7th St.

DAY: WEDNESDAY

PROJECT# 06-3043-006

LANES:	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			TOTAL
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	
	1	3	1	1	2.5	0.5	1	2	0	1	1	0	
6:00 AM													
6:15 AM													
6:30 AM													
6:45 AM													
7:00 AM	49	219	17	2	346	19	19	9	39	19	9	5	752
7:15 AM	52	225	22	1	358	9	20	11	53	32	7	2	792
7:30 AM	56	239	25	4	379	13	11	13	63	52	11	3	869
7:45 AM	65	271	42	2	383	21	15	15	60	60	10	1	945
8:00 AM	66	244	25	3	265	22	20	11	33	21	12	0	722
8:15 AM	66	230	24	2	258	22	12	7	48	24	22	7	722
8:30 AM	73	255	20	6	234	17	13	6	40	37	9	2	712
8:45 AM	89	252	28	1	256	18	11	8	29	22	7	2	723
9:00 AM													
9:15 AM													
9:30 AM													
9:45 AM													
10:00 AM													
10:15 AM													
10:30 AM													
10:45 AM													
11:00 AM													
11:15 AM													
11:30 AM													
11:45 AM													

TOTAL VOLUMES =	NL 516	NT 1935	NR 203	SL 21	ST 2479	SR 141	EL 121	ET 80	ER 365	WL 267	WT 87	WR 22	TOTAL 6237
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AM Peak Hr Begins at: 700 AM

PEAK VOLUMES =	222	954	106	9	1466	62	65	48	215	163	37	11	3358
PEAK HR. FACTOR:		0.848			0.946			0.911			0.743		0.888

CONTROL: Signalized

# Intersection Turning Movement

Prepared by: Southland Car Counters

N-S STREET: Mountain Ave.

DATE: 1/25/2006

LOCATION: City of Ontario

E-W STREET: 7th St.

DAY: WEDNESDAY

PROJECT# 06-3043-006

LANES:	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			TOTAL
	NL 1	NT 3	NR 1	SL 1	ST 2.5	SR 0.5	EL 1	ET 2	ER 0	WL 1	WT 1	WR 0	
1:00 PM													
1:15 PM													
1:30 PM													
1:45 PM													
2:00 PM													
2:15 PM													
2:30 PM													
2:45 PM													
3:00 PM													
3:15 PM													
3:30 PM													
3:45 PM													
4:00 PM	85	287	4	3	229	39	41	31	89	19	8	5	840
4:15 PM	107	311	7	1	270	44	37	26	90	20	16	5	934
4:30 PM	101	346	9	0	279	42	30	5	91	23	7	4	937
4:45 PM	95	351	18	1	310	36	50	12	90	24	20	5	1012
5:00 PM	101	383	21	1	333	41	42	11	86	26	11	2	1058
5:15 PM	97	371	19	2	351	38	33	10	90	29	12	1	1053
5:30 PM	93	349	7	0	340	39	34	16	85	25	21	5	1014
5:45 PM	109	376	26	2	289	27	23	9	87	31	19	3	1001
6:00 PM													
6:15 PM													
6:30 PM													
6:45 PM													

TOTAL VOLUMES =	NL 788	NT 2774	NR 111	SL 10	ST 2401	SR 306	EL 290	ET 120	ER 708	WL 197	WT 114	WR 30	TOTAL 7849
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PM Peak Hr Begins at: 445 PM

PEAK VOLUMES =	386	1454	65	4	1334	154	159	49	351	104	64	13	4137
PEAK HR. FACTOR:	0.943			0.954			0.919			0.887			0.978

CONTROL: Signalized

# Intersection Turning Movement

Prepared by: Southland Car Counters

N-S STREET: Mountain Ave.

DATE: 1/25/2006

LOCATION: City of Ontario

E-W STREET: I-10 WB Ramps

DAY: WEDNESDAY

PROJECT# 06-3043-007

LANES:	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			TOTAL
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	
	2	2	0	0	2	1	0	0	0	1.5	0	1.5	
6:00 AM													
6:15 AM													
6:30 AM													
6:45 AM													
7:00 AM	133	198			226	159				69	1	89	875
7:15 AM	121	203			294	171				78	4	92	963
7:30 AM	125	215			319	208				99	1	110	1077
7:45 AM	149	241			335	195				122	2	156	1200
8:00 AM	131	212			206	108				101	0	131	889
8:15 AM	129	202			189	102				98	0	118	838
8:30 AM	113	211			192	122				87	0	130	855
8:45 AM	126	225			177	106				99	3	150	886
9:00 AM													
9:15 AM													
9:30 AM													
9:45 AM													
10:00 AM													
10:15 AM													
10:30 AM													
10:45 AM													
11:00 AM													
11:15 AM													
11:30 AM													
11:45 AM													

TOTAL VOLUMES =	NL 1027	NT 1707	NR 0	SL 0	ST 1938	SR 1171	EL 0	ET 0	ER 0	WL 753	WT 11	WR 976	TOTAL 7583
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AM Peak Hr Begins at: 715 AM

PEAK VOLUMES =	526	871	0	0	1154	682	0	0	0	400	7	489	4129
PEAK HR. FACTOR:		0.896			0.866			0.000			0.800		0.860

CONTROL: Signalized

# Intersection Turning Movement

Prepared by: Southland Car Counters

N-S STREET: Mountain Ave.

DATE: 1/25/2006

LOCATION: City of Ontario

E-W STREET: I-10 WB Ramps

DAY: WEDNESDAY

PROJECT# 06-3043-007

LANES:	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			TOTAL
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	
	2	2	0	0	2	1	0	0	0	1.5	0	1.5	
1:00 PM													
1:15 PM													
1:30 PM													
1:45 PM													
2:00 PM													
2:15 PM													
2:30 PM													
2:45 PM													
3:00 PM													
3:15 PM													
3:30 PM													
3:45 PM													
4:00 PM	79	254			253	86				90	0	121	883
4:15 PM	83	281			281	101				91	2	141	980
4:30 PM	93	302			291	103				104	0	154	1047
4:45 PM	81	312			301	123				109	1	153	1080
5:00 PM	99	347			324	119				117	0	156	1162
5:15 PM	93	334			353	119				158	0	156	1213
5:30 PM	86	311			343	105				162	1	139	1147
5:45 PM	77	364			323	79				146	0	154	1143
6:00 PM													
6:15 PM													
6:30 PM													
6:45 PM													

TOTAL VOLUMES =	NL 691	NT 2505	NR 0	SL 0	ST 2469	SR 835	EL 0	ET 0	ER 0	WL 977	WT 4	WR 1174	TOTAL 8655
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PM Peak Hr Begins at: 500 PM

PEAK VOLUMES =	355	1356	0	0	1343	422	0	0	0	583	1	605	4665
PEAK HR. FACTOR:		0.959			0.935			0.000			0.947		0.961

CONTROL: Signalized

# Intersection Turning Movement

Prepared by: Southland Car Counters

N-S STREET: Mountain Ave.

DATE: 01/25/2006

LOCATION: City of Ontario

E-W STREET: I-10 EB Ramps

DAY: WEDNESDAY

PROJECT# 06-3043-008

LANES:	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			TOTAL
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	
	0	3	1	2	2	0	2	0	1	0	0	0	
6:00 AM													
6:15 AM													
6:30 AM													
6:45 AM													
7:00 AM		177	64	85	202		58	0	27				613
7:15 AM		190	80	114	194		81	0	55				714
7:30 AM		265	61	112	274		108	2	32				854
7:45 AM		258	47	131	219		171	0	55				881
8:00 AM		278	73	127	229		96	1	39				843
8:15 AM		272	31	96	226		104	0	31				760
8:30 AM		245	57	87	219		95	0	42				745
8:45 AM		224	45	105	257		113	0	36				780
9:00 AM													
9:15 AM													
9:30 AM													
9:45 AM													
10:00 AM													
10:15 AM													
10:30 AM													
10:45 AM													
11:00 AM													
11:15 AM													
11:30 AM													
11:45 AM													

TOTAL VOLUMES =	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
	0	1909	458	857	1820	0	826	3	317	0	0	0	6190

AM Peak Hr Begins at: 730 AM

PEAK VOLUMES =	0	1073	212	466	948	0	479	3	157	0	0	0	3338
PEAK HR. FACTOR:		0.915		0.916			0.707			0.000			0.947

CONTROL: Signalized

# Intersection Turning Movement

Prepared by: Southland Car Counters

N-S STREET: Mountain Ave.

DATE: 01/25/2006

LOCATION: City of Ontario

E-W STREET: I-10 EB Ramps

DAY: WEDNESDAY

PROJECT# 06-3043-008

LANES:	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			TOTAL
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	
	0	3	1	2	2	0	2	0	1	0	0	0	
1:00 PM													
1:15 PM													
1:30 PM													
1:45 PM													
2:00 PM													
2:15 PM													
2:30 PM													
2:45 PM													
3:00 PM													
3:15 PM													
3:30 PM													
3:45 PM													
4:00 PM		257	140	90	339		125	0	121				1072
4:15 PM		276	117	92	327		122	0	103				1037
4:30 PM		266	122	93	328		115	1	117				1042
4:45 PM		297	127	92	362		111	0	125				1114
5:00 PM		264	110	88	336		96	0	111				1005
5:15 PM		351	130	106	358		133	1	140				1219
5:30 PM		278	108	103	389		137	0	107				1122
5:45 PM		270	100	66	293		104	2	87				922
6:00 PM													
6:15 PM													
6:30 PM													
6:45 PM													

TOTAL VOLUMES =	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
	0	2259	954	730	2732	0	943	4	911	0	0	0	8533

PM Peak Hr Begins at: 445 PM

PEAK VOLUMES =	0	1190	475	389	1445	0	477	1	483	0	0	0	4460
PEAK HR. FACTOR:		0.865			0.932			0.877			0.000		0.915

CONTROL: Signalized



# Intersection Turning Movement

Prepared by: Southland Car Counters

N-S STREET: Mountain Ave.

DATE: 1/26/2006

LOCATION: City of Ontario

E-W STREET: 6th St.

DAY: THURSDAY

PROJECT# 06-3043-009

LANES:	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			TOTAL
	NL 1	NT 1	NR 1	SL 2	ST 2	SR 1	EL 2	ET 1	ER 0	WL 2	WT 1	WR 0	
6:00 AM													
6:15 AM													
6:30 AM													
6:45 AM													
7:00 AM	9	264	12	24	211	21	11	11	21	16	11	18	629
7:15 AM	7	272	22	31	189	20	7	7	26	11	18	13	623
7:30 AM	10	286	10	27	236	28	15	19	31	13	11	24	710
7:45 AM	15	319	15	33	264	23	22	11	45	14	19	22	802
8:00 AM	11	283	21	39	271	19	22	18	44	21	24	20	793
8:15 AM	8	261	24	31	256	22	18	14	54	16	22	11	737
8:30 AM	14	236	17	36	221	27	27	19	41	11	25	14	688
8:45 AM	24	226	15	31	186	18	21	17	33	16	21	12	620
9:00 AM													
9:15 AM													
9:30 AM													
9:45 AM													
10:00 AM													
10:15 AM													
10:30 AM													
10:45 AM													
11:00 AM													
11:15 AM													
11:30 AM													
11:45 AM													

TOTAL VOLUMES =	NL 98	NT 2147	NR 136	SL 252	ST 1834	SR 178	EL 143	ET 116	ER 295	WL 118	WT 151	WR 134	TOTAL 5602
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AM Peak Hr Begins at: 730 AM

PEAK VOLUMES =	44	1149	70	130	1027	92	77	62	174	64	76	77	3042
PEAK HR. FACTOR:		0.905			0.949			0.910			0.835		0.948

CONTROL: Signalized

# Intersection Turning Movement

Prepared by: Southland Car Counters

N-S STREET: Mountain Ave.

DATE: 1/26/2006

LOCATION: City of Ontario

E-W STREET: 6th St.

DAY: THURSDAY

PROJECT# 06-3043-009

LANES:	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			TOTAL
	NL 1	NT 1	NR 1	SL 2	ST 2	SR 1	EL 2	ET 1	ER 0	WL 2	WT 1	WR 0	
1:00 PM													
1:15 PM													
1:30 PM													
1:45 PM													
2:00 PM													
2:15 PM													
2:30 PM													
2:45 PM													
3:00 PM													
3:15 PM													
3:30 PM													
3:45 PM													
4:00 PM	13	316	13	18	404	45	30	11	14	20	13	10	907
4:15 PM	14	352	24	28	454	33	52	24	21	18	18	18	1056
4:30 PM	13	349	22	16	406	38	76	23	18	28	22	24	1035
4:45 PM	20	343	25	20	429	52	43	25	12	19	25	21	1034
5:00 PM	24	372	19	18	405	36	44	23	18	27	21	12	1019
5:15 PM	16	324	17	20	364	35	38	14	16	21	24	13	902
5:30 PM	22	311	21	19	288	29	29	16	16	26	22	13	812
5:45 PM	19	325	12	24	278	27	43	11	12	18	18	10	797
6:00 PM													
6:15 PM													
6:30 PM													
6:45 PM													

TOTAL VOLUMES =	NL 141	NT 2692	NR 153	SL 163	ST 3028	SR 295	EL 355	ET 147	ER 127	WL 177	WT 163	WR 121	TOTAL 7562
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PM Peak Hr Begins at: 4:15 PM

PEAK VOLUMES =	71	1416	90	82	1694	159	215	95	69	92	86	75	4144
PEAK HR. FACTOR:		0.950			0.939			0.810			0.855		0.981

CONTROL: Signalized

# Intersection Turning Movement

Prepared by: Southland Car Counters

N-S STREET: Mountain Ave.

DATE: 1/26/2006

LOCATION: City of Ontario

E-W STREET: 5th St.

DAY: THURSDAY

PROJECT# 06-3043-010

LANES:	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			TOTAL
	NL 1	NT 2	NR 0	SL 1	ST 2	SR 0	EL 1	ET 1	ER 0	WL 1	WT 1	WR 0	
6:00 AM													
6:15 AM													
6:30 AM													
6:45 AM													
7:00 AM	10	207	3	7	223	4	10	3	13	5	7	8	500
7:15 AM	8	241	6	7	232	14	11	5	11	9	17	8	569
7:30 AM	18	312	9	7	240	7	16	10	25	8	13	2	667
7:45 AM	20	389	10	7	279	14	17	15	37	17	20	12	837
8:00 AM	13	369	16	10	286	9	21	22	28	24	17	12	827
8:15 AM	16	307	5	8	253	6	23	20	17	16	30	23	724
8:30 AM	22	267	7	4	215	2	8	7	8	4	15	10	569
8:45 AM	17	255	4	7	183	3	13	13	12	7	15	11	540
9:00 AM													
9:15 AM													
9:30 AM													
9:45 AM													
10:00 AM													
10:15 AM													
10:30 AM													
10:45 AM													
11:00 AM													
11:15 AM													
11:30 AM													
11:45 AM													

TOTAL VOLUMES =	NL 124	NT 2347	NR 60	SL 57	ST 1911	SR 59	EL 119	ET 95	ER 151	WL 90	WT 134	WR 86	TOTAL 5233
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AM Peak Hr Begins at: 730 AM

PEAK VOLUMES =	67	1377	40	32	1058	36	77	67	107	65	80	49	3055
PEAK HR. FACTOR:		0.885			0.923			0.884			0.703		0.912

CONTROL: Signalized

# Intersection Turning Movement

Prepared by: Southland Car Counters

N-S STREET: Mountain Ave.

DATE: 1/26/2006

LOCATION: City of Ontario

E-W STREET: 5th St.

DAY: THURSDAY

PROJECT# 06-3043-010

LANES:	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			TOTAL
	NL 1	NT 2	NR 0	SL 1	ST 2	SR 0	EL 1	ET 1	ER 0	WL 1	WT 1	WR 0	
1:00 PM													
1:15 PM													
1:30 PM													
1:45 PM													
2:00 PM													
2:15 PM													
2:30 PM													
2:45 PM													
3:00 PM													
3:15 PM													
3:30 PM													
3:45 PM													
4:00 PM	31	297	5	9	321	8	15	14	20	7	17	9	753
4:15 PM	30	350	7	12	313	7	12	18	22	2	13	10	796
4:30 PM	50	337	7	14	375	4	13	19	23	4	19	6	871
4:45 PM	28	380	11	11	368	10	15	22	16	7	11	14	893
5:00 PM	45	325	6	14	391	9	14	20	21	4	13	9	871
5:15 PM	52	385	8	9	381	7	16	24	14	7	19	13	935
5:30 PM	51	362	8	15	470	4	16	31	19	7	21	15	1019
5:45 PM	53	370	8	12	347	8	17	17	20	13	19	4	888
6:00 PM													
6:15 PM													
6:30 PM													
6:45 PM													

TOTAL VOLUMES =	NL 340	NT 2806	NR 60	SL 96	ST 2966	SR 57	EL 118	ET 165	ER 155	WL 51	WT 132	WR 80	TOTAL 7026
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PM Peak Hr Begins at: 445 PM

PEAK VOLUMES =	176	1452	33	49	1610	30	61	97	70	25	64	51	3718
PEAK HR. FACTOR:		0.933			0.863			0.864			0.814		0.912

CONTROL: Signalized

# Intersection Turning Movement

Prepared by: Southland Car Counters

N-S STREET: Mountain Ave.

DATE: 1/26/2006

LOCATION: City of Ontario

E-W STREET: 4th St.

DAY: THURSDAY

PROJECT# 06-3043-011

LANES:	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			TOTAL
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	
	11	2	0	1	2	0	1	2	0	1	2	0	
6:00 AM													
6:15 AM													
6:30 AM													
6:45 AM													
7:00 AM	7	191	6	23	182	16	15	9	9	12	17	13	500
7:15 AM	13	216	4	17	203	14	21	18	8	18	28	23	583
7:30 AM	22	241	13	15	244	33	25	27	22	6	19	36	703
7:45 AM	21	295	9	23	267	22	44	34	10	17	50	32	824
8:00 AM	24	257	4	20	295	16	41	37	18	32	41	28	813
8:15 AM	10	288	9	19	232	13	25	25	3	19	31	18	692
8:30 AM	12	273	6	24	195	8	10	18	8	13	8	22	597
8:45 AM	10	236	5	22	194	10	14	18	10	13	23	19	574
9:00 AM													
9:15 AM													
9:30 AM													
9:45 AM													
10:00 AM													
10:15 AM													
10:30 AM													
10:45 AM													
11:00 AM													
11:15 AM													
11:30 AM													
11:45 AM													

TOTAL VOLUMES =	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
	119	1997	56	163	1812	132	195	186	88	130	217	191	5286

AM Peak Hr Begins at: 730 AM

PEAK VOLUMES =	77	1081	35	77	1038	84	135	123	53	74	141	114	3032
PEAK HR. FACTOR:		0.918			0.906			0.810			0.814		0.920

CONTROL: Signalized

# Intersection Turning Movement

Prepared by: Southland Car Counters

N-S STREET: Mountain Ave.

DATE: 1/26/2006

LOCATION: City of Ontario

E-W STREET: 4th St.

DAY: THURSDAY

PROJECT# 06-3043-011

LANES:	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			TOTAL
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	
1:00 PM	11	2	0	1	2	0	1	2	0	1	2	0	
1:15 PM													
1:30 PM													
1:45 PM													
2:00 PM													
2:15 PM													
2:30 PM													
2:45 PM													
3:00 PM													
3:15 PM													
3:30 PM													
3:45 PM													
4:00 PM	26	330	8	32	286	17	32	43	6	16	53	16	865
4:15 PM	25	294	13	37	315	18	15	40	14	13	33	24	841
4:30 PM	11	294	7	41	281	20	28	45	16	33	42	20	838
4:45 PM	18	332	16	49	295	28	25	43	14	27	42	39	928
5:00 PM	25	344	19	60	283	21	25	51	25	26	38	37	954
5:15 PM	35	358	18	58	312	20	29	67	25	25	54	29	1030
5:30 PM	20	291	19	47	323	20	19	53	22	29	69	31	943
5:45 PM	30	316	13	52	321	35	26	52	13	18	49	54	979
6:00 PM													
6:15 PM													
6:30 PM													
6:45 PM													

TOTAL VOLUMES =	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
	190	2559	113	376	2416	179	199	394	135	187	380	250	7378

PM Peak Hr Begins at: 500 PM

PEAK VOLUMES =	110	1309	69	217	1239	96	99	223	85	98	210	151	3906
PEAK HR. FACTOR:		0.905		0.951			0.841			0.890			0.948

CONTROL: Signalized

# Intersection Turning Movement

Prepared by: Southland Car Counters

N-S STREET: Mountain Ave.

DATE: 1/26/2006

LOCATION: City of Ontario

E-W STREET: Holt Blvd.

DAY: THURSDAY

PROJECT# 06-3043-012

LANES:	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			TOTAL
	NL 1	NT 2	NR 1	SL 1	ST 2	SR 0	EL 1	ET 2	ER 0	WL 1	WT 2	WR 0	
6:00 AM													
6:15 AM													
6:30 AM													
6:45 AM													
7:00 AM	32	150	20	21	197	12	4	56	15	39	56	12	614
7:15 AM	28	161	16	17	213	18	2	38	22	32	47	15	609
7:30 AM	41	242	26	23	222	30	3	65	24	39	74	18	807
7:45 AM	43	304	41	20	259	23	9	67	35	44	149	27	1021
8:00 AM	59	257	35	32	277	28	11	74	28	42	107	24	974
8:15 AM	35	212	27	20	181	30	6	61	26	39	106	28	771
8:30 AM	24	245	36	22	196	30	15	68	26	27	93	33	815
8:45 AM	27	225	36	34	140	31	18	75	30	28	72	16	732
9:00 AM													
9:15 AM													
9:30 AM													
9:45 AM													
10:00 AM													
10:15 AM													
10:30 AM													
10:45 AM													
11:00 AM													
11:15 AM													
11:30 AM													
11:45 AM													

TOTAL VOLUMES =	NL 289	NT 1796	NR 237	SL 189	ST 1685	SR 202	EL 68	ET 504	ER 206	WL 290	WT 704	WR 173	TOTAL 6343
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AM Peak Hr Begins at: 745 AM

PEAK VOLUMES =	161	1018	139	94	913	111	41	270	115	152	455	112	3581
PEAK HR. FACTOR:		0.849			0.829			0.942			0.817		0.877

CONTROL: Signalized

# Intersection Turning Movement

Prepared by: Southland Car Counters

N-S STREET: Mountain Ave.

DATE: 1/26/2006

LOCATION: City of Ontario

E-W STREET: Holt Blvd.

DAY: THURSDAY

PROJECT# 06-3043-012

LANES:	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			TOTAL
	NL 1	NT 2	NR 1	SL 1	ST 2	SR 0	EL 1	ET 2	ER 0	WL 1	WT 2	WR 0	
1:00 PM													
1:15 PM													
1:30 PM													
1:45 PM													
2:00 PM													
2:15 PM													
2:30 PM													
2:45 PM													
3:00 PM													
3:15 PM													
3:30 PM													
3:45 PM													
4:00 PM	69	262	43	51	218	47	49	241	68	39	261	38	1386
4:15 PM	73	281	55	39	278	48	52	264	62	54	244	40	1490
4:30 PM	72	233	61	47	264	52	61	275	72	72	239	44	1492
4:45 PM	90	258	67	67	252	54	51	261	75	78	256	54	1563
5:00 PM	88	303	73	61	286	53	64	269	69	83	298	61	1708
5:15 PM	85	284	75	60	284	50	67	279	83	65	282	66	1680
5:30 PM	81	258	73	67	287	49	65	282	64	89	298	62	1675
5:45 PM	61	267	72	61	265	50	82	288	64	75	275	52	1612
6:00 PM													
6:15 PM													
6:30 PM													
6:45 PM													

TOTAL VOLUMES =	NL 619	NT 2146	NR 519	SL 453	ST 2134	SR 403	EL 491	ET 2159	ER 557	WL 555	WT 2153	WR 417	TOTAL 12606
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PM Peak Hr Begins at: 500 PM

PEAK VOLUMES =	315	1112	293	249	1122	202	278	1118	280	312	1153	241	6675
PEAK HR. FACTOR:		0.927			0.976			0.965			0.950		0.977

CONTROL: Signalized



# Intersection Turning Movement

Prepared by: Southland Car Counters

N-S STREET: San Antonio Ave.

DATE: 01/25/2006

LOCATION: City of Ontario

E-W STREET: 6th St.

DAY: WEDNESDAY

PROJECT# 06-3043-014

LANES:	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			TOTAL
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	
	0	2	0	0	2	0	0	1	0	0	1	0	
6:00 AM													
6:15 AM													
6:30 AM													
6:45 AM													
7:00 AM	7	43	10	3	53	6	3	8	3	10	11	9	166
7:15 AM	12	62	12	5	74	11	10	8	2	12	13	3	224
7:30 AM	11	66	25	10	95	16	14	23	6	19	23	13	321
7:45 AM	12	72	12	10	81	18	7	15	8	22	32	5	294
8:00 AM	17	76	12	5	61	16	15	13	5	14	25	10	269
8:15 AM	5	58	7	4	44	6	8	12	6	2	16	4	172
8:30 AM	9	53	9	5	55	4	2	4	2	5	13	6	167
8:45 AM	5	60	7	4	45	5	5	10	4	4	8	3	160
9:00 AM													
9:15 AM													
9:30 AM													
9:45 AM													
10:00 AM													
10:15 AM													
10:30 AM													
10:45 AM													
11:00 AM													
11:15 AM													
11:30 AM													
11:45 AM													

TOTAL VOLUMES =	NL 78	NT 490	NR 94	SL 46	ST 508	SR 82	EL 64	ET 93	ER 36	WL 88	WT 141	WR 53	TOTAL 1773
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AM Peak Hr Begins at: 715 AM

PEAK VOLUMES =	52	276	61	30	311	61	46	59	21	67	93	31	1108
PEAK HR. FACTOR:		0.926			0.831			0.733			0.809		0.863

CONTROL: 4-Way Stop

# Intersection Turning Movement

Prepared by: Southland Car Counters

N-S STREET: San Antonio Ave.

DATE: 01/25/2006

LOCATION: City of Ontario

E-W STREET: 6th St.

DAY: WEDNESDAY

PROJECT# 06-3043-014

LANES:	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			TOTAL
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	
	0	2	0	0	2	0	0	1	0	0	1	0	
1:00 PM													
1:15 PM													
1:30 PM													
1:45 PM													
2:00 PM													
2:15 PM													
2:30 PM													
2:45 PM													
3:00 PM													
3:15 PM													
3:30 PM													
3:45 PM													
4:00 PM	10	74	8	10	69	2	5	13	9	7	19	6	232
4:15 PM	11	83	9	9	73	3	5	18	9	9	23	8	260
4:30 PM	16	86	13	13	80	5	6	20	10	10	25	7	291
4:45 PM	16	88	10	14	103	9	19	13	9	9	28	11	329
5:00 PM	8	111	7	14	114	6	9	17	12	4	16	7	325
5:15 PM	8	99	13	12	106	4	8	23	11	13	13	10	320
5:30 PM	9	93	12	11	116	8	7	29	14	20	19	14	352
5:45 PM	8	89	12	12	87	5	9	13	10	7	14	5	271
6:00 PM													
6:15 PM													
6:30 PM													
6:45 PM													

TOTAL VOLUMES =	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
	86	723	84	95	748	42	68	146	84	79	157	68	2380

PM Peak Hr Begins at: 445 PM

PEAK VOLUMES =	41	391	42	51	439	27	43	82	46	46	76	42	1326
PEAK HR. FACTOR:		0.940			0.957			0.855			0.774		0.942

CONTROL: 4-Way Stop

# Intersection Turning Movement

Prepared by: Southland Car Counters

N-S STREET: San Antonio Ave.

DATE: 01/25/2006

LOCATION: City of Ontario

E-W STREET: 5th St.

DAY: WEDNESDAY

PROJECT# 06-3043-015

LANES:	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			TOTAL
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	
	0	2	0	0	2	0	0	1	0	0	1	0	
6:00 AM													
6:15 AM													
6:30 AM													
6:45 AM													
7:00 AM	4	60	4	4	47	1	4	11	4	6	15	1	161
7:15 AM	6	79	12	5	55	3	14	10	4	7	16	4	215
7:30 AM	17	104	17	7	96	11	11	16	9	10	22	7	327
7:45 AM	31	92	26	14	107	6	6	35	14	14	33	8	386
8:00 AM	24	105	18	5	108	13	5	22	20	15	36	5	376
8:15 AM	3	73	18	9	66	8	4	18	6	7	14	6	232
8:30 AM	5	68	20	4	60	6	2	20	9	17	22	5	238
8:45 AM	9	67	13	0	56	10	5	10	8	12	22	6	218
9:00 AM													
9:15 AM													
9:30 AM													
9:45 AM													
10:00 AM													
10:15 AM													
10:30 AM													
10:45 AM													
11:00 AM													
11:15 AM													
11:30 AM													
11:45 AM													

TOTAL VOLUMES =	NL 99	NT 648	NR 128	SL 48	ST 595	SR 58	EL 51	ET 142	ER 74	WL 88	WT 180	WR 42	TOTAL 2153
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AM Peak Hr Begins at: 730 AM

PEAK VOLUMES =	75	374	79	35	377	38	26	91	49	46	105	26	1321
PEAK HR. FACTOR:	0.886			0.886			0.755			0.790			0.856

CONTROL: 4-Way Stop

# Intersection Turning Movement

Prepared by: Southland Car Counters

N-S STREET: San Antonio Ave.

DATE: 01/25/2006

LOCATION: City of Ontario

E-W STREET: 5th St.

DAY: WEDNESDAY

PROJECT# 06-3043-015

LANES:	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			TOTAL
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	
	0	2	0	0	2	0	0	1	0	0	1	0	
1:00 PM													
1:15 PM													
1:30 PM													
1:45 PM													
2:00 PM													
2:15 PM													
2:30 PM													
2:45 PM													
3:00 PM													
3:15 PM													
3:30 PM													
3:45 PM													
4:00 PM	9	83	13	10	99	5	7	15	6	10	12	7	276
4:15 PM	2	80	10	2	89	9	5	20	3	6	18	3	247
4:30 PM	11	88	6	3	87	11	2	27	7	8	18	1	269
4:45 PM	7	101	8	4	80	6	6	19	7	12	14	2	266
5:00 PM	4	105	18	6	134	12	3	20	9	11	19	2	343
5:15 PM	11	97	13	8	117	8	8	24	10	7	16	9	328
5:30 PM	10	75	13	6	77	2	13	22	10	9	23	5	265
5:45 PM	9	69	12	7	80	3	11	20	7	9	17	8	252
6:00 PM													
6:15 PM													
6:30 PM													
6:45 PM													

TOTAL VOLUMES =	NL 63	NT 698	NR 93	SL 46	ST 763	SR 56	EL 55	ET 167	ER 59	WL 72	WT 137	WR 37	TOTAL 2246
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PM Peak Hr Begins at: 430 PM

PEAK VOLUMES =	33	391	45	21	418	37	19	90	33	38	67	14	1206
PEAK HR. FACTOR:		0.923			0.783			0.845			0.930		0.879

CONTROL: 4-Way Stop

Location: 5th Street E/O Mountain

AM Period	NB	SB	EB	WB	PM Period	NB	SB	EB	WB			
00:00			5	3	12:00			17	27			
00:15			2	1	12:15			21	17			
00:30			2	0	12:30			31	27			
00:45			1	10	12:45			22	91	34	105	196
01:00			2	3	13:00			21	25			
01:15			1	2	13:15			21	25			
01:30			3	1	13:30			19	16			
01:45			1	7	13:45			26	87	25	91	178
02:00			0	2	14:00			25	34			
02:15			0	1	14:15			33	26			
02:30			0	2	14:30			33	29			
02:45			0	0	14:45			36	127	45	134	261
03:00			0	0	15:00			38	63			
03:15			2	0	15:15			41	39			
03:30			1	2	15:30			39	27			
03:45			1	4	15:45			34	152	29	158	310
04:00			0	6	16:00			33	28			
04:15			0	5	16:15			29	32			
04:30			1	5	16:30			39	20			
04:45			5	6	16:45			41	142	27	107	249
05:00			2	7	17:00			37	43			
05:15			4	3	17:15			46	36			
05:30			1	15	17:30			44	32			
05:45			2	9	17:45			41	168	41	152	320
06:00			6	13	18:00			51	42			
06:15			8	24	18:15			41	38			
06:30			9	13	18:30			32	25			
06:45			10	33	18:45			21	145	35	140	285
07:00			13	30	19:00			36	24			
07:15			15	40	19:15			31	19			
07:30			36	43	19:30			35	18			
07:45			59	123	19:45			23	125	19	80	205
08:00			23	64	20:00			33	11			
08:15			22	28	20:15			12	14			
08:30			27	21	20:30			27	27			
08:45			21	93	20:45			23	95	11	63	158
09:00			8	21	21:00			24	21			
09:15			14	28	21:15			18	21			
09:30			12	22	21:30			16	13			
09:45			15	49	21:45			13	71	10	65	136
10:00			17	19	22:00			21	8			
10:15			16	31	22:15			8	5			
10:30			19	22	22:30			9	5			
10:45			20	72	22:45			7	45	3	21	66
11:00			33	16	23:00			6	2			
11:15			14	42	23:15			3	2			
11:30			26	36	23:30			3	2			
11:45			38	111	23:45			6	18	2	8	26

<b>Total Vol.</b>			517	787	<b>1304</b>			1266	1124	<b>2390</b>
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Daily Totals					
NB	SB	EB	WB	Combined	
		1783	1911	<b>3694</b>	

Split %	AM			PM		
	39.6%	60.4%	<b>35.3%</b>	53.0%	47.0%	<b>64.7%</b>

Peak Hour	07:30	07:15	<b>07:15</b>	17:15	14:30	<b>17:15</b>
Volume	140	201	<b>334</b>	182	176	<b>333</b>
P.H.F.	0.59	0.79	<b>0.74</b>	0.89	0.70	<b>0.90</b>

Location: 5th Street W/O Mountain

AM Period	NB	SB	EB	WB	PM Period	NB	SB	EB	WB			
00:00			7	6	12:00			40	38			
00:15			5	5	12:15			24	32			
00:30			2	4	12:30			41	40			
00:45			2	16	2	17	33	0	105	0	110	215
01:00			2	4	13:00			36	40			
01:15			0	1	13:15			26	39			
01:30			1	4	13:30			34	39			
01:45			3	6	3	12	18	39	135	42	160	295
02:00			1	1	14:00			63	48			
02:15			2	1	14:15			82	41			
02:30			3	3	14:30			47	42			
02:45			4	10	2	7	17	49	241	51	182	423
03:00			3	3	15:00			42	58			
03:15			1	2	15:15			42	65			
03:30			6	5	15:30			58	39			
03:45			2	12	4	14	26	49	191	55	217	408
04:00			3	3	16:00			38	59			
04:15			6	5	16:15			50	58			
04:30			11	4	16:30			47	45			
04:45			11	31	10	22	53	54	189	78	240	429
05:00			12	7	17:00			60	65			
05:15			19	7	17:15			58	70			
05:30			18	15	17:30			60	76			
05:45			17	66	17	46	112	68	246	73	284	530
06:00			12	7	18:00			73	76			
06:15			18	13	18:15			51	53			
06:30			26	16	18:30			44	67			
06:45			15	71	32	68	139	35	203	79	275	478
07:00			44	28	19:00			51	52			
07:15			44	39	19:15			47	50			
07:30			87	46	19:30			48	30			
07:45			54	229	62	175	404	59	205	41	173	378
08:00			26	48	20:00			54	26			
08:15			28	27	20:15			38	31			
08:30			37	32	20:30			42	37			
08:45			42	133	33	140	273	39	173	30	124	297
09:00			25	34	21:00			22	26			
09:15			17	54	21:15			44	32			
09:30			28	27	21:30			29	21			
09:45			18	88	29	144	232	19	114	25	104	218
10:00			39	36	22:00			23	23			
10:15			35	50	22:15			15	11			
10:30			41	33	22:30			12	13			
10:45			31	146	38	157	303	13	63	14	61	124
11:00			53	38	23:00			10	9			
11:15			45	56	23:15			5	12			
11:30			41	46	23:30			5	5			
11:45			49	188	45	185	373	6	26	7	33	59

<b>Total Vol.</b>			996	987	<b>1983</b>			1891	1963	<b>3854</b>
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		Daily Totals			
NB	SB	EB	WB	Combined	
		2887	2950	<b>5837</b>	

Split %	AM			PM		
	NB	SB	Combined	NB	SB	Combined
	50.2%	49.8%	<b>34.0%</b>	49.1%	50.9%	<b>66.0%</b>

Peak Hour	AM	PM
	07:00	07:15
<b>Volume</b>	229	195
<b>P.H.F.</b>	0.66	0.79

Peak Hour	AM	PM
	07:15	17:15
<b>Volume</b>	406	259
<b>P.H.F.</b>	0.76	0.89

## **Appendix B**

Existing Level of Service Analysis Worksheets

ONTARIO WALMART SUPERSTORE
TRAFFIC IMPACT STUDY
ONTARIO, CALIFORNIA

Level Of Service Computation Report
2000 HCM 4-Way Stop Method (Base Volume Alternative)

\*\*\*\*\*
Intersection #1 BENSON AVENUE (NS) AT 6TH STREET (EW)
\*\*\*\*\*

Cycle (sec): 100 Critical Vol./Cap. (X): 0.452
Loss Time (sec): 0 (Y+R = 4 sec) Average Delay (sec/veh): 12.7
Optimal Cycle: 0 Level Of Service: B
\*\*\*\*\*

Table with 4 columns: North Bound, South Bound, East Bound, West Bound. Rows include Movement (L-T-R), Control (Stop Sign), Rights (Include), Min. Green, and Lanes.

Volume Module: Table with 13 columns for volume metrics. Rows include Base Vol, Growth Adj, Initial Bse, User Adj, PHF Adj, PHF Volume, Reduct Vol, Reduced Vol, PCE Adj, MLF Adj, and Final Vol.

Saturation Flow Module: Table with 13 columns for saturation flow metrics. Rows include Adjustment, Lanes, and Final Sat.

Capacity Analysis Module: Table with 13 columns for capacity analysis metrics. Rows include Vol/Sat, Crit Moves, Delay/Veh, Delay Adj, AdjDel/Veh, LOS by Move, ApproachDel, Delay Adj, ApprAdjDel, and LOS by Appr.

\*\*\*\*\*



ONTARIO WALMART SUPERSTORE  
 TRAFFIC IMPACT STUDY  
 ONTARIO, CALIFORNIA

Level Of Service Computation Report

2000 HCM 4-Way Stop Method (Base Volume Alternative)

\*\*\*\*\*  
 Intersection #1 BENSON AVENUE (NS) AT 6TH STREET (EW)  
 \*\*\*\*\*

Cycle (sec): 100 Critical Vol./Cap. (X): 0.634  
 Loss Time (sec): 0 (Y+R = 4 sec) Average Delay (sec/veh): 15.6  
 Optimal Cycle: 0 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:	Stop Sign			Stop Sign			Stop Sign			Stop Sign		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Lanes:	0	1	0	1	0	0	0	1	0	0	1	0

Volume Module:

Base Vol:	9	411	54	75	541	77	33	30	6	40	39	54
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:	9	411	54	75	541	77	33	30	6	40	39	54
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:	0.93	0.93	0.93	0.96	0.96	0.96	0.82	0.82	0.82	0.71	0.71	0.71
PHF Volume:	10	441	58	78	562	80	40	37	7	57	55	76
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	10	441	58	78	562	80	40	37	7	57	55	76
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Vol.:	10	441	58	78	562	80	40	37	7	57	55	76

Saturation Flow Module:

Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	0.04	1.73	0.23	0.22	1.56	0.22	0.52	0.48	1.00	0.51	0.49	1.00
Final Sat.:	21	960	128	123	904	131	222	202	476	224	219	500

Capacity Analysis Module:

Vol/Sat:	0.46	0.46	0.45	0.63	0.62	0.61	0.18	0.18	0.02	0.25	0.25	0.15
Crit Moves:	****			****			****			****		
Delay/Veh:	14.4	14.1	13.8	18.9	18.1	17.3	12.2	12.2	9.7	12.7	12.7	10.5
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
AdjDel/Veh:	14.4	14.1	13.8	18.9	18.1	17.3	12.2	12.2	9.7	12.7	12.7	10.5
LOS by Move:	B	B	B	C	C	C	B	B	A	B	B	B
ApproachDel:	14.1			18.1			12.0			11.8		
Delay Adj:	1.00			1.00			1.00			1.00		
ApprAdjDel:	14.1			18.1			12.0			11.8		
LOS by Appr:	B			C			B			B		

ONTARIO WALMART SUPERSTORE  
 TRAFFIC IMPACT STUDY  
 ONTARIO, CALIFORNIA

Level Of Service Computation Report

2000 HCM 4-Way Stop Method (Base Volume Alternative)

\*\*\*\*\*  
 Intersection #2 BENSON AVENUE (NS) AT 5TH STREET (EW)  
 \*\*\*\*\*

Cycle (sec): 100 Critical Vol./Cap. (X): 0.474  
 Loss Time (sec): 0 (Y+R = 4 sec) Average Delay (sec/veh): 13.8  
 Optimal Cycle: 0 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:	Stop Sign			Stop Sign			Stop Sign			Stop Sign			
Rights:	Include			Include			Include			Include			
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0	
Lanes:	0	1	0	1	0	0	0	1	0	0	1	0	1

Volume Module:

Base Vol:	59	298	77	47	239	42	23	106	13	35	141	38
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	59	298	77	47	239	42	23	106	13	35	141	38
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:	0.88	0.88	0.88	0.93	0.93	0.93	0.81	0.81	0.81	0.79	0.79	0.79
PHF Volume:	67	341	88	50	256	45	29	131	16	44	179	48
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	67	341	88	50	256	45	29	131	16	44	179	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
Final Vol.:	67	341	88	50	256	45	29	131	16	44	179	48

Saturation Flow Module:

Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	0.27	1.38	0.35	0.29	1.46	0.25	0.18	0.82	1.00	0.20	0.80	1.00
Final Sat.:	142	738	196	144	750	135	82	379	510	95	384	532

Capacity Analysis Module:

Vol/Sat:	0.47	0.46	0.45	0.35	0.34	0.33	0.35	0.35	0.03	0.47	0.47	0.09
Crit Moves:	****			****			****			****		
Delay/Veh:	15.0	14.4	13.7	13.0	12.7	12.3	13.6	13.6	9.5	15.5	15.5	9.7
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
AdjDel/Veh:	15.0	14.4	13.7	13.0	12.7	12.3	13.6	13.6	9.5	15.5	15.5	9.7
LOS by Move:	B	B	B	B	B	B	B	B	A	C	C	A
ApproachDel:	14.4			12.7			13.2			14.5		
Delay Adj:	1.00			1.00			1.00			1.00		
ApprAdjDel:	14.4			12.7			13.2			14.5		
LOS by Appr:	B			B			B			B		

\*\*\*\*\*

ONTARIO WALMART SUPERSTORE
TRAFFIC IMPACT STUDY
ONTARIO, CALIFORNIA

Level Of Service Computation Report

2000 HCM 4-Way Stop Method (Base Volume Alternative)

\*\*\*\*\*
Intersection #2 BENSON AVENUE (NS) AT 5TH STREET (EW)
\*\*\*\*\*

Cycle (sec): 100 Critical Vol./Cap. (X): 0.615
Loss Time (sec): 0 (Y+R = 4 sec) Average Delay (sec/veh): 17.3
Optimal Cycle: 0 Level Of Service: C
\*\*\*\*\*

Table with 4 columns: North Bound, South Bound, East Bound, West Bound. Rows include Movement (L-T-R), Control (Stop Sign), Rights (Include), Min. Green, and Lanes.

Volume Module: Table with 12 columns for volume and adjustment factors. Rows include Base Vol, Growth Adj, Initial Bse, User Adj, PHF Adj, PHF Volume, Reduct Vol, Reduced Vol, PCE Adj, MLF Adj, and Final Vol.

Saturation Flow Module: Table with 12 columns for saturation flow factors. Rows include Adjustment, Lanes, and Final Sat.

Capacity Analysis Module: Table with 12 columns for capacity analysis metrics. Rows include Vol/Sat, Crit Moves, Delay/Veh, Delay Adj, AdjDel/Veh, LOS by Move, ApproachDel, Delay Adj, ApprAdjDel, and LOS by Appr.

\*\*\*\*\*

ONTARIO WALMART SUPERSTORE
TRAFFIC IMPACT STUDY
ONTARIO, CALIFORNIA

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

\*\*\*\*\*
Intersection #3 JASMINE AVENUE (NS) AT 5TH STREET (EW)
\*\*\*\*\*

Average Delay (sec/veh): 1.3 Worst Case Level Of Service: B[ 11.5]
\*\*\*\*\*

Table with columns: Approach, Movement, Control, Rights, Lanes. Rows for North, South, East, and West bounds.

Volume Module: Table with columns for Base Vol, Growth Adj, Initial Bse, User Adj, PHF Adj, PHF Volume, Reduct Vol, Final Vol. Rows for North, South, East, and West bounds.

Critical Gap Module: Table with columns for Critical Gp, FollowUpTim. Rows for North, South, East, and West bounds.

Capacity Module: Table with columns for Cnflct Vol, Potent Cap., Move Cap., Volume/Cap. Rows for North, South, East, and West bounds.

Level Of Service Module: Table with columns for Queue, Stopped Del, LOS by Move, Movement, Shared Cap., SharedQueue, Shrd StpDel, Shared LOS, ApproachDel, ApproachLOS. Rows for North, South, East, and West bounds.

ONTARIO WALMART SUPERSTORE  
 TRAFFIC IMPACT STUDY  
 ONTARIO, CALIFORNIA

Level Of Service Computation Report

2000 HCM Unsignalized Method (Base Volume Alternative)

\*\*\*\*\*  
 Intersection #3 JASMINE AVENUE (NS) AT 5TH STREET (EW)  
 \*\*\*\*\*

Average Delay (sec/veh): 2.3 Worst Case Level Of Service: B[ 12.2]  
 \*\*\*\*\*

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	0	0	0	0	1	0	1	0	0	0	1

Volume Module:

Base Vol:	0	0	0	23	0	13	11	179	0	0	184	17
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	0	0	23	0	13	11	179	0	0	184	17
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	0.35	0.35	0.35	0.86	0.86	0.86	0.75	0.75	0.75
PHF Volume:	0	0	0	66	0	38	13	207	0	0	245	23
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Final Vol.:	0	0	0	66	0	38	13	207	0	0	245	23

Critical Gap Module:

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

Capacity Module:

Cnflct Vol:	xxxx	xxxx	xxxxx	489	xxxx	257	268	xxxx	xxxxx	xxxx	xxxx	xxxxx
Potent Cap.:	xxxx	xxxx	xxxxx	542	xxxx	787	1307	xxxx	xxxxx	xxxx	xxxx	xxxxx
Move Cap.:	xxxx	xxxx	xxxxx	538	xxxx	787	1307	xxxx	xxxxx	xxxx	xxxx	xxxxx
Volume/Cap:	xxxx	xxxx	xxxx	0.12	xxxx	0.05	0.01	xxxx	xxxx	xxxx	xxxx	xxxx

Level Of Service Module:

Queue:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	0.0	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Stopped Del:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	7.8	xxxx	xxxxx	xxxxx	xxxx	xxxxx
LOS by Move:	*	*	*	*	*	*	A	*	*	*	*	*
Movement:	LT	LTR	RT	LT	LTR	RT	LT	LTR	RT	LT	LTR	RT
Shared Cap.:	xxxx	xxxx	xxxxx	xxxx	607	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
SharedQueue:	xxxxx	xxxx	xxxxx	xxxxx	0.6	xxxxx	0.0	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Shrd StpDel:	xxxxx	xxxx	xxxxx	xxxxx	12.2	xxxxx	7.8	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Shared LOS:	*	*	*	*	B	*	A	*	*	*	*	*
ApproachDel:	xxxxxx			12.2			xxxxxx			xxxxxx		
ApproachLOS:	*			B			*			*		

ONTARIO WALMART SUPERSTORE
TRAFFIC IMPACT STUDY
ONTARIO, CALIFORNIA

Level Of Service Computation Report

2000 HCM Unsignalized Method (Base Volume Alternative)

\*\*\*\*\*
Intersection #4 HELEN AVENUE (NS) AT 5TH STREET (EW)
\*\*\*\*\*

Average Delay (sec/veh): 2.0 Worst Case Level Of Service: B[ 12.0]
\*\*\*\*\*

Table with columns: Approach, Movement, Control, Rights, Lanes. Rows for North Bound, South Bound, East Bound, West Bound.

Volume Module: Table with columns for Base Vol, Growth Adj, Initial Etc, User Adj, PHF Adj, PHF Volume, Reduct Vol, Final Vol. Rows for North, South, East, West.

Critical Gap Module: Table with columns for Critical Gp, FollowUpTim. Rows for North, South, East, West.

Capacity Module: Table with columns for Cnflct Vol, Potent Cap., Move Cap., Volume/Cap. Rows for North, South, East, West.

Level Of Service Module: Table with columns for Queue, Stopped Del, LOS by Move, Movement, Shared Cap., SharedQueue, Shrd StpDel, Shared LOS, ApproachDel, ApproachLOS. Rows for North, South, East, West.

ONTARIO WALMART SUPERSTORE
TRAFFIC IMPACT STUDY
ONTARIO, CALIFORNIA

Level Of Service Computation Report

2000 HCM Unsignalized Method (Base Volume Alternative)

\*\*\*\*\*
Intersection #4 HELEN AVENUE (NS) AT 5TH STREET (EW)
\*\*\*\*\*

Average Delay (sec/veh): 0.7 Worst Case Level Of Service: B[ 11.4]
\*\*\*\*\*

Table with columns: Approach: North Bound, South Bound, East Bound, West Bound; Movement: L - T - R; Control: Stop Sign, Uncontrolled; Rights: Include; Lanes: 0 0 0 0 0, 0 0 1 0 0, 0 1 0 0 0, 0 0 0 1 0

Volume Module:
Base Vol: 0 0 0 13 0 5 11 194 0 0 179 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: 0 0 0 13 0 5 11 194 0 0 179 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 0.75 0.75 0.75 0.84 0.84 0.84 0.77 0.77 0.77
PHF Volume: 0 0 0 17 0 7 13 231 0 0 232 19
Reduct Vol: 0 0 0 0 0 0 0 0 0 0 0 0
Final Vol.: 0 0 0 17 0 7 13 231 0 0 232 19

Critical Gap Module:
Critical Gp:xxxxx xxxx xxxxxx 6.4 xxxxx 6.2 4.1 xxxxx xxxxxx xxxxxx xxxx xxxxxx
FollowUpTim:xxxxx xxxx xxxxxx 3.5 xxxxx 3.3 2.2 xxxxx xxxxxx xxxxxx xxxx xxxxxx

Capacity Module:
Cnflct Vol: xxxxx xxxxx xxxxxx 499 xxxxx 242 252 xxxxx xxxxxx xxxxx xxxxx xxxxxx
Potent Cap.: xxxxx xxxxx xxxxxx 534 xxxxx 802 1325 xxxxx xxxxxx xxxxx xxxxx xxxxxx
Move Cap.: xxxxx xxxxx xxxxxx 530 xxxxx 802 1325 xxxxx xxxxxx xxxxx xxxxx xxxxxx
Volume/Cap: xxxxx xxxxx xxxxx 0.03 xxxxx 0.01 0.01 xxxxx xxxxx xxxxx xxxxx xxxxx

Level Of Service Module:
Queue: xxxxxx xxxxx xxxxxx xxxxxx xxxxx xxxxxx 0.0 xxxxx xxxxxx xxxxxx xxxxx xxxxxx
Stopped Del:xxxxxx xxxxx xxxxxx xxxxxx xxxxx xxxxxx 7.7 xxxxx xxxxxx xxxxxx xxxxx xxxxxx
LOS by Move: \* \* \* \* \* A \* \* \* \* \*
Movement: LT - LTR - RT LT - LTR - RT LT - LTR - RT LT - LTR - RT
Shared Cap.: xxxxx xxxxx xxxxxx xxxxx 585 xxxxxx xxxxx xxxxx xxxxxx xxxxx xxxxx xxxxxx
SharedQueue:xxxxxx xxxxx xxxxxx xxxxxx 0.1 xxxxxx 0.0 xxxxx xxxxxx xxxxxx xxxxx xxxxxx
Shrd StpDel:xxxxxx xxxxx xxxxxx xxxxxx 11.4 xxxxxx 7.7 xxxxx xxxxxx xxxxxx xxxxx xxxxxx
Shared LOS: \* \* \* \* \* B \* A \* \* \* \* \*
ApproachDel: xxxxxx 11.4 xxxxxxxx xxxxxxxx
ApproachLOS: \* B \* \*

ONTARIO WALMART SUPERSTORE
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2000 HCM Unsignalized Method (Base Volume Alternative)

\*\*\*\*\*
Intersection #5 ALDERBERRY (NS) AT 5TH STREET (EW)
\*\*\*\*\*

Average Delay (sec/veh): 2.0 Worst Case Level Of Service: B[ 13.0]
\*\*\*\*\*

Table with 4 columns: North Bound, South Bound, East Bound, West Bound. Rows include Approach, Movement, Control, Rights, and Lanes.

Volume Module: Table with 13 columns for traffic movements. Rows include Base Vol, Growth Adj, Initial Bse, User Adj, PHF Adj, PHF Volume, Reduct Vol, and Final Vol.

Critical Gap Module: Table with 13 columns for traffic movements. Rows include Critical Gp and FollowUpTim.

Capacity Module: Table with 13 columns for traffic movements. Rows include Cnflct Vol, Potent Cap, Move Cap, and Volume/Cap.

Level Of Service Module: Table with 13 columns for traffic movements. Rows include Queue, Stopped Del, LOS by Move, Movement, Shared Cap, Shrd StpDel, Shared LOS, ApproachDel, and ApproachLOS.



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2000 HCM Unsignalized Method (Base Volume Alternative)

\*\*\*\*\*
Intersection #5 ALDERBERRY (NS) AT 5TH STREET (EW)
\*\*\*\*\*

Average Delay (sec/veh): 1.9 Worst Case Level Of Service: B[ 11.6]
\*\*\*\*\*

Table with 4 columns: North Bound, South Bound, East Bound, West Bound. Rows include Approach, Movement, Control, Rights, and Lanes.

Volume Module: Table with 12 columns for traffic movements. Rows include Base Vol, Growth Adj, Initial Bse, User Adj, PHF Adj, PHF Volume, Reduct Vol, and Final Vol.

Critical Gap Module: Table with 12 columns for traffic movements. Rows include Critical Gp and FollowUpTim.

Capacity Module: Table with 12 columns for traffic movements. Rows include Cnflct Vol, Potent Cap., Move Cap., and Volume/Cap.

Level Of Service Module: Table with 12 columns for traffic movements. Rows include Queue, Stopped Del, LOS by Move, Movement, Shared Cap., Shrd StpDel, Shared LOS, ApproachDel, and ApproachLOS.

ONTARIO WALMART SUPERSTORE
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ONTARIO, CALIFORNIA

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2000 HCM Operations Method (Base Volume Alternative)

\*\*\*\*\*

Intersection #6 MOUNTAIN AVENUE (NS) AT 8TH STREET

\*\*\*\*\*

Cycle (sec): 100 Critical Vol./Cap. (X): 0.787

Loss Time (sec): 8 (Y+R = 4 sec) Average Delay (sec/veh): 40.2

Optimal Cycle:OPTIMIZED 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 Prot+Permit Prot+Permit

Rights: Include Include Include Include

Min. Green: 24 24 24 24 24 24 10 25 25 10 25 25

Lanes: 1 0 2 1 0 1 0 2 1 0 1 0 1 1 0 1 0 1 1 0

Volume Module:

Table with 12 columns and 12 rows of traffic volume data including Base Vol, Growth Adj, Initial Bse, User Adj, PHF Adj, PHF Volume, Reduct Vol, Reduced Vol, PCE Adj, MLF Adj, and Final Vol.

Saturation Flow Module:

Table with 12 columns and 4 rows of saturation flow data including Sat/Lane, Adjustment, Lanes, and Final Sat.

Capacity Analysis Module:

Table with 12 columns and 10 rows of capacity analysis data including Vol/Sat, Crit Moves, Green/Cycle, Volume/Cap, Delay/Veh, User DelAdj, AdjDel/Veh, and HCM2kAvg.

\*\*\*\*\*

ONTARIO WALMART SUPERSTORE
TRAFFIC IMPACT STUDY
ONTARIO, CALIFORNIA

Level Of Service Computation Report

2000 HCM Operations Method (Base Volume Alternative)

\*\*\*\*\*

Intersection #6 MOUNTAIN AVENUE (NS) AT 8TH STREET

\*\*\*\*\*

Cycle (sec): 115 Critical Vol./Cap. (X): 1.113

Loss Time (sec): 8 (Y+R = 4 sec) Average Delay (sec/veh): 101.7

Optimal Cycle:OPTIMIZED Level Of Service: F

\*\*\*\*\*

Table with 4 columns: Approach, North Bound, South Bound, East Bound, West Bound. Rows include Movement, Control, Rights, Min. Green, and Lanes.

Volume Module:

Table with 12 columns representing different volume and adjustment factors like Base Vol, Growth Adj, Initial Bse, etc.

Saturation Flow Module:

Table with 12 columns representing saturation flow factors like Sat/Lane, Adjustment, Lanes, Final Sat.

Capacity Analysis Module:

Table with 12 columns representing capacity analysis factors like Vol/Sat, Crit Moves, Green/Cycle, etc.

\*\*\*\*\*

ONTARIO WALMART SUPERSTORE
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ONTARIO, CALIFORNIA

Level Of Service Computation Report

2000 HCM Operations Method (Base Volume Alternative)

\*\*\*\*\*

Intersection #7 MOUNTAIN AVENUE (NS) AT 7TH STREET (EW)

\*\*\*\*\*

Cycle (sec): 95 Critical Vol./Cap. (X): 0.479
Loss Time (sec): 6 (Y+R = 4 sec) Average Delay (sec/veh): 20.2
Optimal Cycle:OPTIMIZED Level Of Service: C

\*\*\*\*\*

Table with columns: Approach (North Bound, South Bound, East Bound, West Bound), Movement (L, T, R), Control, Rights, Min. Green, Lanes.

Volume Module: Table with columns: Base Vol, Growth Adj, Initial Bse, User Adj, PHF Adj, PHF Volume, Reduct Vol, Reduced Vol, PCE Adj, MLF Adj, Final Vol.

Saturation Flow Module: Table with columns: Sat/Lane, Adjustment, Lanes, Final Sat.

Capacity Analysis Module: Table with columns: Vol/Sat, Crit Moves, Green/Cycle, Volume/Cap, Delay/Veh, User DelAdj, AdjDel/Veh, HCM2kAvg.

\*\*\*\*\*

ONTARIO WALMART SUPERSTORE  
 TRAFFIC IMPACT STUDY  
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Level Of Service Computation Report

2000 HCM Operations Method (Base Volume Alternative)

\*\*\*\*\*

Intersection #7 MOUNTAIN AVENUE (NS) AT 7TH STREET (EW)

\*\*\*\*\*

Cycle (sec): 95 Critical Vol./Cap. (X): 0.686

Loss Time (sec): 6 (Y+R = 4 sec) Average Delay (sec/veh): 23.8

Optimal Cycle:OPTIMIZED 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			Permitted			Permitted		
Rights:	Include			Include			Include			Include		
Min. Green:	10	19	19	10	19	19	28	28	28	28	28	28
Lanes:	2	0	2	0	2	1	0	1	0	0	1	0

Volume Module:

Base Vol:	386	1454	65	4	1334	154	159	49	351	104	64	13
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:	386	1454	65	4	1334	154	159	49	351	104	64	13
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:	0.94	0.94	0.94	0.95	0.95	0.95	0.92	0.92	0.92	0.89	0.89	0.89
PHF Volume:	409	1542	69	4	1398	161	173	53	382	117	72	15
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	409	1542	69	4	1398	161	173	53	382	117	72	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
Final Vol.:	409	1542	69	4	1398	161	173	53	382	117	72	15

Saturation Flow Module:

Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.84	0.95	0.95	0.89	0.95	0.90	0.85	0.95	0.95	0.85	0.95	0.90
Lanes:	2.00	2.00	1.00	1.00	2.67	0.33	1.57	0.43	1.00	1.43	0.47	0.10
Final Sat.:	3200	3600	1800	1700	4813	556	2525	778	1800	2300	848	172

Capacity Analysis Module:

Vol/Sat:	0.13	0.43	0.04	0.00	0.29	0.29	0.07	0.07	0.21	0.05	0.09	0.09
Crit Moves:	****			****			****			****		
Green/Cycle:	0.20	0.54	0.54	0.11	0.45	0.45	0.29	0.29	0.29	0.29	0.29	0.29
Volume/Cap:	0.65	0.80	0.07	0.02	0.65	0.65	0.23	0.23	0.72	0.17	0.29	0.29
Delay/Veh:	37.6	20.2	10.6	38.2	21.2	21.2	25.5	25.5	34.8	25.0	26.1	26.1
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:	37.6	20.2	10.6	38.2	21.2	21.2	25.5	25.5	34.8	25.0	26.1	26.1
HCM2kAvg:	7	20	1	0	13	12	3	3	11	2	4	3

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Level Of Service Computation Report

2000 HCM Operations Method (Base Volume Alternative)

\*\*\*\*\*
Intersection #8 MOUNTAIN AVENUE (NS) AT WESTBOUND I-10 RAMPS
\*\*\*\*\*

Cycle (sec): 120 Critical Vol./Cap. (X): 0.820
Loss Time (sec): 6 (Y+R = 4 sec) Average Delay (sec/veh): 42.8
Optimal Cycle:OPTIMIZED Level Of Service: D
\*\*\*\*\*

Table with columns: Approach (North Bound, South Bound, East Bound, West Bound), Movement (L, T, R), Control (Protected, Include), Rights, Min. Green, Lanes.

Volume Module: Table with columns: Base Vol, Growth Adj, Initial Bse, User Adj, PHF Adj, PHF Volume, Reduct Vol, Reduced Vol, PCE Adj, MLF Adj, Final Vol.

Saturation Flow Module: Table with columns: Sat/Lane, Adjustment, Lanes, Final Sat.

Capacity Analysis Module: Table with columns: Vol/Sat, Crit Moves, Green/Cycle, Volume/Cap, Delay/Veh, User DelAdj, AdjDel/Veh, HCM2kAvg.

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2000 HCM Operations Method (Base Volume Alternative)

\*\*\*\*\*  
 Intersection #8 MOUNTAIN AVENUE (NS) AT WESTBOUND I-10 RAMPS  
 \*\*\*\*\*

Cycle (sec): 120 Critical Vol./Cap. (X): 0.743  
 Loss Time (sec): 6 (Y+R = 4 sec) Average Delay (sec/veh): 34.2  
 Optimal Cycle:OPTIMIZED 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:	27	27	27	27	27	27	0	0	0	38	38	38			
Lanes:	2	0	2	0	0	2	0	0	0	0	1	1	0	0	2

Volume Module:

Base Vol:	355	1356	0	0	1343	422	0	0	0	583	1	605
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:	355	1356	0	0	1343	422	0	0	0	583	1	605
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:	0.96	0.96	0.96	0.94	0.94	0.94	1.00	1.00	1.00	0.95	0.95	0.95
PHF Volume:	371	1414	0	0	1436	451	0	0	0	616	1	639
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	371	1414	0	0	1436	451	0	0	0	616	1	639
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Vol.:	371	1414	0	0	1436	451	0	0	0	616	1	639

Saturation Flow Module:

Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.84	0.95	0.95	0.89	0.95	0.95	0.89	0.95	0.95	0.85	0.95	0.95
Lanes:	2.00	2.00	0.00	0.00	2.00	1.00	0.00	0.00	0.00	1.99	0.01	2.00
Final Sat.:	3200	3600	0	0	3600	1800	0	0	0	3216	6	3600

Capacity Analysis Module:

Vol/Sat:	0.12	0.39	0.00	0.00	0.40	0.25	0.00	0.00	0.00	0.19	0.19	0.18
Crit Moves:	****			****						****		
Green/Cycle:	0.23	0.63	0.00	0.00	0.41	0.41	0.00	0.00	0.00	0.32	0.32	0.32
Volume/Cap:	0.51	0.62	0.00	0.00	0.98	0.61	0.00	0.00	0.00	0.60	0.60	0.56
Delay/Veh:	41.4	13.8	0.0	0.0	53.1	29.6	0.0	0.0	0.0	35.7	35.7	34.7
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:	41.4	13.8	0.0	0.0	53.1	29.6	0.0	0.0	0.0	35.7	35.7	34.7
HCM2kAvg:	6	16	0	0	32	13	0	0	0	10	11	10

\*\*\*\*\*

ONTARIO WALMART SUPERSTORE
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Level Of Service Computation Report

2000 HCM Operations Method (Base Volume Alternative)

\*\*\*\*\*
Intersection #9 MOUNTAIN AVENUE (NS) AT EASTBOUND I-10 RAMPS (EW)
\*\*\*\*\*

Cycle (sec): 105 Critical Vol./Cap. (X): 0.913
Loss Time (sec): 6 (Y+R = 4 sec) Average Delay (sec/veh): 40.7
Optimal Cycle:OPTIMIZED Level Of Service: D
\*\*\*\*\*

Table with 4 columns: North Bound, South Bound, East Bound, West Bound. Rows include Movement, Control, Rights, Min. Green, and Lanes.

Volume Module: Table with 12 columns representing different traffic movements and 10 rows of volume-related metrics.

Saturation Flow Module: Table with 12 columns and 5 rows showing saturation flow and adjustment factors.

Capacity Analysis Module: Table with 12 columns and 10 rows showing capacity analysis metrics.

\*\*\*\*\*



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2000 HCM Operations Method (Base Volume Alternative)

\*\*\*\*\*
Intersection #9 MOUNTAIN AVENUE (NS) AT EASTBOUND I-10 RAMPS (EW)
\*\*\*\*\*
Cycle (sec): 105 Critical Vol./Cap. (X): 0.923
Loss Time (sec): 6 (Y+R = 4 sec) Average Delay (sec/veh): 36.2
Optimal Cycle:OPTIMIZED Level Of Service: D
\*\*\*\*\*

Table with 4 columns: North Bound, South Bound, East Bound, West Bound. Rows include Approach, Movement, Control, Rights, Min. Green, and Lanes.

Volume Module: Table with 12 columns representing different traffic movements and 10 rows of adjustment factors like Base Vol, Growth Adj, etc.

Saturation Flow Module: Table with 12 columns and 4 rows showing Sat/Lane, Adjustment, Lanes, and Final Sat.

Capacity Analysis Module: Table with 12 columns and 10 rows showing Vol/Sat, Crit Moves, Green/Cycle, etc.

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2000 HCM Operations Method (Base Volume Alternative)

\*\*\*\*\*

Intersection #10 MOUNTAIN AVENUE (NS) AT AT 6TH STREET (EW)

\*\*\*\*\*

Cycle (sec): 120 Critical Vol./Cap. (X): 0.970

Loss Time (sec): 8 (Y+R = 4 sec) Average Delay (sec/veh): 77.4

Optimal Cycle:OPTIMIZED 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			Ovl			Include			Include			
Min. Green:	10	18	18	10	18	18	10	25	25	10	25	25	
Lanes:	2	0	1	0	1	1	2	0	1	1	0	1	0

Volume Module:

Base Vol:	44	1149	70	130	1027	92	77	62	174	64	76	77
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:	44	1149	70	130	1027	92	77	62	174	64	76	77
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.91	0.91	0.91	0.95	0.95	0.95	0.91	0.91	0.91	0.84	0.84	0.84
PHF Volume:	49	1270	77	137	1082	97	85	68	191	77	91	92
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	49	1270	77	137	1082	97	85	68	191	77	91	92
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Vol.:	49	1270	77	137	1082	97	85	68	191	77	91	92

Saturation Flow Module:

Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.84	0.95	0.95	0.84	0.95	0.95	0.84	0.95	0.90	0.89	0.95	0.90
Lanes:	2.00	1.00	1.00	2.00	2.00	1.00	2.00	1.00	1.00	1.00	1.00	1.00
Final Sat.:	3200	1800	1800	3200	3600	1800	3200	1800	1705	1700	1800	1705

Capacity Analysis Module:

Vol/Sat:	0.02	0.71	0.04	0.04	0.30	0.05	0.03	0.04	0.11	0.05	0.05	0.05
Crit Moves:	****			****			****			****		
Green/Cycle:	0.14	0.56	0.56	0.08	0.50	0.59	0.08	0.21	0.21	0.08	0.21	0.21
Volume/Cap:	0.11	1.26	0.08	0.51	0.60	0.09	0.32	0.18	0.54	0.54	0.24	0.26
Delay/Veh:	45.2	153	12.3	54.4	21.8	10.9	52.5	39.1	43.6	57.0	39.8	40.0
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	45.2	153	12.3	54.4	21.8	10.9	52.5	39.1	43.6	57.0	39.8	40.0
HCM2kAvg:	1	80	1	3	14	2	2	2	7	3	3	3

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Level Of Service Computation Report

2000 HCM Operations Method (Base Volume Alternative)

\*\*\*\*\*

Intersection #10 MOUNTAIN AVENUE (NS) AT AT 6TH STREET (EW)

\*\*\*\*\*

Cycle (sec): 120 Critical Vol./Cap. (X): 1.063

Loss Time (sec): 8 (Y+R = 4 sec) Average Delay (sec/veh): 109.6

Optimal Cycle:OPTIMIZED 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			Ovl			Include			Include			
Min. Green:	10	18	18	10	18	18	10	25	25	10	25	25	
Lanes:	2	0	1	0	1	1	2	0	1	1	0	1	0

Volume Module:

Base Vol:	71	1416	90	82	1694	159	215	95	69	92	86	75
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	71	1416	90	82	1694	159	215	95	69	92	86	75
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.95	0.95	0.95	0.94	0.94	0.94	0.81	0.81	0.81	0.86	0.86	0.86
PHF Volume:	75	1491	95	87	1804	169	265	117	85	108	101	88
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	75	1491	95	87	1804	169	265	117	85	108	101	88
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Vol.:	75	1491	95	87	1804	169	265	117	85	108	101	88

Saturation Flow Module:

Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.84	0.95	0.95	0.84	0.95	0.95	0.84	0.95	0.90	0.89	0.95	0.90
Lanes:	2.00	1.00	1.00	2.00	2.00	1.00	2.00	1.13	0.87	1.00	1.04	0.96
Final Sat.:	3200	1800	1800	3200	3600	1800	3200	2038	1480	1700	1874	1635

Capacity Analysis Module:

Vol/Sat:	0.02	0.83	0.05	0.03	0.50	0.09	0.08	0.06	0.06	0.06	0.05	0.05
Crit Moves:	****			****			****			****		
Green/Cycle:	0.09	0.56	0.56	0.08	0.55	0.63	0.08	0.21	0.21	0.08	0.21	0.21
Volume/Cap:	0.26	1.48	0.09	0.33	0.91	0.15	1.00	0.28	0.28	0.76	0.26	0.26
Delay/Veh:	51.2	249	12.4	52.6	31.1	9.0	108.7	40.1	40.1	74.8	39.9	39.9
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:	51.2	249	12.4	52.6	31.1	9.0	108.7	40.1	40.1	74.8	39.9	39.9
HCM2kAvg:	1	113	2	2	34	2	8	3	3	6	3	3

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ONTARIO WALMART SUPERSTORE
TRAFFIC IMPACT STUDY
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Level Of Service Computation Report

2000 HCM Operations Method (Base Volume Alternative)

\*\*\*\*\*

Intersection #11 MOUNTAIN AVENUE (NS) AT 5TH STREET (EW)

\*\*\*\*\*

Cycle (sec): 100 Critical Vol./Cap. (X): 0.617

Loss Time (sec): 6 (Y+R = 4 sec) Average Delay (sec/veh): 18.3

Optimal Cycle:OPTIMIZED Level Of Service: B

\*\*\*\*\*

Table with 4 columns: North Bound, South Bound, East Bound, West Bound. Rows include Approach, Movement, Control, Rights, Min. Green, and Lanes.

Volume Module:

Table with 12 columns representing different volume and adjustment factors. Rows include Base Vol, Growth Adj, Initial Bse, User Adj, PHF Adj, PHF Volume, Reduct Vol, Reduced Vol, PCE Adj, MLF Adj, and Final Vol.

Saturation Flow Module:

Table with 12 columns representing saturation flow factors. Rows include Sat/Lane, Adjustment, Lanes, and Final Sat.

Capacity Analysis Module:

Table with 12 columns representing capacity analysis factors. Rows include Vol/Sat, Crit Moves, Green/Cycle, Volume/Cap, Delay/Veh, User DelAdj, AdjDel/Veh, and HCM2kAvg.

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2000 HCM Operations Method (Base Volume Alternative)

\*\*\*\*\*

Intersection #11 MOUNTAIN AVENUE (NS) AT 5TH STREET (EW)

\*\*\*\*\*

Cycle (sec): 115 Critical Vol./Cap. (X): 0.791

Loss Time (sec): 6 (Y+R = 4 sec) Average Delay (sec/veh): 22.6

Optimal Cycle:OPTIMIZED 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:	Prot+Permit			Prot+Permit			Permitted			Permitted		
Rights:	Include			Include			Include			Include		
Min. Green:	10	13	13	10	13	13	21	21	21	21	21	21
Lanes:	1	0	1	1	0	1	0	0	1	0	1	0

Volume Module:

Base Vol:	176	1452	33	49	1610	30	61	97	70	25	64	51
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:	176	1452	33	49	1610	30	61	97	70	25	64	51
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:	0.93	0.93	0.93	0.86	0.86	0.86	0.86	0.86	0.86	0.81	0.81	0.81
PHF Volume:	189	1556	35	57	1866	35	71	112	81	31	79	63
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	189	1556	35	57	1866	35	71	112	81	31	79	63
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Vol.:	189	1556	35	57	1866	35	71	112	81	31	79	63

Saturation Flow Module:

Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.89	0.95	0.90	0.85	0.95	0.90	0.89	0.95	0.90	0.89	0.95	0.90
Lanes:	1.00	1.95	0.05	1.00	1.96	0.04	1.00	0.57	0.43	1.00	0.54	0.46
Final Sat.:	1700	3516	80	1611	3531	66	1700	1022	737	1700	978	779

Capacity Analysis Module:

Vol/Sat:	0.00	0.44	0.44	0.00	0.53	0.53	0.04	0.11	0.11	0.02	0.08	0.08
Crit Moves:	****			****			****					
Green/Cycle:	0.13	0.64	0.64	0.13	0.63	0.63	0.18	0.18	0.18	0.18	0.18	0.18
Volume/Cap:	0.84	0.69	0.69	0.28	0.84	0.84	0.23	0.60	0.60	0.10	0.44	0.44
Delay/Veh:	71.5	14.3	14.3	45.6	19.2	19.2	40.5	46.3	46.3	39.3	42.7	42.7
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:	71.5	14.3	14.3	45.6	19.2	19.2	40.5	46.3	46.3	39.3	42.7	42.7
HCM2kAvg:	9	19	18	2	28	27	2	7	7	1	5	5

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TRAFFIC IMPACT STUDY
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2000 HCM Operations Method (Base Volume Alternative)

\*\*\*\*\*

Intersection #12 MOUNTAIN AVENUE (NS) AT 4TH STREET (EW)

\*\*\*\*\*

Cycle (sec): 75 Critical Vol./Cap. (X): 0.516

Loss Time (sec): 6 (Y+R = 4 sec) Average Delay (sec/veh): 17.8

Optimal Cycle:OPTIMIZED Level Of Service: B

\*\*\*\*\*

Table with 4 columns: North Bound, South Bound, East Bound, West Bound. Rows include Movement (L-T-R), Control (Prot+Permit, Permitted), Rights (Include), Min. Green, and Lanes.

Volume Module:

Table with 12 columns representing different volume and adjustment factors. Rows include Base Vol, Growth Adj, Initial Bse, User Adj, PHF Adj, PHF Volume, Reduct Vol, Reduced Vol, PCE Adj, MLF Adj, and Final Vol.

Saturation Flow Module:

Table with 12 columns representing saturation flow factors. Rows include Sat/Lane, Adjustment, Lanes, and Final Sat.

Capacity Analysis Module:

Table with 12 columns representing capacity analysis factors. Rows include Vol/Sat, Crit Moves, Green/Cycle, Volume/Cap, Delay/Veh, User DelAdj, AdjDel/Veh, and HCM2kAvg.

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ONTARIO WALMART SUPERSTORE  
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2000 HCM Operations Method (Base Volume Alternative)

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Intersection #12 MOUNTAIN AVENUE (NS) AT 4TH STREET (EW)

\*\*\*\*\*

Cycle (sec): 80 Critical Vol./Cap. (X): 0.704  
 Loss Time (sec): 6 (Y+R = 4 sec) Average Delay (sec/veh): 21.7  
 Optimal Cycle:OPTIMIZED 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:	Prot+Permit			Prot+Permit			Permitted			Permitted		
Rights:	Include			Include			Include			Include		
Min. Green:	10	18	18	10	18	18	21	21	21	21	21	21
Lanes:	1	0	2	0	1	0	1	0	1	1	0	1

Volume Module:

Base Vol:	110	1309	69	217	1239	96	99	223	85	98	210	151
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	110	1309	69	217	1239	96	99	223	85	98	210	151
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:	0.91	0.91	0.91	0.95	0.95	0.95	0.84	0.84	0.84	0.89	0.89	0.89
PHF Volume:	122	1446	76	228	1303	101	118	265	101	110	236	170
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	122	1446	76	228	1303	101	118	265	101	110	236	170
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Vol.:	122	1446	76	228	1303	101	118	265	101	110	236	170

Saturation Flow Module:

Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.89	0.95	0.95	0.89	0.95	0.95	0.89	0.95	0.90	0.89	0.95	0.90
Lanes:	1.00	2.00	1.00	1.00	2.00	1.00	1.00	1.43	0.57	1.00	1.14	0.86
Final Sat.:	1700	3600	1800	1700	3600	1800	1700	2567	979	1700	2047	1472

Capacity Analysis Module:

Vol/Sat:	0.00	0.40	0.04	0.00	0.36	0.06	0.07	0.10	0.10	0.06	0.12	0.12
Crit Moves:	****			****						****		
Green/Cycle:	0.17	0.50	0.50	0.17	0.49	0.49	0.26	0.26	0.26	0.26	0.26	0.26
Volume/Cap:	0.42	0.81	0.09	0.81	0.73	0.11	0.26	0.39	0.39	0.25	0.44	0.44
Delay/Veh:	30.7	19.8	10.6	48.0	17.8	11.0	23.7	24.5	24.5	23.6	24.9	24.9
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:	30.7	19.8	10.6	48.0	17.8	11.0	23.7	24.5	24.5	23.6	24.9	24.9
HCM2kAvg:	3	17	1	8	14	1	2	4	4	2	5	4

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ONTARIO WALMART SUPERSTORE
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Level Of Service Computation Report

2000 HCM Operations Method (Base Volume Alternative)

\*\*\*\*\*

Intersection #13 MOUNTAIN AVENUE (NS) AT HOLT BOULEVARD (EW)

\*\*\*\*\*

Cycle (sec): 95 Critical Vol./Cap. (X): 0.744

Loss Time (sec): 8 (Y+R = 4 sec) Average Delay (sec/veh): 33.2

Optimal Cycle:OPTIMIZED Level Of Service: C

\*\*\*\*\*

Table with columns for Approach (North, South, East, West Bound) and Movement (L, T, R). Rows include Control, Rights, Min. Green, and Lanes.

Volume Module:

Table with 12 columns for various volume and adjustment factors like Base Vol, Growth Adj, Initial Bse, etc.

Saturation Flow Module:

Table with 12 columns for saturation flow factors like Sat/Lane, Adjustment, Lanes, Final Sat., etc.

Capacity Analysis Module:

Table with 12 columns for capacity analysis factors like Vol/Sat, Crit Moves, Green/Cycle, etc.

\*\*\*\*\*



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2000 HCM Operations Method (Base Volume Alternative)

\*\*\*\*\*

Intersection #13 MOUNTAIN AVENUE (NS) AT HOLT BOULEVARD (EW)

\*\*\*\*\*

Cycle (sec): 105 Critical Vol./Cap. (X): 1.277

Loss Time (sec): 8 (Y+R = 4 sec) Average Delay (sec/veh): 127.0

Optimal Cycle:OPTIMIZED 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: 10 22 22 10 22 22 10 24 24 10 24 24
Lanes: 1 0 2 0 1 1 0 1 1 0 1 0 2 0 1

Volume Module:

Base Vol: 315 1112 293 249 1122 202 278 1118 280 312 1153 241
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: 315 1112 293 249 1122 202 278 1118 280 312 1153 241
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: 0.93 0.93 0.93 0.98 0.98 0.98 0.97 0.97 0.97 0.95 0.95 0.95
PHF Volume: 340 1200 316 255 1150 207 288 1159 290 328 1214 254
Reduct Vol: 0 0 0 0 0 0 0 0 0 0 0 0
Reduced Vol: 340 1200 316 255 1150 207 288 1159 290 328 1214 254
PCE Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00
MLF Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00
Final Vol.: 340 1200 316 255 1150 207 288 1159 290 328 1214 254

Saturation Flow Module:

Sat/Lane: 1900 1900 1900 1900 1900 1900 1900 1900 1900 1900 1900 1900
Adjustment: 0.89 0.95 0.95 0.89 0.95 0.90 0.89 0.95 0.90 0.89 0.95 0.95
Lanes: 1.00 2.00 1.00 1.00 1.68 0.32 1.00 1.58 0.42 1.00 2.00 1.00
Final Sat.: 1700 3600 1800 1700 3025 545 1700 2847 713 1700 3600 1800

Capacity Analysis Module:

Vol/Sat: 0.20 0.33 0.18 0.15 0.38 0.38 0.17 0.41 0.41 0.19 0.34 0.14
Crit Moves: \*\*\*\* \*\*\*\* \*\*\*\* \*\*\*\*
Green/Cycle: 0.16 0.31 0.31 0.14 0.30 0.30 0.16 0.32 0.32 0.15 0.31 0.31
Volume/Cap: 1.28 1.06 0.56 1.06 1.28 1.28 1.08 1.28 1.28 1.28 1.08 0.45
Delay/Veh: 194.9 81.8 31.3 121.3 169 169.0 121.7 167 167.5 195.9 86.7 29.4
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: 194.9 81.8 31.3 121.3 169 169.0 121.7 167 167.5 195.9 86.7 29.4
HCM2kAvg: 23 29 9 14 42 40 16 45 43 22 30 7

\*\*\*\*\*

ONTARIO WALMART SUPERSTORE
TRAFFIC IMPACT STUDY
ONTARIO, CALIFORNIA

Level Of Service Computation Report
2000 HCM 4-Way Stop Method (Base Volume Alternative)

\*\*\*\*\*
Intersection #14 SAN ANTONIO AVE (NS) AT 6TH STREET (EW)
\*\*\*\*\*

Cycle (sec): 100 Critical Vol./Cap. (X): 0.457
Loss Time (sec): 0 (Y+R = 4 sec) Average Delay (sec/veh): 13.6
Optimal Cycle: 0 Level Of Service: B
\*\*\*\*\*

Table with 4 columns: North Bound, South Bound, East Bound, West Bound. Rows include Movement (L-T-R), Control (Stop Sign), Rights (Include), Min. Green (0-0-0), and Lanes (0-1-0-1-0).

Volume Module: Table with 13 columns for traffic flow metrics. Rows include Base Vol, Growth Adj, Initial Bse, User Adj, PHF Adj, PHF Volume, Reduct Vol, Reduced Vol, PCE Adj, MLF Adj, and Final Vol.

Saturation Flow Module: Table with 13 columns for saturation flow metrics. Rows include Adjustment, Lanes, and Final Sat.

Capacity Analysis Module: Table with 13 columns for capacity analysis metrics. Rows include Vol/Sat, Crit Moves, Delay/Veh, Delay Adj, AdjDel/Veh, LOS by Move, ApproachDel, Delay Adj, ApprAdjDel, and LOS by Appr.

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ONTARIO WALMART SUPERSTORE
TRAFFIC IMPACT STUDY
ONTARIO, CALIFORNIA

Level Of Service Computation Report

2000 HCM 4-Way Stop Method (Base Volume Alternative)

\*\*\*\*\*

Intersection #14 SAN ANTONIO AVE (NS) AT 6TH STREET (EW)

\*\*\*\*\*

Cycle (sec): 100 Critical Vol./Cap. (X): 0.522

Loss Time (sec): 0 (Y+R = 4 sec) Average Delay (sec/veh): 15.0

Optimal Cycle: 0 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: Stop Sign Stop Sign Stop Sign Stop Sign

Rights: Include Include Include Include

Min. Green: 0 0 0 0 0 0 0 0 0 0 0 0

Lanes: 0 1 0 1 0 0 1 0 1 0 0 1

Volume Module:

Base Vol: 41 391 42 51 439 27 43 82 46 46 76 42

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: 41 391 42 51 439 27 43 82 46 46 76 42

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: 0.94 0.94 0.94 0.96 0.96 0.96 0.86 0.86 0.86 0.77 0.77 0.77

PHF Volume: 44 416 45 53 459 28 50 96 54 59 98 54

Reduct Vol: 0 0 0 0 0 0 0 0 0 0 0 0

Reduced Vol: 44 416 45 53 459 28 50 96 54 59 98 54

PCE Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00

MLF Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00

Final Vol.: 44 416 45 53 459 28 50 96 54 59 98 54

Saturation Flow Module:

Adjustment: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00

Lanes: 0.17 1.65 0.18 0.20 1.70 0.10 0.34 0.66 1.00 0.38 0.62 1.00

Final Sat.: 89 860 94 102 890 55 151 288 489 167 275 492

Capacity Analysis Module:

Vol/Sat: 0.49 0.48 0.48 0.52 0.52 0.51 0.33 0.33 0.11 0.36 0.36 0.11

Crit Moves: \*\*\*\* \*\*\*\* \*\*\*\* \*\*\*\*

Delay/Veh: 15.7 15.3 14.9 16.4 16.0 15.7 14.0 14.0 10.4 14.3 14.3 10.3

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

AdjDel/Veh: 15.7 15.3 14.9 16.4 16.0 15.7 14.0 14.0 10.4 14.3 14.3 10.3

LOS by Move: C C B C C C B B B B B B

ApproachDel: 15.3 16.0 13.0 13.3

Delay Adj: 1.00 1.00 1.00 1.00

ApprAdjDel: 15.3 16.0 13.0 13.3

LOS by Appr: C C B B

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ONTARIO WALMART SUPERSTORE
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ONTARIO, CALIFORNIA

Level Of Service Computation Report
2000 HCM 4-Way Stop Method (Base Volume Alternative)

\*\*\*\*\*
Intersection #15 SAN ANTONIO AVE (NS) AT 5TH STREET (EW)
\*\*\*\*\*

Cycle (sec): 100 Critical Vol./Cap. (X): 0.596
Loss Time (sec): 0 (Y+R = 4 sec) Average Delay (sec/veh): 16.9
Optimal Cycle: 0 Level Of Service: C
\*\*\*\*\*

Table with 4 columns: North Bound, South Bound, East Bound, West Bound. Rows include Movement (L-T-R), Control (Stop Sign), Rights (Include), Min. Green (0-0-0), and Lanes (0 1 0 1 0).

Volume Module: Table with 12 columns for traffic volumes and 12 columns for adjustment factors (Growth Adj, Initial Bse, User Adj, PHF Adj, PCE Adj, MLF Adj, Final Vol.).

Saturation Flow Module: Table with 12 columns for adjustment factors and 12 columns for saturation flow values.

Capacity Analysis Module: Table with 12 columns for delay and LOS values, and 12 columns for delay and LOS values.

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ONTARIO, CALIFORNIA

Level Of Service Computation Report
2000 HCM 4-Way Stop Method (Base Volume Alternative)

\*\*\*\*\*
Intersection #15 SAN ANTONIO AVE (NS) AT 5TH STREET (EW)
\*\*\*\*\*

Cycle (sec): 100 Critical Vol./Cap. (X): 0.541
Loss Time (sec): 0 (Y+R = 4 sec) Average Delay (sec/veh): 14.4
Optimal Cycle: 0 Level Of Service: B
\*\*\*\*\*

Table with 4 columns: North Bound, South Bound, East Bound, West Bound. Rows include Approach, Movement, Control, Rights, Min. Green, and Lanes.

Volume Module: Table with 12 columns representing different traffic movements and 10 rows of adjustment factors like Base Vol, Growth Adj, etc.

Saturation Flow Module: Table with 12 columns and 3 rows showing adjustment factors for lanes and final saturation.

Capacity Analysis Module: Table with 12 columns and 10 rows showing delay, LOS, and approach delay for various movements.

## **Appendix C**

Project Buildout (Year 2008) Without Project Without Improvements  
Level of Service Analysis Worksheets

ONTARIO WALMART SUPERSTORE
TRAFFIC IMPACT STUDY
ONTARIO, CALIFORNIA

Level Of Service Computation Report
2000 HCM 4-Way Stop Method (Future Volume Alternative)

\*\*\*\*\*
Intersection #1 BENSON AVENUE (NS) AT 6TH STREET (EW)
\*\*\*\*\*

Cycle (sec): 100 Critical Vol./Cap. (X): 0.348
Loss Time (sec): 0 (Y+R = 4 sec) Average Delay (sec/veh): 11.0
Optimal Cycle: 0 Level Of Service: B
\*\*\*\*\*

Table with 4 columns: North Bound, South Bound, East Bound, West Bound. Rows include Movement (L-T-R), Control (Stop Sign), Rights (Include), Min. Green (0-0-0), and Lanes (0-1-0-1-0).

Volume Module: Table with 12 columns for traffic movements. Rows include Base Vol, Growth Adj, Initial Bse, Added Vol, PasserByVol, Initial Fut, User Adj, PHF Adj, PHF Volume, Reduct Vol, Reduced Vol, PCE Adj, MLF Adj, and Final Vol.

Saturation Flow Module: Table with 12 columns for traffic movements. Rows include Adjustment (1.00), Lanes (0.11-1.61), and Final Sat. (63-970-170).

Capacity Analysis Module: Table with 12 columns for traffic movements. Rows include Vol/Sat (0.35-0.34), Crit Moves (\*\*\*\*), Delay/Veh (11.6-11.1), Delay Adj (1.00), AdjDel/Veh (11.6-11.1), LOS by Move (B, B, B, B, B, B, B, B, A, B, B, A), ApproachDel (11.3, 10.9, 10.8, 10.4), Delay Adj (1.00), ApprAdjDel (11.3, 10.9, 10.8, 10.4), and LOS by Appr (B, B, B, B).

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ONTARIO, CALIFORNIA

Level Of Service Computation Report
2000 HCM 4-Way Stop Method (Future Volume Alternative)

\*\*\*\*\*
Intersection #1 BENSON AVENUE (NS) AT 6TH STREET (EW)
\*\*\*\*\*

Cycle (sec): 100 Critical Vol./Cap. (X): 0.648
Loss Time (sec): 0 (Y+R = 4 sec) Average Delay (sec/veh): 15.6
Optimal Cycle: 0 Level Of Service: C
\*\*\*\*\*

Table with 4 columns: North Bound, South Bound, East Bound, West Bound. Rows include Movement (L-T-R), Control (Stop Sign), Rights (Include), Min. Green (0 0 0), and Lanes (0 1 0 1 0).

Volume Module: Table with 12 columns representing traffic movements. Rows include Base Vol, Growth Adj, Initial Bse, Added Vol, PasserByVol, Initial Fut, User Adj, PHF Adj, PHF Volume, Reduct Vol, Reduced Vol, PCE Adj, MLF Adj, and Final Vol.

Saturation Flow Module: Table with 12 columns. Rows include Adjustment (1.00 1.00 1.00), Lanes (0.04 1.73 0.23), and Final Sat. (21 985 132).

Capacity Analysis Module: Table with 12 columns. Rows include Vol/Sat (0.46 0.46 0.45), Crit Moves (\*\*\*\*), Delay/Veh (14.0 13.8 13.5), Delay Adj (1.00 1.00 1.00), AdjDel/Veh (14.0 13.8 13.5), LOS by Move (B B B), ApproachDel (13.7), Delay Adj (1.00), ApprAdjDel (13.7), and LOS by Appr (B C B B).

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2000 HCM 4-Way Stop Method (Future Volume Alternative)

\*\*\*\*\*
Intersection #2 BENSON AVENUE (NS) AT 5TH STREET (EW)
\*\*\*\*\*

Cycle (sec): 100 Critical Vol./Cap. (X): 0.438
Loss Time (sec): 0 (Y+R = 4 sec) Average Delay (sec/veh): 12.8
Optimal Cycle: 0 Level Of Service: B
\*\*\*\*\*

Table with 4 columns: North Bound, South Bound, East Bound, West Bound. Rows include Movement (L, T, R), Control (Stop Sign), Rights (Include), Min. Green (0), and Lanes (0 1 0 1 0).

Volume Module: Table with 12 columns for volume metrics. Rows include Base Vol, Growth Adj, Initial Bse, Added Vol, PasserByVol, Initial Fut, User Adj, PHF Adj, PHF Volume, Reduct Vol, Reduced Vol, PCE Adj, MLF Adj, and Final Vol.

Saturation Flow Module: Table with 12 columns for saturation flow metrics. Rows include Adjustment (1.00), Lanes (0.27), and Final Sat. (147).

Capacity Analysis Module: Table with 12 columns for capacity analysis metrics. Rows include Vol/Sat (0.44), Crit Moves (\*\*\*\*), Delay/Veh (13.8), Delay Adj (1.00), AdjDel/Veh (13.8), LOS by Move (B), ApproachDel (13.3), Delay Adj (1.00), ApprAdjDel (13.3), and LOS by Appr (B).

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\*\*\*\*\*
Intersection #2 BENSON AVENUE (NS) AT 5TH STREET (EW)
\*\*\*\*\*

Cycle (sec): 100 Critical Vol./Cap. (X): 0.599
Loss Time (sec): 0 (Y+R = 4 sec) Average Delay (sec/veh): 16.4
Optimal Cycle: 0 Level Of Service: C
\*\*\*\*\*

Table with 4 columns: North Bound, South Bound, East Bound, West Bound. Rows include Movement (L-T-R), Control (Stop Sign), Rights (Include), Min. Green (0-0-0), and Lanes (0-1-0-1-0).

Volume Module: Table with 12 columns representing different traffic movements. Rows include Base Vol, Growth Adj, Initial Bse, Added Vol, PasserByVol, Initial Fut, User Adj, PHF Adj, PHF Volume, Reduct Vol, Reduced Vol, PCE Adj, MLF Adj, and Final Vol.

Saturation Flow Module: Table with 12 columns. Rows include Adjustment (1.00), Lanes (0.13-1.57-0.30), and Final Sat. (61-767-152).

Capacity Analysis Module: Table with 12 columns. Rows include Vol/Sat (0.45-0.44-0.43), Crit Moves (\*\*\*\*), Delay/Veh (15.4-15.0-14.6), Delay Adj (1.00), AdjDel/Veh (15.4-15.0-14.6), LOS by Move (C-C-B), ApproachDel (15.0), Delay Adj (1.00), ApprAdjDel (15.0), and LOS by Appr (B-C-C-B).

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\*\*\*\*\*
Intersection #3 JASMINE AVENUE (NS) AT 5TH STREET (EW)
\*\*\*\*\*

Average Delay (sec/veh): 1.0 Worst Case Level Of Service: B[ 10.3]
\*\*\*\*\*

Table with 4 columns: North Bound, South Bound, East Bound, West Bound. Rows include Movement, Control, Rights, and Lanes.

Volume Module: Table with 12 columns for volume metrics across four approaches.

Critical Gap Module: Table with 12 columns for critical gap and follow-up time metrics.

Capacity Module: Table with 12 columns for capacity-related metrics.

Level Of Service Module: Table with 12 columns for level of service and delay metrics.

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\*\*\*\*\*
Intersection #3 JASMINE AVENUE (NS) AT 5TH STREET (EW)
\*\*\*\*\*
Average Delay (sec/veh): 1.1 Worst Case Level Of Service: B[ 10.9]
\*\*\*\*\*

Table with 4 columns: North Bound, South Bound, East Bound, West Bound. Rows include Approach, Movement, Control, Rights, and Lanes.

Volume Module: Table with 12 columns for traffic volumes and 12 columns for adjustment factors (Growth Adj, Initial Bse, Added Vol, etc.).

Critical Gap Module: Table with 12 columns for gap and follow-up times.

Capacity Module: Table with 12 columns for conflict volumes, potential capacity, move capacity, and volume/capacity ratios.

Level Of Service Module: Table with 12 columns for queue lengths, stopped delays, LOS by move, shared capacity, shared queue, shared stop delays, shared LOS, approach delays, and approach LOS.

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\*\*\*\*\*
Intersection #4 HELEN AVENUE (NS) AT 5TH STREET (EW)
\*\*\*\*\*

Average Delay (sec/veh): 1.8 Worst Case Level Of Service: B[ 10.4]
\*\*\*\*\*

Table with 4 columns: North Bound, South Bound, East Bound, West Bound. Rows include Movement, Control, Rights, and Lanes.

Volume Module: Table with 12 columns for volume metrics like Base Vol, Growth Adj, Initial Bse, etc.

Critical Gap Module: Table with 12 columns for gap metrics like Critical Gp, FollowUpTim.

Capacity Module: Table with 12 columns for capacity metrics like Cnflct Vol, Potent Cap., Move Cap., Volume/Cap.

Level Of Service Module: Table with 12 columns for LOS metrics like Queue, Stopped Del, LOS by Move, Shared Cap., etc.

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\*\*\*\*\*
Intersection #4 HELEN AVENUE (NS) AT 5TH STREET (EW)
\*\*\*\*\*

Average Delay (sec/veh): 0.7 Worst Case Level Of Service: B{ 11.7}
\*\*\*\*\*

Table with 4 columns: North Bound, South Bound, East Bound, West Bound. Rows include Approach, Movement, Control, Rights, and Lanes.

Volume Module: Table with 12 columns representing different traffic volumes and adjustment factors like Base Vol, Growth Adj, Initial Bse, etc.

Critical Gap Module: Table with 12 columns showing critical gap values and follow-up times for different movements.

Capacity Module: Table with 12 columns showing conflict volumes, potential capacity, and volume/capacity ratios.

Level Of Service Module: Table with 12 columns showing queue lengths, stopped delays, LOS by movement, and approach delays.

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\*\*\*\*\*
Intersection #5 ALDERBERRY (NS) AT 5TH STREET (EW)
\*\*\*\*\*

Average Delay (sec/veh): 1.9 Worst Case Level Of Service: B[ 11.2]
\*\*\*\*\*

Table with 4 columns: North Bound, South Bound, East Bound, West Bound. Rows include Movement, Control, Rights, and Lanes.

Volume Module: Table with 13 columns for various volume metrics like Base Vol, Growth Adj, Initial Bse, etc.

Critical Gap Module: Table with 13 columns for gap metrics like Critical Gp, FollowUpTim.

Capacity Module: Table with 13 columns for capacity metrics like Cnflct Vol, Potent Cap., Move Cap., etc.

Level Of Service Module: Table with 13 columns for LOS metrics like Queue, Stopped Del, LOS by Move, etc.

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\*\*\*\*\*
Intersection #5 ALDERBERRY (NS) AT 5TH STREET (EW)
\*\*\*\*\*

Average Delay (sec/veh): 1.8 Worst Case Level Of Service: B[ 11.5]
\*\*\*\*\*

Table with 4 columns: North Bound, South Bound, East Bound, West Bound. Rows include Movement, Control, Rights, and Lanes.

Volume Module: Table with 12 columns for volume metrics like Base Vol, Growth Adj, Initial Bse, etc.

Critical Gap Module: Table with 12 columns for gap metrics like Critical Gp, FollowUpTim.

Capacity Module: Table with 12 columns for capacity metrics like Cnflct Vol, Potent Cap., Move Cap., etc.

Level Of Service Module: Table with 12 columns for LOS metrics like Queue, Stopped Del, LOS by Move, etc.



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Intersection #6 MOUNTAIN AVENUE (NS) AT 8TH STREET

Cycle (sec): 100 Critical Vol./Cap. (X): 0.792
Loss Time (sec): 8 (Y+R = 4 sec) Average Delay (sec/veh): 41.6
Optimal Cycle:OPTIMIZED Level Of Service: D

Table with 4 columns: North Bound, South Bound, East Bound, West Bound. Rows include Movement, Control, Rights, Min. Green, and Lanes.

Volume Module table with 12 columns representing different traffic volumes and adjustment factors.

Saturation Flow Module table with 12 columns representing saturation flow rates and adjustments.

Capacity Analysis Module table with 12 columns representing capacity analysis metrics.

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Intersection #6 MOUNTAIN AVENUE (NS) AT 8TH STREET

\*\*\*\*\*

Cycle (sec): 120 Critical Vol./Cap. (X): 1.151

Loss Time (sec): 8 (Y+R = 4 sec) Average Delay (sec/veh): 117.6

Optimal Cycle:OPTIMIZED 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 Prot+Permit Prot+Permit
Rights: Include Include Include Include
Min. Green: 24 24 24 24 24 24 10 25 25 10 25 25
Lanes: 1 0 2 1 0 1 0 2 1 0 1 0 1 1 0

Volume Module:

Base Vol: 115 1559 33 83 1410 72 207 839 118 144 284 24
Growth Adj: 1.04 1.04 1.04 1.04 1.04 1.04 1.04 1.04 1.04 1.04 1.04 1.04
Initial Bse: 120 1621 34 86 1466 75 215 873 123 150 295 25
Added Vol: 0 0 0 0 0 0 0 0 0 0 0 0
PasserByVol: 0 0 0 0 0 0 0 0 0 0 0 0
Initial Fut: 120 1621 34 86 1466 75 215 873 123 150 295 25
User Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00
PHF Adj: 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95
PHF Volume: 126 1707 36 91 1544 79 227 918 129 158 311 26
Reduct Vol: 0 0 0 0 0 0 0 0 0 0 0 0
Reduced Vol: 126 1707 36 91 1544 79 227 918 129 158 311 26
PCE Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00
MLF Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00
Final Vol.: 126 1707 36 91 1544 79 227 918 129 158 311 26

Saturation Flow Module:

Sat/Lane: 1800 1800 1800 1800 1800 1800 1800 1800 1800 1800 1800 1800
Adjustment: 0.94 0.91 0.91 0.94 0.91 0.91 0.94 0.95 0.95 0.94 0.95 0.95
Lanes: 1.00 2.94 0.06 1.00 2.85 0.15 1.00 1.75 0.25 1.00 1.84 0.16
Final Sat.: 1700 4812 102 1700 4675 239 1700 2998 422 1700 3154 266

Capacity Analysis Module:

Vol/Sat: 0.07 0.35 0.35 0.05 0.33 0.33 0.00 0.31 0.31 0.00 0.10 0.10
Crit Moves: \*\*\*\* \*\*\*\* \*\*\*\*
Green/Cycle: 0.30 0.30 0.30 0.28 0.28 0.28 0.14 0.26 0.26 0.08 0.21 0.21
Volume/Cap: 0.24 1.17 1.17 0.19 1.17 1.17 0.99 1.17 1.17 1.11 0.47 0.47
Delay/Veh: 31.6 124 124.2 32.8 126 125.9 107.4 131 131.1 164.1 41.9 41.9
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: 31.6 124 124.2 32.8 126 125.9 107.4 131 131.1 164.1 41.9 41.9
HCM2kAvg: 3 35 35 3 32 32 13 31 31 11 6 6

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Intersection #7 MOUNTAIN AVENUE (NS) AT 7TH STREET (EW)

\*\*\*\*\*

Cycle (sec): 85 Critical Vol./Cap. (X): 0.589  
 Loss Time (sec): 6 (Y+R = 4 sec) Average Delay (sec/veh): 20.9  
 Optimal Cycle:OPTIMIZED 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			Permitted			Permitted		
Rights:	Include			Include			Include			Include		
Min. Green:	10	19	19	10	19	19	28	28	28	28	28	28
Lanes:	2	0	2	0	1	0	1	1	0	0	1	0

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Volume Module:

Base Vol:	222	954	106	9	1466	62	65	48	215	163	37	11
Growth Adj:	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04
Initial Bse:	231	992	110	9	1525	64	68	50	224	170	38	11
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:	231	992	110	9	1525	64	68	50	224	170	38	11
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
PHF Volume:	243	1044	116	10	1605	68	71	53	235	178	41	12
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	243	1044	116	10	1605	68	71	53	235	178	41	12
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Vol.:	243	1044	116	10	1605	68	71	53	235	178	41	12

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Saturation Flow Module:

Sat/Lane:	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Adjustment:	0.89	0.95	1.00	0.94	0.91	0.91	0.94	1.00	1.00	0.94	1.00	1.00
Lanes:	2.00	2.00	1.00	1.00	2.88	0.12	1.18	0.82	1.00	1.64	0.28	0.08
Final Sat.:	3200	3420	1800	1700	4715	199	2003	1479	1800	2792	496	147

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Capacity Analysis Module:

Vol/Sat:	0.08	0.31	0.06	0.01	0.34	0.34	0.04	0.04	0.13	0.06	0.08	0.08
Crit Moves:	****			****			****			****		
Green/Cycle:	0.12	0.43	0.43	0.17	0.48	0.48	0.33	0.33	0.33	0.33	0.33	0.33
Volume/Cap:	0.65	0.71	0.15	0.03	0.71	0.71	0.11	0.11	0.40	0.19	0.25	0.25
Delay/Veh:	39.7	21.2	14.7	29.7	18.3	18.3	19.9	19.9	22.4	20.5	21.0	21.0
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:	39.7	21.2	14.7	29.7	18.3	18.3	19.9	19.9	22.4	20.5	21.0	21.0
HCM2kAvg:	4	12	2	0	13	13	1	1	5	2	3	3

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Intersection #7 MOUNTAIN AVENUE (NS) AT 7TH STREET (EW)

\*\*\*\*\*

Cycle (sec): 90 Critical Vol./Cap. (X): 0.730

Loss Time (sec): 6 (Y+R = 4 sec) Average Delay (sec/veh): 26.4

Optimal Cycle:OPTIMIZED 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			Permitted			Permitted		
Rights:	Include			Include			Include			Include		
Min. Green:	10	19	19	10	19	19	28	28	28	28	28	28
Lanes:	2	0	2	0	1	0	1	1	0	0	1	0

Volume Module:

Base Vol:	386	1454	65	4	1334	154	159	49	351	104	64	13
Growth Adj:	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04
Initial Bse:	401	1512	68	4	1387	160	165	51	365	108	67	14
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:	401	1512	68	4	1387	160	165	51	365	108	67	14
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:	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
PHF Volume:	423	1592	71	4	1460	169	174	54	384	114	70	14
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	423	1592	71	4	1460	169	174	54	384	114	70	14
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Vol.:	423	1592	71	4	1460	169	174	54	384	114	70	14

Saturation Flow Module:

Sat/Lane:	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Adjustment:	0.89	0.95	1.00	0.94	0.91	0.91	0.94	1.00	1.00	0.94	1.00	1.00
Lanes:	2.00	2.00	1.00	1.00	2.69	0.31	1.55	0.45	1.00	1.42	0.48	0.10
Final Sat.:	3200	3420	1800	1700	4405	509	2634	812	1800	2409	872	177

Capacity Analysis Module:

Vol/Sat:	0.13	0.47	0.04	0.00	0.33	0.33	0.07	0.07	0.21	0.05	0.08	0.08
Crit Moves:	****			****			****			****		
Green/Cycle:	0.18	0.51	0.51	0.11	0.44	0.44	0.31	0.31	0.31	0.31	0.31	0.31
Volume/Cap:	0.74	0.91	0.08	0.02	0.74	0.74	0.21	0.21	0.69	0.15	0.26	0.26
Delay/Veh:	40.4	27.7	11.2	35.7	22.2	22.2	23.0	23.0	30.7	22.5	23.4	23.4
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:	40.4	27.7	11.2	35.7	22.2	22.2	23.0	23.0	30.7	22.5	23.4	23.4
HCM2kAvg:	7	24	1	0	14	14	2	2	10	2	3	3

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Intersection #8 MOUNTAIN AVENUE (NS) AT WESTBOUND I-10 RAMPS
\*\*\*\*\*

Cycle (sec): 120 Critical Vol./Cap. (X): 0.764
Loss Time (sec): 6 (Y+R = 4 sec) Average Delay (sec/veh): 39.8
Optimal Cycle:OPTIMIZED Level Of Service: D
\*\*\*\*\*

Table with 4 columns: North Bound, South Bound, East Bound, West Bound. Rows include Approach, Movement, Control, Rights, Min. Green, and Lanes.

Volume Module: Table with 12 columns representing different traffic movements and 11 rows of volume-related metrics like Base Vol, Growth Adj, Initial Bse, etc.

Saturation Flow Module: Table with 12 columns and 4 rows showing Sat/Lane, Adjustment, Lanes, and Final Sat.

Capacity Analysis Module: Table with 12 columns and 10 rows showing Vol/Sat, Crit Moves, Green/Cycle, Volume/Cap, Delay/Veh, etc.

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Intersection #8 MOUNTAIN AVENUE (NS) AT WESTBOUND I-10 RAMPS
\*\*\*\*\*

Cycle (sec): 120 Critical Vol./Cap. (X): 0.778
Loss Time (sec): 6 (Y+R = 4 sec) Average Delay (sec/veh): 41.1
Optimal Cycle:OPTIMIZED Level Of Service: D
\*\*\*\*\*

Table with 4 columns: North Bound, South Bound, East Bound, West Bound. Rows include Approach, Movement, Control, Rights, Min. Green, and Lanes.

Volume Module: Table with 12 columns representing different traffic flow metrics and 12 rows of data including Base Vol, Growth Adj, Initial Bse, etc.

Saturation Flow Module: Table with 12 columns representing saturation flow metrics and 4 rows of data including Sat/Lane, Adjustment, Lanes, and Final Sat.

Capacity Analysis Module: Table with 12 columns representing capacity analysis metrics and 10 rows of data including Vol/Sat, Crit Moves, Green/Cycle, etc.

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\*\*\*\*\*
Intersection #9 MOUNTAIN AVENUE (NS) AT EASTBOUND I-10 RAMPS (EW)
\*\*\*\*\*

Cycle (sec): 105 Critical Vol./Cap. (X): 0.836
Loss Time (sec): 6 (Y+R = 4 sec) Average Delay (sec/veh): 33.0
Optimal Cycle:OPTIMIZED Level Of Service: C
\*\*\*\*\*

Table with 4 columns: North Bound, South Bound, East Bound, West Bound. Rows include Approach, Movement, Control, Rights, Min. Green, and Lanes.

Volume Module: Table with 12 columns representing different traffic movements and 12 rows of volume-related metrics like Base Vol, Growth Adj, Initial Bse, etc.

Saturation Flow Module: Table with 12 columns and 4 rows showing Sat/Lane, Adjustment, Lanes, and Final Sat.

Capacity Analysis Module: Table with 12 columns and 10 rows showing Vol/Sat, Crit Moves, Green/Cycle, Volume/Cap, Delay/Veh, etc.

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Intersection #9 MOUNTAIN AVENUE (NS) AT EASTBOUND I-10 RAMPS (EW)
\*\*\*\*\*
Cycle (sec): 110 Critical Vol./Cap. (X): 0.895
Loss Time (sec): 6 (Y+R = 4 sec) Average Delay (sec/veh): 35.5
Optimal Cycle:OPTIMIZED Level Of Service: D
\*\*\*\*\*

Table with 4 columns: North Bound, South Bound, East Bound, West Bound. Rows include Movement (L-T-R), Control (Protected), Rights (Include), Min. Green, and Lanes.

Volume Module: Table with 12 columns representing different traffic flow metrics and 12 rows of data including Base Vol, Growth Adj, Initial Bse, etc.

Saturation Flow Module: Table with 12 columns representing saturation flow metrics and 4 rows of data including Sat/Lane, Adjustment, Lanes, and Final Sat.

Capacity Analysis Module: Table with 12 columns representing capacity analysis metrics and 10 rows of data including Vol/Sat, Crit Moves, Green/Cycle, etc.



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Intersection #10 MOUNTAIN AVENUE (NS) AT AT 6TH STREET (EW)

\*\*\*\*\*

Cycle (sec): 120 Critical Vol./Cap. (X): 0.960

Loss Time (sec): 8 (Y+R = 4 sec) Average Delay (sec/veh): 74.8

Optimal Cycle:OPTIMIZED 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			Ovl			Include			Include		
Min. Green:	10	18	18	10	18	18	10	25	25	10	25	25
Lanes:	2	0	1	0	1	0	2	0	1	1	0	1

Volume Module:

Base Vol:	44	1149	70	130	1027	92	77	62	174	64	76	77
Growth Adj:	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04
Initial Bse:	46	1195	73	135	1068	96	80	64	181	67	79	80
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:	46	1195	73	135	1068	96	80	64	181	67	79	80
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:	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
PHF Volume:	48	1258	77	142	1124	101	84	68	190	70	83	84
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	48	1258	77	142	1124	101	84	68	190	70	83	84
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Vol.:	48	1258	77	142	1124	101	84	68	190	70	83	84

Saturation Flow Module:

Sat/Lane:	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Adjustment:	0.89	1.00	1.00	0.89	0.95	1.00	0.89	0.95	0.95	0.94	0.95	0.95
Lanes:	2.00	1.00	1.00	2.00	2.00	1.00	2.00	1.00	1.00	1.00	1.00	1.00
Final Sat.:	3200	1800	1800	3200	3420	1800	3200	1710	1710	1700	1710	1710

Capacity Analysis Module:

Vol/Sat:	0.02	0.70	0.04	0.04	0.33	0.06	0.03	0.04	0.11	0.04	0.05	0.05
Crit Moves:	****			****			****			****		
Green/Cycle:	0.13	0.56	0.56	0.08	0.51	0.60	0.08	0.21	0.21	0.08	0.21	0.21
Volume/Cap:	0.12	1.25	0.08	0.53	0.64	0.09	0.32	0.19	0.53	0.49	0.23	0.24
Delay/Veh:	46.3	148	12.3	54.9	22.1	10.5	52.5	39.2	43.5	55.3	39.7	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:	46.3	148	12.3	54.9	22.1	10.5	52.5	39.2	43.5	55.3	39.7	39.7
HCM2kAvg:	1	78	1	3	15	2	2	2	7	3	3	3

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Intersection #10 MOUNTAIN AVENUE (NS) AT AT 6TH STREET (EW)

\*\*\*\*\*

Cycle (sec): 120 Critical Vol./Cap. (X): 1.087

Loss Time (sec): 8 (Y+R = 4 sec) Average Delay (sec/veh): 122.3

Optimal Cycle:OPTIMIZED Level Of Service: F

\*\*\*\*\*

Table with 4 columns: Approach (North Bound, South Bound, East Bound, West Bound) and Movement (L, T, R). Rows include Control, Rights, Min. Green, and Lanes.

Volume Module:

Table with 12 columns representing different traffic volumes and adjustment factors like Base Vol, Growth Adj, Initial Bse, etc.

Saturation Flow Module:

Table with 12 columns representing saturation flow and adjustment factors like Sat/Lane, Adjustment, Lanes, Final Sat.

Capacity Analysis Module:

Table with 12 columns representing capacity analysis metrics like Vol/Sat, Crit Moves, Green/Cycle, etc.

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Intersection #11 MOUNTAIN AVENUE (NS) AT 5TH STREET (EW)

\*\*\*\*\*

Cycle (sec): 100 Critical Vol./Cap. (X): 0.618

Loss Time (sec): 6 (Y+R = 4 sec) Average Delay (sec/veh): 18.0

Optimal Cycle:OPTIMIZED 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: Prot+Permit Prot+Permit Permitted Permitted

Rights: Include Include Include Include

Min. Green: 10 13 13 10 13 13 21 21 21 21 21 21

Lanes: 1 0 1 1 0 1 1 0 1 0 1 0 1 0 0 1 0

Volume Module:

Base Vol: 67 1377 40 32 1058 36 77 67 107 65 80 49

Growth Adj: 1.04 1.04 1.04 1.04 1.04 1.04 1.04 1.04 1.04 1.04 1.04 1.04

Initial Bse: 70 1432 42 33 1100 37 80 70 111 68 83 51

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: 70 1432 42 33 1100 37 80 70 111 68 83 51

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: 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95

PHF Volume: 73 1507 44 35 1158 39 84 73 117 71 88 54

Reduct Vol: 0 0 0 0 0 0 0 0 0 0 0 0

Reduced Vol: 73 1507 44 35 1158 39 84 73 117 71 88 54

PCE Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00

MLF Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00

Final Vol.: 73 1507 44 35 1158 39 84 73 117 71 88 54

Saturation Flow Module:

Sat/Lane: 1800 1800 1800 1800 1800 1800 1800 1800 1800 1800 1800 1800

Adjustment: 0.94 0.95 0.95 0.90 0.95 0.95 0.94 1.00 1.00 0.94 1.00 1.00

Lanes: 1.00 1.94 0.06 1.00 1.93 0.07 1.00 0.39 0.61 1.00 0.62 0.38

Final Sat.: 1700 3323 97 1615 3307 113 1700 693 1107 1700 1116 684

Capacity Analysis Module:

Vol/Sat: 0.00 0.45 0.45 0.00 0.35 0.35 0.05 0.11 0.11 0.04 0.08 0.08

Crit Moves: \*\*\*\* \*\*\*\* \*\*\*\*

Green/Cycle: 0.16 0.63 0.63 0.10 0.57 0.57 0.21 0.21 0.21 0.21 0.21 0.21

Volume/Cap: 0.27 0.72 0.72 0.22 0.62 0.62 0.24 0.50 0.50 0.20 0.37 0.37

Delay/Veh: 37.2 13.7 13.7 41.4 15.0 15.0 33.2 36.0 36.0 32.8 34.5 34.5

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: 37.2 13.7 13.7 41.4 15.0 15.0 33.2 36.0 36.0 32.8 34.5 34.5

HCM2kAvg: 2 17 17 1 13 13 2 6 6 2 4 4

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Intersection #11 MOUNTAIN AVENUE (NS) AT 5TH STREET (EW)

\*\*\*\*\*

Cycle (sec): 105 Critical Vol./Cap. (X): 0.785

Loss Time (sec): 6 (Y+R = 4 sec) Average Delay (sec/veh): 23.1

Optimal Cycle:OPTIMIZED 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:	Prot+Permit			Prot+Permit			Permitted			Permitted		
Rights:	Include			Include			Include			Include		
Min. Green:	10	13	13	10	13	13	21	21	21	21	21	21
Lanes:	1	0	1	1	1	0	1	0	0	1	0	0

Volume Module:

Base Vol:	176	1452	33	49	1610	30	61	97	70	25	64	51
Growth Adj:	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04
Initial Bse:	183	1510	34	51	1674	31	63	101	73	26	67	53
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:	183	1510	34	51	1674	31	63	101	73	26	67	53
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:	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
PHF Volume:	193	1590	36	54	1763	33	67	106	77	27	70	56
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	193	1590	36	54	1763	33	67	106	77	27	70	56
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Vol.:	193	1590	36	54	1763	33	67	106	77	27	70	56

Saturation Flow Module:

Sat/Lane:	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Adjustment:	0.94	0.95	0.95	0.90	0.95	0.95	0.94	1.00	1.00	0.94	1.00	1.00
Lanes:	1.00	1.96	0.04	1.00	1.96	0.04	1.00	0.58	0.42	1.00	0.56	0.44
Final Sat.:	1700	3344	76	1615	3357	63	1700	1046	754	1700	1002	798

Capacity Analysis Module:

Vol/Sat:	0.00	0.48	0.48	0.00	0.52	0.52	0.04	0.10	0.10	0.02	0.07	0.07
Crit Moves:	****			****			****					
Green/Cycle:	0.13	0.62	0.62	0.12	0.61	0.61	0.20	0.20	0.20	0.20	0.20	0.20
Volume/Cap:	0.86	0.77	0.77	0.27	0.86	0.86	0.20	0.51	0.51	0.08	0.35	0.35
Delay/Veh:	71.3	16.3	16.3	41.7	20.5	20.5	35.3	38.6	38.6	34.3	36.7	36.7
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:	71.3	16.3	16.3	41.7	20.5	20.5	35.3	38.6	38.6	34.3	36.7	36.7
HCM2kAvg:	9	20	20	2	26	26	2	6	6	1	4	4

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Intersection #12 MOUNTAIN AVENUE (NS) AT 4TH STREET (EW)

\*\*\*\*\*

Cycle (sec): 75 Critical Vol./Cap. (X): 0.525

Loss Time (sec): 6 (Y+R = 4 sec) Average Delay (sec/veh): 18.0

Optimal Cycle:OPTIMIZED Level Of Service: B

\*\*\*\*\*

Table with columns: Approach (North Bound, South Bound, East Bound, West Bound), Movement (L, T, R), Control (Prot+Permit, Permitted), Rights (Include), Min. Green, Lanes.

Volume Module:

Table with columns: Base Vol, Growth Adj, Initial Bse, Added Vol, PasserByVol, Initial Fut, User Adj, PHF Adj, PHF Volume, Reduct Vol, Reduced Vol, PCE Adj, MLF Adj, Final Vol.

Saturation Flow Module:

Table with columns: Sat/Lane, Adjustment, Lanes, Final Sat.

Capacity Analysis Module:

Table with columns: Vol/Sat, Crit Moves, Green/Cycle, Volume/Cap, Delay/Veh, User DelAdj, AdjDel/Veh, HCM2kAvg.

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Intersection #12 MOUNTAIN AVENUE (NS) AT 4TH STREET (EW)

\*\*\*\*\*

Cycle (sec): 75 Critical Vol./Cap. (X): 0.733

Loss Time (sec): 6 (Y+R = 4 sec) Average Delay (sec/veh): 23.4

Optimal Cycle:OPTIMIZED Level Of Service: C

\*\*\*\*\*

Table with columns: Approach (North Bound, South Bound, East Bound, West Bound), Movement (L, T, R), Control (Prot+Permit, Permitted), Rights (Include), Min. Green, Lanes.

Volume Module:

Table with columns: Base Vol, Growth Adj, Initial Bse, Added Vol, PasserByVol, Initial Fut, User Adj, PHF Adj, PHF Volume, Reduct Vol, Reduced Vol, PCE Adj, MLF Adj, Final Vol.

Saturation Flow Module:

Table with columns: Sat/Lane, Adjustment, Lanes, Final Sat.

Capacity Analysis Module:

Table with columns: Vol/Sat, Crit Moves, Green/Cycle, Volume/Cap, Delay/Veh, User DelAdj, AdjDel/Veh, HCM2kAvg.

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Intersection #13 MOUNTAIN AVENUE (NS) AT HOLT BOULEVARD (EW)

\*\*\*\*\*

Cycle (sec): 85 Critical Vol./Cap. (X): 0.720

Loss Time (sec): 8 (Y+R = 4 sec) Average Delay (sec/veh): 31.9

Optimal Cycle:OPTIMIZED Level Of Service: C

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Approach:	North Bound					South Bound					East Bound					West Bound				
Movement:	L	T	R	L	T	R	L	T	R	L	T	R	L	T	R	L	T	R		
Control:	Protected					Protected					Protected					Protected				
Rights:	Include					Include					Include					Include				
Min. Green:	10	22	22	10	22	22	10	24	24	10	24	24	10	24	24	10	24	24		
Lanes:	1	0	2	0	1	1	0	1	1	0	1	0	1	1	0	1	0	2	0	1

Volume Module:

Base Vol:	161	1018	139	94	913	111	41	270	115	152	455	112
Growth Adj:	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04
Initial Bse:	167	1059	145	98	950	115	43	281	120	158	473	116
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:	167	1059	145	98	950	115	43	281	120	158	473	116
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:	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
PHF Volume:	176	1114	152	103	999	122	45	296	126	166	498	123
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	176	1114	152	103	999	122	45	296	126	166	498	123
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Vol.:	176	1114	152	103	999	122	45	296	126	166	498	123

Saturation Flow Module:

Sat/Lane:	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Adjustment:	0.94	0.95	1.00	0.94	0.95	0.95	0.94	0.95	0.95	0.94	0.95	1.00
Lanes:	1.00	2.00	1.00	1.00	1.78	0.22	1.00	1.40	0.60	1.00	2.00	1.00
Final Sat.:	1700	3420	1800	1700	3049	371	1700	2398	1022	1700	3420	1800

Capacity Analysis Module:

Vol/Sat:	0.10	0.33	0.08	0.06	0.33	0.33	0.03	0.12	0.12	0.10	0.15	0.07
Crit Moves:	****			****			****			****		
Green/Cycle:	0.12	0.37	0.37	0.13	0.38	0.38	0.12	0.28	0.28	0.12	0.28	0.28
Volume/Cap:	0.85	0.88	0.23	0.45	0.85	0.85	0.22	0.44	0.44	0.83	0.52	0.24
Delay/Veh:	63.9	32.0	18.5	35.3	29.6	29.6	34.6	25.3	25.3	61.3	26.1	23.7
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	63.9	32.0	18.5	35.3	29.6	29.6	34.6	25.3	25.3	61.3	26.1	23.7
HCM2kAvg:	7	17	3	3	16	16	1	5	5	7	6	3

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Intersection #13 MOUNTAIN AVENUE (NS) AT HOLT BOULEVARD (EW)

\*\*\*\*\*

Cycle (sec): 70 Critical Vol./Cap. (X): 1.430

Loss Time (sec): 8 (Y+R = 4 sec) Average Delay (sec/veh): 167.8

Optimal Cycle:OPTIMIZED 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: 10 22 22 10 22 22 10 24 24 10 24 24

Lanes: 1 0 2 0 1 1 0 1 1 0 1 0 2 0 1

Volume Module:

Table with 12 columns and 14 rows of traffic volume data including Base Vol, Growth Adj, Initial Bse, Added Vol, PasserByVol, Initial Fut, User Adj, PHF Adj, PHF Volume, Reduct Vol, Reduced Vol, PCE Adj, MLF Adj, and Final Vol.

Saturation Flow Module:

Table with 12 columns and 4 rows of saturation flow data including Sat/Lane, Adjustment, Lanes, and Final Sat.

Capacity Analysis Module:

Table with 12 columns and 10 rows of capacity analysis data including Vol/Sat, Crit Moves, Green/Cycle, Volume/Cap, Delay/Veh, User DelAdj, AdjDel/Veh, and HCM2kAvg.

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2000 HCM 4-Way Stop Method (Future Volume Alternative)

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Intersection #14 SAN ANTONIO AVE (NS) AT 6TH STREET (EW)
\*\*\*\*\*

Cycle (sec): 100 Critical Vol./Cap. (X): 0.399
Loss Time (sec): 0 (Y+R = 4 sec) Average Delay (sec/veh): 12.5
Optimal Cycle: 0 Level Of Service: B
\*\*\*\*\*

Table with 4 columns: North Bound, South Bound, East Bound, West Bound. Rows include Approach, Movement, Control, Rights, Min. Green, and Lanes.

Volume Module: Table with 12 columns representing different traffic volumes and adjustment factors like Base Vol, Growth Adj, Initial Bse, etc.

Saturation Flow Module: Table with 12 columns showing adjustment factors and saturation flow values for different lanes.

Capacity Analysis Module: Table with 12 columns showing delay, LOS, and approach delay for various traffic movements.

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Intersection #14 SAN ANTONIO AVE (NS) AT 6TH STREET (EW)
\*\*\*\*\*

Cycle (sec): 100 Critical Vol./Cap. (X): 0.533
Loss Time (sec): 0 (Y+R = 4 sec) Average Delay (sec/veh): 14.8
Optimal Cycle: 0 Level Of Service: B
\*\*\*\*\*

Table with 4 columns: North Bound, South Bound, East Bound, West Bound. Rows include Movement (L-T-R), Control (Stop Sign), Rights (Include), Min. Green, and Lanes.

Volume Module: Table with 12 columns representing different traffic movements. Rows include Base Vol, Growth Adj, Initial Bse, Added Vol, PasserByVol, Initial Fut, User Adj, PHF Adj, PHF Volume, Reduct Vol, Reduced Vol, PCE Adj, MLF Adj, and Final Vol.

Saturation Flow Module: Table with 12 columns. Rows include Adjustment, Lanes, and Final Sat.

Capacity Analysis Module: Table with 12 columns. Rows include Vol/Sat, Crit Moves, Delay/Veh, Delay Adj, AdjDel/Veh, LOS by Move, ApproachDel, Delay Adj, ApprAdjDel, and LOS by Appr.

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Intersection #15 SAN ANTONIO AVE (NS) AT 5TH STREET (EW)
\*\*\*\*\*

Cycle (sec): 100 Critical Vol./Cap. (X): 0.550
Loss Time (sec): 0 (Y+R = 4 sec) Average Delay (sec/veh): 15.1
Optimal Cycle: 0 Level Of Service: C
\*\*\*\*\*

Table with 4 columns: North Bound, South Bound, East Bound, West Bound. Rows include Movement (L-T-R), Control (Stop Sign), Rights (Include), Min. Green, and Lanes.

Volume Module: Table with 12 columns representing different traffic movements and 12 rows of volume-related metrics such as Base Vol, Growth Adj, Initial Bse, etc.

Saturation Flow Module: Table with 12 columns and 3 rows showing adjustment factors, lane saturation, and final saturation values.

Capacity Analysis Module: Table with 12 columns and 10 rows showing capacity analysis metrics like Vol/Sat, Crit Moves, Delay/Veh, etc.

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2000 HCM 4-Way Stop Method (Future Volume Alternative)

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Intersection #15 SAN ANTONIO AVE (NS) AT 5TH STREET (EW)
\*\*\*\*\*

Cycle (sec): 100 Critical Vol./Cap. (X): 0.461
Loss Time (sec): 0 (Y+R = 4 sec) Average Delay (sec/veh): 13.3
Optimal Cycle: 0 Level Of Service: B
\*\*\*\*\*

Table with 4 columns: North Bound, South Bound, East Bound, West Bound. Rows include Approach, Movement, Control, Rights, Min. Green, and Lanes.

Volume Module: Table with 12 columns representing different traffic movements and 10 rows of volume-related metrics like Base Vol, Growth Adj, Initial Bse, etc.

Saturation Flow Module: Table with 12 columns and 3 rows showing adjustment factors and saturation flow rates.

Capacity Analysis Module: Table with 12 columns and 10 rows showing delay, LOS, and approach delay metrics.

## **Appendix D**

Project Buildout (Year 2008) With 1997 Specific Plan Land Uses  
Level of Service Analysis Worksheets

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Intersection #1 BENSON AVENUE (NS) AT 6TH STREET (EW)

\*\*\*\*\*

Cycle (sec): 100 Critical Vol./Cap. (X): 0.351
Loss Time (sec): 0 (Y+R = 4 sec) Average Delay (sec/veh): 11.0
Optimal Cycle: 0 Level Of Service: B
\*\*\*\*\*

Table with columns: Approach, Movement, Control, Rights, Min. Green, Lanes. Rows for North Bound, South Bound, East Bound, West Bound.

Volume Module: Table with columns for various volume metrics (Base Vol, Growth Adj, etc.) and rows for different approaches.

Saturation Flow Module: Table with columns for adjustment factors and rows for Lanes and Final Sat.

Capacity Analysis Module: Table with columns for delay and LOS metrics and rows for various delay and LOS calculations.

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ONTARIO WALMART SUPERSTORE
TRAFFIC IMPACT STUDY
ONTARIO, CALIFORNIA

Level Of Service Computation Report
2000 HCM 4-Way Stop Method (Future Volume Alternative)

Intersection #1 BENSON AVENUE (NS) AT 6TH STREET (EW)

Cycle (sec): 100 Critical Vol./Cap. (X): 0.664
Loss Time (sec): 0 (Y+R = 4 sec) Average Delay (sec/veh): 16.1
Optimal Cycle: 0 Level Of Service: C

Table with 4 columns: North Bound, South Bound, East Bound, West Bound. Rows include Movement, Control, Rights, Min. Green, and Lanes.

Volume Module table with 12 columns and 13 rows including Base Vol, Growth Adj, Initial Bse, Added Vol, PasserByVol, Initial Fut, User Adj, PHF Adj, PHF Volume, Reduct Vol, Reduced Vol, PCE Adj, MLF Adj, Final Vol.

Saturation Flow Module table with 12 columns and 3 rows including Adjustment, Lanes, and Final Sat.

Capacity Analysis Module table with 12 columns and 11 rows including Vol/Sat, Crit Moves, Delay/Veh, Delay Adj, AdjDel/Veh, LOS by Move, ApproachDel, Delay Adj, ApprAdjDel, LOS by Appr.

ONTARIO WALMART SUPERSTORE
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ONTARIO, CALIFORNIA

Level Of Service Computation Report
2000 HCM 4-Way Stop Method (Future Volume Alternative)

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Intersection #2 BENSON AVENUE (NS) AT 5TH STREET (EW)
\*\*\*\*\*

Cycle (sec): 100 Critical Vol./Cap. (X): 0.443
Loss Time (sec): 0 (Y+R = 4 sec) Average Delay (sec/veh): 12.9
Optimal Cycle: 0 Level Of Service: B
\*\*\*\*\*

Table with 4 columns: North Bound, South Bound, East Bound, West Bound. Rows include Approach, Movement, Control, Rights, Min. Green, and Lanes.

Volume Module: Table with 13 columns representing different traffic movements and 12 rows of volume data including Base Vol, Growth Adj, Initial Bse, etc.

Saturation Flow Module: Table with 13 columns and 3 rows showing adjustment factors and saturation flow rates.

Capacity Analysis Module: Table with 13 columns and 10 rows showing delay, LOS, and approach delay metrics.



ONTARIO WALMART SUPERSTORE
TRAFFIC IMPACT STUDY
ONTARIO, CALIFORNIA

Level Of Service Computation Report
2000 HCM 4-Way Stop Method (Future Volume Alternative)

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Intersection #2 BENSON AVENUE (NS) AT 5TH STREET (EW)
\*\*\*\*\*

Cycle (sec): 100 Critical Vol./Cap. (X): 0.626
Loss Time (sec): 0 (Y+R = 4 sec) Average Delay (sec/veh): 17.2
Optimal Cycle: 0 Level Of Service: C
\*\*\*\*\*

Table with 4 columns: Approach (North Bound, South Bound, East Bound, West Bound) and 3 rows: Movement (L-T-R), Control (Stop Sign), Rights (Include), Min. Green (0 0 0), Lanes (0 1 0 1 0).

Volume Module: Table with 13 columns and 13 rows showing traffic volume metrics like Base Vol, Growth Adj, Initial Bse, Added Vol, PasserByVol, Initial Fut, User Adj, PHF Adj, PHF Volume, Reduct Vol, Reduced Vol, PCE Adj, MLF Adj, Final Vol.

Saturation Flow Module: Table with 13 columns and 3 rows showing Adjustment (1.00), Lanes (0.12), and Final Sat. (59).

Capacity Analysis Module: Table with 13 columns and 10 rows showing Vol/Sat, Crit Moves, Delay/Veh, Delay Adj, AdjDel/Veh, LOS by Move, ApproachDel, Delay Adj, ApprAdjDel, LOS by Appr.

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ONTARIO WALMART SUPERSTORE
TRAFFIC IMPACT STUDY
ONTARIO, CALIFORNIA

Level Of Service Computation Report

2000 HCM Unsignalized Method (Future Volume Alternative)

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Intersection #3 JASMINE AVENUE (NS) AT 5TH STREET (EW)

\*\*\*\*\*

Average Delay (sec/veh): 1.0 Worst Case Level Of Service: B[ 10.4]

\*\*\*\*\*

Table with columns: Approach (North Bound, South Bound, East Bound, West Bound), Movement (L, T, R), Control, Rights, Lanes.

Table with columns: Volume Module, Base Vol, Growth Adj, Initial Bse, Added Vol, PasserByVol, Initial Fut, User Adj, PHF Adj, PHF Volume, Reduct Vol, Final Vol.

Table with columns: Critical Gap Module, Critical Gp, FollowUpTim.

Table with columns: Capacity Module, Cnflct Vol, Potent Cap., Move Cap., Volume/Cap.

Table with columns: Level Of Service Module, Queue, Stopped Del, LOS by Move, Movement, Shared Cap., SharedQueue, Shrd StpDel, Shared LOS, ApproachDel, ApproachLOS.

ONTARIO WALMART SUPERSTORE
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ONTARIO, CALIFORNIA

Level Of Service Computation Report

2000 HCM Unsignalized Method (Future Volume Alternative)

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Intersection #3 JASMINE AVENUE (NS) AT 5TH STREET (EW)

\*\*\*\*\*

Average Delay (sec/veh): 1.0 Worst Case Level Of Service: B[ 11.2]

\*\*\*\*\*

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 0 0 0 0 0 0 1 0 0 0 0 0 0 0 1 0

Volume Module: peak afternoon volume

Table with 13 columns for traffic metrics: Base Vol, Growth Adj, Initial Bse, Added Vol, PasserByVol, Initial Fut, User Adj, PHF Adj, PHF Volume, Reduct Vol, Final Vol., Critical Gap Module, FollowUpTim.

Capacity Module:

Table with 13 columns for capacity metrics: Cnflct Vol, Potent Cap., Move Cap., Volume/Cap.

Level Of Service Module:

Table with 13 columns for level of service metrics: Queue, Stopped Del, LOS by Move, Movement, Shared Cap., SharedQueue, Shrd StpDel, Shared LOS, ApproachDel, ApproachLOS.

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2000 HCM Unsignalized Method (Future Volume Alternative)

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Intersection #4 HELEN AVENUE (NS) AT 5TH STREET (EW)

\*\*\*\*\*

Average Delay (sec/veh): 1.7 Worst Case Level Of Service: B[ 10.5]

\*\*\*\*\*

Table with columns for Approach (North, South, East, West Bound) and Movement (L, T, R). Rows include Control, Rights, and Lanes.

Volume Module table with columns for Base Vol, Growth Adj, Initial Bse, Added Vol, PasserByVol, Initial Fut, User Adj, PHF Adj, PHF Volume, Reduct Vol, Final Vol.

Critical Gap Module table with columns for Critical Gp, FollowUpTim.

Capacity Module table with columns for Cnflct Vol, Potent Cap., Move Cap., Volume/Cap.

Level Of Service Module table with columns for Queue, Stopped Del, LOS by Move, Movement, Shared Cap., SharedQueue, Shrd StpDel, Shared LOS, ApproachDel, ApproachLOS.

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2000 HCM Unsignalized Method (Future Volume Alternative)

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Intersection #4 HELEN AVENUE (NS) AT 5TH STREET (EW)

\*\*\*\*\*

Average Delay (sec/veh): 0.7 Worst Case Level Of Service: B[ 12.2]

\*\*\*\*\*

Table with columns: Approach (North Bound, South Bound, East Bound, West Bound), Movement (L, T, R), Control, Rights, Lanes.

Table with columns: Volume Module: peak afternoon volume, Base Vol, Growth Adj, Initial Bse, Added Vol, PasserByVol, Initial Fut, User Adj, PHF Adj, PHF Volume, Reduct Vol, Final Vol.

Table with columns: Critical Gap Module, Critical Gp, FollowUpTim.

Table with columns: Capacity Module, Cnflct Vol, Potent Cap., Move Cap., Volume/Cap.

Table with columns: Level Of Service Module, Queue, Stopped Del, LOS by Move, Movement, Shared Cap., SharedQueue, Shrd StpDel, Shared LOS, ApproachDel, ApproachLOS.

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2000 HCM Unsignalized Method (Future Volume Alternative)

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Intersection #5 ALDERBERRY (NS) AT 5TH STREET (EW)

\*\*\*\*\*

Average Delay (sec/veh): 1.9 Worst Case Level Of Service: B[ 11.2]

\*\*\*\*\*

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 0 0 0 0 0 0 1! 0 0 0 0 0 0 0 1 0

Volume Module:

Base Vol: 0 0 0 43 0 24 14 188 0 0 170 8
Growth Adj: 1.04 1.04 1.04 1.04 1.04 1.04 1.04 1.04 1.04 1.04 1.04 1.04
Initial Bse: 0 0 0 45 0 25 15 196 0 0 177 8
Added Vol: 0 0 0 0 0 0 0 6 0 0 4 0
PasserByVol: 0 0 0 0 0 0 0 0 0 0 0 0
Initial Fut: 0 0 0 45 0 25 15 202 0 0 181 8
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: 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95
PHF Volume: 0 0 0 47 0 26 15 212 0 0 190 9
Reduct Vol: 0 0 0 0 0 0 0 0 0 0 0 0
Final Vol.: 0 0 0 47 0 26 15 212 0 0 190 9

Critical Gap Module:

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

Capacity Module:

Cnflct Vol: xxxxx xxxx xxxxxx 437 xxxxx 195 199 xxxxx xxxxxx xxxxx xxxx xxxxxx
Potent Cap.: xxxxx xxxx xxxxxx 580 xxxxx 852 1385 xxxxx xxxxxx xxxxx xxxx xxxxxx
Move Cap.: xxxxx xxxx xxxxxx 575 xxxxx 852 1385 xxxxx xxxxxx xxxxx xxxx xxxxxx
Volume/Cap: xxxxx xxxx xxxxx 0.08 xxxxx 0.03 0.01 xxxxx xxxxx xxxxx xxxx xxxxxx

Level Of Service Module:

Queue: xxxxx xxxx xxxxxx xxxxxx xxxx xxxxxx 0.0 xxxxx xxxxxx xxxxxx xxxx xxxxxx
Stopped Del:xxxxxx xxxx xxxxxx xxxxxx xxxx xxxxxx 7.6 xxxxx xxxxxx xxxxxx xxxx xxxxxx
LOS by Move: \* \* \* \* \* A \* \* \* \* \*
Movement: LT - LTR - RT LT - LTR - RT LT - LTR - RT LT - LTR - RT
Shared Cap.: xxxxx xxxx xxxxxx xxxxx 651 xxxxxx xxxxx xxxxx xxxxxx xxxxx xxxx xxxxxx
SharedQueue:xxxxxx xxxx xxxxxx xxxxxx 0.4 xxxxxx 0.0 xxxxx xxxxxx xxxxxx xxxx xxxxxx
Shrd StpDel:xxxxxx xxxx xxxxxx xxxxxx 11.2 xxxxxx 7.6 xxxxx xxxxxx xxxxxx xxxx xxxxxx
Shared LOS: \* \* \* \* \* B \* A \* \* \* \* \*
ApproachDel: xxxxxxxx 11.2 xxxxxxxx xxxxxxxx
ApproachLOS: \* B \* \* \*

ONTARIO WALMART SUPERSTORE
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ONTARIO, CALIFORNIA

Level Of Service Computation Report

2000 HCM Unsignalized Method (Future Volume Alternative)

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Intersection #5 ALDERBERRY (NS) AT 5TH STREET (EW)

\*\*\*\*\*

Average Delay (sec/veh): 1.7 Worst Case Level Of Service: B[ 11.9]

\*\*\*\*\*

Table with 4 columns: North Bound, South Bound, East Bound, West Bound. Rows include Approach, Movement, Control, Rights, and Lanes.

Volume Module:

Table with 12 columns representing different traffic metrics and 12 rows of data including Base Vol, Growth Adj, Initial Bse, etc.

Critical Gap Module:

Table with 12 columns and 2 rows of data for Critical Gap and FollowUpTim.

Capacity Module:

Table with 12 columns and 4 rows of data for Capacity metrics like Cnflct Vol, Potent Cap, etc.

Level Of Service Module:

Table with 12 columns and 10 rows of data for Level Of Service metrics like Queue, Stopped Del, LOS by Move, etc.

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

\*\*\*\*\*
Intersection #6 MOUNTAIN AVENUE (NS) AT 8TH STREET
\*\*\*\*\*

Cycle (sec): 105 Critical Vol./Cap. (X): 0.801
Loss Time (sec): 8 (Y+R = 4 sec) Average Delay (sec/veh): 42.7
Optimal Cycle:OPTIMIZED Level Of Service: D
\*\*\*\*\*

Table with 4 columns: Approach (North Bound, South Bound, East Bound, West Bound) and 3 sub-columns (L, T, R) for each. Rows include Movement, Control, Rights, Min. Green, and Lanes.

Volume Module: Table with 12 columns representing different traffic volumes and adjustment factors. Rows include Base Vol, Growth Adj, Initial Bse, Added Vol, PasserByVol, Initial Fut, User Adj, PHF Adj, PHF Volume, Reduct Vol, Reduced Vol, PCE Adj, MLF Adj, and Final Vol.

Saturation Flow Module: Table with 12 columns representing saturation flow rates and adjustment factors. Rows include Sat/Lane, Adjustment, Lanes, and Final Sat.

Capacity Analysis Module: Table with 12 columns representing capacity analysis metrics. Rows include Vol/Sat, Crit Moves, Green/Cycle, Volume/Cap, Delay/Veh, User DelAdj, AdjDel/Veh, and HCM2kAvg.



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2000 HCM Operations Method (Future Volume Alternative)

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Intersection #6 MOUNTAIN AVENUE (NS) AT 8TH STREET

\*\*\*\*\*

Cycle (sec): 120 Critical Vol./Cap. (X): 1.193
Loss Time (sec): 8 (Y+R = 4 sec) Average Delay (sec/veh): 135.2
Optimal Cycle:OPTIMIZED Level Of Service: F

\*\*\*\*\*

Table with 4 columns: Approach (North Bound, South Bound, East Bound, West Bound) and 3 rows: Movement, Control, Rights, Min. Green, Lanes.

Volume Module:

Table with 12 columns representing different traffic movements and 14 rows of volume-related metrics like Base Vol, Growth Adj, Initial Bse, etc.

Saturation Flow Module:

Table with 12 columns representing different traffic movements and 4 rows of saturation flow metrics like Sat/Lane, Adjustment, Lanes, Final Sat.

Capacity Analysis Module:

Table with 12 columns representing different traffic movements and 10 rows of capacity analysis metrics like Vol/Sat, Crit Moves, Green/Cycle, etc.

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ONTARIO WALMART SUPERSTORE  
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2000 HCM Operations Method (Future Volume Alternative)

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Intersection #6 MOUNTAIN AVENUE (NS) AT 8TH STREET

\*\*\*\*\*

Cycle (sec): 80 Critical Vol./Cap. (X): 0.619  
 Loss Time (sec): 8 (Y+R = 4 sec) Average Delay (sec/veh): 27.3  
 Optimal Cycle:OPTIMIZED Level Of Service: C

\*\*\*\*\*

Approach:	North Bound			South Bound			East Bound			West Bound		
	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	10	24	24	10	24	24	10	25	25	10	25	25
Lanes:	1	0	2	1	0	2	1	0	1	0	1	0

Volume Module:

Base Vol:	55	1095	74	86	1029	27	53	310	90	163	302	79
Growth Adj:	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04
Initial Bse:	57	1139	77	89	1070	28	55	322	94	170	314	82
Added Vol:	4	8	4	0	13	0	0	0	6	6	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	61	1147	81	89	1083	28	55	322	100	176	314	82
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:	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
PHF Volume:	64	1207	85	94	1140	30	58	339	105	185	331	86
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	64	1207	85	94	1140	30	58	339	105	185	331	86
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Vol.:	64	1207	85	94	1140	30	58	339	105	185	331	86

Saturation Flow Module:

Sat/Lane:	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Adjustment:	0.94	0.91	0.91	0.94	0.91	0.91	0.94	0.95	0.95	0.94	0.95	0.95
Lanes:	1.00	2.80	0.20	1.00	2.92	0.08	1.00	1.53	0.47	1.00	1.59	0.41
Final Sat.:	1700	4590	324	1700	4790	124	1700	2613	807	1700	2711	709

Capacity Analysis Module:

Vol/Sat:	0.04	0.26	0.26	0.06	0.24	0.24	0.03	0.13	0.13	0.11	0.12	0.12
Crit Moves:	****			****			****			****		
Green/Cycle:	0.13	0.33	0.33	0.13	0.32	0.32	0.13	0.31	0.31	0.14	0.32	0.32
Volume/Cap:	0.28	0.80	0.80	0.44	0.75	0.75	0.27	0.42	0.42	0.80	0.38	0.38
Delay/Veh:	31.9	27.6	27.6	33.9	26.3	26.3	32.2	22.0	22.0	51.8	21.3	21.3
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:	31.9	27.6	27.6	33.9	26.3	26.3	32.2	22.0	22.0	51.8	21.3	21.3
HCM2kAvg:	2	12	12	3	10	10	2	5	5	7	4	4

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

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 Intersection #6 MOUNTAIN AVENUE (NS) AT 8TH STREET  
 \*\*\*\*\*

Cycle (sec): 105 Critical Vol./Cap. (X): 0.915  
 Loss Time (sec): 8 (Y+R = 4 sec) Average Delay (sec/veh): 46.0  
 Optimal Cycle:OPTIMIZED 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:	10	24	24	10	24	24	10	25	25	10	25	25
Lanes:	1	0	2	1	0	2	1	0	1	1	0	1

Volume Module:

Base Vol:	115	1559	33	83	1410	72	207	839	118	144	284	24
Growth Adj:	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04
Initial Bse:	120	1621	34	86	1466	75	215	873	123	150	295	25
Added Vol:	23	47	23	0	49	0	0	0	25	25	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	143	1668	57	86	1515	75	215	873	148	175	295	25
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
PHF Volume:	150	1756	60	91	1595	79	227	918	155	184	311	26
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	150	1756	60	91	1595	79	227	918	155	184	311	26
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Vol.:	150	1756	60	91	1595	79	227	918	155	184	311	26

Saturation Flow Module:

Sat/Lane:	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Adjustment:	0.94	0.91	0.91	0.94	0.91	0.91	0.94	0.95	0.95	0.94	0.95	0.95
Lanes:	1.00	2.90	0.10	1.00	2.86	0.14	1.00	1.71	0.29	1.00	1.84	0.16
Final Sat.:	1700	4751	163	1700	4683	231	1700	2925	495	1700	3154	266

Capacity Analysis Module:

Vol/Sat:	0.09	0.37	0.37	0.05	0.34	0.34	0.13	0.31	0.31	0.11	0.10	0.10
Crit Moves:	****			****			****			****		
Green/Cycle:	0.11	0.39	0.39	0.10	0.38	0.38	0.16	0.33	0.33	0.11	0.28	0.28
Volume/Cap:	0.84	0.96	0.96	0.56	0.90	0.90	0.84	0.96	0.96	0.96	0.35	0.35
Delay/Veh:	74.0	43.2	43.2	49.8	37.7	37.7	63.3	51.7	51.7	98.3	30.1	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:	74.0	43.2	43.2	49.8	37.7	37.7	63.3	51.7	51.7	98.3	30.1	30.1
HCM2kAvg:	7	24	24	4	21	21	10	22	22	10	4	4

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ONTARIO WALMART SUPERSTORE
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Level Of Service Computation Report

2000 HCM Operations Method (Future Volume Alternative)

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Intersection #7 MOUNTAIN AVENUE (NS) AT 7TH STREET (EW)

\*\*\*\*\*

Cycle (sec): 90 Critical Vol./Cap. (X): 0.592
Loss Time (sec): 6 (Y+R = 4 sec) Average Delay (sec/veh): 20.8
Optimal Cycle:OPTIMIZED Level Of Service: C

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Table with columns for Approach (North Bound, South Bound, East Bound, West Bound) and Movement (L, T, R). Rows include Control, Rights, Min. Green, and Lanes.

Volume Module: Table with columns for various traffic volume metrics (Base Vol, Growth Adj, Initial Bse, etc.) and rows for different approaches.

Saturation Flow Module: Table with columns for Sat/Lane, Adjustment, Lanes, and Final Sat., and rows for different approaches.

Capacity Analysis Module: Table with columns for Vol/Sat, Crit Moves, Green/Cycle, Volume/Cap, Delay/Veh, User DelAdj, AdjDel/Veh, and HCM2kAvg, and rows for different approaches.

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 2000 HCM Operations Method (Future Volume Alternative)

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Intersection #7 MOUNTAIN AVENUE (NS) AT 7TH STREET (EW)

Cycle (sec): 105 Critical Vol./Cap. (X): 0.753  
 Loss Time (sec): 6 (Y+R = 4 sec) Average Delay (sec/veh): 26.4  
 Optimal Cycle: OPTIMIZED 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			Permitted			Permitted		
Rights:	Include			Include			Include			Include		
Min. Green:	10	19	19	10	19	19	28	28	28	28	28	28
Lanes:	2	0	2	0	2	1	1	1	0	0	1	0

Volume Module:

Base Vol:	386	1454	65	4	1334	154	159	49	351	104	64	13
Growth Adj:	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04
Initial Bse:	401	1512	68	4	1387	160	165	51	365	108	67	14
Added Vol:	0	93	0	0	98	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	401	1605	68	4	1485	160	165	51	365	108	67	14
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:	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
PHF Volume:	423	1690	71	4	1564	169	174	54	384	114	70	14
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	423	1690	71	4	1564	169	174	54	384	114	70	14
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Vol.:	423	1690	71	4	1564	169	174	54	384	114	70	14

Saturation Flow Module:

Sat/Lane:	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Adjustment:	0.89	0.95	1.00	0.94	0.91	0.91	0.94	1.00	1.00	0.94	1.00	1.00
Lanes:	2.00	2.00	1.00	1.00	2.71	0.29	1.55	0.45	1.00	1.42	0.48	0.10
Final Sat.:	3200	3420	1800	1700	4436	478	2634	812	1800	2409	872	177

Capacity Analysis Module:

Vol/Sat:	0.13	0.49	0.04	0.00	0.35	0.35	0.07	0.07	0.21	0.05	0.08	0.08
Crit Moves:	****			****			****			****		
Green/Cycle:	0.18	0.58	0.58	0.10	0.49	0.49	0.27	0.27	0.27	0.27	0.27	0.27
Volume/Cap:	0.72	0.85	0.07	0.03	0.72	0.72	0.25	0.25	0.80	0.18	0.30	0.30
Delay/Veh:	44.5	21.9	9.6	43.2	22.0	22.0	30.4	30.4	45.2	29.7	31.0	31.0
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:	44.5	21.9	9.6	43.2	22.0	22.0	30.4	30.4	45.2	29.7	31.0	31.0
HCM2kAvg:	8	25	1	0	16	16	3	3	14	2	4	4

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Intersection #8 MOUNTAIN AVENUE (NS) AT WESTBOUND I-10 RAMPS

\*\*\*\*\*

Cycle (sec): 120 Critical Vol./Cap. (X): 0.778

Loss Time (sec): 6 (Y+R = 4 sec) Average Delay (sec/veh): 40.6

Optimal Cycle:OPTIMIZED Level Of Service: D

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Table with columns: Approach, Movement, Control, Rights, Min. Green, Lanes. Rows for North Bound, South Bound, East Bound, West Bound.

Volume Module:

Table with columns: Base Vol, Growth Adj, Initial Bse, Added Vol, PasserByVol, Initial Fut, User Adj, PHF Adj, PHF Volume, Reduct Vol, Reduced Vol, PCE Adj, MLF Adj, Final Vol. Rows for various volume metrics.

Saturation Flow Module:

Table with columns: Sat/Lane, Adjustment, Lanes, Final Sat. Rows for saturation flow metrics.

Capacity Analysis Module:

Table with columns: Vol/Sat, Crit Moves, Green/Cycle, Volume/Cap, Delay/Veh, User DelAdj, AdjDel/Veh, HCM2kAvg. Rows for capacity analysis metrics.

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Intersection #8 MOUNTAIN AVENUE (NS) AT WESTBOUND I-10 RAMPS
\*\*\*\*\*

Cycle (sec): 120 Critical Vol./Cap. (X): 0.874
Loss Time (sec): 6 (Y+R = 4 sec) Average Delay (sec/veh): 49.9
Optimal Cycle:OPTIMIZED Level Of Service: D
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Table with columns: Approach (North Bound, South Bound, East Bound, West Bound), Movement (L, T, R), Control, Rights, Min. Green, Lanes.

Volume Module: Table with columns: Base Vol, Growth Adj, Initial Bse, Added Vol, PasserByVol, Initial Fut, User Adj, PHF Adj, PHF Volume, Reduct Vol, Reduced Vol, PCE Adj, MLF Adj, Final Vol.

Saturation Flow Module: Table with columns: Sat/Lane, Adjustment, Lanes, Final Sat.

Capacity Analysis Module: Table with columns: Vol/Sat, Crit Moves, Green/Cycle, Volume/Cap, Delay/Veh, User DelAdj, AdjDel/Veh, HCM2kAvg.

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Intersection #9 MOUNTAIN AVENUE (NS) AT EASTBOUND I-10 RAMP (EW)

\*\*\*\*\*

Cycle (sec): 105 Critical Vol./Cap. (X): 0.841

Loss Time (sec): 6 (Y+R = 4 sec) Average Delay (sec/veh): 33.1

Optimal Cycle:OPTIMIZED Level Of Service: C

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Table with columns: Approach, Movement, Control, Rights, Min. Green, Lanes. Rows for North Bound, South Bound, East Bound, West Bound.

Volume Module: Table with columns for various volume metrics (Base Vol, Growth Adj, etc.) and rows for different approaches.

Saturation Flow Module: Table with columns for Sat/Lane, Adjustment, Lanes, Final Sat. and rows for different approaches.

Capacity Analysis Module: Table with columns for Vol/Sat, Crit Moves, Green/Cycle, Volume/Cap, Delay/Veh, User DelAdj, AdjDel/Veh, HCM2kAvg.

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Intersection #9 MOUNTAIN AVENUE (NS) AT EASTBOUND I-10 RAMPS (EW)
\*\*\*\*\*
Cycle (sec): 110 Critical Vol./Cap. (X): 0.999
Loss Time (sec): 6 (Y+R = 4 sec) Average Delay (sec/veh): 43.8
Optimal Cycle:OPTIMIZED Level Of Service: D
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Table with 4 columns: North Bound, South Bound, East Bound, West Bound. Rows include Approach, Movement, Control, Rights, Min. Green, and Lanes.

Volume Module: Table with 12 columns representing different volume and adjustment factors like Base Vol, Growth Adj, Initial Bse, etc.

Saturation Flow Module: Table with 12 columns representing saturation flow and adjustment factors like Sat/Lane, Adjustment, Lanes, etc.

Capacity Analysis Module: Table with 12 columns representing capacity analysis factors like Vol/Sat, Crit Moves, Green/Cycle, etc.

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Intersection #10 MOUNTAIN AVENUE (NS) AT AT 6TH STREET (EW)

Cycle (sec): 120 Critical Vol./Cap. (X): 0.991
Loss Time (sec): 8 (Y+R = 4 sec) Average Delay (sec/veh): 83.3
Optimal Cycle:OPTIMIZED Level Of Service: F

Table with 4 columns: Approach (North Bound, South Bound, East Bound, West Bound) and 3 rows: Movement, Control, Rights, Min. Green, Lanes.

Volume Module: Table with 12 columns for volume metrics and 12 rows for various adjustment factors like Base Vol, Growth Adj, PHF Adj, etc.

Saturation Flow Module: Table with 12 columns for saturation flow metrics and 4 rows for Sat/Lane, Adjustment, Lanes, Final Sat.

Capacity Analysis Module: Table with 12 columns for capacity analysis metrics and 10 rows for Vol/Sat, Crit Moves, Green/Cycle, etc.

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Intersection #10 MOUNTAIN AVENUE (NS) AT AT 6TH STREET (EW)

\*\*\*\*\*

Cycle (sec): 120 Critical Vol./Cap. (X): 1.262

Loss Time (sec): 8 (Y+R = 4 sec) Average Delay (sec/veh): 195.2

Optimal Cycle:OPTIMIZED Level Of Service: F

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Table with 4 columns: North Bound, South Bound, East Bound, West Bound. Rows include Approach, Movement, Control, Rights, Min. Green, and Lanes.

Volume Module:

Table with 12 columns representing different volume and adjustment factors. Rows include Base Vol, Growth Adj, Initial Bse, Added Vol, PasserByVol, Initial Fut, User Adj, PHF Adj, PHF Volume, Reduct Vol, Reduced Vol, PCE Adj, MLF Adj, and Final Vol.

Saturation Flow Module:

Table with 12 columns representing saturation flow and adjustment factors. Rows include Sat/Lane, Adjustment, Lanes, and Final Sat.

Capacity Analysis Module:

Table with 12 columns representing capacity analysis metrics. Rows include Vol/Sat, Crit Moves, Green/Cycle, Volume/Cap, Delay/Veh, User DelAdj, AdjDel/Veh, and HCM2kAvg.

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Intersection #10 MOUNTAIN AVENUE (NS) AT AT 6TH STREET (EW)

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Cycle (sec): 120 Critical Vol./Cap. (X): 0.622

Loss Time (sec): 8 (Y+R = 4 sec) Average Delay (sec/veh): 26.4

Optimal Cycle:OPTIMIZED Level Of Service: C

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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			Ovl			Include			Include		
Min. Green:	10	18	18	10	18	18	10	25	25	10	25	25
Lanes:	2	0	2	0	2	0	1	1	0	1	0	1

Volume Module:

Base Vol:	44	1149	70	130	1027	92	77	62	174	64	76	77
Growth Adj:	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04
Initial Bse:	46	1195	73	135	1068	96	80	64	181	67	79	80
Added Vol:	0	50	0	0	77	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	46	1245	73	135	1145	96	80	64	181	67	79	80
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:	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
PHF Volume:	48	1310	77	142	1205	101	84	68	190	70	83	84
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	48	1310	77	142	1205	101	84	68	190	70	83	84
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Vol.:	48	1310	77	142	1205	101	84	68	190	70	83	84

Saturation Flow Module:

Sat/Lane:	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Adjustment:	0.89	0.95	1.00	0.89	0.95	1.00	0.89	0.95	0.95	0.94	0.95	0.95
Lanes:	2.00	2.00	1.00	2.00	2.00	1.00	2.00	1.00	1.00	1.00	1.00	1.00
Final Sat.:	3200	3420	1800	3200	3420	1800	3200	1710	1710	1700	1710	1710

Capacity Analysis Module:

Vol/Sat:	0.02	0.38	0.04	0.04	0.35	0.06	0.03	0.04	0.11	0.04	0.05	0.05
Crit Moves:	****			****			****			****		
Green/Cycle:	0.12	0.56	0.56	0.08	0.52	0.60	0.08	0.21	0.21	0.08	0.21	0.21
Volume/Cap:	0.12	0.69	0.08	0.53	0.68	0.09	0.32	0.19	0.53	0.49	0.23	0.24
Delay/Veh:	47.0	20.0	12.3	54.9	22.5	10.1	52.5	39.2	43.5	55.3	39.7	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:	47.0	20.0	12.3	54.9	22.5	10.1	52.5	39.2	43.5	55.3	39.7	39.7
HCM2kAvg:	1	18	1	3	17	2	2	2	7	3	3	3

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Intersection #10 MOUNTAIN AVENUE (NS) AT AT 6TH STREET (EW)

\*\*\*\*\*

Cycle (sec): 120 Critical Vol./Cap. (X): 0.838

Loss Time (sec): 8 (Y+R = 4 sec) Average Delay (sec/veh): 63.9

Optimal Cycle:OPTIMIZED Level Of Service: E

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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			Ovl			Include			Include		
Min. Green:	10	18	18	10	18	18	10	25	25	10	25	25
Lanes:	2	0	2	0	2	0	1	1	0	1	0	1

Volume Module:

Base Vol:	71	1416	90	82	1694	159	215	95	69	92	86	75
Growth Adj:	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04
Initial Bse:	74	1473	94	85	1762	165	224	99	72	96	89	78
Added Vol:	0	279	0	0	295	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	74	1752	94	85	2057	165	224	99	72	96	89	78
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:	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
PHF Volume:	78	1844	99	90	2165	174	235	104	76	101	94	82
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	78	1844	99	90	2165	174	235	104	76	101	94	82
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Vol.:	78	1844	99	90	2165	174	235	104	76	101	94	82

Saturation Flow Module:

Sat/Lane:	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Adjustment:	0.89	0.95	1.00	0.89	0.95	1.00	0.89	0.95	0.95	0.94	0.95	0.95
Lanes:	2.00	2.00	1.00	2.00	2.00	1.00	2.00	1.16	0.84	1.00	1.07	0.93
Final Sat.:	3200	3420	1800	3200	3420	1800	3200	1981	1439	1700	1827	1593

Capacity Analysis Module:

Vol/Sat:	0.02	0.54	0.05	0.03	0.63	0.10	0.07	0.05	0.05	0.06	0.05	0.05
Crit Moves:	****			****			****			****		
Green/Cycle:	0.08	0.56	0.56	0.09	0.56	0.64	0.08	0.21	0.21	0.08	0.21	0.21
Volume/Cap:	0.29	0.97	0.10	0.33	1.13	0.15	0.88	0.25	0.25	0.71	0.25	0.25
Delay/Veh:	52.3	39.9	12.6	52.3	93.9	8.6	81.6	39.9	39.9	69.1	39.8	39.8
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:	52.3	39.9	12.6	52.3	93.9	8.6	81.6	39.9	39.9	69.1	39.8	39.8
HCM2kAvg:	2	39	2	2	58	2	7	3	3	5	3	3

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Intersection #11 MOUNTAIN AVENUE (NS) AT 5TH STREET (EW)

\*\*\*\*\*

Cycle (sec): 100 Critical Vol./Cap. (X): 0.633

Loss Time (sec): 6 (Y+R = 4 sec) Average Delay (sec/veh): 18.5

Optimal Cycle:OPTIMIZED Level Of Service: B

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Table with columns: Approach, Movement, Control, Rights, Min. Green, Lanes. Rows: North Bound, South Bound, East Bound, West Bound.

Volume Module:

Table with columns: Base Vol, Growth Adj, Initial Bse, Added Vol, PasserByVol, Initial Fut, User Adj, PHF Adj, PHF Volume, Reduct Vol, Reduced Vol, PCE Adj, MLF Adj, Final Vol. Rows: 12 columns of data.

Saturation Flow Module:

Table with columns: Sat/Lane, Adjustment, Lanes, Final Sat. Rows: 4 columns of data.

Capacity Analysis Module:

Table with columns: Vol/Sat, Crit Moves, Green/Cycle, Volume/Cap, Delay/Veh, User DelAdj, AdjDel/Veh, HCM2kAvg. Rows: 8 columns of data.

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Intersection #11 MOUNTAIN AVENUE (NS) AT 5TH STREET (EW)
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Cycle (sec): 110 Critical Vol./Cap. (X): 0.932
Loss Time (sec): 6 (Y+R = 4 sec) Average Delay (sec/veh): 32.3
Optimal Cycle:OPTIMIZED Level Of Service: C
\*\*\*\*\*

Table with 4 columns: North Bound, South Bound, East Bound, West Bound. Rows include Approach, Movement, Control, Rights, Min. Green, and Lanes.

Volume Module: Table with 12 columns representing different traffic scenarios. Rows include Base Vol, Growth Adj, Initial Bse, Added Vol, PasserByVol, Initial Fut, User Adj, PHF Adj, PHF Volume, Reduct Vol, Reduced Vol, PCE Adj, MLF Adj, and Final Vol.

Saturation Flow Module: Table with 12 columns. Rows include Sat/Lane, Adjustment, Lanes, and Final Sat.

Capacity Analysis Module: Table with 12 columns. Rows include Vol/Sat, Crit Moves, Green/Cycle, Volume/Cap, Delay/Veh, User DelAdj, AdjDel/Veh, and HCM2kAvg.

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Intersection #12 MOUNTAIN AVENUE (NS) AT 4TH STREET (EW)

\*\*\*\*\*

Cycle (sec): 80 Critical Vol./Cap. (X): 0.534  
 Loss Time (sec): 6 (Y+R = 4 sec) Average Delay (sec/veh): 18.0  
 Optimal Cycle:OPTIMIZED Level Of Service: B

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Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Prot+Permit			Prot+Permit			Permitted			Permitted		
Rights:	Include			Include			Include			Include		
Min. Green:	10	18	18	10	18	18	21	21	21	21	21	21
Lanes:	1	0	2	0	1	0	1	0	1	1	0	1

Volume Module:

Base Vol:	77	1081	35	77	1038	84	135	123	53	74	141	114
Growth Adj:	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04
Initial Bse:	80	1124	36	80	1080	87	140	128	55	77	147	119
Added Vol:	0	26	0	2	17	2	4	0	0	0	0	4
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	80	1150	36	82	1097	89	144	128	55	77	147	123
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:	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
PHF Volume:	84	1211	38	86	1154	94	152	135	58	81	154	129
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	84	1211	38	86	1154	94	152	135	58	81	154	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
Final Vol.:	84	1211	38	86	1154	94	152	135	58	81	154	129

Saturation Flow Module:

Sat/Lane:	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Adjustment:	0.94	0.95	1.00	0.94	0.95	1.00	0.94	0.95	0.95	0.94	0.95	0.95
Lanes:	1.00	2.00	1.00	1.00	2.00	1.00	1.00	1.40	0.60	1.00	1.09	0.91
Final Sat.:	1700	3420	1800	1700	3420	1800	1700	2390	1030	1700	1863	1557

Capacity Analysis Module:

Vol/Sat:	0.00	0.35	0.02	0.00	0.34	0.05	0.09	0.06	0.06	0.05	0.08	0.08
Crit Moves:	****			****			****					
Green/Cycle:	0.18	0.54	0.54	0.13	0.48	0.48	0.26	0.26	0.26	0.26	0.26	0.26
Volume/Cap:	0.28	0.66	0.04	0.41	0.70	0.11	0.34	0.21	0.21	0.18	0.32	0.32
Delay/Veh:	28.9	14.1	8.8	33.5	17.4	11.3	24.4	23.2	23.2	23.0	23.9	23.9
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:	28.9	14.1	8.8	33.5	17.4	11.3	24.4	23.2	23.2	23.0	23.9	23.9
HCM2kAvg:	2	11	0	2	12	1	3	2	2	2	3	3

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Intersection #12 MOUNTAIN AVENUE (NS) AT 4TH STREET (EW)
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Cycle (sec): 90 Critical Vol./Cap. (X): 0.769
Loss Time (sec): 6 (Y+R = 4 sec) Average Delay (sec/veh): 24.2
Optimal Cycle:OPTIMIZED Level Of Service: C
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Table with columns: Approach (North Bound, South Bound, East Bound, West Bound), Movement (L, T, R), Control (Prot+Permit, Permitted), Rights (Include), Min. Green, Lanes.

Volume Module:
Base Vol: 110 1309 69 217 1239 96 99 223 85 98 210 151
Growth Adj: 1.04 1.04 1.04 1.04 1.04 1.04 1.04 1.04 1.04 1.04 1.04 1.04
Initial Bse: 114 1361 72 226 1289 100 103 232 88 102 218 157
Added Vol: 0 98 0 14 93 14 15 0 0 0 0 15
PasserByVol: 0 0 0 0 0 0 0 0 0 0 0 0
Initial Fut: 114 1459 72 240 1382 114 118 232 88 102 218 172
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: 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95
PHF Volume: 120 1536 76 252 1454 120 124 244 93 107 230 181
Reduct Vol: 0 0 0 0 0 0 0 0 0 0 0 0
Reduced Vol: 120 1536 76 252 1454 120 124 244 93 107 230 181
PCE Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00
MLF Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00
Final Vol.: 120 1536 76 252 1454 120 124 244 93 107 230 181

Saturation Flow Module:
Sat/Lane: 1800 1800 1800 1800 1800 1800 1800 1800 1800 1800 1800 1800
Adjustment: 0.94 0.95 1.00 0.94 0.95 1.00 0.94 0.95 0.95 0.94 0.95 0.95
Lanes: 1.00 2.00 1.00 1.00 2.00 1.00 1.00 1.45 0.55 1.00 1.12 0.88
Final Sat.: 1700 3420 1800 1700 3420 1800 1700 2476 944 1700 1913 1507

Capacity Analysis Module:
Vol/Sat: 0.00 0.45 0.04 0.00 0.43 0.07 0.07 0.10 0.10 0.06 0.12 0.12
Crit Moves: \*\*\*\*
Green/Cycle: 0.15 0.53 0.53 0.17 0.55 0.55 0.23 0.23 0.23 0.23 0.23 0.23
Volume/Cap: 0.49 0.85 0.08 0.85 0.77 0.12 0.31 0.42 0.42 0.27 0.52 0.52
Delay/Veh: 36.9 22.5 10.6 56.8 17.4 9.6 29.0 29.7 29.7 28.6 30.6 30.6
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: 36.9 22.5 10.6 56.8 17.4 9.6 29.0 29.7 29.7 28.6 30.6 30.6
HCM2kAvg: 4 21 1 10 17 2 3 4 4 3 5 5
\*\*\*\*\*

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2000 HCM Operations Method (Future Volume Alternative)

\*\*\*\*\*

Intersection #13 MOUNTAIN AVENUE (NS) AT HOLT BOULEVARD (EW)

\*\*\*\*\*

Cycle (sec): 90 Critical Vol./Cap. (X): 0.720

Loss Time (sec): 8 (Y+R = 4 sec) Average Delay (sec/veh): 31.5

Optimal Cycle:OPTIMIZED Level Of Service: C

\*\*\*\*\*

Table with columns: Approach, Movement, Control, Rights, Min. Green, Lanes. Rows for North Bound, South Bound, East Bound, West Bound.

Volume Module:

Table with columns: Base Vol, Growth Adj, Initial Bse, Added Vol, PasserByVol, Initial Fut, User Adj, PHF Adj, PHF Volume, Reduct Vol, Reduced Vol, PCE Adj, MLF Adj, Final Vol. Rows for various volume metrics.

Saturation Flow Module:

Table with columns: Sat/Lane, Adjustment, Lanes, Final Sat. Rows for saturation flow metrics.

Capacity Analysis Module:

Table with columns: Vol/Sat, Crit Moves, Green/Cycle, Volume/Cap, Delay/Veh, User DelAdj, AdjDel/Veh, HCM2kAvg. Rows for capacity analysis metrics.

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Intersection #13 MOUNTAIN AVENUE (NS) AT HOLT BOULEVARD (EW)

\*\*\*\*\*

Cycle (sec): 115 Critical Vol./Cap. (X): 1.394

Loss Time (sec): 8 (Y+R = 4 sec) Average Delay (sec/veh): 175.4

Optimal Cycle:OPTIMIZED 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:	10	22	22	10	22	22	10	24	24	10	24	24
Lanes:	1	0	2	0	1	1	0	1	1	0	1	2

Volume Module:

Base Vol:	315	1112	293	249	1122	202	278	1118	280	312	1153	241
Growth Adj:	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04
Initial Bse:	328	1156	305	259	1167	210	289	1163	291	324	1199	251
Added Vol:	0	49	0	23	47	23	25	0	0	0	0	25
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	328	1205	305	282	1214	233	314	1163	291	324	1199	276
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:	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
PHF Volume:	345	1269	321	297	1278	245	331	1224	307	342	1262	290
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	345	1269	321	297	1278	245	331	1224	307	342	1262	290
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Vol.:	345	1269	321	297	1278	245	331	1224	307	342	1262	290

Saturation Flow Module:

Sat/Lane:	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Adjustment:	0.94	0.95	1.00	0.94	0.95	0.95	0.94	0.95	0.95	0.94	0.95	1.00
Lanes:	1.00	2.00	1.00	1.00	1.68	0.32	1.00	1.60	0.40	1.00	2.00	1.00
Final Sat.:	1700	3420	1800	1700	2869	551	1700	2735	685	1700	3420	1800

Capacity Analysis Module:

Vol/Sat:	0.20	0.37	0.18	0.17	0.45	0.45	0.19	0.45	0.45	0.20	0.37	0.16
Crit Moves:	****				****			****			****	
Green/Cycle:	0.15	0.32	0.32	0.15	0.32	0.32	0.16	0.32	0.32	0.14	0.30	0.30
Volume/Cap:	1.39	1.17	0.56	1.17	1.39	1.39	1.21	1.39	1.39	1.39	1.21	0.53
Delay/Veh:	249.1	127	34.0	160.5	222	221.9	172.3	222	221.8	249.3	144	34.1
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:	249.1	127	34.0	160.5	222	221.9	172.3	222	221.8	249.3	144	34.1
HCM2kAvg:	26	37	10	19	54	54	22	55	55	26	38	9

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Intersection #13 MOUNTAIN AVENUE (NS) AT HOLT BOULEVARD (EW)

\*\*\*\*\*

Cycle (sec): 75 Critical Vol./Cap. (X): 0.472

Loss Time (sec): 8 (Y+R = 4 sec) Average Delay (sec/veh): 24.0

Optimal Cycle:OPTIMIZED 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: 10 22 22 10 22 22 10 24 24 10 24 24
Lanes: 2 0 3 0 1 2 0 3 0 1 2 0 1 1 0 2 0 2 0 1

Volume Module:

Base Vol: 161 1018 139 94 913 111 41 270 115 152 455 112
Growth Adj: 1.04 1.04 1.04 1.04 1.04 1.04 1.04 1.04 1.04 1.04 1.04 1.04
Initial Bse: 167 1059 145 98 950 115 43 281 120 158 473 116
Added Vol: 0 13 0 4 8 4 6 0 0 0 0 0 6
PasserByVol: 0 0 0 0 0 0 0 0 0 0 0 0 0
Initial Fut: 167 1072 145 102 958 119 49 281 120 158 473 122
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: 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95
PHF Volume: 176 1128 152 107 1008 126 51 296 126 166 498 129
Reduct Vol: 0 0 0 0 0 0 0 0 0 0 0 0 0
Reduced Vol: 176 1128 152 107 1008 126 51 296 126 166 498 129
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
Final Vol.: 176 1128 152 107 1008 126 51 296 126 166 498 129

Saturation Flow Module:

Sat/Lane: 1800 1800 1800 1800 1800 1800 1800 1800 1800 1800 1800 1800
Adjustment: 0.89 0.91 1.00 0.89 0.91 1.00 0.89 0.95 0.95 0.89 0.95 1.00
Lanes: 2.00 3.00 1.00 2.00 3.00 1.00 2.00 1.40 0.60 2.00 2.00 1.00
Final Sat.: 3200 4914 1800 3200 4914 1800 3200 2398 1022 3200 3420 1800

Capacity Analysis Module:

Vol/Sat: 0.06 0.23 0.08 0.03 0.21 0.07 0.02 0.12 0.12 0.05 0.15 0.07
Crit Moves: \*\*\*\*
Green/Cycle: 0.13 0.30 0.30 0.14 0.31 0.31 0.13 0.32 0.32 0.13 0.32 0.32
Volume/Cap: 0.41 0.76 0.28 0.24 0.67 0.23 0.12 0.39 0.39 0.39 0.46 0.22
Delay/Veh: 30.5 26.0 20.2 29.2 23.9 19.6 28.8 20.0 20.0 30.3 20.6 18.9
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: 30.5 26.0 20.2 29.2 23.9 19.6 28.8 20.0 20.0 30.3 20.6 18.9
HCM2kAvg: 2 10 3 1 8 2 1 4 4 2 5 2

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Intersection #13 MOUNTAIN AVENUE (NS) AT HOLT BOULEVARD (EW)

\*\*\*\*\*

Cycle (sec): 95 Critical Vol./Cap. (X): 1.007

Loss Time (sec): 8 (Y+R = 4 sec) Average Delay (sec/veh): 52.8

Optimal Cycle:OPTIMIZED 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:	10	22	22		10	22	22		10	24	24		10	24	24					
Lanes:	2	0	3	0	1	2	0	3	0	1	2	0	1	1	0	2	0	2	0	1

Volume Module:

Base Vol:	315	1112	293	249	1122	202	278	1118	280	312	1153	241
Growth Adj:	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04
Initial Bse:	328	1156	305	259	1167	210	289	1163	291	324	1199	251
Added Vol:	0	49	0	23	47	23	25	0	0	0	0	25
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	328	1205	305	282	1214	233	314	1163	291	324	1199	276
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:	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
PHF Volume:	345	1269	321	297	1278	245	331	1224	307	342	1262	290
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	345	1269	321	297	1278	245	331	1224	307	342	1262	290
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Vol.:	345	1269	321	297	1278	245	331	1224	307	342	1262	290

Saturation Flow Module:

Sat/Lane:	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Adjustment:	0.89	0.91	1.00	0.89	0.91	1.00	0.89	0.95	0.95	0.89	0.95	1.00
Lanes:	2.00	3.00	1.00	2.00	3.00	1.00	2.00	1.60	0.40	2.00	2.00	1.00
Final Sat.:	3200	4914	1800	3200	4914	1800	3200	2735	685	3200	3420	1800

Capacity Analysis Module:

Vol/Sat:	0.11	0.26	0.18	0.09	0.26	0.14	0.10	0.45	0.45	0.11	0.37	0.16
Crit Moves:	****			****			****			****		
Green/Cycle:	0.11	0.26	0.26	0.11	0.26	0.26	0.12	0.44	0.44	0.11	0.43	0.43
Volume/Cap:	1.01	1.00	0.69	0.88	1.01	0.53	0.85	1.01	1.01	1.01	0.86	0.38
Delay/Veh:	92.8	59.1	35.9	63.7	62.2	31.4	56.4	51.1	51.1	93.0	30.1	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:	92.8	59.1	35.9	63.7	62.2	31.4	56.4	51.1	51.1	93.0	30.1	18.8
HCM2kAvg:	9	18	10	7	19	7	7	30	30	9	20	6

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2000 HCM 4-Way Stop Method (Future Volume Alternative)

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Intersection #14 SAN ANTONIO AVE (NS) AT 6TH STREET (EW)

\*\*\*\*\*

Cycle (sec): 100 Critical Vol./Cap. (X): 0.400

Loss Time (sec): 0 (Y+R = 4 sec) Average Delay (sec/veh): 12.5

Optimal Cycle: 0 Level Of Service: B

\*\*\*\*\*

Table with columns: Approach, Movement, Control, Rights, Min. Green, Lanes. Rows for North Bound, South Bound, East Bound, West Bound.

Volume Module:

Table with columns: Base Vol, Growth Adj, Initial Bse, Added Vol, PasserByVol, Initial Fut, User Adj, PHF Adj, PHF Volume, Reduct Vol, Reduced Vol, PCE Adj, MLF Adj, Final Vol. Rows for various volume metrics.

Saturation Flow Module:

Table with columns: Adjustment, Lanes, Final Sat. Rows for saturation flow metrics.

Capacity Analysis Module:

Table with columns: Vol/Sat, Crit Moves, Delay/Veh, Delay Adj, AdjDel/Veh, LOS by Move, ApproachDel, Delay Adj, ApprAdjDel, LOS by Appr. Rows for capacity analysis metrics.

\*\*\*\*\*

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2000 HCM 4-Way Stop Method (Future Volume Alternative)

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Intersection #14 SAN ANTONIO AVE (NS) AT 6TH STREET (EW)
\*\*\*\*\*

Cycle (sec): 100 Critical Vol./Cap. (X): 0.539
Loss Time (sec): 0 (Y+R = 4 sec) Average Delay (sec/veh): 15.0
Optimal Cycle: 0 Level Of Service: B
\*\*\*\*\*

Table with 4 columns: North Bound, South Bound, East Bound, West Bound. Rows include Approach, Movement, Control, Rights, Min. Green, and Lanes.

Volume Module: Table with 13 columns representing different traffic movements and 12 rows of volume data including Base Vol, Growth Adj, Initial Bse, etc.

Saturation Flow Module: Table with 13 columns and 3 rows showing adjustment factors and saturation flow rates.

Capacity Analysis Module: Table with 13 columns and 10 rows showing delay, LOS, and approach delay data.

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2000 HCM 4-Way Stop Method (Future Volume Alternative)

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Intersection #15 SAN ANTONIO AVE (NS) AT 5TH STREET (EW)

\*\*\*\*\*

Cycle (sec): 100 Critical Vol./Cap. (X): 0.554
Loss Time (sec): 0 (Y+R = 4 sec) Average Delay (sec/veh): 15.3
Optimal Cycle: 0 Level Of Service: C

\*\*\*\*\*

Table with 4 columns: North Bound, South Bound, East Bound, West Bound. Rows include Approach, Movement, Control, Rights, Min. Green, and Lanes.

Volume Module: Table with 12 columns representing different traffic movements and 12 rows of volume-related metrics like Base Vol, Growth Adj, etc.

Saturation Flow Module: Table with 12 columns and 3 rows showing adjustment factors and saturation flow rates.

Capacity Analysis Module: Table with 12 columns and 12 rows showing delay, LOS, and approach delay metrics.

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Intersection #15 SAN ANTONIO AVE (NS) AT 5TH STREET (EW)

\*\*\*\*\*

Cycle (sec): 100 Critical Vol./Cap. (X): 0.476

Loss Time (sec): 0 (Y+R = 4 sec) Average Delay (sec/veh): 13.8

Optimal Cycle: 0 Level Of Service: B

\*\*\*\*\*

Table with 4 columns: North Bound, South Bound, East Bound, West Bound. Rows include Approach, Movement, Control, Rights, Min. Green, and Lanes.

Volume Module:

Table with 12 columns representing different traffic movements. Rows include Base Vol, Growth Adj, Initial Bse, Added Vol, PasserByVol, Initial Fut, User Adj, PHF Adj, PHF Volume, Reduct Vol, Reduced Vol, PCE Adj, MLF Adj, and Final Vol.

Saturation Flow Module:

Table with 12 columns. Rows include Adjustment, Lanes, and Final Sat.

Capacity Analysis Module:

Table with 12 columns. Rows include Vol/Sat, Crit Moves, Delay/Veh, Delay Adj, AdjDel/Veh, LOS by Move, ApproachDel, Delay Adj, ApprAdjDel, and LOS by Appr.

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## **Appendix E**

Project Buildout (Year 2008) With Existing Land Uses  
Level of Service Analysis Worksheets

ONTARIO WALMART SUPERSTORE
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2000 HCM 4-Way Stop Method (Future Volume Alternative)

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Intersection #1 BENSON AVENUE (NS) AT 6TH STREET (EW)
\*\*\*\*\*

Cycle (sec): 100 Critical Vol./Cap. (X): 0.351
Loss Time (sec): 0 (Y+R = 4 sec) Average Delay (sec/veh): 11.0
Optimal Cycle: 0 Level Of Service: B
\*\*\*\*\*

Table with 4 columns: Approach (North Bound, South Bound, East Bound, West Bound) and 3 sub-columns (L, T, R) for Movement, Control, Rights, Min. Green, and Lanes.

Volume Module: Table with 13 columns for various volume and adjustment factors like Base Vol, Growth Adj, Initial Bse, Added Vol, PasserByVol, Initial Fut, User Adj, PHF Adj, PHF Volume, Reduct Vol, Reduced Vol, PCE Adj, MLF Adj, Final Vol.

Saturation Flow Module: Table with 13 columns for Adjustment, Lanes, and Final Sat.

Capacity Analysis Module: Table with 13 columns for Vol/Sat, Crit Moves, Delay/Veh, Delay Adj, AdjDel/Veh, LOS by Move, ApproachDel, Delay Adj, ApprAdjDel, LOS by Appr.

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\*\*\*\*\*
Intersection #1 BENSON AVENUE (NS) AT 6TH STREET (EW)
\*\*\*\*\*

Cycle (sec): 100 Critical Vol./Cap.(X): 0.664
Loss Time (sec): 0 (Y+R=4.0 sec) Average Delay (sec/veh): 16.1
Optimal Cycle: 0 Level Of Service: C
\*\*\*\*\*

Table with 4 columns: Approach (North Bound, South Bound, East Bound, West Bound) and 3 rows: Movement (L, T, R), Control (Stop Sign), Rights (Include), Min. Green (0), Lanes (0 1 0 1 0).

Volume Module: Table with 13 columns and 13 rows showing traffic volume metrics like Base Vol, Growth Adj, Initial Bse, Added Vol, PasserByVol, Initial Fut, User Adj, PHF Adj, PHF Volume, Reduct Vol, Reduced Vol, PCE Adj, MLF Adj, Final Vol.

Saturation Flow Module: Table with 13 columns and 3 rows showing Adjustment (1.00), Lanes (0.04), and Final Sat. (21).

Capacity Analysis Module: Table with 13 columns and 13 rows showing Vol/Sat, Crit Moves, Delay/Veh, Delay Adj, AdjDel/Veh, LOS by Move, ApproachDel, Delay Adj, ApprAdjDel, LOS by Appr, AllWayAvgQ.

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

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2000 HCM 4-Way Stop Method (Future Volume Alternative)

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Intersection #2 BENSON AVENUE (NS) AT 5TH STREET (EW)
\*\*\*\*\*

Cycle (sec): 100 Critical Vol./Cap. (X): 0.443
Loss Time (sec): 0 (Y+R = 4 sec) Average Delay (sec/veh): 12.9
Optimal Cycle: 0 Level Of Service: B
\*\*\*\*\*

Table with 4 columns: North Bound, South Bound, East Bound, West Bound. Rows include Approach, Movement, Control, Rights, Min. Green, and Lanes.

Volume Module: Table with 12 columns representing different traffic movements and 10 rows of volume data including Base Vol, Growth Adj, Initial Bse, etc.

Saturation Flow Module: Table with 12 columns and 3 rows showing adjustment factors, lane saturation, and final saturation.

Capacity Analysis Module: Table with 12 columns and 10 rows showing volume/saturation, delay, and level of service by approach.

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2000 HCM 4-Way Stop Method (Future Volume Alternative)

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Intersection #2 BENSON AVENUE (NS) AT 5TH STREET (EW)

\*\*\*\*\*

Cycle (sec): 100 Critical Vol./Cap.(X): 0.627

Loss Time (sec): 0 (Y+R=4.0 sec) Average Delay (sec/veh): 17.2

Optimal Cycle: 0 Level Of Service: C

\*\*\*\*\*

Table with 4 columns: North Bound, South Bound, East Bound, West Bound. Rows include Approach, Movement, Control, Rights, Min. Green, and Lanes.

Volume Module:

Table with 13 columns representing different traffic movements and 13 rows of volume-related metrics such as Base Vol, Growth Adj, Initial Bse, etc.

Saturation Flow Module:

Table with 13 columns and 3 rows showing adjustment factors, lane saturation, and final saturation for each movement.

Capacity Analysis Module:

Table with 13 columns and 13 rows showing capacity analysis metrics including Vol/Sat, Crit Moves, Delay/Veh, and LOS by Move.

\*\*\*\*\*

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

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2000 HCM Unsignalized Method (Future Volume Alternative)

\*\*\*\*\*

Intersection #3 JASMINE AVENUE (NS) AT 5TH STREET (EW)

\*\*\*\*\*

Average Delay (sec/veh): 1.0 Worst Case Level Of Service: B[ 10.4]

\*\*\*\*\*

Table with 4 columns: North Bound, South Bound, East Bound, West Bound. Rows include Approach, Movement, Control, Rights, and Lanes.

Volume Module:

Table with 12 columns representing traffic volumes and adjustment factors like Base Vol, Growth Adj, Initial Bse, etc.

Critical Gap Module:

Table with 4 columns for Critical Gap, FollowUpTim, and other metrics.

Capacity Module:

Table with 4 columns for Capacity metrics like Cnflct Vol, Potent Cap, Move Cap, Volume/Cap.

Level Of Service Module:

Table with 4 columns for Level of Service metrics like Queue, Stopped Del, LOS by Move, Shared Cap, etc.

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2000 HCM Unsignalized Method (Future Volume Alternative)

\*\*\*\*\*

Intersection #3 JASMINE AVENUE (NS) AT 5TH STREET (EW)

\*\*\*\*\*

Average Delay (sec/veh): 1.0 Worst Case Level Of Service: B[ 11.3]

\*\*\*\*\*

Table with 4 columns: North Bound, South Bound, East Bound, West Bound. Rows include Movement, Control, Rights, and Lanes.

Volume Module: peak afternoon volume

Table with 13 columns representing different traffic movements and 10 rows of volume-related metrics like Base Vol, Growth Adj, Initial Bse, etc.

Critical Gap Module:

Table with 13 columns and 2 rows showing Critical Gap and FollowUpTim values.

Capacity Module:

Table with 13 columns and 4 rows showing Capacity-related metrics like Cnflct Vol, Potent Cap., Move Cap., and Volume/Cap.

Level Of Service Module:

Table with 13 columns and 10 rows showing Level Of Service metrics like 2Way95thQ, Control Del, LOS by Move, etc.

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)

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Intersection #4 HELEN AVENUE (NS) AT 5TH STREET (EW)

\*\*\*\*\*

Average Delay (sec/veh): 1.7 Worst Case Level Of Service: B[ 10.5]

\*\*\*\*\*

Table with 4 columns: North Bound, South Bound, East Bound, West Bound. Rows include Approach, Movement, Control, Rights, and Lanes.

Volume Module table with 12 columns representing different traffic movements and 10 rows of volume data including Base Vol, Growth Adj, Initial Bse, etc.

Critical Gap Module table with 12 columns and 2 rows of gap data including Critical Gp and FollowUpTim.

Capacity Module table with 12 columns and 4 rows of capacity data including Cnflct Vol, Potent Cap., Move Cap., and Volume/Cap.

Level Of Service Module table with 12 columns and 10 rows of service data including Queue, Stopped Del, LOS by Move, Movement, Shared Cap., Shared Queue, Shrd StpDel, Shared LOS, ApproachDel, and ApproachLOS.

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\*\*\*\*\*
Intersection #4 HELEN AVENUE (NS) AT 5TH STREET (EW)
\*\*\*\*\*

Average Delay (sec/veh): 0.7 Worst Case Level Of Service: B[ 12.2]

Table with 4 columns: North Bound, South Bound, East Bound, West Bound. Rows include Movement, Control, Rights, and Lanes.

Volume Module: peak afternoon volume. Table with 13 columns for various volume metrics like Base Vol, Growth Adj, Initial Bse, etc.

Critical Gap Module. Table with 13 columns for gap metrics like Critical Gp, FollowUpTim.

Capacity Module. Table with 13 columns for capacity metrics like Cnflct Vol, Potent Cap., Move Cap., Volume/Cap.

Level Of Service Module. Table with 13 columns for LOS metrics like 2Way95thQ, Control Del, LOS by Move, etc.

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

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2000 HCM Unsignalized Method (Future Volume Alternative)

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Intersection #5 ALDERBERRY (NS) AT 5TH STREET (EW)

\*\*\*\*\*

Average Delay (sec/veh): 1.9 Worst Case Level Of Service: B[ 11.2]

\*\*\*\*\*

Table with 4 columns: North Bound, South Bound, East Bound, West Bound. Rows include Approach, Movement, Control, Rights, and Lanes.

Volume Module table with 12 columns representing different traffic movements and 10 rows of volume data including Base Vol, Growth Adj, Initial Bse, etc.

Critical Gap Module table with 12 columns and 2 rows of critical gap and follow-up time data.

Capacity Module table with 12 columns and 4 rows of capacity data including Conflict Vol, Potent Cap, Move Cap, and Volume/Cap.

Level Of Service Module table with 12 columns and 10 rows of LOS data including Queue, Stopped Del, LOS by Move, Movement, Shared Cap, Shared Queue, Shrd StpDel, Shared LOS, ApproachDel, and ApproachLOS.

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Intersection #5 ALDERBERRY (NS) AT 5TH STREET (EW)

\*\*\*\*\*

Average Delay (sec/veh): 1.7 Worst Case Level Of Service: B [ 11.9]

\*\*\*\*\*

Table with 4 columns: North Bound, South Bound, East Bound, West Bound. Rows include Movement, Control, Rights, and Lanes.

Volume Module:

Table with 13 columns representing different traffic metrics and 12 rows of data including Base Vol, Growth Adj, Initial Bse, etc.

Critical Gap Module:

Table with 13 columns and 2 rows of data for Critical Gap and FollowUpTim.

Capacity Module:

Table with 13 columns and 4 rows of data for Capacity metrics like Cnflct Vol, Potent Cap., etc.

Level Of Service Module:

Table with 13 columns and 10 rows of data for Level Of Service metrics like 2Way95thQ, Control Del, etc.

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

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2000 HCM Operations Method (Future Volume Alternative)

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Intersection #6 MOUNTAIN AVENUE (NS) AT 8TH STREET

\*\*\*\*\*

Cycle (sec): 105 Critical Vol./Cap. (X): 0.800
Loss Time (sec): 8 (Y+R = 4 sec) Average Delay (sec/veh): 42.6
Optimal Cycle:OPTIMIZED Level Of Service: D

\*\*\*\*\*

Table with 4 columns: North Bound, South Bound, East Bound, West Bound. Rows include Approach, Movement, Control, Rights, Min. Green, and Lanes.

Volume Module table with 12 columns representing different traffic volumes and adjustment factors.

Saturation Flow Module table with 12 columns representing saturation flow rates and adjustment factors.

Capacity Analysis Module table with 12 columns representing capacity analysis metrics.

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

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Intersection #6 MOUNTAIN AVENUE (NS) AT 8TH STREET

\*\*\*\*\*

Cycle (sec): 120 Critical Vol./Cap.(X): 1.195
Loss Time (sec): 8 (Y+R=4.0 sec) Average Delay (sec/veh): 135.7
Optimal Cycle: OPTIMIZED Level Of Service: F

\*\*\*\*\*

Table with 4 columns: North Bound, South Bound, East Bound, West Bound. Rows include Approach, Movement, Control, Rights, Min. Green, and Lanes.

Volume Module:

Table with 12 columns representing different traffic movements. Rows include Base Vol, Growth Adj, Initial Bse, Added Vol, PasserByVol, Initial Fut, User Adj, PHF Adj, PHF Volume, Reduct Vol, Reduced Vol, PCE Adj, MLF Adj, and Final Vol.

Saturation Flow Module:

Table with 12 columns. Rows include Sat/Lane, Adjustment, Lanes, and Final Sat.

Capacity Analysis Module:

Table with 12 columns. Rows include Vol/Sat, Crit Moves, Green/Cycle, Volume/Cap, Delay/Veh, User DelAdj, AdjDel/Veh, LOS by Move, and HCM2kAvgQ.

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

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2000 HCM Operations Method (Future Volume Alternative)

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Intersection #6 MOUNTAIN AVENUE (NS) AT 8TH STREET

\*\*\*\*\*

Cycle (sec): 80 Critical Vol./Cap. (X): 0.619
Loss Time (sec): 8 (Y+R = 4 sec) Average Delay (sec/veh): 27.3
Optimal Cycle:OPTIMIZED 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: 10 24 24 10 24 24 10 25 25 10 25 25

Lanes: 1 0 2 1 0 1 0 2 1 0 1 0 1 1 0

-----

Volume Module:

Table with 12 columns and 14 rows of traffic volume and adjustment factors.

Saturation Flow Module:

Table with 12 columns and 4 rows of saturation flow and adjustment factors.

Capacity Analysis Module:

Table with 12 columns and 10 rows of capacity analysis metrics.

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2000 HCM Operations Method (Future Volume Alternative)

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Intersection #6 MOUNTAIN AVENUE (NS) AT 8TH STREET

\*\*\*\*\*

Cycle (sec): 105 Critical Vol./Cap.(X): 0.916

Loss Time (sec): 8 (Y+R=4.0 sec) Average Delay (sec/veh): 46.2

Optimal Cycle: OPTIMIZED Level Of Service: D

\*\*\*\*\*

Table with columns: Approach, Movement, Control, Rights, Min. Green, Lanes. Rows: North Bound, South Bound, East Bound, West Bound.

Volume Module: Table with columns: Base Vol, Growth Adj, Initial Bse, Added Vol, PasserByVol, Initial Fut, User Adj, PHF Adj, PHF Volume, Reduct Vol, Reduced Vol, PCE Adj, MLF Adj, Final Vol.

Saturation Flow Module: Table with columns: Sat/Lane, Adjustment, Lanes, Final Sat.

Capacity Analysis Module: Table with columns: Vol/Sat, Crit Moves, Green/Cycle, Volume/Cap, Delay/Veh, User DelAdj, AdjDel/Veh, LOS by Move, HCM2kAvgQ.

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



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Intersection #7 MOUNTAIN AVENUE (NS) AT 7TH STREET (EW)

Cycle (sec): 90 Critical Vol./Cap. (X): 0.592
Loss Time (sec): 6 (Y+R = 4 sec) Average Delay (sec/veh): 20.8
Optimal Cycle:OPTIMIZED Level Of Service: C

Table with 4 columns: Approach (North Bound, South Bound, East Bound, West Bound) and Movement (L, T, R). Rows include Control, Rights, Min. Green, and Lanes.

Volume Module table with 12 columns representing different traffic movements and 13 rows of volume-related metrics like Base Vol, Growth Adj, Initial Bse, etc.

Saturation Flow Module table with 12 columns and 5 rows of saturation flow metrics like Sat/Lane, Adjustment, Lanes, Final Sat.

Capacity Analysis Module table with 12 columns and 10 rows of capacity analysis metrics like Vol/Sat, Crit Moves, Green/Cycle, etc.

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Intersection #7 MOUNTAIN AVENUE (NS) AT 7TH STREET (EW)

\*\*\*\*\*

Cycle (sec): 105 Critical Vol./Cap.(X): 0.755

Loss Time (sec): 6 (Y+R=4.0 sec) Average Delay (sec/veh): 26.5

Optimal Cycle: OPTIMIZED Level Of Service: C

\*\*\*\*\*

Table with columns: Approach, Movement, Control, Rights, Min. Green, Lanes. Rows: North Bound, South Bound, East Bound, West Bound.

Volume Module:

Table with columns: Base Vol, Growth Adj, Initial Bse, Added Vol, PasserByVol, Initial Fut, User Adj, PHF Adj, PHF Volume, Reduct Vol, Reduced Vol, PCE Adj, MLF Adj, Final Vol.

Saturation Flow Module:

Table with columns: Sat/Lane, Adjustment, Lanes, Final Sat.

Capacity Analysis Module:

Table with columns: Vol/Sat, Crit Moves, Green/Cycle, Volume/Cap, Delay/Veh, User DelAdj, AdjDel/Veh, LOS by Move, HCM2kAvgQ.

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

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Intersection #8 MOUNTAIN AVENUE (NS) AT WESTBOUND I-10 RAMPS

\*\*\*\*\*

Cycle (sec): 120 Critical Vol./Cap. (X): 0.777
Loss Time (sec): 6 (Y+R = 4 sec) Average Delay (sec/veh): 40.6
Optimal Cycle:OPTIMIZED Level Of Service: D

\*\*\*\*\*

Table with 4 columns: North Bound, South Bound, East Bound, West Bound. Rows include Approach, Movement, Control, Rights, Min. Green, and Lanes.

Volume Module: Table with 13 columns representing different traffic volumes and adjustment factors like Base Vol, Growth Adj, Initial Bse, etc.

Saturation Flow Module: Table with 13 columns for Sat/Lane, Adjustment, Lanes, and Final Sat.

Capacity Analysis Module: Table with 13 columns for Vol/Sat, Crit Moves, Green/Cycle, Volume/Cap, Delay/Veh, User DelAdj, AdjDel/Veh, and HCM2kAvg.

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\*\*\*\*\*

Intersection #8 MOUNTAIN AVENUE (NS) AT WESTBOUND I-10 RAMPS

\*\*\*\*\*

Cycle (sec): 120 Critical Vol./Cap. (X): 0.879

Loss Time (sec): 6 (Y+R=4.0 sec) Average Delay (sec/veh): 50.3

Optimal Cycle: OPTIMIZED Level Of Service: D

\*\*\*\*\*

Table with 4 columns: North Bound, South Bound, East Bound, West Bound. Rows include Approach, Movement, Control, Rights, Min. Green, and Lanes.

Volume Module:

Table with 13 columns representing different volume and adjustment factors like Base Vol, Growth Adj, Initial Bse, etc.

Saturation Flow Module:

Table with 13 columns representing saturation flow factors like Sat/Lane, Adjustment, Lanes, Final Sat.

Capacity Analysis Module:

Table with 13 columns representing capacity analysis factors like Vol/Sat, Crit Moves, Green/Cycle, etc.

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

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\*\*\*\*\*

Intersection #9 MOUNTAIN AVENUE (NS) AT EASTBOUND I-10 RAMPS (EW)

\*\*\*\*\*

Cycle (sec): 105 Critical Vol./Cap. (X): 0.840
Loss Time (sec): 6 (Y+R = 4 sec) Average Delay (sec/veh): 33.0
Optimal Cycle:OPTIMIZED Level Of Service: C

\*\*\*\*\*

Table with columns: Approach (North Bound, South Bound, East Bound, West Bound), Movement (L, T, R), Control, Rights, Min. Green, Lanes.

Volume Module:

Table with columns: Base Vol, Growth Adj, Initial Bse, Added Vol, PasserByVol, Initial Fut, User Adj, PHF Adj, PHF Volume, Reduct Vol, Reduced Vol, PCE Adj, MLF Adj, Final Vol.

Saturation Flow Module:

Table with columns: Sat/Lane, Adjustment, Lanes, Final Sat.

Capacity Analysis Module:

Table with columns: Vol/Sat, Crit Moves, Green/Cycle, Volume/Cap, Delay/Veh, User DelAdj, AdjDel/Veh, HCM2kAvg.

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Intersection #9 MOUNTAIN AVENUE (NS) AT EASTBOUND I-10 RAMPS (EW)

\*\*\*\*\*

Cycle (sec): 110 Critical Vol./Cap.(X): 1.006

Loss Time (sec): 6 (Y+R=4.0 sec) Average Delay (sec/veh): 44.5

Optimal Cycle: OPTIMIZED Level Of Service: D

\*\*\*\*\*

Table with columns: Approach, Movement, Control, Rights, Min. Green, Lanes. Rows for North Bound, South Bound, East Bound, West Bound.

Volume Module:

Table with columns: Base Vol, Growth Adj, Initial Bse, Added Vol, PasserByVol, Initial Fut, User Adj, PHF Adj, PHF Volume, Reduct Vol, Reduced Vol, PCE Adj, MLF Adj, Final Vol.

Saturation Flow Module:

Table with columns: Sat/Lane, Adjustment, Lanes, Final Sat.

Capacity Analysis Module:

Table with columns: Vol/Sat, Crit Moves, Green/Cycle, Volume/Cap, Delay/Veh, User DelAdj, AdjDel/Veh, LOS by Move, HCM2kAvgQ.

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

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Intersection #10 MOUNTAIN AVENUE (NS) AT AT 6TH STREET (EW)

\*\*\*\*\*

Cycle (sec): 120 Critical Vol./Cap. (X): 0.987

Loss Time (sec): 8 (Y+R = 4 sec) Average Delay (sec/veh): 82.0

Optimal Cycle:OPTIMIZED Level Of Service: F

\*\*\*\*\*

Table with columns: Approach, Movement, Control, Rights, Min. Green, Lanes. Rows for North Bound, South Bound, East Bound, West Bound.

Volume Module:

Table with columns: Base Vol, Growth Adj, Initial Bse, Added Vol, PasserByVol, Initial Fut, User Adj, PHF Adj, PHF Volume, Reduct Vol, Reduced Vol, PCE Adj, MLF Adj, Final Vol. Rows for various volume metrics.

Saturation Flow Module:

Table with columns: Sat/Lane, Adjustment, Lanes, Final Sat. Rows for saturation flow metrics.

Capacity Analysis Module:

Table with columns: Vol/Sat, Crit Moves, Green/Cycle, Volume/Cap, Delay/Veh, User DelAdj, AdjDel/Veh, HCM2kAvg. Rows for capacity analysis metrics.

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Intersection #10 MOUNTAIN AVENUE (NS) AT AT 6TH STREET (EW)

\*\*\*\*\*

Cycle (sec): 120 Critical Vol./Cap.(X): 1.275

Loss Time (sec): 8 (Y+R=4.0 sec) Average Delay (sec/veh): 200.6

Optimal Cycle: OPTIMIZED Level Of Service: F

\*\*\*\*\*

Table with columns: Approach, Movement, Control, Rights, Min. Green, Lanes. Rows for North Bound, South Bound, East Bound, West Bound.

Volume Module:

Table with columns: Base Vol, Growth Adj, Initial Bse, Added Vol, PasserByVol, Initial Fut, User Adj, PHF Adj, PHF Volume, Reduct Vol, Reduced Vol, PCE Adj, MFL Adj, Final Vol.

Saturation Flow Module:

Table with columns: Sat/Lane, Adjustment, Lanes, Final Sat.

Capacity Analysis Module:

Table with columns: Vol/Sat, Crit Moves, Green/Cycle, Volume/Cap, Delay/Veh, User DelAdj, AdjDel/Veh, LOS by Move, HCM2kAvgQ.

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



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Intersection #10 MOUNTAIN AVENUE (NS) AT AT 6TH STREET (EW)

\*\*\*\*\*

Cycle (sec): 120 Critical Vol./Cap. (X): 0.619
Loss Time (sec): 8 (Y+R = 4 sec) Average Delay (sec/veh): 26.3
Optimal Cycle:OPTIMIZED Level Of Service: C

\*\*\*\*\*

Table with columns for Approach (North Bound, South Bound, East Bound, West Bound) and Movement (L, T, R). Rows include Control, Rights, Min. Green, and Lanes.

Volume Module:

Table with 12 columns representing different traffic movements. Rows include Base Vol, Growth Adj, Initial Bse, Added Vol, PasserByVol, Initial Fut, User Adj, PHF Adj, PHF Volume, Reduct Vol, Reduced Vol, PCE Adj, MLF Adj, and Final Vol.

Saturation Flow Module:

Table with 12 columns representing different traffic movements. Rows include Sat/Lane, Adjustment, Lanes, and Final Sat.

Capacity Analysis Module:

Table with 12 columns representing different traffic movements. Rows include Vol/Sat, Crit Moves, Green/Cycle, Volume/Cap, Delay/Veh, User DelAdj, AdjDel/Veh, and HCM2kAvg.

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 Intersection #10 MOUNTAIN AVENUE (NS) AT AT 6TH STREET (EW)  
 \*\*\*\*\*

Cycle (sec): 120 Critical Vol./Cap.(X): 0.842  
 Loss Time (sec): 8 (Y+R=4.0 sec) Average Delay (sec/veh): 65.7  
 Optimal Cycle: OPTIMIZED 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			Ovl			Include			Include		
Min. Green:	10	18	18	10	18	18	10	25	25	10	25	25
Lanes:	2	0	2	0	1	1	2	0	1	1	1	0

Volume Module:

Base Vol:	71	1416	90	82	1694	159	215	95	69	92	86	75
Growth Adj:	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04
Initial Bse:	74	1473	94	85	1762	165	224	99	72	96	89	78
Added Vol:	0	301	0	0	305	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	74	1774	94	85	2067	165	224	99	72	96	89	78
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:	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
PHF Volume:	78	1867	99	90	2176	174	235	104	76	101	94	82
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	78	1867	99	90	2176	174	235	104	76	101	94	82
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Vol.:	78	1867	99	90	2176	174	235	104	76	101	94	82

Saturation Flow Module:

Sat/Lane:	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Adjustment:	0.89	0.95	1.00	0.89	0.95	1.00	0.89	0.95	0.95	0.94	0.95	0.95
Lanes:	2.00	2.00	1.00	2.00	2.00	1.00	2.00	1.16	0.84	1.00	1.07	0.93
Final Sat.:	3200	3420	1800	3200	3420	1800	3200	1981	1439	1700	1827	1593

Capacity Analysis Module:

Vol/Sat:	0.02	0.55	0.05	0.03	0.64	0.10	0.07	0.05	0.05	0.06	0.05	0.05
Crit Moves:	****			****			****			****		
Green/Cycle:	0.08	0.56	0.56	0.08	0.56	0.64	0.08	0.21	0.21	0.08	0.21	0.21
Volume/Cap:	0.29	0.98	0.10	0.33	1.14	0.15	0.88	0.25	0.25	0.71	0.25	0.25
Delay/Veh:	52.3	42.2	12.5	52.4	96.1	8.6	81.6	39.9	39.9	69.1	39.8	39.8
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:	52.3	42.2	12.5	52.4	96.1	8.6	81.6	39.9	39.9	69.1	39.8	39.8
LOS by Move:	D	D	B	D	F	A	F	D	D	E	D	D
HCM2kAvgQ:	2	42	2	2	62	2	7	3	3	5	3	3

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

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Intersection #11 MOUNTAIN AVENUE (NS) AT 5TH STREET (EW)

Cycle (sec): 105 Critical Vol./Cap. (X): 0.630
Loss Time (sec): 6 (Y+R = 4 sec) Average Delay (sec/veh): 18.4
Optimal Cycle:OPTIMIZED Level Of Service: B

Table with 4 columns: North Bound, South Bound, East Bound, West Bound. Rows include Movement, Control, Rights, Min. Green, and Lanes.

Volume Module:

Table with 12 columns representing different volume metrics and 12 rows of data including Base Vol, Growth Adj, Initial Bse, etc.

Saturation Flow Module:

Table with 12 columns representing saturation flow metrics and 4 rows of data including Sat/Lane, Adjustment, Lanes, and Final Sat.

Capacity Analysis Module:

Table with 12 columns representing capacity analysis metrics and 10 rows of data including Vol/Sat, Crit Moves, Green/Cycle, etc.

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Intersection #11 MOUNTAIN AVENUE (NS) AT 5TH STREET (EW)

\*\*\*\*\*

Cycle (sec): 110 Critical Vol./Cap. (X): 0.940

Loss Time (sec): 6 (Y+R=4.0 sec) Average Delay (sec/veh): 33.0

Optimal Cycle: OPTIMIZED Level Of Service: C

\*\*\*\*\*

Table with columns: Approach, Movement, Control, Rights, Min. Green, Lanes. Rows: North Bound, South Bound, East Bound, West Bound.

Volume Module:

Table with columns: Base Vol, Growth Adj, Initial Bse, Added Vol, PasserByVol, Initial Fut, User Adj, PHF Adj, PHF Volume, Reduct Vol, Reduced Vol, PCE Adj, MLF Adj, Final Vol.

Saturation Flow Module:

Table with columns: Sat/Lane, Adjustment, Lanes, Final Sat.

Capacity Analysis Module:

Table with columns: Vol/Sat, Crit Moves, Green/Cycle, Volume/Cap, Delay/Veh, User DelAdj, AdjDel/Veh, LOS by Move, HCM2kAvgQ.

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

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Intersection #12 MOUNTAIN AVENUE (NS) AT 4TH STREET (EW)
\*\*\*\*\*

Cycle (sec): 80 Critical Vol./Cap. (X): 0.534
Loss Time (sec): 6 (Y+R = 4 sec) Average Delay (sec/veh): 18.0
Optimal Cycle:OPTIMIZED Level Of Service: B
\*\*\*\*\*

Table with 4 columns: Approach (North Bound, South Bound, East Bound, West Bound) and 3 rows: Movement (L-T-R), Control (Prot+Permit, Prot+Permit, Permitted, Permitted), Rights (Include, Include, Include, Include), Min. Green, Lanes.

Volume Module:
Base Vol: 77 1081 35 77 1038 84 135 123 53 74 141 114
Growth Adj: 1.04 1.04 1.04 1.04 1.04 1.04 1.04 1.04 1.04 1.04 1.04 1.04
Initial Bse: 80 1124 36 80 1080 87 140 128 55 77 147 119
Added Vol: 0 25 0 2 14 2 4 0 0 0 0 4
PasserByVol: 0 0 0 0 0 0 0 0 0 0 0 0
Initial Fut: 80 1149 36 82 1094 89 144 128 55 77 147 123
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: 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95
PHF Volume: 84 1210 38 86 1151 94 152 135 58 81 154 129
Reduct Vol: 0 0 0 0 0 0 0 0 0 0 0 0
Reduced Vol: 84 1210 38 86 1151 94 152 135 58 81 154 129
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
Final Vol.: 84 1210 38 86 1151 94 152 135 58 81 154 129

Saturation Flow Module:
Sat/Lane: 1800 1800 1800 1800 1800 1800 1800 1800 1800 1800 1800 1800
Adjustment: 0.94 0.95 1.00 0.94 0.95 1.00 0.94 0.95 0.95 0.94 0.95 0.95
Lanes: 1.00 2.00 1.00 1.00 2.00 1.00 1.00 1.40 0.60 1.00 1.09 0.91
Final Sat.: 1700 3420 1800 1700 3420 1800 1700 2390 1030 1700 1863 1557

Capacity Analysis Module:
Vol/Sat: 0.00 0.35 0.02 0.00 0.34 0.05 0.09 0.06 0.06 0.05 0.08 0.08
Crit Moves: \*\*\*\*
Green/Cycle: 0.18 0.54 0.54 0.13 0.48 0.48 0.26 0.26 0.26 0.26 0.26 0.26
Volume/Cap: 0.28 0.66 0.04 0.41 0.70 0.11 0.34 0.21 0.21 0.18 0.32 0.32
Delay/Veh: 28.8 14.1 8.8 33.5 17.4 11.3 24.4 23.2 23.2 23.0 23.9 23.9
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: 28.8 14.1 8.8 33.5 17.4 11.3 24.4 23.2 23.2 23.0 23.9 23.9
HCM2kAvg: 2 11 0 2 12 1 3 2 2 2 3 3

\*\*\*\*\*

ONTARIO WALMART SUPERSTORE
TRAFFIC IMPACT STUDY
ONTARIO, CALIFORNIA

Level Of Service Computation Report

2000 HCM Operations Method (Future Volume Alternative)

\*\*\*\*\*

Intersection #12 MOUNTAIN AVENUE (NS) AT 4TH STREET (EW)

\*\*\*\*\*

Cycle (sec): 90 Critical Vol./Cap.(X): 0.771

Loss Time (sec): 6 (Y+R=4.0 sec) Average Delay (sec/veh): 24.3

Optimal Cycle: OPTIMIZED Level Of Service: C

\*\*\*\*\*

Table with 4 columns: North Bound, South Bound, East Bound, West Bound. Rows include Approach, Movement, Control, Rights, Min. Green, and Lanes.

Volume Module:

Table with 12 columns representing different traffic movements. Rows include Base Vol, Growth Adj, Initial Bse, Added Vol, PasserByVol, Initial Fut, User Adj, PHF Adj, PHF Volume, Reduct Vol, Reduced Vol, PCE Adj, MLF Adj, and Final Vol.

Saturation Flow Module:

Table with 12 columns. Rows include Sat/Lane, Adjustment, Lanes, and Final Sat.

Capacity Analysis Module:

Table with 12 columns. Rows include Vol/Sat, Crit Moves, Green/Cycle, Volume/Cap, Delay/Veh, User DelAdj, AdjDel/Veh, LOS by Move, and HCM2kAvgQ.

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

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

\*\*\*\*\*  
 Intersection #13 MOUNTAIN AVENUE (NS) AT HOLT BOULEVARD (EW)  
 \*\*\*\*\*

Cycle (sec): 90 Critical Vol./Cap. (X): 0.720  
 Loss Time (sec): 8 (Y+R = 4 sec) Average Delay (sec/veh): 31.5  
 Optimal Cycle:OPTIMIZED 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:	10	22	22	10	22	22	10	24	24	10	24	24
Lanes:	1	0	2	0	1	1	0	1	1	0	1	0

Volume Module:

Base Vol:	161	1018	139	94	913	111	41	270	115	152	455	112
Growth Adj:	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04
Initial Bse:	167	1059	145	98	950	115	43	281	120	158	473	116
Added Vol:	0	13	0	4	7	4	6	0	0	0	0	6
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	167	1072	145	102	957	119	49	281	120	158	473	122
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:	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
PHF Volume:	176	1128	152	107	1007	126	51	296	126	166	498	129
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	176	1128	152	107	1007	126	51	296	126	166	498	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
Final Vol.:	176	1128	152	107	1007	126	51	296	126	166	498	129

Saturation Flow Module:

Sat/Lane:	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Adjustment:	0.94	0.95	1.00	0.94	0.95	0.95	0.94	0.95	0.95	0.94	0.95	1.00
Lanes:	1.00	2.00	1.00	1.00	1.78	0.22	1.00	1.40	0.60	1.00	2.00	1.00
Final Sat.:	1700	3420	1800	1700	3040	380	1700	2398	1022	1700	3420	1800

Capacity Analysis Module:

Vol/Sat:	0.10	0.33	0.08	0.06	0.33	0.33	0.03	0.12	0.12	0.10	0.15	0.07
Crit Moves:	****			****			****			****		
Green/Cycle:	0.13	0.39	0.39	0.13	0.40	0.40	0.11	0.27	0.27	0.12	0.27	0.27
Volume/Cap:	0.83	0.84	0.21	0.48	0.83	0.83	0.27	0.46	0.46	0.83	0.54	0.26
Delay/Veh:	61.0	29.5	18.2	37.7	28.5	28.5	37.2	28.0	28.0	62.4	28.5	26.0
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:	61.0	29.5	18.2	37.7	28.5	28.5	37.2	28.0	28.0	62.4	28.5	26.0
HCM2kAvg:	7	17	3	3	16	16	2	5	5	7	6	3

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ONTARIO WALMART SUPERSTORE
TRAFFIC IMPACT STUDY
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Level Of Service Computation Report

2000 HCM Operations Method (Future Volume Alternative)

\*\*\*\*\*

Intersection #13 MOUNTAIN AVENUE (NS) AT HOLT BOULEVARD (EW)

\*\*\*\*\*

Cycle (sec): 115 Critical Vol./Cap.(X): 1.395

Loss Time (sec): 8 (Y+R=4.0 sec) Average Delay (sec/veh): 176.1

Optimal Cycle: OPTIMIZED Level Of Service: F

\*\*\*\*\*

Table with columns: Approach, Movement, Control, Rights, Min. Green, Lanes. Rows: North Bound, South Bound, East Bound, West Bound.

Volume Module:

Table with columns: Base Vol, Growth Adj, Initial Bse, Added Vol, PasserByVol, Initial Fut, User Adj, PHF Adj, PHF Volume, Reduct Vol, Reduced Vol, PCE Adj, MLF Adj, Final Vol.

Saturation Flow Module:

Table with columns: Sat/Lane, Adjustment, Lanes, Final Sat.

Capacity Analysis Module:

Table with columns: Vol/Sat, Crit Moves, Green/Cycle, Volume/Cap, Delay/Veh, User DelAdj, AdjDel/Veh, LOS by Move, HCM2kAvgQ.

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



ONTARIO WALMART SUPERSTORE  
 TRAFFIC IMPACT STUDY  
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Level of Service Computation Report

2000 HCM Operations Method (Future Volume Alternative)

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Intersection #13 MOUNTAIN AVENUE (NS) AT HOLT BOULEVARD (EW)

\*\*\*\*\*

Cycle (sec): 75 Critical Vol./Cap. (X): 0.472  
 Loss Time (sec): 8 (Y+R = 4 sec) Average Delay (sec/veh): 24.0  
 Optimal Cycle:OPTIMIZED Level Of Service: C

\*\*\*\*\*

Approach:	North Bound			South Bound			East Bound			West Bound						
	L	T	R	L	T	R	L	T	R	L	T	R				
Control:	Protected			Protected			Protected			Protected						
Rights:	Include			Include			Include			Include						
Min. Green:	10	22	22	10	22	22	10	24	24	10	24	24				
Lanes:	2	0	3	0	1		2	0	1	1	0	2	0	2	0	1

Volume Module:

Base Vol:	161	1018	139	94	913	111	41	270	115	152	455	112
Growth Adj:	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04
Initial Bse:	167	1059	145	98	950	115	43	281	120	158	473	116
Added Vol:	0	13	0	4	7	4	6	0	0	0	0	6
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	167	1072	145	102	957	119	49	281	120	158	473	122
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:	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
PHF Volume:	176	1128	152	107	1007	126	51	296	126	166	498	129
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	176	1128	152	107	1007	126	51	296	126	166	498	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
Final Vol.:	176	1128	152	107	1007	126	51	296	126	166	498	129

Saturation Flow Module:

Sat/Lane:	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Adjustment:	0.89	0.91	1.00	0.89	0.91	1.00	0.89	0.95	0.95	0.89	0.95	1.00
Lanes:	2.00	3.00	1.00	2.00	3.00	1.00	2.00	1.40	0.60	2.00	2.00	1.00
Final Sat.:	3200	4914	1800	3200	4914	1800	3200	2398	1022	3200	3420	1800

Capacity Analysis Module:

Vol/Sat:	0.06	0.23	0.08	0.03	0.20	0.07	0.02	0.12	0.12	0.05	0.15	0.07
Crit Moves:	****			****			****			****		
Green/Cycle:	0.13	0.30	0.30	0.14	0.31	0.31	0.13	0.32	0.32	0.13	0.32	0.32
Volume/Cap:	0.41	0.76	0.28	0.24	0.67	0.23	0.12	0.39	0.39	0.39	0.46	0.22
Delay/Veh:	30.5	26.0	20.2	29.2	23.8	19.6	28.8	20.0	20.0	30.3	20.6	18.9
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:	30.5	26.0	20.2	29.2	23.8	19.6	28.8	20.0	20.0	30.3	20.6	18.9
HCM2kAvg:	2	10	3	1	8	2	1	4	4	2	5	2

\*\*\*\*\*

ONTARIO WALMART SUPERSTORE
TRAFFIC IMPACT STUDY
ONTARIO, CALIFORNIA

Level Of Service Computation Report

2000 HCM Operations Method (Future Volume Alternative)

\*\*\*\*\*
Intersection #13 MOUNTAIN AVENUE (NS) AT HOLT BOULEVARD (EW)
\*\*\*\*\*

Cycle (sec): 95 Critical Vol./Cap.(X): 1.008
Loss Time (sec): 8 (Y+R=4.0 sec) Average Delay (sec/veh): 52.9
Optimal Cycle: OPTIMIZED Level Of Service: D
\*\*\*\*\*

Table with 4 columns: Approach (North Bound, South Bound, East Bound, West Bound) and Movement (L, T, R). Rows include Control, Rights, Min. Green, and Lanes.

Volume Module: Table with 12 columns representing different traffic volumes and adjustment factors like Base Vol, Growth Adj, Initial Bse, etc.

Saturation Flow Module: Table with 12 columns for Sat/Lane, Adjustment, Lanes, and Final Sat.

Capacity Analysis Module: Table with 12 columns for Vol/Sat, Crit Moves, Green/Cycle, Volume/Cap, Delay/Veh, User DelAdj, AdjDel/Veh, LOS by Move, and HCM2kAvgQ.

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

ONTARIO WALMART SUPERSTORE
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Level Of Service Computation Report
2000 HCM 4-Way Stop Method (Future Volume Alternative)

\*\*\*\*\*
Intersection #14 SAN ANTONIO AVE (NS) AT 6TH STREET (EW)
\*\*\*\*\*

Cycle (sec): 100 Critical Vol./Cap. (X): 0.400
Loss Time (sec): 0 (Y+R = 4 sec) Average Delay (sec/veh): 12.5
Optimal Cycle: 0 Level Of Service: B
\*\*\*\*\*

Table with 4 columns: North Bound, South Bound, East Bound, West Bound. Rows include Approach, Movement, Control, Rights, Min. Green, and Lanes.

Volume Module: Table with 13 columns and 13 rows showing traffic volume adjustments like Base Vol, Growth Adj, Initial Bse, etc.

Saturation Flow Module: Table with 13 columns and 3 rows showing adjustment factors for lanes and final saturation.

Capacity Analysis Module: Table with 13 columns and 13 rows showing delay, LOS, and approach delay metrics.

\*\*\*\*\*

ONTARIO WALMART SUPERSTORE
TRAFFIC IMPACT STUDY
ONTARIO, CALIFORNIA

Level Of Service Computation Report

2000 HCM 4-Way Stop Method (Future Volume Alternative)

\*\*\*\*\*

Intersection #14 SAN ANTONIO AVE (NS) AT 6TH STREET (EW)

\*\*\*\*\*

Cycle (sec): 100 Critical Vol./Cap.(X): 0.539

Loss Time (sec): 0 (Y+R=4.0 sec) Average Delay (sec/veh): 15.0

Optimal Cycle: 0 Level Of Service: B

\*\*\*\*\*

Table with columns for Approach (North, South, East, West Bound) and Movement (L, T, R). Rows include Control, Rights, Min. Green, and Lanes.

Volume Module:

Table with 13 columns for various volume and adjustment factors like Base Vol, Growth Adj, Initial Bse, etc.

Saturation Flow Module:

Table with 13 columns for saturation flow factors like Adjustment, Lanes, and Final Sat.

Capacity Analysis Module:

Table with 13 columns for capacity analysis factors like Vol/Sat, Crit Moves, Delay/Veh, etc.

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

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Level Of Service Computation Report
2000 HCM 4-Way Stop Method (Future Volume Alternative)

\*\*\*\*\*
Intersection #15 SAN ANTONIO AVE (NS) AT 5TH STREET (EW)
\*\*\*\*\*

Cycle (sec): 100 Critical Vol./Cap. (X): 0.554
Loss Time (sec): 0 (Y+R = 4 sec) Average Delay (sec/veh): 15.3
Optimal Cycle: 0 Level Of Service: C
\*\*\*\*\*

Table with 4 columns: Approach (North Bound, South Bound, East Bound, West Bound) and 3 rows: Movement (L, T, R), Control (Stop Sign), Rights (Include), Min. Green (0), Lanes (0 1 0 1 0).

Volume Module:
Base Vol: 75 374 79 35 377 38 26 91 49 46 105 26
Growth Adj: 1.04 1.04 1.04 1.04 1.04 1.04 1.04 1.04 1.04 1.04 1.04 1.04
Initial Bse: 78 389 82 36 392 40 27 95 51 48 109 27
Added Vol: 1 0 0 0 0 0 1 1 1 0 3 0
PasserByVol: 0 0 0 0 0 0 0 0 0 0 0 0
Initial Fut: 79 389 82 36 392 41 28 96 52 48 112 27
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: 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95
PHF Volume: 83 409 86 38 413 43 30 101 55 50 118 28
Reduct Vol: 0 0 0 0 0 0 0 0 0 0 0 0
Reduced Vol: 83 409 86 38 413 43 30 101 55 50 118 28
PCE Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00
MLF Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00
Final Vol.: 83 409 86 38 413 43 30 101 55 50 118 28

Saturation Flow Module:
Adjustment: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00
Lanes: 0.29 1.41 0.30 0.16 1.67 0.17 0.23 0.77 1.00 0.26 0.60 0.14
Final Sat.: 150 759 164 80 877 92 100 340 487 118 277 67

Capacity Analysis Module:
Vol/Sat: 0.55 0.54 0.53 0.48 0.47 0.46 0.30 0.30 0.11 0.43 0.43 0.43
Crit Moves: \*\*\*\* \*\*\*\* \*\*\*\* \*\*\*\*
Delay/Veh: 17.2 16.4 15.7 15.3 14.9 14.6 13.3 13.3 10.4 15.4 15.4 15.4
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
AdjDel/Veh: 17.2 16.4 15.7 15.3 14.9 14.6 13.3 13.3 10.4 15.4 15.4 15.4
LOS by Move: C C C C B B B B C C C
ApproachDel: 16.4 14.9 12.4 15.4
Delay Adj: 1.00 1.00 1.00
ApprAdjDel: 16.4 14.9 12.4 15.4
LOS by Appr: C B B C
\*\*\*\*\*

ONTARIO WALMART SUPERSTORE
TRAFFIC IMPACT STUDY
ONTARIO, CALIFORNIA

Level Of Service Computation Report
2000 HCM 4-Way Stop Method (Future Volume Alternative)

\*\*\*\*\*
Intersection #15 SAN ANTONIO AVE (NS) AT 5TH STREET (EW)
\*\*\*\*\*

Cycle (sec): 100 Critical Vol./Cap.(X): 0.477
Loss Time (sec): 0 (Y+R=4.0 sec) Average Delay (sec/veh): 13.8
Optimal Cycle: 0 Level Of Service: B

Table with 4 columns: North Bound, South Bound, East Bound, West Bound. Rows include Movement, Control, Rights, Min. Green, and Lanes.

Volume Module table with 13 columns and 13 rows including Base Vol, Growth Adj, Initial Bse, Added Vol, PasserByVol, Initial Fut, User Adj, PHF Adj, PHF Volume, Reduct Vol, Reduced Vol, PCE Adj, MLF Adj, Final Vol.

Saturation Flow Module table with 13 columns and 3 rows including Adjustment, Lanes, and Final Sat.

Capacity Analysis Module table with 13 columns and 13 rows including Vol/Sat, Crit Moves, Delay/Veh, Delay Adj, AdjDel/Veh, LOS by Move, ApproachDel, Delay Adj, ApprAdjDel, LOS by Appr, AllWayAvgQ.

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

## **Appendix F**

Project Buildout (Year 2008) With Project  
Level of Service Analysis Worksheets

ONTARIO WALMART SUPERSTORE
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ONTARIO, CALIFORNIA

Level Of Service Computation Report

2000 HCM 4-Way Stop Method (Future Volume Alternative)

\*\*\*\*\*
Intersection #1 BENSON AVENUE (NS) AT 6TH STREET (EW)
\*\*\*\*\*

Cycle (sec): 100 Critical Vol./Cap. (X): 0.352
Loss Time (sec): 0 (Y+R = 4 sec) Average Delay (sec/veh): 11.0
Optimal Cycle: 0 Level Of Service: B
\*\*\*\*\*

Table with 4 columns: North Bound, South Bound, East Bound, West Bound. Rows include Movement (L-T-R), Control (Stop Sign), Rights (Include), Min. Green, and Lanes.

Volume Module: Table with 13 columns representing different traffic movements. Rows include Base Vol, Growth Adj, Initial Bse, Added Vol, PasserByVol, Initial Fut, User Adj, PHF Adj, PHF Volume, Reduct Vol, Reduced Vol, PCE Adj, MLF Adj, and Final Vol.

Saturation Flow Module: Table with 13 columns. Rows include Adjustment, Lanes, and Final Sat.

Capacity Analysis Module: Table with 13 columns. Rows include Vol/Sat, Crit Moves, Delay/Veh, Delay Adj, AdjDel/Veh, LOS by Move, ApproachDel, Delay Adj, ApprAdjDel, and LOS by Appr.



ONTARIO WALMART SUPERSTORE
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Level Of Service Computation Report

2000 HCM 4-Way Stop Method (Future Volume Alternative)

\*\*\*\*\*

Intersection #1 BENSON AVENUE (NS) AT 6TH STREET (EW)

\*\*\*\*\*

Cycle (sec): 100 Critical Vol./Cap.(X): 0.658

Loss Time (sec): 0 (Y+R=4.0 sec) Average Delay (sec/veh): 15.9

Optimal Cycle: 0 Level Of Service: C

\*\*\*\*\*

Table with columns for Approach (North, South, East, West Bound) and Movement (L, T, R). Rows include Control, Rights, Min. Green, and Lanes.

Volume Module table with columns for Base Vol, Growth Adj, Initial Bse, Added Vol, PasserByVol, Initial Fut, User Adj, PHF Adj, PHF Volume, Reduct Vol, Reduced Vol, PCE Adj, MLF Adj, Final Vol.

Saturation Flow Module table with columns for Adjustment, Lanes, and Final Sat.

Capacity Analysis Module table with columns for Vol/Sat, Crit Moves, Delay/Veh, Delay Adj, AdjDel/Veh, LOS by Move, ApproachDel, Delay Adj, ApprAdjDel, LOS by Appr, AllWayAvgQ.

\*\*\*\*\*

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

ONTARIO WALMART SUPERSTORE
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ONTARIO, CALIFORNIA

Level Of Service Computation Report

2000 HCM 4-Way Stop Method (Future Volume Alternative)

\*\*\*\*\*
Intersection #2 BENSON AVENUE (NS) AT 5TH STREET (EW)
\*\*\*\*\*

Cycle (sec): 100 Critical Vol./Cap. (X): 0.444
Loss Time (sec): 0 (Y+R = 4 sec) Average Delay (sec/veh): 12.9
Optimal Cycle: 0 Level Of Service: B
\*\*\*\*\*

Table with 4 columns: North Bound, South Bound, East Bound, West Bound. Rows include Movement (L-T-R), Control (Stop Sign), Rights (Include), Min. Green (0 0 0), and Lanes (0 1 0 1 0).

Volume Module: Table with 12 columns representing different traffic movements. Rows include Base Vol, Growth Adj, Initial Bse, Added Vol, PasserByVol, Initial Fut, User Adj, PHF Adj, PHF Volume, Reduct Vol, Reduced Vol, PCE Adj, MLF Adj, and Final Vol.

Saturation Flow Module: Table with 12 columns. Rows include Adjustment (1.00 1.00 1.00), Lanes (0.27 1.36 0.37), and Final Sat. (146 756 209).

Capacity Analysis Module: Table with 12 columns. Rows include Vol/Sat (0.44 0.43 0.42), Crit Moves (\*\*\*\*), Delay/Veh (14.0 13.5 12.9), Delay Adj (1.00 1.00 1.00), AdjDel/Veh (14.0 13.5 12.9), LOS by Move (B B B), ApproachDel (13.5), Delay Adj (1.00), ApprAdjDel (13.5), and LOS by Appr (B).

\*\*\*\*\*

ONTARIO WALMART SUPERSTORE
TRAFFIC IMPACT STUDY
ONTARIO, CALIFORNIA

Level Of Service Computation Report
2000 HCM 4-Way Stop Method (Future Volume Alternative)

\*\*\*\*\*

Intersection #2 BENSON AVENUE (NS) AT 5TH STREET (EW)

\*\*\*\*\*

Cycle (sec): 100 Critical Vol./Cap.(X): 0.617
Loss Time (sec): 0 (Y+R=4.0 sec) Average Delay (sec/veh): 16.9
Optimal Cycle: 0 Level Of Service: C

\*\*\*\*\*

Table with columns: Approach (North Bound, South Bound, East Bound, West Bound), Movement (L, T, R), Control (Stop Sign), Rights (Include), Min. Green, Lanes.

Volume Module:

Table with columns: Base Vol, Growth Adj, Initial Bse, Added Vol, PasserByVol, Initial Fut, User Adj, PHF Adj, PHF Volume, Reduct Vol, Reduced Vol, PCE Adj, MLF Adj, Final Vol.

Saturation Flow Module:

Table with columns: Adjustment, Lanes, Final Sat.

Capacity Analysis Module:

Table with columns: Vol/Sat, Crit Moves, Delay/Veh, Delay Adj, AdjDel/Veh, LOS by Move, ApproachDel, Delay Adj, ApprAdjDel, LOS by Appr, AllWayAvgQ.

\*\*\*\*\*

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

ONTARIO WALMART SUPERSTORE
TRAFFIC IMPACT STUDY
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Level Of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

\*\*\*\*\*
Intersection #3 JASMINE AVENUE (NS) AT 5TH STREET (EW)
\*\*\*\*\*

Average Delay (sec/veh): 1.0 Worst Case Level Of Service: B[ 10.4]
\*\*\*\*\*

Table with 4 columns: North Bound, South Bound, East Bound, West Bound. Rows include Movement, Control, Rights, and Lanes.

Volume Module: Table with 13 columns for volume metrics (Base Vol, Growth Adj, Initial Bse, Added Vol, PasserByVol, Initial Fut, User Adj, PHF Adj, PHF Volume, Reduct Vol, Final Vol) and 4 columns for bound metrics.

Critical Gap Module: Table with 4 columns for bound metrics and 4 columns for gap metrics (Critical Gp, FollowUpTim).

Capacity Module: Table with 4 columns for bound metrics and 4 columns for capacity metrics (Cnflct Vol, Potent Cap., Move Cap., Volume/Cap.).

Level Of Service Module: Table with 4 columns for bound metrics and 4 columns for LOS metrics (Queue, Stopped Del, LOS by Move, Movement, Shared Cap., Shared Queue, Shrd StpDel, Shared LOS, ApproachDel, ApproachLOS).

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2000 HCM Unsignalized Method (Future Volume Alternative)

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Intersection #3 JASMINE AVENUE (NS) AT 5TH STREET (EW)

\*\*\*\*\*

Average Delay (sec/veh): 1.1 Worst Case Level Of Service: B [ 11.1]

\*\*\*\*\*

Table with 4 columns: North Bound, South Bound, East Bound, West Bound. Rows include Movement, Control, Rights, and Lanes.

Table with 12 columns representing traffic movements. Rows include Volume Module: peak afternoon volume, Base Vol, Growth Adj, Initial Bse, Added Vol, PasserByVol, Initial Fut, User Adj, PHF Adj, PHF Volume, Reduct Vol, and Final Vol.

Table with 12 columns representing traffic movements. Rows include Critical Gap Module: Critical Gp and FollowUpTim.

Table with 12 columns representing traffic movements. Rows include Capacity Module: Cnflct Vol, Potent Cap., Move Cap., and Volume/Cap.

Table with 12 columns representing traffic movements. Rows include Level Of Service Module: 2Way95thQ, Control Del, LOS by Move, Movement, Shared Cap., SharedQueue, Shrd ConDel, Shared LOS, ApproachDel, and ApproachLOS.

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

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\*\*\*\*\*
Intersection #4 HELEN AVENUE (NS) AT 5TH STREET (EW)
\*\*\*\*\*

Average Delay (sec/veh): 1.7 Worst Case Level Of Service: B[ 10.5]

Table with 4 columns: North Bound, South Bound, East Bound, West Bound. Rows include Approach, Movement, Control, Rights, and Lanes.

Volume Module: Table with 12 columns for volume metrics. Rows include Base Vol, Growth Adj, Initial Bse, Added Vol, PasserByVol, Initial Fut, User Adj, PHF Adj, PHF Volume, Reduct Vol, and Final Vol.

Critical Gap Module: Table with 12 columns for gap metrics. Rows include Critical Gp and FollowUpTim.

Capacity Module: Table with 12 columns for capacity metrics. Rows include Cnflct Vol, Potent Cap., Move Cap., and Volume/Cap.

Level Of Service Module: Table with 12 columns for LOS metrics. Rows include Queue, Stopped Del, LOS by Move, Movement, Shared Cap., Shared Queue, Shrd StpDel, Shared LOS, ApproachDel, and ApproachLOS.

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\*\*\*\*\*
Intersection #4 HELEN AVENUE (NS) AT 5TH STREET (EW)
\*\*\*\*\*

Average Delay (sec/veh): 0.7 Worst Case Level Of Service: B[ 12.0]

Table with 4 columns: North Bound, South Bound, East Bound, West Bound. Rows include Approach, Movement, Control, Rights, and Lanes.

Volume Module: peak afternoon volume. Table with 13 columns for various volume metrics like Base Vol, Growth Adj, Initial Bse, etc.

Critical Gap Module. Table with 13 columns for gap metrics like Critical Gp, FollowUpTim, etc.

Capacity Module. Table with 13 columns for capacity metrics like Cnflct Vol, Potent Cap., Move Cap., etc.

Level Of Service Module. Table with 13 columns for LOS metrics like 2Way95thQ, Control Del, LOS by Move, etc.

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

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\*\*\*\*\*
Intersection #5 ALDERBERRY (NS) AT 5TH STREET (EW)
\*\*\*\*\*

Average Delay (sec/veh): 1.9 Worst Case Level Of Service: B[ 11.3]
\*\*\*\*\*

Table with 4 columns: North Bound, South Bound, East Bound, West Bound. Rows include Movement, Control, Rights, and Lanes.

Volume Module: Table with 13 columns representing different volume metrics and 13 rows of data.

Critical Gap Module: Table with 13 columns representing gap metrics and 2 rows of data.

Capacity Module: Table with 13 columns representing capacity metrics and 4 rows of data.

Level Of Service Module: Table with 13 columns representing LOS metrics and 8 rows of data.



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\*\*\*\*\*
Intersection #5 ALDERBERRY (NS) AT 5TH STREET (EW)
\*\*\*\*\*

Average Delay (sec/veh): 1.7 Worst Case Level Of Service: B[ 11.8]

Table with 4 columns: North Bound, South Bound, East Bound, West Bound. Rows include Movement, Control, Rights, and Lanes.

Volume Module:

Table with 12 columns representing traffic flow metrics. Rows include Base Vol, Growth Adj, Initial Bse, Added Vol, PasserByVol, Initial Fut, User Adj, PHF Adj, PHF Volume, Reduct Vol, and Final Vol.

Critical Gap Module:

Table with 12 columns for critical gap metrics. Rows include Critical Gp and FollowUpTim.

Capacity Module:

Table with 12 columns for capacity metrics. Rows include Cnflct Vol, Potent Cap., Move Cap., and Volume/Cap.

Level Of Service Module:

Table with 12 columns for level of service metrics. Rows include 2Way95thQ, Control Del, LOS by Move, Movement, Shared Cap., SharedQueue, Shrd ConDel, Shared LOS, ApproachDel, and ApproachLOS.

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

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\*\*\*\*\*

Intersection #6 MOUNTAIN AVENUE (NS) AT 8TH STREET

\*\*\*\*\*

Cycle (sec): 105 Critical Vol./Cap. (X): 0.806

Loss Time (sec): 8 (Y+R = 4 sec) Average Delay (sec/veh): 43.1

Optimal Cycle:OPTIMIZED 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			Prot+Permit			Prot+Permit						
Rights:	Include			Include			Include			Include						
Min. Green:	24	24	24	24	24	24	10	25	25	10	25	25				
Lanes:	1	0	2	1	0	2	1	0	1	1	0	1	0	1	1	0

Volume Module:

Base Vol:	55	1095	74	86	1029	27	53	310	90	163	302	79
Growth Adj:	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04
Initial Bse:	57	1139	77	89	1070	28	55	322	94	170	314	82
Added Vol:	7	15	7	0	16	0	0	0	8	8	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	64	1154	84	89	1086	28	55	322	102	178	314	82
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:	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
PHF Volume:	68	1215	88	94	1143	30	58	339	107	187	331	86
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	68	1215	88	94	1143	30	58	339	107	187	331	86
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Vol.:	68	1215	88	94	1143	30	58	339	107	187	331	86

Saturation Flow Module:

Sat/Lane:	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Adjustment:	0.94	0.91	0.91	0.94	0.91	0.91	0.94	0.95	0.95	0.94	0.95	0.95
Lanes:	1.00	2.80	0.20	1.00	2.92	0.08	1.00	1.52	0.48	1.00	1.59	0.41
Final Sat.:	1700	4581	333	1700	4790	124	1700	2600	820	1700	2711	709

Capacity Analysis Module:

Vol/Sat:	0.04	0.27	0.27	0.06	0.24	0.24	0.00	0.13	0.13	0.00	0.12	0.12
Crit Moves:			****			****		****		****		
Green/Cycle:	0.30	0.30	0.30	0.27	0.27	0.27	0.10	0.24	0.24	0.12	0.26	0.26
Volume/Cap:	0.13	0.90	0.90	0.21	0.90	0.90	0.33	0.55	0.55	0.90	0.47	0.47
Delay/Veh:	27.2	42.9	42.9	30.1	45.4	45.4	44.8	35.8	35.8	80.5	33.3	33.3
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:	27.2	42.9	42.9	30.1	45.4	45.4	44.8	35.8	35.8	80.5	33.3	33.3
HCM2kAvg:	2	17	17	2	16	16	2	7	7	9	6	6

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Intersection #6 MOUNTAIN AVENUE (NS) AT 8TH STREET

\*\*\*\*\*

Cycle (sec): 120 Critical Vol./Cap. (X): 1.177

Loss Time (sec): 8 (Y+R=4.0 sec) Average Delay (sec/veh): 128.3

Optimal Cycle: OPTIMIZED 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			Prot+Permit			Prot+Permit			
Rights:	Include			Include			Include			Include			
Min. Green:	24	24	24	24	24	24	10	25	25	10	25	25	
Lanes:	1	0	2	1	0	2	1	0	1	1	0	1	0

Volume Module:

Base Vol:	115	1559	33	83	1410	72	207	839	118	144	284	24
Growth Adj:	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04
Initial Bse:	120	1621	34	86	1466	75	215	873	123	150	295	25
Added Vol:	16	32	16	0	31	0	0	0	15	15	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	136	1653	50	86	1497	75	215	873	138	165	295	25
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
PHF Volume:	143	1740	53	91	1576	79	227	918	145	173	311	26
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	143	1740	53	91	1576	79	227	918	145	173	311	26
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Vol.:	143	1740	53	91	1576	79	227	918	145	173	311	26

Saturation Flow Module:

Sat/Lane:	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Adjustment:	0.94	0.91	0.91	0.94	0.91	0.91	0.94	0.95	0.95	0.94	0.95	0.95
Lanes:	1.00	2.91	0.09	1.00	2.86	0.14	1.00	1.73	0.27	1.00	1.84	0.16
Final Sat.:	1700	4769	145	1700	4680	234	1700	2954	466	1700	3154	266

Capacity Analysis Module:

Vol/Sat:	0.08	0.36	0.36	0.05	0.34	0.34	0.00	0.31	0.31	0.00	0.10	0.10
Crit Moves:			****		****			****		****		
Green/Cycle:	0.31	0.31	0.31	0.28	0.28	0.28	0.13	0.26	0.26	0.09	0.21	0.21
Volume/Cap:	0.27	1.19	1.19	0.19	1.19	1.19	0.99	1.19	1.19	1.19	0.47	0.47
Delay/Veh:	31.9	136	136.0	32.9	138	137.9	107.7	143	142.9	191.2	41.9	41.9
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:	31.9	136	136.0	32.9	138	137.9	107.7	143	142.9	191.2	41.9	41.9
LOS by Move:	C	F	F	C	F	F	F	F	F	F	D	D
HCM2kAvgQ:	4	40	40	3	37	37	13	34	34	13	6	6

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

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Intersection #6 MOUNTAIN AVENUE (NS) AT 8TH STREET

\*\*\*\*\*

Cycle (sec): 80 Critical Vol./Cap. (X): 0.623

Loss Time (sec): 8 (Y+R = 4 sec) Average Delay (sec/veh): 27.5

Optimal Cycle:OPTIMIZED 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:	10	24	24	10	24	24	10	25	25	10	25	25
Lanes:	1	0	2	1	0	2	1	0	1	1	0	1

Volume Module:

Base Vol:	55	1095	74	86	1029	27	53	310	90	163	302	79
Growth Adj:	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04
Initial Bse:	57	1139	77	89	1070	28	55	322	94	170	314	82
Added Vol:	7	15	7	0	16	0	0	0	8	8	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	64	1154	84	89	1086	28	55	322	102	178	314	82
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:	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
PHF Volume:	68	1215	88	94	1143	30	58	339	107	187	331	86
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	68	1215	88	94	1143	30	58	339	107	187	331	86
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Vol.:	68	1215	88	94	1143	30	58	339	107	187	331	86

Saturation Flow Module:

Sat/Lane:	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Adjustment:	0.94	0.91	0.91	0.94	0.91	0.91	0.94	0.95	0.95	0.94	0.95	0.95
Lanes:	1.00	2.80	0.20	1.00	2.92	0.08	1.00	1.52	0.48	1.00	1.59	0.41
Final Sat.:	1700	4581	333	1700	4790	124	1700	2600	820	1700	2711	709

Capacity Analysis Module:

Vol/Sat:	0.04	0.27	0.27	0.06	0.24	0.24	0.03	0.13	0.13	0.11	0.12	0.12
Crit Moves:	****			****			****			****		
Green/Cycle:	0.13	0.33	0.33	0.13	0.32	0.32	0.13	0.31	0.31	0.14	0.32	0.32
Volume/Cap:	0.30	0.81	0.81	0.44	0.75	0.75	0.27	0.42	0.42	0.81	0.38	0.38
Delay/Veh:	32.1	27.9	27.9	33.9	26.4	26.4	32.1	22.0	22.0	52.7	21.3	21.3
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:	32.1	27.9	27.9	33.9	26.4	26.4	32.1	22.0	22.0	52.7	21.3	21.3
HCM2kAvg:	2	12	12	3	10	10	2	5	5	7	4	4

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Intersection #6 MOUNTAIN AVENUE (NS) AT 8TH STREET

\*\*\*\*\*

Cycle (sec): 105 Critical Vol./Cap.(X): 0.900

Loss Time (sec): 8 (Y+R=4.0 sec) Average Delay (sec/veh): 43.8

Optimal Cycle: OPTIMIZED Level Of Service: D

\*\*\*\*\*

Table with columns: Approach, Movement, Control, Rights, Min. Green, Lanes. Rows for North, South, East, and West bounds.

Volume Module:

Table with columns: Base Vol, Growth Adj, Initial Bse, Added Vol, PasserByVol, Initial Fut, User Adj, PHF Adj, PHF Volume, Reduct Vol, Reduced Vol, PCE Adj, MLF Adj, Final Vol.

Saturation Flow Module:

Table with columns: Sat/Lane, Adjustment, Lanes, Final Sat.

Capacity Analysis Module:

Table with columns: Vol/Sat, Crit Moves, Green/Cycle, Volume/Cap, Delay/Veh, User DelAdj, AdjDel/Veh, LOS by Move, HCM2kAvgQ.

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

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Intersection #7 MOUNTAIN AVENUE (NS) AT 7TH STREET (EW)
\*\*\*\*\*

Cycle (sec): 85 Critical Vol./Cap. (X): 0.596
Loss Time (sec): 6 (Y+R = 4 sec) Average Delay (sec/veh): 21.1
Optimal Cycle:OPTIMIZED Level Of Service: C
\*\*\*\*\*

Table with columns: Approach (North Bound, South Bound, East Bound, West Bound), Movement (L, T, R), Control (Protected, Permitted), Rights (Include), Min. Green, Lanes.

Volume Module:
Base Vol: 222 954 106 9 1466 62 65 48 215 163 37 11
Growth Adj: 1.04 1.04 1.04 1.04 1.04 1.04 1.04 1.04 1.04 1.04 1.04 1.04
Initial Bse: 231 992 110 9 1525 64 68 50 224 170 38 11
Added Vol: 0 29 0 0 31 0 0 0 0 0 0 0
PasserByVol: 0 0 0 0 0 0 0 0 0 0 0 0
Initial Fut: 231 1021 110 9 1556 64 68 50 224 170 38 11
User Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00
PHF Adj: 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95
PHF Volume: 243 1075 116 10 1638 68 71 53 235 178 41 12
Reduct Vol: 0 0 0 0 0 0 0 0 0 0 0 0
Reduced Vol: 243 1075 116 10 1638 68 71 53 235 178 41 12
PCE Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00
MLF Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00
Final Vol.: 243 1075 116 10 1638 68 71 53 235 178 41 12

Saturation Flow Module:
Sat/Lane: 1800 1800 1800 1800 1800 1800 1800 1800 1800 1800 1800 1800
Adjustment: 0.89 0.95 1.00 0.94 0.91 0.91 0.94 1.00 1.00 0.94 1.00 1.00
Lanes: 2.00 2.00 1.00 1.00 2.88 0.12 1.18 0.82 1.00 1.64 0.28 0.08
Final Sat.: 3200 3420 1800 1700 4718 196 2003 1479 1800 2792 496 147

Capacity Analysis Module:
Vol/Sat: 0.08 0.31 0.06 0.01 0.35 0.35 0.04 0.04 0.13 0.06 0.08 0.08
Crit Moves: \*\*\*\*
Green/Cycle: 0.12 0.44 0.44 0.16 0.48 0.48 0.33 0.33 0.33 0.33 0.33 0.33
Volume/Cap: 0.65 0.72 0.15 0.04 0.72 0.72 0.11 0.11 0.40 0.19 0.25 0.25
Delay/Veh: 39.7 21.4 14.5 30.0 18.5 18.5 19.9 19.9 22.4 20.5 21.0 21.0
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: 39.7 21.4 14.5 30.0 18.5 18.5 19.9 19.9 22.4 20.5 21.0 21.0
HCM2kAvg: 4 13 2 0 13 13 1 1 5 2 3 3

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Intersection #7 MOUNTAIN AVENUE (NS) AT 7TH STREET (EW)

\*\*\*\*\*

Cycle (sec): 105 Critical Vol./Cap.(X): 0.744

Loss Time (sec): 6 (Y+R=4.0 sec) Average Delay (sec/veh): 26.1

Optimal Cycle: OPTIMIZED Level Of Service: C

\*\*\*\*\*

Table with 4 columns: North Bound, South Bound, East Bound, West Bound. Rows include Movement, Control, Rights, Min. Green, and Lanes.

Volume Module: Table with 12 columns for different traffic movements and 12 rows for various volume and adjustment factors.

Saturation Flow Module: Table with 12 columns for different traffic movements and 4 rows for saturation flow and adjustment factors.

Capacity Analysis Module: Table with 12 columns for different traffic movements and 10 rows for capacity and delay analysis.

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

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Intersection #8 MOUNTAIN AVENUE (NS) AT WESTBOUND I-10 RAMPS
\*\*\*\*\*

Cycle (sec): 120 Critical Vol./Cap. (X): 0.784
Loss Time (sec): 6 (Y+R = 4 sec) Average Delay (sec/veh): 40.9
Optimal Cycle:OPTIMIZED Level Of Service: D
\*\*\*\*\*

Table with 4 columns: North Bound, South Bound, East Bound, West Bound. Rows include Approach, Movement, Control, Rights, Min. Green, and Lanes.

Volume Module: Table with 12 columns representing different traffic movements and 11 rows of volume-related metrics like Base Vol, Growth Adj, Initial Bse, etc.

Saturation Flow Module: Table with 12 columns and 4 rows showing saturation flow rates and adjustment factors.

Capacity Analysis Module: Table with 12 columns and 10 rows showing capacity analysis metrics like Vol/Sat, Crit Moves, Green/Cycle, etc.

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Intersection #8 MOUNTAIN AVENUE (NS) AT WESTBOUND I-10 RAMPS

\*\*\*\*\*

Cycle (sec): 120 Critical Vol./Cap.(X): 0.841
Loss Time (sec): 6 (Y+R=4.0 sec) Average Delay (sec/veh): 46.5
Optimal Cycle: OPTIMIZED Level Of Service: D

\*\*\*\*\*

Table with 4 columns: North Bound, South Bound, East Bound, West Bound. Rows include Approach, Movement, Control, Rights, Min. Green, and Lanes.

Volume Module:

Table with 12 columns representing different volume metrics like Base Vol, Growth Adj, Initial Bse, etc.

Saturation Flow Module:

Table with 12 columns representing saturation flow metrics like Sat/Lane, Adjustment, Lanes, etc.

Capacity Analysis Module:

Table with 12 columns representing capacity analysis metrics like Vol/Sat, Crit Moves, Green/Cycle, etc.

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

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TRAFFIC IMPACT STUDY
ONTARIO, CALIFORNIA

Level Of Service Computation Report

2000 HCM Operations Method (Future Volume Alternative)

\*\*\*\*\*
Intersection #9 MOUNTAIN AVENUE (NS) AT EASTBOUND I-10 RAMPS (EW)
\*\*\*\*\*

Cycle (sec): 105 Critical Vol./Cap. (X): 0.845
Loss Time (sec): 6 (Y+R = 4 sec) Average Delay (sec/veh): 33.3
Optimal Cycle:OPTIMIZED Level Of Service: C
\*\*\*\*\*

Table with 4 columns: North Bound, South Bound, East Bound, West Bound. Rows include Approach, Movement, Control, Rights, Min. Green, and Lanes.

Volume Module: Table with 12 columns representing different traffic movements and 10 rows of volume-related metrics like Base Vol, Growth Adj, Initial Bse, etc.

Saturation Flow Module: Table with 12 columns and 4 rows showing saturation flow rates and adjustment factors.

Capacity Analysis Module: Table with 12 columns and 10 rows showing capacity analysis metrics like Vol/Sat, Crit Moves, Green/Cycle, etc.

\*\*\*\*\*

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Intersection #9 MOUNTAIN AVENUE (NS) AT EASTBOUND I-10 RAMPS (EW)

\*\*\*\*\*

Cycle (sec): 110 Critical Vol./Cap.(X): 0.959

Loss Time (sec): 6 (Y+R=4.0 sec) Average Delay (sec/veh): 40.2

Optimal Cycle: OPTIMIZED Level of Service: D

\*\*\*\*\*

Table with columns: Approach, Movement, Control, Rights, Min. Green, Lanes. Rows: North Bound, South Bound, East Bound, West Bound.

Volume Module:

Table with columns: Base Vol, Growth Adj, Initial Bse, Added Vol, PasserByVol, Initial Fut, User Adj, PHF Adj, PHF Volume, Reduct Vol, Reduced Vol, PCE Adj, MLF Adj, Final Vol.

Saturation Flow Module:

Table with columns: Sat/Lane, Adjustment, Lanes, Final Sat.

Capacity Analysis Module:

Table with columns: Vol/Sat, Crit Moves, Green/Cycle, Volume/Cap, Delay/Veh, User DelAdj, AdjDel/Veh, LOS by Move, HCM2kAvgQ.

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

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Intersection #10 MOUNTAIN AVENUE (NS) AT AT 6TH STREET (EW)

\*\*\*\*\*

Cycle (sec): 120 Critical Vol./Cap. (X): 1.015
Loss Time (sec): 8 (Y+R = 4 sec) Average Delay (sec/veh): 90.7
Optimal Cycle:OPTIMIZED Level Of Service: F

\*\*\*\*\*

Table with 4 columns: Approach (North Bound, South Bound, East Bound, West Bound) and Movement (L, T, R). Rows include Control, Rights, Min. Green, and Lanes.

Volume Module:

Table with 12 columns representing different traffic movements. Rows include Base Vol, Growth Adj, Initial Bse, Added Vol, PasserByVol, Initial Fut, User Adj, PHF Adj, PHF Volume, Reduct Vol, Reduced Vol, PCE Adj, MLF Adj, and Final Vol.

Saturation Flow Module:

Table with 12 columns representing different traffic movements. Rows include Sat/Lane, Adjustment, Lanes, and Final Sat.

Capacity Analysis Module:

Table with 12 columns representing different traffic movements. Rows include Vol/Sat, Crit Moves, Green/Cycle, Volume/Cap, Delay/Veh, User DelAdj, AdjDel/Veh, and HCM2kAvg.

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Intersection #10 MOUNTAIN AVENUE (NS) AT AT 6TH STREET (EW)

\*\*\*\*\*

Cycle (sec): 120 Critical Vol./Cap.(X): 1.207

Loss Time (sec): 8 (Y+R=4.0 sec) Average Delay (sec/veh): 169.3

Optimal Cycle: OPTIMIZED Level Of Service: F

\*\*\*\*\*

Table with 4 columns: North Bound, South Bound, East Bound, West Bound. Rows include Approach, Movement, Control, Rights, Min. Green, and Lanes.

Volume Module:

Table with 12 columns representing different volume metrics and 12 rows of data including Base Vol, Growth Adj, Initial Bse, Added Vol, PasserByVol, Initial Fut, User Adj, PHF Adj, PHF Volume, Reduct Vol, Reduced Vol, PCE Adj, MLF Adj, and Final Vol.

Saturation Flow Module:

Table with 12 columns representing saturation flow metrics and 4 rows of data including Sat/Lane, Adjustment, Lanes, and Final Sat.

Capacity Analysis Module:

Table with 12 columns representing capacity analysis metrics and 10 rows of data including Vol/Sat, Crit Moves, Green/Cycle, Volume/Cap, Delay/Veh, User DelAdj, AdjDel/Veh, LOS by Move, and HCM2kAvgQ.

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

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 Intersection #10 MOUNTAIN AVENUE (NS) AT AT 6TH STREET (EW)  
 \*\*\*\*\*

Cycle (sec): 120 Critical Vol./Cap. (X): 0.634  
 Loss Time (sec): 8 (Y+R = 4 sec) Average Delay (sec/veh): 26.5  
 Optimal Cycle:OPTIMIZED 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			Ovl			Include			Include		
Min. Green:	10	18	18	10	18	18	10	25	25	10	25	25
Lanes:	2	0	2	0	2	0	1	2	0	1	1	0

Volume Module:

Base Vol:	44	1149	70	130	1027	92	77	62	174	64	76	77
Growth Adj:	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04
Initial Bse:	46	1195	73	135	1068	96	80	64	181	67	79	80
Added Vol:	0	88	0	0	93	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	46	1283	73	135	1161	96	80	64	181	67	79	80
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:	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
PHF Volume:	48	1350	77	142	1222	101	84	68	190	70	83	84
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	48	1350	77	142	1222	101	84	68	190	70	83	84
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Vol.:	48	1350	77	142	1222	101	84	68	190	70	83	84

Saturation Flow Module:

Sat/Lane:	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Adjustment:	0.89	0.95	1.00	0.89	0.95	1.00	0.89	0.95	0.95	0.94	0.95	0.95
Lanes:	2.00	2.00	1.00	2.00	2.00	1.00	2.00	1.00	1.00	1.00	1.00	1.00
Final Sat.:	3200	3420	1800	3200	3420	1800	3200	1710	1710	1700	1710	1710

Capacity Analysis Module:

Vol/Sat:	0.02	0.39	0.04	0.04	0.36	0.06	0.03	0.04	0.11	0.04	0.05	0.05
Crit Moves:	****			****			****			****		
Green/Cycle:	0.12	0.56	0.56	0.08	0.52	0.60	0.08	0.21	0.21	0.08	0.21	0.21
Volume/Cap:	0.12	0.71	0.08	0.53	0.69	0.09	0.32	0.19	0.53	0.49	0.23	0.24
Delay/Veh:	47.2	20.6	12.3	54.9	22.6	10.0	52.5	39.2	43.5	55.3	39.7	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:	47.2	20.6	12.3	54.9	22.6	10.0	52.5	39.2	43.5	55.3	39.7	39.7
HCM2kAvg:	1	19	1	3	17	2	2	2	7	3	3	3

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\*\*\*\*\*
Intersection #10 MOUNTAIN AVENUE (NS) AT AT 6TH STREET (EW)
\*\*\*\*\*

Cycle (sec): 120 Critical Vol./Cap.(X): 0.802
Loss Time (sec): 8 (Y+P=4.0 sec) Average Delay (sec/veh): 51.4
Optimal Cycle: OPTIMIZED Level Of Service: D
\*\*\*\*\*

Table with 4 columns: North Bound, South Bound, East Bound, West Bound. Rows include Movement (L, T, R), Control (Protected), Rights (Include, Ovl), Min. Green, and Lanes.

Volume Module: Table with 12 columns representing different traffic volumes and adjustment factors like Base Vol, Growth Adj, Initial Bse, etc.

Saturation Flow Module: Table with 12 columns showing saturation flow rates, adjustment factors, lanes, and final saturation values.

Capacity Analysis Module: Table with 12 columns showing capacity analysis metrics like Vol/Sat, Crit Moves, Green/Cycle, etc.

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

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Intersection #11 MOUNTAIN AVENUE (NS) AT 5TH STREET (EW)

\*\*\*\*\*

Cycle (sec): 95 Critical Vol./Cap. (X): 0.645

Loss Time (sec): 6 (Y+R = 4 sec) Average Delay (sec/veh): 18.8

Optimal Cycle:OPTIMIZED 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: Prot+Permit Prot+Permit Permitted Permitted
Rights: Include Include Include Include

Min. Green: 10 13 13 10 13 13 21 21 21 21 21 21

Lanes: 1 0 1 1 0 1 1 0 1 0 1 0 1 0 0 1 0

Volume Module:

Table with 12 columns and 15 rows of traffic volume data including Base Vol, Growth Adj, Initial Bse, Added Vol, PasserByVol, Initial Fut, User Adj, PHF Adj, PHF Volume, Reduct Vol, Reduced Vol, PCE Adj, MLF Adj, and Final Vol.

Saturation Flow Module:

Table with 12 columns and 4 rows of saturation flow data including Sat/Lane, Adjustment, Lanes, and Final Sat.

Capacity Analysis Module:

Table with 12 columns and 10 rows of capacity analysis data including Vol/Sat, Crit Moves, Green/Cycle, Volume/Cap, Delay/Veh, User DelAdj, AdjDel/Veh, and HCM2kAvg.

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Intersection #11 MOUNTAIN AVENUE (NS) AT 5TH STREET (EW)

Cycle (sec): 115 Critical Vol./Cap.(X): 0.879
Loss Time (sec): 6 (Y+R=4.0 sec) Average Delay (sec/veh): 27.9
Optimal Cycle: OPTIMIZED Level of Service: C

Table with 4 columns: North Bound, South Bound, East Bound, West Bound. Rows include Movement, Control, Rights, Min. Green, and Lanes.

Volume Module: Table with 12 columns representing different traffic components and 12 rows of data including Base Vol, Growth Adj, Initial Bse, etc.

Saturation Flow Module: Table with 12 columns and 4 rows of data including Sat/Lane, Adjustment, Lanes, and Final Sat.

Capacity Analysis Module: Table with 12 columns and 10 rows of data including Vol/Sat, Crit Moves, Green/Cycle, etc.

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

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\*\*\*\*\*

Intersection #12 MOUNTAIN AVENUE (NS) AT 4TH STREET (EW)

\*\*\*\*\*

Cycle (sec): 75 Critical Vol./Cap. (X): 0.541

Loss Time (sec): 6 (Y+R = 4 sec) Average Delay (sec/veh): 18.2

Optimal Cycle:OPTIMIZED Level Of Service: B

\*\*\*\*\*

Table with 4 columns: Approach (North Bound, South Bound, East Bound, West Bound) and Movement (L, T, R). Rows include Control, Rights, Min. Green, and Lanes.

Volume Module:

Table with 12 columns representing different traffic movements. Rows include Base Vol, Growth Adj, Initial Bse, Added Vol, PasserByVol, Initial Fut, User Adj, PHF Adj, PHF Volume, Reduct Vol, Reduced Vol, PCE Adj, MLF Adj, and Final Vol.

Saturation Flow Module:

Table with 12 columns representing different traffic movements. Rows include Sat/Lane, Adjustment, Lanes, and Final Sat.

Capacity Analysis Module:

Table with 12 columns representing different traffic movements. Rows include Vol/Sat, Crit Moves, Green/Cycle, Volume/Cap, Delay/Veh, User DelAdj, AdjDel/Veh, and HCM2kAvg.

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Intersection #12 MOUNTAIN AVENUE (NS) AT 4TH STREET (EW)

\*\*\*\*\*

Cycle (sec): 90 Critical Vol./Cap.(X): 0.753

Loss Time (sec): 6 (Y+R=4.0 sec) Average Delay (sec/veh): 23.7

Optimal Cycle: OPTIMIZED Level Of Service: C

\*\*\*\*\*

Table with 4 columns: North Bound, South Bound, East Bound, West Bound. Rows include Approach, Movement, Control, Rights, Min. Green, and Lanes.

Volume Module:

Table with 12 columns representing different volume metrics and 12 rows of data including Base Vol, Growth Adj, Initial Bse, etc.

Saturation Flow Module:

Table with 12 columns representing saturation flow metrics and 4 rows of data including Sat/Lane, Adjustment, Lanes, and Final Sat.

Capacity Analysis Module:

Table with 12 columns representing capacity analysis metrics and 10 rows of data including Vol/Sat, Crit Moves, Green/Cycle, etc.

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

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\*\*\*\*\*  
 Intersection #13 MOUNTAIN AVENUE (NS) AT HOLT BOULEVARD (EW)  
 \*\*\*\*\*

Cycle (sec): 85 Critical Vol./Cap. (X): 0.728  
 Loss Time (sec): 8 (Y+R = 4 sec) Average Delay (sec/veh): 32.4  
 Optimal Cycle:OPTIMIZED 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:	10	22	22	10	22	22	10	24	24	10	24	24
Lanes:	1	0	2	0	1	1	0	1	1	0	1	0

Volume Module:

Base Vol:	161	1018	139	94	913	111	41	270	115	152	455	112
Growth Adj:	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04
Initial Bse:	167	1059	145	98	950	115	43	281	120	158	473	116
Added Vol:	0	16	0	7	15	7	8	0	0	0	0	8
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	167	1075	145	105	965	122	51	281	120	158	473	124
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:	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
PHF Volume:	176	1131	152	110	1015	129	53	296	126	166	498	131
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	176	1131	152	110	1015	129	53	296	126	166	498	131
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Vol.:	176	1131	152	110	1015	129	53	296	126	166	498	131

Saturation Flow Module:

Sat/Lane:	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Adjustment:	0.94	0.95	1.00	0.94	0.95	0.95	0.94	0.95	0.95	0.94	0.95	1.00
Lanes:	1.00	2.00	1.00	1.00	1.77	0.23	1.00	1.40	0.60	1.00	2.00	1.00
Final Sat.:	1700	3420	1800	1700	3035	385	1700	2398	1022	1700	3420	1800

Capacity Analysis Module:

Vol/Sat:	0.10	0.33	0.08	0.06	0.33	0.33	0.03	0.12	0.12	0.10	0.15	0.07
Crit Moves:	****			****			****			****		
Green/Cycle:	0.12	0.37	0.37	0.13	0.39	0.39	0.12	0.28	0.28	0.12	0.28	0.28
Volume/Cap:	0.87	0.89	0.23	0.49	0.87	0.87	0.27	0.44	0.44	0.83	0.52	0.26
Delay/Veh:	66.8	32.8	18.4	35.9	30.3	30.3	34.9	25.3	25.3	61.3	26.1	23.9
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:	66.8	32.8	18.4	35.9	30.3	30.3	34.9	25.3	25.3	61.3	26.1	23.9
HCM2kAvg:	7	18	3	3	17	17	2	5	5	7	6	3

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2000 HCM Operations Method (Future Volume Alternative)

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Intersection #13 MOUNTAIN AVENUE (NS) AT HOLT BOULEVARD (EW)

\*\*\*\*\*

Cycle (sec): 115 Critical Vol./Cap.(X): 1.386

Loss Time (sec): 8 (Y+R=4.0 sec) Average Delay (sec/veh): 171.0

Optimal Cycle: OPTIMIZED Level Of Service: F

\*\*\*\*\*

Table with columns: Approach, Movement, Control, Rights, Min. Green, Lanes. Rows for North, South, East, and West bounds.

Volume Module: Table with columns for various volume metrics (Base Vol, Growth Adj, etc.) and 12 rows of data.

Saturation Flow Module: Table with columns for Sat/Lane, Adjustment, Lanes, Final Sat., and 12 rows of data.

Capacity Analysis Module: Table with columns for Vol/Sat, Crit Moves, Green/Cycle, Volume/Cap, Delay/Veh, User DelAdj, AdjDel/Veh, LOS by Move, HCM2kAvgQ, and 12 rows of data.

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

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Intersection #13 MOUNTAIN AVENUE (NS) AT HOLT BOULEVARD (EW)

\*\*\*\*\*

Cycle (sec): 75 Critical Vol./Cap. (X): 0.475  
Loss Time (sec): 8 (Y+R = 4 sec) Average Delay (sec/veh): 24.0  
Optimal Cycle: OPTIMIZED 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:	10	22	22	10	22	22	10	24	24	10	24	24						
Lanes:	2	0	3	0	1		2	0	1	1	0		2	0	2	0	1	

Volume Module:

Base Vol:	161	1018	139	94	913	111	41	270	115	152	455	112
Growth Adj:	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04
Initial Bse:	167	1059	145	98	950	115	43	281	120	158	473	116
Added Vol:	0	16	0	7	15	7	8	0	0	0	0	8
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	167	1075	145	105	965	122	51	281	120	158	473	124
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:	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
PHF Volume:	176	1131	152	110	1015	129	53	296	126	166	498	131
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	176	1131	152	110	1015	129	53	296	126	166	498	131
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Vol.:	176	1131	152	110	1015	129	53	296	126	166	498	131

Saturation Flow Module:

Sat/Lane:	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Adjustment:	0.89	0.91	1.00	0.89	0.91	1.00	0.89	0.95	0.95	0.89	0.95	1.00
Lanes:	2.00	3.00	1.00	2.00	3.00	1.00	2.00	1.40	0.60	2.00	2.00	1.00
Final Sat.:	3200	4914	1800	3200	4914	1800	3200	2398	1022	3200	3420	1800

Capacity Analysis Module:

Vol/Sat:	0.06	0.23	0.08	0.03	0.21	0.07	0.02	0.12	0.12	0.05	0.15	0.07
Crit Moves:	****			****			****			****		
Green/Cycle:	0.13	0.30	0.30	0.14	0.31	0.31	0.13	0.32	0.32	0.13	0.32	0.32
Volume/Cap:	0.41	0.76	0.28	0.25	0.67	0.23	0.12	0.39	0.39	0.39	0.46	0.23
Delay/Veh:	30.5	26.1	20.2	29.2	23.9	19.6	28.8	20.0	20.0	30.3	20.6	18.9
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:	30.5	26.1	20.2	29.2	23.9	19.6	28.8	20.0	20.0	30.3	20.6	18.9
HCM2kAvg:	2	10	3	1	8	2	1	4	4	2	5	2

\*\*\*\*\*

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2000 HCM Operations Method (Future Volume Alternative)

\*\*\*\*\*  
 Intersection #13 MOUNTAIN AVENUE (NS) AT HOLT BOULEVARD (EW)  
 \*\*\*\*\*

Cycle (sec): 95 Critical Vol./Cap.(X): 1.003  
 Loss Time (sec): 8 (Y+R=4.0 sec) Average Delay (sec/veh): 51.9  
 Optimal Cycle: OPTIMIZED 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:	10	22	22	10	22	22	10	24	24	10	24	24
Lanes:	2	0	3	0	1		2	0	3	0	1	

Volume Module:

Base Vol:	315	1112	293	249	1122	202	278	1118	280	312	1153	241
Growth Adj:	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04
Initial Bse:	328	1156	305	259	1167	210	289	1163	291	324	1199	251
Added Vol:	0	31	0	16	32	16	15	0	0	0	0	15
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	328	1187	305	275	1199	226	304	1163	291	324	1199	266
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:	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
PHF Volume:	345	1250	321	289	1262	238	320	1224	307	342	1262	280
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	345	1250	321	289	1262	238	320	1224	307	342	1262	280
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Vol.:	345	1250	321	289	1262	238	320	1224	307	342	1262	280

Saturation Flow Module:

Sat/Lane:	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Adjustment:	0.89	0.91	1.00	0.89	0.91	1.00	0.89	0.95	0.95	0.89	0.95	1.00
Lanes:	2.00	3.00	1.00	2.00	3.00	1.00	2.00	1.60	0.40	2.00	2.00	1.00
Final Sat.:	3200	4914	1800	3200	4914	1800	3200	2735	685	3200	3420	1800

Capacity Analysis Module:

Vol/Sat:	0.11	0.25	0.18	0.09	0.26	0.13	0.10	0.45	0.45	0.11	0.37	0.16
Crit Moves:	****			****			****			****		
Green/Cycle:	0.11	0.26	0.26	0.11	0.26	0.26	0.12	0.45	0.45	0.11	0.43	0.43
Volume/Cap:	1.00	0.99	0.69	0.85	1.00	0.52	0.82	1.00	1.00	1.00	0.86	0.36
Delay/Veh:	91.8	57.9	36.4	59.7	61.5	31.3	53.1	50.1	50.1	92.1	29.8	18.6
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:	91.8	57.9	36.4	59.7	61.5	31.3	53.1	50.1	50.1	92.1	29.8	18.6
LOS by Move:	F	E	D	E	E	C	D	D	D	F	C	B
HCM2kAvgQ:	10	19	10	7	20	6	7	31	31	10	20	6

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

ONTARIO WALMART SUPERSTORE
TRAFFIC IMPACT STUDY
ONTARIO, CALIFORNIA

Level Of Service Computation Report

2000 HCM 4-Way Stop Method (Future Volume Alternative)

Intersection #14 SAN ANTONIO AVE (NS) AT 6TH STREET (EW)

Cycle (sec): 100 Critical Vol./Cap. (X): 0.401
Loss Time (sec): 0 (Y+R = 4 sec) Average Delay (sec/veh): 12.5
Optimal Cycle: 0 Level Of Service: B

Table with columns: Approach (North Bound, South Bound, East Bound, West Bound), Movement (L, T, R), Control, Rights, Min. Green, Lanes.

Volume Module table with columns: Base Vol, Growth Adj, Initial Bse, Added Vol, PasserByVol, Initial Fut, User Adj, PHF Adj, PHF Volume, Reduct Vol, Reduced Vol, PCE Adj, MLF Adj, Final Vol.

Saturation Flow Module table with columns: Adjustment, Lanes, Final Sat.

Capacity Analysis Module table with columns: Vol/Sat, Crit Moves, Delay/Veh, Delay Adj, AdjDel/Veh, LOS by Move, ApproachDel, Delay Adj, ApprAdjDel, LOS by Appr.



ONTARIO WALMART SUPERSTORE
TRAFFIC IMPACT STUDY
ONTARIO, CALIFORNIA

Level Of Service Computation Report

2000 HCM 4-Way Stop Method (Future Volume Alternative)

\*\*\*\*\*
Intersection #14 SAN ANTONIO AVE (NS) AT 6TH STREET (EW)
\*\*\*\*\*

Cycle (sec): 100 Critical Vol./Cap.(X): 0.537
Loss Time (sec): 0 (Y+R::4.0 sec) Average Delay (sec/veh): 14.9
Optimal Cycle: 0 Level Of Service: B
\*\*\*\*\*

Table with 4 columns: North Bound, South Bound, East Bound, West Bound. Rows include Movement, Control, Rights, Min. Green, and Lanes.

Volume Module: Table with 12 columns representing different traffic movements and 12 rows of volume-related metrics like Base Vol, Growth Adj, etc.

Saturation Flow Module: Table with 12 columns and 3 rows showing adjustment factors, lane saturation, and final saturation.

Capacity Analysis Module: Table with 12 columns and 12 rows analyzing capacity, delay, LOS, and approach delay for each movement.

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

ONTARIO WALMART SUPERSTORE
TRAFFIC IMPACT STUDY
ONTARIO, CALIFORNIA

Level Of Service Computation Report
2000 HCM 4-Way Stop Method (Future Volume Alternative)

\*\*\*\*\*
Intersection #15 SAN ANTONIO AVE (NS) AT 5TH STREET (EW)
\*\*\*\*\*

Cycle (sec): 100 Critical Vol./Cap. (X): 0.556
Loss Time (sec): 0 (Y+R = 4 sec) Average Delay (sec/veh): 15.3
Optimal Cycle: 0 Level Of Service: C
\*\*\*\*\*

Table with 4 columns: North Bound, South Bound, East Bound, West Bound. Rows include Movement (L-T-R), Control (Stop Sign), Rights (Include), Min. Green (0 0 0), and Lanes (0 1 0 1 0).

Volume Module: Table with 12 columns for traffic movements. Rows include Base Vol, Growth Adj, Initial Bse, Added Vol, PasserByVol, Initial Fut, User Adj, PHF Adj, PHF Volume, Reduct Vol, Reduced Vol, PCE Adj, MLF Adj, and Final Vol.

Saturation Flow Module: Table with 12 columns for traffic movements. Rows include Adjustment (1.00), Lanes (0.29), and Final Sat. (152).

Capacity Analysis Module: Table with 12 columns for traffic movements. Rows include Vol/Sat (0.56), Crit Moves (\*\*\*\*), Delay/Veh (17.3), Delay Adj (1.00), AdjDel/Veh (17.3), LOS by Move (C), ApproachDel (16.5), Delay Adj (1.00), ApprAdjDel (16.5), and LOS by Appr (C).

\*\*\*\*\*

ONTARIO WALMART SUPERSTORE  
 TRAFFIC IMPACT STUDY  
 ONTARIO, CALIFORNIA

Level Of Service Computation Report

2000 HCM 4-Way Stop Method (Future Volume Alternative)

\*\*\*\*\*  
 Intersection #15 SAN ANTONIO AVE (NS) AT 5TH STREET (EW)  
 \*\*\*\*\*

Cycle (sec): 100 Critical Vol./Cap.(X): 0.470  
 Loss Time (sec): 0 (Y+R=4.0 sec) Average Delay (sec/veh): 13.6  
 Optimal Cycle: 0 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:	Stop Sign			Stop Sign			Stop Sign			Stop Sign		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Lanes:	0	1	0	1	0	0	0	1	0	1	0	0

Volume Module:

Base Vol:	33	391	45	21	418	37	19	90	33	38	67	14
Growth Adj:	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04
Initial Bse:	34	407	47	22	435	38	20	94	34	40	70	15
Added Vol:	3	0	0	0	0	3	3	6	3	0	6	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	37	407	47	22	435	41	23	100	37	40	76	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:	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
PHF Volume:	39	428	49	23	458	44	24	105	39	42	80	15
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	39	428	49	23	458	44	24	105	39	42	80	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
Final Vol.:	39	428	49	23	458	44	24	105	39	42	80	15

Saturation Flow Module:

Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	0.15	1.66	0.19	0.09	1.74	0.17	0.19	0.81	1.00	0.30	0.59	0.11
Final Sat.:	84	933	109	49	985	95	85	374	509	142	273	52

Capacity Analysis Module:

Vol/Sat:	0.47	0.46	0.45	0.47	0.46	0.46	0.28	0.28	0.08	0.29	0.29	0.29
Crit Moves:	****			****			****			****		
Delay/Veh:	14.2	13.9	13.6	14.3	14.0	13.7	12.6	12.6	9.7	12.9	12.9	12.9
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
AdjDel/Veh:	14.2	13.9	13.6	14.3	14.0	13.7	12.6	12.6	9.7	12.9	12.9	12.9
LOS by Move:	B	B	B	B	B	B	B	B	A	B	B	B
ApproachDel:	13.9			14.0			12.0			12.9		
Delay Adj:	1.00			1.00			1.00			1.00		
ApprAdjDel:	13.9			14.0			12.0			12.9		
LOS by Appr:	B			B			B			B		
AllWayAvgQ:	0.8	0.8	0.8	0.8	0.8	0.8	0.3	0.3	0.1	0.4	0.4	0.4

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

## **Appendix G**

Traffic Signal Warrant Worksheets

## WARRANT 3, PEAK HOUR (Urban Areas)

Traffic Conditions = **PROJECT BUILDOUT PLUS PROJECT**

Major Street Name = **BENSON**

Total of Both Approaches (VPH) = **1234**

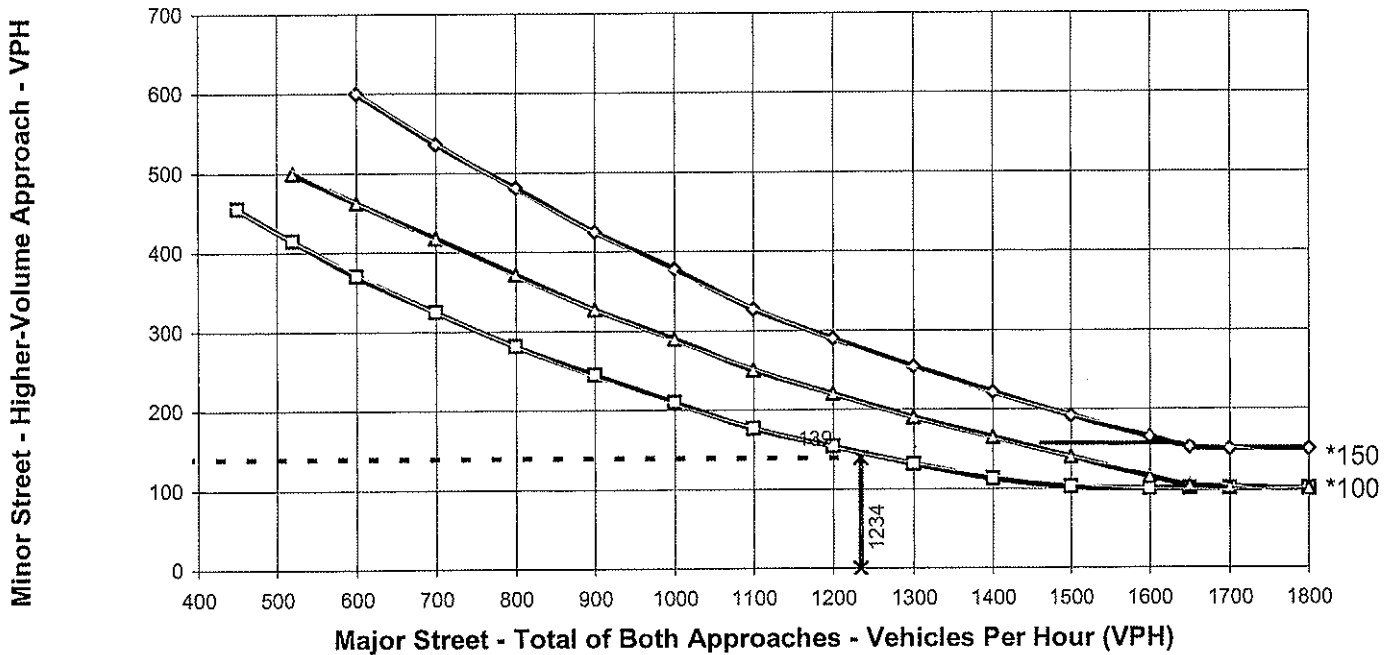
Number of Approach Lanes on Major Street = **2**

Minor Street Name = **6TH STREET**

High Volume Approach (VPH) = **139**

Number of Approach Lanes On Minor Street = **1**

**SIGNAL WARRANT NOT SATISFIED**



- 1 Lane (Major) & 1 Lane (Minor)
- △— 2+ Lanes (Major) & 1 Lane (Minor) OR 1 Lane (Major) & 2+ Lanes (Minor)
- ◇— 2+ Lanes (Major) & 2+ Lanes (Minor)
- ×— Major Street Approaches
- \* - Minor Street Approaches

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

## WARRANT 3, PEAK HOUR (Urban Areas)

Traffic Conditions = **PROJECT BUILDOUT PLUS PROJECT**

Major Street Name = **BENSON**

Total of Both Approaches (VPH) = **996**

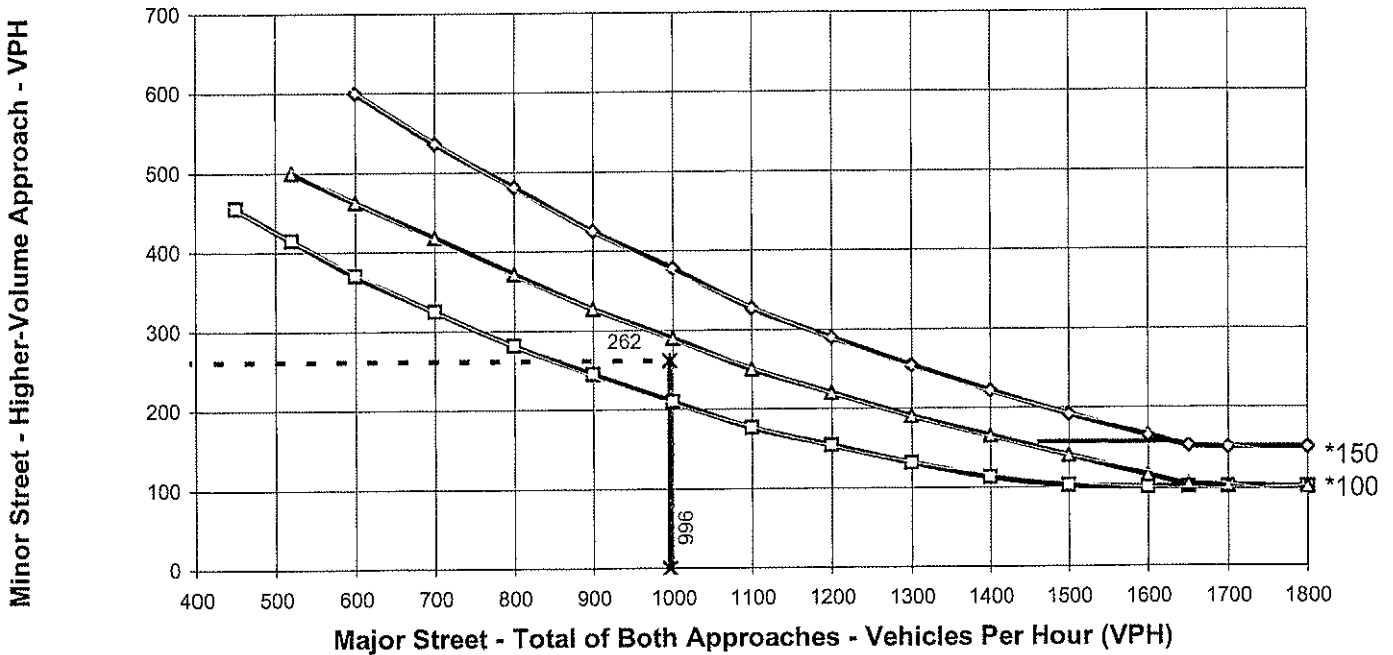
Number of Approach Lanes on Major Street = **2**

Minor Street Name = **5TH STREET**

High Volume Approach (VPH) = **262**

Number of Approach Lanes On Minor Street = **1**

### SIGNAL WARRANT NOT SATISFIED



- 1 Lane (Major) & 1 Lane (Minor)
- △— 2+ Lanes (Major) & 1 Lane (Minor) OR 1 Lane (Major) & 2+ Lanes (Minor)
- ◇— 2+ Lanes (Major) & 2+ Lanes (Minor)
- ×— Major Street Approaches
- \*— Minor Street Approaches

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

## WARRANT 3, PEAK HOUR (Urban Areas)

Traffic Conditions = **PROJECT BUILDOUT PLUS PROJECT**

Major Street Name = **JASMINE**

Total of Both Approaches (VPH) = **441**

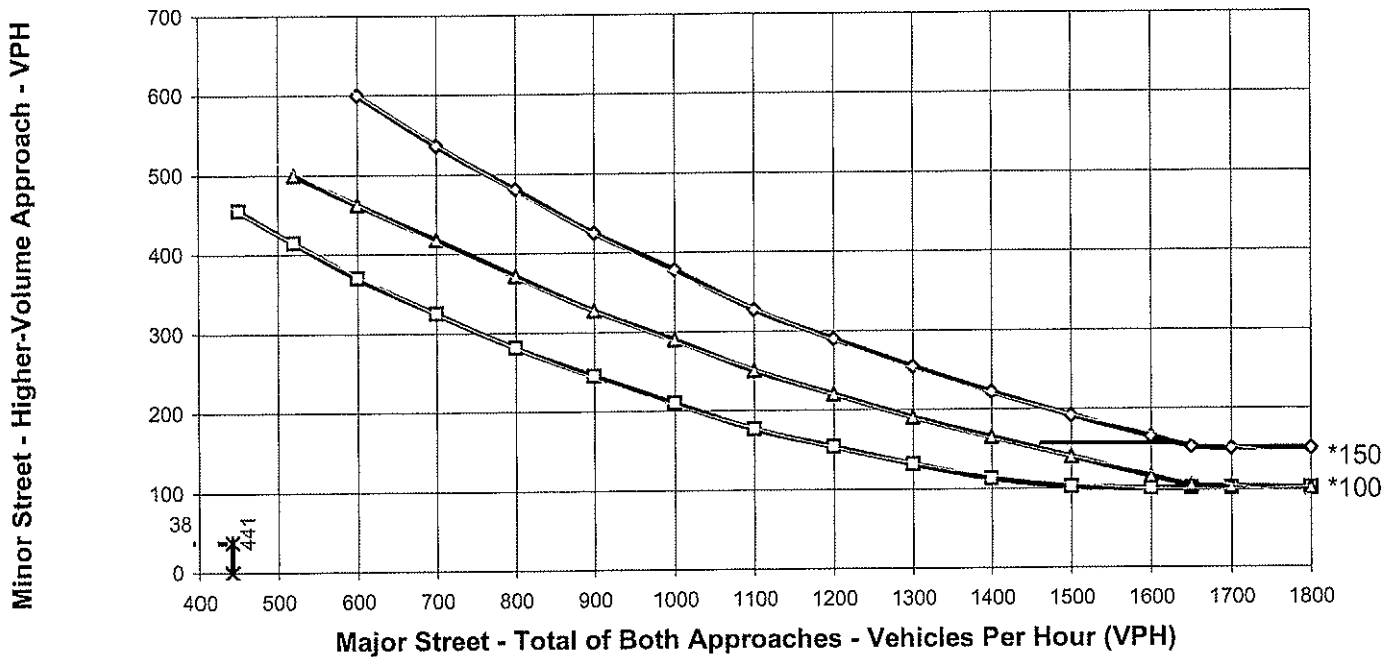
Number of Approach Lanes on Major Street = **1**

Minor Street Name = **5TH STREET**

High Volume Approach (VPH) = **38**

Number of Approach Lanes On Minor Street = **1**

### SIGNAL WARRANT NOT SATISFIED



- 1 Lane (Major) & 1 Lane (Minor)
- △— 2+ Lanes (Major) & 1 Lane (Minor) OR 1 Lane (Major) & 2+ Lanes (Minor)
- ◇— 2+ Lanes (Major) & 2+ Lanes (Minor)
- ×— Major Street Approaches
- \* - Minor Street Approaches

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

## WARRANT 3, PEAK HOUR (Urban Areas)

Traffic Conditions = **PROJECT BUILDOUT PLUS PROJECT**

Major Street Name = **HELEN**

Total of Both Approaches (VPH) = **399**

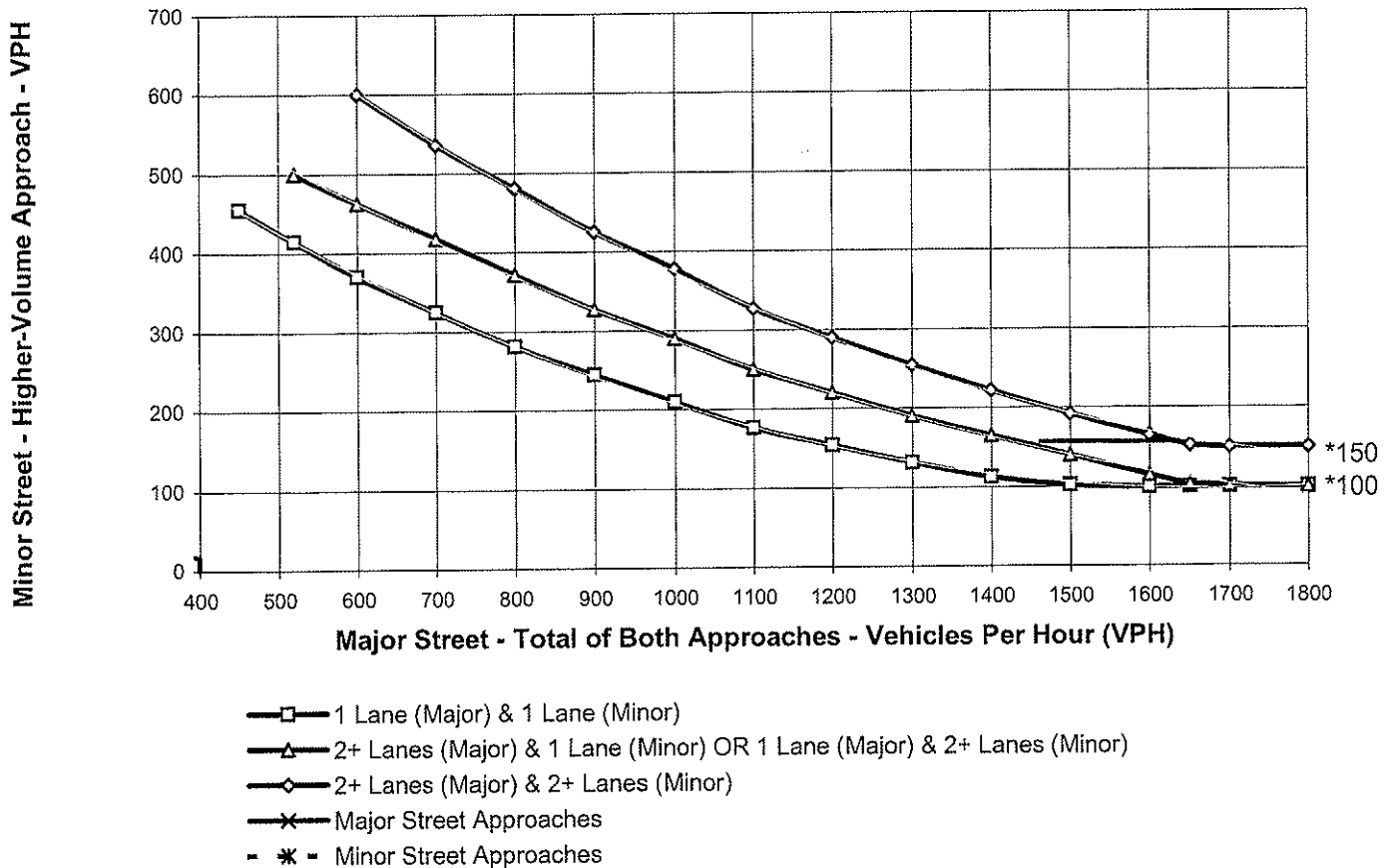
Number of Approach Lanes on Major Street = **1**

Minor Street Name = **5TH STREET**

High Volume Approach (VPH) = **18**

Number of Approach Lanes On Minor Street = **1**

**SIGNAL WARRANT NOT SATISFIED**



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



## WARRANT 3, PEAK HOUR (Urban Areas)

Traffic Conditions = **PROJECT BUILDOUT PLUS PROJECT**

Major Street Name = **ALDERBERRY**

Total of Both Approaches (VPH) = **474**

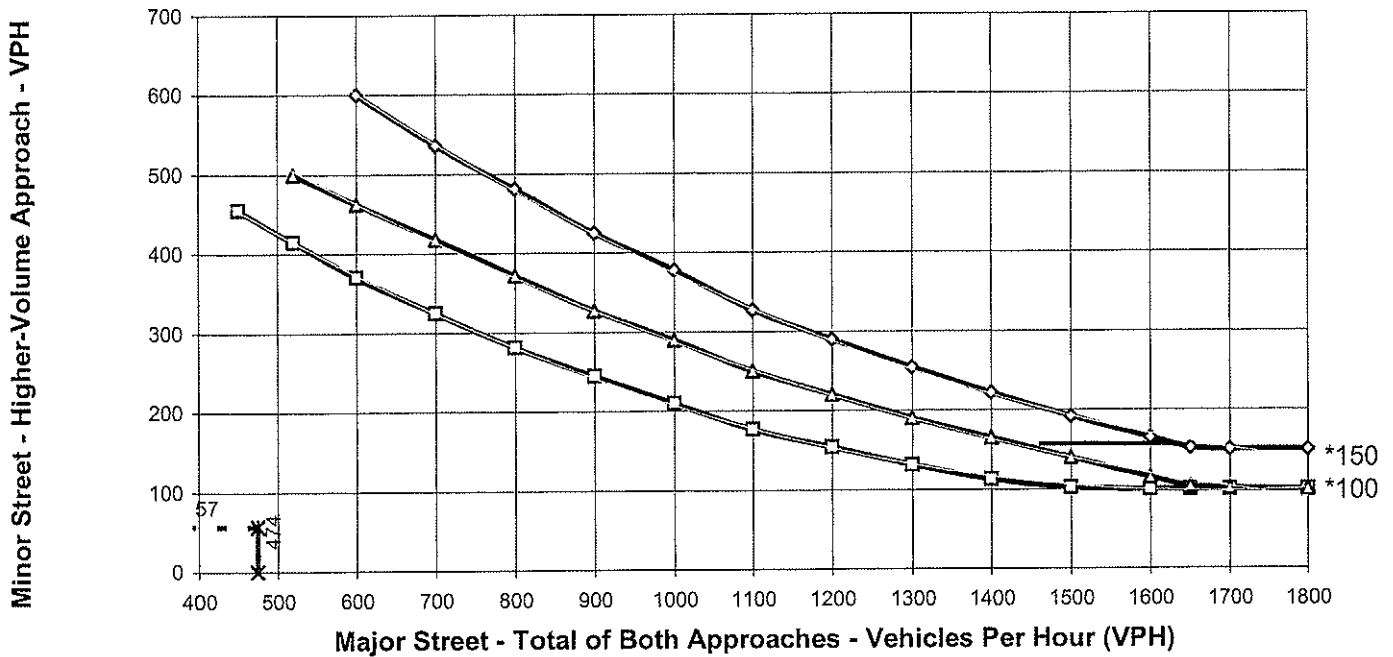
Number of Approach Lanes on Major Street = **1**

Minor Street Name = **5TH STREET**

High Volume Approach (VPH) = **57**

Number of Approach Lanes On Minor Street = **1**

### SIGNAL WARRANT NOT SATISFIED



- 1 Lane (Major) & 1 Lane (Minor)
- △— 2+ Lanes (Major) & 1 Lane (Minor) OR 1 Lane (Major) & 2+ Lanes (Minor)
- ◇— 2+ Lanes (Major) & 2+ Lanes (Minor)
- ×— Major Street Approaches
- \*— Minor Street Approaches

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

## WARRANT 3, PEAK HOUR (Urban Areas)

Traffic Conditions = **PROJECT BUILDOUT PLUS PROJECT**

Major Street Name = **SAN ANTONIO**

Total of Both Approaches (VPH) = **1039**

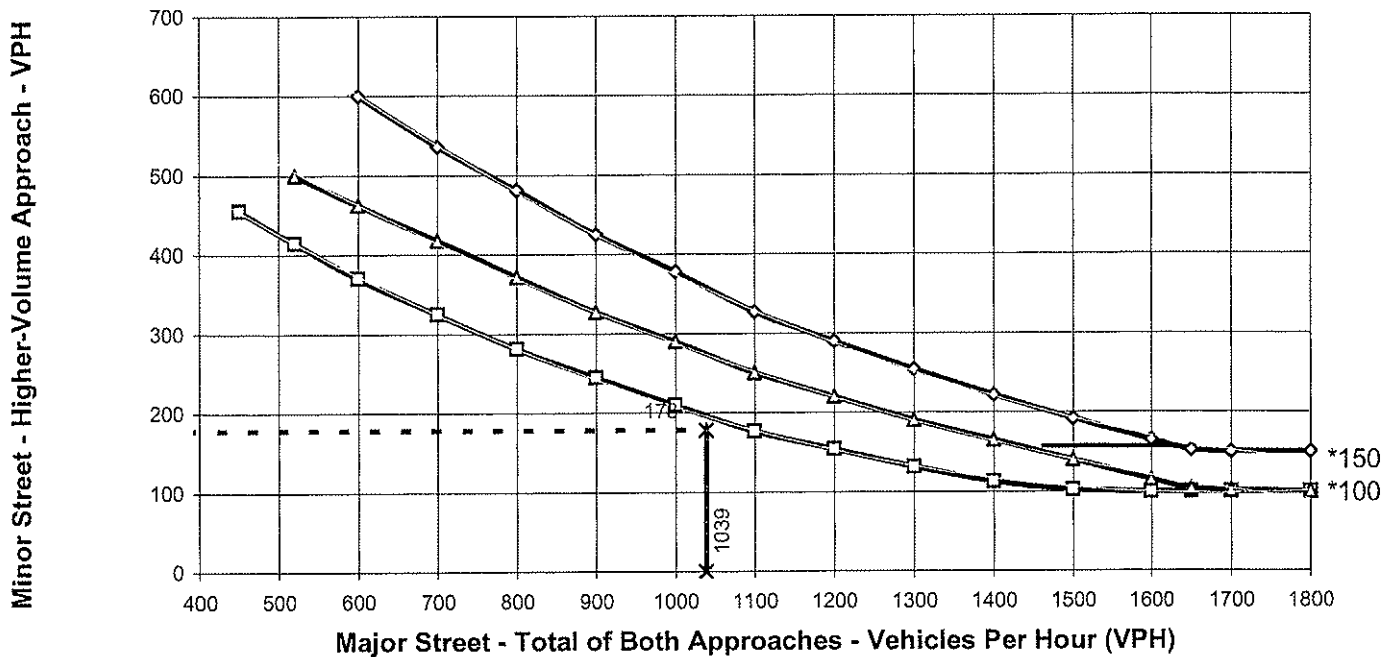
Number of Approach Lanes on Major Street = **2**

Minor Street Name = **6TH STREET**

High Volume Approach (VPH) = **178**

Number of Approach Lanes On Minor Street = **1**

### SIGNAL WARRANT NOT SATISFIED



- 1 Lane (Major) & 1 Lane (Minor)
- △— 2+ Lanes (Major) & 1 Lane (Minor) OR 1 Lane (Major) & 2+ Lanes (Minor)
- ◇— 2+ Lanes (Major) & 2+ Lanes (Minor)
- ×— Major Street Approaches
- \* - Minor Street Approaches

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

## WARRANT 3, PEAK HOUR (Urban Areas)

Traffic Conditions = **PROJECT BUILDOUT PLUS PROJECT**

Major Street Name = **SAN ANTONIO**

Total of Both Approaches (VPH) = **989**

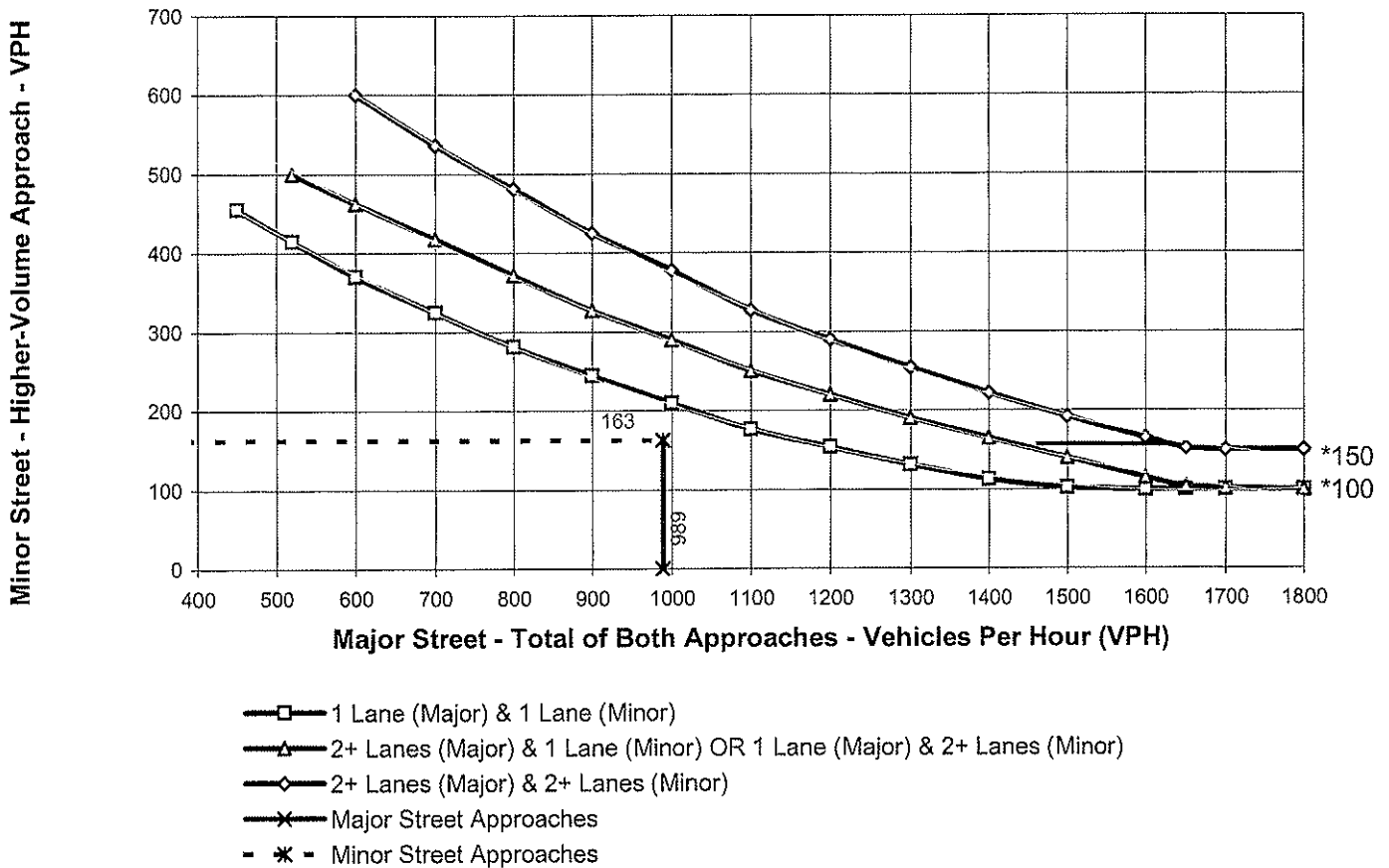
Number of Approach Lanes on Major Street = **2**

Minor Street Name = **5TH STREET**

High Volume Approach (VPH) = **163**

Number of Approach Lanes On Minor Street = **1**

**SIGNAL WARRANT NOT SATISFIED**



\* 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.

(msg. Tom Hanna re: speed limits rural/urban) 42-1106 909-395-2387 Bruce Smith

RK No. 01410501

Sheet No. \_\_\_\_\_ of \_\_\_\_\_

Prepared by: Ag Date: 2/21/06

Subject: Ontario Walmart

TRAFFIC SIGNAL WARRANTS

RURAL

- ① Benson/6th → yes (EXPM)
- ② Benson/5th → yes (EXPM)
- ③ Jasmine/5th → no
- ④ Helen/5th → no
- ⑤ Alderberry/5th → no
- ⑥ San Antonio/ 6th → yes (EXPM)
- ⑦ San Antonio/ 5th → yes (EXPM)

(Rural okay?)  
~~Urban~~

- no
- no
- no
- no
- no
- no
- no



use  
urban  
warrants

## WARRANT 3, PEAK HOUR (70% FACTOR) (Rural Areas)

(COMMUNITY LESS THAN 10,000 POPULATION OR ABOVE 70 km/h OR ABOVE 40 mph ON MAJOR STREET)

Traffic Conditions = **EXISTING PM**

Major Street Name = **BENSON AVENUE**

Total of Both Approaches (VPH) = **1167**

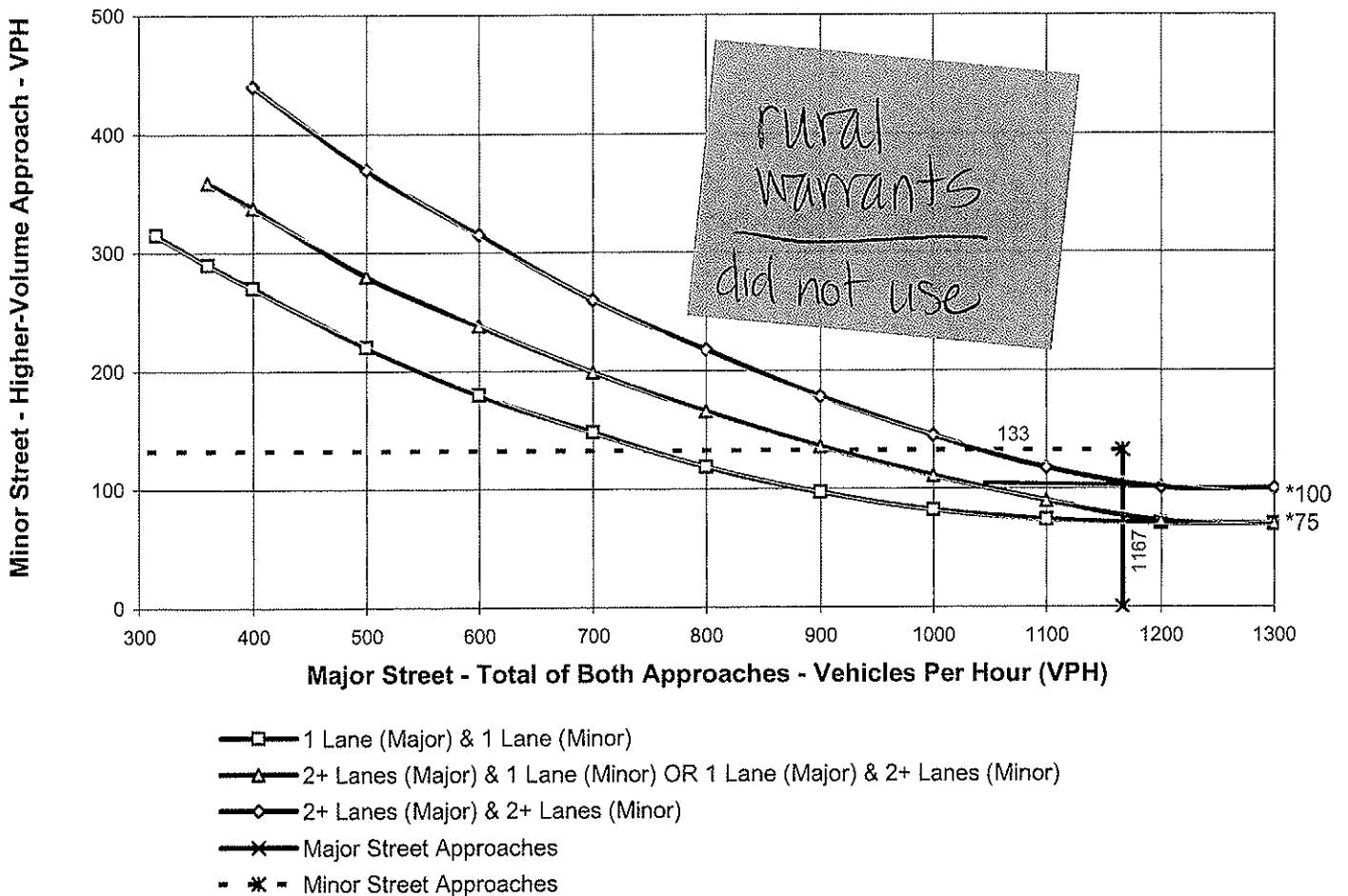
Number of Approach Lanes Major Street = **2**

Minor Street Name = **6TH STREET**

High Volume Approach (VPH) = **133**

Number of Approach Lanes Minor Street = **1**

**WARRANTED FOR A SIGNAL**



\* Note: 100 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 75 vph applies as the lower threshold volume for a minor-street approach with one lane.

## WARRANT 3, PEAK HOUR (70% FACTOR) (Rural Areas)

(COMMUNITY LESS THAN 10,000 POPULATION OR ABOVE 70 km/h OR ABOVE 40 mph ON MAJOR STREET)

Traffic Conditions = **EXISTING PM**

Major Street Name = **BENSON AVENUE**

Total of Both Approaches (VPH) = **942**

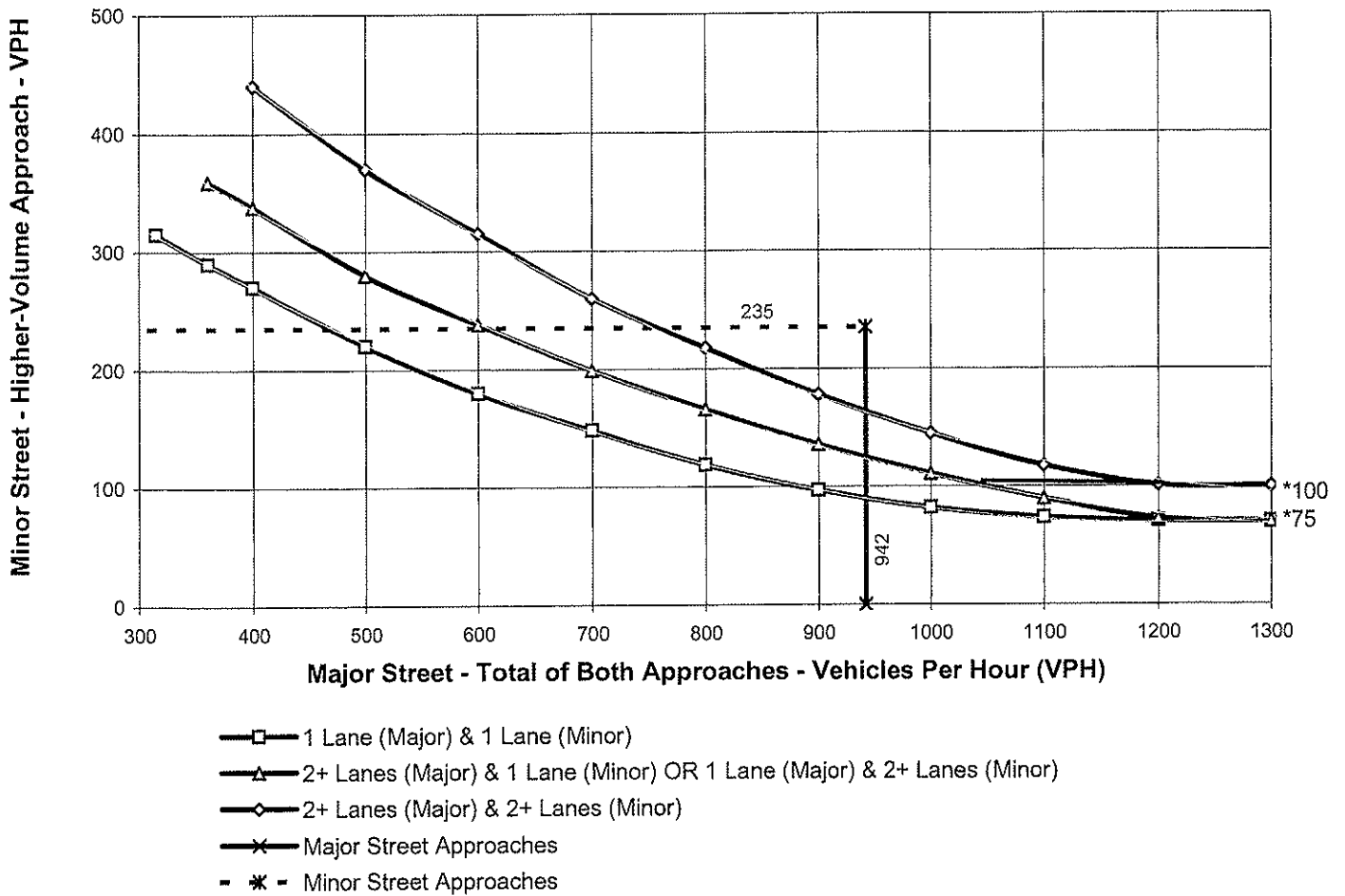
Number of Approach Lanes Major Street = **2**

Minor Street Name = **5TH STREET**

High Volume Approach (VPH) = **235**

Number of Approach Lanes Minor Street = **1**

**WARRANTED FOR A SIGNAL**



\* Note: 100 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 75 vph applies as the lower threshold volume for a minor-street approach with one lane.

## WARRANT 3, PEAK HOUR (70% FACTOR) (Rural Areas)

(COMMUNITY LESS THAN 10,000 POPULATION OR ABOVE 70 km/h OR ABOVE 40 mph ON MAJOR STREET)

Traffic Conditions = **PROJECT BUILDOUT PLUS PROJECT**

Major Street Name = **JASMINE AVENUE**

Total of Both Approaches (VPH) = **441**

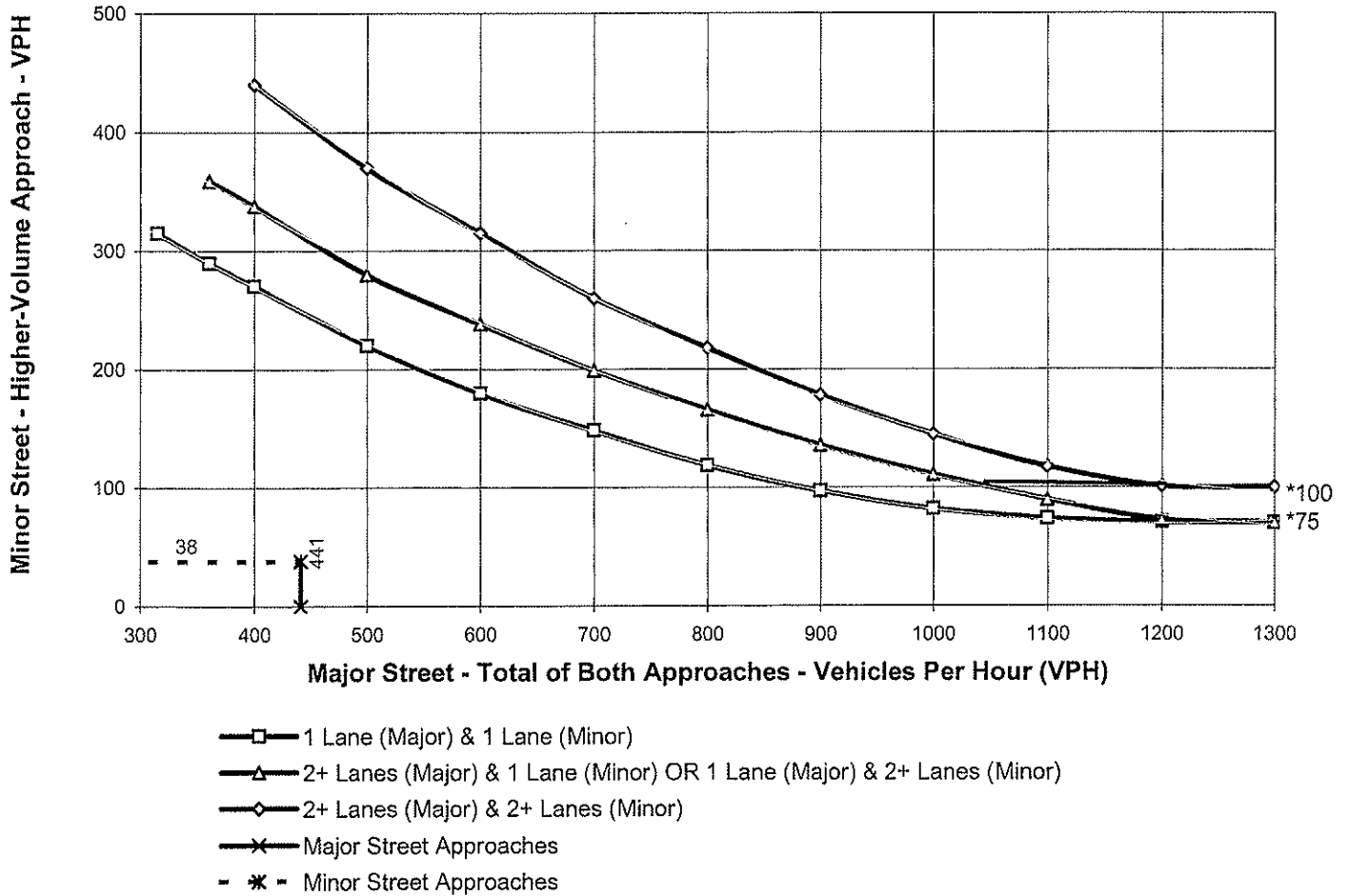
Number of Approach Lanes Major Street = **1**

Minor Street Name = **5TH STREET**

High Volume Approach (VPH) = **38**

Number of Approach Lanes Minor Street = **1**

### SIGNAL WARRANT NOT SATISFIED



\* Note: 100 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 75 vph applies as the lower threshold volume for a minor-street approach with one lane.

## WARRANT 3, PEAK HOUR (70% FACTOR) (Rural Areas)

(COMMUNITY LESS THAN 10,000 POPULATION OR ABOVE 70 km/h OR ABOVE 40 mph ON MAJOR STREET)

Traffic Conditions = **PROJECT BUILDOUT PLUS PROJECT**

Major Street Name = **HELEN AVENUE**

Total of Both Approaches (VPH) = **399**

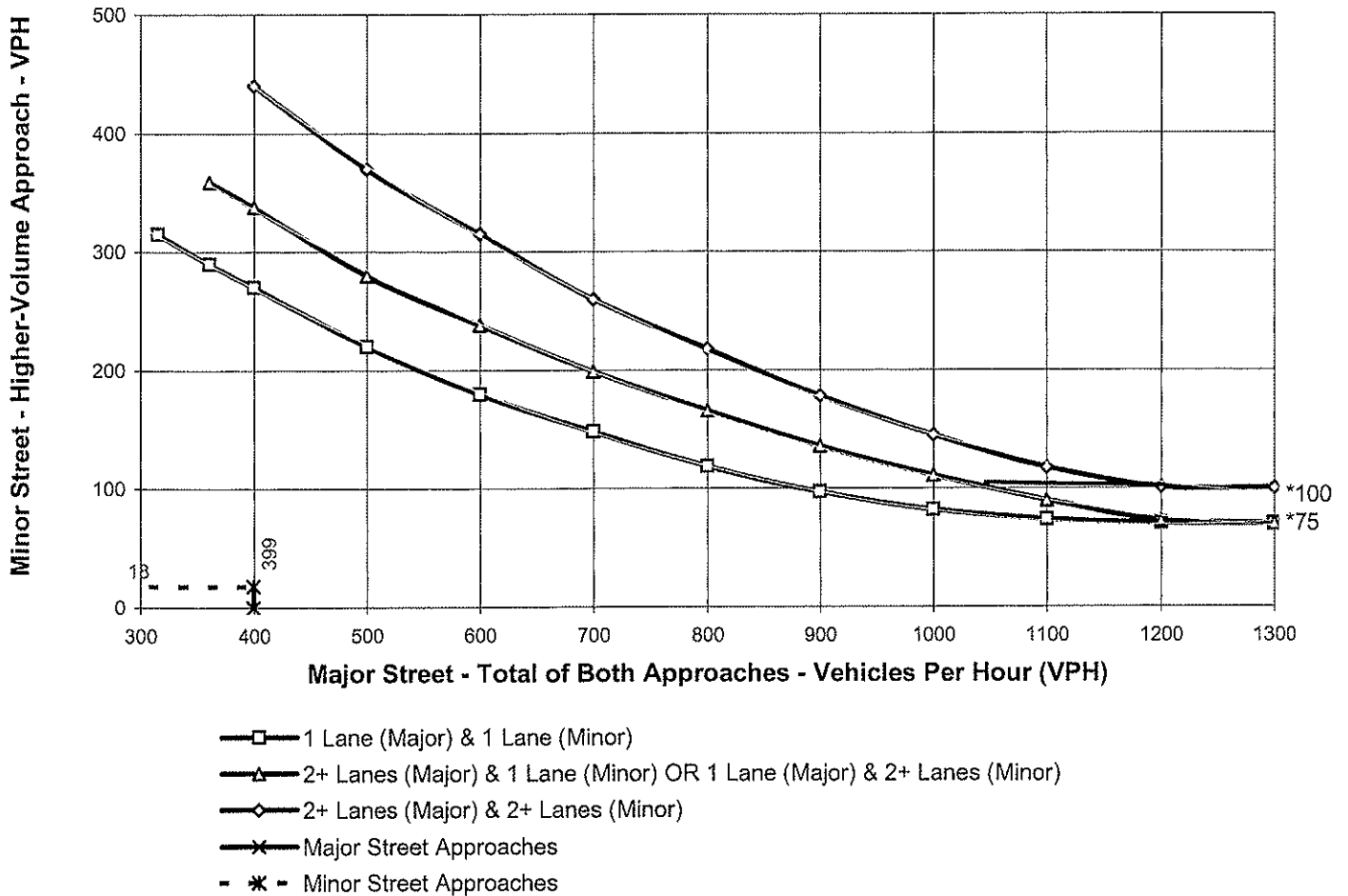
Number of Approach Lanes Major Street = **1**

Minor Street Name = **5TH STREET**

High Volume Approach (VPH) = **18**

Number of Approach Lanes Minor Street = **1**

### SIGNAL WARRANT NOT SATISFIED



\* Note: 100 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 75 vph applies as the lower threshold volume for a minor-street approach with one lane.



## WARRANT 3, PEAK HOUR (70% FACTOR) (Rural Areas)

(COMMUNITY LESS THAN 10,000 POPULATION OR ABOVE 70 km/h OR ABOVE 40 mph ON MAJOR STREET)

Traffic Conditions = **PROJECT BUILDOUT PLUS PROJECT**

Major Street Name = **ALDERBERRY**

Total of Both Approaches (VPH) = **474**

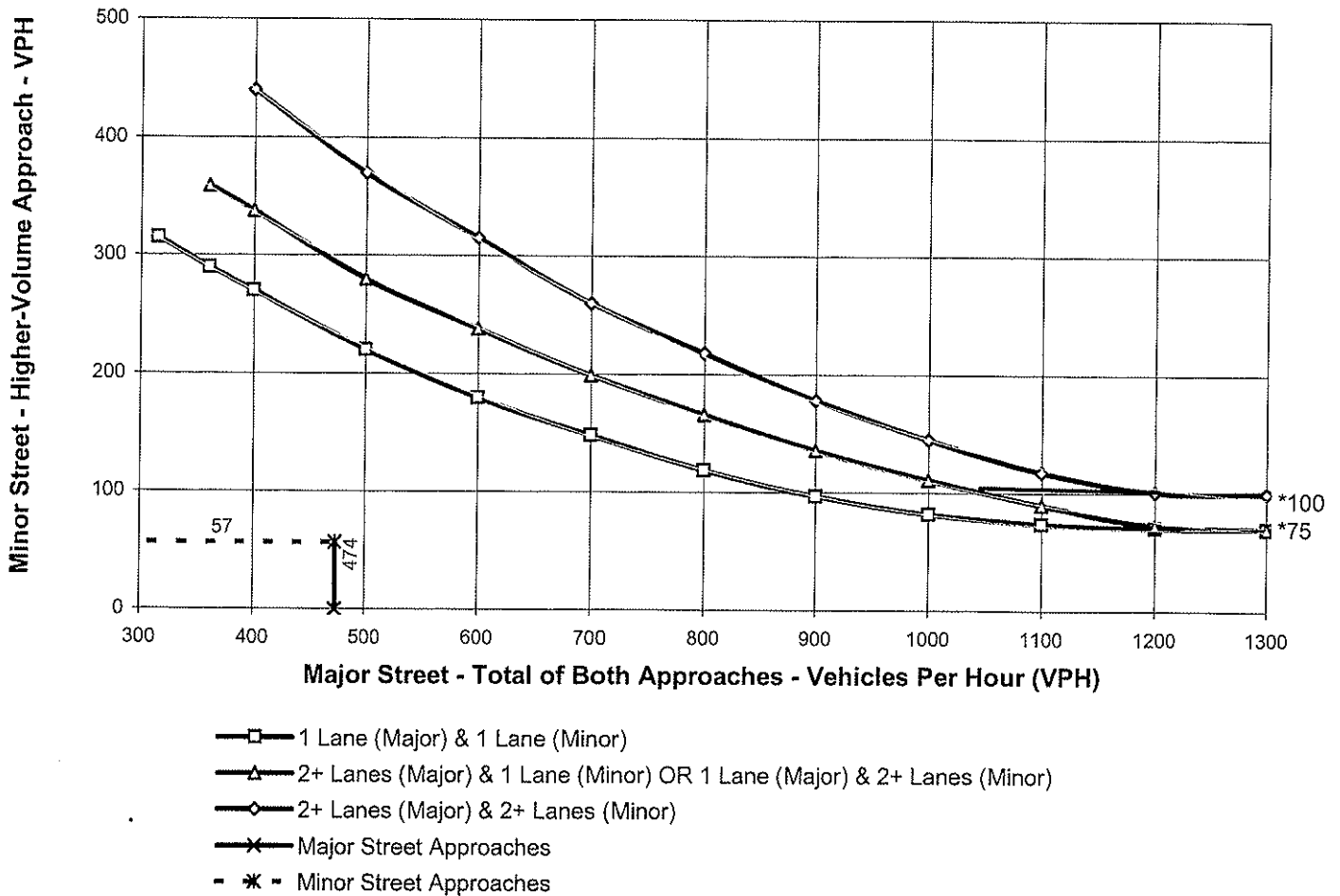
Number of Approach Lanes Major Street = **1**

Minor Street Name = **5TH STREET**

High Volume Approach (VPH) = **57**

Number of Approach Lanes Minor Street = **1**

### SIGNAL WARRANT NOT SATISFIED



\* Note: 100 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 75 vph applies as the lower threshold volume for a minor-street approach with one lane.

## WARRANT 3, PEAK HOUR (70% FACTOR) (Rural Areas)

(COMMUNITY LESS THAN 10,000 POPULATION OR ABOVE 70 km/h OR ABOVE 40 mph ON MAJOR STREET)

Traffic Conditions = **EXISTING PM**

Major Street Name = **SAN ANTONIO**

Total of Both Approaches (VPH) = **991**

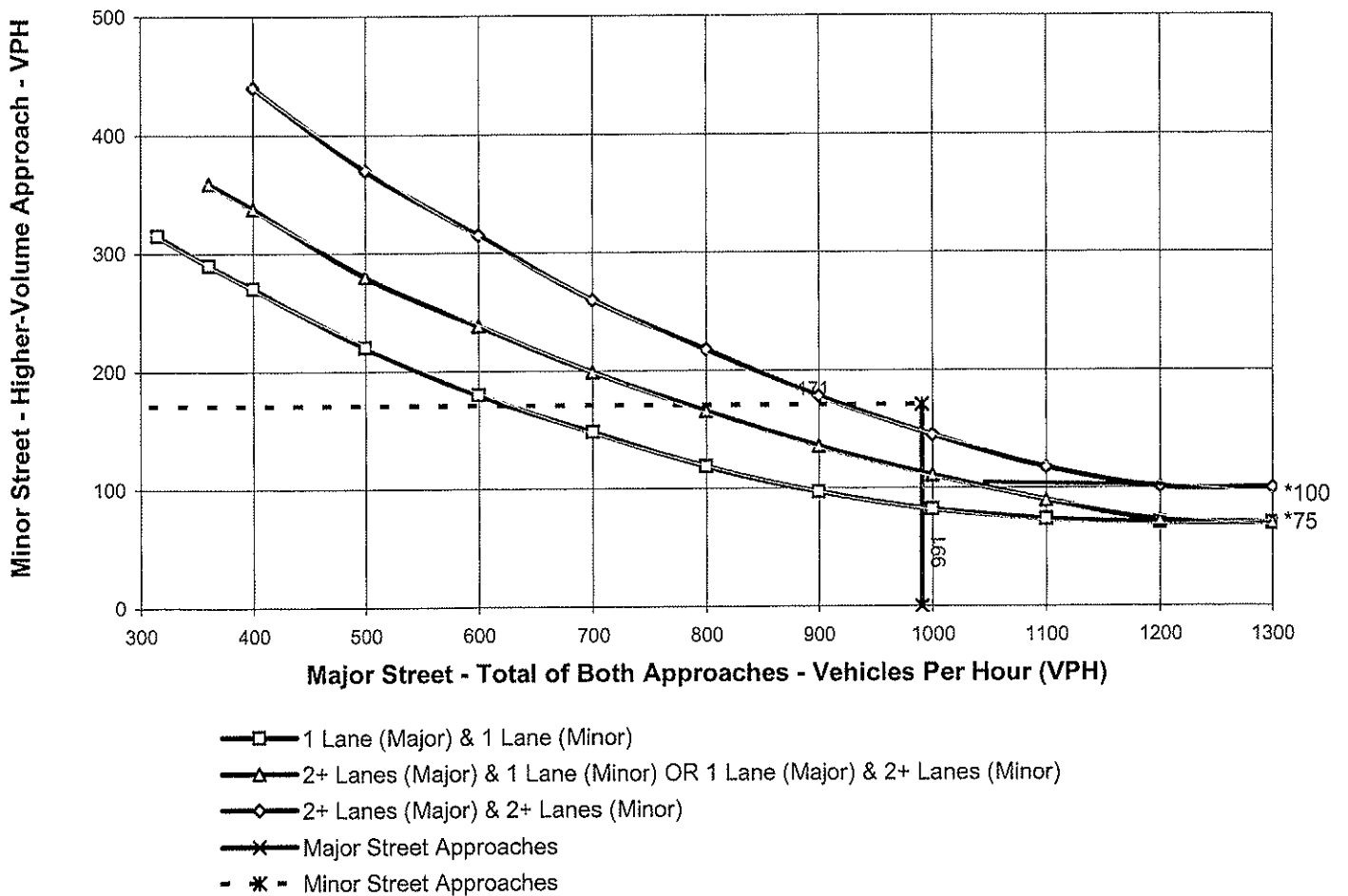
Number of Approach Lanes Major Street = **2**

Minor Street Name = **6TH STREET**

High Volume Approach (VPH) = **171**

Number of Approach Lanes Minor Street = **1**

**WARRANTED FOR A SIGNAL**



\* Note: 100 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 75 vph applies as the lower threshold volume for a minor-street approach with one lane.

## WARRANT 3, PEAK HOUR (70% FACTOR) (Rural Areas)

(COMMUNITY LESS THAN 10,000 POPULATION OR ABOVE 70 km/h OR ABOVE 40 mph ON MAJOR STREET)

Traffic Conditions = **EXISTING PM**

Major Street Name = **SAN ANTONIO**

Total of Both Approaches (VPH) = **945**

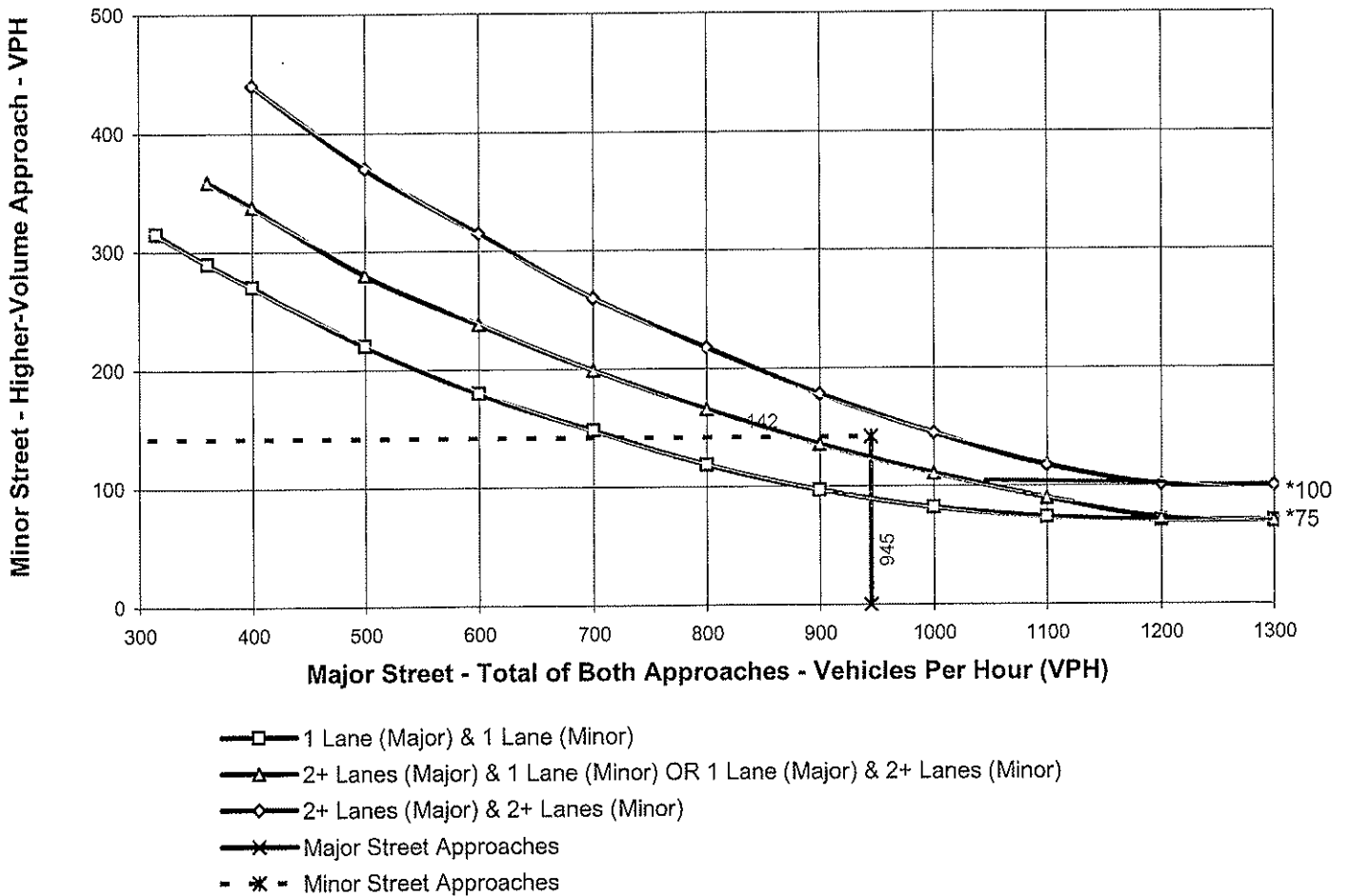
Number of Approach Lanes Major Street = **2**

Minor Street Name = **5TH STREET**

High Volume Approach (VPH) = **142**

Number of Approach Lanes Minor Street = **1**

**WARRANTED FOR A SIGNAL**



\* Note: 100 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 75 vph applies as the lower threshold volume for a minor-street approach with one lane.