Church of the Good Shepherd
Traffic Impact Study

(MUP56-020W1; LOG NO. 02-18-006; CP14366)

May 2005

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1.0 Proposed Project Traffic

Vehicular traffic generation characteristics for projects are estimated based on rates in the *SANDAG (Not so) Brief Guide of Vehicular Traffic Generation Rates for the San Diego Region*, April 2002. This manual provides standards and recommendations for the probable traffic generation of various land uses based upon local, regional and nation-wide studies of existing developments in comparable settings. Based on the planned expansion of the Church of the Good Shepherd, the following table summarizes the net increase in trips generated by the proposed buildout of the project during a typical weekday.

Table 1
Weekday Trip Generation for the Proposed Project

Land Use	*Intensity*	*Trip Rate*	*ADT*
Planned Church – Phase I	6,100 ft^2	9 per KSF	55
Planned Church – Phase III	8,800 ft^2	9 per KSF	79
Existing Church	3,300 ft^2	9 per KSF	- 30
Net Increase of Weekday Trips	**-**	**-**	**104**

Source: SANDAG (Not so) Brief Guide of Vehicular Traffic Generation Rates for the San Diego Region, April 2002.

Project trips associated with the additional 8,800 square feet of classroom space included under Phase III of the proposed project will occur after 6:00 PM and therefore will occur outside the typical PM peak traffic hour, which was found to be between 4:45 and 5:45PM. Since the traffic associated with Phase III will occur outside the peak traffic hours, the additional trips on a weekday daily basis were analyzed.

Project Access

The proposed project will take access from a driveway onto Hill Road at the north end of the project site. This driveway will function as the site entrance and an exit for all traffic associated with the proposed project. All project traffic will access Bonita Road at the signalized intersection of Bonita and Willow Streets.

Project Trip Distribution and Assignment

Trip distribution and assignment is the process of identifying the probable destinations, directions, or traffic routes that project related traffic will likely affect. In this case, the project trip distribution was estimated from observed traffic patterns and experience. Discussion with County of San Diego Traffic Engineering Staff also helped define the proposed project's distribution and assignment as well as the importance of the local traffic circulation adjacent to the project.

2.0 Existing Plus Project Conditions

This section documents the addition of the proposed project to the existing conditions. The existing plus project analysis takes into account existing traffic volumes plus the traffic associated with the project. Phases I and III were collectively analyzed to represent the worst-case project scenario. Through a comparison of the resulting change in delay and level of service, project impacts can be identified.

With Project Scenario Daily Roadway Segment Performance

As stated in the Traffic Impact Study for this project, the two study segments of Bonita Road west of Acacia Avenue and east of Willow Street are currently operating at LOS F and E respectively. The segment of Bonita Road west of Willow Street operates at LOS D and is considered acceptable. The addition of the project traffic to the roadway segments is shown below in Table 2.

Table 2
Existing Daily Roadway Segment Conditions
Without and With the Proposed Project

Roadway Segment	Classification/ Lanes	LOS E Capacity	Existing Conditions without Project			Existing Conditions with Project				
			Forecast ADT Volume	Volume/ Capacity Ratio	LOS	Project ADT	Forecast ADT Volume	Volume/ Capacity Ratio	LOS	Signi-ficant?
Bonita Road – West of Acacia Avenue	Town Collector/ 3	19,000	25,174	1.33	F	28	25,202	1.33	F	No
Bonita Road – East of Willow Street	Major / 4	37,000	36,567	0.99	E	28	36,595	0.99	E	No
Bonita Road – West of Willow Street	Major / 4	37,000	31,067	0.84	D	48	31,115	0.84	D	No
Grevillea Way*	Residential Road	1,500	267	0.18	<C	104	371	0.25	<C	No

*Personal communication with County, 9/8/03: Grevillea Way can accommodate 2,500 ADT, this is approximated by the Residential Road classification of the non-circulation element road classes of the County road design standards. The location shown is that of the approach segment of the Bonita Road/Grevillea Way intersection projected to be utilized by project vehicles accessing the site via the northern driveway.

Table 2 illustrates that the proposed project does not have any significant roadway impacts based on the County criteria shown in Table 1.

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1.0 Introduction

This traffic study has been prepared to document potential impacts from the expansion of the existing Church of the Good Shepherd located at 3990 Bonita Road in an unincorporated area of the County of San Diego. The Church of the Good Shepherd is proposing an expansion of 2,800 square feet and an addition of a daycare facility for no more than 60 children. The 2,800 square foot expansion will occur as Phase I of the project, while the daycare facility is project to occur as Phase III. Phase II of the project is scheduled as a cosmetic remodel only and will not generate any additional traffic. The cosmetic remodel consists of some needed maintenance in addition to the expansion of 810 square feet for extra storage. The project would conform to the adopted zoning. To analyze the traffic impacts, the Church of the Good Shepherd retained Katz, Okitsu & Associates. Figure 1 shows the project vicinity and Figure 2 shows the study area for this analysis.

Background

This traffic study is based on the need to perform a cumulative analysis given the recent exemption from the California Environmental Quality Act (CEQA) of "de minimus effects" which were removed from the State law as a result of a lawsuit. As a result, the County of San Diego has recommended that all discretionary projects be reviewed for cumulative impacts. The Church of Good Shepherd project falls within this recommendation. The proposed project would generate a total of 325 net daily trips during the weekday and 134 daily trips during Sunday. Per County recommendations, the Sunday trip generation rate used for this study is based on field counts at the existing site, and thus represents more conservative rates when compared with published SANDAG rates.

Interstate 805 and Bonita Road provide regional access to the project site, while Bonita Road, Willow Street, Grevillea Way, The Hill Road and Old Orchard Lane provide local access to the site. Existing access to the site can be taken either from the north end of the property at The Hill Road, or from the south end of the property at Grevillea Way.

In order to gain approval for the project, a traffic study must be prepared to fulfill the requirements of the Draft County of San Diego Guidelines for Determining Significance. This project will not generate more than 2,400 daily trips and will not generate more than 200 peak hour trips. Therefore, this project is not required to conform to the Congestion Management Program, and a detailed analysis of Regionally Significant Arterials and is also not required.

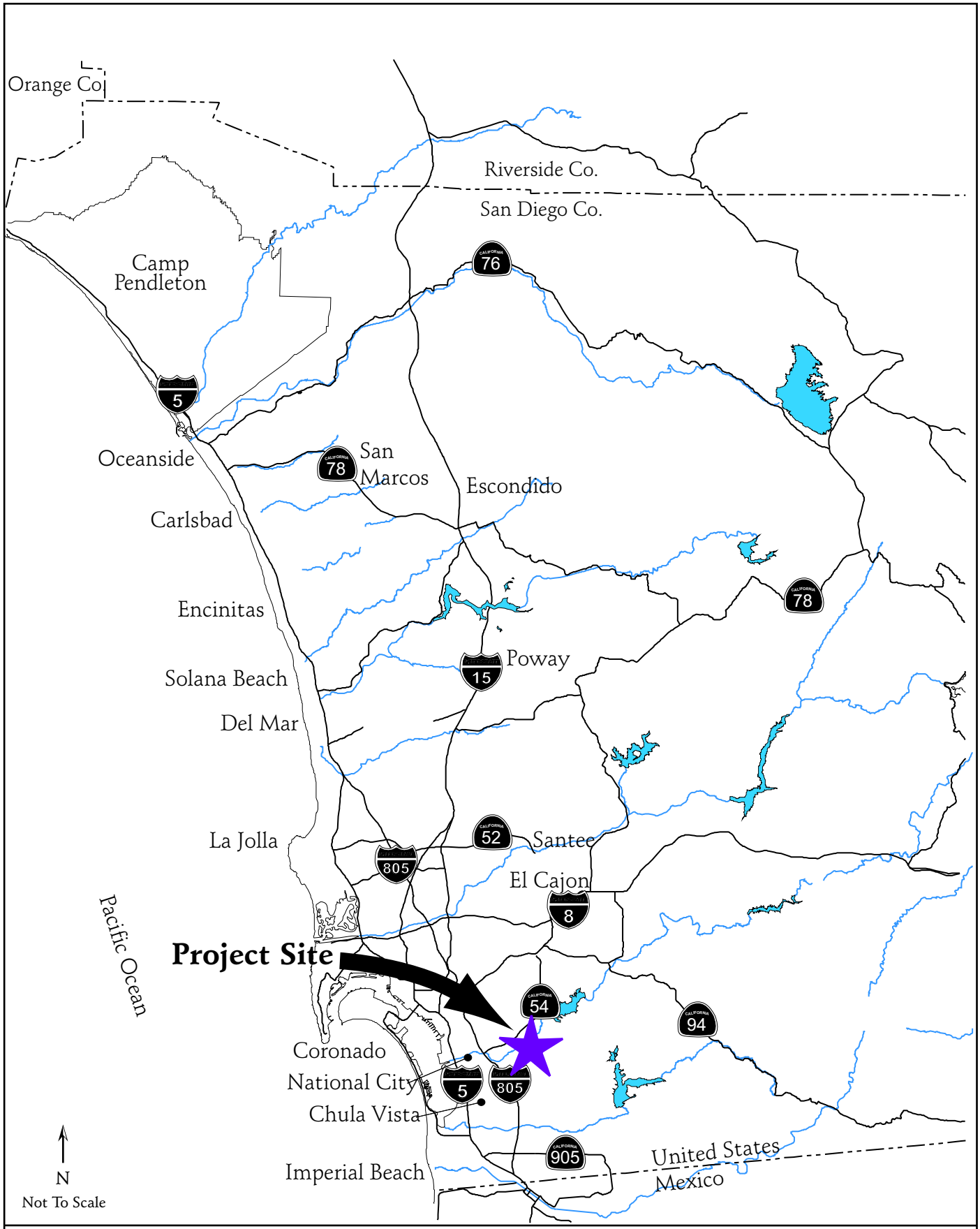

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Figure 1

Project Vicinity

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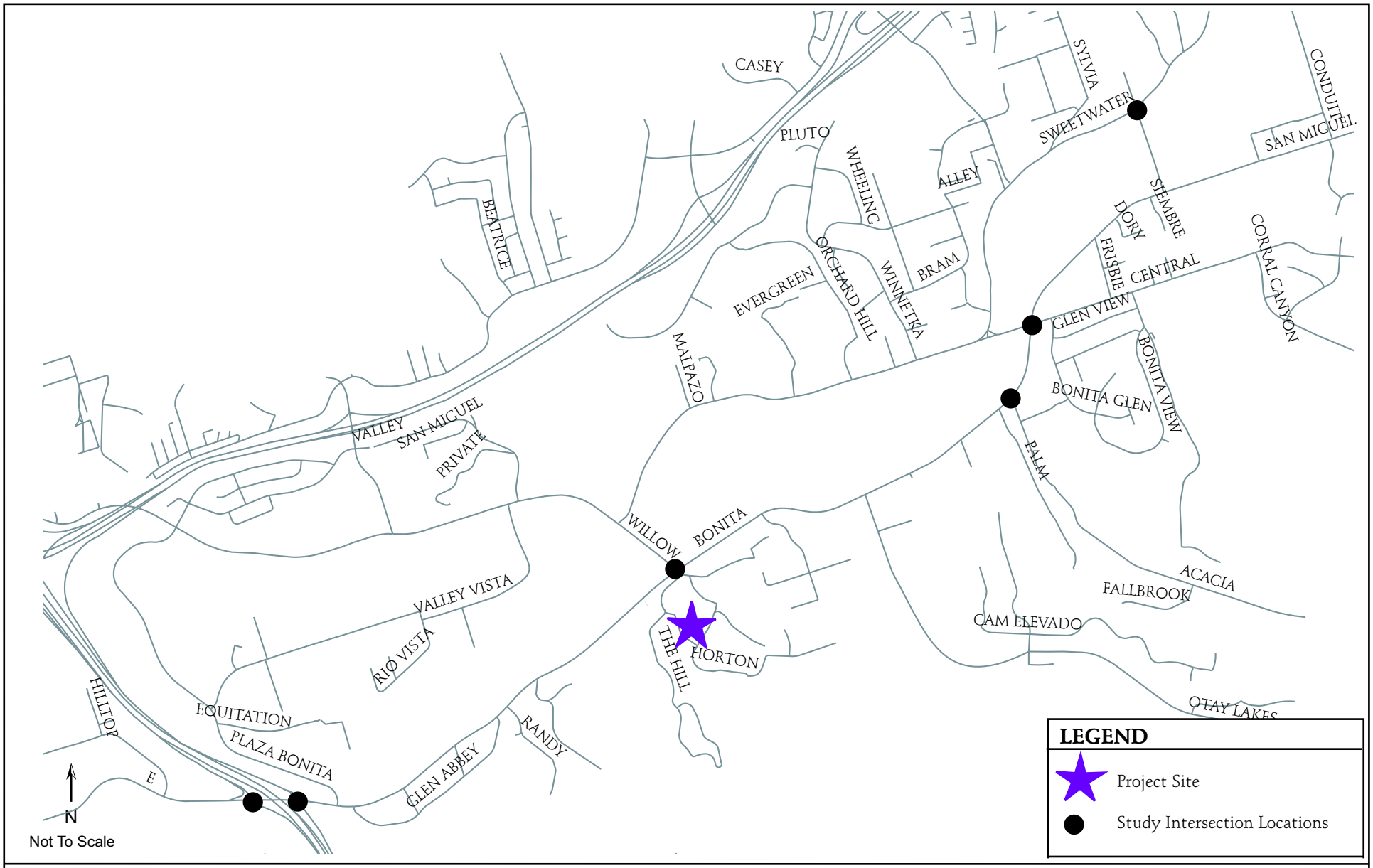

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Figure 2
Study Intersections and Site Location

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Traffic Engineers and Transportation Planners

The Church of Good Shepherd
Traffic Impact Study

2.0 Methodologies

This chapter documents the methodologies and assumptions used to conduct the circulation impact analysis for the Church of the Good Shepherd. This section contains the following background information:

- Study timeframes
- Study area description
- Capacity analysis methodologies

Study Timeframes

This report presents an analysis of the following timeframes:

- Existing
- Existing plus Project
- Near-Term Cumulative (Open and Closed Discretionary Projects) Without Project
- Near-Term Cumulative (Open and Closed Discretionary Projects) Plus Project

Project Study Area

The project study area for the Good Shepherd Church expansion project is shown in Figure 2. The area consists of the following intersections and their adjacent roadway segments:

Study Intersections:

1. I-805 Southbound Ramps and Bonita Road;
2. I-805 Northbound Ramps and Bonita Road;
3. Willow Street and Bonita Road;
4. Acacia Avenue and Bonita Road;
5. Central Avenue and Bonita Road;
6. Sweetwater Road and Bonita Road.

Study Roadway Segments:

1. Bonita Road west of Acacia Avenue;
2. Bonita Road east of Willow Street;
3. Bonita Road west of Willow Street.

This project study area is generally based on the assumed project trip distribution and assignment. The trip distribution and assignment determines how much project traffic is attributable to each link in the roadway network and which intersections they affect.

Analysis Methodologies

This section presents a brief overview of traffic analysis methodologies and concepts used in this study. Street system operating conditions are typically described in terms of "level of service." Level of service is a report-card scale used to indicate the quality of traffic flow on roadway segments and at intersections. Level of service (LOS) ranges from LOS A (free flow, little congestion) to LOS F (forced flow, extreme

congestion). A more detailed description of the concepts described in this section is provided in Appendix A, Appendix A-1 of this document.

Roadway Segment Capacity Analysis

The County of San Diego has published daily traffic volume standards for roadways within its jurisdiction. To determine existing service levels on study area roadway segments, we compared the appropriate average daily traffic thresholds for level of service, the daily capacity of the study area roadway segments, and the existing and future volumes in the study area. The thresholds for determining level of service used in this analysis are summarized in Appendix A, Table A-2.

The values shown in Table A-2 are not intended to serve as an exact description of the actual operating level of service on a particular roadway segment. The capacity of roadway facilities is affected by a number of factors, including pavement width, access to cross streets and driveways, intersection signal timing, geometry, and on-street parking. The actual functional capacity is based on the ability of arterial intersections to accommodate peak hour volumes. Efficient designs of intersections to achieve acceptable levels of service could result in higher capacities. Thus, higher volumes may occur on arterial segments than those shown in these tables.

Intersection Capacity Analysis

The analysis of peak hour intersection performance was conducted using the TRAFFIX and Synchro analysis software programs. This program uses the "operational analysis" procedure for signalized intersections as defined in the Highway Capacity Manual (HCM). This technique uses 1,900 passenger cars per hour of green per lane (pcphgpl) as the maximum saturation flow of a single lane at an intersection. This saturation flow rate is adjusted to account for lane width, on-street parking, conflicting pedestrian flow, traffic composition (i.e., percent of trucks) and shared lane movements (e.g., through and right-turn movements from the same lane). Level of service for signalized intersections is based on the average time (seconds) that vehicles entering an intersection are stopped or delayed. Appendix A, Table A-4 lists the HCM LOS/delay criteria for signalized intersections.

The Highway Capacity Manual analysis method for evaluating unsignalized, minor street stop intersections is based on the average total delay for each impeded movement. As used here, total delay is defined as the total elapsed time from when a vehicle stops at the end of a queue until the vehicle departs from the stop line. This time includes the time required for the vehicle to travel from the last-in-queue to the first-in-queue position. The average total delay for any particular minor movement is a function of the service rate or capacity of the approach and the degree of saturation. Intersection wide delay and level of service is not defined by the HCM for two-way stop controlled intersections, therefore is not shown in the analysis report. Therefore, the delay reported for each unsignalized intersection is the worst level of service of all the individual movements. Appendix A, Table A-5 summarizes the level of service criteria, for minor-street stop controlled intersections.

Significance Analysis

To determine project impacts, the County of San Diego has developed a series of thresholds within their "Guidelines for Determining Significance" based on allowable increases in road segment ADTs, intersection peak hour trips and intersection seconds of delay, which become more stringent as level of service worsens. The acceptable level of service for roadway segments and intersections in San Diego

County is level of service D. Where the roadway segment or intersection is forecast to operate at LOS E or F, the allowable increases are shown below in Table 1.

Table 1
Measures of Significant Project Impacts to Congestion

Allowable Increases on Congested Roads

Road Segments

Roadway Segment LOS	*2-Lane Road*	*4-Lane Road*	*6-Lane Road*
LOS E	200 ADT	400 ADT	600 ADT
LOS F	100 ADT	200 ADT	300 ADT

Intersections

Intersection LOS	*Signalized*	*Unsignalized*
LOS E	Delay of 2 seconds	20 peak hour trips on a critical movement
LOS F	Delay of 1 second, or 5 peak hour trips on a critical movement	5 peak hour trips on a critical movement

Should the project exceed the allowable ADT on segments, the determination of significance (Yes/No) is shown in **bold type** to indicate a significant project impact that requires mitigation. Where intersections are forecast to operate at LOS E or F and the thresholds set in Table 1 are exceeded, the determination of significance (Yes/No) is shown in **bold type** to indicate a significant impact that requires mitigation.

Traffic Count Data

Existing traffic data was obtained from counts commissioned from Traffic Data Service Southwest and Katz, Okitsu and Associates in November 2002, September 2003, October 2004, and November 2004. Weekday and Sunday traffic counts were taken during non-holiday periods. All count data used in this study can be found in Appendix B.

3.0 Existing Conditions

Existing Circulation Network

Bonita Road provides regional access to the site from Interstate 805 and Highway 54. The roadways south of Bonita Road in and around the project site include: Willow Street; Grevillea Way, which heads south along the east boundary of the project site; Hill Road, a short portion of which is used for the north most entry point to the project site; and Old Orchard Lane. Old Orchard Lane, while adjacent to the site, terminates in a residential area east of the project it is not anticipated for use as part of the regular circulation in and out of the project site. Figure 4 shows the circulation network and intersection geometries.

Bonita Road provides access to both Interstate 805 and Highway 54. Interstate 805 can be accessed west of the intersection of Bonita Road and Willow Street. This segment is classified as a four-lane major road with posted speeds of 50 mph. Access to Highway 54 is provided via Willow Street and Bonita Road. The Bonita Road access is located east of the Bonita Road and Willow Street intersection where Bonita Road is also classified as a four-lane major road between Willow Street and Otay Lakes Road. The speed limit is posted at 35 mph between Willow Street and Allen School Road and 45 mph between Allen School Road and Otay Lakes Road. East of Otay Lakes Road, Bonita Road transitions to a three-lane town collector roadway with a center left turn lane or turn pockets with speeds posted at 45 mph.

Willow Street just south of Bonita Road measures approximately 48 feet in width at the intersection with Bonita. It has a narrow gravel shoulder, measuring one to two feet on the west side, and commercial fronting property with driveway along with a narrow two foot sidewalk on the east side. This segment is striped as a two-lane road and functions similar to a residential collector. As such, it loosely meets the standards for the said functional class. North of Bonita Road to the northern edge of the Willow Street Bridge, Willow Street is also a two-lane residential collector street but is located within the jurisdiction of Chula Vista. North of the Willow Street Bridge, the roadway changes to Sweetwater Road where it widens to a four-lane major road.

Grevillea Way is an asphalt-paved road that varies in width from approximately 14 to 21 feet. It has gravel shoulders ranging in width from a few inches to a few feet. No curb or gutter exists along Grevillea Way. The pavement condition can be characterized as fair, whereby no pavement distress exists currently which require mitigation. This roadway functions similar to a residential loop. As such, is does not meet the standards for the said functional class.

Hill Road is an asphalt-paved road with a width of approximately 16 feet. It has gravel shoulders ranging in width from a few inches to a few feet. No curb or gutter exists along Hill Road. The pavement condition can be characterized as fair, whereby no pavement distress exists currently which require mitigation. This roadway functions similar to a residential loop. As such, is does not meet the standards for the said functional class. Old

Old Orchard Lane is an asphalt-paved road with a width of approximately 13 feet. It has gravel shoulders ranging in width from a few inches to a few feet. No curb or gutter exists along Old Orchard Lane. The pavement condition can be characterized as poor, whereby some pavement distress exists currently

which may require mitigation. This roadway functions similar to a residential loop. As such, it does not meet the standards for the said functional class.

Sight Distance

Due to relatively high speeds on Bonita Road approaching the Willow Street intersection, a field measurement was made for the corner sight distance for eastbound vehicles. The posted speed limit on Bonita Road is 50 mph. For this speed, the minimum corner sight distance required by the County is approximately 500 feet. A field measurement of corner sight distance in excess of 600 feet for eastbound Bonita Road traffic exceeds the County's minimum requirement. Sight distance to westbound traffic is not an issue of concern since the intersection is signalized. There are no corner sight distance problems between the eastbound and northbound traffic at the intersection of Bonita Road with Willow Road.

Ingress/Egress/Internal Circulation Alternatives

Existing access to the Church of the Good Shepard can be taken either from the north end of the property, adjacent to Bonita Road, or from the southerly portion of the property onto Grevillea Way. Currently, bi-directional travel through the premises is allowed, giving patrons ingress and egress at either access point. The layout of the facility is such that the sanctuary is located toward the northern end of the property. As such, the majority of the parking is located toward the northern portion of the property, which would tend to favor the northern access point during Sunday and weekday use.

However, current plans for redevelopment will implement either angled or perpendicular parking into the facility and will relocate much of the northerly parking area towards the southern portion of the property. Use of angled parking will force unidirectional circulation through the northern portion of the facility up to the point where the roadway enters the parking lot in the southern portion of the facility. Perpendicular parking will allow for the continued use of the front entrance for two-way travel.

Three circulation alternatives have been examined as outlined in Table 2 below:

Table 2 Circulation Alternatives

Alternative	*Access*	*Circulation*	*Parking*
Alt. 1 North access	Northern Access	Two-way	Perpendicular
Alt. 2 Full access	Northern and Southern access	Two-way	Perpendicular
Alt. 3 One-way flow	Northern access entry, southern access exit.	One-way north to south	Angled in northern parking lot, perpendicular in south parking lot

Site plans for the proposed expansion of the Good Shepherd Church include provisions for curbside drop-off space at the north end of the proposed back parking lot, which is located at the southern end of the project site, and in the front, on the east side of the driveway which is located along the west side of the project site. Given one or two-directional traffic through the northern driveway, it is necessary to give consideration to how these locations will be used for the loading and unloading of passengers. For two-way traffic through the front, the northern driveway will be used for traffic entering and exiting the project site. Therefore the unloading of passengers will only be allowed within the back parking lot.

Loading will also be allowed in the back parking lot, however for two-way traffic through the front, the drop-off space in the front, on the west side of the project site, will be restricted to loading only.

Where one-way traffic comes in the north end and leaves from the south end, the opposite will be true. In this instance, the back lot can be used for loading or unloading of passengers, but the front location will be restricted to unloading of passengers. The implications of these circulation alternatives on local traffic are studied in following sections. Figures 3a and 3b graphically portray the alternative site plans and the respective loading zone layouts for each.

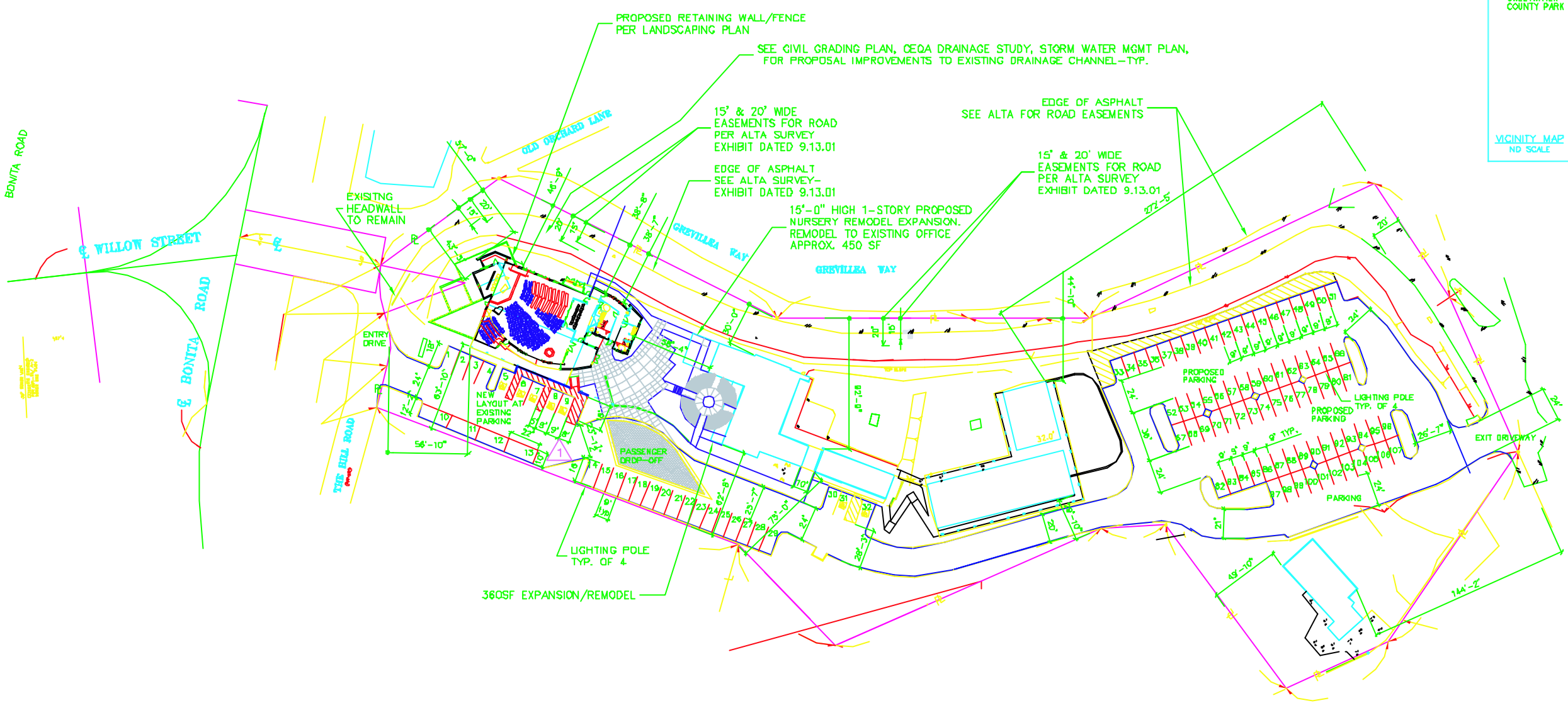
To minimize any confusion for one-way traffic through the project, a 'DO NOT ENTER' sign should be placed facing the new south parking lot where the front driveway connects to the new south parking lot.

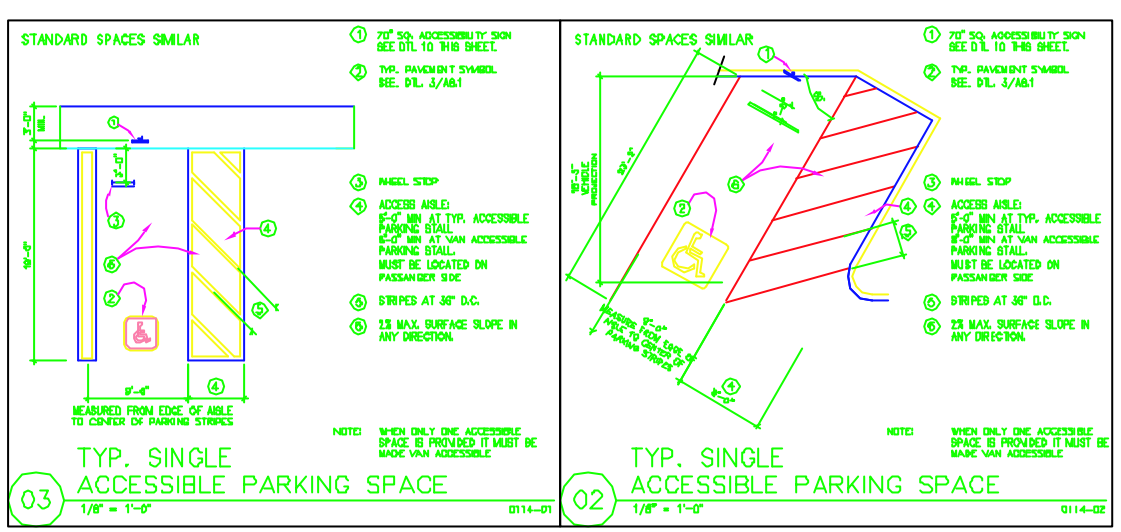
Currently, as a matter of verbal agreement, the Church has an agreement with the Bonita Fire Department whereby emergency vehicles can take access to property south of the Church via the new driveway which is located on the west side of the property. It has been agreed that this point of access will meet the standards for emergency vehicles in width, height and weight. It is recommended that this agreement be written up and formalized as a condition of approval.

PHASE SCHEDULE

PHASE I: NEW APPROX. 325 SEAT SANCTUARY WITH PARKING AND UTILITY IMPROVEMENTS (COMMENCE APPROX. ONE YEAR FROM THIS APPROVAL)
PHASE II: COSMETIC REMODEL TO EXISTING FACILITIES UNDER ROOF. EXISTING HALL IS TO RECEIVE SOME NEEDED MAINTENANCE. CHURCH MAY NEED TO EXPAND 810 SF FOR EXTRA STORAGE AND WANT NURSERY DURING WORSHIP SERVICE. THEREFORE, EXISTING HALL WOULD BE 4214 SF TOTAL IN LIEU OF 3404 SF. (COMMENCE APPROX 8–10 YEARS FROM THIS APPROVAL.)
PHASE III: NEW CLASSROOM – MEETING – STORAGE BUILDING TO REPLACE EXISTING WITH NEW DAY CARE (60 CHILDREN MAX.) APPROX. 8,800 SF OF NEW CLASSROOM SPACE. AT PROPOSED NEW CLASSROOM BUILDING WE RAISED PORTION OF THE ROOF NEAR ENTRANCE TO HELP DEFINE LOCATION OF ENTRANCE. (COMMENCE APPROX. 15–17 YEARS FROM THIS APPROVAL)

PROPERTY LINE
CENTER LINE
EASEMENT LINE PER ALTA





PLOT PLAN– PARKING OPTION B

1" = 40'-0"

TRUE NORTH

0 40 80 160

ASSESSORS PARCEL NUMBERS:
591–252–21
592–060–28
592–060–67
NET AREA: 3.32 ACRES

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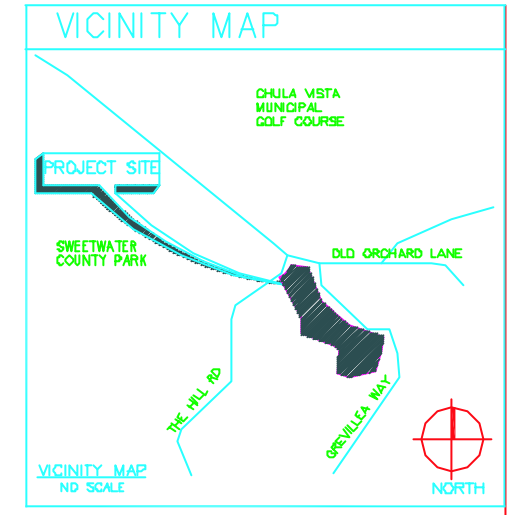
Figure 3a - Project Site Plan, One-Way Traffic Alternatives 1 and 2

VICINITY MAP



VICINITY MAP
NO SCALE

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GOOD SHEPHERD CHURCH
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Revisions
1 09/16/2003

Date 05/28/2003
Drawn TG
Checked DD
Job Number 0114
Drawing PLOT PLAN
Sheet PP1.1

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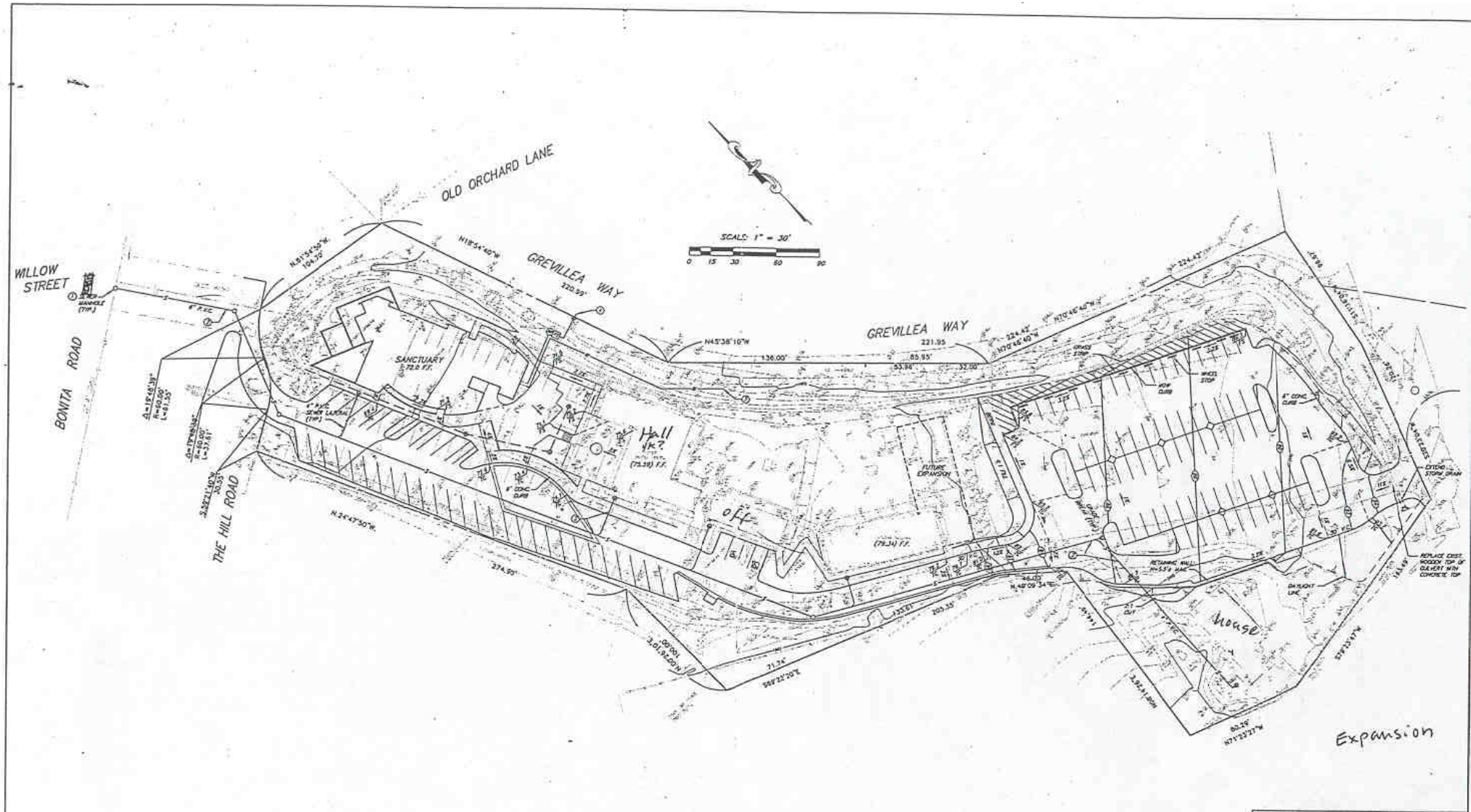

CONSTRUCTION NOTES

1. PRIVATE 6" SEWER LINE POINT OF CONNECTION TO EXISTING PUBLIC SEWER.
2. 6" SEWER LINE TO REPLACE EXISTING ON-SITE SEPTIC SYSTEM(S)
3. PRIVATE WATER LINE POINT OF CONNECTION TO BE LOCATED ON PRIVATE SIDE OF EXISTING WATER METER.
4. PRIVATE FIRE SERVICE POINT OF CONNECTION TO EXISTING PUBLIC WATER LINE.

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SHEET 1	COUNTY OF SAN DIEGO DEPARTMENT OF PUBLIC WORKS	1 SHEETS

PRELIMINARY GRADING & UTILITY PLAN FOR:

CHURCH OF THE GOOD SHEPERD
3990 BONITA ROAD

DATE: 1/22/02

Daily Roadway Segment Operations

The *County of San Diego Circulation Element* contains daily traffic volume standards for roadways within the City. To determine existing service levels on study area roadway segments, we compared the adopted average daily traffic thresholds for level of service, the daily capacity of the study area roadway segments, and the existing volumes in the study area. When evaluating traffic conditions, the County of San Diego considers levels of service A-D acceptable. The thresholds for determining level of service on County of San Diego roadways are summarized in Appendix A, Table A-2. Table 3 is a summary of existing conditions. Figure 5 graphically presents the results of this analysis.

Table 3
Existing Daily Roadway Segment Conditions

Roadway Segment	*Classification/ Lanes*	*LOS E Capacity*	*Forecast Daily Traffic (ADT)*	*Volume to Capacity Ratio*	*Level of Service*
Bonita Road – West of Acacia Avenue	Town Collector / 3	19,000	25,174	1.33	F
Bonita Road – East of Willow Street	Major / 4	37,000	36,567	0.99	E
Bonita Road – West of Willow Street	Major / 4	37,000	31,067	0.84	D
Grevillea Way*	Residential Road	1,500	267	0.18	<C

*Personal communication with County, 9/8/03: Grevillea Way can accommodate 2,500 ADT, this is approximated by the Residential Road classification of the non-circulation element road classes of the County road design standards.

As shown in Table 3, two of the study segments on Bonita Road, west of Acacia Avenue and east of Willow Street, are currently operating at LOS F and E respectively.

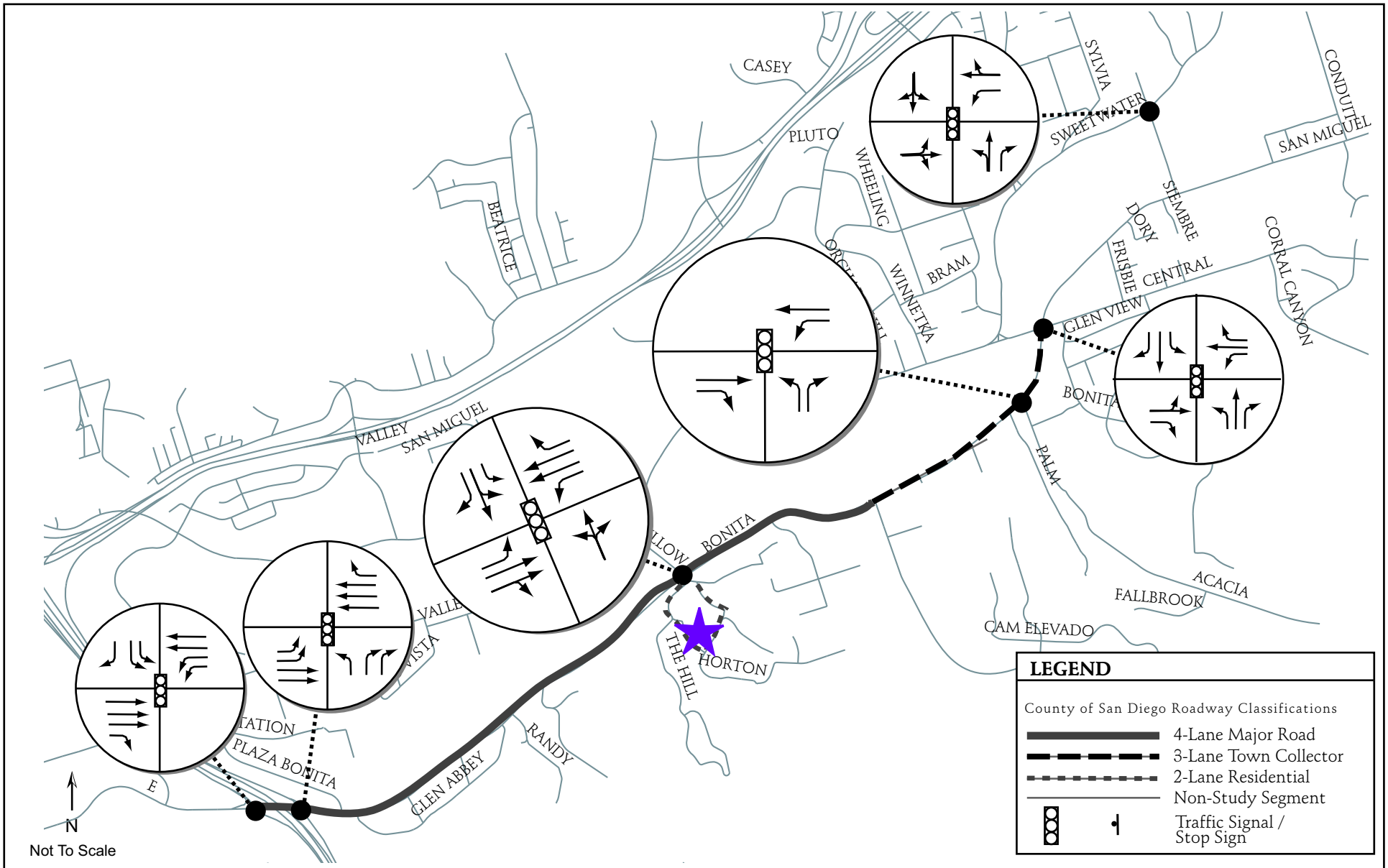

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Figure 4
Existing Circulation Network

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Peak Hour Intersection Performance

Traffic conditions are evaluated in the using the procedures outlined in the *Highway Capacity Manual* (HCM), a publication of the Transportation Research Board. Appendix A, Table A-4 and Table A-5 contain a summary of this analysis method as well as the level of service criteria used.

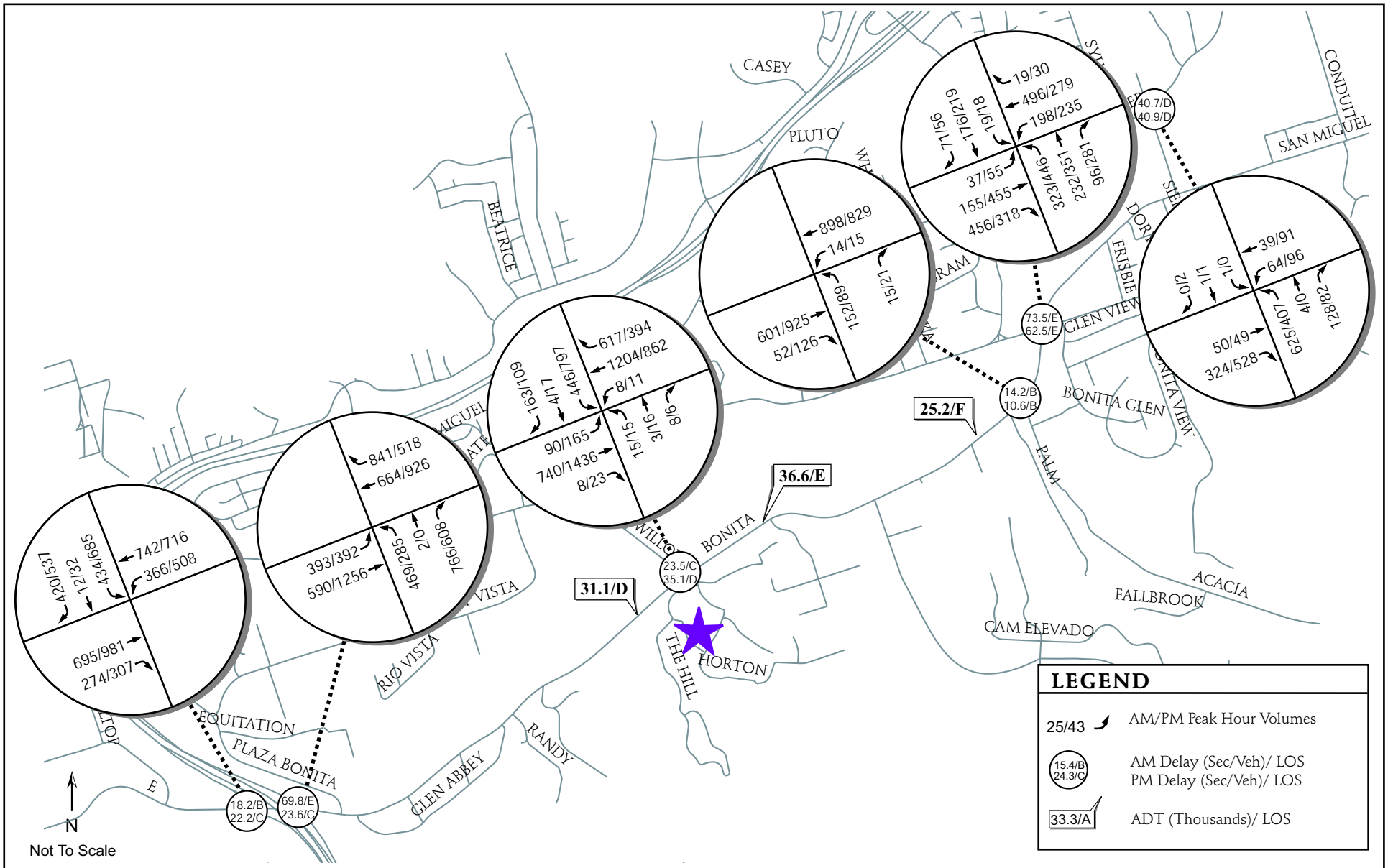
Level of service A-D is considered acceptable for peak hour intersection operations in the County of San Diego. The following table summarizes the existing peak hour operating conditions for the study intersection. Figure 5 shows existing morning and evening peak hour traffic volumes and levels of service for the study intersection. Appendix B contains the worksheets used in this analysis.

Table 4
Existing Peak Hour Intersection Conditions

	AM Peak Hour		*PM Peak Hour*		*Sunday Peak Hour*	
Intersection	*Average Intersection Delay (sec.)*	*Level of Service*	*Average Intersection Delay (sec.)*	*Level of Service*	*Average Intersection Delay (sec.)*	*Level of Service*
I-805 Southbound Ramps and Bonita Road	18.2	B	22.2	C	-	-
I-805 Northbound Ramps and Bonita Road	69.8	E	23.6	C	-	-
Acacia Avenue and Bonita Road	14.2	B	10.6	B	-	-
Central Avenue and Bonita Road	73.5	E	62.5	E	-	-
Sweetwater Road and Bonita Road	40.7	D	40.9	D	-	-
Willow Street and Bonita Road	23.5	C	35.1	D	38.7	D
Old Orchard Lane and Hill Road	9.0	A*	9.2	A*	8.9	A*
Grevillea Way and Old Orchard Lane	8.8	A*	9.1	A*	8.7	A*
Hill Road and Front Project Driveway	4.4	A*	8.4	A*	8.4	A*

*Approach LOS for the worst approach at the intersection

As shown in Table 4, the internal, unsignalized intersections operate at LOS A. The signalized intersection of the I-805 Northbound Ramps and Bonita Road operate at LOS E in the AM peak hour, while the intersection of Central Avenue and Bonita Road operates at LOS E during both the AM and PM peak hours. All other study intersections operate at LOS D or better.



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25/43	AM/PM Peak Hour Volumes
15.4/B 24.3/C	AM Delay (Sec/Veh)/ LOS PM Delay (Sec/Veh)/ LOS
33.3/A	ADT (Thousands)/ LOS

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Figure 5

Existing Peak Hour Intersection and Segment Conditions

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4.0 Proposed Project Traffic

At present, the site includes a church. Any development on the site will result in some level of increase in traffic on streets and driveways leading to the site.

Project Trip Generation

Trip generation is a measure or forecast of the number of trips that begin or end at the project site. All or part of these trips will result in traffic increases on the streets where they occur. The traffic generated is a function of the extent and type of development proposed for the site.

Vehicular traffic generation characteristics for projects are estimated based on rates in the SANDAG *(Not so) Brief* Guide of Vehicular Traffic Generation Rates for the San Diego Region, April 2002. This manual provides standards and recommendations for the probable traffic generation of various land uses based upon local, regional and nation-wide studies of existing developments in comparable settings. Appendix C contains excerpts from the trip generation manual used in this analysis as well as the hand calculations used to derive the modified Sunday trip generation rates, based on existing traffic counts. Tables 5a, 5b and 5c summarize the trips generated by the proposed project. Table 5b represents the published, Sunday SANDAG trip generation rate for the proposed project. However, based on manual counts at the church, Table 5c lists more conservative Sunday rates that were obtained to more accurately portray the actual trip generation of the site. The trip generation and net trips used for purposes of this analysis are taken from Table 5c.

Based on the planned expansion of the Church of the Good Shepherd, the following tables summarize the net increase in trips generated by the proposed buildout of the project in the AM and PM peak hours during a typical weekday and during Sunday. The daycare center enrollment will not exceed 60 students as a condition of the MUP approval.

Table 5a
Weekday Trip Generation for the Proposed Project

Land Use	*Intensity*	*Trip Rate*	*ADT*	*AM Trips, In*	*AM Trips, Out*	*PM Trips, In*	*PM Trips, Out*
Planned Church – Phase I	6,100 ft^2	9 per KSF	55	2	1	2	2
Planned Daycare – Phase III	60 Students	5 per child	300	26	26	27	27
Existing Church	3,300 ft^2	9 per KSF	- 30	- 1	- 1	- 1	- 1
Net Increase of Weekday Trips	**-**	**-**	**325**	**27**	**26**	**28**	**28**

Source: *SANDAG (Not so) Brief Guide of Vehicular Traffic Generation Rates for the San Diego Region*, April 2002.

Table 5b
Sunday Trip Generation for the Proposed Project, Published Rates

Land Use	*Intensity*	*Sunday Trip Rate*	*ADT*	*Max Sunday Trips, In*	*Max Sunday Trips, Out*
Planned Church – Phase I	6,100 ft^2	36 per KSF	220	9	9
Planned Daycare – Phase III	60 Students	0 per student	0	-	-
Existing Church	3,300 ft^2	36 per KSF	- 119	- 5	- 5
Net Increase of Sunday Trips	**-**	**-**	**101**	**4**	**4**

Source: *SANDAG (Not so) Brief Guide of Vehicular Traffic Generation Rates for the San Diego Region, April 2002.*

Table 5c
Sunday Trip Generation for the Proposed Project, Field Rate

Land Use	*Intensity*	*Sunday Trip Rate*	*ADT*	*Max Sunday Trips, In*	*Max Sunday Trips, Out*
Planned Church – Phase I	6,100 ft^2	48 per KSF	293	31	20
Planned Daycare – Phase III	60 Students	0 per student	0	-	-
Existing Church	3,300 ft^2	48 per KSF	- 159	- 17	- 11
Net Increase of Sunday Trips	**-**	**-**	**134**	**14**	**9**

Source: *Estimate based on manual count data collected for the duration of all three Sunday masses on 9/14/03.*

As shown in Table 5a, the proposed project would add 325 weekday trips to the circulation network, with 63 occurring in the AM peak hour and 56 during PM peak hour. As shown in Table 5c, the proposed project would add 134 daily trips on Sunday to the circulation network, with a net addition of 23 peak hour trips.

For Sundays, weekday trip generation rates are quadrupled. It was determined that the PM distribution for weekday rates present the most conservative traffic volumes. These are the rates listed in Table 5b. The rates listed in Table 5c are based on manual counts taken for the duration of their three currently scheduled Sunday services. As shown, Table 5c represents a more conservative set of trip generation numbers, which are used in the analysis for levels of service. Since the daycare center will be closed on Sundays, it will not be a traffic generator.

Additional regular meetings are held throughout the week, these include choir meetings, boy scouts and others. The sum total of all attendees does not typically exceed 50 on any given evening. The typical starting time for the larger gatherings is 7 p.m. However, smaller gatherings meet as early as 6:00 or 6:30 P.M. In all cases, these group meetings are found to begin outside of the typical PM peak traffic hour, which was found to be between 4:45 and 5:45 P.M. These ancillary uses are typical of any church and is reflected in the published trip generation rate.

Project Access

The proposed project will take access from a driveway onto Hill Road at the north end of the project site. A second driveway on the south end of the property takes access onto Grevillea Way. All project traffic takes access to Bonita Road at the signalized intersection of Bonita and Willow Streets.

Parking

The County of San Diego parking guidelines requires 1 parking space per four persons for a religious assembly structure. It also requires 1 parking space per 200 square feet of childcare. The proposed project will accommodate 300 seats and 8,800 square feet of child daycare, requiring a total of 119 parking spaces. However, since the child day care center and Sunday church services will never operate simultaneously, it is not expected that the facility will completely utilize all of the required parking spaces. Table 6 is a summary of parking requirements.

Table 6
Parking Requirements

Land use	*Size of Facility*	*Required Parking Ratio*	*Required Parking Spaces*	*Planned, Available Parking During Facility Use**
Church	300 Seats	1 per 4 seats	75	103
Daycare	8,800 ft^2	1 per 200 SF	44	103

*Since the hours of operation of the Sunday church services does not overlap with the parking demand for the daycare center, adequate planned parking exists for the expanded facility.

The church has no past or future plans that would require parking in excess of what has been and will be available. For purposes of further eliminating the need for overflow parking, the church worship hall and multipurpose hall will not be used concurrently.

Project Trip Distribution and Assignment

Trip distribution and assignment is the process of identifying the probable destinations, directions, or traffic routes that project related traffic will likely affect. In this case, the project trip distribution was estimated from observed traffic patterns and experience. Discussion with County of San Diego Traffic Engineering Staff also helped define the proposed project's distribution and assignment as well as the importance of the local traffic circulation adjacent to the project. Figure 6 shows the project distribution and assignment for the regional circulation network of the project. Figure 7 shows the increase in trips that the proposed project would add to the circulation network using the distribution shown in Figure 6.

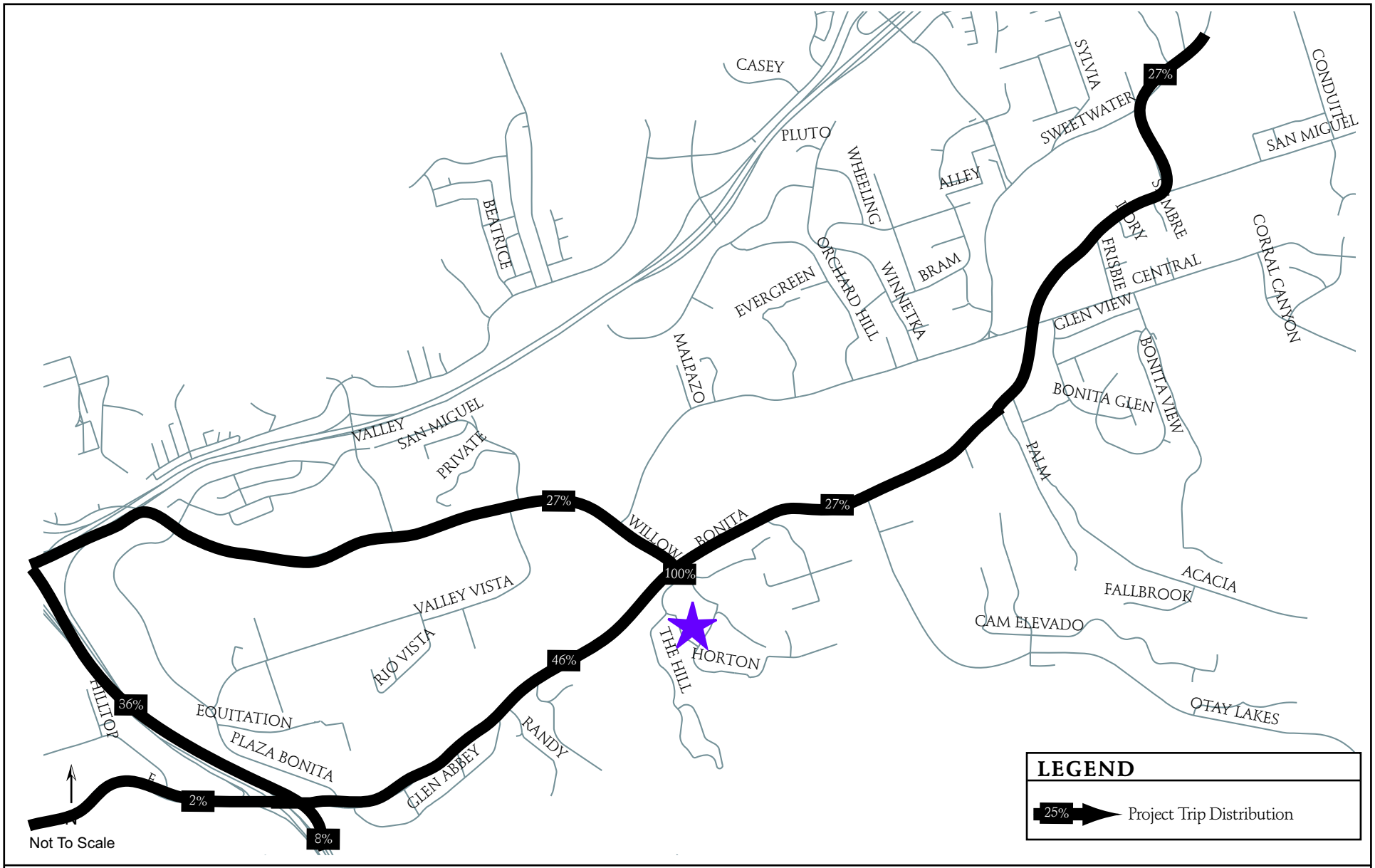

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Figure 6

Regional Project Trip Distribution

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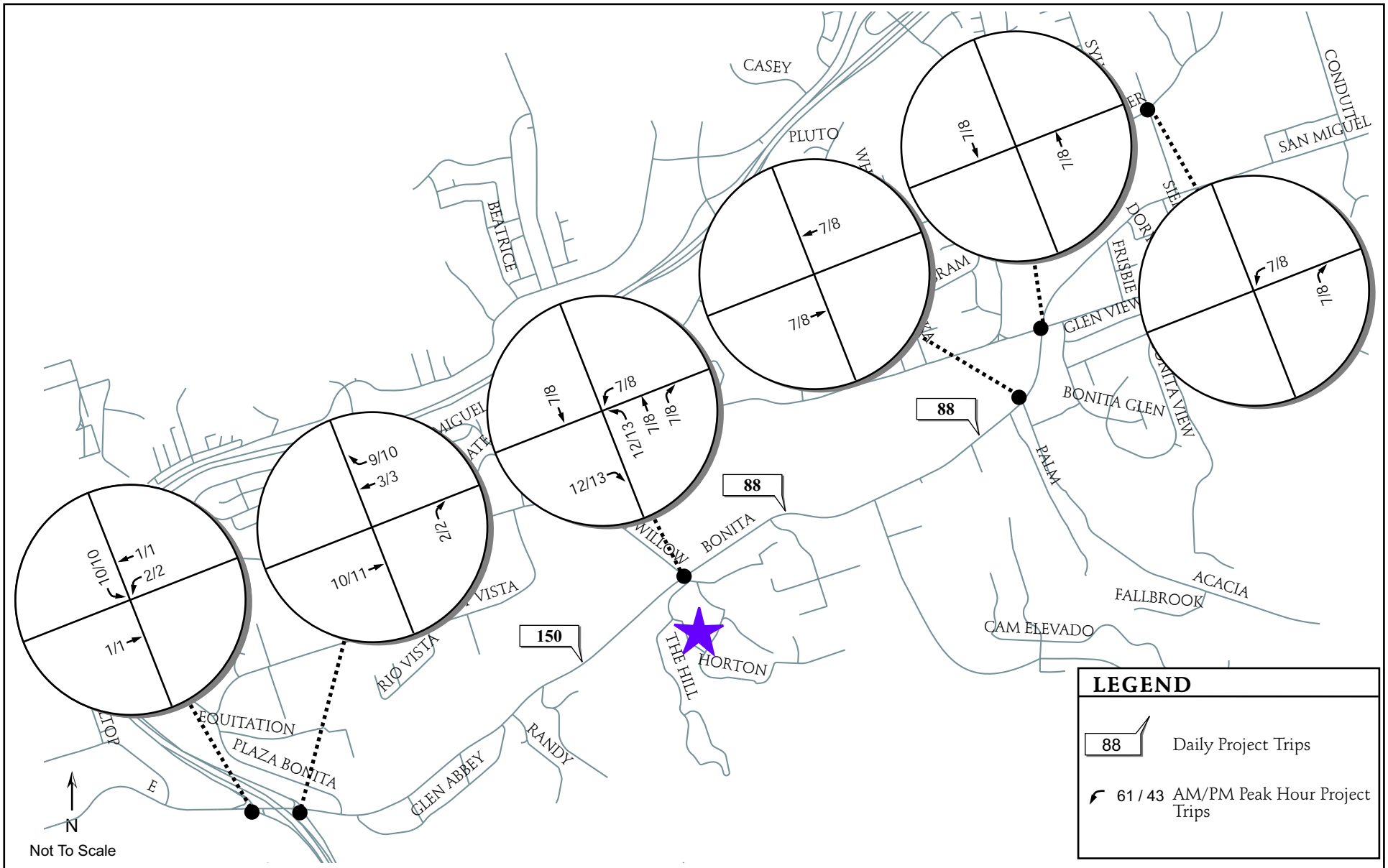

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Figure 7

Regional Proposed Peak Hour Project Trips

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Locally, there are three different circulation alternatives within the direct vicinity of the project site. These three alternatives represent the flow of traffic into and out of the project site using three combinations of the northern and southern project driveway. Given how the existing and proposed project traffic will enter and exit the project site will have varying degrees of impact upon the circulation system adjacent to the project site. These alternatives, the relative proportion of traffic, and the affected driveway are listed in Table 7.

Table 7
Trip Distribution Assumptions for Alternatives 1–3

Alternative	*North Driveway*		*South Driveway*	
	In	*Out*	*In*	*Out*
Alt. 1 North access	100%	100%	0	0
Alt. 2 Full access	75%	75%	25%	25%
Alt. 3 One-way flow	100%	0	0%	100%

Trip distribution of traffic at the intersection of Bonita Road and Willow Street is based on the traffic count at that intersection and the relative proportion of traffic affecting the in and out volumes at the south leg. Figures 8a-c shows the project trip distributions for each alternative. Figures 9a-c shows the increase in trips that the proposed project would add to the circulation network using the near-term distributions shown in Figures 8a-c.

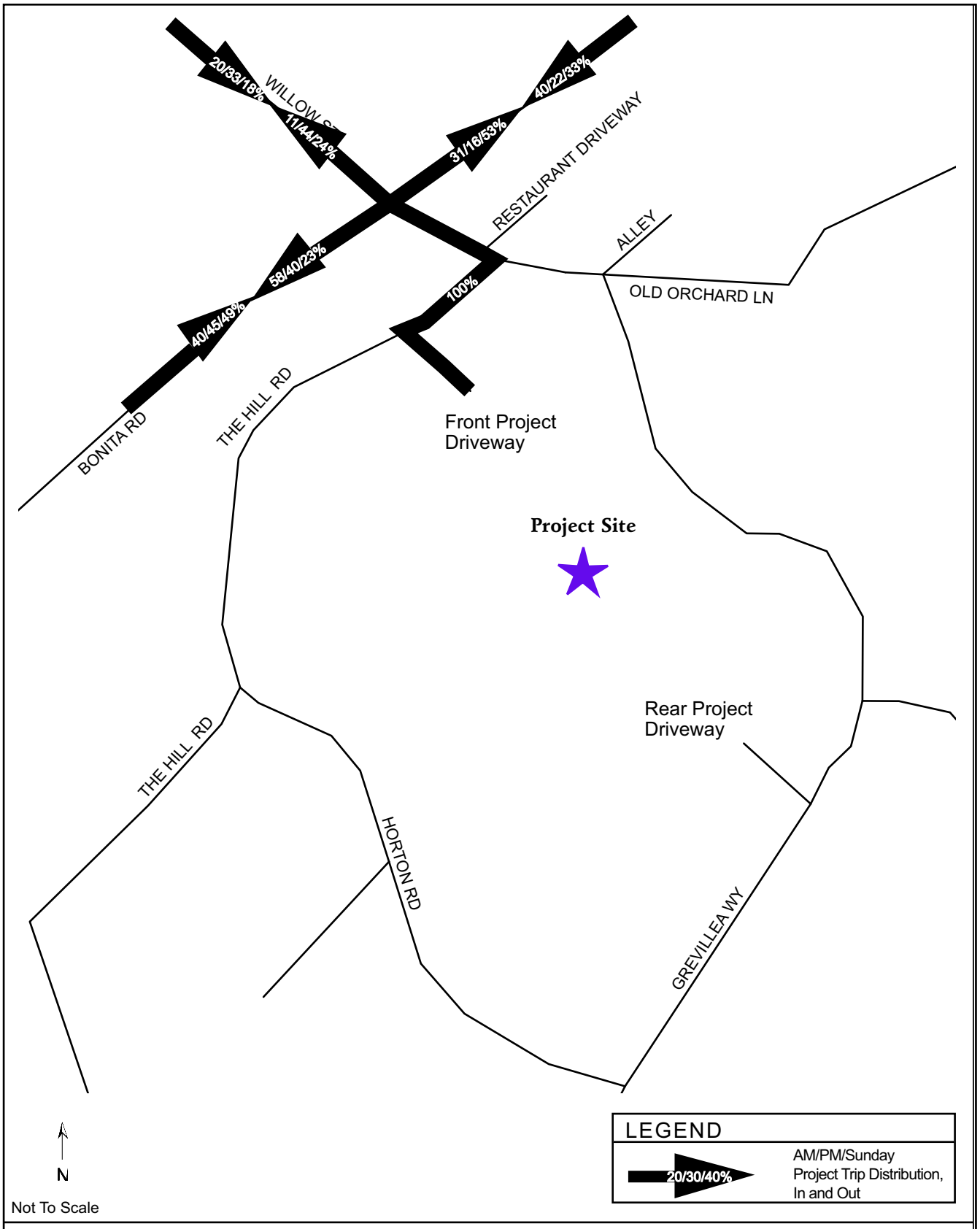

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Figure 8a
Local Project Trip Distribution, Alternative 1

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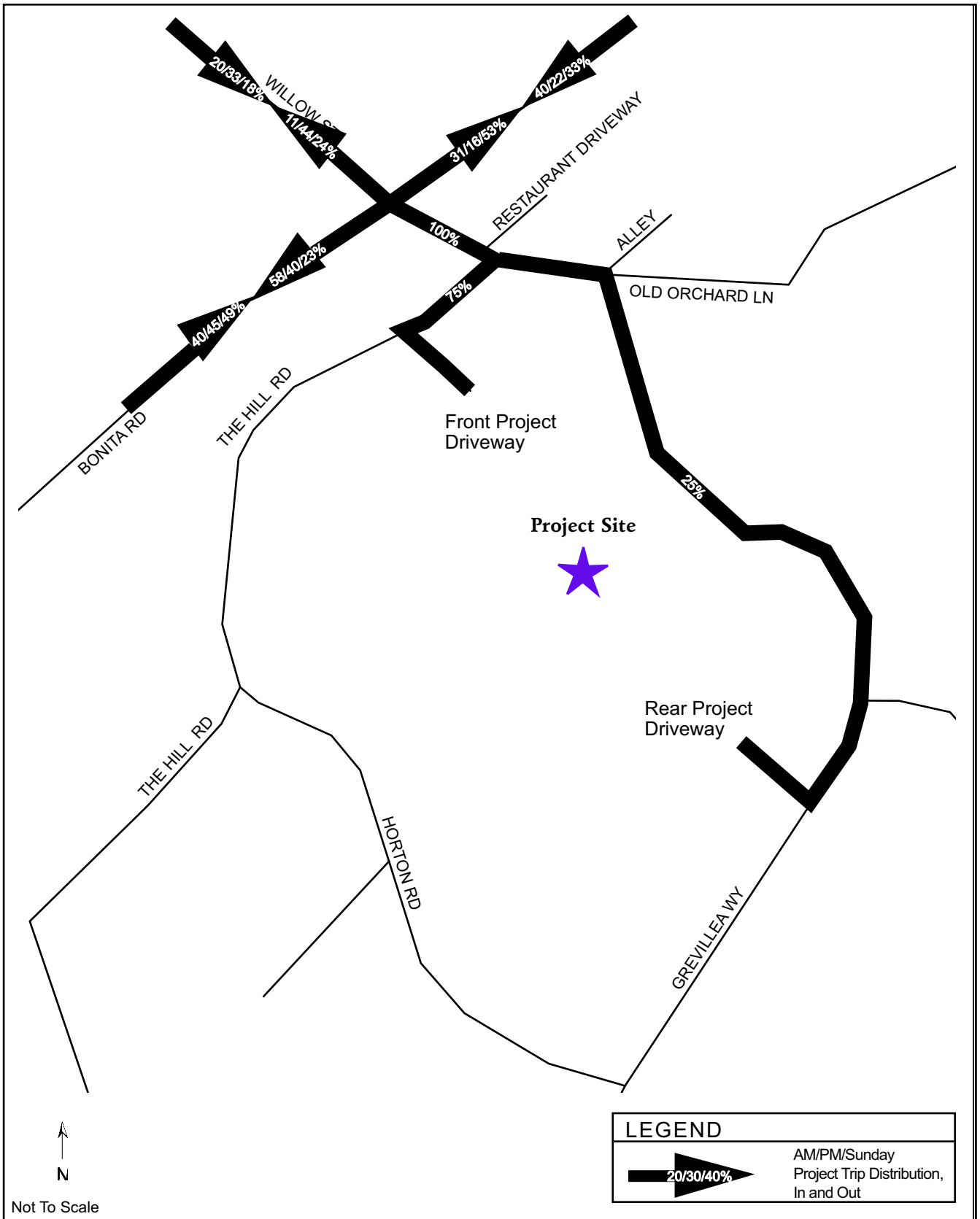

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Figure 8b
Local Project Trip Distribution, Alternative 2

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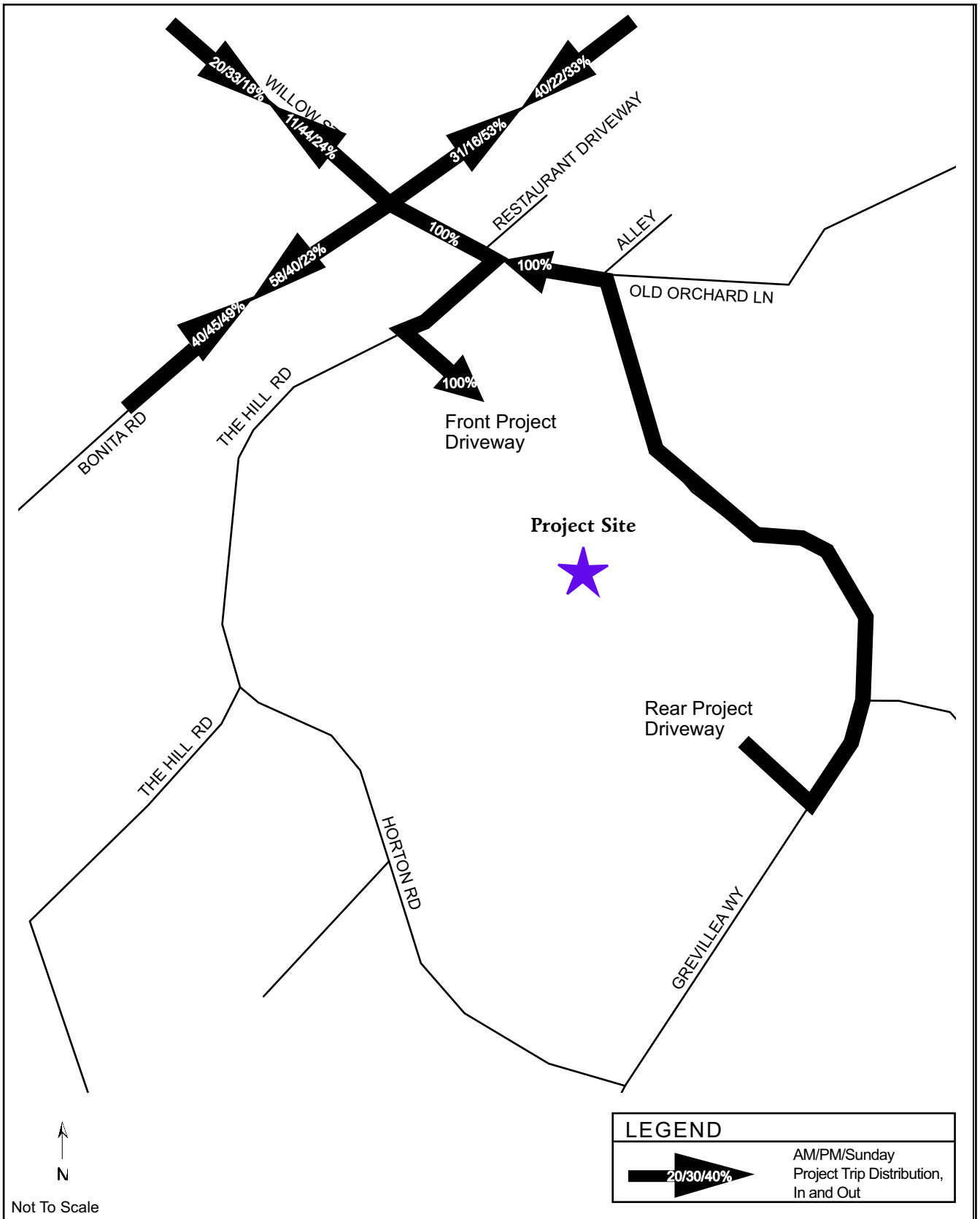

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Figure 8c
Local Project Trip Distribution, Alternative 3

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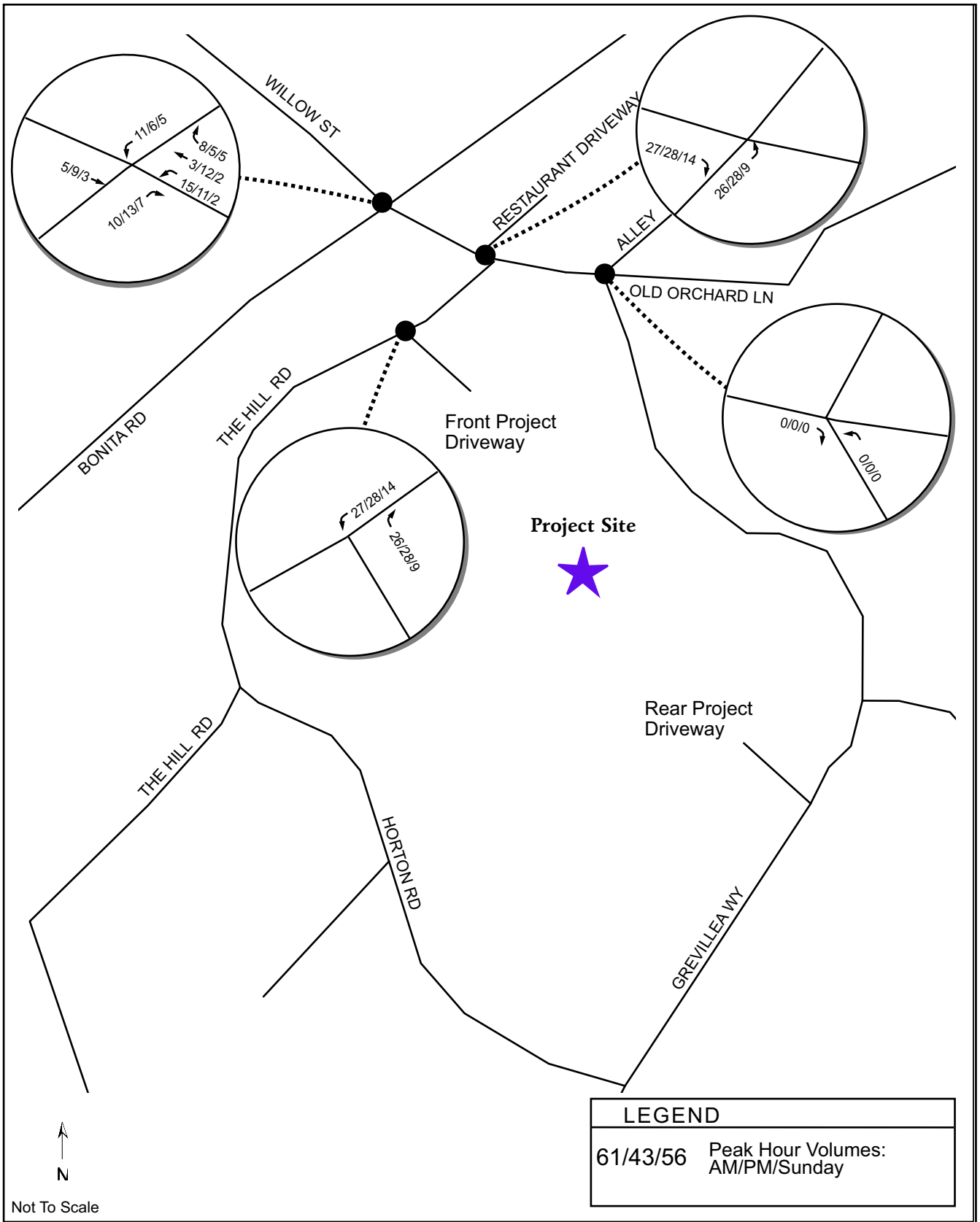

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Figure 9a
Local Project Trip Assignment, Alternative 1

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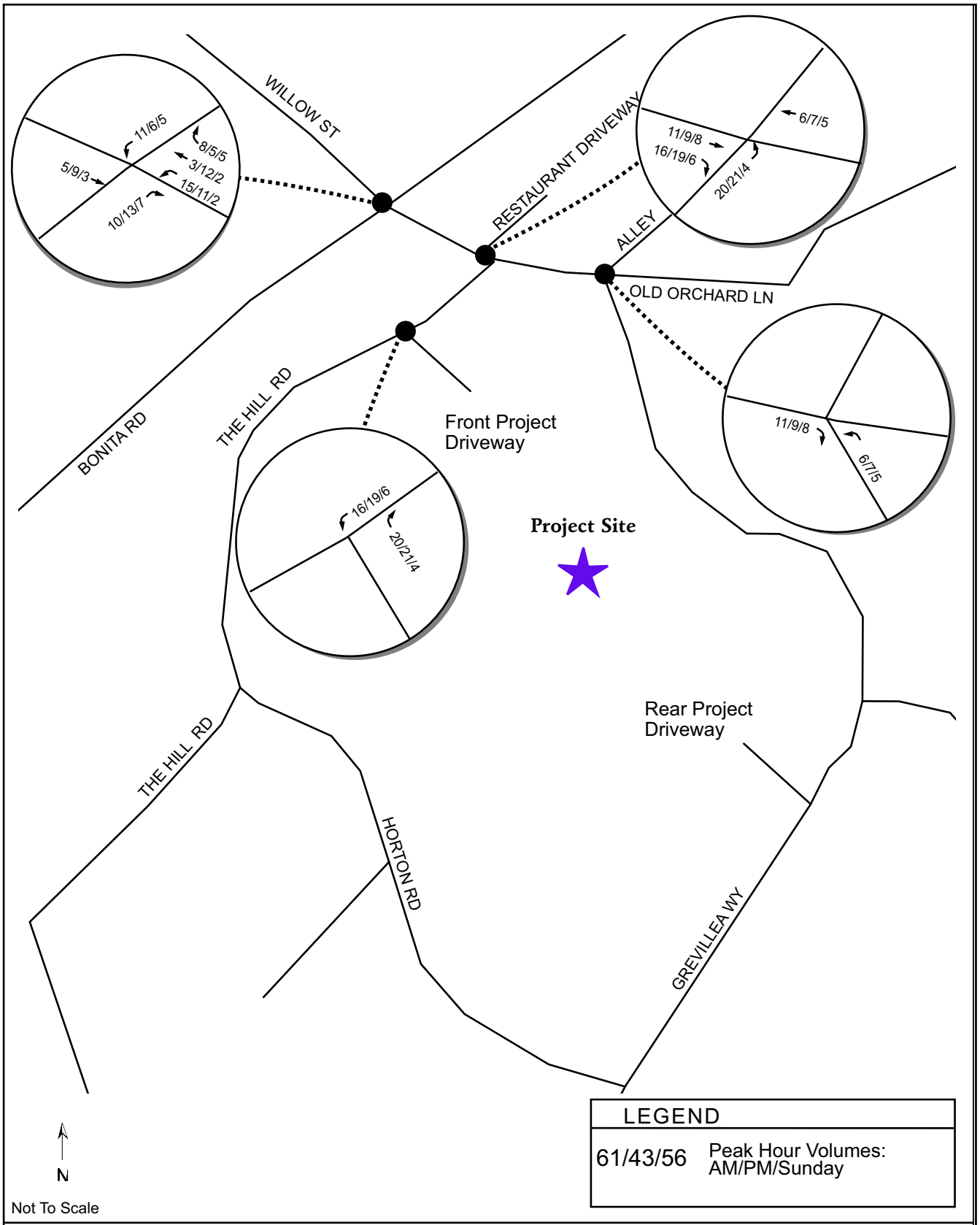

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Figure 9b
Local Project Trip Assignment, Alternative 2

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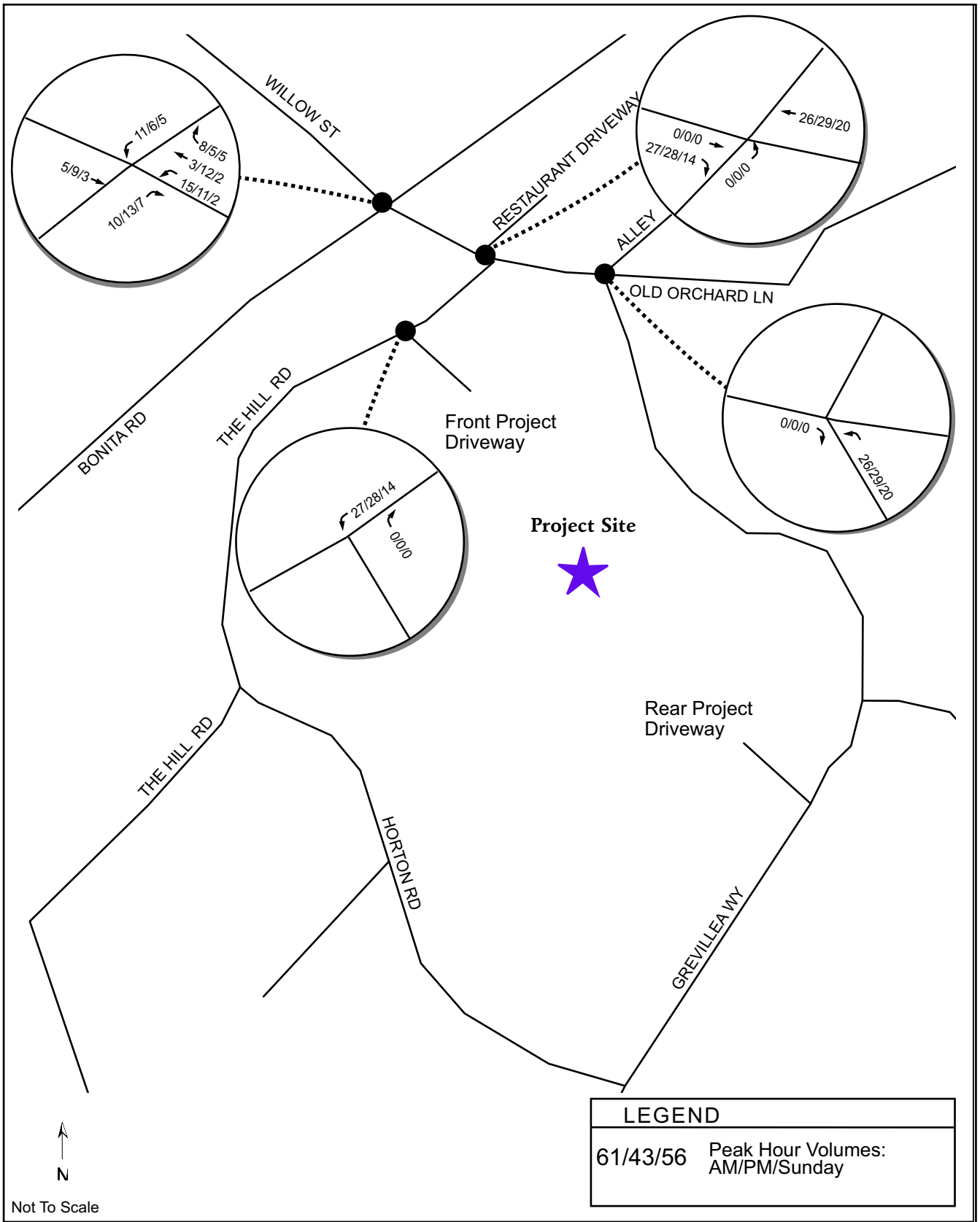

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Figure 9c
Local Project Trip Assignment, Alternative 3

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5.0 Existing Plus Project Conditions

This section documents the addition of the proposed project to the existing conditions. The existing plus project analysis takes into account existing traffic volumes plus the traffic associated with the project. Phases I and III were collectively analyzed to represent the worst-case project scenario. Through a comparison of the resulting change in delay and level of service, project impacts can be identified.

With Project Scenario Daily Roadway Segment Performance

As stated in Section 3, the two study segments of Bonita Road west of Acacia Avenue and east of Willow Street are currently operating at LOS F and E respectively. The segment of Bonita Road west of Willow Street operates at LOS D and is considered acceptable. The addition of the project traffic to the roadway segments is shown below in Table 8.

Table 8
Existing Daily Roadway Segment Conditions
Without and With the Proposed Project

Roadway Segment	Classification/ Lanes	LOS E Capacity	Existing Conditions without Project			Existing Conditions with Project				
			Forecast ADT Volume	Volume/ Capacity Ratio	LOS	Project ADT	Forecast ADT Volume	Volume/ Capacity Ratio	LOS	Signi-ficant?
Bonita Road – West of Acacia Avenue	Town Collector/ 3	19,000	25,174	1.33	F	88	25,262	1.33	F	No
Bonita Road – East of Willow Street	Major / 4	37,000	36,567	0.99	E	88	36,655	0.99	E	No
Bonita Road – West of Willow Street	Major / 4	37,000	31,067	0.84	D	150	31,217	0.84	D	No
Grevillea Way*	Residential Road	1,500	267	0.18	<C	592	0.40	<C	0.22	No

*Personal communication with County, 9/8/03: Grevillea Way can accommodate 2,500 ADT, this is approximated by the Residential Road classification of the non-circulation element road classes of the County road design standards.

Table 8 illustrates that the proposed project does not have any significant roadway impacts based on the County criteria shown in Table 1.

Peak Hour Intersection Performance

Peak hour intersection volumes under the existing plus project scenario were forecast based on the trip generation and trip distribution of the proposed project. These volumes were analyzed both with and without the project so that reasonable comparisons could be drawn and to determine if any impacts exist. Table 9a summarizes the results of this analysis and the significance of the project's regional impacts. Figure 10 illustrates morning and evening peak hour existing traffic volumes with the project. Appendix D contains the worksheets used in this analysis.

Table 9a illustrates that the proposed project does not have any significant intersection impacts based on the County criteria shown in Table 1.

Table 9a
Peak Hour Intersection Conditions
Without and With the Proposed Project, Regional Intersections

Intersection	*Without Project*		*With Proposed Project*			
	Average Intersection Delay (sec.)	*Level of Service*	*Average Intersection Delay (sec.)*	*Level of Service*	*Change in Delay*	*Significant?*
AM Peak Hour						
I-805 Southbound Ramps and Bonita Road	18.2	B	18.2	B	0.0	No
I-805 Northbound Ramps and Bonita Road	69.8	E	71.1	E	1.3	No
Acacia Avenue and Bonita Road	14.2	B	14.3	B	0.3	No
Central Avenue and Bonita Road	73.5	E	74.3	E	0.8	No
Sweetwater Road and Bonita Road	40.7	D	41.7	D	1.0	No
Willow Street and Bonita Road	23.5	C	23.8	C	0.3	No
PM Peak Hour						
I-805 Southbound Ramps and Bonita Road	22.2	C	22.2	C	0.0	No
I-805 Northbound Ramps and Bonita Road	23.6	C	24.0	C	0.4	No
Acacia Avenue and Bonita Road	10.6	B	10.7	B	0.1	No
Central Avenue and Bonita Road	62.5	E	63.4	E	0.9	No
Sweetwater Road and Bonita Road	40.9	D	41.7	D	0.8	No
Willow Street and Bonita Road	35.1	D	36.5	D	1.4	No

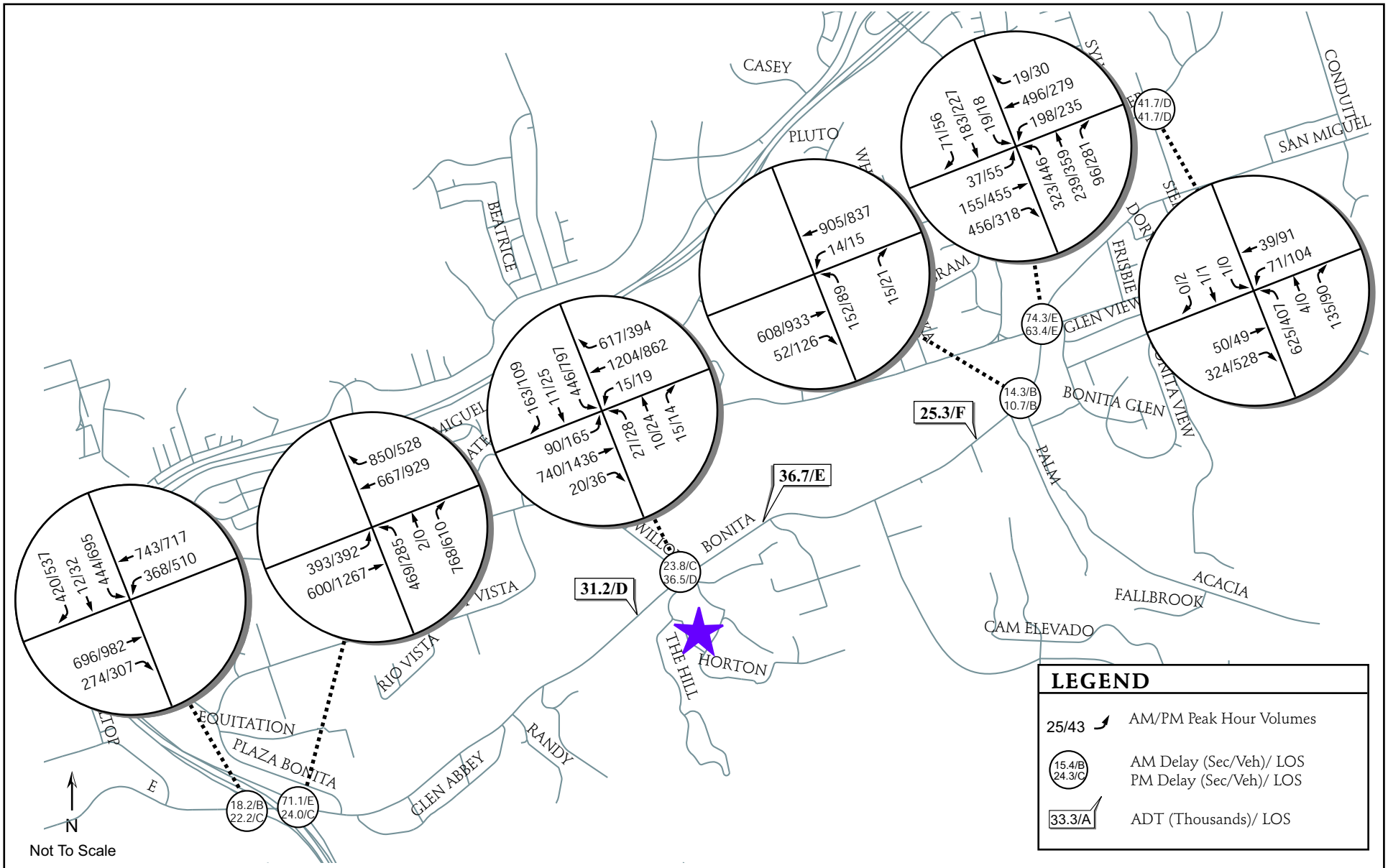

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Figure 10

Existing Peak Hour Intersection and Segment Conditions With the Proposed Project

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Tables 9b through 9d below show the peak hour intersection conditions at the local unsignalized intersections within the direct vicinity of the project.

Table 9b
Peak Hour Intersection Conditions
Without and With the Proposed Project, Alternative 1 Local Intersections

Intersection	*Without Project*		*With Proposed Project*			
	Average Intersection Delay (sec.)	*Level of Service*	*Average Intersection Delay (sec.)*	*Level of Service*	*Change in Delay*	*Significant?*
AM Peak Hour						
Old Orchard Lane at Hill Road	9.0	A	9.2	A	0.2	No
Grevillea Way at Old Orchard Lane	8.8	A	8.8	A	0	No
Hill Road at North Church Driveway	4.4	A	8.5	A	4.1	No
PM Peak Hour						
Old Orchard Lane at Hill Road	9.2	A	9.4	A	0.2	No
Grevillea Way at Old Orchard Lane	9.1	A	9.1	A	0	No
Hill Road at North Church Driveway	8.4	A	8.5	A	0.1	No
Sunday Peak Hour						
Old Orchard Lane at Hill Road	8.9	A	9.0	A	0.1	No
Grevillea Way at Old Orchard Lane	8.7	A	8.7	A	0	No
Hill Road at North Church Driveway	8.4	A	8.4	A	0	No

Table 9c
Peak Hour Intersection Conditions
Without and With the Proposed Project, Alternative 2 Local Intersections

Intersection	*Without Project*		*With Proposed Project*			
	Average Intersection Delay (sec.)	*Level of Service*	*Average Intersection Delay (sec.)*	*Level of Service*	*Change in Delay*	*Significant?*
AM Peak Hour						
Old Orchard Lane at Hill Road	9.0	A	9.2	A	0.2	No
Grevillea Way at Old Orchard Lane	8.8	A	8.9	A	0.1	No
Hill Road at North Church Driveway	4.4	A	8.4	A	4.0	No*
PM Peak Hour						
Old Orchard Lane at Hill Road	9.2	A	9.5	A	0.3	No
Grevillea Way at Old Orchard Lane	9.1	A	9.2	A	0.1	No
Hill Road at North Church Driveway	8.4	A	8.5	A	0.1	No
Sunday Peak Hour						
Old Orchard Lane at Hill Road	8.9	A	9.0	A	0.1	No
Grevillea Way at Old Orchard Lane	8.7	A	8.8	A	0.1	No
Hill Road at North Church Driveway	8.4	A	8.4	A	0	No

Table 9d
Peak Hour Intersection Conditions
Without and With the Proposed Project, Alternative 3 Local Intersections

Intersection	*Without Project*		*With Proposed Project*			
	Average Intersection Delay (sec.)	*Level of Service*	*Average Intersection Delay (sec.)*	*Level of Service*	*Change in Delay*	*Significant?*
AM Peak Hour						
Old Orchard Lane at Hill Road	9.0	A	9.2	A	0.2	No
Grevillea Way at Old Orchard Lane	8.8	A	8.9	A	0.1	No
Hill Road at North Church Driveway	4.4	A	6.0	A	1.6	No*
PM Peak Hour						
Old Orchard Lane at Hill Road	9.2	A	9.5	A	0.3	No
Grevillea Way at Old Orchard Lane	9.1	A	9.3	A	0.2	No
Hill Road at North Church Driveway	8.4	A	5.0	A	-3.4	No
Sunday Peak Hour						
Old Orchard Lane at Hill Road	8.9	A	8.9	A	0	No
Grevillea Way at Old Orchard Lane	8.7	A	8.8	A	0.1	No
Hill Road at North Church Driveway	8.4	A	6.1	A	-2.3	No

In some instances intersection delay may decrease due to increased volumes on certain movements that result in a more "even" distribution of traffic causing less overall intersection delay. The average intersection delay is calculated by considering all vehicles traveling through the intersection. In some instances it is possible that the additional vehicles in the "with project" scenario experience lower than average delays, particularly when vehicles are added to non-critical traffic movements. This has an overall effect of decreasing the average intersection delay.

As shown in the above tables, neither the addition of the project nor any of the alternatives will result in any significant impacts that will require mitigation. The local intersection results found in Tables 9b-d are shown graphically in Figures 11a-c.

Queuing

Queuing analysis was done for the intersection of Bonita Road with Willow Road. The west, east and southbound movements have a dedicated left turn pocket, whereas a single lane serves the northbound movement. A summary table below shows the 95th percentile queuing for each movement based on analysis performed using the Synchro software. Table 10 is a summary of queuing at the intersection of Bonita Road with Willow Street. All unsignalized intersections studied have no significant queuing under any of the three alternatives.

Table 10 Bonita Road at Willow Street Queuing Summary, With and Without Project

Move-ment	*AM Peak Hour*		*PM Peak Hour*		*Sunday*		*Existing Storage Length, feet*
	Existing	*With Project*	*Existing*	*With Project*	*Existing*	*With Project*	
	95th Percentile Queue Length, Feet						
EBL	154	154	245	**262**	149	149	245
EBT	238	247	838	890	206	209	-
WBL	20	35	31	43	21	27	75
WBT	523	523	427	451	303	303	-
WBR	371	371	239	261	83	83	-
NBT	31	50	55	94	44	49	134
SBL	**271**	**271**	**577**	**604**	148	148	183
SBT	274	283	610	649	152	154	-
SBR	50	50	42	43	38	38	-

Since project traffic takes access from Bonita Road using only the northbound and westbound left turning movements, no traffic generated as a result of the proposed project will directly contribute traffic to either the eastbound or southbound left-turning movements. However, as is shown in the above table, the existing eastbound and southbound left turning movements exceed the existing available storage length for 'Existing' conditions as indicated in the **BOLD** text. There is no increase in the eastbound or southbound left turning movements when comparing 'Existing' versus any of the three 'Alternate' scenarios. Slight increases in queue lengths at these legs are the result of an overall increase in traffic on other legs at the intersection. The overall increase in either the EBL or SBL for the 95th percentile queue length is found to be no more than one full vehicle in length.

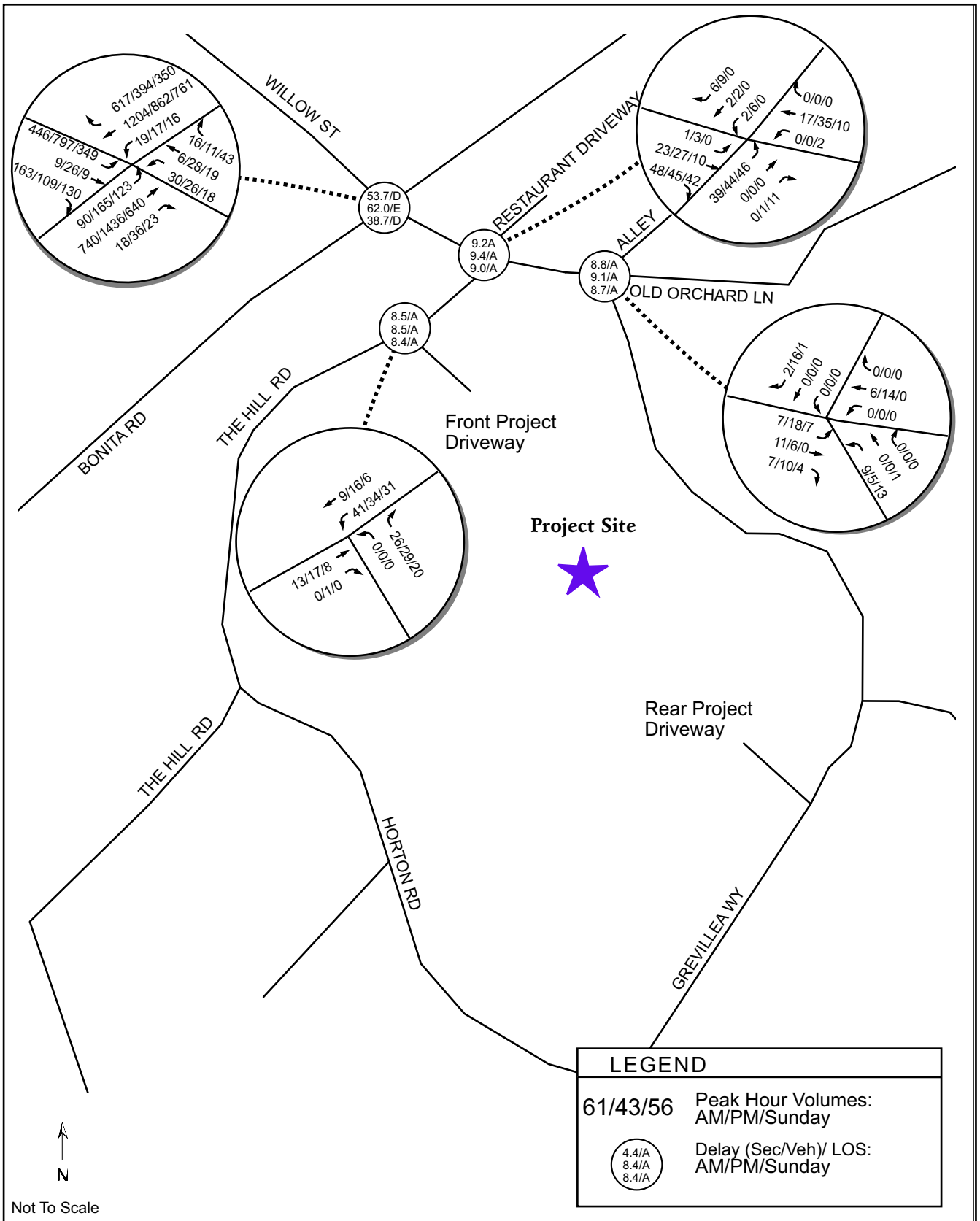

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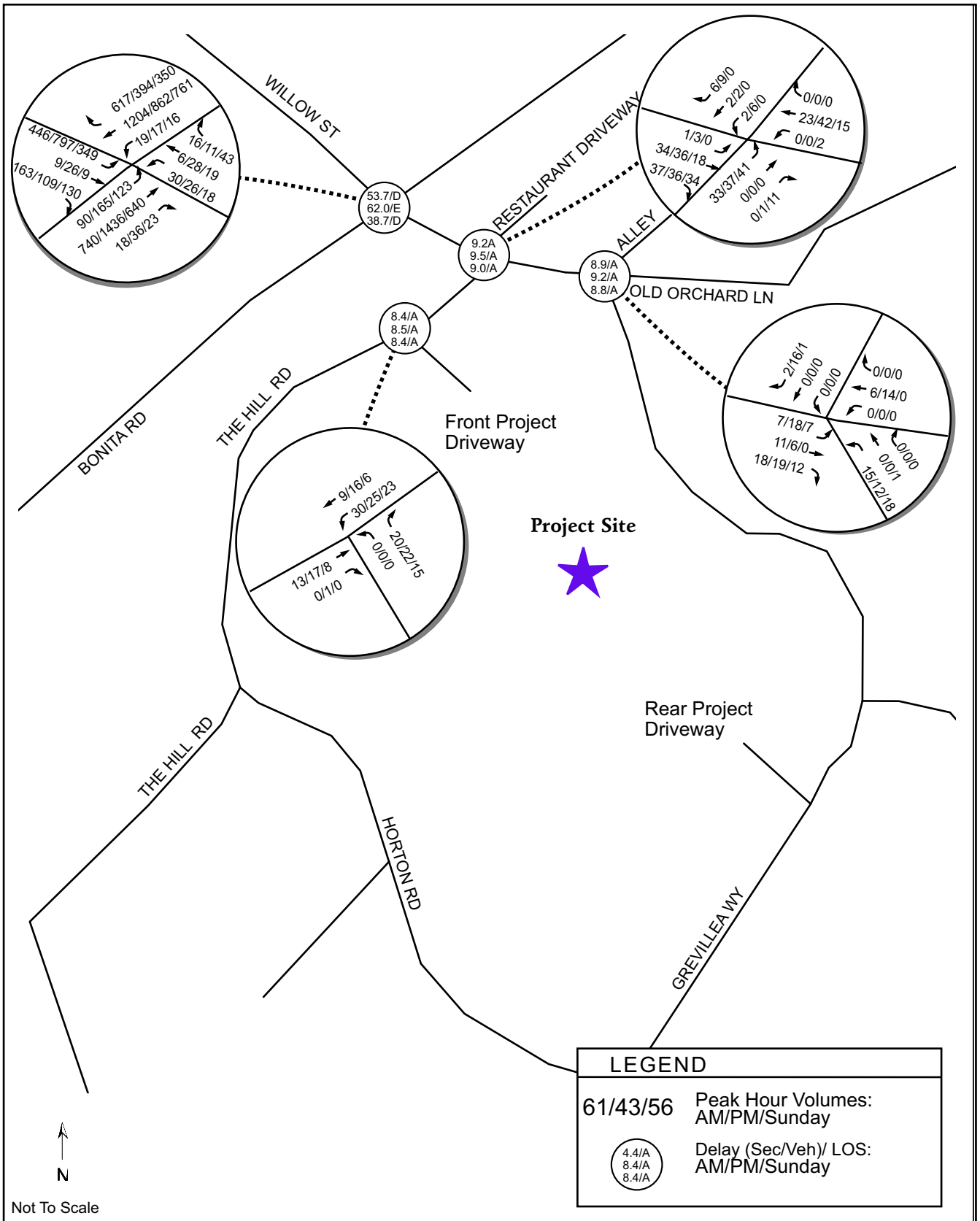
Figure 11a
Existing Peak Hour Intersection Conditions with the Proposed Project, Alternative 1

Katz, Oktisu & Associates
Transportation Engineers and Transportation Planners

Church of the Good Shepherd
Traffic Impact Study

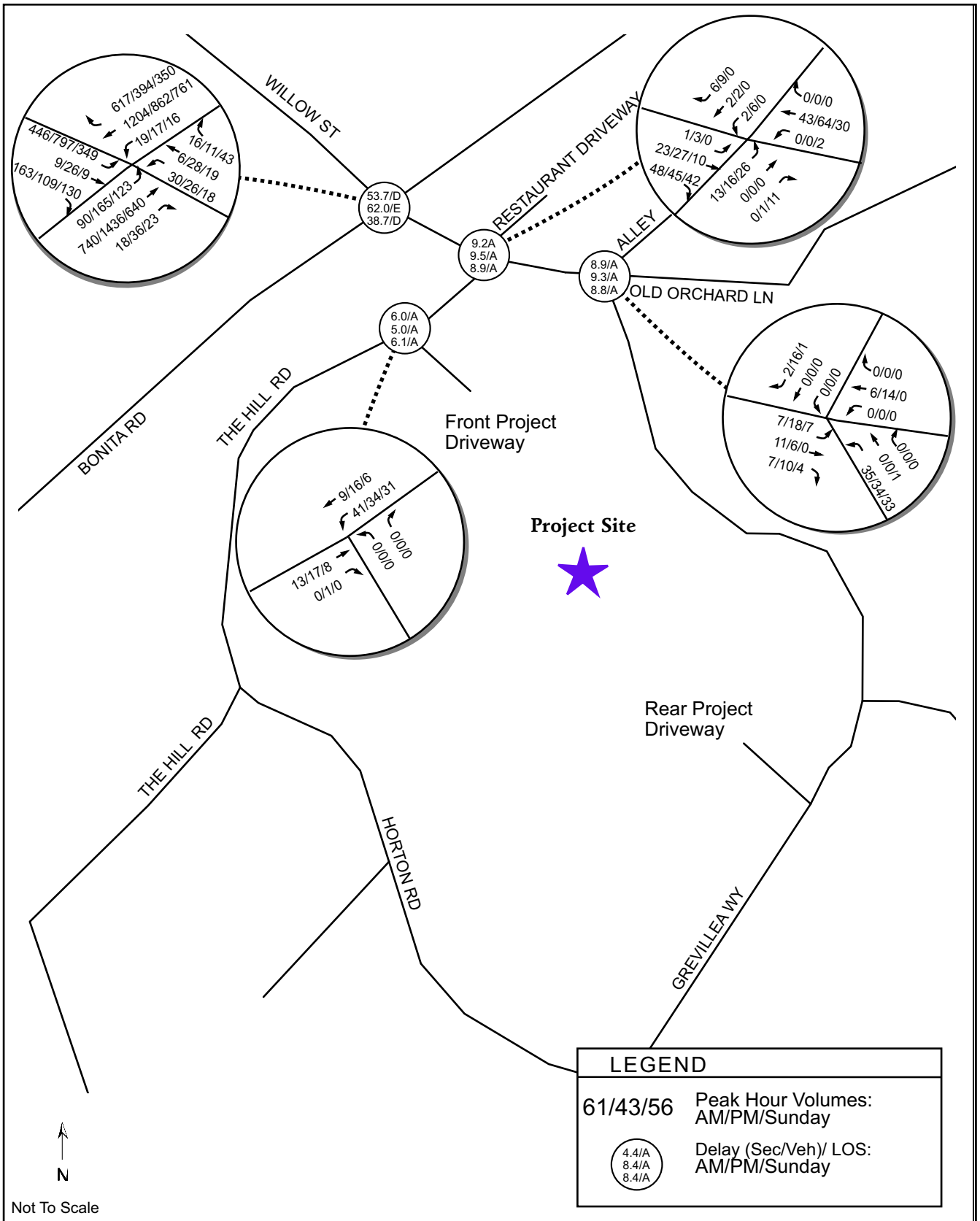


May 2005
JA2600

Figure 11b
Existing Peak Hour Intersection Conditions with the Proposed Project, Alternative 2

Katz, Oktisu & Associates
Transportation Engineers and Transportation Planners

Church of the Good Shepherd
Traffic Impact Study



May 2005
JA2600

Figure 11c
Existing Peak Hour Intersection Conditions with the Proposed Project, Alternative 3

Katz, Oktisu & Associates
Transportation Engineers and Transportation Planners

Church of the Good Shepherd
Traffic Impact Study

6.0 Near-Term (Cumulative) Conditions

The County of San Diego has developed an overall programmatic solution that addresses existing and projected future road deficiencies in the unincorporated portion of San Diego County. This program includes the adoption of a Transportation Impact Fee (TIF) program to fund improvements to roadways necessary to mitigate potential cumulative impacts caused by traffic from future development. Based on SANDAG regional growth and land use forecasts, the SANDAG Regional Transportation Model was utilized to analyze projected buildout (year 2030) development conditions on the existing circulation element roadway network throughout the unincorporated area of the County. Based on the results of the traffic modeling, funding necessary to construct transportation facilities that will mitigate cumulative impacts from new development was identified. Existing roadway deficiencies will be corrected through improvement projects funded by other public funding sources, such as TransNet, gas tax, and grants. Potential cumulative impacts to the region's freeways have been addressed in SANDAG's Regional Transportation Plan (RTP). This plan, which considers freeway buildout over the next 30 years, will use funds from TransNet, state, and federal funding to improve freeways to projected level of service objectives in the RTP.

The proposed project is scheduled to occur in three phases. The first phase of the proposed project involves the construction of 2,800 square feet of planned sanctuary expansion, which will generate 25 ADT. These trips will be distributed on circulation element roadways in the County that were analyzed by the TIF program, some of which currently or are projected to operate at inadequate levels of service. These project trips therefore contribute to a potential significant cumulative impact and mitigation is required. The potential growth represented by this project phase was included in the growth projections upon which the TIF program is based. Therefore, payment of the TIF, which will be required at issuance of phase 1 building permits, in combination with other components of the program described above, will mitigate the potential cumulative traffic impacts to less than significant for phase 1.

The second phase of the proposed project consists of only a cosmetic remodel and will not generate any project trips. The cosmetic remodel consists of some needed maintenance in addition to the expansion of 810 square feet for extra storage.

The third phase of the proposed project involves the construction of a daycare facility for up to 60 children, which will generate 300 ADT. These trips will be distributed on circulation element roadways in the County that were analyzed by the TIF program, some of which currently or are projected to operate at inadequate levels of service. These project trips therefore contribute to a potential significant cumulative impact and mitigation is required. The potential growth represented by this project phase was included in the growth projections upon which the TIF program is based. Therefore, payment of the TIF, which will be required at issuance of building permits for phase 3, in combination with other components of the program described above, will mitigate the potential cumulative traffic impacts to less than significant for phase 3.

7.0 Summary of Impacts

The proposed project is the expansion of an existing church and the development of a child daycare facility, not to exceed 60 children. The project would take access from one of two driveways onto both Hill Road and Grevillea Way. The project takes primary access onto regional roads via the south leg of the signalized intersection of Willow Street with Bonita Road. The project would conform to the adopted zoning. The proposed project would add 325 trips to the circulation network, with 53 occurring in the AM peak hour and 56 during PM peak hour. Based on field observations, which were used to generate conservative trip generation rates greater than published levels, the project will add 134 trips to the circulation network on a Sunday, with 23 occurring during the peak hour.

Construction Impacts

It is not estimated that the project will require any street closures during construction. In addition, construction impacts on the area are projected to be minimal since construction vehicles are estimated to contribute fewer vehicles during the peak hours than the project would after completion.

Existing Conditions

The analysis of existing roadway segment conditions analysis found that two of the three roadway segments on Bonita Road are below the acceptable level of service standard of LOS D. The segment of Bonita Road east of Acacia Avenue is at level of service F, while the segment of Bonita Road west of Willow Street is at level of service E.

The analysis of the existing intersections operations found that two of the six intersections operate at below LOS D in one or both of the peak hours. The intersection of I-805 and Bonita Road operates at LOS E in the AM Peak hour and the intersection of Central Avenue and Bonita Road operates at LOS E in both the AM and PM peak hours.

Existing Plus Project Conditions

The analysis of the existing roadway segment conditions found that, with the proposed project, the study segments continue to operate at existing LOS levels. Based on the ADT thresholds set in Table 1, the project does not have any direct impacts on any of the study roadway segments.

The analysis of existing plus project intersection operations found that the study intersections continue to operate at existing LOS levels. Furthermore, the project does not exceed the thresholds set in Table 1 for intersections and therefore has no direct intersection impacts.

Direct Project Impacts: None.

Parking Impacts: Although the project does not provide parking to meet the total County requirements for both the daycare and the church simultaneously, it should be noted that these two entities would not be operation simultaneously. Therefore, the project will be providing adequate parking for either church services or daycare.

Access Impacts: Each of the circulation alternatives needs to consider different passenger loading locations. For Alternatives 1 and 2, passenger loading and unloading will be allowed in the proposed back parking lot, but the front driveway will be restricted to loading of passengers, only. Alternative 3 will allow the loading and unloading of passengers in the back parking lot, but the front driveway will be restricted to unloading of passengers only.

Near-Term Cumulative Conditions

The County of San Diego has developed an overall programmatic solution that addresses existing and projected future road deficiencies in the unincorporated portion of San Diego County. This program includes the adoption of a Transportation Impact Fee (TIF) program to fund improvements to roadways necessary to mitigate potential cumulative impacts caused by traffic from future development. Based on SANDAG regional growth and land use forecasts, the SANDAG Regional Transportation Model was utilized to analyze projected buildout (year 2030) development conditions on the existing circulation element roadway network throughout the unincorporated area of the County. Based on the results of the traffic modeling, funding necessary to construct transportation facilities that will mitigate cumulative impacts from new development was identified. Existing roadway deficiencies will be corrected through improvement projects funded by other public funding sources, such as TransNet, gas tax, and grants. Potential cumulative impacts to the region's freeways have been addressed in SANDAG's Regional Transportation Plan (RTP). This plan, which considers freeway buildout over the next 30 years, will use funds from TransNet, state, and federal funding to improve freeways to projected level of service objectives in the RTP.

The proposed project is scheduled to occur in three phases. The first phase of the proposed project involves the construction of 2,800 square feet of planned sanctuary expansion, which will generate 25 ADT. These trips will be distributed on circulation element roadways in the County that were analyzed by the TIF program, some of which currently or are projected to operate at inadequate levels of service. These project trips therefore contribute to a potential significant cumulative impact and mitigation is required. The potential growth represented by this project phase was included in the growth projections upon which the TIF program is based. Therefore, payment of the TIF, which will be required at issuance of phase 1 building permits, in combination with other components of the program described above, will mitigate the potential cumulative traffic impacts to less than significant for phase 1.

The second phase of the proposed project consists of only a cosmetic remodel and will not generate any project trips. The cosmetic remodel consists of some needed maintenance in addition to the expansion of 810 square feet for extra storage.

The third phase of the proposed project involves the construction of a daycare facility for up to 60 children, which will generate 300 ADT. These trips will be distributed on circulation element roadways in the County that were analyzed by the TIF program, some of which currently or are projected to operate at inadequate levels of service. These project trips therefore contribute to a potential significant cumulative impact and mitigation is required. The potential growth represented by this project phase was included in the growth projections upon which the TIF program is based. Therefore, payment of the TIF, which will be required at issuance of building permits for phase 3, in combination with other components of the program described above, will mitigate the potential cumulative traffic impacts to less than significant for phase 3.

8.0 Recommendations

Katz, Okitsu and Associates recommend that the Church of the Good Shepherd mitigate their cumulative impacts by initiating phasing of the project. It is also recommended that the Church of the Good Shepherd mitigate the cumulative impacts separately for each project phase. Project phasing and associated mitigation is recommended below.

Phase I: Phase I: Construction of 2,800 square feet of planned sanctuary expansion (1 year from approval)

Phase I Mitigation Measure: It is recommended that the project contribute to the County's Traffic Impact Fee (TIF) program to mitigate the cumulative impacts of the sanctuary expansion. Payment into the TIF program as mitigation for Phase I would only mitigate the cumulative impacts associates with Phase I and would allow for the construction of the sanctuary independent of the construction of the daycare facility (Phase III).

Phase II: The second phase of the Church project consists of only a cosmetic remodel with no additional project trips. The cosmetic remodel consists of some needed maintenance in addition to the expansion of 810 square feet for extra storage.

Phase II Mitigation Measures: None required.

Phase III: Phase III: Construction of the daycare facility for up to 60 children (15-17 years from approval)

Phase III Mitigation Measure: It is recommended that the project contribute to the County's Traffic Impact Fee (TIF) program to mitigate the cumulative impacts of the daycare use.

Site Improvements:

Katz, Okitsu and Associates also recommend that a 'DO NOT ENTER' sign be placed facing the south parking lot where the driveway (along the west side of the project) meets the new back parking lot, should the one-way traffic flow (Alternative 3) be adopted.

Other recommendations, as a matter of approval by the County, include:

- The maximum number of students to be enrolled at the daycare center must be limited to 60.
- The total square footage for the new church must be limited to 6,100.
- All-evening gatherings must not begin prior to 7pm during the week.
- The church and daycare facility must not be allowed to operate at the same time.
- A written agreement between the Church and the Bonita Fire Department concerning the use of the Church property for access to properties south of the property must be formalized.
- The worship hall and the multipurpose hall will not be used at the same time.

Only these uses; church services, daycare and non-peak hour group meetings will be allowed under the current MUP.

Sincerely,

Katz, Okitsu & Associates

J. Arnold Torma, P.E.
Principal Traffic Engineer

Appendix A

Level of Service Concepts, Analysis Methodologies, Standards of Significance

Table A-1
Roadway Segment Level of Service Definitions

Level of Service (LOS) Definitions

The concept of LOS is defined as a qualitative measure describing operational conditions within a traffic stream, and the motorist's and/or passengers' perception of operations. A LOS definition generally describes these conditions in terms of such factors as speed, travel time, freedom to maneuver, comfort, convenience, and safety. Levels of service for freeway segments can generally be categorized as follows:

LOS	***V/C***	***Congestion/Delay***	***Traffic Description***
(*Used for surface streets, freeways, expressways and conventional highways)*			
"A"	<0.41	None	Free flow.
"B"	0.42-0.62	None	Free to stable flow, light to moderate volumes.
"C"	0.63-0.80	None to minimal	Stable flow, moderate volumes, freedom to maneuver noticeably restricted.
"D"	0.80-0.92	Minimal to substantial	Approaches unstable flow, heavy volumes, very limited freedom to maneuver.
"E"	0.93-1.00	Significant	Extremely unstable flow, maneuverability and psychological comfort extremely poor.
(Used for surface streets and conventional highways)			
"F"	<1.00	Considerable	Forced or breakdown flow. Delay measured in average travel speed (MPH). Signalized segments experience delays >60.0 seconds/vehicle.
(Used for freeways and expressways)			
"F(0)"	1.01-1.25	Considerable 0-1 hour delay	Forced flow, heavy congestion, long queues form behind breakdown points, stop and go.
"F(1)"	1.26-1.35	Severe 1-2 hour delay	Very heavy congestion, very long queues.
"F(2)"	1.36-1.45	Very Severe 2-3 hour delay	Extremely heavy congestion, longer queues, more numerous breakdown points, longer stop periods.
"F(3)"	>1.46	Extremely Severe 3+ hours of delay	Gridlock

SOURCE: Caltrans, 1992.

Table A-2
San Diego County Roadway Classifications, Levels of Service (LOS) and Average Daily Traffic (ADT)

Street Classification	*Lanes*	*Maximum Recommended ADT by LOS*				
		A Free flow	*B Steady flow*	*C Stable flow*	*D Approach unstable*	*E Unstable flow*
Expressway	6	36,000	54,000	70,000	86,000	108,000
Prime	6	22,200	37,000	44,600	50,000	57,000
Major	4	14,800	24,700	29,600	33,400	37,000
Collector	4	13,700	22,800	27,400	30,800	34,200
Town Collector	3	3,000	6,000	9,500	13,500	19,000
Collector	2	1,900	4,100	7,100	10,900	16,200

*Approximate recommended ADT based on County of San Diego Circulation Element. The volumes and average daily level of service listed above are only intended as a planning guideline. Levels of service are not applied to residential streets since their primary purpose is to serve abutting lots, not to carry through traffic. Levels of service normally apply to roads carrying through traffic between major trip generators and attractors.

Table A-3
Roadway Segment Level of Service Definitions

Level of Service (LOS) Definitions

The concept of LOS is defined as a qualitative measure describing operational conditions within a traffic stream, and the motorist's and/or passengers' perception of operations. A LOS definition generally describes these conditions in terms of such factors as speed, travel time, freedom to maneuver, comfort, convenience, and safety. Levels of service for arterial segments with a range of free-flow speeds can generally be categorized as follows:

LOS	***Class I (45 to 35 mph)***	***Class II (35-30 mph)***	***Class III (35 to 25)***	***LOS Characteristic***
"A"	≥35	≥30	≥25	Speeds 90% of free-flow speed. minimal stopped delay
"B"	≥28	≥24	≥19	Speeds 70% of free-flow speed, delay not bothersome
"C"	≥22	≥18	≥13	Speeds 50% of free-flow speed, longer queues, noticeable delay
"D"	≥17	≥14	≥9	Speeds 40% of free-flow, substantial delay.
"E"	≥13	≥10	≥7	Speeds 30% of free-flow, high delay.
"F"	<13	<10	<7	Speeds 25% of free-flow, high delay, extensive queuing

Table A-4
Signalized Intersection Level of Service
Highway Capacity Manual Operational Analysis Method

The operational analysis method for evaluation of signalized intersections presented in the 2000 Highway Capacity Manual (Transportation Research Board Special Report 209) defines level of service in terms of delay, or more specifically, average stopped delay per vehicle. Delay is a measure of driver and/or passenger discomfort, frustration, fuel consumption, and lost travel time.

Average Stopped Delay Per Vehicle (seconds)	***Level of Service (LOS) Characteristics***
<10	*LOS A* describes operations with very low delay. This occurs when progression is extremely favorable, and most vehicles do not stop at all. Short cycle lengths may also contribute to low delay.
10 - 20.0	*LOS B* describes operations with generally good progression and/or short cycle lengths. More vehicles stop than for LOS A, causing higher levels of average delay.
20.1 – 35.0	*LOS C* describes operations with higher delays which may result from fair progression and/or longer cycle lengths. Individual cycle failures may begin to appear at this level. The number of vehicles stopping is significant at this level, although many still pass through the intersection without stopping.
35.1 - 55.0	*LOS D* describes operations with high delay, resulting from some combination of unfavorable progression, long cycle lengths, or high volumes. The influence of congestion becomes more noticeable, and individual cycle failures are noticeable.
55.1 – 80.0	*LOS E* is considered to be the limit of acceptable delay. Individual cycle failures are frequent occurrences.
>80.0	*LOS F* describes a condition of excessively high delay, considered unacceptable to most drivers. This condition often occurs when arrival flow rates exceed the capacity of the intersection. Poor progression and long cycle lengths may also be major contributing causes to such delay.

SOURCE: 2000 Highway Capacity Manual

Table A-5
Definitions of the HCM/TRB Methodology and Level Of Service For Unsignalized Intersections

Minor Street Stop Controlled Intersections

The Highway Capacity Manual (HCM) analysis method for evaluating unsignalized, minor street stop intersections is based on the average total delay for each impeded movement. As used here, total delay is defined as the total elapsed time from when a when a vehicle stops at the end of a queue until the vehicle departs from the stop line; this time includes the time required for the vehicle to travel from the last-in-queue to the first-in-queue position. The average total delay for any particular minor movement is a function of the service rate or capacity of the approach and the degree of saturation. The resulting delay is used to determine the level of service as shown in the following table.

Average Total Delay	Level of Service (LOS) Characteristics
<10	*LOS A* – Little or no delay
10 - 20.0	*LOS B* – Short traffic delay
20.1 – 35.0	*LOS C* – Average traffic delay
35.1 - 55.0	*LOS D* – Long traffic delays
55.1 – 80.0	*LOS E* – Very long traffic delays
>80.0	LOS F – When the demand exceeds the capacity of the lane, extreme delays will be encountered and queuing may cause severe congestion to the intersection.

SOURCE: 1997 Highway Capacity Manual, TRB Special Report 209.

Table A-6
Significant Transportation Impact Measure

Level of Service with Project	Allowable Increase/Decrease Due to Project Impacts*		
	Intersections	Roadway Sections	
	Delay (sec)	V/C	Speed (MPH)
A	N/A	0.10	5
B	6	0.06	3
C	4	0.04	2
D**	2	0.02	1
E**	2	0.02	1
F**	2	0.02	1

Notes:

* If a proposed project's traffic impacts exceed the values shown in the above table, then the impacts are deemed "significant". The project applicant shall identify "feasible mitigations", to bring the facility back to the level previously held by the facility prior to the project's traffic impacts.

** In the County of San Diego the acceptable level of service standard for roadways is level of service C, and for intersections is level of service D. However, for undeveloped locations, the goal is to achieve a level of service C.

Source: *SANTEC/ITE Guidelines for Traffic Impact Studies in the San Diego Region*

Appendix B

Existing Counts and Existing Peak Hour Intersection Analysis Worksheets

Traffic Data Service Southwest
Event Counts

Eastbound

EventCount-2171

DATASETS:

Site: **[35201E] Bonita Road Btwn Acacia Ave & Otay Lakes Road**
ChannelA: 2 - East bound. - Added to totals. (1)
ChannelB: 0 - Unused or unknown. - Excluded from totals. (0)
Survey Duration: 11:28 Mon 11 Oct 2004 to 11:52 Thu 14 Oct 2004
File: Z:\mcdata\KOA\2004\352\35201E14OCT2004.EC0 (Base)
Identifier: A643QTA4 MC56-1 [MC55] (c)Microcom 07/06/99
Algorithm: Event count

PROFILE:

Filter time: **12:00 Mon 11 Oct 2004 to 13:00 Wed 13 Oct 2004**
Name: Factory default profile
Method: Count axles divided by two.
Units: Non-Metric (ft, mi, f/s, mph, lb, ton)
In profile: 25855 Events

*** Mon 11 Oct 2004 - Total=8249(incomplete) , 15 minute drops,**

0000	0100	0200	0300	0400	0500	0600	0700	0800	0900	1000	1100	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300	
–	**–**	**–**	**–**	**–**	**–**	**–**	**–**	**–**	**–**	**–**	**–**	**790**	**823**	**871**	**1064**	**981**	**1001**	**881**	**610**	**515**	**388**	**213**	**112**	
–	–	–	–	–	–	–	–	–	–	–	–	192	228	225	255	**261**	232	250	173	121	127	77	30	14
–	–	–	–	–	–	–	–	–	–	–	–	207	212	170	239	**247**	268	220	153	123	107	66	37	15
–	–	–	–	–	–	–	–	–	–	–	–	173	173	215	**300**	235	255	207	136	127	87	42	27	12
–	–	–	–	–	–	–	–	–	–	–	–	218	210	261	**270**	238	246	204	148	144	67	28	18	12

PM PkHr 15:30 to 16:30 (n=1078), PM PHF=0.90

*** Tue 12 Oct 2004 - Total=12757, 15 minute drops,**

0000	0100	0200	0300	0400	0500	0600	0700	0800	0900	1000	1100	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300	
53	**24**	**16**	**13**	**33**	**106**	**385**	**661**	**661**	**699**	**667**	**727**	**804**	**815**	**867**	**1097**	**1116**	**1135**	**972**	**649**	**554**	**373**	**225**	**105**	
14	6	2	1	6	17	66	166	176	161	180	203	**204**	189	193	235	**283**	297	255	197	160	120	71	27	16
15	7	7	2	8	25	72	193	155	178	150	179	**192**	223	192	262	**280**	302	274	191	134	99	71	40	16
12	8	5	7	10	28	125	170	154	181	157	149	**186**	211	235	289	**319**	269	240	135	118	93	43	20	6
12	3	2	3	9	36	122	132	176	179	180	**196**	222	192	247	**311**	234	267	203	126	142	61	40	18	12

AM PkHr 11:45 to 12:45 (n=778), AM PHF=0.95 PM PkHr 15:45 to 16:45 (n=1193), PM PHF=0.93

*** Wed 13 Oct 2004 - Total=4848(incomplete) , 15 minute drops,**

0000	0100	0200	0300	0400	0500	0600	0700	0800	0900	1000	1100	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300	
50	**31**	**22**	**23**	**39**	**121**	**372**	**609**	**738**	**732**	**629**	**678**	**804**	**–**	**–**	**–**	**–**	**–**	**–**	**–**	**–**	**–**	**–**	**–**	
16	7	7	4	6	12	57	156	209	214	163	186	**199**	–	–	–	–	–	–	–	–	–	–	–	–
16	12	6	8	11	27	81	147	194	179	132	158	**195**	–	–	–	–	–	–	–	–	–	–	–	–
6	9	3	6	10	33	100	157	163	189	162	162	**196**	–	–	–	–	–	–	–	–	–	–	–	–
12	3	6	5	12	49	134	149	172	150	172	**172**	214	–	–	–	–	–	–	–	–	–	–	–	–

AM PkHr 11:45 to 12:45 (n=762), AM PHF=0.96

Traffic Data Service Southwest
Event Counts

Westbound

EventCount-2171

DATASETS:

Site: **[35201W] Bonita Road Btwn Acacia Ave & Otay Lakes Road**
ChannelA: 4 - West bound. - Added to totals. (1)
ChannelB: 0 - Unused or unknown. - Excluded from totals. (0)
Survey Duration: 11:27 Mon 11 Oct 2004 to 11:53 Thu 14 Oct 2004
File: Z:\mcdata\KOA\2004\352\35201W14OCT2004.EC0 (Plus)
Identifier: M287G207 MC56-6 [MC55] (c)Microcom 02/03/01
Algorithm: Event count

PROFILE:

Filter time: **12:00 Mon 11 Oct 2004 to 13:00 Wed 13 Oct 2004**
Name: Factory default profile
Method: Count axles divided by two.
Units: Non-Metric (ft, mi, f/s, mph, lb, ton)
In profile: 25101 Events

*** Mon 11 Oct 2004 - Total=6954(incomplete) , 15 minute drops,**

0000	0100	0200	0300	0400	0500	0600	0700	0800	0900	1000	1100	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300	
-	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**683**	**632**	**827**	**832**	**888**	**905**	**810**	**482**	**362**	**266**	**155**	**112**	
-	-	-	-	-	-	-	-	-	-	-	-	172	161	178	213	233	200	**227**	148	97	76	37	30	15
-	-	-	-	-	-	-	-	-	-	-	-	165	145	260	189	225	**206**	204	132	73	68	58	34	13
-	-	-	-	-	-	-	-	-	-	-	-	164	142	195	202	213	**236**	177	108	90	71	33	27	12
-	-	-	-	-	-	-	-	-	-	-	-	182	184	194	228	217	**263**	202	94	102	51	27	21	11

PM PkHr 17:15 to 18:15 (n=932), PM PHF=0.89

*** Tue 12 Oct 2004 - Total=12417, 15 minute drops,**

0000	0100	0200	0300	0400	0500	0600	0700	0800	0900	1000	1100	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300	
51	**28**	**27**	**24**	**52**	**149**	**640**	**1039**	**830**	**782**	**663**	**807**	**651**	**685**	**832**	**870**	**977**	**983**	**873**	**550**	**375**	**279**	**156**	**94**	
15	12	7	2	6	16	81	199	**218**	203	168	178	154	192	186	227	236	233	**259**	179	81	79	44	29	22
13	9	8	2	13	27	104	**203**	197	203	167	194	153	152	220	191	258	**262**	234	159	101	72	43	22	17
12	5	6	7	13	56	194	**289**	211	188	160	225	177	175	218	236	230	**231**	209	102	100	62	44	23	15
11	2	6	13	20	50	261	**348**	204	188	168	210	167	166	208	216	253	**257**	171	110	93	66	25	20	5

AM PkHr 07:15 to 08:15 (n=1058), AM PHF=0.76 PM PkHr 17:15 to 18:15 (n=1009), PM PHF=0.96

*** Wed 13 Oct 2004 - Total=5729(incomplete) , 15 minute drops,**

0000	0100	0200	0300	0400	0500	0600	0700	0800	0900	1000	1100	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300	
59	**27**	**25**	**28**	**51**	**145**	**606**	**1065**	**877**	**713**	**647**	**754**	**732**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	
22	10	12	7	10	22	71	184	**193**	159	178	192	167	-	-	-	-	-	-	-	-	-	-	-	-
17	6	4	6	10	33	104	**265**	219	169	163	164	195	-	-	-	-	-	-	-	-	-	-	-	-
15	7	5	7	9	43	181	**280**	226	193	159	204	200	-	-	-	-	-	-	-	-	-	-	-	-
5	4	4	8	22	47	250	**336**	239	192	147	194	170	-	-	-	-	-	-	-	-	-	-	-	-

AM PkHr 07:15 to 08:15 (n=1074), AM PHF=0.80

Traffic Data Service Southwest
Event Counts

Eastbound

EventCount-2171

DATASETS:

Site: **[35202E] Bonita Road Btwn Otay Lakes Road & Allen School Road**
ChannelA: 2 - East bound. - Added to totals. (1)
ChannelB: 0 - Unused or unknown. - Excluded from totals. (0)
Survey Duration: 11:26 Mon 11 Oct 2004 to 11:50 Thu 14 Oct 2004
File: Z:\mcdata\KOA\2004\352\35202E14OCT2004.EC0 (Plus)
Identifier: M2909VVJ MC56-6 [MC55] (c)Microcom 02/03/01
Algorithm: Event count

PROFILE:

Filter time: **12:00 Mon 11 Oct 2004 to 13:00 Wed 13 Oct 2004**
Name: Factory default profile
Method: Count axles divided by two.
Units: Non-Metric (ft, mi, f/s, mph, lb, ton)
In profile: 38426 Events

*** Mon 11 Oct 2004 - Total=12521(incomplete) , 15 minute drops,**

0000	0100	0200	0300	0400	0500	0600	0700	0800	0900	1000	1100	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300	
–	**–**	**–**	**–**	**–**	**–**	**–**	**–**	**–**	**–**	**–**	**–**	**1098**	**1077**	**1284**	**1550**	**1665**	**1804**	**1490**	**919**	**681**	**529**	**260**	**164**	
–	–	–	–	–	–	–	–	–	–	–	–	262	267	299	370	410	**452**	440	271	185	149	90	40	32
–	–	–	–	–	–	–	–	–	–	–	–	275	269	290	402	389	**425**	353	247	194	142	75	52	20
–	–	–	–	–	–	–	–	–	–	–	–	259	258	319	388	413	**479**	375	201	141	122	49	49	23
–	–	–	–	–	–	–	–	–	–	–	–	302	283	376	390	**453**	448	322	200	161	116	46	23	23

PM PkHr 16:45 to 17:45 (n=1809), PM PHF=0.94

*** Tue 12 Oct 2004 - Total=19318, 15 minute drops,**

0000	0100	0200	0300	0400	0500	0600	0700	0800	0900	1000	1100	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300	
98	**40**	**26**	**21**	**37**	**106**	**602**	**900**	**877**	**902**	**901**	**1030**	**1072**	**1124**	**1307**	**1762**	**1941**	**2124**	**1701**	**999**	**740**	**540**	**321**	**147**	
32	11	6	5	5	23	69	167	210	246	213	253	**262**	256	276	425	454	514	**520**	296	220	159	105	40	36
20	10	10	5	9	14	97	173	188	227	214	245	**246**	296	308	438	501	**516**	492	252	197	140	94	41	30
23	11	8	5	12	24	171	277	215	225	234	244	**276**	281	342	452	498	**570**	381	220	168	127	60	29	20
23	8	2	6	11	45	265	283	264	204	240	**288**	288	291	381	447	488	**524**	308	231	155	114	62	37	13

AM PkHr 11:45 to 12:45 (n=1072), AM PHF=0.93 PM PkHr 17:15 to 18:15 (n=2130), PM PHF=0.93

*** Wed 13 Oct 2004 - Total=6586(incomplete) , 15 minute drops,**

0000	0100	0200	0300	0400	0500	0600	0700	0800	0900	1000	1100	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300	
99	**50**	**28**	**24**	**54**	**116**	**501**	**896**	**965**	**916**	**844**	**986**	**1107**	**–**	**–**	**–**	**–**	**–**	**–**	**–**	**–**	**–**	**–**	**–**	
36	10	8	7	13	21	70	160	219	228	188	197	**272**	–	–	–	–	–	–	–	–	–	–	–	–
30	13	8	9	7	28	88	206	211	193	206	229	**252**	–	–	–	–	–	–	–	–	–	–	–	–
20	12	7	3	14	21	130	237	248	260	222	265	**291**	–	–	–	–	–	–	–	–	–	–	–	–
13	15	5	5	20	46	213	293	287	235	228	**295**	292	–	–	–	–	–	–	–	–	–	–	–	–

AM PkHr 11:45 to 12:45 (n=1110), AM PHF=0.94

Traffic Data Service Southwest
Event Counts

Westbound

EventCount-2171

DATASETS:

Site: **[35202W] Bonita Road Btwn Otay Lakes Road & Allen School Road**
ChannelA: 4 - West bound. - Added to totals. (1)
ChannelB: 0 - Unused or unknown. - Excluded from totals. (0)
Survey Duration: 11:25 Mon 11 Oct 2004 to 11:45 Thu 14 Oct 2004
File: Z:\mcdata\KOA\2004\352\35202W14OCT2004.EC0 (Plus)
Identifier: M427JV36 MC56-6 [MC55] (c)Microcom 02/03/01
Algorithm: Event count

PROFILE:

Filter time: **12:00 Mon 11 Oct 2004 to 13:00 Wed 13 Oct 2004**
Name: Factory default profile
Method: Count axles divided by two.
Units: Non-Metric (ft, mi, f/s, mph, lb, ton)
In profile: 35443 Events

*** Mon 11 Oct 2004 - Total=8874(incomplete) , 15 minute drops,**

0000	0100	0200	0300	0400	0500	0600	0700	0800	0900	1000	1100	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300	
–	**–**	**–**	**–**	**–**	**–**	**–**	**–**	**–**	**–**	**–**	**–**	**1070**	**1032**	**1116**	**1147**	**978**	**935**	**901**	**613**	**469**	**336**	**176**	**101**	
–	–	–	–	–	–	–	–	–	–	–	–	289	258	257	**258**	258	230	213	200	137	116	60	26	17
–	–	–	–	–	–	–	–	–	–	–	–	276	250	287	**311**	245	227	254	151	112	89	42	19	9
–	–	–	–	–	–	–	–	–	–	–	–	257	257	308	**284**	223	243	223	137	105	66	47	35	11
–	–	–	–	–	–	–	–	–	–	–	–	248	267	264	**294**	252	235	211	125	115	65	27	21	4

PM PkHr 15:00 to 16:00 (n=1147), PM PHF=0.92

*** Tue 12 Oct 2004 - Total=17249, 15 minute drops,**

0000	0100	0200	0300	0400	0500	0600	0700	0800	0900	1000	1100	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300	
41	**29**	**14**	**21**	**100**	**356**	**1187**	**1701**	**1475**	**1124**	**1042**	**1100**	**999**	**1053**	**1119**	**1173**	**1110**	**997**	**893**	**584**	**499**	**340**	**209**	**83**	
17	12	1	1	11	38	206	**431**	412	285	267	284	241	246	228	280	**301**	255	236	186	127	119	71	32	17
9	5	7	3	16	65	263	**470**	402	252	223	281	263	268	263	283	**290**	265	228	168	152	98	52	18	13
11	8	4	5	29	106	306	**391**	338	309	281	283	257	291	321	**318**	231	235	233	119	103	70	40	20	12
4	4	2	12	44	147	**412**	409	323	278	271	252	238	248	307	**292**	288	242	196	111	117	53	46	13	7

AM PkHr 06:45 to 07:45 (n=1704), AM PHF=0.91 PM PkHr 15:30 to 16:30 (n=1201), PM PHF=0.94

*** Wed 13 Oct 2004 - Total=9320(incomplete) , 15 minute drops,**

0000	0100	0200	0300	0400	0500	0600	0700	0800	0900	1000	1100	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300	
49	**25**	**21**	**24**	**73**	**357**	**1202**	**1767**	**1475**	**1151**	**1004**	**1062**	**1110**	**–**	**–**	**–**	**–**	**–**	**–**	**–**	**–**	**–**	**–**	**–**	
17	4	8	3	7	49	202	**443**	435	317	279	300	302	–	–	–	–	–	–	–	–	–	–	–	–
13	12	7	5	13	57	266	**468**	412	280	260	241	252	–	–	–	–	–	–	–	–	–	–	–	–
12	8	4	8	29	103	341	**423**	315	263	233	268	280	–	–	–	–	–	–	–	–	–	–	–	–
7	1	2	8	24	148	393	**433**	313	291	232	253	276	–	–	–	–	–	–	–	–	–	–	–	–

AM PkHr 07:00 to 08:00 (n=1767), AM PHF=0.94

Traffic Data Service Southwest
Event Counts

Eastbound

EventCount-2171

DATASETS:

Site: **[35203E] Bonita Road Btwn Willow Street & Glen Abbey Drive**
ChannelA: 2 - East bound. - Added to totals. (1)
ChannelB: 0 - Unused or unknown. - Excluded from totals. (0)
Survey Duration: 11:08 Mon 11 Oct 2004 to 11:55 Thu 14 Oct 2004
File: Z:\mcdata\KOA\2004\352\35203E14OCT2004.EC0 (Plus)
Identifier: M280P4JB MC56-6 [MC55] (c)Microcom 02/03/01
Algorithm: Event count

PROFILE:

Filter time: **12:00 Mon 11 Oct 2004 to 12:00 Wed 13 Oct 2004**
Name: Factory default profile
Method: Count axles divided by two.
Units: Non-Metric (ft, mi, f/s, mph, lb, ton)
In profile: 31596 Events

*** Mon 11 Oct 2004 - Total=10316(incomplete) , 15 minute drops,**

0000	0100	0200	0300	0400	0500	0600	0700	0800	0900	1000	1100	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300	
–	**–**	**–**	**–**	**–**	**–**	**–**	**–**	**–**	**–**	**–**	**–**	**947**	**986**	**1130**	**1341**	**1388**	**1403**	**1139**	**696**	**528**	**405**	**218**	**135**	
–	–	–	–	–	–	–	–	–	–	–	–	243	244	243	354	348	**335**	322	201	141	109	70	39	26
–	–	–	–	–	–	–	–	–	–	–	–	231	228	265	335	321	**389**	269	191	133	112	56	34	16
–	–	–	–	–	–	–	–	–	–	–	–	221	258	279	340	337	**375**	285	153	114	99	47	40	23
–	–	–	–	–	–	–	–	–	–	–	–	252	256	343	312	**382**	304	263	151	140	85	45	22	20

PM PkHr 16:45 to 17:45 (n=1481), PM PHF=0.95

*** Tue 12 Oct 2004 - Total=16170, 15 minute drops,**

0000	0100	0200	0300	0400	0500	0600	0700	0800	0900	1000	1100	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300	
85	**29**	**22**	**22**	**43**	**108**	**422**	**789**	**950**	**864**	**862**	**873**	**895**	**983**	**1165**	**1477**	**1462**	**1740**	**1233**	**767**	**587**	**400**	**269**	**123**	
26	6	6	6	8	21	55	146	208	**241**	212	221	239	211	262	384	376	**384**	377	235	173	117	77	33	27
16	6	9	5	7	13	79	172	**231**	231	211	191	196	253	293	338	365	**471**	344	185	147	92	78	31	21
23	9	5	6	16	25	121	224	**240**	183	199	216	222	252	287	379	336	**454**	270	176	123	100	52	27	14
20	8	2	5	12	49	167	247	**271**	209	240	245	238	267	323	376	385	**431**	242	171	144	91	62	32	8

AM PkHr 08:15 to 09:15 (n=983), AM PHF=0.91 PM PkHr 17:00 to 18:00 (n=1740), PM PHF=0.92

*** Wed 13 Oct 2004 - Total=5109(incomplete) , 15 minute drops,**

0000	0100	0200	0300	0400	0500	0600	0700	0800	0900	1000	1100	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300	
70	**46**	**22**	**21**	**46**	**111**	**370**	**788**	**1024**	**841**	**854**	**916**	**–**	**–**	**–**	**–**	**–**	**–**	**–**	**–**	**–**	**–**	**–**	**–**	
27	10	5	5	9	15	52	136	211	215	201	208	–	–	–	–	–	–	–	–	–	–	–	–	–
21	13	10	6	8	29	68	182	257	186	239	210	–	–	–	–	–	–	–	–	–	–	–	–	–
14	9	5	1	14	17	115	211	272	234	199	263	–	–	–	–	–	–	–	–	–	–	–	–	–
8	14	2	9	15	50	135	259	284	206	215	235	–	–	–	–	–	–	–	–	–	–	–	–	–

Traffic Data Service Southwest
Event Counts

Westbound

EventCount-2171

DATASETS:

Site: **[35203W] Bonita Road Btwn Willow Street & Glen Abbey Drive**
ChannelA: 4 - West bound. - Added to totals. (1)
ChannelB: 0 - Unused or unknown. - Excluded from totals. (0)
Survey Duration: 11:07 Mon 11 Oct 2004 to 11:42 Thu 14 Oct 2004
File: Z:\mcdata\KOA\2004\352\35203W14OCT2004.EC0 (Plus)
Identifier: M432HARN MC56-6 [MC55] (c)Microcom 02/03/01
Algorithm: Event count

PROFILE:

Filter time: **12:00 Mon 11 Oct 2004 to 12:00 Wed 13 Oct 2004**
Name: Factory default profile
Method: Count axles divided by two.
Units: Non-Metric (ft, mi, f/s, mph, lb, ton)
In profile: 29622 Events

*** Mon 11 Oct 2004 - Total=7766(incomplete) , 15 minute drops,**

0000	0100	0200	0300	0400	0500	0600	0700	0800	0900	1000	1100	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300	
-	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**917**	**920**	**978**	**974**	**911**	**887**	**790**	**483**	**380**	**292**	**158**	**76**	
-	-	-	-	-	-	-	-	-	-	-	-	215	217	212	**222**	256	248	212	161	111	101	54	20	20
-	-	-	-	-	-	-	-	-	-	-	-	259	234	262	**289**	235	209	186	128	92	71	34	17	10
-	-	-	-	-	-	-	-	-	-	-	-	222	217	**255**	244	208	214	190	110	76	65	37	19	8
-	-	-	-	-	-	-	-	-	-	-	-	221	252	**249**	219	212	216	202	84	101	55	33	20	4

PM PkHr 14:30 to 15:30 (n=1015), PM PHF=0.88

*** Tue 12 Oct 2004 - Total=14894, 15 minute drops,**

0000	0100	0200	0300	0400	0500	0600	0700	0800	0900	1000	1100	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300	
42	**33**	**10**	**22**	**88**	**319**	**821**	**1316**	**1263**	**1052**	**947**	**979**	**898**	**904**	**1039**	**1035**	**976**	**927**	**823**	**481**	**413**	**264**	**181**	**61**	
20	13	2	1	10	38	158	331	**329**	271	228	247	231	212	219	248	**289**	274	228	144	108	83	69	22	16
10	5	5	3	14	63	182	315	**355**	224	232	236	241	242	268	**270**	232	212	193	143	113	74	42	14	14
8	8	1	5	24	92	231	**322**	298	291	256	246	222	252	276	**278**	224	224	221	110	97	66	41	14	10
4	7	2	13	40	126	250	**348**	281	266	231	250	204	198	276	**239**	231	217	181	84	95	41	29	11	4

AM PkHr 07:30 to 08:30 (n=1354), AM PHF=0.95 PM PkHr 15:15 to 16:15 (n=1076), PM PHF=0.93

*** Wed 13 Oct 2004 - Total=6961(incomplete) , 15 minute drops,**

0000	0100	0200	0300	0400	0500	0600	0700	0800	0900	1000	1100	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300	
44	**26**	**23**	**30**	**74**	**313**	**853**	**1333**	**1307**	**1024**	**929**	**1005**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	
16	5	9	5	9	44	159	313	326	295	270	269	-	-	-	-	-	-	-	-	-	-	-	-	-
14	13	7	6	15	62	203	316	355	245	233	221	-	-	-	-	-	-	-	-	-	-	-	-	-
10	7	5	9	27	87	230	344	295	246	232	254	-	-	-	-	-	-	-	-	-	-	-	-	-
4	1	2	10	23	120	261	360	331	238	194	261	-	-	-	-	-	-	-	-	-	-	-	-	-

Traffic Data Service Southwest
Event Counts

Northbound

EventCount-2171

DATASETS:

Site: **[35204N] Willow Street Btwn Bonita Road & Sweetwater Road**
ChannelA: 1 - North bound. - Added to totals. (1)
ChannelB: 0 - Unused or unknown. - Excluded from totals. (0)
Survey Duration: 10:52 Mon 11 Oct 2004 to 11:57 Thu 14 Oct 2004
File: Z:\mcdata\KOA\2004\352\35204N14OCT2004.EC0 (Plus)
Identifier: B1670JC5 MC56-1 [MC55] (c)Microcom 07/06/99
Algorithm: Event count

PROFILE:

Filter time: **11:00 Mon 11 Oct 2004 to 12:00 Wed 13 Oct 2004**
Name: Factory default profile
Method: Count axles divided by two.
Units: Non-Metric (ft, mi, f/s, mph, lb, ton)
In profile: 16944 Events

*** Mon 11 Oct 2004 - Total=5033(incomplete) , 15 minute drops,**

0000	0100	0200	0300	0400	0500	0600	0700	0800	0900	1000	1100	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300	
–	**–**	**–**	**–**	**–**	**–**	**–**	**–**	**–**	**–**	**–**	**481**	**532**	**460**	**517**	**585**	**532**	**536**	**492**	**310**	**283**	**185**	**74**	**46**	
–	–	–	–	–	–	–	–	–	–	–	109	145	106	130	**139**	137	151	128	90	78	66	24	13	7
–	–	–	–	–	–	–	–	–	–	–	112	126	106	111	**135**	131	146	132	77	69	54	21	8	6
–	–	–	–	–	–	–	–	–	–	–	110	128	128	147	**139**	134	136	113	78	61	33	18	20	6
–	–	–	–	–	–	–	–	–	–	–	150	133	120	129	**172**	130	103	119	65	75	32	11	5	2

PM PkHr 15:00 to 16:00 (n=585), PM PHF=0.85

*** Tue 12 Oct 2004 - Total=8239, 15 minute drops,**

0000	0100	0200	0300	0400	0500	0600	0700	0800	0900	1000	1100	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300	
21	**10**	**5**	**5**	**28**	**87**	**499**	**990**	**654**	**447**	**438**	**475**	**444**	**481**	**479**	**625**	**577**	**584**	**492**	**301**	**266**	**174**	**97**	**60**	
7	1	1	1	2	9	57	**235**	225	117	119	140	121	115	87	154	**152**	156	134	86	69	61	28	24	7
6	2	1	2	4	14	110	**262**	191	105	87	125	104	120	120	144	**147**	160	131	82	86	42	23	11	3
6	5	1	1	6	21	152	**254**	115	121	113	113	127	144	141	**161**	135	140	122	64	46	50	20	14	8
2	2	2	1	16	43	180	**239**	123	104	119	97	92	102	131	**166**	143	128	105	69	65	21	26	11	2

AM PkHr 07:00 to 08:00 (n=990), AM PHF=0.94 PM PkHr 15:30 to 16:30 (n=626), PM PHF=0.94

*** Wed 13 Oct 2004 - Total=3671(incomplete) , 15 minute drops,**

0000	0100	0200	0300	0400	0500	0600	0700	0800	0900	1000	1100	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300	
20	**6**	**6**	**4**	**13**	**89**	**524**	**924**	**666**	**488**	**455**	**476**	**–**	**–**	**–**	**–**	**–**	**–**	**–**	**–**	**–**	**–**	**–**	**–**	
7	0	1	1	0	8	67	222	236	126	112	141	–	–	–	–	–	–	–	–	–	–	–	–	–
3	1	3	0	3	12	96	234	169	127	110	112	–	–	–	–	–	–	–	–	–	–	–	–	–
8	4	1	1	3	25	150	236	133	114	111	115	–	–	–	–	–	–	–	–	–	–	–	–	–
2	1	1	2	7	44	211	232	128	121	122	108	–	–	–	–	–	–	–	–	–	–	–	–	–

Traffic Data Service Southwest
Event Counts

Southbound

EventCount-2171

DATASETS:

Site: **[35204S] Willow Street Btwn Bonita Road & Sweetwater Road**
ChannelA: 3 - South bound. - Added to totals. (1)
ChannelB: 0 - Unused or unknown. - Excluded from totals. (0)
Survey Duration: 10:53 Mon 11 Oct 2004 to 11:59 Thu 14 Oct 2004
File: Z:\mcdata\KOA\2004\352\35204S14OCT2004.EC0 (Plus)
Identifier: B102GC7E MC56-1 [MC55] (c)Microcom 07/06/99
Algorithm: Event count

PROFILE:

Filter time: **12:00 Mon 11 Oct 2004 to 12:00 Wed 13 Oct 2004**
Name: Factory default profile
Method: Count axles divided by two.
Units: Non-Metric (ft, mi, f/s, mph, lb, ton)
In profile: 17719 Events

*** Mon 11 Oct 2004 - Total=5522(incomplete) , 15 minute drops,**

0000	0100	0200	0300	0400	0500	0600	0700	0800	0900	1000	1100	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300	
–	**–**	**–**	**–**	**–**	**–**	**–**	**–**	**–**	**–**	**–**	**–**	**463**	**500**	**597**	**714**	**723**	**837**	**659**	**391**	**275**	**230**	**82**	**51**	
–	–	–	–	–	–	–	–	–	–	–	–	105	131	130	176	186	**226**	193	116	78	76	28	8	11
–	–	–	–	–	–	–	–	–	–	–	–	106	133	145	172	162	**176**	168	108	80	57	26	21	6
–	–	–	–	–	–	–	–	–	–	–	–	122	122	128	167	192	**223**	149	79	60	53	16	13	9
–	–	–	–	–	–	–	–	–	–	–	–	130	114	194	199	183	**212**	149	88	57	44	12	9	5

PM PkHr 17:00 to 18:00 (n=837), PM PHF=0.93

*** Tue 12 Oct 2004 - Total=9313, 15 minute drops,**

0000	0100	0200	0300	0400	0500	0600	0700	0800	0900	1000	1100	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300	
31	**12**	**2**	**7**	**10**	**49**	**321**	**529**	**536**	**522**	**417**	**477**	**451**	**531**	**610**	**837**	**1039**	**1043**	**821**	**371**	**294**	**217**	**124**	**62**	
11	4	0	0	0	8	40	80	**150**	148	97	106	114	132	129	228	235	**253**	242	103	91	60	47	12	13
6	2	2	1	2	11	45	97	**125**	127	100	117	111	143	124	186	**271**	244	263	97	74	62	35	19	11
9	2	0	1	4	8	89	**169**	122	115	104	127	110	134	148	210	**264**	281	163	85	66	49	22	18	5
5	4	0	5	4	22	147	**183**	139	132	116	127	116	122	209	213	**269**	265	153	86	63	46	20	13	4

AM PkHr 07:30 to 08:30 (n=627), AM PHF=0.86 PM PkHr 16:15 to 17:15 (n=1057), PM PHF=0.98

*** Wed 13 Oct 2004 - Total=2884(incomplete) , 15 minute drops,**

0000	0100	0200	0300	0400	0500	0600	0700	0800	0900	1000	1100	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300	
33	**10**	**8**	**10**	**14**	**53**	**269**	**505**	**579**	**514**	**439**	**450**	**–**	**–**	**–**	**–**	**–**	**–**	**–**	**–**	**–**	**–**	**–**	**–**	
13	2	3	3	0	12	35	76	142	138	104	97	–	–	–	–	–	–	–	–	–	–	–	–	–
11	3	2	4	1	11	41	116	138	112	90	115	–	–	–	–	–	–	–	–	–	–	–	–	–
5	3	1	0	4	13	76	158	139	130	119	113	–	–	–	–	–	–	–	–	–	–	–	–	–
4	2	2	3	9	17	117	155	160	134	126	125	–	–	–	–	–	–	–	–	–	–	–	–	–

Traffic Data Service Southwest
9773 Maine Avenue
Lakeside, CA 92040
(619) 390-8495 Fax (619) 390-8427

Weather : Clear & Dry
Counted by: M.Archibald & S. Mockler
Board # :D1-2278 & D1-2279
Location :N/B I-805 @ Bonita Rd

File Name : 04395010B
Site Code : 00395010
Start Date : 11/9/2004
Page No : 1

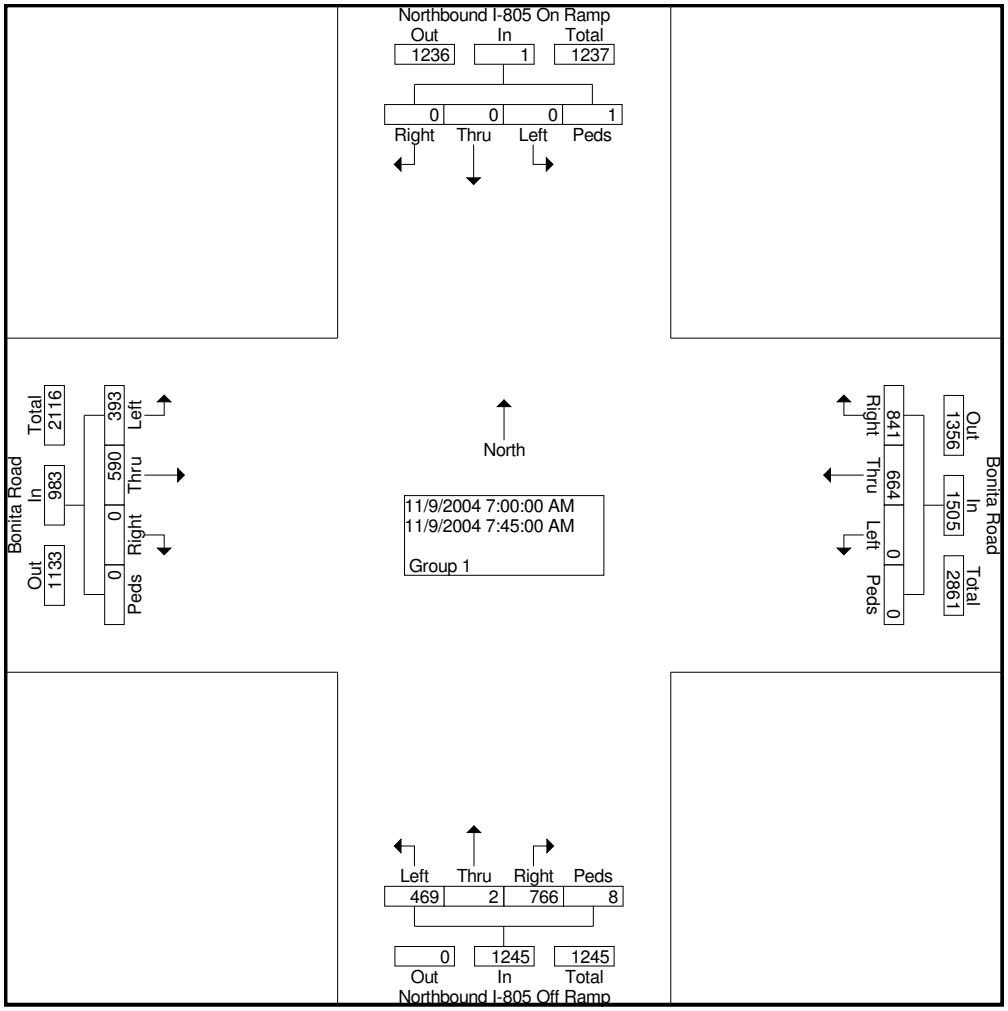
Groups Printed- Group 1

	Northbound I-805 On Ramp Southbound					Bonita Road Westbound					Northbound I-805 Off Ramp Northbound					Bonita Road Eastbound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
Factor	1.0	1.0	1.0	1.0		1.0	1.0	1.0	1.0		1.0	1.0	1.0	1.0		1.0	1.0	1.0	1.0		
07:00	0	0	0	0	0	0	134	239	0	373	135	1	221	5	362	107	95	0	0	202	937
07:15	0	0	0	0	0	0	142	227	0	369	143	0	254	1	398	86	131	0	0	217	984
07:30	0	0	0	0	0	0	173	209	0	382	104	1	176	1	282	107	177	0	0	284	948
07:45	0	0	0	1	1	0	215	166	0	381	87	0	115	1	203	93	187	0	0	280	865
Total	0	0	0	1	1	0	664	841	0	1505	469	2	766	8	1245	393	590	0	0	983	3734
08:00	0	0	0	0	0	0	199	168	0	367	92	0	99	0	191	72	187	0	0	259	817
08:15	0	0	0	1	1	0	176	188	0	364	62	0	142	0	204	77	205	0	0	282	851
08:30	0	0	0	1	1	0	179	142	0	321	79	0	124	0	203	83	197	0	0	280	805
08:45	0	0	0	1	1	0	180	145	0	325	70	0	135	0	205	100	198	0	0	298	829
Total	0	0	0	3	3	0	734	643	0	1377	303	0	500	0	803	332	787	0	0	1119	3302
Grand Total	0	0	0	4	4	0	1398	1484	0	2882	772	2	1266	8	2048	725	1377	0	0	2102	7036
Apprch %	0.0	0.0	0.0	100.0		0.0	48.5	51.5	0.0		37.7	0.1	61.8	0.4		34.5	65.5	0.0	0.0		
Total %	0.0	0.0	0.0	0.1	0.1	0.0	19.9	21.1	0.0	41.0	11.0	0.0	18.0	0.1	29.1	10.3	19.6	0.0	0.0	29.9	

	Northbound I-805 On Ramp Southbound					Bonita Road Westbound					Northbound I-805 Off Ramp Northbound					Bonita Road Eastbound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
Peak Hour From 07:00 to 08:45 - Peak 1 of 1																					
Intersection	07:00																				
Volume	0	0	0	1	1	0	664	841	0	1505	469	2	766	8	1245	393	590	0	0	983	3734
Percent	0.0	0.0	0.0	100.0		0.0	44.1	55.9	0.0		37.7	0.2	61.5	0.6		40.0	60.0	0.0	0.0		
07:15 Volume	0	0	0	0	0	0	142	227	0	369	143	0	254	1	398	86	131	0	0	217	984
Peak Factor																					0.949
High Int.	07:45					07:30					07:15					07:30					
Volume	0	0	0	1	1	0	173	209	0	382	143	0	254	1	398	107	177	0	0	284	
Peak Factor					0.250					0.985					0.782					0.865	

Traffic Data Service Southwest
9773 Maine Avenue
Lakeside, CA 92040
(619) 390-8495 Fax (619) 390-8427

File Name : 04395010B
Site Code : 00395010
Start Date : 11/9/2004
Page No : 2



Traffic Data Service Southwest
9773 Maine Avenue
Lakeside, CA 92040
(619) 390-8495 Fax (619) 390-8427

Weather : Clear & Dry
Counted by:M.Archibald & S.Mockler
Board # :D1-2278 & D1-2279
Location :N/B I-805 @ Bonita Rd

File Name : 04395011BB
Site Code : 00395011
Start Date : 11/9/2004
Page No : 1

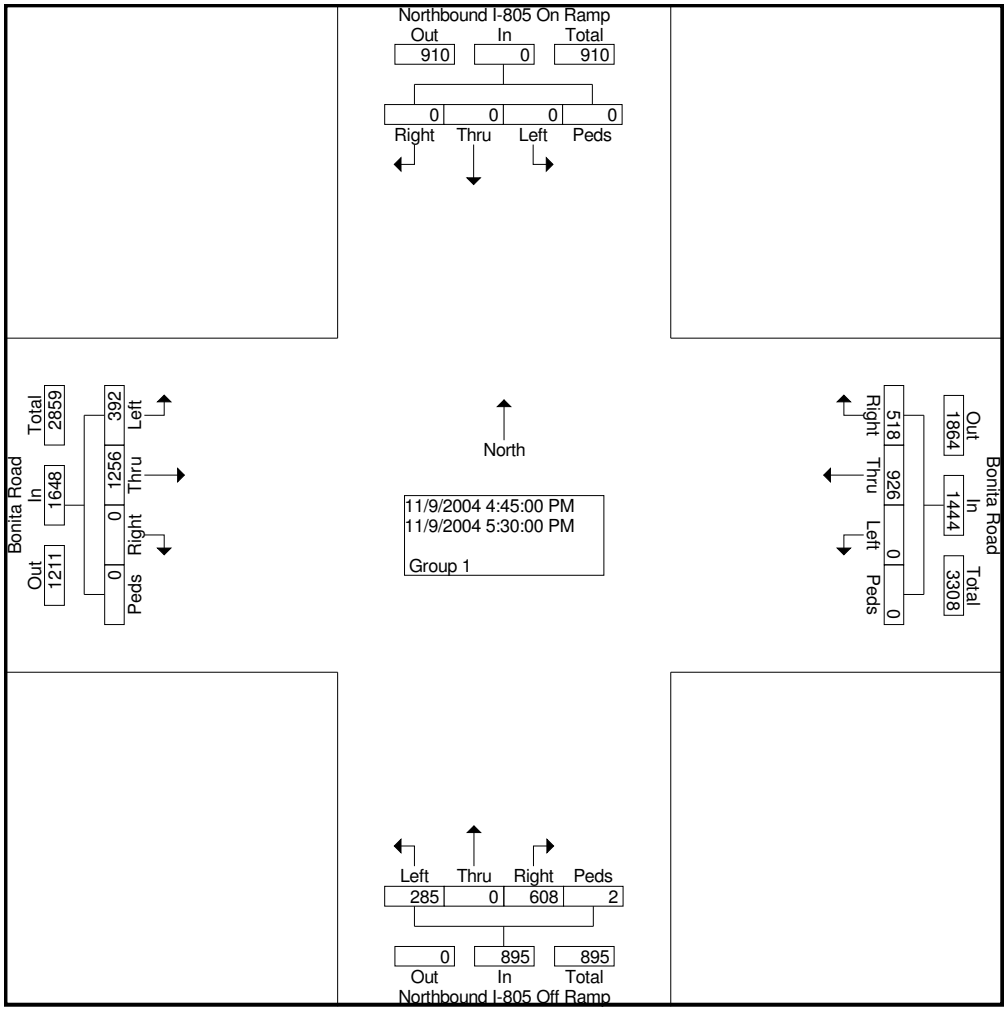
Groups Printed- Group 1

	Northbound I-805 On Ramp Southbound					Bonita Road Westbound					Northbound I-805 Off Ramp Northbound					Bonita Road Eastbound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
Factor	1.0	1.0	1.0	1.0		1.0	1.0	1.0	1.0		1.0	1.0	1.0	1.0		1.0	1.0	1.0	1.0		
16:00	0	0	0	0	0	0	230	155	0	385	69	0	138	0	207	102	310	0	0	412	1004
16:15	0	0	0	0	0	0	227	116	0	343	80	0	144	1	225	78	313	0	0	391	959
16:30	0	0	0	1	1	0	231	124	0	355	72	0	141	1	214	97	302	0	0	399	969
16:45	0	0	0	0	0	0	227	122	0	349	78	0	149	0	227	77	286	0	0	363	939
Total	0	0	0	1	1	0	915	517	0	1432	299	0	572	2	873	354	1211	0	0	1565	3871
17:00	0	0	0	0	0	0	250	146	0	396	57	0	137	1	195	127	330	0	0	457	1048
17:15	0	0	0	0	0	0	218	142	0	360	89	0	162	1	252	106	308	0	0	414	1026
17:30	0	0	0	0	0	0	231	108	0	339	61	0	160	0	221	82	332	0	0	414	974
17:45	0	0	0	0	0	0	208	81	0	289	71	0	181	0	252	88	283	0	0	371	912
Total	0	0	0	0	0	0	907	477	0	1384	278	0	640	2	920	403	1253	0	0	1656	3960
Grand Total	0	0	0	1	1	0	1822	994	0	2816	577	0	1212	4	1793	757	2464	0	0	3221	7831
Apprch %	0.0	0.0	0.0	100.0		0.0	64.7	35.3	0.0		32.2	0.0	67.6	0.2		23.5	76.5	0.0	0.0		
Total %	0.0	0.0	0.0	0.0	0.0	0.0	23.3	12.7	0.0	36.0	7.4	0.0	15.5	0.1	22.9	9.7	31.5	0.0	0.0	41.1	

	Northbound I-805 On Ramp Southbound					Bonita Road Westbound					Northbound I-805 Off Ramp Northbound					Bonita Road Eastbound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
Peak Hour From 16:00 to 17:45 - Peak 1 of 1																					
Intersection	16:45																				
Volume	0	0	0	0	0	0	926	518	0	1444	285	0	608	2	895	392	1256	0	0	1648	3987
Percent	0.0	0.0	0.0	0.0		0.0	64.1	35.9	0.0		31.8	0.0	67.9	0.2		23.8	76.2	0.0	0.0		
17:00 Volume	0	0	0	0	0	0	250	146	0	396	57	0	137	1	195	127	330	0	0	457	1048
Peak Factor																					0.951
High Int.	3:45:00 PM					17:00					17:15					17:00					
Volume	0	0	0	0	0	0	250	146	0	396	89	0	162	1	252	127	330	0	0	457	
Peak Factor										0.912					0.888					0.902	

Traffic Data Service Southwest
9773 Maine Avenue
Lakeside, CA 92040
(619) 390-8495 Fax (619) 390-8427

File Name : 04395011BB
Site Code : 00395011
Start Date : 11/9/2004
Page No : 2



Traffic Data Service Southwest
9773 Maine Avenue
Lakeside, CA 92040
(619) 390-8495 Fax (619) 390-8427

Weather : Clear & Dry
Counted by: J.Green & K.Thind
Board # : D1-2172 & D1-2173
Location :S/B I-805 @ Bonita Rd

File Name : 04395020
Site Code : 00395020
Start Date : 11/9/2004
Page No : 1

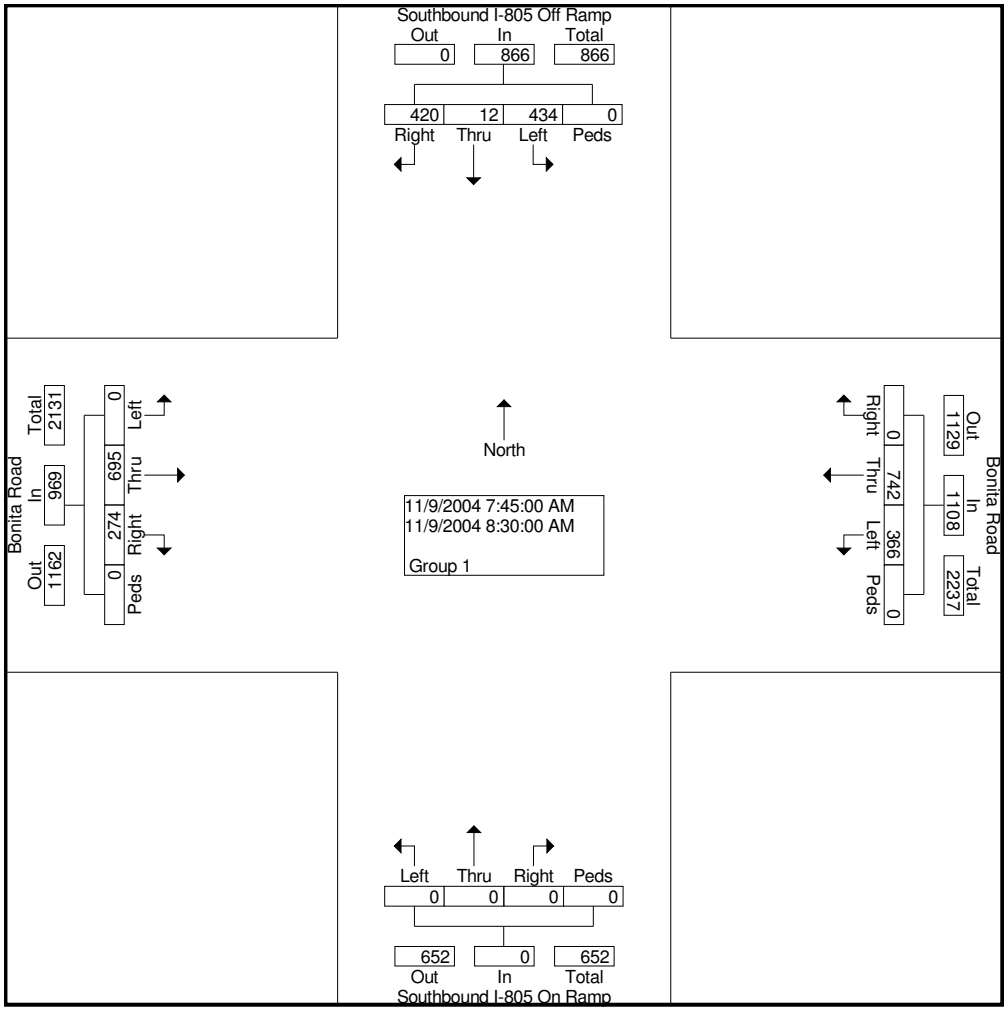
Groups Printed- Group 1

	Southbound I-805 Off Ramp Southbound					Bonita Road Westbound					Southbound I-805 On Ramp Northbound					Bonita Road Eastbound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
Factor	1.0	1.0	1.0	1.0		1.0	1.0	1.0	1.0		1.0	1.0	1.0	1.0		1.0	1.0	1.0	1.0		
07:00	66	1	53	0	120	75	188	0	0	263	0	0	0	0	0	0	149	56	0	205	588
07:15	75	5	55	0	135	79	191	0	0	270	0	0	0	0	0	0	139	78	0	217	622
07:30	96	0	104	0	200	68	201	0	0	269	0	0	0	0	0	0	172	68	0	240	709
07:45	106	4	121	0	231	102	225	0	0	327	0	0	0	0	0	0	173	63	0	236	794
Total	343	10	333	0	686	324	805	0	0	1129	0	0	0	0	0	0	633	265	0	898	2713
08:00	100	1	100	0	201	73	220	0	0	293	0	0	0	0	0	0	163	70	0	233	727
08:15	115	7	103	0	225	93	140	0	0	233	0	0	0	0	0	0	182	72	0	254	712
08:30	113	0	96	0	209	98	157	0	0	255	0	0	0	0	0	0	177	69	0	246	710
08:45	121	0	113	0	234	80	177	0	0	257	0	0	0	0	0	0	159	80	0	239	730
Total	449	8	412	0	869	344	694	0	0	1038	0	0	0	0	0	0	681	291	0	972	2879
Grand Total	792	18	745	0	1555	668	1499	0	0	2167	0	0	0	0	0	0	1314	556	0	1870	5592
Apprch %	50.9	1.2	47.9	0.0		30.8	69.2	0.0	0.0		0.0	0.0	0.0	0.0		0.0	70.3	29.7	0.0		
Total %	14.2	0.3	13.3	0.0	27.8	11.9	26.8	0.0	0.0	38.8	0.0	0.0	0.0	0.0	0.0	0.0	23.5	9.9	0.0	33.4	

	Southbound I-805 Off Ramp Southbound					Bonita Road Westbound					Southbound I-805 On Ramp Northbound					Bonita Road Eastbound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
Peak Hour From 07:00 to 08:45 - Peak 1 of 1																					
Intersection	07:45																				
Volume	434	12	420	0	866	366	742	0	0	1108	0	0	0	0	0	0	695	274	0	969	2943
Percent	50.1	1.4	48.5	0.0		33.0	67.0	0.0	0.0		0.0	0.0	0.0	0.0		0.0	71.7	28.3	0.0		
07:45 Volume	106	4	121	0	231	102	225	0	0	327	0	0	0	0	0	0	173	63	0	236	794
Peak Factor																					0.927
High Int.	07:45					07:45					6:45:00 AM					08:15					
Volume	106	4	121	0	231	102	225	0	0	327	0	0	0	0	0	0	182	72	0	254	
Peak Factor					0.937					0.847										0.954	

Traffic Data Service Southwest
9773 Maine Avenue
Lakeside, CA 92040
(619) 390-8495 Fax (619) 390-8427

File Name : 04395020
Site Code : 00395020
Start Date : 11/9/2004
Page No : 2



Traffic Data Service Southwest
9773 Maine Avenue
Lakeside, CA 92040
(619) 390-8495 Fax (619) 390-8427

Weather : Clear & Dry
Counted by:J.Green & K.Thind
Board # :D1-2172 & D1-2173
Location :S/B I-805 @ Bonita Rd

File Name : 04395021
Site Code : 00395021
Start Date : 11/9/2004
Page No : 1

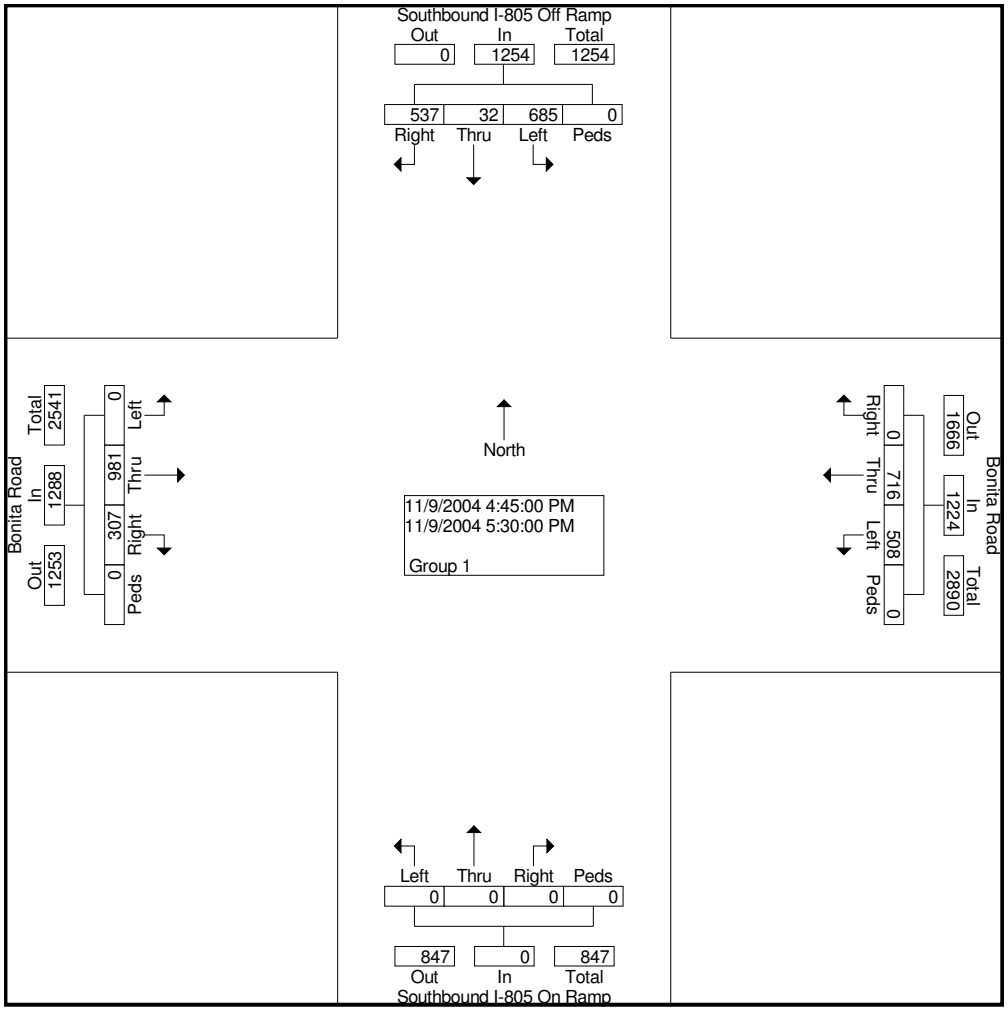
Groups Printed- Group 1

	Southbound I-805 Off Ramp Southbound					Bonita Road Westbound					Southbound I-805 On Ramp Northbound					Bonita Road Eastbound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
Factor	1.0	1.0	1.0	1.0		1.0	1.0	1.0	1.0		1.0	1.0	1.0	1.0		1.0	1.0	1.0	1.0		
16:00	185	0	160	0	345	129	181	0	0	310	0	0	0	0	0	0	208	81	0	289	944
16:15	173	0	137	0	310	99	182	0	0	281	0	0	0	0	0	0	228	68	0	296	887
16:30	155	3	136	0	294	140	169	0	0	309	0	0	0	0	0	0	220	65	0	285	888
16:45	149	32	134	0	315	119	200	0	0	319	0	0	0	0	0	0	202	82	0	284	918
Total	662	35	567	0	1264	487	732	0	0	1219	0	0	0	0	0	0	858	296	0	1154	3637
17:00	190	0	143	0	333	131	157	0	0	288	0	0	0	0	0	0	259	88	0	347	968
17:15	143	0	122	0	265	141	190	0	0	331	0	0	0	0	0	0	301	74	0	375	971
17:30	203	0	138	0	341	117	169	0	0	286	0	0	0	0	0	0	219	63	0	282	909
17:45	161	0	145	0	306	120	176	0	0	296	0	0	0	0	0	0	216	49	0	265	867
Total	697	0	548	0	1245	509	692	0	0	1201	0	0	0	0	0	0	995	274	0	1269	3715
Grand Total	1359	35	1115	0	2509	996	1424	0	0	2420	0	0	0	0	0	0	1853	570	0	2423	7352
Apprch %	54.2	1.4	44.4	0.0		41.2	58.8	0.0	0.0		0.0	0.0	0.0	0.0		0.0	76.5	23.5	0.0		
Total %	18.5	0.5	15.2	0.0	34.1	13.5	19.4	0.0	0.0	32.9	0.0	0.0	0.0	0.0	0.0	0.0	25.2	7.8	0.0	33.0	

	Southbound I-805 Off Ramp Southbound					Bonita Road Westbound					Southbound I-805 On Ramp Northbound					Bonita Road Eastbound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
Peak Hour From 16:00 to 17:45 - Peak 1 of 1																					
Intersection	16:45																				
Volume	685	32	537	0	1254	508	716	0	0	1224	0	0	0	0	0	0	981	307	0	1288	3766
Percent	54.6	2.6	42.8	0.0		41.5	58.5	0.0	0.0		0.0	0.0	0.0	0.0		0.0	76.2	23.8	0.0		
17:15 Volume	143	0	122	0	265	141	190	0	0	331	0	0	0	0	0	0	301	74	0	375	971
Peak Factor																					0.970
High Int.	17:30					17:15					3:45:00 PM					17:15					
Volume	203	0	138	0	341	141	190	0	0	331	0	0	0	0	0	0	301	74	0	375	
Peak Factor					0.919					0.924										0.859	

Traffic Data Service Southwest
9773 Maine Avenue
Lakeside, CA 92040
(619) 390-8495 Fax (619) 390-8427

File Name : 04395021
Site Code : 00395021
Start Date : 11/9/2004
Page No : 2



Traffic Data Service Southwest
9773 Maine Avenue
Lakeside, CA 92040
(619) 390-8495 Fax (619) 390-8427

Weather : Clear & Dry
Counted by: D.Wellman
Board # : D1-1424
Location : Bonita Rd @ Central Ave

File Name : 04395030
Site Code : 00395030
Start Date : 11/9/2004
Page No : 1

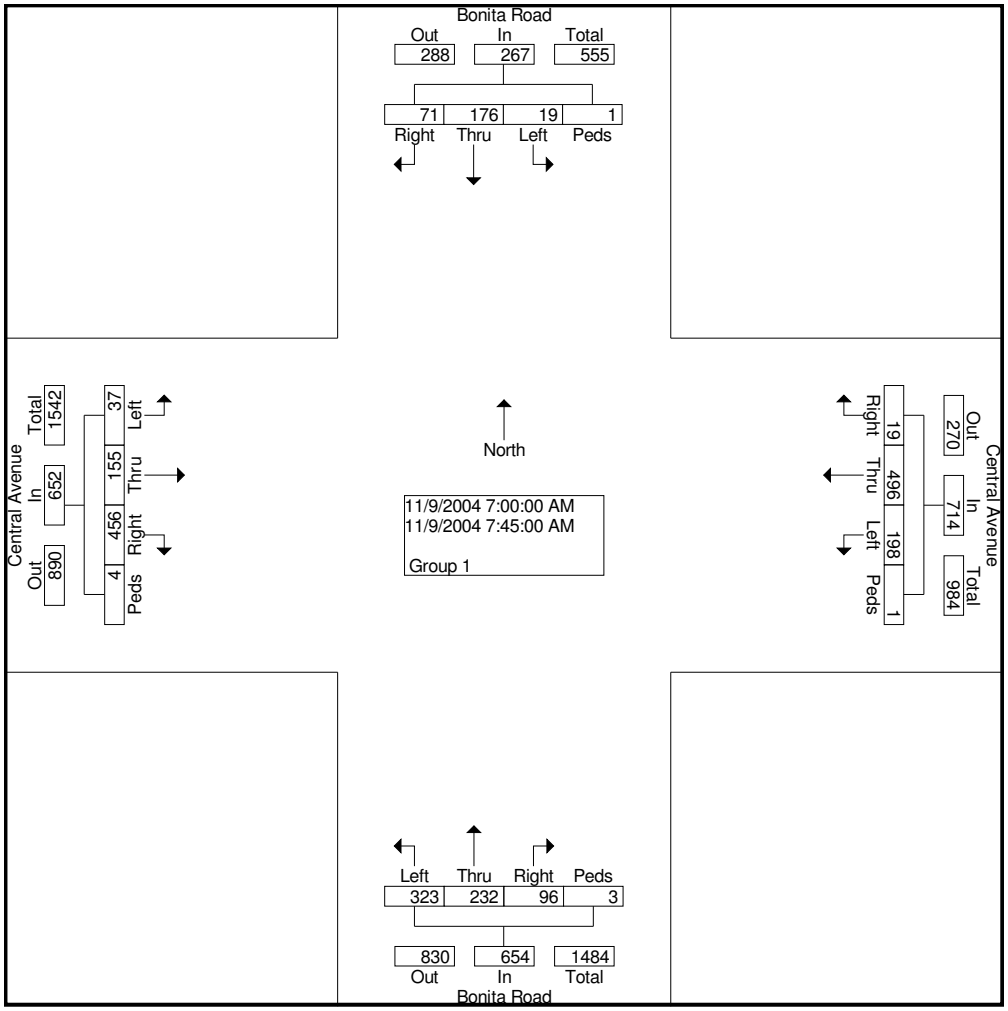
Groups Printed- Group 1

	Bonita Road Southbound					Central Avenue Westbound					Bonita Road Northbound					Central Avenue Eastbound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
Factor	1.0	1.0	1.0	1.0		1.0	1.0	1.0	1.0		1.0	1.0	1.0	1.0		1.0	1.0	1.0	1.0		
07:00	0	27	11	1	39	43	139	3	0	185	67	68	26	2	163	8	48	91	2	149	536
07:15	4	36	19	0	59	37	146	5	0	188	90	70	29	1	190	10	33	91	0	134	571
07:30	8	59	20	0	87	63	110	7	1	181	76	49	18	0	143	8	47	136	2	193	604
07:45	7	54	21	0	82	55	101	4	0	160	90	45	23	0	158	11	27	138	0	176	576
Total	19	176	71	1	267	198	496	19	1	714	323	232	96	3	654	37	155	456	4	652	2287
08:00	0	38	12	0	50	51	114	5	0	170	83	45	30	0	158	10	57	83	0	150	528
08:15	2	33	11	4	50	38	95	2	0	135	81	52	26	0	159	9	40	82	3	134	478
08:30	4	36	3	1	44	45	84	5	1	135	77	31	26	1	135	13	46	106	1	166	480
08:45	1	46	4	1	52	27	105	3	3	138	71	39	24	4	138	10	35	98	1	144	472
Total	7	153	30	6	196	161	398	15	4	578	312	167	106	5	590	42	178	369	5	594	1958
Grand Total	26	329	101	7	463	359	894	34	5	1292	635	399	202	8	1244	79	333	825	9	1246	4245
Apprch %	5.6	71.1	21.8	1.5		27.8	69.2	2.6	0.4		51.0	32.1	16.2	0.6		6.3	26.7	66.2	0.7		
Total %	0.6	7.8	2.4	0.2	10.9	8.5	21.1	0.8	0.1	30.4	15.0	9.4	4.8	0.2	29.3	1.9	7.8	19.4	0.2	29.4	

	Bonita Road Southbound					Central Avenue Westbound					Bonita Road Northbound					Central Avenue Eastbound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
Peak Hour From 07:00 to 08:45 - Peak 1 of 1																					
Intersection	07:00																				
Volume	19	176	71	1	267	198	496	19	1	714	323	232	96	3	654	37	155	456	4	652	2287
Percent	7.1	65.9	26.6	0.4		27.7	69.5	2.7	0.1		49.4	35.5	14.7	0.5		5.7	23.8	69.9	0.6		
07:30 Volume	8	59	20	0	87	63	110	7	1	181	76	49	18	0	143	8	47	136	2	193	604
Peak Factor																					0.947
High Int.	07:30					07:15					07:15					07:30					
Volume	8	59	20	0	87	37	146	5	0	188	90	70	29	1	190	8	47	136	2	193	
Peak Factor					0.767					0.949					0.861					0.845	

Traffic Data Service Southwest
9773 Maine Avenue
Lakeside, CA 92040
(619) 390-8495 Fax (619) 390-8427

File Name : 04395030
Site Code : 00395030
Start Date : 11/9/2004
Page No : 2



Traffic Data Service Southwest
9773 Maine Avenue
Lakeside, CA 92040
(619) 390-8495 Fax (619) 390-8427

Weather : Clear & Dry
Counted by: D.Wellman
Board # : D1-1424
Location : Bonita Rd @ Central Ave

File Name : 04395031
Site Code : 00395031
Start Date : 11/9/2004
Page No : 1

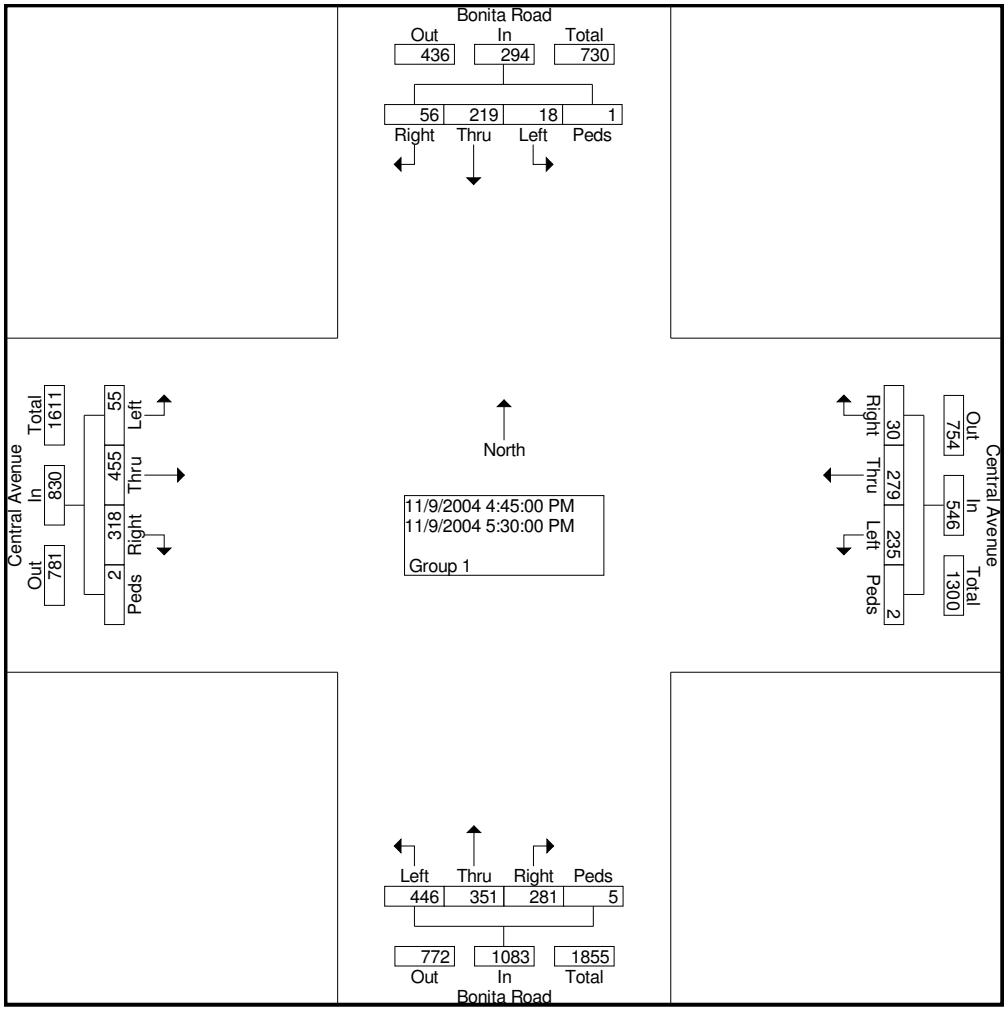
Groups Printed- Group 1

	Bonita Road Southbound					Central Avenue Westbound					Bonita Road Northbound					Central Avenue Eastbound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
Factor	1.0	1.0	1.0	1.0		1.0	1.0	1.0	1.0		1.0	1.0	1.0	1.0		1.0	1.0	1.0	1.0		
16:00	1	36	9	1	47	45	52	9	1	107	107	76	47	3	233	11	105	97	4	217	604
16:15	6	52	6	0	64	61	49	4	1	115	90	68	67	3	228	21	101	108	1	231	638
16:30	9	53	2	0	64	45	54	8	0	107	101	74	68	2	245	13	118	96	1	228	644
16:45	4	54	19	0	77	70	71	12	0	153	107	72	66	1	246	14	113	97	2	226	702
Total	20	195	36	1	252	221	226	33	2	482	405	290	248	9	952	59	437	398	8	902	2588
17:00	1	61	12	1	75	48	60	7	1	116	129	96	76	1	302	12	114	68	0	194	687
17:15	3	52	13	0	68	72	57	4	0	133	114	91	80	0	285	19	136	66	0	221	707
17:30	10	52	12	0	74	45	91	7	1	144	96	92	59	3	250	10	92	87	0	189	657
17:45	7	42	8	0	57	53	49	2	0	104	107	78	71	0	256	10	130	111	0	251	668
Total	21	207	45	1	274	218	257	20	2	497	446	357	286	4	1093	51	472	332	0	855	2719
Grand Total	41	402	81	2	526	439	483	53	4	979	851	647	534	13	2045	110	909	730	8	1757	5307
Apprch %	7.8	76.4	15.4	0.4		44.8	49.3	5.4	0.4		41.6	31.6	26.1	0.6		6.3	51.7	41.5	0.5		
Total %	0.8	7.6	1.5	0.0	9.9	8.3	9.1	1.0	0.1	18.4	16.0	12.2	10.1	0.2	38.5	2.1	17.1	13.8	0.2	33.1	

	Bonita Road Southbound					Central Avenue Westbound					Bonita Road Northbound					Central Avenue Eastbound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
Peak Hour From 16:00 to 17:45 - Peak 1 of 1																					
Intersection	16:45																				
Volume	18	219	56	1	294	235	279	30	2	546	446	351	281	5	1083	55	455	318	2	830	2753
Percent	6.1	74.5	19.0	0.3		43.0	51.1	5.5	0.4		41.2	32.4	25.9	0.5		6.6	54.8	38.3	0.2		
17:15 Volume	3	52	13	0	68	72	57	4	0	133	114	91	80	0	285	19	136	66	0	221	707
Peak Factor																					0.973
High Int.	16:45					16:45					17:00					16:45					
Volume	4	54	19	0	77	70	71	12	0	153	129	96	76	1	302	14	113	97	2	226	
Peak Factor					0.955					0.892					0.897					0.918	

Traffic Data Service Southwest
9773 Maine Avenue
Lakeside, CA 92040
(619) 390-8495 Fax (619) 390-8427

File Name : 04395031
Site Code : 00395031
Start Date : 11/9/2004
Page No : 2



Traffic Data Service Southwest
9773 Maine Avenue
Lakeside, CA 92040
(619) 390-8495 Fax (619) 390-8427

Weather : Clear & Dry
Counted by: F.Gilbert
Board # : D1-1424
Location : Bonita Rd @ Sweetwater Rd

File Name : 04395040
Site Code : 00395040
Start Date : 11/9/2004
Page No : 1

Groups Printed- Group 1

	Simbar Road Southbound					Sweetwater Road Westbound					Bonita Road Northbound					Sweetwater Road Eastbound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
Factor	1.0	1.0	1.0	1.0		1.0	1.0	1.0	1.0		1.0	1.0	1.0	1.0		1.0	1.0	1.0	1.0		
07:00	0	0	0	0	0	9	10	0	0	19	195	0	39	0	234	0	16	52	0	68	321
07:15	1	0	0	0	1	15	5	0	0	20	180	0	34	0	214	0	9	74	0	83	318
07:30	0	1	0	0	1	21	12	0	0	33	129	4	34	0	167	0	15	84	0	99	300
07:45	0	0	0	0	0	19	12	0	0	31	121	0	21	0	142	0	10	114	0	124	297
Total	1	1	0	0	2	64	39	0	0	103	625	4	128	0	757	0	50	324	0	374	1236
08:00	0	0	0	0	0	6	11	0	0	17	124	0	24	0	148	0	13	60	0	73	238
08:15	0	0	0	0	0	1	8	0	0	9	107	0	14	0	121	0	11	48	1	60	190
08:30	0	0	0	0	0	7	18	0	0	25	102	0	16	0	118	0	12	48	0	60	203
08:45	0	0	0	0	0	17	17	0	0	34	96	0	20	0	116	0	20	52	0	72	222
Total	0	0	0	0	0	31	54	0	0	85	429	0	74	0	503	0	56	208	1	265	853
Grand Total	1	1	0	0	2	95	93	0	0	188	1054	4	202	0	1260	0	106	532	1	639	2089
Apprch %	50.0	50.0	0.0	0.0		50.5	49.5	0.0	0.0		83.7	0.3	16.0	0.0		0.0	16.6	83.3	0.2		
Total %	0.0	0.0	0.0	0.0	0.1	4.5	4.5	0.0	0.0	9.0	50.5	0.2	9.7	0.0	60.3	0.0	5.1	25.5	0.0	30.6	

	Simbar Road Southbound					Sweetwater Road Westbound					Bonita Road Northbound					Sweetwater Road Eastbound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
Peak Hour From 07:00 to 08:45 - Peak 1 of 1																					
Intersection	07:00																				
Volume	1	1	0	0	2	64	39	0	0	103	625	4	128	0	757	0	50	324	0	374	1236
Percent	50.0	50.0	0.0	0.0		62.1	37.9	0.0	0.0		82.6	0.5	16.9	0.0		0.0	13.4	86.6	0.0		
07:00 Volume	0	0	0	0	0	9	10	0	0	19	195	0	39	0	234	0	16	52	0	68	321
Peak Factor																					0.963
High Int.	07:15					07:30					07:00					07:45					
Volume	1	0	0	0	1	21	12	0	0	33	195	0	39	0	234	0	10	114	0	124	
Peak Factor					0.500					0.780					0.809					0.754	

Traffic Data Service Southwest
9773 Maine Avenue
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File Name : 04395040
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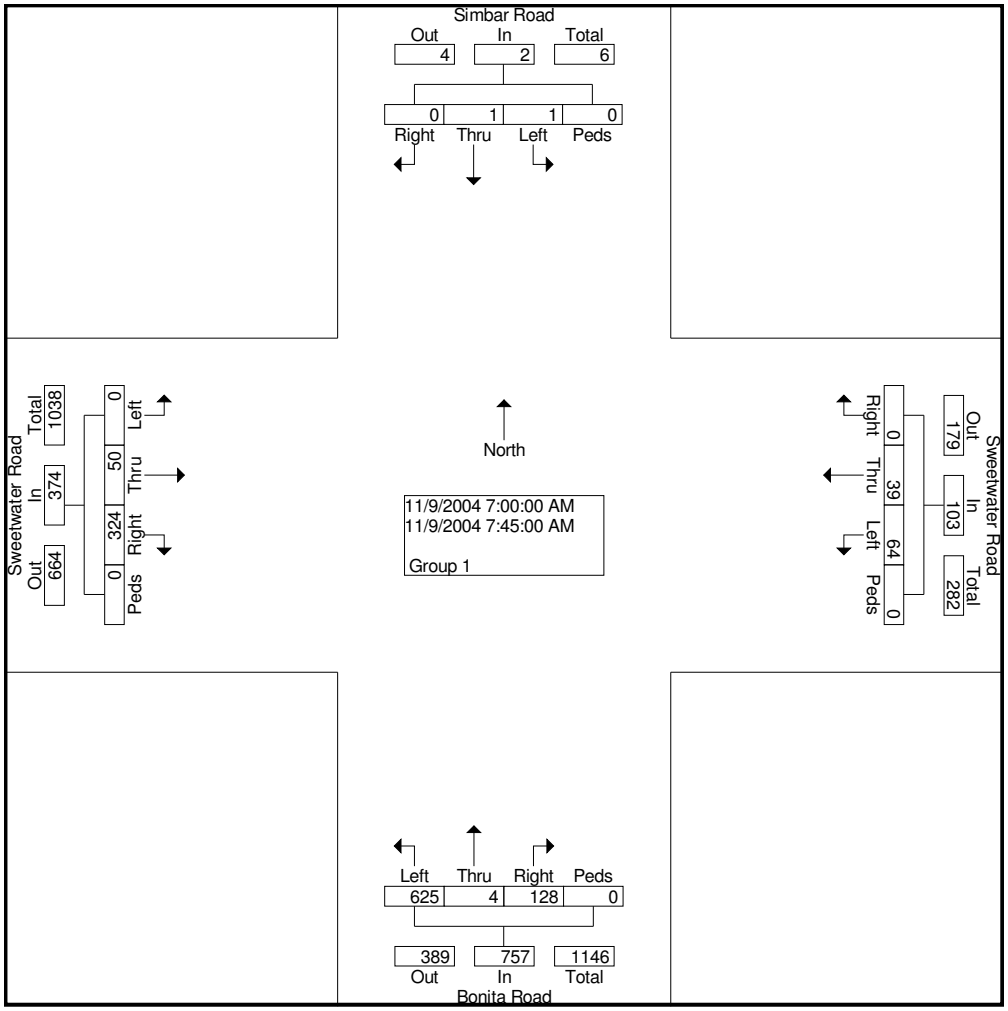

Traffic Data Service Southwest
9773 Maine Avenue
Lakeside, CA 92040
(619) 390-8495 Fax (619) 390-8427

Weather : Clear & Dry
Counted by: F.Gilbert
Board # : D1-1426
Location : Sweetwater Rd @ Bonita Rd

File Name : 04395041
Site Code : 00395041
Start Date : 11/9/2004
Page No : 1

Groups Printed- Group 1

	Simbar Road Southbound					Sweetwater Road Westbound					Bonita Road Northbound					Sweetwater Road Eastbound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
Factor	1.0	1.0	1.0	1.0		1.0	1.0	1.0	1.0		1.0	1.0	1.0	1.0		1.0	1.0	1.0	1.0		
16:00	0	0	0	0	0	17	26	0	0	43	115	10	36	0	161	0	24	107	0	131	335
16:15	1	0	0	0	1	17	14	0	0	31	105	0	14	0	119	1	8	118	0	127	278
16:30	0	0	0	0	0	24	19	0	0	43	84	0	10	0	94	0	8	145	0	153	290
16:45	0	0	0	0	0	26	19	0	0	45	93	0	31	1	125	0	15	124	0	139	309
Total	1	0	0	0	1	84	78	0	0	162	397	10	91	1	499	1	55	494	0	550	1212
17:00	0	0	2	0	2	21	32	0	0	53	97	0	23	0	120	0	14	128	0	142	317
17:15	0	1	0	0	1	25	21	0	0	46	133	0	18	0	151	0	12	131	0	143	341
17:30	0	0	0	0	0	25	16	0	0	41	88	0	15	0	103	0	10	133	0	143	287
17:45	0	0	0	0	0	21	11	0	0	32	76	1	18	0	95	0	12	126	0	138	265
Total	0	1	2	0	3	92	80	0	0	172	394	1	74	0	469	0	48	518	0	566	1210
Grand Total	1	1	2	0	4	176	158	0	0	334	791	11	165	1	968	1	103	1012	0	1116	2422
Apprch %	25.0	25.0	50.0	0.0		52.7	47.3	0.0	0.0		81.7	1.1	17.0	0.1		0.1	9.2	90.7	0.0		
Total %	0.0	0.0	0.1	0.0	0.2	7.3	6.5	0.0	0.0	13.8	32.7	0.5	6.8	0.0	40.0	0.0	4.3	41.8	0.0	46.1	

	Simbar Road Southbound					Sweetwater Road Westbound					Bonita Road Northbound					Sweetwater Road Eastbound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
Peak Hour From 16:00 to 17:45 - Peak 1 of 1																					
Intersection	16:30																				
Volume	0	1	2	0	3	96	91	0	0	187	407	0	82	1	490	0	49	528	0	577	1257
Percent	0.0	33.3	66.7	0.0		51.3	48.7	0.0	0.0		83.1	0.0	16.7	0.2		0.0	8.5	91.5	0.0		
17:15 Volume	0	1	0	0	1	25	21	0	0	46	133	0	18	0	151	0	12	131	0	143	341
Peak Factor																					0.922
High Int.	17:00					17:00					17:15					16:30					
Volume	0	0	2	0	2	21	32	0	0	53	133	0	18	0	151	0	8	145	0	153	
Peak Factor					0.375					0.882					0.811					0.943	

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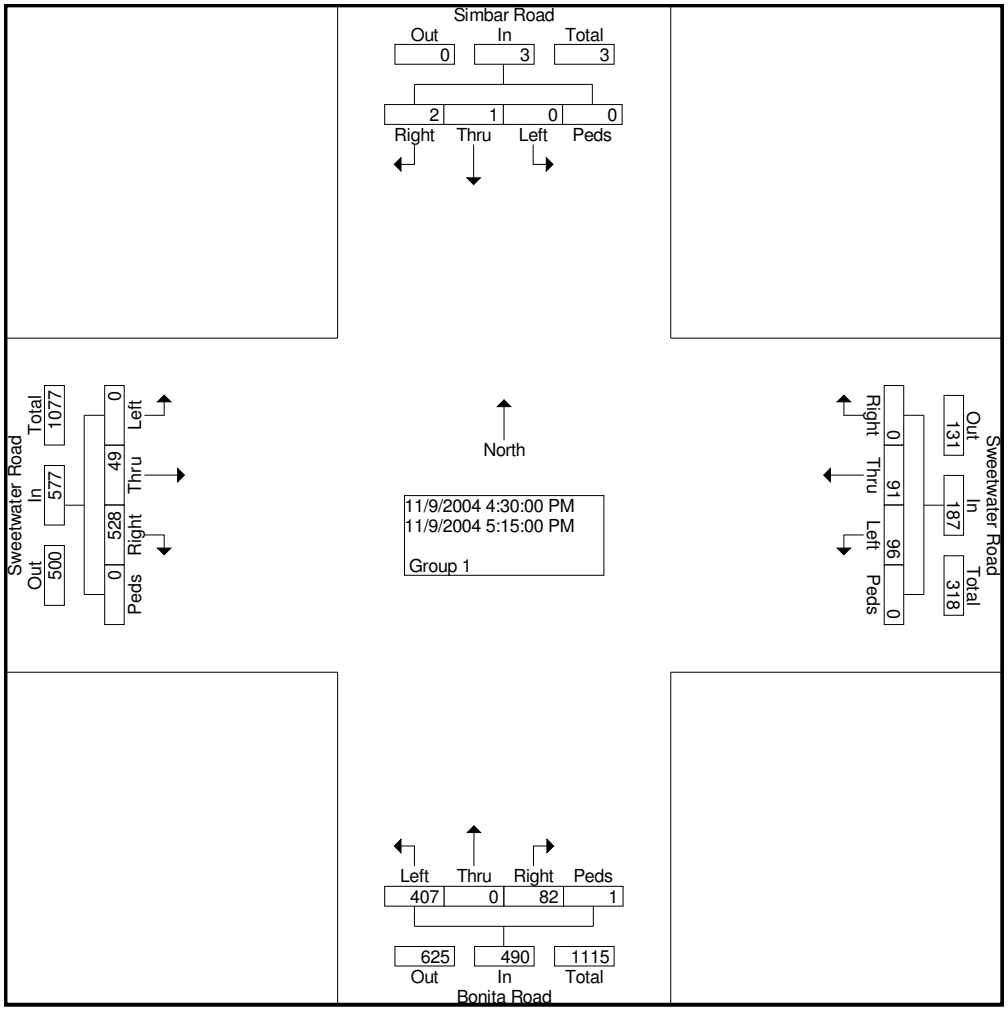

Appendix C

SANDAG Trip Generation Manual Analysis and Manual Sunday Trip Generation Calculation Sheet

(NOT SO)

BRIEF GUIDE OF VEHICULAR TRAFFIC GENERATION RATES FOR THE SAN DIEGO REGION

SANDAG
401 B Street, Suite 800
San Diego, California 92101
(619)595-5300 • Fax (619)595-5305

APRIL2002

NOTE: This listing only represents a *guide* of average, or estimated, traffic generation "driveway" *rates and some* very general trip data for land uses (emphasis on acreage and building square footage) in the San Diego region. These rates (both local and national) are subject to change as future documentation becomes available, or as regional sources are updated. For more specific information regarding traffic data *and trip rates, please* refer to the San Diego Traffic Generators manual. ***Always check with local jurisdictions for their preferred or applicable rates.***

LAND USE	TRIP CATEGORIES [PRIMARY:DIVERTED:PASS-BY][a]	ESTIMATED WEEKDAY VEHICLE TRIP GENERATION RATE (DRIVEWAY)	HIGHEST PEAK HOUR % (plus IN:OUT ratio) Between 6:00-9:30 A.M.		Between 3:00-6:30 P.M.		TRIP LENGTH (Miles)[b]
AGRICULTURE (Open Space)	[80:18:2]	2/acre**					10.8
AIRPORT	[78:20:2]						12.5
Commercial		60/acre, 100/flight, 70/1000 sq. ft.* **	5%	(6:4)	6%	(5:5)	
General Aviation		6/acre, 2/flight, 6/based aircraft* **	9%	(7:3)	15%	(5:5)	
Heliports		100/acre**					
AUTOMOBILE[c]							
Car Wash							
Automatic		900/site, 600/acre**	4%	(5:5)	9%	(5:5)	
Self-serve		100/wash stall**	4%	(5:5)	8%	(5:5)	
Gasoline	[21:51:28]						2.8
with/Food Mart		160/vehicle fueling space**	7%	(5:5)	8%	(5:5)	
with/Food Mart & Car Wash		155/vehicle fueling space**	8%	(5:5)	9%	(5:5)	
Older Service Station Design		150/vehicle fueling space, 900/station**	7%	(5:5)	9%	(5:5)	
Sales (Dealer & Repair)		50/1000 sq. ft., 300/acre, 60/service stall* **	5%	(7:3)	8%	(4:6)	
Auto Repair Center		20/1000 sq. ft., 400/acre, 20/service stall*	8%	(7:3)	11%	(4:6)	
Auto Parts Sales		60/1000 sq. ft. **	4%		10%		
Quick Lube		40/service stall**	7%	(6:4)	10%	(5:5)	
Tire Store		25/1000 sq. ft., 30/service stall**	7%	(6:4)	11%	(5:5)	
CEMETERY		5/acre*					
CHURCH (or Synagogue)	[64:25:11]	9/1000 sq. ft., 30/acre** (quadruple rates for Sunday, or days of assembly)	5%	(6:4)	8%	(5:5)	5.1
COMMERCIAL/RETAIL[c]							
Super Regional Shopping Center (More than 80 acres, more than 800,000 sq. ft., w/usually 3+ major stores)		35/1000 sq. ft.,[c] 400/acre*	4%	(7:3)	10%	(5:5)	
Regional Shopping Center (40-80acres, 400,000-800,000 sq. ft., w/usually 2+ major stores)	[54:35:11]	50/1000 sq. ft.,[c] 500/acre*	4%	(7:3)	9%	(5:5)	5.2
Community Shopping Center (15-40 acres, 125,000-400,000 sq. ft., w/usually 1 major store, detached restaurant(s), grocery *and drugstore)*	[47:31:22]	90/1000 sq. ft., 700/acre* **	4%	(6:4)	10%	(5:5)	3.6
Neighborhood Shopping Center (Less than 15 acres, less than 125,000 sq. ft., w/usually grocery & drugstore, cleaners, beauty & barber shop, *& fast food services)*		120/1000 sq. ft., 1200/acre* **	4%	(6:4)	10%	(5:5)	
Commercial Shops	[45:40:15]						4.3
Specialty Retail/Strip Commercial		40/1000 sq. ft., 400/acre*	3%	(6:4)	9%	(5:5)	
Electronics Superstore		50/1000 sq. ft**			10%	(5:5)	
Factory Outlet		40/1000 sq. ft.**	3%	(7:3)	9%	(5:5)	
Supermarket		150/1000 sq. ft., 2000/acre* **	4%	(7:3)	10%	(5:5)	
Drugstore		90/1000 sq. ft.**	4%	(6:4)	10%	(5:5)	
Convenience Market (15-16 hours)		500/1000 sq. ft.**	8%	(5:5)	8%	(5:5)	
Convenience Market (24 hours)		700/1000 sq. ft.**	9%	(5:5)	7%	(5:5)	
Convenience Market (w/gasoline pumps)		850/1000 sq. ft., 550/vehicle fueling space**	6%	(5:5)	7%	(5:5)	
Discount Club		60/1000 sq. ft., 600/acre* **	1%	(7:3)	9%	(5:5)	
Discount Store		60/1000 sq. ft., 600/acre**	3%	(6:4)	8%	(5:5)	
Furniture Store		6/1000 sq. ft., 100/acre**	4%	(7:3)	9%	(5:5)	
Lumber Store		30/1000 sq. ft., 150/acre**	7%	(6:4)	9%	(5:5)	
Home Improvement Superstore		40/1000 sq. ft.**	5%	(6:4)	8%	(5:5)	
Hardware/Paint Store		60/1000 sq. ft., 600/acre**	2%	(6:4)	9%	(5:5)	
Garden Nursery		40/1000 sq. ft., 90/acre**	3%	(6:4)	10%	(5:5)	
Mixed Use: Commercial (w/supermarket)/Residential		110/1000 sq. ft., 2000/acre* (commercial only) 5/dwelling unit, 200/acre* (residential only)	3% 9%	(6:4) (3:7)	9% 13%	(5:5) (6:4)	
EDUCATION							
University (4 years)	[91:9:0]	2.4/student, 100 acre*	10%	(8:2)	9%	(3:7)	8.9
Junior College (2 years)	[92:7:1]	1.2/student, 24/1000 sq. ft., 120/acre* **	12%	(8:2)	9%	(6:4)	9.0
High School	[75:19:6]	1.3/student, 15/1000 sq. ft., 60/acre* **	20%	(7:3)	10%	(4:6)	4.8
Middle/Junior High	[63:25:12]	1.4/student, 12/1000 sq. ft. 60/acre**	30%	(6:4)	9%	(4:6)	5.0
Elementary	[57:26:10]	1.6/student, 14/1000 sq. ft., 90/acre* **	32%	(6:4)	9%	(4:6)	3.4
Day Care	[28:58:14]	5/child, 80/1000 sq. ft.**	17%	(5:5)	18%	(5:5)	3.7
FINANCIAL[c]	[35:42:23]						3.4
Bank (Walk-in only)		150/1000 sq. ft., 1000/acre* **	4%	(7:3)	8%	(4:6)	
with Drive-Through		200/1000 sq. ft., 1500/acre*	5%	(6:4)	10%	(5:5)	
Drive-Through only		250 (125 one-way)/lane*	3%	(5:5)	13%	(5:5)	
Savings & Loan		60/1000 sq. ft., 600/acre**	2%		9%		
Drive-Through only		100 (50 one-way)/lane**	4%		15%		
HOSPITAL	[73:25:2]						8.3
General		20/bed, 25/1000 sq. ft., 250/acre*	8%	(7:3)	10%	(4:6)	
Convalescent/Nursing		3/bed**	7%	(6:4)	7%	(4:6)	
INDUSTRIAL							
Industrial/Business Park (commercial included)	[78:19:2]	16/1000 sq. ft., 200/acre* **	12%	(8:2)	12%	(2:8)	9.0
Industrial Park (no commercial)		8/1000 sq. ft., 90/acre**	11%	(9:1)	12%	(2:8)	
Industrial Plant (multiple shifts)	[92:5:3]	10/1000 sq. ft., 120/acre*	14%	(8:2)	15%	(3:7)	11.7
Manufacturing/Assembly		4/1000 sq. ft., 50/acre**	19%	(9:1)	20%	(2:8)	
Warehousing		5/1000 sq. ft., 60/acre**	13%	(7:3)	15%	(4:6)	
Storage		2/1000 sq. ft., 0.2/vault, 30/acre*	6%	(5:5)	9%	(5:5)	
Science Research & Development		8/1000 sq. ft., 80/acre*	18%	(9:1)	14%	(1:9)	
Landfill & Recycling Center		6/acre	11%	(5:5)	10%	(4:6)	

(OVER)

MEMBER AGENCIES: Cities of Carlsbad, Chula Vista, Coronado, Del Mar, El Cajon, Encinitas, Escondido, Imperial Beach, La Mesa, Lemon Grove, National City, Oceanside, Poway, San Diego, San Marcos, Santee, Solana Beach, Vista and County of San Diego.
ADVISORY/LIAISON MEMBERS: California Department of Transportation, County Water Authority, U.S. Department of Defense, S.D. Unified Port District and Tijuana/Baja California.

Department of Motor Vehicles	180/1000 sq. ft., 900/acre**	6%	(6:4)	10%	(4:6)	
Medical-Dental ..... [60:30:10]	50/1000 sq. ft., 500/acre*	6%	(8:2)	11%	(3:7)	6.4
PARKS ..... [66:28:6]		4%		8%		5.4
City (developed w/meeting rooms and sports facilities)	50/acre*	13%	(5:5)	9%	(5:5)	
Regional (developed)	20/acre*					
Neighborhood/County (undeveloped)	5/acre (add for specific sport uses), 6/picnic site* **					
State (average 1000 acres)	1/acre, 10/picnic site**					
Amusement (Theme)	80/acre, 130/acre (summer only)**			6%	(6:4)	
San Diego Zoo	115/acre*					
Sea World	80/acre*					
RECREATION						
Beach, Ocean or Bay ..... [52:39:9]	600/1000 ft. shoreline, 60/acre*					6.3
Beach, Lake (fresh water)	50/1000 ft. shoreline, 5/acre*					
Bowling Center	30/1000 sq. ft., 300/acre, 30/lane **	7%	(7:3)	11%	(4:6)	
Campground	4/campsite**	4%		8%		
Golf Course	7/acre, 40/hole, 700/course* **	7%	(8:2)	9%	(3:7)	
Driving Range only	70/acre, 14/tee box*	3%	(7:3)	9%	(5:5)	
Marinas	4/berth, 20/acre* **	3%	(3:7)	7%	(6:4)	
Multi-purpose (miniature golf, video arcade, batting cage, etc.)	90/acre	2%		6%		
Racquetball/Health Club	30/1000 sq. ft., 300/acre, 40/court*	4%	(6:4)	9%	(6:4)	
Tennis Courts	16/acre, 30/court**	5%		11%	(5:5)	
Sports Facilities						
Outdoor Stadium	50/acre, 0.2/seat*					
Indoor Arena	30/acre, 0.1/seat*					
Racetrack	40/acre, 0.6 seat*					
Theaters (multiplex w/matinee) ..... [66:17:17]	80/1000 sq. ft., 1.8/seat, 360/screen*	1/3%		8%	(6:4)	6.1
RESIDENTIAL ..... [86:11:3]						7.9
Estate, Urban or Rural (average 1-2 DU/acre)	12/dwelling unit*R	8%	(3:7)	10%	(7:3)	
Single Family Detached (average 3-6 DU/acre)	10/dwelling unit*R	8%	(3:7)	10%	(7:3)	
Condominium (or any multi-family 6-20 DU/acre)	8/dwelling unit*R	8%	(2:8)	10%	(7:3)	
Apartment (or any multi-family units more than 20 DU/acre)	6/dwelling unit*R	6%	(2:8)	9%	(7:3)	
Military Housing (off-base, multi-family)						
(less than 6 DU/acre)	8/dwelling unit	7%	(3:7)	9%	(6:4)	
(6-20 DU/acre)	6/dwelling unit	7%	(3:7)	9%	(6:4)	
Mobile Home						
Family	5/dwelling unit, 40/acre*	8%	(3:7)	11%	(6:4)	
Adults Only	3/dwelling unit, 20/acre*	9%	(3:7)	10%	(6:4)	
Retirement Community	4/dwelling unit**	5%	(4:6)	7%	(6:4)	
Congregate Care Facility	2.5/dwelling unit**	4%	(6:4)	8%	(5:5)	
RESTAURANT[5] ..... [51:37:12]						4.7
Quality	100/1000 sq. ft., 3/seat, 500/acre* **	1%	(6:4)	8%	(7:3)	
Sit-down, high turnover	160/1000 sq. ft., 6/seat, 1000/acre* **	8%	(5:5)	8%	(6:4)	
Fast Food (w/drive-through)	650/1000 sq. ft., 20/seat, 3000/acre* **	7%	(5:5)	7%	(5:5)	
Fast Food (without drive-through)	700/1000 sq. ft.**	5%	(6:4)	7%	(5:5)	
Delicatessen (7am-4pm)	150/1000 sq. ft., 11/seat*	9%	(6:4)	3%	(3:7)	
TRANSPORTATION						
Bus Depot	25/1000 sq. ft.**					
Truck Terminal	10/1000 sq. ft., 7/bay, 80/acre**	9%	(4:6)	8%	(5:5)	
Waterport/Marine Terminal	170/berth, 12/acre**					
Transit Station (Light Rail w/parking)	300/acre, 2[1/2]/parking space (4/occupied)**	14%	(7:3)	15%	(3:7)	
Park & Ride Lots	400/acre (600/paved acre), 5/parking space (8/occupied)* **	14%	(7:3)	15%	(3:7)	

* Primary source: *San Diego Traffic Generators.*

** Other sources: *ITE Trip Generation Report [6th Edition],* Trip Generation Rates (other agencies and publications), various SANDAG & CALTRANS studies, reports and estimates.

[P] Trip category percentage ratios are daily from local household surveys, often cannot be applied to very specific land uses, and do not include non-resident drivers (draft SANDAG *Analysis of Trip Diversion,* revised November, 1990):
PRIMARY - one trip directly between origin and primary destination.
DIVERTED - linked trip (having one or more stops along the way to a primary destination) whose distance compared to direct distance ≥ 1 mile.
PASS-BY - undiverted or diverted < 1 mile.

[L] Trip lengths are average weighted for all trips to and from general land use site. (All trips system-wide average length = 6.9 miles)

[C] Fitted curve equation: $Ln(T) = 0.502\ Ln(x) + 6.945$

[O] Fitted curve equation: $Ln(T) = 0.756\ Ln(x) + 3.950$

T = total trips, x = 1,000 sq. ft.

[R] Fitted curve equation: $t = -2.169\ Ln(d) + 12.85$ t = trips/DU, d = density (DU/acre), DU = dwelling unit

[S] Suggested PASS-BY (undiverted or diverted < 1 mile) percentages for trip rate reductions only during P.M. peak period (based on combination of local data/review and Other sources**):

COMMERCIAL/RETAIL	
Regional Shopping Center	20%
Community " "	30%
Neighborhood " "	40%
Specialty Retail/Strip Commercial (other)	10%
Supermarket	40%
Convenience Market	50%
Discount/Club/Store	30%
FINANCIAL	
Bank	25%
AUTOMOBILE	
Gasoline Station	50%
RESTAURANT	
Quality	10%
Sit-down high turnover	20%
Fast Food	40%

[T] Trip Reductions - In order to help promote regional "smart growth" policies, and acknowledge San Diego's expanding mass transit system, consider vehicle trip rate reductions (with proper documentation and necessary adjustments for peak periods). The following are some examples:

[1] A 5% daily trip reduction for land uses with transit access or near transit stations accessible within 1/4 mile.

[2] Up to 10% daily trip reduction for mixed-use developments where residential and commercial retail are combined (demonstrate mode split of walking trips to replace vehicular trips).

Appendix D

Peak Hour Analysis Worksheets
Near-Term Conditions With Proposed Project
Alternatives 1-3

Scenario Report

Scenario:	AM Existing
Command:	AM Existing
Volume:	AM Existing
Geometry:	Existing
Impact Fee:	Default Impact Fee
Trip Generation:	none
Trip Distribution:	project
Paths:	Default Paths
Routes:	Default Routes
Configuration:	AM Existing

Impact Analysis Report
Level Of Service

Intersection	Base LOS	Base Del/ Veh	Base V/ C	Future LOS	Future Del/ Veh	Future V/ C	Change in D/V
# 1 I-805 SB & Bonita Rd	B	18.2	0.640	B	18.2	0.640	+ 0.000
# 2 I-805 NB & Bonita Rd	E	69.8	1.138	E	69.8	1.138	+ 0.000
# 3 Willow St & Bonita Rd	C	23.5	0.766	C	23.5	0.766	+ 0.000
# 4 Acacia Ave & Bonita Rd	B	14.2	0.690	B	14.2	0.690	+ 0.000
# 5 Central Ave & Bonita Rd	E	73.5	1.024	E	73.5	1.024	+ 0.000
# 6 Sweetwater Rd & Bonita Rd	D	40.7	0.810	D	40.7	0.810	+ 0.000

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

Intersection #1 I-805 SB & Bonita Rd

Cycle (sec): 60 Critical Vol./Cap. (X): 0.640
Loss Time (sec): 12 (Y+R = 4 sec) Average Delay (sec/veh): 18.2
Optimal Cycle:OPTIMIZED Level Of Service: B

Street Name:	I-805 Southbound						Bonita Road					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Split Phase			Split Phase			Protected			Protected		
Rights:	Include			Ovl			Include			Include		
Min. Green:	5	5	5	5	5	5	5	5	5	5	5	5
Lanes:	0 0	0 0	0	1 1	0 1	0	0 0	3 0	1	2 0	2 0	0
Volume Module:												
Base Vol:	0	0	0	434	12	420	0	695	274	366	742	0
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	0	0	434	12	420	0	695	274	366	742	0
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	0	0	0	434	12	420	0	695	274	366	742	0
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	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	457	13	442	0	732	288	385	781	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	0	0	0	457	13	442	0	732	288	385	781	0
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Vol.:	0	0	0	457	13	442	0	732	288	385	781	0
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	1.00	1.00	1.00	0.80	0.80	0.80	1.00	0.89	0.83	0.90	0.93	1.00
Lanes:	0.00	0.00	0.00	1.95	0.05	1.00	0.00	3.00	1.00	2.00	2.00	0.00
Final Sat.:	0	0	0	2958	82	1520	0	5083	1583	3432	3538	0
Capacity Analysis Module:												
Vol/Sat:	0.00	0.00	0.00	0.15	0.15	0.29	0.00	0.14	0.18	0.11	0.22	0.00
Crit Moves:						****	****				****	
Green/Cycle:	0.00	0.00	0.00	0.35	0.35	0.43	0.00	0.28	0.28	0.17	0.37	0.00
Volume/Cap:	0.00	0.00	0.00	0.44	0.44	0.68	0.00	0.51	0.65	0.65	0.60	0.00
Uniform Del:	0.0	0.0	0.0	15.1	15.1	13.7	0.0	18.2	19.0	23.1	15.3	0.0
IncremntDel:	0.0	0.0	0.0	0.2	0.2	1.4	0.0	0.3	3.4	2.6	0.8	0.0
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	0.00	0.00	0.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	0.00
Delay/Veh:	0.0	0.0	0.0	15.3	15.3	15.1	0.0	18.5	22.4	25.7	16.1	0.0
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	0.0	0.0	0.0	15.3	15.3	15.1	0.0	18.5	22.4	25.7	16.1	0.0
HCM2kAvg:	0	0	0	4	4	8	0	4	6	5	7	0

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

Intersection #2 I-805 NB & Bonita Rd

Cycle (sec): 115 Critical Vol./Cap. (X): 1.138
Loss Time (sec): 12 (Y+R = 4 sec) Average Delay (sec/veh): 69.8
Optimal Cycle:OPTIMIZED Level Of Service: E

Street Name:	I-805 Northbound						Bonita Road					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Split Phase			Split Phase			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	5	5	5	5	5	5	5	5	5	5	5	5
Lanes:	0 1	0 1	1	0 0	0 0	0	2 0	2 0	0	0 0	3 0	1
Volume Module:												
Base Vol:	469	2	766	0	0	0	393	590	0	0	664	841
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:	469	2	766	0	0	0	393	590	0	0	664	841
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:	469	2	766	0	0	0	393	590	0	0	664	841
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:	494	2	806	0	0	0	414	621	0	0	699	885
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	494	2	806	0	0	0	414	621	0	0	699	885
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.:	494	2	806	0	0	0	414	621	0	0	699	885
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.77	0.77	0.77	1.00	1.00	1.00	0.90	0.93	1.00	1.00	0.89	0.83
Lanes:	1.00	0.01	1.99	0.00	0.00	0.00	2.00	2.00	0.00	0.00	3.00	1.00
Final Sat.:	1455	8	2903	0	0	0	3432	3538	0	0	5083	1583
Capacity Analysis Module:												
Vol/Sat:	0.34	0.28	0.28	0.00	0.00	0.00	0.12	0.18	0.00	0.00	0.14	0.56
Crit Moves:	****						****					****
Green/Cycle:	0.30	0.30	0.30	0.00	0.00	0.00	0.11	0.48	0.00	0.00	0.49	0.49
Volume/Cap:	1.14	0.93	0.93	0.00	0.00	0.00	1.14	0.37	0.00	0.00	0.28	1.14
Uniform Del:	40.4	39.2	39.2	0.0	0.0	0.0	51.4	18.9	0.0	0.0	17.2	29.2
IncremntDel:	73.1	11.4	11.4	0.0	0.0	0.0	90.2	0.1	0.0	0.0	0.1	77.4
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	1.00	0.00	0.00	0.00	1.00	1.00	0.00	0.00	1.00	1.00
Delay/Veh:	113.4	50.6	50.6	0.0	0.0	0.0	141.6	19.1	0.0	0.0	17.3	106.6
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:	113.4	50.6	50.6	0.0	0.0	0.0	141.6	19.1	0.0	0.0	17.3	106.6
HCM2kAvg:	31	20	20	0	0	0	14	7	0	0	5	47

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

Intersection #3 Willow St & Bonita Rd

Cycle (sec): 80 Critical Vol./Cap. (X): 0.766
Loss Time (sec): 16 (Y+R = 4 sec) Average Delay (sec/veh): 23.5
Optimal Cycle:OPTIMIZED Level Of Service: C

Street Name:	Willow Street						Bonita Road					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Split Phase			Split Phase			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	5	5	5	5	5	5	5	5	5	5	5	5
Lanes:	0 0	1! 0	0	1 1	0 0	1	1 0	1 1	0	1 0	2 0	1
Volume Module:												
Base Vol:	15	3	8	446	4	163	90	740	8	8	1204	617
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	15	3	8	446	4	163	90	740	8	8	1204	617
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	15	3	8	446	4	163	90	740	8	8	1204	617
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:	16	3	8	469	4	172	95	779	8	8	1267	649
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	16	3	8	469	4	172	95	779	8	8	1267	649
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.:	16	3	8	469	4	172	95	779	8	8	1267	649
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.91	0.91	0.91	0.93	0.93	0.83	0.93	0.93	0.93	0.93	0.93	0.83
Lanes:	0.58	0.11	0.31	1.98	0.02	1.00	1.00	1.98	0.02	1.00	2.00	1.00
Final Sat.:	1000	200	533	3517	32	1583	1769	3493	38	1769	3538	1583
Capacity Analysis Module:												
Vol/Sat:	0.02	0.02	0.02	0.13	0.13	0.11	0.05	0.22	0.22	0.00	0.36	0.41
Crit Moves:		****		****			****					****
Green/Cycle:	0.06	0.06	0.06	0.16	0.16	0.16	0.07	0.45	0.45	0.13	0.51	0.51
Volume/Cap:	0.25	0.25	0.25	0.81	0.81	0.66	0.81	0.50	0.50	0.04	0.71	0.81
Uniform Del:	35.7	35.7	35.7	32.2	32.2	31.3	36.9	15.7	15.7	30.7	15.2	16.5
IncremntDel:	1.2	1.2	1.2	8.3	8.3	6.0	33.0	0.2	0.2	0.1	1.3	6.2
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	37.0	37.0	37.0	40.5	40.5	37.3	69.8	16.0	16.0	30.8	16.5	22.7
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:	37.0	37.0	37.0	40.5	40.5	37.3	69.8	16.0	16.0	30.8	16.5	22.7
HCM2kAvg:	1	1	1	8	8	5	5	7	7	0	13	16

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

Intersection #4 Acacia Ave & Bonita Rd

Cycle (sec): 90 Critical Vol./Cap. (X): 0.690
Loss Time (sec): 12 (Y+R = 4 sec) Average Delay (sec/veh): 14.2
Optimal Cycle:OPTIMIZED Level Of Service: B

Street Name:	Acacia Avenue						Bonita Road					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Split Phase			Split Phase			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	5	5	5	5	5	5	5	5	5	5	5	5
Lanes:	1 0	0 0	1	0 0	0 0	0	0 0	1 0	1	1 0	1 0	0
Volume Module:												
Base Vol:	152	0	15	0	0	0	0	601	52	14	898	0
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	152	0	15	0	0	0	0	601	52	14	898	0
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	152	0	15	0	0	0	0	601	52	14	898	0
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	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:	160	0	16	0	0	0	0	633	55	15	945	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	160	0	16	0	0	0	0	633	55	15	945	0
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Vol.:	160	0	16	0	0	0	0	633	55	15	945	0
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.93	1.00	0.83	1.00	1.00	1.00	1.00	0.98	0.83	0.93	0.98	1.00
Lanes:	1.00	0.00	1.00	0.00	0.00	0.00	0.00	1.00	1.00	1.00	1.00	0.00
Final Sat.:	1769	0	1583	0	0	0	0	1862	1583	1769	1862	0
Capacity Analysis Module:												
Vol/Sat:	0.09	0.00	0.01	0.00	0.00	0.00	0.00	0.34	0.03	0.01	0.51	0.00
Crit Moves:	****						****				****	
Green/Cycle:	0.12	0.00	0.12	0.00	0.00	0.00	0.00	0.64	0.64	0.10	0.69	0.00
Volume/Cap:	0.74	0.00	0.08	0.00	0.00	0.00	0.00	0.53	0.05	0.08	0.74	0.00
Uniform Del:	38.1	0.0	35.0	0.0	0.0	0.0	0.0	8.9	6.1	36.4	8.9	0.0
IncremntDel:	12.5	0.0	0.2	0.0	0.0	0.0	0.0	0.5	0.0	0.2	2.3	0.0
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	0.00	1.00	0.00	0.00	0.00	0.00	1.00	1.00	1.00	1.00	0.00
Delay/Veh:	50.6	0.0	35.2	0.0	0.0	0.0	0.0	9.3	6.1	36.6	11.2	0.0
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	50.6	0.0	35.2	0.0	0.0	0.0	0.0	9.3	6.1	36.6	11.2	0.0
HCM2kAvg:	6	0	0	0	0	0	0	10	1	0	18	0

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

Intersection #5 Central Ave & Bonita Rd

Cycle (sec): 110 Critical Vol./Cap. (X): 1.024
Loss Time (sec): 16 (Y+R = 4 sec) Average Delay (sec/veh): 73.5
Optimal Cycle:OPTIMIZED Level Of Service: E

Street Name:	Bonita Road						Central Ave					
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			Split Phase			Split Phase		
Rights:	Include			Include			Include			Include		
Min. Green:	5	5	5	5	5	5	5	5	5	5	5	5
Lanes:	1 0	1 0	1	1 0	1 0	1	0 1	0 0	1	1 0	1 0	1
Volume Module:												
Base Vol:	323	232	96	19	176	71	37	155	456	198	496	19
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:	323	232	96	19	176	71	37	155	456	198	496	19
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:	323	232	96	19	176	71	37	155	456	198	496	19
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:	340	244	101	20	185	75	39	163	480	208	522	20
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	340	244	101	20	185	75	39	163	480	208	522	20
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Vol.:	340	244	101	20	185	75	39	163	480	208	522	20
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.93	0.98	0.83	0.93	0.98	0.83	0.97	0.97	0.83	0.93	0.98	0.83
Lanes:	1.00	1.00	1.00	1.00	1.00	1.00	0.19	0.81	1.00	1.00	1.00	1.00
Final Sat.:	1769	1862	1583	1769	1862	1583	355	1488	1583	1769	1862	1583
Capacity Analysis Module:												
Vol/Sat:	0.19	0.13	0.06	0.01	0.10	0.05	0.11	0.11	0.30	0.12	0.28	0.01
Crit Moves:	****				****				****		****	
Green/Cycle:	0.19	0.21	0.21	0.07	0.10	0.10	0.30	0.30	0.30	0.27	0.27	0.27
Volume/Cap:	1.02	0.62	0.30	0.15	1.02	0.49	0.37	0.37	1.02	0.43	1.02	0.05
Uniform Del:	44.7	39.4	36.5	47.8	49.7	47.1	30.6	30.6	38.7	32.9	39.9	29.4
IncremntDel:	55.8	3.0	0.5	0.6	73.4	2.4	0.4	0.4	47.9	0.6	46.2	0.0
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	100.5	42.4	37.0	48.3	123	49.5	31.0	31.0	86.6	33.5	86.2	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:	100.5	42.4	37.0	48.3	123	49.5	31.0	31.0	86.6	33.5	86.2	29.4
HCM2kAvg:	18	8	3	1	11	3	6	6	23	6	25	0

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

Intersection #6 Sweetwater Rd & Bonita Rd

Cycle (sec): 105 Critical Vol./Cap. (X): 0.810
Loss Time (sec): 16 (Y+R = 4 sec) Average Delay (sec/veh): 40.7
Optimal Cycle:OPTIMIZED Level Of Service: D

Street Name:	Bonita Road						Sweetwater Road					
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			Permitted			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	5	5	5	5	5	5	5	5	5	5	5	5
Lanes:	0 1	0 0	1	0 1	0 0	0	0 0	0 1	0	1 0	0 1	0
Volume Module:												
Base Vol:	625	4	128	1	1	0	0	50	324	64	39	0
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	625	4	128	1	1	0	0	50	324	64	39	0
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	625	4	128	1	1	0	0	50	324	64	39	0
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	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:	658	4	135	1	1	0	0	53	341	67	41	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	658	4	135	1	1	0	0	53	341	67	41	0
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Vol.:	658	4	135	1	1	0	0	53	341	67	41	0
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.93	0.93	0.83	0.96	0.96	1.00	1.00	0.87	0.74	0.93	0.98	1.00
Lanes:	0.99	0.01	1.00	0.50	0.50	0.00	0.00	0.12	0.88	1.00	1.00	0.00
Final Sat.:	1763	11	1583	909	909	0	0	192	1245	1769	1862	0
Capacity Analysis Module:												
Vol/Sat:	0.37	0.37	0.09	0.00	0.00	0.00	0.00	0.27	0.27	0.04	0.02	0.00
Crit Moves:	****				****			****		****		
Green/Cycle:	0.44	0.44	0.44	0.05	0.05	0.00	0.00	0.31	0.31	0.05	0.36	0.00
Volume/Cap:	0.85	0.85	0.19	0.02	0.02	0.00	0.00	0.87	0.87	0.80	0.06	0.00
Uniform Del:	26.3	26.3	18.1	47.7	47.7	0.0	0.0	34.1	34.1	49.5	21.9	0.0
IncremntDel:	8.8	8.8	0.1	0.1	0.1	0.0	0.0	17.0	17.0	40.2	0.0	0.0
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	1.00	1.00	1.00	0.00	0.00	1.00	1.00	1.00	1.00	0.00
Delay/Veh:	35.1	35.1	18.2	47.8	47.8	0.0	0.0	51.1	51.1	89.7	22.0	0.0
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	35.1	35.1	18.2	47.8	47.8	0.0	0.0	51.1	51.1	89.7	22.0	0.0
HCM2kAvg:	23	23	3	0	0	0	0	17	15	4	1	0

Scenario Report

Scenario:	PM Existing
Command:	PM Existing
Volume:	PM Existing
Geometry:	Existing
Impact Fee:	Default Impact Fee
Trip Generation:	none
Trip Distribution:	project
Paths:	Default Paths
Routes:	Default Routes
Configuration:	PM Existing

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Impact Analysis Report
Level Of Service

Intersection	Base LOS	Base Del/ Veh	Base V/ C	Future LOS	Future Del/ Veh	Future V/ C	Change in V/C
# 1 I-805 SB & Bonita Rd	C	22.2	0.905	C	22.2	0.905	+ 0.000
# 2 I-805 NB & Bonita Rd	C	23.6	0.852	C	23.6	0.852	+ 0.000
# 3 Willow St & Bonita Rd	D	35.1	0.831	D	35.1	0.831	+ 0.000
# 4 Acacia Ave & Bonita Rd	B	10.6	0.656	B	10.6	0.656	+ 0.000
# 5 Central Ave & Bonita Rd	E	62.5	0.987	E	62.5	0.987	+ 0.000
# 6 Sweetwater Rd & Bonita Rd	D	40.9	0.806	D	40.9	0.806	+ 0.000

D/V

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

Intersection #1 I-805 SB & Bonita Rd

Cycle (sec): 60 Critical Vol./Cap. (X): 0.905
Loss Time (sec): 12 (Y+R = 4 sec) Average Delay (sec/veh): 22.2
Optimal Cycle:OPTIMIZED Level Of Service: C

Street Name:	I-805 Southbound						Bonita Road					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Split Phase			Split Phase			Protected			Protected		
Rights:	Include			Ovl			Include			Include		
Min. Green:	5	5	5	5	5	5	5	5	5	5	5	5
Lanes:	0 0	0 0	0	1 1	0 1	0	0 0	3 0	1	2 0	2 0	0
Volume Module:												
Base Vol:	0	0	0	685	32	537	0	981	307	508	716	0
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	0	0	685	32	537	0	981	307	508	716	0
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	0	0	0	685	32	537	0	981	307	508	716	0
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	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	721	34	565	0	1033	323	535	754	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	0	0	0	721	34	565	0	1033	323	535	754	0
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Vol.:	0	0	0	721	34	565	0	1033	323	535	754	0
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	1.00	1.00	1.00	0.82	0.82	0.82	1.00	0.89	0.83	0.90	0.93	1.00
Lanes:	0.00	0.00	0.00	1.91	0.09	1.00	0.00	3.00	1.00	2.00	2.00	0.00
Final Sat.:	0	0	0	2961	138	1550	0	5083	1583	3432	3538	0
Capacity Analysis Module:												
Vol/Sat:	0.00	0.00	0.00	0.24	0.24	0.36	0.00	0.20	0.20	0.16	0.21	0.00
Crit Moves:						****		****		****		
Green/Cycle:	0.00	0.00	0.00	0.35	0.35	0.48	0.00	0.25	0.25	0.19	0.32	0.00
Volume/Cap:	0.00	0.00	0.00	0.69	0.69	0.76	0.00	0.80	0.80	0.80	0.66	0.00
Uniform Del:	0.0	0.0	0.0	16.7	16.7	12.9	0.0	21.0	21.0	23.0	17.5	0.0
IncremntDel:	0.0	0.0	0.0	1.1	1.1	2.1	0.0	3.7	11.2	6.8	1.5	0.0
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	0.00	0.00	0.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	0.00
Delay/Veh:	0.0	0.0	0.0	17.8	17.8	15.0	0.0	24.6	32.2	29.9	19.0	0.0
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	0.0	0.0	0.0	17.8	17.8	15.0	0.0	24.6	32.2	29.9	19.0	0.0
HCM2kAvg:	0	0	0	8	8	11	0	8	8	7	7	0

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

Intersection #2 I-805 NB & Bonita Rd

Cycle (sec): 65 Critical Vol./Cap. (X): 0.852
Loss Time (sec): 12 (Y+R = 4 sec) Average Delay (sec/veh): 23.6
Optimal Cycle:OPTIMIZED Level Of Service: C

Street Name:	I-805 Northbound						Bonita Road					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Split Phase			Split Phase			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	5	5	5	5	5	5	5	5	5	5	5	5
Lanes:	1 0	0 0	2	0 0	0 0	0	2 0	2 0	0	0 0	3 0	1
Volume Module:												
Base Vol:	285	0	608	0	0	0	392	1256	0	0	926	518
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	285	0	608	0	0	0	392	1256	0	0	926	518
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	285	0	608	0	0	0	392	1256	0	0	926	518
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:	300	0	640	0	0	0	413	1322	0	0	975	545
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	300	0	640	0	0	0	413	1322	0	0	975	545
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.:	300	0	640	0	0	0	413	1322	0	0	975	545
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.93	1.00	0.73	1.00	1.00	1.00	0.90	0.93	1.00	1.00	0.89	0.83
Lanes:	1.00	0.00	2.00	0.00	0.00	0.00	2.00	2.00	0.00	0.00	3.00	1.00
Final Sat.:	1769	0	2786	0	0	0	3432	3538	0	0	5083	1583
Capacity Analysis Module:												
Vol/Sat:	0.17	0.00	0.23	0.00	0.00	0.00	0.12	0.37	0.00	0.00	0.19	0.34
Crit Moves:			****				****					****
Green/Cycle:	0.27	0.00	0.27	0.00	0.00	0.00	0.14	0.45	0.00	0.00	0.40	0.40
Volume/Cap:	0.63	0.00	0.85	0.00	0.00	0.00	0.85	0.83	0.00	0.00	0.47	0.85
Uniform Del:	20.9	0.0	22.5	0.0	0.0	0.0	27.2	15.6	0.0	0.0	14.3	17.6
IncremntDel:	2.7	0.0	9.2	0.0	0.0	0.0	13.5	3.7	0.0	0.0	0.2	10.6
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	0.00	1.00	0.00	0.00	0.00	1.00	1.00	0.00	0.00	1.00	1.00
Delay/Veh:	23.5	0.0	31.7	0.0	0.0	0.0	40.8	19.2	0.0	0.0	14.4	28.2
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	23.5	0.0	31.7	0.0	0.0	0.0	40.8	19.2	0.0	0.0	14.4	28.2
HCM2kAvg:	7	0	9	0	0	0	7	14	0	0	5	13

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

Intersection #3 Willow St & Bonita Rd

Cycle (sec): 105 Critical Vol./Cap. (X): 0.831
Loss Time (sec): 16 (Y+R = 4 sec) Average Delay (sec/veh): 35.1
Optimal Cycle:OPTIMIZED Level Of Service: D

Street Name:	Willow Street						Bonita Road					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	- T	- R	L	- T	- R	L	- T	- R	L	- T	- R
Control:	Split Phase			Split Phase			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	5	5	5	5	5	5	5	5	5	5	5	5
Lanes:	0 0	1! 0	0	1 1	0 0	1	1 0	1 1	0	1 0	2 0	1
Volume Module:												
Base Vol:	15	16	6	797	17	109	165	1436	23	11	862	394
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	15	16	6	797	17	109	165	1436	23	11	862	394
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	15	16	6	797	17	109	165	1436	23	11	862	394
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:	16	17	6	839	18	115	174	1512	24	12	907	415
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	16	17	6	839	18	115	174	1512	24	12	907	415
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.:	16	17	6	839	18	115	174	1512	24	12	907	415
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.94	0.94	0.94	0.93	0.93	0.83	0.93	0.93	0.93	0.93	0.93	0.83
Lanes:	0.41	0.43	0.16	1.96	0.04	1.00	1.00	1.97	0.03	1.00	2.00	1.00
Final Sat.:	723	772	289	3475	74	1583	1769	3475	56	1769	3538	1583
Capacity Analysis Module:												
Vol/Sat:	0.02	0.02	0.02	0.24	0.24	0.07	0.10	0.43	0.43	0.01	0.26	0.26
Crit Moves:	****				****			****		****		
Green/Cycle:	0.05	0.05	0.05	0.27	0.27	0.27	0.14	0.48	0.48	0.05	0.39	0.39
Volume/Cap:	0.46	0.46	0.46	0.90	0.90	0.27	0.68	0.90	0.90	0.14	0.66	0.68
Uniform Del:	48.7	48.7	48.7	37.0	37.0	30.3	42.6	24.8	24.8	47.9	26.6	26.8
IncremntDel:	3.9	3.9	3.9	11.3	11.3	0.3	7.1	6.8	6.8	0.7	1.2	3.1
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	52.6	52.6	52.6	48.3	48.3	30.6	49.7	31.6	31.6	48.7	27.8	29.8
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:	52.6	52.6	52.6	48.3	48.3	30.6	49.7	31.6	31.6	48.7	27.8	29.8
HCM2kAvg:	2	2	2	18	18	3	7	26	26	0	13	12

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

Intersection #4 Acacia Ave & Bonita Rd

Cycle (sec): 110 Critical Vol./Cap. (X): 0.656
Loss Time (sec): 12 (Y+R = 4 sec) Average Delay (sec/veh): 10.6
Optimal Cycle:OPTIMIZED Level Of Service: B

Street Name:	Acacia Avenue						Bonita Road					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	- T	- R	L	- T	- R	L	- T	- R	L	- T	- R
Control:	Split Phase			Split Phase			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	5	5	5	5	5	5	5	5	5	5	5	5
Lanes:	1 0	0 0	1	0 0	0 0	0	0 0	1 0	1	1 0	1 0	0
Volume Module:												
Base Vol:	89	0	21	0	0	0	0	925	126	15	829	0
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	89	0	21	0	0	0	0	925	126	15	829	0
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	89	0	21	0	0	0	0	925	126	15	829	0
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	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:	94	0	22	0	0	0	0	974	133	16	873	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	94	0	22	0	0	0	0	974	133	16	873	0
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Vol.:	94	0	22	0	0	0	0	974	133	16	873	0
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.93	1.00	0.83	1.00	1.00	1.00	1.00	0.98	0.83	0.93	0.98	1.00
Lanes:	1.00	0.00	1.00	0.00	0.00	0.00	0.00	1.00	1.00	1.00	1.00	0.00
Final Sat.:	1769	0	1583	0	0	0	0	1862	1583	1769	1862	0
Capacity Analysis Module:												
Vol/Sat:	0.05	0.00	0.01	0.00	0.00	0.00	0.00	0.52	0.08	0.01	0.47	0.00
Crit Moves:	****							****		****		
Green/Cycle:	0.08	0.00	0.08	0.00	0.00	0.00	0.00	0.77	0.77	0.05	0.74	0.00
Volume/Cap:	0.68	0.00	0.18	0.00	0.00	0.00	0.00	0.68	0.11	0.20	0.63	0.00
Uniform Del:	49.4	0.0	47.4	0.0	0.0	0.0	0.0	6.2	3.2	50.6	6.9	0.0
IncremntDel:	13.1	0.0	0.7	0.0	0.0	0.0	0.0	1.4	0.0	1.2	1.0	0.0
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	0.00	1.00	0.00	0.00	0.00	0.00	1.00	1.00	1.00	1.00	0.00
Delay/Veh:	62.5	0.0	48.1	0.0	0.0	0.0	0.0	7.6	3.3	51.8	7.9	0.0
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	62.5	0.0	48.1	0.0	0.0	0.0	0.0	7.6	3.3	51.8	7.9	0.0
HCM2kAvg:	5	0	1	0	0	0	0	17	1	1	15	0

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

Intersection #5 Central Ave & Bonita Rd

Cycle (sec): 105 Critical Vol./Cap. (X): 0.987
Loss Time (sec): 16 (Y+R = 4 sec) Average Delay (sec/veh): 62.5
Optimal Cycle:OPTIMIZED Level Of Service: E

Street Name:	Bonita Road									Central Ave		
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			Split Phase			Split Phase		
Rights:	Include			Include			Include			Include		
Min. Green:	5	5	5	5	5	5	5	5	5	5	5	5
Lanes:	1 0	1 0	1	1 0	1 0	1	0 1	0 0	1	1 0	1 0	1
Volume Module:												
Base Vol:	446	351	281	18	219	56	55	455	318	235	279	30
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:	446	351	281	18	219	56	55	455	318	235	279	30
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:	446	351	281	18	219	56	55	455	318	235	279	30
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	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:	469	369	296	19	231	59	58	479	335	247	294	32
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	469	369	296	19	231	59	58	479	335	247	294	32
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.:	469	369	296	19	231	59	58	479	335	247	294	32
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.93	0.98	0.83	0.93	0.98	0.83	0.98	0.98	0.83	0.93	0.98	0.83
Lanes:	1.00	1.00	1.00	1.00	1.00	1.00	0.11	0.89	1.00	1.00	1.00	1.00
Final Sat.:	1769	1862	1583	1769	1862	1583	200	1653	1583	1769	1862	1583
Capacity Analysis Module:												
Vol/Sat:	0.27	0.20	0.19	0.01	0.12	0.04	0.29	0.29	0.21	0.14	0.16	0.02
Crit Moves:	****				****		****				****	
Green/Cycle:	0.27	0.32	0.32	0.08	0.13	0.13	0.29	0.29	0.29	0.16	0.16	0.16
Volume/Cap:	0.99	0.62	0.59	0.14	0.99	0.30	0.99	0.99	0.72	0.88	0.99	0.12
Uniform Del:	38.2	30.5	30.0	45.3	45.8	41.7	36.9	36.9	33.2	43.1	44.0	37.8
IncremntDel:	37.8	2.1	1.8	0.5	55.1	0.8	35.2	35.2	5.4	24.8	48.5	0.2
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	76.0	32.6	31.9	45.8	101	42.6	72.0	72.0	38.7	67.9	92.5	38.0
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:	76.0	32.6	31.9	45.8	101	42.6	72.0	72.0	38.7	67.9	92.5	38.0
HCM2kAvg:	22	11	9	1	12	2	23	23	11	11	14	1

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

Intersection #6 Sweetwater Rd & Bonita Rd

Cycle (sec): 100 Critical Vol./Cap. (X): 0.806
Loss Time (sec): 16 (Y+R = 4 sec) Average Delay (sec/veh): 40.9
Optimal Cycle:OPTIMIZED Level Of Service: D

Street Name:	Bonita Road									Sweetwater Road		
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			Permitted			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	5	5	5	5	5	5	5	5	5	5	5	5
Lanes:	0 1	0 0	1	0 0	1 0	0	0 0	0 1	0	1 0	0 1	0
Volume Module:												
Base Vol:	407	0	82	0	1	2	0	49	528	96	91	0
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	407	0	82	0	1	2	0	49	528	96	91	0
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	407	0	82	0	1	2	0	49	528	96	91	0
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	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:	428	0	86	0	1	2	0	52	556	101	96	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	428	0	86	0	1	2	0	52	556	101	96	0
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Vol.:	428	0	86	0	1	2	0	52	556	101	96	0
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.93	1.00	0.83	1.00	0.89	0.89	1.00	0.86	0.85	0.93	0.98	1.00
Lanes:	1.00	0.00	1.00	0.00	0.33	0.67	0.00	0.08	0.92	1.00	1.00	0.00
Final Sat.:	1773	0	1583	0	565	1130	0	137	1478	1769	1862	0
Capacity Analysis Module:												
Vol/Sat:	0.24	0.00	0.05	0.00	0.00	0.00	0.00	0.38	0.38	0.06	0.05	0.00
Crit Moves:	****				****			****		****		
Green/Cycle:	0.28	0.00	0.28	0.00	0.05	0.05	0.00	0.44	0.44	0.07	0.51	0.00
Volume/Cap:	0.85	0.00	0.19	0.00	0.04	0.04	0.00	0.85	0.85	0.85	0.10	0.00
Uniform Del:	33.9	0.0	27.2	0.0	45.2	45.2	0.0	25.1	25.1	46.2	12.8	0.0
IncremntDel:	13.3	0.0	0.2	0.0	0.2	0.2	0.0	9.9	9.9	41.7	0.0	0.0
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	0.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	0.00
Delay/Veh:	47.2	0.0	27.4	0.0	45.4	45.4	0.0	35.0	35.0	87.9	12.9	0.0
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	47.2	0.0	27.4	0.0	45.4	45.4	0.0	35.0	35.0	87.9	12.9	0.0
HCM2kAvg:	16	0	2	0	0	0	0	20	20	6	1	0

Scenario Report

Scenario:	AM Existing Plus Project
Command:	AM Existing Plus Project
Volume:	AM Existing
Geometry:	Existing
Impact Fee:	Default Impact Fee
Trip Generation:	AM Proj Only
Trip Distribution:	project
Paths:	Default Paths
Routes:	Default Routes
Configuration:	AM Existing Plus Project

Impact Analysis Report
Level Of Service

Intersection	Base LOS	Base Del/ Veh	Base V/ C	Future LOS	Future Del/ Veh	Future V/ C	Change in V/ C
# 1 I-805 SB & Bonita Rd	B	18.2	0.640	B	18.2	0.639	+ 0.001
# 2 I-805 NB & Bonita Rd	E	69.8	1.138	E	71.1	1.145	+ 1.289
# 3 Willow St & Bonita Rd	C	23.5	0.766	C	23.8	0.789	+ 0.290
# 4 Acacia Ave & Bonita Rd	B	14.2	0.690	B	14.3	0.695	+ 0.067
# 5 Central Ave & Bonita Rd	E	73.5	1.024	E	74.3	1.029	+ 0.843
# 6 Sweetwater Rd & Bonita Rd	D	41.0	0.802	D	41.7	0.808	+ 0.716

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

Intersection #1 I-805 SB & Bonita Rd

Cycle (sec): 60 Critical Vol./Cap. (X): 0.639
Loss Time (sec): 12 (Y+R = 4 sec) Average Delay (sec/veh): 18.2
Optimal Cycle:OPTIMIZED Level Of Service: B

Street Name:	I-805 Southbound						Bonita Road					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Split Phase			Split Phase			Protected			Protected		
Rights:	Include			Ovl			Include			Include		
Min. Green:	5	5	5	5	5	5	5	5	5	5	5	5
Lanes:	0 0	0 0	0	1 1	0 1	0	0 0	3 0	1	2 0	2 0	0
Volume Module:												
Base Vol:	0	0	0	434	12	420	0	695	274	366	742	0
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	0	0	434	12	420	0	695	274	366	742	0
Added Vol:	0	0	0	10	0	0	0	1	0	2	1	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	0	0	0	444	12	420	0	696	274	368	743	0
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	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	467	13	442	0	733	288	387	782	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	0	0	0	467	13	442	0	733	288	387	782	0
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Vol.:	0	0	0	467	13	442	0	733	288	387	782	0
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	1.00	1.00	1.00	0.80	0.80	0.80	1.00	0.89	0.83	0.90	0.93	1.00
Lanes:	0.00	0.00	0.00	1.95	0.05	1.00	0.00	3.00	1.00	2.00	2.00	0.00
Final Sat.:	0	0	0	2967	80	1523	0	5083	1583	3432	3538	0
Capacity Analysis Module:												
Vol/Sat:	0.00	0.00	0.00	0.16	0.16	0.29	0.00	0.14	0.18	0.11	0.22	0.00
Crit Moves:						****	****				****	
Green/Cycle:	0.00	0.00	0.00	0.35	0.35	0.43	0.00	0.28	0.28	0.17	0.37	0.00
Volume/Cap:	0.00	0.00	0.00	0.45	0.45	0.68	0.00	0.51	0.65	0.65	0.60	0.00
Uniform Del:	0.0	0.0	0.0	15.2	15.2	13.7	0.0	18.2	19.0	23.1	15.3	0.0
IncremntDel:	0.0	0.0	0.0	0.2	0.2	1.4	0.0	0.3	3.4	2.6	0.8	0.0
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	0.00	0.00	0.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	0.00
Delay/Veh:	0.0	0.0	0.0	15.4	15.4	15.1	0.0	18.5	22.4	25.7	16.0	0.0
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	0.0	0.0	0.0	15.4	15.4	15.1	0.0	18.5	22.4	25.7	16.0	0.0
HCM2kAvg:	0	0	0	4	4	8	0	4	6	5	7	0

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

Intersection #2 I-805 NB & Bonita Rd

Cycle (sec): 115 Critical Vol./Cap. (X): 1.145
Loss Time (sec): 12 (Y+R = 4 sec) Average Delay (sec/veh): 71.1
Optimal Cycle:OPTIMIZED Level Of Service: E

Street Name:	I-805 Northbound						Bonita Road					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Split Phase			Split Phase			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	5	5	5	5	5	5	5	5	5	5	5	5
Lanes:	0 1	0 1	1	0 0	0 0	0	2 0	2 0	0	0 0	3 0	1
Volume Module:												
Base Vol:	469	2	766	0	0	0	393	590	0	0	664	841
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:	469	2	766	0	0	0	393	590	0	0	664	841
Added Vol:	0	0	2	0	0	0	0	10	0	0	3	9
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	469	2	768	0	0	0	393	600	0	0	667	850
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:	494	2	808	0	0	0	414	632	0	0	702	895
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	494	2	808	0	0	0	414	632	0	0	702	895
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.:	494	2	808	0	0	0	414	632	0	0	702	895
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.77	0.77	0.77	1.00	1.00	1.00	0.90	0.93	1.00	1.00	0.89	0.83
Lanes:	1.00	0.01	1.99	0.00	0.00	0.00	2.00	2.00	0.00	0.00	3.00	1.00
Final Sat.:	1455	8	2903	0	0	0	3432	3538	0	0	5083	1583
Capacity Analysis Module:												
Vol/Sat:	0.34	0.28	0.28	0.00	0.00	0.00	0.12	0.18	0.00	0.00	0.14	0.57
Crit Moves:	****						****					****
Green/Cycle:	0.30	0.30	0.30	0.00	0.00	0.00	0.11	0.48	0.00	0.00	0.49	0.49
Volume/Cap:	1.14	0.94	0.94	0.00	0.00	0.00	1.14	0.37	0.00	0.00	0.28	1.14
Uniform Del:	40.5	39.5	39.5	0.0	0.0	0.0	51.4	18.8	0.0	0.0	17.1	29.1
IncremntDel:	75.8	12.5	12.5	0.0	0.0	0.0	92.7	0.1	0.0	0.0	0.1	79.9
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	1.00	0.00	0.00	0.00	1.00	1.00	0.00	0.00	1.00	1.00
Delay/Veh:	116.2	51.9	51.9	0.0	0.0	0.0	144.2	18.9	0.0	0.0	17.1	109.0
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:	116.2	51.9	51.9	0.0	0.0	0.0	144.2	18.9	0.0	0.0	17.1	109.0
HCM2kAvg:	31	20	20	0	0	0	14	7	0	0	5	48

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

Intersection #3 Willow St & Bonita Rd

Cycle (sec): 80 | Critical Vol./Cap. (X): 0.789
Loss Time (sec): 16 (Y+R = 4 sec) | Average Delay (sec/veh): 23.8
Optimal Cycle:OPTIMIZED | Level Of Service: C

Street Name:	Willow Street						Bonita Road					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Split Phase			Split Phase			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	5	5	5	5	5	5	5	5	5	5	5	5
Lanes:	0 0	1! 0	0	1 1	0 0	1	1 0	1 1	0	1 0	2 0	1
Volume Module:												
Base Vol:	15	3	8	446	4	163	90	740	8	8	1204	617
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	15	3	8	446	4	163	90	740	8	8	1204	617
Added Vol:	12	7	7	0	7	0	0	0	12	7	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	27	10	15	446	11	163	90	740	20	15	1204	617
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:	28	11	16	469	12	172	95	779	21	16	1267	649
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	28	11	16	469	12	172	95	779	21	16	1267	649
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.:	28	11	16	469	12	172	95	779	21	16	1267	649
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	0.92	0.92	0.93	0.93	0.83	0.93	0.93	0.93	0.93	0.93	0.83
Lanes:	0.52	0.19	0.29	1.95	0.05	1.00	1.00	1.95	0.05	1.00	2.00	1.00
Final Sat.:	906	336	503	3464	85	1583	1769	3431	93	1769	3538	1583
Capacity Analysis Module:												
Vol/Sat:	0.03	0.03	0.03	0.14	0.14	0.11	0.05	0.23	0.23	0.01	0.36	0.41
Crit Moves:		****			****		****					****
Green/Cycle:	0.06	0.06	0.06	0.17	0.17	0.17	0.07	0.45	0.45	0.12	0.50	0.50
Volume/Cap:	0.50	0.50	0.50	0.81	0.81	0.65	0.81	0.51	0.51	0.07	0.71	0.81
Uniform Del:	36.3	36.3	36.3	32.1	32.1	31.1	36.9	15.8	15.8	31.0	15.3	16.6
IncremntDel:	3.7	3.7	3.7	8.4	8.4	5.6	33.6	0.3	0.3	0.1	1.3	6.4
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	39.9	39.9	39.9	40.5	40.5	36.8	70.5	16.1	16.1	31.2	16.6	23.0
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:	39.9	39.9	39.9	40.5	40.5	36.8	70.5	16.1	16.1	31.2	16.6	23.0
HCM2kAvg:	2	2	2	8	8	5	5	7	7	0	13	16

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

Intersection #4 Acacia Ave & Bonita Rd

Cycle (sec): 90 | Critical Vol./Cap. (X): 0.695
Loss Time (sec): 12 (Y+R = 4 sec) | Average Delay (sec/veh): 14.3
Optimal Cycle:OPTIMIZED | Level Of Service: B

Street Name:	Acacia Avenue						Bonita Road					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Split Phase			Split Phase			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	5	5	5	5	5	5	5	5	5	5	5	5
Lanes:	1 0	0 0	1	0 0	0 0	0	0 0	1 0	1	1 0	1 0	0
Volume Module:												
Base Vol:	152	0	15	0	0	0	0	601	52	14	898	0
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	152	0	15	0	0	0	0	601	52	14	898	0
Added Vol:	0	0	0	0	0	0	0	7	0	0	7	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	152	0	15	0	0	0	0	608	52	14	905	0
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	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:	160	0	16	0	0	0	0	640	55	15	953	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	160	0	16	0	0	0	0	640	55	15	953	0
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Vol.:	160	0	16	0	0	0	0	640	55	15	953	0
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.93	1.00	0.83	1.00	1.00	1.00	1.00	0.98	0.83	0.93	0.98	1.00
Lanes:	1.00	0.00	1.00	0.00	0.00	0.00	0.00	1.00	1.00	1.00	1.00	0.00
Final Sat.:	1769	0	1583	0	0	0	0	1862	1583	1769	1862	0
Capacity Analysis Module:												
Vol/Sat:	0.09	0.00	0.01	0.00	0.00	0.00	0.00	0.34	0.03	0.01	0.51	0.00
Crit Moves:	****						****				****	
Green/Cycle:	0.12	0.00	0.12	0.00	0.00	0.00	0.00	0.64	0.64	0.10	0.69	0.00
Volume/Cap:	0.74	0.00	0.08	0.00	0.00	0.00	0.00	0.54	0.05	0.08	0.74	0.00
Uniform Del:	38.2	0.0	35.1	0.0	0.0	0.0	0.0	8.8	6.0	36.5	8.9	0.0
IncremntDel:	13.0	0.0	0.2	0.0	0.0	0.0	0.0	0.5	0.0	0.2	2.4	0.0
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	0.00	1.00	0.00	0.00	0.00	0.00	1.00	1.00	1.00	1.00	0.00
Delay/Veh:	51.1	0.0	35.2	0.0	0.0	0.0	0.0	9.3	6.0	36.6	11.3	0.0
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	51.1	0.0	35.2	0.0	0.0	0.0	0.0	9.3	6.0	36.6	11.3	0.0
HCM2kAvg:	6	0	0	0	0	0	0	10	1	0	18	0

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

Intersection #5 Central Ave & Bonita Rd

Cycle (sec): 110 Critical Vol./Cap. (X): 1.029
Loss Time (sec): 16 (Y+R = 4 sec) Average Delay (sec/veh): 74.3
Optimal Cycle:OPTIMIZED Level Of Service: E

Street Name:	Bonita Road						Central Ave					
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			Split Phase			Split Phase		
Rights:	Include			Include			Include			Include		
Min. Green:	5	5	5	5	5	5	5	5	5	5	5	5
Lanes:	1 0	1 0	1	1 0	1 0	1	0 1	0 0	1	1 0	1 0	1
Volume Module:												
Base Vol:	323	232	96	19	176	71	37	155	456	198	496	19
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:	323	232	96	19	176	71	37	155	456	198	496	19
Added Vol:	0	7	0	0	7	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	323	239	96	19	183	71	37	155	456	198	496	19
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:	340	252	101	20	193	75	39	163	480	208	522	20
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	340	252	101	20	193	75	39	163	480	208	522	20
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Vol.:	340	252	101	20	193	75	39	163	480	208	522	20
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.93	0.98	0.83	0.93	0.98	0.83	0.97	0.97	0.83	0.93	0.98	0.83
Lanes:	1.00	1.00	1.00	1.00	1.00	1.00	0.19	0.81	1.00	1.00	1.00	1.00
Final Sat.:	1769	1862	1583	1769	1862	1583	355	1488	1583	1769	1862	1583
Capacity Analysis Module:												
Vol/Sat:	0.19	0.14	0.06	0.01	0.10	0.05	0.11	0.11	0.30	0.12	0.28	0.01
Crit Moves:	****				****				****		****	
Green/Cycle:	0.19	0.21	0.21	0.07	0.10	0.10	0.29	0.29	0.29	0.27	0.27	0.27
Volume/Cap:	1.03	0.63	0.30	0.16	1.03	0.47	0.37	0.37	1.03	0.43	1.03	0.05
Uniform Del:	44.7	39.2	36.2	47.9	49.5	46.7	30.7	30.7	38.8	33.0	40.0	29.5
IncremntDel:	57.2	3.2	0.5	0.6	73.6	2.2	0.4	0.4	49.3	0.6	47.6	0.0
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	101.9	42.4	36.7	48.4	123	48.9	31.2	31.2	88.1	33.6	87.6	29.5
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:	101.9	42.4	36.7	48.4	123	48.9	31.2	31.2	88.1	33.6	87.6	29.5
HCM2kAvg:	18	9	3	1	11	3	6	6	23	6	25	0

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

Intersection #6 Sweetwater Rd & Bonita Rd

Cycle (sec): 110 Critical Vol./Cap. (X): 0.808
Loss Time (sec): 16 (Y+R = 4 sec) Average Delay (sec/veh): 41.7
Optimal Cycle:OPTIMIZED Level Of Service: D

Street Name:	Bonita Road						Sweetwater Road					
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			Permitted			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	5	5	5	5	5	5	5	5	5	5	5	5
Lanes:	0 1	0 0	1	0 1	0 0	0	0 0	0 1	0	1 0	0 1	0
Volume Module:												
Base Vol:	625	4	128	1	1	0	0	50	324	64	39	0
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	625	4	128	1	1	0	0	50	324	64	39	0
Added Vol:	0	0	7	0	0	0	0	0	0	7	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	625	4	135	1	1	0	0	50	324	71	39	0
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	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:	658	4	142	1	1	0	0	53	341	75	41	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	658	4	142	1	1	0	0	53	341	75	41	0
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Vol.:	658	4	142	1	1	0	0	53	341	75	41	0
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.93	0.93	0.83	0.96	0.96	1.00	1.00	0.87	0.74	0.93	0.98	1.00
Lanes:	0.99	0.01	1.00	0.50	0.50	0.00	0.00	0.12	0.88	1.00	1.00	0.00
Final Sat.:	1763	11	1583	909	909	0	0	192	1247	1769	1862	0
Capacity Analysis Module:												
Vol/Sat:	0.37	0.37	0.09	0.00	0.00	0.00	0.00	0.27	0.27	0.04	0.02	0.00
Crit Moves:	****				****			****		****		
Green/Cycle:	0.44	0.44	0.44	0.05	0.05	0.00	0.00	0.32	0.32	0.05	0.37	0.00
Volume/Cap:	0.84	0.84	0.20	0.03	0.03	0.00	0.00	0.87	0.87	0.84	0.06	0.00
Uniform Del:	27.2	27.2	18.7	50.2	50.2	0.0	0.0	35.5	35.5	51.8	22.6	0.0
IncremntDel:	8.1	8.1	0.1	0.1	0.1	0.0	0.0	16.1	16.1	48.0	0.0	0.0
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	1.00	1.00	1.00	0.00	0.00	1.00	1.00	1.00	1.00	0.00
Delay/Veh:	35.3	35.3	18.9	50.3	50.3	0.0	0.0	51.5	51.5	99.9	22.7	0.0
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	35.3	35.3	18.9	50.3	50.3	0.0	0.0	51.5	51.5	99.9	22.7	0.0
HCM2kAvg:	23	23	3	0	0	0	0	17	15	5	1	0

Scenario Report

Scenario:	PM Existing Plus Project
Command:	PM Existing Plus Project
Volume:	PM Existing
Geometry:	Existing
Impact Fee:	Default Impact Fee
Trip Generation:	PM Proj Only
Trip Distribution:	project
Paths:	Default Paths
Routes:	Default Routes
Configuration:	PM Existing Plus Project

Impact Analysis Report
Level Of Service

Intersection	Base LOS	Base Del/ Veh	Base V/ C	Future LOS	Future Del/ Veh	Future V/ C	Change in V/ C
# 1 I-805 SB & Bonita Rd	C	22.2	0.905	C	22.2	0.906	+ 0.046 D/V
# 2 I-805 NB & Bonita Rd	C	23.6	0.852	C	24.0	0.861	+ 0.334 D/V
# 3 Willow St & Bonita Rd	D	35.1	0.839	D	36.5	0.874	+ 1.374 D/V
# 4 Acacia Ave & Bonita Rd	B	10.6	0.656	B	10.7	0.661	+ 0.058 D/V
# 5 Central Ave & Bonita Rd	E	62.5	0.987	E	63.4	0.992	+ 0.892 D/V
# 6 Sweetwater Rd & Bonita Rd	D	41.0	0.798	D	41.7	0.804	+ 0.777 D/V

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

Intersection #1 I-805 SB & Bonita Rd

Cycle (sec): 60 | Critical Vol./Cap. (X): 0.906
Loss Time (sec): 12 (Y+R = 4 sec) | Average Delay (sec/veh): 22.2
Optimal Cycle:OPTIMIZED | Level Of Service: C

Street Name:	I-805 Southbound						Bonita Road					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Split Phase			Split Phase			Protected			Protected		
Rights:	Include			Ovl			Include			Include		
Min. Green:	5	5	5	5	5	5	5	5	5	5	5	5
Lanes:	0 0	0 0	0	1 1	0 1	0	0 0	3 0	1	2 0	2 0	0
Volume Module:												
Base Vol:	0	0	0	685	32	537	0	981	307	508	716	0
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	0	0	685	32	537	0	981	307	508	716	0
Added Vol:	0	0	0	10	0	0	0	1	0	2	1	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	0	0	0	695	32	537	0	982	307	510	717	0
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	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	732	34	565	0	1034	323	537	755	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	0	0	0	732	34	565	0	1034	323	537	755	0
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Vol.:	0	0	0	732	34	565	0	1034	323	537	755	0
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	1.00	1.00	1.00	0.82	0.82	0.82	1.00	0.89	0.83	0.90	0.93	1.00
Lanes:	0.00	0.00	0.00	1.91	0.09	1.00	0.00	3.00	1.00	2.00	2.00	0.00
Final Sat.:	0	0	0	2963	136	1550	0	5083	1583	3432	3538	0
Capacity Analysis Module:												
Vol/Sat:	0.00	0.00	0.00	0.25	0.25	0.36	0.00	0.20	0.20	0.16	0.21	0.00
Crit Moves:						****		****		****		
Green/Cycle:	0.00	0.00	0.00	0.35	0.35	0.48	0.00	0.25	0.25	0.20	0.32	0.00
Volume/Cap:	0.00	0.00	0.00	0.70	0.70	0.76	0.00	0.80	0.80	0.80	0.66	0.00
Uniform Del:	0.0	0.0	0.0	16.8	16.8	12.9	0.0	21.0	21.0	23.0	17.5	0.0
IncremntDel:	0.0	0.0	0.0	1.2	1.2	2.1	0.0	3.7	11.3	6.9	1.5	0.0
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	0.00	0.00	0.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	0.00
Delay/Veh:	0.0	0.0	0.0	18.0	18.0	15.0	0.0	24.7	32.3	29.9	18.9	0.0
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	0.0	0.0	0.0	18.0	18.0	15.0	0.0	24.7	32.3	29.9	18.9	0.0
HCM2kAvg:	0	0	0	8	8	11	0	9	8	7	7	0

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

Intersection #2 I-805 NB & Bonita Rd

Cycle (sec): 65 | Critical Vol./Cap. (X): 0.861
Loss Time (sec): 12 (Y+R = 4 sec) | Average Delay (sec/veh): 24.0
Optimal Cycle:OPTIMIZED | Level Of Service: C

Street Name:	I-805 Northbound						Bonita Road					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Split Phase			Split Phase			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	5	5	5	5	5	5	5	5	5	5	5	5
Lanes:	1 0	0 0	2	0 0	0 0	0	2 0	2 0	0	0 0	3 0	1
Volume Module:												
Base Vol:	285	0	608	0	0	0	392	1256	0	0	926	518
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	285	0	608	0	0	0	392	1256	0	0	926	518
Added Vol:	0	0	2	0	0	0	0	11	0	0	3	10
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	285	0	610	0	0	0	392	1267	0	0	929	528
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:	300	0	642	0	0	0	413	1334	0	0	978	556
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	300	0	642	0	0	0	413	1334	0	0	978	556
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Vol.:	300	0	642	0	0	0	413	1334	0	0	978	556
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.93	1.00	0.73	1.00	1.00	1.00	0.90	0.93	1.00	1.00	0.89	0.83
Lanes:	1.00	0.00	2.00	0.00	0.00	0.00	2.00	2.00	0.00	0.00	3.00	1.00
Final Sat.:	1769	0	2786	0	0	0	3432	3538	0	0	5083	1583
Capacity Analysis Module:												
Vol/Sat:	0.17	0.00	0.23	0.00	0.00	0.00	0.12	0.38	0.00	0.00	0.19	0.35
Crit Moves:			****				****					****
Green/Cycle:	0.27	0.00	0.27	0.00	0.00	0.00	0.14	0.45	0.00	0.00	0.41	0.41
Volume/Cap:	0.63	0.00	0.86	0.00	0.00	0.00	0.86	0.83	0.00	0.00	0.47	0.86
Uniform Del:	21.0	0.0	22.6	0.0	0.0	0.0	27.3	15.5	0.0	0.0	14.1	17.6
IncremntDel:	2.8	0.0	10.0	0.0	0.0	0.0	14.6	3.8	0.0	0.0	0.2	11.3
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	0.00	1.00	0.00	0.00	0.00	1.00	1.00	0.00	0.00	1.00	1.00
Delay/Veh:	23.8	0.0	32.7	0.0	0.0	0.0	42.0	19.3	0.0	0.0	14.3	28.9
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:	23.8	0.0	32.7	0.0	0.0	0.0	42.0	19.3	0.0	0.0	14.3	28.9
HCM2kAvg:	7	0	9	0	0	0	7	14	0	0	5	14

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

Intersection #3 Willow St & Bonita Rd

Cycle (sec): 100 | Critical Vol./Cap. (X): 0.874
Loss Time (sec): 16 (Y+R = 4 sec) | Average Delay (sec/veh): 36.5
Optimal Cycle:OPTIMIZED | Level Of Service: D

Street Name:	Willow Street						Bonita Road					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Control:	Split Phase			Split Phase			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	5	5	5	5	5	5	5	5	5	5	5	5
Lanes:	0 0	1! 0	0	1 1	0 0	1	1 0	1 1	0	1 0	2 0	1
Volume Module:												
Base Vol:	15	16	6	797	17	109	165	1436	23	11	862	394
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	15	16	6	797	17	109	165	1436	23	11	862	394
Added Vol:	13	8	8	0	8	0	0	0	13	8	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	28	24	14	797	25	109	165	1436	36	19	862	394
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:	29	25	15	839	26	115	174	1512	38	20	907	415
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	29	25	15	839	26	115	174	1512	38	20	907	415
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.:	29	25	15	839	26	115	174	1512	38	20	907	415
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.93	0.93	0.93	0.93	0.93	0.83	0.93	0.93	0.93	0.93	0.93	0.83
Lanes:	0.43	0.36	0.21	1.94	0.06	1.00	1.00	1.95	0.05	1.00	2.00	1.00
Final Sat.:	751	644	375	3445	108	1583	1769	3437	86	1769	3538	1583
Capacity Analysis Module:												
Vol/Sat:	0.04	0.04	0.04	0.24	0.24	0.07	0.10	0.44	0.44	0.01	0.26	0.26
Crit Moves:		****		****				****		****		
Green/Cycle:	0.05	0.05	0.05	0.26	0.26	0.26	0.14	0.48	0.48	0.05	0.38	0.38
Volume/Cap:	0.78	0.78	0.78	0.92	0.92	0.27	0.68	0.92	0.92	0.23	0.67	0.68
Uniform Del:	47.0	47.0	47.0	35.8	35.8	29.2	40.7	24.5	24.5	45.6	25.6	25.8
IncremntDel:	35.7	35.7	35.7	14.3	14.3	0.4	7.5	9.0	9.0	1.3	1.3	3.2
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	82.7	82.7	82.7	50.2	50.2	29.6	48.2	33.5	33.5	46.9	26.9	29.1
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:	82.7	82.7	82.7	50.2	50.2	29.6	48.2	33.5	33.5	46.9	26.9	29.1
HCM2kAvg:	4	4	4	18	18	3	7	27	27	1	12	12

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

Intersection #4 Acacia Ave & Bonita Rd

Cycle (sec): 110 | Critical Vol./Cap. (X): 0.661
Loss Time (sec): 12 (Y+R = 4 sec) | Average Delay (sec/veh): 10.7
Optimal Cycle:OPTIMIZED | Level Of Service: B

Street Name:	Acacia Avenue						Bonita Road					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Control:	Split Phase			Split Phase			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	5	5	5	5	5	5	5	5	5	5	5	5
Lanes:	1 0	0 0	1	0 0	0 0	0	0 0	1 0	1	1 0	1 0	0
Volume Module:												
Base Vol:	89	0	21	0	0	0	0	925	126	15	829	0
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	89	0	21	0	0	0	0	925	126	15	829	0
Added Vol:	0	0	0	0	0	0	0	8	0	0	8	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	89	0	21	0	0	0	0	933	126	15	837	0
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	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:	94	0	22	0	0	0	0	982	133	16	881	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	94	0	22	0	0	0	0	982	133	16	881	0
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Vol.:	94	0	22	0	0	0	0	982	133	16	881	0
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.93	1.00	0.83	1.00	1.00	1.00	1.00	0.98	0.83	0.93	0.98	1.00
Lanes:	1.00	0.00	1.00	0.00	0.00	0.00	0.00	1.00	1.00	1.00	1.00	0.00
Final Sat.:	1769	0	1583	0	0	0	0	1862	1583	1769	1862	0
Capacity Analysis Module:												
Vol/Sat:	0.05	0.00	0.01	0.00	0.00	0.00	0.00	0.53	0.08	0.01	0.47	0.00
Crit Moves:	****							****		****		
Green/Cycle:	0.08	0.00	0.08	0.00	0.00	0.00	0.00	0.77	0.77	0.05	0.74	0.00
Volume/Cap:	0.69	0.00	0.18	0.00	0.00	0.00	0.00	0.69	0.11	0.20	0.64	0.00
Uniform Del:	49.5	0.0	47.5	0.0	0.0	0.0	0.0	6.2	3.2	50.6	6.9	0.0
IncremntDel:	13.7	0.0	0.7	0.0	0.0	0.0	0.0	1.4	0.0	1.2	1.0	0.0
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	0.00	1.00	0.00	0.00	0.00	0.00	1.00	1.00	1.00	1.00	0.00
Delay/Veh:	63.1	0.0	48.2	0.0	0.0	0.0	0.0	7.7	3.3	51.8	7.9	0.0
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	63.1	0.0	48.2	0.0	0.0	0.0	0.0	7.7	3.3	51.8	7.9	0.0
HCM2kAvg:	5	0	1	0	0	0	0	17	1	1	15	0

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

Intersection #5 Central Ave & Bonita Rd

Cycle (sec): 105 Critical Vol./Cap. (X): 0.992
Loss Time (sec): 16 (Y+R = 4 sec) Average Delay (sec/veh): 63.4
Optimal Cycle:OPTIMIZED Level Of Service: E

Street Name:	Bonita Road						Central Ave					
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			Split Phase			Split Phase		
Rights:	Include			Include			Include			Include		
Min. Green:	5	5	5	5	5	5	5	5	5	5	5	5
Lanes:	1 0	1 0	1	1 0	1 0	1	0 1	0 0	1	1 0	1 0	1
Volume Module:												
Base Vol:	446	351	281	18	219	56	55	455	318	235	279	30
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:	446	351	281	18	219	56	55	455	318	235	279	30
Added Vol:	0	8	0	0	8	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	446	359	281	18	227	56	55	455	318	235	279	30
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	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:	469	378	296	19	239	59	58	479	335	247	294	32
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	469	378	296	19	239	59	58	479	335	247	294	32
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.:	469	378	296	19	239	59	58	479	335	247	294	32
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.93	0.98	0.83	0.93	0.98	0.83	0.98	0.98	0.83	0.93	0.98	0.83
Lanes:	1.00	1.00	1.00	1.00	1.00	1.00	0.11	0.89	1.00	1.00	1.00	1.00
Final Sat.:	1769	1862	1583	1769	1862	1583	200	1653	1583	1769	1862	1583
Capacity Analysis Module:												
Vol/Sat:	0.27	0.20	0.19	0.01	0.13	0.04	0.29	0.29	0.21	0.14	0.16	0.02
Crit Moves:	****				****		****				****	
Green/Cycle:	0.27	0.32	0.32	0.08	0.13	0.13	0.29	0.29	0.29	0.16	0.16	0.16
Volume/Cap:	0.99	0.63	0.58	0.14	0.99	0.29	0.99	0.99	0.72	0.88	0.99	0.13
Uniform Del:	38.4	30.3	29.7	45.4	45.7	41.3	37.1	37.1	33.4	43.2	44.1	37.9
IncremntDel:	39.3	2.2	1.7	0.5	55.8	0.8	36.7	36.7	5.6	25.7	50.1	0.2
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	77.7	32.5	31.4	45.9	101	42.1	73.7	73.7	39.0	68.9	94.2	38.1
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:	77.7	32.5	31.4	45.9	101	42.1	73.7	73.7	39.0	68.9	94.2	38.1
HCM2kAvg:	22	11	9	1	12	2	24	24	11	11	14	1

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

Intersection #6 Sweetwater Rd & Bonita Rd

Cycle (sec): 105 Critical Vol./Cap. (X): 0.804
Loss Time (sec): 16 (Y+R = 4 sec) Average Delay (sec/veh): 41.7
Optimal Cycle:OPTIMIZED Level Of Service: D

Street Name:	Bonita Road						Sweetwater Road					
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			Permitted			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	5	5	5	5	5	5	5	5	5	5	5	5
Lanes:	0 1	0 0	1	0 0	0 1	0	0 0	0 1	0	1 0	0 1	0
Volume Module:												
Base Vol:	407	0	82	0	1	2	0	49	528	96	91	0
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	407	0	82	0	1	2	0	49	528	96	91	0
Added Vol:	0	0	8	0	0	0	0	0	0	8	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	407	0	90	0	1	2	0	49	528	104	91	0
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	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:	428	0	95	0	1	2	0	52	556	109	96	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	428	0	95	0	1	2	0	52	556	109	96	0
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Vol.:	428	0	95	0	1	2	0	52	556	109	96	0
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.93	1.00	0.83	1.00	0.89	0.89	1.00	0.86	0.85	0.93	0.98	1.00
Lanes:	1.00	0.00	1.00	0.00	0.33	0.67	0.00	0.08	0.92	1.00	1.00	0.00
Final Sat.:	1773	0	1583	0	565	1130	0	137	1478	1769	1862	0
Capacity Analysis Module:												
Vol/Sat:	0.24	0.00	0.06	0.00	0.00	0.00	0.00	0.38	0.38	0.06	0.05	0.00
Crit Moves:	****				****			****		****		
Green/Cycle:	0.28	0.00	0.28	0.00	0.05	0.05	0.00	0.44	0.44	0.07	0.52	0.00
Volume/Cap:	0.85	0.00	0.21	0.00	0.04	0.04	0.00	0.85	0.85	0.85	0.10	0.00
Uniform Del:	35.4	0.0	28.6	0.0	47.7	47.7	0.0	26.2	26.2	48.1	13.0	0.0
IncremntDel:	12.8	0.0	0.2	0.0	0.2	0.2	0.0	9.5	9.5	38.1	0.0	0.0
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	0.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	0.00
Delay/Veh:	48.2	0.0	28.8	0.0	47.9	47.9	0.0	35.6	35.6	86.2	13.0	0.0
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	48.2	0.0	28.8	0.0	47.9	47.9	0.0	35.6	35.6	86.2	13.0	0.0
HCM2kAvg:	16	0	2	0	0	0	0	20	20	6	2	0

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Yield			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Volume (veh/h)	39	0	0	2	2	6	0	17	0	1	23	48
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (veh/h)	42	0	0	2	2	7	0	18	0	1	25	52
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
vC, conflicting volume	79	72	51	72	98	18	77			18		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	95	100	100	100	100	99	100			100		
cM capacity (veh/h)	901	818	1017	919	792	1060	1521			1598		

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	42	11	18	78
Volume Left	42	2	0	1
Volume Right	0	7	0	52
cSH	901	965	1521	1598
Volume to Capacity	0.05	0.01	0.00	0.00
Queue Length (ft)	4	1	0	0
Control Delay (s)	9.2	8.8	0.0	0.1
Lane LOS	A	A		A
Approach Delay (s)	9.2	8.8	0.0	0.1
Approach LOS	A	A		

Intersection Summary

Average Delay 3.3
Intersection Capacity Utilization 14.6% ICU Level of Service A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Yield			Yield			Free			Free	
Grade		0%			0%			0%			0%	
Volume (veh/h)	9	0	0	0	0	2	0	6	0	7	11	7
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (veh/h)	10	0	0	0	0	2	0	7	0	8	12	8
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
vC, conflicting volume	40	38	16	38	41	7	20			7		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	99	100	100	100	100	100	100			100		
cM capacity (veh/h)	959	851	1064	964	847	1076	1597			1614		

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	10	2	7	27
Volume Left	10	0	0	8
Volume Right	0	2	0	8
cSH	959	1076	1597	1614
Volume to Capacity	0.01	0.00	0.00	0.00
Queue Length (ft)	1	0	0	0
Control Delay (s)	8.8	8.4	0.0	2.1
Lane LOS	A	A		A
Approach Delay (s)	8.8	8.4	0.0	2.1
Approach LOS	A	A		

Intersection Summary

Average Delay 3.5
Intersection Capacity Utilization 13.3% ICU Level of Service A

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Sign Control	Free			Free	Yield	
Grade	0%			0%	0%	
Volume (veh/h)	13	0	41	9	0	28
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (veh/h)	14	0	45	10	0	28
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type					None	
Median storage veh)						
vC, conflicting volume			14		113	14
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			97		100	97
cM capacity (veh/h)			1604		859	1066

Direction, Lane #	EB 1	WB 1	NB 1
Volume Total	14	54	28
Volume Left	0	45	0
Volume Right	0	0	28
cSH	1700	1604	1066
Volume to Capacity	0.01	0.03	0.03
Queue Length (ft)	0	2	2
Control Delay (s)	0.0	6.0	8.5
Lane LOS		A	A
Approach Delay (s)	0.0	6.0	8.5
Approach LOS			A

Intersection Summary			
Average Delay	5.9		
Intersection Capacity Utilization	13.3%	ICU Level of Service	A

HCM Unsignalized Intersection Capacity Analysis — 6: Restaurant Drive & Old Orchard Ln

Alt1 PM Peak Hour — 10/7/2003

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Yield			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Volume (veh/h)	44	0	1	6	2	9	0	35	0	3	27	45
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (veh/h)	48	0	1	7	2	10	0	38	0	3	29	49
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
vC, conflicting volume	109	98	54	99	123	38	78			38		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	94	100	100	99	100	99	100			100		
cM capacity (veh/h)	858	790	1013	880	766	1034	1520			1572		

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	49	18	38	82
Volume Left	48	7	0	3
Volume Right	1	10	0	49
cSH	861	937	1520	1572
Volume to Capacity	0.06	0.02	0.00	0.00
Queue Length (ft)	5	2	0	0
Control Delay (s)	9.4	8.9	0.0	0.3
Lane LOS	A	A		A
Approach Delay (s)	9.4	8.9	0.0	0.3
Approach LOS	A	A		

Intersection Summary			
Average Delay	3.5		
Intersection Capacity Utilization	14.8%	ICU Level of Service	A

HCM Unsignalized Intersection Capacity Analysis — 8: Grevilea Wy & Old Orchard Ln

Alt1 PM Peak Hour — 10/7/2003

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Yield			Yield			Free			Free	
Grade		0%			0%			0%			0%	
Volume (veh/h)	5	0	0	0	0	16	0	14	0	18	6	10
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (veh/h)	5	0	0	0	0	17	0	15	0	20	7	11
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
vC, conflicting volume	84	66	12	66	72	15	17			15		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	99	100	100	100	100	98	100			99		
cM capacity (veh/h)	880	814	1069	918	809	1064	1600			1603		

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	5	17	15	37
Volume Left	5	0	0	20
Volume Right	0	17	0	11
cSH	880	1064	1600	1603
Volume to Capacity	0.01	0.02	0.00	0.01
Queue Length (ft)	0	1	0	1
Control Delay (s)	9.1	8.4	0.0	3.9
Lane LOS	A	A		A
Approach Delay (s)	9.1	8.4	0.0	3.9
Approach LOS	A	A		

Intersection Summary			
Average Delay	4.5		
Intersection Capacity Utilization	13.3%	ICU Level of Service	A

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Sign Control	Free			Free	Yield	
Grade	0%			0%	0%	
Volume (veh/h)	17	1	34	16	0	29
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (veh/h)	18	1	37	17	0	32
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type					None	
Median storage veh)						
vC, conflicting volume			20		110	19
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			98		100	97
cM capacity (veh/h)			1597		866	1059

Direction, Lane #	EB 1	WB 1	NB 1
Volume Total	20	54	32
Volume Left	0	37	0
Volume Right	1	0	32
cSH	1700	1597	1059
Volume to Capacity	0.01	0.02	0.03
Queue Length (ft)	0	2	2
Control Delay (s)	0.0	5.0	8.5
Lane LOS		A	A
Approach Delay (s)	0.0	5.0	8.5
Approach LOS			A

Intersection Summary			
Average Delay	5.1		
Intersection Capacity Utilization	13.3%	ICU Level of Service	A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Yield			Yield			Free			Free	
Grade		0%			0%			0%			0%	
Volume (veh/h)	46	0	11	0	0	0	2	10	0	0	10	42
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (veh/h)	50	0	12	0	0	0	2	11	0	0	11	46
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
vC, conflicting volume	49	49	34	61	72	11	57			11		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	95	100	99	100	100	100	100			100		
cM capacity (veh/h)	950	841	1040	923	818	1070	1548			1608		

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	62	0	13	57
Volume Left	50	0	2	0
Volume Right	12	0	0	46
cSH	966	1700	1548	1608
Volume to Capacity	0.06	0.00	0.00	0.00
Queue Length (ft)	5	0	0	0
Control Delay (s)	9.0	0.0	1.2	0.0
Lane LOS	A	A	A	
Approach Delay (s)	9.0	0.0	1.2	0.0
Approach LOS	A	A		

Intersection Summary			
Average Delay	4.4		
Intersection Capacity Utilization	13.6%	ICU Level of Service	A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Yield			Yield			Free			Free	
Grade		0%			0%			0%			0%	
Volume (veh/h)	13	1	0	0	0	1	0	0	0	7	0	4
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (veh/h)	14	1	0	0	0	1	0	0	0	8	0	4
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
vC, conflicting volume	18	17	2	18	20	0	4			0		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	99	100	100	100	100	100	100			100		
cM capacity (veh/h)	991	873	1082	992	870	1085	1617			1623		

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	15	1	0	12
Volume Left	14	0	0	8
Volume Right	0	1	0	4
cSH	981	1085	1700	1623
Volume to Capacity	0.02	0.00	0.00	0.00
Queue Length (ft)	1	0	0	0
Control Delay (s)	8.7	8.3	0.0	4.6
Lane LOS	A	A		A
Approach Delay (s)	8.7	8.3	0.0	4.6
Approach LOS	A	A		

Intersection Summary			
Average Delay	7.0		
Intersection Capacity Utilization	13.3%	ICU Level of Service	A

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Sign Control	Free			Free	Yield	
Grade	0%			0%	0%	
Volume (veh/h)	8	0	31	6	0	20
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (veh/h)	9	0	34	7	0	22
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type					None	
Median storage veh)						
vC, conflicting volume			9		83	9
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			98		100	98
cM capacity (veh/h)			1611		900	1073

Direction, Lane #	EB 1	WB 1	NB 1
Volume Total	9	40	22
Volume Left	0	34	0
Volume Right	0	0	22
cSH	1700	1611	1073
Volume to Capacity	0.01	0.02	0.02
Queue Length (ft)	0	2	2
Control Delay (s)	0.0	6.1	8.4
Lane LOS		A	A
Approach Delay (s)	0.0	6.1	8.4
Approach LOS			A

Intersection Summary			
Average Delay	6.1		
Intersection Capacity Utilization	13.3%	ICU Level of Service	A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Yield			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Volume (veh/h)	33	0	0	2	2	6	0	23	0	1	34	37
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (veh/h)	36	0	0	2	2	7	0	25	0	1	37	40
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
vC, conflicting volume	92	84	57	84	104	25	77			25		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	96	100	100	100	100	99	100			100		
cM capacity (veh/h)	884	805	1009	902	785	1051	1521			1589		

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	36	11	25	78
Volume Left	36	2	0	1
Volume Right	0	7	0	40
cSH	884	955	1521	1589
Volume to Capacity	0.04	0.01	0.00	0.00
Queue Length (ft)	3	1	0	0
Control Delay (s)	9.2	8.8	0.0	0.1
Lane LOS	A	A		A
Approach Delay (s)	9.2	8.8	0.0	0.1
Approach LOS	A	A		

Intersection Summary

Average Delay 2.9

Intersection Capacity Utilization 14.5% ICU Level of Service A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Yield			Yield			Free			Free	
Grade		0%			0%			0%			0%	
Volume (veh/h)	15	0	0	0	0	2	0	6	0	7	11	18
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (veh/h)	16	0	0	0	0	2	0	7	0	8	12	20
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
vC, conflicting volume	46	43	22	43	53	7	32			7		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	98	100	100	100	100	100	100			100		
cM capacity (veh/h)	951	844	1055	956	834	1076	1581			1614		

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	16	2	7	39
Volume Left	16	0	0	8
Volume Right	0	2	0	20
cSH	951	1076	1581	1614
Volume to Capacity	0.02	0.00	0.00	0.00
Queue Length (ft)	1	0	0	0
Control Delay (s)	8.9	8.4	0.0	1.4
Lane LOS	A	A		A
Approach Delay (s)	8.9	8.4	0.0	1.4
Approach LOS	A	A		

Intersection Summary

Average Delay 3.4

Intersection Capacity Utilization 13.3% ICU Level of Service A

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Sign Control	Free			Free	Yield	
Grade	0%			0%	0%	
Volume (veh/h)	13	0	30	9	0	20
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (veh/h)	14	0	33	10	0	22
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type					None	
Median storage veh)						
vC, conflicting volume			14		89	14
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			98		100	98
cM capacity (veh/h)			1604		893	1066

Direction, Lane #	EB 1	WB 1	NB 1
Volume Total	14	42	22
Volume Left	0	33	0
Volume Right	0	0	22
cSH	1700	1604	1066
Volume to Capacity	0.01	0.02	0.02
Queue Length (ft)	0	2	2
Control Delay (s)	0.0	5.6	8.4
Lane LOS		A	A
Approach Delay (s)	0.0	5.6	8.4
Approach LOS			A

Intersection Summary			
Average Delay	5.4		
Intersection Capacity Utilization	13.3%	ICU Level of Service	A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Yield			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Volume (veh/h)	37	0	1	6	2	9	0	42	0	3	36	36
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (veh/h)	40	0	1	7	2	10	0	46	0	3	39	39
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
vC, conflicting volume	122	111	59	112	130	46	78			46		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	95	100	100	99	100	99	100			100		
cM capacity (veh/h)	842	778	1007	863	759	1024	1520			1562		

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	41	18	46	82
Volume Left	40	7	0	3
Volume Right	1	10	0	39
cSH	845	925	1520	1562
Volume to Capacity	0.05	0.02	0.00	0.00
Queue Length (ft)	4	2	0	0
Control Delay (s)	9.5	9.0	0.0	0.3
Lane LOS	A	A		A
Approach Delay (s)	9.5	9.0	0.0	0.3
Approach LOS	A	A		

Intersection Summary			
Average Delay	3.1		
Intersection Capacity Utilization	14.7%	ICU Level of Service	A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Yield			Yield			Free			Free	
Grade		0%			0%			0%			0%	
Volume (veh/h)	12	0	0	0	0	16	0	14	0	18	6	19
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (veh/h)	13	0	0	0	0	17	0	15	0	20	7	21
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
vC, conflicting volume	89	71	17	71	82	15	27			15		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	99	100	100	100	100	98	100			99		
cM capacity (veh/h)	874	809	1062	912	799	1064	1587			1603		

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	13	17	15	47
Volume Left	13	0	0	20
Volume Right	0	17	0	21
cSH	874	1064	1587	1603
Volume to Capacity	0.01	0.02	0.00	0.01
Queue Length (ft)	1	1	0	1
Control Delay (s)	9.2	8.4	0.0	3.1
Lane LOS	A	A		A
Approach Delay (s)	9.2	8.4	0.0	3.1
Approach LOS	A	A		

Intersection Summary			
Average Delay	4.5		
Intersection Capacity Utilization	13.3%	ICU Level of Service	A

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Sign Control	Free			Free	Yield	
Grade	0%			0%	0%	
Volume (veh/h)	17	1	25	16	0	22
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (veh/h)	18	1	27	17	0	24
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type					None	
Median storage veh)						
vC, conflicting volume			20		91	19
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			98		100	98
cM capacity (veh/h)			1597		894	1059

Direction, Lane #	EB 1	WB 1	NB 1
Volume Total	20	45	24
Volume Left	0	27	0
Volume Right	1	0	24
cSH	1700	1597	1059
Volume to Capacity	0.01	0.02	0.02
Queue Length (ft)	0	1	2
Control Delay (s)	0.0	4.5	8.5
Lane LOS		A	A
Approach Delay (s)	0.0	4.5	8.5
Approach LOS			A

Intersection Summary			
Average Delay	4.6		
Intersection Capacity Utilization	13.3%	ICU Level of Service	A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Yield			Yield			Free			Free	
Grade		0%			0%			0%			0%	
Volume (veh/h)	41	0	11	0	0	0	2	15	0	0	18	34
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (veh/h)	45	0	12	0	0	0	2	16	0	0	20	37
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
vC, conflicting volume	59	59	38	71	77	16	57			16		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	95	100	99	100	100	100	100			100		
cM capacity (veh/h)	937	831	1034	909	812	1063	1548			1601		

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	57	0	18	57
Volume Left	45	0	2	0
Volume Right	12	0	0	37
cSH	956	1700	1548	1601
Volume to Capacity	0.06	0.00	0.00	0.00
Queue Length (ft)	5	0	0	0
Control Delay (s)	9.0	0.0	0.9	0.0
Lane LOS	A	A	A	
Approach Delay (s)	9.0	0.0	0.9	0.0
Approach LOS	A	A		

Intersection Summary

Average Delay 4.0
Intersection Capacity Utilization 13.3% ICU Level of Service A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Yield			Yield			Free			Free	
Grade		0%			0%			0%			0%	
Volume (veh/h)	18	1	0	0	0	1	0	0	0	7	0	12
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (veh/h)	20	1	0	0	0	1	0	0	0	8	0	13
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
vC, conflicting volume	23	22	7	22	28	0	13			0		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	98	100	100	100	100	100	100			100		
cM capacity (veh/h)	985	868	1076	985	861	1085	1605			1623		

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	21	1	0	21
Volume Left	20	0	0	8
Volume Right	0	1	0	13
cSH	978	1085	1700	1623
Volume to Capacity	0.02	0.00	0.00	0.00
Queue Length (ft)	2	0	0	0
Control Delay (s)	8.8	8.3	0.0	2.7
Lane LOS	A	A		A
Approach Delay (s)	8.8	8.3	0.0	2.7
Approach LOS	A	A		

Intersection Summary

Average Delay 5.8
Intersection Capacity Utilization 13.3% ICU Level of Service A

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Sign Control	Free			Free	Yield	
Grade	0%			0%	0%	
Volume (veh/h)	8	0	23	6	0	15
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (veh/h)	9	0	25	7	0	16
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type					None	
Median storage veh)						
vC, conflicting volume			9		65	9
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			98		100	98
cM capacity (veh/h)			1611		926	1073

Direction, Lane #	EB 1	WB 1	NB 1
Volume Total	9	32	16
Volume Left	0	25	0
Volume Right	0	0	16
cSH	1700	1611	1073
Volume to Capacity	0.01	0.02	0.02
Queue Length (ft)	0	1	1
Control Delay (s)	0.0	5.8	8.4
Lane LOS		A	A
Approach Delay (s)	0.0	5.8	8.4
Approach LOS			A

Intersection Summary			
Average Delay	5.7		
Intersection Capacity Utilization	13.3%	ICU Level of Service	A

HCM Unsignalized Intersection Capacity Analysis
All3 AM Peak Hour

6: Restaurant Drive & Old Orchard Ln
10/7/2003

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Yield			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Volume (veh/h)	13	0	0	2	2	6	0	43	0	1	23	48
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (veh/h)	14	0	0	2	2	7	0	47	0	1	25	52
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
vC, conflicting volume	106	100	51	100	126	47	77			47		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	98	100	100	100	100	99	100			100		
cM capacity (veh/h)	863	789	1017	881	764	1023	1521			1561		

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	14	11	47	78
Volume Left	14	2	0	1
Volume Right	0	7	0	52
cSH	863	930	1521	1561
Volume to Capacity	0.02	0.01	0.00	0.00
Queue Length (ft)	1	1	0	0
Control Delay (s)	9.2	8.9	0.0	0.1
Lane LOS	A	A		A
Approach Delay (s)	9.2	8.9	0.0	0.1
Approach LOS	A	A		

Intersection Summary			
Average Delay	1.6		
Intersection Capacity Utilization	14.6%	ICU Level of Service	A

HCM Unsignalized Intersection Capacity Analysis
All3 AM Peak Hour

8: Grevilea Wy & Old Orchard Ln
10/7/2003

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Yield			Yield			Free			Free	
Grade		0%			0%			0%			0%	
Volume (veh/h)	35	0	0	0	0	2	0	6	0	7	11	7
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (veh/h)	38	0	0	0	0	2	0	7	0	8	12	8
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
vC, conflicting volume	40	38	16	38	41	7	20			10	7	
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	96	100	100	100	100	100	100			100		
cM capacity (veh/h)	959	851	1064	964	847	1076	1597			1614		

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	38	2	7	27
Volume Left	38	0	0	8
Volume Right	0	2	0	8
cSH	959	1076	1597	1614
Volume to Capacity	0.04	0.00	0.00	0.00
Queue Length (ft)	3	0	0	0
Control Delay (s)	8.9	8.4	0.0	2.1
Lane LOS	A	A		A
Approach Delay (s)	8.9	8.4	0.0	2.1
Approach LOS	A	A		

Intersection Summary			
Average Delay	5.6		
Intersection Capacity Utilization	13.3%	ICU Level of Service	A

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Sign Control	Free			Free	Yield	
Grade	0%			0%	0%	
Volume (veh/h)	13	0	41	9	0	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (veh/h)	14	0	45	10	0	0
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type					None	
Median storage veh)						
vC, conflicting volume			14		113	14
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			97		100	100
cM capacity (veh/h)			1604		859	1066

Direction, Lane #	EB 1	WB 1	NB 1
Volume Total	14	54	0
Volume Left	0	45	0
Volume Right	0	0	0
cSH	1700	1604	1700
Volume to Capacity	0.01	0.03	0.00
Queue Length (ft)	0	2	0
Control Delay (s)	0.0	6.0	0.0
Lane LOS		A	A
Approach Delay (s)	0.0	6.0	0.0
Approach LOS			A

Intersection Summary			
Average Delay	4.8		
Intersection Capacity Utilization	6.7%	ICU Level of Service	A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Yield			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Volume (veh/h)	16	0	1	6	2	9	0	64	0	3	27	45
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (veh/h)	17	0	1	7	2	10	0	70	0	3	29	49
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
vC, conflicting volume	141	130	54	131	154	70	78			70		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	98	100	100	99	100	99	100			100		
cM capacity (veh/h)	818	759	1013	839	736	993	1520			1531		

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	18	18	70	82
Volume Left	17	7	0	3
Volume Right	1	10	0	49
cSH	827	898	1520	1531
Volume to Capacity	0.02	0.02	0.00	0.00
Queue Length (ft)	2	2	0	0
Control Delay (s)	9.5	9.1	0.0	0.3
Lane LOS	A	A		A
Approach Delay (s)	9.5	9.1	0.0	0.3
Approach LOS	A	A		

Intersection Summary			
Average Delay	2.0		
Intersection Capacity Utilization	14.8%	ICU Level of Service	A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Yield			Yield			Free			Free	
Grade		0%			0%			0%			0%	
Volume (veh/h)	34	0	0	0	0	16	0	14	0	16	6	10
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (veh/h)	37	0	0	0	0	17	0	15	0	20	7	11
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
vC, conflicting volume	84	66	12	66	72	15	17			15		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	96	100	100	100	100	98	100			99		
cM capacity (veh/h)	880	814	1069	918	809	1064	1600			1603		

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	37	17	15	37
Volume Left	37	0	0	20
Volume Right	0	17	0	11
cSH	880	1064	1600	1603
Volume to Capacity	0.04	0.02	0.00	0.01
Queue Length (ft)	3	1	0	1
Control Delay (s)	9.3	8.4	0.0	3.9
Lane LOS	A	A		A
Approach Delay (s)	9.3	8.4	0.0	3.9
Approach LOS	A	A		

Intersection Summary			
Average Delay	5.9		
Intersection Capacity Utilization	13.3%	ICU Level of Service	A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR
Lane Configurations									
Sign Control		Free						Free	Yield
Grade		0%						0%	0%
Volume (veh/h)		17	1	34				16	0	0
Peak Hour Factor		0.92	0.92	0.92				0.92	0.92	0.92
Hourly flow rate (veh/h)		18	1	37				17	0	0
Pedestrians										
Lane Width (ft)										
Walking Speed (ft/s)										
Percent Blockage										
Right turn flare (veh)										
Median type									None	
Median storage veh)										
vC, conflicting volume				20				110		19
vC1, stage 1 conf vol										
vC2, stage 2 conf vol										
tC, single (s)				4.1				6.4		6.2
tC, 2 stage (s)										
tF (s)				2.2				3.5		3.3
p0 queue free %				98				100		100
cM capacity (veh/h)				1597				866		1059

Direction, Lane #	EB 1	WB 1	NB 1
Volume Total	20	54	0
Volume Left	0	37	0
Volume Right	1	0	0
cSH	1700	1597	1700
Volume to Capacity	0.01	0.02	0.00
Queue Lenigth (ft)	0	2	0
Control Delay (s)	0.0	5.0	0.0
Lane LOS		A	A
Approach Delay (s)	0.0	5.0	0.0
Approach LOS			A

Intersection Summary			
Average Delay	3.7		
Intersection Capacity Utilization	6.7%	ICU Level of Service	A

HCM Unsignalized Intersection Capacity Analysis — 6: Restaurant Drive & Old Orchard Ln

Sunday Alt 3 — 10/20/2003

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Yield			Yield			Free			Free	
Grade		0%			0%			0%			0%	
Volume (veh/h)	26	0	11	0	0	0	2	30	0	0	10	42
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (veh/h)	28	0	12	0	0	0	2	33	0	0	11	46
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
vC, conflicting volume	71	71	34	83	93	33	57			33		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	97	100	99	100	100	100	100			100		
cM capacity (veh/h)	920	819	1040	893	795	1041	1548			1579		

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	40	0	35	57
Volume Left	28	0	2	0
Volume Right	12	0	0	46
cSH	953	1700	1548	1579
Volume to Capacity	0.04	0.00	0.00	0.00
Queue Length (ft)	3	0	0	0
Control Delay (s)	8.9	0.0	0.5	0.0
Lane LOS	A	A	A	
Approach Delay (s)	8.9	0.0	0.5	0.0
Approach LOS	A	A		

Intersection Summary			
Average Delay	2.9		
Intersection Capacity Utilization	13.4%	ICU Level of Service	A

HCM Unsignalized Intersection Capacity Analysis — 8: Grevilea Wy & Old Orchard Ln

Sunday Alt 3 — 10/20/2003

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Yield			Yield			Free			Free	
Grade		0%			0%			0%			0%	
Volume (veh/h)	33	1	0	0	0	1	0	0	0	7	0	4
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (veh/h)	36	1	0	0	0	1	0	0	0	8	0	4
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
vC, conflicting volume	18	17	2	18	20	0	4			0		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	98	100	100	100	100	100	100			100		
cM capacity (veh/h)	991	873	1082	992	870	1085	1617			1623		

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	37	1	0	12
Volume Left	36	0	0	8
Volume Right	0	1	0	4
cSH	987	1085	1700	1623
Volume to Capacity	0.04	0.00	0.00	0.00
Queue Length (ft)	3	0	0	0
Control Delay (s)	8.8	8.3	0.0	4.6
Lane LOS	A	A		A
Approach Delay (s)	8.8	8.3	0.0	4.6
Approach LOS	A	A		

Intersection Summary			
Average Delay	7.8		
Intersection Capacity Utilization	13.3%	ICU Level of Service	A

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Sign Control	Free			Free	Yield	
Grade	0%			0%	0%	
Volume (veh/h)	8	0	31	8	0	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (veh/h)	9	0	34	7	0	0
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type					None	
Median storage veh)						
vC, conflicting volume			9		83	9
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			98		100	100
cM capacity (veh/h)			1611		900	1073

Direction, Lane #	EB 1	WB 1	NB 1
Volume Total	9	40	0
Volume Left	0	34	0
Volume Right	0	0	0
cSH	1700	1611	1700
Volume to Capacity	0.01	0.02	0.00
Queue Length (ft)	0	2	0
Control Delay (s)	0.0	6.1	0.0
Lane LOS		A	A
Approach Delay (s)	0.0	6.1	0.0
Approach LOS			A

Intersection Summary			
Average Delay	5.0		
Intersection Capacity Utilization	6.7%	ICU Level of Service	A